Reliable Solutions for Manufacturing High-Purity Chemicals

AIR-OPERATED DOUBLE-DIAPHRAGM PUMPS | MARKET BROCHURE

PSG a DOVER company

ALMATEC

Where Innovation Flows

RELIABLE CHEMICAL SOLUTIONS

ALMATEC®

High-Purity Chemical Manufacture:
The Almatec® E-Series AODD Pump

High-purity chemicals are indispensable building blocks in the manufacture of end products in such diverse industries as pharmaceuticals, semiconductors and solar panels. As such, the manufacturers of these chemicals must create products that conform to a set of strict specifications regarding purity and quality. Failure to do so can result in hundreds of thousands of dollars in lost product and production time, as well put a blemish on the manufacturer's reputation that is hard to remove and can have far-reaching effects.

To ensure in-spec production of high-purity chemicals (which can also be toxic or dangerous to handle), manufacturers are finding that solid-body plastic air-operated double-diaphragm (AODD) pumps are the perfect choice, offering the added benefits of chemical resistant materials, optimized product containment, elimination of product cross-contamination and improved environmental protection.

Specifically, Almatec® E-Series AODD Pumps shine in high-purity chemical-manufacturing applications for a variety of reasons:

FEATURE	BENEFIT	VALUE
Solid-Block Design, Machine Engineered	• High static weight reduces pump-body vibration • No exposed metal parts	• Can be used in corrosive atmospheres • Improved safety • Easier maintenance
PE or PTFE Construction	• Excellent chemical abrasion and good corrosion resistance of polyethylene (PE) • Universal chemical corrosion resistance of PTFE	• Improved durability • Longer lasting • Less maintenance
Consistent Interior Housing Design	• Good self-priming values • Accommodates ball or cylinder valves of varying materials	• Gentle fluid flow • Compatible with a wide range of chemical types • Full containment
Pulsation Damper (optional)	• Self-regulating • No exposed metal parts • Attached directly to pump with no need for additional piping • Flanged versions available	• Easy to install • Maintenance-free • Delivers virtually uniform flow • Protects pipework
Internal Drain System (optional)	• Installed in side housings • Allows draining with no need to disconnect from piping • Reduces amount of cleaning agent and solvent needed • Product recovery of precious liquids	• Valves can be manually or pneumatically operated • Reduces maintenance needs • Virtually eliminates residue in the pump • Reduces environmental pollution
Stroke Counter (optional)	• Stroke-counting sensor installed in center housing	• Accurately counts defined number of strokes

The Almatec® Advantage

MATERIALS OF CONSTRUCTION

All E-Series pumps housings and components are constructed of polyethylene (PE) or polytetrafluoroethylene (PTFE) in a solid-block design. PE offers excellent abrasion resistance higher than steel and PTFE an universal chemical resistance. These are prime considerations when handling high-purity, aggressive, corrosive, toxic or hazardous media.

Depending on the material combination, certificates for USP Class VI, FDA and EC1935 confirmation are available.

MACHINED FOR PRECISION

The pump's solid-body PE or PTFE block construction increases its strength and operational life cycle while eliminating many maintenance concerns. The pump's body and other components are CNC-machined rather than, as is the case with many competitive models, injection-molded. The CNC based design enables tight tolerances, lower risk of leakage, and greater stability and durability. The solid block's high static mass also results in smooth operation with reduced vibration.

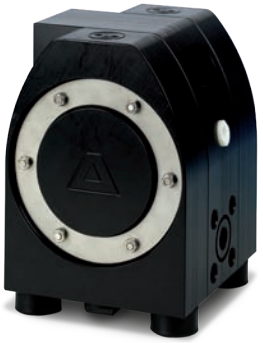
AIR CONTROL SYSTEM

With its PERSWING P® Air Valve Almatec enables its E-Series pumps to achieve superior efficiency in flow rate and air consumption, which translates into lower energy costs. The highly accurate reversal of the main piston, which has only two moving parts, results in low noise levels, less required maintenance, and stall-free operation.

ATEX CONFORMITY

E-Series pumps outfitted with PE- or PTFE-filled conductivity pigments conform to established regulations for use in potentially explosive manufacturing atmospheres. When grounded through a connection on the center housing, the risk of electrostatic discharge occurring is eliminated.

UNIQUE TENSION RING



E-Series pumps feature a stainless-steel tension ring that provides consistent high-torque compression around the entire diameter of the ring and the pump housing, ensuring a leak-free seal.

INTEGRAL DIAPHRAGMS

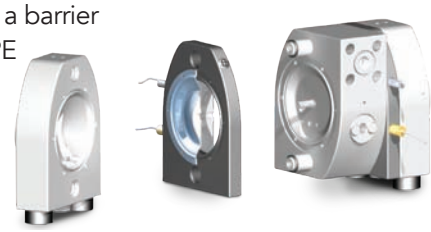
Almatec diaphragms feature a metal core that is built into the center of the diaphragm material, meaning that no diaphragm discs are required, which eliminates notorious leak or product-nesting points. The diaphragm's surface is also smooth, which contributes to flow uniformity.

STEADY, LOW-VIBRATION FLOW RATES

An optional Pulsation Damper buffers the periodic pressure decreases, resulting in a virtually uniform flow. It screws directly to the delivery side of the pump, eliminating the need for additional piping between the pump and the damper.

BARRIER-CHAMBER SYSTEM / DRAINING SYSTEM

The individual diaphragm is replaced by two diaphragms arranged in tandem with a barrier chamber of conductive PE between them and filled with a non-conductive liquid. Any change in the conductivity of the barrier liquid is detected by sensors and signaled to a controller, which triggers an alarm or halts pump operation.



The Internal Drain System consists of a bypass system in the side housings that can be activated either through hand-operated valves or pneumatically, which allows the pump and piping to be drained without having to be disconnected. This capability also reduces the amount of cleaning agent and solvent that is needed, which also greatly reduces environmental pollution. All of these capabilities make possible the recovery of high value liquids.

ALMATEC

PSG
Almatec Maschinenbau GmbH
Hochstraße 150-152
47228 Duisburg, Germany
P: +49 (2065) 89205-0
info@almatec.de
almatec.de

PSG
a DOVER company

Where Innovation Flows

ALM-10010-C-01

Authorized PSG® Partner: