

*exposure*

# Amplification Systems

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## Operation Manual

**PRODUCT RANGE**

Exposure 15, 20 & 25RC Integrated Amplifiers

Exposure 13, 17, 19 & 21Pre Amplifiers

Exposure 4 & 18 Stereo Power Amplifiers

Exposure 16 Mono & 18 Mono Power Amplifiers

Exposure Speaker Cable

Thank you for purchasing an Exposure Amplification system. You are now the owner of a sophisticated audio component incorporating many advanced features. To obtain best results, please read the instructions carefully. These instructions are to be used as a guide to the products listed on the front cover, controls are general layout may vary and the information is pertinent to all the models. We request that you take the time to read the manual thoroughly before you begin to use your Exposure product. All of our products are relatively straightforward and simple to operate; however, we have endeavoured to provide helpful installation information. We believe that reading this manual will help ensure that your Exposure product will perform at its maximum potential.

## **INSTALLATION**

### **UNPACKING**

Unpack your Exposure product and please retain the packing material for future use . Carefully inspect the unit. If it shows signs of shipping damage, contact your Exposure dealer immediately.

### **IMPORTANT**

- No user serviceable parts inside
- To prevent electric shock, DO NOT remove the cover
- DO NOT expose this unit to moisture
- DO NOT use abrasive cleaners or polishes on the unit
- Provide adequate ventilation

### **REAR PANEL FUSE**

- Only to be replaced by a qualified service technician
- The unit is fitted with a protection fuse. The fuse will usually blow under a fault condition. Only replace this fuse with the correct value which is as follows : F5A 230 - 230V

**UNPLUG THE UNIT FROM THE POWER SOURCE  
WHEN IT IS NOT USED FOR PROLONGED PERIODS**

### **REPLACING A MAINS FUSE (UK)**

This apparatus is fitted with an approved moulded 13 Amps plug. To change a fuse in this type of plug, proceed as follows :

- 1) Remove fuse cover and fuse
- 2) Fix new fuse which should be a BS1362 5A, A.S.T.A or BSI approved 13A
- 3) Refit the fuse cover

If the fitted plug is not suitable for your socket outlet, it should be cut off and an appropriate plug should be fitted in its place. If the mains contains a fuse, this should be a value of 5A. If a plug without a fuse is used the fuse at the distribution board should not be greater than 5A.

### **MAINS CORD COLOUR CODE**

BLUE - NETRUAL 'N'  
BROWN - LIVE 'L'

The BLUE wire must be connected to the terminal which is marked with the letter 'N' or coloured BLUE. The BROWN wire must be connected to the terminal which is marked 'L' or coloured BROWN. Connect GREEN/YELLOW wire to the EARTH terminal in the plug which is marked with letter 'E' or safety symbol.

- Always turn the AC mains power off on the components of your music system before connecting or disconnecting any AC mains or signal interconnect cables. Also, turn off the AC power to your system when cleaning any electric components.

- Never remove the cover to your Exposure product. There are no internal adjustments on any of our products, nor are there any user-serviceable components inside them. All service concerns should be referred to your local authorised Exposure dealer.

## **PLACEMENT**

Your Exposure product may be placed on any shelf, or within a cabinet; wherever it is convenient to operate. Please be sure that the location has a reasonable amount of ventilation (particularly in regard to a power or integrated amplifier). A three to four inch clearance around the unit is usually sufficient.

Care should be taken not to orient any component such that the field from its main transformer includes hum in the phono stage of your Exposure preamplifier or integrated amplifier. Generally, this hum is avoided when the preamplifier or integrated amplifier is placed so that the phono stage is not directly above another unit's transformer area, since the phono stage is the most susceptible to induced hum. The line stage of your Exposure product will be far less affected by induced hum owing to the power gain necessary in the line circuit. Users who do not listen to phono records, or users of our XIX(19) preamplifier or XX(20) integrated amplifier are line level only units which lack phono stages, should have little restriction on placement of associated equipment.

The phono stage of your Exposure preamplifier or integrated amplifier is located on the side of the unit where the phono input sockets are mounted. Usually, the transformer location of electronic components is on the side of the unit where the AC mains cable exists the chassis. If hum conditions persist after following these guidelines, contact your local Exposure dealer to resolve the problem.

