



908-A

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OSCILLOGRAPH TUBE

Supersedes Type 908

General:

Heater, for Unipotential Cathode:

Voltage $2.5 \pm 10\%$ ac or dc volts

Current 2.1 amp.

Direct Interelectrode Capacitances (Approx.):

Grid No.1 to All Other Electrodes 9.0 μf DJ₁ to All Other Electrodes 8.5 μf DJ₃ to All Other Electrodes 6.5 μf

Phosphor (For Curves, see front of this Section) No.5

Fluorescence Blue

Persistence Very Short

Focusing Method Electrostatic

Deflection Method Electrostatic

Overall Length $11\frac{1}{2}'' \pm \frac{3}{8}''$ Greatest Diameter of Bulb $3'' \pm \frac{1}{16}''$ Minimum Useful Screen Diameter $2\frac{3}{4}''$

Mounting Position Any

Base Medium 7-Pin

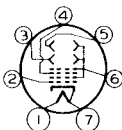
Basing Designation for BOTTOM VIEW 7CE

Pin 1-Heater

Pin 2-Grid No.1

Pin 3-Deflecting
Electrode DJ₃

Pin 4-Anode No.1

Pin 5-Deflecting
Electrode DJ₁

Pin 6-Grid No.2,

Anode No.2,

Deflecting

Electr. DJ₂,

Deflecting

Electr. DJ₄Pin 7-Heater,
Cathode*DJ₁ and DJ₂ are nearer the screen**DJ₃ and DJ₄ are nearer the base*

With DJ₂ positive with respect to DJ₁, the spot is deflected toward pin 1. With DJ₄ positive with respect to DJ₃, the spot is deflected toward pin 6.

The angle between the trace produced by DJ₃ and DJ₄ and its intersection with the plane through the tube axis and pin 6 does not exceed 10° .

The angle between the trace produced by DJ₃ and DJ₄ and the trace produced by DJ₁ and DJ₂ is $90^\circ \pm 30^\circ$.

Maximum Ratings, Design-Center Values:

ANODE-No.2 & GRID No.2 VOLTAGE 1500 *max.* voltsANODE-No.1 VOLTAGE 1000 *max.* volts

GRID-No.1 (CONTROL ELECTRODE) VOLTAGE:

Negative Value 125 *max.* voltsPositive Value 0 *max.* voltsPEAK VOLTAGE BETWEEN ANODE No.2 AND
DEFLECTING ELECTRODE DJ₁ OR DJ₃ 500 *max.* volts



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(continued from preceding page)

Typical Operation:

Anode No.2 & Grid No.2 Voltage* . . 1000 1500 . . . volts

Anode No.1 Voltage for Focus
at 75% of Grid-No.1 Volt-

age for Cutoff* . . 287 430 . . . volts

Grid-No.1 Volt. for Visual Cutoff#. -33 -50 . . . volts

Max. Anode-No.1 Current Range[▲]. Between -50 and +10 μ amp.

Deflection Sensitivity:

DJ1 and DJ2 0.334 0.223 . . mm/v dc

DJ3 and DJ4 0.348 0.233 . . mm/v dc

Deflection Factor:**

DJ1 and DJ2 76 114 . . v dc/in.

DJ3 and DJ4 73 109 . . v dc/in.

* Brilliance and definition decrease with decreasing anode-No.2 voltage. In general, anode-No.2 voltage should not be less than 1000 volts.

● Individual tubes may require between +29% and -44% of the values shown with grid-No.1 voltages between zero and cutoff.

Visual extinction of stationary focused spot. Supply should be adjustable to $\pm 50\%$ of these values.

▲ See curve for average values.

** Individual tubes may vary from these values by $\pm 20\%$.

Spot Position:

The undeflected focused spot will fall within a 15-mm square centered at the geometric center of the tube face and having one side parallel to the trace produced by DJ1 and DJ2. Suitable test conditions are: anode-No.2 voltage, 1500 volts; anode-No.1 voltage, adjusted for focus; deflecting-electrode resistors, 1 megohm each for DJ1 and DJ3, connected to anode No.2; the tube shielded from all extraneous fields. To avoid damage to the tube, grid-No.1 voltage should be near cutoff before application of anode voltages.

Maximum Circuit Values:

Grid-No.1 Circuit Resistance 1.5 max. megohms

Impedance of Any Deflecting-Electrode

Circuit at Heater-Supply Frequency 1.0 max. megohm

Resistance in Any Deflecting-

Electrode Circuit^{▲▲} 5.0 max. megohms

▲▲ It is recommended that both deflecting-electrode-circuit resistances be approximately equal.

