SERVICE SHEET FOR

Stereophonic Projection SYSTEM

Type 1005

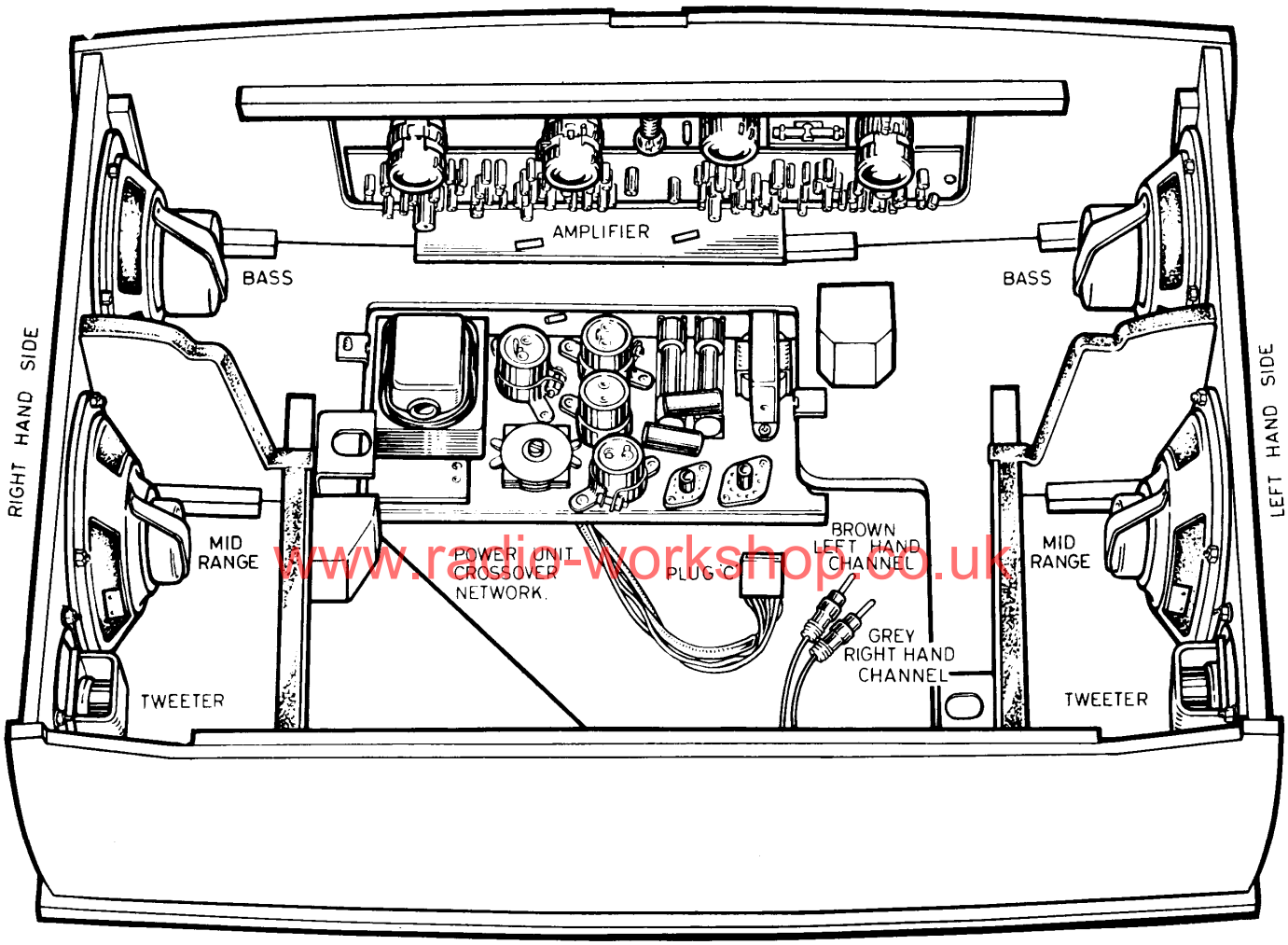
CIRCUIT ANALYSIS (Right-hand Channel)

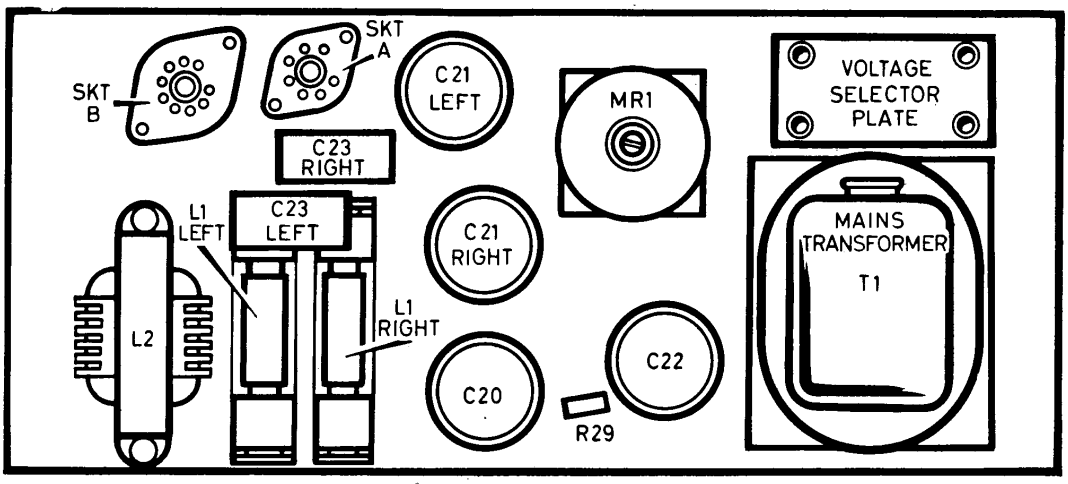
Rectified D.C. Supply: H.T.1. (Plug A1) — 25 volts.
H.T.2. (Plug A2 or A7) — 22.5 volts.

