

MINISTRY OF AIRCRAFT PRODUCTION
DIRECTORATE OF COMMUNICATIONS DEVELOPMENT.

CATHODE RAY TUBE **VCR515.**
 REF. NO. 10E/13026
CV 1515

Test Spec. No.	Date	Associated Drawings	Issued with:-
D.C.D., W.T.1353 Issue No. 2.	17. 9. 42.		D.C.D., W.T.1400 ←

<u>TYPE OF DEFLECTION:</u> Electrostatic <u>BULB:</u> Internally coated with conductive coating <u>SCREEN:</u> Blue or Green <u>COMMERCIAL PROTOTYPE:</u> M.X.1. of E.M.I.Ltd.			<u>MARKING</u> VCR.515 10E/13026
<u>RATING</u> Filament Voltage (volts) 4.0 Filament Current (amps) 1.05 Maximum Second Anode Voltage (kV) 1.2 Desirable Spot Size (mm) 1.0 "X" Plate Sensitivity (mm/V) 480/Va2 "Y" Plate Sensitivity (mm/V) 400/Va2 <u>Typical Operating Conditions</u> Second Anode Voltage (kV) 1.2 First Anode Voltage (volts) 215	Noted.	<u>BASE</u> Type D. See Drg. No. W.T.27468 of D.C.D., W.T. 1400 ←	<u>DIMENSIONS AND BASE CONNECTIONS</u> See Page 4. ←
<u>CAPACITANCES μpF</u> Each "X" plate to all other electrodes 9.0 Each "Y" plate to all other electrodes 5.5 Grid to all other electrodes 9.5 One "X" plate to one "Y" plate 0.005			
<u>NOTES</u>			

→ Indicates a change.

VCR515/2/i.

TESTS.

CATHODE RAY TUBE VCR515.

To be performed in addition to those applicable in D.C.D., W.T. 1400

Clause	Test Conditions				Test	Limits		No. Tested.
	Vh	Va2	Va1	Vg		Min.	Max.	
a.					<u>Direct inter-electrode capacitances</u> (pF) 1. Each X plate to all other electrodes 2. Each Y plate to all other electrodes 3. Grid to all other electrodes 4. One X plate to one Y plate.	-	15	5%(5)
b.	Cathode 50 volts positive to heater				Heater-cathode current (microamps)	-	200	100%
c.	4.0	0	0	0	Heater-current (amps)	0.8	1.3	100%
d.	4.0	1200	adjusted	adjusted	1. The line width shall not be greater than that of standard tube 2. Focusing voltage Va1 (volts)	180	250	100%
e.	4.0	1200	adjusted	adjusted	Grid Voltage Vg	Shall not be positive with respect to cathode, value to be noted.		100%
f.	4.0	1200	as in test (d)	adjusted to give cut-off	1. Grid voltage Vg (volts) 2. Increase in negative value of Vg compared with value noted in test (e)	-25	-60	100%
			Raster as in test (e)			-	40	100%
g.	4.0	1200	as in test (d)	Within working range	<u>Grid Insulation Leakage current</u> (microamps) Increase in volt-meter reading.	-	40	100%
	Recommended method:- See Clause 4.4.2 of D.C.D., W.T. 1400 Insert 1 megohm.					-	100%	

Specification No. D.C.D., W.T.1353.

VCR515/2/11.

Tests Contd. overleaf....

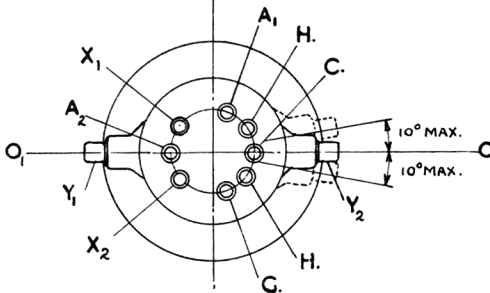
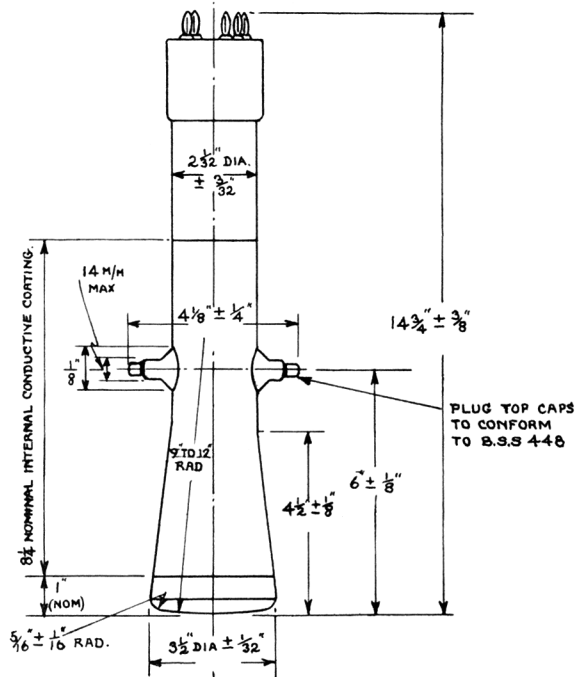
REF. NO. 10E/13026.

TESTS (CONTD.).

CATHODE RAY TUBE VCR515.

Clause	Test Conditions				Test	Limits		No. Tested
	Vh	Va2	Va1	Vg		Min.	Max.	
→ h.	4.0	1200	as in test (d)	Any convenient value	1. X deflection plate sensitivity (mm per volt) 2. Y deflection plate sensitivity (mm per volt)	$\frac{4.10}{Va2}$ $\frac{3.40}{Va2}$	$\frac{5.50}{Va2}$ $\frac{4.60}{Va2}$	10% (10) 10% (10)
→ j.	4.0	1200	as in test (a)	any convenient value	Deviation of spot from centre of screen (mm)	-	12	100%
→ k.	4.0	1200	as in test (d) Deflections to cover the stated circle centred on centre of screen	any convenient value	Useful screen area Diameter (mm)	70	-	100%
→ l.	4.0	1200	as in test (d) Angle measured relative to axis O - O' shown in Drg. No. W.T.27840	any convenient value	Orientation of axes of deflection Y axis	-10°	+10°	
→ m.	4.0	1200	as in test (d)	any convenient value	Angle between X axis and Y axis	88°	92°	100%
→ n.	4.0	1500	See clause 4.13 of D.C.D., W.T.1400		Over Voltage Test			100%

CATHODE RAY TUBE TYPE V.C.R. 515.



ENLARGED VIEW IN DIRECTION OF ARROW
SHOWING BASE CONNECTIONS.

WHEN VIEWING THE SCREEN WITH THE TUBE POSITIONED SUCH THAT THE TERMINAL A_2 IS DOWNWARDS, A POSITIVE VOLTAGE APPLIED TO THE TERMINAL X_1 SHALL DEFLECT THE SPOT TO THE RIGHT AND A POSITIVE VOLTAGE APPLIED TO THE TERMINAL Y_1 SHALL DEFLECT THE SPOT DOWNWARDS.