



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 μμf
Grid-No. 1 to All Other Electrodes 6 μμf
External Conductive Coating to Anode
Maximum 1500 μμf
Minimum 750 μμf

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 \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 Δ , approximate	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.

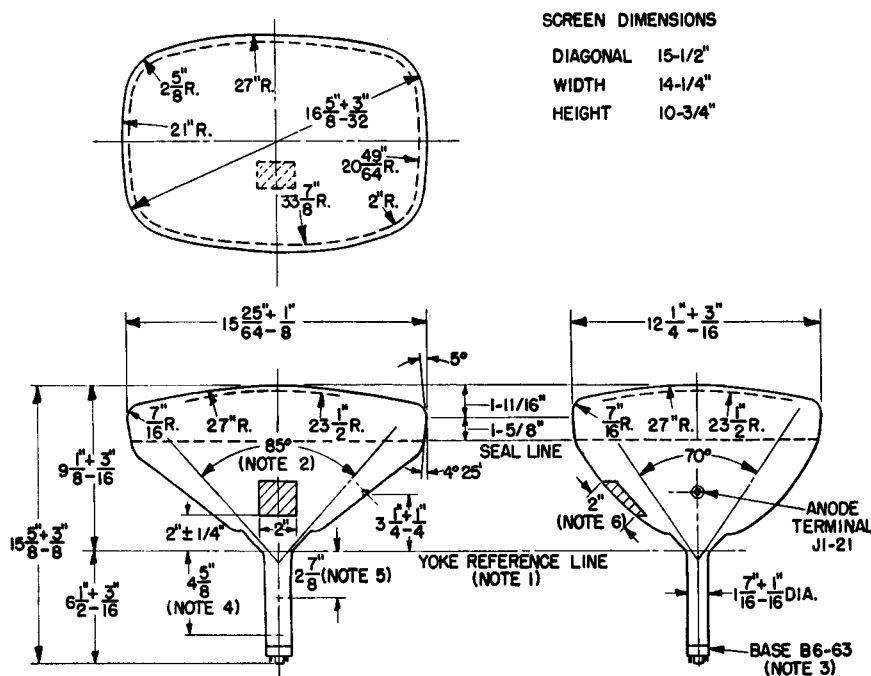
† The maximum ratings provide a ten percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than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

