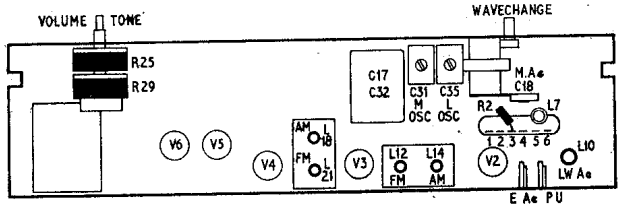
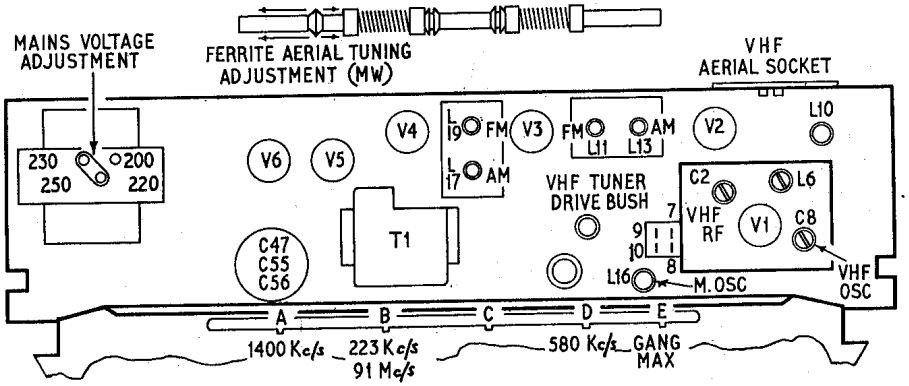
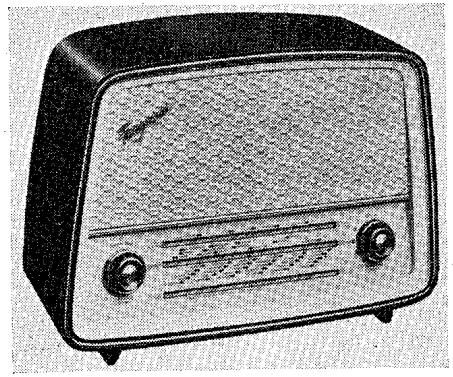






Valve readings, dial drive diagram, etc., see overleaf

COMPONENT RATINGS

Capacitors—

Ceramic : C1 3 4 5 9 10 11 12 13 16 21 23 24 29 30 36 37 42 43 45 57 58 59.
Polystyrene : C6 7 14 15 20 25 26 27 28 33 34 38 39 40 41 44 48.
Metallised paper tubular : C22 46 50 52 54 (150V DC) 71.
Paper tubular : C60 70 72.
Electrolytic 275V : C47 55 56.
Electrolytic 150V : C49.
Electrolytic 25V : C53.

Resistors—

6W wirewound : R30 40 41.
1W : R24 42.
½W : R27 43.

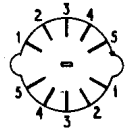
All others ¼W.

Potentiometers—

Log law : R25 29.

SWITCH TABLE

POSITION	CONTACTS CLOSED			
	S1A	S1B	S1C	S1D
LW.....	3,4,5	4,5	1,2	1,3
MW.....	3,4,5	3,4	2,3	1,3
VHF.....	1,4	1, 2, 3,4	2,3,4,5	3,4
GRAM....	—	1,2	4,5	3,5



GENERALISED VIEW OF SWITCH WAFER, SHOWING RELATIVE POSITIONS OF CONTACTS

FERGUSON 382U "FIREFLY"

Continued

SIX-VALVE AM/FM plastic cabinet table model for 200–250V AC (50–60c/s) or DC mains.

Maker. Thorn Electrical Industries, Ltd., 105-109 Judd Street, London, WC1.

Service departments. London, 145 Kentish Town Road, NW1 ; Birmingham 15, 24 Sheepcoat Street ; Glasgow 1, 9-15 Waverley Street ; Manchester 1, 9 Stevenson Square.

Date released. August, 1956.

Price at time of release, 20gns., inclusive.

Valves. V1, UCC85—VHF amplifier and mixer oscillator. V2 UCH81—AM frequency-changer and FM IF amplifier. V3 UF89—AM and FM amplifier. V4 UABC80—AM and FM detector and audio amplifier. V5 UL84—audio output. V6 UY85—rectifier.

Pilot lamps. Two—22V 0.1A.

Speaker. PM. 6½in. diameter. 3 ohms.

Output. 3 watts.

Aerials. Inbuilt VHF aerial attached to cabinet back and connected to receiver through a short twin feeder and two-pin plug. Ferrite rod aerial (MW and LW) has grommets which slide into a small cradle mounted inside cabinet. Can be removed without unsoldering connecting leads when chassis is being serviced.

Waveband coverage. FM, 88-101mc/s. LW, 1,160–1,940 metres. MW, 188–545 metres.

