

# DIAPHRAGM PUMPS No. 512-PM



**ADVANCED FLUID  
MANAGEMENT SOLUTIONS**







**ADVANCED FLUID  
MANAGEMENT SOLUTIONS**

*the human side  
of Quality*



founded in 1975



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**RAASM** pneumatic double-diaphragm pumps are designed and manufactured to pump a wide range of fluids even aggressive and with suspended solids.

Being ATEX certified, they can also be used for severe applications.

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

- Self-priming capability
- Easy adjustment of delivery
- Resistance even in case of prolonged no-load operation

**Our sales department  
is at your disposal to  
provide information and solutions.**

**[www.raasmusa.com](http://www.raasmusa.com)**



**ADVANCED FLUID  
MANAGEMENT SOLUTIONS**



2011



2012



2013



2010



2009



2007



2005



2003



2000





More than **5000** products available  
for your business







**ADVANCED FLUID  
MANAGEMENT SOLUTIONS**

**VISION**

**DESIGN**

**TECHNOLOGY**

**QUALITY**

**EFFICIENCY**

**ASSISTANCE**

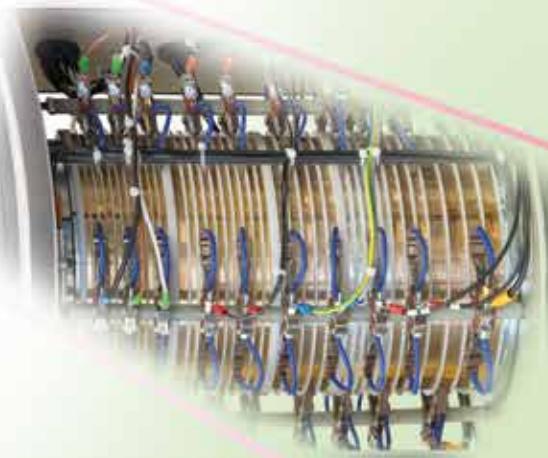
**ENVIRONMENT**

**PACKAGING**

**SHARING**









# DIAPHRAGM PUMPS IN ALUMINUM

**RAASM diaphragm pumps in die-cast aluminum** are manufactured in several sizes and with high quality materials, allowing the pumping of a variety of fluids.

In addition, this type of pump is ATEX certified, and ideal for use in environments with severe conditions.

Our technical department is always at your disposal to help you identify the materials of membranes, balls and seats compatible with the fluid to be pumped.



# Technical characteristics

## MEMBRANES

Made of different and specific materials, able to withstand many types of fluids and millions of cycles.

## AIR DISTRIBUTOR UNIT

Equipped with an anti-stall reversing piston that prevents the pump from stopping at a dead point, even in critical operating conditions.

## 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.

## BALL VALVES

Designed to guarantee the total flow of the pumped fluid.

## TOTAL FLOW SUCTION AND DELIVERY MANIFOLDS

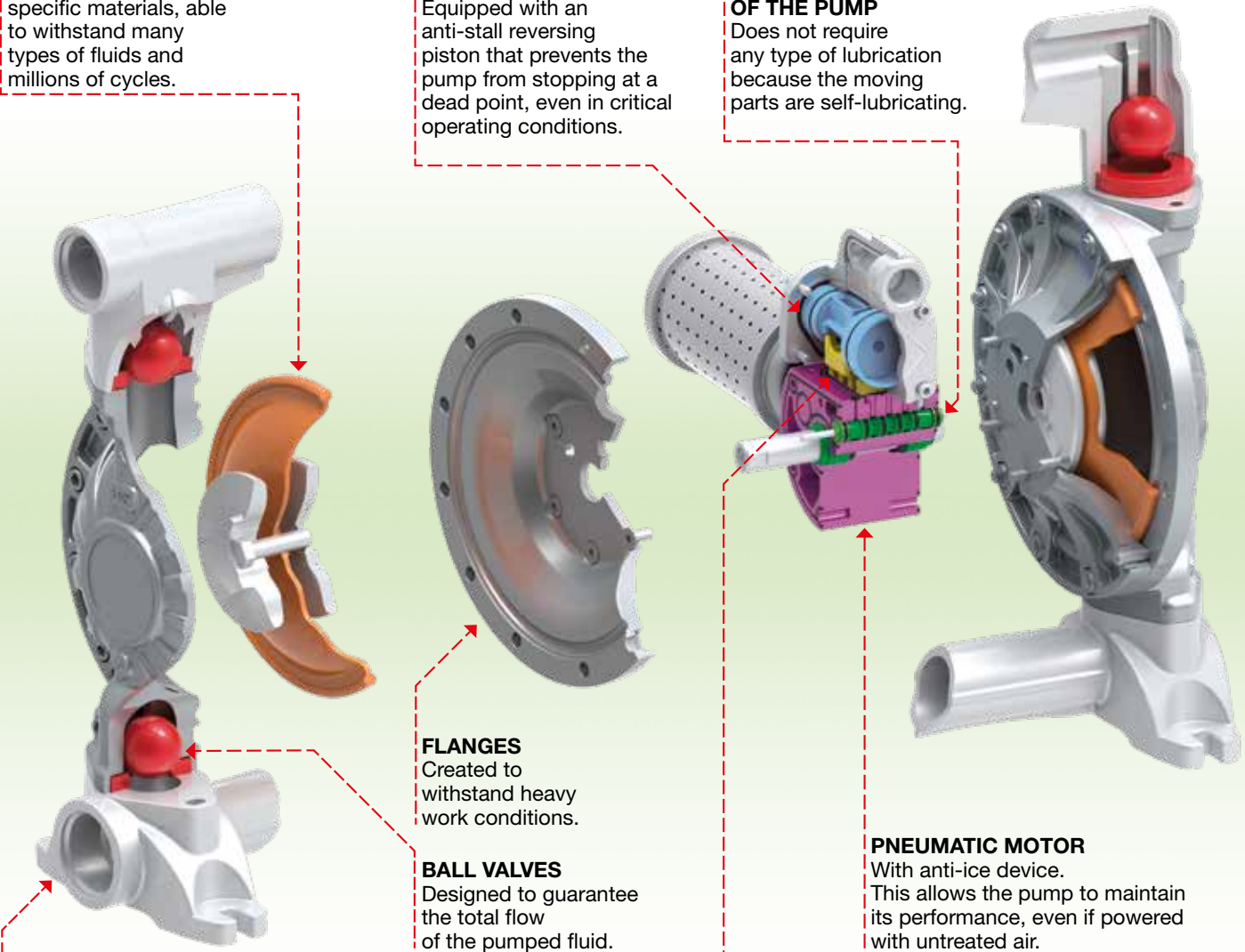
They facilitate suction of the liquid in any situation, with threaded or flanged connections available in different diameters, according to the pump models.

