
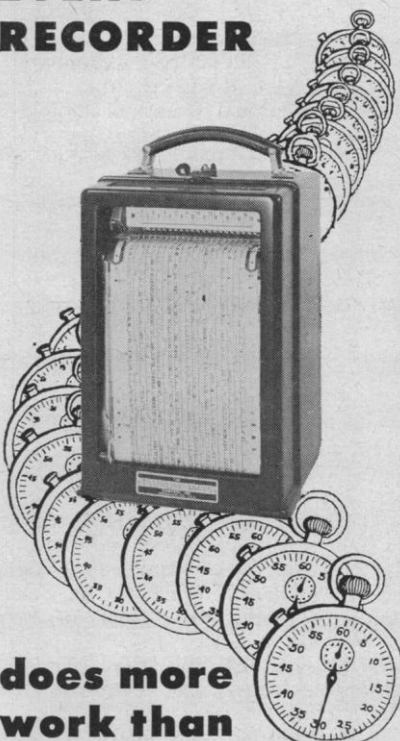


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■ **DETECTION REAGENTS** for amino acid and carbohydrate chromatograms are available in aerosol dispenser cans. Reagents will be available for sugar phosphates, inorganic phosphates, aliphatic acids, and keto acids. Also available are spray solutions to preserve chromatograms as permanent records (Schaar and Company, Dept. Sci589, 7300 W. Montrose Ave., Chicago 34, Ill.)

■ **POWER SUPPLY** for computer applications is designed to protect external circuitry by cutting off all outputs in the event the current in any output exceeds a predetermined value. The completely transistorized supply furnishes ± 15 volts at 10 amp, ± 6 volts at 5 amp, and 48 volts at 1 amp. Regulation for line or load is ± 0.2 percent and ripple is less than 3 mv. (Invar Electronics Corp., Dept. Sci590, 323 West Washington Blvd., Pasadena, Calif.)

■ **DATA ACCUMULATOR** is a six-channel indicator and recorder that accepts bi-directional pulses produced by measuring devices at rates up to 15,000/sec. Each channel has a storage capacity of $\pm 999,999$ counts. Output of the system can be recorded by electric typewriter, card punch, or tape perforator. A control unit supplies output programming and related control signals. Identification and calibration data are derived from 12 front-panel dial switches. Visual readout for each channel is provided by numeral tubes. (Data Instrument Division of Telecomputing Corp., Dept. Sci591, 12838 Saticoy St., North Hollywood, Calif.)

■ **CONSTANT-TEMPERATURE BLOCK** maintains laboratory samples at predetermined temperature during performance of temperature-sensitive measurements. The unit, which uses cast-aluminum blocks as thermal conductors to a heat transfer bath of water or organic liquid, is adjustable to maintain any temperature between 30° and 50°C within $\pm 0.5^\circ\text{C}$ in normal environment or to $\pm 0.2^\circ\text{C}$ in an air-conditioned environment. (Beckman Scientific and Process Instruments Division, Dept. Sci592, 2500 Fullerton Rd., Fullerton, Calif.)

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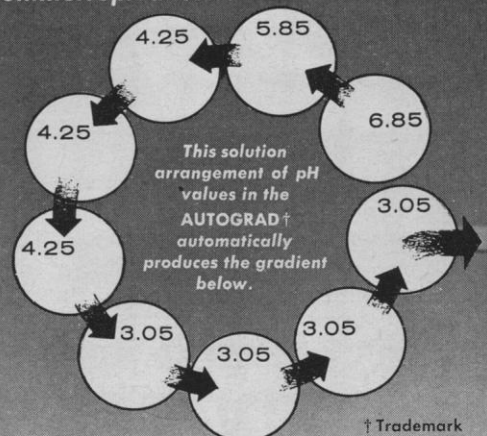
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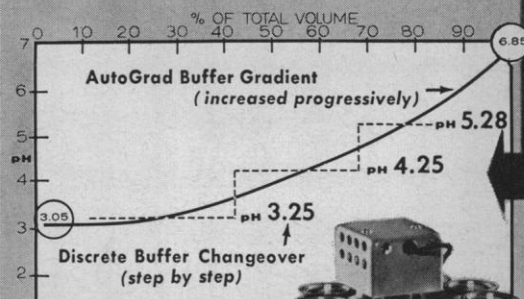
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**Procedure developed by Karl A. Piez, National Institute of Dental Research, National Institute of Health.

