MINISTRY OF SUPPLY D.L.R.D.(A)/R.A.E.

# VALVE ELECTRONIC CV2200

| Specification MOSA/CV2200<br>Issue 3 Dated 11.3.54<br>To be read in conjunction with K1001 | SECURITY<br>Specification: UNCLASSIFIED<br>Valve: UNCLASSIFIED |
|---|---|

→ Indicates a change

TYPE OF VALVE - Disc Seal Common Grid Triode
CATHODE - Indirectly Heated
ENVELOPE - Metal - Glass
PROTOTYPE - VX.3098

MARKING

See K1001/4

| RATING | | Note |
|---|---|---|
| Heater Voltage (V) | 9.0 | A,B |
| Heater Current (A) | 3.8 | A |
| Max. D.C. Anode Voltage (V) | 800 | |
| Max. Pulse Anode Voltage (kV) | 4.5 | C,D |
| Max. Anode Dissipation (W) | 500 | C,E |
| Max. Mean Anode Current (During Pulse) (A) | 15 | |
| Amplification Factor | 45 | F |
| Mutual Conductance (mA/V) | 40 | F |
| **Efficiency at 1200 Mc/s** | | |
| 1. As Pulsed Oscillator | 35% | G |
| 2. As Pulsed Amplifier | 35% | |
| **Efficiency at 1500 Mc/s** | | |
| As Pulsed Oscillator | 20% | G |
| **CAPACITANCES (pF)** | | |
| Cag | 13.0 | H |
| Cge | 16.0 | H |
| Cae (Max.) | 1.0 | H |

DIMENSIONS AND CONNECTIONS

See Drawings on Pages 3 and 4

NOTES

A. Some air cooling of the heater and cathode glass to metal seals is required. This must be provided by a flow of air through the cathode connector insulator. The temperature of the cathode glass to metal seal shall not exceed 100°C.

B. When the valve is used under the above pulsed conditions the heater voltage should be kept at 9.0 V ± 5%.

C. Absolute maximum values.

D. Applied pulses not exceeding 3.0 μ sec. duration.

E. For this dissipation forced air cooling shall be provided by not less than 35 cu. ft. of air per minute through the anode cooler, with a pressure drop of 2 inches of water, and approx. 7 cu. ft. per minute of air through the grid cooler. The temperature of the glass to metal seals shall not exceed 100°C. These conditions apply for ambient temperatures up to 30°C.

F. Measured at Va = 1000 volts, Ia = 500 mA.

G. Used as a self oscillator with zero bias.

H. Measured at a frequency of 1.0 Mc/s.

To be performed in addition to those applicable in K1001

| | Test Conditions | | | | Test | Limits Min. | Limits Max. | No. Tested | Note |
|---|---|---|---|---|---|---|---|---|---|
| a | Measurement to be made at a frequency of 1 Mc/s | | | | CAPACITANCES (pF)<br>Cag<br>Cge<br>Cae | <br>10.5<br>13.5<br>- | <br>15.5<br>18.5<br>1.0 | <br>100%<br>100%<br>100% | |
| | Vh | Vg | Va | Ia mA | | | | | |
| b | 9.0 | -1000 | +4000 | 0 | Conditions to be maintained for a period of one min. without flashing | - | - | 100% | 1 |
| c | 9.0 | 0 | 0 | 0 | Ih (A) | 3.6 | 4.0 | 100% | |
| d | 9.0 | Adjust | 1000 | 500 | Vg (V) | -4 | -14 | 100% | |
| e | 9.0 | Adjust | 1000 | 500 | Reverse Ig (μA) | - | 50 | 100% | |
| f | 9.0 | Adjust | 900 | 500 | Vg change from value obtained in test (d) (V) | 1.6 | 3.0 | 100% | |
| g | 9.0 | Adjust Peak grid swing | 1000 | 500 | gm (mA/V)<br>± 1V. | 25 | - | 100% | |
| h | 9.0 | Adjust | 1000 | 20 | Vg (V) | - | -40 | 100% | |
| j | 9.0 | Anode and Grid strapped Peak applied voltage = 750V. Tp = 2 μ sec. Pulse shape sinusoidal p.r.f.= 50 c/s | | | Peak Emission (A) | 50 | - | 100% | |

NOTES

1. Test (b) forms part of the processing of the valve, and having been met during manufacture, shall not be repeated for acceptance testing. For this hot flash test, applied voltages shall be supplied through a circuit as in Fig.1, page 3.