## AIR DISTRIBUTION VALVE

Ensures perfect operations in any working conditions.

Some examples:

- minimum supply pressures (min. 29 psi);
- critical fluid and environmental temperatures;
- supply pressure fluctuations.





**3/4" - Flow rate 18.5 gpm**

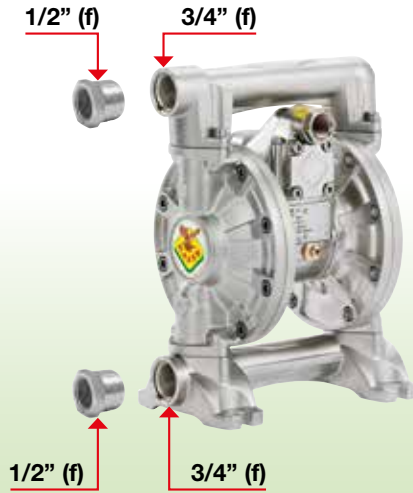
**3/4" - Flow rate 18.5 gpm**

**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.

In accordance with

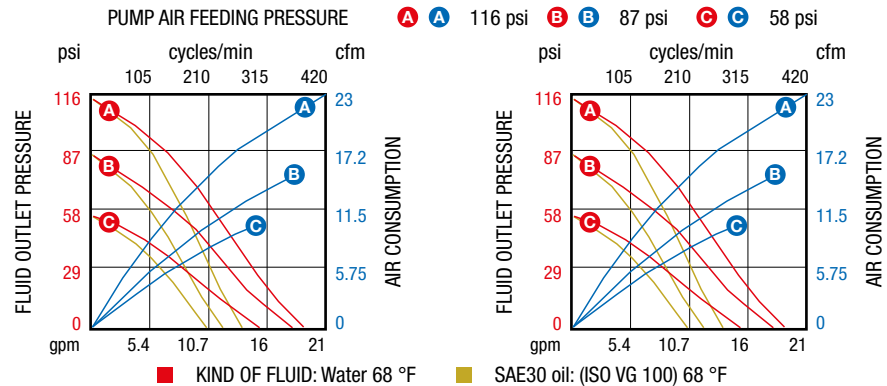
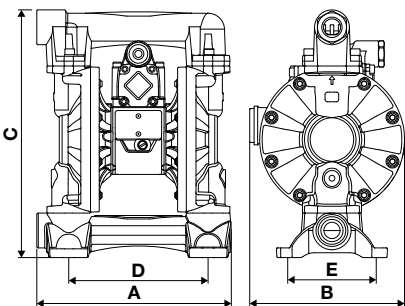


**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



Model			AAB-34	AAB-34
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CA/16111EAA-55	32/2011EAA2-55
Hytrel®	Hytrel®	Hytrel®	3CA/16111HHH-55	32/2011HHH2-55
NBR	Hytrel®	Hytrel®	3CA/16111NHH-55	32/2011NHH2-55
Santoprene™	Santoprene™	Santoprene™	3CA/16111SSS-55	32/2011SSS2-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CA/16111TTP-55	32/2011TTP2-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			400 cpm	400 cpm
<b>Gallons per cycle **</b>			0.05 gal	0.05 gal
<b>Max suction lift</b>			dry column 15 ft - wet column 25 ft	dry column 15 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.06"	0.06"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			75 dB	75 dB
<b>Max air consumption</b>			21 cfm	21 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 1/2" (f)
<b>Fluid inlet connection</b>			NPT 3/4" (f) and NPT 1/2" (f)	NPT 3/4" (f)
<b>Fluid outlet connection</b>			NPT 3/4" (f) and NPT 1/2" (f)	NPT 3/4" (f)
<b>Balls for inlet and outlet</b>			without spring	with spring
<b>Overall dimensions (A - B - C - D - E)</b>			7.9" - 6.3" - 10.1" - 5.7" - 3.9"	7.9" - 6.3" - 10.1" - 5.7" - 3.9"
<b>Screws for pump mounting</b>			M8 - 5/16"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 0.7 cf  13.9 lb	No. 1 0.7 cf  13.9 lb

\* 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







**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.

Available

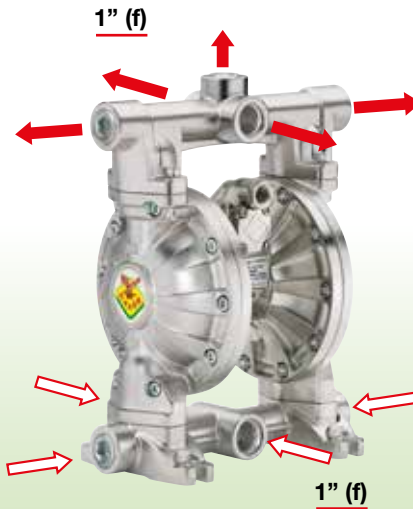


In accordance with



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

**1" - Flow rate 45 gpm**

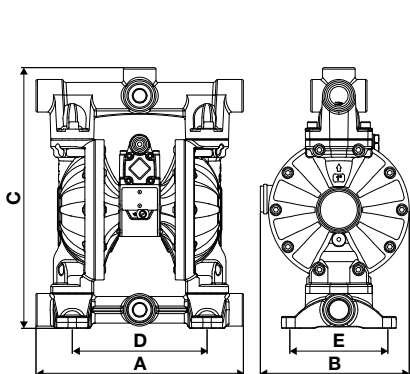


**1.1/4" - Flow rate 53 gpm**

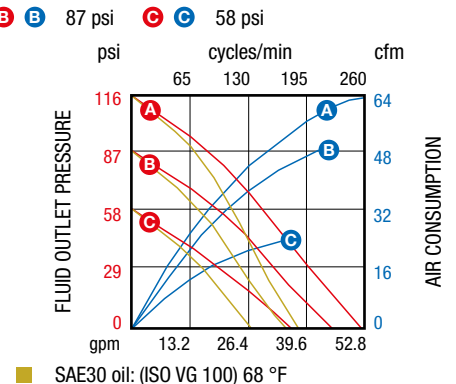
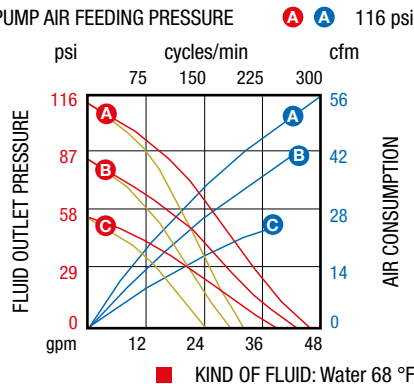


