

SERVICE SHEET FOR



**model
P35**



FOR OPERATION OF www.radio-workshop.co.uk
200/250 V. A.C. MAINS

CIRCUIT ANALYSIS

Mains Consumption 50 watts.

A.F. Output 3 watts.

Valve	Mullard	Ea	Ia	Es	Is	Osc.		Ek	Ik
						Ea	Ia		
V1 Frequency Changer	ECH.35	247	1.4	100	2.35	148	6.75	2.1	10.5
V2 I.F. Amplifier	EF.22	247	5.0	100	1.75	—	—	1.6	6.75
V3 Det. and A.F. Amplifier	EBC.33	34	0.25	—	—	—	—	1.0	0.25
V4 Output	EL.33	267	33.0	247	4.0	—	—	5.8	37.0
V5 Power Rectifier	AZ.31	Anode to Anode 548 v. A.C.						288	54.5

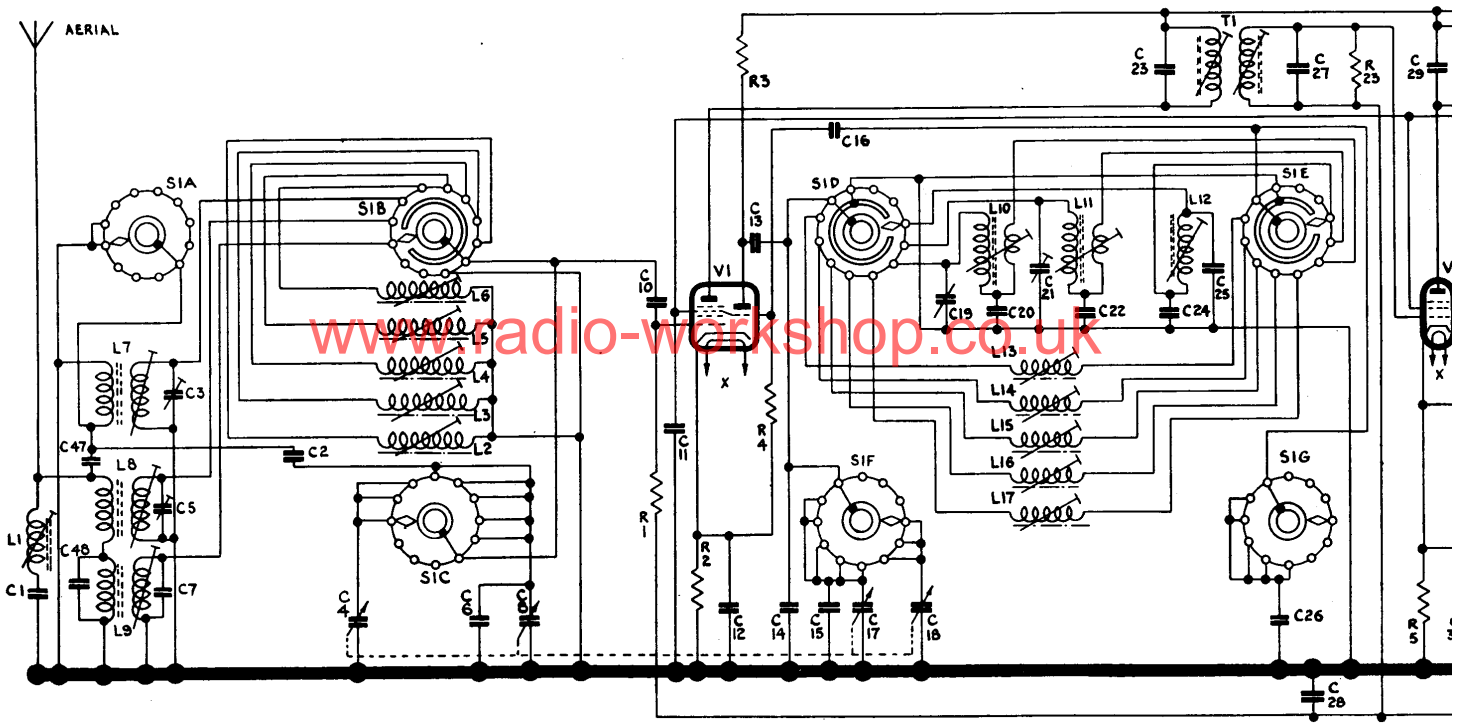
Note.—Voltage measurements made on Avometer model 7 instrument. D.C. measurements above 10 v. made on 400 v. range. Current measurements are in milliamperes. Mains input 207 v. into 200–215 v. tap. Receiver tuned to 500 metres on M.W. band with no signal input.

TRIMMING PROCEDURE

Note.—Calibration of band-spread circuits should preferably be checked against broadcasting stations of known frequency. Most normal signal generators are not calibrated sufficiently accurately for this purpose.

Apply signal as below	Set Receiver Controls to	Adjust in order for Maximum Output
(1) 465 kc/s. between Chassis and Control Grid of V1 via 0.1 μ F Condenser. Grid lead to remain connected to V1	Low frequency end of medium wave-band (550 metres)	Iron dust cores of I.F. Transformers T2 and T1
(2) 465 kc/s. between Aerial and Chassis via Standard Dummy Aerial	Low frequency end of medium wave-band (550 metres)	Iron dust core of L1 for minimum output
(3) As (2) but 225 kc/s. (1330 m.)	L.W. 225 kc/s. (1330 m.)	Iron dust cores of L12 and L9
(4) As (2) but 600 kc/s. (500 m.)	M.W. 600 kc/s. (500 m.)	Iron dust cores of L11 and L8
(5) As (2) but 1500 kc/s. (200 m.)	M.W. 1500 kc/s. (200 m.)	Trimmers C21 and C5
(6) Repeat (4) and (5) until calibration and tracking are correct		
(7) As (2) but 1500 kc/s. (200 m.)	Trawler band 1500 kc/s. (200 m.)	Iron dust cores of L10 and L7
(8) As (2) but 3.3 Mc/s.	Trawler band 3.3 Mc/s.	Trimmers C19 and C3
(9) Repeat (7) and (8) until calibration and tracking are correct		
(10) 6.1 Mc/s. between Chassis and Aerial via 400 Ω resistor	49 m. band 6.1 Mc/s.	Aluminium cores of L17 and L6
(11) As (10) but 9.6 Mc/s.	31 m. band 9.6 Mc/s.	Aluminium cores of L16 and L5
(12) As (10) but 11.8 Mc/s.	25 m. band 11.8 Mc/s.	Aluminium cores of L15 and L4
(13) As (10) but 15.3 Mc/s.	19 m. band 15.3 Mc/s.	Aluminium cores of L14 and L3
(14) As (10) but 17.8 Mc/s.	16 m. band 17.8 Mc/s.	Aluminium cores of L13 and L2

Note.—Adjust all cores in the sequence described, i.e. Oscillator first, Aerial second. In the case of the fully spread bands, the only adjustment necessary is at the frequency stated.



WAVE CHANGE SWITCH
SHOWN IN 'L.W.' POSITION

TONE SWITCH SHOWN IN 'OFF' POSITION
FULLY ANTI-CLOCKWISE

circuit diagram of the **PYE MODEL P35**

fitting a new tuning scale

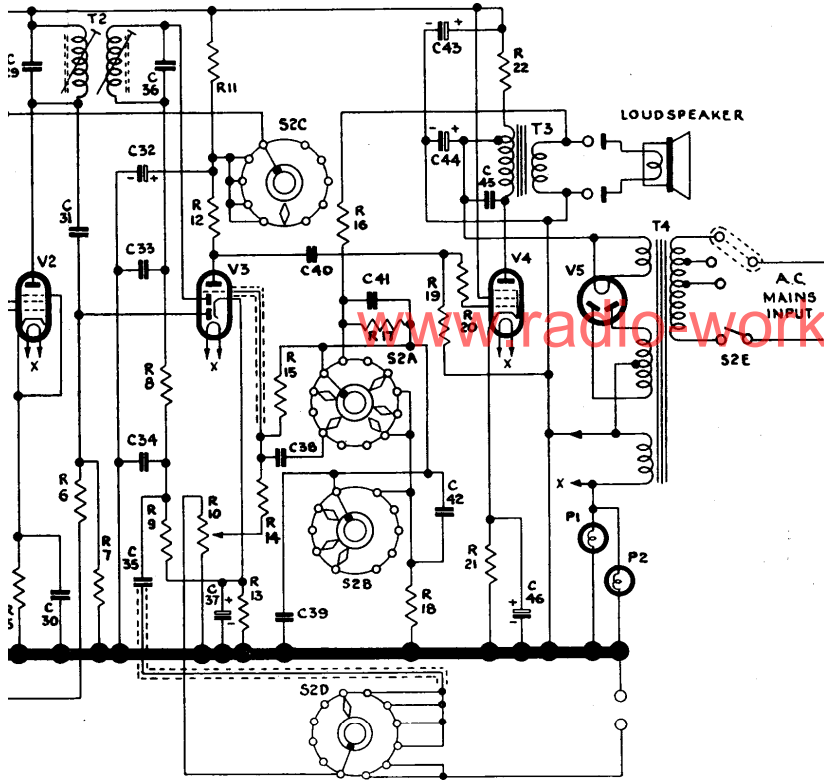
- 1** Remove Chassis.
- 2** Place Scale Plate in cabinet aperture and screw the clips lightly in position.
- 3** Place chassis in position in the cabinet.
- 4** Adjust Tuning Scale until coloured waveband indicators line up with shutter apertures.
- 5** Remove chassis and screw Tuning Scale clips firmly in position.
- 6** Fit chassis in cabinet.
- 7** Adjust Gang Condenser to maximum position and line up the pointer to the spots to be found at the top of the tracks.

