DIAPHRAGM PUMPS

Applied
Lubrication
Technology Inc.

12 French Drive, Mono, ON L9W 5W1
Technical Sales: Bob Lewis
Cell: (519) 658-3204
E-Mail: bob@appliedlubrication.com

Raasm pneumatic double-diaphragm pumps (ratio 1:1) are designed and manufactured for pumping a wide range of fluids even with high viscosities and with suspended solids.
In being ATEX certified, they can also be used for heavy applications such as in places with high humidity or with potentially explosive atmosphere.

- Self-priming capability
- Easy adjustment of delivery
- They do not become damaged in case of prolonged operation when empty

are some of the features that make these pumps particularly versatile and appreciated in all work environments.

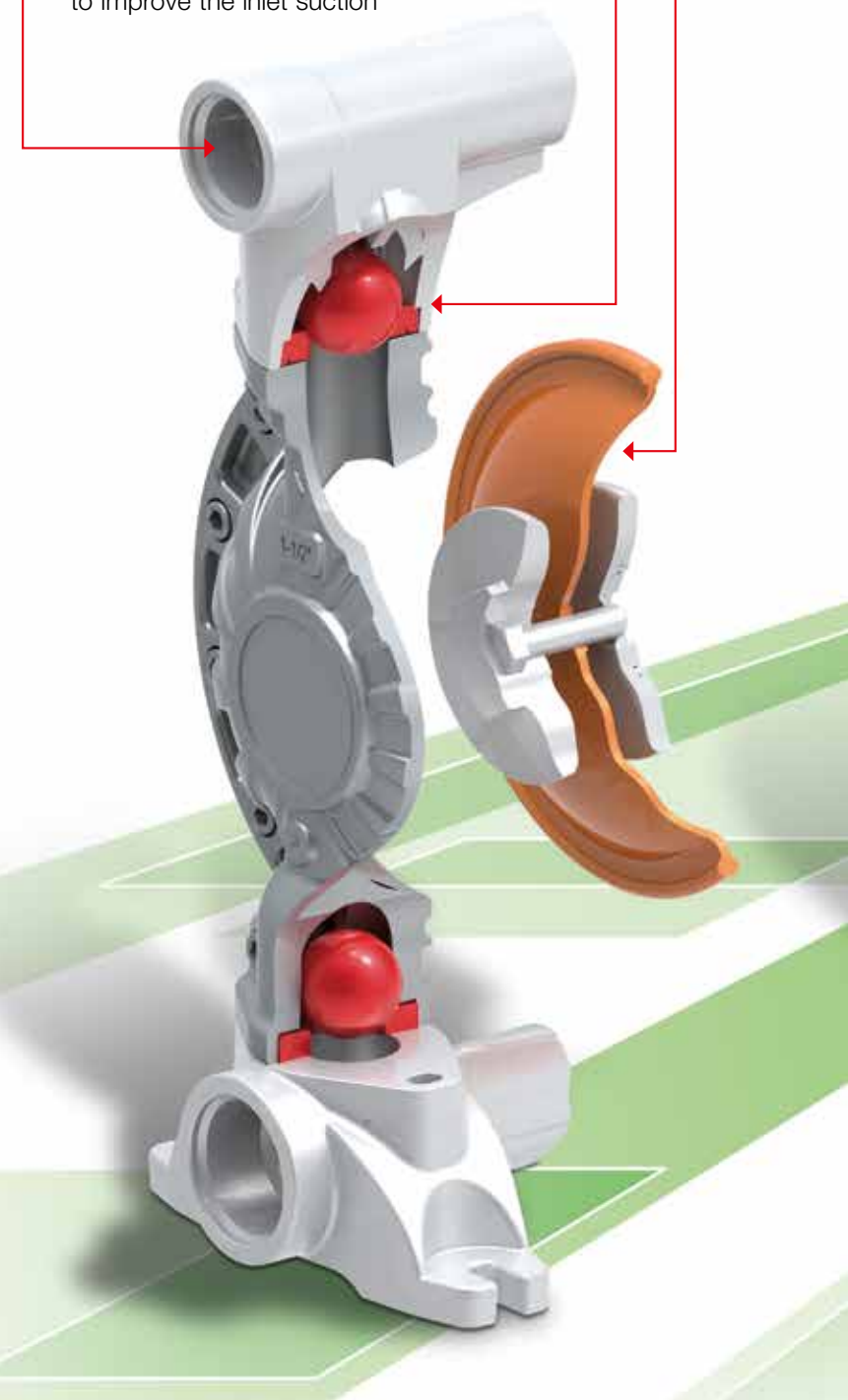
The wide range of materials used for the pumps makes it easy to identify the model having the best chemical compatibility with the fluid to be pumped and for the work environment.

TECHNICAL CHARACTERISTICS

Diaphragms designed and produced with different materials according to the fluid to be pumped

Ball valves designed to guarantee the total flow of the pumped fluid

Total flow suction and delivery manifolds, to facilitate suction of the liquid in any situation, with threaded connections or flanged available in different diameters according to the pump models. Most of the pumps have an oversize diameter lower union to improve the inlet suction



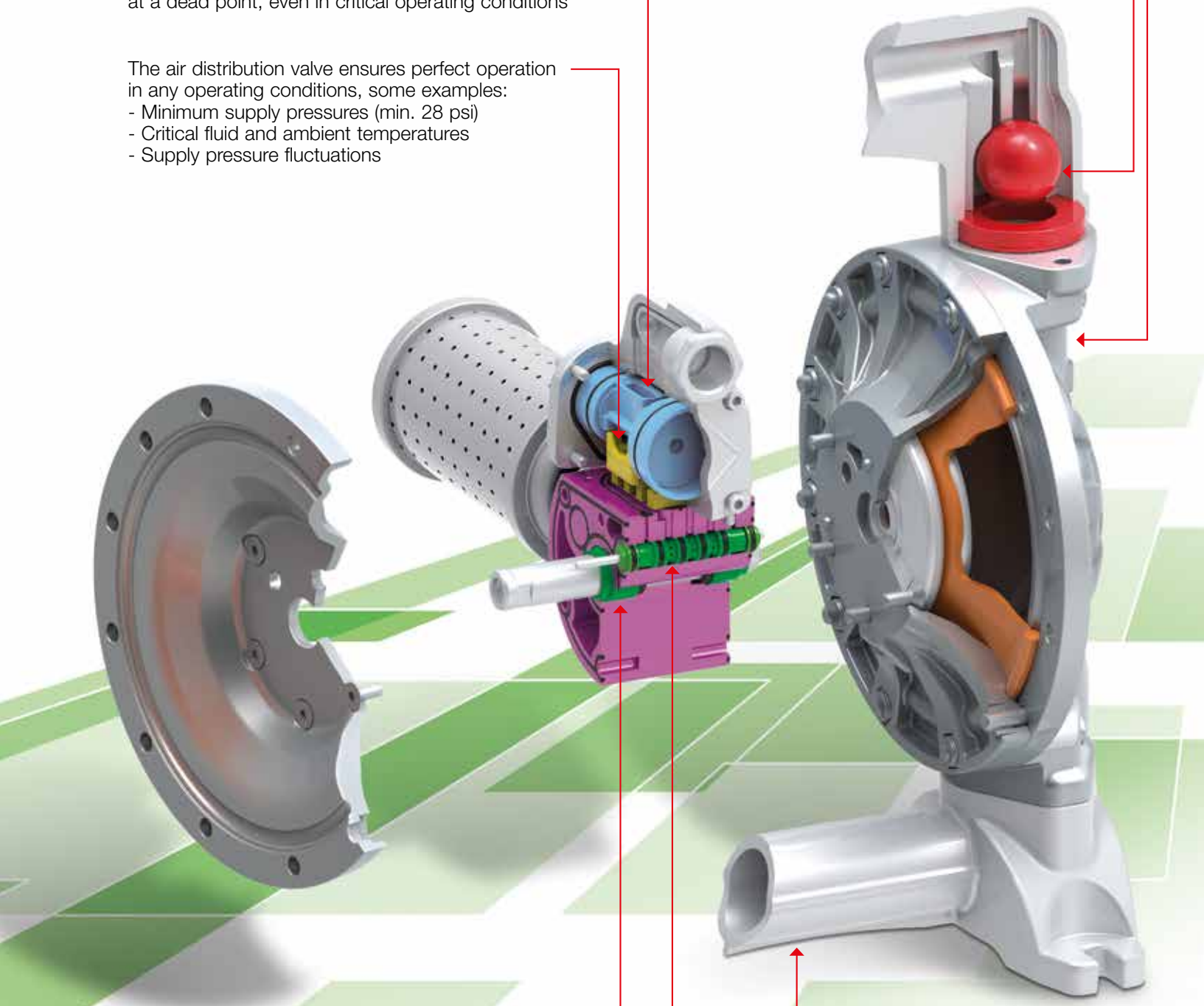
The exploded view shows the main parts making up the diaphragm pumps, and their technical features.
Many RAASM models are available; although similar in type and appearance they differ for the type of materials used to ensure correct chemical compatibility according to the fluid to be pumped.