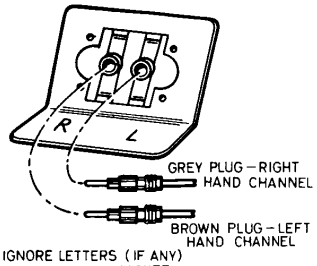
Quiescent Current: H.T.1. — 170mA (total). 54mA (without indicator lamp).
H.T.2. — 9.4mA.

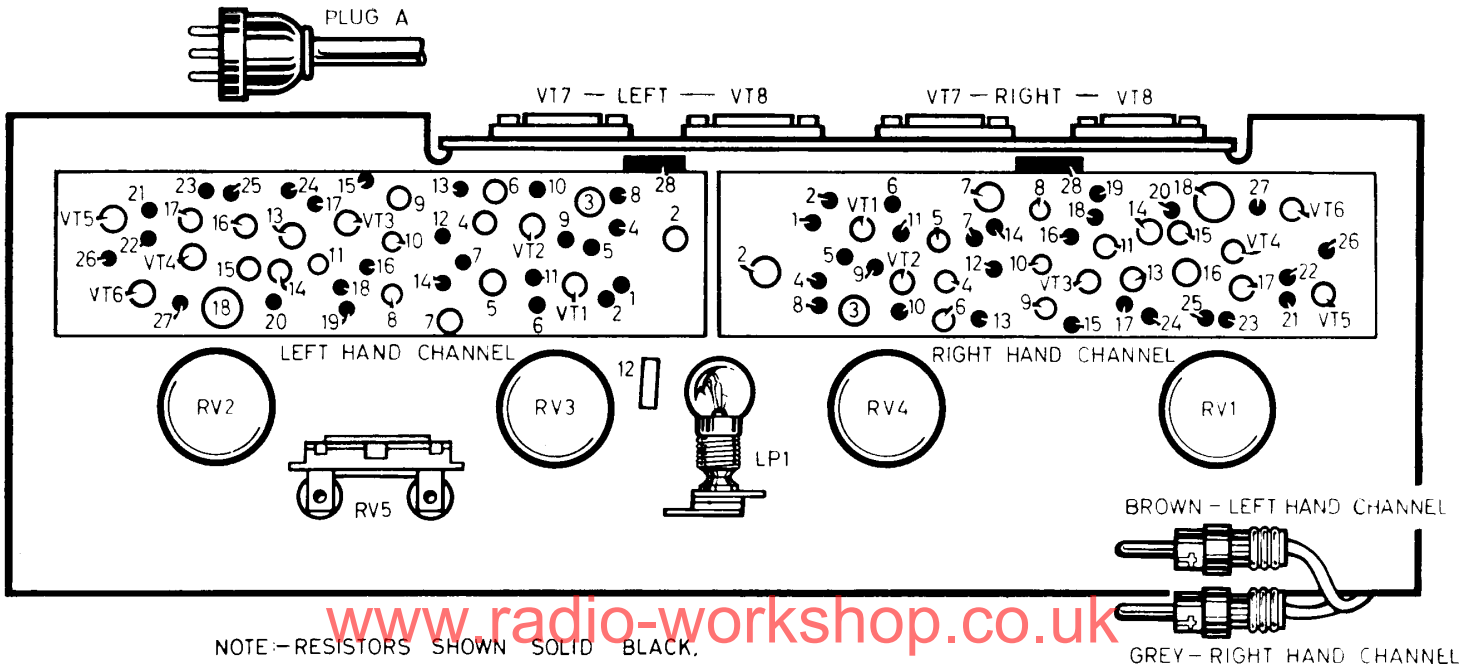
Code	Transistor Function	Type	Ec	Eb	Ee
VT1	Pre-amplifiers	NKT 216U/226U	6.3	1.1	1.0
VT2		NKT 72U/162U	8.0	0.4	0.3
VT3	Balance/Driver	NKT 72U/162U	10.3	4.1	4.0
VT4	Voltage Amplifier	NKT 213U/223U	10.5	0.9	0.8
VT5	Complementary Push-Pull	NKT 211U/221U	25.0	10.8	10.7
VT6	Driver Pair	NKT 713U	0.1	10.6	10.5
VT7	Push-Pull Output	NKT 453U	25.0	10.7	10.6
VT8	Pair	NKT 453U	10.5	0.1	—

NOTES: (a) Mains input for the above measurements was 210 volts, 50 c/s. A.C.
(b) All measurements taken with an Avo model 8, 20,000 ohms per volt, with no signal input.
(c) All voltages are negative with respect to chassis.
(d) The left-hand channel Circuit Analysis is identical to the above.

