



7GP4

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KINESCOPE

ELECTROSTATIC FOCUS—ELECTROSTATIC DEFLECTION

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. 8.5 μf
 Cathode to All Other Electrodes. 9.5 μf
 DJ₁ to DJ₂ 3.5 μf
 DJ₃ to DJ₄ 2.0 μf
 DJ₁ to All Other Electrodes. 11.0 μf
 DJ₂ to All Other Electrodes. 11.0 μf
 DJ₃ to All Other Electrodes. 8.0 μf
 DJ₄ to All Other Electrodes. 8.0 μf

Phosphor (For Curves, see front of this Section) No.4

Fluorescence White

Persistence. Medium

Focusing Method. Electrostatic

Deflection Method. Electrostatic

Overall Length $14\frac{1}{2}'' \pm \frac{3}{8}''$ Greatest Diameter of Bulb. $7'' \pm \frac{1}{8}''$

Minimum Useful Screen Diameter 6"

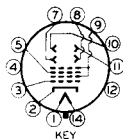
Raster Size. $4'' \times 5\frac{1}{2}''$

Mounting Position. Any

Base Medium Shell Diheptal 12-Pin

BOTTOM VIEW

Pin 1—Heater
 Pin 2—Cathode
 Pin 3—Grid No.1
 Pin 4—Internal
 Con.—
 Do Not Use
 Pin 5—Anode No.1
 Pin 7—Deflecting
 Electrode
 DJ₃
 Pin 8—Deflecting
 Electrode
 DJ₄



Pin 9—Anode No.2,
 Grid No.2
 Pin 10—Deflecting
 Electrode
 DJ₂
 Pin 11—Deflecting
 Electrode
 DJ₁
 Pin 12—No Connec-
 tion
 Pin 14—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 5. With DJ₃ positive with respect to DJ₄, the spot is deflected toward pin 2.

The plane through the tube axis and pin 5 may vary from the trace produced by DJ₁ and DJ₂ by an angular tolerance (measured about the tube axis) of 10° .

The angle between the trace produced by DJ₁ and DJ₂ and the trace produced by DJ₃ and DJ₄ is $90^\circ \pm 3^\circ$.



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Maximum Ratings, Design-Center Values:

ANODE-No.2 & GRID-No.2 VOLTAGE.	4000 max. volts
ANODE-No.1 VOLTAGE.	1500 max. volts
GRID-No.1 (CONTROL ELECTRODE) VOLTAGE:	
Negative bias value	200 max. volts
Positive bias value	2 max. volts
PEAK VOLTAGE BETWEEN ANODE No.2 AND ANY DEFLECTING ELECTRODE . . .	500 max. volts
PEAK HEATER-CATHODE VOLTAGE:	
Heater negative with respect to cathode .	125 max. volts
Heater positive with respect to cathode .	125 max. volts

Equipment Design Ranges:

For any anode-No.2 voltage (E_{b2}) between 3000* and 4000 volts

Anode-No.1 Voltage	
for Focus [□]	27% to 40% of E_{b2} . . . volts
Grid-No.1 Voltage for	
Visual Cutoff	1.2% to 2.8% of E_{b2} . . . volts
Anode-No.1 Current for Any	
Operating Condition	-15 to +10 . microamp
Deflection Factors:	
DJ ₁ & DJ ₂	31 to 41 v dc/in./kv of E_{b2}
DJ ₃ & DJ ₄ [⊙]	25 to 34 v dc/in./kv of E_{b2}

Examples of Use of Design Ranges:

For anode-No.2 voltage of 3000 volts

Anode-No.1 Voltage.	810 to 1200 . . . volts
Grid-No.1 Voltage for Visual Cutoff	-36 to -84 . . . volts
Deflection Factors:	
DJ ₁ & DJ ₂	93 to 123 volts dc/in.
DJ ₃ & DJ ₄	75 to 102 volts dc/in.

Maximum Circuit Values:

Grid-No.1-Circuit Resistance.	1.5 max. megohms
Resistance in Any Deflecting Electrode Circuit [⊙] . . .	5.0 max. megohms

* Brilliance and definition decrease with decreasing anode-No.2 voltage.

□ With the combined grid-No.1 bias voltage and video-signal voltage adjusted for a highlight brightness of 7 foot-lamberts on a 4" x 5-1/2" picture area.

⊙ It is recommended that the deflecting-electrode-circuit resistances be approximately equal.

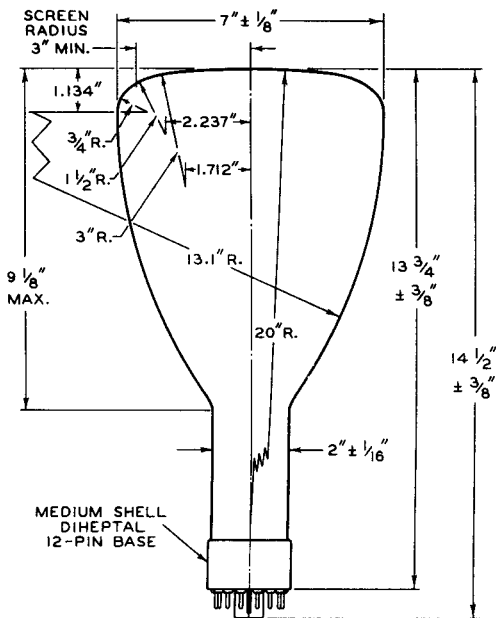
⊙ The 7GP4 is designed to be used in television circuits with horizontal deflection applied to deflecting electrodes DJ₃ and DJ₄, and should be so used to obtain maximum picture width. When the 7GP4 is operated in this way, the deflecting voltage required to produce the vertical height is approximately the same as that required to produce the horizontal width of a television picture of standard proportions.



