DIAPHRAGM PUMPS

No. 405-PM



090 998 9907

ADVANCED FLUID
MANAGEMENT SOLUTIONS

Ready for any challenge









DESIGN IS AN

Aut











RAASM pneumatic double-diaphragm pumps 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.





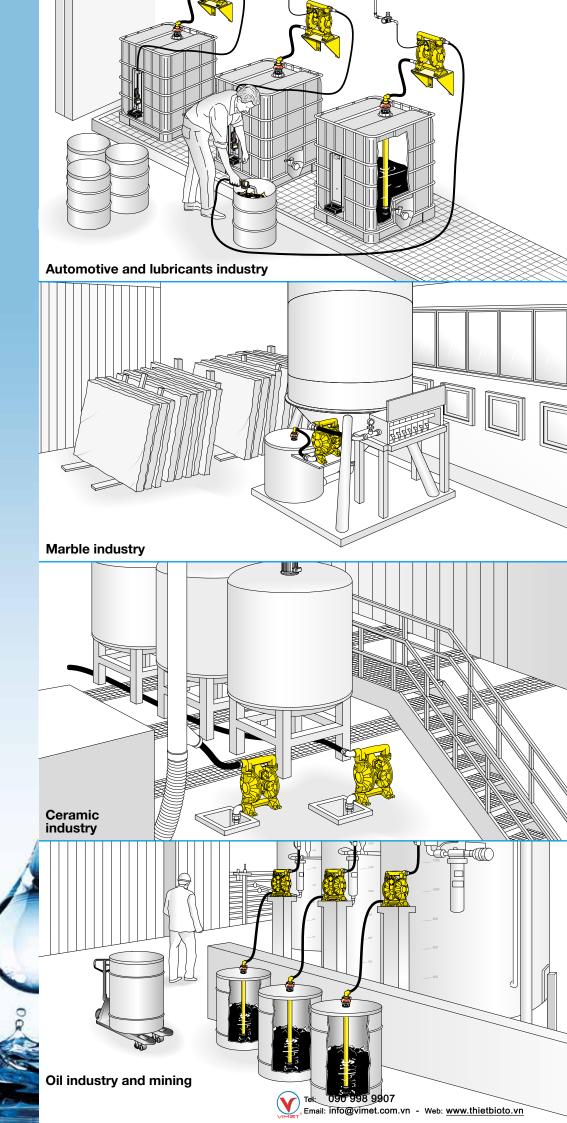


Series 120-PPAB with multi-ported inlet/outlet	page	18
Series 120-PPAB dual inlet/multi-ported outlet	page	18
Series 1000-PPAB	page	19
Series 1000-PPAB dual inlet	page	19

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Series 120-PPB dual inlet/multi-ported outlet	page	22
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Series 1000-PPB dual inlet	page	23

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	1000	

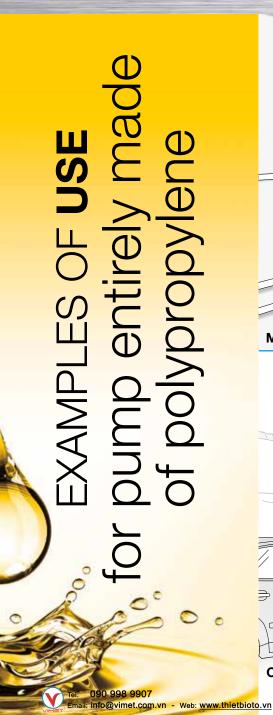
for pump entirely made of aluminum or aluminum and polypropylene

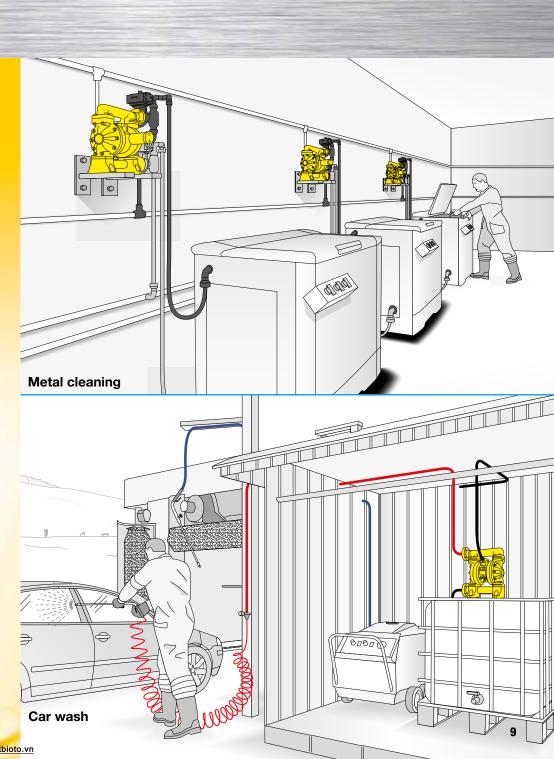




Diaphragm pumps are the ideal solution in different working environments, also the most aggressive ones. These are some examples of application:

- pumping detergent liquids in car washes
- transfer slip and glaze in the ceramics industry
- distribution of adhesives, paints, cellulose pulp in the paper and printing industry
- pumping of spent acids, dyes and wastewater in the textile and tanning industry
- distribution and mixing of paints in the colors/varnishes industry
- pumping of corrosive and abrasive products in galvanic applications in the chemical and mechanical sector
- pumping of waste oils and lubricants in a garage





strength points



Why choose a diaphragm pump entirely made of aluminum?

RAASM pneumatic diaphragm pumps are designed and manufactured for pumping a wide range of fluids even with high viscosities and with suspended solids.

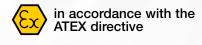
In being **ATEX certified,** they can also be used for heavy applications such as in places with high humidity or with potentially explosive atmosphere.

- ATEX certification available
- 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
- All pumps are tested before the packaging to ensure the highest quality
- They do not become damaged in case of prolonged operation when empty
- Self-priming capability
- Easy adjustment of delivery

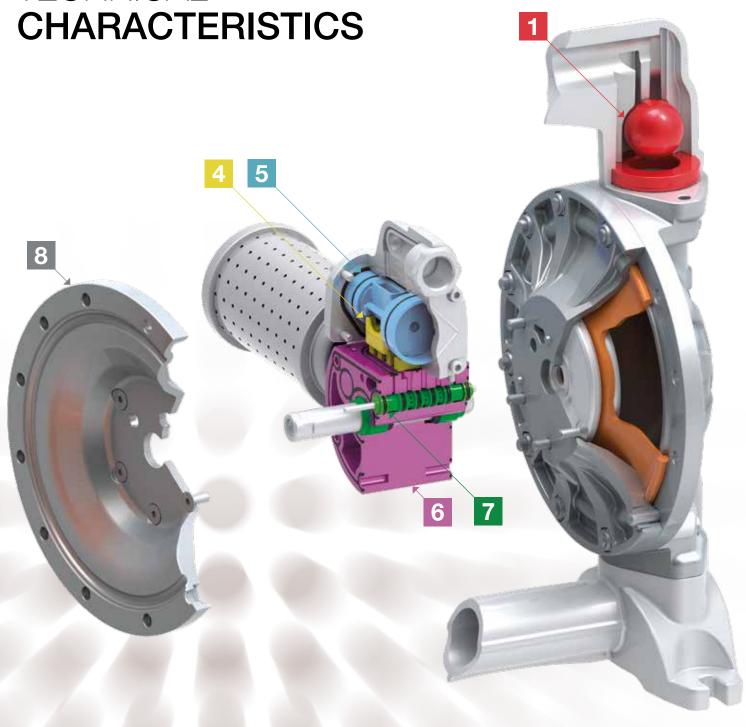
Diaphragm pumps in aluminum







TECHNICAL



- Ball valves designed to guarantee the total flow of the pumped fluid.
- The air distribution valve ensures **perfect operation** in any operating conditions. Some examples:
 - Minimum supply pressures (min. 2 bar)
 - Critical fluid and ambient temperatures
 - Supply pressure fluctuations
- The pneumatic motor block of the pump does not require any type of lubrication because the moving parts are self-lubricating.

