



T.41 THYRATRON

RATING.

Heater Voltage	4.0
Heater Current (Amps.)	1.5
Maximum Anode Voltage	400
Control Ratio	20
Maximum Peak Anode Current (mA)	500
Voltage Drop (at 150 mA)	40
Maximum Peak-Peak Scan Output Voltage	120

OPERATING CONDITIONS.

Generated Peak-Peak Scan Voltage	20-30	> 60
Mean Anode Current (mA)	2.5	1.5
Minimum Grid-Cathode Resistance at Scan Frequency (ohms/bias volt)	500	500
Recommended Grid-Cathode Resistance at Scan Frequency (ohms)	30,000 to 100,000	

INTER-ELECTRODE CAPACITIES.

*Anode to Earth	3.75 μF
*Grid to Earth	4.5 μF
Anode to Grid	2.0 μF

*"Earth" denotes the remaining earthy potential electrodes and metallising joined to cathode.

DIMENSIONS.

Maximum Overall Length	90 mm.
Maximum Diameter	32 mm.

GENERAL.

The type T.41 thyatron is intended for use as a scanning generator in both the line and frame time bases of television receivers with magnetic deflecting systems. The bulb is metallised and fitted with a Mazda Octal Base, the connexions to which are given overleaf.

APPLICATION.

Owing to the construction of the T.41 it is not recommended that it be used in circuits having a high overall H.T. voltage. The anode-cathode voltage should not be allowed to exceed 400 in order to prevent the possibility of cold discharge in the valve.

The peak discharge current should be limited to 500 mA by inserting a resistance of suitable value in the anode circuit. For satisfactory operation the mean anode current through the valve should be adjusted to the average values given above under "Operating Conditions."

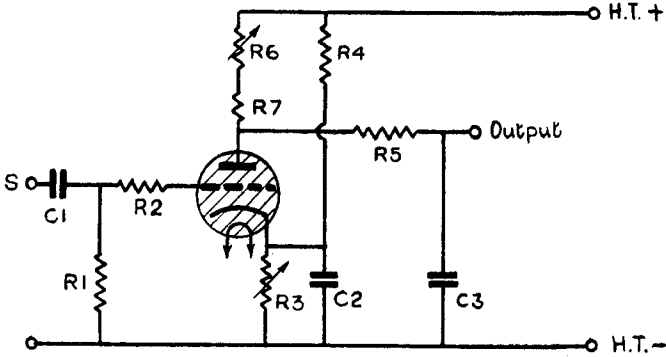


Figure A.

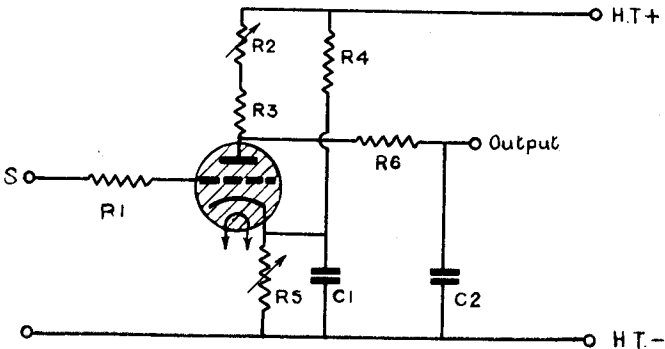


Figure B.

TYPICAL CIRCUIT CONSTANTS.

		Figure A.			
		H.T. Voltage	330
Line,		Frame.			
R1.	50,000 ohms.	C1.	50 $\mu\mu\text{F}$	R1.	50,000 ohms.
R2.	5,000 ohms.	C2.	1 $\mu\mu\text{F}$	R2.	30,000 to 50,000
R3.	1,500 ohms.	C3.	0.007 μF	R3.	3,000 ohms.
R4.	130,000 ohms.			R4.	130,000 ohms.
R5.	100 ohms.			R5.	300 ohms.
R6.	50,000 ohms.			R6.	100,000 ohms.
R7.	70,000 ohms.			R7.	100,000 ohms.
				C1.	0.1 μF
				C2.	50 μF
				C3.	0.5 μF

Figure B.

		H.T. Voltage	330
R1.	30,000 to 50,000 ohms.	All other values as in Figure A.			



APPLICATION (contd.)

The circuits on the opposite page show the use of the thyatron as a scanning generator, the output being fed to an amplifier of the beam pentode type (Mazda Pen. 46, Sheet 18/5).

In order to protect the cathode, the minimum grid-cathode resistance at the scanning frequency should not be less than 500 ohms per volt of grid bias, but it is recommended that this resistance should be of the order of 30,000-100,000 ohms. Such a high resistance should not be in series with the grid as it would tend to bend the line synchronising pulse and render the synchronising less accurate.

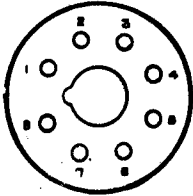
In order that the above conditions may be satisfied without appreciably affecting the sharpness of the synchronising pulse the circuit shown at (a) may be used. The resistance in series with the grid is limited to 5,000 ohms which will not affect the sharpness of the pulse, the high resistance being provided by R.I. The effect of a low resistance in a preceding circuit is isolated by the use of a low capacity condenser for C1.

In the case of frame time bases whose synchronising pulse is provided from an "integrator" type of separator, the high resistance can be connected directly in the grid circuit without appreciably affecting the shape of the pulse, so that R2. in Figure A may be increased.

This circuit cannot be used where the synchronising pulse is obtained directly from the signal diode load or from the cathode of the video frequency amplifier and the high resistance must be connected directly in series with the grid of the T.41 as in diagram (b) at the expense of the sharpness of the pulse.

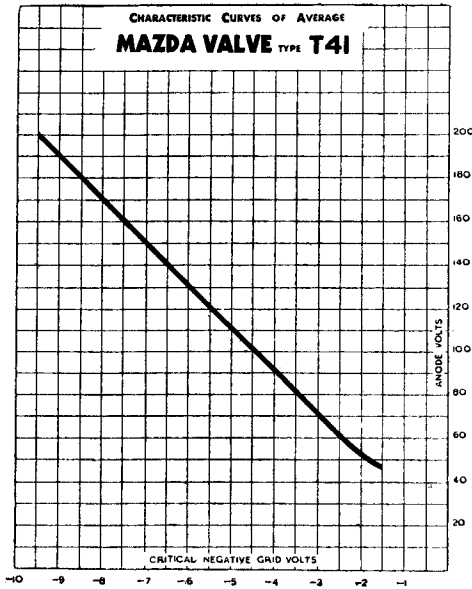


BASING.



- Pin No. 1. Heater.
- 2. Cathode.
- 3. Anode.
- 4. —
- 5. Control Grid.
- 6. Metallising.
- 7. Omitted.
- 8. Heater.

Viewed from the free end of the pins.



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

THE EDISON SWAN ELECTRIC CO., LTD.
155, CHARING CROSS ROAD, LONDON, W.C.2.

