General:

Heater, for Unipotential Cathode:
Voltage: 2.5 ± 10% ac or dc volts
Current: 2.1 amp.

Direct Inter-electrode Capacitances (Approx.):
Grid No. 1 to All Other Electrodes: 9.0 µuf
DJ1 to DJ2: 2.0 µuf
DJ3 to DJ4: 1.0 µuf

Phosphor (For Curves, see front of this Section): No. 1
Fluorescence: Green
Persistence: Medium
Focusing Method: Electrostatic
Deflection Method: Electrostatic
Overall Length: 16-1/2" ± 3/8"

Greatest Diameter of Bulb: 5-1/4" + 1/16" - 3/32"
Minimum Useful Screen Diameter: 4-1/2"
Mounting Position: Any
Caps (Four): Small
Base: Long-Shell Medium 5-Pin, Micanol
Basing Designation for BOTTOM VIEW: 5BR

Pin 1—Heater
Pin 2—Anode No. 1
Pin 3—Anode No. 2, Grid No. 2
Pin 4—Grid No. 1
Pin 5—Heater, Cathode
Cap (Deflecting over Electrode)

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 3. With DJ3 positive with respect to DJ4, the spot is deflected toward pin 2.
The angle between the trace produced by DJ1 and DJ2 and its intersection with the plane through the tube axis and pin 3 does not exceed 10°.
The angle between the trace produced by DJ3 and DJ4 and the trace produced by DJ1 and DJ2 is 90° ± 6°.

Maximum Ratings, Absolute Values:
ANODE—No. 2 & GRID—No. 2 VOLTAGE: 2200 max. volts
ANODE—No. 1 VOLTAGE: 660 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: 1100 max. volts
JULY 1, 1945

RCA VICTOR DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
Typical Operation:

Anode-No.2 & Grid-No.2 Voltage* . . 1500 2000 . . volts
Anode-No.1 Volt. for Focus at 75%
of Grid-No.1 Volt. for Cutoff*. 338 450 . . volts
Grid-No.1 Volt. for Visual Cutoff#. -26 -35 . . volts
Max. Anode-No.1 Current
Range* . . Between -50 and +10 μamp.

Deflection Sensitivity:
DJ1 and DJ2 . . . . . . . . . . . . . . 0.295 0.221 . . mm/v dc
DJ3 and DJ4 . . . . . . . . . . . . . . 0.348 0.262 . . mm/v dc

Deflection Factor:**
DJ1 and DJ2 . . . . . . . . . . . . . 86 115 . . v dc/in.
DJ3 and DJ4 . . . . . . . . . . . . . 73 97 . . v dc/in.

* Preroll and definition decrease with decreasing anode-No.2 voltage.
In general, anode-No.2 voltage should not be less than 1500 volts.

** Individual tubes may require between .30% and .45% of the values shown
with grid-No.1 voltages between zero and cutoff.

# Visual extinction of stationary focused spot. Supply should be adjust-
able to ± 5% 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 12-mm square
centered at the geometric center of the tube face and having
one side parallel to the trace produced by DJ1 and DJ2. Suit-
able test conditions are: anode-No.2 voltage, 1500 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 applica-
tion of anode voltages.

Maximum Circuit Values:

Grid-No.1-Circuit Resistance. . . . . . 1.5 max. megohms
Resistance in Any Deflecting-
Electrode Circuit** 5.0 max. megohms

** It is recommended that all deflecting-electrode-circuit resistances be
approximately equal.
HIGH-VACUUM CATHODE-RAY TUBE

TYPICAL OSCILLOGRAPH CIRCUIT

C1: 0.1 μf  
C2: 1.0 μf  
C3 C4 C5 C6: 0.05-μf Blocking Capacitors*  
R1 R2: 2 Megohms  
R3: 6 Megohms  

R4: 2-Megohm Potentiometer  
R5: 1.0 Megohm  
R6: 0.35-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.

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

JULY 1, 1945

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RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
HIGH-VACUUM CATHODE-RAY TUBE

BOTTOM VIEW OF TUBE

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

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

$E_f = 6.3$ VOLTS
ANODE NO.1 VOLTS ADJUSTED TO GIVE FOCUS

<table>
<thead>
<tr>
<th>CURVE</th>
<th>ELECTRODE CURRENT</th>
<th>ANODE NO.2 &amp; GRID NO.2 VOLTS</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>ANODE NO.1</td>
<td>2000</td>
</tr>
<tr>
<td>B</td>
<td>ANODE NO.1</td>
<td>1500</td>
</tr>
<tr>
<td>C</td>
<td>ANODE NO.2 &amp; GRID NO.2</td>
<td>2000</td>
</tr>
<tr>
<td>D</td>
<td>ANODE NO.2 &amp; GRID NO.2</td>
<td>1500</td>
</tr>
</tbody>
</table>

GRID NO.1 VOLTS

GRID NO.2 & GRID NO.2 VOLTS

ANODE NO.1 CURRENT / MICROAMPERES

APR. 27, 1945
RCA VICTOR DIVISION
92CM-5409R4
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