*Reference: "Variable Gradient Device for Chromatography", E. A. Peterson and H. A. Sober, Anal. Chem., Vol. 31, No. 34, May 1959.

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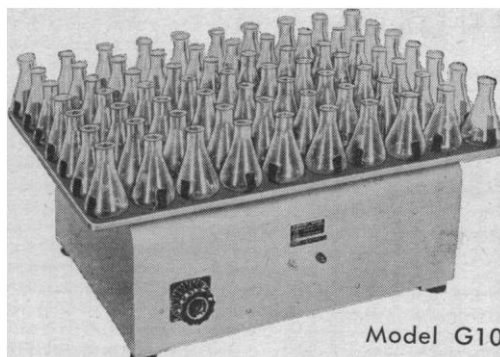
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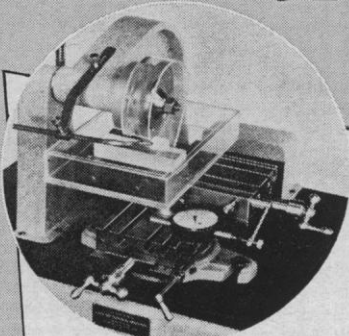
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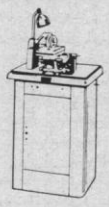
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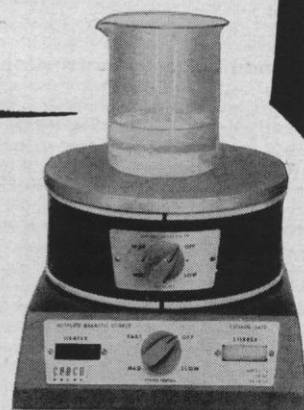
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■ **DIRECT PRINTING CATHODE-RAY TUBES** employ a metallic-element-mosaic target in the tube face. The metallic elements are 0.001 in. in diameter on approximately 0.004-in. centers. The cathode-ray tube electron beam, operating through the mosaic elements, produces a charge pattern on paper or other dielectric surface. The charge pattern is rendered visible by adherence of a pigment powder that may be permanently fixed in place by heat. The type L-4013 tube provides a matrix area 2.75 in. by 0.15 in. The type L-4016 has a one-dimensional array 2.75 in. long. Deflection of the electron beam accomplishes one dimension of motion, the dielectric material moving in the orthogonal direction. Writing rates of 0.1 μsec per element are said to be possible. (Litton Industries, Dept. Sci596, 960 Industrial Rd., San Carlos, Calif.)

■ **DRY ELECTROMAGNETIC SEPARATOR** consists of a stack of six 4-in.-diameter grids that are magnetized by a direct-current coil. The grids have sloping vanes that divide and retard the flow of material so that the material sifts through in a zigzag course. An adjustable vibrator, driven through a flexible drive, keeps the material flowing. The iron particles collected are discharged by turning of current to the coils. (S. G. Frantz Co., Inc., Dept. Sci597, 72 Kline Ave., Trenton 6, N.J.)

■ **TENSION IMPACT TESTER** for plastics and ceramics incorporates a pendulum hammer with a two-jaw gripping device that holds the specimen during the downward swing. At the moment of impact one part of the gripping device is arrested by a stop. The hammer continues its swing with the other part of the gripping device and the specimen is pulled apart. Resistance to the tensile impact force is shown on a dial. (Testing Machines, Inc., Dept. Sci598, 72 Jericho Turnpike, Mineola, N.Y.)

■ **DIGITAL DISPLAY** is an incandescent-lamp readout device that displays the digits 0 through 9 on a common 1-by-1 in. area. The panel-mounting units measure 1 by 1 by 3 in. Operating voltage may be 2.5, 6, 12, or 28 volts. Special units that display as many as ten complete messages in the same 1-in.² viewing area are also available. (Burroughs Corporation, Dept. Sci599, P.O. Box 1226, Plainfield, N.J.)

■ **CORE-MEMORY-SYSTEM TESTER** is designed to locate defects automatically in coincident current systems. The tester detects and counts defective cores by reading in and reading out a pattern of information and checking for accuracy. Memory systems with planes up to 128 by 128 are accommodated. Operation may be programed to stop upon detection of an error, to determine its location, or to pause on the error and then continue the test. (Digital Equipment Corp., Dept. Sci602, Maynard, Mass.)

