

A stylized, light-colored illustration of a vacuum tube, possibly a 6X4 rectifier tube, is centered on the page. The tube has a rounded, bulbous body with several vertical lines indicating its shape, and a flared base with a series of small, rectangular protrusions. Overlaid on the tube is the word **TEKTRONIX** in a large, bold, sans-serif font. The letters are dark brown with a 3D effect, appearing to be raised from the surface of the tube.

TEKTRONIX

SHORT FORM CATALOG

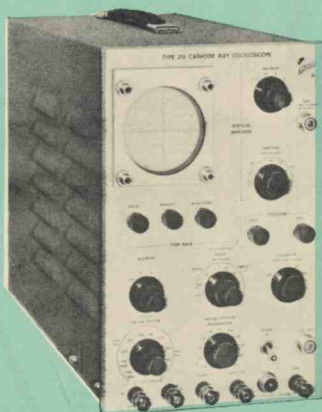
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EXCELLENCE



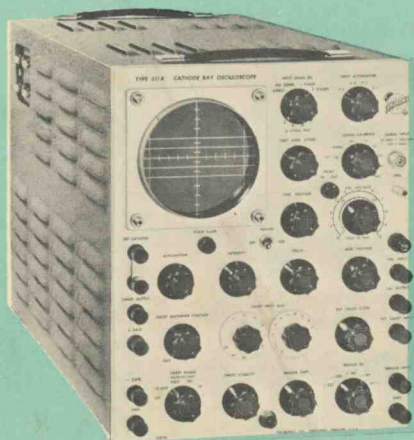
OSCILLOSCOPE FEATURES

- 5" Cathode-Ray Tubes (except Type 315-D)
- Direct reading sweep dials
- Single, triggered or recurrent time bases
- Time bases accurate to 5% or better
- Positive or negative internal and external triggering
- Sawtooth and gate available on front panel
- All dc voltage electronically regulated
- Individually adjusted for optimum transient response
- Excellent image contrast under high ambient light conditions
- Electrically welded all aluminum construction — low weight.



TYPE 315-D OSCILLOSCOPE

The TEKTRONIX Type 315-D is a 3" precision laboratory oscilloscope with the following features: Calibrated time bases in the extremely wide range of 1 μ sec to 50 sec; improved 5x magnifier; direct coupled trigger amplitude discriminator; direct coupled unblanking; vertical amplifier risetime 0.07 μ sec; sensitivity dc to 5 mc, 0.2 v/division, 5 cycles to 5 mc, 0.02 v/division (graticule marked in quarter inch divisions); signal delay; square wave voltage calibrator. Small in size—12 $\frac{3}{8}$ " high, 8 $\frac{5}{8}$ " wide, 18 $\frac{1}{4}$ " deep—but fully accessible for servicing. Weight only 35 lbs. Supply voltage range—105 to 125 v, 50 to 800 cycles. Price: Type 315-D, \$785.



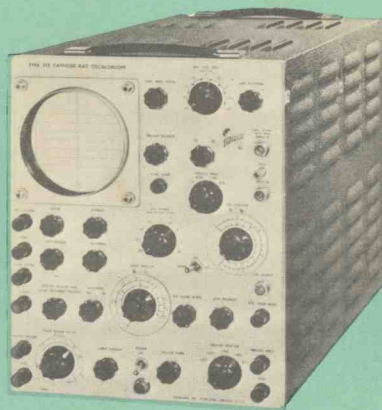
TYPE 511-AD OSCILLOSCOPE

The TEKTRONIX Type 511-AD Cathode-Ray Oscilloscope offers the desirable combination of the following characteristics: 0.1 μ sec/cm to 0.01 sec/cm continuously variable time bases, with 5x magnifier; five position trigger selector; 0.04 μ sec vertical amplifier risetime; approximate bandwidth 5 cycles to 10 mc; vertical deflection sensitivity from 0.25 v/cm to 200 v/cm; voltage calibrator from 0 to 100 volts in six ranges, 3% of full scale accuracy; 0.25 μ sec delay network that can be switched in or out at will. This instrument is extremely valuable in the video testing field where excellent transient response, wide bandpass, and high sweep speeds are necessary. Weight 55 lbs. Price: Type 511-AD, \$845.; Type 511-A (without delay network), \$795.

in Instrumentation

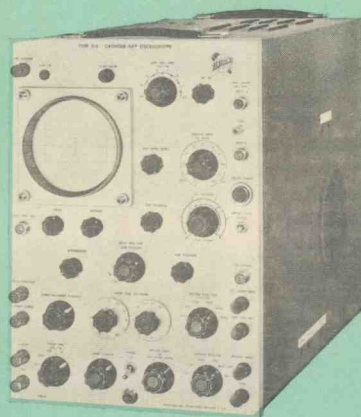
TYPE 512 OSCILLOSCOPE

The TEKTRONIX Type 512 Oscilloscope features: balanced, direct-coupled, push-pull amplifiers with sensitivity ranging from 5 mv/cm to 50 v/cm; risetime 0.2 μ sec; bandwidth from dc to 2 mc; time base range from 3 μ sec/cm to 0.3 sec/cm, with 5x magnifier; differential input to amplifiers; square wave voltage calibrator from 0 to 50 v in 9 ranges, 3% of full scale accuracy; time bases of 1.0 sec/cm and 3.0 sec/cm available on order. With its high stability, sensitivity, and accurate calibration of timing and amplitude, the Type 512 has gained exceptional and immediate acceptance in the fields of biophysical and geophysical research, as well as being an indispensable circuit development tool in the hands of the electronic engineer. Weight, 56 lbs. Price \$950.



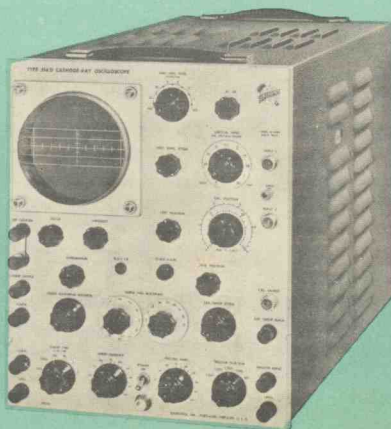
TYPE 513-D OSCILLOSCOPE

The TEKTRONIX Type 513-D Oscilloscope has the following features: high writing rate; metallized crt with regulated accelerating potential of 12 kv (+10 kv and -2 kv); distributed type vertical amplifier with a risetime of 0.025 μ sec, sensitivity of 0.03 v/cm at 5 cycles to 16 mc (approx.) and 0.3 v/cm at dc to 18 mc (approx.); trigger rate generator with 5 fixed pulse rate frequencies of 0.2 kc, 0.5 kc, 1 kc, 2 kc and 5 kc; a square wave voltage calibrator from 0 to 50 v in 7 ranges, 3% of full scale accuracy; a delayed gate and a delayed trigger for control of auxiliary equipment. Other specifications similar to those of Type 511-A. This instrument is extremely useful in random pulse work where high writing rate is essential. Weight 79 lbs. Price, Type 513-D, \$1650. Type 513 (without delay network) \$1600.



TYPE 514-D OSCILLOSCOPE

The TEKTRONIX Type 514-D Oscilloscope offers the high frequency range of the Type 511-A with the additional advantages of direct-coupled vertical amplifier. Specifications: risetime 0.04 μ sec; band-pass dc to 10 mc (approx.) at 0.3 v/cm, and 5 cycles to 10 mc (approx.) at 0.03 v/cm; 0.1 μ sec/cm to 0.01 sec/cm sweep range; square wave voltage calibrator variable from 0 to 50 v in 7 ranges, 3% of full scale accuracy; undistorted deflection of 4 cm (± 2 cm); accelerating potential of 3 kv (+1.5 kv and -1.5 kv); other specifications similar to those of Type 511-A. The Type 514-D admirably meets the requirements of those who do not need the higher writing rate of the Type 513-D, but require its direct-coupling and high sensitivity. Weight 61 lbs. Price: Type 514-D \$950; Type 514 (without delay network) \$900.

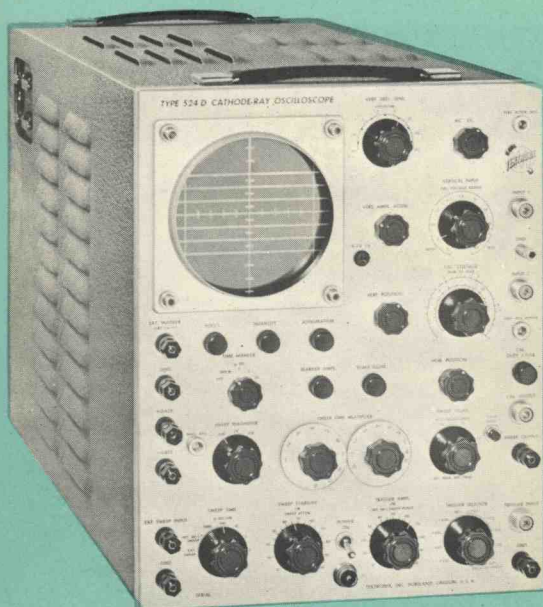


EXCELLENCE



TYPE 517 OSCILLOSCOPE

The TEKTRONIX Type 517 is a wide band high voltage cathode-ray oscilloscope designed primarily for the observation and photography of very fast transients. It consists of two units, indicator and power supply, mounted on a scope-mobile to make up a convenient, mobile instrument. Features include; high writing rate, obtained by 24 kv accelerating potential on a metallized P11 crt; eleven calibrated times bases from 0.01 to 20 $\mu\text{sec}/\text{cm}$, accuracy 2%; time base triggered by observed signals of 2 mm or greater amplitude; signal delay to permit observation of front of pulse; distributed vertical amplifier with 0.007 μsec risetime and 0.1 v/cm sensitivity; cathode follower input probe with capacitance attenuators; pulse type amplitude calibrator with 6 ranges, accuracy $\pm 4\%$; all supply voltages to indicator (including heaters and crt gun voltage) electronically regulated; trigger rate generator variable from 15 to 15,000 cps; panel switch to reduce accelerating potential to 12 kv giving twice above sensitivities and sweep rates. Standard accessories; scope-mobile, cathode follower probe and attenuators, 170 ohm attenuator, viewing hood. Weight 190 lbs. Price: \$3500.



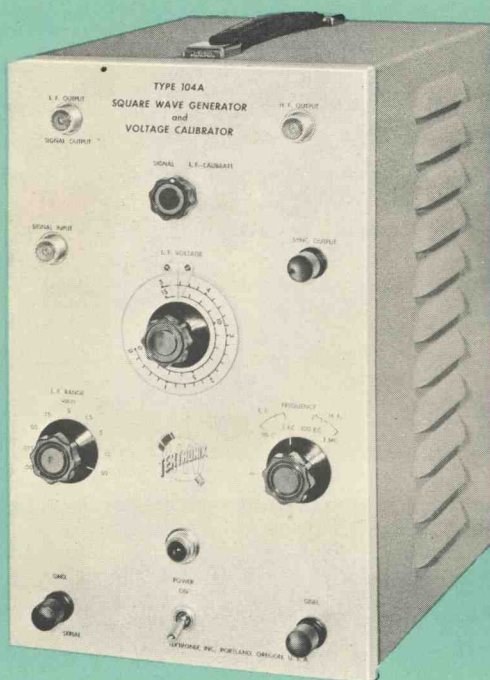
TYPE 524-D OSCILLOSCOPE

The TEKTRONIX Type 524-D Oscilloscope was designed for Television Broadcasters and has the following features: time bases 0.01 sec/cm to 0.1 $\mu\text{sec}/\text{cm}$; zero to 25 milliseconds delay, a line at a time, on all time bases; improved 3x or 10x magnifier; field selector for switching to either field of the frame; built-in sync separator; 60 cycle sweep with amplitude and phase control; time mark generator, 1 μsec , 0.1 μsec , 0.05 μsec , or 200 pips per television line; vertical amplifier risetime 0.04 μsec ; vertical sensitivity dc to 10 mc—0.15 v/cm, 2 cycles to 10 mc—0.015 v/cm; 0.25 μsec signal delay; more than 6 cm undistorted deflection; variable duty cycle square wave calibrator, accurate within 3%; flat faced crt with 4 kv accelerating potential. The specialized features of the 524-D make it highly desirable for maintenance of TV transmitter and studio equipment. Weight 61 lbs. Price \$1180.

