

23FVP4

CATHODE RAY TUBE

|                             |                             |
|-----------------------------|-----------------------------|
| 23 INCH, RECTANGULAR, GLASS | FACEPLATE--SPHERICAL GRAY   |
| FOCUS--ELECTROSTATIC        | NON ION TRAP GUN            |
| DEFLECTION--MAGNETIC        | ALUMINIZED SCREEN           |
| 110-DEGREE DEFLECTION ANGLE | EXTERNAL CONDUCTIVE COATING |

BANDED TYPE IMPLOSION PROTECTION

-----DESCRIPTION AND RATING-----

The 23FVP4 is a 23-inch electrostatic-focus and magnetic-deflection glass light weight picture tube equipped with banded tube type integral implosion protection. Outstanding features include a short overall length, a small neck diameter and a non ion-trap gun. The fluorescent screen is aluminized to increase light output and reduce undesirable screen charging. An external conductive coating is provided to serve as a filter capacitor when grounded.

ELECTRICAL DATA

|   |                            |
|---|----------------------------|
| Focusing Method . . . . .                           | Electrostatic              |
| Deflection Angle, Approximate                       |                            |
| Horizontal . . . . .                                | 99 Degrees                 |
| Vertical . . . . .                                  | 82 Degrees                 |
| Diagonal . . . . .                                  | 110 Degrees                |
| Direct Interelectrode Capacitance                   |                            |
| Cathode to all other electrodes, approx. . . . .    | 5 uuf                      |
| Grid #1 to all other electrodes, approx. . . . .    | 6 uuf                      |
| External Conductive Coating to Anode . . . . .      | 2500 max. uuf              |
| (including implosion protection hardware) . . . . . | 2000 <sup>+</sup> min. uuf |
| Heater Current at 6.3 volts . . . . .               | 450 ± 22 ma.               |
| Heater Warm-up time . . . . .                       | 11 sec.                    |

OPTICAL DATA

|  |               |
|--|---------------|
| Phosphor Number . . . . .                      | P4 Aluminized |
| Light transmittance at center, approx. . . . . | .42 percent   |

CATHODE RAY TUBE DEPARTMENT

**GENERAL  ELECTRIC**

Syracuse, N. Y.

MECHANICAL DATA

|   |                          |
|---|--------------------------|
| Overall Length . . . . .                                  | 14-7/8 $\pm$ 5/16 inches |
| Greatest Dimensions of Tube                               |                          |
| Diagonal. . . . .   | 23-1/2 $\pm$ 1/8 inches  |
| Width . . . . .   | 20-5/8 $\pm$ 1/8 inches  |
| Height. . . . .   | 16-5/8 $\pm$ 1/8 inches  |
| Minimum Useful Screen Dimensions (Projected)              |                          |
| Diagonal. . . . .   | 22-5/16 inches           |
| Horizontal Axis . . . . .                                 | 19-1/4 inches            |
| Vertical Axis . . . . .                                   | 15-1/8 inches            |
| Area. . . . .   | 282 square inches        |
| Neck Length . . . . .                                     | 5-1/8 $\pm$ 1/8 inches   |
| Bulb. . . . .   | J187K1                   |
| Bulb Contact. . . . .                                     | JEDEC No. J1-21          |
| Base. . . . .   | JEDEC No. B7-208         |
| Basing . . . . .  | 8HR                      |
| Bulb Contact Alignment                                    |                          |
| Anode Contact Aligns with base pin No. 4 $\pm$ 30 degrees |                          |

RATINGS (Design Maximum System)

Unless otherwise specified, voltage values are positive and measured with respect to cathode.

|   |                     |
|---|---------------------|
| Maximum Anode Voltage . . . . .                       | 22,000 volts        |
| Minimum Anode Voltage . . . . .                       | 15,000 volts        |
| Maximum Grid #4 (Focusing Electrode) Voltage. . . . . | -500 to +1000 volts |
| Minimum Grid #2 Voltage . . . . .                     | 100 volts           |
| Maximum Grid #2 Voltage . . . . .                     | 550 volts           |
| Grid #1 Voltage                                       |                     |
| Maximum Negative Value. . . . .                       | 140 volts DC        |
| Maximum Negative Peak Value . . . . .                 | 200 volts           |
| Maximum Positive Value. . . . .                       | 0 volts DC          |
| Maximum Positive Peak Value . . . . .                 | 2 volts             |
| Maximum Heater Voltage . . . . .                      | 6.9 volts           |
| Minimum Heater Voltage . . . . .                      | 5.7 volts           |

CATHODE RAY TUBE DEPARTMENT



Syracuse, N. Y.