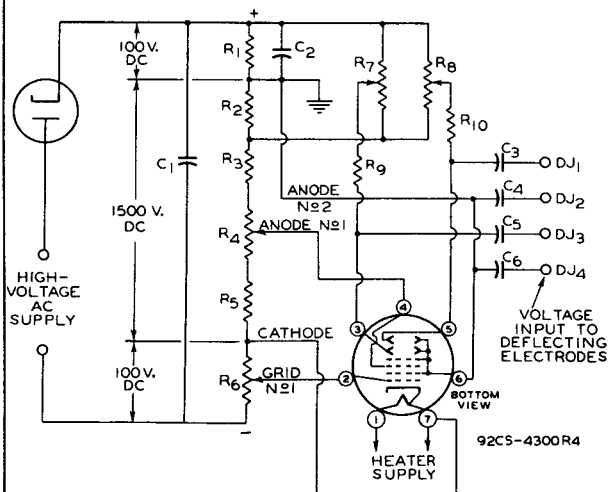


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TYPICAL OSCILLOGRAPH CIRCUIT



C1: 0.1 μ f
 C2: 1.0 μ f
 C3 C4 C5 C6: 0.05- μ f Blocking Capacitors*
 R1 R2: 1.5 Megohms
 R3: 4 Megohms

R4: 2-Megohm Potentiometer
 R5: 1.0 Megohm
 R6: 0.5-Megohm Potentiometer
 R7 R8: Dual 3-Megohm Potentiometer
 R9 R10: 2-Megohms

*When cathode is grounded, capacitors should have high voltage rating; when anode No.2 is grounded, they may have low voltage rating. For dc amplifier service, deflecting electrodes should be connected direct to amplifier output. In this service, it is preferable usually to remove deflecting-electrode resistors to minimize loading effect on amplifier. In order to minimize spot defocusing, it is essential that anode No.2 be returned to a point in the amplifier system which will give the lowest possible potential difference between anode No.2 and the deflecting electrodes.

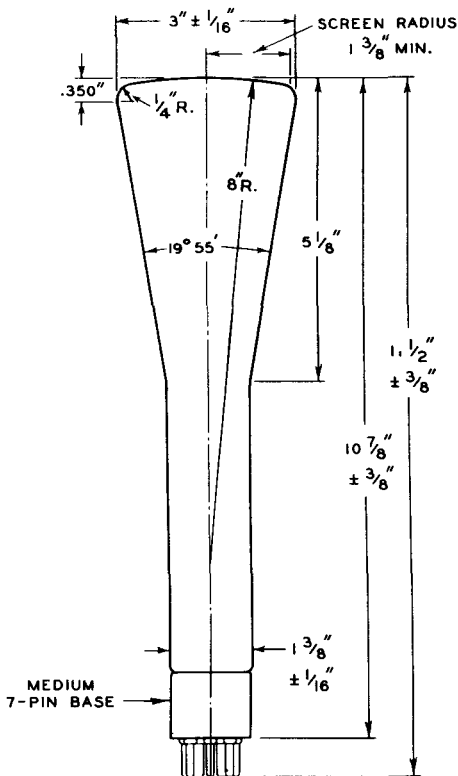
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OSCILLOGRAPH TUBE



92CM-4284R7

☐ OF BULB WILL NOT DEVIATE MORE THAN 2°
IN ANY DIRECTION FROM PERPENDICULAR
ERECTED AT CENTER OF BOTTOM OF BASE



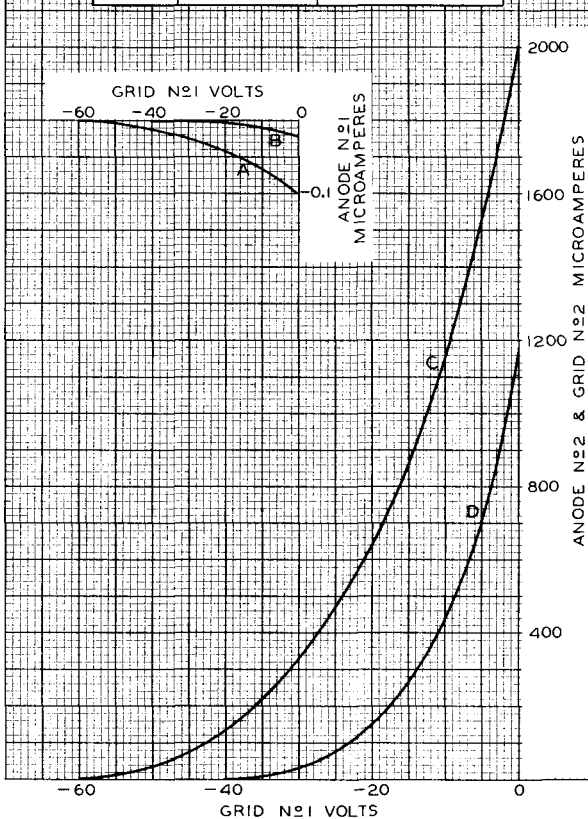
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AVERAGE CHARACTERISTICS

 $E_f = 6.3$ VOLTSANODE N^o1 VOLTS ADJUSTED TO GIVE FOCUS

CURVE	ELECTRODE CURRENT	ANODE N ^o 2 & GRID N ^o 2 VOLTS
A	ANODE N ^o 1	1500
B	ANODE N ^o 1	1000
C	ANODE N ^o 2 & GRID N ^o 2	1500
D	ANODE N ^o 2 & GRID N ^o 2	1000



APR. 18, 1945

TUBE DIVISION

92CM-5415R5

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY