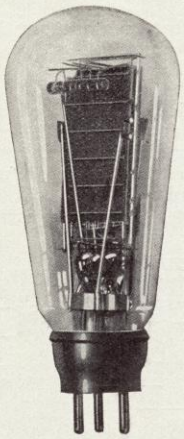
# MAZDA

## PP 3/250



### RATING.

| | |
|---|---|
| Filament Volts ... ... ... .. | 4.0 |
| Filament Amps. ... ... ... ... | 1.0 |
| Maximum Anode Volts ... ... ... | 250 |
| Maximum Anode Watts ... ... ... | 12 |
| Amplification Factor ... ... ... ... | 6.5 |
| Mutual A.C. Conductance (mA/V) ... ... | 6.5 |
| Anode A.C. Resistance (ohms) ... ... | 1,000 |

### AVERAGE WORKING CHARACTERISTICS.

| | |
|---|---|
| Anode Volts ... ... ... ... ... | 250 |
| Grid Voltage for A.C. Filament Operation ... | −30 |
| Grid Voltage for D.C. Filament Operation ... | 28 |
| Amplification Factor ... ... ... ... | 5.9 |
| Anode A.C. Resistance (ohms) ... ... | 1,180 |
| Mutual A.C. Conductance (mA/V) ... ... | 5.0 |
| Optimum Load Resistance (ohms) ... ... | 2,300 |

### DIMENSIONS.

| | |
|---|---|
| Maximum overall length ... ... | 140 m.m. |
| Maximum diameter ... ... ... | 58 m.m. |

PRICE ~~17/6~~ 16/6

### GENERAL.

The Mazda PP 3/250 Valve is a 250-volt, super-power, output valve of great sensitivity particularly suitable for operating moving-coil speakers at a large volume of sound.

The PP 3/250 employs a 4-volt, 1 amp. oxide coated filament of very robust construction, primarily designed for A.C. operation, but which may be used with D.C. if required. The step down transformer should be designed to deliver $1\frac{1}{4}$ amperes; it is recommended that tappings should be provided on the primary to ensure that the working voltage at the valve pins is 4 volts $\pm$ 5%.

Figs 1 and 2 illustrate the recommended circuit connections when using a single or push-pull stage.

The grid and anode return should be connected through the bias resistance R2 to the centre tap of the filament transformer secondary winding, or a 20 ohms centre tapped resistance may be used.

The valve should always be operated in the vertical position and adequate provision for ventilation is essential. Owing to the high mutual conductance parasitic oscillation may occur especially if the circuits are symmetrically wired, and a resistance should be inserted in series with the grid as shown in Figs. 1 and 2. In the case of a single-valve circuit (Fig. 1) R3 may have a value of 5,000 ohms. With valves in push-pull (Fig. 2) R3 should have a value of 30,000 ohms.

The PP 3/250 is not suitable for use as an oscillator.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4/33

# MAZDA

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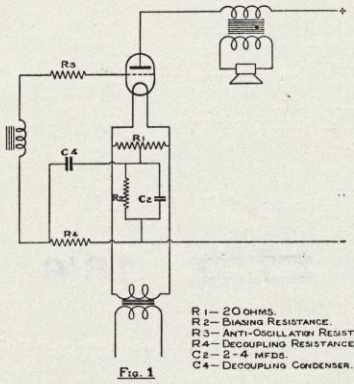
**GRID BIAS.**

It is recommended that the self-bias system should be used in preference to dry batteries, as it greatly reduces any anode current variation from valve to valve. Recommended circuits are shown in Figs. 1 and 2.

A suitable value for the biasing resistance R2 shown in Fig. 1 is 715 ohms. This value should include any resistance introduced by the centre-tap potentiometer should one be used.

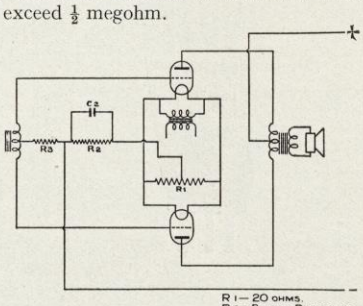
The by-pass condenser " C2 " across the biasing resistance should have a value of at least 4$\mu$F, for Fig. 1 and to avoid reduction of power at low frequencies, the grid circuit should be decoupled as shown.

Curves giving the optimum load resistance, optimum bias and feed current, for different anode voltages are given below. When choosing a transformer ratios the speaker should be matched at its lowest working impedance. The total resistance of the grid circuit should not exceed $\frac{1}{2}$ megohm.



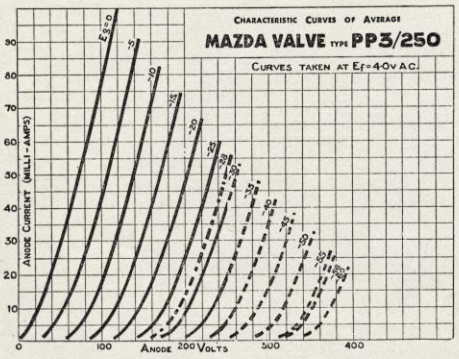

R 1— 20 OHMS.
R 2— BIASING RESISTANCE.
R 3— ANTI-OSCILLATION RESISTANCE.
R 4— DECOUPLING RESISTANCE.
C 2— 2-4 MFDS.
C 4— DECOUPLING CONDENSER.

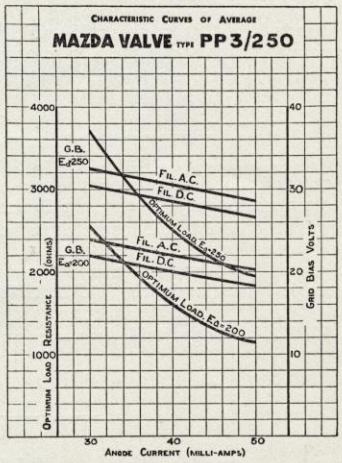
Fig. 1




R 1— 20 OHMS.
R 2— BIASING RESISTANCE.
R 3— ANTI-OSCILLATION RESISTANCE.
C 2— 0·05 MFDS.

Fig. 2

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