PEN. 383

BEAM POWER AMPLIFIER FOR AC/DC MAINS

RATING.

Heater Voltage	38·0
Heater Current (Amps.)	0·2
Maximum Anode Voltage	200
Maximum Screen Voltage	200
Maximum Anode Dissipation (watts)	10
*Mutual Conductance (mA/V)	12

*Taken at Ea = 100 ; Es = 100 ; Eg = 0.

TYPICAL OPERATION.

Anode Voltage	138	150	160
Screen Voltage	150	150	175
Grid Bias	8·7	8·75	10·0
Anode Current (mA.)	50	50	64
Screen Current (mA.)	10	10	13
*Anode Load (ohms)	2,800	2,900	2,600
*Power Output (watts)	2·65	2·95	3·75
*Input Swing Volts (RMS)	4·7	4·8	5·5
Bias Resistance (ohms)	145	145	130

* For 5 per cent. Third Harmonic, and Second Harmonic not exceeding 5 per cent.

INTER-ELECTRODE CAPACITIES.

*Anode to Earth	13·5 $\mu\mu$F.
*Grid to Earth	21·5 $\mu\mu$F.
Anode to Grid	0·7 $\mu\mu$F.

* "Earth" denotes the remaining earthy potential electrodes and metallising joined to cathode.

DIMENSIONS.

Maximum Overall Length	... 120 mm.
Maximum Diameter	... 54 mm.

GENERAL.

The PEN. 383 is an indirectly-heated beam power amplifier for use in A.C. D.C. receivers. A band of metallising covers the lower portion of the bulb, and the valve is fitted with a Mazda octal base, the connexions to which are given overleaf.

APPLICATION.

When used with average A.C. mains with series speaker field circuit, in which the speaker field requires approximately 6 watts, a screen voltage of the order of 145 to 150 will be obtained. Approximately 2·7 watts will be delivered, without exceeding 5 per cent. of either second or third harmonic, with an output transformer resistance of 250 ohms.

In the case of parallel speaker fields, approximately 3·75 watts will be delivered using an output transformer with resistance of 250 ohms, and a 300 ohms smoothing choke smoothing a speaker field of 6 watts.

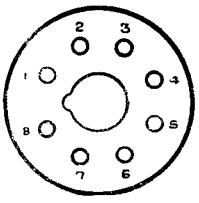
The valve should always be self-biased, and the value required is given on the preceding page. The grid to cathode circuit should be kept as low as possible and should not exceed 1 megohm for an anode dissipation limit of 10 watts. The grid circuit must be efficiently decoupled, and this may be achieved either by connecting an electrolytic condenser of 50 to 75 μF. across the self-bias resistance, or decoupling the grid circuit in the usual manner. An anti-parastic resistance of the moulded type, and of a low self-capacity should be connected in the grid or anode circuit, and mounted close to the actual valve terminals. A value of 50 ohms is satisfactory in the case of an anode resistance.

The anode load should be accurately determined, and kept reasonably constant by the provision of a suitable condenser filter.

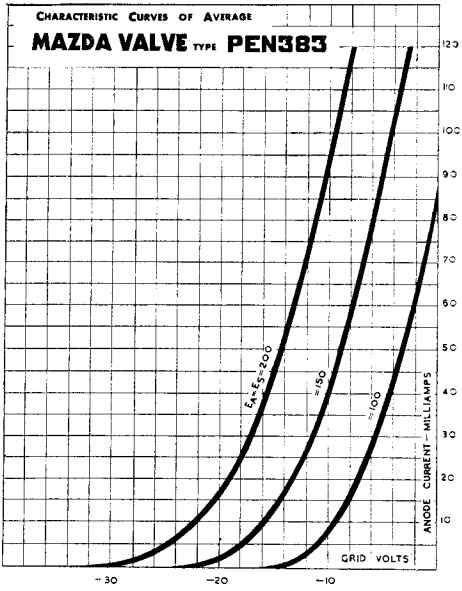
The heater is designed to operate at 0·2 amps. and the series heater resistance should be such that the heater current has this value at average line voltage.

BASING.

Pin No. 1. Heater.
2. Cathode.
3. Anode.
4. Screen.
5. Control Grid.
6. Metallising.
7. Omitted.
8. Heater.



Viewed from the free end of the base.



Mazda Radio Valves are manufactured in Great Britain for the British Thomson-Houston Co., Ltd., London and Rugby, and distributed by

THE EDISON SWAN ELECTRIC CO., LTD.
155, CHARING CROSS ROAD, LONDON, W.C.2.