## **CONNECTIONS**

### **REAR OF CASE**

- **Mains Connection** - Connect the mains lead to your mains supply
- **Loudspeakers** (Bi-Wired)

### **AMPLIFIER TO LOUSPEAKER INTERCONNECTION**

Exposure amplifiers use custom made gold-plated 4mm (touch proof) socket connectors as the output terminals, as we have found these to give the best combination of sound quality, long-term reliability and electrical safety. Your Exposure dealer will properly terminate appropriate loudspeaker cables with the matching 4mm plugs to fit these sockets.

Various types of loudspeaker cable will be suitable for connection of our amplifiers to loudspeakers; however, we have designed a loudspeaker cable specifically for use with our amplifiers which will fulfil the technical requirements of our amplifier output stage designs. Accordingly, our cable will generally outperform alternative cables, in relation to our amplifiers. We typically recommend a minimum length of three metres per channel of cable. We strongly recommend the use of these cables with our products. Your dealer's assistance with this subject will prove helpful.

Pay close attention to connecting the loudspeaker cables with the proper polarity. Connect the positive conductor of the loudspeaker cable to both the positive output socket on the amplifier's relevant channel (colour coded red) and to the input socket marked positive (+ or red) on the loudspeaker input). Connect the negative terminals, usually colour coded black, similarly. If both loudspeakers are not connected properly poor sound will result, the symptoms being a loss of bass extensions and volume, and a overly diffuse, poorly defined stereo image and soundstage.

As with interconnect cables, all loudspeaker cables we have used exhibit directional performance. Exposure loudspeaker cable is no exception. The legend printed on the web between the conductors indicates directionally (the writing reads from amplifier to loudspeaker, in the direction of the signal flow) and polarity (positive is marked with a + symbol, and indicated by a ridge moulded into the side of the cable dielectric).

### **BI - WIRING**

Many loudspeaker models are currently available which provide for bi-wiring. This wiring arrangement will offer an improvement in sound quality on these models in exchange for a modest parallel to facilitate multi-wiring. Have your dealer terminate loudspeaker cabling for your amplifier with the appropriate 4mm plug connectors. *Please note* that particular care *must* be taken when connecting any amplifier to loudspeakers using multi-wiring.

## **INPUT SOCKETS**

- **TAPE IN/OUT** - For connections to Tape Deck or Mini Disc
- **TUNER** - Radio tuner
- **CD** - Connect to CD Player/DAC
- **AUX** - Spare input (for second Tuner, etc)
- **PHONO** - (MM/MC as required) 15 Super
- **TURNTABLE EARTH SCREW**

## **FRONT PANEL CONTROLS**

- **VOLUME** - Adjusts the volume level of the loudspeakers
- **INPUT SELECTOR (LISTEN)** - Selects input you wish to listen to
- **RECORD SELECTOR (RECORD)** - To record a input while listening to another.
- **MAINS ON/OFF SWITCH** - Switches the unit on and off

## **OPERATION**

### **PREAMPLIFIERS**

Our preamplifiers each have a volume attenuation control and an input selector switch mounted on the fascia to control the listening volume and the desired program. In addition the XX(II), XVII(17), and XIX(19) all have a tape recording output selector, labelled "RECORD", to select the program which appears at the unit's tape recorder outputs. This arrangement allows the selection of separate programs for listening and tape recording. The XIV(14) preamplifier features two record output selectors, corresponding to two independent tape recorder signal paths. With the XIV(14), the user may therefore select two independent programs to be recorded if desired, plus a third to be listened to through the loudspeakers. Tape recorder outputs on all of our preamplifiers are buffered to eliminate interactions between the preamplifiers and the tape recorder circuitry.

All of our preamplifiers have relay protected mains outputs, allowing the preamplifier to fully stabilise switching power on (or, of course, after a temporary AC power interruption) before the preamplifier outputs are connected to the power amplifier. The operation of this relay takes approximately 30 seconds, during which no musical signal will appear at the output. This protects the amplifier and loudspeakers against the transients before stabilisation, which might otherwise cause damage. Audio electronics need time to stabilise to sound their best, and this is particularly true of preamplifiers. Whilst our preamplifiers will perform quite well immediately after being switched on, their performance will improve to an even higher level after being in operation for a time.

