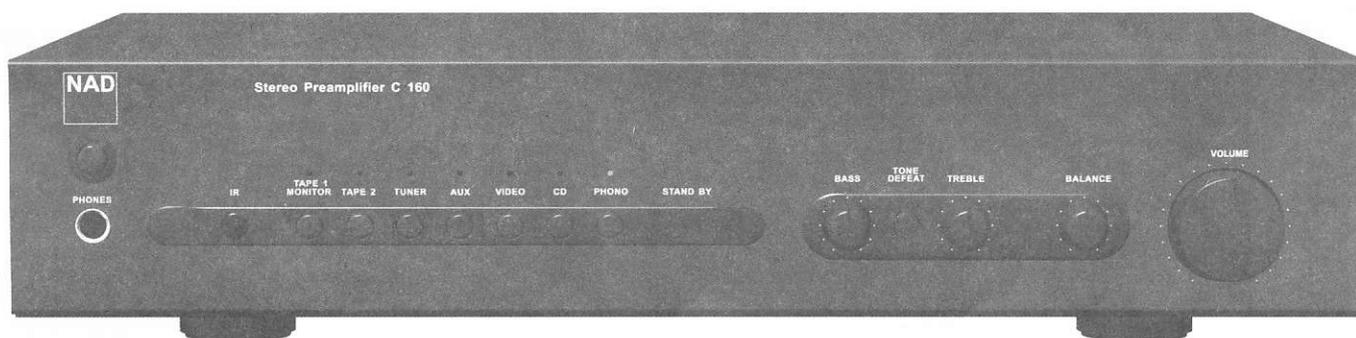


NAD

C160

Stereo Pre-Amplifier



GB Owner's Manual

F Manuel d'Installation

D Bedienungsanleitung

E Manual del Usuario

I Manuale delle Istruzioni

P Manual do Proprietário

S Bruksanvisning

IMPORTANT SAFETY INSTRUCTIONS



CAUTION
RISK OF ELECTRIC
SHOCK DO NOT OPEN

ATTENTION:
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Warning: To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Do not place this unit on an unstable cart, stand or tripod, bracket or table. The unit may fall, causing serious injury to a child or adult and serious damage to the unit. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the unit. Any mounting of the device on a wall or ceiling should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

Read and follow all the safety and operating instructions before connecting or using this unit. Retain this notice and the owner's manual for future reference.

All warnings on the unit and in its operating instructions should be adhered to.

Do not use this unit near water; for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated from heat sources such as radiators, heat registers, stoves or other devices (including amplifiers) that produce heat.

The unit should be connected to a power supply outlet only of the voltage and frequency marked on its rear panel.

The power supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit.

Unplug the unit from the wall outlet before cleaning. Never use benzene, thinner or other solvents for cleaning. Use only a soft damp cloth.

The power supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time.

Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure through any openings.

This unit should be serviced by qualified service personnel when:

- The power cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the unit; or
- The unit has been exposed to rain or liquids of any kind; or
- The unit does not appear to operate normally or exhibits a marked change in performance; or
- The device has been dropped or the enclosure damaged.

DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

Upon completion of any servicing or repairs, request the service shop's assurance that only Factory Authorized Replacement Parts with the same characteristics as the original parts have been used, and that the routine safety checks have been performed to guarantee that the equipment is in safe operating condition. REPLACEMENT WITH UNAUTHORIZED PARTS MAY RESULT IN FIRE, ELECTRIC SHOCK OR OTHER HAZARDS.

ATTENTION

POUR ÉVITER LES CHOC ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT FULLY INSERT.

If an indoor antenna is used (either built into the set or installed separately), never allow any part of the antenna to touch the metal parts of other electrical appliances such as a lamp, TV set etc.

