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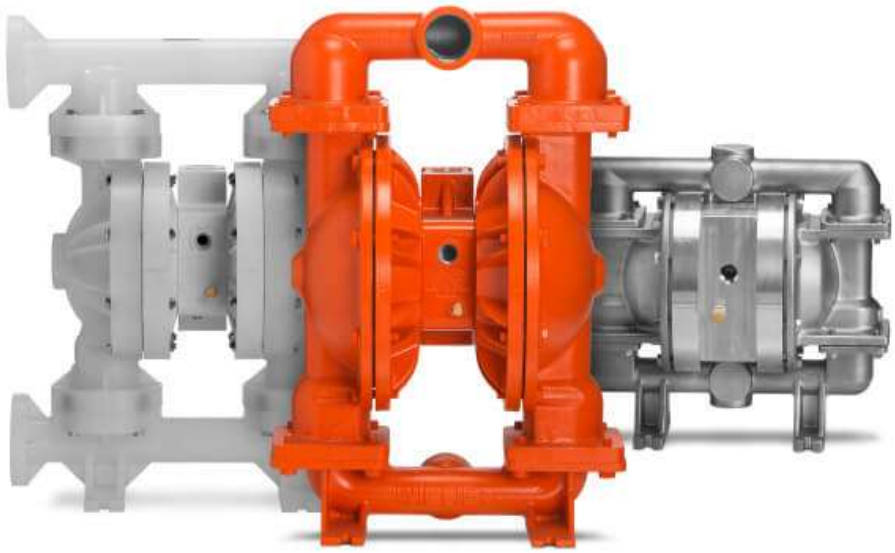

AIR OPERATED DOUBLE DIAPHRAGM PUMPS

GSTN : 09APVPK8618N3ZQ

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CHEMICA PUMPS & FILTRATION is the India's leading sales and service providers for chemical process **AIR OPERATED DOUBLE DIAPHRAGM PUMPS.**

FEATURES

- The pumps can run dry indefinitely without damage.
- No Shaft Seals or gland packing.
- Infinitely variable flow & discharge pressure from zero to pump's maximum by adjusting air pressure.
- One pump can fit a broad spectrum of applications.
- Gentle non-shearing action.
- If discharge is clogged or closed pump stops immediately
- no power consumed, no heat, no wear - By opening discharge, flow starts automatically.
- Operates submerged or with flooded suction.
- Self-priming from a dry start.
- Pressure up to 100 PSI (7 bar)

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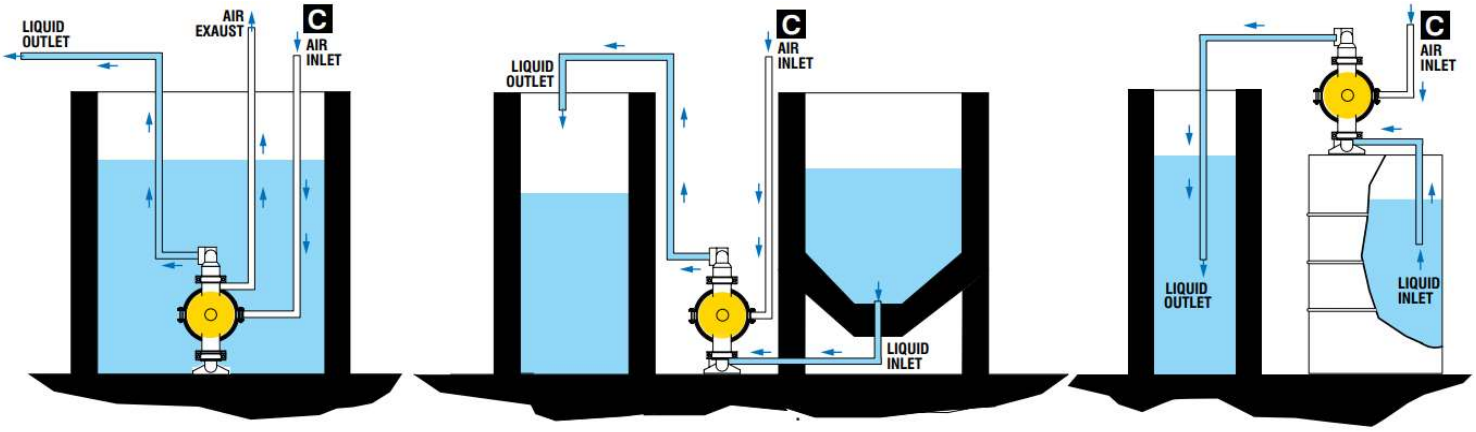
INSTALLATION VERSATALITY