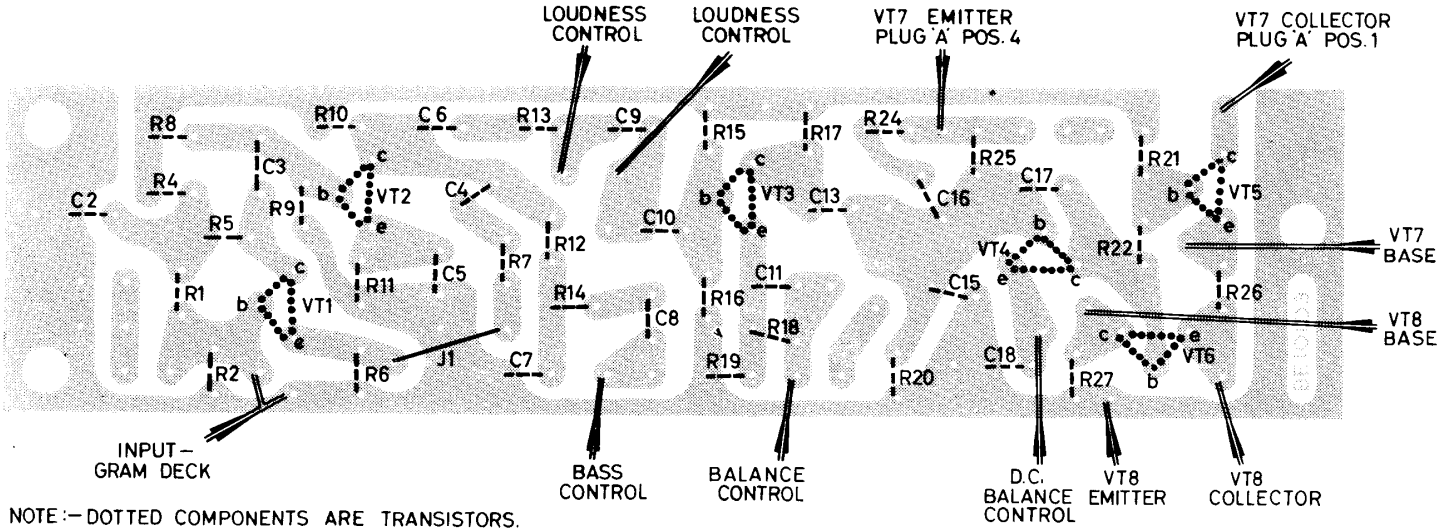






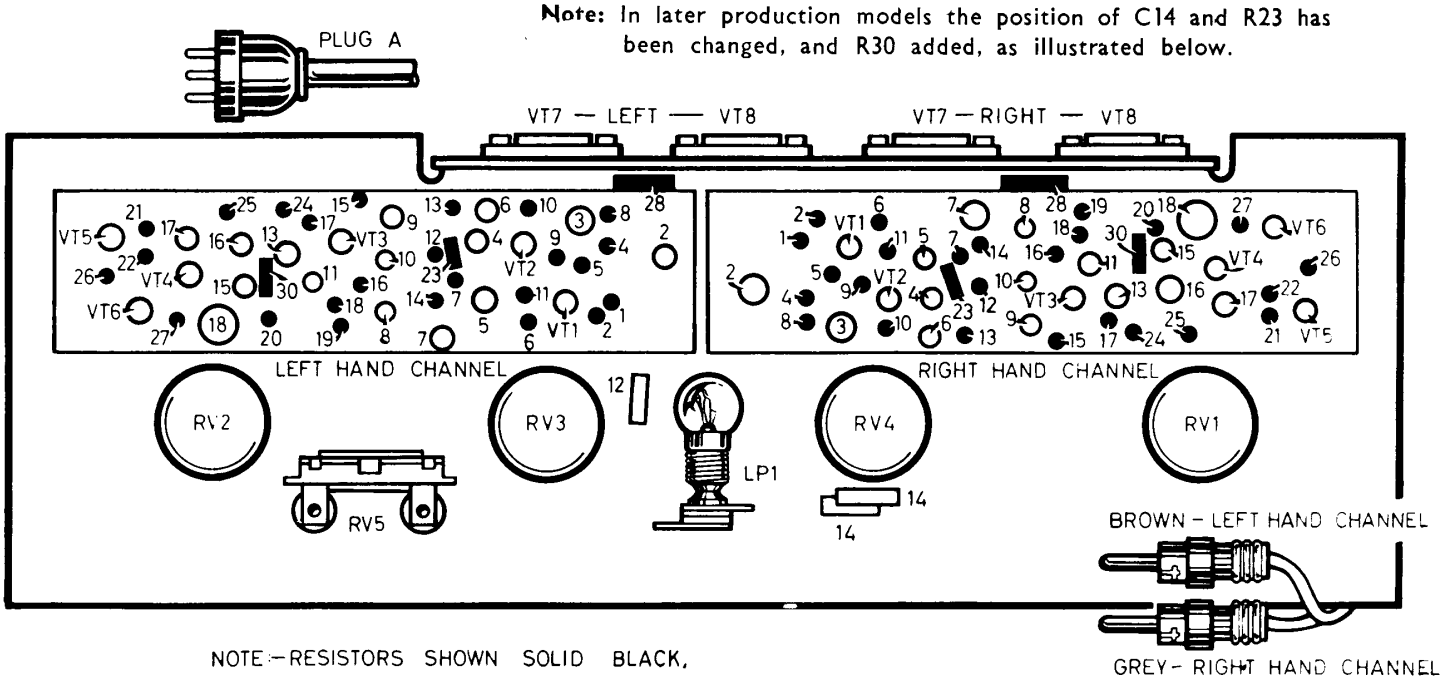


NOTE:—RESISTORS SHOWN SOLID BLACK.



NOTE:—DOTTED COMPONENTS ARE TRANSISTORS.

