

FERGUSON 625U, 627U

A.M. intermediate frequency 470 kc/s.
F.M. intermediate frequency 10.7 Mc/s

Valve Table

Valve	Anode (V)	Screen (V)	Cath. (V)
V1 UCC85	97	—	—
V2a UCH81	42	—	—
V2b UCH81	187	74	—
V3 UF89	182	72	—
V4d UABC80	173	65	—
V5 UL84	90	—	—
V6 UY85	85	190	14.1
	180	178	12.8
	—	—	247
	—	—	242

‡No reading quoted.
*Receiver switched to A.M.
†Receiver switched to F.M.

Internal F.M. aerial

Resistors

R1 1.8MΩ	R30 1MΩ	C15 50pF
R2 1.8MΩ	R31 10MΩ	C16 —
R3 68Ω	R32 120kΩ	C17 12pF
R4 680kΩ	R33 500Ω	C18 88pF
R5 1.5kΩ	R34 680kΩ	C19 40pF
R6 2.2kΩ	R35 1MΩ	C20 100pF
R7 680kΩ	R36 270Ω	C21 0.02μF
R8 6.8kΩ	R37 680Ω	C22 96pF
R9 1.8MΩ	R38 250Ω	C23 30pF
R10 100Ω	R39 2.2kΩ	C24 40pF
R11 22kΩ	R40 350Ω	C25 —
R12 68kΩ	R41 250Ω	C26 3,900pF
R13 1MΩ	R42 100Ω	C27 220pF
R14 47kΩ		C28 5,000pF
R15 4.7MΩ		C29 —
R16 22kΩ		C30 40pF
R17 15kΩ		C31 5,000pF
R18 2.7kΩ		C32 56pF
R19 470Ω		C33 265pF
R20 47kΩ		C34 30pF
R21 3.3kΩ		C35 220pF
R22 220Ω		C36 12pF
R23 220kΩ		C37 220pF
R24 100kΩ		C38 12pF
R25 1MΩ		C39 220pF
R26 100kΩ		C40 6,000pF
R27 2.7MΩ		C41 5,000pF
R28 27kΩ		C42 0.01μF
R29 2.2MΩ		C43 18pF
		C44 220pF

Capacitors

C1 470pF	C31 5,000pF
C2 470pF	C32 56pF
C3 47pF	C33 265pF
C4 47pF	C34 30pF
C5 15pF	C35 220pF
C6 220pF	C36 12pF
C7 7pF	C37 220pF
C8 47pF	C38 12pF
C9 —	C39 220pF
C10 1,500pF	C40 6,000pF
C11 5pF	C41 5,000pF
C12 5pF	C42 0.01μF
C13 18.5pF	C43 18pF
C14 11.5pF	C44 220pF

Miscellaneous

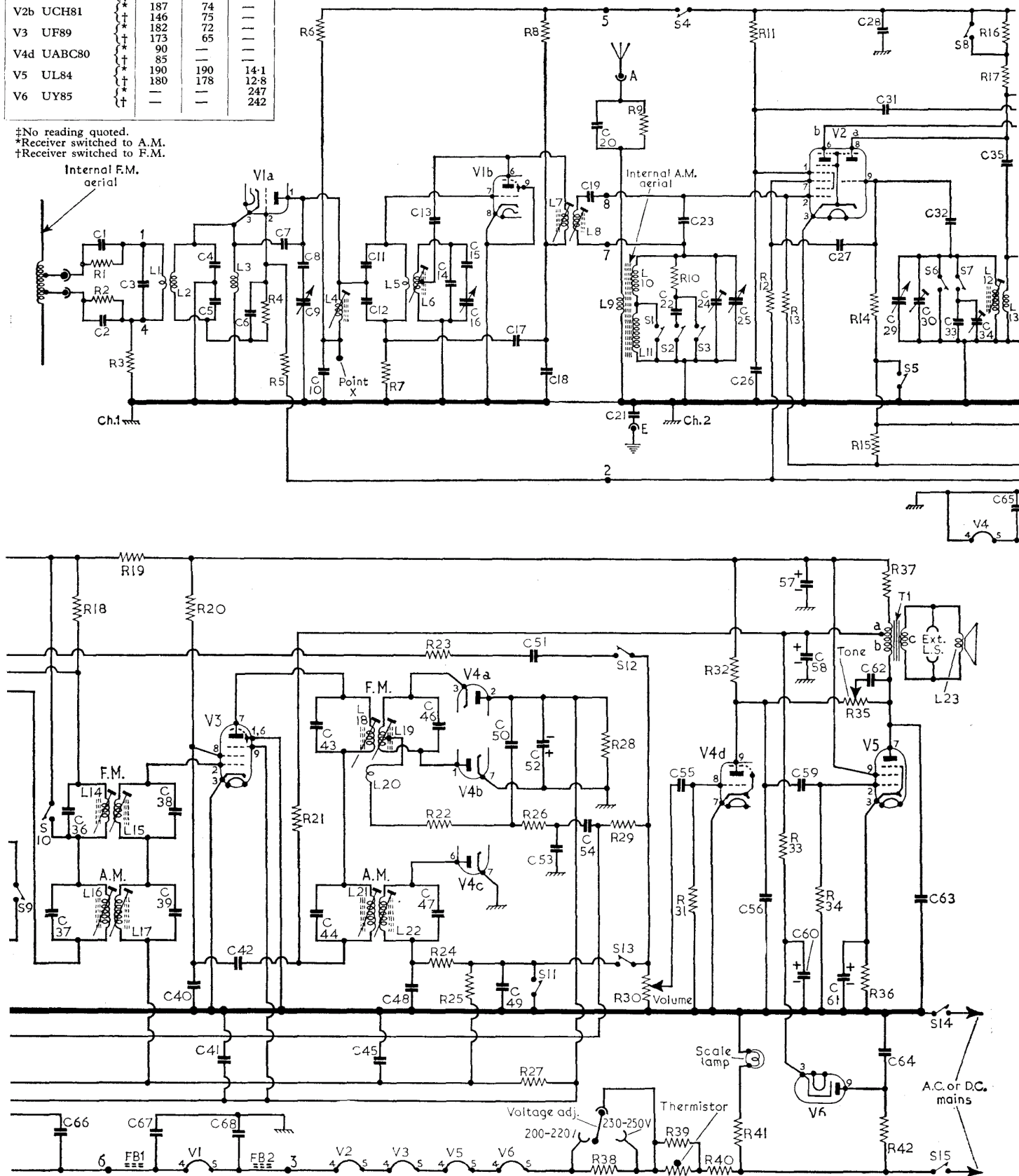
T1 375-0
FB1 375-0
FB2 375-0
Thermistor V1010
S1-S15
S14, S15