**Maximum Heater-Cathode Voltage**

Heater negative with respect to cathode

During warm-up period not to exceed 15 sec . . . . . 410 volts

After equipment warm-up period . . . . . 300 volts

Heater positive with respect to cathode. . . . . 180 volts

**TYPICAL OPERATING CONDITIONS** (Cathode Drive Service)

Anode Voltage. . . . . 18,000 volts DC

Grid #4 Voltage (Focusing Electrode-Notes 2 & 3) . . . . . 250 volts DC

Grid #2 Voltage. . . . . 300 volts DC

Cathode to Grid #1 Voltage (Note 1). . . . . 36 to 54 volts DC

**MAXIMUM CIRCUIT VALUES**

Maximum Grid #1 Circuit Resistance . . . . . 1.5 max. megohm

Grid #2 Circuit Resistance . . . . . 0.1 min. megohm

Focusing Electrode Circuit Resistance. . . . . 0.1 min. megohm

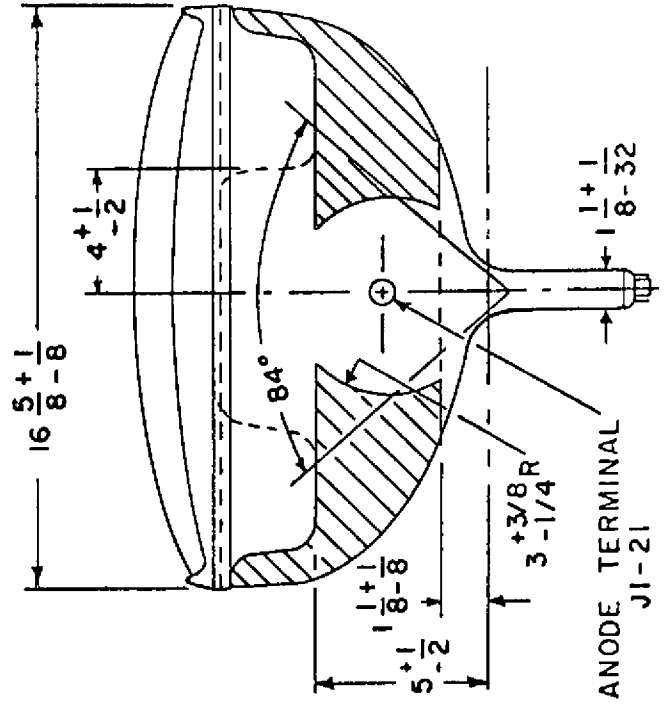
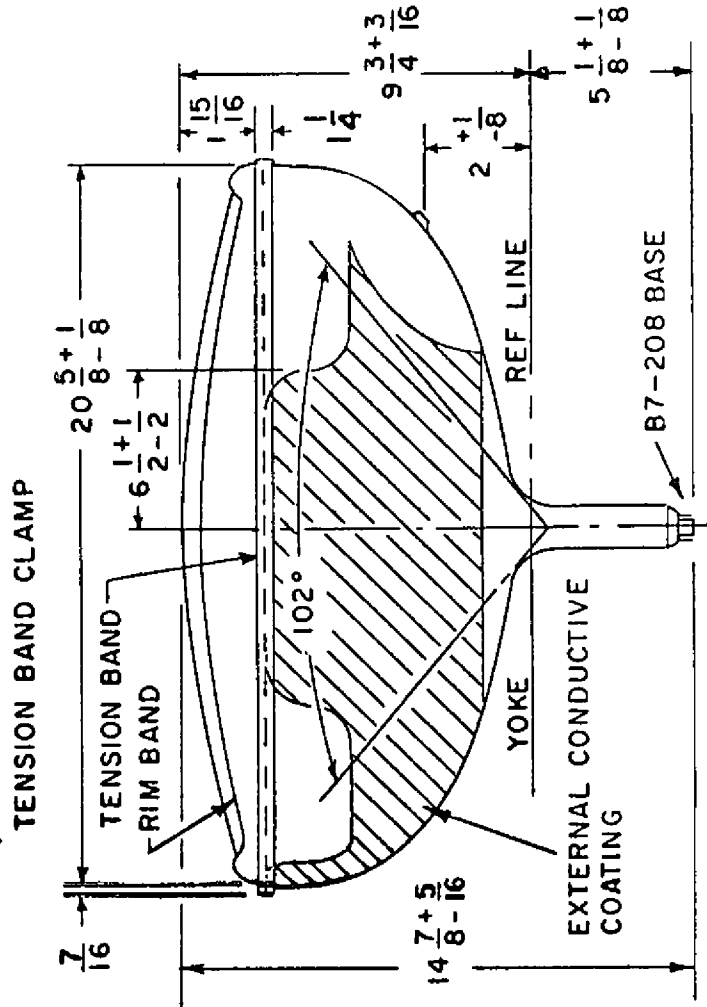
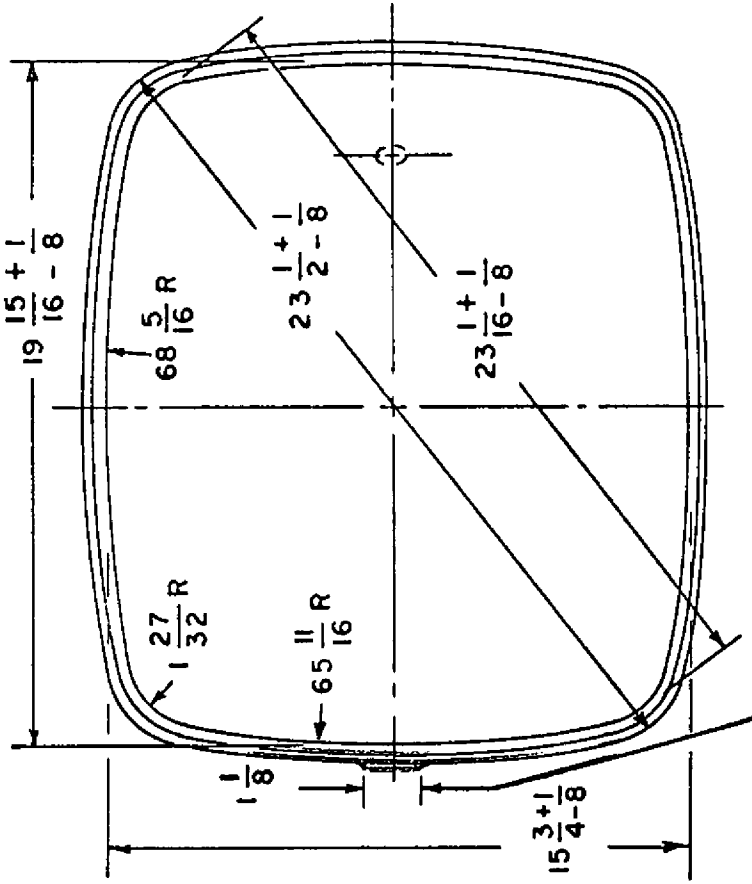
Protective resistance in Grid #2 and focusing electrical circuits is advisable to prevent damage to tube. If applicable, one resistor common to both circuits may be used.