Flanges created to withstand heavy work conditions

Balls and ball seats in many types of materials to guarantee chemical compatibility according to the fluid to be pumped. Easy to clean or replace as required.

Air distributor unit equipped with anti-stall reversing piston. This piston prevents the pump from stopping at a dead point, even in critical operating conditions

The air distribution valve ensures perfect operation in any operating conditions, some examples:
- Minimum supply pressures (min. 28 psi)
- Critical fluid and ambient temperatures
- Supply pressure fluctuations



Pneumatic motor with anti-ice device. This allows the pump to maintain its performance

Industrial design, material in aluminum with internal and external nickel-plating surface treatment.

Die-casting ensures a better structural and surface finish

The pneumatic motor block of the pump does not require any type of lubrication because the moving parts are self-lubricating

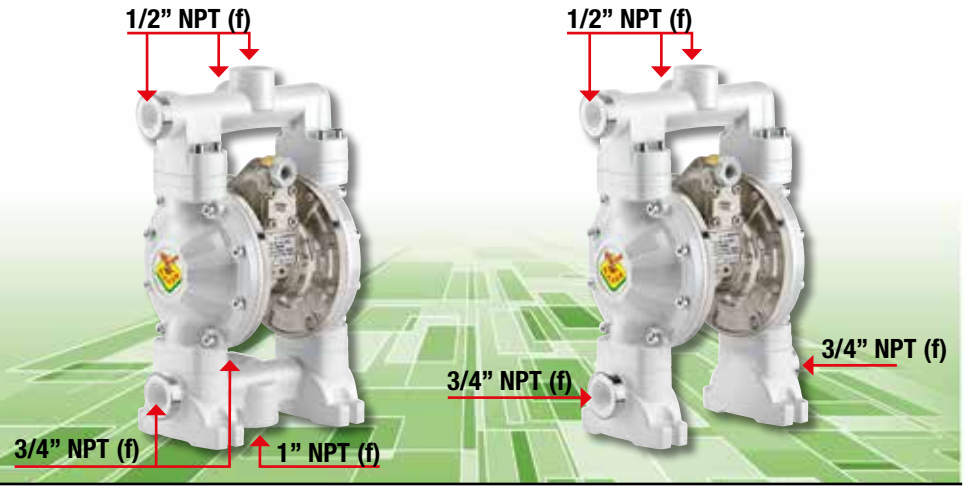
Applied Lubrication Technology Inc.

1/2” - 16 gpm

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from molding injected Polypropylene, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 3 GD c TX

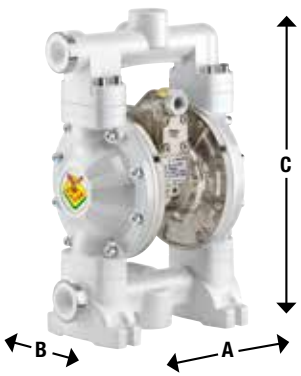
Note: The max flow rate shown in the below graphics has been obtained by laboratory test.



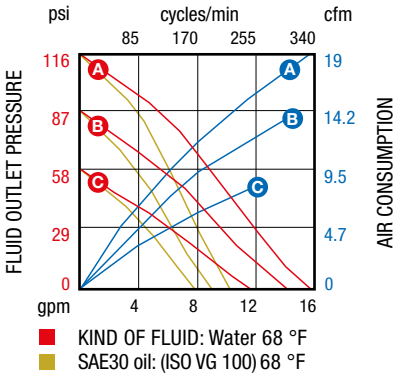
Series			120-PB in **Polypropylene** - motor **Aluminum**	120-PB in **Polypropylene** - motor **Aluminum**
membranes	**balls**	**seats**		
EPDM	**Acetal**	**Polypropylene and AISI 316**	P/N **2BC/16117EA5-55**	P/N **2BH/16117EA5-55**
Hytrel®	**Hytrel®**	**Polypropylene and AISI 316**	P/N **2BC/16117HH5-55**	P/N **2BH/16117HH5-55**
NBR	**Hytrel®**	**Polypropylene and AISI 316**	P/N **2BC/16117NH5-55**	P/N **2BH/16117NH5-55**
Santoprene	**Santoprene**	**Polypropylene and AISI 316**	P/N **2BC/16117SS5-55**	P/N **2BH/16117SS5-55**
PTFE+Hytrel®	**PTFE**	**Polypropylene and AISI 316**	P/N **2BC/16117TT5-55**	P/N **2BH/16117TT5-55**
Fluid inlet connection			3/4” NPT (f) (1” NPT (f) for drum)	**dual inlet** 3/4” NPT (f)
Fluid outlet connection			1/2” NPT (f)	1/2” NPT (f)
Air working pressure			30 - 90 psi	30 - 90 psi
Max. air pressure			120 psi	120 psi
Air inlet connection			3/8” NPT (f)	3/8” NPT (f)
Air outlet connection (muffler)			1/2” BSP (f)	1/2” BSP (f)
Gal per cycle *			0.05 gal	0.05 gal
Max cycles per minute			330 cpm	330 cpm
Max suction lift			dry column 15’ - wet column 25’	dry column 15’ - wet column 25’
Max size pumpable solids			0.06”	0.06”
Max working temperature			149° F	149° F
Max air consumption (cfm)			18 cfm	18 cfm
Noise level **			75 dB	75 dB
Balls and seats configuration				
Overall dimensions (A x B x C)			8.6” x 7” x 12.8”	8.6” x 7” x 12.8”
Carton - Weight			N° 1 cf 0.5 lb 12	N° 1 cf 0.5 lb 18

* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

PUMP DIMENSIONS



PUMP PERFORMANCE



PUMP AIR FEEDING PRESSURE A A 116 psi B B 87 psi C C 58 psi

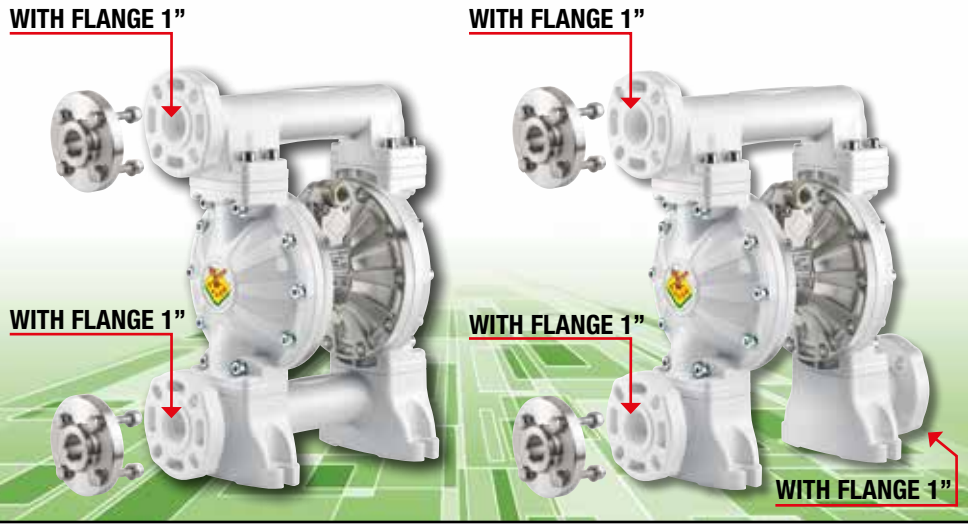
Applied Lubrication Technology Inc.