SUBMERGED
CHEMICA Pumps are totally submersible. It is important that the air exhaust be ported above the level of the fluid, and that the MOC also be compatible.

POSITIVE SUCTION
Pump can draw from the bottom of the vessel. Preferred installation for viscous fluids.

SELF PRIMING / DRUM TRANSFER
The suction capabilities of each pump may vary due to system design, product being pumped, and pump materials of construction.

PUMP'S WORKING

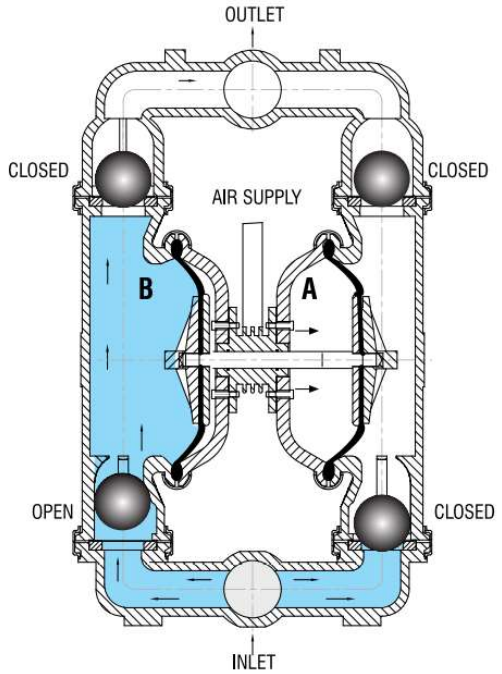


FIGURE 1 (LEFT STROKE)

The air valve directs pressurized air to the back side of diaphragm A. The compressed air is applied directly to the liquid column separated by elastomeric diaphragms. The diaphragm acts as a separation membrane between the compressed air and liquid, balancing the load and removing mechanical stress from the diaphragm. The compressed air moves the diaphragm away from the center block of the pump. The opposite diaphragm is pulled in by the shaft connected to the pressurized diaphragm. Diaphragm B is on its suction stroke; air behind the diaphragm has been forced out to the atmosphere through the exhaust port of the pump. The movement of diaphragm B toward the center block of the pump creates a vacuum within chamber B. Atmospheric pressure forces fluid into the inlet manifold forcing the inlet valve ball off its seat. Liquid is free to move past the inlet valve ball and fill the liquid chamber (see shaded area).

MID STROKE

When the pressurized diaphragm, diaphragm A, reaches the limit of its discharge stroke, the air valve redirects pressurized air to the back side of diaphragm B. The pressurized air forces diaphragm B away from the center block while pulling diaphragm A to the center block. Diaphragm B is now on its discharge stroke. Diaphragm B forces the inlet valve ball onto its seat due to the hydraulic forces developed in the liquid chamber and manifold of the pump. These same hydraulic forces lift the discharge valve ball off its seat, while the opposite discharge valve ball is forced onto its seat, forcing fluid to flow through the pump discharge. The movement of diaphragm A toward the center block of the pump creates a vacuum within liquid chamber A. Atmospheric pressure forces fluid into the inlet manifold of the pump. The inlet valve ball is forced off its seat allowing the fluid being pumped to fill the liquid chamber.

