



A.C./S.2 PEN

A.C. MAINS H.F. PENTODE

RATING.

Heater Voltage	4.0
Heater Current (Amps.)	1.0
Maximum Anode Voltage	250
Maximum Screen Voltage	150
*Mutual Conductance (mA/V)	5.8

*Taken at $E_a=200$; $E_s=100$; $E_g=0$.

TYPICAL OPERATION. (Frequency Changer with Cathode Injection).

Anode Voltage	250
Screen Voltage	120
Grid Bias	4.5
Anode Current (mA)	4.5
Screen Current (mA)	1.5
Peak Heterodyne Voltage	3.5
Conversion Conductance ($\mu A/V$)	1700

INTER-ELECTRODE CAPACITIES.

*Grid to Earth	13.5 $\mu\mu F$.
*Anode to Earth	8.75 $\mu\mu F$.
Anode to Grid	0.009 $\mu\mu F$.

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

DIMENSIONS.

Maximum Overall Length	125 mm.
Maximum Diameter	45 mm.

GENERAL.

The AC/S2 Pen is a high slope screened pentode valve for use as a frequency changer, detector or amplifier. The bulb is metallised. The valve is fitted with a standard 7-pin base, the connexions to which are given overleaf.

APPLICATION.

The valve will be particularly suitable for use as a self-oscillating frequency changer with cathode injection. For this purpose only about two turns will be required in the cathode coil on medium waves. The anode volts should be kept high, of the order of 200—250, and the screen volts may be obtained from a voltage dropping resistance of about 150,000 ohms, and the metallised coating should be connected to earth. The screen decoupling condenser should also be returned to earth potential.

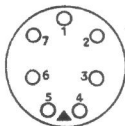
MAZDA

High gain self-oscillating frequency changers tend inherently to "squegger," and to avoid this the time constant of the resistance and by-pass condenser should be kept low. A self-bias resistance of 1,000 ohms will be suitable, and the value of the by-pass condenser should not exceed $0.1\mu\text{F.}$, a lower value being preferable.

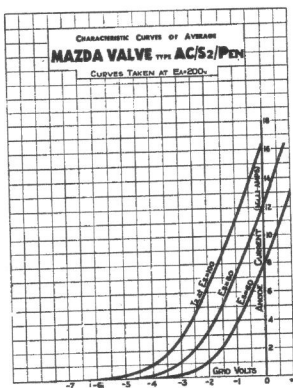
A grid leak of $\frac{1}{2}$ to 1 megohm should also be included in the grid circuit to limit the damping that may be introduced in the tuned circuit by excessive grid currents. This leak should be by-passed by a condenser. As re-radiation is dependent on the magnitude of the grid-cathode capacity, all additions to this capacity should be avoided.

BASING.

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



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.
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