Model			AAB-1-9 with multiple inlet/outlet	AAB-114
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CC/26111EAA-55	3CA/30111EAA-55
Hytrel®	Hytrel®	Hytrel®	3CC/26111HHH-55	3CA/30111HHH-55
NBR	Hytrel®	Hytrel®	3CC/26111NHH-55	3CA/30111NHH-55
Santoprene™	Santoprene™	Santoprene™	3CC/26111SSS-55	3CA/30111SSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CC/26111TTP-55	3CA/30111TTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			300 cpm	260 cpm
<b>Gallons per cycle **</b>			0.15 gal	0.21 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.12"	0.12"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			75 dB	75 dB
<b>Max air consumption</b>			57 cfm	64 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			4 x NPT 1" (f)	NPT 1.1/4" (f)
<b>Fluid outlet connection</b>			5 x NPT 1" (f)	NPT 1.1/4" (f)
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			11" - 7.9" - 13.9" - 7.2" - 5.1"	11.3" - 9.4" - 15.2" - 7.8" - 5.4"
<b>Screws for pump mounting</b>			M10 - 3/8"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 1.1 cf  28.7 lb	No. 1 1.1 cf  33.1 lb

\* 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





**1.1/2" - Flow rate 125 gpm**

**2" - Flow rate 160 gpm**

**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.

In accordance with

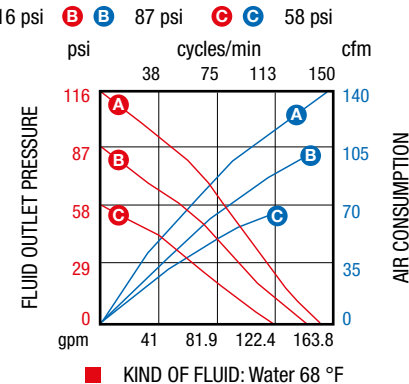
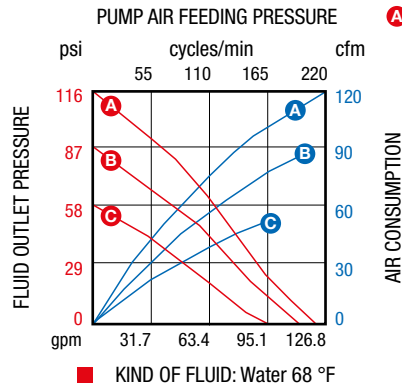
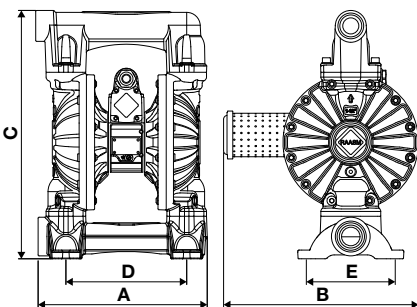


**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



Model			AAB-112	AAB-2
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CA/40111EAA-55	3CA/50111EAA-55
Hytrel®	Hytrel®	Hytrel®	3CA/40111HHH-55	3CA/50111HHH-55
NBR	Hytrel®	Hytrel®	3CA/40111NHH-55	3CA/50111NHH-55
Santoprene™	Santoprene™	Santoprene™	3CA/40111SSS-55	3CA/50111SSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CA/40111TTP-55	3CA/50111TTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			220 cpm	147 cpm
<b>Gallons per cycle **</b>			0.57 gal	1.09 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.22"	0.26"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			78 dB	82 dB
<b>Max air consumption</b>			120 cfm	141 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			NPT 2" (f)	NPT 2.1/2" (f)
<b>Fluid outlet connection</b>			NPT 1.1/2" (f)	NPT 2" (f)
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			13.8" - 15.8" - 20.2" - 9.8" - 7.2"	16.8" - 17.1" - 24.3" - 12" - 8.9"
<b>Screws for pump mounting</b>			M12 - 1/2"	M12 - 1/2"
<b>Packing - Weight</b>			No. 1 2.5 cf  47.4 lb	No. 1 4.2 cf  94.8 lb

\* 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





**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 can be rotated 90° or 180° to change the direction of the fluid inlet and outlet.

In accordance with



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

**2" - Flow rate 160 gpm**

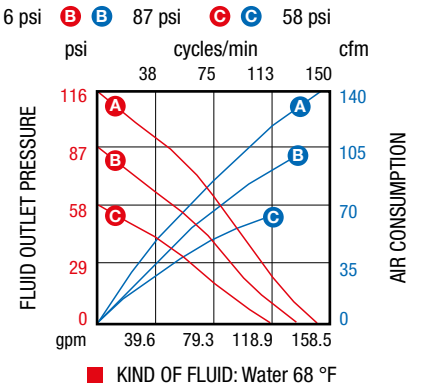
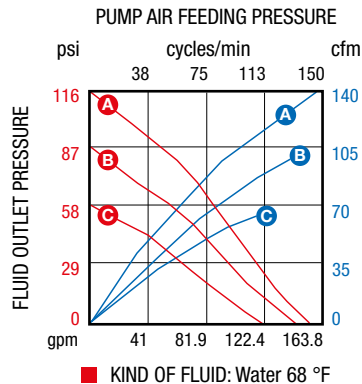
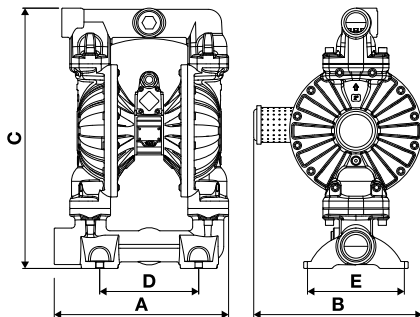


**2" - Flow rate 155 gpm**



Model			AAB-2 with multiple inlet/outlet	AABM-2 modular
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CC/50111EAA-55	3CF/50111EAA-55
Hytrel®	Hytrel®	Hytrel®	3CC/50111HHH-55	3CF/50111HHH-55
NBR	Hytrel®	Hytrel®	3CC/50111NHH-55	3CF/50111NHH-55
Santoprene™	Santoprene™	Santoprene™	3CC/50111SSS-55	3CF/50111SSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CC/50111TTP-55	3CF/50111TTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			147 cpm	147 cpm
<b>Gallons per cycle **</b>			1.09 gal	1.04 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.26"	0.26"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			82 dB	82 dB
<b>Max air consumption</b>			141 cfm	141 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			NPT 2.1/2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2"
<b>Fluid outlet connection</b>			NPT 2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2"
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			17.7" - 17.1" - 26.6" - 10" - 8.9"	16.1" - 17.1" - 28" - 12" - 9.4"
<b>Screws for pump mounting</b>			M12 - 1/2"	M12 - 1/2"
<b>Packing - Weight</b>			No. 1 4.2 cf  99.2 lb	No. 1 4.6 cf  110.2 lb

