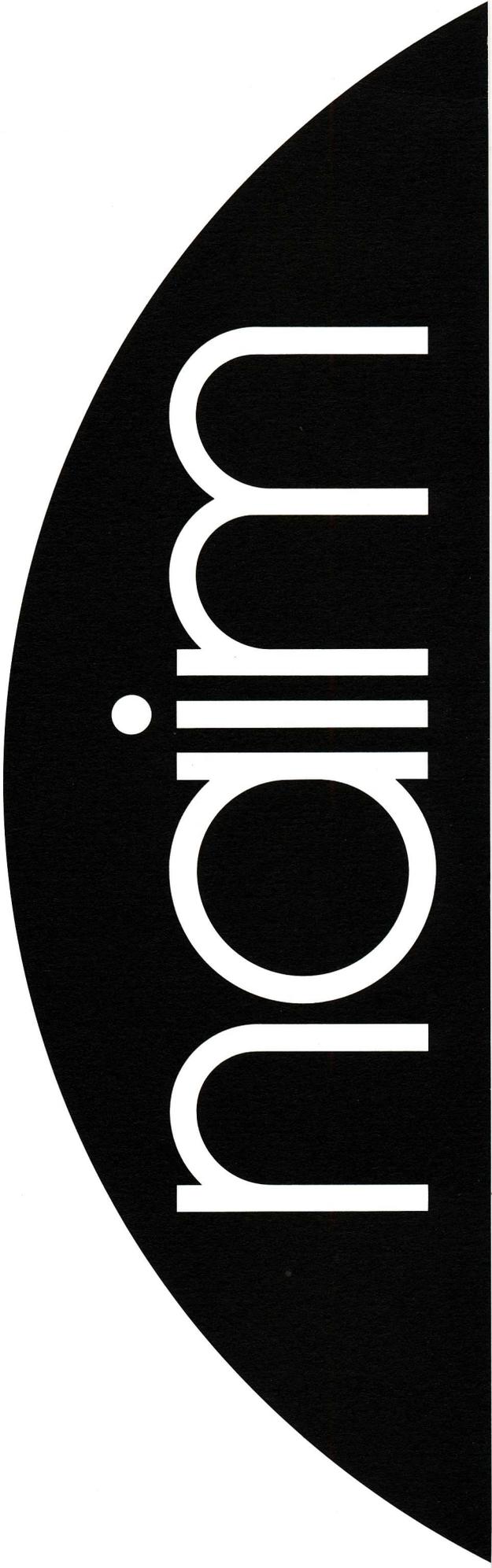


**owners
manual**
preamplifiers



millon

equipment installation

- 1** equipment installation
cables and connections
- 2** turning on and off
warming up
mains supply
how to site the equipment
if you have a problem
- 3** warnings
- 4** mains lead
non-rewireable mains plugs
fuse carrier
plug fuses
- 5** nac 52 preamplifier
- 6** nac 52 connections
- 7** nac 52 operation
- 8** nac 52 & 82 remote control
- 9** nac 82 preamplifier
- 10** nac 82 connections
- 12** nac 82 operation
- 13** nac 72 preamplifier & connections
- 14** nac 92 preamplifier
- 15** nac 92 connections
- 16** EC Declaration of Conformity
to Appropriate Standards

Normally your Naim Audio equipment will have been installed by the dealer who sold it to you, even if you live outside their immediate area. Your dealer is responsible for making sure that the system sounds exactly as it should, and information given here is not intended to reduce this responsibility in any way.

cables and connections

Please do not modify the standard interconnect cables supplied with amplifiers and power supplies, either the type of wire or length. This is important for safety as well as performance. One end of each cable is marked with a strip of tape to establish its direction. The tape marks the end that goes towards the signal source.

Loudspeaker leads are also very important. Naim Audio loudspeaker cable is correct for your system and your dealer will make up leads to your own requirements. **THEY SHOULD EACH BE AT LEAST 3.5 METRES LONG AND OF EQUAL LENGTH.** Like interconnect leads, they are directional, and should be connected so that the printed arrow points towards the speakers. Using incorrect cable will degrade performance, and may even damage your amplifier. The loudspeaker connectors supplied with all our amplifiers and loudspeakers have been very carefully designed to make a robust mechanical connection. It is essential that **ONLY** these are used in order to comply with current safety regulations.

All the plugs and sockets that come with your Naim Audio equipment have been chosen because they make the best possible connection for their purpose. A poor contact will degrade the signal substantially, and plugs and sockets should all look clean and free from dirt and corrosion.

The easiest way to clean them is to switch off the equipment, pull the plugs out of their sockets and push them back in again. Special contact cleaners and "enhancers" should not be used as they deposit a film which degrades sound and is very difficult to remove.

turning on and off

Power supplies for cd players, tuners, preamplifiers and crossovers should be switched on first, before switching on the amplifier(s). Always switch the amplifier(s) off and wait about a minute for the power supply capacitors to discharge before plugging (or unplugging) anything into the system.

warming up

Your Naim Audio equipment will take a considerable time to "warm up" before it can perform at its best. This period varies, but under some conditions you will find that performance continues to improve for as much as five days. A better and more consistent performance is achieved when hi-fi equipment is left switched on for long periods.

It is worth remembering, though, that all electronic equipment can be damaged by lightning, including the electronic components of your hi-fi system. Please see the warnings section.

mains supply

Where fused plugs are used, 13 amp fuses should be fitted. Smaller ones will fail after a period of use.

A hi-fi system usually shares a ring main with other household equipment, some of which can cause distortion of the mains wave-form, leading to mechanical hum from the transformers in Naim Audio equipment. This hum is not transmitted through the speakers, has no effect on the system, but is purely local to the transformer itself.

A separate fused spur from the consumer unit (like the spur reserved for electric cookers) may reduce transformer noise. It's also worth bearing in mind that such a spur (ideally with a 30 or 45amp rating) has lower impedance and supplies cleaner current than a ring main, which will improve performance.

Please don't wire voltage dependent resistors or noise suppressors into mains plugs, they degrade the supply, and the music.

how to site the equipment

Power supplies and amplifiers need to be kept at a reasonable distance from other equipment or their transformer fields will interfere with it, and possibly cause hum audible from the loudspeakers. 300mm (12 inches) is the minimum recommended distance and that allowed by the standard interconnect lead is the maximum.

if you have a problem

Legal consumer protection varies from country to country. In most places where our equipment is supplied, the dealer must be prepared to take back any Naim Audio equipment he has sold you, at the time of sale, if he cannot make it work to YOUR satisfaction in your own home. A problem may be due to a fault in any part of your system, or its siting, so it is essential to make full use of your local dealer's diagnostic skills on site. Please contact your local distributor, or Naim Audio at the address in the back of this manual, if any difficulties cannot be resolved. Much of our equipment is now made in special versions for different countries, adding to other obstacles that make it impracticable to arrange international guarantees, so please make sure of your position with your own dealer NOW, at the time of sale. We are always available to help and advise.

