SERVICE MANUAL

PORTABLE MAINS-OPERATED
RECORD
PLAYER **C8-8M**

"HIS MASTER'S VOICE"

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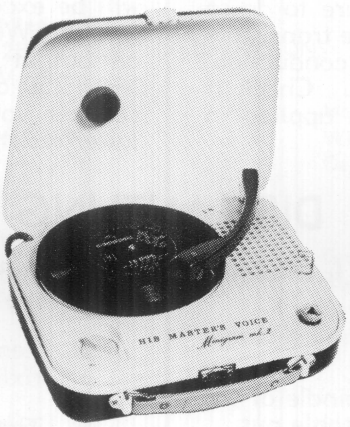
MANUFACTURED & DISTRIBUTED BY
E.M.I. (AUSTRALIA) LIMITED
(INCORPORATED IN N.S.W.)

6 PARRAMATTA ROAD
HOMEBUSH, N.S.W.



SPECIFICATION

POWER SUPPLY:
240-250 volts, 50 Hz.

CONSUMPTION:
Amplifier: 8 mA (no signal)
Motor: 8 watts

SEMI-CONDUCTORS:
BC108—Pre-Amplifier
BC186—Driver
AC187, AC188 —Push-Pull (complementary pair)
OA605—Rectifier Diode

OUTPUT LOAD IMPEDANCE:
15 ohms at 400 Hz.

POWER OUTPUT:
1 watt r.m.s.

May, 1968

Part No. 683-8081

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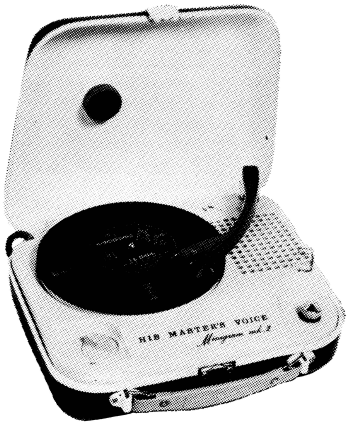

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SERVICE NOTES

Transistors can be permanently damaged by excessive external heat, or by heat generated within the circuit by means of the excessive current flow. When servicing this equipment, the following precautions should be observed.

Supply polarity should never be reversed. Never remove or replace a transistor or circuit component without first switching the unit off.

When soldering transistor leads, use a small iron. Solder as rapidly as possible, keeping the iron well clear of the transistor body.

The use of a 240-volt soldering iron should be avoided, as leakage and capacitance effects can destroy a transistor. To avoid this problem, a low-voltage iron with a step-down transformer should be used.

Disconnect transistors before making circuit checks with an ohm-meter. Failure to do so will give misleading results, and the transistors may be damaged by excessive conduction, caused by the ohm-meter battery. Check if the ohm-meter battery voltage is applied in reverse polarity.

When taking voltage measurements, avoid accidental short-circuits by the voltmeter probes.

The output transistors are operated in a complementary symmetry configuration. Care must be taken not to connect the emitters of these transistors to earth.

Fault finding can be carried out in the usual manner, keeping in mind that a transistor failure is unlikely.

When using a signal generator, a DC blocking capacitor should be used in the live lead to prevent disturbance of the transistor DC circuits.

The output must be correctly loaded in each case during these tests. If the output load is reduced below the correct value, the maximum dissipation of the output transistors will be exceeded at medium and high output levels. When taking output measurements, an output meter having a resistance of at least 250 ohms may be connected across the speaker voice coil. Do not use a meter of lower resistance.

DISMANTLING

1. Disconnect the power plug from mains supply.
2. Check that the pickup arm is securely fastened to its rest.
3. Remove circlip from the spindle of the turntable and lift the turntable out.
4. Remove the centre screw in the turntable recess.
5. Remove the screw from the centre of the mains plug storage socket.
6. Remove inner screws from handle-fixing clamps.
7. The whole assembly can now be lifted clear of the cabinet for access to all parts.

AMPLIFIER POWER SUPPLY

A special secondary winding on the gramophone motor supplies 13.5 volts, A.C., which is rectified and filtered at the chassis. To avoid possible damage to the motor when the player is inverted, the rotor may be "locked" by inserting a suitable folded paper wedge between the rotor face and bearing.

The unit may then be switched on in the normal manner. All D.C. voltages will be 3% lower than those indicated on the circuit diagram, and the amplifier may be operated in this manner for up to 20 minutes.

IMPORTANT

It is desirable that when any repairs are done to the audio amplifier, the supply rail be reduced to half the nominal voltage to enable a quick check on the performance to be made without the possibility of damage occurring due to faulty components, etc.

This is best done by inserting a series resistor of 500 ohms between rectifier diode and motor secondary winding. The approximate supply rail voltage under no signal conditions being 9 volts, and the centre voltage (junction R31, R32) will be 3.8V.

Under no signal conditions, all other voltages will be roughly halved. The amplifier will continue to operate with considerably reduced power and non-symmetrical clipping due to the shift in centre voltage. If the amplifier does not operate, do not restore full supply rail until the fault has been corrected.

