

FERGUSON 701, 704

Four-valve, plus rectifier, three-waveband superhet, with push-button waveband switching, and suitable for 200-250-v. A.C. supplies. Model 701 is a table type and 704 is a console. Made by Ferguson Radio Corp., Ltd., Great Cambridge Road, Enfield.

Circuit.—The aerial is coupled by capacity and inductance to the simple tuned grid circuits of V1, the frequency-changer. The oscillator circuits are tuned grid with anode reaction coils on M. and S.W. On L.W. the padder is common to anode and grid circuits. The wave-switching, although by push-button, is quite straightforward. The circuit shows all the buttons "out."

Tracing is easier working back from the valve electrodes.

Conventional trimmer-tuned I.F. transformers link up V2, the I.F. amplifier, and V3, the double-diode triode.

The diodes are strapped and the load, R11, provides a demodulated signal via C13 to R13, the volume control, and also A.V.C. voltage via R12, an H.F. filter resistance. Part of the A.V.C. line is used to connect the pick-up across C13-R13, when the appropriate P.B. is pushed.

V3 is resistance and condenser coupled to V4, the output pentode. This has a high-impedance extension speaker connection with a fixed tone shunt.

H.T. is provided from a full-wave rectifier, V5, with the field, L13, and two electrolytics for smoothing. The voltage drop across R21, between chassis and H.T. negative, is applied to V3 grid for bias. C27 is a modulation hum filter.

GANGING

I.F. Circuits.—Inject 465 kc. to the grid of V1 (the lead may be removed and a .25 meg. leak connected between grid and grid lead), and adjust the I.F. trimmers for maximum on output meter. Keep signal as low as possible.

S.W. Band.—This must be aligned first as the padder is in series with M. and L.W. padders. Tune to 15 mc., inject 15 mc. to

aerial and adjust T1 for lowest capacity peak. Adjust T2.

Tune to 6 mc., inject 6 mc., and adjust T3 while rocking gang. Repeat both trimming and padding.

M.W. Band.—Tune to and inject 1,200 kc. (250 m.) and adjust T4 and T5. Pad with T6 at 580 kc. (520 m.).

L.W. Band.—Tune and inject 240 kc. (1,250 m.) and trim T7 and T8.

Pad with T9 at 145 kc. (2,000 m.).

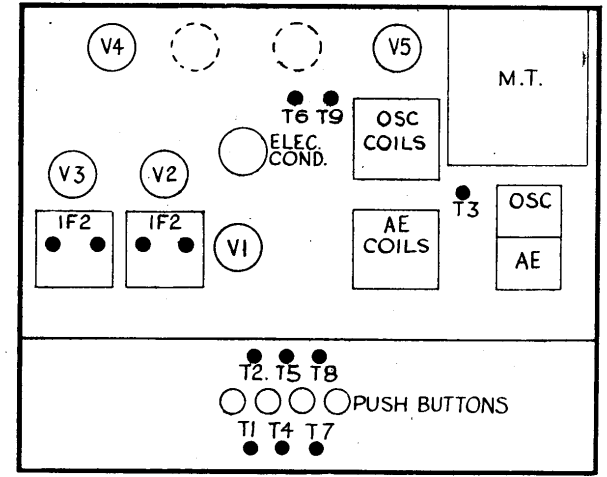
VALVE READINGS

V	Type	Electrode	Volts	Ma.
1	6A8G	Anode	240	5.2
		Screen	90	3.4
		Osc. anode	138	3.1
		Cathode	1.8	—
2	6U7G	Anode	240	7.2
		Screen	90	2.1
		Cathode	2.2	—
3	6Q7G	Anode	115	.4
		Anode	220	.35
4	6V6G	Screen	240	3.2
		Cathode	12	—
		Cathode	340 D.C.	—

WINDINGS

L	Ohms	L	Ohms
1	.. 17	8	.. 9
2	.. 3	9	.. 11
3	.. .1	10	.. 12
4	.. 5	11	.. 9
5	.. 3	12	.. 500
6	.. .1	13	.. 1,800
7	.. 1	14	.. 180
		15	.. 180

The Ferguson chassis diagram with the front indicated to show the trimmer positions. A basically similar chassis is used for models with push-pull output and full push-button tuning.



This receiver is a straight-forward A.C. superhet, a distinguishing feature being the use of push-buttons for wave-changing. The circuit will be found of some assistance with similar models using push-pull output and push-button tuning.

