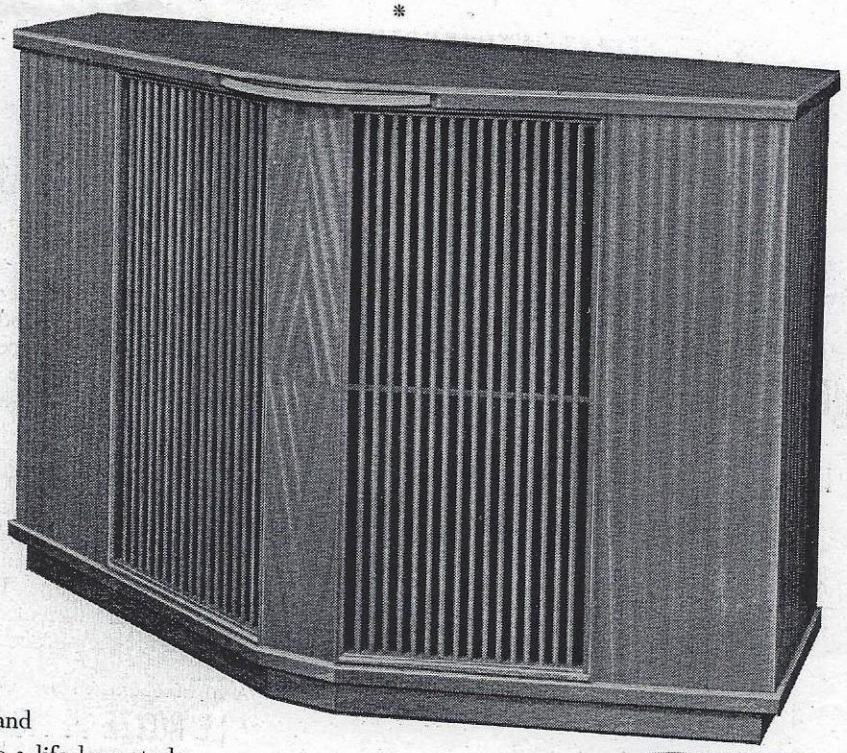

FOR REFERENCE ALWAYS QUOTE
MODEL Nº 3051
& SERIAL Nº 14935

The technically initiated and the great widening circle of music lovers for ever striving for higher standards of reproduction, will recognise that here indeed the claim of "Higher Fidelity" is justly made.

The frequency response of this equipment is flat within ±1dB from 20-20,000 c.p.s. Used with appropriate complementary equipment it provides the nearest approach to realism yet achieved on recordings either tape or disc, or from high quality radio transmissions.

THE PURSUIT OF HIGHER FIDELITY



GENERAL DESCRIPTION

This unique and exclusive loudspeaker combination designed—and adjudged—by people who have made a life-long study of the techniques of recording and reproduction, will rank in the opinion of connoisseurs as the most perfect example of artistic and technical achievement yet devised for the re-creation of sound.

Incorporating a power amplifier of the same technical specification as Model 3051, it lacks nothing that the engineer will consider desirable in an instrument of the greatest fidelity; the craftsman will see in it a creation of grace and dignity, commanding pride of place amidst the most elegant of home decor.

Pre-amplifier and control unit Model 3050 is suitable for use with this combination.

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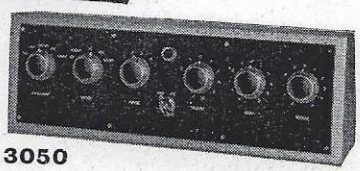
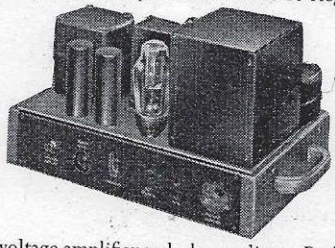


PRE-AMPLIFIER AND CONTROL UNIT MODEL 3050

A four stage amplifier designed to control Power Amplifier Model 3051, or Loudspeaker Combination Model 3052. This amplifier has tone control circuits using special low noise pentodes throughout. Tone controls are designed to provide Frequency range control consisting of paralleled "T" filters giving attenuation of greater than 20dB per octave above 5 Kc/s, 9 Kc/s and 13 Kc/s, and 6dB per octave above 20 Kc/s.



