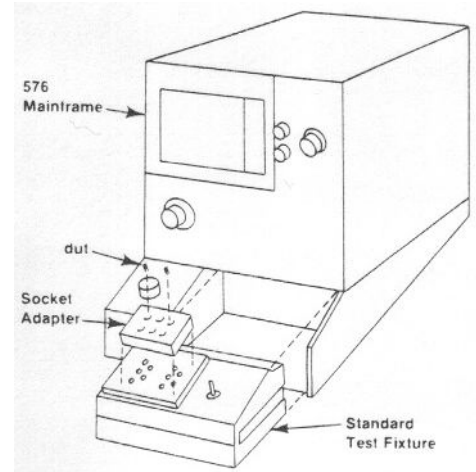


Curve Tracers

General Purpose System with Digital Readout Available



With compliments

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The TEKTRONIX 576 Curve Tracer System continues to hold the title "standard of the industry." The 576 accepts three different test fixtures: the Standard Test Fixture, 172 Programmable Test Fixture (described on pg 174), and the 176 Pulsed High-Current Fixture (described on pg 175). The 576 is an excellent general purpose Curve Tracer System that performs well in applications where high current testing is required.

With the Standard Test Fixture, the Collector Supply of the 576 delivers up to 220 watts peak to the dut. The Step Generators can deliver up to 2A in both its current and voltage modes of operation. Of course, with the 176, the 576 is capable of pulsed collector operation up to 200 amps peak.

One of the features that sets the 576 apart from the 577 is the display area READ-OUT. Adjacent to 576's crt are alphanumeric indicators of vertical and horizontal deflection factor, step amplitude, and Beta/div or gm/div. The Beta or gm readout saves the operator from the arithmetic usually necessary to arrive at these parameters. The READ-OUT also provides a permanent record of major knob settings in 576 crt photographs.

Another unique feature of the 576 is the Calibrated Display Offset. Combining a calibrated position control and a display magnifier, the Display Offset increases resolution and allows the operator to make more precise measurements.

Other features of the 576 Curve Tracer are: adjustable current limiting in the Step Generator, either 300 μ s or 80 μ s pulse width in pulsed base operation, pushbuttons to check display zero and calibration, and illuminated graticule.



CHARACTERISTICS

COLLECTOR SUPPLY

Modes — NORM: positive or negative full wave rectified ac (line frequency); dc: positive or negative dc. LEAKAGE: emitter current rather than collector current measurements with an increase in the basic vertical deflection factor to 1 nA/div.

Voltages — Peak open circuit voltages within $\pm 35\%$ and $\pm 5\%$ of indicated range.

Range	15 V	75 V	350 V	1500 V
Max Continuous Peak Current	10 A	2 A	0.5 A	0.1 A
Peak Pulse Mode Current	≥ 20 A	≥ 4 A	≥ 1 A	≥ 0.2 A

Series resistance is from 0.3 Ω to 6.5 M Ω in 12 steps, all within 5% or 0.1 Ω . Peak power limit setting: 0.1 W, 0.5 W, 2.2 W, 10 W, 50 W, 220 W.

Safety Interlock — Protects operator from 75 V, 350 V, and 1500 V collector voltages.

STEP GENERATOR

Current Mode — Step/offset amplitude range is 5 nA/step (with 0.1X MULT) to 200 mA/step, 1-2-5 sequence. Max current (steps and aiding offset) is X20 AMPLITUDE setting, except X10 (2 A) at 200 mA/step and X15 (1.5 A) at 100 mA/step. Max voltage (steps and aiding offset) is at least 10 V. Max opposing offset current is X10 AMPLITUDE switch setting or 10 mA, whichever is less. Max opposing voltage is limited at 1 V to 3 V.

Voltage Mode — Step/offset amplitude range is 5 mV/step (with 0.1X MULT) to 2 V/step, 1-2-5 sequence. Max voltage (steps and aiding offset) is X20 AMPLITUDE switch setting, 40 V max. Max current (steps and aiding offset) is at least 2 A at 10 V, derating linearly to 10 mA at 40 V. Short circuit current limiting is 20 mA, 100 mA, 500 mA $\pm 100\%$, -0% ; 2 A $\pm 50\%$, -0% . Max opposing offset voltage; X10 AMPLITUDE switch setting. Max opposing current; limited at 5 mA to 20 mA.

Accuracy — Incremental; within 5% between steps, within 10% with 0.1X MULT. Absolute; within 2% of total output including offset, or 1% of AMPLITUDE setting, whichever is greater. Offset multiplier; 0 to X10 the AMPLITUDE setting, continuously variable. Polarity AID(s) or OPPOSE(s) the step polarity.

Step Rates — 0.5X, 1X (NORM), and 2X the collector supply rate. The collector supply rate is twice line frequency.

Pulsed Steps — Approx 80 μ s or 300 μ s width, at NORM or 0.5X rates.

Step/Offset Polarity — The STEP GEN polarity is the same as the COLLECTOR SUPPLY polarity, and positive in the ac position. Step polarity may be inverted by actuating the INVERT pushbutton.

Step Family — REPETITIVE or SINGLE FAMILY (manually actuated).

Number of Steps — Digitally selectable between 1 and 10.

DEFLECTION CONTROLS

Display Accuracies — As percentage of highest on-screen value.

