

MAZDA

AC/TP

A.C. Mains Triode Pentode



RATING.

Heater Voltage	4.0
Heater Current (Amps.)	1.25
Pentode Section.	
Maximum Anode Voltage	250
Maximum Screen Voltage	250
Conversion Conductance (Maximum) ($\mu\text{A}/\text{V}$)	900
*Mutual Conductance (mA/V)	3.4
* at $E_a=250$; $E_s=200$; $E_g=0$.	
Triode Section.	
Maximum Anode Voltage	200
Recommended Anode Voltage (approx.)	150
Maximum Mean Anode Current (mA)	2.0
Amplification Factor	30
*Mutual Conductance (mA/V)	1.4
* at $E_a=100$; $E_g=0$.	

INTER ELECTRODE CAPACITIES.

	Pentode.	Triode.
Input Capacity	8.0 μF .	5.75 μF .
Output Capacity	7.75 μF .	4.25 μF .
Grid to Anode Capacity	0.1 μF .	2.5 μF .

TYPICAL OPERATING CONDITIONS.

Anode Voltage	250
Screen Voltage (Initial)	200
Grid Bias Voltage	5.0
Heterodyne Peak Voltage	3.0
Impedance (ohms) (approx.)	900,000
Anode Current (mA)	6.5
Screen Current (mA)	2.5
Oscillator Anode Current (mA)	1.5
Conversion Conductance ($\mu\text{A}/\text{V}$)	700
*Conversion Conductance at $E_g=40$ ($\mu\text{A}/\text{V}$) (approx.)	8
*Input Signal Handling Capacity (Peak Carrier Voltage)	12
*Screen Voltage rising to	250

DIMENSIONS.

Maximum overall length	126 m.m.
Maximum diameter	45 m.m.

PRICE 20/-

GENERAL.

The Mazda AC/TP is an indirectly heated triode pentode valve which is designed for operation as a self oscillating frequency changer. The pentode section has variable μ characteristics and can handle a 12-volts peak carrier without distortion, in addition it has a high working impedance. The triode oscillator and pentode frequency changer sections are screened from each other, and are, except for a common cathode connection, completely independent of each other, and both functions may, therefore, be carried out with circuit arrangements giving the best possible operation. Owing to the complete absence of any electronic coupling between the two sections, the oscillator frequency is independent of the operating conditions of the frequency changer section.

APPLICATION.

When operating as a self-oscillating frequency changer, the Mazda AC/TP has variable μ characteristics suitable for use with diode or amplified automatic volume control.

It possesses all the advantages usually associated with the use of a separate oscillator and frequency changer, including low oscillator harmonic content and minimum noise from leakage and Schrott effect.

It is recommended that frequency changing should be accomplished by heterodyne injection in the common cathode circuit as shown in Fig. 1.

The variable μ characteristic has been specially shaped to reduce whistles, repeat points and cross modulation, and to ensure minimum interference the heterodyne peak voltage should not appreciably exceed 3 volts. A 12-volt peak carrier modulated at 60% can be handled without distortion with a heterodyne voltage of 3 volts and screen voltage of 250 volts.

The screen of the pentode section can be operated at 250 volts, but it is advantageous to limit the initial screen volts to 200 volts at maximum gain by a series resistance. The suppressor grid should be returned to cathode, and the screen and anode circuits must be decoupled to cathode and not to earth. A common decoupling resistance (R_6 in Fig. 1) may be used and should not be less than 5,000 ohms.

The condensers C_4 and C_5 , the latter for long wave operation, combine with the self bias resistance R_3 to form a filter circuit, which reduces the variation of heterodyne voltage over the required frequency ranges to a minimum; and also reduces oscillator harmonics.

HEATER SUPPLY.

It is recommended that the voltage across the heater pins should be 4.0 volts + 5% under normal working conditions

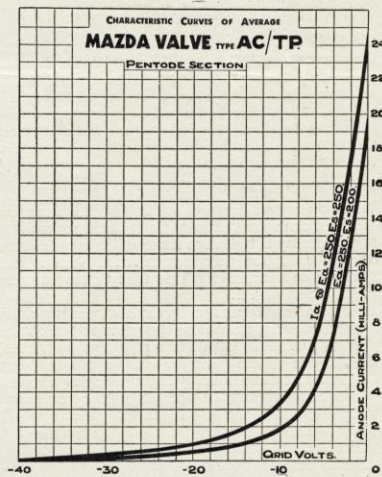
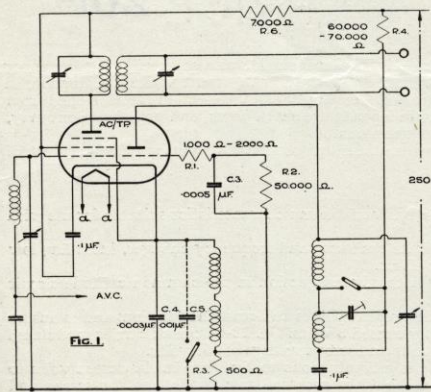
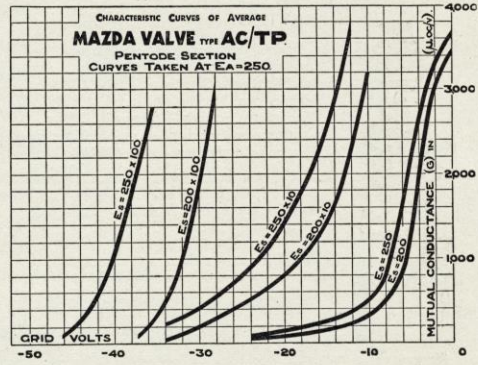
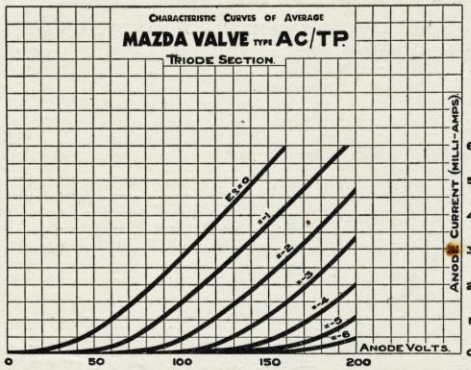


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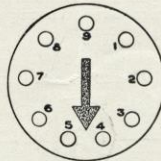
MAZDA

AC/TP



CONNECTIONS TO BASE.

- Pin No. 1.—Pentode Screen.
- Pin No. 2.—Pentode Anode.
- Pin No. 3.—Suppressor Grid.
- Pin No. 4.—Heater.
- Pin No. 5.—Heater.



- Pin No. 6.—Cathode.
- Pin No. 7.—Triode Anode.
- Pin No. 8.—Triode Grid.
- Pin No. 9.—Metal Coating.
- Top Cap.—Pentode Control Grid.