CIRCUIT ALIGNMENT

This receiver may be aligned with the chassis in or out of its cabinet. With the chassis out, alignment markers are provided by notches at the edges of the scale backing plate. With the chassis in, alignment markers are repeated in the same positions on the tuning scale.

Equipment Required.—An A.M. signal generator modulated 30% at 400 c/s. An F.M. signal generator with a deviation of 25 kc/s and an output impedance of 75Ω. An output meter, a 0.1μF capacitor and a 400 pF capacitor, and two trimming tools, a hexagonal type and a non-metallic screw-driver type.

The manufacturers recommend that the chassis should be connected to the mains via an isolating transformer. No earth connection should be made to the receiver, and any equipment connected to the receiver should not be earthed. Where an isolating transformer is not available, tests must be made to ensure that the chassis is connected to the neutral side of the mains supply.



The signal generator should have an isolating capacitor in its "live" output lead, and it must have a minimum rating of 350V D.C. Throughout the entire alignment process the signal generator should be adjusted to maintain approximately 100 mW output from the receiver.

A.M. Alignment

- 1.—Switch receiver to M.W., turn tuning gang to minimum capacitance. Connect output meter across speaker. Connect A.M. signal generator, with a 0.1 μ F capacitor in its "live" output lead across coil L8 (tags 7 and 8, location reference B2). Turn volume control to maximum.
- 2.—Feed in a modulated 470kc/s signal and adjust the cores of L22, L21 and L17, L16 (location reference C2), in that order for maximum reading on the output meter, reducing the input at each step if necessary.
- 3.—With the tuning gang at maximum capacitance, check that the cursor coincides with the top left-hand notch in edge of scale backing plate.
- 4.—Loosely couple the signal generator to the ferrite rod by means of a loop of insulated wire.

Turn the tuning gang until the cursor is in line with the second notch from the top. Feed in a 580kc/s signal and adjust the core of L12 (C1) for maximum reading on the output meter. Still with signal generator at 580kc/s, slide the adjusting ring (A2) along the ferrite rod for maximum reading on the output meter. Reduce the signal generator input with each step if necessary.

- 5.—Turn the tuning gang until the cursor is in line with the bottom notch on the left-hand edge of tuning scale backing plate. Retune the signal generator to 1,400kc/s, and with the output still coupled to the ferrite rod as for operation 4, adjust C30 (B2) and then C24 (B2) for maximum reading on the output meter.

- 6.—Switch receiver to L.W. Turn tuning gang to bring the cursor in line with the third notch from the top on left-hand edge of scale backing plate. With the signal generator coupled to the ferrite rod as before, adjust frequency to 220kc/s and adjust C34 and L11 in turn for maximum output. L11 is adjusted by sliding its former along the ferrite rod.

