

# IOM

INSTALLATION OPERATION  
& MAINTENANCE

## A050

PLASTIC 1/2 INCH

AIR-OPERATED DOUBLE-DIAPHRAGM PUMP



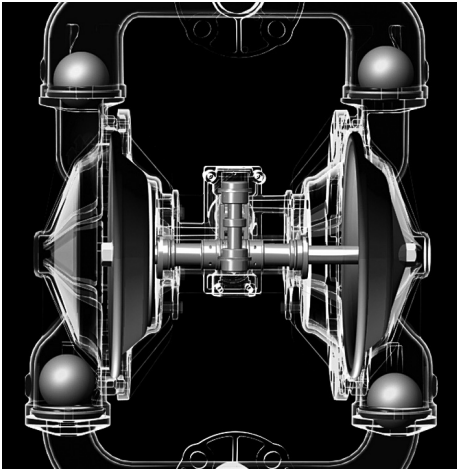
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# PRINCIPLES OF OPERATION

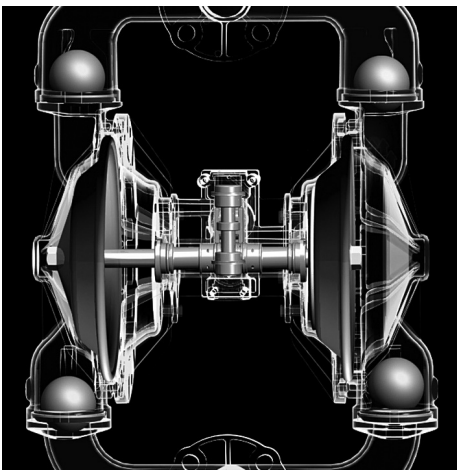
## HOW AN AIR OPERATED DOUBLE DIAPHRAGM PUMP WORKS



The air-valve directs pressurized air behind the diaphragm on the right, causing the diaphragm on the right to move outward (to the right).

Since both the right diaphragm and the left diaphragm are connected via a diaphragm rod, when the right diaphragm moves to the right, the left diaphragm (through the action of the diaphragm rod) moves to the right also.

When the diaphragm on the left side is moving to the right, it is referred to as suction stroke. When the left diaphragm is in its suction stroke, the left suction ball moves upward (opens) and the left discharge ball moves downward (closes). This action creates suction and draws liquid into the left side chamber.



The air-valve directs pressurized air behind the left diaphragm, causing the left diaphragm to move outward (to the left).

Since both the left diaphragm and the right diaphragm are connected via a diaphragm rod, when the left diaphragm moves to the left, the right diaphragm (through the action of the diaphragm rod) moves to the left also.

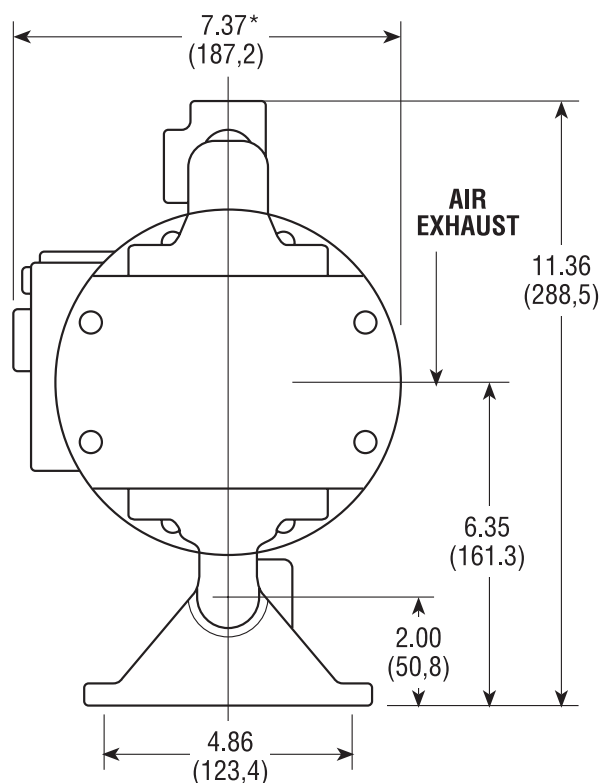
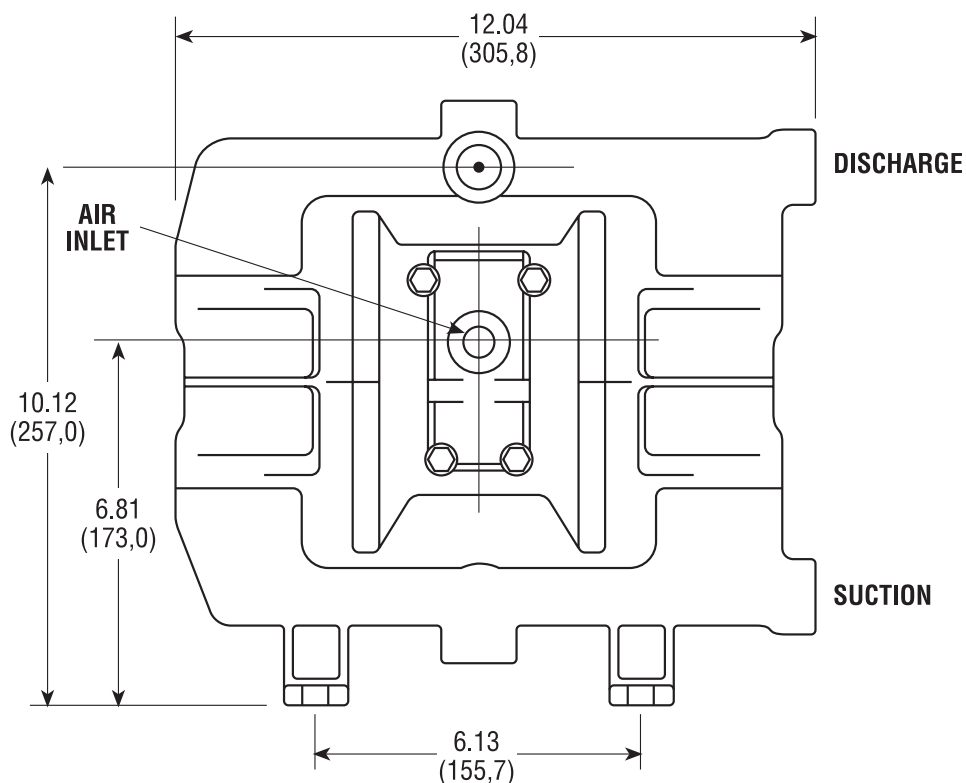
When the diaphragm on the left side moves outward, the left discharge ball moves upward (opens) and the left suction ball moves downward (closes). This causes the liquid to leave the left side liquid outlet of the pump.

