

New Materials and Components

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In order to supplement manufacturers' information this Department will welcome the submission by our readers of brief communications reporting measurements on the physical properties of materials which supersede earlier data or suggest new research application.

Metal Vacuum Valve

An all metal valve has been developed for high vacuum systems where organic material cannot be tolerated. Construction, except for the seat, is of 300 series stainless steel, inert-gas-welded. The seating material is a very low vapor pressure metallic alloy. Designed for operation to 120°, the valve can be baked out at 450°C, and operates at pressures down to 10⁻¹⁰ mm Hg. The seating arrangement provides unlimited vacuumtight closures; and to outgassing of the seat is required to remove trapped residual gas such as is normally found in organic seating material. It is available in 1, 4, and 6 in. diameters, and can be furnished with flanges to fit all standard vacuum fittings.—*Kane Engineering Laboratories, Palo Alto, California.*

High Pressure Shutoff Valve

900 series valves have full flow passage and O-ring seals. Basic stainless steel construction, coupled with a choice of O-ring materials, permits use in almost any gas or liquid service. Operating temperature range is -40° to 450°F, and pressures up to 6000 psi have zero leakage. All valves are proof-pressure tested at 7500 psi, and have a burst pressure over 20 000 psi. The design engages a precision machined stem into a resilient O-ring for tight sealing of gases and liquids. A spring-loaded sleeve follows the stem as it is withdrawn, to enclose the O-ring and protect it from extrusion or the cutting action of fluids. Stem and seat design permit gradual throttling of flow as the valve is actuated. Twenty inch-pounds are required to actuate the valve under 6000 psi pressure.—*Circle Seal Products, Inc., 181 East Foothill Boulevard, Pasadena, California.*

Metal Seal

The Bar-X seal is stated to withstand temperatures from -450° to 1200°F, and peak pressures of 40 000 psi. The cross section of this seal has an X configuration, which is suited to provide elastic deflections and high sealing forces.—*E. B. Wiggins Oil Tool Company, 3424 East Olympic Boulevard, Los Angeles 23, California.*

Cryogenic Pump

Using a new design a lightweight (30-lb) pump provides the same performance and reliability as high pressure pumps designed for the same work load and weighing up to 900 lb, according to the maker. The pumps are designed to handle low boiling point, liquefied gases such as argon, oxygen, nitrogen, and hydrogen. They handle pressures up to 15 000 psi, and have a net positive suction-head requirement below 15 psig at flows of 30 000 scfh at 3000 psi discharge pressure. Cooldown time is approximately 4 min. These pumps can be disassembled or reassembled in 10 min for servicing high pressure components. Either motor-driven or hydraulically operated units are available.—*Paul Chemical Company, Inc., 604 South Raymond Avenue, Fullerton, California.*

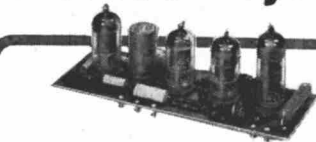
Isolation Transformers

A line of electrostatically shielded power transformers has been developed for instrument applications where a high degree of isolation is required. Effective capacitance between primary and secondary is less than 0.05 pf (maximum noise current of 2 na at 60 cps). Such isolation is useful for dc amplifiers, strain gauge power supplies, bridge circuits, and other applications. The transformers are 115/115 v for 60 cps and above. Units with power ratings from 5 to 500 va are enclosed in MIL-T-27A cans; units rated at 1 and 2.5 kva are housed in special cans.—*Topaz Transformer Products, Inc., 4995 Weeks Avenue, San Diego 10, California.*

Miniature Magnetic Tape Head

The J series of record/erase/playback magnetic tape heads measure ¼ in. in diameter by ¼ in. long, and are suited for use in miniature tape recorders, motion picture cameras, and projectors, and in applications where size is a problem. The heads are designed for use in transistor circuits, have low impedance and good frequency response. Track width is 0.070 in., and slow tape speeds can be used.—*Nortronics Company, 1015 South 6th Street, Minneapolis 4, Minnesota.*

You can look at Philbrick's USA-3 Amplifier at least 3 ways



1. Undressed — Here's the basic unit itself — more performance per dollar than any other operational amplifier. Highly reliable — no electrolytic capacitors or glow tubes. Designed to prevent self-destruction, even when output is grounded. Drift, noise, offset under 100 microvolts. Output, \approx 115 vdc. Wide frequency range — dc to 100 kc (attenuation less than 3 db) when connected as gain-of-ten amplifier. Printed circuit board, 7" x 2½". Price, 1 to 9 units: **\$95**



2. Dressed — In a neat 3" x 7½" ventilated aluminum package, it becomes the USA-3-M3. It has sufficient room for the user to implement its operational destiny by installing additional circuit components. For example, you make it into a complete diode function generator, or integrator, or whatever you wish. The important feature of plug-in interchangeability is enhanced by the 4 to 7 spare terminals on the Blue Ribbon Connector. Price, 1 to 9 units: **\$125**



3. Dressed-up — Now it's a full fledged utility packaged amplifier, known as the UPA-2. Combining a new level of convenience and flexibility, it is immediately operational when plugged into any Philbrick power supply. It can be made to drive a 12,000 ohm load to 100 volts in either direction. Designed for bench top use, it comes installed in a 3½" rack adapter, from which it is easily removed. The UPA-2 is ideal for analog computing, measurement and control, continuous data reduction, and many other feedback operations. Price, 1 to 9 units: **\$149**

- OEM's: write, wire, or phone for quantity prices
- Military equivalents available
- 8 page technical manual available on request



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