

# MARCONIPHONE SERVICE MANUAL

**MODEL 269—6-VALVE SUPER-HET. PORTABLE WITH A.V.C.**

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**PRIVATE AND CONFIDENTIAL—TO THE TRADE ONLY**

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## THIS IS THE FINEST OF ALL PORTABLE RECEIVERS

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### GENERAL DESCRIPTION.

#### WAVELENGTH RANGE.

Medium waves :—200 to 560 metres.

Long waves :—1000 to 2000 metres.

#### PHYSICAL DETAILS.

Height	...	...	...	...	...	18 $\frac{5}{8}$ in.
Width	...	...	...	...	...	15 $\frac{3}{4}$ in.
Depth	...	...	...	...	...	8 $\frac{5}{8}$ in.

Weight :—46 $\frac{3}{4}$  lbs. complete (approx.).

#### BATTERIES.

High tension :—Marconiphone type B 550, 166 volts, plus 9 volts for grid bias.

Accumulator :—Unspillable jelly-acid type accumulator, 2 volts, 30 amp. hours.

IMPORTANT.—When replacing the accumulator after charging, always place exactly as shown in the instruction book, i.e., with the red (+) terminal to the back of instrument. Instability in operation may result if accumulator is the wrong way round.

#### BATTERY CONSUMPTION.

Total consumption from H.T. :—7 to 9 m/A, depending on position of volume control. *This figure is based on voltameter test.*

Total consumption from accumulator :—0.86 amp.

#### VALVES (See Fig. 1).

Valves (left to right) :—

Marconi S23\* (MET)—Pre-detector H.F. amplifier.

Marconi S23\* (PLAIN)—Detector-oscillator.

Marconi VS2 (MET)—I.F. amplifier.

Marconi HL2 (MET)—1st L.F. amplifier.

Marconi PT2 }  
Marconi PT2 } Quiescent push-pull pentode output.

\* S21 and S23 valves have similar characteristics and are interchangeable.

### CIRCUIT DESCRIPTION.

Separate M.W. frame aerial (inside cabinet) and L.W. winding (in lid), feed S23 (MET) H.F. amplifier the grid of which is controlled (giving A.V.C.) by one-half of the dual metal rectifier MR.

The screened grid frequency changer S23 (PLAIN) is coupled by band pass intermediate frequency transformer (L7, L8) to I.F. amplifier valve VS2 MET, which is also controlled by bias supplied by dual metal rectifier.

Output of 2nd I.F. transformer L9, L10 is rectified by the remaining section of the dual metal rectifier and passed via the manual volume control VR1 to the grid of the 1st L.F. amplifier HL2 (MET).

Output of HL2 is coupled via condenser C17 and transformer T1 to QPP output stage.

#### LOUDSPEAKER.

Type 16000 :—Permanent magnet moving coil speaker.

D.C. resistance of coil :—4 ohms.

The cone suspension and adjustment is in many respects similar to the Marconiphone Model 132 speaker, and the information under heading "Service Information" in the manual for that instrument should be consulted.

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**SEE OUTSIDE BACK COVER FOR CHIEF SALES POINTS**

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## EMPHASISE THE ADVANTAGES OF A.V.C. ON A BATTERY SET

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### EXTRA LOUDSPEAKERS

An extra loudspeaker may be connected to this instrument without appreciably reducing volume. Moving iron or moving coil types may be used providing that their impedances are adjusted to suit pentode output conditions. Connect the extra speaker across terminals 3 and 5 on the parent loudspeaker transformer panel.

Use only wire which is adequately rubber insulated for extension speaker leads, otherwise the H.T. battery may be run down, and/or volume reduced.

### DISMANTLING.

#### TO REMOVE CHASSIS.

1. Remove batteries. H.T. battery plugs should always be detached **before** accumulator tags are disturbed.
2. Remove 3 screws which fix frame aerial terminal strip on left-hand top corner of chassis.
3. Remove metal accumulator housing, fixed by 4 wood screws.
4. Remove 3 screws which fix speaker lead terminal panel on right hand (underside) of chassis. Do not disturb connections on speaker transformer.
5. With a short screwdriver, unscrew the 4 cheese-headed screws fixing the unit to the metal brackets. **Do not forget spring washers under heads of screws.**  
*The black wire of multiple speaker lead must be replaced between side bearer of cabinet and metal strap of chassis.*
6. Chassis may now be withdrawn complete without disturbing control knobs or escutcheon.

#### ACCESS TO BASE COMPONENTS.

Remove the 2 shields at base of chassis. The 8 fixing screws are a special type and must be used only for fixing shield.

#### TO REMOVE SPEAKER.

1. Remove the 3 screws fixing terminal strip of multiple speaker cable.
  2. Using a wide-bladed screwdriver in order not to damage finish, remove 3 ornamental screws from front of cabinet. There are no nuts.
- When replacing, screw up firmly.

#### REPLACEMENT OF COILS.

Separate coils (such as L7) cannot be supplied. In the event of coil damage, the complete unit (L7 and L8) should be replaced.

When tuning coils are replaced, or if the H.F. wiring of the instrument has been disarranged, the tuned circuits must be re-ganged (see under H.F. tests and Adjustments).

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**REMEMBER THAT H.T. CURRENT VARIES WITH STRENGTH OF SIGNAL**

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**DO NOT USE MORE VOLUME THAN IS NECESSARY**

**COMPONENT CONTINUITY TESTS.**

The tests shown in bold type may be made whilst chassis remains in position.  
Remove all valves, lamp and batteries before testing.