Typically, full performance conditions are reached within 24 hours. We, therefore recommend leaving the preamplifier's power supply switched on continuously. There are no associated penalties with regard to reliability or longevity (indeed, electronic components generally have longer lives when powered up continuously), and this practice ensures optimum musical performance whenever you wish to enjoy music on your system.

No facility for tone control, or equalisation is provided, since our experience indicates that these circuits invariably cause degradation of the musical signal. A perceived need for tone correction usually suggests either a faulty in the installation of the system, or the need for a higher quality component somewhere in the system (typically the source component; e.g. Turntable, Compact Disc Player or Tuner).

### **INTEGRATED AMPLIFIERS**

The XV(15) and XX(20) integrated amplifiers feature the same volume attenuation, listening program selection, and tape recording program selection as the XVII preamplifier described above in the Preamplifiers section. A similar relay protection circuit is employed to protect the system during stabilisation immediately after the unit's mains power is switched on. The XV(15) and XX(20) were not designed to tolerate short-circuit conditions. Damage will result if these units are forced to play a signal into a short-circuit. Observe the same cautions with the XX(15) or XX(20) regarding leaving equipment powered during long absences from home as noted in the Power Amplifiers section.

## **POWER AMPLIFIERS**

Our power amplifiers are protected against overload and short-circuit conditions of significant duration whilst a musical signal is being amplified will result in damage to the amplifier. Please ensure that speaker cable leads are not allowed to short-circuit, either directly, or via metal loudspeaker stands, carpet tack strips or brads, tacks and clamps used to dress the loudspeaker cable.

Conditions of overload with no short-circuit are more benign, and these will be terminated eventually by the amplifier itself. This action is effected by a temperature sensor within the amplifier which detects undesirable operating conditions of output stage temperature and interrupts the AC mains supply. The amplifier will reconnect the mains supply automatically after the amplifier output section has cooled to safer levels. No user intervention is necessary.

Power amplifiers typically reach stable operating conditions more quickly than preamplifiers (Usually less than an hour), hence the desirability of keeping them continuously powered up is a bit less than with preamplifiers. There is little reason that the power amplifier may not be left on continuously, but would point out that prudence would dictate switching the power amplifier off when one is leaving one's residence for long periods of time (e.g. a holiday). Electrical storms or catastrophic mains faults can occur without one's knowledge while one is away with potentially tragic results for one's amplifier and loudspeakers.

Removing the mains plugs of your system's components from the power source is an excellent practice before such an absence from home. Our amplifiers exhibit slight turn-on and turn-off transients, heard as "pops" or "thumps" through the loudspeakers. These transients can cause no damage to the loudspeakers, are indicative of normal operation, and such are no cause for alarm.

## **PREAMPLIFIER/POWER SUPPLY INTERCONNECTION**

Our XVII(17) and XIX(19) preamplifiers have internal power supplies which require no connection by the installer or user.

The XIV(14), XI(11), and VII(7) preamplifiers, however, employ an external power supply configuration, and require one or more DC power supply interconnect cables for operation. These are supplied with the matching power supply. IX(9), XII(12), or VI(6) or, with the VIII(8). In the case of the VII(7) taking its DC power supplies from an VIII(8) Standard power amplifier. The DC power supply cables are black in colour, with special locking 5-pin DIN connectors at each end, and one end marked with a red band.

To properly connect these, observe the following procedure :

With the AC power switch off on the power supply unit, connect the red-marked end of the cable to the socket on the rear of the preamplifier labelled "DC IN". The VII(7) preamplifier has one DC power supply input socket which should be connected to the single DC power supply socket on the rear panel of the VIII(8) Standard, or to the lower of the two DC power supply sockets on the rear of the VI(6) power supply. The XI(11) preamplifier has two DC power supply input sockets (one for the left channel, the other for The right channel) which should be connected to the appropriate DC power supply output sockets on the rear of the XII(12) power supply labelled "LEFT OUTPUT" and "RIGHT OUTPUT" respectively. The XIX(14) preamplifier has four DC power supply input sockets (left and right channel phono supplied separately, and left and right line amp supplied separately). Connect the XIV's(14) phono power supply input sockets to the lower DC power supply output sockets on the rear panel of the IX(9) power supply, labelled "Left OUTPUT" and "Right OUTPUT" respectively. Then connect the XIV's(14) line amp power supply input sockets to the remaining (upper) DC power supply output sockets, left and right respectively, on the rear of the IX(9).

