

FERRANTI 1737 THREE-BAND FIVE

CIRCUIT.—The aerial coupling to the grid of V1, a heptode frequency changer, is a set of bandpass coils on medium and long waves. An image rejector coil will be noticed between the cathode of V1 and chassis line. On short waves coupling is effected by an H.F. transformer and the image rejector coil is cut out.

A variable band width I.F. transformer couples V1 to V2, an H.F. pentode operating as the I.F. amplifier. The tuning control automatically switches the fidelity control to low fidelity.

A further I.F. transformer of the fixed band width type couples V2 to the demodulating diode of V3, a double diode triode, the other diode providing the potential for the A.V.C. network and for the visual tuning indicator. The coupling arrangements to the grid of the triode section of V3 includes a manual volume control and a link for cutting off the radio input when operating on gramophone.

V3 is resistance capacity coupled to V4, a triode output valve. Bias for this valve is obtained from a potentiometer across the H.T. supply.

Mains equipment consists of a full-wave rectifying valve V5, a mains transformer, electrolytic smoothing condensers and a smoothing choke (speaker field coil). A mains suppressor condenser is connected between one side of the mains and the chassis.

Chassis Removal.—Remove the back of the cabinet (four bolts) and the control knobs from the front (spring fixing). Remove the four chassis securing bolts and washers from the base, and the four connecting plugs from the panel supporting

the rectifying valve. The colours of the four leads from the back of the cabinet to the front are blue, green, red and black.

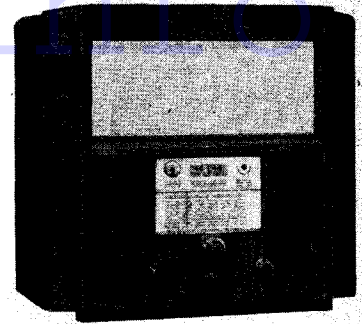
The chassis can then be completely withdrawn from the cabinet free of all leads.

Special Notes.—R14, R18, C14 and C15 are located inside the can housing I.F.T.2. In our particular chassis C21 was connected to one heater of V3 and not V4.

A pair of terminals on the speaker frame enable an extension speaker to be operated. This should be of the low impedance type and need not have a matching transformer. The switch near the terminals enables the internal speaker to be muted.

Terminals at the rear of the chassis enable a pick-up to be connected. The metal link should be removed from the top terminal when the receiver is operating on gramophone.

There are two pilot lights, one being of the tubular type. They have M.E.S. bases and are rated at 6.2 volts .3 amp., and fit into holders that are clipped on their respective supporting tags.



The Ferranti model 1737 is a deluxe four-valve plus rectifier all-wave receiver.

Alignment Notes

I.F. Circuits.—Connect an output meter across the primary of the speaker transformer and a service oscillator between the top grid cap of V1 and chassis. Set tuning control to maximum, wavechange switch to M.W. and volume to maximum.

Tune oscillator to 125 kc. and adjust T1, T2, T3 and T4 in that order for maximum,