1” - 45 gpm

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from molding injected Polypropylene, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 3 GD c TX

Note: The max flow rate shown in the below graphics has been obtained by laboratory test.



Series

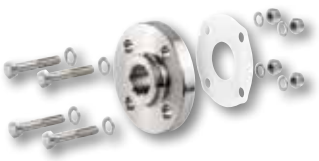
membranes	balls	seats
EPDM	Acetal	Stainless steel AISI 316
Hytrel®	Hytrel®	Stainless steel AISI 316
NBR	Hytrel®	Stainless steel AISI 316
Santoprene	Santoprene	Stainless steel AISI 316
PTFE+Hytrel®	PTFE	Stainless steel AISI 316

	1000-PB in **Polypropylene** - motor **Aluminum**	1000-PB dual inlet in **Polypropylene** - motor **Aluminum**
	P/N **2BD/26117EAI-55**	P/N **2BG/26117EAI-55**
	P/N **2BD/26117HHI-55**	P/N **2BG/26117HHI-55**
	P/N **2BD/26117NHI-55**	P/N **2BG/26117NHI-55**
	P/N **2BD/26117SSI-55**	P/N **2BG/26117SSI-55**
	P/N **2BD/26117TTI-55**	P/N **2BG/26117TTI-55**
Fluid inlet connection	ANSI 150 - DIN PN 10 - JIS 10K 1” proneness to 1.1/4” thread	**dual inlet** ANSI 150 - DIN PN 10 - JIS 10K 1” proneness to 1.1/4” thread
Fluid outlet connection	ANSI 150 - DIN PN 10 - JIS 10K 1” proneness to 1.1/4” thread	ANSI 150 - DIN PN 10 - JIS 10K 1” proneness to 1.1/4” thread
Air working pressure	30 - 90 psi	30 - 90 psi
Max. air pressure	120 psi	120 psi
Air inlet connection	3/8” NPT (f)	3/8” NPT (f)
Air outlet connection (muffler)	1/2” BSP (f)	1/2” BSP (f)
Gal per cycle *	0.15 gal	0.15 gal
Max cycles per minute	300 cpm	300 cpm
Max suction lift	dry column 15’ - wet column 25’	dry column 15 - wet column 25’
Max size pumpable solids	0.12”	0.12”
Max working temperature	149° F	149° F
Max air consumption (cfm)	57 cfm	57 cfm
Noise level **	75 dB	75 dB
Balls and seats configuration		
Overall dimensions (A x B x C)	11.8” x 7.9” x 17.9”	14” x 7.8” x 16.5”
Carton - Weight	N° 1 cf 0.9 lb 16	N° 1 cf 0.9 lb 27

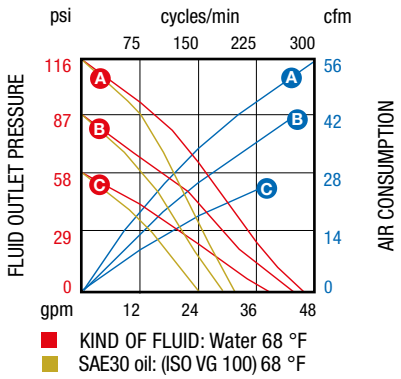
* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

ACCESSORY (to be ord ered separately)

P/N **32/95-55**
Flange in stainless steel AISI 304 with 1”NPT (f) thread suitable for the plant connection.



PUMP PERFORMANCE



PUMP AIR FEEDING PRESSURE A A 116 psi B B 87 psi C C 58 psi

Applied Lubrication Technology Inc.

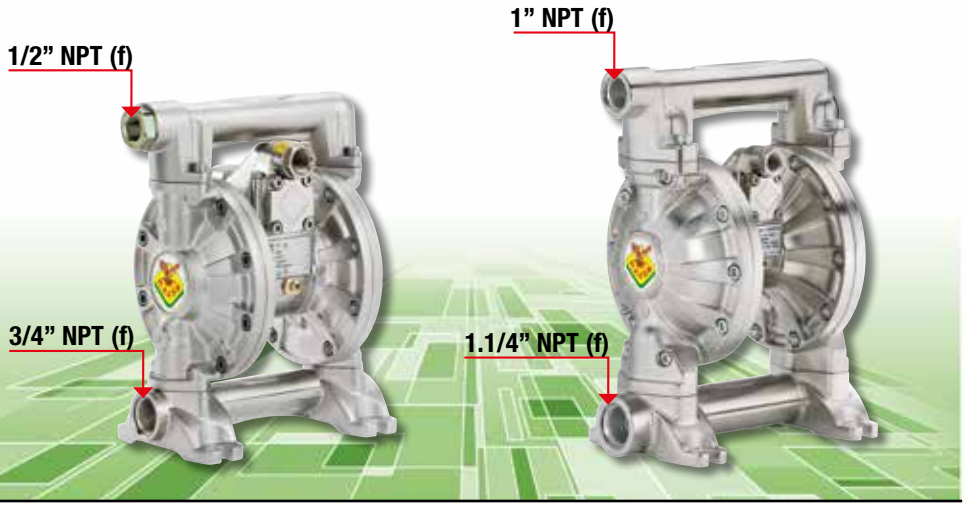
1/2” - 18.5 gpm

1” - 45 gpm

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from die-cast aluminum, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 2 GD c IIB T4 X

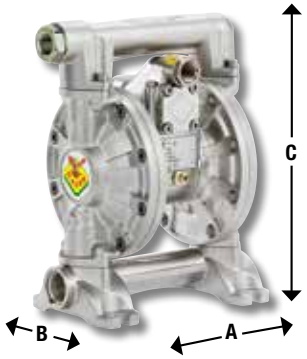
Note: The max flow rate shown in the below graphics has been obtained by laboratory test.



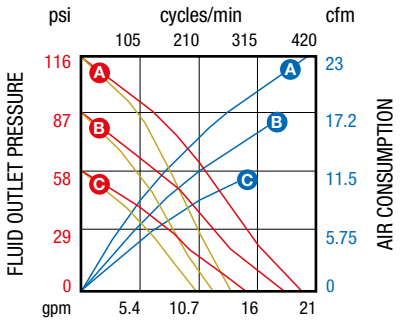
Series			120-AB all Aluminum	1000-AB all Aluminum
membranes	balls	seats		
EPDM	Acetal	Acetal	P/N **3CA/16111EAA-55**	P/N **3CA/26111EAA-55**
Hytrel®	Hytrel®	Hytrel®	P/N **3CA/16111HHH-55**	P/N **3CA/26111HHH-55**
NBR	Hytrel®	Hytrel®	P/N **3CA/16111NHH-55**	P/N **3CA/26111NHH-55**
Santoprene	Santoprene	Santoprene	P/N **3CA/16111SSS-55**	P/N **3CA/26111SSS-55**
PTFE+Hytrel®	PTFE	Polypropylene	P/N **3CA/16111TTP-55**	P/N **3CA/26111TTP-55**
Fluid inlet connection			3/4” NPT (f)	1.1/4” NPT (f)
Fluid outlet connection			1/2” NPT (f)	1” NPT (f)
Air working pressure			30 - 90 psi	30 - 90 psi
Max. air pressure			120 psi	120 psi
Air inlet connection			3/8” NPT (f)	3/8” NPT (f)
Air outlet connection (muffler)			1/2” BSP (f)	1/2” BSP (f)
Gal per cycle *			0.05 gal	0.15 gal
Max cycles per minute			400 cpm	300 cpm
Max suction lift			dry column 15’ - wet column 25’	dry column 15’ - wet column 25’
Max size pumpable solids			0.06”	0.12”
Max working temperature			212° F	212° F
Max air consumption (cfm)			21 cfm	57 cfm
Noise level **			75 dB	75 dB
Balls and seats configuration				
Overall dimensions (A x B x C)			7.9” x 6.3” x 10”	10.3” x 7.9” x 13.6”
Carton - Weight			N° 1 cf 0.5 lb 14	N° 1 cf 0.9 lb 27

* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

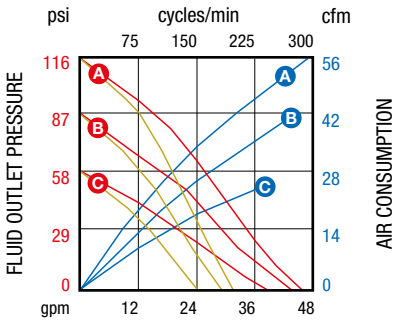
PUMP DIMENSIONS



PUMP PERFORMANCE



KIND OF FLUID: Water 68 °F
SAE30 oil: (ISO VG 100) 68 °F



KIND OF FLUID: Water 68 °F
SAE30 oil: (ISO VG 100) 68 °F

PUMP AIR FEEDING PRESSURE — A A 116 psi — B B 87 psi — C C 58 psi

Applied Lubrication Technology Inc.

