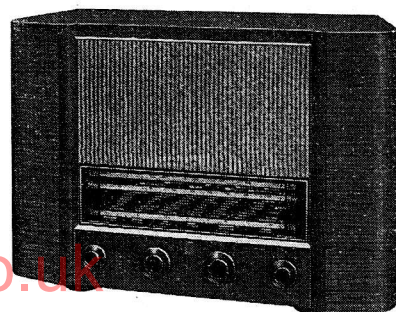


FERRANTI

A.C. Table Receiver

MODEL 125



Service Instructions

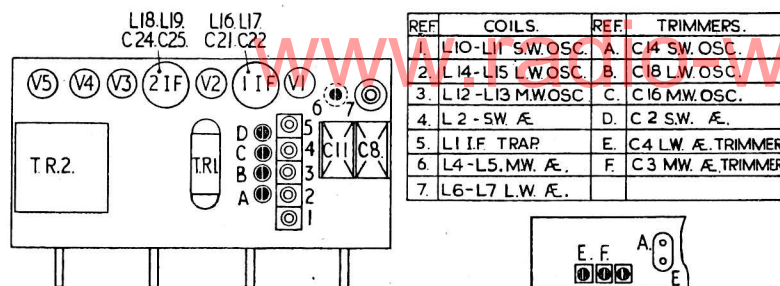
GENERAL DESCRIPTION	A.C. mains, 4 valves plus rectifier, three waveband super-heterodyne receiver housed in a walnut cabinet and for operation from an external aerial. H.T. is derived from a half-wave rectifier the anode of which is supplied from the primary winding of the heater transformer.
WAVE-RANGES	S.W. 16-50 Metres. M.W. 190-570 Metres. L.W. 1000-2000 Metres.
INTERMEDIATE FREQUENCY VALVES	470 Kilocycles. Triode-Hexode Frequency Changer ECH42 ; Pentode I.F. Amplifier EF41 ; Double Diode Triode Demodulator, A.V.C. and L.F. Amplifier EBC41 ; Pentode Power Amplifier EL41 ; Half-wave Rectifier EZ40 with anodes strapped. (Valves are B8A based.)
DIAL LAMP	6.2 volts, 0.3 amp. M.E.S.
CONTROLS	Tone/Mains On-Off Switch ; Volume ; Tuning ; Wave-range/Gramophone Switch.
LOUDSPEAKER	6.5 inches diameter P.M. moving coil.
POWER OUTPUT	3.5 watts.
A.C. POWER SUPPLY	Standard Models 200/250 v., 50/100 c.p.s. Export Models 105/115v., 120/135v., 200/225v., 50/100 c.p.s.
POWER CONSUMPTION	50 watts.
MAINS FUSE	Export Models are fitted with a 1 amp. cartridge fuse.
DIMENSIONS	Height 13¼ inches ; Depth 8½ inches ; Width 18¾ inches.

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MODEL 125 — CIRCUIT ALIGNMENT



To prevent shock or damage to equipment, connect the receiver to the A.C. mains so that the chassis is neutral. Check this with a lamp or voltmeter.

Connect a high resistance output meter (100v. A.C.) via a 0.1 μ F series capacitor across TR1 primary. During alignment maintain the input signal at a level which produces a meter reading of 10–20 volts. To prevent damage to iron dust cores use a non-metallic screwdriver which exactly fits the slots in the cores.

I.F. Alignment 470 Kc/s

1. Set the wave-range switch to L.W. (position 3 from anti-clockwise); set the tuning gang to maximum (vaness fully meshed); set the volume control to maximum (fully clockwise).
2. Inject 470 Kc/s via a 0.1 μ F capacitor into V1 signal grid (pin 6), i.e. front section of tuning gang.
3. Adjust the tuning cores of L19, L18, L17 and L16 for maximum gain. **Note**—each core may have two tuning positions, the correct one is the first as the core is screwed into the coil.
4. Repeat 3 until no further gain can be obtained.

R.F. Alignment

Alignment calibration points are marked on the front of the chassis. Prior to alignment check that when the tuning gang is at maximum the pointer coincides with the right-hand side calibration line.

Medium Waves 190–570 Metres

1. Set the wave-range switch to M.W. (position 2 from anti-clockwise) and check that the volume control is at maximum.
2. Inject alignment signals into the aerial socket via a standard dummy aerial.

3. Set the signal generator to 500M (600 Kc/s) and set the receiver pointer to 600 Kc/s. Adjust the M.W. oscillator core L12 and then the M.W. aerial core L5 for maximum gain.

4. Set the signal generator to 200M (1500 Kc/s) and set the pointer to 1500 Kc/s. Adjust the M.W. oscillator trimmer C16 and then the M.W. aerial trimmer C3 for maximum gain.