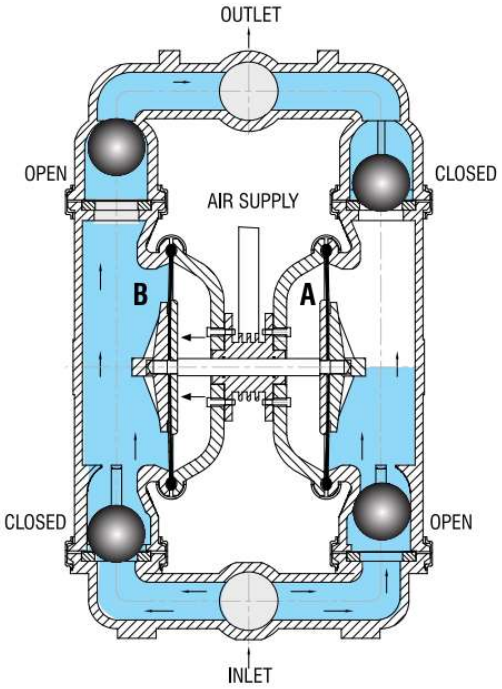


FIGURE 2 (MID STROKE)

RIGHT STROKE

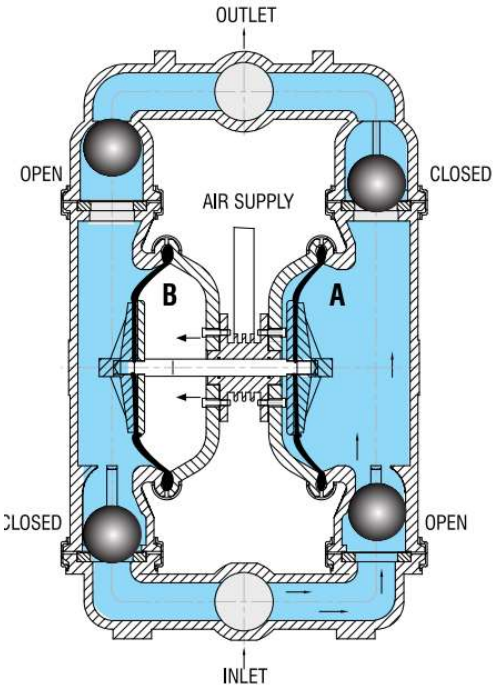


FIGURE 3 (RIGHT STROKE)

At completion of the stroke, the air valve again redirects air to the back side of diaphragm A, which starts diaphragm B on its exhaust stroke. As the pump reaches its original starting point, each diaphragm has gone through one exhaust and one discharge stroke. This constitutes one complete pumping cycle. The pump may take several cycles to completely prime depending on the conditions of the application.

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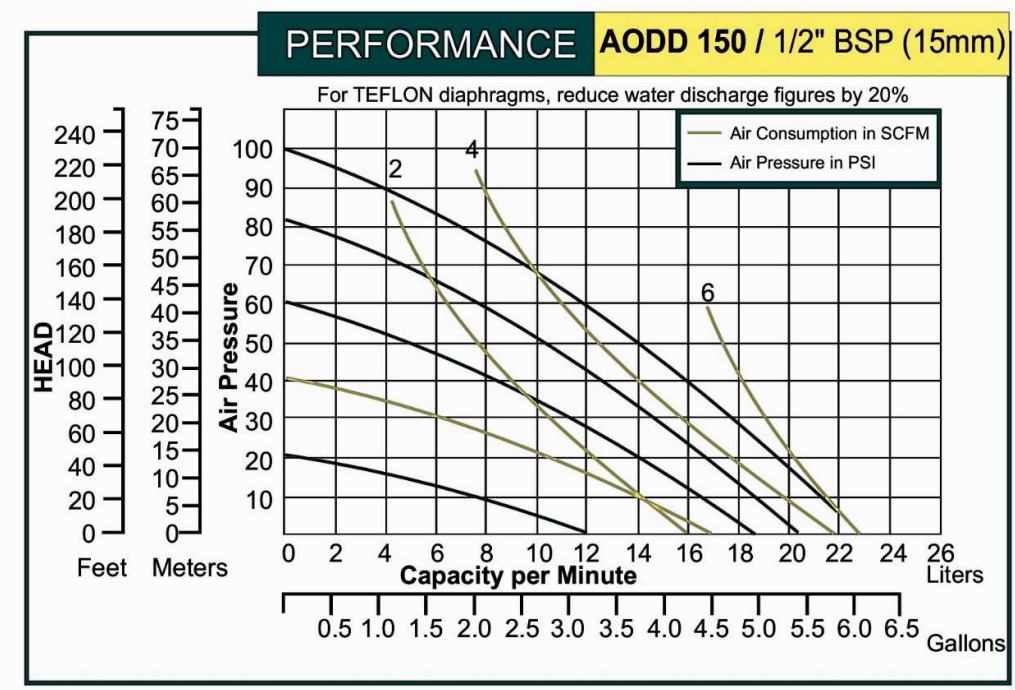
SPECIFICATIONS & PERFORMANCE

