

Equipment

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■ **VOLTAGE-CURRENT CALIBRATOR** delivers continuously variable positive or negative voltages from 1 mv to 100 v in four ranges. The output is available either as a direct voltage or as a 5-msec pulse repeated from 5 to 50 times per second. Currents are calibrated by voltage drop produced across an internal 1-ohm resistor. Accuracy is ± 0.3 percent. (Rese Engineering, Inc., Dept. 682)

■ **X-RAY IMAGE INTENSIFIER** offers binocular viewing of the image of a 5-in. field intensified 1000 times. The device is compact enough to permit normal access to the fluoroscopic mechanism and can be connected or disconnected by means of a quick-release clamp. (Keleket X-Ray Corp., Dept. 680)

■ **SOLID-STATE ELECTRONIC COMMUTATOR** will sample up to a maximum of 1000 channels of information at rates up to 100,000 samples per second. Accuracy of the switches is a function of the full scale of the signals being commutated. For example, a full scale of ± 1 v would have a total error of 0.07 percent, ± 8 v full scale would have a total error of 0.02 percent. (Packard-Bell Computer Corp., Dept. 685)

■ **MERCURY BATTERY PACKS** are designed for use as secondary voltage standards. Desired voltages can be made up by combination of basic cells of nominal open-circuit voltage 1.357 ± 0.5 percent. Voltage declines 1 percent in 2 years' storage at 70°F. Short-period stability of 1 part in 10,000 is obtainable. Voltage remains stable within ± 1 percent over a temperature range -40° to 160°F. (Mallory Battery Co., Dept. 686)

■ **DELAYED-PULSE GENERATOR** is adjustable in 1- μ sec steps from 1 to 10,000 μ sec with provision for interpolation between steps. Over-all accuracy is within ± 0.1 μ sec, and jitter is less than 0.02 μ sec. Time intervals may be initiated internally at rates from 10 cy to 10 kcy/sec or by external signals from 0 to 10 kcy/sec. (Hewlett-Packard Co., Dept. 689)

■ **ZONE REFINER** applies the zone melting principle to the purification of organic compounds or other materials that melt between 50° and 300°C. The material to be purified is contained in a glass tube. A Nichrome ribbon loop encircles the tube and generates heat to melt the

material. As a carriage moves the heater along the tube, the molten zone moves with it. An air-blast ring carried behind the heater cools the tube to solidify the molten material. A second heater and air-blast ring may be used to double the effect of each pass. Zone widths from about $\frac{1}{4}$ to 2 in. can be obtained by adjustment of the relative position of the heaters and air blast. Carriage motion is adjustable between 0.1 and 2.4 in./hr. (Fisher Scientific Co., Dept. 692)

■ **SERVO MILLIVOLTMETER** is available as either a ratio meter or an absolute voltage measuring device for full-scale inputs as low as ± 5 mv. Accuracy of a standard model is ± 0.5 percent, but accuracies as high as ± 0.03 percent can be provided. Visual display and a variety of electrical outputs, analog or digital, are available. (North Atlantic Industries, Inc., Dept. 695)

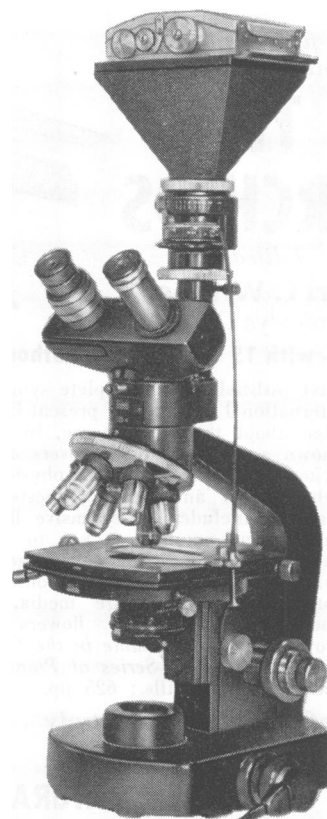
■ **VIBRATION GENERATOR** produces double amplitudes up to 1-in. at frequencies from 2 to 20 cy/sec. Table motion is linear in a vertical plane. Specimens weighing 25 lb can be accelerated up to 20 g. Frequency may be adjusted while the machine is running. (L. A. B. Corporation, Dept. 687)

■ **OXYGEN ANALYZER** is available in single or multiple ranges from 0 to 10 parts per million to 0 to 1 percent oxygen. Accuracy is ± 2 percent of full scale. A built-in calibrator adds a known amount of oxygen to the sample by electrolysis of water. The analyzer uses an electrochemical cell in which oxygen is catalytically converted at the cathode to hydroxyl ions. The current required is measured by a potentiometer recorder. The instrument responds 90 percent in less than 1 min. (Analytic Systems Co., Dept. 694)

■ **SQUIB-ACTUATED MOTOR** measures 0.3 in. in diameter by 0.5 in. long and is capable of providing 8 lb of thrust over a 0.1-in. minimum stroke within an elapsed time of 1 msec. The motor is actuated by as little as 7500 erg and will withstand accelerations of 20,000 g. Operating temperature range is -65° to +165°F. (Atlas Powder Co., Dept. 691)

■ **PLUG-IN VOLTMETER CIRCUITRY** contains complete vacuum-tube voltmeter circuitry but does not include meter, calibration control, zero adjust, or input voltage divider. With this unit meters being utilized for other purposes may also be used for voltage measurement in the range 1 to 1000 v. Input resistance is 10 megohm. The circuit requires a meter of sensitivity 50 to 250 μ a. (Metronix, Inc., Dept. 688)

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