■ **INDICATOR-TUBE DRIVER** comprises ten medium-voltage NPN transistors in a common-emitter configuration with each transistor driving one of the indi-

cator tube's ten cathodes. The device is encapsulated on a standard indicator-tube socket and is designed for direct panel mounting with over-all length 2 in. and nominal 1-in. diameter. Triggering signal can be as low as 3 volts, 300 μa . (Burroughs Corporation, Dept. Sci600, P.O. Box 1266, Plainfield, N.J.)

■ **ULTRAVIOLET SPECTROPHOTOMETER** is a double-beam instrument for the 220 to 770 $\text{m}\mu$ wavelength range. A vibrating-mirror assembly directs the beam alternately through the sample and reference. An output meter reads directly absorbance and percent transmission. Conversion to automatic recording can be accomplished by adding a wavelength drive and strip-chart record. Stray

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■ **TIME-DELAY GENERATOR** operates in five ranges from 0.1 to 10,000 μsec . Accuracy is said to be ± 1 percent and linearity tolerance ± 1 percent. The unit may be triggered by a periodic wave of 15 volts peak-to-peak amplitude or an 8 volts peak negative or positive pulse of noncritical shape. Delay is presented as the time between two approximately triangular pulses with rise time less than 0.05 μsec . (B. J. Electronics, Borg-Warner Corp., Dept. Sci601, 3300 Newport Blvd., Santa Ana, Calif.)

■ **FREQUENCY CONVERTER** furnishes a d-c output in response to input frequency. Selection of full-scale frequency from 500 cy/sec to 100 kcy/sec is accomplished by changing a plug-in circuit board. Linearity is said to be better than 0.1 percent; drift less than ± 0.1 percent from -15 to $+55^\circ\text{C}$. Output signal level is ± 10 volts and output impedance less than 0.25 ohm. An integral regulated power supply is provided for each channel. (Vidar Corporation, Dept. Sci603, 2107 El Camino Real, Palo Alto, Calif.)

■ **VACUUM GAGE** of McLeod type compresses gas in the capillary between two mercury columns, thereby avoiding difficulties arising from contamination of the closed end of a capillary. A piston is used to raise the mercury level to trap a given amount of gas for compression. The knob used to actuate the piston is threaded to permit fine adjustment of the mercury meniscus to a ring marking the compressed volume. Pressure is read directly from a calibrated manometer tube. (The Emil Greiner Co., Dept. Sci608, 20-26 N. Moore St., New York 13, N.Y.)

■ **DIGITAL COMPARATORS** are available in two models, one accepting two 24-bit parallel binary numbers, the other, two 24-bit parallel binary-coded-decimal numbers. By a process of digital comparison, an error-modulated 60 to 1000 cy/sec a-c output is produced with an amplitude of 23 mv per unit error for the pure-binary model and 15 mv per unit error for the binary-coded-decimal model. Saturation amplitude is 1.5 volts a-c at approximately 5 kohm impedance. (Norden Division, United Aircraft Corp., Dept. Sci611, 50 Commerce Rd., Stamford, Conn.)

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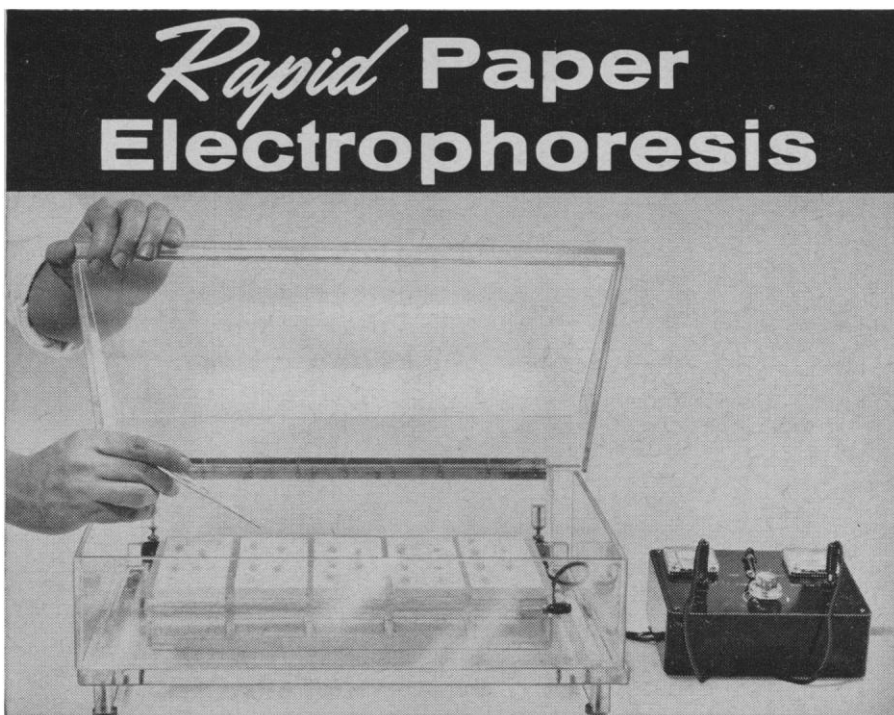
■ **STRAIN GAGE** is a photoelectric direct-reading uniaxial strain indicator. The device indicates axial strain in the direction of gage application only. In addition to axial strain, lateral bending and torque are also indicated. Linear displacement of visible interference fringes indicates strain magnitudes. Polarizers are built in. The gages are said to be easily installed on any surface or material and may be observed visually or photographed. Two types provide gage lengths of $\frac{3}{4}$ in. and 2 in. (Electronics and Instrumentation Division, Baldwin-Lima-Hamilton Corp., Dept. Sci615, Waltham, Mass.)