It is essential that repairs and updates should only be carried out by an authorised Naim dealer, or at the factory by Naim Audio. Many components are made, tested or matched specially, and suitable replacements can only be obtained through ourselves.

warnings

Naim Audio equipment is designed to offer the finest sound quality that can be achieved, avoiding compromise whenever possible. This can lead to situations that may be unfamiliar. The material that follows contains advice and information specifically related to Naim equipment, as well as more general warnings about the use of domestic amplification, so please read it carefully.

The transformers in the power amplifiers and power supplies may sometimes make a mechanical noise caused by the distortion of the mains (house current). Naim transformers are large in size and have large gauge secondary windings, making them quite sensitive to this distortion. A separate spur from your consumer unit for your hi-fi system can often reduce the effect, while also giving an overall improvement in sound quality, but it may be necessary to take account of mechanical transformer noise when siting your equipment.

In some circumstances you may experience radio frequency interference, depending on where you live and the earthing arrangements in your home. Controls on broadcasting in some countries allow very high levels of RF, and the choice and especially the exact siting of equipment may become critical. If there is a problem in your area, arrange for a home demonstration before purchase to find out if your Naim equipment will be affected. RF interference is related to the wide internal bandwidth which is required for good amplification, and in general moving magnet preamplifiers and passive systems are less likely to suffer. An RF kit is available for some Naim equipment, but sound quality will be progressively compromised. In extreme situations customers may find Naim equipment unsuitable.

The electronic components of your Naim hi-fi system can be damaged by lightning. The power amplifier is particularly sensitive to adverse conditions during an electrical storm and should always be turned off when not in use. For complete protection, the mains (house current) plugs of all equipment should be pulled out and any aerials disconnected.

important

IT IS ESSENTIAL THAT THE NAIM LOUDSPEAKER CONNECTORS SUPPLIED WITH OUR AMPLIFIERS AND LOUDSPEAKERS ARE USED, IN ORDER TO COMPLY WITH CURRENT SAFETY REGULATIONS.

DO NOT UNDER ANY CIRCUMSTANCES ALLOW ANYONE TO MODIFY YOUR NAIM EQUIPMENT WITHOUT FIRST CHECKING WITH THE FACTORY, YOUR DEALER, OR YOUR DISTRIBUTOR. UNAUTHORISED MODIFICATIONS WILL INVALIDATE YOUR GUARANTEE.

FOR YOUR OWN SAFETY DO NOT UNDER ANY CIRCUMSTANCES OPEN NAIM EQUIPMENT WITHOUT FIRST DISCONNECTING THE MAINS (HOUSE CURRENT).

THE FOLLOWING WARNING ATTACHES TO ALL MAINS POWERED EQUIPMENT:

WARNING

This apparatus must be earthed

mains lead

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or coloured green or green-and-yellow.

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured black.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured red.

non-rewireable mains plugs

If a non-rewireable plug is cut from a mains lead (for whatever purpose), the plug MUST be disposed of in a way to render it totally unusable. Considerable shock hazard exists if the cut-off plug is inserted into a socket outlet.

fuse carrier

Should the plug fuse carrier be damaged or lost, the correct replacement must be obtained from your dealer, or from Naim Audio direct. Do not use the plug until the fuse carrier is replaced.

plug fuses

Replace only with ASTA or BS 1362 approved fuses.

note

This equipment has been tested and found to comply with the relevant EMC and Safety Standards, and where applicable also complies with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

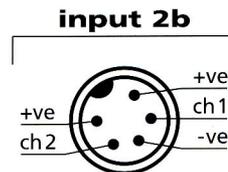
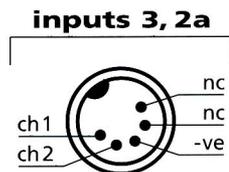
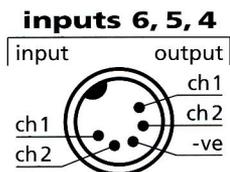
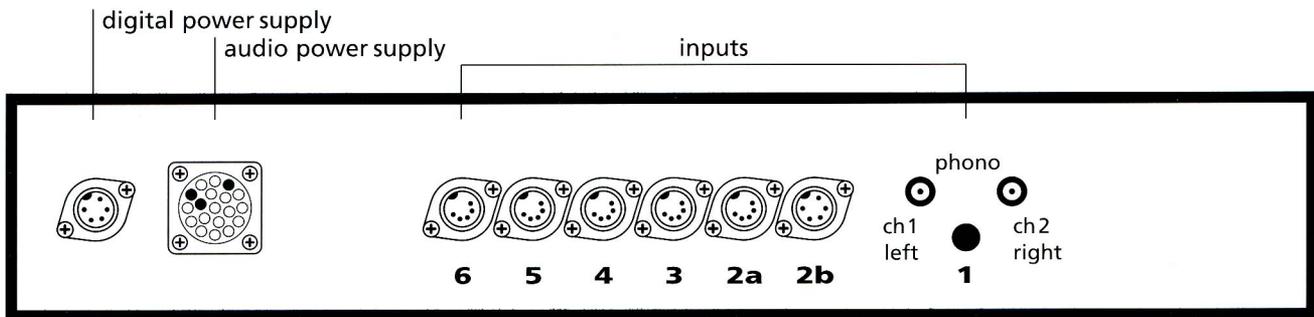
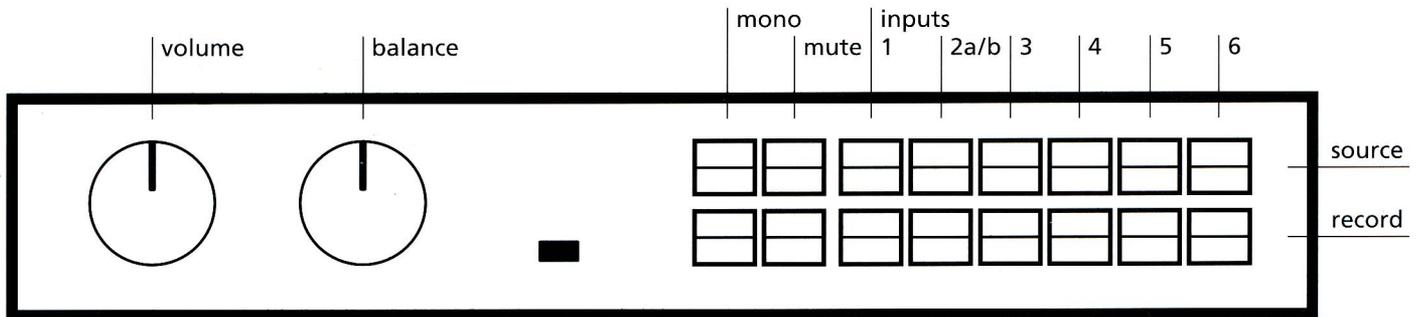
Reorient or relocate the receiving antenna.

