

ALLEN & HEATH



WARNING – HIGH VOLTAGES

Power Supply Unit (PSU) work should only be carried out by qualified personnel.

We recommend that you use an approved Allen & Heath service centre for all power supply work.

Please contact your local Allen & Heath distributor for more details.

<http://www.allen-heath.com/>

AHB

BROADCAST PRODUCTION

MIXER

S6-2



S6-2 PRODUCTION MIXER

OWNERS MANUAL

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S6-2 PRODUCTION MIXER

Introduction

The S6-2 mixer has been designed to produce broadcast quality stereo master tapes with the minimum of source signal degradation and with every ergonomic consideration taken into account. For these reasons the unit is also suitable for 'live' mixing in such applications as audio visual presentations and discotheques.

The circuitry used in the S6-2 is of a complex nature it is therefore recommended that repairs and service are carried out only by our factory or authorised dealers.

Should any operational or service problems arise we recommend that you contact our customer liason office at the following address:

Allen & Heath Brenell Ltd.,
Pembroke House,
Campsbourne Road,
London N.8.

TEL: 01-340 3291 TELEX: 267727 BATGRP G

Goods sent for service should be addressed to:

Allen & Heath Brenell Ltd.,
Service Reception,
231 Liverpool Road,
London N.1.

Export customers should contact the agent from whom they purchased the mixer. Every effort has been made to ensure that your S6-2 mixer will give years of reliable service but optimum performance will be achieved only by careful use and regular cleaning of the faders, a proprietary cleaning fluid intended for the purpose is 'Fospro'.

The panel printing is a stoved paint finish carrying the white control markings. This combination gives long life under normal conditions and it is recommended that the panel be cleaned only with a soft damp cloth. Avoid chemical cleaners such as alcohol, methylated spirit and aerosol furniture and plastic cleaners.

PRODUCTION MIXER S6/2

OPERATING INSTRUCTIONS

Installation

Connect the Relay Box/Power Supply Unit to the Mixer using the 6 pin connector and lead. The Power Supply should be positioned away from the Mixer to avoid hum pick up. Connect 240v AC Main and Earth to the Power Supply.

Switch on - power is indicated by illumination of the meters and the meter needles flicking maximum before resettling at zero.

Mixer Connections

All connectors are on the rear panel and are listed below:-

INPUTS $\frac{1}{4}$ inch Stereo Jack Sockets

Tape One and Two	Tip Left Signal Ring Right Signal Sleeve Earth
Mic One and Two	Tip Signal Ring Sleeve Earth
Gram One and Two	RCA Phono Socket

OUTPUTS $\frac{1}{4}$ inch Stereo Jack Sockets

Left	Tip Signal, Sleeve and Ring Earth
Right	Tip Signal, Sleeve and Ring Earth
Inserts	Tip-send, Ring-return, Sleeve Earth
Phones	Tip-left Signal, Ring Right Signal, Sleeve Earth.

Sensitivities

All quoted at 1 kHz maximum gain for normal output level
OVU = 0dBm = 0.775v RMS

Gram Inputs	-50 dBm, 2.5 mV RMS into 47 Kohms to match magnetic cartridges.
Tape 1 & 2	-20 dBm, 75 mV RMS into 47 Kohms
Mic 1 & 2	-50 dBm, into 100 Kohms. -70 dBm into 200 ohms using In Line XLR to Jack matching transformer.
Pan	Constant power type +3 dBm to either side, equal in centre.
Headphone	Suitable for high impedance (200 ohm or greater).
Main Outputs	minimum recommended load 600 ohms.

Setting Up

Pre-fade listen monitoring is provided on the GRAM and TAPE channels for headphone listening. The meters are simultaneously switched to show PFL level.

Example - Gram 1 input. Set tone faders initially to 'Flat' channel fader to off. Start programme and select 'PFL' on Gram 1, adjust 'Trim' to give meter peaking into the red, listen on headphones, adjust tone faders for desired sound, re-adjust trim if necessary. To monitor output on headphones release all 'PFL' switches.

The programme is fed to the stereo output by raising 'Master' and channel faders to maximum. Use trim to adjust level when necessary. Keep channel faders for ON - OFF fading.

The output balance control provides 9dB range for correction of out-of-balance stereo sources.

If programme requires limiting or similar processing at the outputs use the 'Insert' socket provided. This is a send/return system on a single socket to facilitate wiring. Monitoring is after the insert point.

Autofade

This is provided for voice or programme control for Gram and Tape sources. The depth of fade can be adjusted by using 'Autofade' fader.

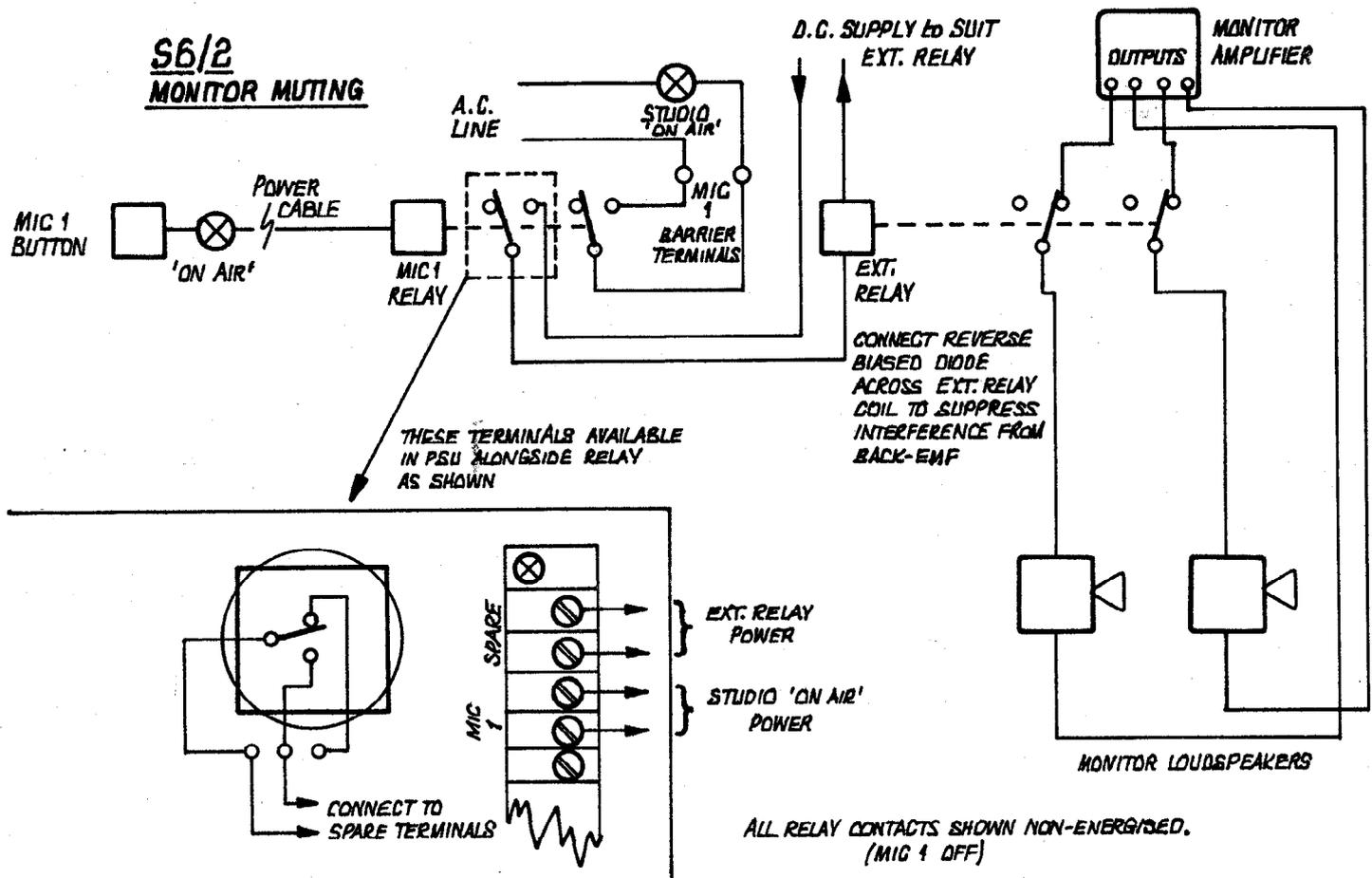
Both MIC channels fade both GRAM channels. Both MIC channels fade which ever TAPE channel is selected to 'Auto'. Tape channels not selected 'Auto' fade both GRAM channels.