Note: In later production models the position of C14 and R23 has been changed, and R30 added, as illustrated below.



NOTE:—RESISTORS SHOWN SOLID BLACK.

RESISTORS

Ref. No.	Value in Ohms	Tol. ±%	Part No.
R1	390 K	10	NG 39419
R2	82 K	10	NG 82319
R3	Not used		
R4	12 K	10	NG 12319
R5	3.3 K	10	NG 33219
R6	1 K	10	NG 10219
R7	560	10	NG 56119
R8	680 K	10	NG 68419
R9	12 K	10	NG 12319
R10	18 K	10	NG 18319
R11	330	10	NG 33119
R12	10 K	10	NG 10319
R13	10 K	10	NG 10319
R14	3.3 K	10	NG 33219
R15	27 K	10	NG 27319
R16	5.6 K	10	NG 56219
R17	2.7 K	10	NG 27219
R18	100	10	NG 10119
R19	1 K	10	NG 10219
R20	4.7 K	10	NG 47219
R21	2.4 K	5	NE 24219
R22	82	5	NE 82019
R23	100 K	Type 16 10	NG 10504
R24	7.5 K	10	NG 75219
R25	39 K	10	NG 39319
R26	270	5	NE 27119
R27	270	5	NE 27119
R28	1	Type 9 20	NH 01001
R29	100	Type 16 10	NG 10104
R30	1 K	Type 15 10	NG 10203

Note: All resistors type 7A/VF unless otherwise stated.

VARIABLE RESISTORS

Ref. No.	Value in Ohms	Description	Part No.
RV1	250 K	Reverse Semi. Log (Bass)	PL 01103
RV2	5 K	Lin. Tapped at 40% Rotation (Loudness)	PL 01102
RV3	100	Lin. (Balance)	PL 01105
RV4	50 K	Semi. Log. (Treble)	PL 01104
RV5	300	Lin. Wire Wound Preset (D.C. Balance)	PL 02296

TRANSISTORS

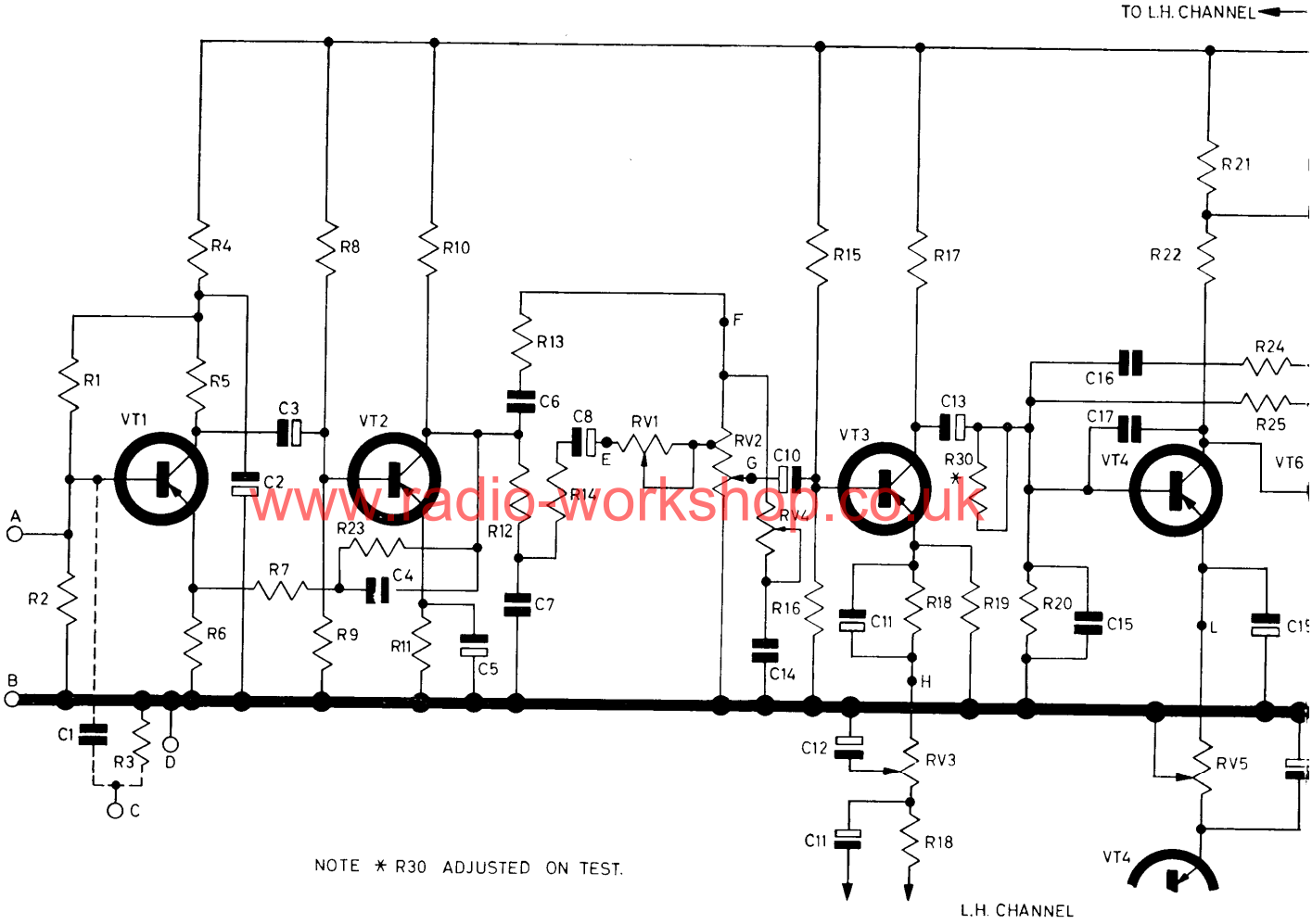
Ref. No.	Description	Part No.
VT1	NKT 216u (Black Spot)	FV 06484
	NKT 226u (Black Spot)	FV 06485
VT2 & VT3	NKT 72u (Black Spot)	FV 06486
	NKT 162u (Black Spot)	FV 06487
VT4	NKT 213u	FV 06422
	NKT 223u	FV 06423
VT5 & VT6	NKT 211u / NKT 713u matched pair	FV 06424
VT5 & VT6	NKT 221u / NKT 713u matched pair	FV 06425
VT7 & VT8	NKT 453u / NKT 453u matched pair	FV 06426

