

77 STEREO POWER
AMPLIFIER

INSTRUCTION BOOK

QUAD

77 INSTRUCTION MANUAL

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European Union Directives

Quad equipment is designed to comply with the legal provisions of EU Directives 89/336/EC and 72/23/EEC. The standards which have been applied were those in force at the time of the introduction of the product. The product bears the CE mark.



Compliance cannot guarantee perfect performance. In the very rare circumstance that you experience problems you should first try to locate and remedy the origin of any disturbance. A further option is to relocate the Quad equipment in order to reduce the interference. Your dealer should be able to provide assistance if the problem persists.

FCC Rule 15 Class B

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential 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 the receiver

Connect the equipment into an outlet on a circuit different to that to which the receiver is attached

Consult the dealer or an experienced radio/TV technician for help

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

Information to the user

Alteration or modifications carried out without appropriate authorisation may invalidate the user's right to operate the equipment.

It is always good practice to switch off equipment before connecting or disconnecting signal leads. This will prevent unpleasant and loud noises coming from the loudspeakers and avoid the risk of damage to equipment.

This equipment is double insulated and does not need a safety earth. It is important though that any equipment connected to it is earthed according to the manufacturers' instructions. This becomes more important as the number of units which are connected together increases.

Quad high fidelity equipment is designed to reproduce music at realistic levels, but there is a world of difference between the sound levels produced by a string quartet and a heavy metal group.

Please be aware that very high sound pressure levels can cause permanent damage to your hearing, and can also cause severe annoyance to neighbours.

INTRODUCTION

This equipment is intended to be used for music reproduction in the home and we hope that it will give you much pleasure. The Quad 77 series comprises a range of equipment which can be connected together using Quad's interlink system which we call QuadLink. The 77 series offers a two way infra red 77 System Console which provides you with a unique means of controlling and receiving information from your 77 series equipment. Some products of the 77 series also receive their power from the QuadLink bus. This power is provided by one of the special base units such as the 77 Integrated Amplifier, the 77 preamplifier or the 77 Audio Visual preamplifier. You can also provide your Quad 77 series equipment with signals from your existing equipment though you will not be able to control their functions with Quad's 77 System Console.

You should read the following useful notes before you begin to install and use the equipment. The notes are directed towards the responsible adult who is responsible for the safe installation of the equipment. You should not allow minors to attempt electrical installation or to carry out changes.

The Quad 77 stereo power amplifier weighs approximately 6kg. It is built to be robust. Remember to check that any surface on which you place it is stable and is able to support this weight.

There are no user adjustable parts inside the equipment. You should refer any servicing to a qualified engineer or return the equipment to either the dealer or the Quad distributor.

The QUAD 77 stereo power amplifier can be used either with the QUAD 77 preamplifier in which case the QUAD 77AMPBUS connector should be used, or with an earlier QUAD preamplifier or preamplifier of other make in which case the phono inputs must be used and the channel selector switch must be set to Phono.

PACKING LIST AND UNPACKING THE EQUIPMENT

The packaging contains the following items:

- The 77 power amplifier model 7767
- The accessory pack containing:
 - one 500mm long IEC plug and socket cable, QU2005A
 - one 160mm long 77AMPBUS connector and cable, Q37414A
- one user manual
- one user registration card
- one set of packing materials comprising:
 - one set of expanded polystyrene end cheeks
 - one cardboard carton
 - one polythene protective bag

You should retain the packing materials for future use or you may return them to your dealer. If you decide not to keep the packing, please dispose of it sensibly. The paper and plastics components are recoverable and should be taken to an appropriate recovery service.

You should consult the dealer from whom you purchased the equipment if any of these items are not present.

You should retain the user manual and the information concerning the date and place of purchase of this equipment for future reference.

SAFETY AND OPERATION OF ELECTRICAL PRODUCTS

All electrical products carry with them the risk of electrical shock if they are misused or damaged. Quad 77 series equipment is intended to be used within the relatively protected environment of your house.