Chassis removal. Chassis fits in grooves moulded in plastic cabinet and is secured by two screws at the rear.

ALIGNMENT

Warning. Chassis is connected to one side of mains and isolating capacitors of adequate working voltage should be used when connecting a signal generator into circuit.

AM circuits

IF stages. Switch receiver to MW, set gang at minimum capacitance and volume control at maximum.

Inject modulated 470kc/s via 0.1mF capacitor at pin 2 of V2. L18, L17, L14, L13, tune for maximum output, adjusting input signal level to maintain peak output at about 50mW.

RF stages. MW must be aligned first, signals being injected via a loop, loosely coupled inductively to Ferrite rod aerial. Maintain input level at 50mW.

MW. Set gang at maximum capacitance and cursor to position E (end stop) on scale backing plate. Switch receiver to MW, inject 1,400kc/s, set cursor to position A.

C31, C18, adjust for maximum output.

Set cursor to D, inject 580kc/s.

L16, adjust this and adjusting ring on Ferrite rod aerial for maximum output.

C31, C18, repeat adjustment with cursor at A and 1,400kc/s injection.

L16 and ring on Ferrite rod, repeat adjustment with cursor at D and 580kc/s injection.

LW. Switch receiver to LW, inject 223kc/s, set cursor to B.

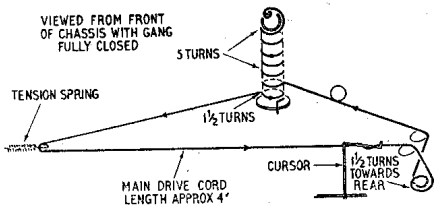
C35, L10, adjust until no further improvement is possible.

FM circuits

An FM signal generator with IF and Band 2 coverage and an output impedance of 75 ohms, is required. Carrier deviation should be set at 25kc/s and, throughout alignment, signal input to receiver should be adjusted to maintain an audio output of 100mW.

IF stages. Switch on receiver at least ten minutes before commencing alignment. Set volume control to maximum and switch to VHF/FM position.

Inject 10.7mc/s (sig. gen. output 20mW) at pin 2 V3 via an 0.01mF capacitor.



L21, L19, adjust for maximum audio output—about 100mW.

Inject 10.7mc/s at pin 2 V2 via 0.01mF capacitor.

L12, L11, tune for maximum audio output, reducing input level so that output does not exceed 100mW.

Inject 10.7mc/s at junction R2/L3 (tag 3 VHF tuner via 500pF).

L7, L6, adjust with non-metallic tool for maximum audio output, reducing input as necessary.

RF stages. Rotate tuning control until cursor locates at position C. With main drive held in this position, slacken VHF tuner drive bush fixing screw and rotate bush fully anti-clockwise. Check that free end of cord is under washer and that cord tension is maintained, then tighten fixing screw.

Turn tuning control clockwise until cursor is at E (end stop).

Inject 91mc/s at aerial socket.

C8, adjust with non-metallic tool for maximum audio output. Once adjusted, C8 should not be altered.

Slacken VHF tuner drive bush and rotate tuning control until cursor is at B. Re-adjust VHF drive bush if necessary to bring in 91mc/s signal (during this operation cord tension must be maintained) and tighten fixing screw.

C2, trim for maximum audio output—reducing input level as required.

VOLTAGE AND CURRENT CHECKS

Readings taken with Avo model 8, voltages measured on the 10V, 250V or 1,000V ranges as applicable. Receiver on 230–250V mains tapping, supply being 240V 50c/s AC.

HT current (total), AM 76mA, FM 78mA.

HT voltage (unsmoothed), AM 252V, FM 252V. First section smoothing, AM 215V, FM 212V. Second section smoothing, AM 180V, FM 167V.

VALVE MEASUREMENTS (AM)

	Anode		Screen		Cathode
	Volts	*mA*	*Volts*	*mA*	*Volts*
V1A ...	—	—	—	—	—
V1B ...	—	—	—	—	—
V2 Hep. ...	169	3.1	85	6.7	—
Tri. ...	94	5.3	—	—	—
V3 ...	188	8.4	70	2.5	—
V4 ...	73	0.5	—	—	—
V5 ...	205	47.0	180	2.4	13.7

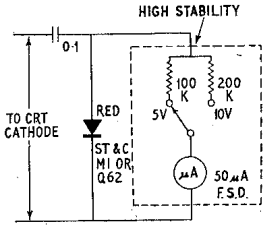
VALVE MEASUREMENTS (FM)

	Anode		Screen		Cathode
	Volts	*mA*	*Volts*	*mA*	*Volts*
V1A ...	101	5.0	—	—	—
V1B ...	110*	3.0	—	—	—
V2 Hep. ...	125	8.0	91	5.1	—
Tri. ...	—	—	—	—	—
V3 ...	185	7.7	63	2.3	—
V4 ...	70	0.4	—	—	—
V5 ...	203	44.0	167	2.1	12.8

* Connect meter (100V range) to V1B anode through a 2 megohm resistor and multiply scale reading by two.

