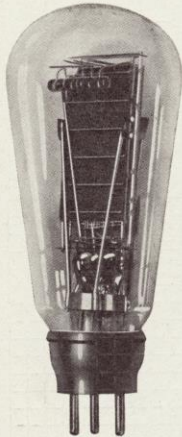


# MAZDA

## PP 5/400

### Power Valve



#### RATING.

|                                    |     |     |     |       |
|------------------------------------|-----|-----|-----|-------|
| Filament Voltage                   | ... | ... | ... | 4.0   |
| Filament Amps.                     | ... | ... | ... | 2.0   |
| Maximum Anode Voltage              | ... | ... | ... | 400   |
| Maximum Anode Watts Dissipation    | ... | ... | ... | 25    |
| *Mutual A.C. Conductance (mA/Volt) | ... | ... | ... | 6.0   |
| *Amplification Factor              | ... | ... | ... | 9.0   |
| *Anode A.C. Resistance (ohms)      | ... | ... | ... | 1,500 |

\*At  $E_a=100$ ;  $E_g=0$ .

#### DIMENSIONS.

|   |     |     |     |          |
|---|-----|-----|-----|----------|
| Maximum overall length (including pins) | ... | ... | ... | 150 m.m. |
| Maximum diameter                        | ... | ... | ... | 64 m.m.  |

#### AVERAGE WORKING CHARACTERISTICS.

|  |     |     |     |       |
|--|-----|-----|-----|-------|
| Anode Voltage                            | ... | ... | ... | 400   |
| Grid Voltage for A.C. Filament Operation | ... | ... | ... | -32   |
| Grid Voltage for D.C. Filament Operation | ... | ... | ... | -30   |
| Amplification Factor                     | ... | ... | ... | 8.8   |
| Anode A.C. Resistance (ohms)             | ... | ... | ... | 1220  |
| Mutual A.C. Conductance (mA/Volt)        | ... | ... | ... | 7.2   |
| Optimum Load Resistance (ohms)           | ... | ... | ... | 2,700 |

PRICE ~~30/-~~ 25/-

#### GENERAL.

The Mazda PP5/400 Valve is a 400 volt super-power output valve of great sensitivity, particularly suitable for operating moving-coil speakers at a very large volume of sound, such as required for public address work, cinemas, etc.

The PP5/400 employs a 4 volt, 2 amp., oxide coated filament of very robust construction, primarily designed for A.C. operation, but may be used with D.C., if required. The step down transformer should be designed to deliver 2½ amperes, and tapings should be provided on the primary to ensure that the working voltage is within  $\pm 5\%$  of 4 volts under all conditions.

The grid and anode returns should be connected through the bias Resistance R2 to the centre tap of the filament transformer secondary winding, or a 20 ohm centre tapped resistor may be used.

The valve should always be operated in the vertical position and adequate provision for ventilation is essential. Owing to the very high mutual conductance of this valve parasitic oscillations 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 about 30,000 ohms.

The PP 5/400 is not suitable for use as an oscillator.

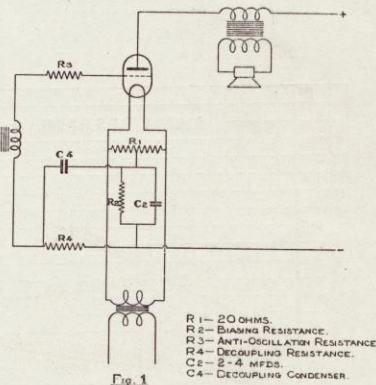
#### GRID BIAS.

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.

Values for the biasing resistance R2 in Fig. 1, for different anode voltages, are given in the table below.

|                    |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|
| Anode Voltage      | ... | ... | 300 | 250 | 400 |
| Value of R. (ohms) | ... | ... | 440 | 415 | 510 |

The above values should include any resistance introduced by the centre tapped potentiometer, should one be used.



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# EDISWAN

# MAZDA

## PP 5/400

The by-pass condenser "C2" across the biasing resistance should have a value of at least  $2\mu\text{F}$ , 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 transformer ratios the speaker should be matched at its lowest working impedance.

A special B.T.H. transformer, Type F, has been designed for use with a PP5/400 in conjunction with an R.K. Senior. The 14.5 : 1 ratio should be used.

The resistance of the grid circuit should not exceed  $\frac{1}{2}$  megohm.

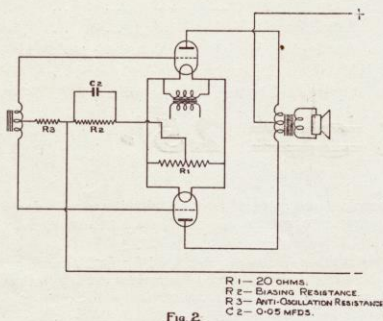


Fig. 2.

