



Abbingdon Music Research

**PH-77 Reference Class
Dual-Mono Phono Equaliser**

Owner's Manual

FCC Declaration of Conformity - United States only

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply 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 energy 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 the equipment 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Notice (Avis Canadien)

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.



This products complies with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

- o EN55022 (CISPR 22) - Electromagnetic Interference
- o EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity
- o EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
- o EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- o EN60950 (IEC60950) - Product Safety

WARNINGS

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 this component.



This component weighs over 40 kilograms. Do not place this component on an unstable cart, stand, tripod, bracket or table as the component may fall causing serious injury to a child or adult and serious damage to the unit. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the component and cart combination to overturn.



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.

Read and follow all the safety and operating instructions before connecting or using this component.

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

Retain this Owner's Manual for future reference.

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.

Unplug the component from the wall outlet before cleaning. Never use benzine, thinner or other solvents for cleaning; use only a soft damp cloth.

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

This component should be serviced only by qualified AMR service personnel when:

- A. The power cable or the power input socket has been damaged;
- B. Objects have fallen, or liquid has been spilled into the component;
- C. The component has been exposed to rain or liquids of any kind;
- D. The component does not appear to operate normally or exhibits a marked change in performance;
- E. The component has been dropped or the enclosure has been damaged.

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

Upon completion of any servicing or repairs, request the service point's assurance that only AMR Authorised 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 component is in a safe operating condition.

REPLACEMENT WITH UNAUTHORIZED PARTS MAY RESULT IN FIRE, ELECTRIC SHOCK OR OTHER HAZARDS

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On power sources

The mains power cable should be routed so that it is not likely to be walked on or pinched, especially near the plug or back panel receptacle. The component should not be disconnected from the AC power source as long as it is connected to the wall outlet, even if the component itself has been turned off.

If this component is not going to be used for a long time, be sure to disconnect the component from the wall outlet. To disconnect the AC power cable, grasp the plug itself; never pull the cable.



On placement

The PH-77 may become warm during normal operation. Given this, it is imperative that the PH-77 when installed, 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 top or bottom ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its top and bottom ventilation openings.

Do not place the component in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock. Do not place the component in an inclined position.

It is designed to be operated in a horizontal position only. Do not place heavy objects on the component.

Keep the component away from equipment with strong magnets, such as microwave ovens or large loudspeakers.

To prevent fire or shock hazard, do not place vessels filled with liquids, such as vases, on the component.

Touch-Sensitive Buttons

On the front fascia of this AMR component are touch-sensitive buttons. Due to the wide variance of climates around the world, instances may arise where to activate a button:

- the touching finger may be required to be in contact with both the button and the front fascia to register;
- the touching finger may have to touch the chassis to discharge any static electricity prior to button selection.

Running-In

AMR estimates that the PH-77 may take between 300-500 operating hours for all of the internal components to be fully-broken in. Please anticipate the sonic performance of the PH-77 to settle only after it has been used for this approximate length of time.

Stand-By

Please note that the solid state section needs to find its equilibrium and due to the (unavoidable) use of electrolytic capacitors (and an effect called soakage) around 24-48 hours of "standby" (or operation) are required to stabilise performance. Therefore, "standby" does not shut down the solid-state sections, only the valves.

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Section 1 - Setup

Thank you for purchasing this AMR Reference Class component.

We hope you derive as much pleasure from using this component as we have enjoyed making it for you.

1.1 Unpacking

This section refers to the unpacking of the PH-77

Please check that all contents are present

- i. PH-77 Reference Class Dual-Mono Phono Equaliser.
- ii. RC-707 Remote Commander.
- iii. AMR Burn-In Cable*(ensure **CORRECT** directionality between the CD source and the PH-77)
- iv. Mains power cable.
- v. PH-77 Owner's Manual.
- vi. AMR Warranty Card.
- vii. Professional aluminium flightcase.