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■ **NULL DETECTOR** is a d-c instrument with eight ranges of sensitivity from 10 μ v to 100 volts full scale. Input resistance is 10 megohms on all ranges. The input floats above ground by a minimum of 200 megohms. The detector may be used as a d-c amplifier with a gain of 100 db. A hunt mode of operation provides 60 db of meter scale compression to eliminate the need to switch ranges. A calibrate mode covers a linear range -1.2 to $+1.2$. (Boonton Electronics Corp., Dept. Sci619, 738 Speedwell Ave., Morris Plains, N.J.)

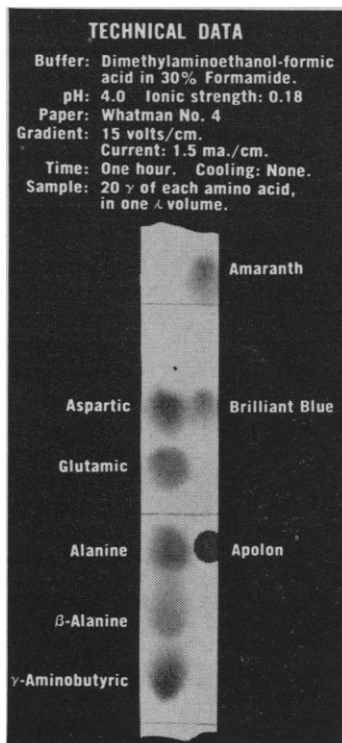
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■ **DIGITAL TRANSLATOR** accepts digital data and provides an analog output and control signals for automatic operation of the manufacturer's X-Y recorders. Accuracy of the conversion is said to be ± 0.1 percent. The translator accepts four digits and sign each axis and is compatible with I.B.M. summary punches and card readers and may also be driven by punched-tape readers. Ac-



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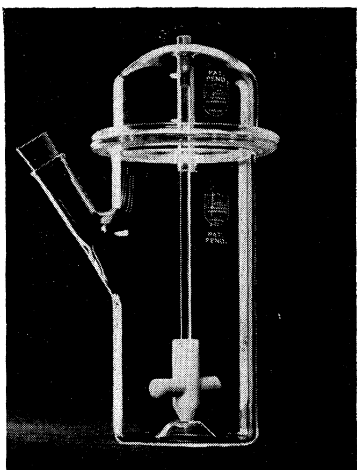
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*Rapid Paper Ionophoresis Using Organic Buffers in Water-Formamide and Water-Urea. L. N. Werum, H. T. Gordon, W. Thornburg. *J. Chromatography* (in press).

