

MAZDA

PD.220

Double Triode Output Valve



RATING.

Filament Voltage	...	...	...	...	...	2.0
Filament Current	...	...	...	...	...	0.2
Maximum Anode Voltage	...	...	...	...	...	150
Maximum Peak Anode Current per Triode (mA)	...	...	...	...	...	45
*Mutual Conductance (mA/V.)	...	...	...	...	...	0.9

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

DIMENSIONS.

Maximum overall length (including pins)...	110 m.m.
Maximum Diameter	45 m.m.

PRICE 14/-

GENERAL.

The Mazda PD.220 is a low consumption 2-volt twin output valve consisting of two high mu triode sections for use in a "Class B" positive drive output stage.

The valve will deliver an exceptionally high power output for a very economical anode current and filament current consumption, and will operate a moving coil loud speaker at full volume.

The valve is mounted on a standard 7-pin base, the connections to which are shown.

OPERATION.

The circuit attached gives a typical case of the use of this valve in a three-valve receiver. The valve may be operated with zero bias, although an improvement in quality and reduction in feed current may be obtained by the use of a small bias, which may be obtained from the potentiometer supplying the driver valve bias. As in the case of Class B positive drive valves the power output is essentially determined by the power available from the driver, a Mazda L.2 valve will provide sufficient output for most purposes, but a Mazda P.220 should be used if maximum possible power is required. The feed current for the L.2 and P.220 as well as the required optimum anode to anode load and the required driver transformer ratios are given in the table below.

Driver Valve.	Anode Voltage	Driver Anode Current mA.	Anode-Anode Load Ohms.	Overall Driver Transformer.
Mazda L.2	120	1.5	17,000	2:1
	135	1.75	16,000	2:1
	150	2.0	15,000	2:1
Mazda P.220	120	2.5	11,500	1.5:1
	135	3.0	11,500	1.6:1
	150	3.5	10,000	1.6:1



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PD. 220

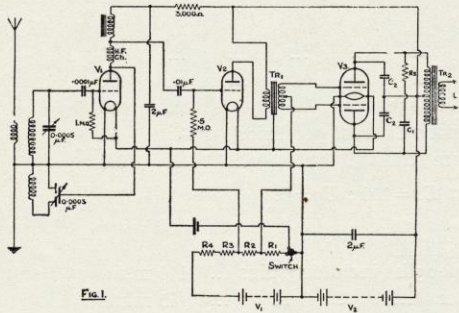


FIG. 1.

DRIVER VALVE.

The bias of the driver and PD.220 valves should be obtained by means of a potentiometer across the bias battery, as shown in the circuit diagram. The actual values of the resistances for the potentiometer will depend upon the type of battery used, but the bias voltage should decrease at from 25 to 30 per cent. faster than the rate of fall of the H.T. battery voltage. Below are given the required initial bias of the PD.220, as well as the total feed current at different anode voltages.

Anode Volts.	120	135	150
Bias Volts.	0.8	1.0	1.15
Total Quiescent Feed Current mA.	0.7	0.75	0.8

With some circuit lay-outs parasitic oscillations may be developed in the output stage. The likelihood of these oscillations being encountered will depend upon the design of the individual transformers used. These parasitic oscillations may be cured by connecting either one or both of the condensers marked C2 on the circuit. The condenser C2 may have a value of about .001 to .002 $\mu\text{m.F.}$

The resistance-condenser filter R5, C1 should be incorporated so as to keep the impedance of the anode to anode load constant with frequency.

PRECAUTIONS.

Do not allow the valve to generate parasitic oscillations. The anode voltage should not be disconnected when a signal is applied to the grids of the output valve. The instantaneous peak current take per triode section of the PD.220 should not exceed 45 mA.

CONNECTIONS TO BASE.