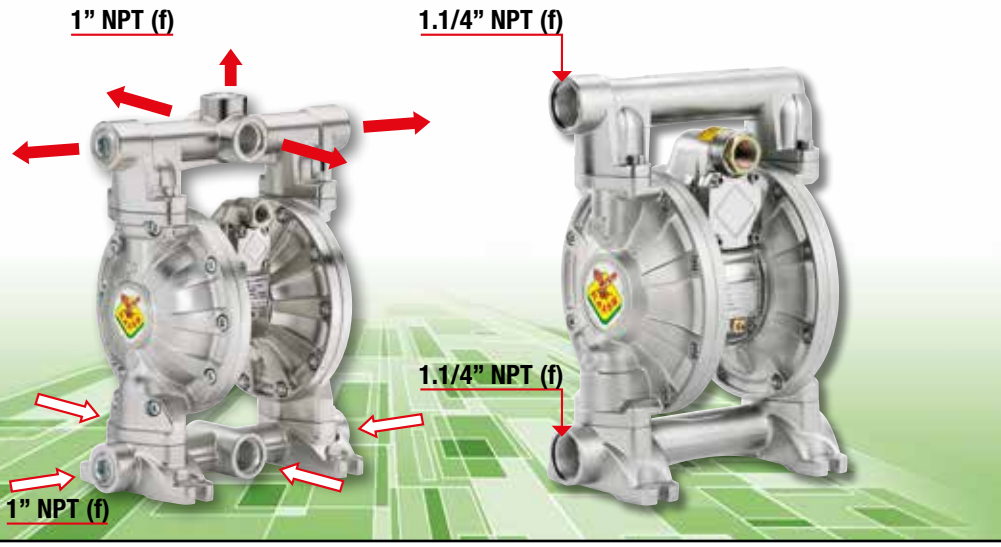
1” - 45 gpm

1.1/4” - 52.8 gpm

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from die-cast aluminum, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 2 GD c IIB T4 X

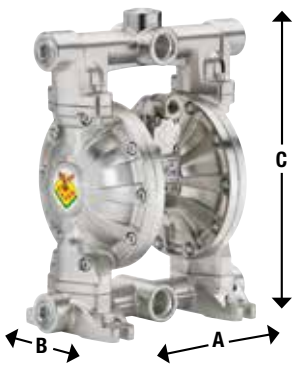
Note: The max flow rate shown in the below graphics has been obtained by laboratory test.



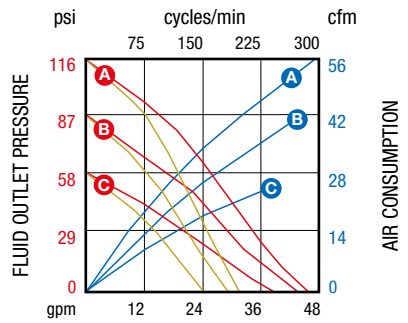
Series			**1000-AB** all **Aluminum** with inlet/outlet **multi-ported**	**1140-AB** all **Aluminum**
membranes	**balls**	**seats**		
EPDM	**Acetal**	**Acetal**	P/N **3CC/26111EAA-55**	P/N **3CA/30111EAA-55**
Hytrel®	**Hytrel®**	**Hytrel®**	P/N **3CC/26111HHH-55**	P/N **3CA/30111HHH-55**
NBR	**Hytrel®**	**Hytrel®**	P/N **3CC/26111NHH-55**	P/N **3CA/30111NHH-55**
Santoprene	**Santoprene**	**Santoprene**	P/N **3CC/26111SSS-55**	P/N **3CA/30111SSS-55**
PTFE+Hytrel®	**PTFE**	**Polypropylene**	P/N **3CC/26111TTP-55**	P/N **3CA/30111TTP-55**
Fluid inlet connection			4 x 1” NPT (f)	1.1/4” NPT (f)
Fluid outlet connection			5 x 1” NPT (f)	1.1/4” NPT (f)
Air working pressure			30 - 90 psi	30 - 90 psi
Max. air pressure			120 psi	120 psi
Air inlet connection			3/8” NPT (f)	3/4” NPT (f)
Air outlet connection (muffler)			1/2” BSP (f)	1” BSP (f)
Gal per cycle *			0.15 gal	0.21 gal
Max cycles per minute			330 cpm	260 cpm
Max suction lift			dry column 15’ - wet column 25’	dry column 5 m - wet column 25’
Max size pumpable solids			0.12”	0.12”
Max working temperature			212° F	212° F
Max air consumption (cfm)			57 cfm	64 cfm
Noise level **			75 dB	75 dB
Balls and seats configuration				
Overall dimensions (A x B x C)			11” x 7.9” x 14”	11.3” x 9.4” x 15.2”
Carton - Weight			N° 1 cf 0.9 lb 30	N° 1 cf 1.35 lb 33

* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

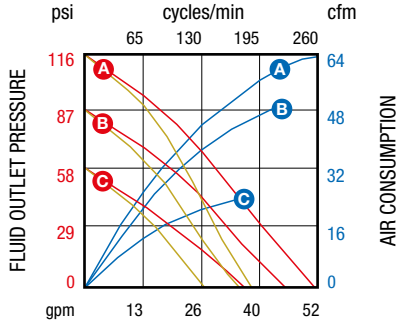
PUMP DIMENSIONS



PUMP PERFORMANCE



KIND OF FLUID: Water 68 °F
SAE30 oil: (ISO VG 100) 68 °F



KIND OF FLUID: Water 68 °F
SAE30 oil: (ISO VG 100) 68 °F

PUMP AIR FEEDING PRESSURE A A 116 psi B B 87 psi C C 58 psi

Applied Lubrication Technology Inc.

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from die-cast aluminum, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 2 GD c IIB T4 X

Note: The max flow rate shown in the below graphics has been obtained by laboratory test.

