

Vernay V-Ball® Elastomeric Spheres

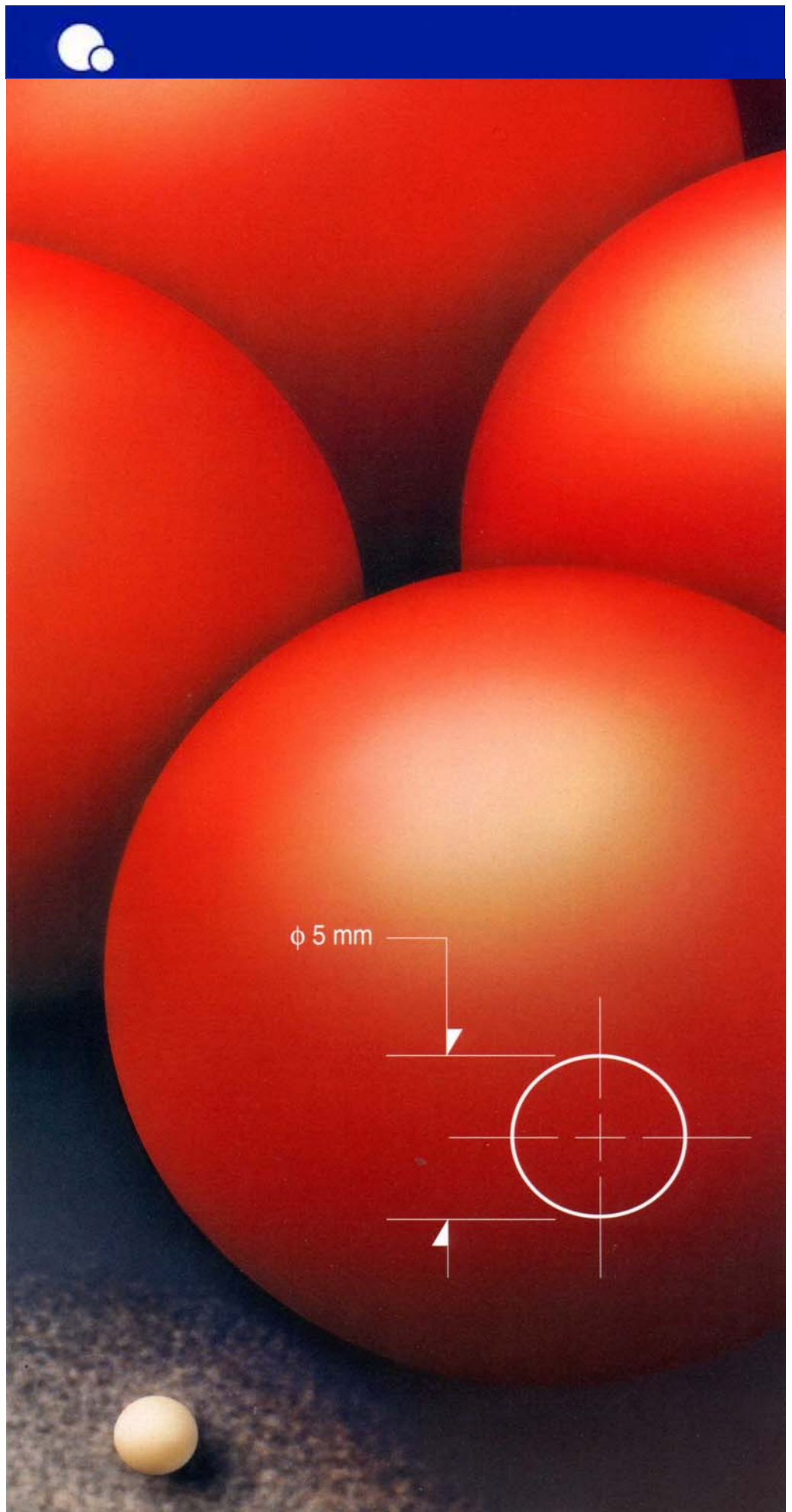
Precision-manufactured for superior performance

Vernay specializes in the innovative design and high-volume manufacture of precision elastomeric products. V-Ball® elastomeric balls are small, versatile, resilient spheres used in worldwide applications such as check valves, indicators and springs.

