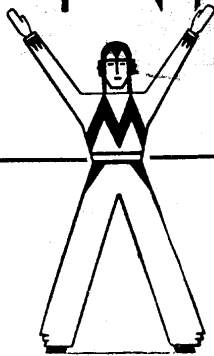


MARCONI PHONO



MODEL 292

NINE VALVE AUTOMATIC
RADIOGRAMPHONE DE LUXE

TECHNICAL

INFORMATION

PRIVATE AND CONFIDENTIAL

TO THE TRADE ONLY

DEC

1934

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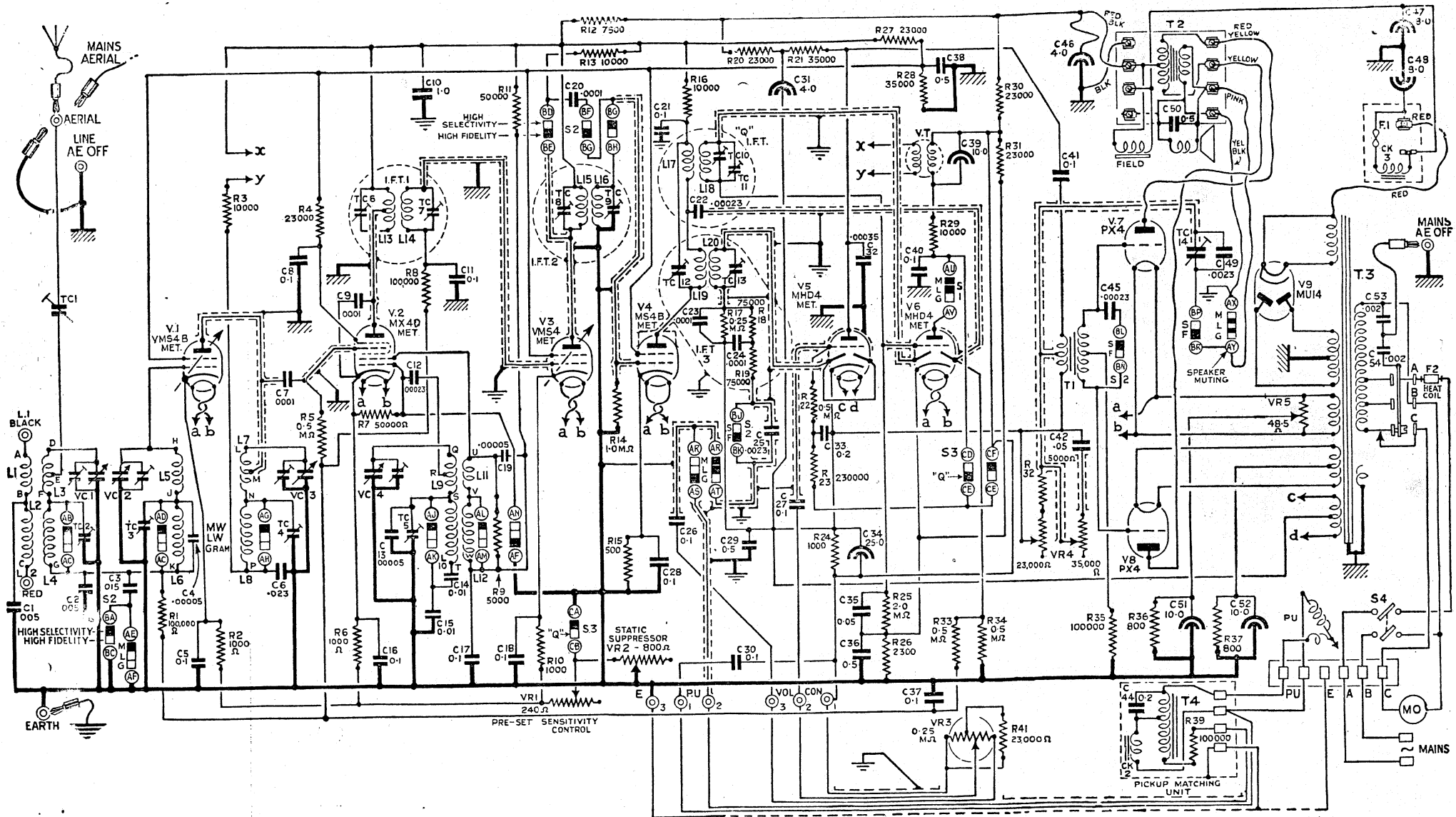


