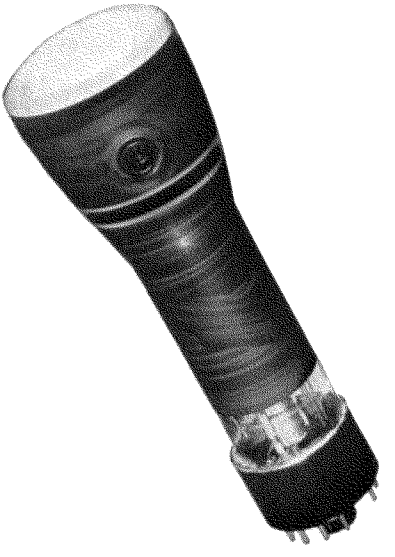
3JP- CATHODE-RAY TUBES

The Type 3JP- Cathode-ray Tubes are designed for oscillographic applications requiring a small short tube with very high light output and good deflection sensitivity. The intensifier electrode and extremely high current gun provide high excitation of the screen. The gun is designed so that the focusing electrode current under operating conditions is negligible. The 2" diameter neck and diheptal base provide adequate insulation between electrode leads for high altitude installation.

The four types differ only in the characteristics of the fluorescent screens. Other screen types may be obtained on special order.



GENERAL CHARACTERISTICS

Electrical

Heater Voltage	6.3 Volts
Heater Current	0.6 ± 10% Ampere
Focusing Method	Electrostatic
Deflecting Method	Electrostatic

Phosphor	No. 1	No. 2	No. 7	No. 11
Fluorescence	Green	Green	Blue	Blue
Phosphorescence	—	Green	Yellow	—
Persistence	Medium	Long	Long	Short

Direct Interelectrode Capacitances, Nominal

Cathode to all other electrodes	8 μμf.
Grid No. 1 to all other electrodes	8 μμf.
D1 to D2	2.5 μμf.
D3 to D4	2 μμf.
D1 to all other electrodes except D2	8 μμf.
D2 to all other electrodes except D1	7 μμf.
D3 to all other electrodes except D4	7 μμf.
D4 to all other electrodes except D3	8 μμf.

Mechanical

Overall Length	10 ± ¼ Inches
Greatest Diameter of Bulb	3 ± 1/16 Inches
Minimum Useful Screen Diameter	2¾ Inches
Bulb Contact (Recessed Small Ball Cap)	J1-22
Base (Medium Shell Diheptal 12-Pin)	B12-37
Basing	14J

Base Alignment

D1D2 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	
Angle between D3D4 and D1D2 traces	90 ± 3 Degrees

Bulb Contact Alignment

J1-22 Cap aligns with D1D2 trace	±10 Degrees
J1-22 Cap on same side as Pin No. 5	

MAXIMUM RATINGS—(Design Center Values)

Anode No. 3 Voltage (Accelerator High-Voltage Electrode) ..... 4,000 Max. Volts D-C
Anode No. 2 Voltage[1,2] ..... 2,000 Max. Volts D-C
Ratio Anode No. 3 Voltage to Anode No. 2 Voltage ..... 2.3 Max.
Anode No. 1 Voltage ..... 1,000 Max. Volts D-C

Grid No. 1 Voltage
- Negative Bias Value ..... 200 Max. Volts D-C
- Positive Bias Value ..... 0 Max. Volts D-C
- Positive Peak Value ..... 2 Max. Volts

Peak Heater Cathode Voltage
- Heater Negative with respect to cathode ..... 125 Max. Volts D-C
- Heater positive with respect to cathode ..... 125 Max. Volts D-C

Peak Voltage between Anode No. 2 and any deflection Electrode ..... 500 Max. Volts

TYPICAL OPERATING CONDITIONS

For Anode No. 3 Voltage of	1,500	3,000	4,000	Volts
For Anode No. 2 Voltage of	1,500	1,500	2,000	Volts
Anode No. 1 Voltage for focus	300 to 515	300 to 515	400 to 690	Volts
Grid No. 1 Voltage[3]	−22.5 to −67.5	−22.5 to −67.5	−30 to −90	Volts
Deflection Factors:				
D1 and D2	102 to 138	127 to 173	170 to 230	Volts D-C per Inch
D3 and D4	76 to 102	94 to 128	125 to 170	Volts D-C per Inch

Anode No. 1 Voltage for focus ..... 20% to 34.5% of Eb2 Volts
Grid No. 1 Voltage[3] ..... 1.5% to 4.5% of Eb2 Volts
Anode No. 1 Current for any operating condition ..... −50 to +10 Microamperes

Deflection Factors:
No 3rd Anode or Eb3 = Eb2
- D1 and D2 ..... 68 to 92 Volts D-C per Inch per Kilovolt of Eb2
- D3 and D4 ..... 50 to 68 Volts D-C per Inch per Kilovolt of Eb2

Eb3 = Twice Eb2
- D1 and D2 ..... 85 to 115 Volts D-C per Inch per Kilovolt of Eb2
- D3 and D4 ..... 62.5 to 85 Volts D-C per Inch per Kilovolt of Eb2

Spot Position (Undeflected)[4] ..... Within a 6 millimeter radius circle.

MAXIMUM CIRCUIT VALUES

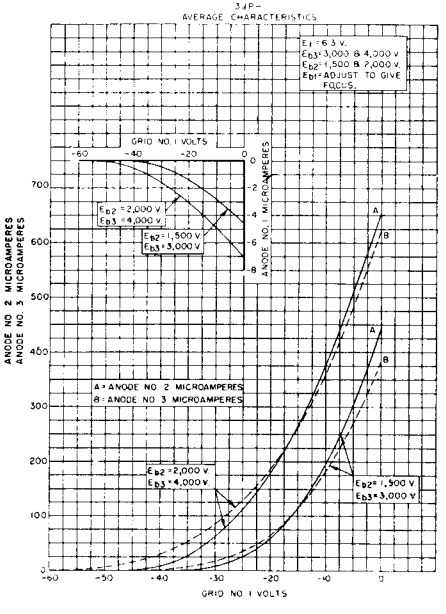
Grid No. 1 Circuit Resistance ..... 1.5 Max. Megohms
Resistance in any Deflecting Electrode Circuit[5] ..... 5 Max. Megohms

NOTES

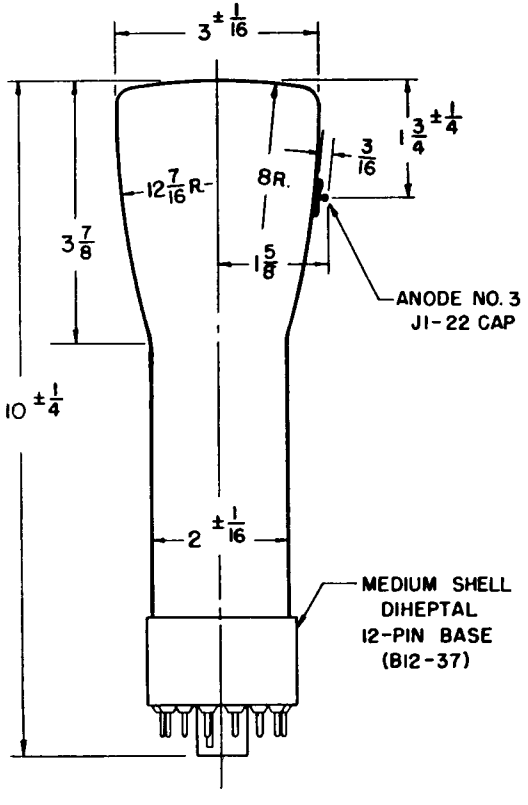
1. Anode No. 2 and Grid No. 2, which are connected together within the tube, are referred to herein as Anode No. 2.
2. The product of Anode No. 2 voltage and average Anode No. 2 current should be limited to 6 watts.
3. Visual extinction of undeflected focused spot.
4. Centered with respect to the tube face with the tube shielded.

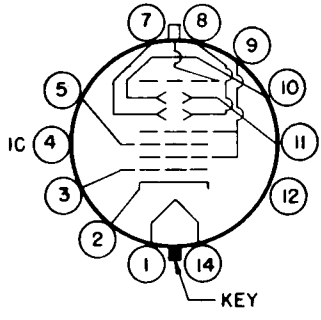
5. It is recommended that the deflecting electrode circuit resistances be approximately equal.

6. For optimum focus the average potentials of the deflection plates and second anode should be the same.



TYPE 3JP-





BOTTOM VIEW OF BASE

PIN NO.	ELEMENT
1	HEATER
2	CATHODE
3	GRID NO 1
4	INTERNAL CONNECTION
5	ANODE NO. 1
7	DEFLECTING ELECTRODE D_3
8	DEFLECTING ELECTRODE D_4
9	ANODE NO. 2, GRID NO. 2
10	DEFLECTING ELECTRODE D_2
11	DEFLECTING ELECTRODE D_1
14	HEATER