EKCO SERVICE DATA

MODEL U332

See also Service News Sheets Nos.

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MODEL U332 is a four valve (including rectifier) superheterodyne A.M. receiver for the Long and Medium Wavebands.

A directional ' Ferrite ' rod aerial is employed for both wavebands and provision is included for connecting an external aerial and earth.

Sockets are provided for connecting to an extension loud-speaker of the low impedance type.

Operation is from an A.C. or D.C. mains supply.

IMPORTANT NOTES : (1) The chassis connects to one side of the mains and, with A.C. operation, care should be taken to ensure that the chassis connects to the neutral side of the supply. With D.C. supplies the mains plug must be inserted in the correct polarity, otherwise the receiver will not operate.

In the case of earthed positive D.C. supplies the chassis will be live.

(2) The rear cover should NEVER be released whilst the receiver is connected to the mains, as the cowl over the mains resistor may become live.

(3) An earth wire, if used, should only be connected to the socket provided and NEVER direct to the chassis or the aerial socket.

(4) The voltage taps on the mains resistor should be adjusted prior to installation, as follows :—

Supplies 200-220V use the 210V tap (lower).
,, 230-250V use the 240V tap (upper).

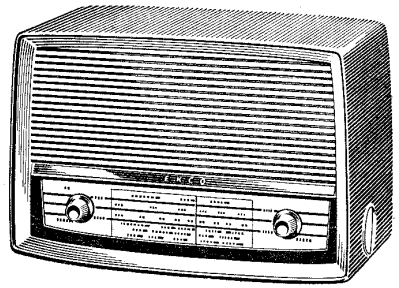
MAINS SUPPLY : 200-250V A.C. 40-100 c/s. or D.C.

MAINS CONSUMPTION : 40 Watts approximately.

WAVEBAND COVERAGE :

M.W. 535-1650 Kc/s. 560- 182 Metres.
L.W. 150- 275 Kc/s. 2000-1100 Metres.

CONTROLS : Front (right) TUNING, (left) VOLUME ON-OFF, Side WAVECHANGE.



VALVES :

V1	Frequency Changer	UCH81	B9A base
V2	I.F. Amplifier, Demod. and A.G.C.	UBF89	B9A ,,
V3	A.F. Amplifier and Audio Output	UCL82	B9A ,,
V4	H.T. Rectifier	UY85	B9A ,,

INTERMEDIATE FREQUENCY : 470 Kc/s.

CHASSIS REMOVAL : Disconnect from the mains supply and remove the rear cover. Remove the three control knobs, held by grub screws, then remove two screws securing the rear flange of the chassis to the cabinet. The chassis may now be withdrawn to the extent of the loud-speaker leads. When re-assembling ensure that the flange on the front of the chassis is correctly located in the appropriate channel of the cabinet.

After tightening the grub screws on the control knobs a small quantity of wax should be pressed into the hole in the side of the knob to insulate the head of the grub screw and so avoid any possibility of shock to the user should the chassis be live.

DRIVE CORD REPLACEMENT : A length of approximately 36 inches of nylon drive cord is required. Tie a small loop in one end of the cord and attach this to the free end of the spring. Hook the spring on to the drive wheel, then pass the end of the cord clockwise round the drive drum, over the left hand pulley, under the right hand pulley, two turns clockwise round the control spindle, then round the drive drum back to the spring. The pointer is attached to the cord so as to be coincident with the datum mark at the right hand end of the scale, when the gang is fully meshed.

CIRCUIT ALIGNMENT : A standard signal generator, covering 200-1550 Kc/s., modulated 30 per cent., and an A.F. output meter will be required.
Connect the A.F. output meter across the loud-speaker tags.

I.F. ALIGNMENT : Switch the receiver to M.W. and adjust the Volume control for maximum output. Input to V1 pin 2, at 470 Kc/s. modulated. Adjust L8 (upper core), L7, L4 (upper core) and L3 in that order for maximum symmetrical output.

R.F. ALIGNMENT : Connect the signal generator, via a dummy aerial, to the A and E sockets of the receiver. Check that the pointer is coincident with the datum mark, at the right hand end of the scale, when the gang is fully meshed. Adjust if necessary by sliding the pointer along the cord.

M.W. Tune to 500 Metres, inject a signal of 600 Kc/s., then adjust L5 for calibration, and L2 for maximum output.