Simultaneously, the right diaphragm moves inward (to the left), which causes the right suction ball to open and the right discharge to close, which in turn causes suction, drawing liquid into the right chamber.

The process of alternating right suction / left discharge (and vice-versa) continues as long as compressed air is supplied to the pump.

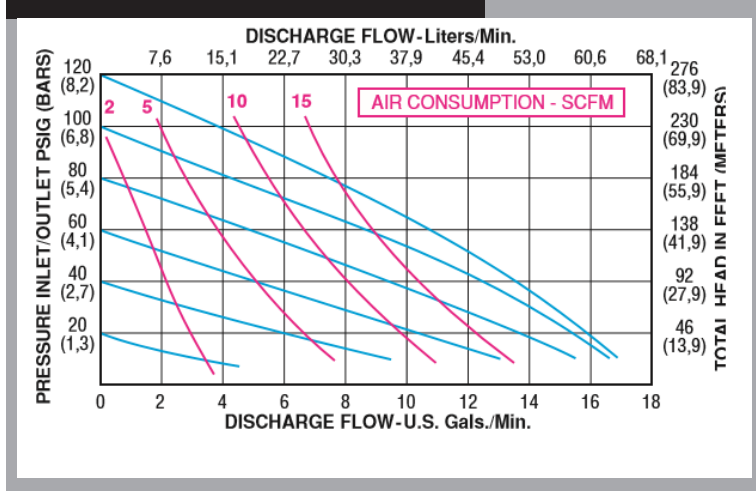
# 1/2" PUMP DIMENSIONS

## BOLTED PLASTIC



# PERFORMANCE CURVES

PERFORMANCE CURVE



Performance Specifications

|                                |                                                 |
|--------------------------------|-------------------------------------------------|
| Max. Flow:                     | 17 gpm (64.4 lpm)                               |
| Max. Air Pressure:             | 120 psi (8.3 bar)                               |
| Max. Solids:                   | 1/8" (3.2 mm)                                   |
| Max. Suction Lift Dry:         | 15 ft-H <sub>2</sub> O (4.6 m-H <sub>2</sub> O) |
| Max. Suction Lift Dry w/PTFE:  | 10 ft-H <sub>2</sub> O (3.0 m-H <sub>2</sub> O) |
| Max. Suction Lift Wet:         | 26 ft-H <sub>2</sub> O (7.9 m-H <sub>2</sub> O) |
| Weight Polypropylene:          | 9 lbs (4.1 kg)                                  |
| Weight PVDF & Conductive Nylon | 12 lbs (5.4 kg)                                 |
| Air Inlet:                     | 1/4" FNPT                                       |
| Liquid Inlet FNPT/FBSPT:       | 1/2"                                            |
| Liquid Outlet FNPT/FBSPT:      | 1/2"                                            |
| Height:                        | 11.4" (289 mm)                                  |
| Width:                         | 12.0" (306 mm)                                  |
| Depth:                         | 7.4" (187 mm)                                   |

\*Flow rates indicated on the chart(s) shown were determined by pumping water at flooded suction. For optimum life and performance, pumps should be specified so that daily operation parameters will fall in the center of the pump performance curve.



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