FIG. 1

TESTS

TEST VOLTAGES	VMS4B Met (V1)	MX4D Met (V2)	VMS4 Met (V3)	MS4B Met (V4)	MHD4 Met (V5)	MHD4 Met (V6)	PX4 (V7 and V8)	MU14 (V9)	Remarks.
Measured between..	1.2 to 1.8*	2.0*	3.0 to 3.5*	1.4*	80 to 105	7.0 to 8.0*	36* grid bias		
Parts which should be checked if TEST VOLTAGES are abnormal	Met. to frame	Met. to frame	Met. to frame	Met. to frame	Cathode to frame	Cathode to frame	Filament and frame	See that connections at terminal panel of speaker transformer are correct, otherwise this valve may be damaged	* To obtain these readings the meter used must have a full scale deflection of AT LEAST 10 TIMES the indicated value.
	C7, L7, L8, R2, C5, C6, TC4, R3, Visual tuner, R27, R12, T2, C46, C47, C48, CK3, R28, C38, CK3, R28, C38, VK1 and Field.	C9, L13, TC6, R12, R4, C8, R27, R6, L11, L12, R11, C17, T2, C46, C47, C48, CK3, R28, C38, VR1 and Field.	L15, TC8, R10, R12, R27, T2, C46, C47, C48, CK3, R28, C38, VR1 and Field.	L17, L19, TC12, C21, R16, R12, R27, R15, T2, C46, C47, C48, CK3, R28, C38 and Field.	R20, R21, C31, R24, C29, T2, C46, C47, C48, CK3, VT, R29, R26, R30 and R31.	S1 contacts AU and AV, C40, R29, VT, R30, R31, T2, C46, C47, C48, CK3, Field, R25 and R26.	R36, R37, VR5, T2, C47, C48 CK3 and Field.		

VALVE EMISSION READINGS

ANODE/FRAHE VOLTS	VMS4B Met (V1)	MX40 Met (V2)	VMS4 Met (V3)	MS4B Met (V4)	MHD4 Met (V5)	MHD4 Met (V6)	PX4 (V7 and V8)	REMARKS
ANODE/FRAHE VOLTS	135 v.	170 v. mixer anode	170 v.	135 v.	120-140 v.	Radio: 90-130 Gram.: Nil	255 v.	Most of these values will be found to vary (due to A.V.C.) with signals. Readings are for average signals on M.W. except where stated otherwise.
SCREEN/FRAHE VOLTS	60-65 v.*	40 v.*	60-65 v.*	60-65 v.*	—	—	—	
ANODE FEED m/A.'s	1.0-1.4 m/A.'s	0.1 m/A. to 0.35 m/A.	4.0 m/A.'s	1.5 m/A.'s	0.5 to 0.9 m/A.'s.	Signals: Nil No Signals: 2.5	48 m/A. each	
SCREEN FEED m/A.'s	0.5 m/A.	0.8 m/A.	1.8 m/A.'s	0.6 m/A.	—	—	—	
OSC. ANODE/FRAHE VOLTS	—	75 v.	—	—	—	—	—	
OSC. ANODE FEED	—	1.5 m/A.'s	—	—	—	—	—	—
CATHODE VOLTS	Knob in ... 1.5 v. Knob out ... 4.0 v. * Measure between metallising and chassis	Knob in ... 2.0 v. Knob out ... 4.5 v. * Measure between metallising and chassis	Knob in ... 3.0 v. Knob out ... 5.5 v.	1.4v.* metallising to chassis	80-105 v. cathode to frame	7.0*-8.0 v. cathode to frame (Delay volts.)	36 v.* filament to chassis	Readings \pm 10 per cent., but will depend on type of meter used. The voltage measurements shown are those recorded on a meter having a resistance of 200 ohms. per volt.
Depend on position of Silent Tuning and Static controls.								

