

PHILIPS RADIOPLAYER

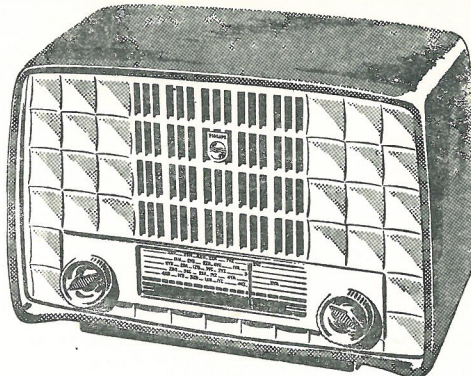
MODEL BZI56U

4 VALVE SUPERHETERODYNE RECEIVER

Mains supply 210-250 volts A.C. 50-100 c/s or D.C.

Tuning Range 535-1600 Kc/s

Intermediate Frequency 455 Kc/s



REMOVAL FROM THE CABINET

To remove the chassis from the cabinet the following procedure should be adopted:

Remove the mains plug from the supply.

Remove the back cover and knobs.

Loosen off the two screws holding the speaker clamps, and turn the clamps to one side.

Remove the chassis mounting screws from the back of the chassis, and slide the chassis clear of the cabinet.

To replace the chassis in the cabinet rest the speaker on the bracket behind the front of the chassis. Slide the chassis almost into the cabinet and position the speaker on the baffle, so that the top of the speaker touches the two stops at the top of the baffle board. Turn the clamps onto the rim of the speaker, and slide the chassis forward until the back of the chassis touches the threaded bosses for the mounting screws. See that the ribbon connecting the Ferroxcube rod is kept well away from the I.F. valve and transformer. Replace the back cover. Replace the two knobs.

ALIGNMENT OF THE RECEIVER

Attention is drawn to the fact that the high tension supply is rectified from the mains so that in the event of the mains cord being improperly connected, it is possible that the phase of the supply be connected to the chassis. Therefore, before commencing work on the chassis it is advisable to check the mains plug for correct phasing. A further check may be carried out by connecting a neon lamp between chassis and earth, measuring the potential of the chassis with respect to neutral or earth, with a low consumption A.C. voltmeter or by using a suitable 1 : 1 isolating transformer.

Set the pointer to the reference point at the start of the two lines below 550 Kc/s, with the tuning condenser at the maximum capacity position. Switch on the receiver and allow it to warm up for a few minutes. Turn the volume control to the maximum position and the tuning condenser to the minimum capacity position.

Unscrew the adjusting cores on the I.F. transformers nearly right out. Apply a signal of 455

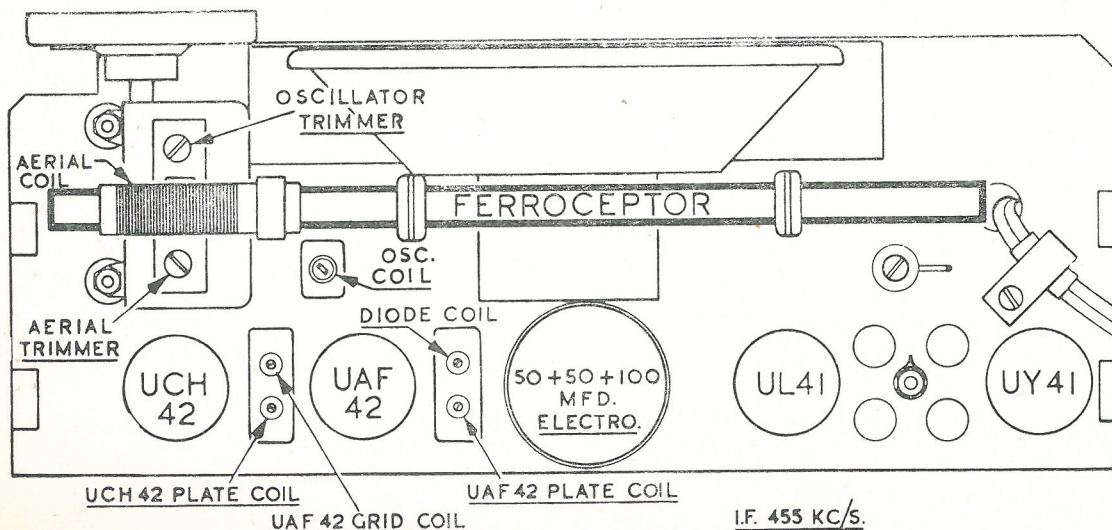
Kc/s modulated 30% through a capacity of 0.01 mfd. to the control grid of the UCH42 valve, and adjust for maximum output in the following sequence:

