

PHILIPS

MODEL RF490 "STUDIO ELEVEN"

P1-12

Service

notes



SPECIFICATIONS

Power Supply	220-255V. 50 Hz
Power Consumption (Total)	20w
Frequency Coverage	525-1605 KHz
Intermediate Frequency Modules	455 KHz
Dial Lamp	UF311, UA404 x 2
Record Changer	8073D (6.3V 0.1A Tub. Screw)
Pick Up Head	BSR UA25
	BSR SXIM/STB.

ACCESS FOR SERVICE

Note: Access to any part, other than the two speakers, requires the removal of the motorboard assembly from the cabinet. The following must therefore be carried out prior to the operations described below under the various separate headings. Remove the power plug from the mains outlet socket. Unplug the leads from the speakers, freeing them from their cable-clips, and remove any connection to the external aerial lead. Lift the lid and remove the four screws securing the motorboard assembly. Slide the motorboard assembly about 3/4 inch to the left and lift completely clear, easing the leads through the appropriate holes in the cabinet. Re-install in the reverse order.

DIAL LAMP REPLACEMENT

Carefully lever the dial lamp holder from the bracket formed on the underside of the chassis. Unscrew the lamp. Ensure replacement is fully screwed into the holder and the holder firmly replaced on the bracket.

CHASSIS REMOVAL

Remove the three control knobs (by direct pull), and the "Function" plate. Unscrew the central knurled knob securing the tuning knob, and remove the tuning knob by direct pull. Unscrew the four screws securing the chassis to the underside of the motorboard. The chassis will then be free to the extent of the leads connecting it to the record player.

For complete removal, unsolder the mains supply connections to the player from the power transformer on the radio and amplifier chassis, and the audio input connections from the tag strip on the chassis. Reassemble in the reverse order.

MODULE REPLACEMENT

I.F. MODULE UF311. The module is secured in its chassis-mounted base by means of four pins formed in the screening cover. Exert slight pressure on the sides of the screening cover to release the module from its base. Careful rotation on its own wiring will permit access to the printed circuit side of the P.W. board, for servicing or removal. For complete removal, unsolder the six wiring connections to the module. Reverse the order of operations for re-installation of a module.

U.F. MODULE UA404. Remove the screw securing the heat sink for the output transistors to the main chassis. Unclip the P.W. board from the chassis-mounted plastic clips. Access for servicing or removal is then achieved in a similar manner to that described for the I.F. Module.

RECORD CHANGER REMOVAL

Unsolder the mains connections for the record player at the mains transformer on the radio chassis. Unsolder the pick-up output connections at the tag strip on the record player. On the underside of the motorboard, rotate the spring clips on the ends of the two transit screws through 90° until they are in line with the screws. Lift the changer clear of the motorboard. Re-install in the reverse order.

ALIGNMENT

Trimming point locations are shown on the circuit diagram. (Note: Coils and tuning slugs of miniature assemblies are easily damaged by the use of incorrect alignment tools. A complete range of properly designed tools is available in the Philips Kit type 800/TX.

I.F. ALIGNMENT

Connect a signal generator via I.F. dummy to the base of TR1. Put the volume and tone controls in a fully clockwise position and the balance control in its central position.

Peak the cores in the following order and at the frequencies quoted:—

IFT.2	457 KHz
IFT.1	453.3 KHz
IFT.3	457.5 KHz

Repeat the adjustments, as necessary.

R.F. ALIGNMENT

Couple the signal generator via a single turn around the aerial rod. Fully close the tuning capacitor. Inject a signal at 520 KHz and peak the oscillator coil core.

Fully open the tuning capacitor. Inject a signal at 1620 KHz and adjust the oscillator trimmer for maximum output.

Repeat the above until the band end-setting is correct.

Tune receiver and adjust signal generator to 600 KHz (7ZL) and adjust aerial coil on rod aerial assembly for max. output. Tune receiver and adjust signal generator to 1500 KHz (3AK) and adjust aerial trimmer for max. output.

Repeat these two adjustments as necessary. Seal the aerial coil to the rod.