Remote Control

Each of the five switches beneath the channel faders are linked to a relay in the power supply unit. Relay contacts are accessible by removing power supply case. (Disconnect from AC power). Each pair of terminals is normally open. Operation of the channel switch closes the contacts and illuminates the switched LED indicator.

MIC ONE switch is also connected so that the channel is dead until the switch is operated, 'on air' indicator then illuminates.

The relay contacts are terminated on the barrier strip in the power supply unit. The contact rating is 240v 5 A max, and is suitable for control of external equipment by switching the A.C. power to the equipment, for instance "on air" indicators, gramophones and tape recorders not fitted with remote control circuitry. Equipment having a remote control output will only require connection of its terminals to the barrier strip terminals. Monitor loudspeaker muting can be achieved with an external 2 pole normally closed relay. The coil of this relay should be energised from a suitable external D.C. supply and switched by a normally open contact pair available as P.C.B. pins alongside the MIC 1 relay in the power pack. The external relay contacts should be wired to interrupt the control room monitor amplifier left and right output loudspeaker lines when MIC 1 remote switch on the mixer is pressed. The control room and studio 'ON AIR' lights can be wired across the MIC 1 barrier strip terminals.

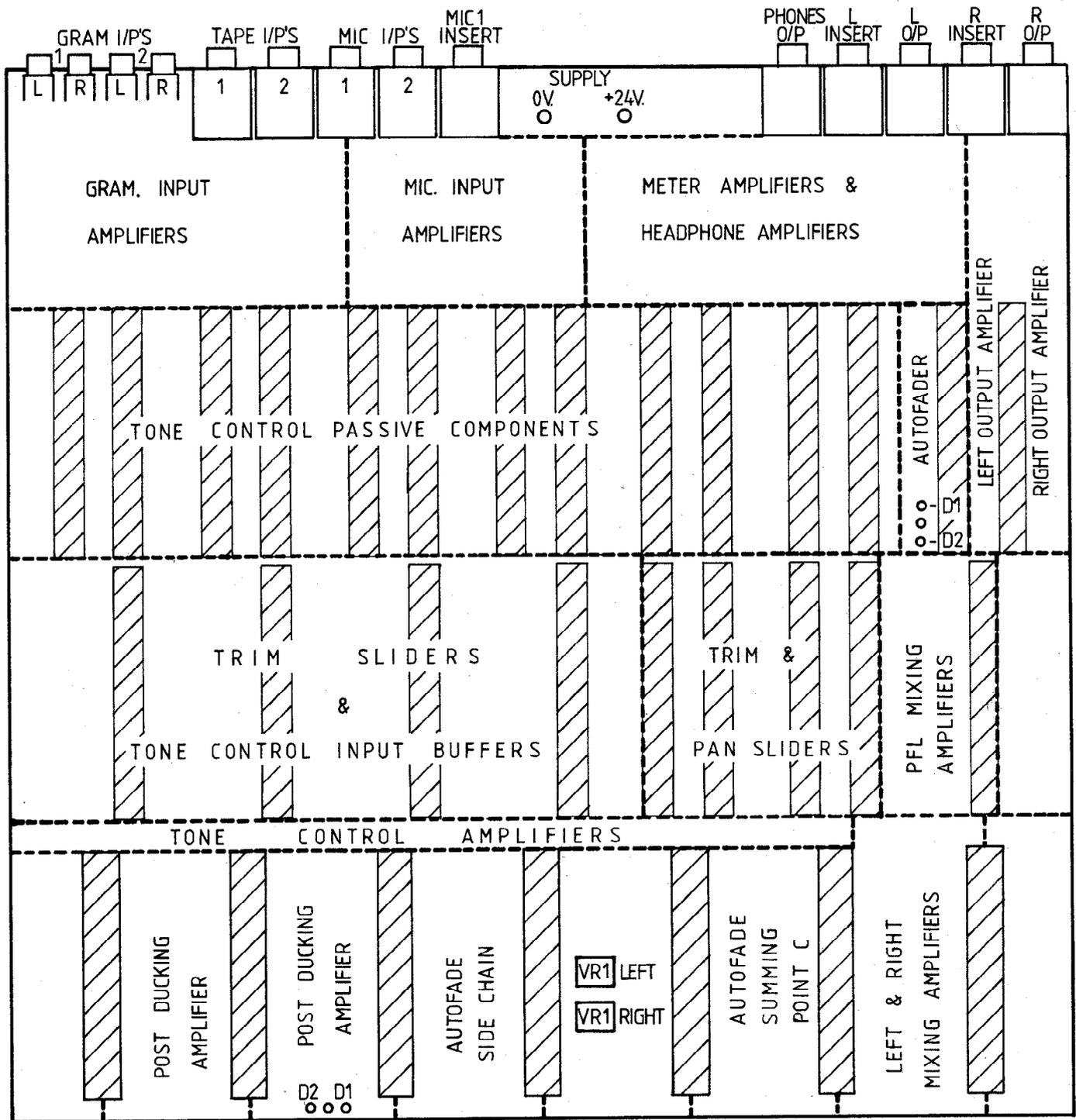


For further advice on remote control facilities contact Technical Advisory Department.

Hum and Click suppression and earthing

The gramophone input sockets on the console are highly sensitive and as with any high gain input the case circuit must not be used as earth for external equipment other than the screen to the pickup head. When connecting the gramophone lines check first on the turntable/arm unit that there is NO electrical continuity between pickup arm headshell and the turntable motor chassis. The chassis must be earthed via the A.C. power lead. The pickup arm headshell must be connected to the screen of the phono lines to the mixer, some manufacturers provide a fifth screen wire in addition to the four pickup head wires for this purpose. Check also that this arm screen has not been provided by the pickup cartridge manufacturer in the form of a grounding link between head output ground and head case.

This arrangement will provide a quiet low hum gram input circuit free from hum loops which would otherwise amplify interference from lighting and remote control circuits. If the low level interference from the remote relays which switch A.C. power is intrusive, a suppression device may be fitted across the relay contacts at the barrier strip in the power pack. A suitable suppressor comprises a 400 volt 0.05 to 0.2 microfarad capacitor in series with a 100 ohm $\frac{1}{4}$ W resistor. The precise value will depend on application, 0.1 microfarads is generally suitable.