Increase the separation between the equipment and the receiver.

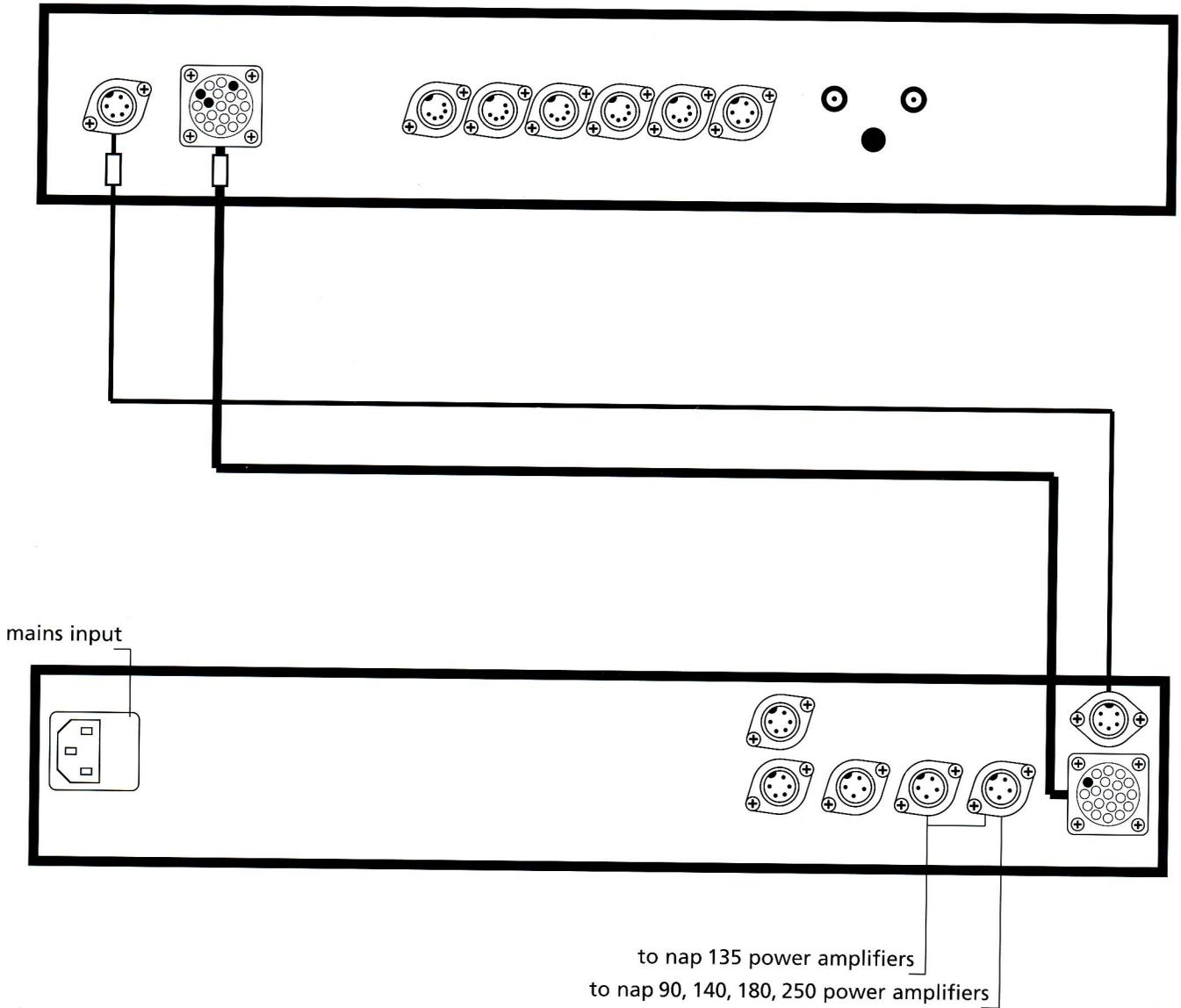
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult your Naim dealer or an experienced radio / TV technician for help.

nac 52
preamplifier



nac 52 connection to super-cap power supply



| cable
 | **direction**
 | marker

interconnect cables

5 to 5 pin DIN ———
 16 to 16 pin Burndy ———

nac 52

preamplifier operation

listening and recording

The input selector buttons are arranged along the uppermost bank of buttons. They control which source is to be routed to the power amplifier and the loudspeakers, for listening. Below them, in the lower bank, are a corresponding array of buttons which choose the source component to be routed to the preamplifier's recording outputs. One component (for example, the record player) can therefore be listened to whilst the output from another (say, the tuner) can be recorded onto a tape recorder. It is possible to lock the record controls and prevent accidental de-selection during recording. Record-lock is switched on or off by depressing the SOURCE mono button four times within six seconds.

mute and mono facilities

To the left of each bank of buttons there are two further buttons labelled mute and mono. These work independently: for example the mute button in the lower (recording) bank does not affect the signal that is chosen via the upper (source) buttons, and vice versa. Operating the mono button on the source bank will not affect the record circuits. To select either function press the relevant button once. To cancel that function press the button again.

preamplifier inputs

Input 1 is a high level input, but can be converted into a phono input by fitting plug in boards. Please see your dealer for further details.

Input 2 is a standard high level input. Before using, see the section "input socket 2" below.

Input 3 is a standard high level input.

Inputs 4, 5 and 6 are standard high level inputs and also have record output facilities, so these should be assigned to your tape recorder, cassette deck or VCR.

input socket 2 to expand input capabilities

Please note that input 2 is provided with two sockets. Use socket 2a for connecting your usual ancillary equipment. The extra socket (2b) is for the Prefix phono stage. Only one of these sockets may be used at a time, for safety as well as performance. Your preamplifier will have a protective cover fitted over the extra socket. If you wish to use it, it is advisable to refit the protective cover over the socket that will now be unused, to prevent mistakes.

nac 52 & 82 remote control

The remote control provided is designed to be used in conjunction with the nac 52 and 82 preamplifiers, and the cds and cd2 compact disc players.

remote functions

This universal remote control has numerous "HOT KEYS" and some keys controlled in conjunction with the three "SUB KEYS".

