



913

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HIGH-VACUUM CATHODE-RAY TUBE

Heater	Coated Unipotential Cathode	
Voltage	6.3	a-c or d-c volts
Current	0.6	amp.
Focus		Electrostatic
Deflection		Electrostatic
Electrodes DJ ₁ and DJ ₂ (upper): nearest to screen		
Electrodes DJ ₃ and DJ ₄ (lower): nearest to base		
DJ ₁ is on the same side of tube as pins No.2 and No.4		
DJ ₃ is on the same side of tube as pins No.2 and No.8		
Phosphor		No.1
Fluorescence		Green
Persistence		Medium
Direct Interelectrode Capacitances:		
Control Electrode (Grid) to All Other Electrodes	8	μf
Deflecting Electrode DJ ₁ to Deflecting Electrode DJ ₂	2.5	μf
Deflecting Electrode DJ ₃ to Deflecting Electrode DJ ₄	2.5	μf
Maximum Overall Length	4-3/4"	
Maximum Diameter	1-5/8"	
Bulb	Metal Shell, MT-10	
Base	Small Wafer Octal 8-Pin	

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Maximum Ratings Are Based on a Line-Voltage Design Center of 117 Volts

High-Voltage Electrode (Anode No.2) Volt.	500 max.	volts	
Focusing Electrode (Anode No.1) Volt.	200 max.	volts	←
Control Electrode (Grid) Volt.	Never positive		
Peak Voltage Between Anode No.2 and Any Deflecting Electrode	250 max.	volts	
Grid Circuit Resistance	1.5 max.	megohms	←
Impedance of Any Deflecting-Electrode Circuit at Heater-Supply Frequency	1.0 max.	megohm	←
Typical Operation:			
Anode No.2 Voltage	250	500	volts
Anode No.1 Voltage [□]	50	<u>100 approx. volts</u>	
Grid Voltage [○]	Adjusted to give suitable luminous spot		
Deflection Sensitivity:			
Electrodes DJ ₁ & DJ ₂	0.15	0.07	mm/volt d.c.
Electrodes DJ ₃ & DJ ₄	0.21	0.10	mm/volt d.c.

NOTE 1: Brilliance and definition decrease with decreasing anode voltages. In general the anode No.2 voltage should not be less than 250 volts.

NOTE 2: The d-c potential of each deflecting electrode is maintained essentially equivalent to that of anode No.2 by connecting resistors having values not greater than 10 megohms between each deflecting electrode and anode No.2. This arrangement by suitable choice of resistor values minimizes pattern distortion and pattern drift resulting from unbalanced potentials on the deflecting electrodes. The smaller the resistor values, the less the distortion for a given beam current.

[□], [○]: See next page.

← Indicates a change.

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DATA



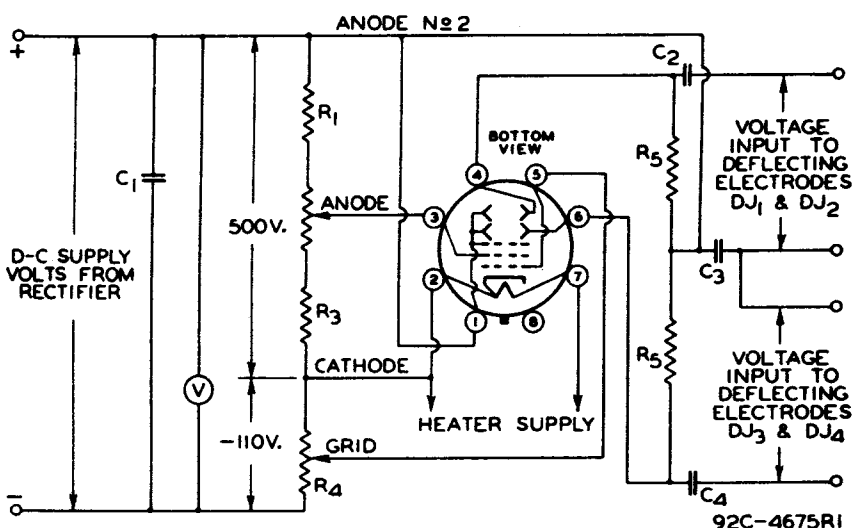
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(continued from preceding page)

- □ Supply should be adjustable to $\pm 30\%$ of the value shown.
 → ○ Approximately 80% of Anode No.1 voltage is required for current cut-off when, in some applications, it is necessary to use the maximum permissible grid-circuit resistance.

Characteristic Curves of phosphor No.1 are shown at the beginning of this section.