**COILS.**

Test No.	Coil To be Tested.	Test between	D.C. Resistance.	Notes.
1	<b>Long wave frame</b> ...	<b>2 lugs in lid...</b> ...	<b>15 ohms</b> ...	—
2	<b>Medium wave frame</b>	<b>2 inside lugs on chassis</b> ...	<b>2 ohms</b> ...	—
3	H.F. anode coils— L1 (M.W.) ... L2 (L.W.) ...	SI, contact M and anode lead of V1 ... SI, contacts M and L ...	4.0 ohms ... 13.0 ohms ...	— —
4	<b>Oscillator reaction coils—</b> L3 ... L4 ...	<b>L.T.— accumulator spade and (—) socket of V2 valveholder.</b> <b>L.T. + accumulator spade and (+) socket of V2 valveholder.</b>	1.4 ohms ... 1.4 ohms ...	Remove pilot lamp before making this test.
5	Oscillator coils— L5 ... L6 ...	Measure across ends ... SI, contacts K and L ...	3.5 ohms ... 6.4 ohms ...	
6	I.F.T. 1— L7 ... L8 ... (Intermediate frequency transformer.)	Measure across ends ... Measure across ends ...	63 ohms ... 90 ohms ...	— —
7	<b>L1, L2, L5, L6 and L7</b>	<b>Anode leads of V1 and V2</b> ...	<b>90 ohms (approx.)</b> ...	Test between these components and chassis for freedom from "shorts."
8	I.F.T. 2— L9 ... L10 ... (Intermediate frequency transformer.)	Measure across ends ... Measure across ends ...	73 ohms ... 82 ohms ...	— —

Wave-change switch in L.W. position.

**RESISTANCES.**

Test No.	Resistance to be Tested.	Test between	D.C. Resistance.	Notes.
9	R1 ...	One side of F.A.E.2 (L.W.) and free end of resistance.	15,000 ohms	One side of this resistance must be disconnected before measuring.
10	R2 ...	SI, contact J and grid socket of V3 (VS2)	1.0 megohm ...	—
11	R3 ...	SI, contact A and anode lead of V3 (VS2)	1,000 ohms ...	—

**IT IS ADVISABLE TO ROTATE SET FOR MINIMUM BACK-GROUND**

## MODEL 269 WILL EASILY OPERATE AN EXTERNAL SPEAKER

### RESISTANCES.—continued.

Test No.	Resistance to be Tested.	Test Between	D.C. Resistance.	Notes.
12	R4 ... ..	Screen sockets of V1 and V2 valves...	15,000 ohms	—
13	R5 ... ..	Grid socket of V2 and chassis ... ..	1.0 megohm ...	—
14	R6 ... ..	Measure across ends ... ..	500,000 ohms	—
15	R7 ... ..	Measure across ends ... ..	230,000 ohms	—
16	R8 ... ..	Measure across ends ... ..	23,000 ohms	—
17	R9 ... ..	Pick-up sockets ... ..	23,000 ohms	—
18	R10 ... ..	Measure across ends ... ..	100,000 ohms	—
19	R11 ... ..	Measure across ends ... ..	2.3 megohms	—
20	R12 ... ..	G.B.— 2 plug and grid socket of V5 or V6.	230,000 ohms	—
21	R13 ... ..	Anodes of V3 and V4 ... ..	50,000 ohms	—
22	R14 ... ..	Anode of V3 and H.T. + 3 plug ...	7,500 ohms ...	—
23	VRI ... ..	Measure across ends ... ..	250,000 ohms	—
24	MR type WM26 metal rectifier.	<p>The resistance of each half of this rectifier should be as follows :—</p> <p><b>Forward resistance—</b>                      With negative lead of ohmmeter connected to positive (centre) of metal rectifier, the D.C. resistance of each half should be approximately 12,000 ohms when measured on AVO 100,000 ohms scale (7.5 volt battery in series).</p> <p><b>Reverse resistance—</b>                      With positive lead of ohmmeter connected to positive (centre), the D.C. resistance of each half should be not less than 2 megohms when measured on AVO 1 megohm scale (75 volt battery in series). <b>Do not</b> attempt to measure forward resistance on 1 megohm scale, and be sure that the positive lead of battery is connected to the positive side of rectifier when measuring reverse resistance. If these precautions are not taken the rectifier may be rendered useless.</p>		

### L.F. TRANSFORMERS.

Test No.	Component to be Tested.	Test between	D.C. Resistance.	Notes.
25	T1 intervalve transformer— Primary ... .. Secondary ... ..	C17 and chassis ... .. Grid of pentode sockets V5 and V6 ...	465 ohms ... 7,800 ohms total	— —
26	T2 speech transformer— Primary (high side) ... Secondary (low side)	Terminals 3 and 5 ... .. Terminals 1 and 2 ... ..	465 ohms ... 1.0 ohm ...	— Due to the 4.0 ohm speech coil connected across this winding, the parallel windings will measure 0.8 ohm.