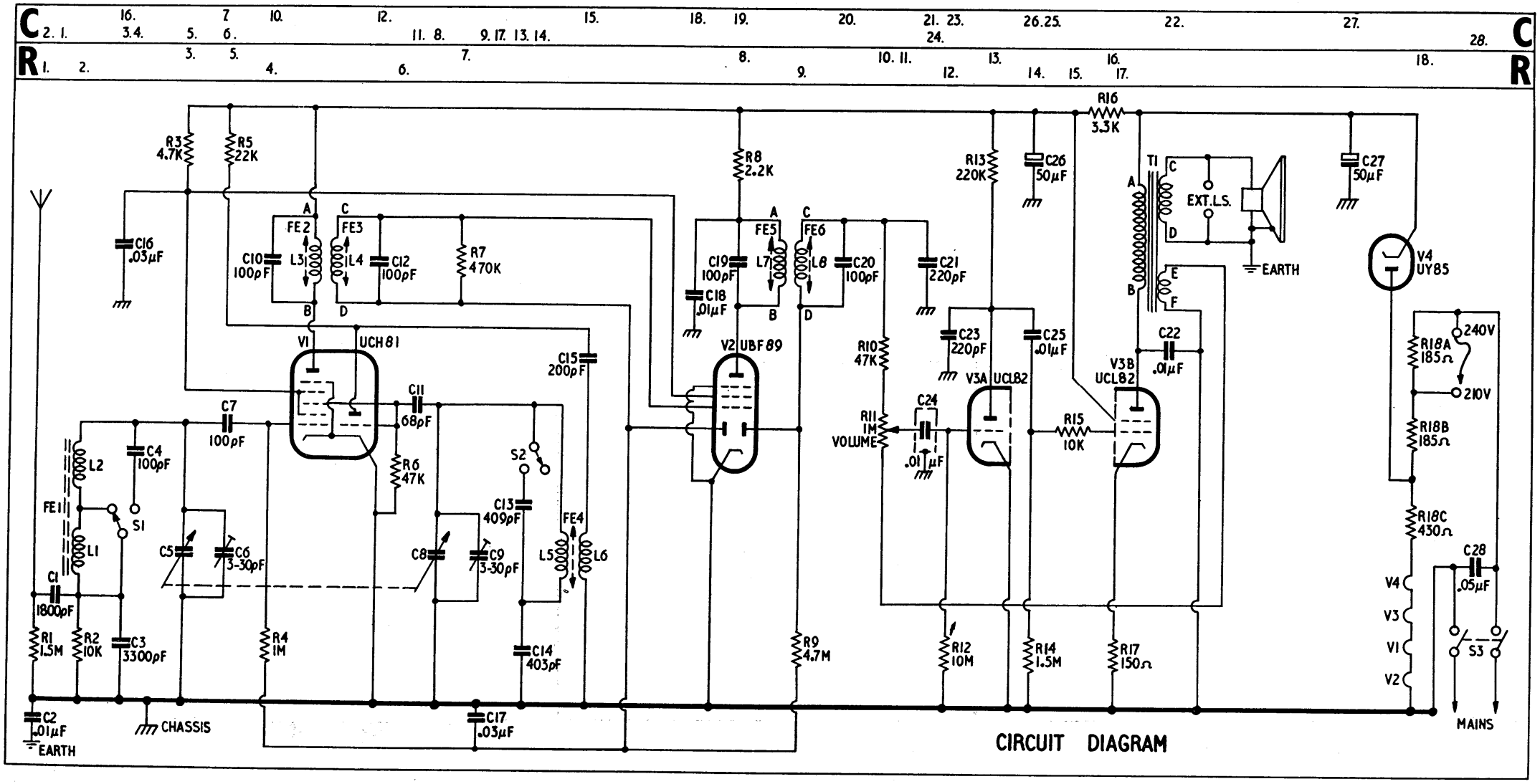
Tune to 3rd Programme calibration mark, inject a signal of 1546 Kc/s., then tune C9 for calibration and C6 for maximum output.