***WARNING:the AMR Burn-In Cable steps down the higher CD signal voltage to millivolts so that it mimics a cartridge. Therefore,you MUST observe the correct directionality whenever you use the AMR Burn-In Cable.**

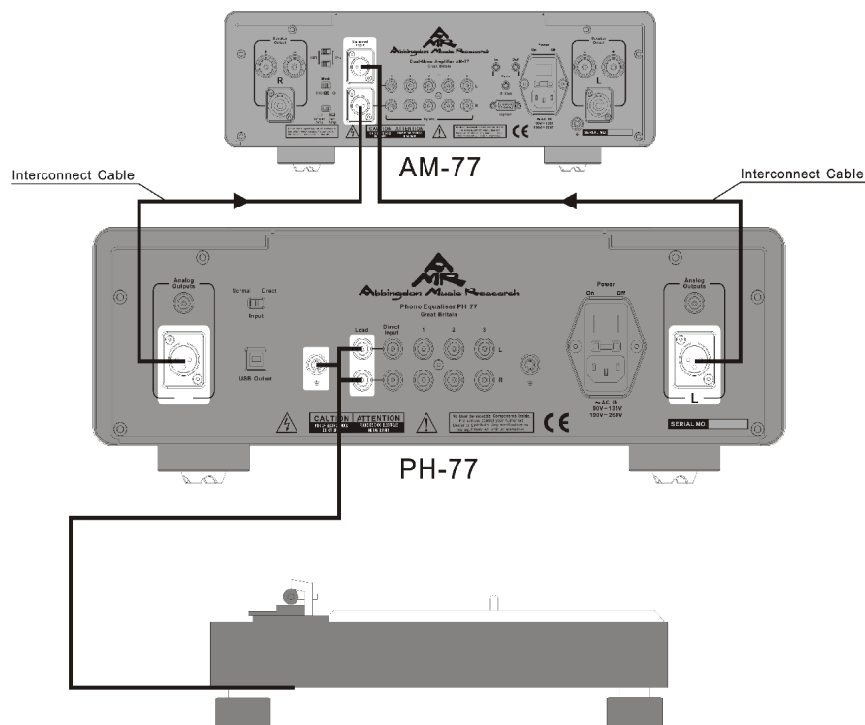
AMR and its affiliates are not responsible for any damage to the PH-77 resulting from incorrect use of the AMR Burn-In Cable. If in doubt, please contact your AMR distributor/dealer.

1.2 Connections

Default:
Direct input
mode

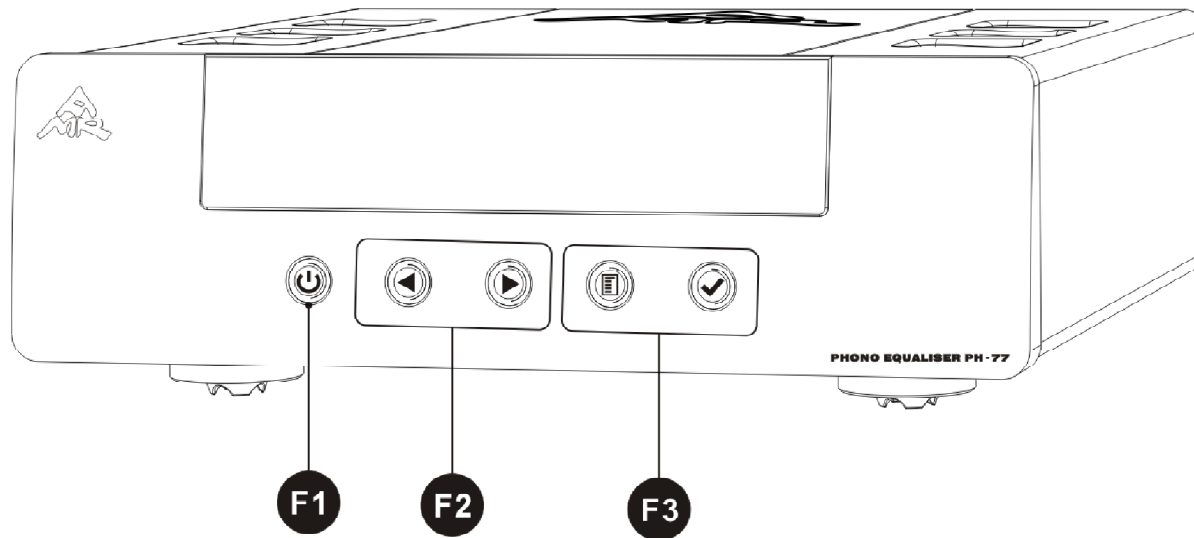
The following diagram illustrates the standard connection of the PH-77 in direct input mode. This is the default factory setting and is suitable for the connection of a single tonearm/cartridge and turntable.