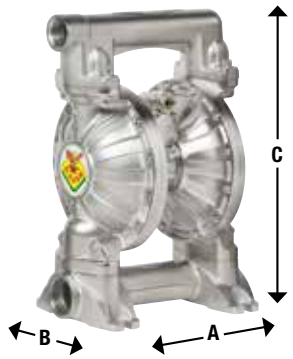
1.1/2" - 126.7 gpm

2" - 161 gpm

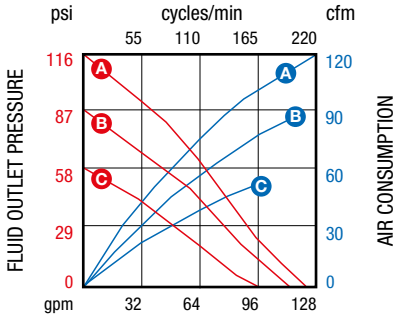
Series			1120-AB all Aluminum	2000-AB all Aluminum
membranes	balls	seats		
EPDM	Acetal	Acetal	P/N **3CA/40111EAA-55**	P/N **3CA/50111EAA-55**
Hytrel®	Hytrel®	Hytrel®	P/N **3CA/40111HHH-55**	P/N **3CA/50111HHH-55**
NBR	Hytrel®	Hytrel®	P/N **3CA/40111NHH-55**	P/N **3CA/50111NHH-55**
Santoprene	Santoprene	Santoprene	P/N **3CA/40111SSS-55**	P/N **3CA/50111SSS-55**
PTFE+Hytrel®	PTFE	Polypropylene	P/N **3CA/40111TTP-55**	P/N **3CA/50111TTP-55**
Fluid inlet connection			2" NPT (f)	2.1/2" NPT (f)
Fluid outlet connection			1.1/2" NPT (f)	2" NPT (f)
Air working pressure			30 - 90 psi	30 - 90 psi
Max. air pressure			120 psi	120 psi
Air inlet connection			3/4" NPT (f)	3/4" NPT (f)
Air outlet connection (muffler)			1" BSP (f)	1" BSP (f)
Gal per cycle *			0.57 gal	1.1 gal
Max cycles per minute			220 cpm	147 cpm
Max suction lift			dry column 16.4' - wet column 25'	dry column 16.4' - wet column 25'
Max size pumpable solids			0.22"	0.26"
Max working temperature			212° F	212° F
Max air consumption (cfm)			120 cfm	141 cfm
Noise level **			78 dB	82 dB
Balls and seats configuration				
Overall dimensions (A x B x C)			13.8" x 15.8" x 20.2"	18.2" x 17" x 24.2"
Carton - Weight			N° 1 cf 2.3 lb 52	N° 1 cf 5.6 lb 96

* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

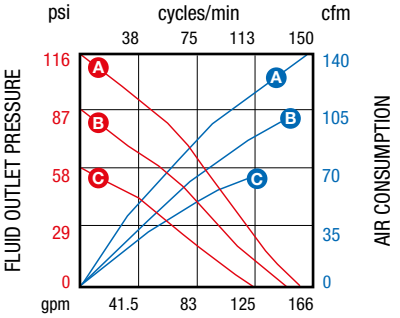
PUMP DIMENSIONS



PUMP PERFORMANCE



KIND OF FLUID: Water 68 °F



KIND OF FLUID: Water 68 °F

PUMP AIR FEEDING PRESSURE A A 116 psi B B 87 psi C C 58 psi

Applied Lubrication Technology Inc.

Diaphragm pumps R. 1:1 for transferring industrial fluids compatible with the materials of the pumps, made from die-cast aluminum, with high quality components, they ensure lasting and reliable operation even in extreme conditions.

Atex 94/9
II 2 GD c IIB T4 X

Note: The max flow rate shown in the below graphics has been obtained by laboratory test.

2” - 161 gpm

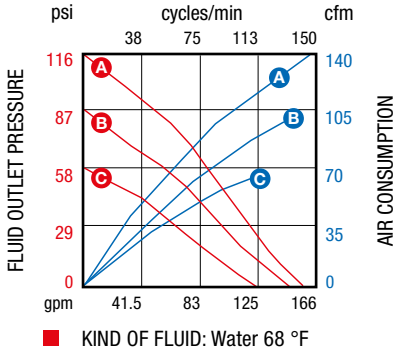
2” - 153 gpm

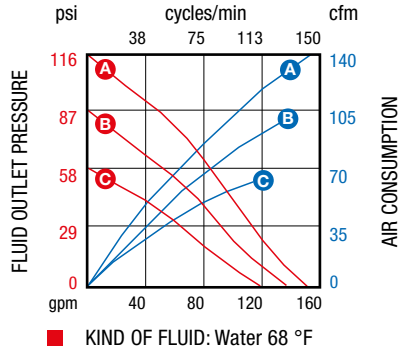
Series			2000-AB all Aluminum with inlet/outlet multi-ported	2000-AB all Aluminum
membranes	balls	seats		
EPDM	Acetal	Acetal	P/N **3CC/50111EAA-55**	P/N **3CF/50111EAA-55**
Hytrel®	Hytrel®	Hytrel®	P/N **3CC/50111HHH-55**	P/N **3CF/50111HHH-55**
NBR	Hytrel®	Hytrel®	P/N **3CC/50111NHH-55**	P/N **3CF/50111NHH-55**
Santoprene	Santoprene	Santoprene	P/N **3CC/50111SSS-55**	P/N **3CF/50111SSS-55**
PTFE+Hytrel®	PTFE	Polypropylene	P/N **3CC/50111TTP-55**	P/N **3CF/50111TTP-55**
Fluid inlet connection			2.1/2” NPT (f)	ANSI 150 - DIN PN 10 - JIS 10K 2”
Fluid outlet connection			2” NPT (f)	ANSI 150 - DIN PN 10 - JIS 10K 2”
Air working pressure			30 - 90 psi	30 - 90 psi
Max. air pressure			120 psi	120 psi
Air inlet connection			3/4” NPT (f)	3/4” NPT (f)
Air outlet connection (muffler)			1” BSP (f)	1” BSP (f)
Gal per cycle *			1.1 gal	1.05 gal
Max cycles per minute			147 cpm	147 cpm
Max suction lift			dry column 16.4’ - wet column 25’	dry column 16.4’ - wet column 25’
Max size pumpable solids			0.26”	0.26”
Max working temperature			212° F	212° F
Max air consumption (cfm)			141 cfm	141 cfm
Noise level **			82 dB	82 dB
Balls and seats configuration				
Overall dimensions (A x B x C)			18.2” x 17” x 24.2”	16.1” x 17” x 28”
Carton - Weight			N° 1 cf 5.6 lb 100	N° 1 cf 5.6 lb 11

* Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute
** Different kind of muffler are available on request for special use or hard work *** With PTFE membrane flow rate is 10 % lower

PUMP DIMENSIONS

PUMP PERFORMANCE

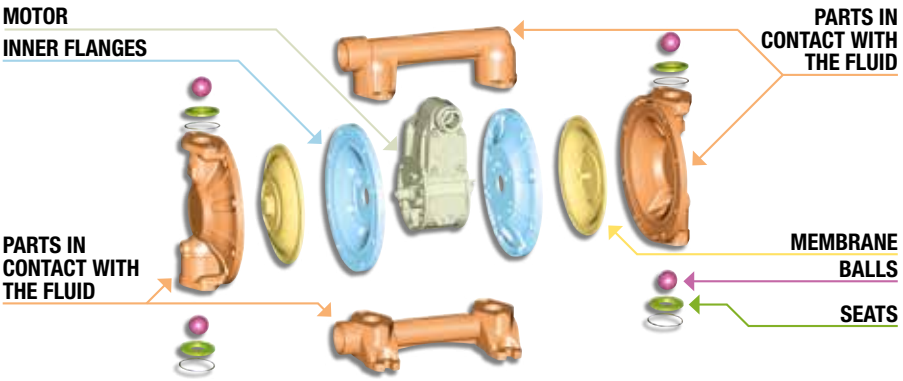




PUMP AIR FEEDING PRESSURE A A 116 psi B B 87 psi C C 58 psi

pump configuration

Exploded view of the pump, showing its main parts and thereby facilitating the choice for a custom configuration.



The table summarises the pump configurations available, allowing the user to create his own personalised code whenever the models listed on the leaflet do not meet the specific requirements.

Two types of Atex certifications are available, for zone 2 or for zone 1, depending on the materials making up the pump.

II 3GD T4 cIIB X (for zone 2) **II 2GD T4 cIIB X (for zone 1)**

They can be threaded (NPT) or flanged, single, multiple and modular.

It defines the inside diameter of the manifold.

This is the heart of the pump, responsible for the reciprocating movement that creates the flow of liquid.

The valve seats are to be coupled to the balls and must ensure correct closing. Like the balls, they must be made from a material suitable for the fluid they come into contact with.

They open and close the flow of liquid as a result of the reciprocating movement of the follower plates. The material they are made from must be compatible with the fluid being pumped.

They are the only elastic parts of the pump, that suck and pump the liquid with their movement. The material they are made from must be selected in order to obtain the correct chemical compatibility with the liquid to be pumped.