Total H.T. feed, including speaker field (measured at fuse—R.H. side of speaker) ... 120 m/A.'s.

Total H.T. feed, excluding speaker field and output valves (measured at red-black terminal on T2 terminal panel) ... 29 m/A.'s.

* Measure between metallising and frame.

NOTE:—Condensers C46, C47 and C48 are mounted on speaker support.

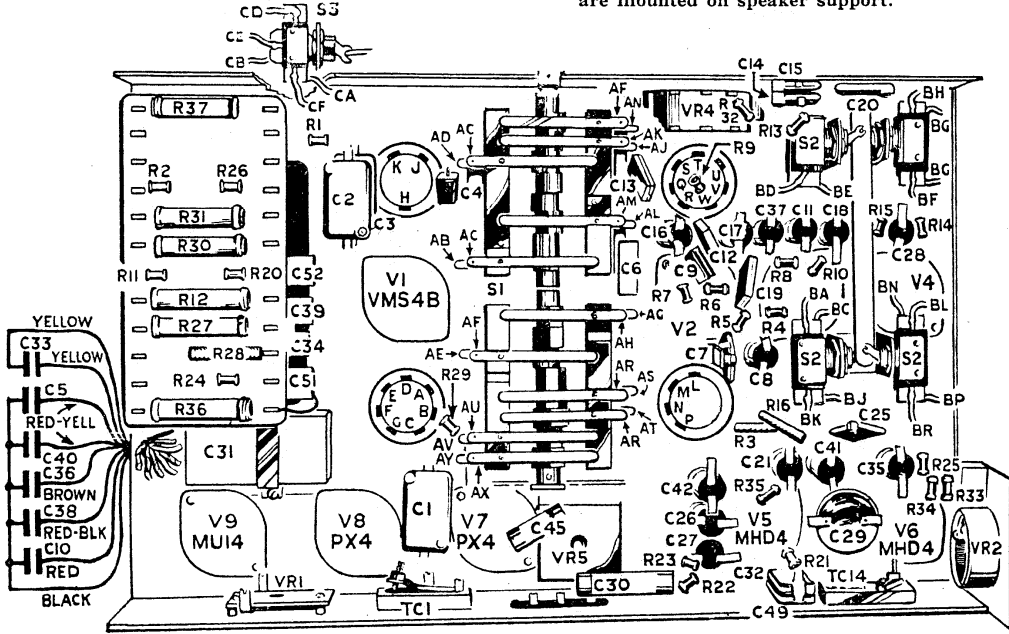
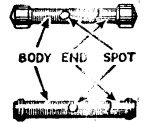


Fig. 2

RESISTANCE COLOUR CODE.

BODY and END Colours. (1st and 2nd figures.)	SPOT Colours (Additional 0's.)
0 Black.	0 Black.
1 Brown.	00 Brown.
2 Red.	000 Red.
3 Orange.	0000 Orange.
4 Yellow.	00000 Yellow.
5 Green.	00,000 Green.
6 Blue.	
7 Violet.	
8 Grey.	
9 White.	



NEW WIRE COLOUR CODE.

H.T. positive (+) ... Red.
 Anodes of valves when not direct to H.T.+ ... Red, Yellow.
 Screening grids when not direct to H.T.+ ... Red/Black.
 Grid circuits ... Green.
 Earth ... Black.
 Mains ... Orange.
 Heaters, filaments and cathodes ... Brown.
 General purpose colour ... Yellow.
 Yellow will be used for leads not falling in the general code, and when stocks of any colour are temporarily exhausted in the factory.