CAPACITORS

Ref. No.	Value and Type	Tol. ±%	Volts	Part No.
C1	Not used			
C2	10 μF Electrolytic		25	PS 23031
C3	2 μF Electrolytic		15	PS 15089
C4	0.033 μF Tubular	20	125	PR 17352
C5	40 μF Electrolytic		3	PS 30014
C6	0.033 μF Tubular	20	125	PR 17352
C7	0.1 μF Tubular	10	125	PR 19540
C8	2 μF Electrolytic		15	PS 15089
C9	Not used			
C10	2 μF Electrolytic		15	PS 15089
C11	5 μF Electrolytic		6	PS 19029
C12	15 μF Electrolytic		3	PS 24500
C13	1 μF Electrolytic		25	PS 13047
C14	0.033 μF Tubular	20	125	PR 17352
C15	0.033 μF Tubular	20	125	PR 17352
C16	0.1 μF Tubular	10	125	PR 19540
C17	0.0015 μF Tubular	20	400	PR 03502
C18	200 μF Electrolytic		3	PS 40035
C19	Not used			
C20	1000 μF Electrolytic		30	PS 51038
C21	150 μF Electrolytic (750mA at 1 Kc/s.)		30	PS 39019
C22	1000 μF Electrolytic		30	PS 51038
C23	1 μF Electrolytic		30	PS 13051

MISCELLANEOUS

Ref. No.	Description	Part No.
L1	0.3 mH 0.3Ω Choke	AL 51036
L2	6.4 mH 0.5Ω Choke	AL 51029
LP1	24V. 2.8W Lamp	FL 01144
MR1	Selenium Bridge Rectifier FSM 246 1A	FR 00033
T1	Mains Transformer	AL 21519
	Cabinet	AG 40008
	Base Cover Assembly	AG 10395
	Speaker Grille Assembly	AG 10396
	Front Grille Assembly	AG 10397
	Gram Unit Tray (moulded)	BG 10070
	Control Knob	BJ 10214
	Gasket Extrusion	FG 00001
	Motif	FM 01091
	B9A Plug and Lead Assembly	FP 00158
	Knob Clip	QA 00205
	Loudspeaker; Bass—5in. 8Ω	FS 12017
	Loudspeaker; Midrange—5in. 5Ω	FS 12018
	Loudspeaker; Tweeter	FS 11013
	Gram Unit; B.S.R. type UA15 Fawn (complete with Pye/CBS ceramic cartridge assembly)	FG 01285
	Pye/CBS Ceramic Pick-up Cartridge Assembly	AG 10494
	Stereo/LP Diamond Stylus Assembly	AG 10575
	Stereo/LP Diamond & 78 Sapphire Stylus Assembly	AG 10655
	Lid & Moulding Assembly	EC 01021
	Lid Hinge	FD 00551
	Lidstay	FD 00550