These are all the rigid parts such as external flanges, manifolds and sleeves which are constantly in contact with the liquid to be pumped. Available in various materials, depending on the type of liquid.

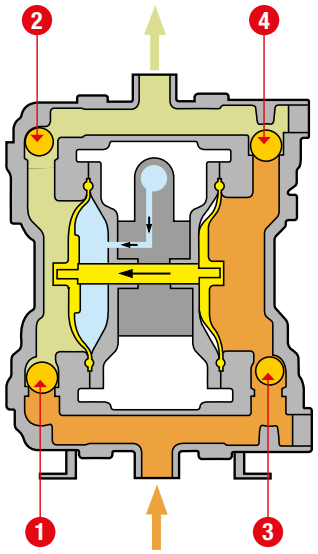
These are not in contact with the pumped liquid, but only with the compressed air feeding the motor.

MATERIALS AND ATEX VERSIONS	MANIFOLD FOR INLET AND OUTLET	FLOW INSIDE DIAMETER	KIND OF MATERIALS					
			MOTOR	INNER FLANGES	PARTS IN CONTACT WITH THE FLUID	MEMBRANE	BALLS	SEATS
2B = plastic for Zone 2	**A/** = NPT threaded connection	**16** = 1/2”	**1** = nickel plat. aluminum	**1** = nickel plat. aluminum	**1** = nickel plat. aluminum	**E** = EPDM	**A** = acetal	**A** = acetal
3C = aluminum for Zone 1	**C/** = mult. NPT threaded con.	**26** = 1”				**H** = hytrel	**H** = hytrel	**H** = hytrel
	D/ = connection with flange	**30** = 1.1/4”			**7** = polypropylene	**N** = NBR	**S** = santoprene	**P** = polypropylene
	F/ = multiple modular connection with flange	**40** = 1.1/2”				**S** = santoprene	**T** = PTFE	**S** = santoprene
		50 = 2”				**T** = PTFE + hytrel		**1** = cylindrical acetal
	G/ = dual inlet connection with flange							
								2 = cylindrical polypropylene
	H/ = dual inlet NPT threaded connection							

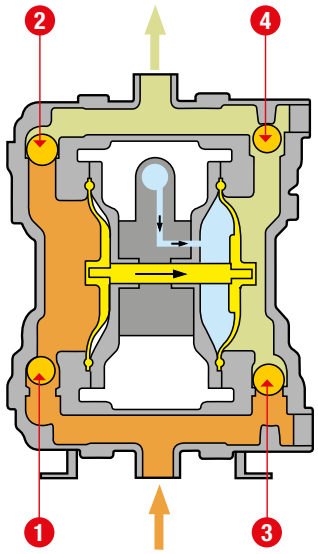
ESEMPIO 3C1/16111EAA-55								
3C = aluminum for Zone 1	**A/** = NPT threaded connection	**16** = 1/2”	**1** =nickel plat. aluminum	**1** =nickel plat. aluminum	**1** =nickel plat. aluminum	**E** = EPDM	**A** = acetal	**A** = acetal

installation and operation

SIMPLE AND EFFECTIVE (1:1 RATIO)



The slide valve of the air motor sends air (blue) to the left chamber which, pushing the membrane outwards, compresses the previously filled liquid (green).
Through the effect of the pressure created valve 1 closes and valve 2 opens allowing the liquid to dispense (green). The right membrane then carries out the same movement by the shaft joining it to the left membrane, creating a vacuum. Through the effect of the vacuum, the valve 3 opens and the valve 4 closes, enabling suction of the liquid (orange).



The slide valve of the air motor sends air (blue) to the right chamber which, pushing the membrane outwards, compresses the previously filled liquid (green).
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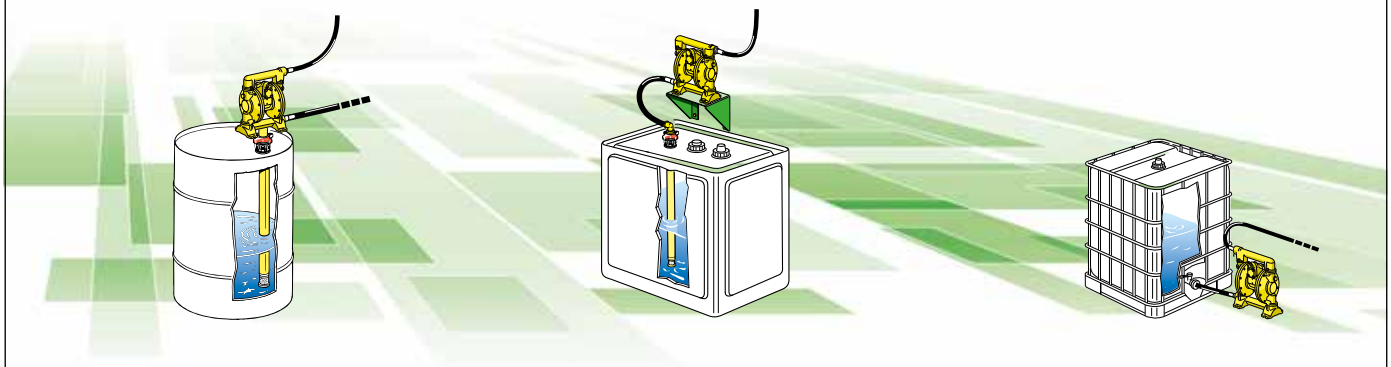
HOW TO INSTALL THE PUMP



PUMP INSTALLED ON DRUM

TOP FEED

BOTTOM FEED

PUMP INSTALLED ON A MOBILE UNIT

SUBMERGED PUMP
(it is necessary to check the chemical compatibility between pump material and liquid)

BULK TANK

wide choice of materials

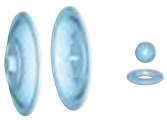
PARTS IN CONTACT WITH FLUID

Pump parts	Materials	Characteristics	Temperature limits
	**Nickel-plated aluminum**	- average resistance to abrasion and corrosion - not intended for use with HHC (halogenated hydrocarbons)	+212 °F
  	**Polypropylene**	- wide chemical compatibility - best alternative with aggressive fluids	+149 °F

CENTRAL MOTOR BLOCK

Pump parts	Materials	Characteristics	Temperature limits
	**Nickel-plated Aluminum**	- high mechanical strength - electrically conductive material for ATEX directive	+212 °F

DIAPHRAGMS - SEATS - BALLS

	Materials	Characteristics and strenght points	T° MAX *	Do not choose if	Similar names on the market
	**High Nitrile NBR**	- high resistance to alphatic hydrocarbons, oils and greases - good flexibility	+194 °F	you are looking for resistance to many chemical agents	**Buna - N** **Geolast**
	**Hytrel**	- high tenacity and springback - high resistance to permanent deformation - good resistance to industrial chemical substances and solvents - excellent flexibility even at low temperature	+149 °F	you work at high temperatures	**Sani - flex**
	**Santoprene**	- excellent flexural and fatigue strength - excellent resistance to abrasion and laceration - excellent resistance to acids, alkalis and ageing - also usable at high temperatures	+230 °F	you work with Kerosene, Diesel, Petrol, Freon, Benzene	**Wil - flex**
	**EPDM**	- good compatibility with organic and non-organic acids - excellent resistance to heat and steam - insensitive to the action of oxidising agents	+230 °F	you work with mineral oils and hydrocarbons	**Nordel** **Buna - Ep**
	**PTFE**	- inert with nearly all chemical reagents - excellent heat resistance - excellent dielectric characteristics - excellent resistance to ageing	+248 °F	you work at low temperatures	**Teflon**
	**Acetal resin**	- high fatigue strength - high compressive strength - good dimensional stability (low humidity absorption) - resistance to alcohols and organic compounds	+302 °F	you work in easy combustion environments	**Delrin**

* The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

guide to choosing a pump

HOW TO CHOOSE A PUMP SUITABLE FOR ONE'S NEEDS

Pump size	Delivery (flow rate)	Max ø solid parts	Series	
			Plastic	Aluminum
1/2"	16 gpm	0.06"	120-PB	120-AB
1"	45 gpm	0.12"	1000-PB	1000-AB
1.1/4"	52,8 gpm	0.12"	-	1140-PB
1.1/2"	126,7 gpm	0.22"	-	1120-AB
2"	161 gpm	0.26"	-	2000-AB

TECHNICAL ASPECTS TO BE CONSIDERED FOR A CORRECT CHOICE OF PUMP

Pump size

The size of a pump is closely linked to its maximum delivery: in fact, the larger the pump the greater the delivery.