MURPHY V240

Continued from page 12



VISION OUTPUT INDICATOR

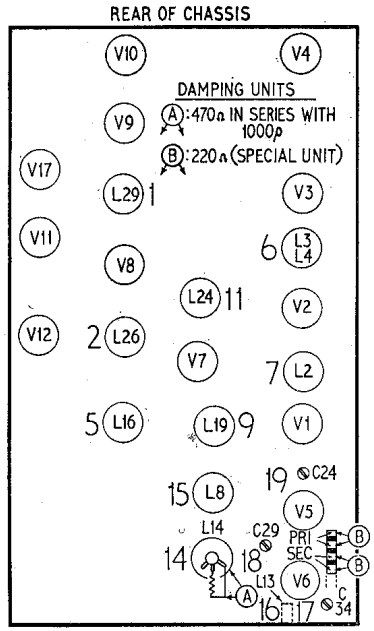
not coded must be fitted with clip and lead uppermost.

CRT replacement, models V250, V250C. If the replacement tube is not secure when the clamping ring is fully tightened, a Presspahn packing strip must be fitted.

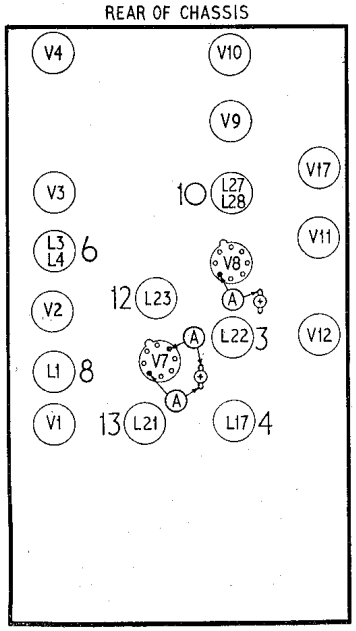
ALIGNMENT

Sensitivity controls, contrast and volume fully clockwise, and vision interference limiter anti-clockwise, L/D switch to D. Selector to channel 2 for all IF alignment.

Damping units. Damping unit A consists of 470 ohm resistor in series with 1000pF capacitor—miniature components. Damping unit B is 220 ohm resistor with special connectors (Part No. 64493). Connect unit B as shown in coil layout diagram.



CHASSIS TOP



CHASSIS UNDERSIDE

Signal generator, 80 ohms, connected to aerial socket for all adjustments, modulation on. Receiver output not to exceed—sound, 200mW, or 0.8V across speech coil, vision, 10V DC as measured by vision output indicator.

RF unit. Before commencing alignment of RF circuits, set fine tuner to mid-position and check that side and bottom covers are in place.

Circuit	*mc/s sig. gen.*	*Adjustments*	*Output*
3rd sound IF rej.	38.15	Switch to Channel 2. 1. L29 (top).	Min. v.
2nd sound rej.	38.15	2. L26 (top). ...	Min. v.
2nd adj. sound IF rej.	33.15	3. L22 (underside)....	Min. v.
1st adj. sound IF rej.	33.15	4. L17 (underside)...	Min. v.
Adj. vision IF rej.	39.65	5. L16 (top). ...	Min. v.
3rd sound IFT	38.15	6. L3/L4 (underside).	Max. s.
2nd sound IFT	38.15	7. L2 (top). ... ... 8. L1 (underside).	Max. s.
1st vision/ sound IFT.	38.15	9. L19 (top). ...	Max. s.
3rd vision IFT	36	10. L27/L28 (underside).	Max. v.
2nd vision IFT	36	11. L24 (top). ... "A" to V7 pin 2.	Max. v.
	36	12. L23 (underside). "A" to V8 pin 6.	Max. v.
1st vision/ sound IFT.	36	13. L21 (underside). "A" to R40 top.	Max. v.
	36	14. L14 (top—IF unit). "A" to V7 pin 6.	Max. v.
IF rejectors ...	—	Repeat 1 to 5. ...	—
1st vision/ sound IFT.	—	Repeat 9.	—
1st sound IF rej.	38.15	15. Channel 1, L8 (top—RF unit).	Min. s.
RF circuits. See under RF unit.	53.25	16. Channel 3, L13/3 (front).	Max. s.
	55	17. C34 (top—RF unit). "B" across Pri.	Max. s.
	55	18. C29 (top—RF unit). "B" across Sec.	Max. v.
	—	19. C24 (top—RF unit).	Max. v.
Local osc. ...	—	20. L13 on local station.	Max. s.

Table gives Channel 3 for alignment of RF stages. Channel 8, Band 3, should be used when the generator is available—frequency is 188mc/s, and procedure, including osc. adjustment at 186.25mc/s, is asTable.