HOT KEYS denote functions which operate with a single push and require no additional mode selection.

SUB KEYS are necessary to alter the mode of certain keys depending upon the operation required.

preamplifier

The hot keys for the preamplifier, are as follows:

Vol up, Vol down, <bal, bal>

To operate sources for listening:

Press sub key "**preamp**". Select source input (1 through 6) on keypad. Select mono if required.

To operate sources for recording:

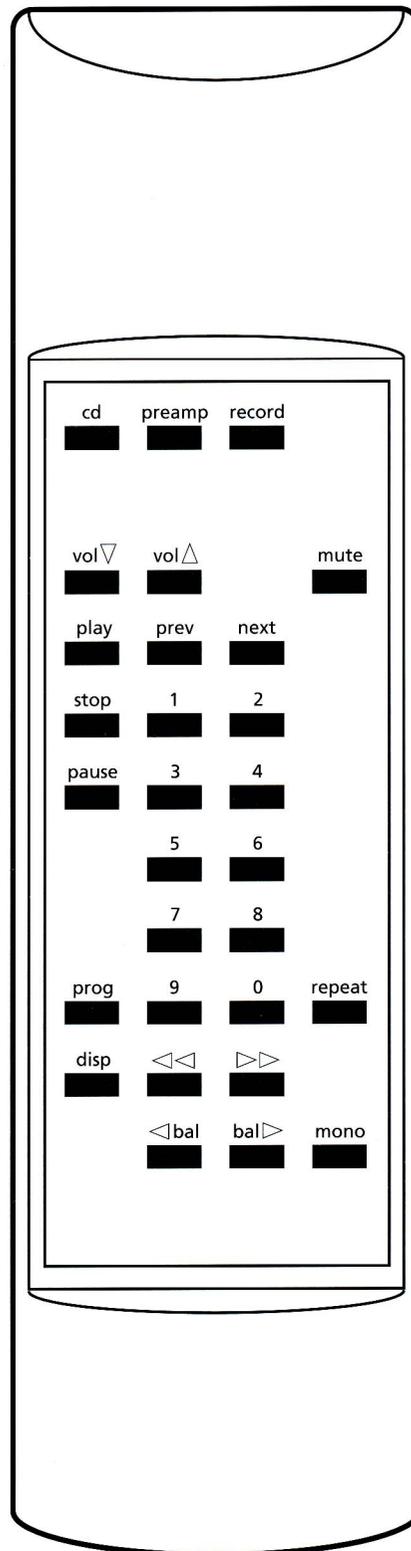
Press sub key "**record**". Select source input (1 through 6) on keypad. Select mono if required.

note

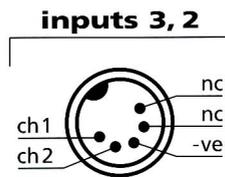
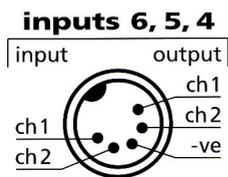
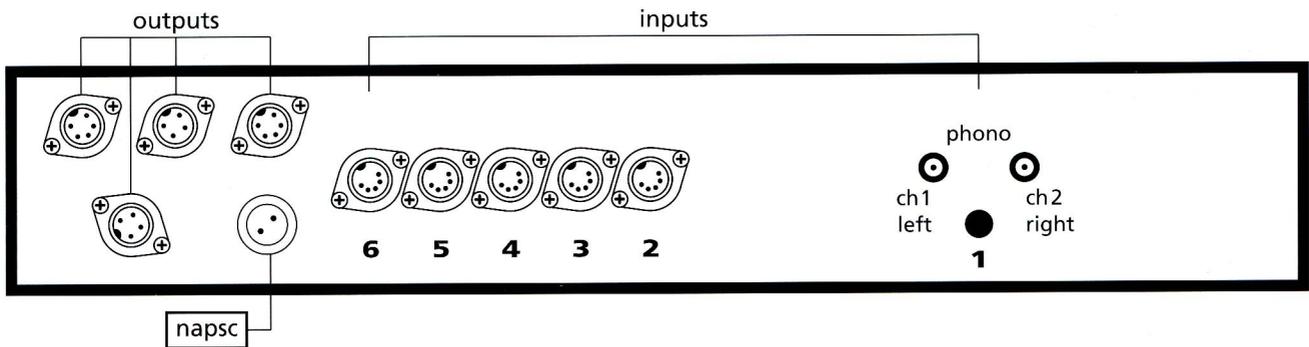
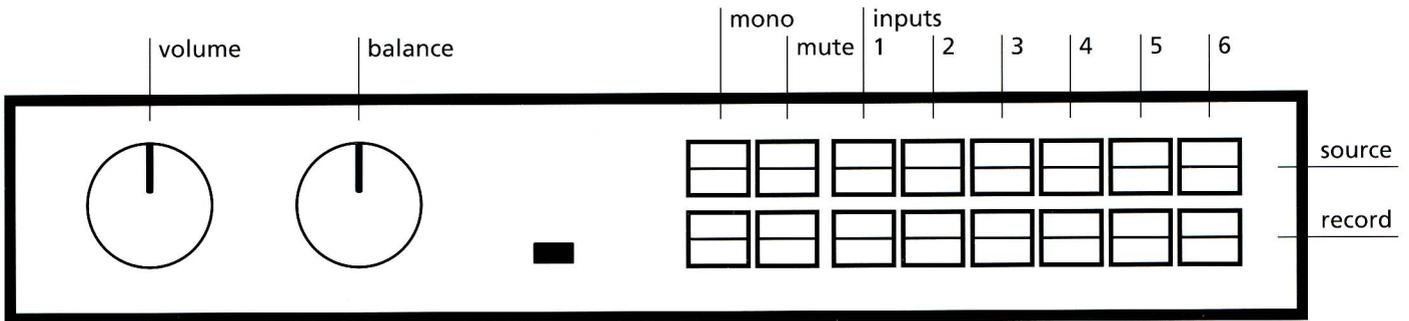
Numbers 7 through 0 have no function on the preamplifier. The mute button adopts source mode, unless the sub key "record" is pressed first, in which case it is record mute.

Once a sub key has been enabled its mode will apply to the universal keys until a new sub key is pressed or batteries are changed in the remote. You can press a sub key before every selection if it helps to avoid confusion.

The remote control can also be used to engage "record lock". For further information please refer to the nac 52 and 82 preamplifiers operation instructions.

