



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 A11 Other Electrodes. . . . 9.0 . . μf
 DJ₁ to A11 Other Electrodes. 8.5 . . μf
 DJ₃ to A11 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

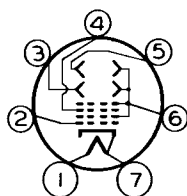
Basing Designation for BOTTOM VIEW 7CE

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.DJ₄
 Pin 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 $90^\circ \pm 3^\circ$.

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.* volts

PEAK 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.

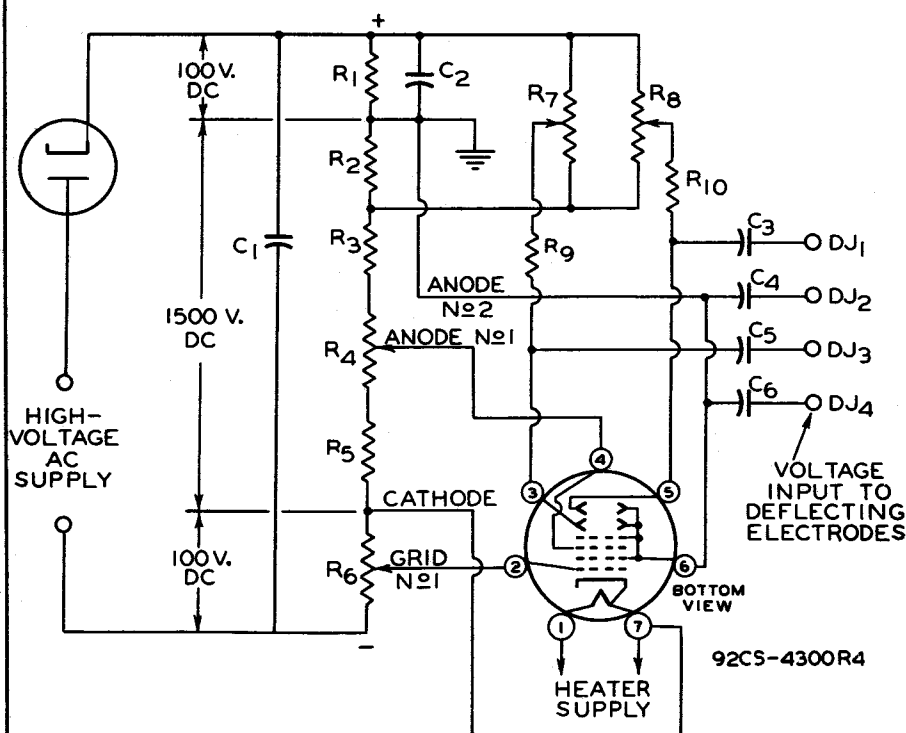


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TYPICAL OSCILLOGRAPH CIRCUIT



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.

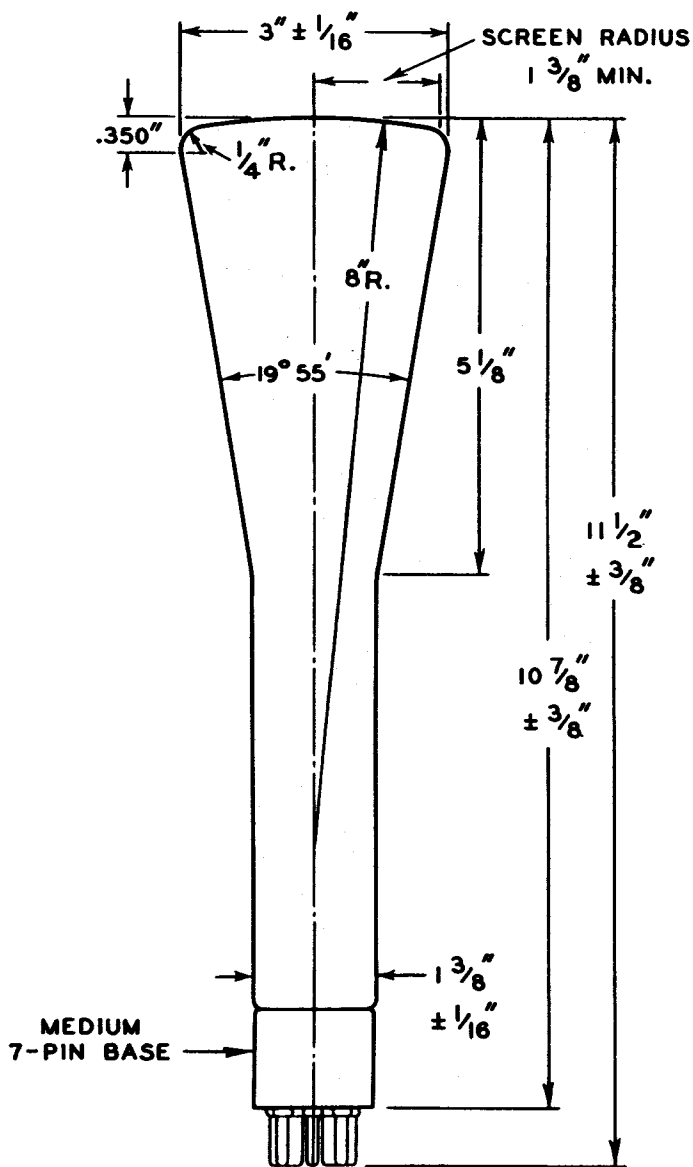
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OSCILLOGRAPH TUBE



92CM-4284R7

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

JUNE 20, 1946

TUBE DIVISION

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-4284R7



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AVERAGE CHARACTERISTICS

$E_f = 6.3$ VOLTS

ANODE 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

