



2AP1-A

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HIGH-VACUUM CATHODE-RAY TUBE

Supersedes Type 2AP1

General:

Heater, for Unipotential Cathode:

Voltage. $6.3 \pm 10\%$ ac or dc volts
 Current. 0.6 amp.

Direct Interelectrode Capacitances (Approx.):

Grid No.1 to All Other Electrodes. 8.0 μf
 Cathode to All Other Electrodes. 5.5 μf
 DJ₁ to DJ₂ 0.6 μf
 DJ₃ to DJ₄ 1.1 μf
 DJ₁ to All Other Electrodes. 8.5 μf
 DJ₃ to All Other Electrodes. 9.0 μf
 DJ₁ to All Other Electrodes except DJ₂ 8.0 μf
 DJ₂ to All Other Electrodes except DJ₁ 4.6 μf
 DJ₃ to All Other Electrodes except DJ₄ 7.5 μf
 DJ₄ to All Other Electrodes except DJ₃ 6.0 μf

Phosphor (For Curves, see front of this Section) No.1
 Fluorescence Green
 Persistence. Medium

Focusing Method. Electrostatic

Deflection Method. Electrostatic

Overall Length $7-7/16" \pm 3/16"$ Greatest Diameter of Bulb. $2" \pm 1/16"$ Minimum Useful Screen Diameter $1-3/4"$

Mounting Position. Any

Base Small Shell Magnal 11-Pin

Basing Designation for BOTTOM VIEW 11L

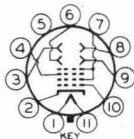
Pin 1-Heater

Pin 2-Cathode

Pin 3-Deflecting
Electrode DJ₁

Pin 4-Anode No.1

Pin 5-No Connection

Pin 6-Deflecting
Electrode DJ₄Pin 7-Anode No.2,
Grid No.2Pin 8-Deflecting
Electrode
DJ₂Pin 9-Deflecting
Electrode
DJ₃Pin 10-Grid No.1
Pin 11-Heater

*DJ₁ and DJ₂ are nearer the screen
 DJ₃ and DJ₄ are nearer the base*

With DJ₁ positive with respect to DJ₂, the spot is deflected toward pin 4. With DJ₃ positive with respect to DJ₄, the spot is deflected toward pin 1.

The angle between the trace produced by DJ₃ and DJ₄ and its intersection with the plane through the tube axis and pin 1 does not exceed 10° .

The angle between the trace produced by DJ₃ and DJ₄ and the trace produced by DJ₁ and DJ₂ is $90^\circ \pm 4^\circ$.



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Maximum Ratings, Absolute Values:

ANODE-No.2 & GRID-No.2 VOLTAGE	1100 max.	volts
ANODE-No.1 VOLTAGE	550 max.	volts
GRID-No.1 (CONTROL ELECTRODE) VOLTAGE:		
Negative Value	125 max.	volts
Positive Value	0 max.	volts
PEAK VOLTAGE BETWEEN ANODE No.2 AND ANY DEFLECTING ELECTRODE	660 max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	125 max.	volts
Heater positive with respect to cathode	10 max.	volts

Typical Operation:

Anode-No.2 & Grid-No.2 Voltage*	500	1000	volts
Anode-No.1 Voltage for Focus at 75% of Grid-No.1 Volt- age for Cutoff*	125	250	volts
Grid-No.1 Volt. for Visual Cutoff#	-30	-60	volts
Max. Anode-No.1 Current Range [▲]	Between -50 and +10		μamp.
Deflection Sensitivity:			
DJ ₁ and DJ ₂	0.220	0.110	mm/v dc
DJ ₃ and DJ ₄	0.260	0.130	mm/v dc
Deflection Factor:**			
DJ ₁ and DJ ₂	115	230	v dc/in.
DJ ₃ and DJ ₄	98	196	v dc/in.

★ Brilliance and definition decrease with decreasing anode-No.2 voltage. In general, anode-No.2 voltage should not be less than 500 volts.

● Individual tubes may require between +20% and -45% of the values shown with grid-No.1 voltages between zero and cutoff.

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

▲ See curve for average values.

** Individual tubes may vary from these values by ± 20%.

Spot Position:

The undeflected focused spot will fall within a 10-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, 1000 volts; anode-No.1 voltage, adjusted for focus; deflecting-electrode resistors, 1 megohm each, 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

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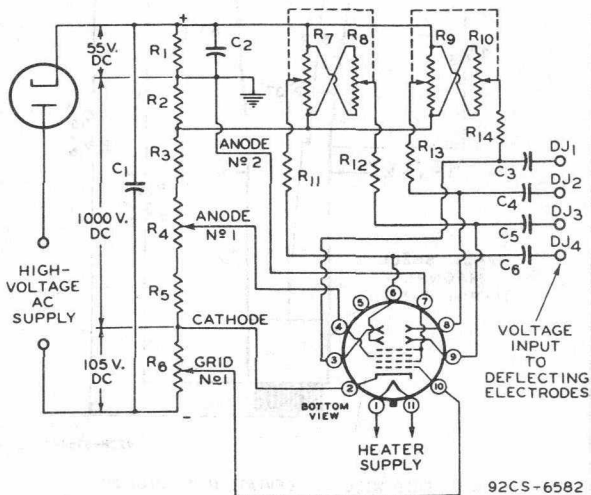
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Resistance in Any Deflecting-

Electrode Circuit▲▲ 5.0 *max.* megohms

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

TYPICAL OSCILLOGRAPH CIRCUIT



C1: 0.1 μ f
C2: 1.0 μ f
C3 C4 C5 C6: 0.05- μ f Blocking
Capacitor*

R1 R2: 0.5 Megohm
R3: 3.0 Megohms

R4: 1.0-Megohm Potentiometer
R5: 0.5 Megohm

R6: 0.5-Megohm Potentiometer
R7 R8: Dual 5-Megohm Potentiometer
R9 R10: Dual 5-Megohm Potentiometer
R11 R12 R13 R14: 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.

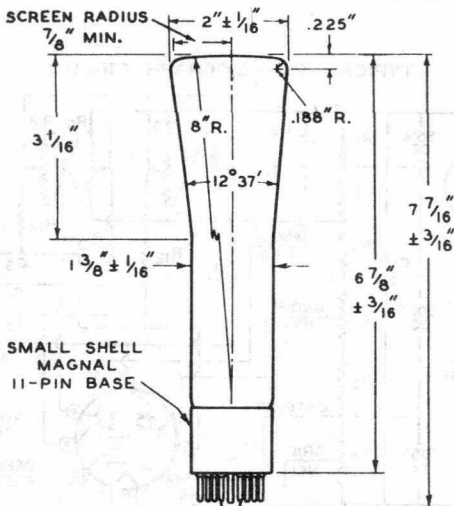
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92CM-6368R2

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

JULY 1, 1945

RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA 2