5. Repeat 3 and 4 until no further gain can be obtained.

6. Set the signal generator to 470 Kc/s and set the tuning gang to maximum (vaness fully meshed). Adjust the I.F. trap core L1 for **minimum** gain.

Long Waves 1,000–2,000 Metres

1. Set the wave-range switch to L.W. (position 3 from anti-clockwise) and check that the volume control is at maximum.
2. Inject alignment signals into the aerial socket via a standard dummy aerial.
3. Set the signal generator to 1800M (166.6 Kc/s) and set the receiver pointer to 166.6 Kc/s. Adjust the L.W. oscillator core L14 and the L.W. aerial core L7 for maximum gain.
4. Set the signal generator to 1128M (266 Kc/s) and set the pointer to 266 Kc/s. Adjust the L.W. oscillator trimmer C18 and then the L.W. aerial trimmer C4 for maximum gain.
5. Repeat 3 and 4 until no further gain can be obtained.

Short Waves 16–50 Metres

1. Set the wave-range switch to S.W. (position 1, i.e. fully anti-clockwise) and check that the volume control is at maximum.
2. Inject alignment signals into the aerial socket via a short wave dummy aerial (a 400 ohms non-inductive resistor).
3. Set the signal generator to 45M (6.67 Mc/s) and set the receiver pointer to 6.6 Mc/s. Adjust the S.W. oscillator core L10 and then the S.W. aerial core L2 for maximum gain. **Note**—The S.W. oscillator core has two tuning positions, the correct one is the first as the core is screwed into the coil.
4. Set the signal generator to 20M (15 Mc/s) and set the pointer to 15 Mc/s. Adjust the S.W. oscillator trimmer C14 and then the S.W. aerial trimmer C2 for maximum gain. **Note**—The S.W. oscillator trimmer has two tuning positions, the correct one is at the lesser capacitance.
5. Repeat 3 and 4 until no further increase in gain can be obtained.

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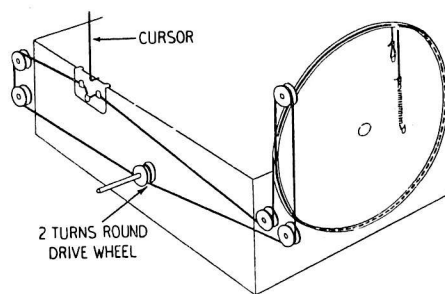
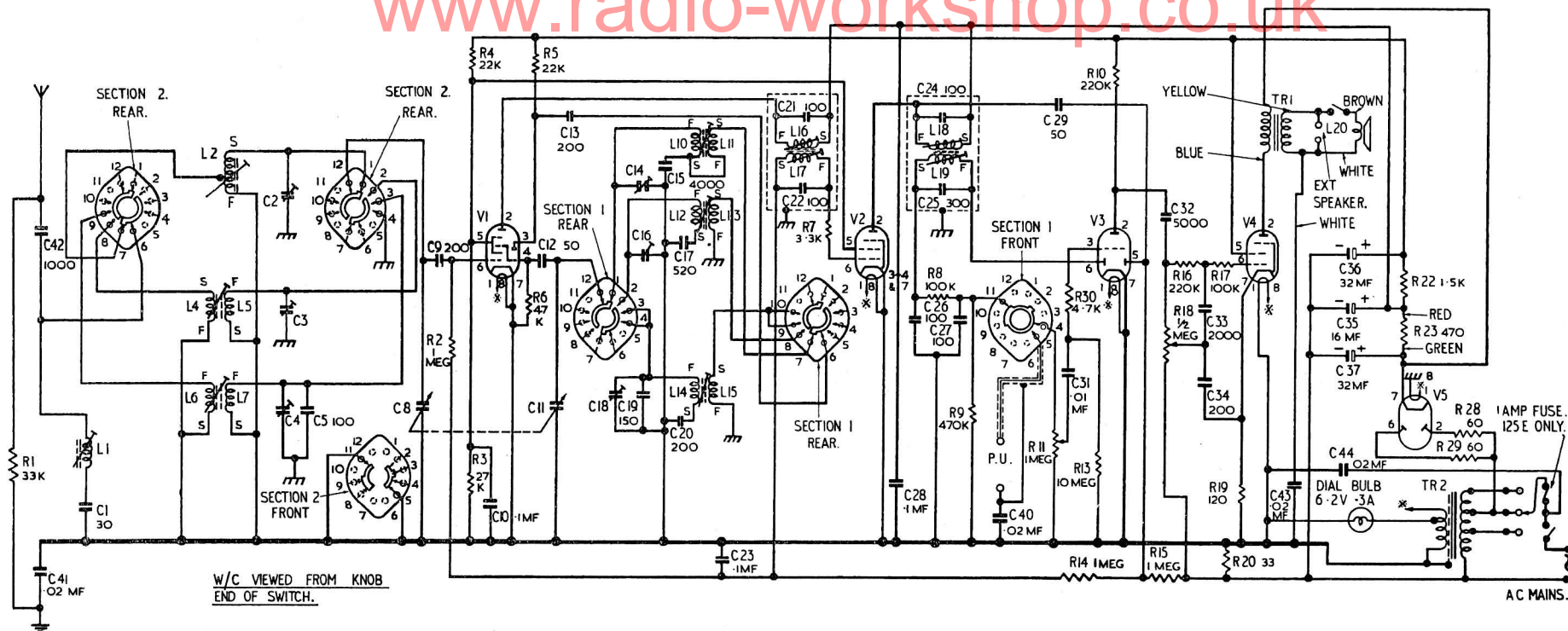
Tel. Failsworth 2271