- 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.
- 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.
- Flanges created to withstand heavy work conditions.

- Membranes made with different and specific materials able to withstand many types of fluids and millions of cycles.
- Pneumatic motor with anti-ice device.
 This allows the pump to maintain its performance, even if powered with untreated air.
- Industrial design, material in aluminum with internal and external sand blasting and nickel-plating surface treatment.

 Die-casting ensures a better structural and

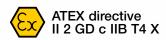
Die-casting ensures a better structural and surface finish.

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1/2" - 70 I/min

1" - 170 I/min



Diaphragm pumps R. 1:1 for transferring,

made of die-cast aluminum; they ensure lasting and reliable operation with the most common automotive and industry fluids.

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



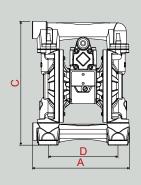


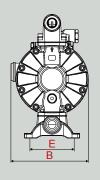
Series			120-AB	1000-AB
membranes	balls	seats	P/N	P/N
EPDM	Acetal	Acetal	3C1/16111EAA	3C1/26111EAA
Hytrel®	Hytrel®	Hytrel®	3C1/16111HHH	3C1/26111HHH
NBR	Hytrel®	Hytrel®	3C1/16111NHH	3C1/26111NHH
Santoprene™	Santoprene™	Santoprene™	3C1/16111SSS	3C1/26111SSS
PTFE+Hytrel® *	PTFE	Polypropylene	3C1/16111TTP	3C1/26111TTP
Max pressure	9	bar	8	8
Max cycles p	er min	cpm	400	300
Litres per cyc	Litres per cycle **		0,188	0,590
Max suction	Max suction lift m		dry column 4,5 - wet column 7,5	dry column 5 - wet column 7,5
Max size pumpable solids mm		mm	1,5	3
Max working	Max working temperature *** °C		100	100
Noise level	Noise level dB		75	75
Max air cons	umption (m³/r	nin) m³/min	0,80	1,40
Air working p	oressure	bar	2 - 6	2 - 6
Air inlet conn	ection		G 3/8" (f)	G 3/8" (f)
Air outlet cor	nection (muff	ler)	G 1/2" (f)	G 1/2" (f)
Fluid inlet co	nnection		G 3/4" (f)	G 1.1/4" (f)
Fluid outlet c	onnection		G 1/2" (f)	G 1" (f)
Balls for inle	Balls for inlet		0	0
Overall dime	nsions (A x B x	(CxDxE) mm	201 x 160 x 256 x 145 x 100	261 x 200 x 345 x 182 x 130
Screws for p	•	•	M8	M10
Packing - We	ight		🙀 N° 1 0,02 m³ 👸 6,3 kg	🙀 № 1 0,03 m³ 🔓 12 kg

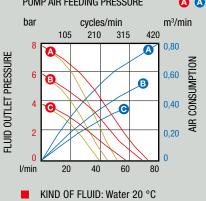
With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS

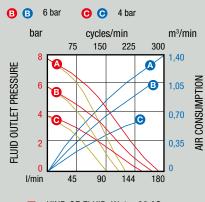
PUMP PERFORMANCE PUMP AIR FEEDING PRESSURE B 6 bar A 8 bar







SAE30 oil: (ISO VG 100) 20 °C

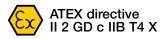


KIND OF FLUID: Water 20 °C SAE30 oil: (ISO VG 100) 20 °C

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1" - 170 I/min

1.1/4" - 200 I/min



Diaphragm pumps R. 1:1 for transferring,

made of die-cast aluminum; they ensure lasting and reliable operation with the most common automotive and industry fluids.

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



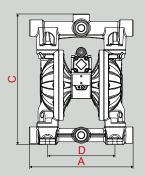


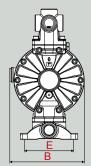
Series			1000-AB with multi-ported inlet/outlet	1140-AB
membranes	balls	seats	P/N	P/N
EPDM	Acetal	Acetal	3C3/26111EAA	3C1/30111EAA
Hytrel®	Hytrel®	Hytrel®	3C3/26111HHH	3C1/30111HHH
NBR	Hytrel®	Hytrel®	3C3/26111NHH	3C1/30111NHH
Santoprene™	Santoprene™	Santoprene™	3C3/26111SSS	3C1/30111SSS
PTFE+Hytrel® *	PTFE	Polypropylene	3C3/26111TTP	3C1/30111TTP
Max pressure	9	bar	8	8
Max cycles p	er min	cpm	300	260
Litres per cyc	cle **	·	0,590	0,800
Max suction	Max suction lift m		dry column 5 - wet column 7,5	dry column 5 - wet column 7,5
Max size pumpable solids mm		mm	3	3
Max working temperature *** °C		*** °C	100	100
Noise level dB		dB	75	75
Max air cons	umption (m³/n	nin) m³/min	1,40	1,80
Air working p	oressure	bar	2 - 6	2 - 6
Air inlet conn	ection		G 3/8" (f)	G 3/4" (f)
Air outlet cor	nection (muff	ler)	G 1/2" (f)	G 1" (f)
Fluid inlet co	nnection		4 x G 1" (f)	G 1.1/4" (f)
Fluid outlet c	Fluid outlet connection		5 x G 1" (f)	G 1.1/4" (f)
Balls for inle	Balls for inlet		0	0
Overall dime	nsions (A x B x	(C x D x E) mm	280 x 200 x 352 x 182 x130	286 x 238 x 386 x 199 x 137
Screws for p		•	M10	M10
Packing - We	ight		😭 N° 1 0,03 m³ 👸 13 kg	😭 N° 1 0,03 m³ 🔓 15 kg

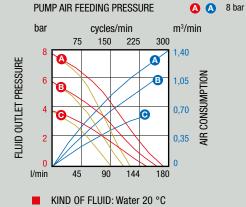
^{*} With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute *** The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS

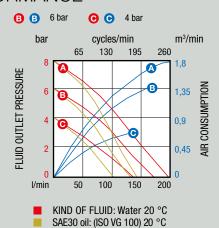
PUMP PERFORMANCE







SAE30 oil: (ISO VG 100) 20 °C





ATEX directive II 2 GD c IIB T4 X

Diaphragm pumps R. 1:1 for transferring,

made of die-cast aluminum; they ensure lasting and reliable operation with the most common automotive and industry fluids.

