17AVP4-A

CATHODE-RAY TUBE

17-INCH RECTANGULAR, GLASS
FOCUS—ELECTROSTATIC
DEFLECTION—MAGNETIC
90-DEGREE DEFLECTION ANGLE

14¼ BY 10¾-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
ALUMINIZED SCREEN
EXTERNAL CONDUCTIVE COATING

DESCRIPTION AND RATING

The 17AVP4-A is a rectangular all-glass picture tube employing electrostatic-focus and magnetic-deflection. It provides a 14¼ by 10¾-inch picture for direct-view television applications. The electron gun has a focusing-voltage range of −0.4 to +2.2 percent of the anode voltage and is designed for use with an external single-field ion-trap magnet. Other features of the 17AVP4-A include a high-quality fluorescent screen which is aluminized to increase light output, a gray faceplate to improve picture contrast, a 90-degree deflection angle and a short neck design both of which provide a short over-all tube length, and an external conductive coating which serves as a filter capacitor when grounded.

GENERAL

ELECTRICAL

Heater Voltage .................................................... 6.3 Volts
Heater Current ..................................................... 0.6 ±10% Amperes

Focusing Method—Electrostatic
Deflecting Method—Magnetic
Deflection Angle, approximate
  Diagonal ...................................................... 90 Degrees
  Horizontal ................................................... 85 Degrees
  Vertical ....................................................... 68 Degrees

Direct Interelectrode Capacitances, approximate
  Cathode to All Other Electrodes ................................ 5 μf
  Grid-No. 1 to All Other Electrodes ............................ 6 μf
  External Conductive Coating to Anode
    Maximum ................................................... 1500 μf
    Minimum .................................................. 750 μf

OPTICAL

Phosphor Number—P4, Sulfide Type
  Fluorescent Color—White
  Phosphorescent Color—White
  Persistence—Short

Faceplate—Gray
  Light Transmission at Center, approximate .................. 71 Percent

GENERAL ELECTRIC
MECHANICAL

Over-all Length ........................................ 15\% \pm \% Inches

Greatest Bulb Dimensions

Diagonal ........................................ 16\% \pm \% Inches
Width ........................................ 15\% \pm \% Inches
Height ........................................ 12\% \pm \% Inches

Minimum Useful Screen Dimensions

Diagonal ........................................ 15\% Inches
Width ........................................ 14\% Inches
Height ........................................ 10\% Inches

Neck Length ........................................ 6\% Inches

Bulb Number, ASA Designation—J133F or J133G
Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21
Base—Small-shell Duodecal 6-pin, JETEC No. B6-63
Basing, JETEC Designation—12L
Bulb Contact Alignment

Anode Contact Aligns with Pin No. 6 \pm 30 Degrees

Mounting Position—Any
Net Weight, approximate .................................... 14 Pounds

MAXIMUM RATINGS*

DESIGN-CENTER VALUES†

Anode Voltage‡ ........................................ 16,000 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 ................................... 125 Max Volts DC
Positive-Bias Value .................................... 0 Max Volts DC
Positive-Peak Value ................................... 2 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 ................................ -56 to +308 Volts DC
Focusing-Electrode Current ................................ -15 to +25 Microamperes DC
Grid-No. 2 Voltage ...................................... 300 Volts DC
Grid-No. 2 Current ...................................... -15 to +15 Microamperes DC
Grid-No. 1 Voltage ...................................... -28 to -72 Volts DC
Ion-Trap Field Intensity \(\Delta\), approximate ................................... 0.37 Gausses
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.

* All voltages are measured with respect to cathode.
† 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 maximum design-center values are not exceeded by more than ten percent.
‡ Anode, grid-No. 3, and grid-No. 5 which are connected together within the tube are referred to herein as anode.
§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 12,000 volts.
π For visual extinction of focused raster.
△ Single-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through RETMA ion-trap magnet No. 117.

SCREEN DIMENSIONS

DIAGONAL 15-1/2"
WIDTH 14-1/4"
HEIGHT 10-3/4"

NOTES:
1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE SHOULDER OF THE REFERENCE LINE GAGE (RETMA NO. 116) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 90 DEGREES.
3. ANODE TERMINAL ALIGNS WITH PIN-No. 6 ± 30 DEGREES.
4. APPROXIMATE POSITION OF ION-TRAP MAGNET.
5. APPROXIMATE POSITION OF CENTERING MAGNET, IF USED.
6. EXTERNAL CONDUCTIVE COATING CONTACT AREA.