CAUTION POWER LINES

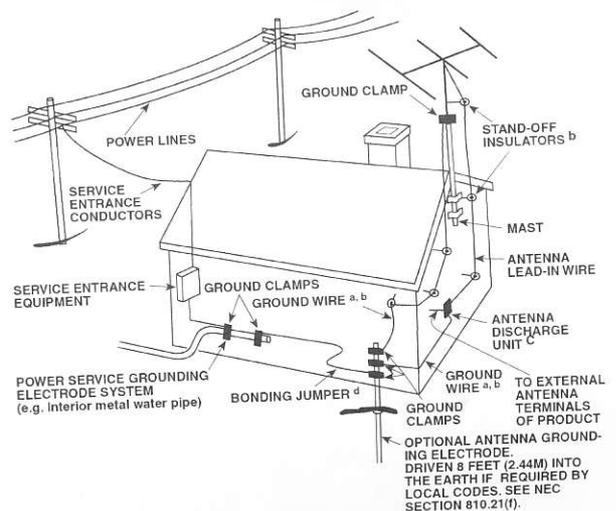
Any outdoor antenna must be located away from all power lines.

OUTDOOR ANTENNA GROUNDING

If an outside antenna is connected to your tuner or tuner-preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements for the grounding electrode.

- Use No. 10 AWG (5.3mm²) copper, No. 8 AWG (8.4mm²) aluminium, No. 17 AWG (1.0mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
- Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22 - 1.83 m) apart.
- Mount antenna discharge unit as close as possible to where lead-in enters house.
- Use jumper wire not smaller than No.6 AWG (13.3mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. see NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - RADIO AND TELEVISION EQUIPMENT.



NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the ground cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

NAD C160 Stereo Pre-Amplifier

NOTES ON INSTALLATION

Your NAD C160 should be placed on a firm, level surface. Avoid placing the unit in direct sunlight or near sources of heat and damp. Allow adequate ventilation. Do not place the unit on a soft surface like a carpet. Do not place it in an enclosed position such as a bookcase or cabinet that may impede the air-flow through the ventilation slots.

Make sure the unit and other components of your system are switched off before making any connections.

The RCA sockets on your NAD C160 are colour coded for convenience. Red and white are Right and Left audio respectively, and yellow for NAD Link.

Use high quality leads and sockets for optimum performance and reliability. Ensure that leads and sockets are not damaged in any way and all sockets are firmly pushed home.

If the unit is not going to be used for some time, disconnect the plug from the AC socket.

Should water get into your NAD C160, shut off the power to the unit and remove the plug from the AC socket. Have the unit inspected by a qualified service technician before attempting to use it again.

Do not remove the cover, there are no user-serviceable parts inside.

Use a dry soft cloth to clean the unit. If necessary, lightly dampen the cloth with soapy water. Do not use solutions containing benzol or other volatile agents.

REAR PANEL CONNECTIONS

1. MC INPUT

Input for a Moving Coil phono cartridge. Connect the twin RCA lead from your turntable to this input if you are using a Moving Coil cartridge.

2. MM INPUT

Input for a Moving Magnet phono cartridge. Connect the twin RCA lead from your turntable to this input if you are using a Moving Magnet cartridge.

3. MC-MM SWITCH

Use this switch to select the phono input you are using.

4. PHONO GROUND CONNECTOR

Often, the twin RCA leads from turntables also includes a single wire earth lead. Use the NAD C160 phono ground connector to connect this lead. Unscrew the terminal to expose the hole, which will accept the lead. After insertion, tighten the terminal to secure the lead.

5. CD INPUT

Input for a CD or other line-level signal source. Use a twin RCA-to-RCA lead to connect the CD player's left and right 'Audio Outputs' to this input. The NAD C160 only accepts analogue signals from your CD player.

6. VIDEO INPUT

Input for the audio signal from a stereo VCR (or stereo TV/Satellite/Cable receiver) or other line-level audio source. Using twin RCA-to-RCA leads, connect to the left and right 'Audio Out' of the unit to these inputs. Note: These are audio inputs only.

7. AUX INPUT

Input for additional line level input signals such as another CD player. Use a twin RCA-to-RCA lead to connect the auxiliary unit's left and right 'Audio Outputs' to this input.