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

1.1/2" - 480 I/min







		1120-AB	2000-AB
membranes balls seats		P/N	P/N
Acetal	Acetal	3C1/40111EAA	3C1/50111EAA
Hytrel®	Hytrel [®]	3C1/40111HHH	3C1/50111HHH
Hytrel®	Hytrel®	3C1/40111NHH	3C1/50111NHH
Santoprene™	Santoprene™	3C1/40111SSS	3C1/50111SSS
PTFE	Polypropylene	3C1/40111TTP	3C1/50111TTP
)	bar	8	8
er min	cpm	220	147
cle **	·	2,15	4,150
Max suction lift m		dry column 5 - wet column 7,5	dry column 5 - wet column 7,5
Max size pumpable solids mm		5,5	6,5
Max working temperature *** °C		100	100
Noise level dB		78	82
umption (m³/n	nin) m³/min	3,40	4,00
ressure	bar	2 - 6	2 - 6
ection		G 3/4" (f)	G 3/4" (f)
nection (muff	ler)	G 1" (f)	G 1" (f)
nnection		G 2" (f)	G 2.1/2" (f)
Fluid outlet connection		G 1.1/2" (f)	G 2" (f)
Balls for inlet and outlet			
nsions (A x B x	C x D x E) mm	350 x 402 x 514 x 250 x 182	427 x 435 x 616 x 305 x 227
•	•	M12	M12
ight		⋒ N° 1 0,07 m³ 🔓 21,5 kg	🗑 № 1 0,12 m³ 👸 43 kg
	Acetal Hytrel® Hytrel® Santoprene™ PTFE e er min cle ** lift npable solids temperature umption (m³/n pressure nection nnection (muffinnection	Acetal Hytrel® Hytrel® Hytrel® Santoprene™ PTFE Polypropylene s bar er min cpm cle ** I lift m npable solids mm temperature **** °C dB umption (m³/min) m³/min pressure bar election nection nection t ssions (A x B x C x D x E) mm ump fixing	Dalls Seats P/N

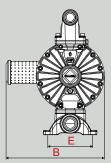
With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

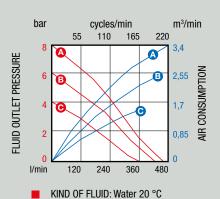
PUMP AIR FEEDING PRESSURE

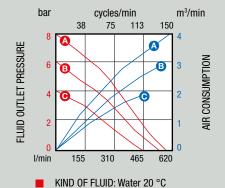
PUMP DIMENSIONS

PUMP PERFORMANCE

A 8 bar







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B B 6 bar

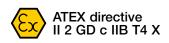
14

2" - 610 I/min

2" - 580 I/min

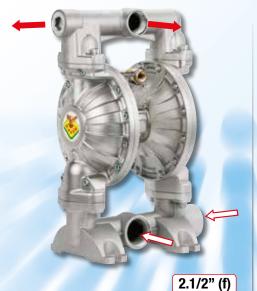
2" (f)

MODULAR WITH FLANGE 2"



Diaphragm pumps R. 1:1 for transferring, made of die-cast aluminum; they ensure lasting and reliable operation with the most common automotive and industry fluids. Flanges could be rotated of 90° or 180° to help the fluid inlet and outlet and the plant connection.

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





Series		2000-AB with multi-ported inlet/outlet	2000-AB	
balls	seats	P/N	P/N	
EPDM Acetal Acetal		3C3/50111EAA	3C6/50111EAA	
Hytrel®	Hytrel®	3C3/50111HHH	3C6/50111HHH	
Hytrel®	Hytrel®	3C3/50111NHH	3C6/50111NHH	
Santoprene™	Santoprene™	3C3/50111SSS	3C6/50111SSS	
PTFE	Polypropylene	3C3/50111TTP	3C6/50111TTP	
)	bar	8	8	
er min	cpm	147	147	
cle **	·	4,150	3,950	
Max suction lift m		dry column 5 - wet column 7,5	dry column 5 - wet column 7,5	
Max size pumpable solids mm		6,5	6,5	
Max working temperature *** °C		100	100	
Noise level dB		82	82	
umption (m³/n	nin) m³/min	4,00	4,00	
ressure	bar	2 - 6	2 - 6	
ection		G 3/4" (f)	G 3/4" (f)	
nection (muff	ler)	G 1" (f)	G 1" (f)	
nnection		G 2.1/2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2" (50 mm)	
Fluid outlet connection		G 2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2" (50 mm)	
Balls for inlet and outlet		0	0	
nsions (A x B x	C x D x E) mm	449 x 435 x 675 x 255 x 227	410 x 435 x 710 x 305 x 238	
ump fixing		M12	M12	
ight		℘ N° 1 0,12 m³ 👸 45 kg	⋛ N° 1 0,13 m³ 🔓 50 kg	
	Acetal Hytrel® Hytrel® Santoprene™ PTFE e er min cle ** lift npable solids temperature umption (m³/n pressure nection nection (muffinnection	Acetal Hytrel® Hytrel® Hytrel® Santoprene™ PTFE Polypropylene er min cpm cle ** I lift m npable solids mm temperature **** °C dB umption (m³/min) m³/min pressure bar election election nnection t ssions (A x B x C x D x E) mm ump fixing Hytrel® Hytrel® Hytrel® Santoprene™ Polypropylene bar cpm	balls seats P/N Acetal Acetal 3C3/50111EAA Hytrel® Hytrel® 3C3/50111HHH Hytrel® Hytrel® 3C3/50111NHH Santoprene™ Santoprene™ 3C3/50111SSS PTFE Polypropylene 3C3/50111TTP Bar	

With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

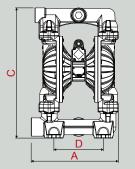
PUMP AIR FEEDING PRESSURE

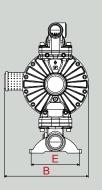
PUMP DIMENSIONS

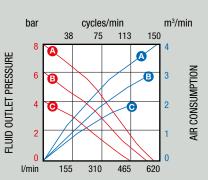
PUMP PERFORMANCE

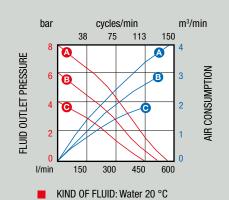
A 8 bar

B B 6 bar









KIND OF FLUID: Water 20 °C

strength points



Why choose a diaphragm pump made of aluminum and polypropylene?

RAASM pneumatic diaphragm pumps are designed and manufactured for pumping a wide range of fluids even with high viscosities and with suspended solids.

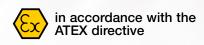
In particular the diaphragm pump of this family can be used with corrosive fluids and aqueous solutions thanks to the manifolds made in polypropylene.