The RCA
output
connection
may also be
employed



Section 2 - Component Overview

2.1 PH-77 Front Panel

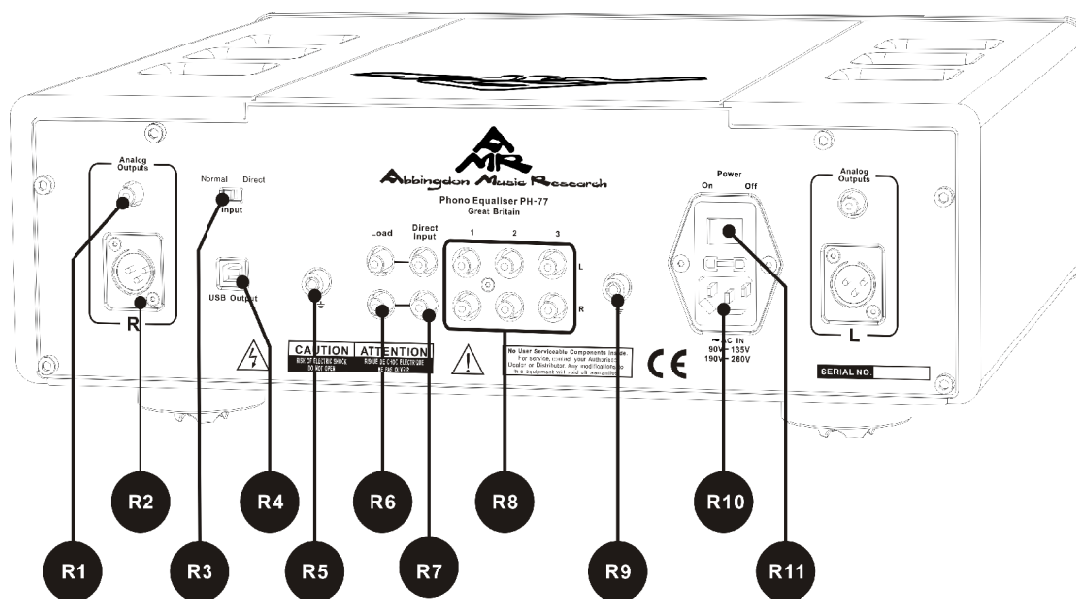


F1. STANDBY: to place the PH-77 in active or standby mode.

F2. SELECT: to select between the 3 different inputs or to select the different EQ curves (software configurable).

F3. MENU/OK: to operate the Menu system for setting cartridge parameters and other functions.

2.2 PH-77 Rear Panel



R1. RCA outputs: for the connection of RCA interconnection cables.

R2. XLR outputs: for the connection of XLR interconnection cables.

R3. DIRECT/NORMAL INPUT: selection of Direct (single input) OR Normal (multiple inputs) vinyl source/sources respectively.

R4. USB output: to archive vinyl using the high-definition 24-Bit/96kHz USB Analogue-to-Digital Converter.

R5. GROUND post: to connect the turntable/phono cable ground wire/s.

WARNING:

Always turn off power to the PH-77 before switching between direct and normal inputs (R3) or before making or changing any connections

R6. LOAD: RCA connectors to allow custom loads to be attached to the Direct input.

R7. DIRECT input: to connect a cartridge bypassing the multiple input switching.

R8. NORMAL inputs (Inputs 1-3): RCA inputs, for signal input of up to three vinyl sources.

R9. GROUND post: to connect turntable/phono cable ground wire/s.

R10. IEC power connector: for the connection of a mains power cable to the PH-77.

R11. POWER: rocker switch for mains on/off to the PH-77.