\* 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





# DIAPHRAGM PUMPS IN ALUMINUM WITH ELECTRO-PLATED COATING (CATAPHORESIS TREATMENT)



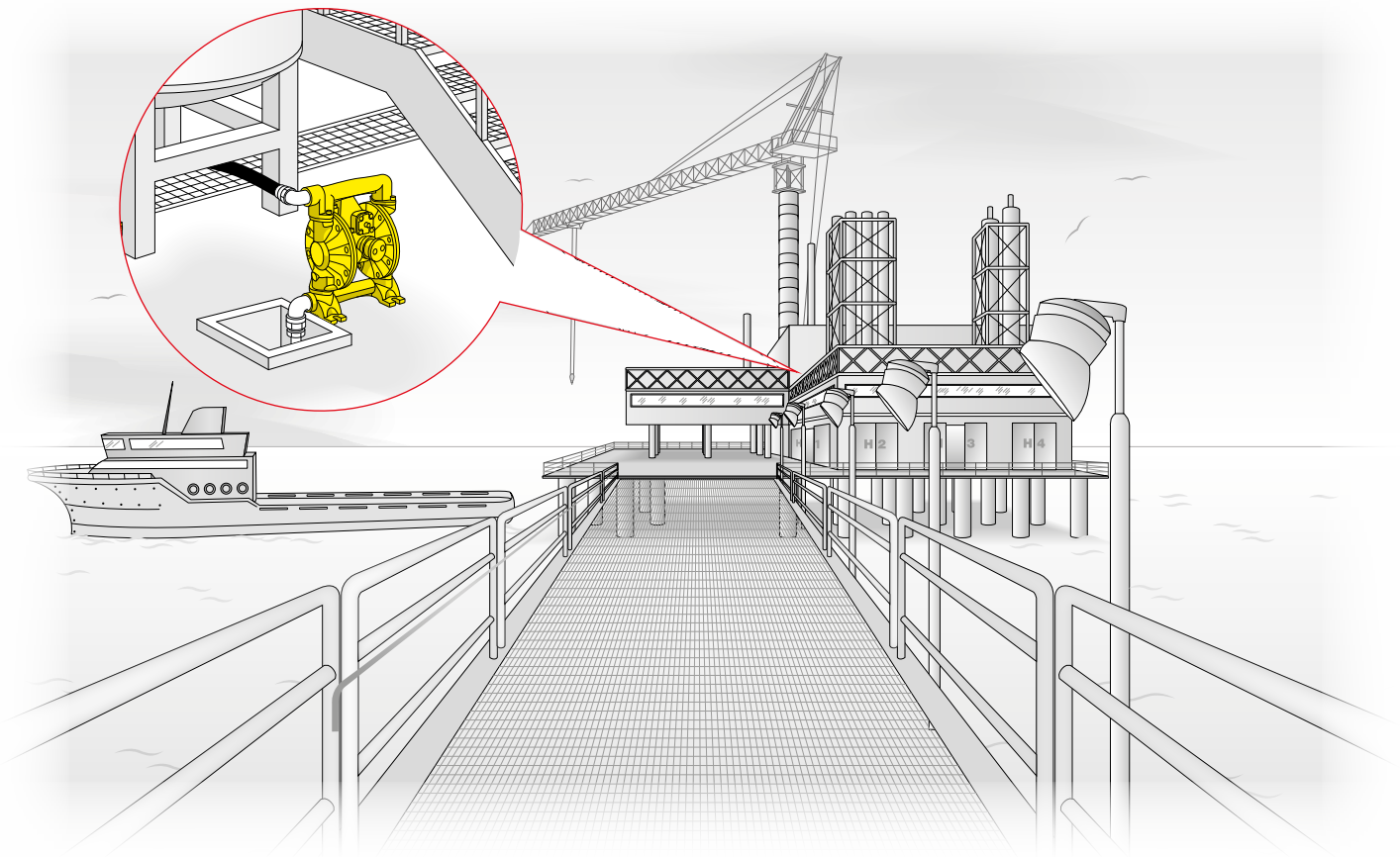
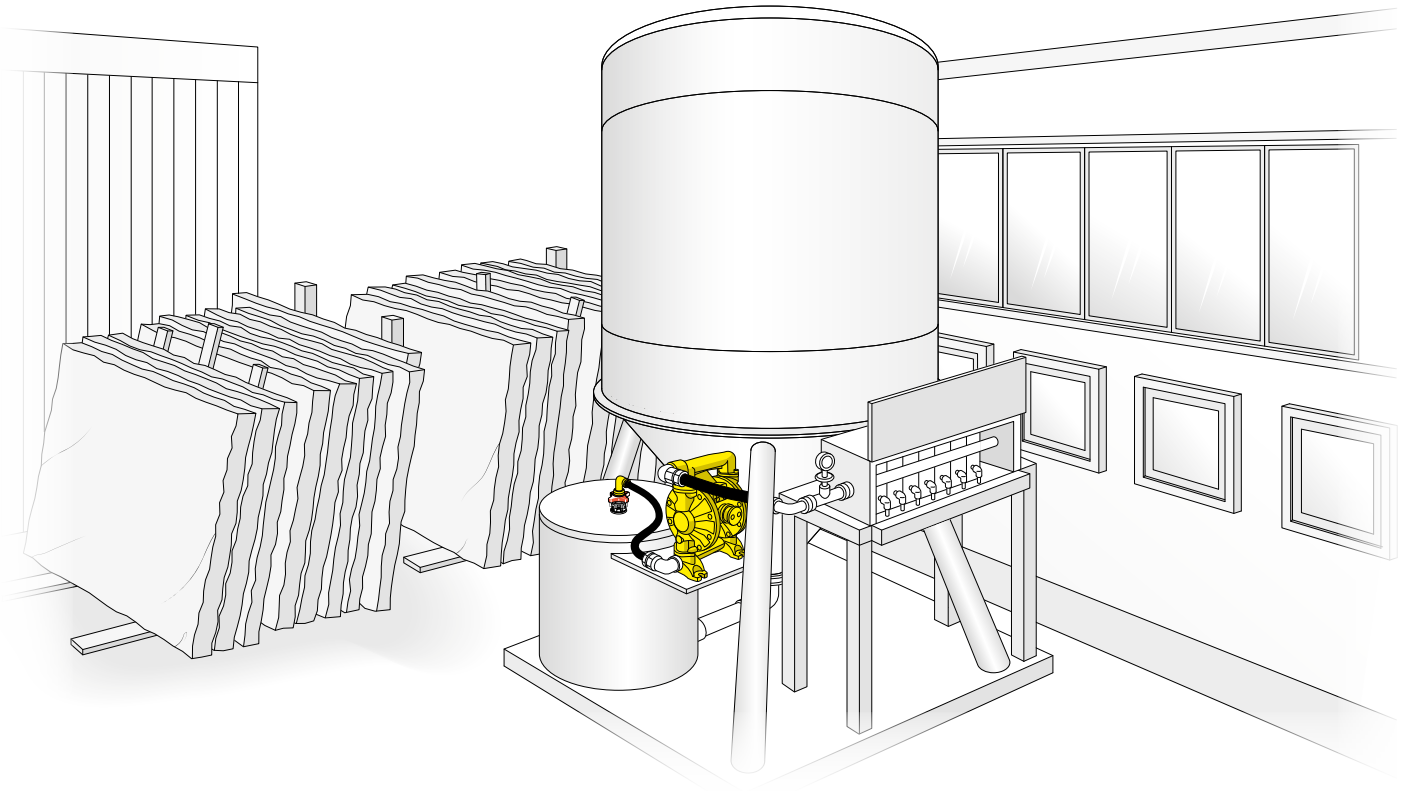
**RAASM diaphragm pumps with cataphoresis treatment** are the ideal solution for use in particularly aggressive working environments thanks to the coating protective layer that ensures high resistance to chemical and environmental corrosion processes.