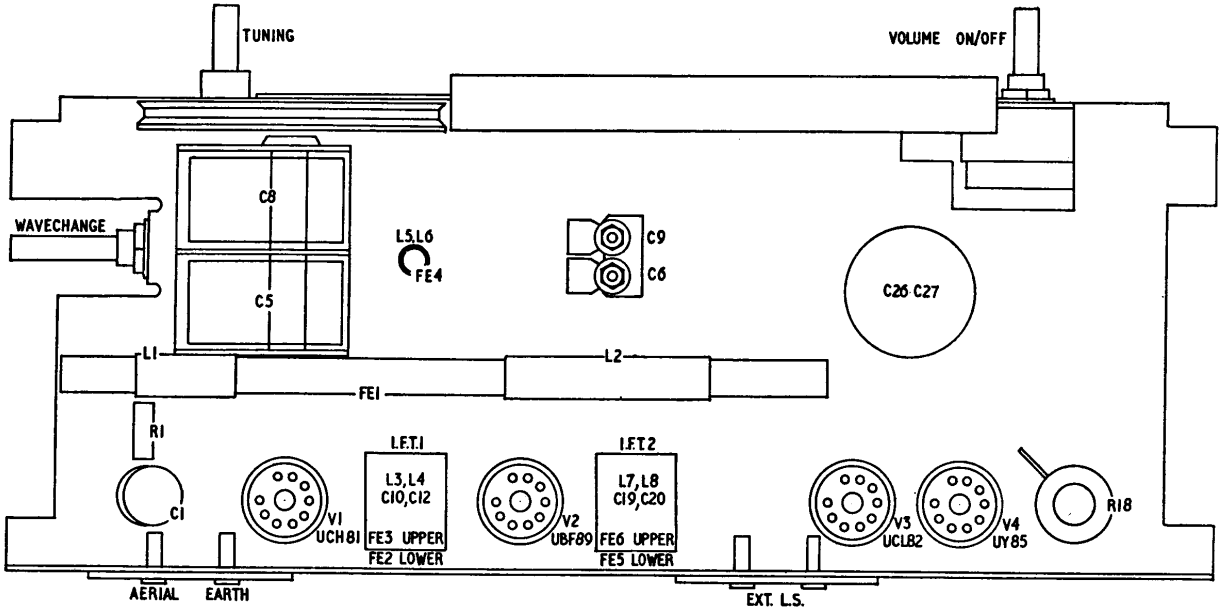
L.W. Tune to 1400 Metres, inject a signal of 214.29 Kc/s., then adjust L1 for maximum output.

CIRCUIT DETAILS : Conventional superheterodyne circuitry is employed in which a triode heptode valve operates as local oscillator and mixer. The second valve combines the function of I.F. amplifier with those of demodulator and A.G.C. rectifier. V3 is another double valve and operates as A.F. amplifier and audio output.

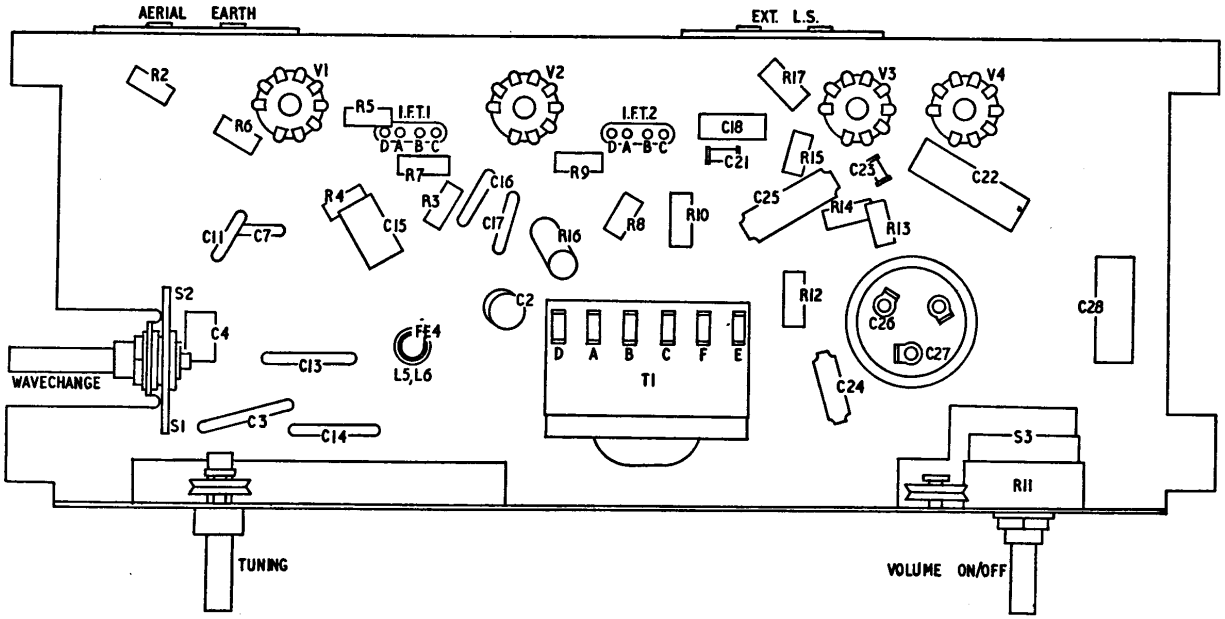
Negative feedback is provided by a tertiary winding on the output transformer.

H.T. is supplied from the half-wave rectifier V4 and smoothed by C27, R16 and C26.