It is important that all electrical connections are competently and securely made to the unit before mains power is applied. You can further reduce risks by ensuring that access to the rear of the equipment is protected by careful placement of the equipment. Bear in mind that the voltage from the output of a power amplifier can exceed 34V peak and that bare metal parts of loudspeaker connectors, for example, must not be touchable while the equipment is powered.

You should not use loudspeaker cables or connectors that resemble or might be confused with mains cables and mains connectors. For this reason you should not use 4mm "banana" plugs or similar unshrouded pin types of connectors. Be careful not to damage loudspeaker cables with heavy furniture or spikes.

GUARANTEE AND PRODUCT REGISTRATION

Your Quad 77 equipment is guaranteed against any defect in material and workmanship for a period of two years from the date of purchase. Within this period Quad will undertake replacement of defective parts free of charge provided that the failure was not caused by misuse, accident or negligence.

Your statutory rights within the territory in which you purchased the equipment are not affected by this guarantee.

A guarantee card is not provided because your guarantee begins on the day you purchased the equipment. You are encouraged to fill in and return to Quad the equipment registration card as this will help us with future product announcements.

Quad does carry out a regular review of its products and reserves the right to adjust the specifications and performance from time to time.

SERVICE ARRANGEMENTS

If your Quad equipment requires servicing you should return it to the supplier, the distributor for the country in which it was purchased or to Quad Electroacoustics Ltd. You should use the original packing. You should enclose a brief note with your name and address and the reason for returning the equipment.

Quad offers a same day service from Monday to Friday except for UK public holidays. Please telephone the number provided on your product registration card in order to make an appointment.

ACCESSORIES

We have provided this equipment with a simple selection of accessories which will allow this equipment to work with other equipment such as your cassette tape recorder, video player or other HiFi equipment. The following is a selection of accessories which are available at the present time:

accessory description	quad part number
IEC mains cable 2m long fitted with UK plug	QUKES2B
IEC mains cable 2m long fitted with European plug	QE2P2S2
QuadLink bus cable 160mm	Q37414A
QuadLink bus cable 1m	Q37404A
Double ended phono cable 500mm	QP2P2SA
Double ended phono cable 1m	QP2P21A
Double ended phono cable 2m	QP2P22A
Quad loudspeaker cable 2.5 sqmm flat form, beige	QLSCF2S
Quad loudspeaker cable 4 sqmm round form, beige	QLSCR4S
Quad loudspeaker cable 4 sqmm round form, blue	QLSCR4B
Quad loudspeaker cable 4 sqmm round form, purple	QLSCR4P