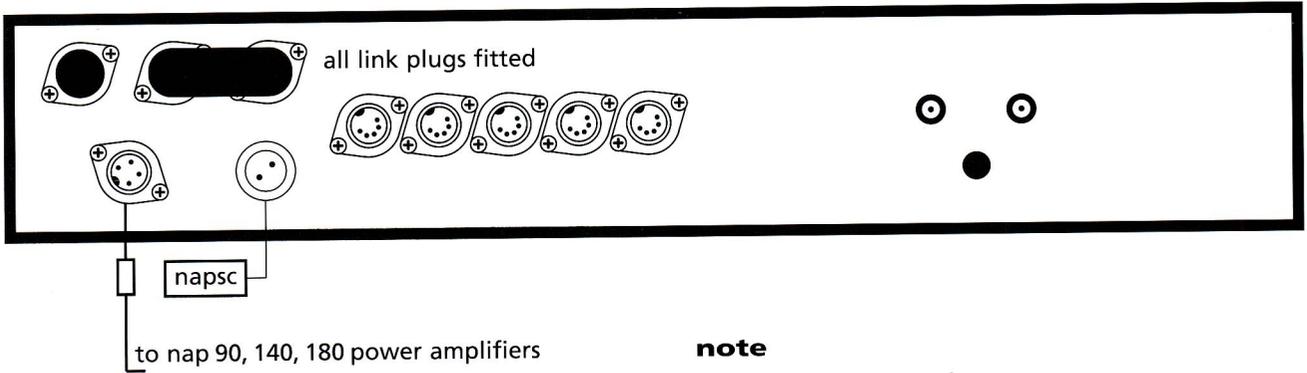


nac 82 preamplifier

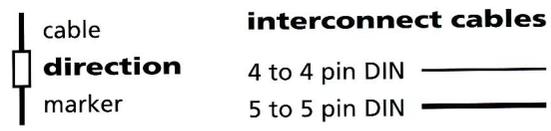


note
the napsc power supply
MUST be connected at
all times to the nac 82

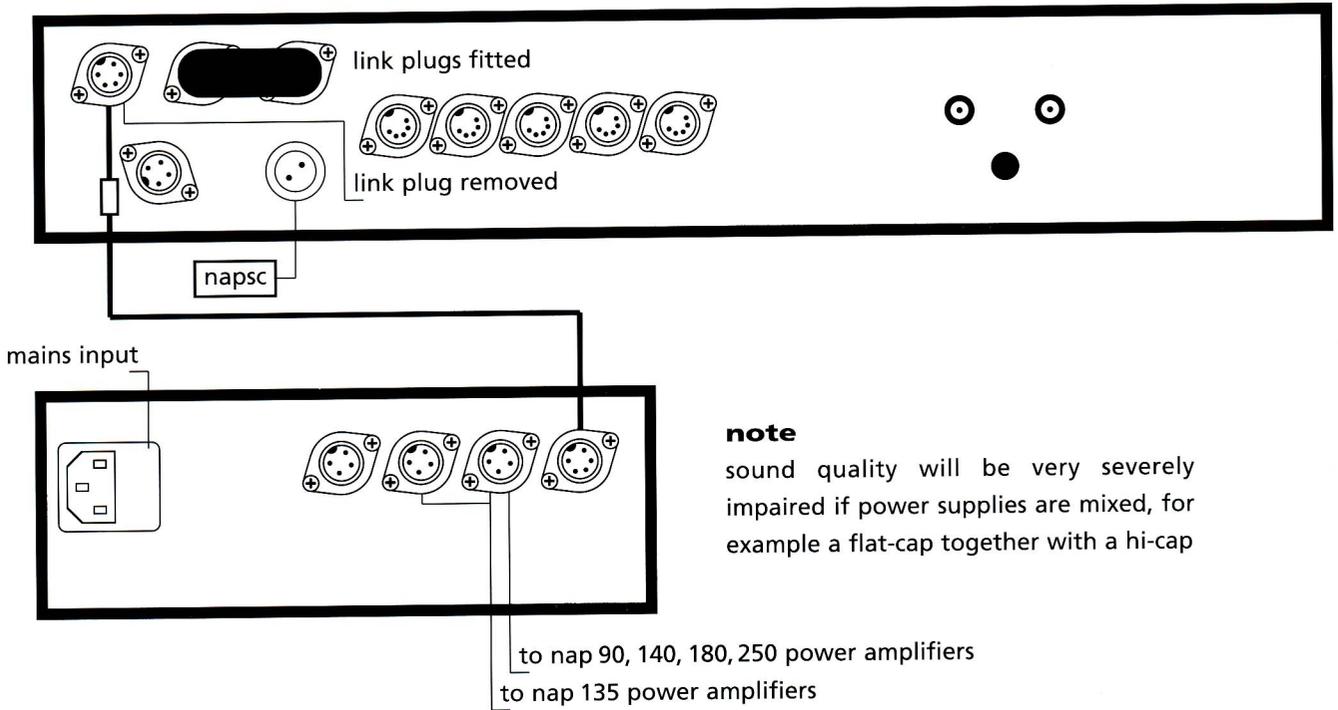
nac 82 connection to one power amplifier