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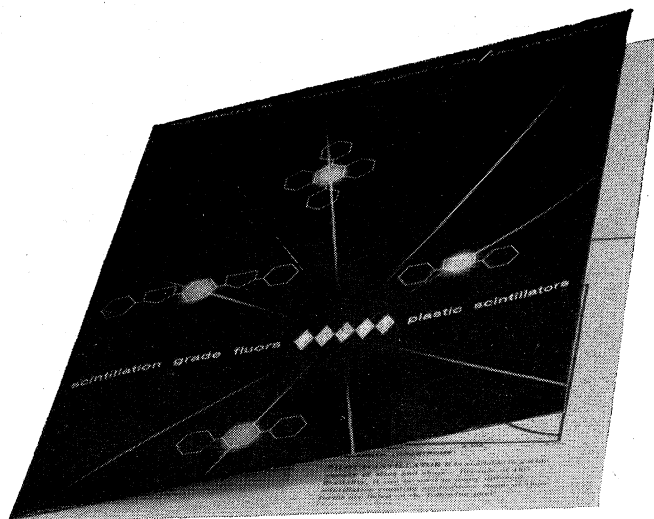
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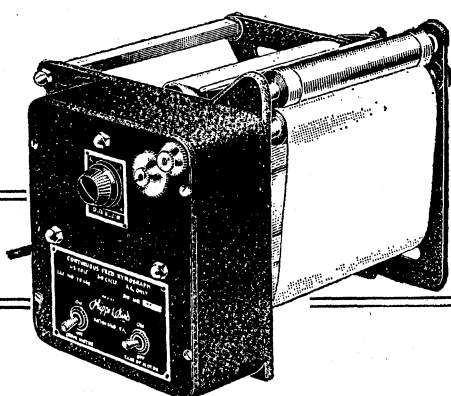
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■ **DIFFERENTIAL-TRANSFORMER INDICATOR** displays static, slowly varying, and average values on a 10-in. panel meter. A demodulated output, flat to 500 cy/sec, is available for operation of cathode-ray and recording oscillographs. Five ranges extend from ± 0.1 to ± 0.001 in one model and ± 0.01 to ± 0.0001 in another. Accuracy is said to be ± 1 percent and maximum resolution 5 μ in. (Daytronic Corp., Dept. Sci606, 225 S. Jefferson St., Dayton 2, Ohio)

■ **THERMOPILE** is said to have response time of 0.01 sec. The detector is mounted in a narrow metal tube, 8.5 mm in diameter, fixed to a large metal base. A metal cover, with drying agent, if required, is supplied to protect the window when the thermopile is not in use. (Engis Equipment Co., Dept. Sci-629, 431 S. Dearborn St., Chicago 6, Ill.)

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■ **TACKINESS METER** is designed to accommodate the range of tackiness normally associated with rubbered fabric or uncured rubber sheet but can be modified to cover other ranges. The instrument is hand operated and portable and does not damage the surface under examination. (Testing Machines Inc., Dept. Sci633, 72 Jericho Turnpike, Mineola, N.Y.)

■ **TORQUE WRENCH CALIBRATOR** accommodates wrenches with capacities from 20 in.-lb to 2000 ft.-lb in four ranges from 1000 in.-lb to 2000 ft.-lb full scale. Calibration accuracy is said to be 0.4 percent of full scale. Torque wrenches of the snap-action type are tested automatically with the torque at the breakaway point displayed on a digital counter. (Steel City Testing Machines, Inc., Dept. Sci635, 8817 Lyndon Ave., Detroit 38, Mich.)

■ **THERMISTOR** for temperature measurement, control, and compensation is supplied sealed into a glass rod. Temperature coefficient of the thermistor is -3.1 percent per $^{\circ}\text{C}$. Cold resistance at 25°C is 100 ohms. Time constant of the configuration is 25 sec when suspended by its leads in still air at 25°C . (Victory Engineering Corp., Dept. Sci-630, Box 373, Union, N.J.)

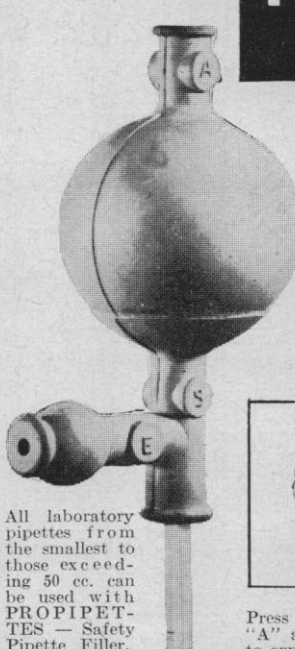
■ **HARDNESS TESTER** is designed to make multiple indentations in reactive or heat-sensitive metals at temperatures up to 1600°C and pressures in the order of 10^{-5} mm-Hg. The indenter is a sapphire point on a molybdenum rod loaded by a 2-kg weight. This assembly is mounted on a cross-feed table adjustable from outside the vacuum chamber so that many closely spaced indentations can be made on one or more samples without losing vacuum. Temperature is said to be controlled within $\pm 1^{\circ}\text{C}$. Maximum temperature is greater than 2000°C . (Vacuum Specialties Co., Dept. Sci638, 34 Linden St., Somerville 43, Mass.)