8. TUNER INPUT

Input for a Tuner or other line-level signal source. Use a twin RCA-to-RCA lead to connect the Tuner left and right 'Audio Outputs' to this input.

9. TAPE 2 IN, OUT

Connections for analogue recording and playback to an audio tape recorder of any type. Using twin RCA-to-RCA leads, connect to the left and right 'Audio Output' of the tape machine to the TAPE 2 IN sockets for playback and tape monitoring. Connect the left and right 'Audio Input' of the tape machine to the TAPE 2 OUT sockets for recording.

10. TAPE 1 IN, OUT

Connections for analogue recording and playback to a secondary audio tape recorder of any type. Using twin RCA-to-RCA leads, connect to the left and right 'Audio Output' of the tape machine to the TAPE 1 IN sockets for playback and tape monitoring. Connect the left and right 'Audio Input' of the tape machine to the TAPE 1 OUT sockets for recording.

11. PRE OUT 1

The NAD C160 allows for the connection multiple power amplifiers. If you are using a single stereo power amplifier, use the PRE OUT 1 sockets.

If you are using a pair of power amplifiers specifically for Bi-amping, use the sockets to connect the power amplifier with the lowest gain of the pair. Refer also to chapter "Bi-amping" for more information.

Use a twin RCA-to-RCA lead to connect to the left and right 'Audio Input' of the Power amp to the PRE OUT 1 sockets.

12. PRE OUT 2

The PRE OUT 2 sockets can be used to drive an additional power amplifier. The VOLUME PRE OUT 2 control (13) can be used to reduce the output level of the pre-amplifier to the power amplifier by up to -12dB. With the VOLUME PRE OUT 2 control set to the maximum position (at the 0dB position), the output level will be identical to that of the PRE OUT 1 sockets.

If you are using a pair of power amplifiers specifically for Bi-amping, use the PRE OUT 2 sockets to connect the power amplifier with the highest gain of the pair. By adjusting the VOLUME PRE OUT 2 control (13) the volume level can be matched exactly to that of the power amplifier connected to the PRE OUT 1 sockets. Refer also to chapter "Bi-amping" for more information.

Use a twin RCA-to-RCA lead to connect to the left and right 'Audio Input' of the Power amp to the PRE OUT 1 sockets.

13. VOLUME PRE OUT 2

The VOLUME Pre Out 2 control allows for adjustment of the output level of the PRE OUT 2 sockets. The output level can be reduced by up to 12dB; when set to the maximum position (at the 0dB position), the output level will be identical to that of the PRE OUT 1 sockets. Refer also to chapter "Bi-amping" for more information.

NOTE: always turn the pre-amplifier and associated power amplifiers off before connecting or disconnecting anything to the Pre-Out 1 & 2 sockets.

14. NAD LINK IN, OUT

The NAD-Link connector is used to pass commands from other units fitted with NAD-Link connectors. This allows centralised control of a complete system, and also allows some of the basic functions of other NAD components (such as a CD player or cassette-deck) also equipped with NAD-Link to be controlled with the pre-amplifier's remote control. To function with such other units, connect the C160's NAD-Link Out to the NAD-Link In on the other unit. NAD-Link connectors can be daisy-chained, IN to OUT, so that a whole system can be controlled from the remote control facilities of one unit.

15. 12V TRIGGER OUT

The 12V trigger is activated automatically when switching the NAD C160 from off or stand-by to on. Connect the 12V trigger to a power amplifier or AC outlet power strip equipped with a 12V trigger input for remote on/off switching of those devices. Use a cable terminated with a 3.5mm Mini-Jack connector at the pre-amplifier's end for connection.

16. AC LINE CORD

Plug the AC power cord into a live AC wall socket. Make sure all connections have been made before connecting to mains.