POWER AMPLIFIER MODEL 3051

Twin-triode voltage amplifier and phase splitter. Push-pull output stage incorporating triode-connected Emitron KT66's. Every precaution has been taken to secure distortion-less amplification and to reduce hum and noise level to a minimum. The output transformer is specially designed to reduce leakage and has fully sectionalised primary and secondary windings.

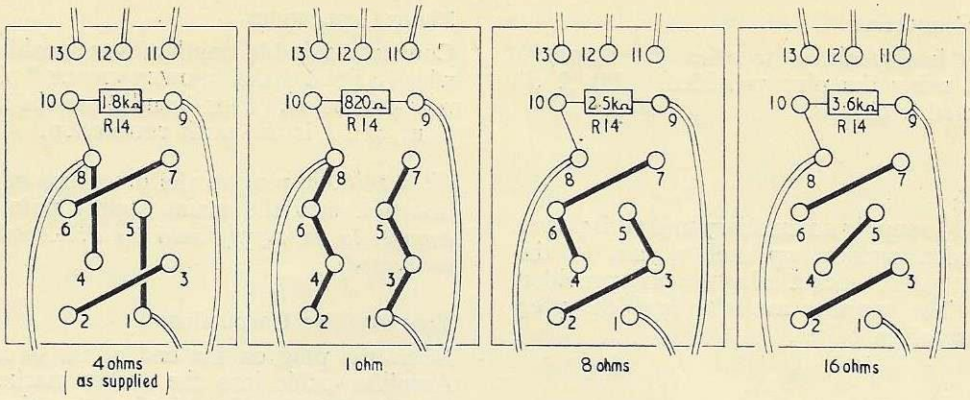


Fig. 2. Output Transformer Connections

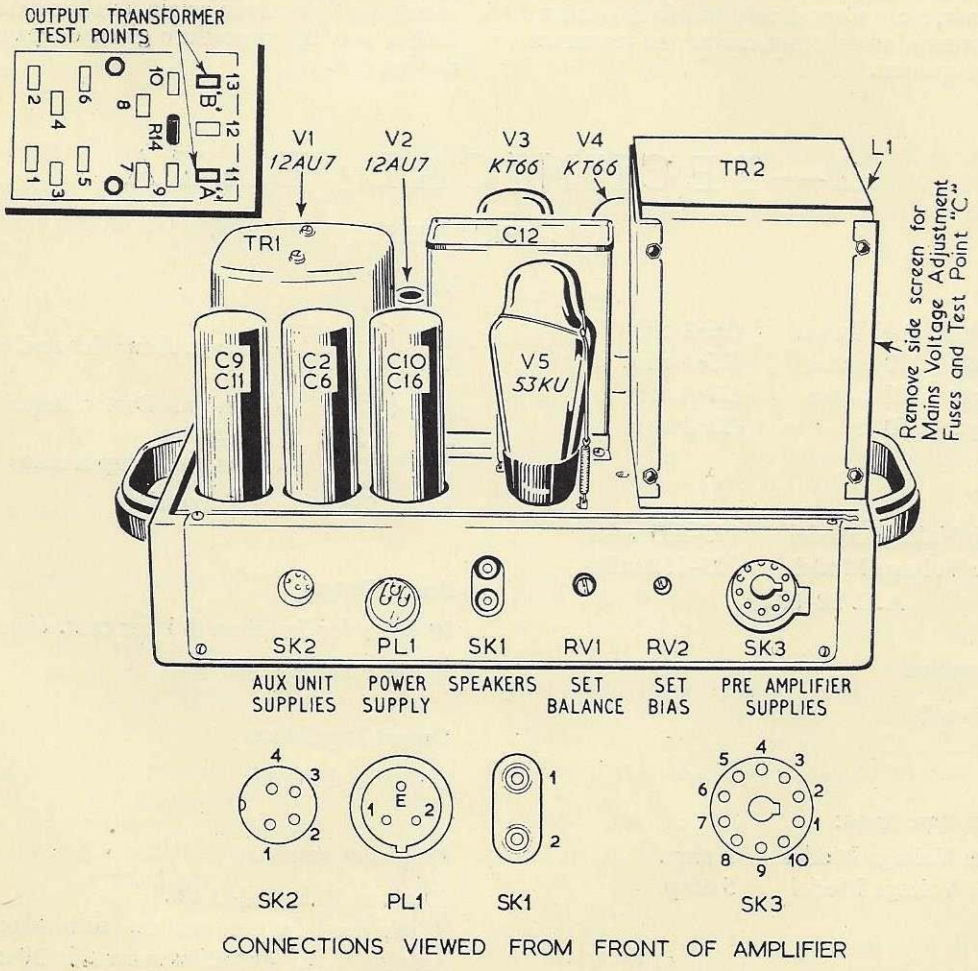


Fig. 3. General View of Amplifier

Loudspeaker Connections

Connect the loudspeakers to the "SPEAKERS" socket (SK1), using the plug provided. Pin 2 of SK1 is connected to chassis.

Auxiliary Unit

If it is intended to supply an auxiliary unit with power from this model, connect up such a unit to the "AUX. UNIT SUPPLIES" socket using the plug provided (see Fig. 3). The supplies available and the plug connections are given below.

PIN	
1	H.T. (+) 250V 20 mA maximum
2	H.T. (—)
3 } 4	L.T. 6.3V a.c. 2A maximum (not earthed)

These supplies are adequate for operating a 3 or 4 valve radio tuner, etc. Care should be taken to ensure that the load connected does not exceed the maximum current ratings quoted.

Mains Connections

Connect a suitable length of 3-core cable to the socket which is fitted to the "POWER SUPPLY" plug (PL1) and refit the socket. Pins 1 and 2 are the mains connections, pin 3 is the earth connection.

