

MAZDA

AC/SG

A.C. Mains Screened Grid Valve.



RATING.

Filament Volts	...	...	...	...	4.0
Filament Amps.	...	...	...	...	1.0
Maximum Anode Voltage	...	...	...	...	200
Maximum Screen Voltage	...	...	...	...	80
Amplification Factor	...	...	...	...	1,700†
Mutual A.C. Conductance (mA/V)	3.0*	...	...	...	1.9†
Anode A.C. Resistance (ohms)	...	...	...	...	895,000†

* at $E_a=200$; $E_s=80$; $E_g=0$.

† at $E_a=200$; $E_s=60$; $E_g=-1.5$.

INTER-ELECTRODE CAPACITIES.

	Clear	Metallised
Anode to Grid	0.003 $\mu\mu\text{F}$	0.0015 $\mu\mu\text{F}$
Anode to Cathode	10 $\mu\mu\text{F}$	11.5 $\mu\mu\text{F}$
Grid to Cathode	10 $\mu\mu\text{F}$	10.5 $\mu\mu\text{F}$

DIMENSIONS.

Maximum overall length	...	...	130 m.m.
Maximum overall diameter	...	...	45 m.m.

PRICE **19/-**

GENERAL.

The AC/SG is an indirectly-heated, 4-volt, screened-grid valve, for A.C. Mains operation. It has been designed to give a minimum amount of cross-modulation, even with relatively large signal inputs, while still preserving a high amplification factor and a high mutual conductance. The AC/SG may be obtained with either a clear or metallised bulb. The metal coating is electrically connected to the central cathode pin, and in addition to reducing the grid to anode capacity, permits the use of simplified screening arrangements.

APPLICATION.

H.F. Amplification.

Owing to its low anode to control-grid capacity, a very high amplification per stage is possible without instability. The AC/SG may be used with either tuned-anode, tuned-grid or tuned H.F. transformer coupling.

Detector.

The AC/SG makes a very sensitive cumulative-grid detector, and should be coupled to the output valve with either a low ratio transformer having a high primary inductance, or a high inductance choke. A resistance should be connected across the primary to ensure that its impedance remains practically constant with



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frequency. A grid condenser of about 0.0001 μ F. with a 1 megohm leak will be found suitable. The anode voltage should be at least 150 volts. When used with R.C. coupling with an available H.T. of 250 volts, the anode resistance should not exceed 60,000 ohms and the screen volts should not exceed 50 volts. The valve may also be used as an anode-bend detector with R.C. coupling, or in super-heterodyne sets. The AC/SG is an exceptionally efficient frequency changer.

GRID BIAS.

Grid Bias must always be provided when the valve is used as an amplifier; a value of -1.5 volts will be found satisfactory. When used as a cumulative-grid detector the grid return should be connected to cathode.

IMPORTANT.

It is necessary to connect a condenser of at least 1 mfd. between the screen-grid and cathode. This condenser should be of the non-inductive type. In the case of metallised valves the cathode must be connected to earth either directly or through a non-inductive condenser.

HEATER SUPPLY.

It is recommended that the voltage across the heater pins should be 4 volts \pm 5% under working conditions.

CURVES.

Values for anode current, amplification factor, and mutual conductance, at different operating conditions, may be obtained from the curves below.