Always switch OFF the PH-77 before switching between Direct/Normal on the Input switch (R3)

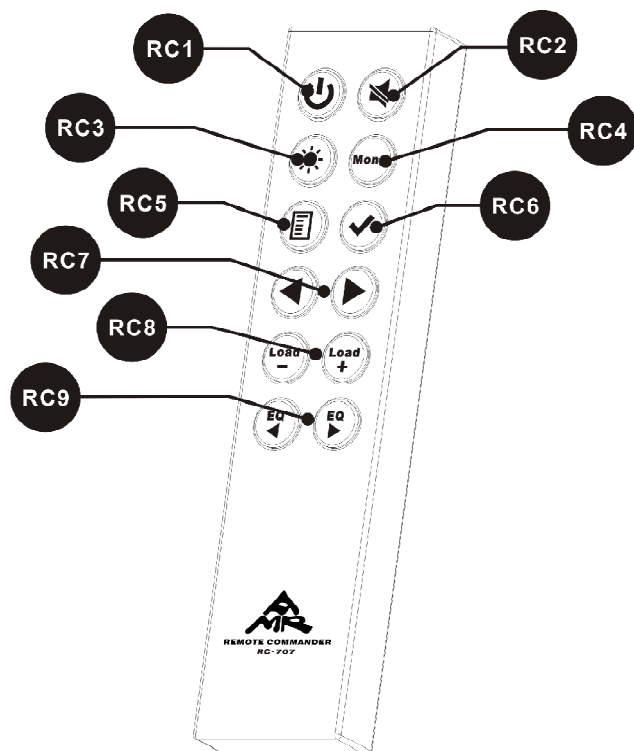
In the majority of audio systems, the PH-77 is most likely to be operated in Direct input mode, i.e. using a single vinyl source. If this is the case, please inspect the rear panel of the PH-77 to verify the following:

- **INPUT** switch is set to **DIRECT**
- the signal and ground cables from the single vinyl source are attached to the Direct input connections.

If more than one turntable is used in the system or more than one tonearm/cartridge combination is mounted to a single turntable, verify the following:

- **INPUT** switch is set to **NORMAL**
- the signal and ground cables from the multiple vinyl sources are attached to the Normal input connections.

2.3 RC-707



RC1. STANDBY: to place the PH-77 in active/standby mode.

RC2. MUTE: to place the PH-77 in mute mode.

RC3. BRIGHTNESS: to adjust the display's brightness levels.

RC4. MONO: to alternate between Stereo and Mono EQ curves.

RC5. MENU: to enter Menu mode*.

RC6. OK: to confirm selection in Menu mode*.

RC7. SELECT: to select between the 3 different inputs.

RC8. LOAD: to select between different loadings.

RC9. EQ: to cycle through different EQ curves.

* Please refer to Section 4 - Menu Setting for a more detailed explanation.

Section 3 - Main Operation

3.1 Power On/Off

Once powered OFF,
always wait 30
seconds before
switching on again

Use the 'POWER' rocker switch (R11) at the rear of the PH-77 to switch on/off mains power to the PH-77.

Always wait at least 30 seconds before switching ON again. This is to enable the *OptiMains*® circuit to shut-down properly. The display will light up to indicate the unit is switched on and ready for use. This should take around 90 seconds as the *OptiMains*® circuit is verifying the incoming mains and the PH-77 is warming up.

3.2 Equalisation (EQ) Curve Adjustment

On the RC-707 remote control, use the **EQ** button (RC9) to step through the available EQ curves. Please use the **Mono** (RC4) button to alternate between the selection of Mono or Stereo curves.

While selecting EQ curves via the front panel buttons (F2) or the RC-707 via (RC9), there may be a small audible "click" from PH-77 and from the speakers. This is the normal operation of the relays selecting the EQ curves.

3.3 Direct/Multiple Inputs

At the rear of the PH-77, there are 3 inputs for the connection of different tonearm/cartridge combinations plus one direct input.

The use of Direct and Normal inputs is mutually exclusive. That is, when using the Direct input, inputs 1-3 must NOT be used. Equally, when inputs 1-3 are used, the Direct input and its Load RCA jack MUST not be connected.

The Input switch (R3) should be set to Direct or Normal in accordance with usage.

3.4 Loading Options

www.amr-audio.co.uk
lists the PH-77's MC/
MM load values

Different cartridges have different ideal load values. The PH-77 offers two comprehensive sets of 32 different load values for MC and MM cartridges.

Selecting a Standard PH-77 Load

Please refer to sub-section 4.5 Individual Default Loading on how to use the menu system to select one of the PH-77's MC/MM load values.