1. Diode coil;
2. UAF42 plate coil;
3. UCH42 plate coil;
4. UAF42 grid coil.

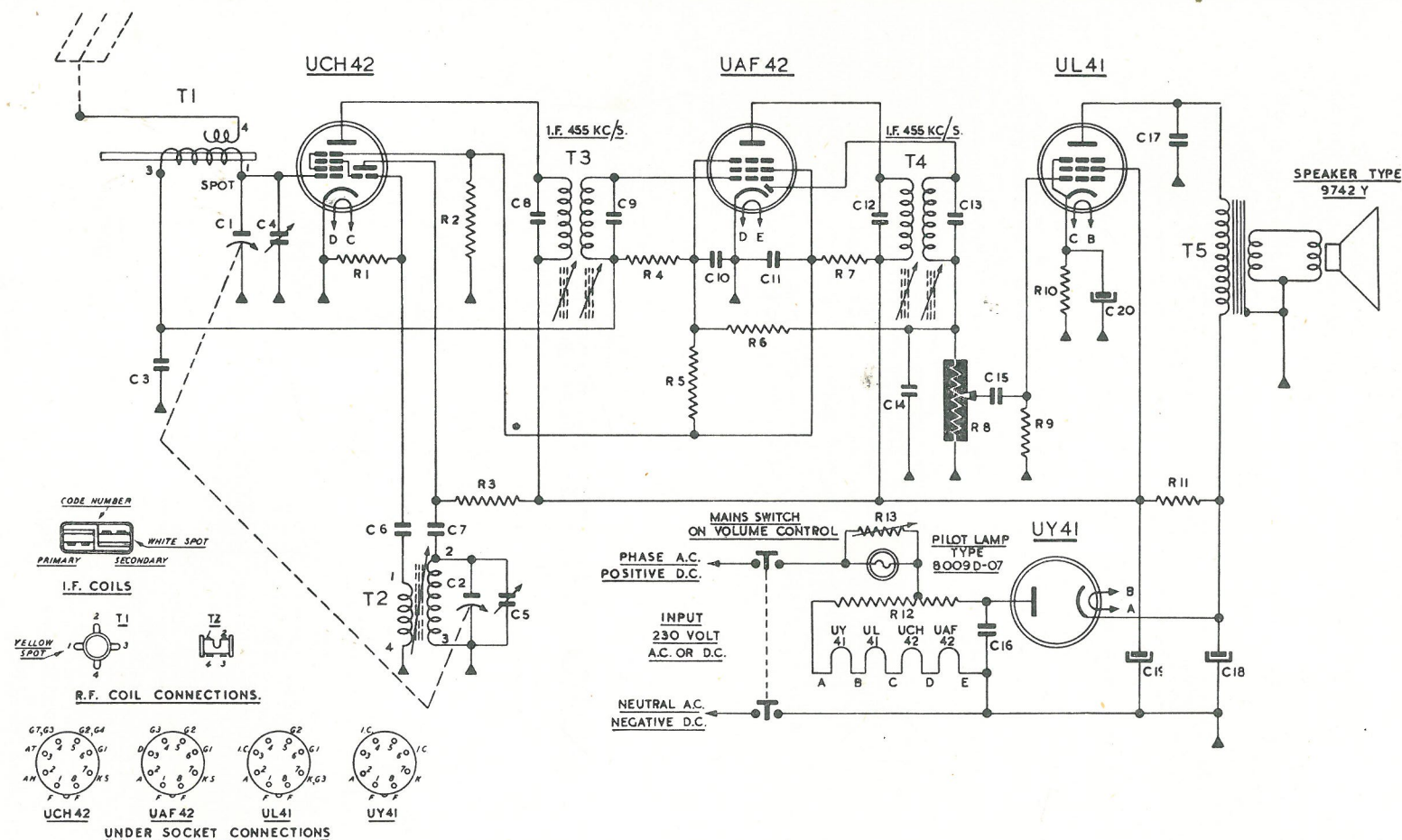
If the above adjustments are carefully carried out no further adjustment should be made. The input required from the generator for a power output of 50 milliwatts should not exceed 300 microvolts. Seal the I.F. adjusting cores. Remove the 0.01 mfd. condenser 'A' and connect the signal generator by means of a standard dummy aerial, to the aerial socket of the receiver.