TYPICAL OSCILLOGRAPH CIRCUIT



C_1 = FILTER CONDENSER
 C_2, C_3, C_4 = SEE NOTE 3
 $R_1 + R_2 + R_3 + R_4$ = BLEEDER POTENTIOMETER
 $R_1 = 0.200$ MEGOHM
 $R_2 = 0.050$ MEGOHM

$R_3 = 0.030$ MEGOHM
 $R_4 = 0.050$ MEGOHM
 R_5 = SEE NOTE 2
 AT END OF DATA
 V = VOLTMETER

NOTE 3: When the cathode or the negative end of the cathode-ray high-voltage supply is grounded, blocking condensers C_2, C_3 , and C_4 should have a high voltage rating. When anode No.2 is grounded, C_3 may be omitted and C_2 and C_4 may be low-voltage condensers.

For d-c amplifier service, the deflecting electrodes should be coupled direct to the output of the amplifier by omitting the blocking condensers. In addition, it will usually be preferable to remove the associated deflecting electrode resistor in order to minimize the loading effect of the resistor on the d-c amplifier. With the resistor removed, it is essential, in order to minimize spot defocusing, that anode No.2 be returned to some point in the d-c amplifier circuit such that the potential difference between anode No.2 and the average voltage across the deflecting electrodes will be as low as possible.

The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

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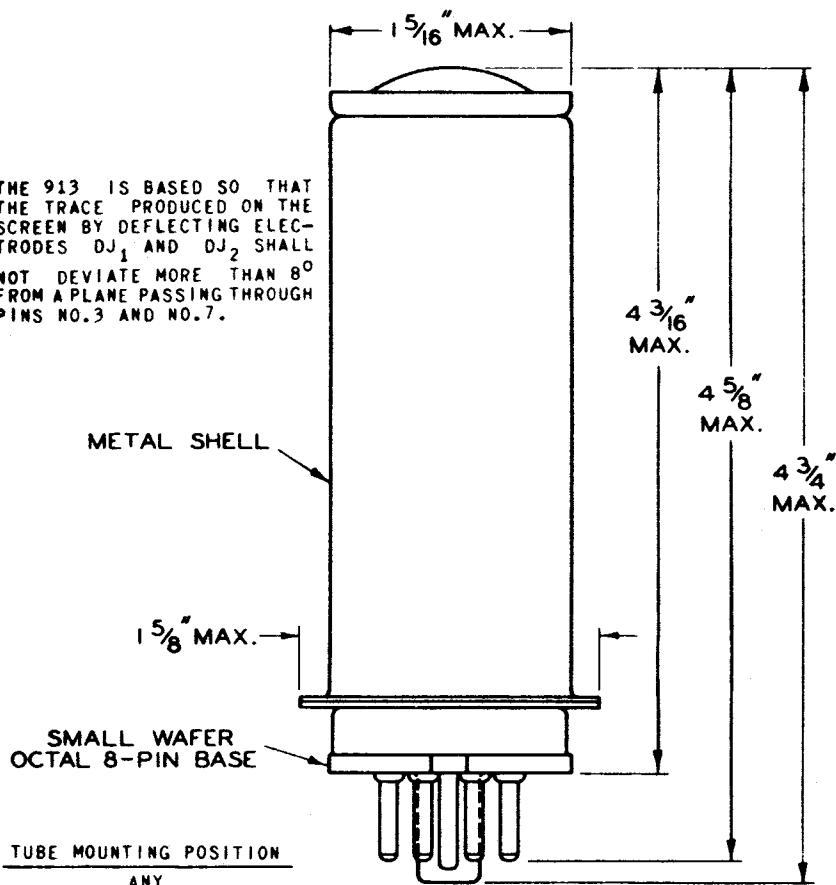


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THE 913 IS BASED SO THAT THE TRACE PRODUCED ON THE SCREEN BY DEFLECTING ELECTRODES DJ_1 AND DJ_2 SHALL NOT DEVIATE MORE THAN 8° FROM A PLANE PASSING THROUGH PINS NO.3 AND NO.7.

BOTTOM VIEW OF SOCKET CONNECTIONS

DJ_1 to DJ_4 = Deflecting Electrodes

P_2 = Anode No.2

P_1 = Anode No.1

G_2 = Grid No.2

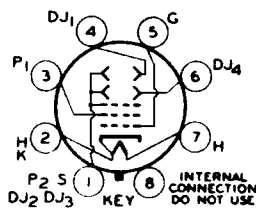
G_1 = Control (Grid No.1) Electrodes

H_1 = Heater

K = Cathode

S = Shell

NC = No Connection



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AVERAGE CHARACTERISTICS