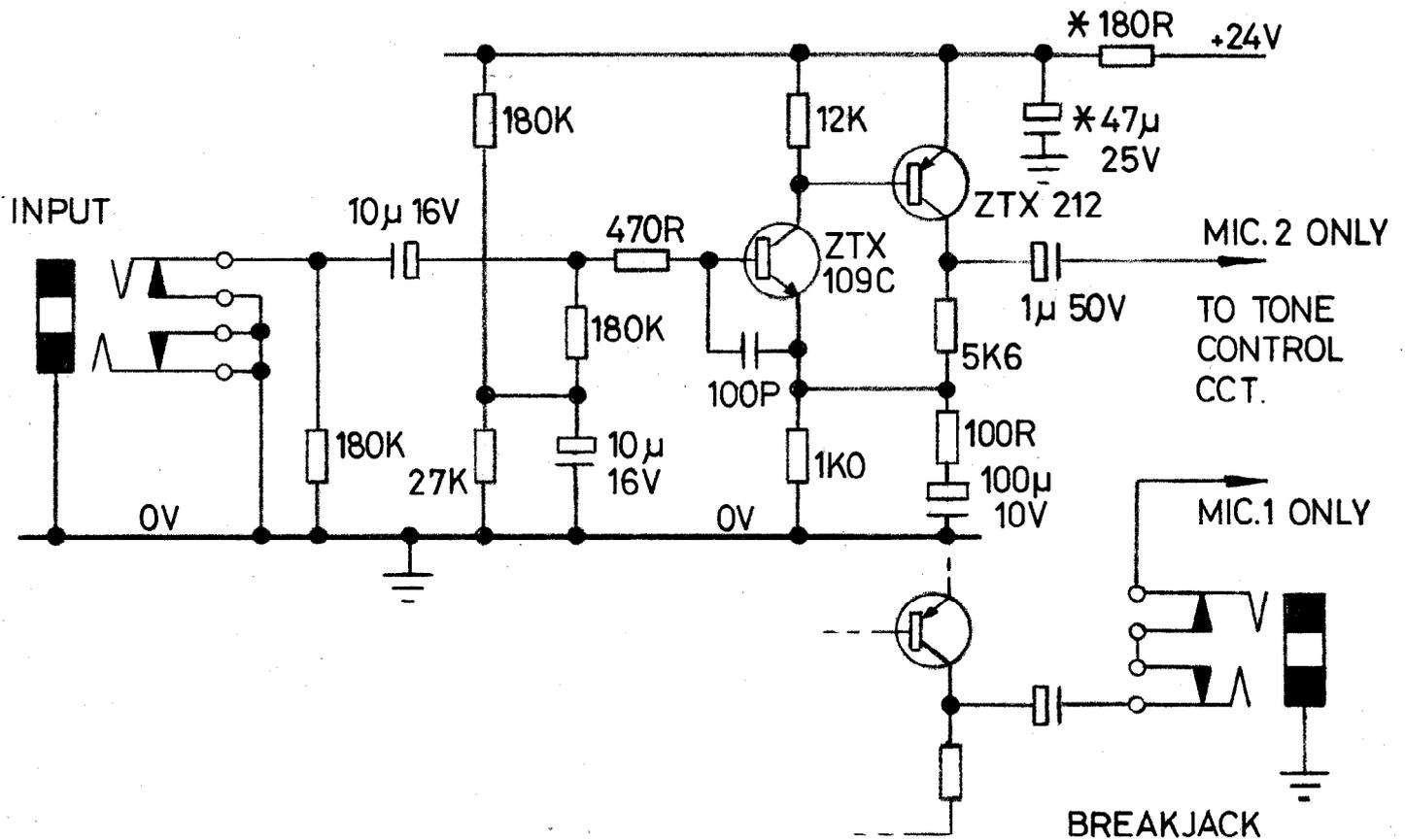


PRODUCTION MIXER S6-2
 GENERAL LAYOUT OF MAIN PCB, ISSUE 2

S·C·W — 17·4·79

MICROPHONE INPUT AMPLIFIER

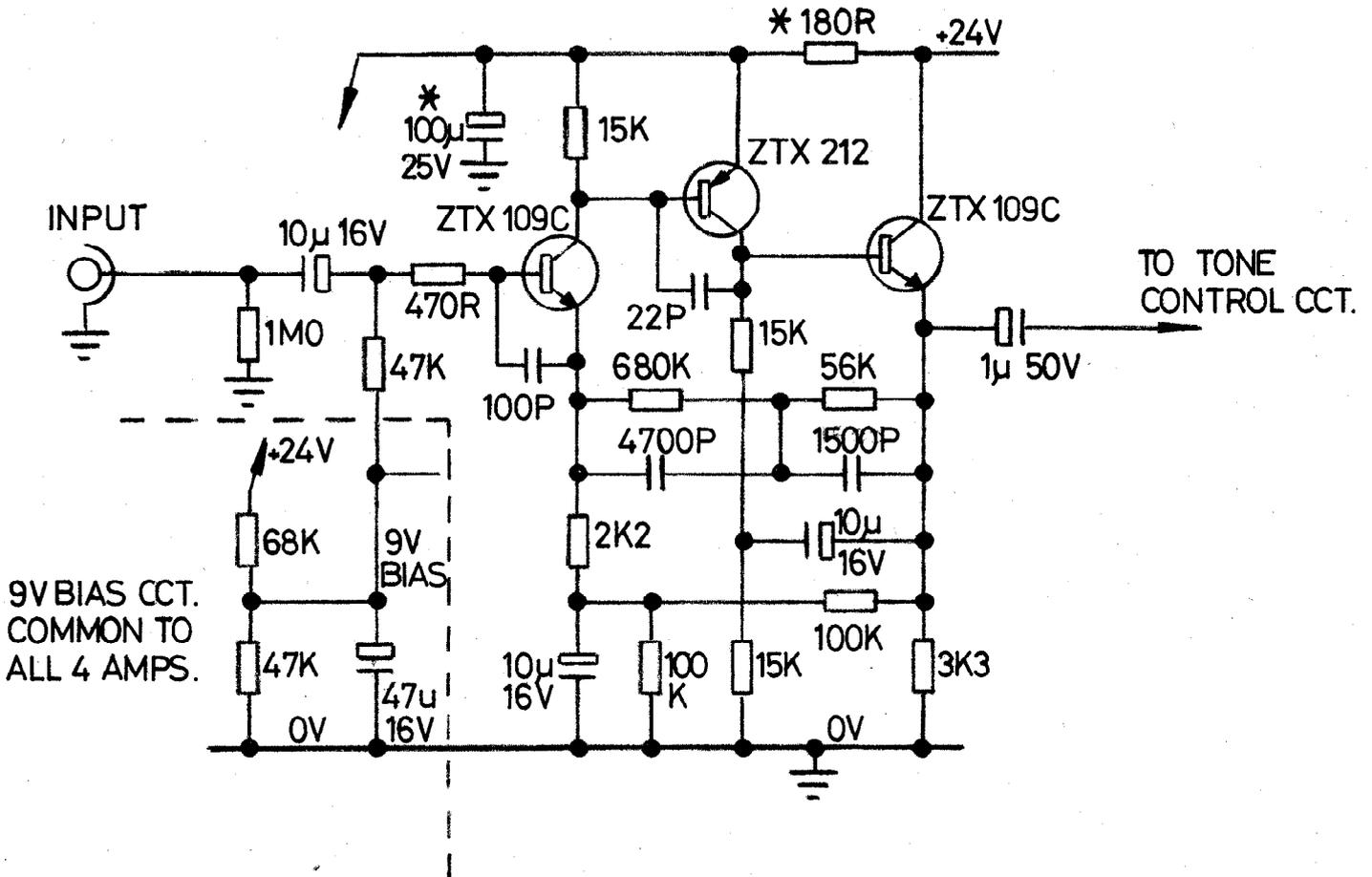
* COMPONENTS COMMON
TO BOTH AMPS.



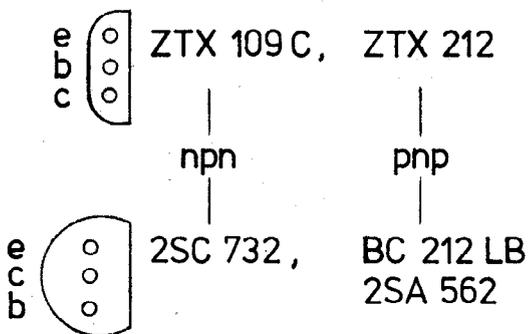
SEE DRG. OF RIAA INPUT AMP FOR TRANSISTOR EQUIVALENTS
& PIN CONFIGURATIONS

RIAA INPUT AMPLIFIER

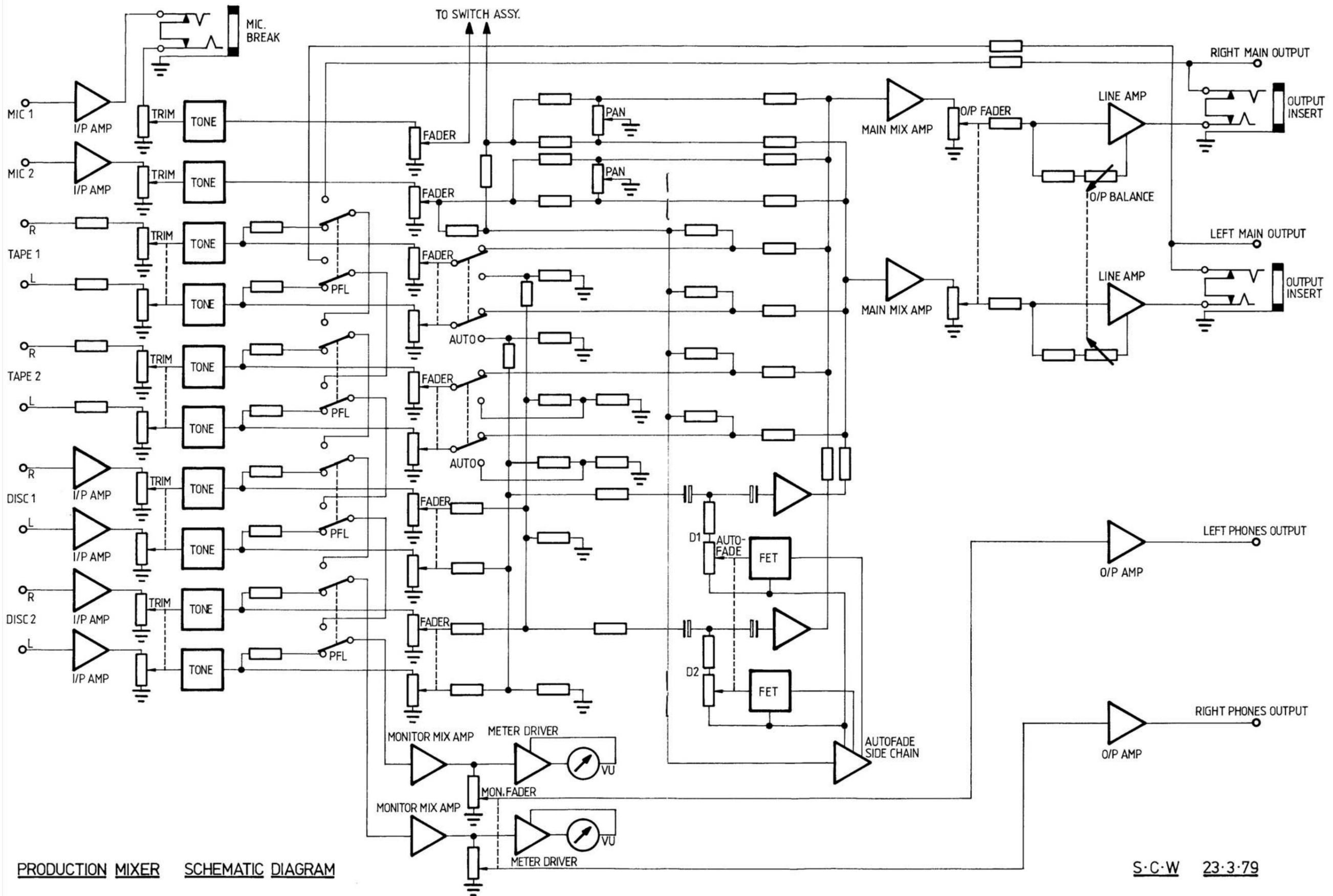
* COMPONENTS COMMON TO ALL 4 AMPS.