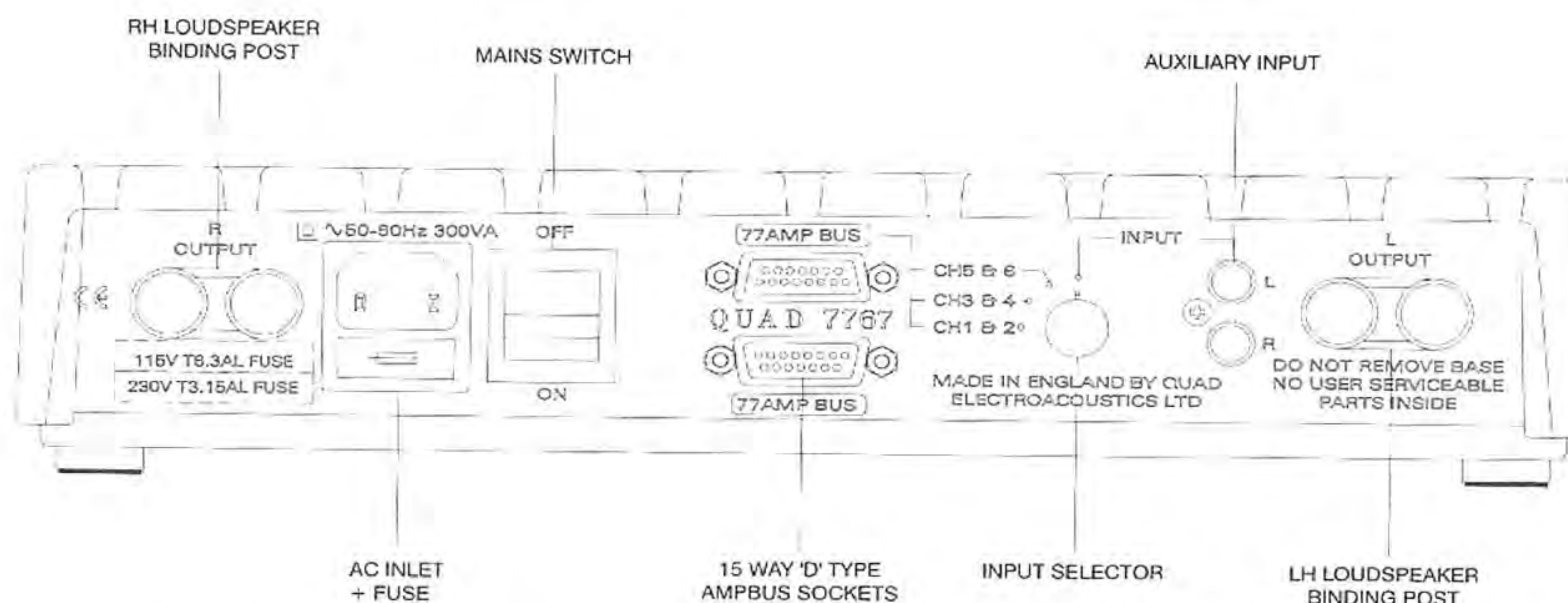
Note that we can not supply loudspeaker cables terminated with 4mm plugs nor the 4mm plugs themselves.

INSTALLATION

Properly installed Quad equipment will allow you to enjoy its performance. There are a few simple requirements. Wherever you place the equipment you should ensure that it is not at risk from spilled water, for example from plants and flowers, and that you are able to prevent small children and pets from gaining access to the cables and connections. The environment should be dry and free from rubbish. You should not place magnetically or thermally sensitive objects such as computer discs, credit cards, magnetic tapes and writable optical discs on the surface of the equipment as the combination of heat and magnetic field may be sufficient to corrupt the information stored on them.

To keep the bus connections simple place the 77 stereo power amplifier below the 77 preamplifier. Power amplifiers can be placed along side or out of sight using a long 77AMPBUS cable which is available as an accessory.

Rear Panel



Before you connect the QUAD 77 power amplifier to the AC mains supply check that the voltage marked on the back matches the voltage of your supply.

Mains working voltage and fuse ratings

The rated voltage for this unit is marked on the rear panel. Within the EC the nominal mains voltage which is provided to homes is 230Vac.

You should check with the dealer if you intend to use the equipment in regions which use different values of mains voltage. The dealer will be able to determine if a simple wiring change or a replacement transformer is needed. Quad manufactures equipment to the following principal mains voltage requirements:

- Europe, including the UK, uses 230Vac
- Japan uses 100Vac
- USA, for example, uses 117Vac
- Korea, for example, uses 220Vac

If you are in any doubt what the correct operational voltage is you should ask a qualified electrician before applying power to the equipment. The Quad 77 power amplifier will work correctly within the tolerances of this voltage.

The mains supply fuse of the Quad 77 power amplifier is accessible on the rear panel when the IEC mains plug has been removed. In the rare event that it has broken you should first check for any obvious cause before replacing the fuse with one of the correct rating and type. The correct fuse values are:

Country or region	nominal mains voltage	fuse rating
Europe including UK	230Vac	T3.15AL slow blow 5x20mm
Japan	100Vac	T6.3AL slow blow 5x20mm
Korea, for example	220Vac	T3.15AL slow blow 5x20mm
USA, for example	115Vac	T6.3AL slow blow 5x20mm

You should switch off the equipment and remove the connection to the mains power outlet before changing the fuse.