**SUITABLE EXTRA SPEAKERS ARE MODELS 140 OR 141**

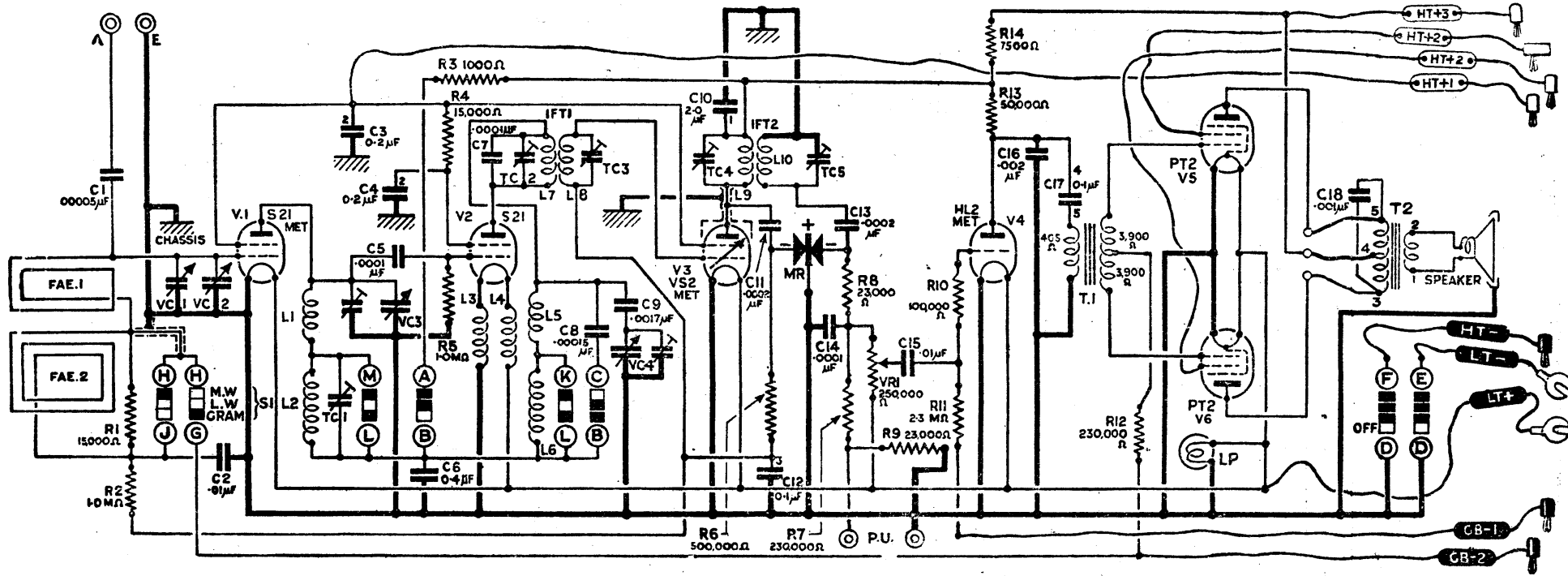


Fig. 1.

For electrical values of components, see pages 13 and 14.

## VALVE TABLE.

	‡S21 MET (V1)	‡S21 (V2)	VS2 MET (V3)	HL2 MET (V4)	PT2 (V5)	PT2 (V6)	Remarks.
Avo Scale (m/A)	0.012	0.012	0.012	0.012	0.012	0.012	If screen voltages or feeds are abnormal, the anode readings will be affected.  Connect an earth-wire to stabilise the instrument and set wave change switch to L.W. when taking "radio" values.
ANODE FEED ... ..	Radio : 0.6 to 1.9* Gram. : —	Radio : 1.0† Gram. : —	Radio : 0.9* Gram. : 0.35	Radio : 0.6* Gram. : 0.9	1.0	1.0	
Parts which should be checked if anode voltages and current are abnormal	L1, L2, R3, R14	L3, L4, L5, L6, L7, R3, R14	L9, R14	R13, R14	T2	T2	
Avo Scale (m/A)	0.012	0.012	0.012	—	0.012	0.012	If anode voltages or feeds are abnormal the screen readings will be affected.
SCREEN FEED ... ..	Radio : 0.1 to 1.5* Gram. : —	Radio : 0.6 Gram. : 1.3	Radio : 0.5 to 0.7* Gram. : 0.2	—	0.4	0.4	
Parts which should be checked if screen voltage and current are abnormal		R4					

\* Varies according to Strength of Station (carrier).

† No Signals obtainable.

All readings are ± 10 per cent.

Total filament current : 0.86 Amp. Anode feeds on V5 and V6 will vary considerably, depending on valves.

‡ S21 and S23 valves have similar characteristics and are interchangeable in all cases.

## MODEL 269 GIVES SPLENDID GRAMOPHONE REPRODUCTION

### TESTING.

If radio signals are unobtainable, switch receiver on and test in the following manner:—

1. TEST BATTERY, SPEAKER AND ACCUMULATOR.—If on making and breaking H.T. — plug at battery socket a rustling sound is heard, the speaker and batteries can be assumed O.K.
2. TEST FOR L.F. AMPLIFIER HL 2 } Place a wet finger on pick-up terminal marked "G." If  
 TEST FOR PENTODE PT 2 } both valves are functioning, a faint click will be heard.  
 TEST FOR LOUDSPEAKER }

The employment of a pick-up will definitely prove whether V4, V5 and V6, and associated components, are working correctly.

If speaker responds to contact at P.U. grid socket, but does not respond on radio, the fault must be associated with valves V1, 2, 3, or their associated components.

Before testing emission of valves individually, it is advisable to check the total H.T. consumption, which should be approx. 13 m/A if signals are not being received. Measure by inserting meter between H.T. — and battery. If total H.T. feed is high, suspect "short" to chassis.

### TOTAL H.T. FEEDS.

L.W. Radio (Not tuned to a station) ... ..	13.0 m/A.
"    (Average maximum volume) ... ..	7.5 m/A.
Gramophone (Quiescent) ... ..	6.5 m/A.
"    (Peak feed—Periodic only) ... ..	20.0 m/A.

The above readings were taken with a new H.T. battery, 175 volts. Recommend the renewal of H.T. battery when voltage has fallen below 100 volts.

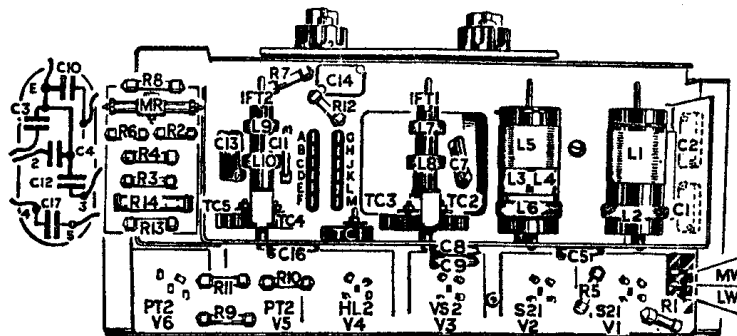


Fig. 2.

