

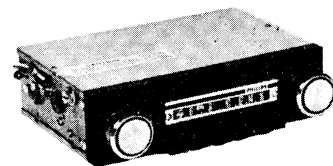
# PHILIPS

## Service

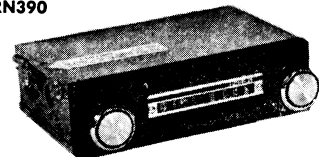
### notes

## MODELS RN390 & RN490

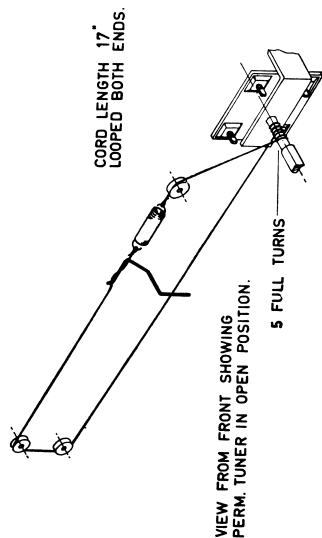
Both receivers are basically the same; RN390 being manual, and RN490 push-button operation



RN390



RN490



## SPECIFICATIONS

Tuning range	.....	525-1620 KHz
Intermediate frequency	.....	455 KHz
Power supply	.....	12V. car battery only
Battery consumption	.....	See table below
Fuse	.....	750 mA
Dial Lamp	.....	Type 12843 (12V 3W)
Speaker impedance	.....	15 ohms
Aerial input capacitance	.....	60 pF
Module (RF/IF)	.....	UF314

### UNCASING INSTRUCTIONS

Top and bottom covers can be removed by unscrewing two screws for each at the rear of the receiver.

To remove the printed base board, remove two screws securing the output transistor heat-sink bracket to the case and move bracket slightly forward to clear back clip, depress the two spring clips at the corners of the board, release from the back clips, and rotate the complete board and module through 90°. Refit by the reverse procedure.

### LAMP REPLACEMENT

Release the two dial assembly mounting screws and withdraw the dial scale and overlay together with spacers.

Position the pointer at extreme H.F. end of scale.

Ease out the L.H. end of the dial back plate and withdraw complete assembly.

Re-assemble in the reverse order, taking care not to overtighten the dial scale screws and damage the overlay.

Note: early models of RN390 employ 12V 2W lamps (type 12913) in lampholders type CZ.637.720. Access for lamp replacement is achieved by removing the top cover, unscrewing the two screws securing the dial back plate assembly and removing the complete assembly. Re-assembly is achieved in the reverse order.

### I.F. ALIGNMENT

Open the permeability tuner and connect the signal generator via an I.F. dummy to the base of TR2. Turn volume control to maximum. Peak I.F.T. cores in the following order.

	Below 80°F ambient	Above 80°F ambient
I.F.T. 2	457.0 KHz	458.0 KHz
I.F.T. 1	451.0 KHz	451.0 KHz
I.F.T. 3	448.0 KHz	448.0 KHz

### R.F. ALIGNMENT

Connect the signal generator to the aerial terminal via a dummy aerial. Tune generator to 1620 KHz and set receiver to H.F. limit. Peak oscillator trimmer, C215. Tune generator to 1500 KHz and set receiver to this frequency. Adjust C201, C203 and C210 (aerial 1, aerial 2 and RF trimmers respectively) for maximum output.

Tune generator and receiver to 600 KHz and peak oscillator coil core whilst rocking tuner back and forth across the signal. Repeat these adjustments until no improvement is achieved.

### OUTPUT TRANSISTOR ADJUSTMENT

A link is provided for the insertion of a meter to enable the quiescent and total current to be checked. Readings should conform to the following table at no signal, and with voltages within  $\pm 20\%$  of the values shown on the circuit diagram. The dial lamp must be open circuit.

Temp. °F	Collector Current (mA)	Receiver Current (mA)
50-60	3.4- 7.5	24-39
60- 70	4.5- 9.0	26-41
70- 80	5.5-10.0	28-43
80- 90	6.5-11.0	30-45
90-100	7.5-12.0	32-47
100-110	8.5-13.5	34-50

R218 (2.7 ohm) may remain in or be shorted out of circuit to maintain the above limits. The value of R223 may also be varied to bring the current within limits. Refer circuit diagram.