CONNECTING TO THE MAINS SUPPLY

Connect the mains output from the Quad 77 preamplifier to the mains input of the Quad 77 stereo power amplifier.

If you are using more than one Quad 77 stereo power amplifier in a Quad 77 system, or using the Quad 77 power amplifier with another preamplifier, you need to connect the amplifier directly to the wall socket with an appropriate mains lead.

ON / OFF SWITCH

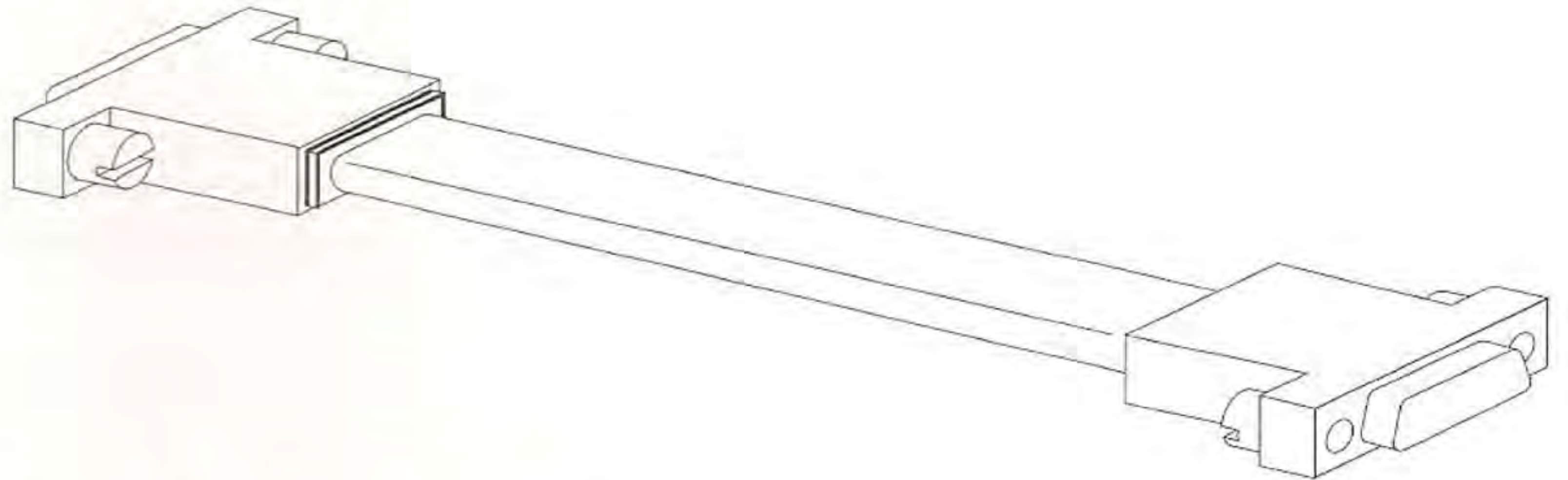
The On/Off switch is on the rear panel. The stereo power amplifier should normally be left switched on.

Signal Connection

When the Quad 77 power amplifier is used as part of a 77 system, you should use the 77AMPBUS lead supplied to connect to the output of the 77 preamplifier or 77 AV processor. Signal on the 77AMPBUS is in differential mode, which has performance advantages over unbalanced signal. The channel selection switch should be set to the appropriate position.

When the Quad 77 power amplifier is used with equipment other than 77 series, you should use an appropriate lead to connect to the phono input and set the channel selection switch to phono input.

