



# 17QP4 CATHODE-RAY TUBE

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

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

## DESCRIPTION AND RATING

The 17QP4 is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 14¼- by 10¾-inch picture for television applications. The electron gun 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 space-saving rectangular face shape, and a cylindrical front surface which materially reduces the effects of specular reflection. 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—Magnetic		
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	uuf
Grid-No. 1 to All Other Electrodes.....	6	uuf
External Conductive Coating to Anode		
Maximum.....	1500	uuf
Minimum.....	750	uuf

#### 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 $\frac{23}{32}$ $\pm$ $\frac{1}{8}$	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 . . . . .	7 $\frac{1}{2}$	Inches
Bulb Number, ASA Designation—J133-C1		
Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21		
Base—Small-shell Duodecal 5-Pin, JETEC No. B5-57		
Basing, JETEC Designation—12N		
Bulb Contact Alignment		
Anode Contact Aligns with Pin No. 6 position $\pm$ 30 Degrees		
Mounting Position—Any		
Net Weight, approximate . . . . .	18	Pounds

**MAXIMUM RATINGS**

**DESIGN-CENTER VALUES\***

Anode Voltage <sup>†</sup> . . . . .	16,000 Max	Volts DC
Grid-No. 2 Voltage . . . . .	410 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 <sup>‡</sup>		
Heater Negative with Respect to Cathode		
During Warm-up Period not to Exceed 15 Seconds . . . . .	410 Max	Volts
After Equipment Warm-up Period . . . . .	150 Max	Volts
Heater Positive with Respect to Cathode . . . . .	150 Max	Volts

**TYPICAL OPERATING CONDITIONS**

Anode Voltage <sup>§</sup> . . . . .	14,000	Volts DC
Grid-No. 2 Voltage . . . . .	300	Volts DC
Grid-No. 1 Voltage <sup>π</sup> . . . . .	-28 to -72	Volts DC
Focusing-Coil Current <sup>▲</sup> , approximate . . . . .	110	Milliamperes DC
Ion-Trap Field Intensity <sup>♦</sup> , approximate . . . . .	37	Gausses

**MAXIMUM CIRCUIT VALUES**

Grid-No. 1-Circuit Resistance . . . . .	1.5 Max	Megohms
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\*The maximum ratings provide a ten-percent safety factor in accordance with 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 and grid-No. 3 which are connected together within the tube are referred to herein as anode.

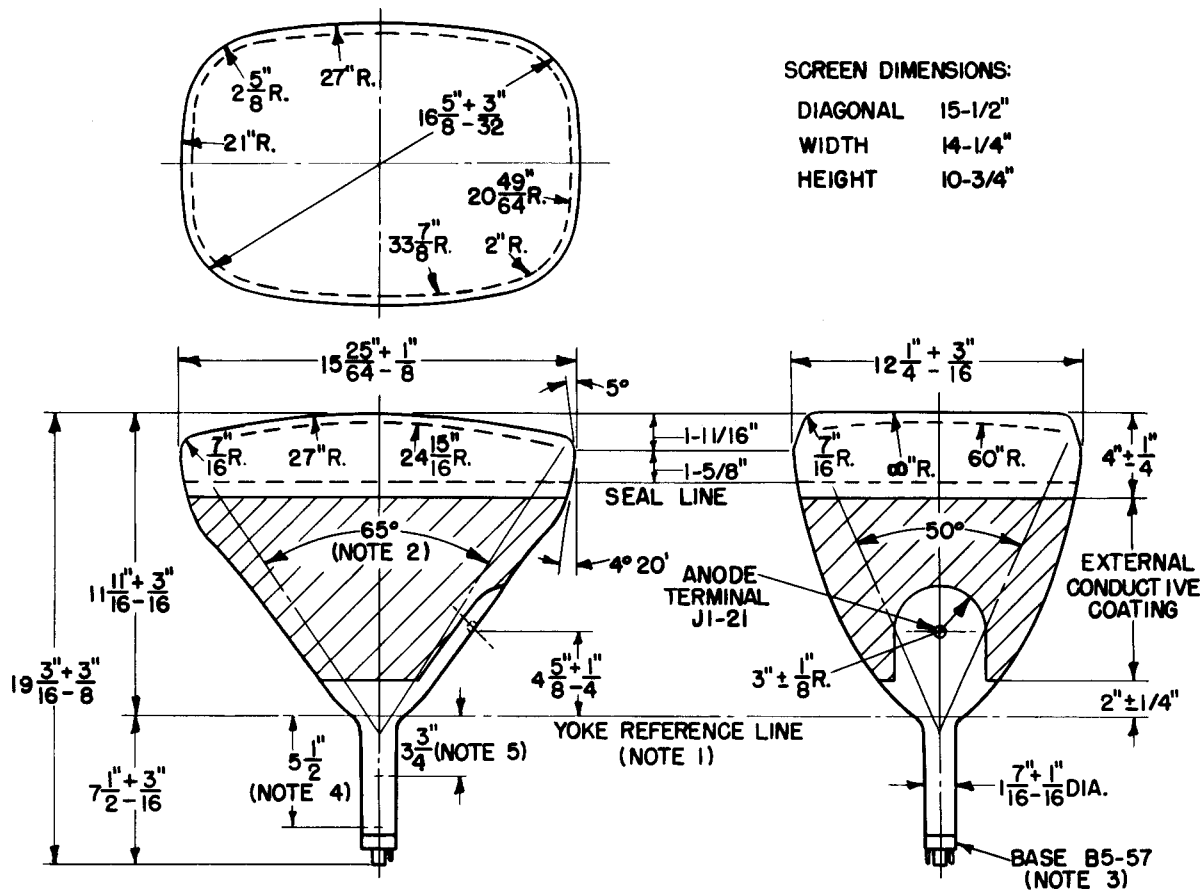
‡Cathode should be returned to one side or to the midtap of the heater transformer winding.

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

πFor visual extinction of focused raster.

▲ For JETEC focusing coil No. 109 with distance from the yoke-reference-line to center-of-air-gap equal to 3¾ inches

◆Single-field ion-trap magnet adjusted to optimum position, equivalent to 37 milliamperes through JETEC ion-trap 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 POSITION ± 30 DEGREES.
4. APPROXIMATE POSITION OF ION-TRAP MAGNET.
5. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.