in Instrumentation

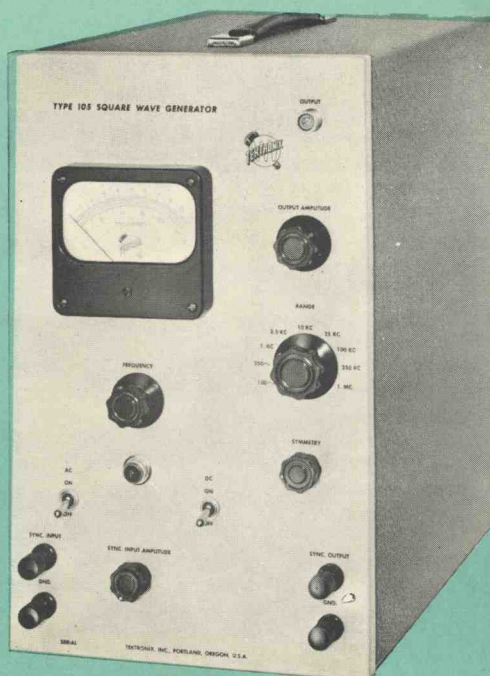
TYPE 104-A SQ. WAVE GENERATOR

The TEKTRONIX Type 104-A is a low cost generator of precision square waves with four fixed frequencies in the ranges most used to test wide band amplifiers and oscilloscopes. Its use in conjunction with any of the above oscilloscopes permits the transient response of an amplifier to be readily observed. Controls are provided enabling use of LF output as voltage calibrator, 5 mv to 50 v in 9 ranges, 3% full scale accuracy. Frequencies; LF-50 cps, 1 kc; HF-100 kc, 1 mc; risetime, LF-3 μ sec; HF-0.02 μ sec; amplitude, LF 0-50 v; HF 0-5 v; output load, LF 0-20 k, HF 0-93 ohms; portable. Weight 22 lbs. Price \$195.

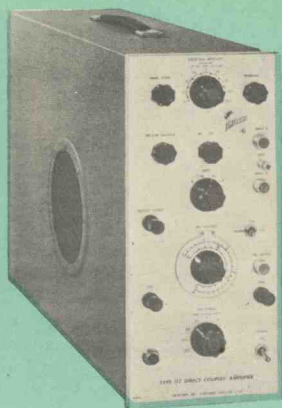


TYPE 105 SQ. WAVE GENERATOR

The TEKTRONIX Type 105 Square Wave Generator is an extremely versatile precision instrument for checking transient response and bandwidth (25 cps 20 mc) of amplifiers, filters, attenuators, etc. Regulated dc supply, direct reading frequency meter, small size, and other features combine to make this instrument a necessity for any well equipped laboratory. Frequency: 25 cps to 1 mc variable; risetime, 0.02 μ sec if load is 93 ohms or less; amplitude, 100 v maximum, 15 v across 93 ohms; accuracy of frequency meter, 3% of full scale; sync voltages, output 5 v, input 3 v — 50 v. Weight 35 lbs. Price \$395.



EXCELLENCE



TYPE 112 AMPLIFIER

The TEKTRONIX Type 112 DC Amplifier was developed to be used with TEKTRONIX or other oscilloscopes.

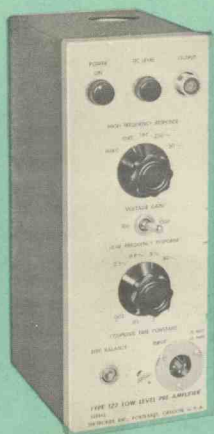
Same as Type 512 vertical amplifier; self-contained regulated supply; square wave calibrator accurate within 3%; trigger output; marker input; output voltages, 150 v high impedance; 75 v, 800 ohm load; average output level, 150 v and ground. Weight 32 lbs. Price \$495.



TYPE 121 PRE-AMPLIFIER

The TEKTRONIX Type 121 Pre-Amplifier was designed primarily to augment the vertical amplifier of the Type 511-A oscilloscope, providing an overall sensitivity of 2.5 mv/cm while preserving the band-pass and transient response. May be used with other oscilloscopes or wide band equipment.

Voltage gain, 100; input impedance 1 megohm paralleled by 25 μ f; output, ± 1 v, 93 ohms; band pass, 5 cps, 12 mc; front panel supply socket, 6.3 v dc, 20-120 v dc; portable; self-contained power supply. Weight 18 lbs. Price \$265.