RESISTANCES

R	Ohms	R	Ohms
1	.. 10,000	13	.. .5 meg.
2	.. 3 meg.	14	.. .25 meg.
3	.. 150	15	.. .5 meg.
4	.. .5 meg.	16	.. .1 meg.
5	.. .5 meg.	17	.. .5 meg.
6	.. .5 meg.	18	.. 300
7	.. 2,500	19	.. 25,000
8	.. 25,000	20	.. 25 meg.
9	.. 25,000	21	.. 35
10	.. 300	22	.. 100
11	.. .5 meg.	23	.. 10,000
12	.. 25,000		

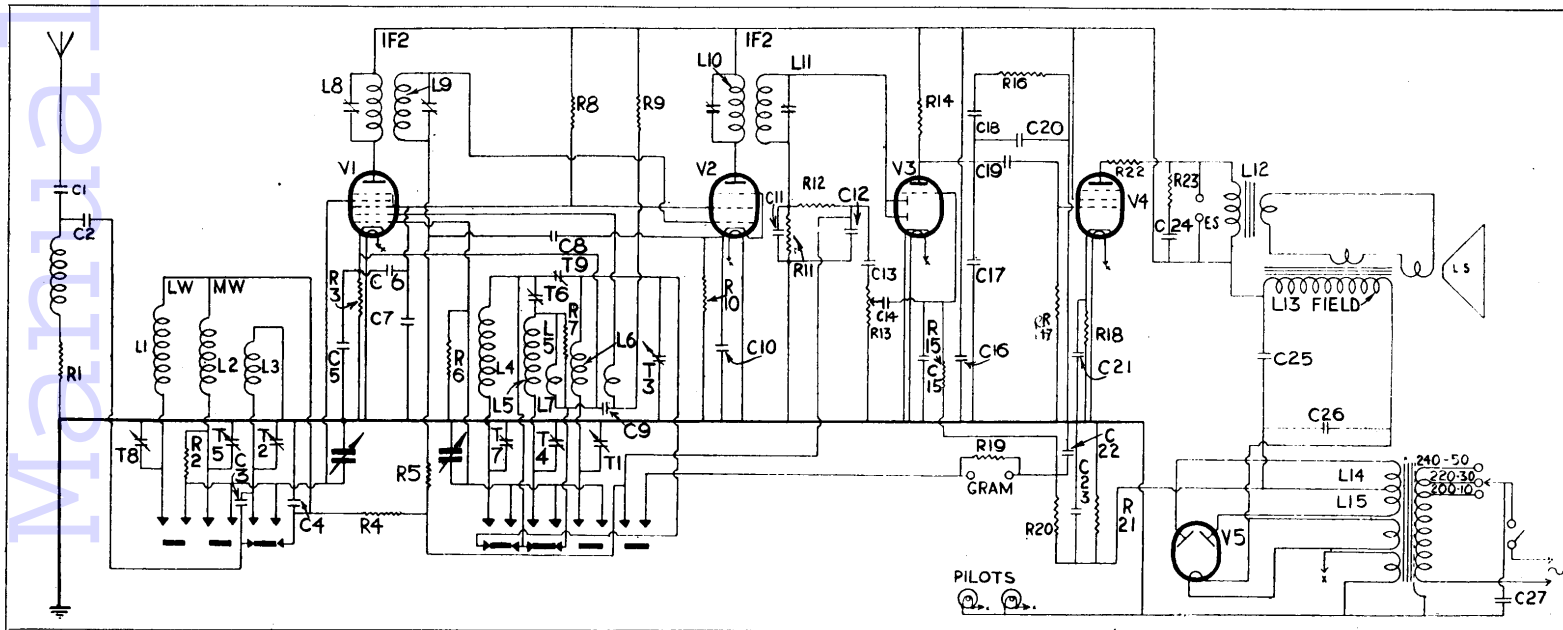
CONDENSERS

C	Mfds.	C	Mfds.
1	.. 500 mmfds.	15	.. 100 mmfds.
2	.. 100 mmfds.	16	.. .1
3	.. 20 mmfds.	17	.. 250 mmfds.
4	.. .004	18	.. .01
5	.. .1	19	.. .01
6	.. 250 mmfds.	20	.. 250 mmfds.
7	.. .1	21	.. 5
8	.. .1	22	.. .25
9	.. 250 mmfds.	23	.. 25
10	.. .1	24	.. .01
11	.. 250 mmfds.	25	.. 8
12	.. 250 mmfds.	26	.. 16
13	.. .02	27	.. .01
14	.. .02		

Misleading Fault

NO volume could be obtained on a receiver until the volume control was turned nearly full on; then the set came on full blast. The control was replaced, but the set acted in the same manner.

After checking the associated circuit the set was tried again, and a slight speaker rattle detected. On recentring the speech coil, the set returned to normal. It appears that the coil became stuck at one position and required a great deal of volume to dislodge it.



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