

Zenith B-Series Pumps... Ensure Precise Mix Ratio For Urethane Foam Applications

Urethane foam is produced primarily for the automotive, building, and furniture industries for use as padding, cushioning, and insulation. Depending upon production, urethane foam can offer different characteristics tailored to specific applications. It can be soft and springy for a seat cushion or strong and durable for rigid foam insulation.

Industry Challenge

To obtain the proper characteristics, precise amounts of polyol and isocyanate must be blended. This reaction creates an expanding cellular structure. By adding catalysts, blowing agents, colorants, and other additives, manufacturers can vary or enhance the physical properties of the foam for their particular application.

The quality of the foam depends on the mix ratio between the polyol and isocyanate. Pumps which pulsate or cannot accurately blend the fluids result in poor quality and uneven product application.

Another concern is the viscosity of various polyols and isocyanates. Some polyols tend to be viscous and may contain abrasive colorants. To thin the fluid, the polyol is heated, or a nitrogen blanket is used to pressurize the supply tank. Isocyanates are usually thinner than polyols but have a tendency to crystallize when exposed to moisture. They require the use of a special shaft seal in the pump to prevent this condition from occurring.

The Zenith Solution

The pump of choice for producing urethane foam is typically a positive displacement gear pump, which is capable of pumping high-viscosity fluids at elevated temperatures and pressures. This high-precision pump accurately blends polyols and isocyanates to maintain a proper mix ratio. The smooth, pulseless output of a Zenith pump makes application of the foam highly consistent. These pumps use a



Zenith BPB Pump (shown) or B-9000 Provides precision blending of polyols and isocyanates

special flushable double lip seal to prevent the isocyanate from crystallizing in the shaft seal.

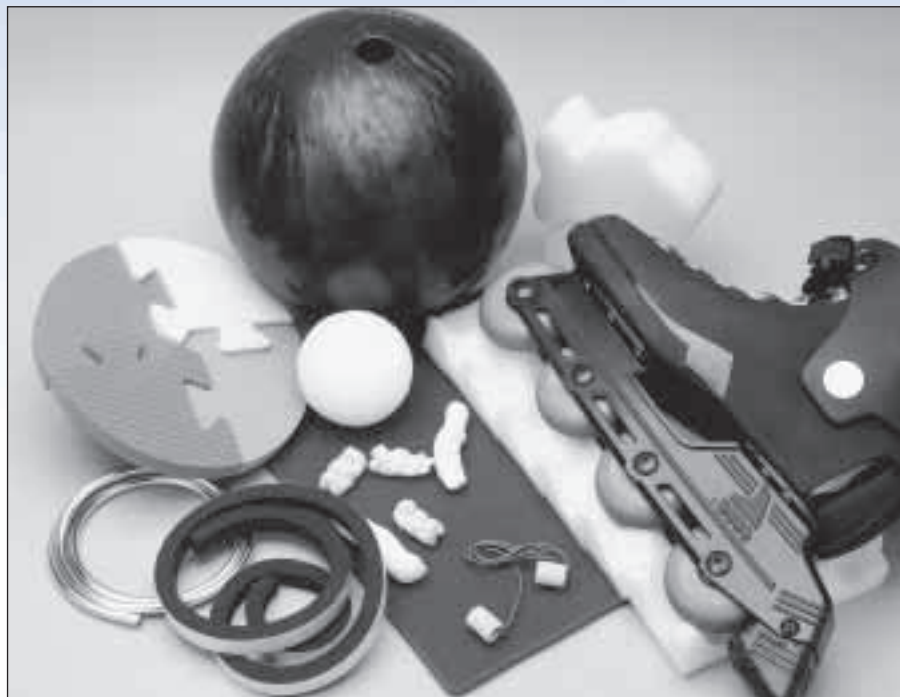
Zenith precision metering pumps are available in a wide variety of models to handle most urethane applications requiring accurate mixing under varying process conditions.

How You Benefit

Precision Blending—The precise, pulseless, and repeatable flow of Zenith precision metering pumps assures highly consistent blending and application of urethane foam products.

Complete Flexibility—To gain maximum flexibility in mix ratios, a variety of independent pumps and drive systems are used. Zenith's master-ratio control system provides accurate programmable control of two or more variable speed DC drives.

Improved Quality—Manufacturers of urethane foams can vastly improve product quality by using Zenith pumps, which ensure the right mix between resins and catalysts.



Zenith offers a complete line of B-Series pumps and metering systems to handle urethane foam applications.

Zenith[®]
Pumps