Fit a suitable plug to the other end of the cable for insertion into the mains supply point, but *do not connect to the supply until the Pre-Amplifier has been connected.*

Pre-Amplifier Connections

Insert the plug on the end of the Model 3050 Pre-Amplifier cable into the socket marked "PRE-AMP. SUPPLIES" having first checked that the mains switch on the Pre-Amplifier is set to "OFF."

Pre-set Controls—Important Note

The two preset controls on the panel of the Power Amplifier "SET BALANCE" and "SET BIAS" have been correctly adjusted at the factory and should not be re-adjusted unless the original valves are replaced. In such a case the procedure given on page 11 must be carried out.

2—TECHNICAL DATA

SPECIFICATION

Physical

Length	14½ inches	(36·8 cm)
Depth	10 inches	(25·4 cm)
Height	11 inches	(27·9 cm)
Weight	50 lb	(22·8 kg)

Mains Supply

High Voltage Model	195–255 volts
Low Voltage Model	103–132 volts
A.C. 50–60 c/s	

Mains Consumption

170 watts

Mains Fuses

Two cartridge type fuses:

High Voltage Model	3 amp.
Low Voltage Model	5 amp.

H.T. Fuse

Cartridge type, 350 mA.

Valves

V1a, V1b	12AU7 (B329)	Voltage Amplifier and Phase-splitter
V2a, V2b	12AU7 (B329)	Push-pull Driver stage
V3	KT66	Push-pull Output stage
V4	KT66	Push-pull Output stage
V5	53KU	H.T. rectifier

Rated Output

10 watts for less than 0·1 per cent. distortion.
18 watts maximum

Output Impedance

1, 4, 8 or 16 ohms

Frequency response

20 c/s to 20 kc/s + 1 db.
When used in conjunction with Model 3050 Pre-Amplifier, the overall response is 30 c/s to 20 kc/s ± 1 db.

