



# CRT DATA

T5030

Revision A

1-15-65

## DESCRIPTION

The T5030 is a 5-inch, flat-faced cathode-ray tube designed for oscilloscope use. The T5030 has electrostatic focus and deflection, and a helical post accelerator.

## ELECTRICAL DATA

Focusing method .....	Electrostatic
Deflecting method .....	Electrostatic
Direct interelectrode capacitance, approximate:	
Cathode to all other electrodes .....	5.0 pf
Grid no. 1 to all other electrodes .....	7.9 pf
D1 to D2 .....	2.6 pf
D3 to D4 .....	1.5 pf
D1 to all other electrodes .....	4.9 pf
D2 to all other electrodes .....	4.9 pf
D3 to all other electrodes .....	3.2 pf
D4 to all other electrodes .....	3.2 pf
B2 to all other electrodes .....	7.7 pf

## MECHANICAL DATA

Overall length .....	16 ±1/8 inches
Greatest bulb diameter .....	5-1/4 ±1/16 inches
Minimum useful screen diameter .....	4-1/2 inches
Bulb number .....	Special
Base .....	B14-38
Basing .....	Special
Base alignment:	
Base keyway aligns with D3-D4 trace .....	±10°
Positive voltage on D1 deflects beam approximately toward pin no. 11	
Positive voltage on D3 deflects beam approximately toward pin no. 8	
Angle between D1-D2 and D3-D4 trace .....	90° ±1°

## RATINGS (absolute maximum values)<sup>1</sup>

Heater voltage .....	6.3 volts ac
Heater current at 6.3 volts .....	0.6 ±10% amp
Screen voltage .....	4000 volts dc max
Isolation shield voltage .....	4000 volts dc max
Average deflection plate voltage .....	4000 volts dc max
Astigmatism electrode voltage .....	4000 volts dc max
Focusing electrode voltage .....	950 volts dc max
Accelerator voltage .....	4000 volts dc max
B2 blanking plate voltage .....	4000 volts dc max
Accelerator input .....	3 watts max

Grid no. 1 voltage:	
Negative-bias value .....	150 volts dc max
Positive-bias value .....	0 volts dc max
Positive-peak value .....	2 volts dc max
Peak heater-cathode voltage:	
Heater negative to cathode .....	180 volts dc max
Heater positive to cathode .....	125 volts dc max
Peak voltage between astigmatism and/or any deflection electrode .....	500 volts dc max