Our solid V-Ball® elastomeric spheres are finished to maintain close tolerances and compounded from elastomeric materials specifically suited to your application. Medical and food grade compounds are available, as well as special materials for high-pressure and high-frequency cycling. Non-standard materials (including silicone as low as 30 durometer), colors for indicator valves, electrically conductive materials and compounds with various specific gravities are also available.



*Elastomeric
Fluid Controls*





your applications + (our designs + materials) = new opportunities



Tolerance: Manufacturing for certain applications can be held to specific gravity tolerances of $\pm .005$ g/cc, diameter tolerances of ± 0.08 mm (0.003 in.) and sphericity of 0.08 mm (0.003 in.) maximum.

Note: Tolerances are for comparison only and will vary according to the compound used.

Finishing process: We offer a proprietary manufacturing process that provides improved diameter and sphericity as well as smoother, more uniform surfaces. V-Ball® products are finished to maintain such close tolerance that flash lines are eliminated.

Correct compound selection is crucial to achieving desired results. Vernay chemists specialize in selecting compounds appropriate to your application.

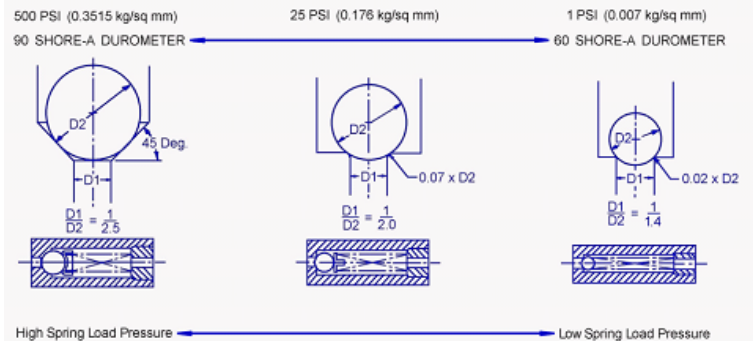
For more technical details, please refer to Vernay Technical Information Sheets.

Product advantages

Function: V-Ball® elastomeric spheres are compliant enough for low pressure sealing applications and resilient enough to withstand severe vibration and impact. They are non-magnetic, corrosion resistant and economical, V-Ball® products require no lubrication during use, but special compounding can provide the internal lubrication necessary to your application. Available with high dielectric strength, they are perfect for high-speed assembly because no orientation is required.

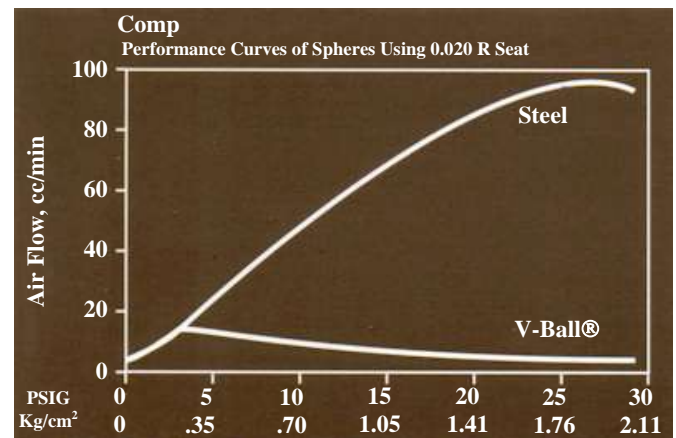
Size: Vernay V-Ball® elastomeric spheres require minimal space. Standard sizes range from 1.8 to 9.525 mm (0.07 to 0.375 in.). Non-standard sizes, as large as 22.23 mm (.875 inches) are available according to your application's needs.