CON

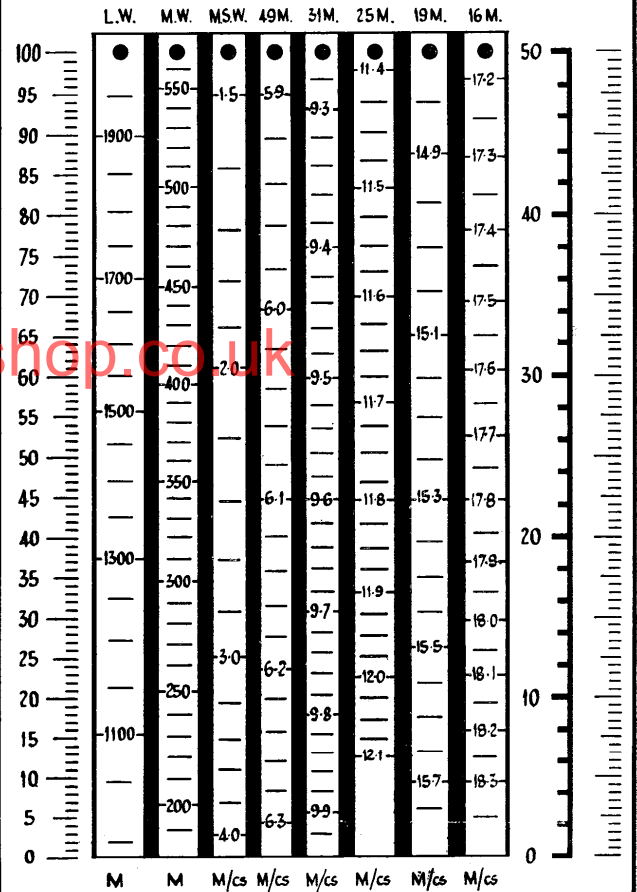
Specificatio

C1	47 pF Mica	..
C2	5 pF Ceramic	..
C3	3-50 pF Trimmer	..
C4	487 pF Swing Gang Con	..
C5	3-50 pF Trimmer	..
C6	50 pF Mica	..
C7	120 pF Mica	..
C8	10 pF Swing Gang Con	..
C9	Not used	..
C10	100 pF Ceramic	..
C11	0.1 μF Tubular 500 v.	..
C12	0.01 μF Tubular 500 v.	..
C13	100 pF Ceramic	..
C14	15 pF Ceramic	..
C15	100 pF Mica	..
C16	100 pF Ceramic	..
C17	45 pF Swing Gang Con	..
C18	487 pF Swing Gang Con	..
C19	3-50 pF Trimmer	..
C20	1700 pF Mica	..
C21	3-50 pF Trimmer	..
C22	500 pF Mica	..
C23	100 pF Mica	..
C24	200 pF Mica	..
C25	150 pF Mica	..
C26	125 pF Mica	..
C27	100 pF Mica	..
C28	0.05 μF Tubular 500 v.	..
C29	100 pF Mica	..
C30	0.1 μF Tubular 350 v.	..
C31	10 pF Ceramic	..
C32	2 μF Electrolytic 450 v.	..
C33	100 pF Ceramic	..
C34	100 pF Ceramic	..
C35	0.002 μF Tubular 500 v	..
C36	100 pF Mica	..
C37	50 μF Electrolytic 12 v.	..
C38	20 pF Ceramic	..
C39	0.002 μF Tubular 500 v	..
C40	0.005 μF Tubular 1000	..
C41	0.05 μF Tubular 350 v.	..
C42	0.05 μF Tubular 350 v.	..
C43		..
C44		..

