S-D57

Applications Laboratory
Brimsdown, Enfield, Middlesex.

SUBJECT General

DATE: 26th August, 1964.
T.D.S. No 6-D13/30GH-0-1A

D13-30GH	GENERAL	Oscilloscope Tube

This 5 in. diameter, all electrostatic cathode ray tube has a large display area and is intended for use as an x-y plotter. It has a spiral post deflection accelerator and a means of beam blanking at anode potential.
The standard phosphor is GH, but GL, GM and BE can be supplied to special order.

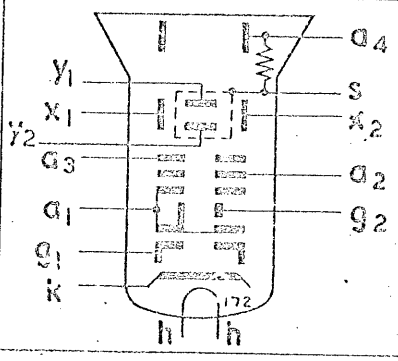
Heater Voltage Vh 6.3 V | RATINGS | Heater Current Ih 0.3 A

	Absolute Values	max	min	
Fourth anode voltage	V_{a4}	6.0	1.5	kV
Third anode voltage	V_{a3}	2.5	0.7	kV
Second anode voltage	V_{a2}	1.0	0	kV
First anode voltage	V_{a1}	2.5	0.7	kV
Negative grid voltage	$-V_{g1}$	200	1.0	V
Beam blanking voltage	V_{g2}	2.5	0.6	kV
x-plate to third anode voltage	V_{x-a3}	500	-	V
y-plate to third anode voltage	V_{y-a3}	500	-	V
x-plate to third anode resistance	R_{x-a3}	5.0	-	MΩ
y-plate to third anode resistance	R_{y-a3}	100	-	kΩ
Control grid to cathode resistance	R_{g1-k}	1.5	-	MΩ
Second anode current (leakage)	I_{a2}	10	-	μA
P.D.A. ratio (V_{a4}/V_{a3})		3:1		
Post deflection helix resistance		-	50	MΩ

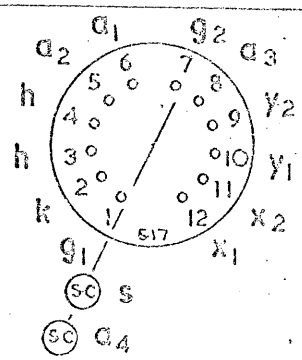
All voltages referred to cathode unless otherwise stated.

CAPACITANCES	pF
g_1/all	10.8
k /all	5.2
x_1/x_2	2.6
y_1/y_2	1.3
x_1/all, less x_2	6.7
x_2/all, less x_1	6.7
y_1/all, less y_2	5.9
y_2/all, less y_1	5.9
g_1,k/x_1,x_2,y_1,y_2	2.25

BASE - B12F



CAP - CT8



Black 3a

CD No. 172
BD No. 517

V3154

→ — INDICATES A CHANGE SINCE PREVIOUS ISSUE.

Thorn Radio Valves and Tubes Limited

Applications Laboratory
BRIMSDOWN, ENFIELD, MIDDLESEX.

SUBJECT: Typical Operation

Date: 27th September, 1967
T.D.S.No. 6-D13/30GH-0-2 C

TYPICAL OPERATION

All voltages referred to cathode unless otherwise stated.

Fourth anode voltage	V_{a4}	2.0	2.5	4.0	kV
Mean deflector plate potential		1.0	1.25	2.0	kV
Third anode to mean y-plate voltage for astigmatism correction	$V_{a3-y(av)}$	±50	±50	±50	V
Second anode voltage for focus	V_{a2}	80 to 240	100 to 300	160 to 480	V
First anode voltage	V_{a1}	1.0	1.25	2.0	kV
Interplate shield to mean x-plate voltage for optimum raster shape	$V_{s-x(av)}$	±50	±50	±50	V
Control grid voltage for spot cut-off	V_{g1}	-36 to -68	-45 to -85	-72 to -135	V
Maximum beam blanking to first anode voltage for I_k = 500 µA	V_{g2-a1}	-45*	-45*	-50*	V
Minimum x-plate sensitivity	$S_{x(min)}$	11 to 13.5	14 to 17	22 to 27	V/cm
Minimum y-plate sensitivity	$S_{y(min)}$	10 to 13.2	12.5 to 16.5	20 to 26.5	V/cm
Minimum screen area (Corners cut-off)		10 x 10	10 x 10	10 x 10	cm^2
Line width at centre } For I_b = 5µA		0.65	0.6	0.5	mm
Line width at edge } For I_b = 5µA		0.8	0.7	0.6	mm

* The beam is unblanked when $V_{g2} = V_{a1}$. This grid 2 electrode should not be used as a brilliance control.

Raster Distortion.

At the recommended P.D.A. ratios, over the nominally useful screen area, the raster distortion will not be greater than 2%. The edges of a test raster will fall between two concentric squares 8.0 cm x 8.0 cm and 8.2 cm x 8.2 cm. Corners cut to 120 mm minimum diameter. Rectangularity of x and y axes is 90° ± 1°

It is not advisable that the deflector plates be run asymmetrically, or severe raster distortion could result and the focus quality could not be guaranteed. It is preferable that the tube be operated with mean x and y potentials equal, otherwise the raster distortion and focus quality will suffer and the limits for V_{a3} and V_s will differ from specification.