- ATEX certification available
- 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
- 1/2" with reinforced thread thanks to a AISI 316 stainless steel ring
- Ball seats in AISI 316 stainless steel and polypropylene
- All pumps are tested before the packaging to ensure the highest quality
- They do not become damaged in case of prolonged operation when empty

Diaphragm pumps in aluminum and polypropylene

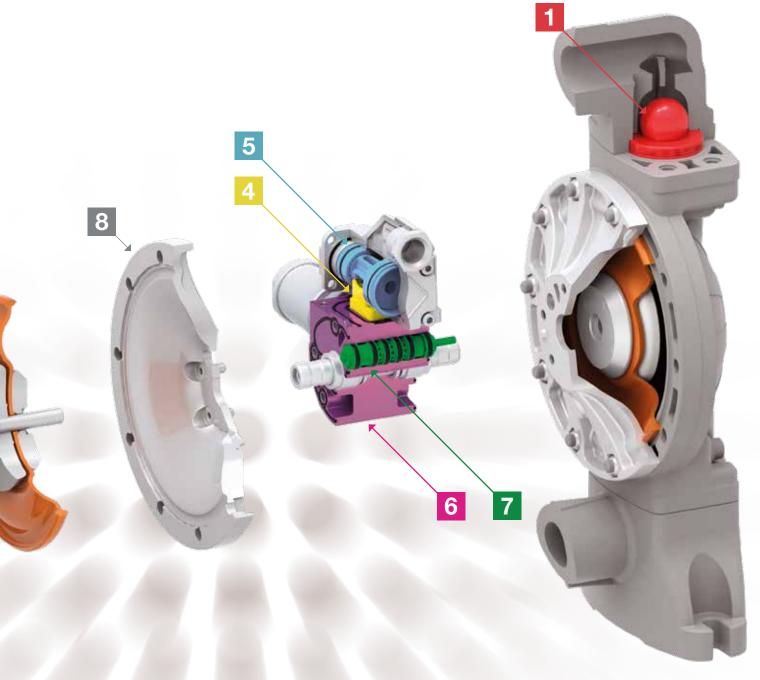






TECHNICAL

CHARACTERISTICS



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

 The ball seats are in AISI 316 stainless steel (versions 1") or in AISI 316 stainless steel and polypropylene (versions 1/2").
- 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.
 - There is a AISI 316 stainless steel ring to reinforce the thread (versions 1/2").
- Membranes made with different and specific materials able to withstand many types of fluids and millions of cycles.

- The air distribution valve ensures perfect operation in any operating conditions. Some examples:
 - Minimum supply pressures (min. 2 bar)
 - Critical fluid and ambient temperatures
 - Supply pressure fluctuations.
- 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.
- Pneumatic motor with anti-ice device.
 This allows the pump to maintain its performance, even if powered with untreated air.

- The pneumatic motor block of the pump does not require any type of lubrication because the moving parts are self-lubricating.
- Flanges created to withstand heavy work conditions.
- Industrial design, material in aluminum with internal and external sand blasting andnickel-plating surface treatment.

 Die-casting ensures a better structural and surface finish.



1/2" - 60 I/min

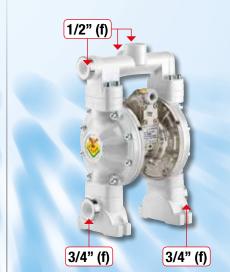


Diaphragm pumps R. 1:1 for transferring fluids,

made of molding injected polypropylene with motor made in aluminum; they ensure lasting and reliable operation even in extreme conditions and with agressive fluids.

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

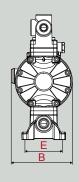




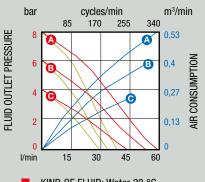
Series		120-PPAB with multi-ported inlet/outlet		120-PPAB dual inlet/multi-ported outlet	
membranes	membranes balls seats		P/N	P/N	
EPDM	Acetal	Polypropylene and AISI 316	2B3/16117EA5	2B8/16117EA5	
Hytrel®	Hytrel®	Polypropylene and AISI 316	2B3/16117HH5	2B8/16117HH5	
NBR	Hytrel®	Polypropylene and AISI 316	2B3/16117NH5	2B8/16117NH5	
Santoprene™	Santoprene™	Polypropylene and AISI 316	2B3/16117SS5	2B8/16117SS5	
PTFE+Hytrel® *	PTFE	Polypropylene and AISI 316	2B3/16117TT5	2B8/16117TT5	
Max pressure	•	bar	8	8	
Max cycles p	er min	cpm	330	330	
Litres per cyc	cle **		0,188	0,188	
Max suction	Max suction lift m		dry column 4,5 - wet column 7,5	dry column 4,5 - wet column 7,5	
Max size pumpable solids mm			1,5	1,5	
Max working	temperature	*** °C	65	65	
Noise level		dB	75	75	
Max air cons	umption (m³/r	nin) m³/min	0,50	0,50	
Air working p	ressure	bar	2 - 6	2 - 6	
Air inlet conn	connection		G 3/8" (f)	G 3/8" (f)	
Air outlet con	onnection (muffler)		G 1/2" (f)	G 1/2" (f)	
Fluid inlet co	nnection		G 3/4" (f) - G 1" (f) for drum	dual inlet G 3/4" (f)	
Fluid outlet c	Fluid outlet connection		G 1/2" (f)	G 1/2" (f)	
Balls for inlet and outlet			€		
Overall dime	Overall dimensions (A x B x C x D x E) mm		220 x 160 x 327 x 145 x 100	220 x 160 x 327 x 145 x 100	
Screws for p	ump fixing		M8	M8	
Packing - We	ight		⋒ N° 1 0,02 m³ 🔓 5,8 kg	⋒ N° 1 0,02 m³ 🔓 5,7 kg	

With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS



PUMP PERFORMANCE



PUMP AIR FEEDING PRESSURE

A 8 bar

B 6 bar

KIND OF FLUID: Water 20 °C SAE30 oil: (ISO VG 100) 20 °C

1" - 170 I/min



Diaphragm pumps R. 1:1 for transferring fluids, made of molding injected polypropylene with motor made in aluminum. These versions have got 1" flange to connect the pump with the plant. Use the new AISI 304 stainless steel flange available in the accessories section for the piping connection.

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

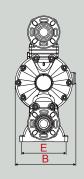




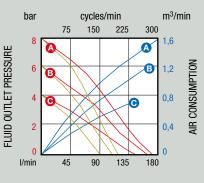
Series			1000-PPAB	1000-PPAB dual inlet	
membranes	balls	seats	P/N	P/N	
EPDM	Acetal	AISI 316 stainless steel	2B4/26117EAI	2B7/26117EAI	
Hytrel®	Hytrel®	AISI 316 stainless steel	2B4/26117HHI	2B7/26117HHI	
NBR	Hytrel®	AISI 316 stainless steel	2B4/26117NHI	2B7/26117NHI	
Santoprene™	Santoprene™	AISI 316 stainless steel	2B4/26117SSI	2B7/26117SSI	
PTFE+Hytrel® *	PTFE	AISI 316 stainless steel	2B4/26117TTI	2B7/26117TTI	
Max pressure	е	bar	8	8	
Max cycles p	er min	cpm	300	300	
Litres per cy	cle **	I	0,590	0,590	
Max suction	lift	m	dry column 5 - wet column 7,5	dry column 5 - wet column 7,5	
Max size pur	npable solids	mm	3	3	
Max working	temperature	*** °C	65	65	
Noise level		dB	75	75	
Max air cons	umption (m³/r	nin) m ³ /min	1,60	1,60	
Air working p	pressure	bar	2 - 6	2 - 6	
Air inlet conr	nection		G 3/8" (f)	G 3/8" (f)	
Air outlet cor	nnection (muff	fler)	G 1/2" (f)	G 1/2" (f)	
Fluid inlet co	nnection		ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread	dual inlet ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm proneness to G 1.1/4" (f) thread	
Fluid outlet o	onnection		ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread	ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread	
Balls for inlet and outlet					
Overall dime	nsions (A x B x	x C x D x E) mm	305 x 200 x 420 x 191 x 130	357 x 200 x 420 x 191 x 130	
Screws for p	ump fixing		M10	M10	
Packing - We	eight		℘ N° 1 0,03 m³ 🔓 7 kg	ୖ № 1 0,03 m³ 🔓 12,1 kg	