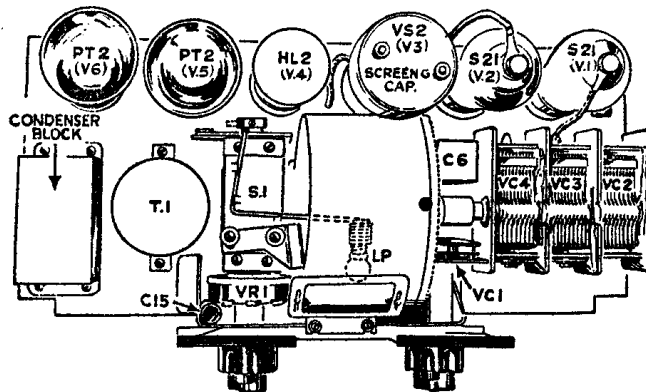


Fig. 3.

**THE MARCONIPHONE MODEL 19 PICK-UP IS RECOMMENDED**



## **H.F. TESTS AND ADJUSTMENTS.**

### **INSTABILITY.**

If instability is encountered, causing instrument to oscillate and set up a whistle in the speaker, this may be due to stray coupling.

See that the purple lead linking R2 with switch point J is not running close to R6. Whenever wiring is re-arranged, the circuits must be reganged.

Unless adequate test equipment is available it is suggested that replacement of coil units should not be attempted, as this work demands a considerable knowledge of the instrument.

### **TRIMMING OF I.F. TRANSFORMERS.**

If new units (such as coils L7 and L8) are fitted to I.F. transformers, the circuits must be re-trimmed. An accurately calibrated modulated oscillator which supplies a signal of constant frequency and magnitude must be employed.

**When making adjustments to trimming condensers, see that the screwdriver has an insulated handle and that the blade does not touch the chassis. A piece of insulating tape wrapped round the blade will prevent this.**

Keep testing leads as short as possible. Put switch to M.W. and turn tuning condenser to minimum.

If frame is connected, the anode lead of V1 must be detached.

Measurement of signal may be made by connecting an O-3 A.C. voltmeter across secondary of T2.

Proceed as follows :—

1. Set oscillator to 125 K.C. and loosely couple output coil by placing it near the valve socket of V.2.
2. Switch on the oscillator and trim TC3 for maximum deflection of meter.
3. Trim TC2, TC4 and TC5 in the order given.

The adjustment of TC5 is not critical. **THE CANS MUST BE IN PLACE WHEN RE-TRIMMING.**

### **REGANGING OF TUNING CONDENSERS.**

If tuning coils L1, L2, L5 or L6 have been replaced or the associated wiring disarranged, the trimmers on sections VC3 and VC4 of ganged condenser must be re-adjusted. The re-trimming of I.F. transformers will also call for the re-adjustment of the tuned circuits L1, L2, L5 and L6.

Employ an 0-3 A.C. voltmeter (connected across the output side of speech coupling transformer T2) as an output meter.

Remove frame aerial terminal strip from chassis and connect the two output leads from the oscillator on to the **outer** terminals from which the frame aerial has been disconnected.

The output coupling coil of the signal generator will not be required.

Unscrew the two trimmers of ganged condensers to minimum and set the wavechange switch to M.W.

The ganged condenser must now be set to minimum capacity, i.e., with vanes fully disengaged.

Switch on the oscillator. Screw up VC3 almost to maximum.

Next screw up VC4 until peak oscillator signal is obtained and finally adjust VC3 for maximum reading on output meter. Go over these adjustments again, starting with VC4 trimmer.

## ELECTRICAL INTERFERENCE.

Attention is drawn to the activities of H.M. Post Office and the British Broadcasting Corporation in investigating the sources of interference in the reception of Broadcast Programmes from electrical sources exterior to radio receivers, such as tramways, electric signs, motors, X-ray apparatus and similar installations.

### WHAT TO DO.

1. Make absolutely certain that the interference is not within the instrument by disconnecting the aerial (if any) and shorting the frame aerials.
2. Obtain from a Post Office (or the B.B.C.) a copy of the special questionnaire form issued by them.
3. Fill in the form accurately, giving in addition to the answers required :—
  - (a) Name of the manufacturer of the receiver.
  - (b) The manufacturer's Cat. No. of the receiver.
4. Send the questionnaire back as directed, together with **brief** notes as to possible source of interference which your local knowledge may suggest.
5. **Do not** assure your customer that a cure will be effected.
6. The P.O./B.B.C. organisation is one for investigating the **cause** of complaint with a view to ascertaining whether or not a cure can be effected. Such investigations may be both delicate and lengthy and require both goodwill and tact to bring to a successful conclusion. **Do not** suggest to the owner (if known) of the interfering apparatus that your application is in any way a measure of retaliation.
7. It is of the utmost importance that this valuable channel of co-operation with H.M. Post Office and the B.B.C. should not be employed until every possible test has been made to ensure that the interference complained of comes definitely from a source **exterior** to the instrument.

### WARNING.

**Marconi valves have been selected for this instrument because of their high performance and special electrical characteristics. Inferior performance or actual damage may result if valves other than the specified Marconi types are employed.**

### RESISTANCE COLOUR CODE.

Resistances are coded with three colours :—

BODY colour indicates 1st figure.  
END colour indicates 2nd figure.  
SPOT colour indicates additional 0's.

BODY and END Colours.  
(1st and 2nd figures.)

