HIGH-VACUUM CATHODE-RAY TUBE

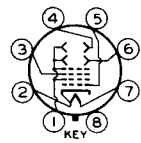
Supersedes Type 902

General:

Heater, for Unipotential Cathode:		
Voltage	6.3 ± 10%	ac or dc volts
Current	0.6	amp.
Direct Interelectrode Capacitances (Approx.):		
Grid No.1 to All Other Electrodes	7.5	μμf
DJ_1 to All Other Electrodes	8.5	μμf
DJ_4 to All Other Electrodes	6.0	μμf
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" ± 3/16"
Greatest Diameter of Bulb		2" ± 1/16"
Minimum Useful Screen Diameter		1-3/4"
Mounting Position		Any
Base		Medium Shell Octal 8-Pin
Basing Designation for BOTTOM VIEW		8CD

Pin 1 – Grid No.2, Anode No.2, Deflecting Electrode DJ_2, Deflecting Electrode DJ_3

Pin 2 – Heater, Cathode



Pin 3 – Anode No.1

Pin 4 – Deflecting Electr. DJ_1

Pin 5 – Grid No.1

Pin 6 – Deflecting Electr. DJ_4

Pin 7 – Heater

Pin 8 – No Connection

DJ_1 and DJ_2 are nearer the screen
DJ_3 and DJ_4 are nearer the base

With DJ_1 positive with respect to DJ_2, the spot is deflected toward pin 3. With DJ_3 positive with respect to DJ_4, the spot is deflected toward pin 1.

The angle between the trace produced by DJ_3 and DJ_4 and its intersection with the plane through the tube axis and pin 1 does not exceed 10°.

The angle between the trace produced by DJ_3 and DJ_4 and the trace produced by DJ_1 and DJ_2 is 90° ± 4°.

Maximum Ratings, ***Absolute Values*****:**

ANODE-No.2 & GRID No.2 VOLTAGE	660 *max.*	volts
ANODE-No.1 VOLTAGE	330 *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 DEFLECTING ELECTRODE DJ_1 OR DJ_4	385 *max.*	volts

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(continued from preceding page)

Typical Operation:

Anode No.2 & Grid No.2 Voltage★	400	600	volts
Anode No.1 Voltage for Focus at 75% of Grid-No.1 Voltage for Cutoff●	100	150	volts
Grid-No.1 Volt. for Visual Cutoff♯	−40	−60	volts
Max. Anode-No.1 Current Range▲	Between −50 and +10		μamp.
Deflection Sensitivity:			
DJ_1 and DJ_2	0.273	0.183	mm/v dc
DJ_3 and DJ_4	0.326	0.217	mm/v dc
Deflection Factor:**			
DJ_1 and DJ_2	93	139	v dc/in.
DJ_3 and DJ_4	78	117	v dc/in.

★ Brilliance and definition decrease with decreasing anode-No.2 voltage. In general, anode-No.2 voltage should not be less than 400 volts.

● Individual tubes may require between +20% and −35% 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 DJ_1 and DJ_2. Suitable test conditions are: anode-No.2 voltage, 600 volts; anode-No.1 voltage, adjusted for focus; deflecting-electrode resistors, 1 megohm each for DJ_1 and DJ_4, 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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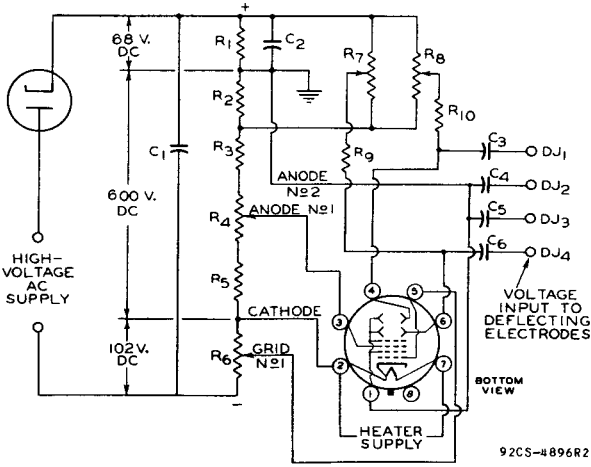
TYPICAL OSCILLOGRAPH CIRCUIT



C1: 0.1 μf
C2: 1.0 μf
C3 C4 C5 C6: 0.05-μf Blocking Capacitors *
R1 R2: 1.0 Megohm
R3: 1.3 Megohms
R4: 1-Megohm Potentiometer
R5: 0.3 Megohm
R6: 0.5-Megohm Potentiometer
R7 R8: Dual 2-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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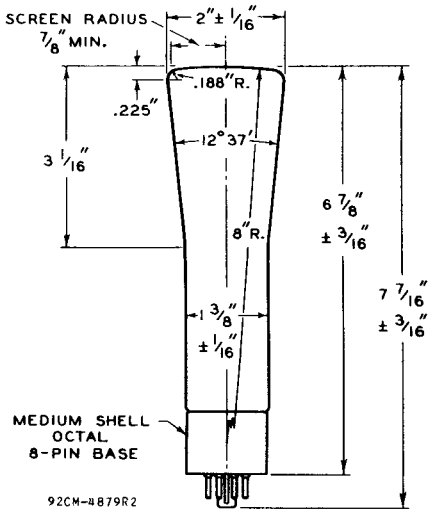

℄ OF BULB WILL NOT DEVIATE MORE THAN 2° IN ANY DIRECTION FROM PERPENDICULAR ERECTED AT CENTER OF BOTTOM OF BASE

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AVERAGE CHARACTERISTICS

$E_f = 6.3$ VOLTS

ANODE N°1 VOLTS ADJUSTED TO GIVE FOCUS

CURVE	ELECTRODE CURRENT	ANODE N° 2 & GRID N°2 VOLTS
A	ANODE N°1	600
B	ANODE N°1	400
C	ANODE N° 2 & GRID N° 2	600
D	ANODE N° 2 & GRID N° 2	400