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

THE PLANE THROUGH THE TUBE AXIS AND PIN 5 MAY VARY FROM THE TRACE PRODUCED BY DJ1 AND DJ2 BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF 10° . ANGLE BETWEEN DJ1-DJ2 TRACE AND DJ3-DJ4 TRACE IS $90^\circ \pm 3^\circ$.

DJ1 AND DJ2 ARE NEARER THE SCREEN; DJ3 AND DJ4 ARE NEARER THE BASE. WITH DJ1 POSITIVE WITH RESPECT TO DJ2, THE SPOT WILL BE DEFLECTED TOWARD PIN 5; LIKEWISE, WITH DJ3 POSITIVE WITH RESPECT TO DJ4, THE SPOT WILL BE DEFLECTED TOWARD PIN 2.

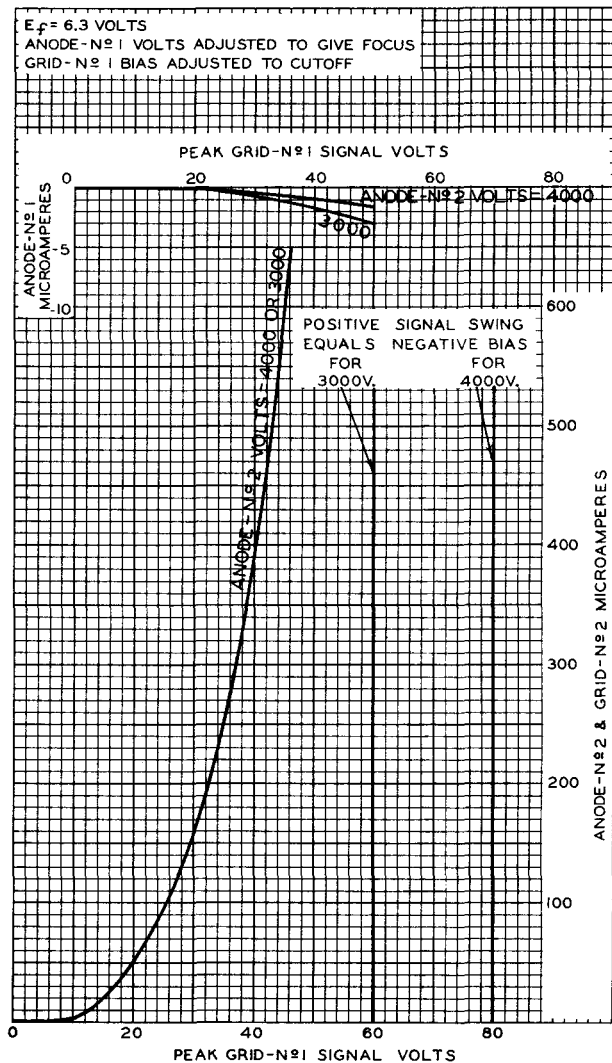
92QM-6667

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OPERATION CHARACTERISTICS



FEB. 20, 1946

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

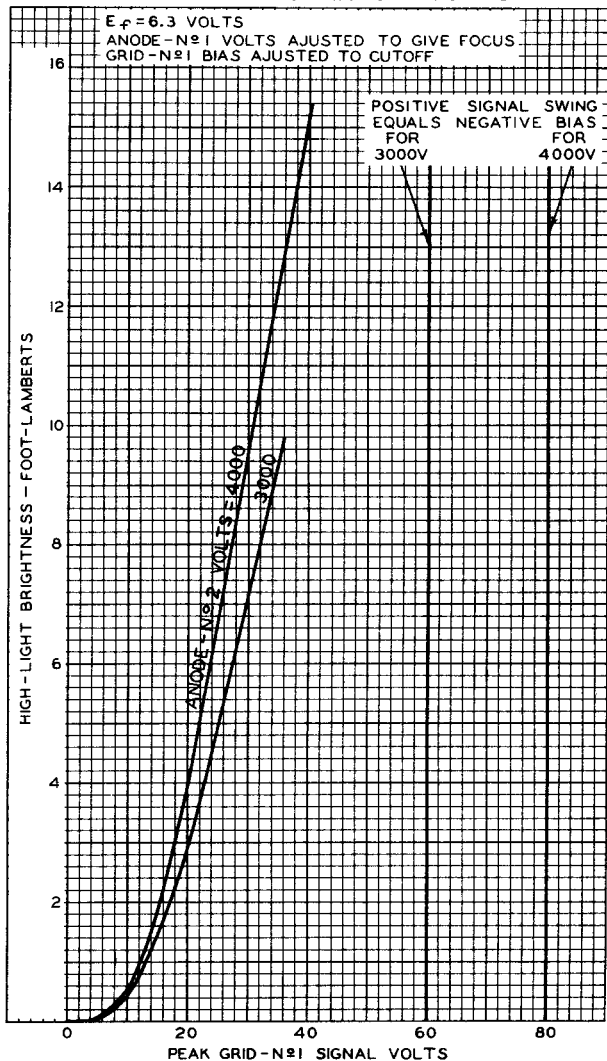
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OPERATION CHARACTERISTICS



FEB. 19, 1946

RCA VICTOR DIVISION
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92CM-6673