Recommended Seat for V-Ball Elastomeric Spheres



As the Port Diameter, Pressure, Temperature, and Length of Time that the Ball is in the Closed Position Increases, Use Higher Pressure Seat Designs (Further to the Left). High Temperatures are Generally Over 200F (93C) and Higher Valve Closure Durations are Generally Greater than 6 Hrs.

The chart below is for illustrative purposes only and is not to be construed as an absolute measurement. The flows will vary with the material properties, the installation and the method of measurement used.





Applications

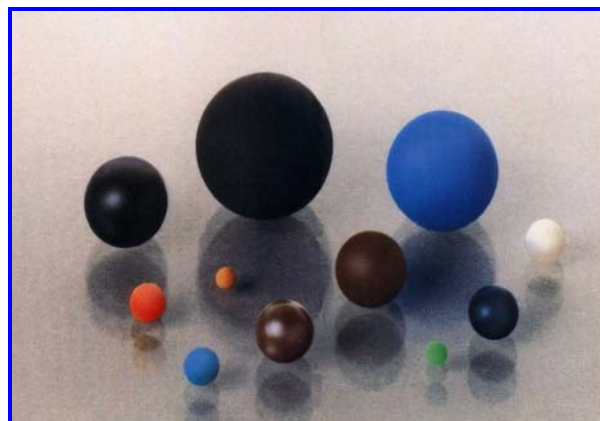
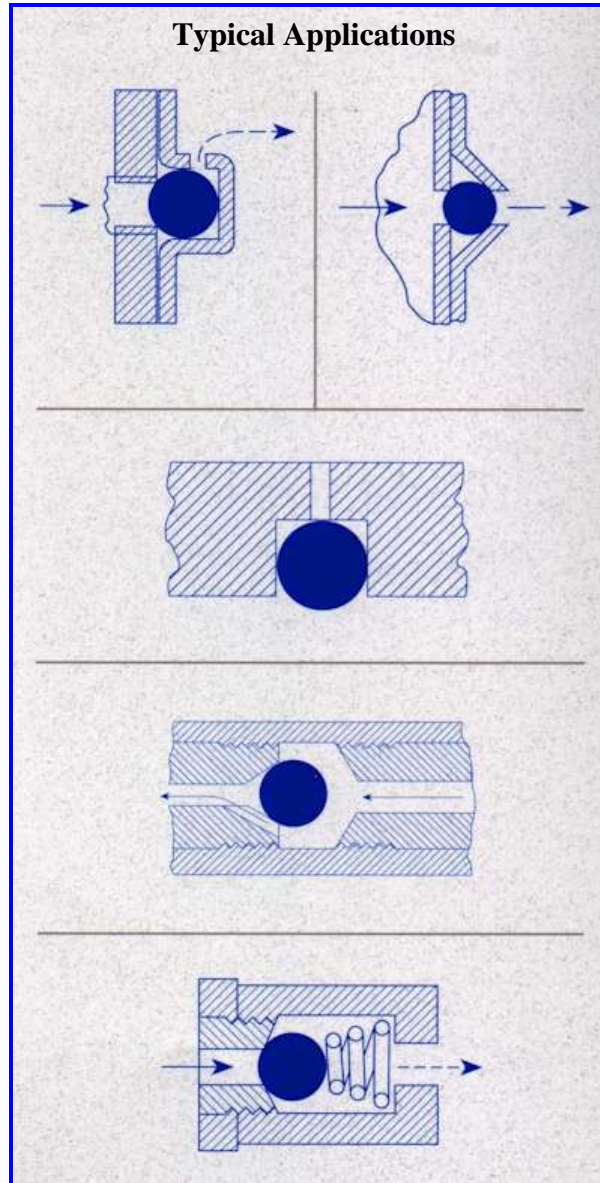
Automotive: Automatic transmission check valves, fuel pump and filter check valves, solenoid valves, battery indicators, pressure and vacuum relief valves, torque converter and clutch assemblies, fuel injection, carburetors, rubber dampeners, low-noise bearings.

Medical: Disposable medical products.

Appliance: Anti-syphon devices, beverage dispensers, battery indicators.