DEPOTS

London :
17, Gt. Queen Street,
London, W.C.2.
Tel. Temple Bar 6666.

Birmingham :
25, Winson Green Road,
Birmingham, 18.
Tel. Edgbaston 0534.

Edinburgh :
Crewe Toll,
Edinburgh,
Tel. Edinburgh 89181.



DRIVE CORD

The length of cord required is 57ins. The material is nylon covered glassfibre obtainable from Ferranti Ltd., Service Dept.

VOLTAGE AND CURRENT MEASUREMENTS

The voltage (measured to chassis) and current readings given below are average and were measured under **no** signal conditions with a Model 7 Avometer.

Ref.	Valve	Anode Volts	Anode Current mAs.	Screen Volts	Screen Current mAs.	Osc. Anode Volts	Cathode Volts
V1	ECH42	233	2.4	70	2.3	110	—
V2	EF41	230	3.6	70	1.1	—	—
V3	EBC41	70	0.6	—	—	—	—
V4	EL41	230	28	210	4	—	4.1
V5	EZ40	—	—	—	—	—	250

To check that the oscillator is functioning, earth V1 oscillator grid (pin 4) and note that the oscillator anode volts fall by approximately 30.

GRAM. PICK-UP

When a pick-up is used, the receiver mains plug connections must be arranged so as to connect the receiver chassis **always** to the **neutral** side of the electric mains (the chassis is connected to one side of the mains). This will prevent undue hum and also be an extra safety precaution.

1. A twin screened lead must be used from the pick-up head. The screening must be insulated from the record player chassis.

2. The twin lead is plugged in the P.U. sockets on the receiver.

3. The screening of the twin lead must be connected to a lead which in turn is plugged into the receiver earth terminal.

4. If an earth is required, i.e., for aerial operation, the earth lead should be plugged into the lower socket of the two marked " External L.S."

5. The 0.02 μ F capacitor from the earth terminal of the receiver to chassis must be changed to 0.05 μ F 1000v. D.C. working or 300v. A.C. working.