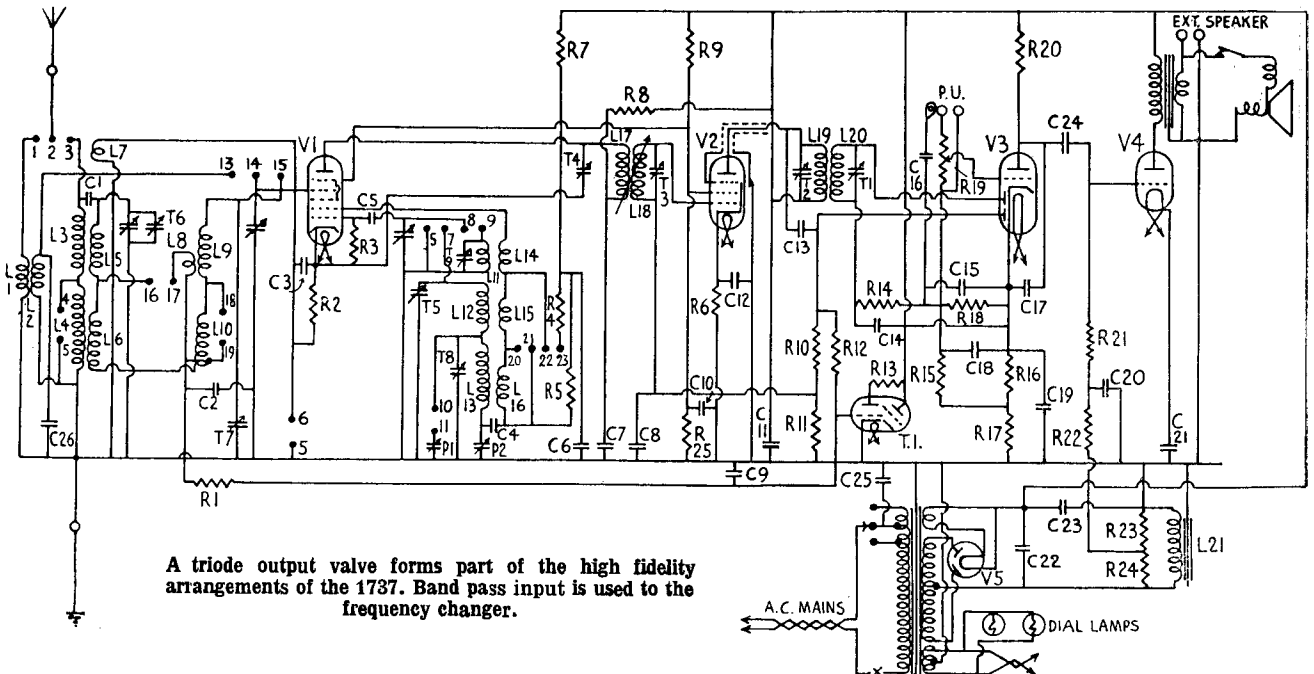
VALVE READINGS

No signal. Volume maximum. M.W. band.
Max. cap. 200 volt A.C. mains.

V.	Type.	Electrode.	Volts.	Ma.
	All Ferranti.	Anode	235	1.7
1	VHT4 (7)	Screen	55	4.4
		Osc. anode	30	1.2
2	VPT4 (5)	Anode	235	2.5
		Screen	60	1.2
3	H4D (7)	Anode	130	1.5
4	LP4 (4)	Anode	222	52
5	R4 (4)	Filaments	235	—

WINDINGS

Winding.	Ohms.	Winding.	Ohms.
L1	1.3	L14	23
L2	.05	L15	7.2
L3	18	L16	8
L4	70	L17	80
L5	4.5	L18	80
L6	45	L19	80
L7	.25	L20	80
L8	.2	L21	1,600
L9	4.5	T2 prim.	150
L10	40	T1 prim.	32
L12	.05	H.T. sec	380
L13	8.5		



A triode output valve forms part of the high fidelity arrangements of the 1737. Band pass input is used to the frequency changer.

reducing the input from the oscillator as the circuits come into line to prevent operation of the A.V.C.

Signal Circuits.—Only feed sufficient input from the service oscillator to obtain definite peaks in the output meter to render the A.V.C. inoperative. Set the tuning pointer so that with the vanes fully out of mesh (i.e., anti-clockwise) it reads 200 metres.

Medium Waves.—With service oscillator still connected to top cap of V1, tune set and oscillator to 228 metres (1,315 kc.), screw T5 to maximum (anti-clockwise) and then slowly clockwise until the second maximum peak output is obtained.

Then connect the service oscillator to the A. and E. terminals via a dummy aerial or fixed condenser (.0002 mfd.) and adjust T6 and T7 for maximum response.

Tune set and oscillator to 500 metres

(600 kc.) and adjust P1 for maximum, simultaneously rocking the gang.
Repeat above adjustments until no further improvement results.

Long Waves.—Tune set and oscillator to 1,000 metres (300 kc.) and adjust T8 for maximum.

Tune set and oscillator to 1,807 metres (166 kc.) and adjust P2 for maximum, simultaneously rocking the gang.

Repeat both operations until no further improvement results.

Short Waves.—Tune oscillator and set to 19.7 metres (15 mc.)—this is marked on top of scale by a black line—screw T9 to maximum (anti-clockwise) and then clockwise until the second peak is obtained.

To verify correct peak, turn tuning condenser slightly to right and the image output should be obtained. Then go back to correct peak and adjust for maximum output.

Ferranti 1737 on Test

MODEL 1737.—Standard model for A.C. mains operation, 200-250 volts, 40-100 cycles. Price, 17 gns.

DESCRIPTION.—A four-valve, plus rectifier, superhet table model covering three wavebands.

FEATURES.— Full-vision scale calibrated in metres and station names. Magnascopic dial for exact calibration. Two-speed tuning control. High fidelity control automatically reset by tuning control. Combined volume and master switch. Visual tuning indicator. Waveband indicator device. Terminals for extension speaker and pick-up.