} 32 + 32 μF Electrolytic



CALIBRATION CHART



CONDENSERS			
Capacitance	±	Fig.	No.
..	2%	3	666775
..	25%	3	666518
..	..	3	800076
Condenser	..	1 & 2	800009
..	..	3	800076
..	1%	3	666383
..	2%	3	666233
Condenser	..	1 & 2	800009
1 v.	20%	3	666520
10 v.	..	3	668127
..	..	3	668015
..	20%	3	666520
..	10%	3	666274
..	2%	3	666232
..	20%	3	666520
Condenser	..	1 & 2	800009
..	..	1 & 2	800076
..	10%	3	666626
..	..	3	800076
..	1%	3	666384
..	2%	1 & 2	666776
..	2%	3	666403
..	2%	3	666235
..	1%	3	666443
..	2%	1 & 2	666776
10 v.	..	3	668125
..	2%	1 & 2	666776
1 v.	..	3	668006
..	20%	3	666525
50 v.	..	3	667080
..	20%	3	666520
..	20%	3	666520
100 v.	..	3	668018
..	2%	1 & 2	666776
12 v.	..	3	667016
..	20%	3	666524
500 v.	..	3	668018
1000 v.	..	3	668122
50 v.	..	3	668013
..	..	3	668013
olytic 450 v.	..	1 & 2	667093

RESISTORS			
Value	±	Fig.	No.
R1	1 meg.	20%	3
R2	220	10%	3
R3	15,000	10%	3
R4	47,000	10%	3
R5	330	10%	3
R6	1 meg.	20%	3
R7	1 meg.	20%	3
R8	100,000	20%	3
R9	470,000	20%	3
R10	1 meg. Potentiometer	..	3
R11	33,000	10%	3
R12	220,000	10%	3
R13	6,800	10%	3
R14	2.2 meg.	20%	3
R15	4.7 meg.	20%	3
R16	10,000	10%	3
R17	18,000	10%	3
R18	10,000	10%	3
R19	470,000	20%	3
R20	22,000	20%	3
R21	150	10%	3
R22	1,800	10%	3
R23	1 meg.	20%	3

SWITCHES AND LAMPS, ETC.			
Specification	Fig.	No.	
SIA Front Bank 1	3	830280	Wave-change Switch 8 position
SIB Front Bank 2			
SIC Rear Bank 2			
SID Rear Bank 4			
SIE Front Bank 3			
SIF Front Bank 4			
SIG Rear Bank 3			
S2A Front Bank 1			
S2B Rear Bank 1			
S2C Front Bank 2			
S2D Rear Bank 2			
S2E On/Off			
PI-2 Dial Lamps 6.5 v. 0.3 amp.	1 & 2	700494	
Loudspeaker	1	850015	

TRANSFORMERS			
Specification	Fig.	No.	
T1 1st I.F. Trans. Incorporating C23 and C27	1 & 2	770369	Prim. 12.2 Ω Sec. 12.2 Ω
T2 2nd I.F. Trans. Incorporating C29 and C36			
T3 Output Trans.	2	770066	Prim. Start to tap 18.5 Ω Sec. Start to Finish 500 Ω
T4 Mains. Trans.	1 & 2	770308	Prim. 18.6 Ω on 250 v. Tap Sec. 185 + 195 Ω

INDUCTANCES			
Specification	Ref.	Fig.	No.
L1 465 kc. Filter Coil	..	3	780149
L2 16 m. Aerial Coil	S.W.4	3	780278
L3 19 m. Aerial Coil	S.W.5	3	780277
L4 25 m. Aerial Coil	S.W.6	3	780276
L5 31 m. Aerial Coil	S.W.7	3	780275
L6 49 m. Aerial Coil	S.W.9	3	780273
L7 Trawler Aerial Coil	No. 3	3	780251
L8 M.W.7 Aerial Coil	..	3	780246
L9 L.W. Aerial Coil	L.W.6	3	780328
L10 Trawler Oscillator Coil	No. 1	3	780249
L11 M.W.1 Oscillator Coil	..	3	780234
L12 L.W.1 Oscillator Coil	..	3	780241
L13 16 m. Oscillator Coil	S.W.4	3	780278
L14 19 m. Oscillator Coil	S.W.5	3	780277
L15 25 m. Oscillator Coil	S.W.6	3	780276
L16 31 m. Oscillator Coil	S.W.7	3	780275
L17 49 m. Oscillator Coil	S.W.9	3	780273

