

7ATP7
CATHODE RAY TUBE

7-INCH ROUND, GLASS	POST ACCELERATION
FOCUS -- ELECTROSTATIC	PERSISTENCE -- LONG
DEFLECTION -- ELECTROSTATIC	FACEPLATE -- SPHERICAL, CLEAR

DESCRIPTION AND RATING

The 7ATP7 is a cathode ray tube for radar and oscillographic applications. A feature of this tube is post acceleration which assures maximum deflection sensitivity with high brightness.

GENERAL

ELECTRICAL

Heater Voltage	6.3	Volts
Heater Current	0.6 $\pm$ 10%	Amperes

Focusing Method -- Electrostatic
Deflecting Method -- Electrostatic

Direct Interelectrode Capacitances, approximate

Cathode to All Other Electrodes	6.0	uuf
Grid No. 1 to All Other Electrodes	7.0	uuf
D1 to D2	3.0	uuf
D3 to D4	2.0	uuf
D1 to All Other Electrodes	8.0	uuf
D2 to All Other Electrodes	8.0	uuf
D3 to All Other Electrodes	4.5	uuf
D4 to All Other Electrodes	4.5	uuf

CATHODE RAY TUBE DEPARTMENT
GENERAL  ELECTRIC
Syracuse, N. Y.

OPTICAL

Phosphor Number -- P7
Fluorescent Color -- Blue-White
Phosphorescent Color -- Yellow
Persistence -- Long

Faceplate -- Clear

MECHANICAL

Over-all Length 17-1/8 + 3/8 Inches
Greatest Bulb Diameter 7-3/8 + 3/16 Inches
Minimum Useful Screen Diameter 6.5 Inches

Bulb Contact -- Recessed Small-ball Cap, JETEC No. J1-22
Base -- 12-Pin Medium Shell Dihelptal JETEC No. B12-37
Basing -- JETEC Designation 14J
Bulb Contact Alignment
J1-22 Contact Aligns with Trace of D1-D2 + 10 Degrees
J1-22 Contact on Same Side as Pin No. 5

Base Alignment
D1-D2 Trace Aligns with Pin.No. 5 and Tube Axis + 10 Degrees
Positive Voltage on D1 Deflects Beam Approximately Toward Pin No. 5
Positive Voltage on D3 Deflects Beam Approximately Toward Pin No. 2

Trace Alignment
Angle Between D3-D4 and D1-D2 Traces 90 + 1 Degrees

Mounting Position -- Any

RATINGS

DESIGN-CENTER VALUES*

Post Accelerator Voltage 6,000 Max Volts DC
Anode Voltage+ 2,000 Max Volts DC
Radio Post Accelerator Voltage to Anode Voltage 2.5 Max
Anode Input/ 6 Max Watts
Focusing Electrode Voltage 1,100 Max Volts DC
Grid No. 1 Voltage
Negative-Bias Value 200 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 180 Max Volts
Heater Positive with Respect to Cathode 180 Max Volts
Peak Voltage between Anode and Any Deflecting Electrode . . 1,500 Max Volts