Circuit Diagram

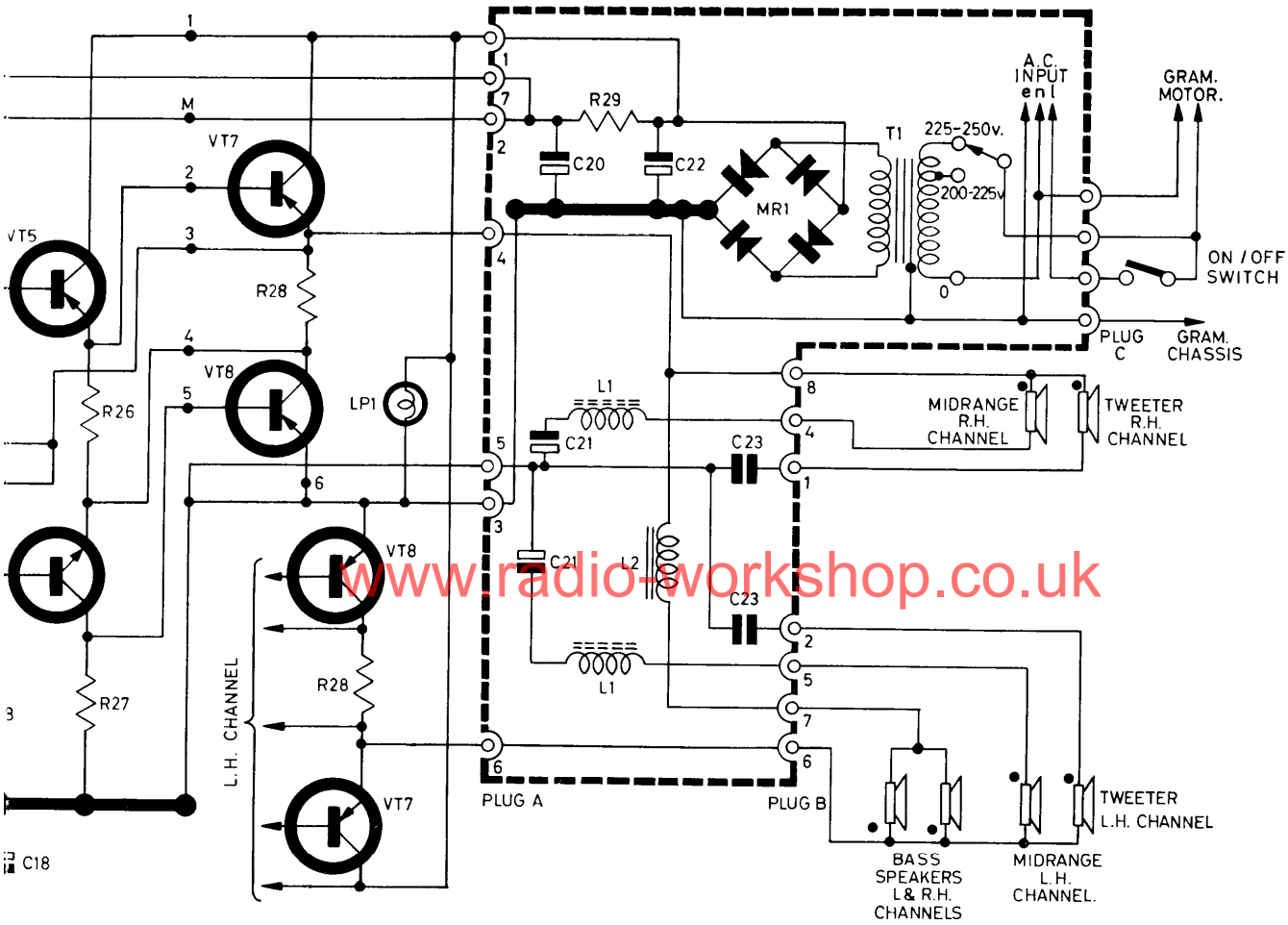
Model 1005

To obtain access to the Amplifier Printed Component Boa
follows:—

1. Disconnect the instrument from the power supply.
2. Pull off the four front control knobs.
3. Remove the control spindle locknuts and take off the f
4. The five 4BA Amplifier Panel fixing screws can now b these, the panel can be lowered to the extent of the c
5. If it should be necessary to completely remove the A cabinet, take off the bottom cover and disconnect the as described below.

To remove the B.S.R. Auto-Changer:—

1. Disconnect the power supply.
2. Take off the bottom cover, which is held by six screws, t onto one side (on a protective surface).
3. Remove the pick-up plugs from the socket panel, an supply to the gram, motor, at the underside of the Chang



CONNECTING WIRES

POINTS 1-6
P/CCT - POWER TRANSISTORS
POINTS E-H, J-L.
P/CCT - POTENTIOMETERS
POINT M HT2 INPUT
POINTS A,B. GRAM INPUT
POINTS C,D. AUX. INPUT

PLUG / SKT. A
AMP CHASSIS - POWER UNIT CHASSIS
PLUG / SKT. B
SPEAKERS - POWER UNIT CHASSIS
PLUG / SKT. C
POWER UNIT CHASSIS - GRAM UNIT

NOTES

ard Assembly, proceed as

front escutcheon.
be seen and, on removing
connecting leads.
Amplifier Panel from the
pick-up and supply leads

by turning the instrument

nd disconnect the power
ger deck.

