Electronic TUBES

17HP4-B

CATHODE-RAY TUBE

17-INCH RECTANGULAR, GLASS
FOCUS—LOW VOLTAGE ELECTROSTATIC
DEFLECTION—MAGNETIC
70-DEGREE DEFLECTION ANGLE
14¼- BY 10¾-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY
ION-TRAP GUN
EXTERNAL CONDUCTIVE COATING
ALUMINIZED SCREEN

DESCRIPTION AND RATING

The 17HP4-B is an electrostatic-focus and magnetic-deflection, direct-view all-glass picture tube which provides a 14¼- by 10¾-inch picture for 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 this tube include a high-quality gray faceplate which increases picture contrast and detail under high-ambient-light conditions, a reflective aluminized screen to increase light output, and a space-saving rectangular face shape. An external conductive coating 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	70	Degrees
Horizontal	65	Degrees
Vertical	50	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	72	Percent

MECHANICAL

Over-all Length . . . . . $19\frac{3}{16} \pm \frac{3}{8}$ 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 . . . . . 15½ Inches
  Width . . . . . 14¼ Inches
  Height . . . . . 10¾ Inches
Neck Length . . . . . 7½ Inches

Bulb Number, ASA Designation—J133-A1 or -B1
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 . . . . . 16 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 Voltageπ . . . . . 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. 1 Voltage♦ . . . . . −28 to −72 Volts DC
Ion-Trap Field Intensityϕ, approximate . . . . . 37 Gausses

MAXIMUM CIRCUIT VALUES

Grid-No. 1 Circuit Resistance . . . . . 1.5 Max Megohms

*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 voltages 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.

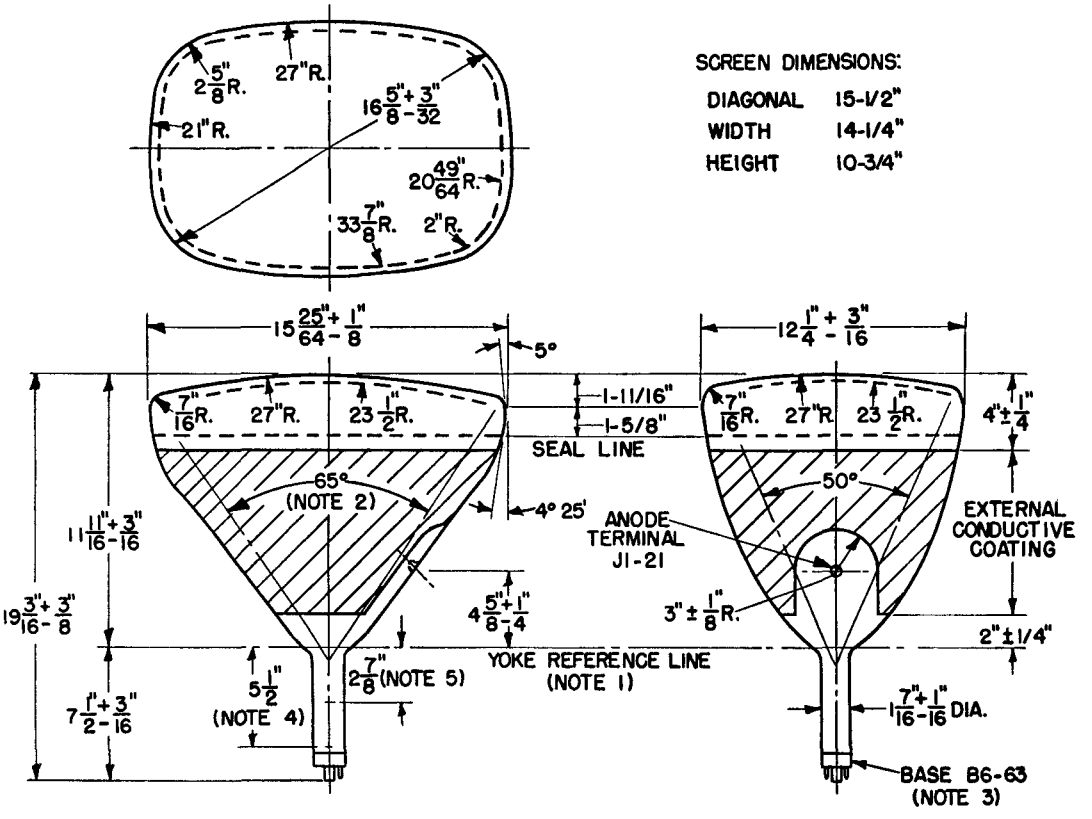
§Cathode should be returned to one side or to the midtap of the heater transformer winding.

πBrightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 12,000 volts.

▲The focusing electrode may be modulated within the stipulated maximum range without damage to the tube.

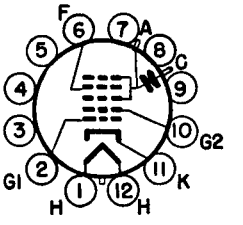
♦For visual extinction of focused raster.

ϕSingle-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through JETEC ion-trap magnet No. 117.



NOTES:

1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RETMA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 70 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.



BASING DIAGRAM
12L