With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS



PUMP PERFORMANCE



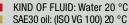
FEEDING PRESSURE

PUMP AIR









strength points

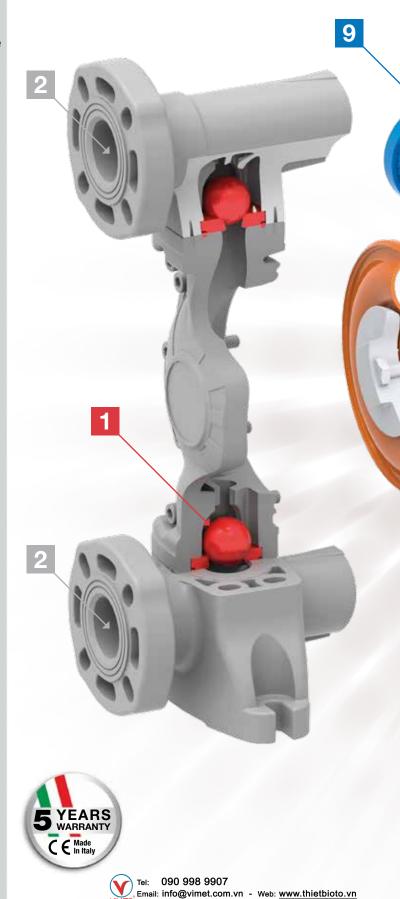


Why choose a diaphragm pump entirely made of polypropylene?

RAASM pneumatic diaphragm pumps completely made of polypropylene are made to work in particularly aggressive work atmospheres, with a wide range of fluids, also corrosive, with high viscosity and solid parts in suspension.

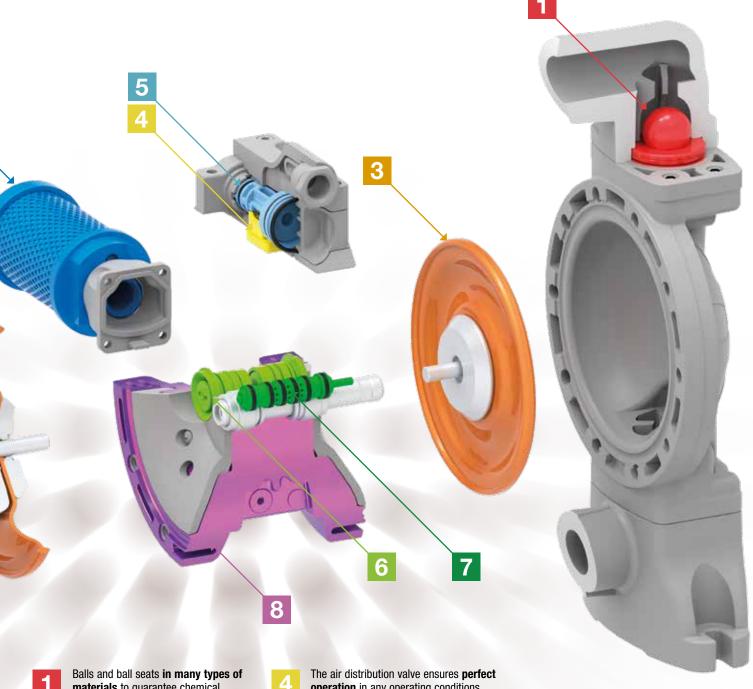
- Suitable in environments with aggressive atmospheres
- Can be used with water or corrosive solutions
- Higher quality thanks also to the stainless steel screws
- Built with anti-stalling and anti-icing devices to maintain unaltered the performances over time
- Silencer in plastic material for corrosive environments with stainless steel cage.
- 1/2" pumps with reinforced thread thanks to a AISI 316 stainless steel ring
- Usable with viscous fluids and with solid parts in suspension
- Easy and on-site maintainability by requesting predefined replacement kits
- Self-priming capability
- All pumps are tested before the packaging to ensure the highest quality

Diaphragm pumps in polypropylene



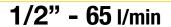
TECHNICAL

CHARACTERISTICS



- materials to guarantee chemical compatibility according to the fluid to be pumped. Easy to clean or replace as required. The ball seats are in AISI 316 stainless steel (versions 1") or in AISI 316 stainless steel and polypropylene (versions 1/2").
- 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. There is a AISI 316 stainless steel ring to reinforce the thread (versions 1/2").
- Membranes made with different and specific materials able to withstand many types of fluids and millions of cycles.

- operation in any operating conditions, some examples:
 - Minimum supply pressures (min. 2 bar)
 - Fluid and environment critical temperatures
 - Supply pressure fluctuations
- 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 pneumatic motor block of the pump does not require any type of lubrication because the moving parts are self-lubricating.
- Pump body in polypropylene with integrated flanges and co-molded inserts to guarantee elevated tightening torques.
- Pneumatic motor anti-icing device made of plastic material. This allows the pump to maintain its unaltered performance even if powered with untreated air.
- Silencer made of plastic material with increased exhaust system designed to withstand corrosive environments also thanks to stainless steel cage.





Diaphragm pumps R. 1:1 for fluids transfer, produced entirely in polypropylene, are recommended for applications with industrial fluids, also corrosive, and in working environments with aggressive atmospheres.

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





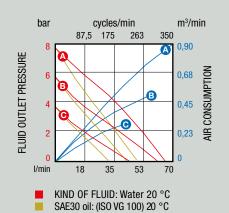
Series	Series		120-PPB with multi-ported inlet/outlet	120-PPB dual inlet/multi-ported outlet				
membranes	balls	seats	P/N	P/N				
EPDM	Acetal	Polypropylene and AISI 316	2A3/1677EA5	2A8/1677EA5				
Hytrel®	Hytrel®	Polypropylene and AISI 316	2A3/1677HH5	2A8/1677HH5				
NBR	Hytrel®	Polypropylene and AISI 316	2A3/1677NH5	2A8/1677NH5				
Santoprene™	Santoprene™	Polypropylene and AISI 316	2A3/1677SS5	2A8/1677SS5				
PTFE+Hytrel®	PTFE	Polypropylene and AISI 316	2A3/1677TT5	2A8/1677TT5				
Max pressure)	bar	8	8				
Max cycles p	er min	cpm	350	350				
Litres per cyc	cle **	<u>.</u>	0,188	0,188				
Max suction	Max suction lift m		dry column 4,5 - wet column 7,5	dry column 4,5 - wet column 7,5				
Max size pun	Max size pumpable solids mm		1,5	1,5				
Max working	temperature	*** °C	65	65				
Noise level	Noise level dB		76	76				
Max air cons	umption (m³/r	nin) m³/min	0,89	0,89				
Air working p	ressure	bar	2 - 6	2 - 6				
Air inlet conn	onnection		nlet connection		G 3/8" (f)	G 3/8" (f)		
Air outlet con	nection (muff	iler)	G 3/4" (f)	G 3/4" (f)				
Fluid inlet co	onnection		l inlet connection		G 3/4" (f) - G 1" (f) for drum	dual inlet G 3/4" (f)		
Fluid outlet c	Fluid outlet connection		utlet connection		outlet connection		G 1/2" (f)	G 1/2" (f)
Balls for inlet	Balls for inlet and outlet		₿	8				
Overall dimer	nsions (A x B x	x C x D x E) mm	208 x 220 x 326 x 145 x 100	220 x 220 x 326 x 145 x 100				
Screws for p	ump fixing		M8	M8				
Packing - We	ight		(n N° 1 0,02 m³	№ N° 1 0,02 m³ 🔓 5,8 kg				

^{*} With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute *** The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS

O D B B

PUMP PERFORMANCE

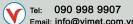


PUMP AIR FEEDING PRESSURE

A 8 bar

B B 6 bar

⊙ ⊙ 4 bar



1" - 145 I/min

The family of 1" diaphragm pumps, R. 1:1 for fluid transfer, produced entirely in polypropylene, maintain their performance on applications with industrial fluids, also aggressive, and in working environments with corrosive atmospheres, offering an unquestionable higher capacity.