NORM and DC MODES	NOR-MAL	OFFSET and MAGNIFIED with CENTERLINE VALUE from:		
		100-40 div	35-15 div	10-0 div
Vert Collector Current	3%	2%	3%	4%
Horiz Collector Volts	3%	2%	3%	4%
Horiz Base Volts	3%	2%	3%	4%
LEAKAGE MODE				
Vert Emitter Current/div:				
10 nA-2 mA/div	3% \pm 1 nA			
1 nA-200 μ A/div (magnified)		2% \pm 1 nA	3% \pm 1 nA	4% \pm 1 nA
5, 2, 1 nA/div	5% \pm 1 nA			
Horiz Collector or Base Volts with Emitter Current/div of:				
$\geq 1 \mu$ A	3%	2%	3%	4%
100, 10, or 1 nA	3% plus 25 mV/vert div	NOT APPLICABLE		
200, 20, or 2 nA	3% plus 50 mV/vert div			
500, 50, or 5 nA	3% plus 125 mV/vert div			
VERT STEP GEN POSITION	4%	3%	4%	5%
HORIZ STEP GEN POSITION	4%	3%	4%	5%

Vertical Deflection Factor — Collector current is 1 μ A/div to 2 A/div, 20 steps in 1-2-5 sequence (0.1 μ A/div with X10 magnification). Emitter current is 1 nA/div to 2 mA/div, 20 steps in 1-2-5 sequence. Step generator is 1 step/div.

Horizontal Deflection Factor — Collector volts: 50 mV/div to 200 V/div, 12 steps (5 mV/div with X10 magnification). Base volts: 50 mV/div to 2 V/div, 6 steps (5 mV/div with X10 magnification). Step generator; 1 step/div.

Displayed Noise — 1% or less or:

RANGE	15 V	75 V	350 V	1500 V
Vertical—Collector	1 μ A	1 μ A	2 μ A	5 μ A
Vertical—Emitter	1 nA	1 nA	2 nA	5 nA
Horizontal—Base	5 mV	5 mV	5 mV	5 mV
Horizontal—Collector	5 mV	5 mV	20 mV	200 mV

Calibrator (CAL) — Dc voltage (accurate within 1.5%) provided to check and adjust vertical and horizontal gain.

Position Controls — Fixed 5 div increments within 0.1 div. Continuous fine control over 5 div or less.

Display Offset — 21 calibrated positioning increments, vertically or horizontally, of 0.5 div or 5 div with X10 MAGNIFIER.

CRT and READOUT

CRT — 6½ in rectangular with parallax-free, illuminated graticule in centimeters. The calibrated area is 10 cm vertical by 10 cm horizontal (12 cm usable horizontal). P31 phosphor normally supplied.

Readout — The readouts, adjacent to crt, are digital indicators of the following parameters: PER VERT DIV from 1 nA/div to 2 A/div; PER HORIZ DIV from 5 mV/div to 200 V/div; PER STEP from 5 nA/step to 2 A/step, 5 mA/step to 2 V/step; β (BETA) or g_m PER DIV from 1 μ to 500 k calculated from CURRENT/DIV, X10 MAG, STEP AMPLITUDE, and 0.1X MULT.

STANDARD TEST FIXTURE

Description — A plug-in fixture with two sets of 5-pin test terminals, the EMITTER GROUNDED or BASE GROUNDED switch, LEFT-OFF-RIGHT switch, STEP GEN OUTPUT EXT BASE or EMITTER input, and the OPERATOR PROTECTION BOX. The test terminals accept either the 8-pin universal adapters, 3-pin adapters, or the high-power transistor adapters with KELVIN contacts.

OTHER CHARACTERISTICS

Power Requirements — Power Source; operates only with an unbalanced-to-ground power source. For safe operation, the power line neutral (white or "identified" conductor) must be connected to the instrument neutral (unfused), and the power plug safety ground (green conductor) must return to ground through a different path than the power line neutral. Voltage Ranges; the quick-charge line-voltage range selector accommodates 90 V ac to 136 V ac or 180 V ac to 272 V ac (six positions), at 48 Hz to 66 Hz line frequency. Max power consumption is 305 W, standby power is approx 60 W.

Ambient Temperature — Performance characteristics are valid over an ambient temperature range of -10° C to +40° C.

Dimensions and Weights

	in	cm
Height	15.0	38.1
Width	11.5	29.2
Depth	23.0	58.2
	lb	kg
Net Weight	70.5	32.0
Shipping Weight	\approx 107	\approx 48.5

INCLUDED ACCESSORIES

Transistor adapter (013-0098-02), FET adapter (013-0099-02), TO3 adapter (013-0100-01), TO66 adapter (013-0101-00), axial lead diode adapter (013-0111-00), stud diode adapter (013-0110-00), large in-line adapter (013-0138-00), small in-line adapter (013-0139-00), and protective cover (337-1194-00).

ORDERING INFORMATION

576 Curve Tracer with Standard Test Fixture

The 576 Option 1 deletes the parameter readout module but maintains provisions for insertion of the module = (020-0031-00) at any time.

Order Option 1

**Auto Seal-Factor Readout Module
Order 020-0031-00**

OPTIONAL ACCESSORIES

Camera — See Oscilloscope/Camera Adapters chart in camera section of this catalog.

SCOPE-MOBILE[®] Cart — Tek Lab Cart Model 3.
Order Model 3

Test Set-up Chart — Package of 250.
Order 070-0970-01

172 Test Fixture See page 174

176 Test Fixture See page 175

Socket Adapters See page 180