

FERGUSON**Model 351U**

General Description : Four-valve (including rectifier), two-waveband receiver, with reflex superheterodyne circuit and having a built-in frame aerial.

Power Supply : A.C. or D.C. 200–250 volts, at 40–100 c/s. A.C.

Intermediate Frequency : 470 kc/s.

Valves : (V₁) UCH42; (V₂) UBF80; (V₃) UL41; (V₄) UY41.

Notes : On a few early receivers C₂₉ was 50 mfd., and V₃ screen was connected to the junction of R₁₈ and R₁₉, this was to reduce hum. V₂ is used for both I.F. and A.F. amplification by means of a reflex circuit.

Alignment Data : *I.F.* : Remove the chassis from the cabinet. Adjust L₈, L₇, L₆ and L₅ in that order, for maximum output at 470 kc/s.

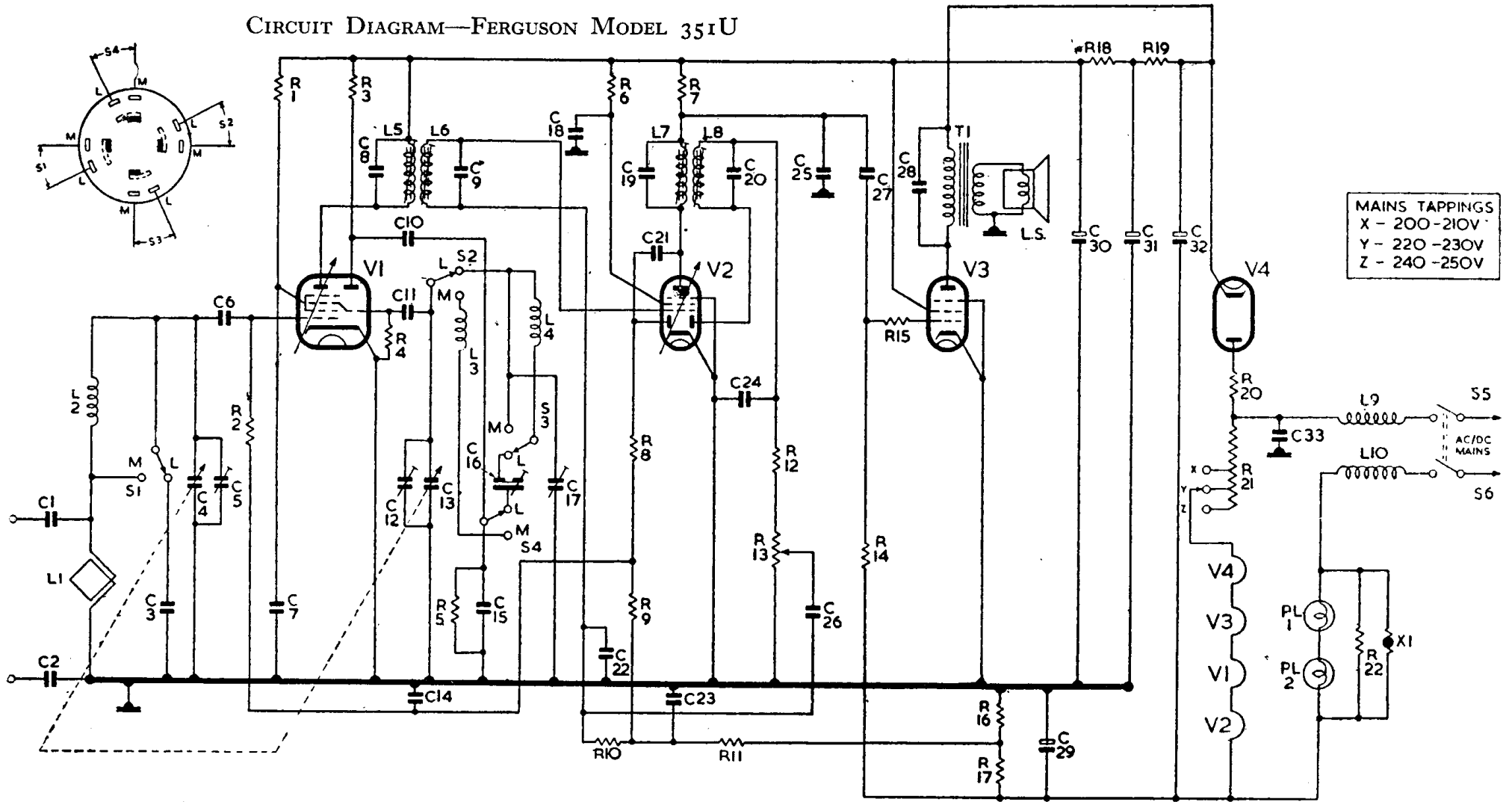
R.F. : Re-alignment should be done with the receiver in the cabinet. An alignment template may be made by marking a piece of paper with the following calibration points (the measurements given are relative to the M.W. trim position) M.W. trim 1500 kc/s.; L.W. trim (approx. 0.38 in.) 350 kc/s.; M.W. check (1.63 in.) 950 kc/s.; L.W. check (2.45 in.) 220 kc/s.; M.W. check (4.1 in.) 580 kc/s.; L.W. Pad. (4.26 in.) 160 kc/s.; "Set pointer" (4.8 in.). Attach the template to the scale window, where the "set pointer" mark should coincide with the vertical marks at the right-hand end of the wavelength scales, as should the pointer when the gang is fully meshed. The frame aerial must be plugged in. While the M.W. aerial circuit is being trimmed the cabinet back must be closed. The signal should be radiated from a loop connected to the signal-generator output, and loosely coupled to the frame aerial. Open back. Check pointer setting. Switch to M.W. and inject 1500-kc/s. signal. Set pointer to the appropriate calibration mark and adjust C₁₂ for maximum output. Check calibration 950 and 580 kc/s.; this should be within $\pm \frac{1}{16}$ in. Switch to L.W., inject 160-kc/s. signal and adjust C₁₆. Change input frequency to 350 kc/s. and re-set pointer. Adjust C₁₇ whilst rocking gang slightly; repeat as necessary. Check calibration at 160, 220 and 350 kc/s. The tolerance is the same as on M.W. Close back and switch to M.W., inject a 1500-kc/s. signal, set pointer and adjust C₅. The trimmer is accessible through a hole below the A.E. and E. sockets in the cabinet back. Open back, switch to L.W., inject 350-kc/s. signal, set pointer and readjust C₁₇ whilst rocking gang.