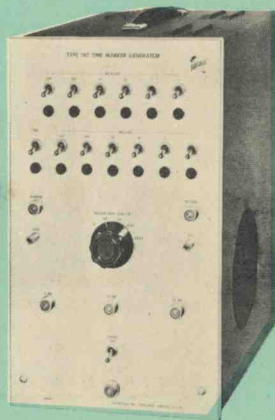
TYPE 122 PRE-AMPLIFIER

The TEKTRONIX Type 122 Pre-Amplifier was designed as an accessory to the Type 512 Oscilloscope, for use in the biophysical, geophysical and other fields requiring additional sensitivity in the limited pass-band of 1/6 cps — 40 kc. At maximum gain, a 5 μ v signal will produce a 1-cm deflection on the oscilloscope. Use of the differential input gives a rejection ratio of 80 to 100 db for in-phase signals. A maximum of 20 v (peak-to-peak) is available at the cathode follower output. Multiposition switches permit separate control of both ends of the pass-band. Battery operated for minimum noise level. Price \$85.

in Instrumentation

TYPE 180 TIME MARK GENERATOR

The TEKTRONIX Type 180 Time Mark Generator has the following features: time markers of 1, 5, 10, 50, 100, 500 microseconds—1, 5, 10, 50, 100, 500 milliseconds—1 second, all available separately and simultaneously through pin jacks at 15v to 50v, or mixed in any combination through uhf connector at 1v to 5v; sine wave outputs of 5 mc, 10 mc, and 50 mc at approximately 2.5v; trigger impulses of 1, 10, 100 cycles, 1, 10, 100 kilocycles through uhf connector at 25v to 35v; all outputs controlled by a 1 mc crystal accurate within 0.02%. The Type 180 was developed for the purpose of oscilloscope time base calibration and is very useful for calibrating counters, computers, etc. Weight 35 lbs. Price \$575.



TYPE 160 SERIES WAVEFORM GENERATORS

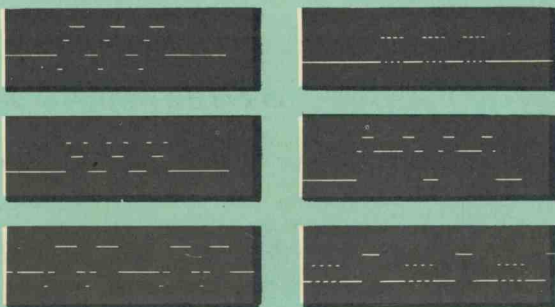
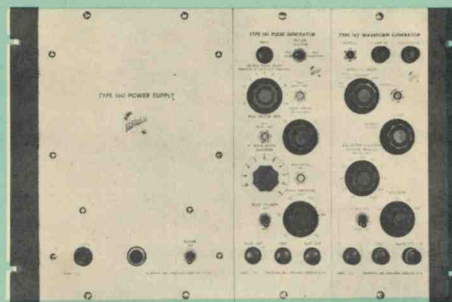
The TEKTRONIX Type 160 series consists of the Type 160 regulated power supply, the Type 161 Pulse Generator, and the Type 162 Waveform generator. Shown are some of the waveform combinations possible with these generators in various hook-ups. The number and repetition rate of pulses in a group are easily controlled. Duration, repetition rate, and amplitude of individual pulses are also variable.

The Type 161, when triggered, produces calibrated rectangular pulses of variable duration (10 μ sec to 0.1 sec) and amplitude (0 to 50v) and of either polarity. Output pulses can be adjusted to occur at any point through the duration of a negative going sawtooth trigger. Price \$95.

The Type 162 generates a linear negative going sawtooth (+150v to +20v, duration 100 μ sec to 10 sec, rep. rate 0.1 cps to 10 kc for recurrent operation), positive gate (+50v, duration 100 μ sec to 10 sec) and positive trigger (+50v, duration 10 μ sec to 0.2 sec). It can be triggered externally or by a front panel button. Price \$95.

The Type 160 produces ac voltages and regulated dc voltages necessary to operate any combination of six of the 161 and 162 generators. Price \$110.

The Type FA 160 Mounting Frame adapts these instruments to rack mounting. Holds four waveform generators—or two waveform generators and one power supply. Price \$5.



WARRANTY

All TEKTRONIX instruments are fully guaranteed against defective materials and workmanship for one year. Should replacement parts be required, whether at no charge under warranty or at established net prices, they will be shipped from the factory, via air transportation on request, prepaid to any point within continental North America.

TEKTRONIX Transformers, manufactured in our own plant, carry an indefinite warranty. In the event of failure please be sure to contact the nearest TEKTRONIX Field Engineer, Field Sales Representative, or Headquarters.

Prices Shown are f.o.b. Portland, Oregon

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