17. SWITCHED AND UNSWITCHED POWER OUTLETS (AH VERSION ONLY)

The AC power cords of other stereo components, such as a CD player, may be plugged into these accessory outlets. Components plugged into the outlet marked "switched" will be switched on and off as the pre-amplifier is switched from stand-by or off to on and vice versa.

Mains power is always available on the outlet marked "unswitched" as long as the NAD C160's power cord is plugged into a live AC wall outlet. This outlet can be used for components which may require continuous supply of AC mains; some tuners require uninterrupted mains supply to retain preset memory, for instance.

NOTE: The total power consumption of any components connected to the AC outlets may not exceed 100 Watts. Never connect the mains lead of a power amplifier to either the Switched or Unswitched outlets of the NAD C160.

QUICK START

1. Connect a twin RCA lead to a power amplifier.
2. Connect the desired sources to the relevant input sockets on the rear.
3. Connect speakers to the power amplifier.
4. Plug in the AC power cord.
5. Press the POWER button to turn on the NAD C160.
6. Switch on the power amplifier
7. Press the required input selector.

FRONT PANEL CONTROLS

1. POWER ON/OFF

Press the POWER button to switch the pre-amplifier to its 'Stand-by' mode. The Stand-by indicator (No. 2) over the power button will light up amber. On the front panel, press any of the input selector buttons to switch to pre-amplifier on. From the remote control, press the green Stand-by button (located just over the Speakers A and B buttons) to switch the unit on. The Stand-by indicator will turn from amber to green to indicate it is switched on and ready for use.

REMOTE CONTROL

STAND-BY BUTTON (GREEN)

Press the Power button to switch the unit on, the Stand-by indicator on the front panel will turn from amber to green within 2 seconds, meanwhile the CD indicator automatically flashes 4 times. The unit is now ready for use.

NOTE: In Stand-by mode the C160 uses very little power. However, it is recommended that you switch the unit totally off if it is not going to be used for more than a couple of days. Switch off completely by pressing the POWER button on the front panel (No. 1), all lights will extinguish.

2. STAND-BY INDICATOR

The indicator LED offers information on the status of the NAD C160:

Off: The unit is switched off totally.

Amber: The unit is in stand-by mode

Green: The unit is switched on and ready for use.

The LED will also flash when the pre-amplifier receives a remote control command from the supplied handset.

3. HEADPHONE SOCKET

A 1/4" stereo jack socket is supplied for headphone listening and will work with conventional headphones of any impedance. Inserting a headphone jack into this socket automatically switches off the output to the PRE OUT 1 & 2 sockets on the back panel. The volume, tone and balance controls are operative for headphone listening. Use a suitable adapter to connect headphones with other types of sockets, such as 3.5mm stereo 'personal stereo' jack plugs.

NOTE: Listening at high levels can damage your hearing.

4. INFRA-RED REMOTE CONTROL COMMAND RECEIVER

The infrared sensor, located behind this circular window, receives commands from the remote control. There must be a clear line-of-sight path from the remote control to this window; if that path is obstructed, the remote control may not work.

5. INPUT SELECTORS

These buttons select the active input to the NAD C160 and the signal sent to the Tape outputs and the PRE OUT 1 & 2 sockets. The buttons on the remote control handset duplicate these buttons, with the exception of the tuner input; see below. An LED over each input selector button indicates which input has been selected.

PHONO Selects the turntable connected to either the PHONO MM or MC sockets as the active input.

CD Selects the CD (or other line-level source) connected to the CD sockets, as the active input.

VIDEO Selects the VCR (or stereo TV/Satellite/Cable pre-amplifier) connected to the VIDEO sockets, as the active input.

AUX Selects a line-level source connected to the AUX sockets, as the active input.

TUNER Selects the tuner (or other line-level source) connected to the Tuner sockets, as the active input. The remote control handset has separate buttons for AM and FM; pressing either one will select the C160's tuner input.

TAPE 2 Selects Tape 2 as the active input.