Apply a signal of 600 Kc/s to the aerial and turn the pointer to the 600 Kc/s position on the dial scale. Adjust the oscillator coil inductance until the signal is tuned in, and adjust the coil on the Ferroxcube rod aerial, by sliding the coil along the rod with an insulated stick. Use a small piece of cellulose tape to hold the coil in place until final adjustments are made. Turn the pointer to the 1400 Kc/s position on the dial scale, and apply a signal of 1400 Kc/s to the aerial. Adjust the oscillator trimmer until the signal is tuned in and adjust the aerial trimmer for maximum output. Repeat as for 600 and 1400 Kc/s until the calibration is correct. The connection of a signal generator to the aerial terminal, damps the rather high "Q" value of the Ferroxcube rod aerial. For optimum performance from the rod aerial the signal from the generator may be induced into the loop by connecting the signal generator to a loop of approximately six turns 6 inches in diameter and the rod coil and aerial trimmer adjusted at 600 Kc/s and 1400 Kc/s respectively. This means that when no external aerial is used, the rod will give maximum performance and when a good external aerial is used the effect of damping is offset by the increased signal. When all adjustments are completed seal the trimmers and the oscillator inductance core, and the Ferroxcube coil to the rod with wax.

TRIMMER LOCATION DIAGRAM



C		3	1	4		6	7	2	5	8		9		10	11		12	14	13	16	15		20	19	17	18
R						1		2	3			4		5	6		7	13	12	8		9	10		11	



CONDENSERS

C1 12-460 mmfd. gang condenser
C2 10-193 mmfd. gang condenser
C3 0.05 mfd. 350v. paper
C4 25 mmfd. compression trimmer
C5 25 mmfd. compression trimmer
C6 100 mmfd. ceramic
C7 150 mmfd. ceramic
C8 110 mmfd. I.F. condenser
C9 195 mmfd. I.F. condenser

C10 500 mmfd. mica
C11 0.05 mfd. 350v. paper
C12 110 mmfd. I.F. condenser
C13 195 mmfd. I.F. condenser
C14 100 mmfd. ceramic
C15 0.01 mfd. 500v. paper
C16 0.022 mfd. 1000v. paper
C17 0.005 mfd. 750v. paper
C18 50 mfd. 350v.
C19 50 mfd. 350v.
C20 100 mfd. 12v. } Triple electrolytic

RESISTORS

R1 47k $\frac{1}{4}$ w. carbon
R2 27k $\frac{1}{4}$ w. carbon
R3 25k $\frac{1}{2}$ w. carbon
R4 4.7 meg. $\frac{1}{4}$ w. carbon
R5 10 meg. $\frac{1}{4}$ w. carbon
R6 2.2 meg. $\frac{1}{4}$ w. carbon
R7 15k 1w. carbon
R8 0.5 meg. volume control
R9 680k $\frac{1}{4}$ w. carbon

R10 150 ohms 1w. carbon
R11 1000 ohms 1w. carbon
R12 1320 ohms tapped at 130 ohms w.w.
R13 tempco resistor 49-379-55

COILS

T1 rod aerial coil VK-469-70
T2 oscillator coil VK-471-50
T3 1st I.F. transformer A3-126-84
T4 2nd I.F. transformer A3-126-84
T5 output transformer VK-670-94

COIL AND TRANSFORMER RESISTANCES

VK 469 70	Ferroxcube rod aerial coil	Tuned	0.95 ohms
VK 471 50	Oscillator coil	{ Tuned Feedback	6.4 ohms 2.85 ohms
A3 126 84	1st and 2nd I.F. transformers	{ Primary Secondary	8.4 ohms 4.7 ohms
VK 670 94	Output transformer	{ Primary Secondary	245 ohms 0.85 ohms

REPLACING THE DIAL DRIVE CORD

Check the position of the tuning condenser drum and make sure that when the tuning condenser is in the maximum capacity position the cord opening in the drum is at 3 o'clock.