WITH FLANGE 1" WITH FLANGE 1"



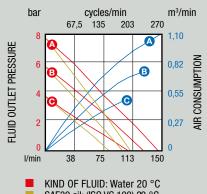
Note: The max flow rate shown in the below graphics has been obtained by laboratory test.

laboratory tost.			WITH E 11102 1	
Series			1000-PPB	1000-PPB dual inlet
membranes	embranes balls seats		P/N	P/N
EPDM	Acetal	AISI 316 stainless steel	2A4/2677EAI	2A7/2677EAI
Hytrel®	Hytrel®	AISI 316 stainless steel	2A4/2677HHI	2A7/2677HHI
NBR	Hytrel®	AISI 316 stainless steel	2A4/2677NHI	2A7/2677NHI
Santoprene™	Santoprene™	AISI 316 stainless steel	2A4/2677SSI	2A7/2677SSI
PTFE+Hytrel®	PTFE	AISI 316 stainless steel	2A4/2677TTI	2A7/2677TTI
Max pressure)	bar	8	8
Max cycles p	er min	cpm	270	270
Litres per cyc	de **		0,540	0,540
Max suction	lift	m	dry column 5 - wet column 7,5	dry column 5 - wet column 7,5
Max size pumpable solids mm		mm	3	3
Max working	Max working temperature *** °C		65	65
Noise level		dB	78	78
Max air cons	umption (m³/r	nin) m³/min	1,1	1,1
Air working p	ressure	bar	2 - 6	2 - 6
Air inlet conn	ection		G 3/8" (f)	G 3/8" (f)
Air outlet con	nection (muff	ier)	G 3/4" (f)	G 3/4" (f)
Fluid inlet co	nnection		ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread	dual inlet ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread
Fluid outlet connection			ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread	ANSI 150 - DIN PN 10 - JIS 10K 1" (25 mm) proneness to G 1.1/4" (f) thread
Balls for inlet and outlet				
Overall dimer	nsions (A x B x	(CxDxE) mm	305 x 300 x 420 x 191 x 130	357 x 300 x 420 x 191 x 130
Screws for po	ımp fixing		M10	M10
Packing - We	ight		🗑 № 1 0,03 m³ 🔓 9,6 kg	№ N° 1 0,03 m³ 🔓 9,6 kg

With PTFE membrane flow rate is 10 % lower ** Displacement per cycle may be influenced by suction lift, fluid viscosity, air pressure, number of cycles per minute. The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

PUMP DIMENSIONS

PUMP PERFORMANCE



PUMP AIR **FEEDING** PRESSURE







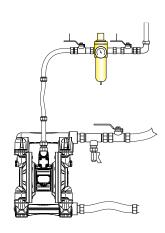


Accessories for



P/N 37819 Pressure regulator with condensate discharge filter and pressure gauge, - connections G 3/8" (f) x G 3/8" (f) for application at the start of the compressed air line feeding the pump

P/N 37815 Pressure regulator with condensate discharge filter and pressure gauge, - connections G 1/2" (f) x G 1/2" (f) for application at the start of the compressed air line feeding the pump

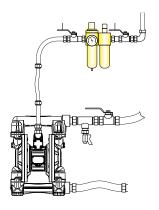




P/N 37821

Pressure regulator
with condensate discharge
filter, air lubricator and
pressure gauge.
- connections
G 3/8" (f) x G 3/8" (f)
the system guarantees
that the pump feed air
is free of condensate

P/N 37817 Pressure regulator with condensate discharge filter, air lubricator and pressure gauge. - connections G 1/2" (f) x G 1/2" (f) the system guarantees that the pump feed air is free of condensate





P/N 38097
Flow regulator chamber

G 3/4" (f) x G 3/4" (f) equipped with: - one-way valve eliminates sudden

- pressure
- changes, ensuring a regular flow
- suitable for R 1:1 3:1 5:1 pumps
- max pressure 100 bar

PRESSURE LEVELLING OF LIQUID FLOW AT PUMP OUTLET 14 12 8 6 4 2 0 with pump R 3:1 - 8 bar without chamber with chamber

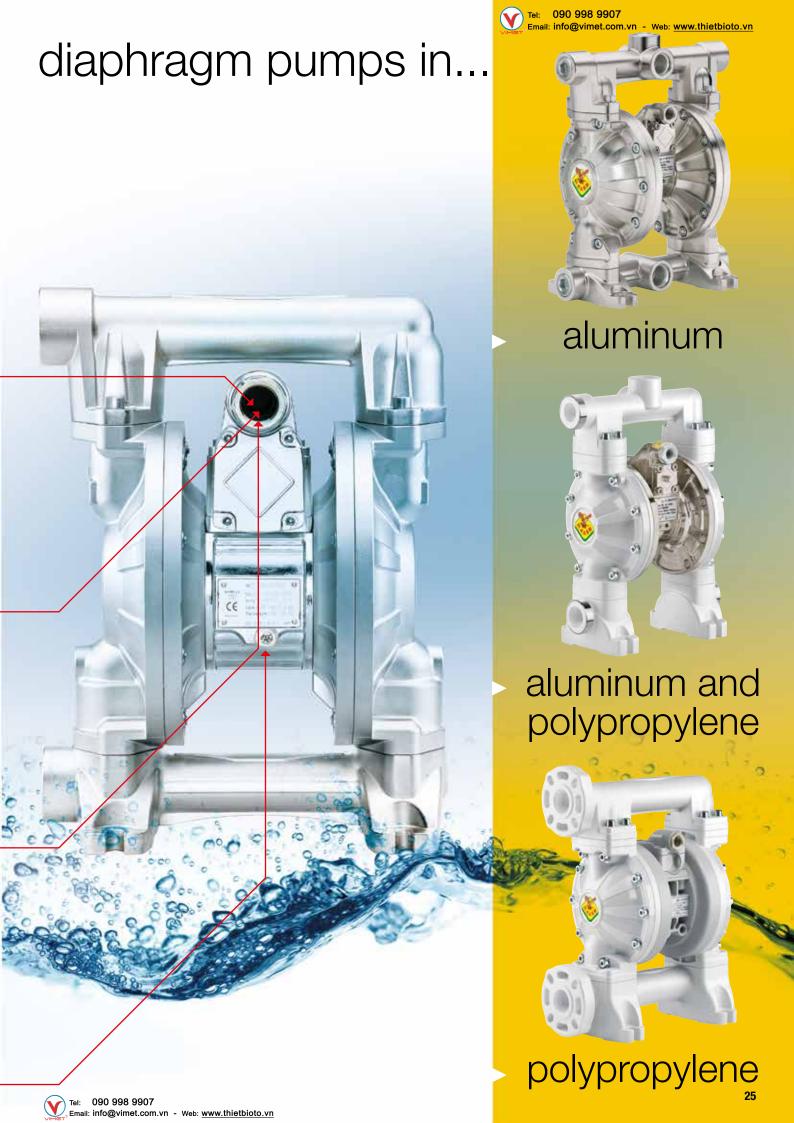
PRESSURE TREND OF PUMP OUTLET



P/N **KR4506**

Earthing cable provided with plier.