F.M. Alignment

- 1.—Switch receiver to V.H.F. and allow it to warm up for at least ten minutes. Set the volume control about 90 deg back from maximum and the tone control to maximum treble.
- 2.—Connect the F.M. signal generator across coil L8 (tags 7 and 8 location reference B2) with 400pF capacitor in its "live" output lead. Feed in a modulated

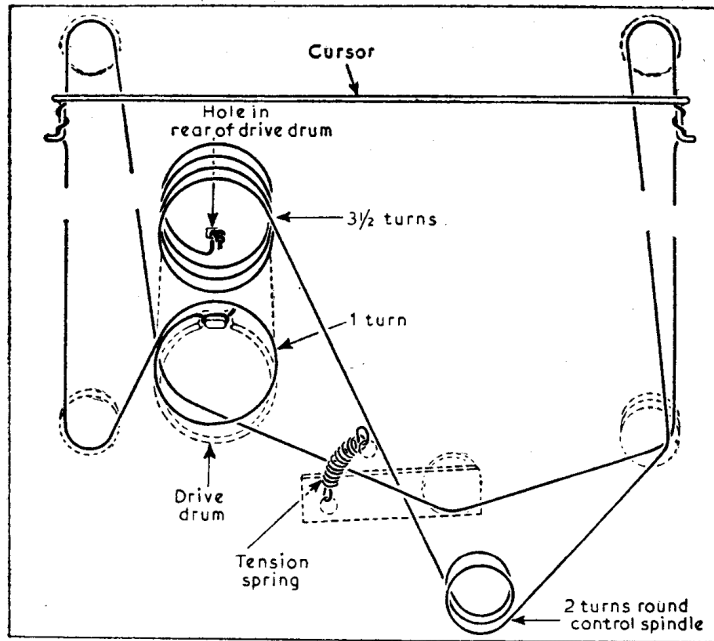


Diagram of the tuning drive system drawn as seen from the front of the chassis.

10.7Mc/s signal and adjust the cores of L19, L18 and L15, L14 (C2) in that order for maximum reading on the output meter. Reduce the signal generator output with each step if necessary. Note the final reading on the output meter and the position of the signal generator attenuator control.

- 3.—Disconnect F.M. signal generator and connect A.M. signal generator to tags 7 and 8 with the 400pF capacitor in its "live" output lead. Set A.M. signal generator to 10.7Mc/s and adjust L19 (C2) for minimum reading (maximum dip) on the output meter. It may be found that on rechecking the F.M. output there is a slight reduction in the meter reading. This reduction should be accepted in favour of maximum A.M. rejection.

- 4.—Unscrew the core of L8 (E3) so that it protrudes from the former by approximately 3/8 in. Transfer the signal generator to point X on the tuner unit (A2). Inject a 10.7Mc/s signal and adjust the cores of L8, L7 (E3) for maximum reading on the output meter.

- 5.—Adjust the tuning gang to maximum capacitance and check that the cursor coincides with notch at top right-hand edge

of scale backing plate. Readjust tuning gang so as to set cursor in line with lower notch on right-hand edge.

- 6.—Connect F.M. signal generator to F.M. aerial sockets. Inject a 91Mc/s signal and adjust L6 (E3) to tune in signal. If two peaks occur, the one with the core nearest the top of the former must be chosen. Adjust L4 (E4) for maximum output with the core towards the bottom end of the former.

GENERAL NOTES

Switches.—S1-S13 are the waveband and A.M./F.M. changeover switches ganged in a single rotary unit and shown in our illustration of the chassis in location reference B1. A detailed diagram of the unit is shown in column 1, where the contacts are drawn as seen when viewed from the rear of the upright chassis. The table (below) shows the switch operations for the three control settings, starting from the fully anti-clockwise position of the control knob. A dash indicates open, and C, closed.

Drive Cord Replacement.—Approximately 70 inches of nylon braided cord is required for a new drive cord. Remove the scale backing plate by taking out three self-tapping screws at the top, and releasing two tension springs at the bottom. Tie a knot in one end of the cord and thread it through the hole in the rear of the drive drum, feeding it through from the front until the knot anchors. The tuning gang should be turned to maximum capacitance.

Draw the free end of the cord through the slot and wind as shown in our sketch of the tuning drive system. Finish by winding one turn clockwise round the drive drum, and adjust the tension of the cord by making it taut without overstretching the tension spring. Secure the end of the cord by tying a knot round the peg cut into the front edge of the drive drum. Refit the scale backing plate and fit the cursor as shown in the sketch.

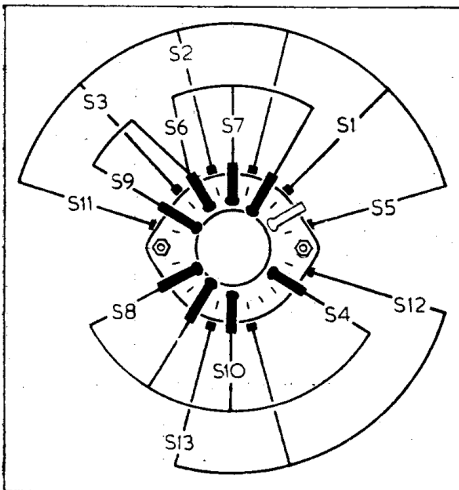


Diagram of the waveband switch unit drawn as seen when looking from the rear at an upright chassis.

Switch Table

Switches	M.W.	L.W.	F.M.
1	C	—	—
2	—	C	—
3	—	—	—
4	—	—	—
5	C	C	—
6	—	—	—
7	—	C	—
8	C	C	—
9	—	—	—
10	C	C	—
11	—	—	—
12	—	—	—
13	C	C	—

FERGUSON
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