Chemical compatibility

Some parts of the pump are always in contact with the liquid to be pumped. Therefore the materials these parts are made from must be chemically compatible with the liquid.

Dimensions of suspended solids

The maximum dimensions possible for suspended solids in the fluid to be pumped are specified in the technical tables of each diaphragm pump.

Working temperature

The maximum and minimum working temperatures take into account the physical characteristics of the various parts making up the pump and their interaction with the pumped liquid.

Abrasion resistance

If the fluid to be pumped is very abrasive, the wear on parts that deteriorate quickly (e.g. diaphragms, balls, seats) can be reduced by choosing a pump larger than required. In this way the speed of the fluid inside the pump will be lower, thereby reducing the abrasion on the parts in contact with it.

System size

In order to optimise the performance of the pump it is advisable to consider the following dimensional parameters relevant to the system:

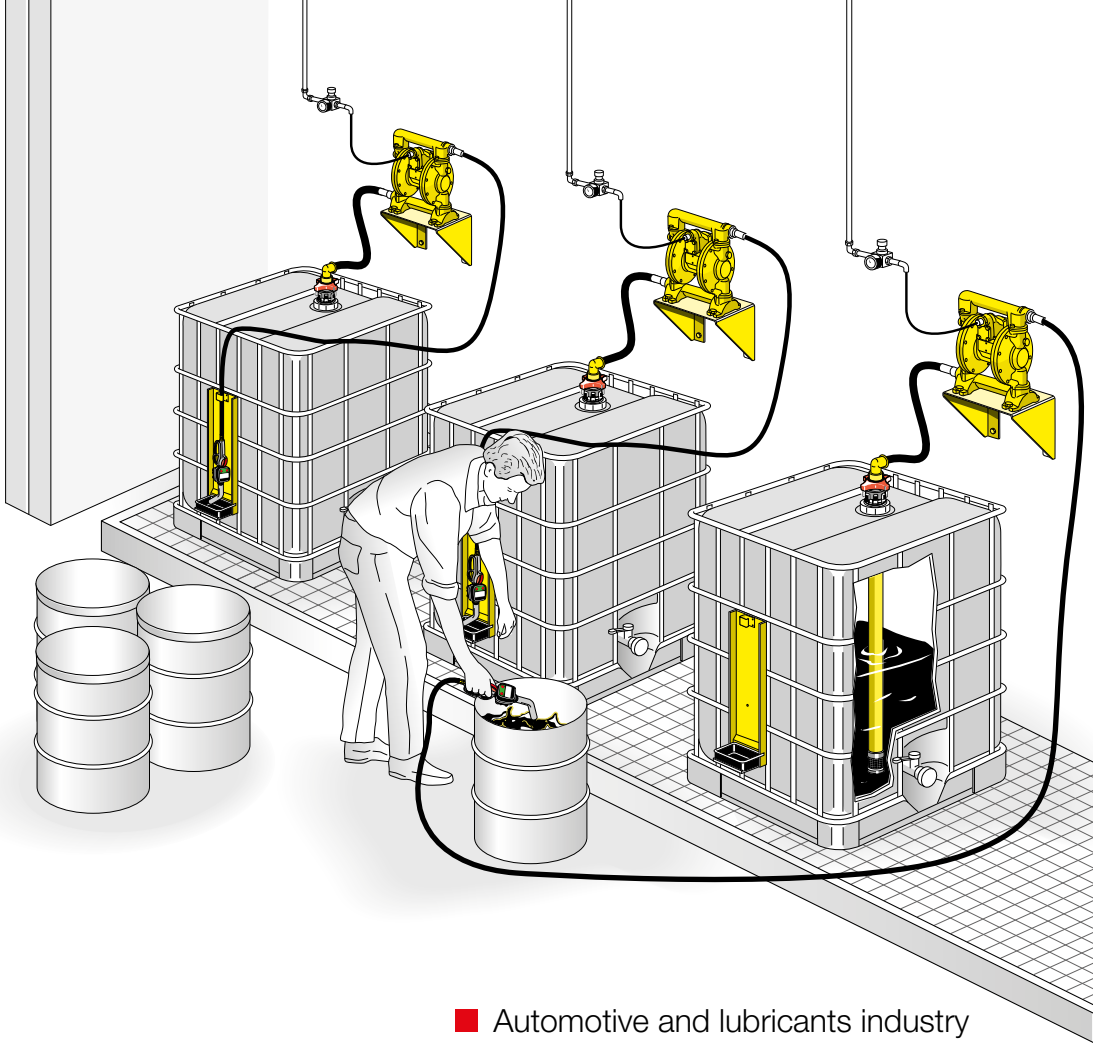
1) Suction pipe: position the pump as close as possible to the point of suction; if this is not possible, the maximum vertical distance must not exceed the 20'.

2) Delivery pipe: the pipe must be sized so as to avoid pressure losses; the internal diameter must be chosen according to the distance to be covered, the temperature and the viscosity of the fluid.

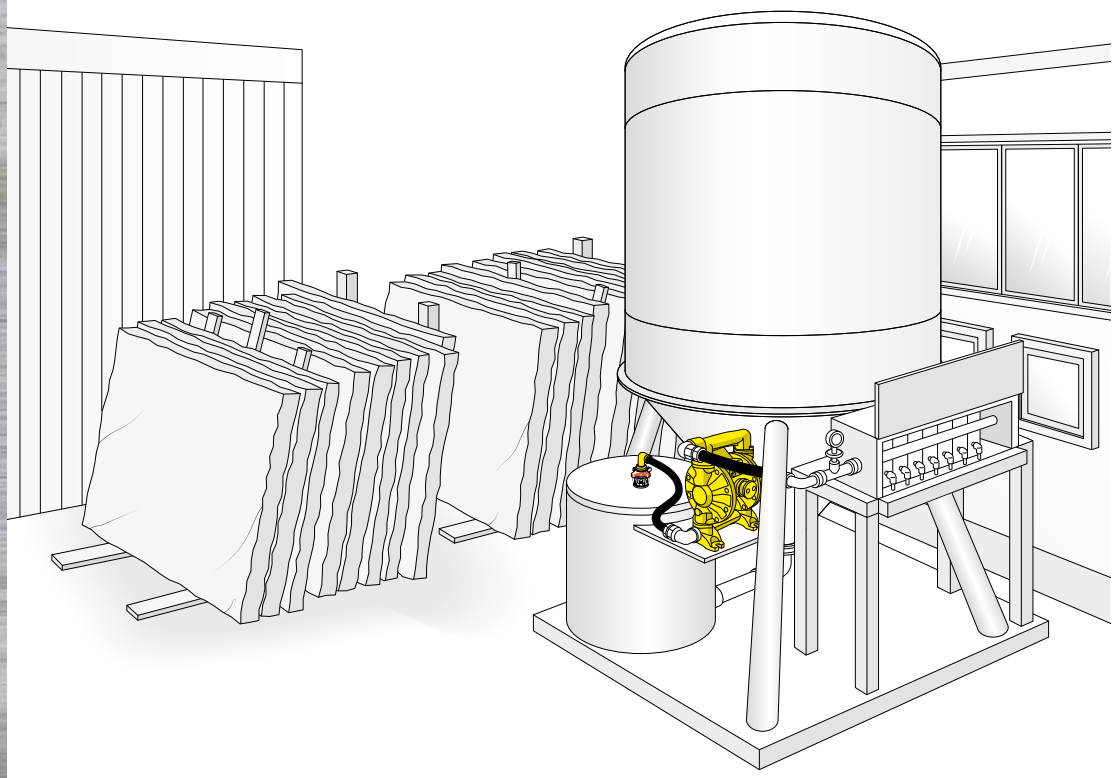
ATEX CERTIFICATION

Product series	Description	Certification class
Version in non-conductive material (Polypropylene)	Made from non-conductive plastic material and/or with non-conductive central body, or in metallic material with non-conductive central body	**II 3GD c T X X (for zone 2)**
Version in conductive material (Aluminum)	Made with pump bodies and/or manifolds in conductive plastic materials (PP) and metallic materials (Aluminum, Stainless Steel)	**II 2GD c IIB T4 X (for zone 1)**