Make sure that the drum is tight on the condenser shaft.

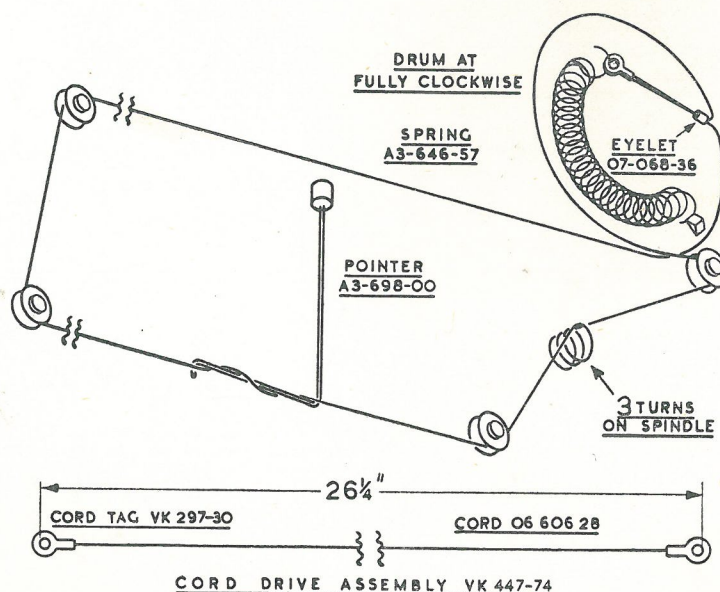
Remove the tuning shaft bearing bracket.

Fold the drive cord assembly in half, and place the loop through the eyelet (07-068-36) so that the round shoulder protects the end from the sharp edge of the drum rim hole. Clip the two ends of the cord with the tags (VK-297-30) to one end of the spring (A3-646-57), and the other end of the spring to the drum.

Place the eyelet securely in its correct position in the slot on the rim of the drum and with the condenser at maximum capacity place one part of the cord loop round the drum in a clockwise direction, along the top edge of the chassis and over the upper left-hand pulley. Take the rest of the cord round the drum in an anticlockwise direction, over the upper right-hand pulley, then round the tuning shaft three times in an anti-clockwise direction, with the cord progressing toward the end of the shaft.

Place the cord under the lower right-hand pulley, then with a pair of pliers, stretch the tension spring until the cord can be placed under the lower left-hand pulley. Replace the tuning spindle bearing. Turn the drive shaft a few times, and adjust the cord so that it runs evenly in the centre of the rim of the tuning condenser drum.

CORD DRIVE DIAGRAM



VOLTAGE TABLE

All readings taken with an input of 230 volts 50 c/s. Full load input current (moving iron ammeter) 250 mA.

Valve	Function	Filaments	Plate	Screen	Cathode
UCH42	Frequency converter and oscillator	14	Conv. 175 Osc. 95	65	—
UAF42	I.F. Amplifier, Demodulator and Delayed A.V.C.	12.6	175	65	—
UL41	Power Output	45	190	175	10.4
UY41	Half Wave Rectifier	31	210 A.C.	—	203
8034D	Panel Lamp	10	—	—	—

The above voltages are measured between the points indicated and chassis, except in the case of the filament voltages, which are measured directly between the valve socket terminals, the meter used having a movement of 20,000 ohms per volt on D.C. ranges and 1000 ohms per volt on A.C. ranges. Variations up to $\pm 5\%$ are permissible. Voltage across the pilot lamp measured with a moving iron voltmeter.

LIST OF SPARE PARTS

Cabinet cream	A3 750 83	Back cover	VK 369 75
Cabinet maroon and cream	A3 738 50	Volume control with switch	48 904 30/DL
Knobs	A3 738 49		50K + 450K
Grub screw	A3 324 16	Tuning condenser assembly	49 001 99
Dial scale	VK 776 03	Tuning condenser drum	VK 691 35
Dial glass	VK 852 02	Wire wound filament resistor	R1 K32 15W
Speed fixes	07 068 56	Ferroxcube rod	56 681 23/22B
Pointer	A3 698 00	For all drive cord parts, see drive cord assembly drawing. For coils and transformer parts see numbers under resistances table.	
Spring clips for back	A3 449 00		