Magnetic Shielding.

Adequate magnetic shielding is required. In addition due attention should be paid to the position of the tube relative to transformers and chokes.

T 1997

Thorn Radio Valves and Tubes Limited

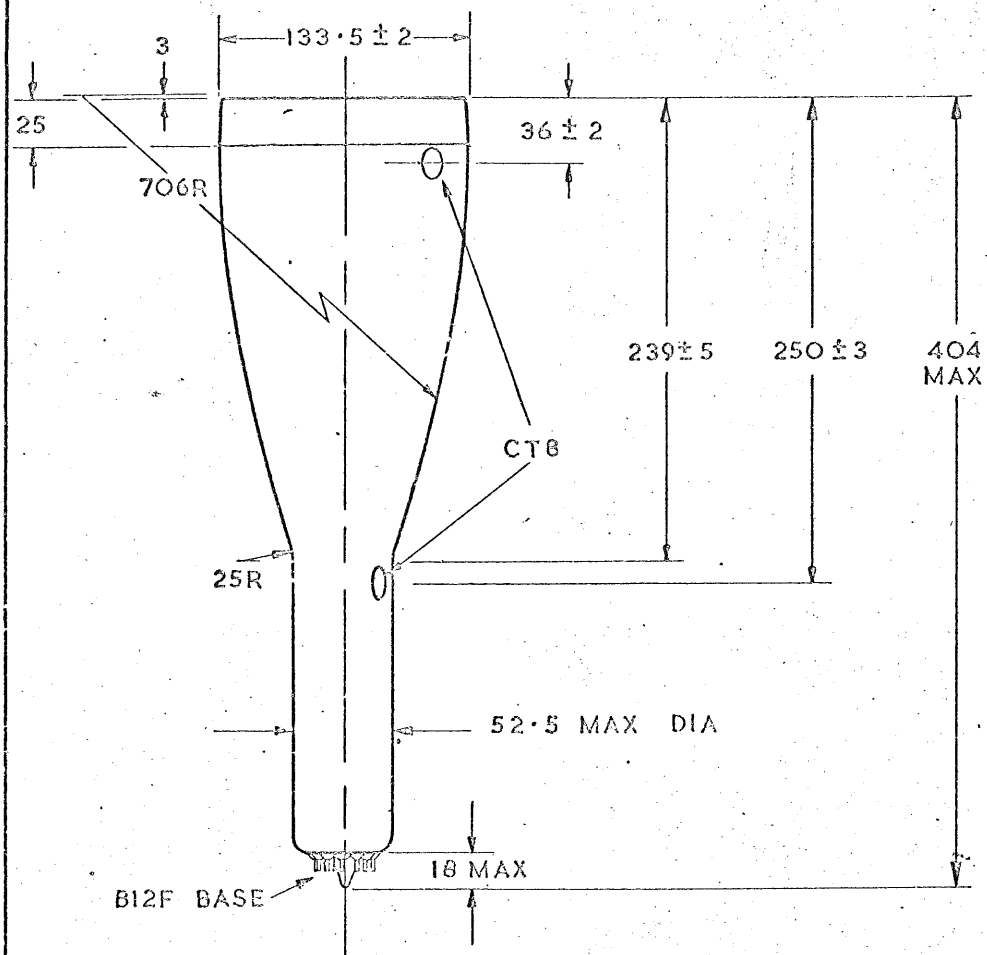
Applications Laboratory
BRIMSDOWN, ENFIELD, MIDDLESEX.

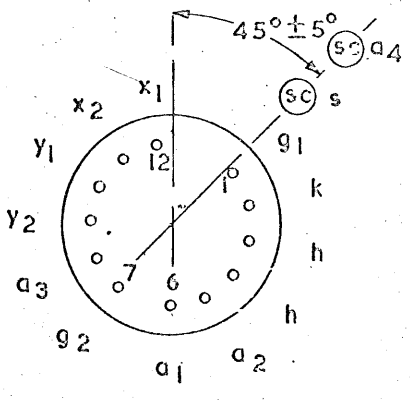
SUBJECT: Outline Drawing.

Date: 10th October. 1968.
T.D.S.No. 6-D13/30GH-90-1C

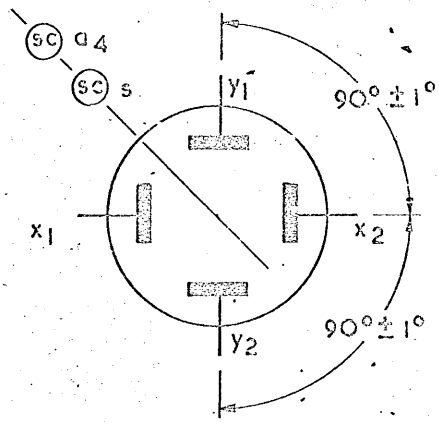
D13 - 30GH

0219A





VIEWED FROM PINS FREE END



VIEWED FROM SCREEN END.
PIN 6 AT BOTTOM

Mounting Position - Unrestricted.

It is advisable to support the tube near the screen, and at a second point on the parallel neck near the base, the tube should not be subjected to any stress from the use of clamps and should not be suspended by the base.

All dimensions in mm

Not to be scaled

Black 3a

V3154

10.22.4.64.