#### TYPICAL OPERATING CONDITIONS<sup>1</sup>

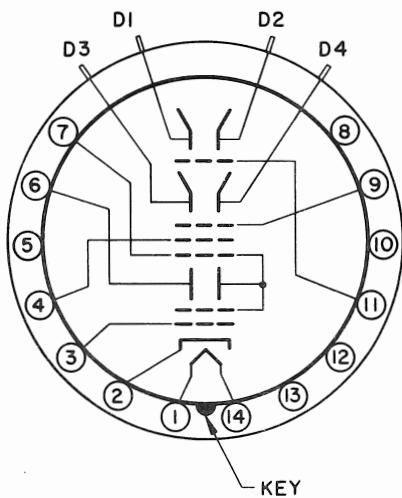
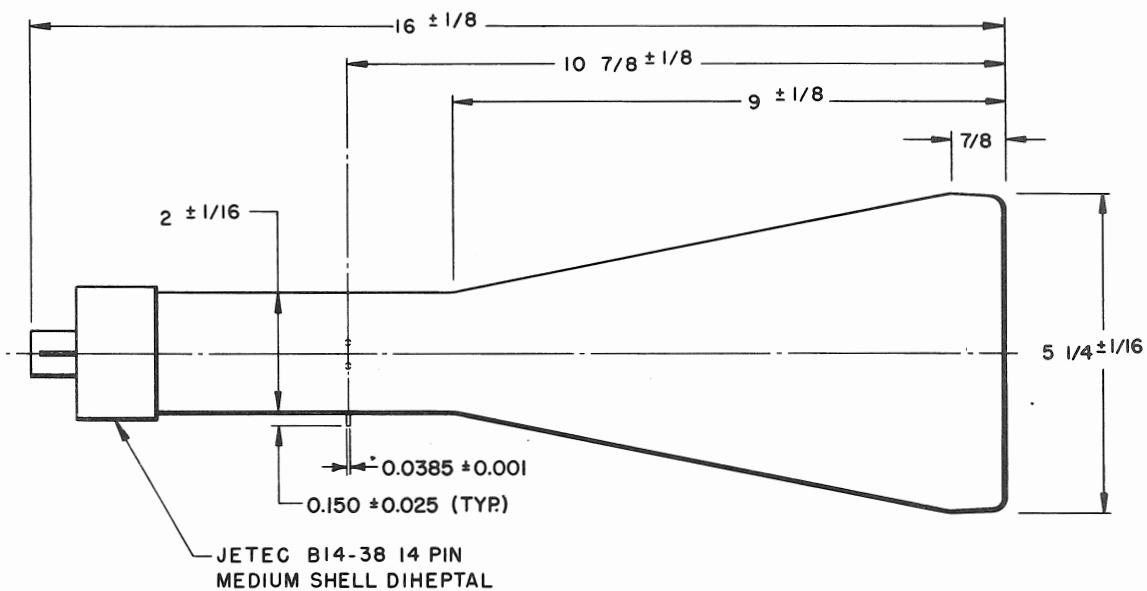
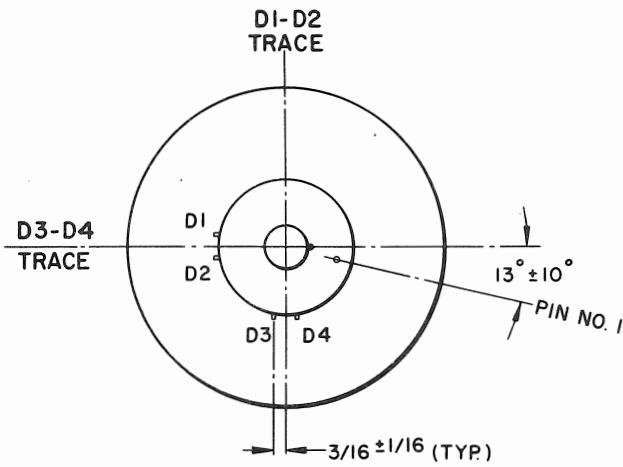
Screen voltage .....	3000 volts dc
Isolation shield voltage .....	3000 volts dc.
Average deflection plate voltage .....	3000 volts dc
Astigmatism electrode voltage <sup>2</sup> .....	2850 to 3150 volts dc
Focusing electrode voltage <sup>2</sup> .....	400 to 700 volts dc
Accelerator and B1 blanking plate voltage .....	3000 volts dc
Grid no. 1 voltage <sup>3</sup> .....	-45 to -75 volts dc
Deflection factors:	
D1 and D2 .....	18.8 to 21.0 volts dc/cm
D3 and D4 .....	15.3 to 16.8 volts dc/cm
Useful scan D1-D2 <sup>4</sup> .....	8 cm
Useful scan D3-D4 <sup>4</sup> .....	10 cm
Blanking plate voltage (B1-B2)	
For visual cut-off at $I_k = 200 \mu\text{a}$ .....	$\pm 75$ volts dc max
Focusing electrode current for any operating condition .....	-10 $\mu\text{a}$ to +10 $\mu\text{a}$
Spot position (undeflected) <sup>5</sup> :	
Horizontal .....	$\pm 8.0$ mm from geometric center
Vertical .....	$\pm 5.0$ mm from geometric center
Pattern distortion at 100% useful scan <sup>6</sup> .....	1.5% max

#### MAXIMUM CIRCUIT VALUES

Grid no. 1 circuit resistance .....	1.5 M $\Omega$ max
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#### NOTES

1. All voltages taken with respect to cathode.
2. Recommended range. Adjust for best overall focus.
3. Visual extinction of undeflected spot.
4. The deflection plates intercept part of the electron beam near the edge of scan; therefore, a low-impedance deflection drive is desirable.
5. Connect free deflection electrodes to accelerator.
6. With a 8 x 10 cm rectangular raster centered on the face of the tube, the raster edges will not deviate from straight parallel lines by more than 1.0 mm total on the left and right edges, nor by more than 1.0 mm total at the top and bottom.



### BASE CONNECTIONS

- 1, 14 HEATER
- 2 CATHODE
- 3 GRID NO. 1 (CONTROL)
- 4 FOCUSING ELECTRODE
- 5, 8, 10 N.C.
- 12, 13
- 6 B 2 BLANKING PLATE
- 7 ACCELERATOR  
B 1 BLANKING PLATE RETURN
- 9 ASTIGMATISM ELECTRODE
- 11 ISOLATION SHIELD

MARK	DATE	DESCRIPTION	BY	APPR
		CATHODE-RAY TUBE DIVISION <b>TEKTRONIX, INC.</b> PORTLAND, OREGON, U.S.A.		
TUBE TYPE:		T 5030	DATE: 7-28-64 MOD. C	