

## Bending Magnet Chamber

**A**tlas Technologies offers ultrahigh-vacuum bending-magnet beam chambers for use with accelerator storage rings. The



custom-built chambers are made of aluminum, an ideal material for storage rings, mass spectrometers, and wigglers. Its magnetic transparency is used to contain the vacuum of the beam tube while the path of the electron, proton, or charged ion is bent using conventional magnets and superconducting magnets. The magnets enshroud the top and bottom of the aluminum beam-tube chamber and impart magnetic energy to the particle. Aluminum has better thermal properties than stainless steel, and its surface structure minimizes the desorption of gases from the beam-tube walls caused by photon energy. Excessive desorption can quench vacuum.

**Atlas Technologies**

305-B Glen Cove Road

Port Townsend, WA 98368

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## Redesign and Retrofit

AMF Custom Retrofit Services offers help to companies left with items such as metal vessels, valve bodies, flow straighteners, tubing, fittings, and housings that are no

longer of use because of product changes. The company can redesign and retrofit many such components for new applications. It upgrades obsolete parts by adding ports, remachining, refinishing, or fabricating adapters for them. AMF specializes in improving the quality of wetted surfaces by oxygen cleaning, passivation, and electropolishing. Its precision machining, mechanical, and chemical processing comply with U.S. Food and Drug Administration good manufacturing practices. AMF can produce high-purity finishes to a smoothness of 10 rhythmic average and provide packaging in a Class 10,000 clean room to customer specifications.

**AMF Technologies**

50 Park Street

Boston, MA 02122

Circle No. 181 on Reader Service Card

## Stainless Steel Powders

Starmet provides highly spherical stainless steel powders for use in improving the compressive strength and surface finish of high-performance parts. Its 300- and 400-series stainless steel powders are free-flowing and



hard-surfaced, which makes them ideal for shot peening to prevent crack initiation at the surface of a part and for shot blasting to remove surface blemishes from invest-

ment castings. Powders in each series have particle distributions of 500  $\mu\text{m}$  to 44  $\mu\text{m}$  (-35 to +325 MESH) and a median distribution of 100  $\mu\text{m}$ . Powders can be controlled for particle size to meet specific customer needs. Starmet uses its Rotating Electrode Process to fashion the stainless powders,



which ensures that they are essentially free of nonmetallic inclusions.

**Starmet Corp.**

2229 Main Street

Concord, MA 01742

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## PVC Tubing

Nelco introduces its line of NewAge Clearflo poly(vinyl chloride) (PVC) tubing, which features glasslike clarity, a mirror-smooth surface for superior flow, and the capability of handling a wide variety of chemicals, gases, and liquids. The new line is made from nontoxic ingredients and prevents the lodging of bacteria or sediment buildup in the tubing. It conforms to U.S. Food and

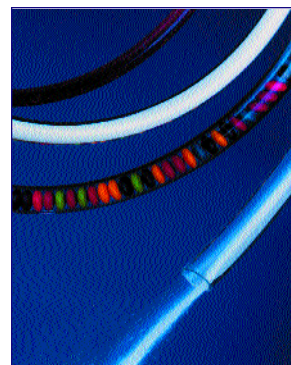
Drug Administration and U.S. Department of Agriculture standards and meets United States Pharmacopoeia Class VI requirements. NewAge Clearflo tubing is lightweight, as flexible as rubber, and abrasion-resistant. It can be autoclaved at 20 lb steam pressure for 15 min and has a tensile strength of 2,000 psi. The PVC tubing comes in 56 sizes, ranging from 1/16th to 4 in.

**Nelco Products, Inc.**

22 Riverside Drive

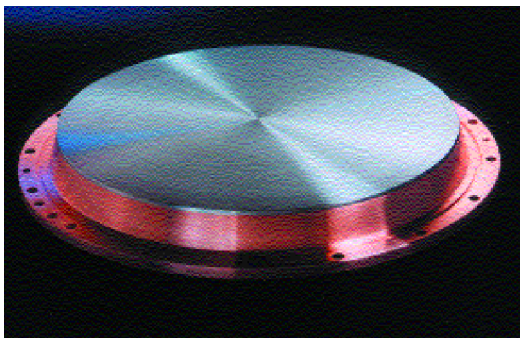
Pembroke, MA 02359

Circle No. 183 on Reader Service Card



## Cobalt Targets

Tosoh SMD has introduced a cobalt target with reduced grain size and a high pass-through flux (PTF). These attributes enable films with better thickness uniformity and the use of the target in advanced semiconductor physical vapor deposition (PVD) contract processes. The cobalt targets have a fine grain size of less than 75  $\mu\text{m}$ , which can be verified by nondestructive testing. The com-



pany says that its manufacturing process produces a cobalt target with a hexagonal close-packed microstructure that has proven to provide better magnetic properties in the target material. The targets' high PTF of more than 60% provides excellent performance with lower sputter impedance. High-purity 3N5 and 4N5 solder-bonded cobalt target assemblies are available.

