



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 $0.6 \pm 10\%$ 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

MECHANICAL

Over-all Length $15\frac{5}{8} \pm \frac{3}{8}$ Inches

Greatest Bulb Dimensions

Diagonal $16\frac{5}{8} \pm \frac{3}{32}$ Inches

Width $15\frac{25}{64} \pm \frac{1}{8}$ Inches

Height $12\frac{1}{4} \pm \frac{3}{16}$ Inches

Minimum Useful Screen Dimensions

Diagonal $15\frac{1}{2}$ Inches

Width $14\frac{1}{4}$ Inches

Height $10\frac{3}{4}$ Inches

Neck Length $6\frac{1}{2}$ 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 ± 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△, approximate 37 Gauss

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.

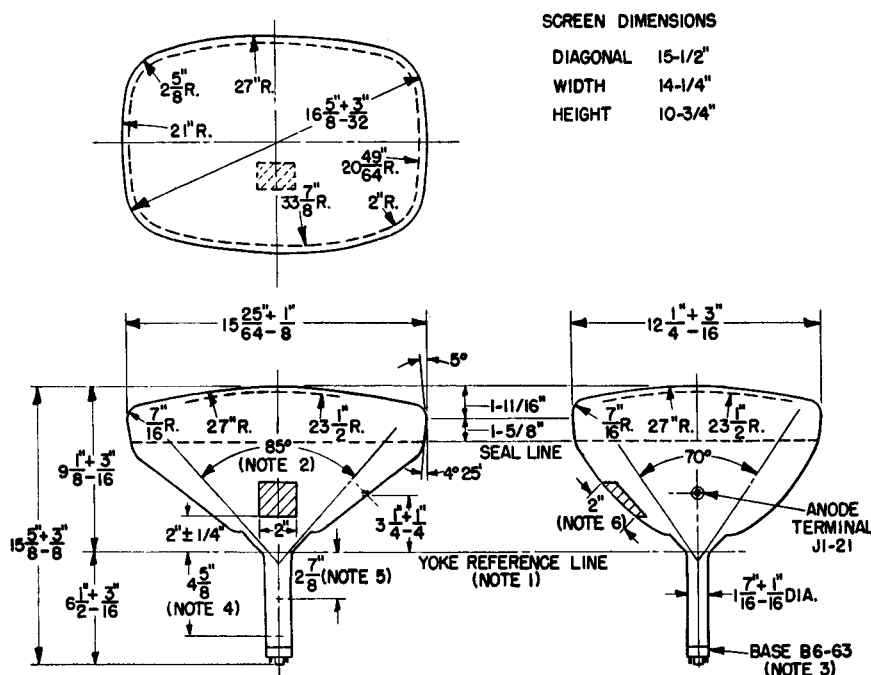
† The maximum ratings provide a ten percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than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



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.

