PD.220 and PD.220.A

BATTERY DOUBLE TRIODE OUTPUT VALVES

RATINGS.	PD.220	PD.220.A
Filament Voltage	2·0	2·0
Filament Current (amps.)	0·2	0·2
Maximum Anode Voltage	150	150
Quiescent Current (mA)	0·8	2·5
Maximum Permissible Peak Anode Current (per Triode) (mA)	45	50
*Mutual Conductance	0·9	1·6

*At Ea=100 ; Eg=0.

TYPICAL OPERATION.	PD.220			PD.220.A		
Anode Volts	120	135	150	120	135	150
Bias Volts	0·8	1·0	1·15	4·8	5·5	6·0
Total Quiescent Feed Current mA	0·7	0·75	0·8	1·9	2·0	2·5

DIMENSIONS (Both Types).	
Maximum Overall Length	110 mm.
Maximum Diameter	39 mm.

GENERAL.

The valves are low consumption twin output valves for "Class B" positive drive output stage for battery operated receivers. They will deliver an exceptionally high power output for a very economical anode current and will operate a moving-coil loudspeaker at full volume. The valves are fitted with standard 7-pin bases, the connections to which are given overleaf.

APPLICATION.

In the case of all "Class B" positive drive valves, the power output is essentially determined by the power available from the driver. An L.2 valve will provide sufficient output for most purposes, but a P.220 should be used if a maximum possible power is required.

The bias of the driver and output valves should be obtained by means of a potentiometer across the bias battery 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. The required initial bias of the output valves, as well as the total feed current at different anode voltages are given in the table overleaf. The PD.220 valve may be operated with zero bias, but in order to obtain optimum quality it is essential the bias values given in the table should be employed.

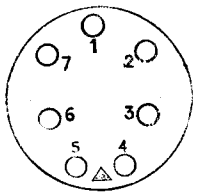
With some circuit lay-outs parasitic oscillations may be developed in the output stage. The likelihood of these oscillations being encountered will depend upon the design of the individual transformers used. These parasitic oscillations may be cured by connecting condensers (about ·001 to ·002 μF.) between anodes and H.T.+.

A resistance-condenser filter 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.

Driver Valve	Anode Voltage	Driver Anode Current mA	Anode-Anode Load Ohms		Overall Driver Transformer	
PD.220 and PD.220.A	PD.220 and PD.220.A	PD.220 and PD.220.A	PD.220	PD.220.A	PD.220	PD.220A.
Mazda L.2	120	1·5	17,000	14,000	2:1	1·35:1
	135	2·0	16,000	14,000	2:1	1·35:1
	150	*2·0	15,000	14,000	2:1	1·35:1
Mazda P.220	120	2·70	11,500	10,000	1·5:1	1·2:1
	135	3·0	11,500	10,000	1·6:1	1·2:1
	150	3·5	10,000	10,000	1·6:1	1·2:1

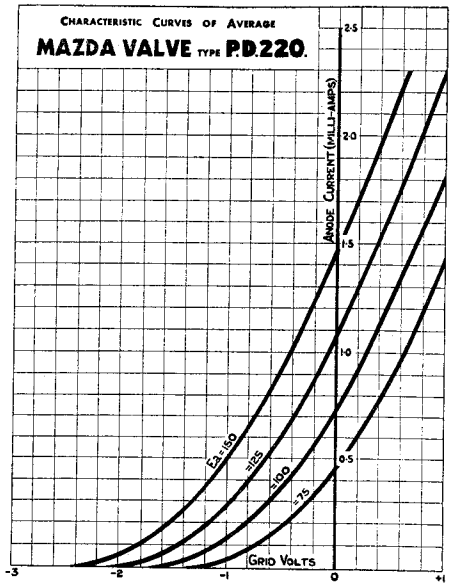


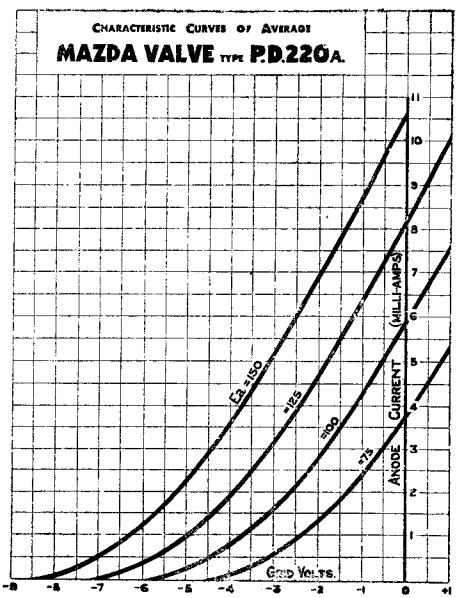
Viewed from the free end of the base.

BASING.

Pin No. 1. Control Grid 2.
2. Control Grid 1
3. Anode 1.
4. Filament.
5. Filament.
6. ——
7. Anode 2.

MAZDA


CHARACTERISTIC CURVES OF AVERAGE
MAZDA VALVE TYPE P.D.220.
ANODE CURRENT (MILLI-AMPS)
2·5
2·0
1·5
1·0
0·5
Ea = 150
=125
=100
=75
GRID VOLTS
-3
-2
-1
0
+1


CHARACTERISTIC CURVES OF AVERAGE
MAZDA VALVE TYPE P.D.220A.
ANODE CURRENT (MILLI-AMPS)
11
10
9
8
7
6
5
4
3
2
1
Ea = 150
=125
=100
=75
GRID VOLTS
-8
-7
-6
-5
-4
-3
-2
-1
0
+1

Mazda Radio Valves are manufactured in Great Britain for the British Thomson-Houston Co., Ltd., London and Rugby.

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