- |   |         |
|---|---------|
| 0 | Black.  |
| 1 | Brown.  |
| 2 | Red.    |
| 3 | Orange. |
| 4 | Yellow. |
| 5 | Green.  |
| 6 | Blue.   |
| 7 | Violet. |
| 8 | Grey.   |
| 9 | White.  |

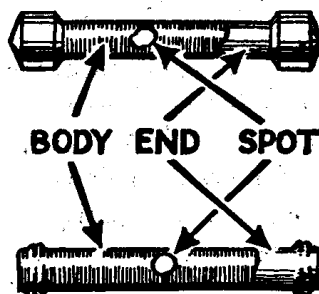


Fig. 4.

SPOT Colours.  
(Additional 0's.)  
.0 Black.  
0. Brown.  
00. Red.  
0,000. Yellow.  
00,000. Green.

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**ALWAYS GIVE FULL DETAILS WITH SPARE PART ORDERS**

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## SPARE PART LIST. MODEL 269.

Part No.	Description.	Retail List Price.	Per
<b>CABINET PARTS AND FITTINGS.</b>			
		£. s. d.	
—	<b>Cabinet complete</b> ... ..	4 5 0	Each.
1908A	Turntable, with rubber ring ... ..	0 2 9	"
1912	Rubber for turntable ... ..	0 0 11	"
9545	Screw No. 4 × $\frac{1}{8}$ -in. R.H.I., securing turntable ... ..	0 0 3	Doz.
2288	Hinges for back ... ..	0 0 4	Each.
9549	Screw No. 3 × $\frac{1}{2}$ -in. F.H.I., securing hinges ... ..	0 0 4	Doz.
2289	Catch and plate complete ... ..	0 0 3	Each set.
9922	Screw No. 2 × $\frac{3}{8}$ -in. R.H.I., securing catches and plates ... ..	0 0 4	Doz.
2925	Back locating pin ... ..	0 0 1	Each.
7341	Back locating pin socket ... ..	0 0 1	"
16723	Silk for back ... ..	0 0 3	"
16720	Felt for battery stop, large ... ..	0 0 2	Doz.
16721	Felt for battery stop, small ... ..	0 0 1	"
16730A	Tuning escutcheon, with felt ... ..	0 2 1	Each.
11029	Screw No. 2 × $\frac{7}{16}$ -in. Rsd.H.I., securing escutcheon ... ..	0 0 3	Doz.
—	Baffle board, with silk ... ..	0 2 1	Each.
16722	Silk only ... ..	0 0 7 $\frac{1}{2}$	"
9545	Screw No. 4 × $\frac{1}{8}$ -in. R.H.I., securing baffle board ... ..	0 0 3	Doz.
16416A	Station chart ... ..	—	—
16645	Station chart holder, L.H. ... ..	—	—
16646	Station chart holder, R.H. ... ..	—	—
—	Pin, 19 gauge × $\frac{1}{16}$ -in. R. head, securing holders ... ..	—	—
<b>LOUDSPEAKER.</b>			
16000L	<b>Loudspeaker, complete with T2 output transformer</b> ... ..	2 6 0	Each.
16020	Ornamental screw } securing loudspeaker ... ..	0 0 1	"
14761	Ornamental washer } ... ..	0 0 7	Doz.
16000A	Cone chassis, with three fixing lugs, transformer base plate, four studs for securing magnet and two studs for spider of cone ... ..	0 3 2	Each.
16763A	Magnet ... ..	1 5 0	"
11627	Nut } securing magnet on studs of cone chassis ... ..	0 0 6	Doz.
3167	Washer } ... ..	0 0 2	"
16006B	Speech coil and cone, complete with spider and inner and outer mounting rings ... ..	0 5 0	Each.
11636	Nut } securing spider of cone to studs on cone chassis... ..	0 0 4	Doz.
6314	Washer } ... ..	0 0 2	"
1883	Spring washer } ... ..	0 0 3	"
16007	Cardboard washer } ... ..	0 0 1	"
16012	Felt ... ..	0 0 2	Each.
(Mounting ring of cone and felt are secured to cone chassis with durofix)			
10616F	T2—Output transformer ... ..	0 9 0	"
16013A	Terminal panel on transformer with five tags and screws ... ..	0 1 6	"
12629	Terminal screw on panel ... ..	0 0 2	Doz.
15159	Tag ... ..	0 0 3	"
8777	Screw, securing panel ... ..	0 0 6	"
15719F	C18—0.001 mfd. condenser ... ..	0 0 9	Each.
12619	Screw, securing T2 to baseplate on cone chassis ... ..	0 0 6	Doz.
16024	Dust bag ... ..	0 1 0	Each.
16724A	Loudspeaker lead, complete with connecting panel and 4 tags ... ..	0 1 8	"
11761A	Panel ... ..	0 0 6	"
15159	Tag ... ..	0 0 3	Doz.
15161	Tag earthing ... ..	0 0 6	"
11376	Screw } connecting panel on lead to radio unit ... ..	0 0 6	"
1048	Washer } ... ..	0 0 2	"
<b>RADIO UNIT.</b>			
14940B	<b>Radio Unit, complete for Model 269</b> ... ..	7 7 6	Each.
11092	Strap } securing radio unit ... ..	0 0 2	"
16725	Bolt } ... ..	0 0 1	"
3167	Washer } ... ..	0 0 2	Doz.
<b>Marconi Valves.</b>			
—	V1 S21 (or S23) met., H.F. amplifier ... ..	—	—
—	V2 S21 (or S23) plain, detector oscillator ... ..	—	—
—	V3 VS2 met., I.F. amplifier ... ..	—	—
—	V4 HL2 met., L.F. amplifier ... ..	—	—
—	V5 PT2 plain } Output push pull ... ..	—	—
—	V6 PT2 plain } ... ..	—	—
16762	Valve screen ... ..	0 0 2	Each.