■ **SERUM AGAR REACTANTS** in agar columns are calibrated to follow changes in concentration and antibody affinity of several serum components in health, disease, and experimental conditions. Reactants may be stored at 4°C . Instrumentation for measurement of precipitin zone movement, density, and patterns is available. (Analytical Products, Dept. Sci609, P.O. Box 6567, San Antonio 9, Texas)

■ **VIBRATION TEST SYSTEM** features a horizontally moving table supported by air bearings. Systems with 50 lb force output are available with either of

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Safety Pipette Filler



All laboratory pipettes from the smallest to those exceeding 50 cc. can be used with PROPIPETTES — Safety Pipette Filler.

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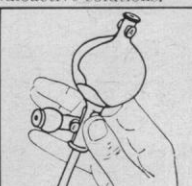
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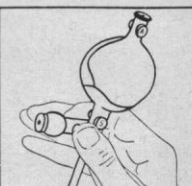
STEP ONE

Press on agate valve "A" and squeeze bulb to expel air and create a vacuum.



STEP TWO


Press on agate valve "S" which draws liquid to the desired level.



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Press on agate valve "E" to expel liquid. To deliver the last drop, cover air inlet in front of "E", press "E" and squeeze the small bulb on the side.

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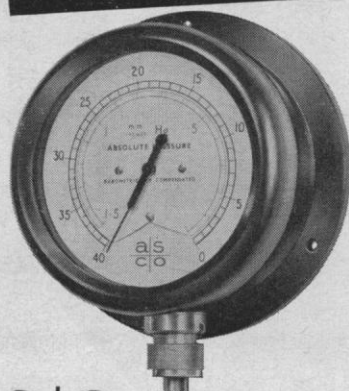
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Model	A120	A140	A160
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■ MEASURING MICROSCOPE scans in two orthogonal directions with ranges 20 and 10 cm. The instrument reads directly to 0.01 mm, and accuracy is said to be ±0.01 mm. Objectives of 5 and 20 magnification are provided. Working distance is 4 cm. Minor adjustment is said to permit placing the instrument directly on the object to be measured. (Ealing Corp., Dept. Sci617, 40 University Rd., Cambridge 38, Mass.)

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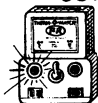
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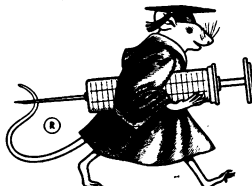
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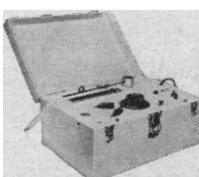
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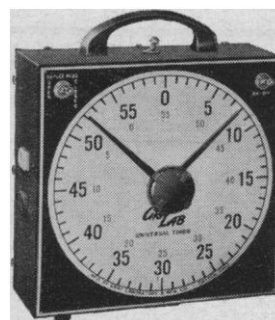
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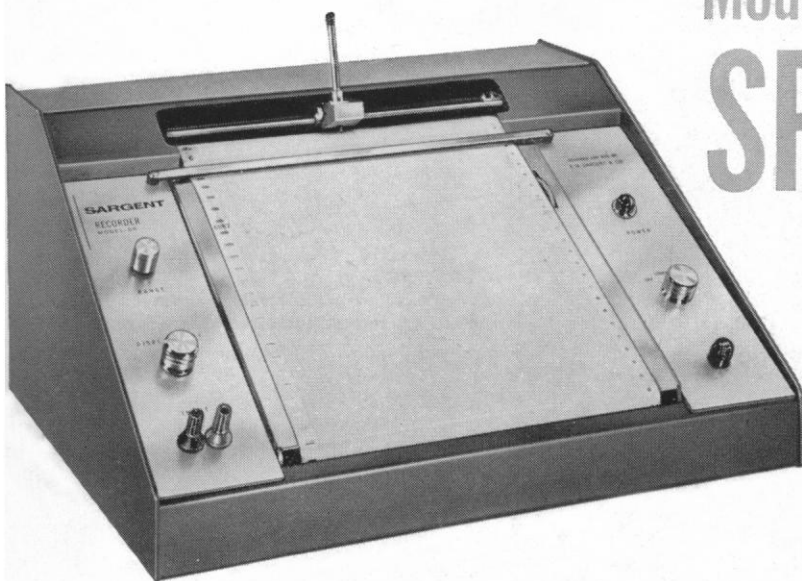
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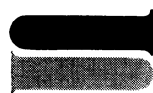
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