Quadlink Cable



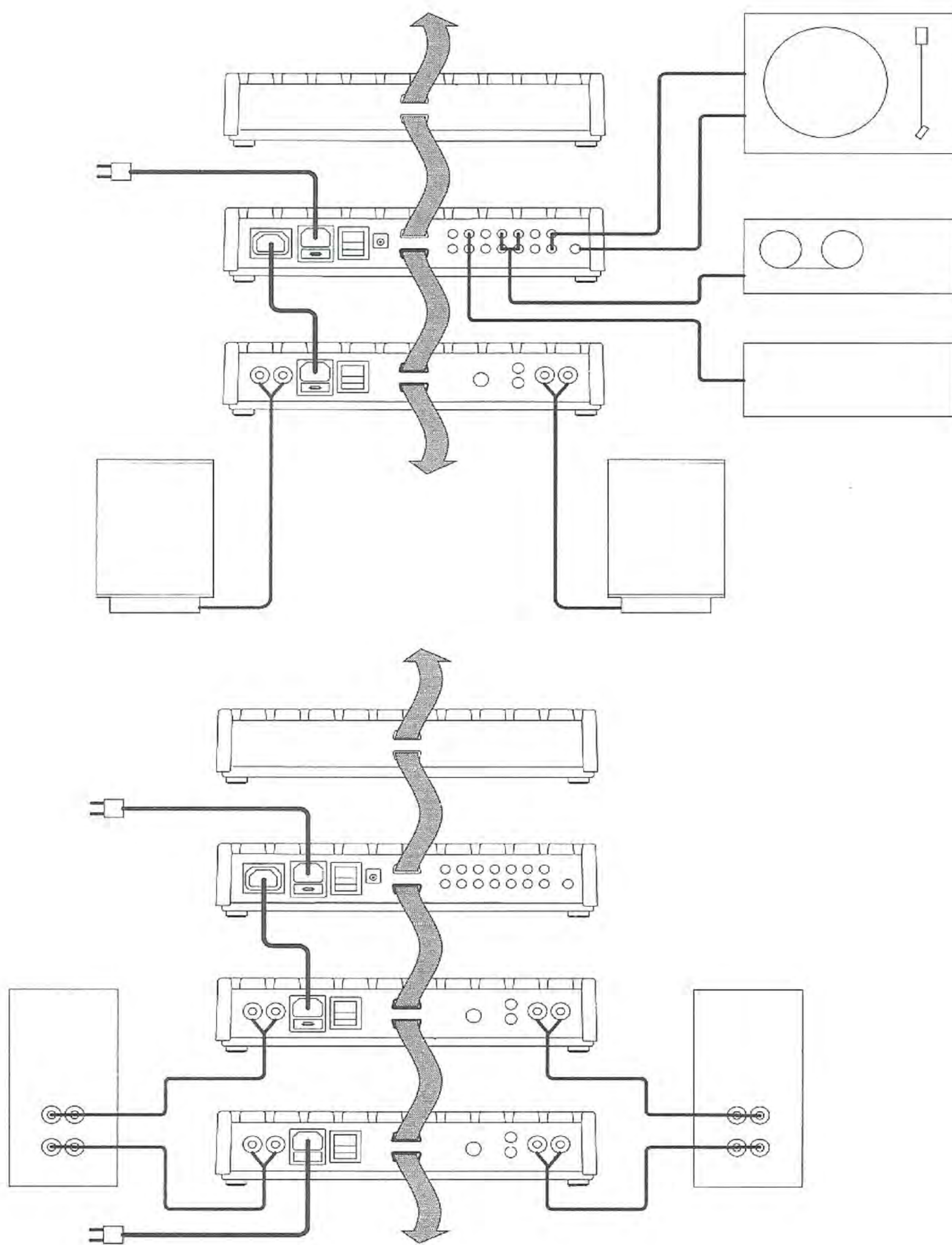
This shows the general view of a QUADLINK cable. The ends are terminated with a male and female form of the D type 15 way connector. Quad manufactures two lengths of this cable, 160mm and 1m. The 77AMPBUS cable is actually electrically and physically identical.

Channel Selector

The QUAD 77AMPBUS carries six audio channels and the rotary switch on the back of the amplifier selects the pair of channels to be fed to the amplifier. Channels 1&2 are left and right in a standard stereo system and front left and front right in a multi channel system. Channels 3&4 are Rear left and rear right in a multi channel system. Channels 5&6 are Centre and Centre Sub in a multi-channel system. Select phono input if you are connecting the amplifier to a non 77 preamplifier using the phono socket inputs.