In environments with risk of explosion (i.e. with a potentially explosive atmosphere according to the ATEX directive) it is mandatory to connect to the ground both the pump and other equipment placed in the work area.





Accessories for

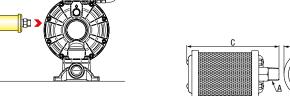
Mufflers reduce exponentially the noise level perceived. They decrease the pump outlet air level noise bringing it to a comfortable level, optimizing the air flow and so increasing the pump performance.



P/N 32/89 Increased muffler G 1/2" (m) suitable for 1/2" and 1" pumps with aluminum motor.



P/N **32/90** Muffler G 3/4" (m) in polypropylene for 1/2" and 1" pumps with plastic motor.





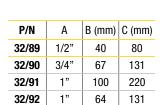
P/N 32/91 Muffler G 1" (m) for 1.1/4", 1.1/2" and 2" pumps with aluminum motor. Suggested with very dusty environments.



MUFFLER REMOTE

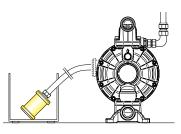
MUFFLER STANDARD

INSTALLATION





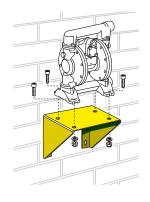
P/N 32/92 **Muffler** G 1" (m) for 1.1/4", 1.1/2" and 2" pumps with aluminum motor.





P/N **33590** Wall bracket in painted steel for wall-mounting of diaphragm pumps 1/2" and 3/4" and screws for pump fixing M8.

Wall bracket in painted steel for wall-mounting of diaphragm pumps 1" and 1.1/4" and screws for pump fixing M10.



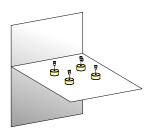


P/N KR33/90 Antivibration kit in SBR rubber ø 30 x h. 20 thread M/M - M8 for 1/2" and 3/4" diaphragm pump. It reduces the vibrations in heavy applications.

P/N **KR33/91** Antivibration kit in SBR rubber ø 50 x h. 30 thread M/M - M10 for 1" and 1.1/4" diaphragm pump. It reduces the vibrations in heavy applications.



P/N KR33/88 Antivibration kit in SBR rubber ø 30 x h. 20 thread F/F - M12 for 1.1/2" and 2" diaphragm pump. It reduces the vibrations in heavy applications.









Accessories for diaphragm





aluminum

aluminum and polypropylene



P/N 32/95 *

1" stainless steel AISI 304 flange suitable to connect the pump with the plant. Thread G 1" (f)

1" polypropylene flange suitable to connect the pump with the plant. Thread G 1" (f)

2" aluminum flange suitable to connect the pump with the plant. Thread G 1" (f)

* accessory only for flanged diaphragm pumps

P/N 33574

Hose holder ø 1.3/4" (47,5 mm) with connection G 1.1/4" (m)

Hose holder ø 1.3/4" (47,5 mm) with connection G 1.1/2" (m)

Hose holder ø 1.3/4" (47,5 mm) with connection G 2" (m)

Hose holder ø 1.1/4" (31,4 mm) with connection G 3/4" (m)

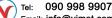
Hose holder ø 1.1/4" (31,4 mm) with connection G 1" (m)

Hose holder ø 1.1/4" (31,4 mm) with connection G 1.1/4" (m)



Hose holder ø 3/4" (22 mm) with connection G 3/4" (m) in AISI 304 stainless steel

Hose holder ø 3/4" (22 mm) with connection G 1" (m) in AISI 304 stainless steel



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Email: info@vimet.com.vn - Web: www.thietbioto.vn





P/N 38026 Flexible suction tube 2 m - ø 30,5 x ø 39 mm

P/N 38028 Flexible suction tube 1 m - ø 30,5 x ø 39 mm

P/N **33584**

Flexible suction tube 2 m

- ø 45 x ø 57 mm



P/N 33426 Flexible suction tube 2 m - ø 19,5 x ø 27 mm



P/N 33434 Bung adaptor for pump with ø 34 mm suction tube



P/N 10/15 Bung adaptor for pump with ø 53 mm suction tube



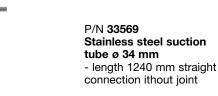
P/N **33581** Rigid suction tube ø 34 mm - length 940 mm

P/N 33582 Rigid suction tube ø 34 mm - length 1240 mm

P/N 33586 Rigid suction tube ø 53 mm - length 940 mm

P/N 33588 Rigid suction tube ø 53 mm - length 1240 mm

P/N 33594 Rigid suction tube ø 34 mm - length 1500 mm



P/N 33579 Stainless steel suction tube ø 34 mm - length 940 mm

P/N 33580

Stainless steel suction tube ø 34 mm - length 1240 mm

P/N 33596 Stainless steel suction tube ø 34 mm

- length 1460 mm

SUCTION TUBES KITS AVAILABLE



P/N 33583

Rigid suction tube ø 34 mm

- length 940 mm

P/N **33585**

Rigid suction tube ø 34 mm

- length 1240 mm

P/N 33587

Rigid suction tube kit ø 53 mm

- length 940 mm

Rigid suction tube kit ø 53 mm

- length 1240 mm

Rigid suction tube kit ø 34 mm

- length 1500 mm



P/N 33577 Stainless steel rigid suction tube kit ø 34 mm

- length 940 mm

P/N 33578 Stainless steel rigid suction tube kit ø 34 mm

- length 1260 mm

P/N 33597 Stainless steel rigid suction tube kit ø 34 mm

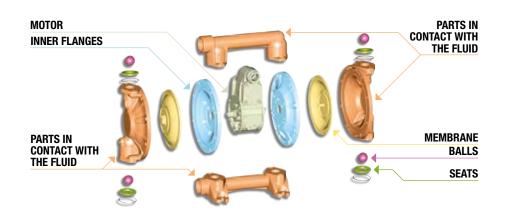
- length 1460 mm



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 c TX (for zone 2) II 2GD c IIB T4 X (for zone 1)

They can be threaded (G/BSP) 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.

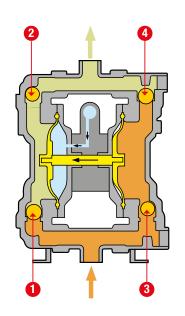
These are not in contact with the pumped liquid, but only with the compressed air feeding the motor.