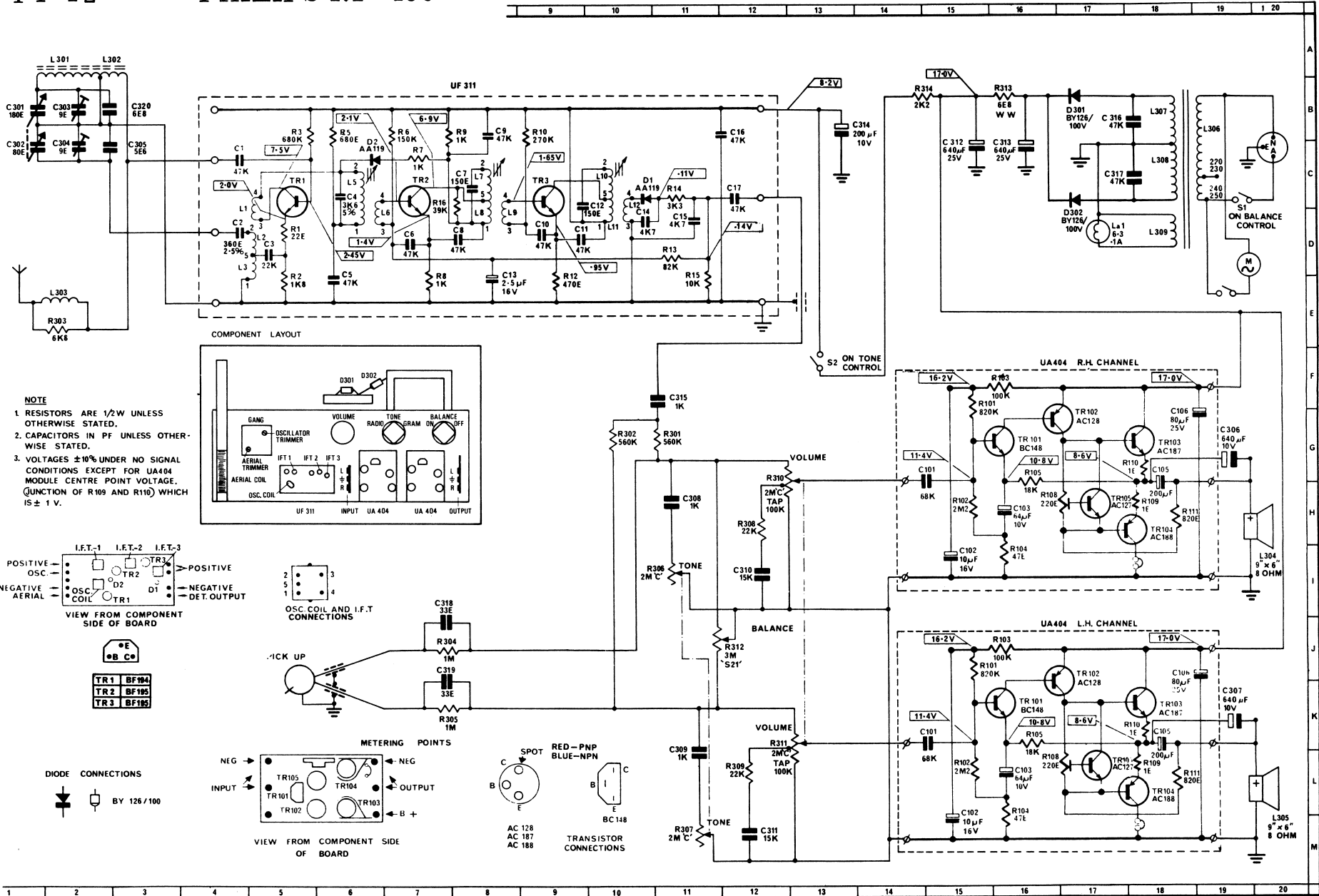
UA404 CURRENT CONSUMPTION

Under no signal conditions and a supply voltage of 17 V.D.C., the current consumption of each audio module will be in accordance with the following current/temperature table.

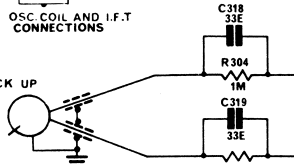
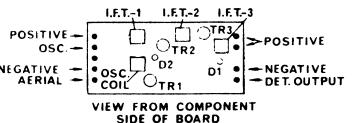
Ambient Temp. (°F)	50	60	75	90	100	110
Collector Current (mA, ± 3)	10	10	10	11	12	13
Total Current (mA, ± 3)	15	17	18	20	22	24

UF311 CURRENT CONSUMPTION

Under no signal conditions the RF/IF module will draw 3.5 - 5.0 mA.



- NOTE**
1. RESISTORS ARE 1/2W UNLESS OTHERWISE STATED.
 2. CAPACITORS IN PF UNLESS OTHERWISE STATED.
 3. VOLTAGES $\pm 10\%$ UNDER NO SIGNAL CONDITIONS EXCEPT FOR UA404 MODULE CENTRE POINT VOLTAGE. (JUNCTION OF R109 AND R110) WHICH IS ± 1 V.



DIODE CONNECTIONS

TR 1	BF194
TR 2	BF195
TR 3	BF195