**SPARE PART LIST—continued.**

Part No.	Description.	Retail List Price.	Per
<b>RADIO UNIT—continued.</b>			
		£ s. d.	
<b>Marconi Valves—continued.</b>			
16761A	Valve screen support with tag in centre ... ..	0 0 1	Each.
16760	Tag ... ..	0 0 1½	Doz.
11232	Screw ... ..	0 0 2	"
3165	Washer ... ..	0 0 2	"
15048	Tag ... ..	0 0 4	"
16871	Spacing nut ... ..	0 0 9	"
11814	Terminal nut ... ..	0 0 5	"
10545	Valve panel ... ..	0 0 2	Each.
10546	Valve leg clip ... ..	0 0 7	Doz.
13703	Valve panel cover, lower ... ..	0 0 2	Each.
10547	Valve panel cover, upper ... ..	0 0 2	"
13804	Rivet, securing above parts to chassis ... ..	0 0 3	Doz.
<b>Frame Aerials.</b>			
16717B	FAE1—M.W. frame aerial, complete with fixing brackets ... ..	0 4 0	Each.
9545	Screw No. 4 × ⅜-in. R.H.B., securing frame brackets to cabinet ... ..	0 0 3	Doz.
11748B	FAE2—L.W. frame aerial complete with fixing brackets ... ..	0 5 0	Each.
12909	Screw ... ..	0 0 1	"
11636	Nut ... ..	0 0 4	Doz.
3166	Washer ... ..	0 0 2	"
11655	Bracket, on frame aerials ... ..	0 0 2	Each.
11475	Screw, securing bracket to frame ... ..	0 0 2	Doz.
11734A	Terminal strip with two tags ... ..	0 0 5	Each.
11735	Backing strip ... ..	0 0 1½	"
8694	Screw No. 3 × ¼-in. R.H.B., securing terminal strip to frame ... ..	0 0 4½	Doz.
<b>Frame Aerial Connecting Leads.</b>			
16733A	Lead—purple, 12½ in. long ... ..	0 0 2	Each.
16735A	Lead—purple, 9 in. long ... ..	0 0 1½	"
16734A	Lead—green, white tracer, 12½ in. long ... ..	0 0 2	"
16736A	Lead—green, white tracer, 9 in. long ... ..	0 0 1½	"
833	Cleat for leads ... ..	0 0 6	Doz.
8692	Screw ... ..	0 0 3	"
11761A	Panel with three tags ... ..	0 0 6	Each.
1048	Washer ... ..	0 0 2	Doz.
11376	Screw ... ..	0 0 6	"
<b>ELECTRICAL COMPONENTS.</b>			
<b>Coils, I.F. Transformers, and Trimmers.</b>			
14966A	{ L1—H.F. anode coil, M.W. } ... ..	0 2 6	Each.
	{ L2—H.F. anode coil, L.W. } ... ..		
14967A	{ L3—Oscillator coil, reaction } ... ..	0 3 3	"
	{ L4—Oscillator coil, reaction } ... ..		
	{ L5—Oscillator coil, M.W. } ... ..		
	{ L6—Oscillator coil, L.W. } ... ..		
11230	Screw ... ..	0 0 3	Doz.
3165	Washer ... ..	0 0 2	"
7601	Spacing collar ... ..	0 0 4	"
14961	Coil screen ... ..	0 0 5	Each.
12917	Nut ... ..	0 0 4	Doz.
3166	Washer ... ..	0 0 2	"
14553H	1st I.F. transformer ... ..	0 5 3	Each.
14553F	{ L7—Primary } ... ..	0 2 6	"
	{ L8—Secondary } ... ..		
12917	Nut ... ..	0 0 4	Doz.
3166	Washer ... ..	0 0 2	"
14963A	Stud and bracket ... ..	0 0 4½	Each.
12640B	TC2 and TC3—twin pre-set condensers ... ..	0 2 1	"
11381	Screw ... ..	0 0 4	Doz.
1062	Washer ... ..	0 0 3	"
14961	Screen for 1st I.F.T. ... ..	0 0 5	Each.
14553G	2nd I.F. transformer ... ..	0 5 3	"
14553E	{ L9—Primary } ... ..	0 2 6	"
	{ L10—Secondary } ... ..		
12640B	TC4 and TC5—twin pre-set condensers (fixing screw, nuts, washers and bracket as for I.F.T. 1) ... ..	0 2 1	"
7601	Spacing collar ... ..	0 0 4	Doz.
3165	Washer ... ..	0 0 2	"
11629	Nut ... ..	0 0 6	"
11818	Screen for 2nd I.F.T. ... ..	0 0 5	Each.