TAPE 1 Monitor Selects the output from a tape recorder when playing back tapes or monitoring recordings being made through the Tape 1 sockets. Press the Tape 1 button once to select it and again to return to the normal input selection.

Tape 1 is a tape Monitor function which does not override the current input selection. For example, if the CD is the active input when TAPE 1 is selected, then the CD signal will continue to be selected and sent to both the TAPE 2, and TAPE 1 OUTPUT sockets, but it is the sound from recorder connected to Tape 1 that will be heard. Apart from the amber LED to indicate Tape 1 is engaged, the green LED for the active input will also stay lit.

NOTE: The remote control handset with the C160 supplied is of a universal NAD type, designed to operate several NAD models. Some buttons on this handset are inoperative as the functions aren't supported by the C160. The Video 2 and Video 3 input selector buttons on the remote control handset are inoperative in the case of the C160.

6. BASS & TREBLE CONTROLS

The NAD C160 is fitted with BASS and TREBLE tone controls to adjust the tonal balance of your system.

The 12 o'clock position is 'flat' with no boost or cut and a detent indicates this position. Rotate the control clockwise to increase the amount of Bass or Treble. Rotate the control anti-clockwise to decrease the amount of Bass or Treble. The Tone controls do not affect recordings made using the Tape outputs.

7. TONE DEFEAT

The TONE DEFEAT switch by-passes the tone control section of the NAD C160. If the Tone Controls are not normally used and left in the 12 o'clock position, then it is advisable to switch out the Tone Control section altogether by using this switch. In the 'out' position, the Tone Control circuits are active, pushing the TONE DEFEAT switch 'in' bypasses the Tone Control section.

8. BALANCE

The BALANCE control adjusts the relative levels of the left and right speakers. The 12 o'clock position provides equal level to the left and right channels. A detent indicates this position.

Rotating the control clockwise moves the balance towards the right. Rotating the control anti-clockwise moves the balance to the left. The BALANCE control does not affect recordings made using the Tape outputs.

9. VOLUME

The VOLUME control adjusts the overall loudness of the signals being fed to the loudspeakers. It is motor driven and can be adjusted from the remote control handset. The VOLUME control does not affect recordings made using the Tape outputs.

On the remote control handset, press the MUTE Button to temporarily switch off the sound to the speakers and headphones. Mute mode is indicated by the active input LED flashing. Press MUTE again to restore sound. Mute does not affect recordings made using the Tape outputs but will affect the signal going to the Pre-amp output (Pre Out).

TO MAKE A RECORDING

When any source is selected, its signal is also fed directly to any tape machine connected to the TAPE 2 or TAPE 1 OUTPUTS for recording.

TAPE TO TAPE COPYING

You can copy between two tape machines connected to your NAD C160. Put the source tape in the recorder connected to Tape 2 and the blank tape into the recorder connected to Tape 1. By selecting TAPE 2 Input you can now record from Tape 2 to Tape 1 and monitor the signal coming from the original tape.

REMOTE CONTROL HANDSET.

The Remote Control handset handles all the key functions of the NAD C160 and has additional controls to remotely operate NAD Tuners, Cassette and CD machines. It will operate up to a distance of 16ft (5m).

Alkaline batteries are recommended for maximum operating life. Two AAA (R 03) batteries should be fitted in the battery compartment at the rear of the Remote Control handset. When replacing batteries, check that they have been put in the right way round, as indicated on the base of the battery compartment.

Please refer to previous sections of the manual for a full description of individual functions.

NOTE: The remote control handset supplied with the C160 is of a universal NAD type, designed to operate several NAD models. Some buttons on this handset are inoperative as the functions aren't supported by the C160.

The Video 2 and Video 3 input selector, and Speakers A and Speakers B buttons on the remote control handset are inoperative in the case of the C160.

The input selector buttons perform the same functions as the buttons labelled the same on the front panel. There are a few differences and extra functions with the remote control handset however:

TUNER AM, TUNER FM

Selects the Tuner input on the NAD C160 and respectively the AM or FM waveband on a separate remote controllable NAD Tuner.