LOADING.—74 watts.

Sensitivity and Selectivity

SHORT WAVES (19-51 metres).—Satisfactory gain and selectivity, with easy handling and no bad drift. Magnascopic dial assists tuning considerably.

MEDIUM WAVES (200-550 metres).—Representative gain and selectivity. Well maintained performance over band. Several whistles noticed during tests in the London district.

LONG WAVES (900-2,000 metres).—Excellent selectivity and adequate gain. All main stations received and very little sidesplash on Deutschlandsender.

Acoustic Output

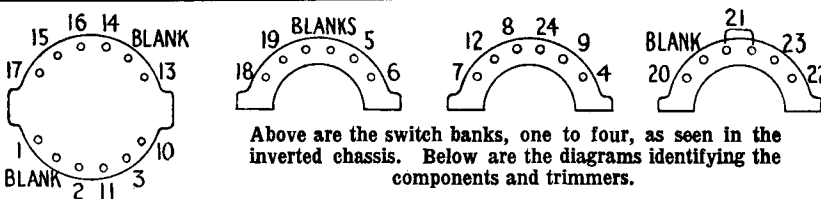
In the high fidelity position there is good, clean reproduction with noticeable brilliance and a very good balance. Very little colouration on speech. Variable fidelity control proves a useful feature.

CONDENSERS

C.	Purpose.	Mfds
1	Top aerial coupling . . . . .	.000016
2	Bottom band bass coupling. .	.05
3	V1 cathode bias shunt . . . . .	.05
4	Oscillator anode feed return .	.01
5	Oscillator grid . . . . .	.00005
6	Oscillator anode decoupling. .	.30
7	V1 anode decoupling . . . . .	.1
8	V2 A.V.C. decoupling . . . . .	.05
9	A.V.C. decoupling . . . . .	.05
10	V1 and V2 screen decoupling .	.4
11	V2 anode decoupling . . . . .	.1
12	V2 cathode bias shunt . . . . .	.1
13	A.V.C. diode coupling . . . . .	.00004
14	H.F. bypass . . . . .	.00015
15	H.F. bypass . . . . .	.00015
16	L.F. coupling . . . . .	.02
17	Tone modifier . . . . .	.0003
18	V3 grid decoupling . . . . .	.25
19	V3 cathode bias shunt . . . . .	.6
20	V4 grid decoupling . . . . .	.25
21	V4 heater bypass . . . . .	.002
22	H.T. smoothing . . . . .	.8
23	H.T. smoothing . . . . .	.8
24	L.F. coupling . . . . .	.02
25	Mains suppressor . . . . .	.002
26	S.W. aerial fixed trimmer . . .	.00001

RESISTANCES

R.	Purpose.	Ohms.
1	V1 A.V.C. decoupling	250,000
2	V1 cathode bias	300
3	Oscillator grid leak	100,000
4	Regeneration modifier S.W. .	1,000
5	Regeneration modifier M.W. and L.W.	120,000
6	V2 cathode bias	600
7	Oscillator anode decoupling. .	30,000
8	V1 anode decoupling	1,000
9	V1 and V2 screen potr (part) .	25,000
10	A.V.C. diode load (part) . . .	4 meg.
11	A.V.C. diode load (part) . . .	1 meg.
12	T.I. grid feed and A.V.C. decoupling.	1 meg.
13	T.I. anode feed	1 meg.
14	H.F. filter	100,000
15	V3 grid decoupling	100,000
16	V3 cathode bias (part)	1,700
17	V3 cathode bias (part)	8,000
18	Demodulating diode load . . .	500,000
19	Volume control	1 meg.
20	V3 anode load	40,000
21	V4 grid leak	250,000
22	V4 grid decoupling	60,000
23	V4 bias potr. (part)	100,000
24	V4 bias potr. (part)	250,000
25	V1 and V2 screen potr. (part) .	50,000



Above are the switch banks, one to four, as seen in the inverted chassis. Below are the diagrams identifying the components and trimmers.

Replacement Condensers

EXACT replacement condensers for the Ferranti 1737 are available from A. H. Hunt, Ltd., of Garratt-lane, Wandsworth, London, S.W.18. These are: for C6, unit 3,967, price 6s. 6d.; for the block containing C22 and C23, unit 1,987, 7s.; C10, 1,986, 2s. 3d., and for C19, 3,722, 1s. 6d.