POWERCRON® 6000 HE cataphoresis treatment ensures better coating of the paint film over the entire surface of the pump, with significant benefits in terms of durability.

In addition, they can be used in applications with potentially explosive atmospheres thanks to their compliance with the ATEX directive.

Our technical department is always at your disposal to help you identify the materials of membranes, balls and seats compatible with the fluid to be pumped.







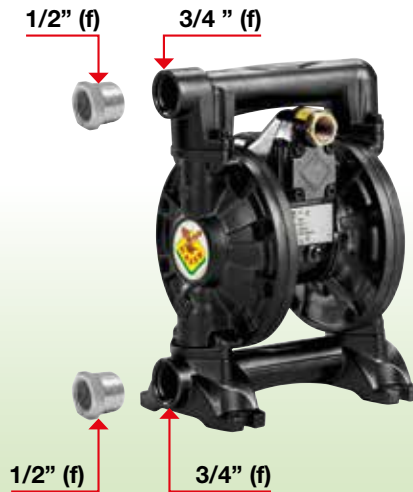
**3/4" - Flow rate 18.5 gpm**

**Diaphragm pumps R. 1:1 for transferring**, made of die-cast aluminum, with black cathaphoresis treatment that guarantees resistance up to 500 hours in saline fog.

In accordance with

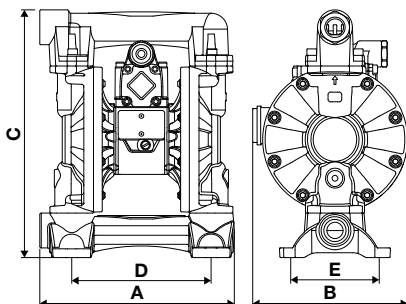


**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.

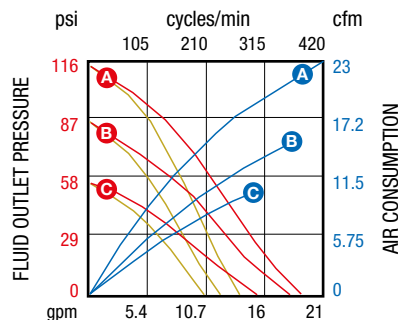


Model			AAB-34
<b>Membranes</b>	<b>Balls</b>	<b>Seats</b>	<b>P/N</b>
EPDM	Acetal	Acetal	3CA/1666VEAA-55
Hytrel®	Hytrel®	Hytrel®	3CA/1666VHHH-55
NBR	Hytrel®	Hytrel®	3CA/1666VNHH-55
Santoprene™	Santoprene™	Santoprene™	3CA/1666VSSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CA/1666VTTP-55
<b>Max pressure</b>			116 psi
<b>Max cycles per min</b>			400 cpm
<b>Gallons per cycle **</b>			0.05 gal
<b>Max suction lift</b>			dry column 15 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.06"
<b>Max working temperature ***</b>			212 °F
<b>Noise level</b>			75 dB
<b>Max air consumption</b>			21 cfm
<b>Air working pressure</b>			29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)
<b>Fluid inlet connection</b>			NPT 3/4" (f) and NPT 1/2" (f)
<b>Fluid outlet connection</b>			NPT 3/4" (f) and NPT 1/2" (f)
<b>Balls for inlet and outlet</b>			
<b>Overall dimensions (A - B - C - D - E)</b>			7.9" - 6.3" - 10.1" - 5.7" - 3.9"
<b>Screws for pump mounting</b>			M8 - 5/16"
<b>Packing - Weight</b>			No. 1 0.7 cf  13.9 lb

\* 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 **A A** 116 psi **B B** 87 psi **C C** 58 psi



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



**1" - Flow rate 45 gpm**

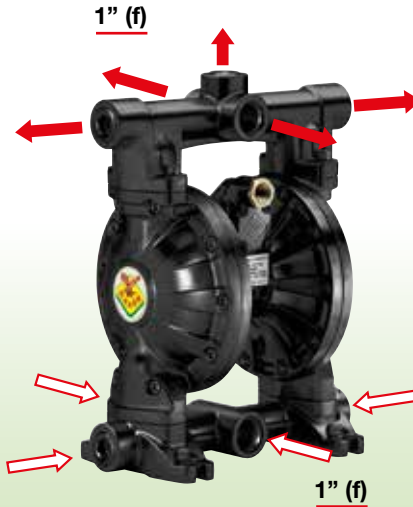
**1.1/4" - Flow rate 53 gpm**

**Diaphragm pumps R. 1:1 for transferring**, made of die-cast aluminum, with black cataphoresis treatment that guarantees resistance up to 500 hours in saline fog.