MUTE

Press the MUTE Button to temporarily switch off the sound to the speakers and headphones. Mute mode is indicated by the active input LED flashing. Press MUTE again to restore sound. Mute does not affect recordings made using the Tape outputs.

MASTER VOLUME

or respectively increases or decreases the Volume setting. The motorised Volume Control on the front panel will indicate the level set.

Other than the commands relating to the NAD C160 amplifier itself, there are other buttons which will operate most NAD CD players and Cassette decks equipped with NAD Link:

TUNER CONTROL

(for use with NAD Tuner)

BANK selects a bank of preset stations.

PRESET or selects respectively higher or lower number station preset.

CD PLAYER CONTROL

(for use with NAD CD Player)

engages Pause.

engages Stop.

engages Play or toggles between Play and Pause.

or engages Track skip; Press once to respectively go to the next track or to return to start of current or previous track.

NEXT DISC Go to next disc (for NAD CD changers).

CASSETTE DECK CONTROL

(For use with single (DECK B) or double transport (A and B) NAD Cassette Decks)

or engages Forward Play or Reverse Play.

Record / Pause. Press to put cassette deck into record-pause. Press Play to start recording.

stops Play or Recording.

engages Rewind.

engages Fast Forward.

NOTE: Direct sunlight or very bright ambient lighting may affect the operating range and angle for the remote control handset.

BI-AMPING

Some loudspeakers have separate connection terminals for the LF (Low Frequency) and HF (High Frequency) sections of the speaker. This facility allows to "Bi-amp" these speakers, where a separate power amplifier is used for the LF and HF section, which may improve overall sound quality.

The NAD C160 provides two sets of pre amplifier outputs (PRE OUT 1 & 2) to facilitate the connections for Bi-amping. Moreover, the level from PRE OUT 2 can be reduced in relation to PRE OUT 1 to accommodate power amplifiers with different gain (amplification factor).

To set up the C160 with power amplifiers first decide which power amplifier has the highest gain. This is easily done by comparing the loudness level of the power amplifiers in an identical system (keep the volume control at the same level; use the same source and speakers). The amplifier that plays louder has the highest gain (note that this does not need to be the more powerful amplifier of the two).

Connect the amplifier with highest gain to the PRE OUT 2 (No. 12) sockets; the other power amplifier to the PRE OUT 1 (No. 11) sockets.

From the maximum level position (0dB), use the VOLUME PRE OUT 2 control (No. 13) to reduce the output level of PRE OUT 2 so that the volume level of both power amplifiers is exactly matched.

TROUBLESHOOTING

Problem	Cause	Solution
NO SOUND	<ul style="list-style-type: none">• Power AC lead unplugged or power not switched on• Tape 1 Monitor selected• Mute on• Power amplifier is switched off• Headphones inserted	<ul style="list-style-type: none">• Check if AC lead is plugged in and power switched on• De-select Tape 1 Monitor mode• Switch off Mute• Switch power amplifier on• Unplug headphones
NO SOUND ONE CHANNEL	<ul style="list-style-type: none">• Balance control not centered• RCA lead to power amplifier not properly connected or damaged.• Input lead disconnected or damaged	<ul style="list-style-type: none">• Center Balance control• Check leads and connections• Check leads and connections
PROBLEM ON PHONO INPUT ONLY	<ul style="list-style-type: none">• No signal• Hum on Phono input.• Weak or Distorted signal	<ul style="list-style-type: none">• Check MM-MC switch set correctly• Check phono earth lead is connected• Check the turntable is connected to the correct MM or MC phono input
REMOTE CONTROL HANDSET NOT WORKING	<ul style="list-style-type: none">• Batteries flat, or incorrectly inserted• IR transmitter or receiver windows obstructed• IR receiver in direct sun or very bright ambient light	<ul style="list-style-type: none">• Check or replace batteries• Remove obstruction• Place unit away from direct sun, reduce amount of ambient light

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