**SPARE PART LIST—continued.**

Part No.	Description.	Retail List Price.	Per
<b>ELECTRICAL COMPONENTS—continued.</b>			
		£ s. d.	
<b>Coils, I.F. Transformers, and Trimmers—continued.</b>			
12917	Nut	0 0 4	Doz.
3166	Washer } securing screens on I.F. transformers ... ..	0 0 2	"
16076D	<b>TI—intervalve transformer</b> ... ..	0 12 0	Each.
12619	Screw } securing TI ... ..	0 0 6	Doz.
1048	Washer } ... ..	0 0 2	"
<b>Condensers and Associated Parts.</b>			
15719A	C1—0.00005 mfd. ... ..	0 0 8	Each.
or 7607A	Washer ... ..	0 0 3	Doz.
1062	Rivet ... ..	0 0 4	"
13806	C2—0.01 mfd. ... ..	0 2 1	Each.
15746B	Rivet ... ..	0 0 3	Doz.
or 5785A	{ C3 —0.2 mfd.	} large condenser block ... ..	0 5 3
13808	{ C4 —0.2 mfd.		
	{ C10—2.0 mfd.		
	{ C12—0.1 mfd.		
	{ C17—0.1 mfd.		
12619	Screw ... ..	0 0 6	Doz.
15719B	C5 —0.0001 mfd. ... ..	0 0 9	Each.
or 2308A	Washer ... ..	0 0 3	Doz.
1062	Rivet ... ..	0 0 4	"
13806	C6—0.4 mfd. ... ..	0 1 8	Each.
16691B	Screw ... ..	0 0 6	Doz.
12619	C7—0.0001 mfd. ... ..	0 0 9	Each.
15719B	C8—0.00015 mfd. ... ..	0 0 9	"
or 2308A	Rivet ... ..	0 0 4	Doz.
15719Z	C9 —0.0017 mfd. ... ..	0 1 3	Each.
13806	C11—0.0002 mfd. ... ..	0 0 9	"
15719L	C13—0.0002 mfd. ... ..	0 0 9	"
15719C	C14—0.0001 mfd. ... ..	0 0 9	"
15719C	Rivet ... ..	0 0 4	Doz.
15719B	C15—0.01 mfd. ... ..	0 0 9	Each.
or 2308A	C16—0.002 mfd. ... ..	0 1 1	"
13806	C16—0.003 mfd. ... ..	0 1 4	"
16316A	C18—0.001 mfd. on T2 ... ..	0 0 9	"
15719G	TC1—0.00007 mfd.—L.W. trimmer ... ..	0 1 3	"
or 15719H	Screw ... ..	0 0 2	Doz.
15719F	Washer } securing TC1 ... ..	0 0 2	"
11737C	Nut ... ..	0 0 6	"
10845	TC2 { 0.0001 mfd. } in 1st I.F.T....	} ... ..	0 2 1
3165	TC3 { 0.0001 mfd. }		
11629	TC4 { 0.0001 mfd. } in 2nd I.F.T.		
12640 B	TC5 { 0.0001 mfd. }	0 2 1	"
10611F	VCI—0.0001 mfd. ... ..	0 3 6	"
3910	Washer } securing VCI to bracket on cursor mounting bracket ... ..	0 0 2	Doz.
5607	Nut } ... ..	0 0 1	Each.
14957A	VC2 } 3-gang variable condenser with two trimmers ... ..	0 11 0	"
	VC3 } ... ..		
	VC4 } ... ..		
16025	Distance piece } securing three gang condenser ... ..	0 0 6	Doz.
17058	Screw } ... ..	0 0 2	"
3167	Washer } ... ..	0 0 6	"
14980A	Scale drum ... ..	0 1 2	Each.
11773	Grub screw, securing drum ... ..	0 0 5	Doz.
14976B	Scale ... ..	0 0 8	Each.
1048	Washer } securing scale to drum ... ..	0 0 2	Doz.
211	Screw } ... ..	0 0 6	"
3165	Washer } ... ..	0 0 2	"
11227	Screw } ... ..	0 0 6	"
14942A	Cursor mounting bracket supporting VRI, cursor, condenser drive spindle and VCI ... ..	0 0 8	Each.
12619	Screw securing bracket ... ..	0 0 6	Doz.
16702A	Condenser drive bush with drive sleeve ... ..	0 0 7	Each.
11676	Drive shaft ... ..	0 0 2	"

**SPARE PART LIST—continued.**

Part No.	Description.	Retail List Price.	Per
<b>ELECTRICAL COMPONENTS—continued.</b>			
		£ s. d.	
<b>Condensers and Associated Parts—continued.</b>			
10674	Grub screw ... ..	0 0 3	Doz.
14945	Cursor ... ..	0 0 2	Each.
14947	Bracket ... ..	0 0 2	"
11248	Screw } securing cursor to bracket (14947) and latter to cursor mounting	0 0 7	Doz.
1048	Washer } bracket (14942A) ... ..	0 0 2	"
3165	Washer } ... ..	0 0 2	"
12968	Pointer ... ..	0 0 1	Each.
11235	Screw, securing pointer to cursor ... ..	0 0 3	Doz.
15935A	Scale guide bracket with two rollers ... ..	0 0 4	Each.
12619	Screw } securing bracket to top of switch ... ..	0 0 6	Doz.
4396	Washer } ... ..	0 0 2	"
14996A	Lampholder, complete ... ..	0 0 4	Each.
16296A	Pilot lamp—2-volt 0.06 amp. continuous burning ... ..	0 0 6	"
<b>Resistances.</b>			
6000AS	VRI—250,000 ohms Volume Control ... ..	0 4 2	"
15806	Distance piece ... ..	0 0 3	"
4400	Nut ... ..	0 0 2	"
5787AG	R1 —15,000 ohms ... ..	0 0 9	"
5787G	R2 —1 megohm ... ..	0 0 9	"
5787K	R3 —1,000 ohms ... ..	0 0 9	"
5787AG	R4 —15,000 ohms ... ..	0 0 9	"
5787G	R5 —1 megohm ... ..	0 0 9	"
5787C	R6 — $\frac{1}{2}$ megohm ... ..	0 0 9	"
5787Z	R7 —230,000 ohms ... ..	0 0 9	"
5787AA	R8 — 23,000 ohms ... ..	0 0 9	"
5787AA	R9 — 23,000 ohms ... ..	0 0 9	"
5787Q	R10—100,000 ohms ... ..	0 0 9	"
5787AL	R11— 2.3 megohm ... ..	0 0 9	"
5787Z	R12—230,000 ohms ... ..	0 0 9	"
5787P	R13— 50,000 ohms ... ..	0 0 9	"
10450M	R14— 7,500 ohms ... ..	0 0 9	"
or 5787AM			
11812A	MR—Rectifier, A.V.C. and 2nd Detector ... ..	0 10 0	"
<b>Switch.</b>			
14950C	S1—Change-over switch ... ..	0 6 3	"
14954	Guard plate, marked "A" to "M" ... ..	0 0 2	"
1048	Washer } securing S1 and guard plate ... ..	0 0 2	Doz.
8777	Screw } ... ..	0 0 6	"
14952	Lamp bracket, on top of S1 ... ..	0 0 1	Each.
14951	Top plate ... ..	0 0 1	"
8777	Screw securing top plate and lamp bracket... ..	0 0 6	Doz.
11696A	Strip with six spring contacts ... ..	0 2 8	Each.
1062	Washer } securing contact strip ... ..	0 0 3	Doz.
8777	Screw } ... ..	0 0 6	"
11051F	Rotor with six contacts ... ..	0 0 10	Each.
11063	Collar ... ..	0 0 2	"
10674	Grub screw, securing collar and rotor ... ..	0 0 4	Doz.
1039	Washer } at front end of rotor ... ..	0 0 2	"
12567	Spring } ... ..	0 0 6	"
12541A	Locating collar, with 4 pins ... ..	0 0 4	Each.
10674	Grub screw, securing locating collar ... ..	0 0 4	Doz.
12013	Tension spring ... ..	0 0 9	"
14950B	Switch frame, rear, with locating lever and roller ... ..	0 0 8	Each.
14950	Switch frame, front ... ..	0 0 2	"
14953	Spindle ... ..	0 0 5	"
<b>Panels, Screens, etc.</b>			
11733A	Frame aerial connecting panel ... ..	0 0 8	Each.
3152A	Aerial and earth panel ... ..	0 0 4	"
16073A	P.U. panel ... ..	0 0 4	"
13803	Rivet securing panels ... ..	0 0 3	Doz.
14948A	L.S. connecting panel on plate ... ..	0 0 6	Each.
8777	Screw, securing plate to sub-chassis ... ..	0 0 6	Doz.
11733A	Panel ... ..	0 0 8	Each.
13803	Rivet securing panel to plate ... ..	0 0 3	Doz.
14956A	Resistance panel, with 13 tags ... ..	0 2 3	Each.
14955	Insulating backing for panel ... ..	0 0 6	Doz.