In accordance with

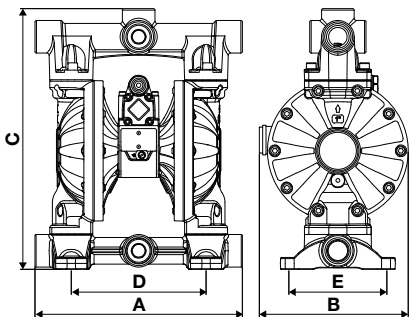


**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



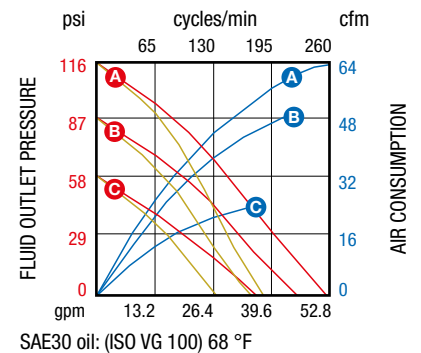
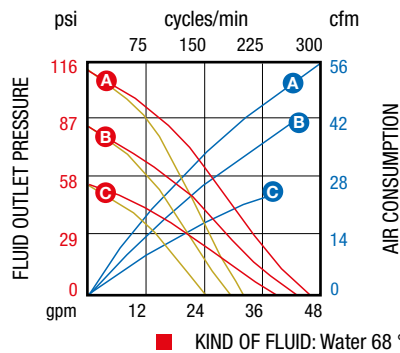
Model			AAB-1-9 with multiple inlet/outlet	AAB-114
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CC/2666VEAA-55	3CA/3066VEAA-55
Hytrel®	Hytrel®	Hytrel®	3CC/2666VHHH-55	3CA/3066VHHH-55
NBR	Hytrel®	Hytrel®	3CC/2666VNHH-55	3CA/3066VNHH-55
Santoprene™	Santoprene™	Santoprene™	3CC/2666VSSS-55	3CA/3066VSSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CC/2666VTTP-55	3CA/3066VTTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			300 cpm	260 cpm
<b>Gallons per cycle **</b>			0.15 gal	0.21 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.12"	0.12"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			75 dB	75 dB
<b>Max air consumption</b>			57 cfm	64 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			4 x NPT 1" (f)	NPT 1.1/4" (f)
<b>Fluid outlet connection</b>			5 x NPT 1" (f)	NPT 1.1/4" (f)
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			11" - 7.9" - 13.9" - 7.2" - 5.1"	11.3" - 9.4" - 15.2" - 7.8" - 5.4"
<b>Screws for pump mounting</b>			M10 - 3/8"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 1.1 cf  28.7 lb	No. 1 1.1 cf  33.1 lb

\* 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

**A A** 116 psi **B B** 87 psi **C C** 58 psi





**1.1/2" - Flow rate 125 gpm**

**2" - Flow rate 160 gpm**

**Diaphragm pumps R. 1:1 for transferring**, made of die-cast aluminum, with black cathaphoresis treatment that guarantees resistance up to 500 hours in saline fog.

In accordance with

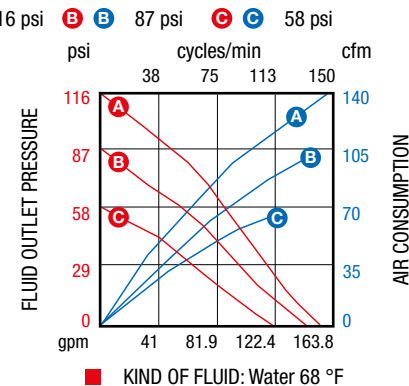
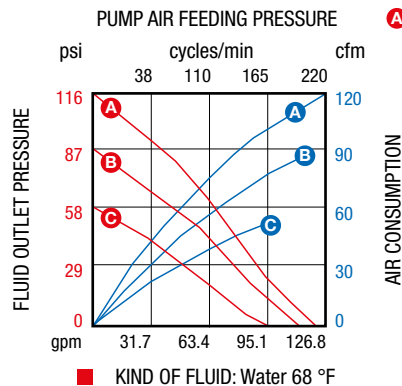
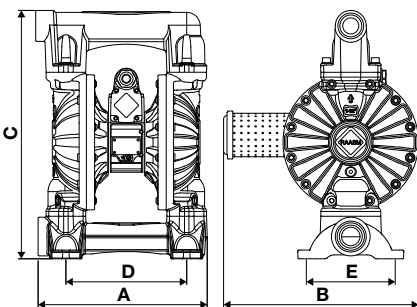


**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



Model			AAB-112	AAB-2
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CA/4066VEAA-55	3CA/5066VEAA-55
Hytrel®	Hytrel®	Hytrel®	3CA/4066VHHH-55	3CA/5066VHHH-55
NBR	Hytrel®	Hytrel®	3CA/4066VNHH-55	3CA/5066VNHH-55
Santoprene™	Santoprene™	Santoprene™	3CA/4066VSSS-55	3CA/5066VSSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CA/4066VTTP-55	3CA/5066VTTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			220 cpm	147 cpm
<b>Gallons per cycle **</b>			0.57 gal	1.09 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.22"	0.26"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			78 dB	82 dB
<b>Max air consumption</b>			120 cfm	141 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			NPT 2" (f)	NPT 2.1/2" (f)
<b>Fluid outlet connection</b>			NPT 1.1/2" (f)	NPT 2" (f)
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			13.8" - 15.8" - 20.2" - 9.8" - 7.2"	16.8" - 17.1" - 24.3" - 12" - 8.9"
<b>Screws for pump mounting</b>			M12 - 1/2"	M12 - 1/2"
<b>Packing - Weight</b>			No. 1 2.5 cf  47.4 lb	No. 1 4.2 cf  94.8 lb

\* 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







**Diaphragm pumps R. 1:1 for transferring**, made of die-cast aluminum, with black cathaphoresis treatment that guarantees resistance up to 500 hours in saline fog. Flanges can be rotated 90° or 180° to change the direction of the fluid inlet and outlet.

In accordance with



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

**2" - Flow rate 160 gpm**

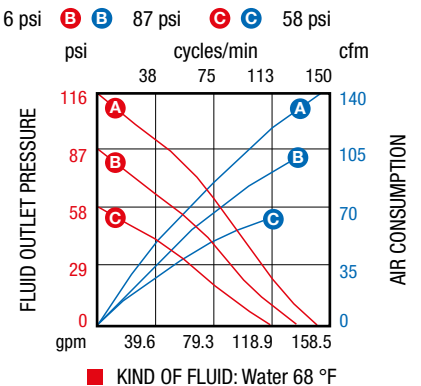
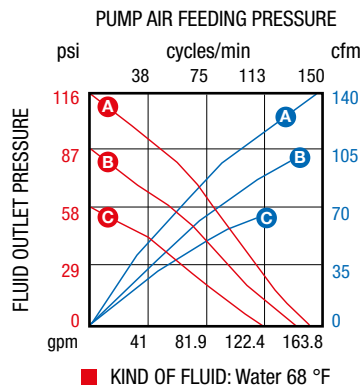
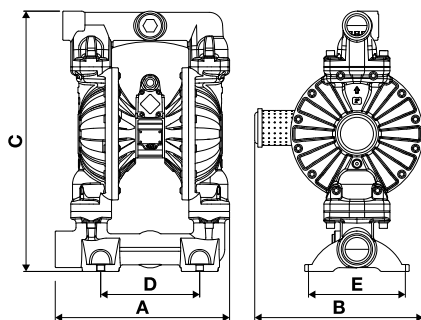


