MAZDA

PEN. DD 4020

AC/DC MAINS DOUBLE-DIODE OUTPUT PENTODE

RATING.

Heater Voltage	40
Heater Current (amps)	0·2
Maximum Anode Voltage	250
Maximum Screen Voltage	250
Maximum Anode Dissipation (watts)	10
*Mutual Conductance (mA/v)	7·0

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

OPERATING CONDITIONS.

Pentode.

Anode Voltage	185	200	240
Screen Voltage	185	200	250
Anode Current (mA)	29	32	43
Bias Voltage	5·7	6·3	7·75
Optimum Load (ohms)	5,400	5,400	4,800
Self Bias Resistance (ohms)	165	165	150
Maximum Undistorted Power Output (watts)	2·1	2·4	3·9
Input Voltage (RMS)	3·25	3·4	4·35

INTER-ELECTRODE CAPACITIES.

Diode 1 to Earth	4.0 $\mu\mu$F.
Diode 2 to Earth	3·75 $\mu\mu$F.
Diode 1 to Diode 2	0·1 $\mu\mu$F.

DIMENSIONS.

Maximum Overall Length	146 mm.
Maximum Diameter	54 mm.

GENERAL.

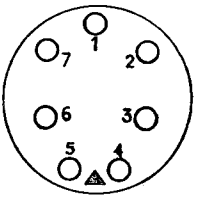
The Pen. DD.4020 is an indirectly heated double diode output pentode for A.C./D.C. mains operation designed to combine the functions of detector, A.V.C. and output valve. The diodes and the pentode form two entirely separate units within the same bulb, mounted on a common cathode with two separate emitting surfaces. The valve is fitted with a standard 7-pin base, the connections to which are given overleaf.

APPLICATION.

To maintain power output, the anode and screen voltages should be kept as high as possible without exceeding the maximum rating. The valve must always be self-biased, and the resistance of the grid to cathode circuit should not exceed 1 megohm. When used in A.V.C. circuits a delay voltage of the order of 15 volts is recommended. The grid circuit must be decoupled in the usual manner by connecting a 50 mfd. condenser across the self-bias resistance, and sometimes it is necessary to connect a 50 ohm anti-oscillation resistance as close as possible to the anode pin. The diode connected to pin No. 3 should be used for A.V.C. bias.

The optimum anode load given in the table is the lowest speaker speech coil impedance in the audio frequency range referred to the primary. The required transformer ratio may be calculated with sufficient accuracy from the D.C. resistance of the speech coil, plus 10 per cent.

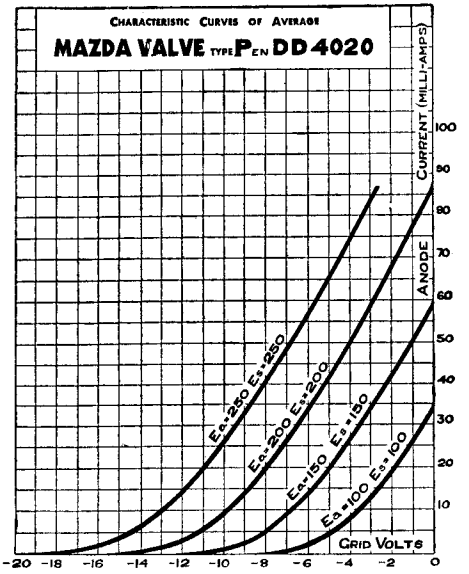
The heaters of AC/DC valves are designed to operate at a constant current of 0·2 ampere, and when the heaters are wired in series the ballast resistance should be such that the current has this value at average line voltage.

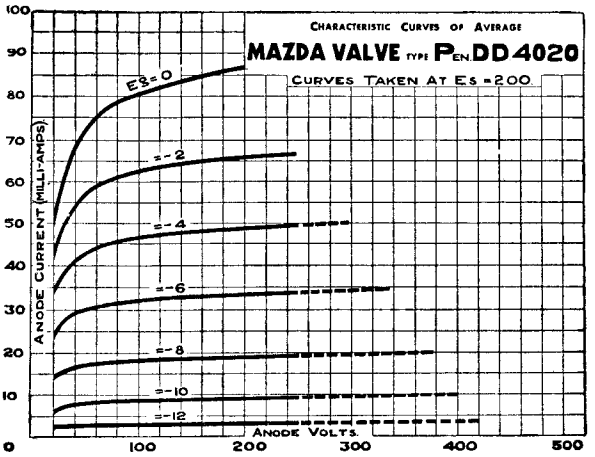


BASING.

Pin No.	1.	Diode 1.
	2.	Anode.
	3.	Diode 2.
	4.	Heater.
	5.	Heater.
	6.	Cathode.
	7.	Screen.
Top Cap.		Control Grid.

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.