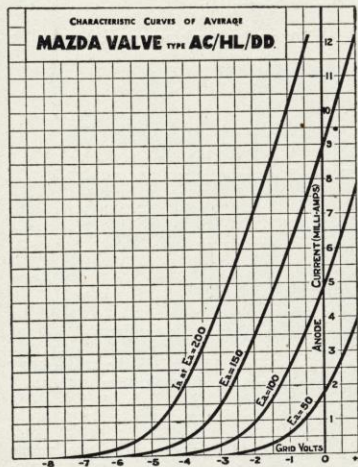


MAZDA

AG/HL.DD

A.C. Mains Double-diode Triode



RATING.

Heater Voltage	...	4.0
Heater Current (Amps.)	...	1.0
Anode Voltage (Maximum)	...	250
*Mutual Conductance	...	2.6
*Amplification Factor	...	36
*Anode A.C. Resistance (ohms)	...	13,800

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

INTER-ELECTRODE CAPACITIES.

Triode Unit.

Grid to Anode	...	2.0 m.m.f.
Grid to Cathode	...	5.0 m.m.f.
Anode to Cathode	...	9.0 m.m.f.

DIMENSIONS.

Maximum Overall Length	...	125 m.m.
Maximum Diameter	...	45 m.m.

PRICE 15/6

GENERAL.

The Mazda Valve type AC/HL.DD is an indirectly heated diode triode for A.C. mains operation, specially designed for use as a combined detector-amplifier and automatic volume control valve. It consists of two separate diodes and a triode on a common cathode sleeve. In operation, the two diodes and the triode are completely independent of each other, except for the common cathode sleeve, which has one emitting surface for the diodes and another for the triode. The diode section is completely screened within the valve from the triode section.

This complete independence of operation permits great flexibility in circuit arrangements and design.

The resistance between heater and cathode is of a very high order, so that the valve is eminently suitable for use in amplified A.V.C. circuits in which the triode unit acts as a combined audio-frequency amplifier and D.C. amplifier for A.V.C. purposes.

The bulb of the valve is metal coated, and the metal coating is electrically connected to a separate pin (No. 2).



THE EDISON SWAN ELECTRIC CO. LTD.
Radio Division Showrooms:
 155 Charing Cross Road, London, W.C.2
Showrooms in all the Principal Towns
 Mazda Valves are manufactured in Great Britain for
 The British Thomson-Houston Co., Ltd.,
 London and Rugby

EDISWAN

R723/51

MAZDA

AG/HL.DD

The connections to the 7-pin base are given below:—

Pin No. 1.—Diode Anode.
Pin No. 2.—Metal Coating.
Pin No. 3.—Diode Anode.
Pin No. 4.—Heater.

Pin No. 5.—Heater.
Pin No. 6.—Cathode.
Pin No. 7.—Anode.
Top Cap.—Control Grid.

It is recommended that the voltage across the heater pins should be 4 volts \pm 5% under working conditions. The heater to cathode voltage should not exceed 150 volts.

APPLICATION.

Typical methods of applying the valve are as follows:—

- Half-wave or full-wave detector, followed by triode amplifier.
- Half-wave or full-wave detector, followed by triode amplifier with non-delayed automatic volume control.
- Half-wave detector with delayed A.V.C., followed by triode amplifier.
- Amplified delayed A.V.C. using half-wave detection.

If half-wave rectification only is employed, and the other diode is not utilised for other purposes, both diode anodes should be connected together.

DIODE DETECTOR.

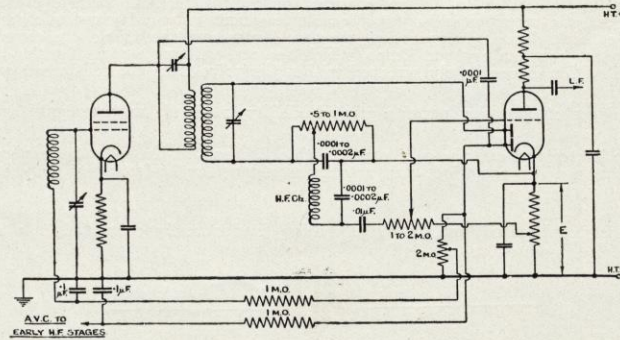
The main advantage of diode detection is that the diode detector cannot be overloaded, and the higher the input signal, the smaller will be the distortion present.

A further advantage lies in the fact that since no H.F. voltages are applied to the triode grid, and as the triode may be operated at a fixed optimum bias, a larger output may be obtained without distortion than in the case of a triode used as a cumulative grid detector.

The damping introduced by the diode detector may be made quite small provided the load resistance is kept high, say $\frac{1}{2}$ to 1 megohm.

It is essential to ensure that the effective impedance to audio frequencies of the circuit between the diode anode and cathode, is as nearly equal as possible to the D.C. resistance of this circuit, otherwise distortion at high modulation percentages will occur.

The use of detector at high signal inputs necessitates the provision of a low frequency gain control between the detector output and the first low frequency amplifying valve, to prevent any possibility of overloading this amplifier.



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