Input

High impedance, 1 M ohms.

Sensitivity

2 volt r.m.s. for 10 watts output

Hum and Noise Level

Greater than 75 db below 10 watts output

Intermodulation Distortion

Less than 0·5 per cent. at 10 watts output

Harmonic Distortion

Less than 0·1 per cent. total for 10 watts output, measured at 1 kc/s

Phase Shift

Does not exceed 15 degrees over frequency range 20 c/s to 20 kc/s

Additional Power Supplies Provided

(*a*) For Pre-Amplifier (via 10-pin socket)

H.T.	355V	10 mA
L.T.	6·3V	1·5 A

(*b*) For auxiliary unit, i.e., radio tuner (via 4-pin plug)

H.T.	250V	20 mA
L.T.	6·3V	2 A

External Connections

" AUX. UNIT SUPPLIES "	4-pin socket (SK2)
" POWER SUPPLY " (Mains)	3-pin plug (PL2)
" SPEAKERS "	2-pin socket (SK1)
" PRE-AMP. SUPPLIES "	10-pin socket (SK3)

Preset Controls

" SET BALANCE "	(RV1)
" SET BIAS "	(RV2)

CIRCUIT DESCRIPTION

Voltage Amplifier and Phase-splitter Stage (V1a and V1b)

The input signal is fed from socket SK3 (pin 9) to the grid of the first triode V1a (12AU7), the anode is d.c. coupled to the grid of the second triode V1b which is the phase-splitter. The anode is coupled via C4 to the grid of V2a and the cathode is coupled via C5 to the grid of V2b.

Push-pull Driver Stage (V2a and V2b)

The two triodes of this valve (12AU7) have a common cathode resistor R11, and each is resistance-capacity coupled to one of the output valves via R12, C7, and R13, C8 respectively.

Push-pull Output Stage (V3 and V4)

The two KT66 output valves are operated as triodes. A variable resistor RV2 is incorporated in the common cathode circuit in series with R21, and provides means for adjusting the bias on both valves to ensure optimum working conditions.

The grid resistors have a common earthing point via the slider of RV1, and adjustment of this control enables a d.c. balance to be established between anodes thus removing d.c. polarisation from the output transformer TR1. This component has multi-sectionalised windings to reduce capacitative and inductive losses and the secondary windings can be connected up to match 1, 4, 8 or 16 ohm loudspeakers. A negative feedback path is provided from TR1 secondary to the cathode of V1a via R14, the value of this resistor varying according to the output impedance selected. (See TR1 connection details on the circuit diagram.)

H.T. and L.T. Supplies

All supplies are derived from the mains transformer TR2. A fuse is fitted in the centre tap of the h.t. winding; h.t. rectification is by V5 (53KU), the output being smoothed by the reservoir capacitor C12 followed by a two-section filter, L3, C10, L1 and C6 before being applied to the first four stages of the amplifier. The output stage is supplied after the first section of this filter.

Additional smoothing by R24, C9, L2 and C11 is provided in the h.t. line which supplies the Pre-Amplifier via SK3 (pin 8). Another h.t. line taken from the junction of R24 and L2 is connected to socket SK2 (pin 7) for feeding to an auxiliary unit.

Three separate 6·3 volt l.t. windings are incorporated in the mains transformer. One supplies the heaters of valves V1 to V4, another supplies the Pre-Amplifier valves and indicator lamp, and the third winding is connected to SK2 for feeding to an auxiliary unit.

Mains Input

The mains supply is fed in at PL1, thence connected direct to SK3 (pins 3 and 4) and so fed to the ON/OFF switch on the Pre-Amplifier. Then it is brought back to the Power Amplifier (via pins 5 and 6) and applied to the primary of the mains transformer. A mains fuse is fitted in each primary lead.

