

ELECTRONIC VALVE SPECIFICATIONS

SPECIFICATION AD/CV2175 ISSUE NO. 5., DATED 6.1.56

AMENDMENT NO. 1

Page 2 TESTS

- (i) After, "To be performed in addition to those applicable in K1001," insert "The cathode illumination test K1001/5A.3.9.2. shall not apply."
- (ii) Test Clause (a): In the column headed "Test Conditions," delete "K1001/5A.13" and substitute "K1001/5A.4.6."
- (iii) Test Clause (d): In the column headed "Test Conditions," delete "K1001/5A.3.2" and substitute "K1001/5A.4.1.2."

T.V.C. for A.S.W.E.

December 1964.

NJ.253565.

ADMIRALTY SIGNAL AND RADAR ESTABLISHMENT

| | | |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------|
| Specification AD/CV2175 Issue No. 5 dated 6.1.56 To be read in conjunction with K1001, BS448 and BS1409 | <u>SECURITY</u> | |
| | <u>Specification</u> Unclassified | <u>Valve</u> Unclassified |

→ Indicates a change

| | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|------------------------------------------|----------------|
| <u>TYPE OF VALVE:-</u> Cathode Ray Tube <u>TYPE OF DEFLECTION:-</u> Electrostatic Symmetrical. <u>TYPE OF FOCUS:-</u> Electrostatic <u>BULB:-</u> Glass. Internally coated with conductive coating. <u>SCREEN DIAMETER:-</u> 2 $\frac{3}{4}$ inches (approx). <u>SCREEN:-</u> GG5 <u>PROTOTYPE:-</u> DG7-5 | | | <u>MARKING</u> See K1001/4 | |
| | | | <u>BASE</u> B.S.448/B9G | |
| <u>RATING</u> | | Note | <u>CONNECTIONS</u> | |
| | | | Pin | Electrode |
| Heater Voltage (V) | 6.3 | | | |
| Heater Current (A) | 0.31 | | 1 | h and k |
| Max. Second Anode Voltage (V) | 1000 | A | 2 | y1 |
| Max. First Anode Voltage (V) | 400 | A | 3 | y2 |
| Max. Negative Grid Voltage (V) | 100 | A | 4 | a2 and Coating |
| Min. Sensitivity x Plates (mm/V) | 104/Va2 | | 5 | x2 |
| Min. Sensitivity y Plates (mm/V) | 168/Va2 | | 6 | x1 |
| Max. Voltage between x Plates (V) | 750 | A | 7 | a1 |
| Max. Voltage between y Plates (V) | 450 | A | 8 | g |
| | | | 9 | h |
| <u>TYPICAL WORKING CONDITIONS</u> | | | <u>DIMENSIONS</u> See drawing, Page 4 | |
| Second Anode Voltage (V) | 800 | | | |
| First Anode Voltage (V) | 200 to 300 | | | |
| Negative Grid Voltage (V) | 0 to 50 | | | |
| Beam Current (μ A) | 0 to 100 | | | |
| <u>NOTE</u> | | | | |
| A. Absolute Maximum Value. | | | | |

To be performed in addition to those applicable in K1001.

| | Test Conditions | | | | Test | Limits | | No. Tested |
|---|-----------------------------------------------------------------------------------------------------------|---------|----------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|------------|
| | Vh (V) | Va2 (V) | Va1 (V) | Vg (V) | | Min. | Max. | |
| a | See K1001/5A.13 | | | | <u>Capacitances (pF)</u> i. Each x or y plate to all other electrodes (except the other x or y plate which should be earthed). ii. Both x plates to both y plates. iii. Grid to Cathode. | - | 7.0 | 5% |
| b | 6.3 | 0 | 0 | 0 | Ih (A) | 0.28 | 0.34 | 100% |
| c | 6.3 | 800 | Adjust to opt: focus | Adjust to cut-off | <u>Cut-off</u> Negative Vg. (V) | - | 4.8 | 100% |
| d | 6.3 | 800 | -do- | -50 | <u>Grid Insulation</u> (a) Leakage Current (μ A) (b) Increase in Voltmeter reading | - | 10 | 100% |
| | or (b) With recommended method of K1001/5A.3.2 and using 5 megohms resistor. | | | | | - | 100% | 100% |
| e | 6.3 | 800 | -do- | Adjust | i. Negative Vg. (V) ii. Va1 (V) | 1 160 | - 34.0 | 5% |
| | Vg adjusted to give light output of 0.014 candela on an optimum focus close raster of area 40 mm x 40 mm. | | | | | | | |
| f | 6.3 | 800 | -do- | Adjust | <u>Line Width</u> at Ia2 = 0.5 μ A (mm) at Ia2 = 10.0 μ A (mm) | - - | 0.8 1.2 | 100% |
| | The trace on the screen shall be a circle of 50 mm diameter and the trace frequency shall be 50 c/s. | | | | | | | |
| g | 6.3 | 800 | -do- | Adjust to give just visible spot | <u>Deflection Sensitivities</u> x Plate (mm/V) y Plate (mm/V) | $\frac{104}{Va2}$ $\frac{168}{Va2}$ | $\frac{152}{Va2}$ $\frac{224}{Va2}$ | 5% |
| h | 6.3 | 800 | -do- | -do- | <u>Spot Displacement</u> Deviation of spot from centre of Screen. (mm) | - | 3.5 | 100% |