CONDENSERS (contd.)			
Specification	±	Fig.	No.
C45 0.01 μF Tubular 1000 v.	..	3	668123
C46 50 μF Electrolytic 12 v.	..	3	667016
C47 100 pF Ceramic	20%	3	666520
C48 100 pF Ceramic	20%	3	666520

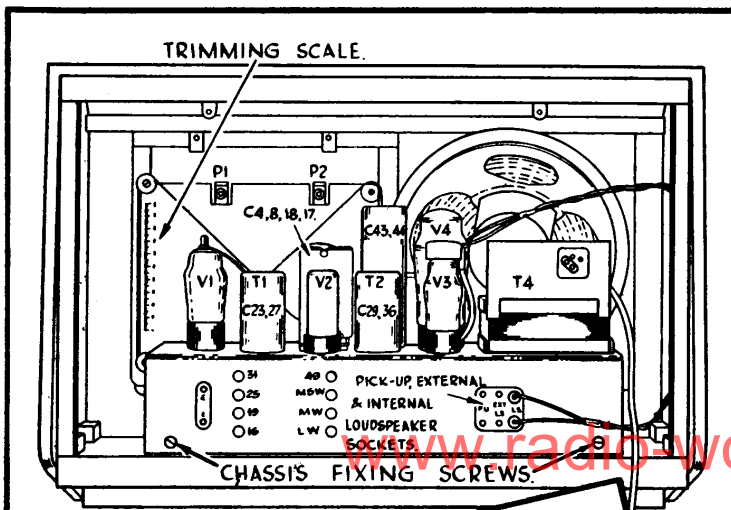


FIG. 1

TO REMOVE CHASSIS
 1 LOOSEN GRUB SCREWS AND PULL OFF KNOBS. 2 PULL OUT LOUDSPEAKER PLUGS. 3 REMOVE THE TWO CHASSIS FIXING SCREWS. 4 WITHDRAW CHASSIS APPROXIMATELY TWO INCHES, TIP UP AND LIFT OUT.