note
the napsc power supply
MUST be connected at
all times to the nac 82

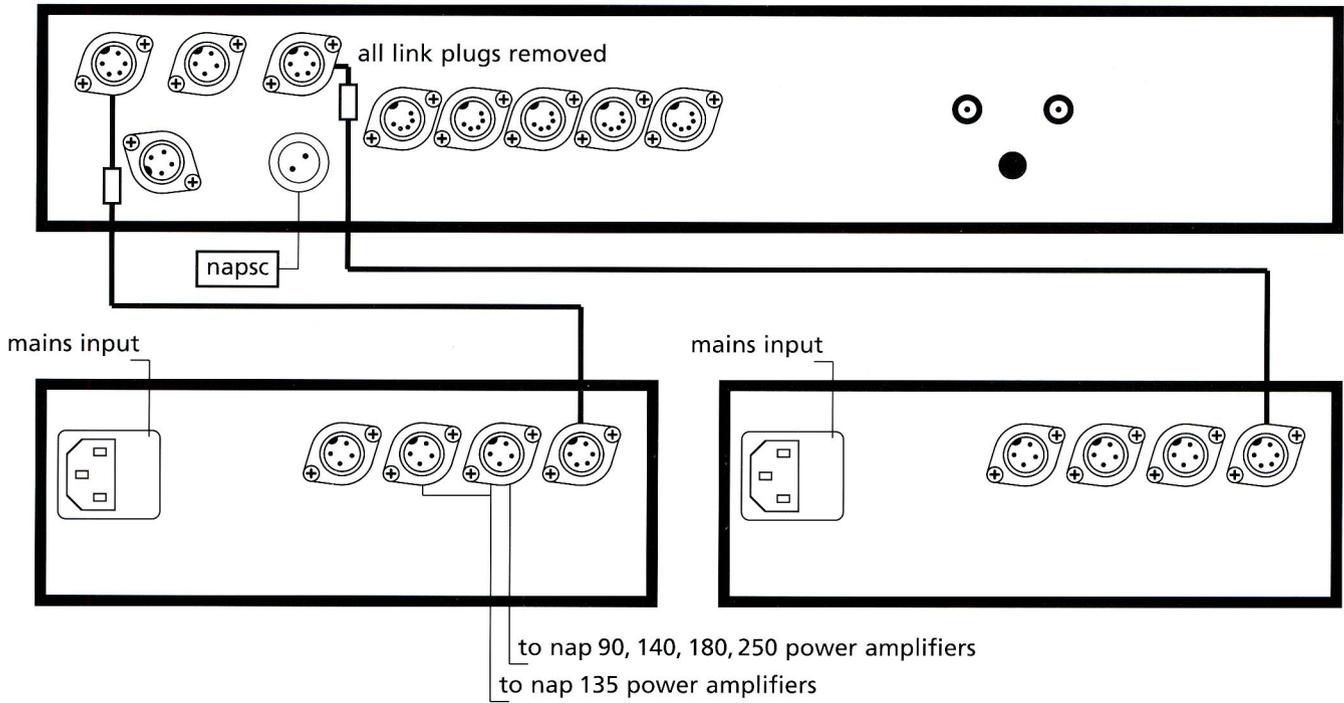


nac 82 connection to one hi-cap or flat-cap

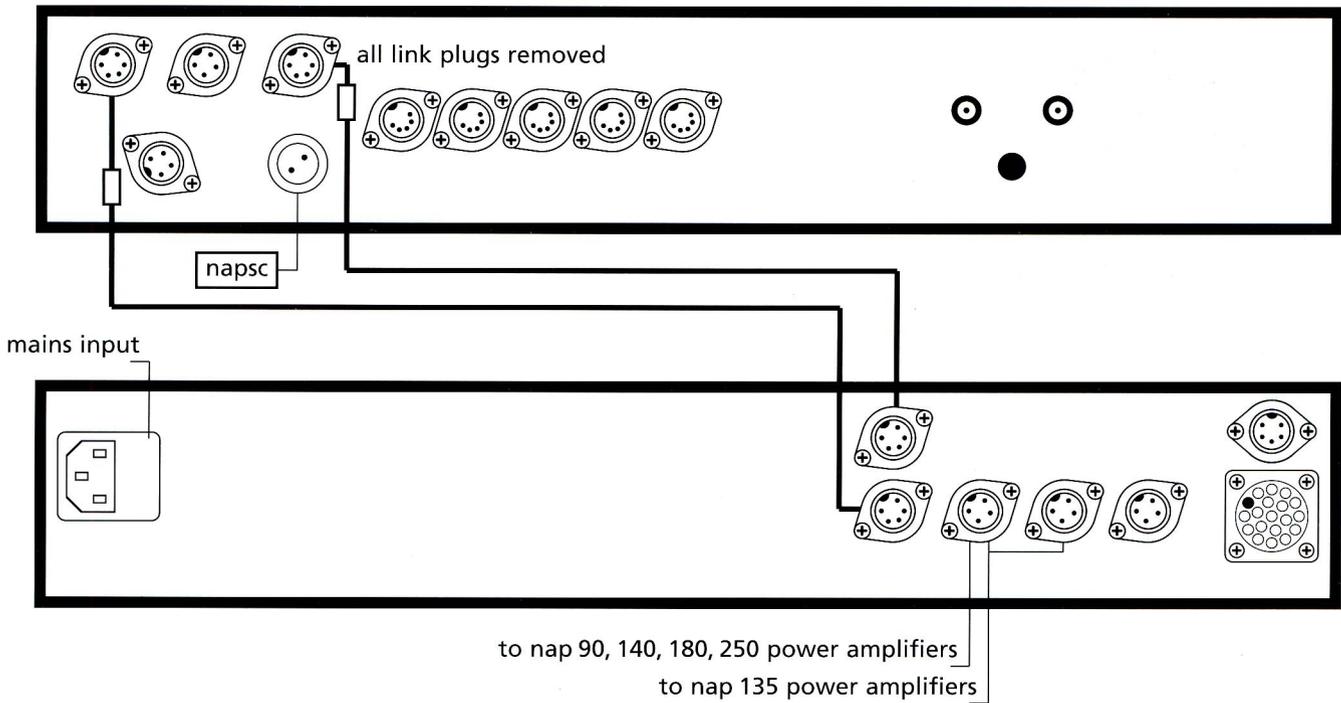


note
sound quality will be very severely
impaired if power supplies are mixed, for
example a flat-cap together with a hi-cap

nac 82 connection to two hi-caps or flat-caps



nac 82 connection to super-cap



nac 82

preamplifier operation

listening and recording

The input selector buttons are arranged along the uppermost bank of buttons. They control which source is to be routed to the power amplifier and the loudspeakers, for listening. Below them, in the lower bank, are a corresponding array of buttons which choose the source component to be routed to the preamplifier's recording outputs. One component (for example, the record player) can therefore be listened to whilst the output from another (say, the tuner) can be recorded onto a tape recorder. It is possible to lock the record controls and prevent accidental de-selection during recording. Record-lock is switched on or off by depressing the SOURCE mono button four times within six seconds.

mute and mono facilities

To the left of each bank of buttons there are two further buttons labelled mute and mono. These work independently: for example the mute button in the lower (recording) bank does not affect the signal that is chosen via the upper (source) buttons, and vice versa. Operating the mono button on the source bank will not affect the record circuits. To select either function press the relevant button once. To cancel that function press the button again.

preamplifier inputs

Input 1 is a high level input, but can be converted into a phono input by fitting plug in boards. Please see your dealer for further details.

Inputs 2, and 3 are standard high level inputs.

Inputs 4, 5 and 6 are standard high level inputs and also have record output facilities, so these should be assigned to your tape recorder, cassette deck or VCR.

connecting to an active system

Please note, an additional separate power supply is required to power the snaxo crossover, i.e. three hi-caps for a system where two are already employed to power the nac 82, or two super-caps where one is already employed for the preamplifier. For further information please refer to your dealer.

nac 72 preamplifier

preamplifier inputs

As supplied, the phono (aux) input is configured for high level sources, but can be fitted with plug-in boards to suit a range of cartridges. Please refer to your Naim Audio dealer for further information.