**2" - Flow rate 155 gpm**



Model			AAB-2 with multiple inlet/outlet	AABM-2 modular
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Acetal	3CC/5066VEAA-55	3CF/5066VEAA-55
Hytrel®	Hytrel®	Hytrel®	3CC/5066VHHH-55	3CF/5066VHHH-55
NBR	Hytrel®	Hytrel®	3CC/5066VNHH-55	3CF/5066VNHH-55
Santoprene™	Santoprene™	Santoprene™	3CC/5066VSSS-55	3CF/5066VSSS-55
PTFE+Hytrel® *	PTFE	Polypropylene	3CC/5066VTTP-55	3CF/5066VTTP-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			147 cpm	147 cpm
<b>Gallons per cycle **</b>			1.09 gal	1.04 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.26"	0.26"
<b>Max working temperature ***</b>			212 °F	212 °F
<b>Noise level</b>			82 dB	82 dB
<b>Max air consumption</b>			141 cfm	141 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Air outlet connection (muffler)</b>			NPT 1" (f)	NPT 1" (f)
<b>Fluid inlet connection</b>			NPT 2.1/2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2"
<b>Fluid outlet connection</b>			NPT 2" (f)	ANSI 150 - DIN PN 10 - JIS 10K 2"
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			17.7" - 17.1" - 26.6" - 10" - 8.9"	16.1" - 17.1" - 28" - 12" - 9.4"
<b>Screws for pump mounting</b>			M12 - 1/2"	M12 - 1/2"
<b>Packing - Weight</b>			No. 1 4.2 cf  99.2 lb	No. 1 4.6 cf  110.2 lb

\* 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





# STAINLESS STEEL DIAPHRAGM PUMPS

## WITH ALUMINUM MOTOR

**RAASM diaphragm pumps in AISI 316 stainless steel with aluminum motor** are versatile and easy to use, suitable for a wide variety of industrial applications.

AISI 316 stainless steel is a material with high mechanical and thermal resistance, ideal for use with corrosive agents or in particularly harsh environments.

Moreover, they can be used in applications with a potentially explosive atmosphere thanks to their compliance with the ATEX directive.

## WITH POLYPROPYLENE MOTOR

**RAASM AISI 316 stainless steel diaphragm pumps with polypropylene motor** are designed to handle particularly aggressive fluids (acids and alkalis) and are the ideal solution to be used in many working environments, even the most aggressive.





**1" - Flow rate 40 gpm**

**1" - Flow rate 34 gpm**

The R 1:1 diaphragm pumps made of AISI 316 stainless steel with aluminum or polypropylene motor ensure reliability and efficiency.

In accordance with



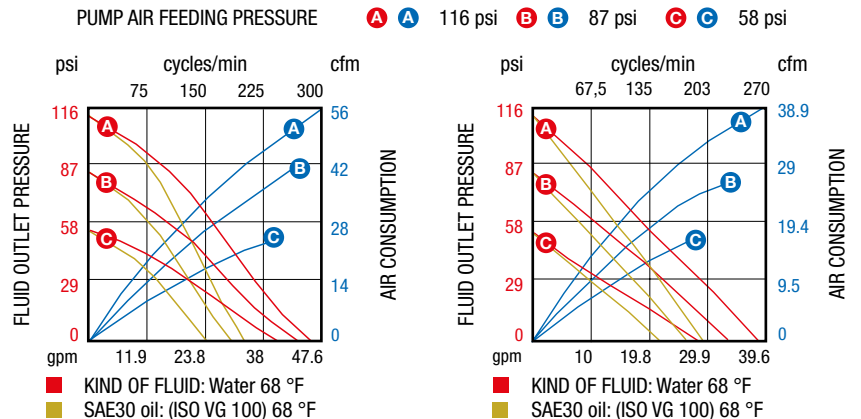
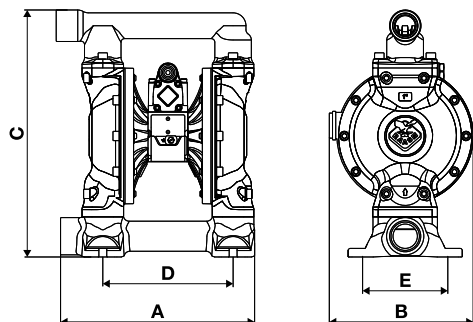
ONLY FOR ALUMINUM MOTOR

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



Model			AIB-1	PPIB-1
Membranes	Balls	Seats	P/N	P/N
PTFE+Hytre <sup>®</sup>	PTFE	AISI 316 stainless steel	<b>4CA/26115TTI-55</b>	<b>2AA/26775TTI-55</b>
<b>Max pressure</b>			116 psi	116 psi
<b>Air motor</b>			aluminum	polypropylene
<b>Wet parts</b>			AISI 316	AISI 316
<b>Gallons per cycle *</b>			0.15 gal	0.14 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.12"	0.12"
<b>Max working temperature **</b>			212 °F	149 °F
<b>Noise level</b>			75 dB	78 dB
<b>Max air consumption</b>			50 cfm	39 cfm
<b>Air working pressure</b>			44 - 116 psi	44 - 116 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 3/4" (f)
<b>Fluid inlet connection</b>			NPT 1.1/4" (f)	NPT 1.1/4" (f)
<b>Fluid outlet connection</b>			NPT 1" (f)	NPT 1" (f)
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			10.7" - 7.9" - 13.6" - 7.2" - 5.1"	10.7" - 7.9" - 13.6" - 7.2" - 5.1"
<b>Screws for pump mounting</b>			M10 - 3/8"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 1.1 cf  55.1 lb	No. 1 1.1 cf  52.9 lb

