ME SERIES

Dissectible Diaphragm Pump – ME69

The Armfield Dissectible Air Operated Diaphragm Pump is crafted for vocational students, providing hands-on experience in dismantling and reassembling the pump.

Through this practical training, students gain an understanding of how the pump operates, learn the names and functions of individual parts, and develop problem-solving skills. The pump comes in a durable hard case, complete with a full set of tools to facilitate disassembly and rebuilding, and is part of a series of pumps that are safe, easy to operate, and maintain.

Operating Principle

The Armfield diaphragm pump is powered by compressed air. The system consists of two diaphragms connected by a diaphragm shaft, which are alternately moved by pressurized air in the chambers behind them. This movement is controlled by an automatic cycling air valve system.

Suction Cycle:

- One diaphragm retracts, creating suction in one chamber (right side), drawing fluid into the chamber.

Discharge Cycle:

- Simultaneously, the other diaphragm pressurizes the liquid in the second chamber (left side), pushing it towards the discharge port.

During each cycle, the air pressure behind the discharging diaphragm matches the liquid's head pressure. The pump can safely operate against a closed discharge valve without impacting diaphragm lifespan.

Instructional capabilities

key learning outcomes include:

- Understanding Pump Mechanics: Learners will gain an in-depth understanding of how a diaphragm pump functions, including the movement of the diaphragm and how it creates pressure to move fluids.
- Hands-on Technical Skills: Students will develop practical skills in dismantling and assembling mechanical components, improving their problem-solving abilities and mechanical dexterity.
- Component Familiarity: By dissecting the pump, students become familiar with the different components such as the diaphragm, valves, seals, and casing, as well as their roles in the pump's operation.
- Maintenance and Troubleshooting: Rebuilding the pump allows students to identify common wear points, understand maintenance requirements, and practice troubleshooting typical issues in diaphragm pumps, like leaks or blockages.
- Fluid Dynamics Principles: The process teaches learners key principles of fluid dynamics, such as the relationship between pressure, volume, and flow rate in diaphragm-driven systems.
- Teamwork and Communication: If done in groups, the activity encourages collaboration, as students will need to communicate and work together efficiently to disassemble and reassemble the pump.

This hands-on experience can enhance both theoretical knowledge and practical skills that are essential in mechanical engineering and fluid mechanics.

Technical specifications

Inlet and outlet connection	Thread ½" BSP (female)
Air connection	Thread ½" BSP (female)
Max discharge pressure	8 bar
Max air pressure	8 bar
Max Capacity	60 l/min
Volume per stroke	116 ml
Temperature range	-20°C.... +70°C
Solids Passage	14 mm ø
Suction Lift (Dry / Wet)	4-9m
Noise data	Less than 80 dB (A)

Overall dimensions

Length	0.172m
Width	0.185m
Height	0.244m
Packed and crated shipping specifications	
Volume	TBC m^3
Gross Weight	TBC kg

Ordering codes

- ME69

Armfield standard warranty applies with this product

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USA office - email: info@armfield.inc tel: +1 (609) 208-2800 (USA only)