**NOTES:**

1. Visual extinction of focused raster.
2. With the combined Grid #1 bias voltage and video-signal voltage adjusted to give an anode current of 150  $\mu$ a on a 19-1/4" x 15-1/8" pattern from RCA 2F21 monoscope or equivalent.
3. Individual tubes will have satisfactory focus at some value between 0 and 500 volts.

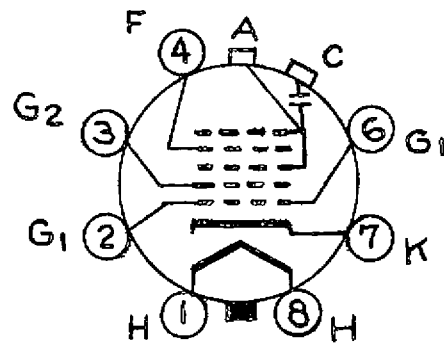
# 23 FVP4

SCREEN DIMENSIONS  
 DIAGONAL 22 5/16  
 WIDTH 19 1/4  
 HEIGHT 15 1/8  
 AREA 282 SQ IN.



OUTLINE NOTES

1. The reference line is determined by the intersection of the plane C-C of gage (EIA No. 126) with the glass funnel.
2. Deflection angle on the diagonal is  $110^{\circ}$ .
3. Anode terminal aligns with pin no.  $4 \pm 30$  degrees.
4. Use a non-rigidly mounted socket with flexible leads. Bottom circumference of base wafer will fall within  $1\text{-}3/4$  inch diameter circle concentric with the bulb axis.



BASING DIAGRAM  
B HR