Electronic TUBES

17GP4

CATHODE-RAY TUBE

17-INCH, RECTANGULAR, METAL
FOCUS—ELECTROSTATIC
DEFLECTION—MAGNETIC
14⅜ BY 10$\frac{11}{16}$-INCH PICTURE SIZE
FACEPLATE—SPHERICAL, GRAY, FROSTED
ION-TRAP GUN
70-DEGREE DEFLECTION ANGLE

DESCRIPTION AND RATING

The 17GP4 is an electrostatic-focus, magnetic-deflection, direct-view picture tube which provides a 14⅜ by 10$\frac{11}{16}$-inch picture for television applications. The electron gun has a focusing-voltage range of 19.1 to 25.9 percent of the anode voltage and is designed for use with an external single-field ion-trap magnet. Other features of the 17GP4 include a lightweight metal-cone envelope, a high-quality frosted gray faceplate to prevent specular reflection and increase picture contrast, and a space-saving rectangular face shape.

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	66	Degrees
Vertical	50	Degrees
Direct Interelectrode Capacitances, approximate		
Cathode to All Other Electrodes	5	μμf
Grid-No. 1 to All Other Electrodes	6	μμf

OPTICAL

Phosphor Number—P4, Sulfide Type		
Fluorescent Color—White		
Phosphorescent Color—White		
Persistence—Short		
Faceplate—Gray		
Light Transmission at Center, approximate	66	Percent
Specular Reflection of Ambient Light, maximum	1.5	Percent

MECHANICAL

Over-all Length	$18\frac{13}{16} \pm \frac{1}{2}$	Inches
Greatest Bulb Dimensions		
Diagonal	$16\frac{13}{16} \pm \frac{3}{16}$	Inches
Width	$15\frac{15}{16} \pm \frac{1}{8}$	Inches
Height	$12\frac{1}{4} \pm \frac{1}{8}$	Inches
Minimum Useful Screen Dimensions		
Diagonal	$15\frac{1}{4}$	Inches
Width	$14\frac{3}{8}$	Inches
Height	$10\frac{11}{16}$	Inches
Neck Length	$7\frac{1}{2}$	Inches

Bulb Contact—Metal Cone Lip
Base—Small-shell Duodecal 6-pin, JETEC No. B6-63
Basing, JETEC Designation—12M
Base Alignment
Pin-No. 3 Position Aligns with Horizontal Picture Axis ±30 Degrees

Mounting Position—Any

Net Weight, approximate . . . . . 10 Pounds

MAXIMUM RATINGS♦

DESIGN-CENTER VALUES*

Anode Voltage†	16,000	Max Volts DC
Focusing-Electrode Voltage	5000	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	2670 to 3620	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 Intensityπ, approximate	37	Gausses

CIRCUIT VALUES

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

♦ All voltages are measured with respect to cathode.

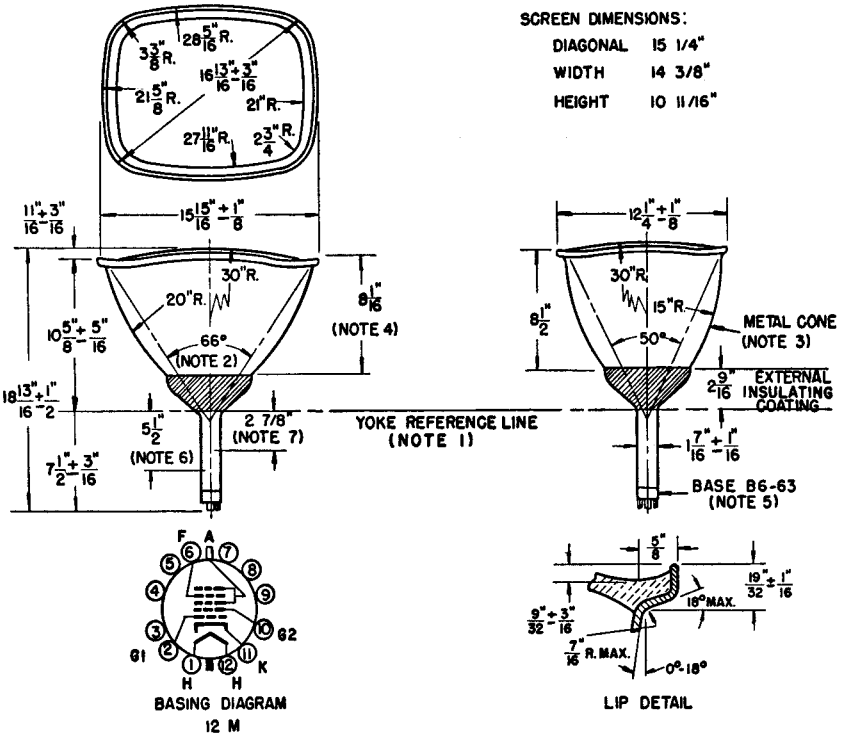
* The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than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

§ For visual extinction of focused raster.

π 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 REFERENCE-LINE GAGE (RETMA NO. 110) WHEN THE GAGE IS RESTING ON THE CONE.
2. DEFLECTION ANGLE ON DIAGONAL IS 70 DEGREES.
3. METAL CONE OPERATES AT A HIGH VOLTAGE AND MUST BE INSULATED TO WITHSTAND THE MAXIMUM APPLIED ANODE VOLTAGE.
4. CONE HEIGHT AT DIAGONAL IS 8 INCHES.
5. PIN-NO. 3 POSITION ALIGNS WITH HORIZONTAL PICTURE AXIS ±30 DEGREES.
6. APPROXIMATE POSITION OF ION-TRAP MAGNET.
7. APPROXIMATE POSITION OF CENTERING MAGNET, IF USED.