Setting-up a Non-Standard, Custom Load

Note: if using multiple
sources via Normal
inputs 1-3 (R8),
always ensure
Direct Input (R7) and
Load (R6) and the
Ground post (R5/R9)
are all disconnected

It is possible to utilise a custom load for a cartridge: ONLY when using a direct source via the rear panel (R6/R7) and NOT through multiple sources via the rear panel (R8). This option will meet for example, the requirement of cartridges that specify unique and highly specific cartridge loads the PH-77 cannot provide as standard or for those who wish to use a particular brand of resistor to perform the loading.

To setup a non-standard load for your cartridge:

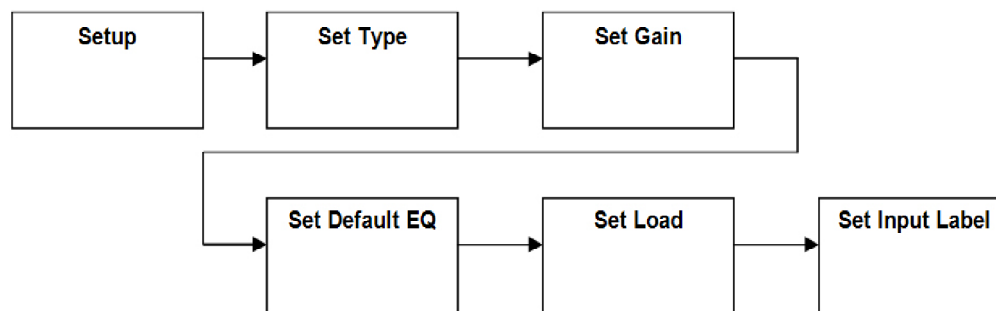
- i. With the vinyl source connected to the Direct input/ground post (R7/R5), select 'Direct' on Input switch (R3).
- ii. Ensure that the load setting is at the nominal value of 47k for an MC cartridge or 70pf for an MM cartridge.
- iii. Fit the desired resistor/s to one set of male RCA connectors for the left/right channels.
- iv. Connect these left/right male RCA connectors to the respective female Load connectors (R6).

Section 4 - Menu Setting

4.1 Menu Operation Flowchart

With the PH-77, one may select all the relevant parameters to match any cartridge and label the input with the cartridge manufacturer's name (from a list) or type. The flowchart below illustrates the sequence of settings:

This flowchart covers the menu settings



4.2 Individual Cartridge Settings

Step 1: Cartridge Type To enter the Menu, press the Menu Button  on the front panel (F3) OR on the remote control (RC5).

“**Setting Input Direct**” or “**Setting Input 1**” is displayed on the 1st line of display; in accordance with whether Input switch (R3) has been set to ‘Direct’ or ‘Normal’ respectively.

The 2nd line of the display displays the Type as “**MM / MC Hi**” or “**MC Lo**” using the current selection or MM / MC Hi as default. The abbreviation **MM** stands for **Moving Magnet** (also moving iron) cartridges and **MC Hi** stands for **Moving Coil High Output** cartridges while **MC Lo** stands for **Moving Coil Low Output** cartridges.

One would class a cartridge as “High Output” with an output of more than 1mV@5cm/s. Correspondingly, cartridges with a lower output, would be classed as “Low Output”.

Use the front panel ◀ / ▶ buttons (F2) or on the remote control (RC7) to select the type of cartridge based upon the specifications and/or type of cartridge to be used. After each change of type, the PH-77 will mute for 10 seconds to allow the gain circuit to settle into the new configuration.

Once the desired selection has been made, press the front panel ✓ button (F3) or on the remote control (RC6) to confirm the selection and continue on to the next item.

4.3 Individual Gain Settings

Step 2: Gain


In accordance with whether Input switch (R3) has been set to 'Direct' or 'Normal', “**Setting Gain Direct Input**” or “**Setting Gain Input 1**” respectively is displayed on the 1st line of the display.

The 2nd line of the display displays Gain as absolute dB value with four options available for the selected type. The default setting is for MM/MC Hi is 48dB and for MC Lo it is 54dB.