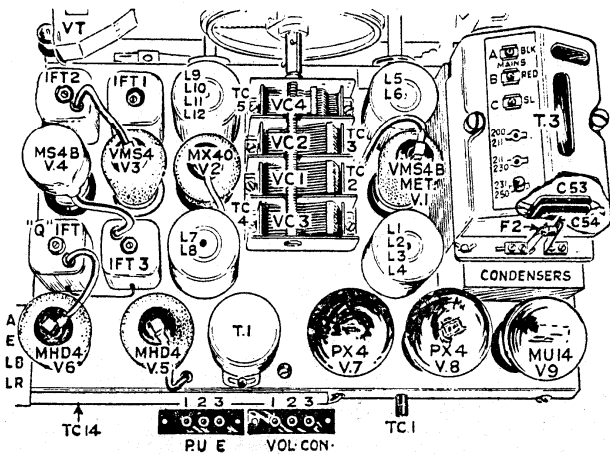


Fig. 3

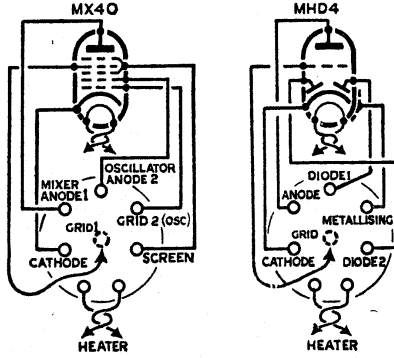


Fig. 4

CONNECTIONS TO VALVES AS SEEN FROM UNDERSIDE OF CHASSIS.

FOR SPARE PARTS LIST OF ELECTRICAL COMPONENTS, SEE OVERLEAF.

WARNING:—Do not interfere with the trimming condenser TC14 (bottom R.H. corner of chassis) the setting of which is very critical. This condenser controls the tone balance of the instrument and may cause instability or oscillation if out of adjustment.