Bi and Tri-amplification

Two or three QUAD 77 stereo amplifiers can be used to bi or tri amplify loudspeakers which are fitted with appropriate input connectors as an easy performance upgrade. Link the amplifiers together using QUAD 77AMPBUS connecting cable and set the channel selectors to 1&2. Connect the output of one amplifier to the left and right tweeter inputs and the outputs of the second amplifier to the bass inputs (And third to the mid range in a triamplified system).



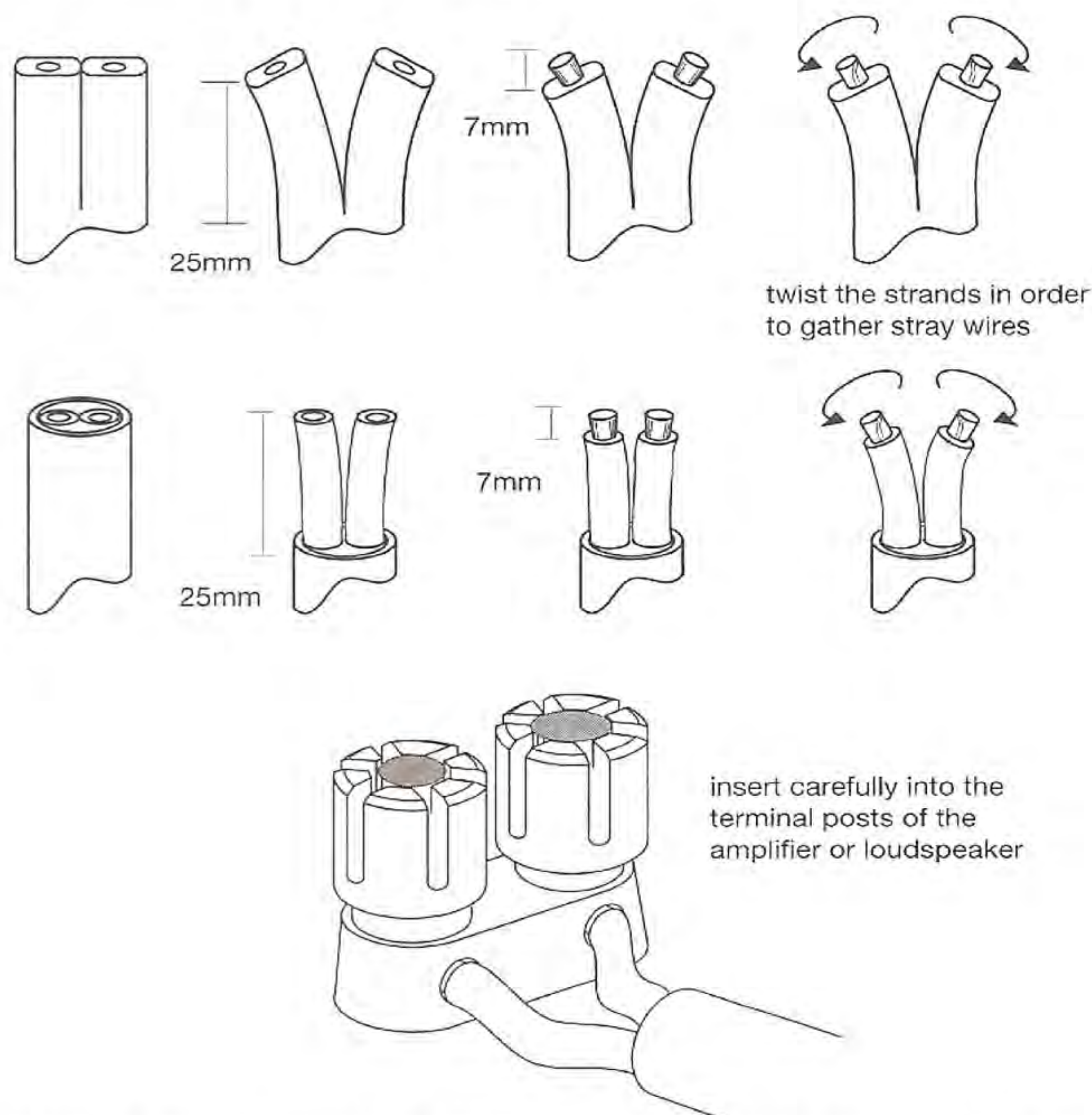
These diagrams show some Quad 77 system components in typical arrangements. The top sketch shows the arrangement with a turntable connected to a 77 preamplifier. The lower sketch shows how further Quad 77 series stereo power amplifiers can be used in a bi-amplified system.