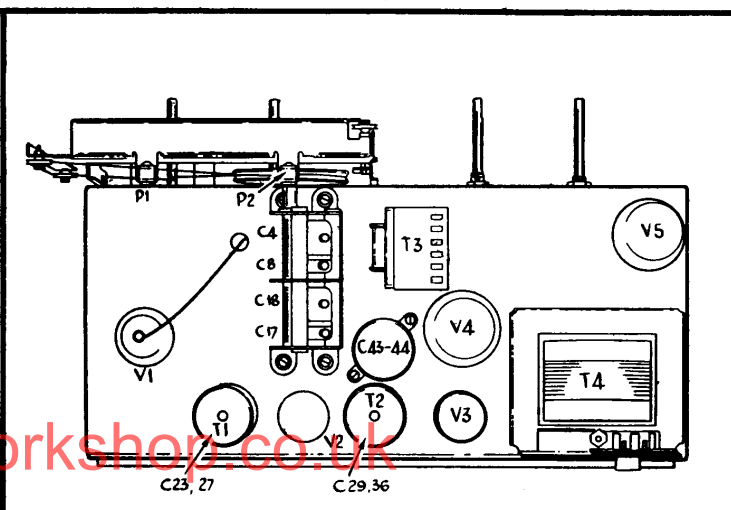


FIG. 2

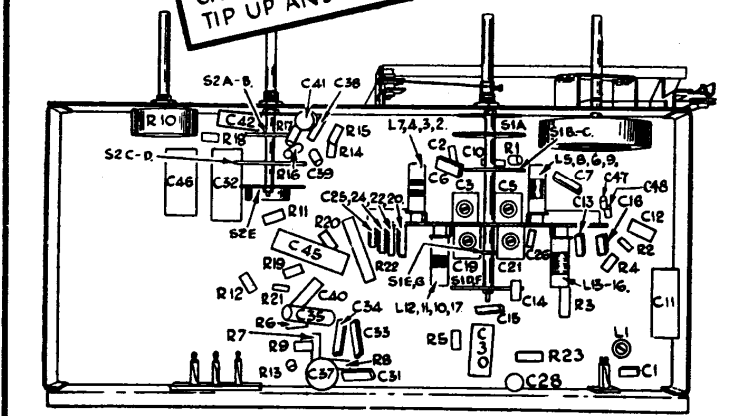


FIG. 3

VALVE BASE CONNECTIONS

	1	2	3	4	5	6	7	8	Top Cap
V1	M	H	A	G2 G4	GT G3	A.T.	H	K	G1
V2	H	A	G2	G3	S	G1	K	H	—
V3	M	H	A	D1	D2	—	H	K	G1
V4	M	H	A	G2	G1	—	H	K G3	—
V5	—	F	—	A1	—	A2	—	F	—

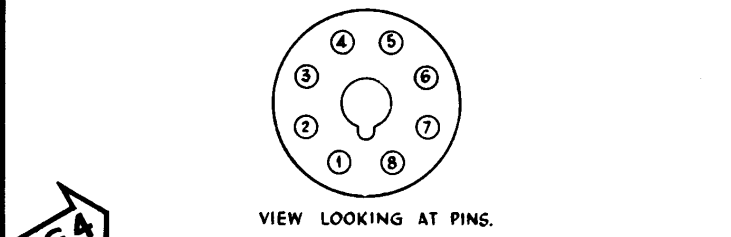
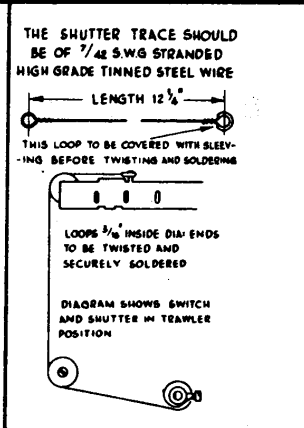
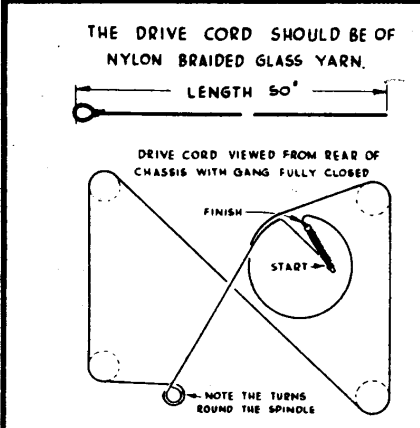


FIG. 4



TO FIT A NEW DRIVE CORD FIRST SET GANG IN FULLY CLOSED POSITION i.e. MAX CAPACITY ATTACH THE LOOPED END OF CORD TO LUG ON DRIVE DRUM. THREAD CORD ROUND PULLEYS AND SPINDLE AS SHOWN IN DIAGRAM. FINISH BY SLACKENING OFF THE TWO LOCKING SCREWS AND ROTATING DRUM TO GIVE ONE COMPLETE TURN OF CORD ROUND DRUM LOCK DRUM TO SPINDLE WITH GANG CLOSED TIGHTEN CORD AND TIE CORD TO SPRING SO THAT SPRING WILL BE IN TENSION WHEN ASSEMBLED ADJUST DRUM TO ITS ORIGINAL POSITION AND TIGHTEN BOTH SCREWS

FIG. 5

Notes

- 1 The Pye quick release (Patent No. 601920) permits the removal of chassis without turning the cabinet over. See Fig. 1.
- 2 The Special Flywheel Tuning needs no maintenance.
- 3 A 100 Division Trimming Scale is printed on the back of the scale reflector plate, see Fig. 1, for use when trimming the receiver outside the cabinet. The top of the pointer carriage serves as an index for the scale. A calibration chart is printed on page 2. When no accurate frequency standard is available the receiver should be calibrated against a reliable broadcasting station operating on a frequency close to that specified in the trimming instructions.
- 4 External speaker 2-4 ohms impedance.
- 5 Dial Bulbs 6-5 v. 0-3 amp. M.E.S.
- 6 Make sure mains voltage adjuster is in correct position to ensure (a) maximum valve and component life, and (b) full benefit of the Pye "FIDELITY" reproduction.