Please note that the DIN connectors on each end of the DC power supply interconnect cables must be inserted into the sockets with the locking tab UP. If they are inserted upside-down, no damage to either preamplifier or power supply will occur, however, the DC supplies will not be connected, and hence the preamplifier will not function.

## **LOW-LEVEL AND LINE-LEVEL INTERCONNECTION (PREAMPLIFIERS AND INTEGRATED AMPLIFIERS)**

Please note that the right channel input and output sockets are the upper set of sockets; the left sockets are the lower set.

Our XIV(14), XVII(17), and XIX(19) preamplifiers feature high quality Swiss-made Neutrik XLR (gold) connectors for their main outputs, in addition to high quality Teflon insulated RCA sockets. The use of XLR output sockets is to be preferred, as these perform to a higher standard sonically. Please note that these outputs are not differential or "balanced"; they are single-ended. Their superior performance is due to the electrical and mechanical superiority of the Neutrik XLR connector.

## **TECHNICAL DATA**

### **Super 15 (20) Integrated Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : Line : 150mV, 10Kohms  
Phono (Super 15 only) : MM: 3m, 47ohms, 470pF  
or  
Inputs Super 15 : RCA Phono + 4 x Line  
Inputs Super 20 : 5 x Line  
Outputs (both) : 1 x Tape (600ohms)  
1 pair loudspeakers 4 - 16 ohms  
Bi-wired included  
Continuos power output : 2 x 60W into 8ohms  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **25 Remote Control Integrated Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : Line : 150mV, 20Kohms  
Inputs : 6 x Line  
Outputs (both) : 1 x Tape (600ohms)  
1 pair loudspeakers 4 - 16 ohms  
Bi-wired included :  
Continuos power output : 2 x 60W into 8ohms  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **13 Phono(RIAA) Pre-Amp**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : MM: 3m, 47ohms, 470pF  
or  
MC: 0.6mV, 470ohms  
Input & output connections : RCA phono sockets  
Output voltage (impedance) : 1V ms, max. 12V (3ohms)  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **17 (19) Pre-Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : MM: 3m, 47ohms, 470pF  
or  
MC: 0.6mV, 470ohms  
Input & output connections : RCA phono sockets  
Output voltage (impedance) : 1V ms, max. 12V (3ohms)  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **21 Remote Control Pre-Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : Line : 150mV, 20Kohms  
Inputs : 6 x Line  
Outputs : 2 x Tape (600ohms)  
2 x Main  
Output voltage (impedance) : 1.2V ms, max. 12V (3ohms)  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **Super 18 Stereo Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : 1.2V/100K ohms  
Input connections : 2 x RCA phono socket,  
2 x XLR  
Outputs : 1 pair loudspeakers 4 - 16ohms  
Bi-wire sockets included  
Continuos power output : 2 x 70W into 8 ohms  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **Super 18 Mono Reg. Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : 1.2V/100K ohms  
Input connections : 1 x RCA phono socket,  
1 x XLR  
Outputs : 1 pair loudspeakers 4 - 16ohms  
Bi-wire sockets included  
Continuos power output : 60W into 8 ohms (each)  
Power supply : 250VA  
Dimensions : 440 x 90 x 306 (mm)  
Weight : 9.0kg boxed

### **4 Dual Reg. Stereo Amplifier**

Frequency response : 20Hz - 20kHz +/- 0.5dB  
Input sensitivity/Impedance : 1.2V/100K ohms  
Input connections : 2 x RCA phono socket,  
2 x XLR  
Outputs : 1 pair loudspeakers 4 - 16ohms  
Bi-wire sockets included  
Continuos power output : 2 x 90W into 8 ohms  
Power supply : 2 x 375VA  
Dimensions : 480 x 135 x 306 (mm)  
Weight : 20.0kg boxed

3 YEARS WARRANTY ON ALL EXPOSURE PRODUCTS

E&OE

PLEASE RETAIN PACKING FOR FUTURE USE. DUE TO OUR POLICY OF CONTINUED RESEARCH AND DEVELOPMENT, EXPOSURE ELECTRONICS RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT PRIOR NOTICE.

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MADE IN ENGLAND

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