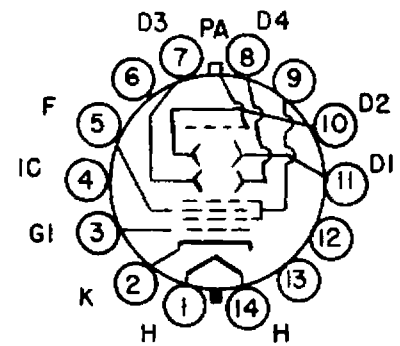
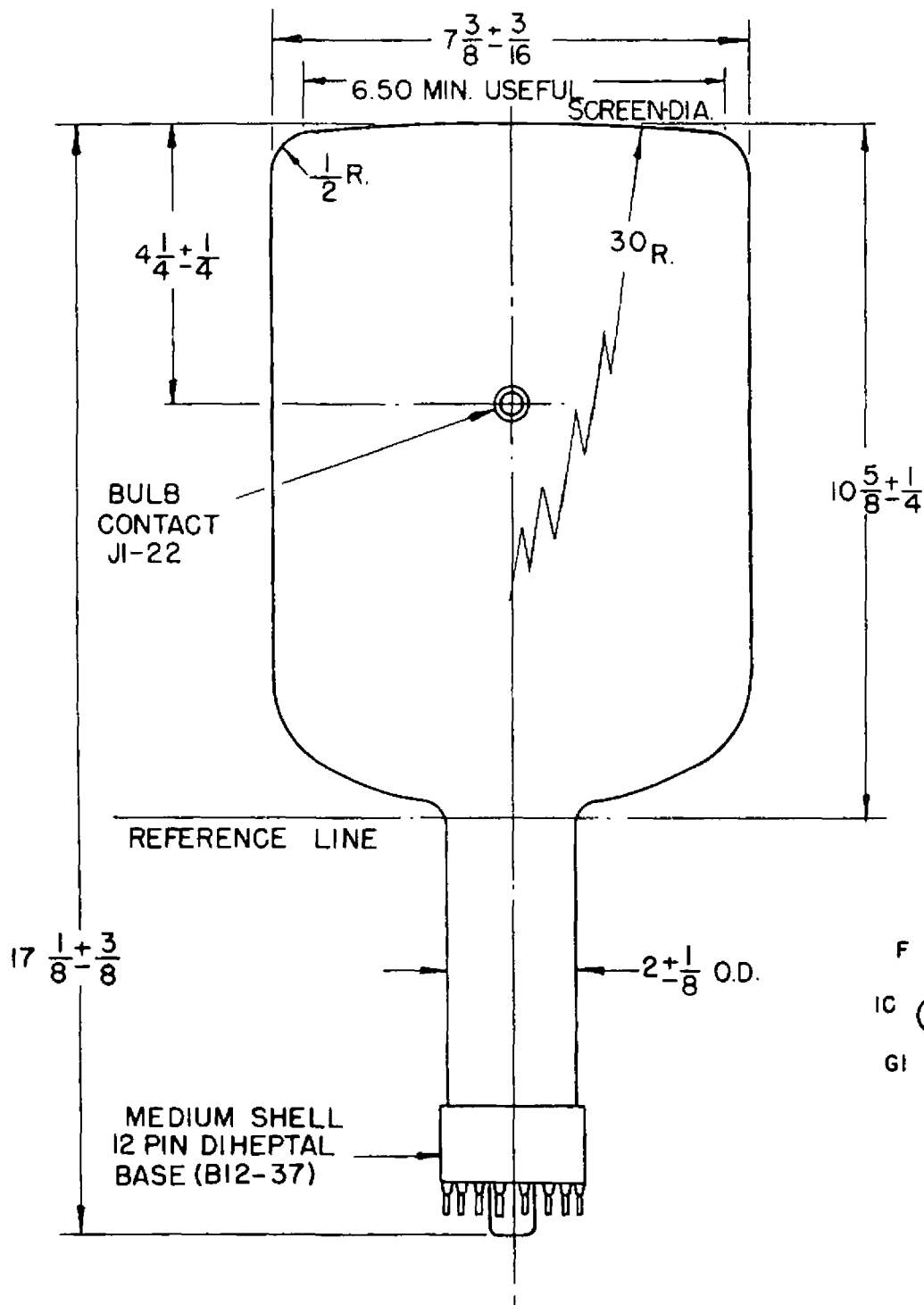
TYPICAL OPERATING CONDITIONS

Post Accelerator Voltage	4,000	Volts DC
Anode Voltage	2,000	Volts DC
Focusing Electrode Voltage	392 to 672	Volts DC
Grid No. 1 Voltage ϕ	-40 to -80	Volts DC
Modulation Factor#	38	Max Volts
Deflecting Factors		
D1 and D2	72 to 108	Volts DC per Inch
D3 and D4	64 to 96	Volts DC per Inch
Focusing-Electrode Current for any Operating Condition.	-25 to +25	Microamperes
Spot Position, Undelected**	Within a 20	Millimeter Square
Line Width A++	0.45	Millimeters
Line Width B++	0.55	Millimeters

CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5	Max Megohms
Resistance in Any Deflecting Electrode Circuit###	5.0	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 voltage and components provided the maximum design-center values are not exceeded by more than ten percent.
- + Anode, grid No. 2 and grid No. 4 which are connected together within the tube are referred to herein as anode.
- ϕ Anode input equals the product of anode voltage and average current measured at the terminal.
- ϕ For visual extinction of focused undeflected spot.
- # For an I_{b3} of 25 microamperes d-c in accordance with MIL-E-1C specification.
- ** With post accelerator anode voltage of 4,000 volts, the center of the focused undeflected spot will lie within a square of 20 millimeters radius centered on the tube face.
- ++ Measured with specification MIL-E-1C, paragraph 4.12.6.1, at an anode No. 3 (post-acceleration) current of 25 microamperes d-c.
- ## It is recommended that the deflection electrode resistance be approximately equal.



BASING DIAGRAM
14J

NOTES

1. REFERENCE LINE - POINT WHERE RING GAGE $2.063 \pm .001, -.000$ I.D., $1/2$ LONG WILL STOP.
2. BULB CONTACT ALIGNS WITH PIN NO.5 POSITION ± 10 DEGREES.