EXAMPLES OF APPLICATION SECTORS

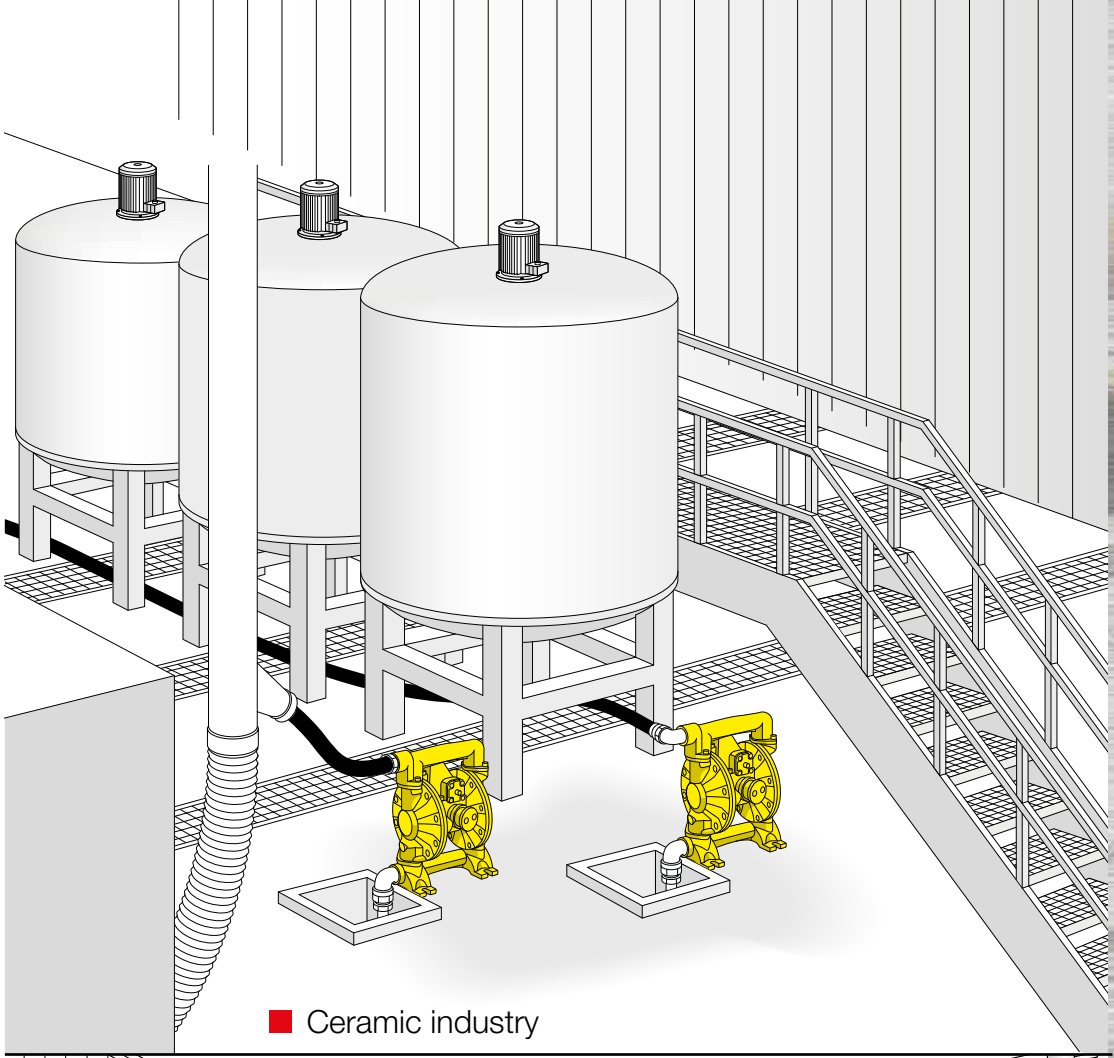


Automotive and lubricants industry

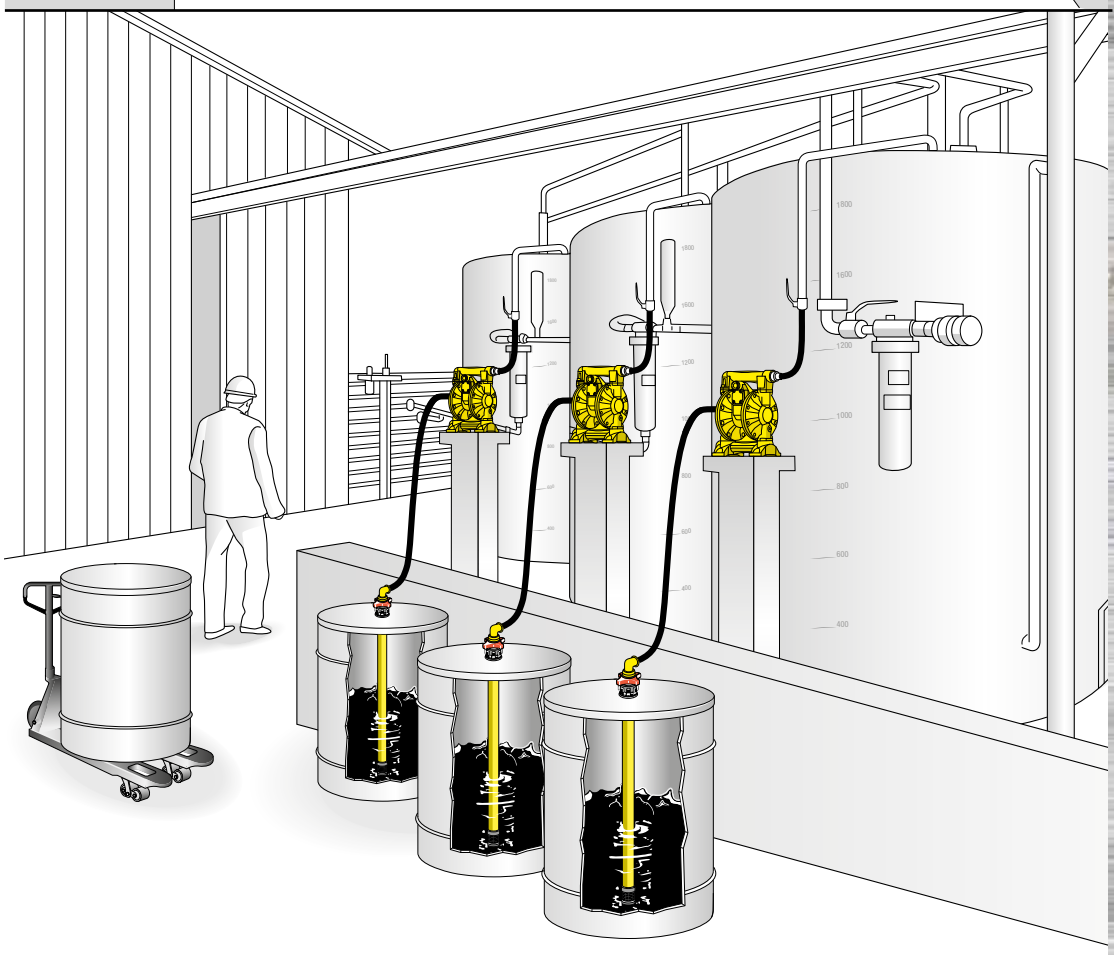


Marble industry

...and many other sectors



Ceramic industry



Oil industry and mining