Use the front panel ◀ / ▶ buttons (F2) or on the remote control (RC7) to adjust gain downwards or upwards. You can step through several levels of gain by repeatedly pressing the appropriate button. If the gain level is left unchanged, after several seconds, the system will use this as the new gain level. After each change of gain, the PH-77 will mute for 10 seconds to allow the gain circuit to settle into the new configuration.



Below is the recommended gain settings for a rated cartridge output@5cm/s:


Cartridge Output	~13mV	~6mV	~3mV	~1.5mV	~0.8mV	~0.4mV	~0.2mV	~0.1mV
PH-77 Gain	30dB	36dB	42dB	48dB	54dB	60dB	66dB	72dB

Start by selecting the nearest lower value of gain for the desired cartridge. As gain settings are applied directly (after a 10 second mute), one may also set the gain (by ear), to offer a similar loudness as a line level source. Once the selection has been made, press the  button on the front panel (F3) or on the remote control (RC6) to confirm the selection and continue to the next item.

4.4 Individual EQ Settings

Step 3: Default EQ The 2nd line of the display depicts the EQ selected.

Use the front panel  /  buttons (F2) or on the remote control (RC7) to adjust the EQ curve that is used when this input/cartridge is selected. This is very useful if a cartridge is dedicated to playing only certain types of records such as a Mono cartridge for Mono LP's. Changes to the EQ curve happen in real-time with a brief mute.

Once the desired selection has been made, press the front panel  button (F3) or on the remote control (RC6) to confirm and continue to the next item.

When the specific EQ curve has been selected, whenever that particular input is used, the PH-77 will always start with the user-selected curve. It will automatically cycle through only the respective Stereo or Mono curves.

4.5 Individual Default Loading

Step 4: Loading

The 2nd line of the display displays the Load in Ohm (MC Mode, load 47 Ohm to 47KOhm) or pF (MM Mode, load 47K + 70pF to 680pF).

Use the ◀ / ▶ buttons on the front panel (F2) or on the remote control (RC7) to adjust the loading to that required by the cartridge. Changes to loading happen in real-time and are applied immediately without mute. Hence, it is also possible to optimise the loading by playing music and adjusting the load at the same time to provide the best sound quality.

Once the desired selection has been made, press the front panel ✓ button (F3) or on the remote control (RC6) to confirm and continue to the next item.

It is also possible to implement a specialised, custom load. Please refer to sub-section 3.4 Loading Options for more details.

4.6 Cartridge Label Selection

Step 5: Cartridge label In accordance with whether the Input switch (R3) has been set to 'Normal' or 'Direct', "**Labelling Input Direct**" or "**Labelling Input 1**" is displayed on the 1st line of display.

The 2nd line of the display will show the following names in sequence followed by input ID:

MC Lo	Blue Elec.	Empire	Miyabi	Shure
MC High	Blue Angel	Einstein	Monster	Stanton
MM	Brinkmann	Fidelity Res.	Nottingham	Sumiko
47 Labs	Cardas	Garrott	Ortofon	Supex
Accuphase	Cartridge Man	Goldring	Phase Tech.	Transfig.
Allaerts	Clearaudio	Grado	Pickering	Tubaphon
Air Tight	Crown Jewel	Ikeda	Rega	Van Den Hul
AudioCraft	Decca	Kiseki	Reson	Volpe
Audio Note	Denon	Koetsu	Roksan	Wilson Ben.
Audio Tech.	Dynavector	Linn	SPJ	Win Research
B & O	ELAC	London	Shelter	Zu
Benz Micro	EMT	Lyra	Soundsmith	ZYX

Use the ◀ / ▶ buttons on the front panel (F2) or on the remote control (RC7) to scroll through the titles. Press the ✓ button on the front panel (F3) or on the RC-707 (RC6) to confirm the desired selection and move to the next item.

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Section 5 - Special System Setup

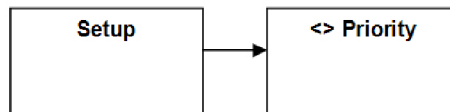
5.1 Special System Setup Menu

From the factory presets, with the input switch (R3) set to **Direct**, the selection of EQ curves (Stereo) is the default ◀ / ▶ setting.

