VALVE ELECTRONIC **CV521**

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

| Specification AD/CV521 Issue No. 1.<br>Dated : 15. 10. 53.<br>To be read in conjunction with K1001. | SECURITY<br>Specification: Unclassified<br>Valve: Unclassified |
|---|---|

TYPE OF VALVE:- Cold Cathode Gas Discharge Tube.

ENVELOPE:- Glass.

PROTOTYPE:- R4410.

MARKING

See K1001/4 and Page 3.

| RATING | | | Note |
|---|---|---|---|
| Max. Anode Voltage | (V) | 1800 | |
| Max. Mean Anode Current | (mA) | 100 | |
| Max. Value of Discharge Capacitance | (μF) | 10 | 1 |
| Max. Frequency of Discharge | (pps) | 4 | |
| Trigger Voltage | (kV) | 20-30 | 2 |
| Ambient Temperature Range | (°F) | -37 to + 140 | |

DIMENSIONS

See drawing, page 3.

NOTES

1. To prolong tube life the value of the discharge capacitance should be kept as low as is practicable. A value not exceeding 4 μF is recommended.

2. Trigger voltages are provided by a high-voltage transformer, such as a car ignition coil, whose primary is supplied with appropriate voltage pulses and whose secondary is connected to a metal band, or to a few turns of bare wire, around a length not exceeding one inch of the mid-portion of the tube. Suitable trigger pulses may be obtained by discharging a 1 μF capacitor, charged to 450 V, across the primary of Ignition Coil, Admiralty Pattern, W6743.

Z.5148.R.

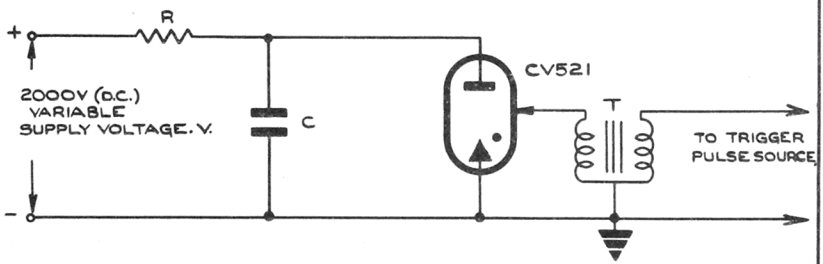
## TESTS

To be performed in addition to those applicable in K1001.

| | Test Conditions<br>See figure on page 3 for test circuit. In all tests except test 4, the capacitor C shall be 10 μF. | Test | Requirements | No. Tested |
|---|---|---|---|---|
| a | Set supply voltage V at 1500 V (d.c.). Then apply trigger voltage. | Starting Voltage | Tube must fire. | 100% |
| b | Set supply voltage V at 1900 V (d.c.). No trigger voltage. | Breakdown Voltage | Tube must not fire. | 100% |
| c | Set supply voltage V at 1650 V (d.c.). Apply trigger voltage at 1, and at 4, pulses per second. | Frequency Range | Tube must fire regularly. Test duration to be at least 1 minute. | 100% |
| d | Set supply voltage V at 1650 V (d.c.). Apply trigger voltage at 4 p.p.s. C = 4 μF. (As an interim measure C shall be 4 μF. When manufacture has been established this test will be done with C = 10 μF). | Life Test | 300 hours min. (Life ends when tube fails to fire, fires erratically or discharges continuously). | T.A. only. |
| e | Set supply voltage V at 1650 V (d.c.). Apply trigger voltage at 4 p.p.s. | Ambient Temperature Test | Tubes must operate satisfactorily over ambient temperature range of -35°F to + 140°F. | Design Test only. (To be done by manufacturers). |

# TESTS (CONTD.)
# TEST CIRCUIT.

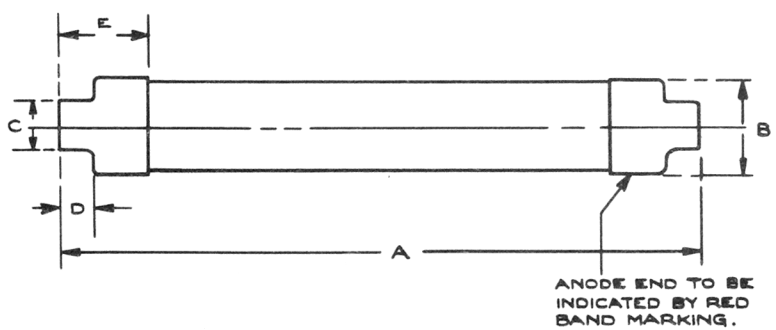
CV521




C = 10 /uF for all tests except Life Test.

T = High-Voltage Transformer.

R = 1000 Ω. (If the impedance of the supply voltage source is appreciable, this value of the charging resistance R is adequate; but, if the source impedance is low, then R must be of such higher value (e.g. 5000 Ω) as will ensure that the tube will return to the non-conducting condition between pulses).




| DIMENSIONS IN INCHES. | | |
|---|---|---|
| DIM. | MIN. | MAX. |
| A | 9·25 | 9·75 |
| B | 1·125 | 1·185 |
| C | 0·562 | 0·625 |
| D | 0·495 | 0·515 |
| E | 1·300 | 1·412 |