COMPONENTS

Ref.	Capacitance	Tol. $\pm\%$	Wkg. Volts	Part No.	Function	Ref.	Ohms	Tol. $\pm\%$	Watts	Part No.	Function
C1	30 pF	10	350	07/99002	I.F. trap fixed tuner.	R2	1MEG	20	$\frac{1}{4}$	07/98417	V1 grid resistor.
C2	5-50 pF				S.W. aerial trimmer.	R3	27K	20	$\frac{1}{4}$	07/98351	V1-V2 screen potentiometer, part of.
C3	5-50 pF				M.W. aerial trimmer.	R4	22K	20	$\frac{1}{4}$	07/98138	V1-V2 screen potentiometer, part of.
C4	5-50 pF				L.W. aerial trimmer, variable.	R5	22K	20	$\frac{1}{4}$	07/98350	V1 oscillator anode load.
C5	100 pF	5	350	07/99028	L.W. aerial trimmer, fixed.	R6	47K	20	$\frac{1}{4}$	07/98407	V1 oscillator grid leak.
C8				07/17518	Aerial tuner (ganged capacitor).	R7	3.3K	20	$\frac{1}{4}$	07/98393	V2 grid stopper.
C9	200 pF	20	350	07/99191	V1 grid coupling.	R8	100K	20	$\frac{1}{4}$	07/98411	I.F. filter.
C10	0.1 μ F	20	350	07/99202	V1-V2 screen decoupler.	R9	470K	20	$\frac{1}{4}$	07/98415	Demodulator load.
C11				07/17518	Oscillator tuner (ganged capacitor).	R10	220K	20	$\frac{1}{4}$	07/98413	V3 anode load.
C12	50 pF	15	350	07/99026	Oscillator grid capacitor.	R11	1MEG		Pot'r	07/17506	Volume control.
C13	200 pF	20	350	07/99191	Oscillator anode coupling.	R13	10MEG	20	$\frac{1}{4}$	07/98370	V3 grid leak.
C14	5-50 pF				S.W. oscillator trimmer.	R14	1MEG	20	$\frac{1}{4}$	07/98417	A.V.C. decoupler.
C15	4000 pF	2		07/99023	S.W. oscillator padder, fixed.	R15	1MEG	20	$\frac{1}{4}$	07/98417	A.V.C. diode load.
C16	5-50 pF				M.W. oscillator trimmer.	R16	220K	20	$\frac{1}{4}$	07/98413	Fixed tone corrector.
C17	520 pF	1	350	07/99272	M.W. oscillator padder, fixed.	R17	100K	20	$\frac{1}{4}$	07/98411	Fixed tone corrector.
C18	5-50 pF				L.W. oscillator trimmer, variable.	R18	0.5MEG		Pot'r	07/17507	Tone control.
C19	150 pF	5	1000	07/99025	L.W. oscillator trimmer, fixed.	R19	120	20	$\frac{1}{4}$	07/98660	V4 cathode bias.
C20	200 pF	2	350	07/99190	L.W. oscillator padder, fixed.	R20	33	10	$\frac{1}{4}$	07/98662	Auto bias.
C21	100 pF	5	350	07/99200	IFT-1 primary tuner, fixed.	R22	1.5K	20	$\frac{1}{4}$	07/98124	H.T. smoother.
C22	100 pF	5	350	07/99200	IFT-1 secondary tuner, fixed.	R23	470	10	W/W	07/98664	H.T. smoother.
C23	0.1 μ F	20	350	07/99202	A.V.C. decoupler.	R28	60-0-60		W/W		V5 anode limiter.
C24	100 pF	5	350	07/99200	IFT-2 primary tuner, fixed.	R29					V5 anode limiter.
C25	300 pF	5	350	07/99201	IFT-2 secondary tuner, fixed.	R30	4.7K	20	$\frac{1}{4}$	07/98395	V3 grid stopper.
C26	100 pF	25	350	07/99300	I.F. filter.	D.C. Resistance (under 1 ohm *)					
C27	100 pF	25	350	07/99300	Demodulator diode reservoir.						
C28	0.1 μ F	20	350	07/99202	H.T. line R.F. bypass.	L1	18			07/17546	I.F. trap.
C29	50 pF	15	350	07/99026	A.V.C. diode coupler.	L2	*			07/17918	S.W. aerial.
C31	0.01 μ F	25	350	07/99155	Audio coupler to V3 grid.	L4	30			07/11615	M.W. aerial primary.
C32	0.005 μ F	25	500	07/99193	Audio coupler V3 anode to V4 grid.	L5	2.5			07/11615	M.W. aerial secondary.
C33	0.002 μ F	25	500	07/99169	Tone corrector.	L6	48			07/17582	L.W. aerial primary.
C34	200 pF	20	350	07/99191	Tone corrector.	L7	15			07/17582	L.W. aerial secondary.
C35	16 μ F		350		H.T. smoother.	L10	*			07/17544	S.W. oscillator grid coil.
C36	32 μ F		350	07/99226	H.T. smoother.	L11	*			07/17544	S.W. oscillator reaction coil.
C37	32 μ F		350		H.T. reservoir.	L12	4			07/17543	M.W. oscillator grid coil.
C40	0.02 μ F		300	07/99203	P.U. isolating capacitor.	L13	*			07/17543	M.W. oscillator reaction coil.
C41	0.02 μ F		300	07/99203	Chassis isolating capacitor.	L14	10			07/17545	L.W. oscillator grid coil.
C42	0.001 μ F		600	07/99270	Aerial isolating capacitor.	L15	1.5			07/17545	L.W. oscillator reaction coil.
C43	0.02 μ F		300	07/99203	Loudspeaker isolating capacitor.	L16	7			07/17508	IFT-1 primary.
C44	0.02 μ F		300	07/99203	Mains R.F. bypass.	L17	7			07/17508	IFT-1 secondary.
						L18	7			07/17509	IFT-2 primary.
						L19	3.5			07/17509	IFT-2 secondary.
						L20	3				Speech coil.
						TR1	450 (Pri.)				Output transformer.
						TR2	120 (Pri.)			07/17612	Mains transformer.
Ref.	Ohms	Tol. $\pm\%$	Watts	Part No.	Function	Ref.	Ohms	Tol. $\pm\%$	Watts	Part No.	Function
R1	33K	20	$\frac{1}{4}$	07/98405	Aerial damper.						