17BRP4

CATHODE-RAY TUBE

17-INCH, RECTANGULAR, GLASS  
14-3/4 BY 11-11/16-INCH PICTURE SIZE

FOCUS - ELECTROSTATIC  
FACE PLATE - SPHERICAL, GRAY

DEFLECTION - MAGNETIC  
ION-TRAP GUN

110-DEGREE DEFLECTION ANGLE  
EXTERNAL CONDUCTIVE COATING

ALUMINIZED SCREEN

--- DESCRIPTION AND RATING ---

The 17BRP4 is an electrostatic-focus and magnetic-deflection, direct-view picture tube. It features a short over-all length, a small neck diameter, and an aluminized fluorescent screen to increase light output and reduce undesirable screen charging. An external conductive coating serves as a filter capacitor.

GENERAL

ELECTRICAL

Heater Voltage ........................................ 6.3 Volts
Heater Current ....................................... 0.6 ± 10% Amperes
Heater Warm-up Time * ............................... 11 Seconds

Focusing Method - Electrostatic
Deflecting Method - Magnetic
Deflection Angle, approximate
  Diagonal ........................................... 110 Degrees
  Horizontal ....................................... 105 Degrees
  Vertical .......................................... 87 Degrees

Direct Interelectrode Capacitances, approximate
  Cathode to All Other Electrodes .................. 5 µuf
  Grid-No. 1 to All Other Electrodes .............. 6 µuf

External Conductive Coating to Anode
  Maximum .......................................... 1400 µuf
  Minimum .......................................... 800 µuf

OPTICAL

Phosphor Number - P4, Sulfide
Fluorescent Color - White
Phosphorescent Color - White
Persistance - Short

Faceplate - Gray
  Light Transmission at Center, approximate. .... 76 Percent

GENERAL ELECTRIC COMPANY

from JETEC release #1885, April 1, 1957
MECHANICAL

Overall Length. .................................. 12 9/16 ± 5/16 Inches
Greatest Bulb Dimensions
  Diagonal........................................... 16 9/16 ± 0.100 Inches
  Width ............................................. 15 5/8 ± 0.100 Inches
  Height ............................................ 12 3/4 ± 0.100 Inches
Minimum Useful Screen Dimensions
  Diagonal. ........................................ 15 3/4 Inches
  Width ............................................ 14 3/4 Inches
  Height .......................................... 11 11/16 Inches
  Area ............................................. 155 Square Inches
  Neck Length ................................... 5 7/16 ± 3/16 1/8

Bulb Contact - Recessed Small-cavity Cap, JETEC No. J1-21
Small-Button Eightar Base - 7-Pin, JETEC No. B7-183
Basing Designation - SHR
Bulb Contact Alignment
  Anode Contact Aligns with Pin No. 4 ± 30 Degrees
Mounting Position - Any
Net Weight, approximate .......................... 10 1/3 Pounds

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Anode Voltage ≠ .................................. 15,000 Max Volts DC
Focusing-Electrode Voltage ......................... -500 to +1000 Max Volts DC
Grid-No. 2 Voltage ................................ 500 Max Volts DC
Grid-No. 1 Voltage
  Negative-Bias Value ............................ 140 Max Volts DC
  Positive-Bias Value ............................ 0 Max Volts DC
  Positive-Peak Value ............................ 2 Max Volts
  Negative-Peak Value ............................ 200 Max Volts

Peak Heater-Cathode Voltage
  Heater Negative with Respect to Cathode
    During Warm-up Period not to Exceed 15 Seconds .......... 410 Max Volts
  After Equipment Warm-up Period ...................... 180 Max Volts
  Heater Positive with Respect to Cathode .................. 180 Max Volts

TYPICAL OPERATING CONDITIONS

Anode Voltage $ ..................................... 14,000 Volts DC
Focusing-Electrode Voltage for Focus ...................... 0 to 500 Volts DC
Focusing-Electrode Current ................................ -15 to +25 Microamperes DC
Grid-No. 2 Voltage .................................. 300 Volts DC
Grid-No. 1 Voltage $ ................................ -28 to -72 Volts DC
Ion-Trap Field Intensity $, minimum ...................... 37 Gausses
MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance. . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1.5 Max Megohms
Grid-No. 2 Circuit Resistance. . . . . . . . . . . . . . . . . . . . . . . . . . . . . 0.1 Min Megohms
Focusing-Electrode Circuit Resistance. . . . . . . . . . . . . . . . . . . . . . . . . 0.1 Min Megohms

Protective resistance in the grid-No. 2 and focusing-electrode circuits is advisable to prevent damage to the tube. If applicable, one resistor common to both circuits may be used.

* Heater warm-up time is the time required for the voltage across the heater terminals to increase to 5.0 volts in the JETEC test circuit, with \( E = 25 \) volts and series \( R = 31.5 \) ohms.

\( \dagger \) The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the design-center values are not exceeded by more than ten percent.

\( \ddagger \) Anode, grid-No. 3, and grid-No. 5 which are connected together within the tube are referred to herein as anode.

\( \S \) Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 12,000 volts.

\( \varpi \) For visual extinction of focused raster.

\( \Delta \) For a Heppner PM ion-trap magnet or equivalent located in optimum position and rotated to give maximum brightness.

Electronic Components Division
GENERAL ELECTRIC COMPANY
Schenectady 5, N. Y.
SCREEN DIMENSIONS

DIAGONAL 15-3/4"
WIDTH 14-3/4"
HEIGHT 11-11/16"
AREA 155 SQ.IN.

NOTES:

1. REFERENCE LINE IS DETERMINED BY PLANE C-C'.
   WHEN GAGE (RETMA) NO 126 IS SEATED AGAINST
   THE BULB.

2. DEFLECTION ANGLE ON DIAGONAL IS 110°.

3. ANODE TERMINAL ALIGNS WITH PIN NO.4 ± 30 DEGREES.

4. RECOMMENDED POSITION OF CENTERING MAGNET,
   IF USED.

5. APPROXIMATE POSITION OF ION-TRAP MAGNET.

6. USE A NON-RIGIDLY MOUNTED SOCKET WITH
   FLEXIBLE LEADS. BOTTOM CIRCUMFERENCE OF
   BASE SHELL WILL FALL WITHIN 1-3/4 INCHES
   DIA. CIRCLE CONCENTRIC WITH BULB AXIS.

BASING DIAGRAM
8HR