Tosoh SMD, Inc.  
3600 Gantz Road  
Grove City, OH 43123-1895  
Circle No. 184 on Reader Service Card

## Spiral Door

Rytec's new high-speed Spiral door, ideal for exterior use with moderate-to-heavy vehicular traffic, provides rapid entrance and exit and added security at industrial, commercial, and institutional facilities. Its advanced spiral roll-up technology and the smooth acceleration and braking of its compact variable-speed ac motor ensure smooth, quiet operation for millions of cycles. The rigid, insulated aluminum slats, full-perimeter gaskets, and speed of the door conserve energy and reduce heating and cooling costs. Dual through-beam photo eyes reverse the door if it comes in contact with an object or when one enters its closing path. The Spiral door comes in dimensions up to 26 ft, 3 in. wide by 22 ft, 11 in. high. Low-profile side frames allow ample clearance for equipment and vehicles maneuvering on either side of the door opening.

Rytec Corp.  
1 Cedar Parkway  
Jackson, WI 53037-0403  
Circle No. 185 on Reader Service Card

## Cross-linked Molded Parts

E-BEAM processes plastic tubing and molded parts to create permanently cross-linked molecular structures that are reliable, long-lasting, and temperature- and chemical-resistant for use as under-the-hood automotive components by original equipment man-

ufacturers. The cross-linking process is performed on fully formed parts and products. Automotive design engineers, for example, can use the technique on high-density polyethylene (HDPE) tubing and molded parts to provide in-service temperatures as high as 120 °C. Untreated HDPE tubing normally withstands temperatures of about 60 °C. E-BEAM uses an electron-beam technology in which high-energy electrons penetrate a product to form three-dimensional molecular links and deliver a variety of commercially desirable properties. The technology is used without changing either the product formulation or its processing. The improved properties include increased impact resistance, greater resis-



tance to slow crack growth, reduced rapid crack propagation, and better resistance to oil, petroleum, and solvents.

E-BEAM Services, Inc.  
118 Melrich Road  
Cranbury, NJ 08512  
Circle No. 186 on Reader Service Card

## New Literature

### Overrun Optics

Meller Optics provides a free list of production overruns of various sizes fabricated from sapphire and other materials, which it updates monthly. Its "Optics 2001 Stock Parts List" features more than 2,500 items

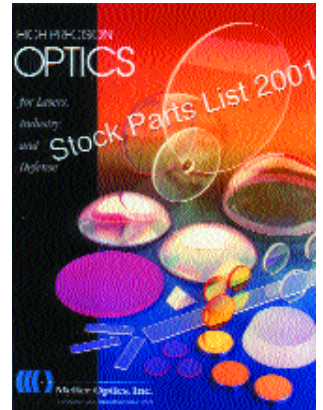
made from sapphire, fused and crystalline quartz, germanium, silicon, and laser glasses. The items are available for immediate shipment and are useful for special projects and prototyping new products. Most of the lenses, mirrors, and substrates in the Meller list range from 0.25 to 2 in. in diameter and 1 to 4 mm in thickness. The large number of sapphire parts in the inventory typically have high-quality 10–5 to 80–50 scratch-dig surface finishes, flatness from 10 waves to 1/10 wave irregularity, and dimensional tolerances from  $\pm 0.001$  to  $\pm 0.005$  in.

Meller Optics, Inc.  
120 Corliss Street, P.O. Box 6001  
Providence, RI 02940  
Circle No. 187 on Reader Service Card

### Perforating Rolls

Robert A. Main & Sons, a supplier of pinned precision products such as pinned assemblies and metal conveyor belting, offers a new catalog that features hundreds of sizes and styles of perforating rolls. Rolls featured in Main's Catalog No. 27 include those for perforating, piercing, dimpling, mixing, and aerating, and they operate with several types of materials including paper, films, and foils. The catalog also shows many types of screw-in performance points. Main's products are made using an ISO 9001 registered quality system.

Robert A. Main & Sons, Inc.  
555 Goffle Road, P.O. Box 159  
Wyckoff, NJ 07481-0159  
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The New Products section is based on information supplied by the manufacturers and in some cases by independent sources. *The Industrial Physicist* can assume no responsibility for its accuracy. To facilitate inquiries, a Reader Service Card is attached between pages 36 and 37.