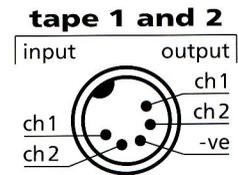
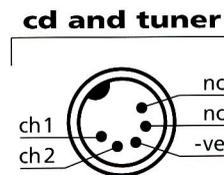
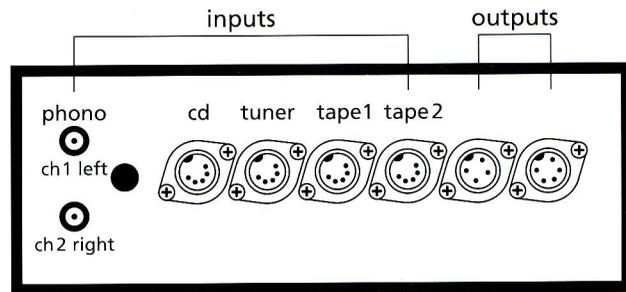
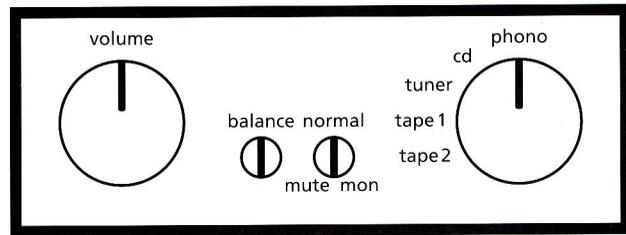
Tape 1 and tape 2 are standard high level inputs which also have record output facilities, so these should be assigned to your tape recorder, cassette deck or VCR.

tape facilities and monitor switch

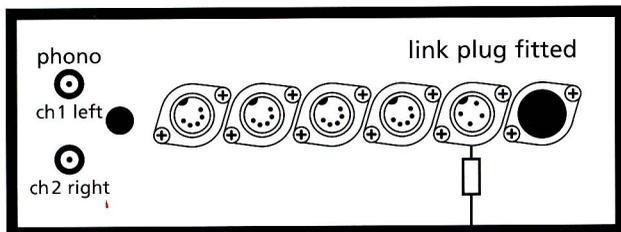
The tape monitor switch (mon) allows you to listen to the output of a tape recorder while recording, which can be useful with a 3-head tape machine to monitor the "off-tape" signal. The source for recording is chosen by the input selector switch.

Operating the monitor switch during recording allows the output from the tape machine connected to tape 1 to be heard, unless tape 1 is chosen on the input selector switch, i.e. for tape to tape recording, in which case the output of the tape machine connected to tape 2 will be heard.

With the mute switch selected there will be no output to the loudspeakers, from any input. This will not affect any recordings taking place at the same time.

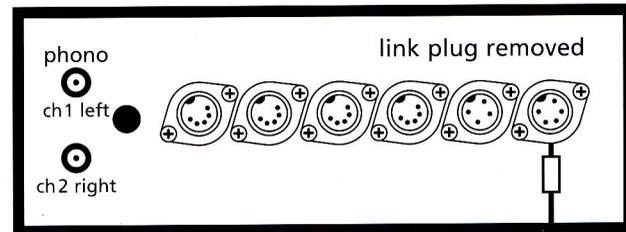


nac 72 connection to one power amplifier

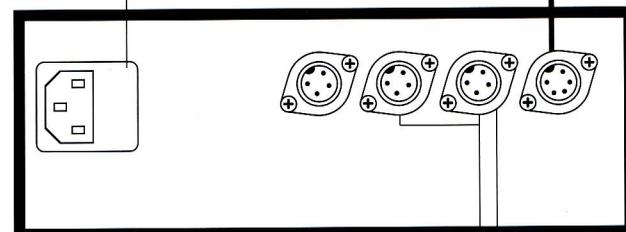


to nap 90, 140, 180 power amplifiers

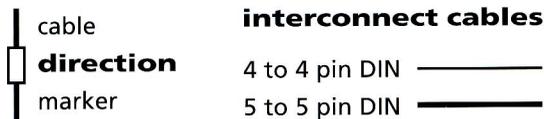
nac 72 connection to hi-cap or flat-cap



mains input



to nap 135 power amplifiers
to nap 90, 140, 180, 250 power amplifiers



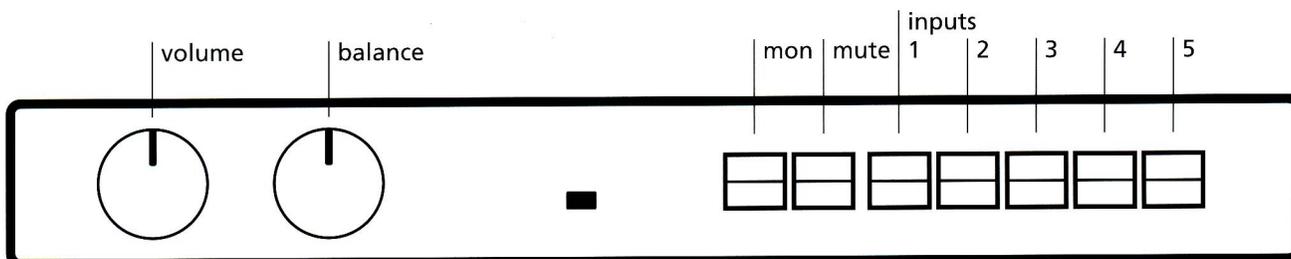
nac 92 preamplifier

preamplifier inputs

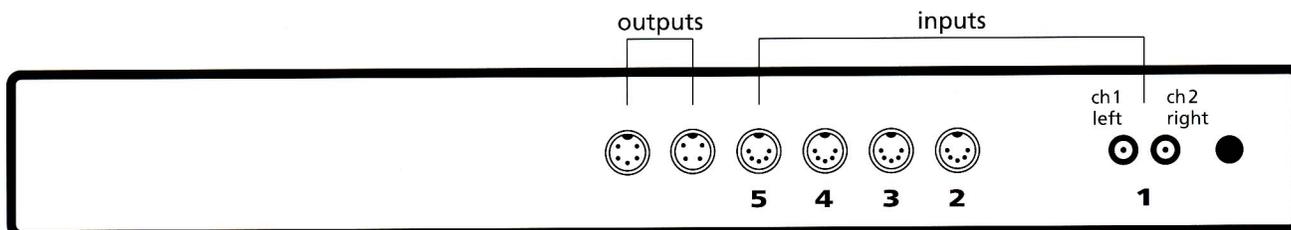
Input 1 is a high level input, but can be converted into a phono input by fitting plug in boards. Please see your dealer for further details.

Inputs 2, and 3 are standard high level inputs.

Inputs 4 and 5 are standard high level inputs and also have record output facilities, so these should be assigned to your tape recorder, cassette deck or VCR.



On the nac 92r, all functions may be operated by the remote control handset supplied.

