PEN.24

BATTERY OUTPUT PENTODE

RATING.

Filament Volts	2·0
Filament Current (amps.)	0·3
Maximum Anode Volts	150
Maximum Screen Volts	150
*Mutual Conductance (mA/V)	5·7

*At Ea=100 ; Es=100 ; Eg=0.

TYPICAL OPERATION.

Anode Voltage	100	120
Screen Voltage	100	120
Grid Bias Voltage	2.35	3·3
Anode Current (mA)	4·2	5·0
Screen Current (mA)	0·83	1·0
Anode Load (ohms)	16,000-18,000	14,000-16,000
Power Output (mW)	*260	†440
Input Swing (Volts R.M.S.)	*1·66	†2·25
Anode Current (mA) (with output Swing)	*5·0	†:·3

*For 15 per cent. Third Harmonic, and Second Harmonic not exceeding 12·5 per cent.

†For 12 per cent. Third Harmonic, and Second Harmonic not exceeding 10 per cent.

DIMENSIONS.

Maximum Overall Length	93 mm.
Maximum Diameter	32 mm.

GENERAL.

The Pen.24 is a high sensitivity output Pentode for use in battery operated receivers. The bulb is of small dimensions. The valve is fitted with a British Octal Base, the connections to which are given overleaf.

APPLICATION.

The valve has a similar sensitivity to the Pen.231, but the maximum power output available has been increased to approximately 450 milliwatts. To obtain this output, a lower load is recommended than in the case of the Pen.231 and 15,000 ohms will be found suitable. With the type of speaker usually employed with this size of output valve, the degree of distortion quoted above can be tolerated. The bias should be obtained by means of a common resistance in the H.T. negative lead and this should be by-passed with a large condenser. When operated in receivers employing variable-mu valves, the quiescent anode current may be lower than the figure specified above, provided that it rises to the recommended value when the receiver is operated on a powerful carrier.

The sensitivity of the Pen.24 is such that it should be used immediately following the detector valve. The use of an intermediate stage of L.F. amplification is not recommended. If transformer coupling is used, it is recommended that a resistance of 50,000—70,000 ohms be connected across the primary winding to avoid damage to the pentode due to surges in the receiver. If resistance-capacity coupling is used, the grid circuit resistance should not exceed 500,000 ohms.

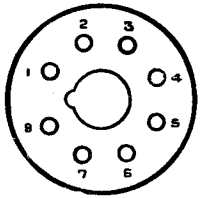
To prevent distortion at higher audio frequencies, a condenser-resistance filter should be connected across the speaker.

A condenser of about 2μF connected across the H.T. battery tappings will prevent any tendency to instability, particularly with the high internal resistance of an old battery.

The anode or screen should not be allowed to exceed 150 volts.

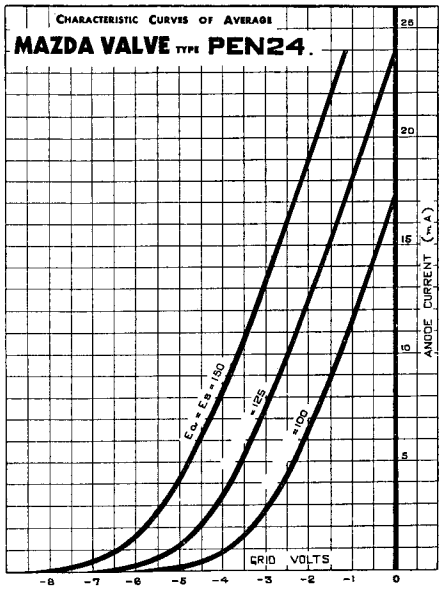
MAZDA

BASING.



Viewed from the free end of the base.

Pin No. 1. Filament.
2. Omitted.
3. Anode.
4. Screen.
5. Control Grid.
6. —
7. Omitted.
8. Filament.



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