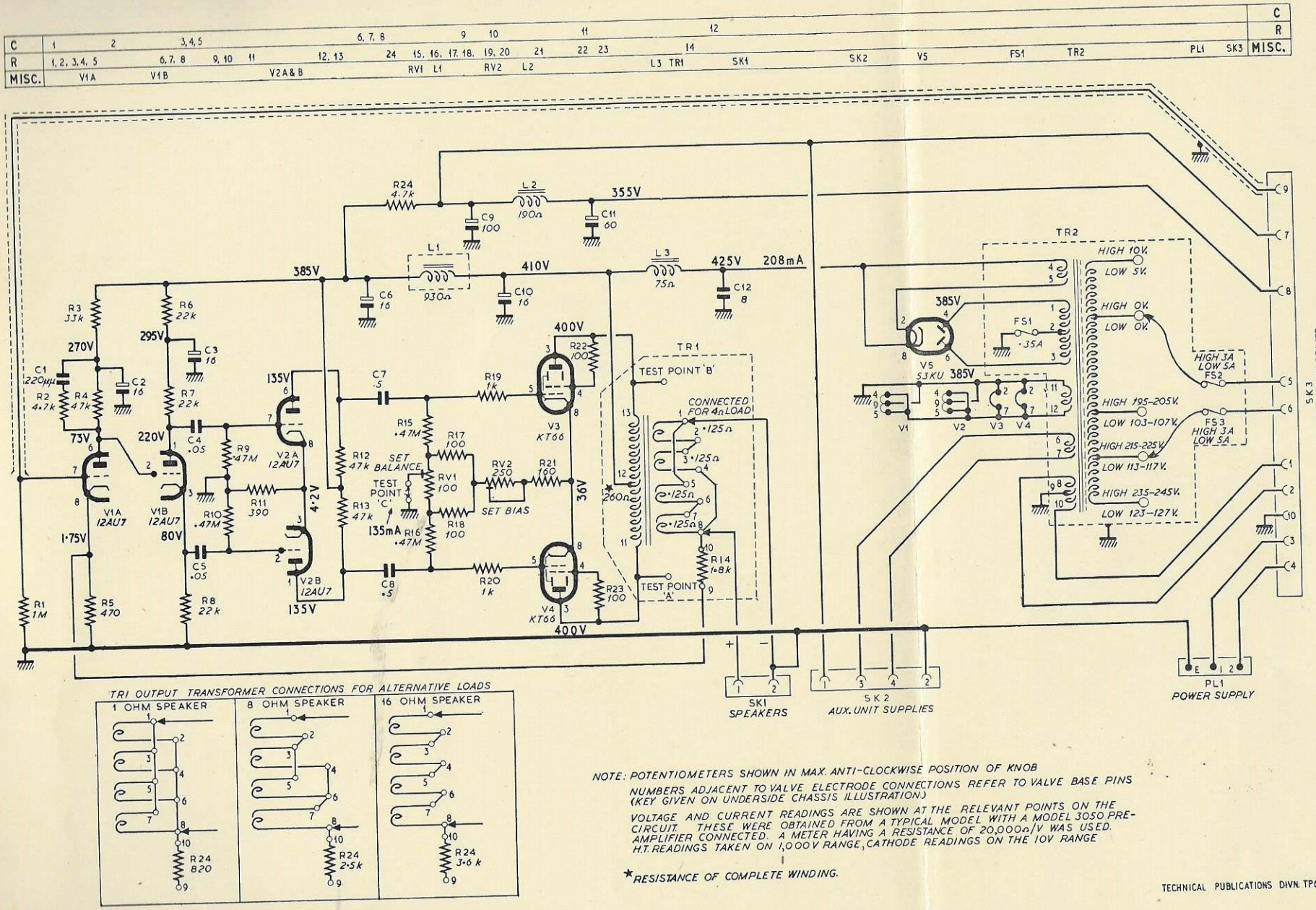


Fig. 5. Model 3051 Power Amplifier: Circuit Diagram