**SPARE PART LIST—continued.**

Part No.	Description.	Retail List Price.	Per
<b>ELECTRICAL COMPONENTS—continued.</b>			
<b>Panels, Screens, etc.—continued.</b>			
1048	Washer } securing resistance panel to sub-chassis ... ..	£ s. d. 0 0 2	Doz.
8777	Screw } ... ..	0 0 6	"
14977	Screen, at end of chassis over resistance panel ... ..	0 0 3	Each.
12619	Screw, securing screen ... ..	0 0 6	Doz.
14975	Back screen, covering underside of valveholders ... ..	0 0 2½	Each.
1048	Washer } securing back screen ... ..	0 0 2	Doz.
12619	Screw } ... ..	0 0 6	"
14946	Straps, at end of chassis ... ..	0 0 4	Each.
13246	Screw } securing straps ... ..	0 0 3	Doz.
3166	Washer } ... ..	0 0 2	"
<b>Leads, plugs, labels, etc.</b>			
16697A	Set of battery leads, complete ... ..	0 3 8	Each.
8519	L.T. tags ... ..	0 0 1	"
16288A	Battery plug, red ... ..	0 0 2	"
16288B	Battery plug, black ... ..	0 0 2	"
16287A	Battery plug, two-way, red ... ..	0 0 2	"
15453A	Lead label, L.T. + ... ..	0 0 1	"
15453B	Lead label, L.T. — ... ..	0 0 1	"
15453C	Lead label, H.T. — ... ..	0 0 1	"
15453D	Lead label, H.T. + 1 ... ..	0 0 1	"
15453E	Lead label, H.T. + 2 ... ..	0 0 1	"
15453F	Lead label, H.T. + 3 ... ..	0 0 1	"
15453H	Lead label, G.B. — 1 ... ..	0 0 1	"
15453J	Lead label, G.B. — 2 ... ..	0 0 1	"
3083	Rubber sleeve, small ... ..	0 0 6	Doz.
3084	Rubber sleeve, large ... ..	0 0 6	"
3153	Cleat for leads ... ..	0 0 3	"
4714	Insulation bush, large ... ..	0 0 1	Each.
or 16756	Insulation bush, small ... ..	0 0 1	"
10086	Tag for anode leads ... ..	0 0 6	Doz.
or 16755	Knob—outer ... ..	0 0 8	Each.
3338	Grub screw ... ..	0 0 5	Doz.
16758A	Knob—inner ... ..	0 0 7	Each.
11773	Grub screw ... ..	0 0 4	Doz.
16759A	Escutcheon plate ... ..	0 0 9	Each.
10674	Label—Use Marconi Valves ... ..	0 0 2	"
16732A	Model, Warning and Patents label ... ..	0 0 6	Doz.
13874	Instruction card ... ..	0 0 4	Each.
17088	Accumulator shield ... ..	0 0 6	"
17094	Screw No. 4 × ¾-in. R.H.I., securing shield ... ..	0 0 2	Doz.
16737	Accumulator (Jelly filled type) ... ..	—	—
8602	H.T. Battery (175-volt, Cat. No. 550 ... ..	—	—

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1. Model number and unit type number.
2. Spare part number and description as given in the above list.
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1. General performance far ahead of ordinary portables—comparable with that of mains instruments.
2. Remarkable quality and volume of reproduction—undistorted output  $1\frac{1}{4}$  Watts.
3. More than enough range and selectivity for any ordinary purpose.
4. Full Delayed Automatic Volume Control.
5. Very economical operation—average H.T. current only 7.5 m/A.
6. Splendid results from an external speaker or a gramophone pick-up.

