

# FERGUSON

# Model 400RG

**General Description :** This six-valve (including rectifier), three-waveband automatic radiogramophone employs a conventional super-heterodyne receiver feeding into a special push-pull audio circuit basically similar to that of Model 300RG (see page 304).

**Power Supply :** A.C. mains, 200–250 volts, 50 c/s.

**Intermediate Frequency :** 470 kc/s.

**Valve Analysis :** Measured with Avo Model 7 testmeter, with gang fully enmeshed (M.W.), and no input signal. No A.F. valve should be removed while receiver is operating.

<i>Valve</i>	<i>Anode Voltage</i>	<i>Anode Current</i>	<i>Screen Voltage</i>	<i>Screen Current</i>	<i>Cathode Voltage</i>
V1 ECH42 (osc.)	250 115	2.7 4.5	100 —	3.0 —	— —
V2 EBF80	300	5.0	100	1.5	—
V3 EF80	*	*	*	*	0.12
V4 EL41 } V5 EL41 }	330	68 †	300	9 †	81 †
V6 GZ30	—	—	—	—	335

Total H.T. current 97 mA. Voltage across R34 (back bias) 2.6 v. Total cathode current or V4 and V5 equals 77 mA.

\* Measurement impracticable owing to high anode/screen resistors.

† Total for both valves.

**Special Notes :** The special notes given for Model 300RG apply also to this model, with the exception that negative feedback is removed by shorting R20 (and not R18) to chassis.

**Adjustment of Bias Control :** As for Model 300RG, except that the control is R24 (and not R22) and is adjusted for cathode current of 77 mA.

**Modifications :** Receivers later than Serial No. 1250 have modified screen and anode circuits for V2, as follows. A 470-ohm ( $\frac{1}{4}$  W.) resistor is connected between the H.T. line and L12, and a 0.01-mfd. (350-v.) capacitor is connected between the junction of this resistor and L12, and chassis. C23 is returned to the junction of the 470-ohm resistor and L12, instead of to chassis. These changes introduce a degree of neutralisation for V2, resulting in more stable I.F. characteristics.

**Alignment Summary :** The alignment procedure follows standard practice, R.F. adjustment being made at the following frequencies:

L.W.	350 kc/s.	857 m.	.	.	.	.	Trim C16, then C5
	160 kc/s.	1875 m.	.	.	.	.	Adjust C19
M.W.	1500 kc/s.	200 m.	.	.	.	.	Trim C15, then C4
	580 kc/s.	517 m.	.	.	.	.	Check calibration
S.W.	17 Mc/s.	17.7 m.	.	.	.	.	Trim C14, then C3 (rock gang)
	6 Mc/s.	50 m.	.	.	.	.	Check calibration