With multiple sources, for ease, make switching between inputs the default selection

However, with the input switch (R3) set to Normal, it is possible to make switching between the selection of EQ curves OR multiple inputs as the default ◀ / ▶ setting.

A flowchart of the menu to select the default setting is shown below.



To enter this special system setup menu, press and HOLD the Menu button (⌂) on the front panel (F3) for 5 seconds.

If there are any questions, please contact your nearest AMR distributor/dealer

Using the ◀ / ▶ buttons (F2), select “Equalisation” or “Input” as the default and then press the (✓) button on the front panel (F3) or on the remote control (RC6) to accept.

From now on, whenever this input is used, the selection of EQ curves (or multiple inputs if selected) is the default.

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Section 6 - Multiple Inputs

6.1 Setup for Multiple Inputs

With the PH-77, in addition to the use of a single cartridge/toner/turtable by selecting 'Direct' on Input switch (R3), it is also possible to select 'Normal' on Input switch (R3) and connect 1, 2 or 3 different cartridge/toner/turtable combinations and select them via the remote control.

For example, three different cartridge/toner combinations on one turntable may be connected via inputs 1, 2 and 3 for effortless switching during playback of the same vinyl record.

To setup multiple sources via the "Normal" Input option switch (R3), at the rear of the PH-77:

When switching between different inputs, the countdown of several seconds allows for the PH-77 to be optimally re-configured

- i. Use the 'POWER' rocker switch (R11) to switch off mains power to the PH-77.
- ii. Check/disconnect cables to Direct input (R7), Ground posts (R5/R9) and Load post (R6).
- iii. Connect the tonearm RCA connectors from the various cartridge/toner/turtable sources to the desired inputs 1 through to 3 (R8) at the rear of the PH-77 and ground posts (R5/R9).
- iv. Select "Normal" by ensuring the Input switch (R3) as viewed from the rear, is set to the left.
- v. Power the PH-77 ON via the rocker switch (R11).

To make switching between the multiple inputs the default selection setting (instead of the selection of EQ curves) see Section 5 - Special System Setup.

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Section 7 - The Analogue-to-Digital Converter

7.1 Using the *HD 24-Bit/96kHz Analogue-To-Digital Converter*

The PH-77 has built-in, a *HD 24-Bit/96kHz Analogue-To-Digital Converter* (ADC) with AMR's customary high-level of digital implementation to ensure the very best possible quality of signal transfer.

This means it is possible to directly digitise/transfer a track/tracks from a vinyl record to a digital format on a personal computer. The music file may then be archived or played back on another device such as personal computer, iPod, AMR CD-77 Reference Class Compact Disk Processor/AMR CD-777 Premier Class Compact Disk Processor/AM-777 Premier Class Pre-Main Amplifier (via the respective USB input).

To setup the Analogue-to-Digital Converter to transfer/digitise a vinyl record:.

- i. Have the PH-77 and a turntable source correctly connected with the desired vinyl record ready for playback.
- ii. Have the computer source ready with the desired recording program installed* and properly configured.
- iii. Switch OFF mains power via the 'POWER' rocker switch (R11) at the rear of the PH-77.
- iv. WAIT 30 seconds, then switch on mains power to PH-77 ON via the rocker switch (R11).
- v. Connect the USB cable between the PH-77 and the personal computer.
- vi. Commence transfer of the recording through the preferred sound recording program.

For technical queries,
please contact your
AMR distributor/
dealer or email:
tech@amr-audio.co.uk

With a powered USB
cable, the 24/96 ADC
is automatically
switched ON and in
the signal path

*Many sound recording programs exist (from freeware to professional studio recording programs). Under Windows, the PH-77 is recognised as WDM (Windows Driver Model) and referred to as "USB Audio Device".

As soon as a POWERED USB cable is connected, it is automatically detected by the ADC and will power on ready for use. For the highest quality playback, once archiving has been completed, always disconnect the USB cable or at the very least, do not leave the USB cable connected to the computer. The ADC will then be disconnected from the signal path.