PARTS LIST — MODEL C8-8M

REF.	PART NO.	DESCRIPTION
		RESISTORS
R20	740-0132	82K ± 10% ½W
R21	740-0142	100K ± 10% ½W
R22	740-1642	300K ± 5% ½W
R23	740-1632	110K ± 5% ½ W
R24	740-1652	510K ± 5% ½W
R25	740-0142	100K ± 10% ½W
R26	740-0862	18K ± 10% ½W
R27	740-1281	3.3K ± 5% ½W
R28	740-0791	8.2K ± 10% ½W
R29	740-0642	1.5K ± 5% ½W
R30		Not used
R31	746-0372	2.2 ohms ± 10% WW
R32	746-0372	2.2 ohms ± 10% WW
R33	740-1092	82 ohms ± 5% ½W
		CAPACITORS
C18	271-1201	.01uF +100% —0% 50V Ceramic
C19	271-1561	.1uF ± 20% 25V Redcap
C20	271-1391	.022uF ± 20% 25V Redcap
C21	280-5201	.5uF ± 20% 50V Metallised Film
C22	271-1281	.0015uF ± 20% Ceramic type BY
C23, C24		Not used
C25	269-1241	500uF 25V Electro
C26	269-0871	125uF 16V Electro
		SEMI-CONDUCTORS
TR4	932-3021	BC108—Pre-Amplifier
TR5	932-3031	BC186—Driver
TR6, TR7	932-2901	AC187, AC188—Matched pair with cooling fins
MR7	932-3041	OA605—Rectifier Diode

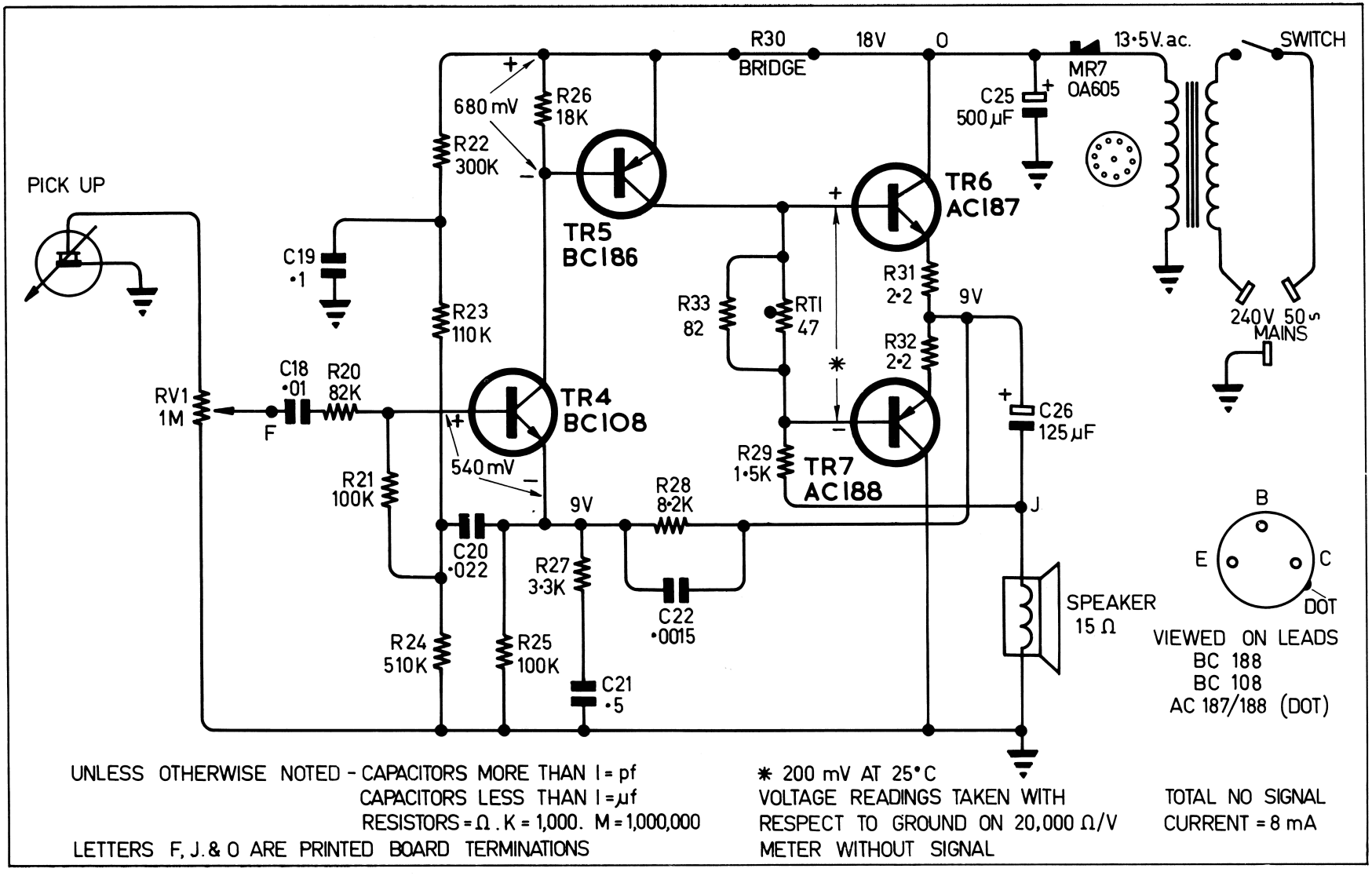
REF.	PART NO.	DESCRIPTION
		SPARE PARTS
	752-0111	Thermistor, 47 ohms ± 10%
RV1	677-1262	Potentiometer, 1M Curve 'C', complete with DPST switch
	191-0471	Case
	294-1371	Plastic Cover
	517-2761	Knob
	526-6731	Mains Lead Assembly
	558-1611	Mechanism, TU12, fitted with UA50 mat
	211-0461	Cartridge, BSR type X3M
	611-0601	Stylus, BSR type ST10—twin turnover, compatible
	611-0611	Stylus (substitute), BSR type ST8 — compatible and std. 78
	831-2681	Speaker, E.M.I. 4PO, 15 ohms, VC1

DIMENSIONS

	Unpacked	Packed
Height	4½"	4¾"
Width	11½"	11¾"
Depth	10¼"	10½"

WEIGHT

Gross	10¾ lbs.
Nett	10 lbs.



CIRCUIT DIAGRAM — C8 CHASSIS