TRANSISTOR EQUIVALENTS & CONFIGURATIONS



VIEWED FROM PIN SIDE

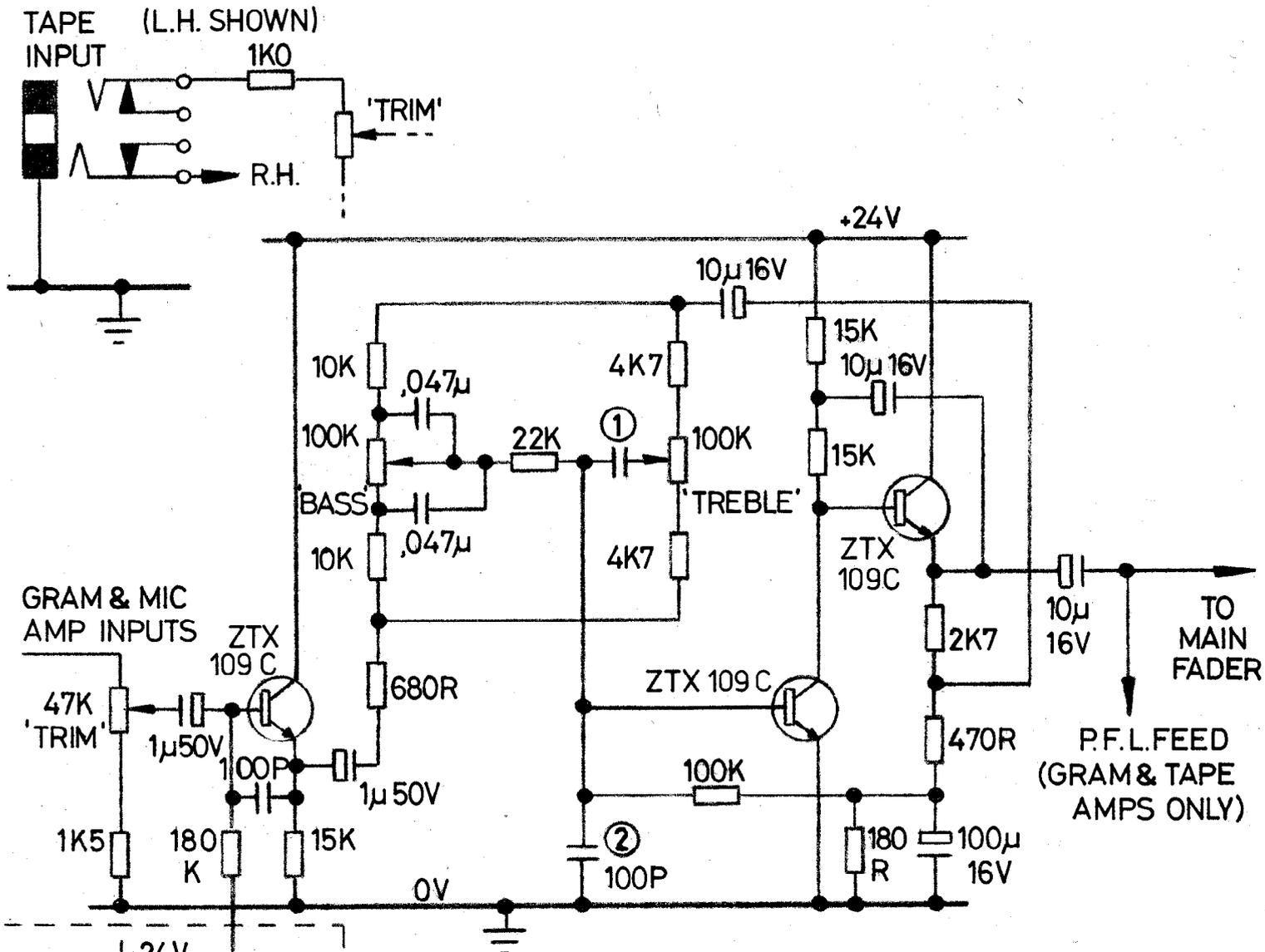


PRODUCTION MIXER SCHEMATIC DIAGRAM

S·C·W 23·3·79

ALLEN AND HEATH LTD

TONE CONTROL AMPLIFIER



GRAM & MIC AMP INPUTS

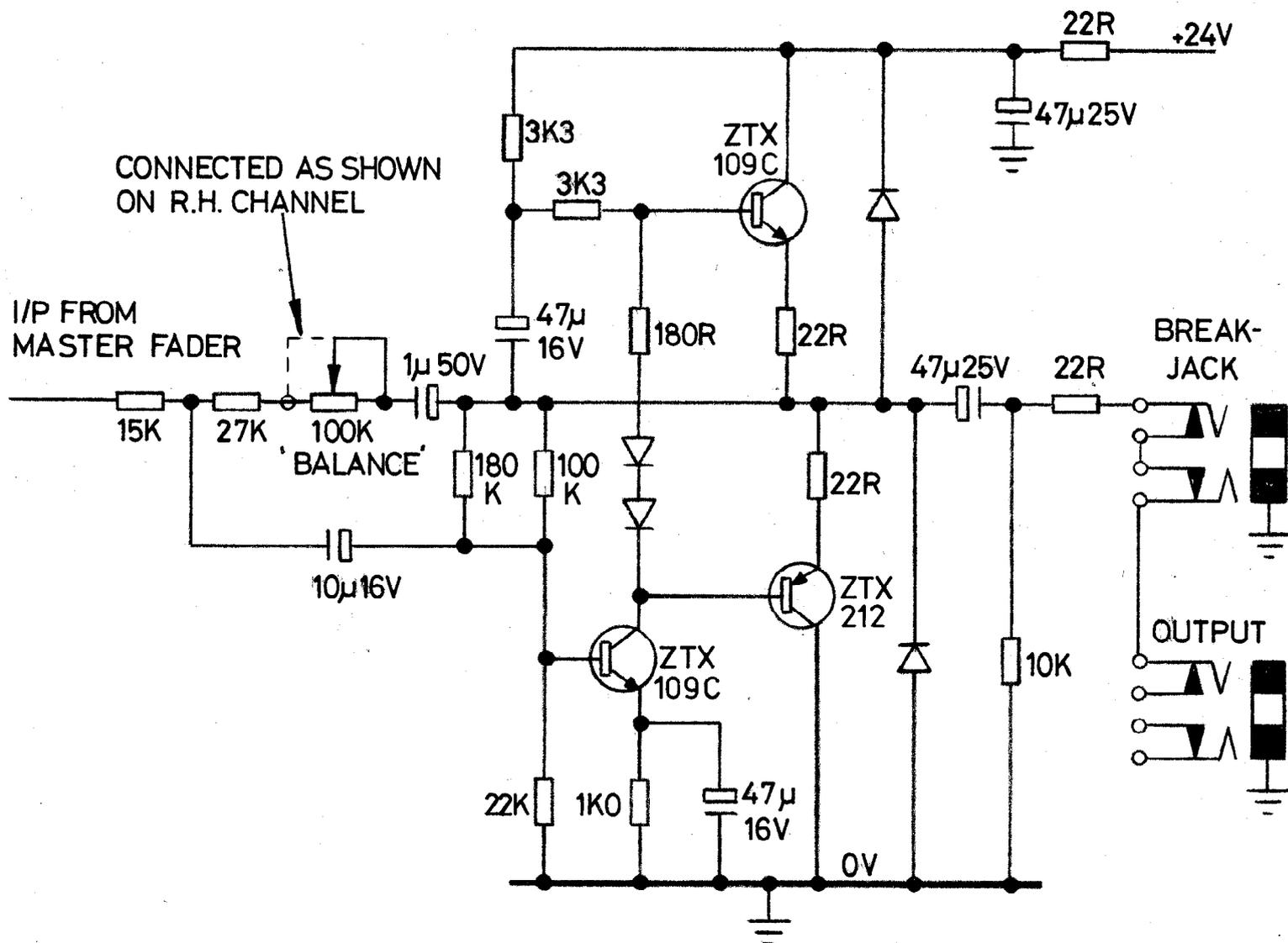
14V BIAS RAIL COMMON TO ALL 10 TONE CCTS.

- ① 2200P ON GRAM & TAPE CCTS. 4400P ON MIC CCTS.
- ② NOT FITTED ON GRAM CCTS.

SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS & PIN CONFIGURATIONS

OUTPUT AMPLIFIER

L.H. CHANNEL ONLY SHOWN

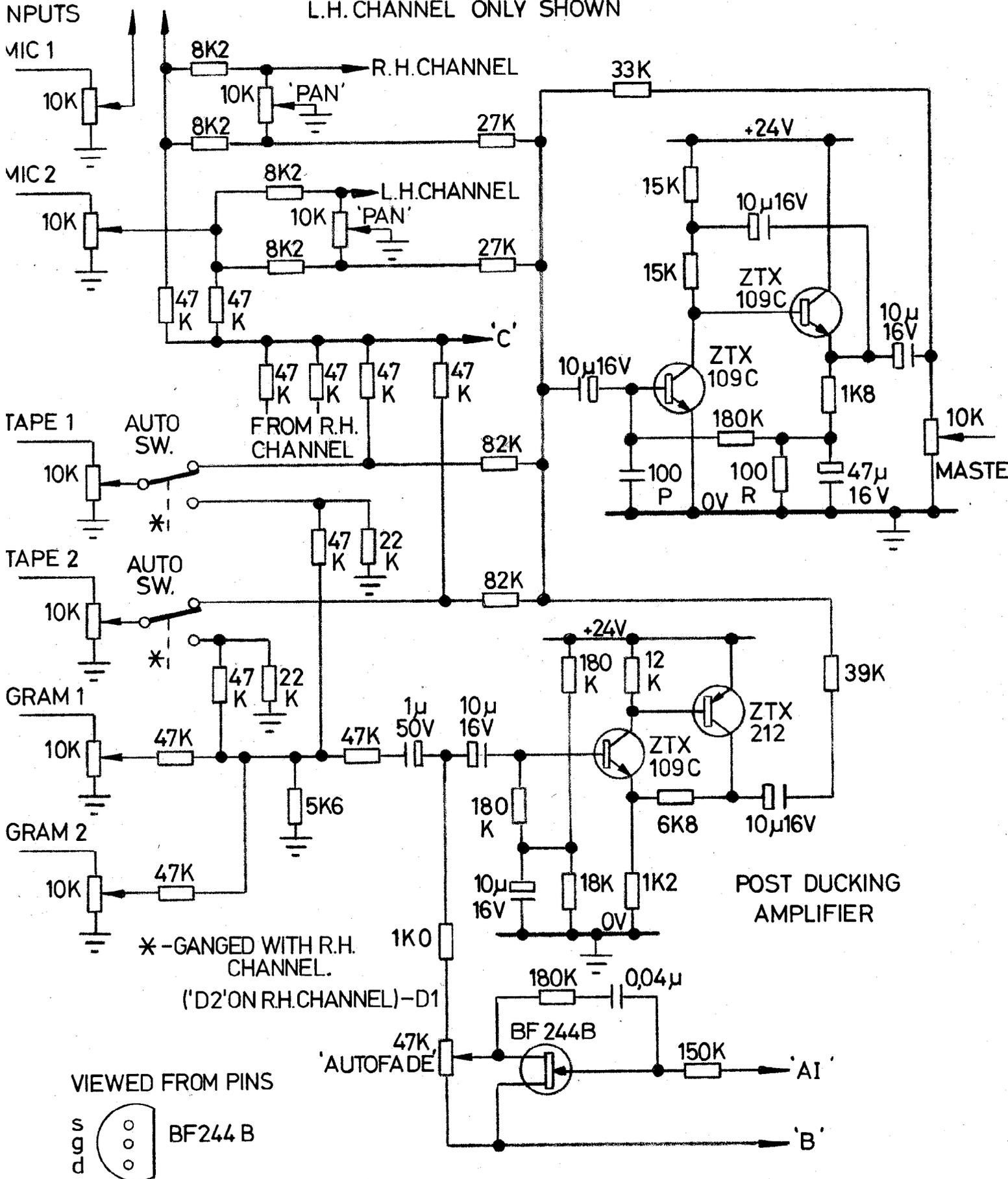


ALL DIODES TYPE 1N4148

SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS
& PIN CONFIGURATIONS

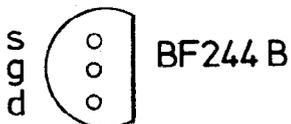
BALANCE AND DUCKING CIRCUITS

L.H. CHANNEL ONLY SHOWN



* - GANGED WITH R.H. CHANNEL.
 ('D2' ON R.H. CHANNEL) - D1

VIEWED FROM PINS

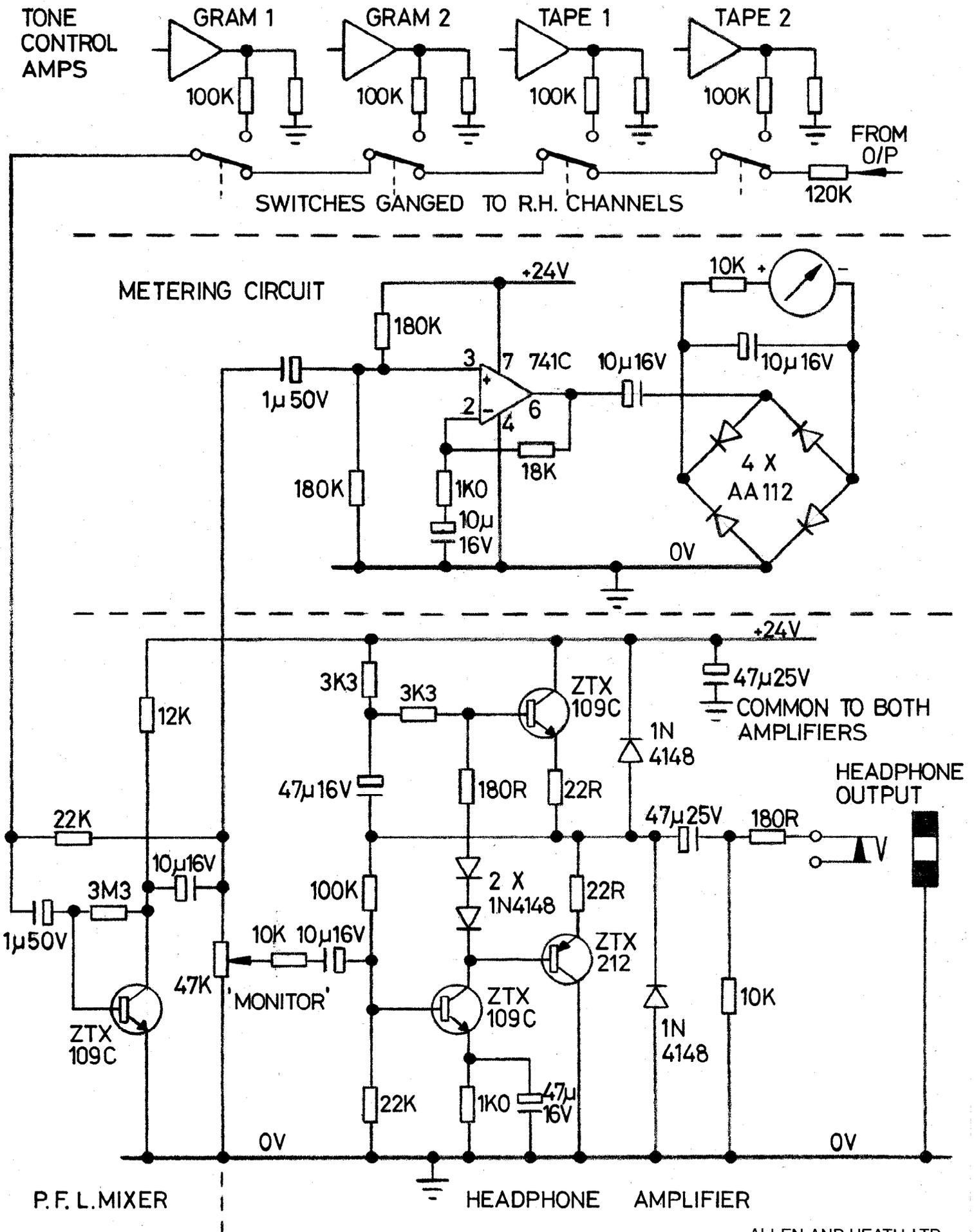


SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS AND PIN CONFIGURATIONS NOT SHOWN