Specialty: Valves, battery vents and indicators, captured-ball armatures.

Optimal solutions are most often achieved through successful co-development. Vernay specialists are ready to work with you to provide innovative answers to your most demanding design challenges. Working with Vernay as your design partner can result in lower total cost and higher value

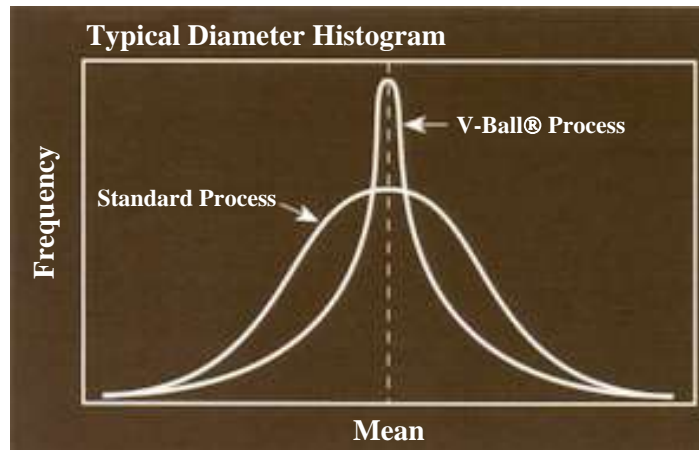
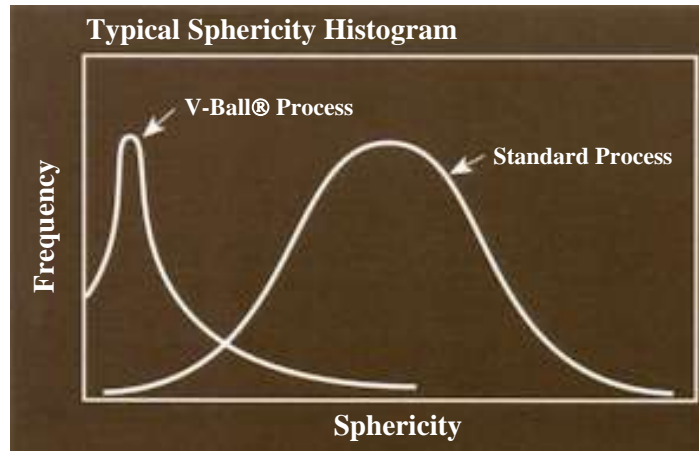


Compounding capabilities

(Not limited to the following polymeric families.)

- Nitrile, NBR
- Fluorosilicone, FVMQ
- Ethylene Propylene, EPDM
- Silicone, VMQ, MQ, PVMQ
- Hydrogenated Nitrile, HNBR
- Butyl, IIR
- Fluorocarbon, FKM
- Polyisoprene, IR, NR
- Epichlorohydrin, CO/ECO
- Chloroprene, CR
- Polyurethane, AU/EU
- Styrene-butadiene, SBR
- Polyacrylate Acrylic, ACM/AEM/ANM

With access to over 23,000 proprietary elastomeric formulations stored in our database for quick retrieval, our engineers and chemists select custom-compound materials suited to your demanding product applications.



Charts Above: The superior flow-checking ability of V-Ball® elastomeric spheres is partly due to a manufacturing process that results in improved sphericity and diameter tolerances. V-Ball® elastomeric spheres may be used in applications that previously required expensive check valves or check valve assemblies.

Quality commitment

Vernay is committed to the philosophy of continuous improvement in everything we do. Product quality is achieved through the stabilization and continuous improvement of all processes and activities that impact quality.

The Vernay Quality System has been established to enforce the vital component of the customer-supplier relationship.

The Vernay Quality System is based on the ISO-9001 Quality System Standards, the Automotive QS-9000 and TS-16949 System Requirements, the FDA Quality System Regulations, and the ISO-14001 Environmental Quality Standard.

Actual quality certifications, for each of our global locations can be downloaded in PDF format on our website www.vernay.com!



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