Voltage Readings :

Valve	Anode		Screen	
	Volts	mA.	Volts	mA.
V ₁ { Hexode Triode	153	4.4	80	2.0
V ₂	54	3.7	—	—
V ₂	88	6.5	85	2.5
V ₃	172	37.0	153	6.4

Input voltage 230 A.C. 50 c/s. using 220–230-volt tap on the receiver. All readings above 10 volts taken on 400-volt scale of Model 7 Avometer.

CIRCUIT DIAGRAM—FERGUSON MODEL 351U



MAINS TAPPINGS
 X - 200-210V
 Y - 220-230V
 Z - 240-250V

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Capacitors.

- C1 15 pF.
- C2 0.005 mfd.
- C3 35 pF.
- C4 528 pF.
- C5 4-40 pF.
- C6 200 pF.
- C7 0.05 mfd.
- C8 100 pF.
- C9 100 pF.

Capacitors.

- C10 100 pF.
- C11 50 pF.
- C12 5-65 pF.
- C13 528 pF.
- C14 0.02 mfd.
- C15 600 pF.
- C16 250-400 pF.
- C17 5-65 pF.
- C18 0.1 mfd.
- C19 100 pF.

Capacitors.

- C20 180 pF.
- C21 100 pF.
- C22 500 pF.
- C23 0.05 mfd.
- C24 200 pF.
- C25 0.001 mfd.
- C26 0.01 mfd.
- C27 0.01 mfd.
- C28 0.005 mfd.
- C29 100 mfd.

Capacitors.

- C30 16 mfd.
- C31 32 mfd.
- C32 32 mfd.
- C33 0.01 mfd.

Resistors.

- R1 33k
- R2 1M
- R3 22k
- R4 47k

Resistors.

- R5 3.9k
- R6 27k
- R7 10k
- R8 330k
- R9 680k
- R10 1M
- R11 150k
- R12 100k
- R13 500k
- R14 470k

Resistors.

- R15 100k
- R16 33
- R17 150
- R18 820
- R19 470
- R20 140
- R21 820+
- R21x-y 200+
- R21y-z 200
- R22 1.2k