4. Release the transit screws by turning the clips into a vertical position.

To remove the Power & Crossover Unit, carry out 1, 2 & 3 above, then:—

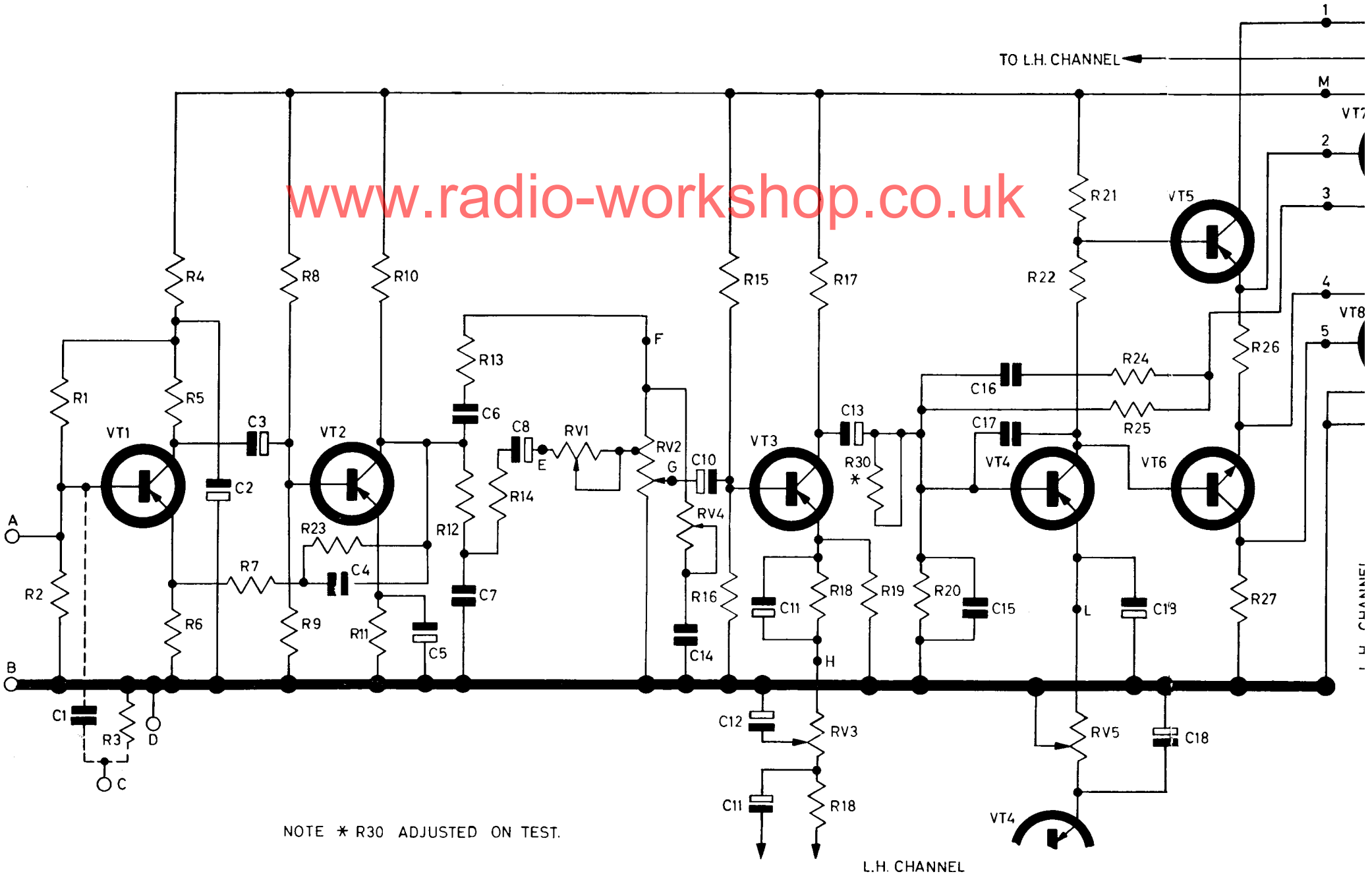
4. Remove the three fixing screws and withdraw the unit from the cabinet.
5. Disconnect the supply plug to the Amplifier Panel.