½” BSP (15 mm)

MOC’s Available

PPH, PVDF, SS-316, AL

Max Flow rate	: 35Lpm
Port Size	: Inlet : 12.70mm (½" BSP)
	Discharge : 12.70mm (½" BSP)
Suction Lift	: Dry : 1.45m (4.75') Wet : 2.83m (9.28')
Teflon	: Dry : 0.50m (1.64') Wet : 0.90m (2.95')
Max Particle Size	: 2mm (0.078")
Air Inlet	: ¼" BSP
Air Exhaust	: ½" BSP



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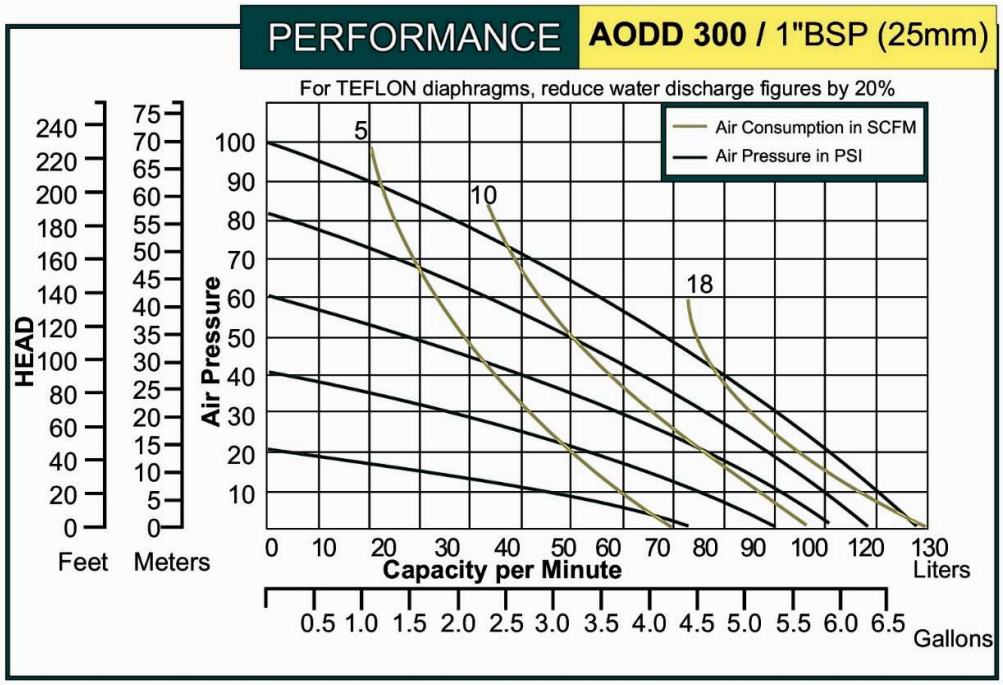
SPECIFICATIONS & PERFORMANCE