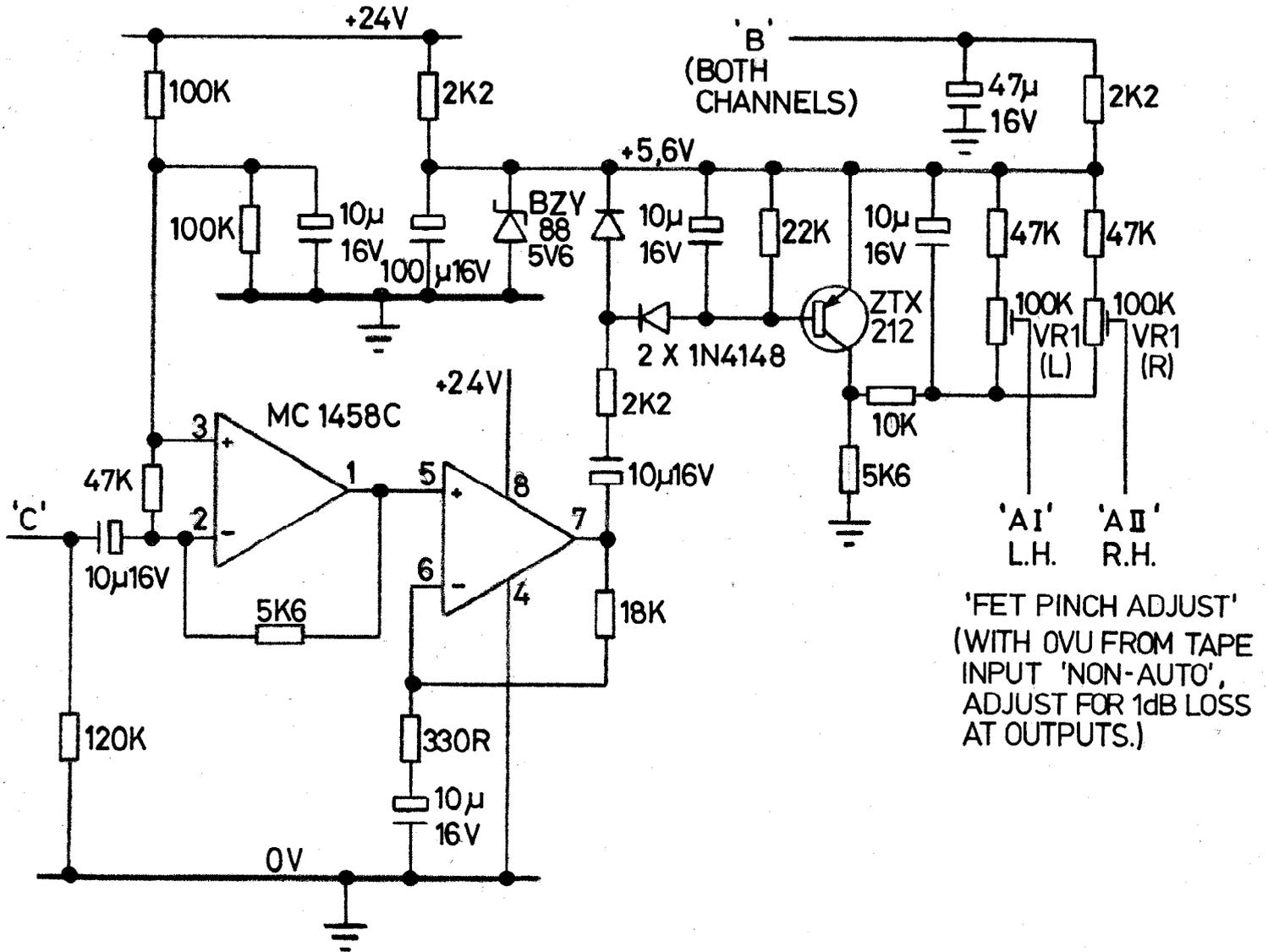
PRE-FADE LISTEN SYSTEM, HEADPHONE AMPLIFIER & METERING CIRCUITS

L.H.CHANNEL ONLY SHOWN

SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS & PIN CONFIGURATIONS



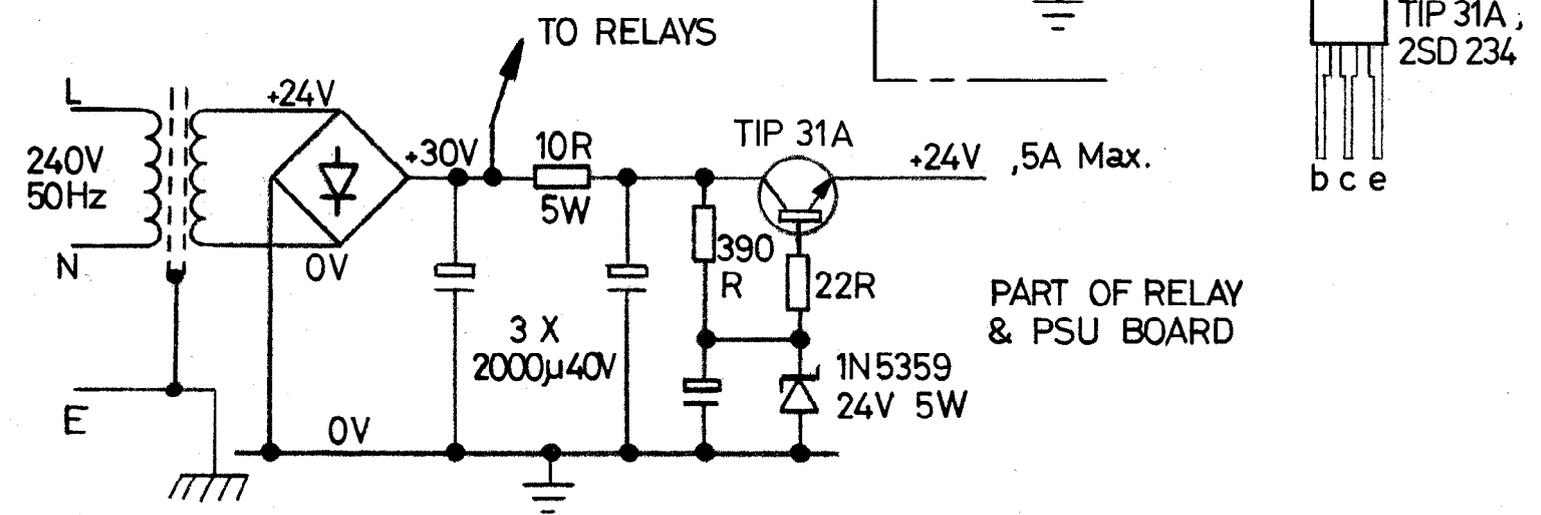
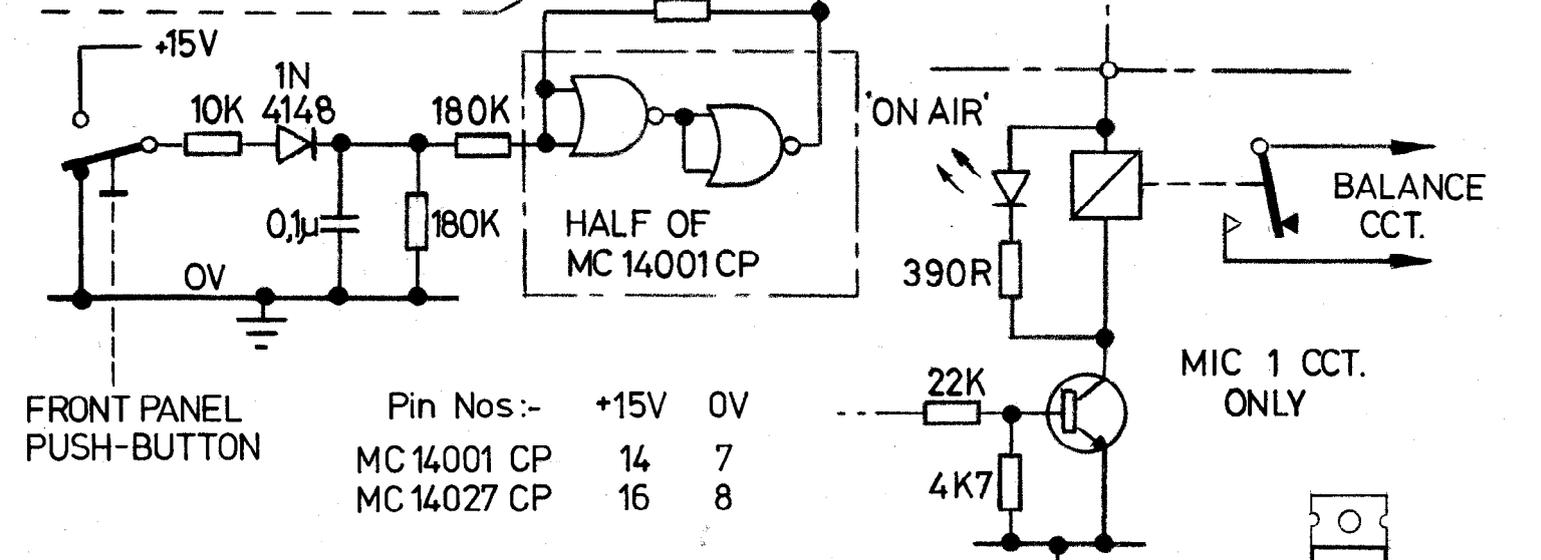
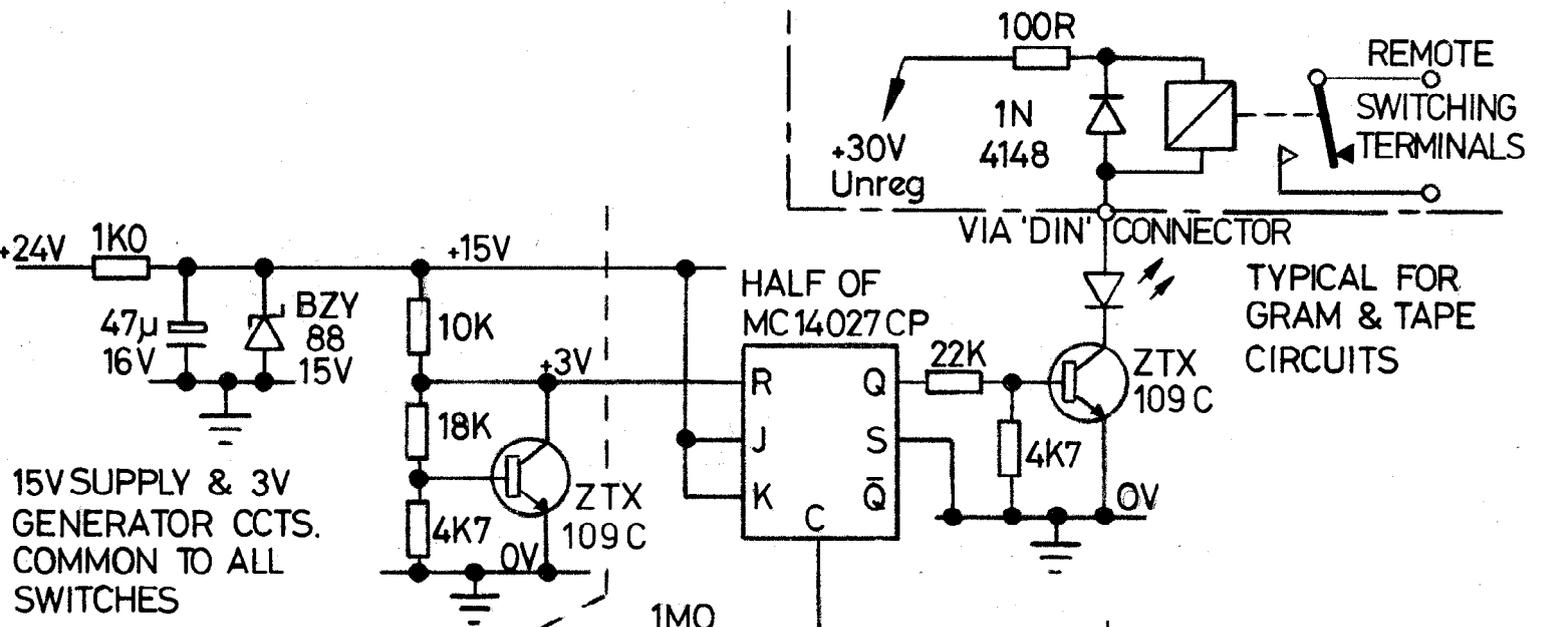
AUTOFADE SIDECHAIN AMPLIFIER