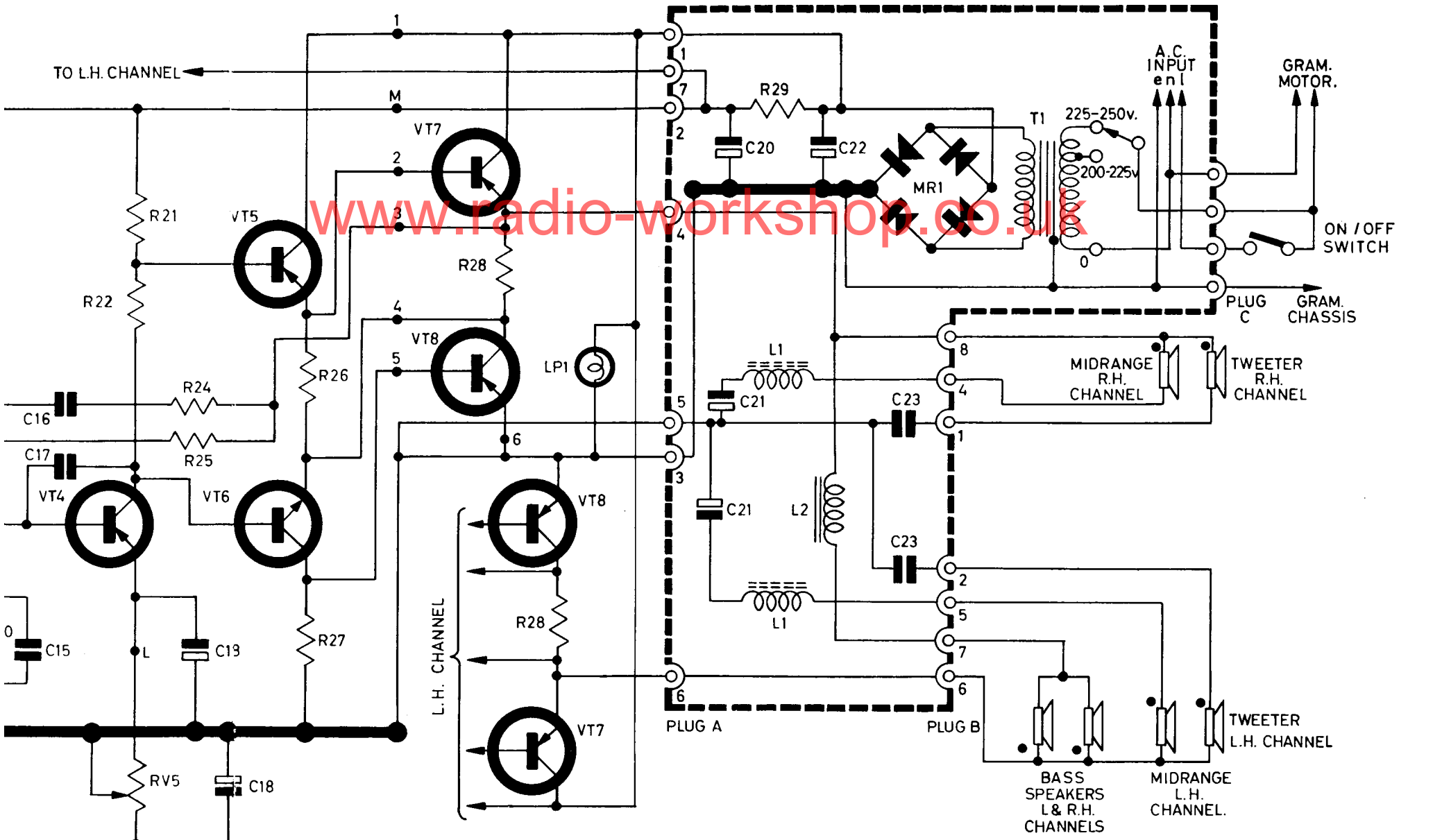
To replace the Stylus Assembly:—

1. Pull off the red selector button, then release and remove the spiral spring.
2. The stylus assembly will now drop out and a replacement may be inserted.

Adjustment of Pre-set Control (RV5).

The pre-set control mounted on the amplifier chassis, between the Loudness and Balance controls, is carefully adjusted at the factory and will not normally need to be disturbed. In the event of the replacement of this control or transistors VT4—VT8 inclusive, however, insert an Avo 8 meter (2.5 volt range) between pins 4 and 6 of plug A in each channel and adjust RV5 to obtain a zero reading.





CONNECTING WIRES

POINTS 1-6
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PLUG / SKT. A
AMP CHASSIS - POWER UNIT CHASSIS
PLUG/SKT. B
SPEAKERS - POWER UNIT CHASSIS
PLUG/SKT. C
POWER UNIT CHASSIS - GRAM UNIT

SERVICE SHEET SUPPLEMENT

Stereophonic Projection SYSTEM

Type 1005

THE PYE 'BUTTERFLY' PICK-UP AND TONE ARM

(fitted to B.S.R. Type UA15 Auto-changer)

1. **Stylus pressure**

The stylus pressure of the 'Butterfly' Tone Arm and Pick-up is controlled by a balance weight built into the rear end of the tone arm. The stylus pressure is adjusted to lie between 2.25 and 2.75 grammes, and should not normally require adjustment. To adjust the playing weight on the stylus, first remove the auto-changer from its cabinet. Access to the balance weight securing screws is below the arm. Slacken off both screws and move balance weight towards the pivot to increase stylus pressure, and away from pivot to decrease stylus pressure. Re-tighten screws when correct adjustment is attained.

The horizontal (hinge) pivots are mounted in silicone rubber bushes and it is of the utmost importance that the arm is not raised above the height to which it is lifted by the normal action of the changer mechanism before making a stylus pressure measurement. Should this be done inadvertently, lower the stylus gently down on to the motor plate before lifting on to the stylus pressure gauge. With some types of pressure gauge, it is necessary to retract the cartridge into the arm to avoid excessive arm lift, when placing the stylus on the pressure gauge pad. (see para. 3).

NOTE: Ensure that the stylus pressure gauge being used is accurately calibrated at the lower end of its range.

2. **Tone-arm Hinge Adjustment**

If it should be necessary to remove the arm, take care to avoid losing the resilient bushes fitted to the pivot pins. When re-assembling the arm to the hinge bracket, ensure that both bushes enter the holes in the bracket correctly. The pivot adjustment screw should then be screwed in so that the screw **just touches** the bottom of the blind hole, and then be retracted by not less than one full turn or more than one and a quarter turns. Take care not to disturb this setting when tightening the locking ring. Avoid straining the tone arm and bracket by over-tightening the screw.

3. **Cartridge Height Adjustment**

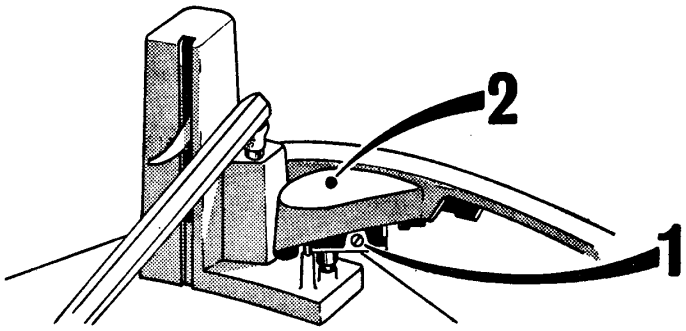
The relative position of the cartridge assembly in the arm is pre-set in the factory. Before making an adjustment it is advisable to ensure that the eye of the coil spring is completely through the hole in the adjustment tab.

To assess the position of the cartridge, place the stylus on a record on the turn-table, avoiding excessive lifting (as in para 1). The bottom of the stylus knob skirt should be level with the top surface of the arm and the clearance between the plastic foot and the record surface should then be between 0.06″ and 0.075″.

To raise the cartridge in the arm, the end of the adjustment tab should be moved away from the cartridge so that the hole moves **parallel** to and remains central in the arm, and vice versa.

4. **Stylus set down**

Adjust stylus to set down approximately ⅛″ from edge of a 10″ record, by turning the screw underneath the tone arm **(1)**. Access to the screw is best obtained by lifting the tone arm and moving it over towards the centre of the turntable.



5. **Pick-up Arm Height**

The height adjustment screw is located on top of the tone arm near the pivot. **(2)**. The amount that the arm lifts should be set so that the top of the stylus clears the top record of a stack of eight average records by ⅛″. The amount of lift is increased by turning the screw clockwise. Make sure that the stylus knob does not foul a record in the dropping position.