

MAZDA

DC2/HL.DD

Indirectly heated Double-diode Triode D.C. Mains

RATING.

Heater Volts	25 volts.
Heater Amps.	0.1 amps.

DIMENSIONS.

Maximum Overall Length	125 m.m.
Maximum diameter	45 m.m.

TRIODE SECTION.

Anode Volts	200 volts.
Maximum Voltage between Heater and Cathode	150 volts.
*Mutual Conductance	2.0 m.A. per volt.
Amp. Factor	30
Anode A.C. Resistance	15,000 ohms.

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

INTER-ELECTRODE CAPACITIES (Triode).

Grid to Anode	1.75 $\mu\mu\text{F}$.
Grid to Cathode	4.0 $\mu\mu\text{F}$.
Anode to Cathode	10.0 $\mu\mu\text{F}$.

PRICE 15/6

GENERAL.

The Mazda DC2/HL.DD is an indirectly-heated double-diode triode for D.C. mains operation, consisting of two separate diodes and a triode on a common cathode sleeve. In operation, the two diodes and the triode are completely independent, with the exception of the cathode which has two emitting surfaces, one for the diode section, and one for the triode section. The diodes are completely screened from the triode section within the valve itself. The heater has been specially designed to give a very high insulation resistance between the heater and cathode so that the valve is eminently suitable for use in amplified A.V.C. circuits, in which the triode unit acts as combined audio-frequency amplifier and D.C. amplifier for automatic volume control purposes. For instructions on the use of D.C. mains valves in general refer to data leaflet No. R.723-36.

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 automatic volume control, followed by triode amplifier.
- Amplified delayed automatic volume control using half-wave detection.

For detection, the diodes may be utilised in a full-wave circuit or in a half-wave circuit. In the latter case, one anode only, or two anodes in parallel, may be employed. If half-wave rectification only is employed, and the other diode is not utilised for other purposes, both diode anodes should be connected together. For amplification the triode may be employed in conventional circuit diagrams.

DIODE DETECTOR.

The main advantage of diode detection is that the diode 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 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.



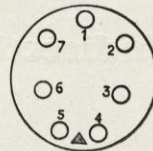
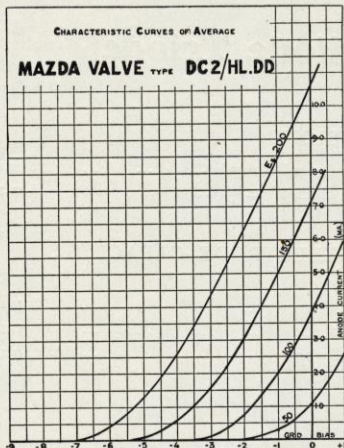
THE EDISON SWAN ELECTRIC CO., LTD.,
Radio Division Showrooms:
155 Charing Cross Road, London, W.C.2
Showrooms in all the Principal Towns
 Mazda Valves are manufactured in Great Britain for
 The British Thomson-Houston Co., Ltd.,
 London and Rugby.

EDISWAN

R723/54

MAZDA

DC2/HL.DD



BASE of Valve,
NOT Valve Holder.

BASE.

The base is of the standard 7-pin type, the connections being:—

- Pin No. 1 ... Diode No. 1.
- Pin No. 2 ... Metal Coating.
- Pin No. 3 ... Diode No. 2.
- Pin No. 4 ... Heater.
- Pin No. 5 ... Heater.
- Pin No. 6 ... Cathode.
- Pin No. 7 ... Anode.
- Top Cap ... Control Grid.

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. Diode No. 1 should be used for detection with Pin No. 4 connected to L.T.—ve. 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 a diode 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. A typical delayed A.V.C. circuit is given below.

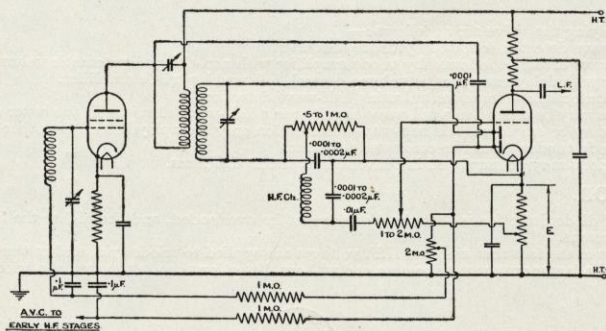


FIG. 9

Circuit employing Mazda DC2/HL.DD, giving delayed automatic volume control.