USE OF CORRECT CONNECTORS AND CABLES

You should ensure that any cables which are used with Quad equipment are properly terminated and that the cable is appropriate to the task. This is particularly important with loudspeaker cables and connections. If you are in any doubt you should consult your dealer.

CONNECTING LOUDSPEAKERS

Loudspeaker cables should be carefully prepared. The Quad 77 series amplifiers may not be used with 4mm or similar styled connectors. The following sketches show how to prepare a loudspeaker cable for use with Quad power amplifiers and loudspeakers. We have used illustrations of Quad's round and flat loudspeaker cables as examples. Be careful to cut only the insulation which is to be removed. Make sure that you collect together all of the strands of wire as stray wires may cause shorting which may result in damage or a risk of fire.



These sketches show the main stages in preparing a loudspeaker cable for termination onto Quad power amplifiers and loudspeakers. The top row of figures shows Quad flat form of loudspeaker cable being prepared and the lower row shows Quad's round form of loudspeaker cable. Ensure that there are no stray strands of wire. For safety reasons Quad power amplifiers have been designed to prevent you from using 4mm type plugs.

When you estimate the length of loudspeaker cable which you will need remember to provide sufficient spare length to allow for access and for tidy securing. A loudspeaker cable, such as the Quad round cable, is quite heavy and it should be placed so that it does not place excess strain on the binding posts of either the amplifier or the loudspeaker.

Phase

Make sure that both loudspeakers are connected in the same phase. The positive (red) output terminal of each channel should be connected to the positive (red) input connector of each loudspeaker.