2. For the above tests, forced air cooling, as detailed in Notes A and E on page 1 shall be used.

# CV2200

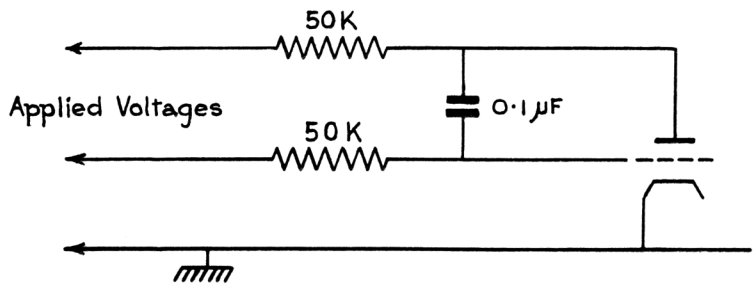
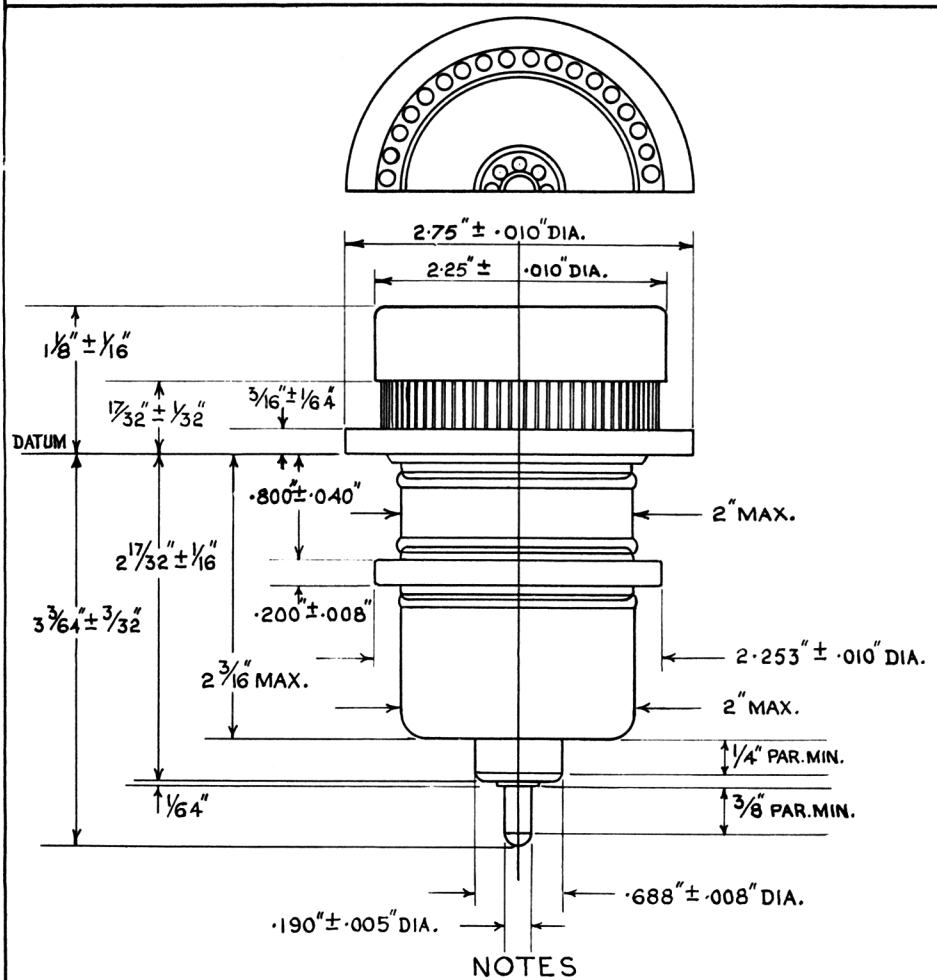
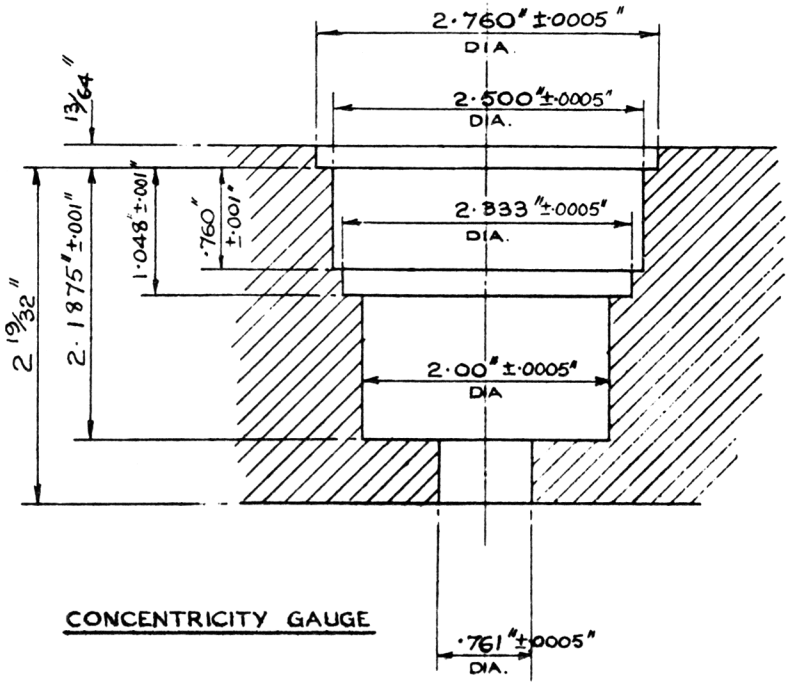