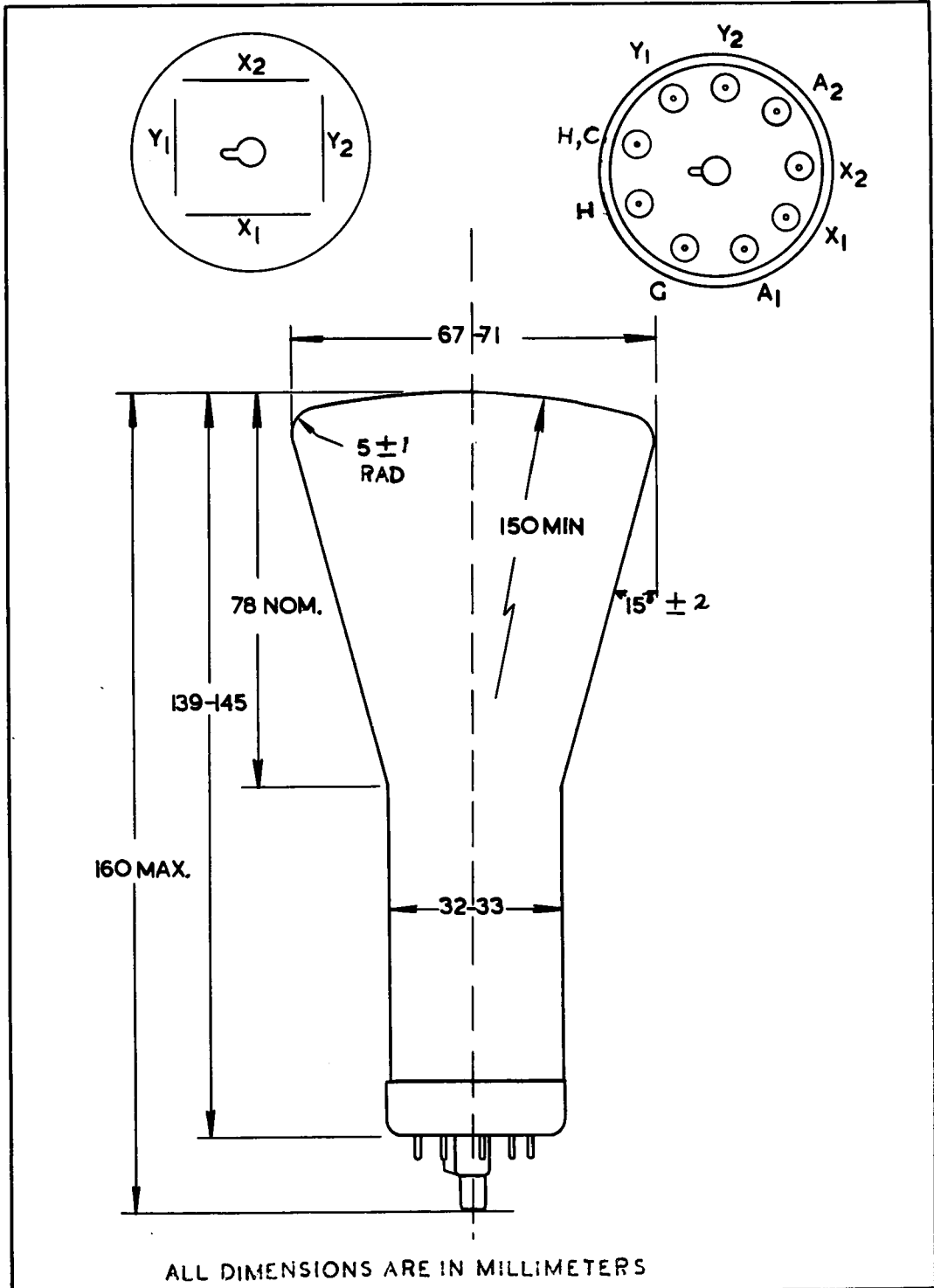
CV. 2175/5/2

TESTS

To be performed in addition to those applicable in K1001.

| | Test Conditions | | | | Test | Limits | | No. Tested |
|----------------------------------------------------------------------------|-----------------|---------|----------------------|-----------------------------------|-----------------------------------------------------------------------------------------------|--------|-------|------------|
| | Vh (V) | Va2 (V) | Va1 (V) | Vg (V) | | Min. | Max. | |
| j | 6.3 | 800 | Adjust to opt: focus | Adjust to give just visible spot. | <u>Useful Screen Area</u> | 61 | - | 100% |
| | | | | | Diameter (mm) | | | |
| Deflection to cover circle of stated diameter centred on centre of screen. | | | | | | | | |
| k | 6.3 | 800 | -do- | -do- | i. Orientation of x axis of deflection relative to a plane through base spigot key and pin 5. | 79° | 101° | 5% |
| | | | | | ii. Angle between x and y axis of deflection. | 88.5 | 91.5 | 5% |
| l | 6.3 | 800 | -do- | -do- | <u>Trapezoidal Distortion</u> | 87.5° | 92.5° | 5% |
| | | | | | A screen area of at least 40 mm x 40 mm to be scanned. | | | |

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CV2175/5/4