Appendix A - A History of EQ Curves

Stereophonic Microgroove LP Records

Display Name	Comments
RIAA	Modern stereo LP playback curve
eRIAA	Modern stereo LP playback curve but corrects the high frequency roll-off and excessive phase shift of vinyl cutting lathes (Enhanced RIAA EQ)
RIAA(DMM)	Corrects for the hard, metallic sound of DMM
Columbia	Columbia LP stereo
DECCA (FFSS)	Decca & London, Deutsche Grammophon, Archiv, polygram, NAB, Philips, and ARGO
CCIR 56	Europe pre appx. 1962, Eastern Europe & Asia pre appx. 1975

Monophonic Microgroove LP Records

Display Name	Comments
Mono RIAA	also RCA Orthophonic, adopted progressively after 1954
Mono eRIAA	Same as RIAA, but corrects the high frequency roll-off and excessive phase shift of the vinyl cutting lathes (Enhanced RIAA EQ)

Monophonic Microgroove LP Records

Display Name	Comments
Mono RCA 50	RCA, Urania, Lyrichord
Mono FFRR 49	Decca & London 1949-1951
Mono FFRR 51	Decca & London 1951
Mono FFRR 52	Decca & London 1952
Mono FFRR 53	Decca & London post 1953
Mono AES 51	1951 AES Standard
Mono Columbia 48	Early Columbia LP mono
Mono Columbia 52	Late Columbia LP mono
Mono EMI	Early EMI LP
Mono CCIR 53	Europe pre appx. 1956
Mono CCIR 56	Europe pre appx. 1962, Eastern Europe & Asia pre appx. 1975
Mono Bartok	Bartok LP's
Mono NAB	1942 also NARTB
Mono 78 RCA 38	RCA electrical 78RPM post appx. 1938
Mono 78 Columbia 38	Columbia electrical 78 RPM post appx. 1938

*The RIAA 'Direct Metal Mastering' Curve is not a standard EQ Curve. This unique AMR 'Curve' was developed specifically to correct for the 'bright' and 'metallic' edge of DMM recordings.

Appendix B - OptiMains Protection

OptiMains® Protection for Excessive Under/Over-Voltages

Please consult your
AMR distributor/dealer
for optimal power
configurations

The PH-77 is fitted with the *OptiMains®* system to condition and adjust the incoming mains supply for best operation under all normal mains conditions (including situations that will cause audible problems without *OptiMains®*).

With the onboard mains conditioning, for the optimal sonic performance, after-market power conditions are not recommended for use with PH-77. However, feel free to experiment to find the most sonically satisfying configuration.

Sometimes there are
excessive mains
fluctuations...

In the case of extreme power surges, brown outs or other exceptional/unexpected conditions that exceed safety margins, the *OptiMains®* system will automatically switch off mains power to the internal parts of the PH-77 to prevent any damage from occurring.

If the display reads:

A C V o l t a g e O u t s i d e
O p e r a t i n g R a n g e !

...OptiMains® will
detect and protect

Power OFF your AMR component and wait at least 5 minutes. If and when the mains electricity has been deemed to have returned to normal (such as during a brown out and the lights dimmed but have returned to normal brightness) then power up your AMR component as per the manual's instructions.

Symptom	Possible Cause	Solution
With power ON no power is registered	<ul style="list-style-type: none"> • poor/no power plug connection at mains power point • blown fuse at mains plug 	<ul style="list-style-type: none"> • insert the power plug firmly into the AC • check and change mains plug fuse
No sound	<ul style="list-style-type: none"> • incorrect audio cable connections • incorrect amplifier operation 	<ul style="list-style-type: none"> • connect the PH-77 correctly • make sure that the input selector on the Amplifier is set to the desired source
If in doubt, please consult your AMR distributor/dealer	Remote control does not work	<ul style="list-style-type: none"> • replace 2 x AAA batteries • remove any objects directly in front of the PH-77
	A “humming” sound	<ul style="list-style-type: none"> • loose cable connections • re-attach the loose cables correctly
	Button does not react	<ul style="list-style-type: none"> • skin resistance too high • place your fingertip across the gap between button and front panel
Front switches “jump”/ enter Standby	<ul style="list-style-type: none"> • static electricity 	<ul style="list-style-type: none"> • “Touch” the chassis prior to pressing a sensor to discharge. Then press the desired sensor
Other problems		<ul style="list-style-type: none"> • go to the Contents section and re-trace the procedure or contact your nearest AMR distributor/dealer

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