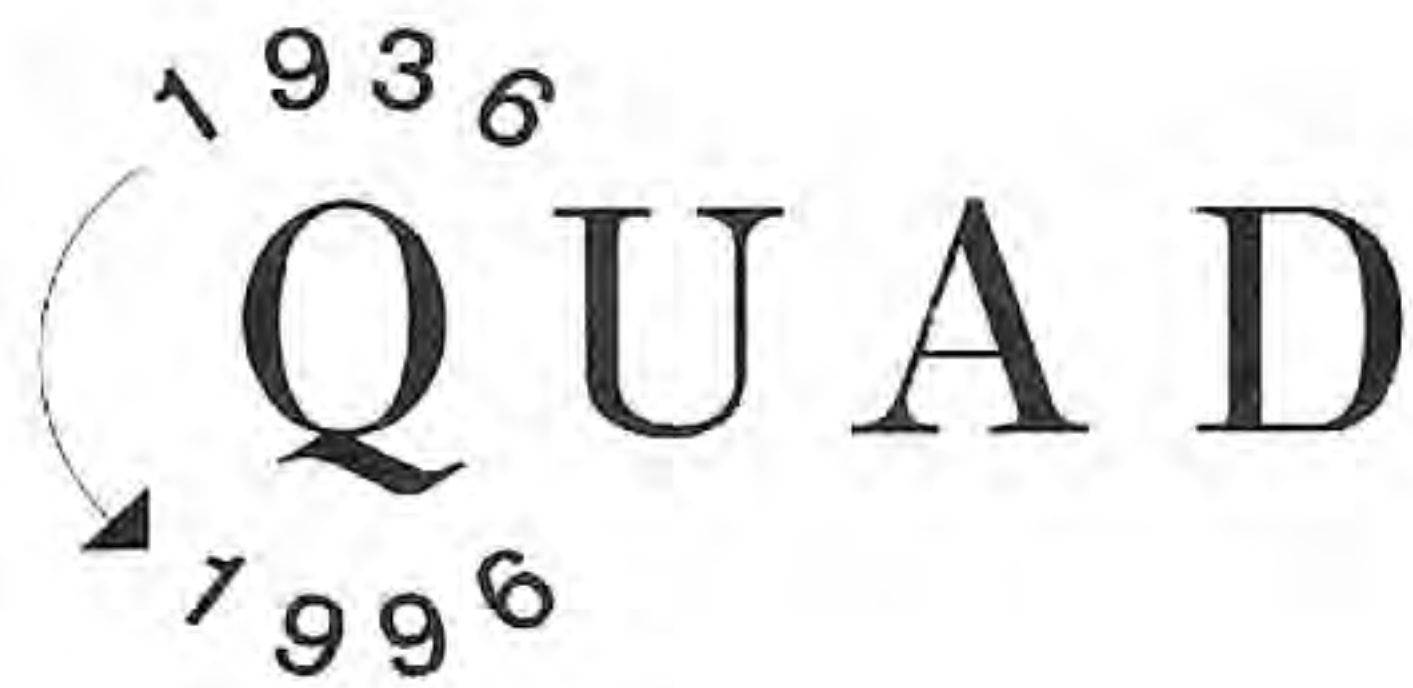
CARE AND CLEANING

The surface of the equipment may be cleaned with a damp cloth provided that the power has been removed first. Solvent based cleaning materials should not be used as they may damage the paint finish and the optical quality of the front panel windows.

BASIC OPERATIONAL FAULT DIAGNOSIS FOR USERS

This section may help you to determine if your Quad 77 stereo power amplifier is connected up incorrectly or, very rarely, has developed some kind of fault.

Symptom	Possible problem
There is no STANDBY or other light when power is applied	<p>The mains outlet switch is not turned on. There is no power available from the mains socket. The mains cable is faulty. The mains plug fuse is faulty. The IEC plug has not been pushed in firmly enough. The rear panel fuse has blown. The front panel printed circuit board has failed.</p>
The equipment front panel shows the unit is out of STANDBY but there is no output from the loudspeakers	<p><i>Note: before adjusting and checking cables you should ensure that the volume control is at a low setting.</i> The signal cable from 77 preamplifier to power amplifier is faulty. The connection between the power amplifier and the loudspeaker is faulty. You have not selected the correct pair of 77AMPBUS channels using the rear panel selector switch. The signal cables have not been properly pushed in to at each end. The CD you were playing has finished. There is no audio input signal for the source you have selected. The loudspeakers have been damaged. The QuadLink and 77AMPBUS connections have been poorly made.</p>
There is a loud hum or other unwanted noise, from the loudspeakers	<p>There is a fault on one or more of the signal leads which you are using. Probably the screen connection has become detached at one or both ends. Replace the cable with a known good one. The source equipment to which you are connecting is itself producing the hum due to a fault.</p>
The 77 power amplifier turns off after playing loudly for a short while	<p>The overall loudness has been set too high. Reduce the ingoing level. The impedance of the loudspeakers is too low, perhaps you have joined loudspeakers in parallel in an attempt to provide more noise. You should not operate the 77 stereo power amplifier with such a load and it would be better to use a further amplifier. There is a fault in the loudspeaker or the wiring and cables to it which is presenting a partial short circuit to the power amplifier. Switch off the power and carefully inspect all of the relevant connections.</p>
The fuse blows each time the 77 power amplifier is turned on	<p>The incorrect fuse value has been used. The unit is being supplied with the wrong mains voltage. The QuadLink bus, or equipment attached to it, is faulty. There is an internal fault.</p>



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