		_						
		FLOW		KIND OF MATERIALS				
MATERIALS AND ATEX VERSIONS	MANIFOLD FOR INLET AND OUTLET	INSIDE DIAMETER	MOTOR	INNER Flanges	PARTS IN CONTACT WITH THE FLUID	MEMBRANE	BALLS	SEATS
2B = Polypropylene	1/ = threaded connection G/BSP	16 = 1/2"	1 = Nichel plat.	1 = Nichel plat.	1 = Nichel plat.	$\mathbf{E} = EPDM$	A = Acetal	A = Acetal
for Zone 2	3/ = mult. threaded con. G/BSP	26 = 1"	aluminum	aluminum	aluminum	H = Hytrel®	H = Hytrel®	H = Hytrel®
3C = Aluminum for Zone 1	4/ = connection with flange	30 = 1.1/4"	= 1.1/4" 7 = polypropylene		7 = Polypropylene	$\mathbf{N} = NBR$	S = Santoprene™	P = Polypropylene
2A = Polypropylene	6/ = multiple modular	40 = 1.1/2"	(motor and fla	tor and flanged		$\mathbf{S} = Santoprene^{TI}$	T = PTFE	$\mathbf{S} = Santoprene^{TM}$
	connection with flange	50 = 2"	= 2" are a single body)		T = PTFE +		I = AISI 316	
	7/ = dual inlet connection					hytrel®		stainless steel
	with flange							5 =
	8/ = dual inlet G/BSP							polypropylene and stainless
	threaded connection							steel AISI 316

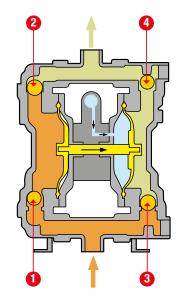
EXEMPLE 3C1/16111EAA								
3C = Aluminum for Zone 1	1/ = threaded connection G/BSP	16 = 1/2"	1 = Nichel plat. aluminum	1 = Nichel plat. aluminum	1 = Nichel plat. aluminum	E = EPDM	A = Acetal	A = Acetal

Installation and operation

SIMPLE AND EFFECTIVE (1:1 RATIO)

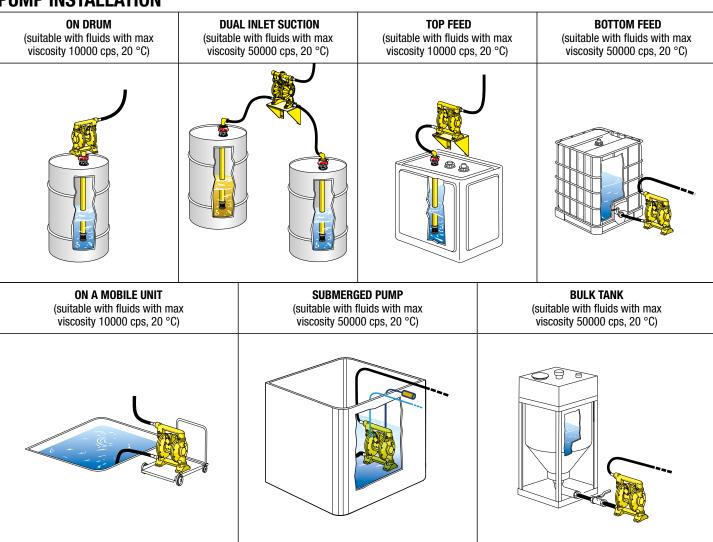


The slide valve of the air motor sends air (blue) to the left chamber which, pushing the membrane outwards, compresses the previously filled liquid (green). Through the effect of the pressure created valve 1 closes and valve 2 opens allowing the liquid to dispense (green). The right membrane then carries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

PUMP INSTALLATION





Wide choice of materials

PARTS IN CONTACT WITH FLUID

PUMP PARTS MATERIALS		CHARACTERISTICS	TEMPERATURE MAX *
	Nickel-plated aluminum	average resistance to abrasion and corrosion not intended for use with HHC (halogenated hydrocarbons)	+100 °C
	Polypropylene	wide chemical compatibility best alternative with aggressive fluids	+65 °C

CENTRAL MOTOR BLOCK

PUMP PARTS	MATERIALS	CHARACTERISTICS	TEMPERATURE MAX *
	Nickel-plated aluminum	- high mechanical strength - electrically conductive material for ATEX directive	+100 °C
	Polypropylene	- wide chemical compatibility - general use - cheaper solution	+65 °C

DIAPHRAGMS - SEATS - BALLS

	MATERIALS	CHARACTERISTICS AND STRENGHT POINTS	T° MAX *	DO NOT CHOOSE IF	SIMILAR NAMES ON THE MARKET
90	High Nitrile NBR	 high resistance to alphatic hydrocarbons, oils and greases good flexibility 	+90 °C	you are looking for resistance to many chemical agents	Buna - N Geolast
0000	Hytrel®	 high tenacity and springback high resistance to permanent deformation good resistance to industrial chemical substances and solvents excellent flexibility even at low temperature 	+65 °C	you work at high temperatures	Sani - flex
002	Santoprene™	 excellent flexural and fatigue strength excellent resistance to abrasion and laceration excellent resistance to acids, alkalis and ageing also usable at high temperatures 	+110 °C	you work with Kerosene, Diesel, Petrol, Freon, Benzene	Wil - flex
50	EPDM	 good compatibility with organic and non-organic acids excellent resistance to heat and steam insensitive to the action of oxidising agents 	+110 °C	you work with mineral oils and hydrocarbons	Nordel Buna - Ep
002	PTFE	- inert with nearly all chemical reagents - excellent heat resistance - excellent dielectric characteristics - excellent resistance to ageing	+120 °C	you work at low temperatures	Teflon®
0	Acetal resin	 high fatigue strength high compressive strength good dimensional stability (low humidity absorption) resistance to alcohols and organic compounds 	+150 °C	you work in easy combustion environments	Delrin

 $^{^{\}star}$ The materials in contact with the fluid, and the fluid as well, can restrict the pump working temperature

 \triangle Use these pumps only with fluids with flash point not less than +55 °C



Guide to choosing a pump

HOW TO CHOOSE A PUMP SUITABLE FOR ONE'S NEEDS

	DELIVEDY	MAY 6	SERIES			
PUMP SIZE	(FLOW RATE)	MAX Ø SOLID PARTS	POLYPROPYLENE	POLYPROPYLENE AND ALUMINUM	ALUMINUM	
	60 l/min	1,5 mm	-	120-PPAB	-	
1/2"	65 l/min	1,5 mm	120-PPB	-	-	
	70 l/min	1,5 mm	-	-	120-AB	
1"	170 l/min	3 mm	-	1000-PPAB	1000-AB	
"	145 l/min	3 mm	1000-PPB	-	-	
1.1/4"	200 l/min	3 mm	-	-	1140-AB	
1.1/2"	480 l/min	5,5 mm	-	-	1120-AB	
2"	580 l/min	6,5 mm	-	-	2000-AB flanged	
	610 l/min	6,5 mm	-	-	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 limits reported in the technical table.
- 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 DIRECTIVE

PUMP FAMILY	DESCRIPTION	CERTIFICATION CLASS
ENTIRELY ALUMINUM SERIES	Conductive material version Built with central body and manifolds in conductive metallic material (aluminum)	II 2GD c IIB T4 X (zone 1)
ALUMINUM AND POLYPROPYLENE SERIES	Partially conductive material version Manifolds built with non-conductive plastic material (PP) and central body with conductive material (aluminum)	IIB 3GD c TX (zone 2)
ENTIRELY POLYPROPYLENE SERIES	Central body and manifolds in non-conductive plastic material (PP)	not certified



SPECIFIC TESTS AND OVERALL TESTING





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strength points





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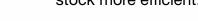
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