1” BSP (25 mm)

MOC’s Available

PPH, PVDF, SS-316, AL

Max Flow rate	: 135Lpm
Port Size	: Inlet : 25.4 mm (1" BSP)
	Discharge : 25.4 mm (1" BSP)
Suction Lift	: Dry : 3.05m (10') Wet : 4.89m (16')
Teflon	: Dry : 2.14m (7') Wet : 3.98m (13')
Max Particle Size	: 3.17mm (0.125")
Air Inlet	: ¼" BSP
Air Exhaust	: ½" BSP



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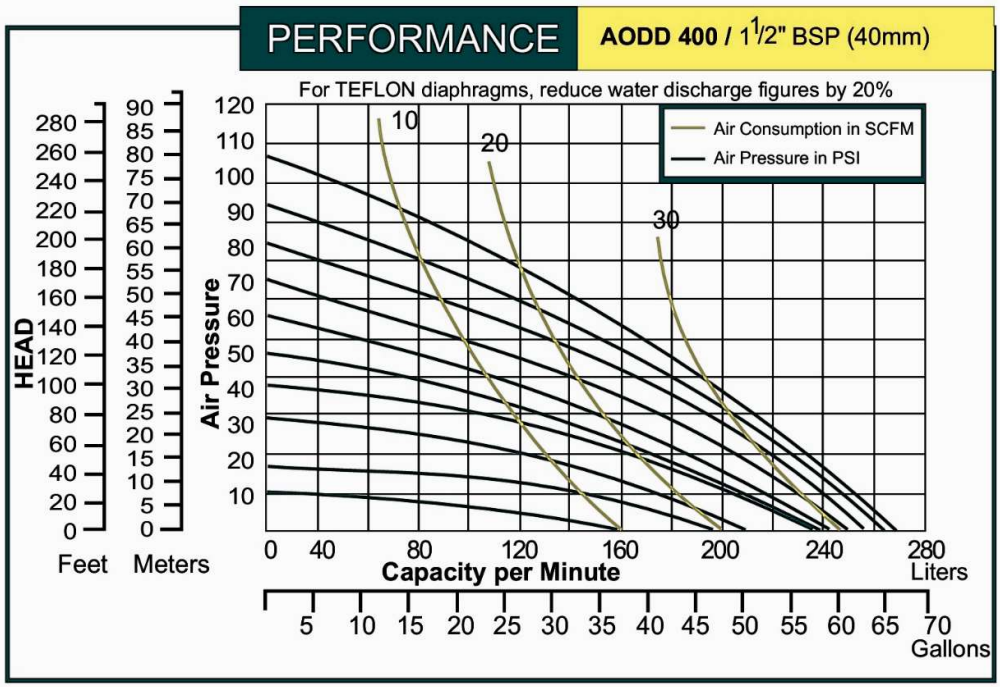
SPECIFICATIONS & PERFORMANCE

1½" BSP (40MM)

MOC's Available

PPH, PVDF, SS-316, AL

Max Flow rate	: 270Lpm
Port Size	: Inlet : 38.10mm (1½" BSP)
	Discharge : 38.10mm (1½" BSP)
Suction Lift	: Dry : 4.57m (15') Wet : 7.62m (25')
Teflon	: Dry : 3.05m (10') Wet : 6.09m (20')
Max Particle Size	: 4.76mm (0.188")
Air Inlet	: ½" BSP
Air Exhaust	: ½" BSP