Ref. No.	Description.	Part No.	Ref. No.	Description.	Part No.	Ref. No.	Description.	Part No.
L 1	M.W. line coil	complete with can 18430E	C 22	0.00023 mfd.	15719AD		Fixed resistances—	
L 2	L.W. "		C 23	0.0001 "	15719B	R 23	230,000 ohms	18530M
L 3	M.W. aerial coil		C 24	0.0001 "	15719B	R 24	1,000 "	18530B
L 4	L.W. "		C 25	0.0023 "	15719AG	R 25	2.0 megohms	18530Q
L 5	M.W. bandpass coil		C 26	0.1 "	18318C	R 26	2,300 ohms	18530R
L 6	L.W. "		C 27	0.1 "	18318C	R 27	23,000 "	10451R
L 7	M.W. H.F. trans. coil		C 28	0.1 "	18318C	R 28	35,000 "	17541E
L 8	L.W. "	C 29	0.5 "	18319E	R 29	10,000 "	18530F	
L 9	M.W. osc. coil	C 30	0.1 "	16316D	R 30	23,000 "	10451R	
L 10	L.W. "	C 31	4.0 "	17595A	R 31	23,000 "	10451R	
L 11	M.W. reaction coil	C 32	0.00035 "	15719AE	R 32	5,000 "	18530E	
L 12	L.W. "	C 34	25 mfd.	17250B	R 33	0.5 megohm	18530N	
L 13	1st I.F. transformer	C 35	0.05 mfd.	18318B	R 34	0.5 "	18530N	
L 14		C 37	0.1 "	18318C	R 35	100,000 ohms	18530L	
L 15	2nd I.F. transformer	C 39	10.0 mfd.	17250A	R 36	800 "	10451C	
L 16		C 41	0.1 mfd.	18318C	R 37	800 "	10451C	
L 17	"Q" transformer	C 42	0.05 "	18318B	R 39	See Pick-Up Unit.		
L 18		C 44	See Pick-Up Unit		R 40	100 ohms	5786T	
L 19	3rd I.F. transformer	C 45	0.00023 mfd.	18580B	R 41	23,000 "	18530G	
L 20		C 49	0.0023 "	15719AP	S 1	Wavechange switch	18500B	
VC 1	Ganged condensers and trimmers	C 50	0.5 "	18319E		Selectivity switch—		
VC 2		C 51	10.0 mfd.	17250C	S 2	Contacts BD, BE only	19214A	
VC 3		C 52	10.0 "	17250C		"B" contacts	18426A	
VC 4		C 53	0.002 mfd.	10064B	S 3	Silent tuning switch	18817A	
TC 1	Trimming condensers—30-140 mmfd.	C 54	0.002 "	10064B	S 4	Mains switch..	14672C	
TC 2		C 46	4.0 mfd.		V 1	Marconi VMS4B Met		
TC 3	Trimming condensers (on ganged condenser)	C 47	8.0 "	18478A	V 2	MX40 Met		
TC 4		C 48	8.0 "		V 3	VMS4 Met		
TC 5		C 5	0.1 mfd.		V 4	MS4B Met		
TC 6		C 10	1.0 "		V 5	MHD4 Met		
TC 7	Trimming condensers, 140-210 mmfd.	C 33	0.2 "		V 6	MHD4 Met		
TC 8		C 36	0.5 "	18420B	V 7	PX4		
TC 9	Trimming condensers—140-210 mmfd.	C 38	0.5 "		V 8	PX4		
TC 10		C 40	0.1 "		V 9	MU14		
TC 11	70-140 mmfd.				VT	Shadowgraph	19200D	
TC 12					F 1	Fuse	18424A	
TC 13	140-210 mmfd.				F 2	Heat coil	16705C	
TC 14					L	Pilot lamp	18810A	
C 1	Fixed condensers—	R 1	100,000 ohms	10530L	T 1	Intervalve transformer	14540J	
C 2		R 2	1,000 "	18530L	T 2	Output transformer	12040U	
C 3		R 3	10,000 "	17541B	T 3	Mains transformer (50-60 cycle)	18510A	
C 4		R 4	23,000 "	18530G	T 3	Mains transformer (25-cycle)	18514	
C 5		R 5	0.5 megohm	18530N	T 4	See Pick-up Units.		
C 6		R 6	1,000 ohms	18530B	CK 2			
C 7		R 7	50,000 "	18530J	CK 3	L.F. smoothing choke,		
C 8		R 8	100,000 "	18530L		257 ohms	12040V	
C 9		R 9	5,000 "	18530E	VR 1	Suppressor resistance (pre-set)	14567F	
C 10		R 10	1,000 "	18530B	VR 2	Suppressor resistance	6000BC	
C 11		R 11	50,000 "	18530J	VR 3	Volume control	6000BE	
C 12		R 12	7,500 "	10451G	VR 4	Tone control	6000BD	
C 13		R 13	10,000 "	18530F	VR 5	Humdinger	14567D	
C 14		R 14	1.0 megohm	18530P	C 44	0.2 mfd.	Pick-up matching unit 18540B	
C 15		R 15	500 ohms	18530A	CK 2	590 ohms		
C 16		R 16	10,000 "	10451B	R 39	100,000 ohms		
C 17		R 17	230,000 "	18530M	T 4	Transformer		
G 17		R 18	75,000 "	18530K				
C 18		R 19	75,000 "	18530K				
C 19		R 20	23,000 "	18530G				
C 20	R 21	35,000 "	18530H					
C 21	R 22	0.5 megohm	18530N					

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 valves are employed.

The information contained herein is subject to alteration.