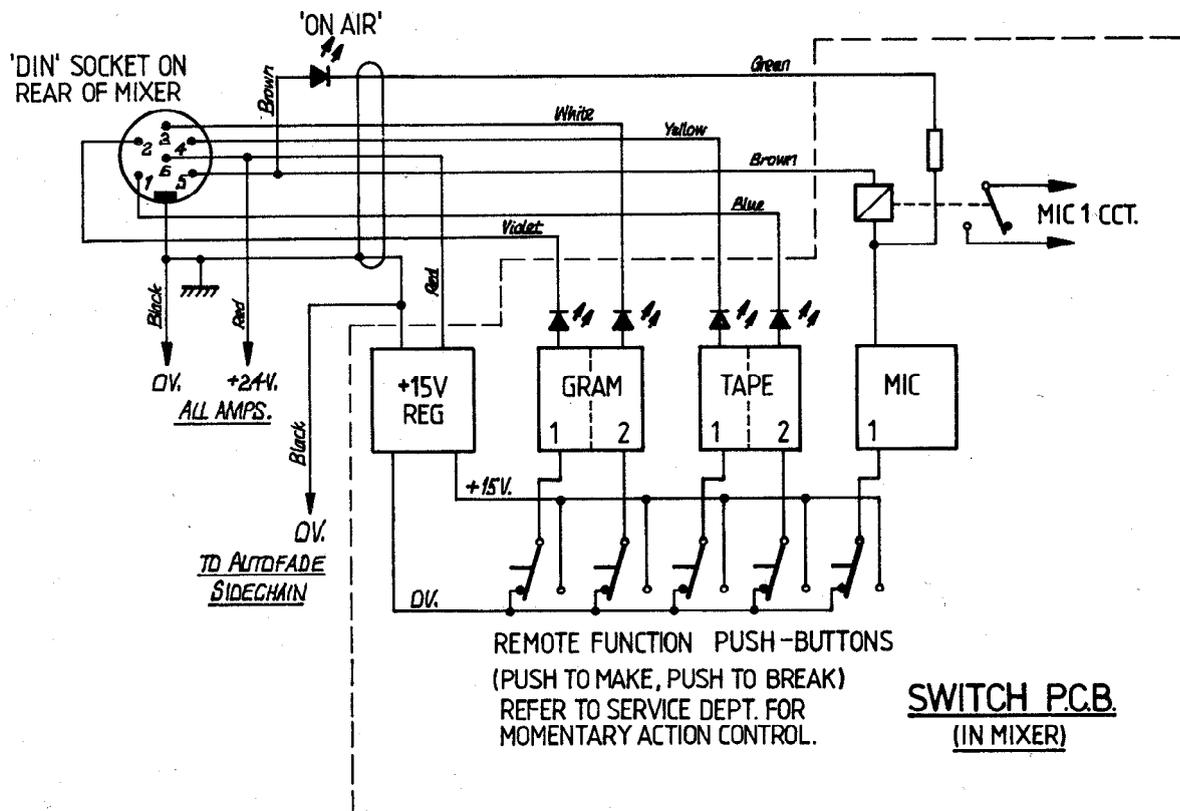
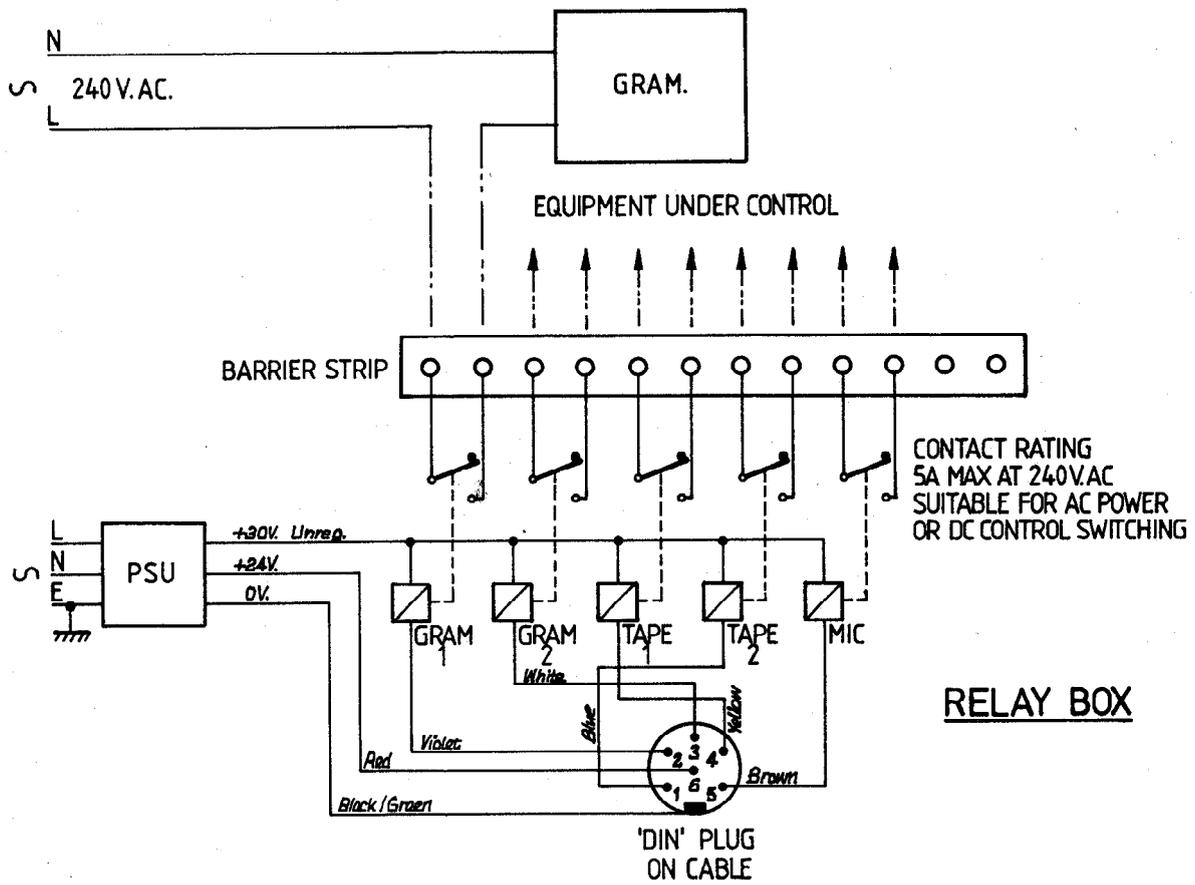
SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS AND PIN CONFIGURATIONS

LATCHING SWITCH AND RELAY CIRCUITS

PART OF RELAY & PSU BOARD



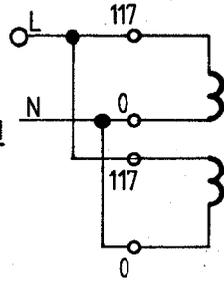
SEE DRG. OF RIAA INPUT AMP. FOR TRANSISTOR EQUIVALENTS & PIN CONFIGURATIONS NOT SHOWN



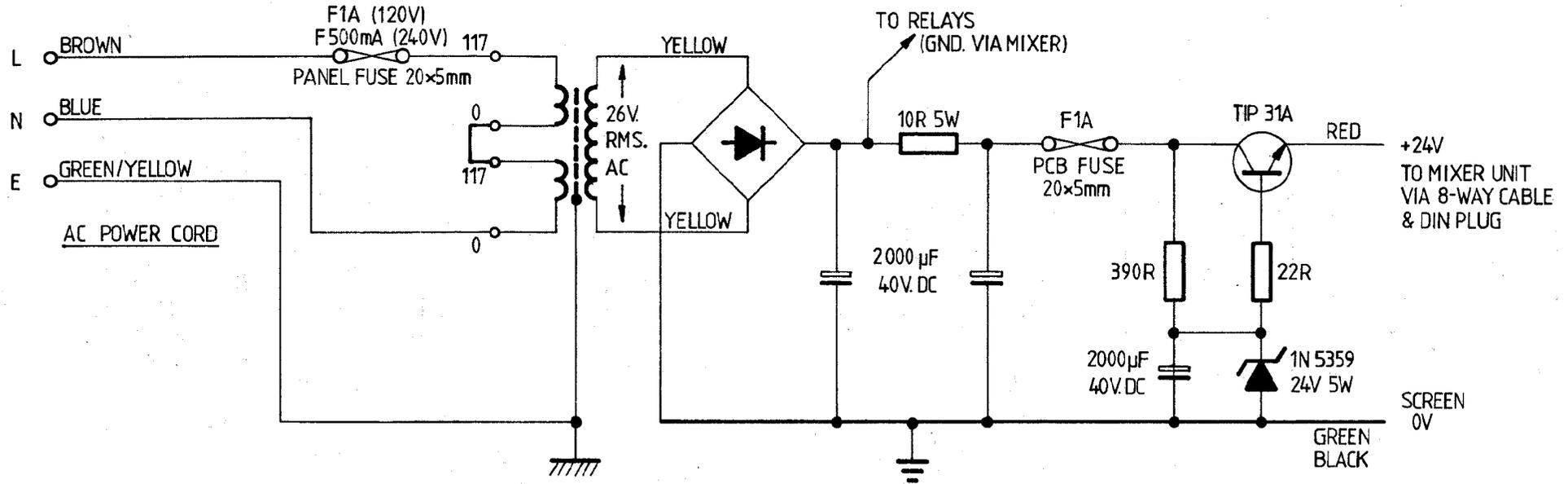
PRODUCTION MIXER S 6-2
LATCHING SWITCH & RELAY SCHEMATIC DIAGRAMS

S.C.W — 30-3-79

WIRING FOR
120V. VERSION



TIP 31A
OR
2SD 234



POWER SUPPLY UNIT DETAIL

PRODUCTION MIXER S6-2

S.C.W 11.5.79

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ALLEN AND HEATH BRENELL LTD.

Pembroke House
Campsbourne Road, Hornsey
London N8
Tel: 01-340 3291
Telex: BATGRP G 267727