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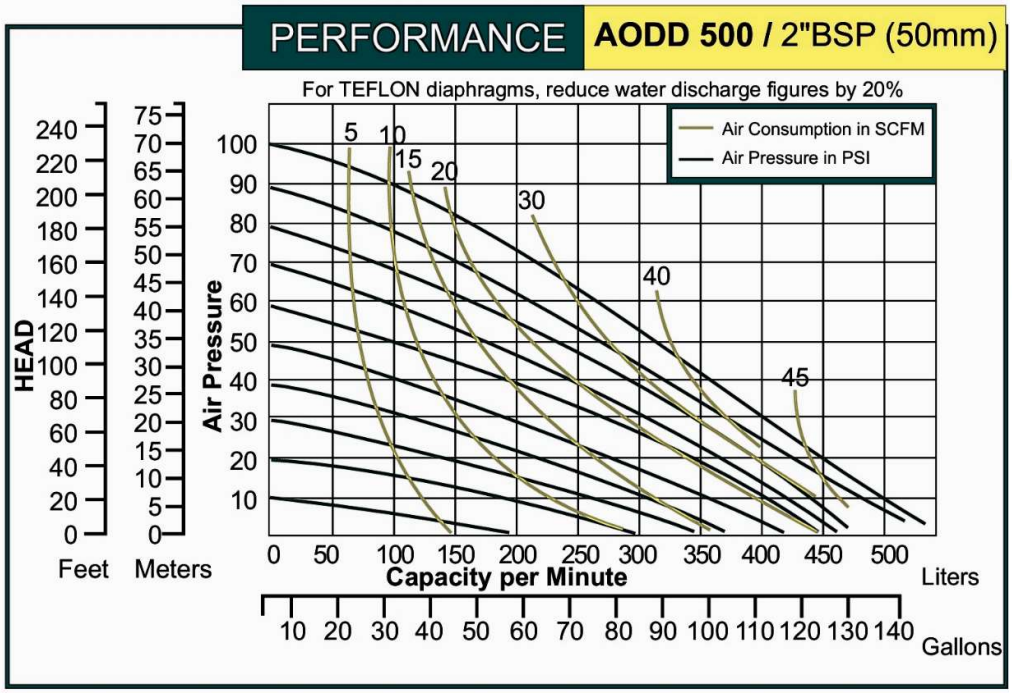
SPECIFICATIONS & PERFORMANCE

2" BSP (50MM)

MOC's Available

PPH, PVDF, SS-316, AL

Max Flow rate	: 586Lpm
Port Size	: Inlet : 50.80 mm (2" BSP)
	Discharge : 50.80 mm (2" BSP)
Suction Lift	: Dry : 4.57m (15') Wet : 7.62m (25')
Teflon	: Dry : 3.05m (10') Wet : 6.09m (20')
Max Particle Size	: 4.76mm (0.188")
Air Inlet	: ½" BSP
Air Exhaust	: ½" BSP



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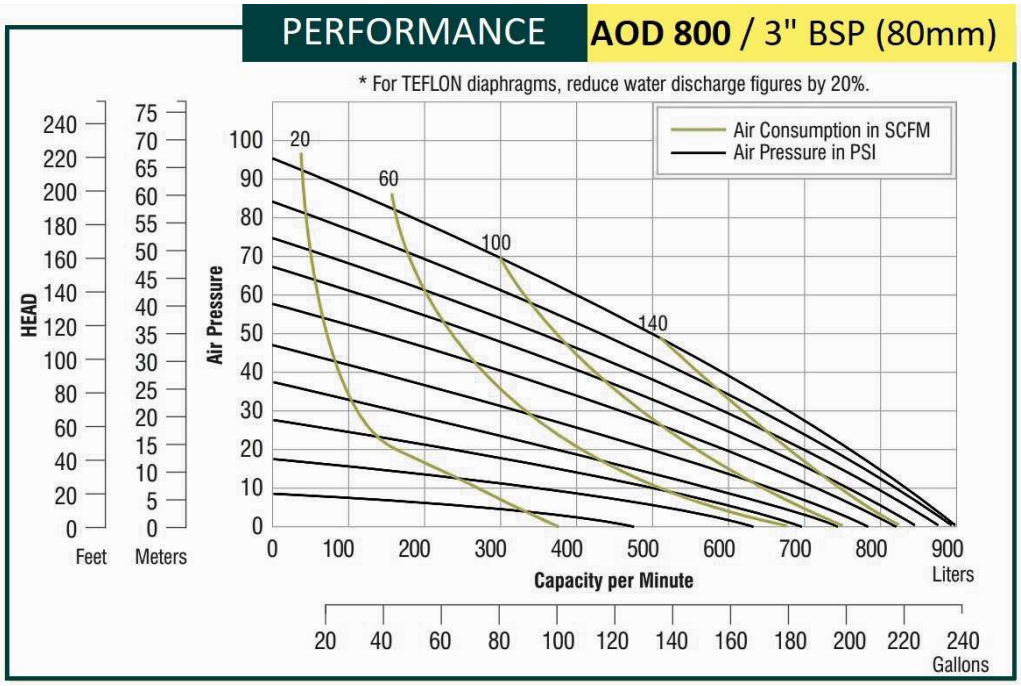
SPECIFICATIONS & PERFORMANCE