R3 4.7K
R5 22K
C16 .03µF
C10 100pF
L3
FE2
L4
FE3
C12 100pF
R7 470K
R8 2.2K
C19 100pF
C18 .01µF
L7
FE5
L8
FE6
C20 100pF
C21 220pF
R13 220K
C26 50µF
R16 3.3K
T1
EXT.L.S.
EARTH
C27 50µF
V4 UY85
V1 UCH81
C15 200pF
V2 UBF89
R10 47K
C23 220pF
C25 .01µF
V3A UCL82
V3B UCL82
C22 .01µF
240V
210V
R18A 185Ω
R18B 185Ω
R18C 430Ω
C28 .05µF
S3
MAINS
C11 68pF
C7 100pF
R6 47K
S2
C13 409pF
FE4
L5
L6
R11 1M VOLUME
C24 .01µF
R15 10K
L2
C4 100pF
FE1
S1
L1
C5
C6 3-30pF
C8
C9 3-30pF
C1 1800pF
R1 1.5M
R2 10K
C3 3300pF
R4 1M
C14 403pF
R9 4.7M
R12 10M
R14 1.5M
R17 150Ω
C2 .01µF
EARTH
CHASSIS
C17 .03µF
CIRCUIT DIAGRAM



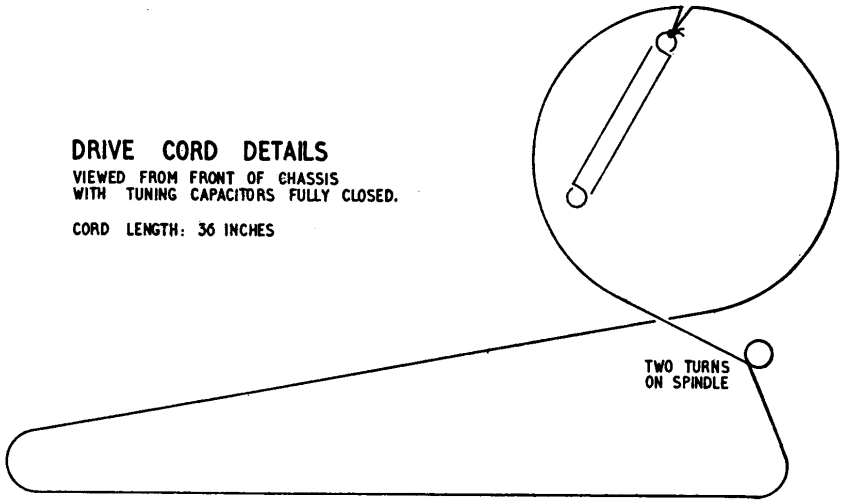
CHASSIS DETAILS

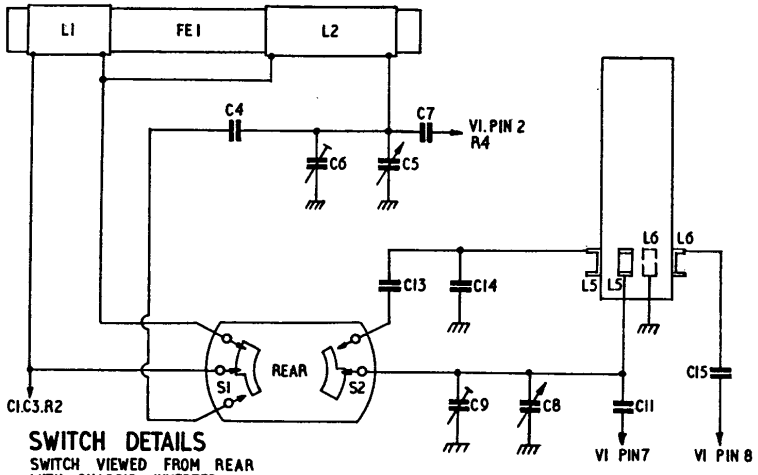


DRIVE CORD DETAILS

VIEWED FROM FRONT OF CHASSIS
WITH TUNING CAPACITORS FULLY CLOSED.

CORD LENGTH: 36 INCHES





SWITCH DETAILS

SWITCH VIEWED FROM REAR
WITH CHASSIS INVERTED

VOLTAGE AND CURRENT DATA : Receiver operating from 240V A.C. 50 c/s. supply into the 230-250V tap. Voltages taken on a meter of 20,000 ohms per volt and are positive with respect to chassis, unless otherwise stated.

Valve	Anode			Screen			Cathode		
	Pin	V	mA	Pin	V	mA	Pin	V	mA
V1H	6	94	1.8	1	60	4.2	3	0	—
V1T	8	48	2.2	—	—	—	3	0	—
V2	6	91	6.3	1	60	3.6	3	0	—
V3A	9	43	0.2	—	—	—	8	0	
V3B	6	150	30	7	94	5	2	5.5	35
V4	9	170A.C.	—	—	—	—	3	160	

Current through valve heaters, 100mA.

V4 pin 5 to chassis, 126V A.C.

D.C. RESISTANT OF WINDINGS :

Winding	Ohms
L1	8
L2	0.5
L3	10
L4	10
L5	3
L6	0.75

Winding	Ohms
L7	10
L8	10
T1 Pri.	335
Sec.	*
Tertiary	*
L.S.	2.6

* Less than 0.5 ohms.

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