FIG.1

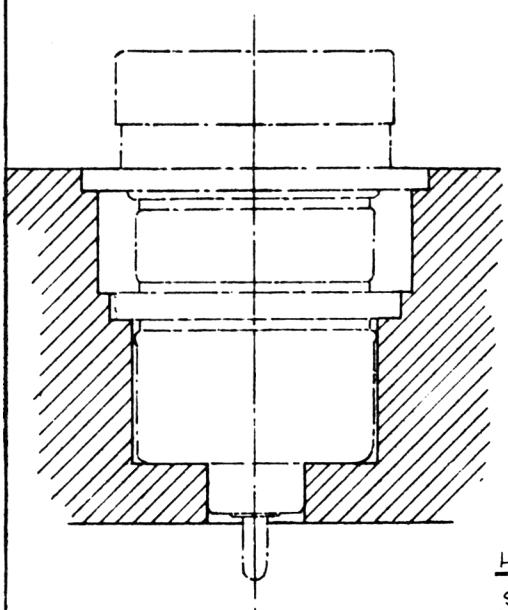



NOTES

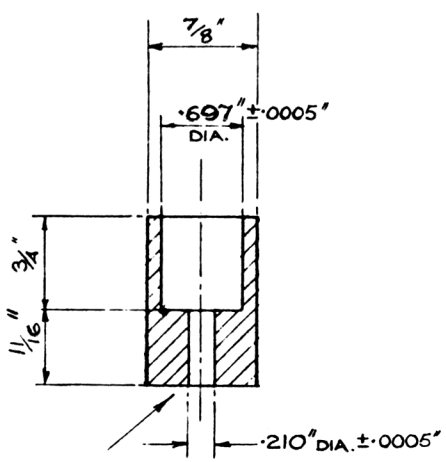
1. All external contact surfaces to be rhodium plated.
2. Rigid connection to be made to anode only.
3. The finished valve will be examined for alignment of anode, grid, cathode, and heater contacts, by means of the gauge on Page 4.




CONCENTRICITY GAUGE



SHOWING VALVE IN POSITION




HEATER PIN / CATHODE CONCENTRICITY CHECKED SEPARATELY WITH THIS GAUGE