3" BSP (80MM)

MOC's Available

PPH, PVDF, SS-316, AL

Max Flow rate	: 900Lpm
Port Size	: Inlet : 76.20 mm (3" BSP)
	Discharge : 76.20 mm (3" BSP)
Suction Lift	: Dry : 6.09m (20') Wet : 7.62m (25')
Teflon	: Dry : 3.05m (10') Wet : 6.09m (20')
Max Particle Size	: 19.10mm (0.750")
Air Inlet	: ½" BSP
Air Exhaust	: ¾" BSP



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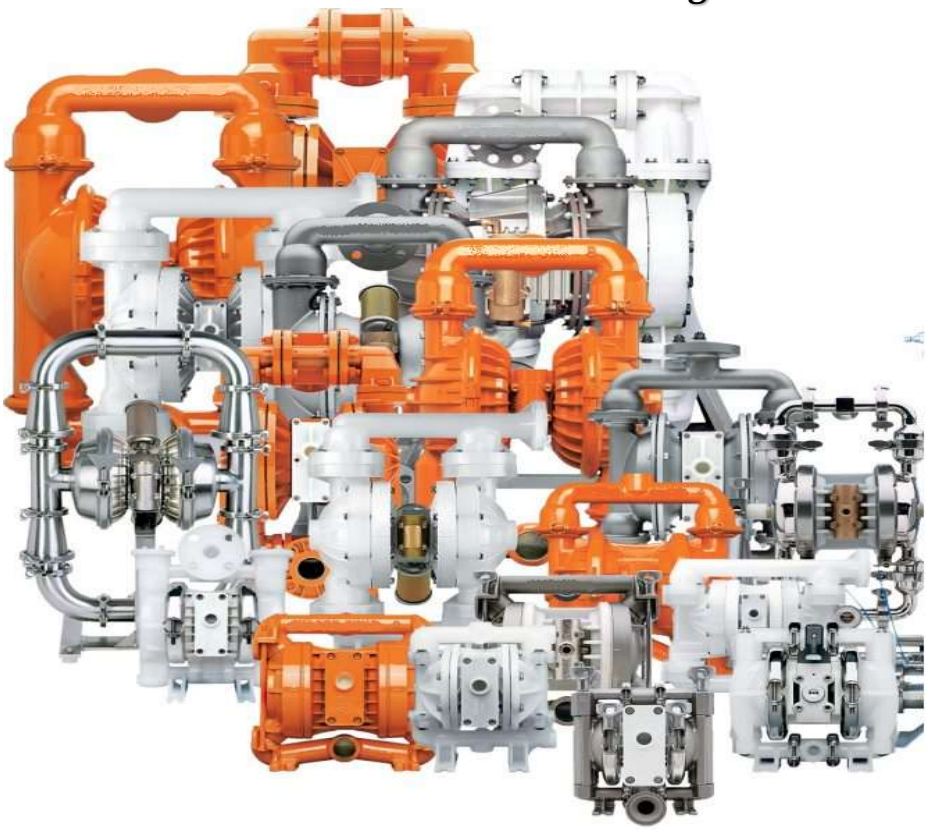

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