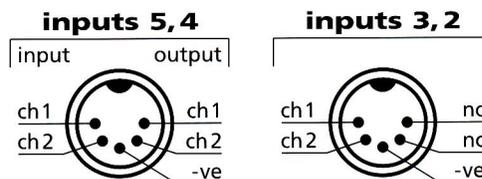


tape facilities and monitor button

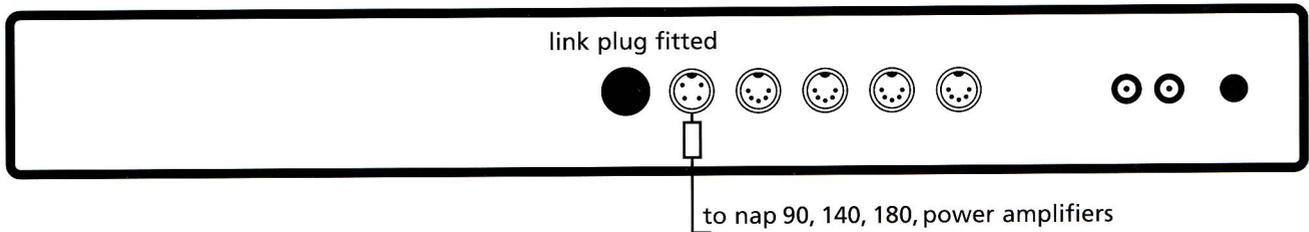
The tape monitor button (mon) allows you to listen to the output of a tape recorder while recording, which can be useful with a 3-head tape machine to monitor the "off-tape" signal. The source for recording is chosen by the input selector buttons.

Operating the monitor button during recording allows the output from the tape machine connected to input 4 to be heard, unless input 4 is chosen on the input selector switch, i.e. for tape to tape recording, in which case the output of the tape machine connected to input 5 will be heard.

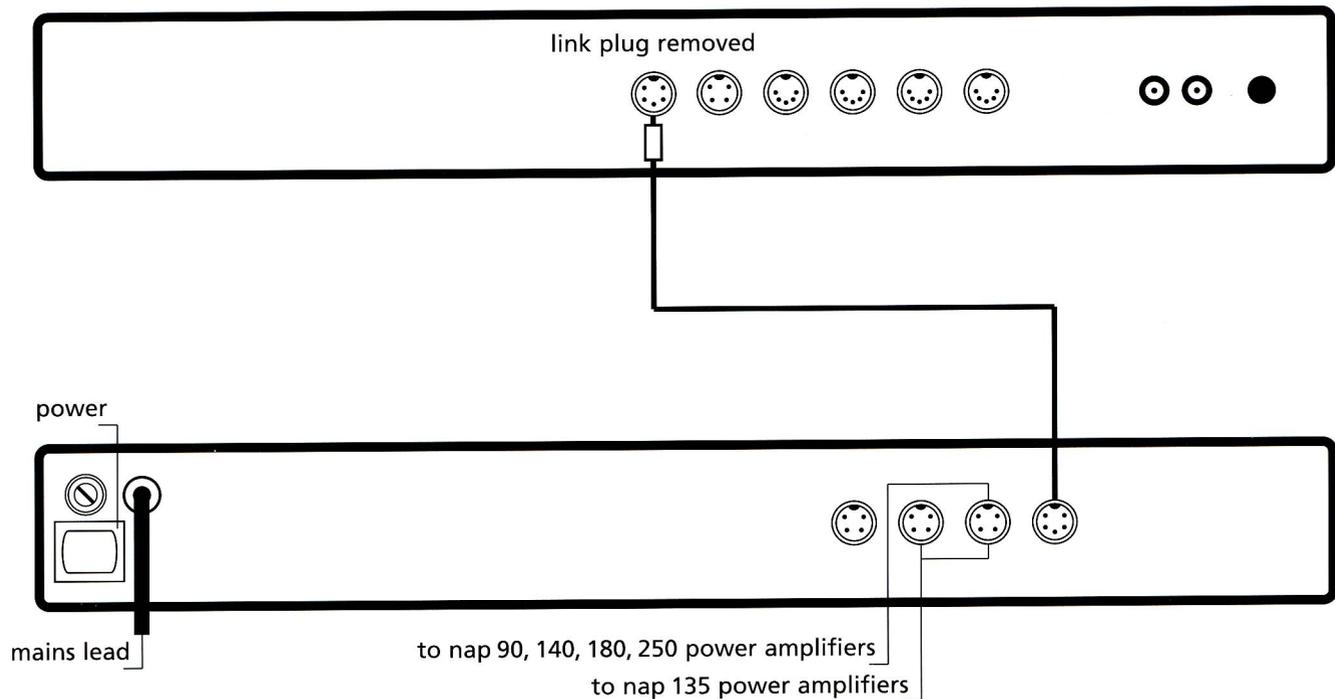
With the mute button selected there will be no output to the loudspeakers, from any input. This will not affect any recordings taking place at the same time.



nac 92 connection to one power amplifier



nac 92 connection to flat-cap or hi-cap



nac 52, 82, 72 & 92 specifications

Input Sensitivities	(Tuner, Tape, CD, etc)	75 mV, 100 K Ω
Cartridge Options	Moving Magnet N	2 mV, 47 K Ω
	Moving Coil S	100 μ V, 470 Ω
	Moving Coil K	100 μ V, 560 Ω
	Moving Coil E	400 μ V, 560 Ω

Overload margin, on all inputs at all audio frequencies 40dB

Output Levels, Tape 75 mV, 600 Ω

Main Outputs 0.775V, <50 Ω

Case Sizes 52 & 82 76 x 430 x 300 mm

(H x W x D) 72 76 x 205 x 300 mm

92 56 x 430 x 300 mm



interconnect cables

4 to 4 pin DIN ———
 5 to 5 pin DIN ———

EC Declaration of Conformity to Appropriate Standards

Manufacturer

Naim Audio Limited
Southampton Road
Salisbury England
SP1 2LN

Products

nac 52, 82, 72 & 92 preamplifiers
super-cap, hi-cap, flat-cap & napscc power supplies

Safety

super-cap, hi-cap, flat-cap & napscc power supplies
HD 195-S6/EN 60 065:1993

EMC

Generic emissions - BS EN 50081-1
Generic susceptibility - BS EN 50082-1

IEC 801-2 8KV (air gap) 4KV (contact)
(performance criteria B)

IEC 801-3 3V/m - 20dB
(performance criteria A)

IEC 801-4 1KV (AC lines) 0.5KV (signal lines)
(performance criteria B)

Naim Audio
Southampton Road Salisbury England SP1 2LN
Tel 01722 332266