\* 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





# DIAPHRAGM PUMPS IN POLYPROPYLENE WITH ALUMINUM MOTOR



## **RAASM polypropylene diaphragm pumps with aluminum motor**

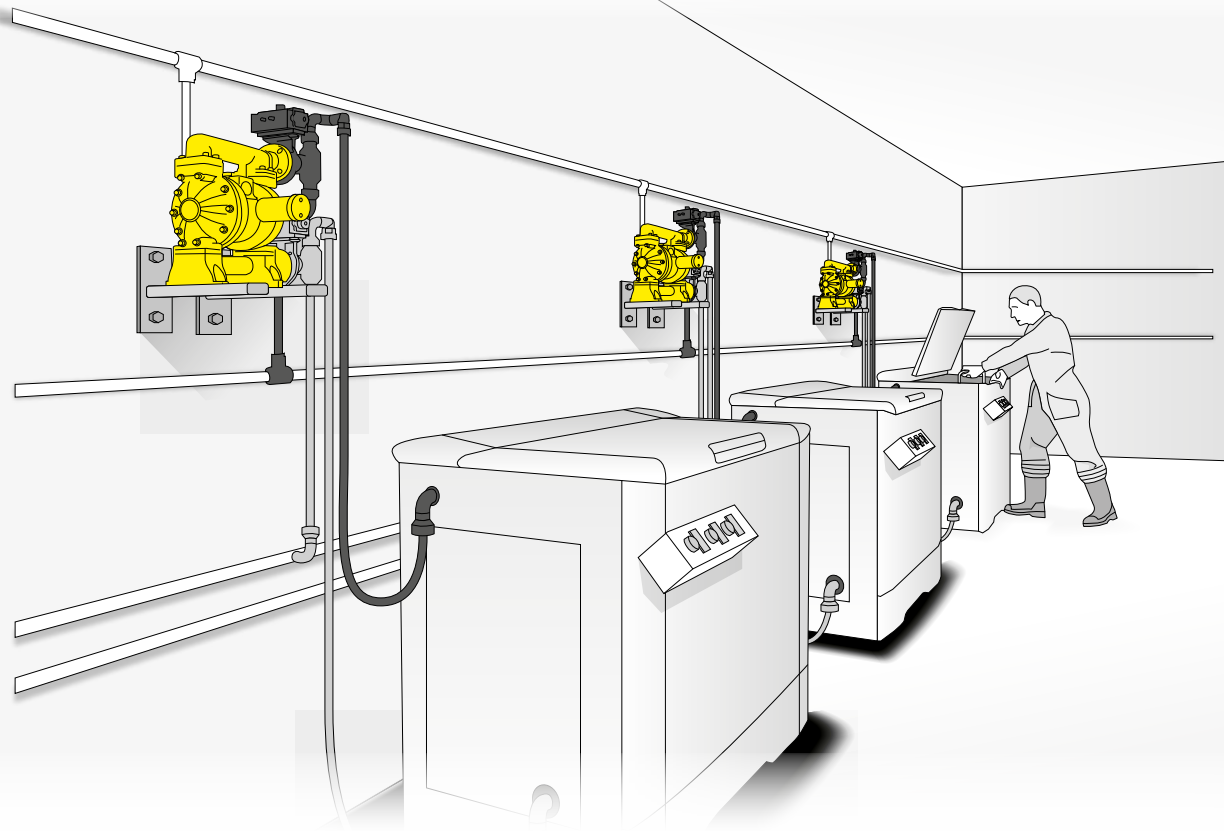
are designed to handle particularly corrosive fluids (acids and alkalis) and are the ideal solution to be used in many working environments, even the most aggressive.

The screws on these pumps are made entirely of stainless steel to ensure quality, longevity and a better aesthetic design of the product.

Furthermore, they can be used in applications with a potentially explosive atmosphere thanks to their compliance with the ATEX directive.

Our technical department is always at your disposal to help you identify the materials of membranes, balls and seats compatible with the fluid to be pumped.







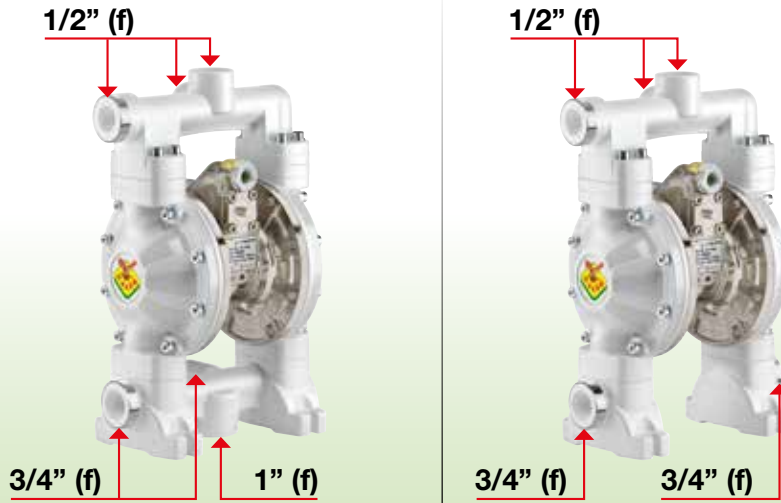
**1/2" - Flow rate 16 gpm**

**Diaphragm pumps R. 1:1 for transferring fluids**, made of molding injected polypropylene with motor made of aluminum; they ensure lasting and reliable operation even in extreme conditions and with aggressive fluids. Dual inlet version is suitable to mix together two different types of fluids e.g. water and antifreeze.

In accordance with



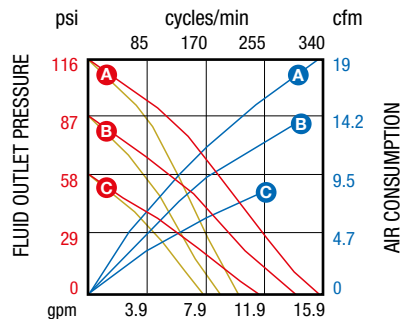
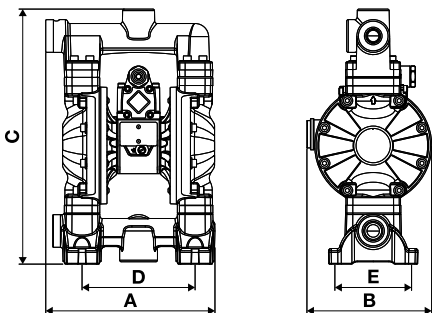
**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



Model			APPB-12 with multiple inlet/outlet	APPB-12 dual inlet/multiple outlet
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Polypropylene and AISI 316	2BC/16117EA5-55	2BH/16117EA5-55
Hytrel®	Hytrel®	Polypropylene and AISI 316	2BC/16117HH5-55	2BH/16117HH5-55
NBR	Hytrel®	Polypropylene and AISI 316	2BC/16117NH5-55	2BH/16117NH5-55
Santoprene™	Santoprene™	Polypropylene and AISI 316	2BC/16117SS5-55	2BH/16117SS5-55
PTFE+Hytrel®*	PTFE	Polypropylene and AISI 316	2BC/16117TT5-55	2BH/16117TT5-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			330 cpm	330 cpm
<b>Gallons per cycle **</b>			0.05 gal	0.05 gal
<b>Max suction lift</b>			dry column 15 ft - wet column 25 ft	dry column 15 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.06"	0.06"
<b>Max working temperature ***</b>			149 °F	149 °F
<b>Noise level</b>			75 dB	75 dB
<b>Max air consumption</b>			18 cfm	18 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 1/2" (f)
<b>Fluid inlet connection</b>			NPT 3/4" (f) - NPT 1" (f) for drum	dual inlet NPT 3/4" (f)
<b>Fluid outlet connection</b>			NPT 1/2" (f)	NPT 1/2" (f)
<b>Balls for inlet and outlet</b>			with spring	with spring
<b>Overall dimensions (A - B - C - D - E)</b>			8.7" - 6.3" - 12.9" - 5.7" - 3.9"	8.7 - 6.3" - 12.9" - 5.7" - 3.9"
<b>Screws for pump mounting</b>			M8 - 5/16"	M8 - 5/16"
<b>Packing - Weight</b>			No. 1 0.7 cf  12.8 lb	No. 1 0.7 cf  12.6 lb

\* 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 **A A** 116 psi **B B** 87 psi **C C** 58 psi



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

**1" - Flow rate 45 gpm**

**Diaphragm pumps R. 1:1 for transferring fluids**, made of molding injected polypropylene with motor made of aluminum. These models have a 1" flanged inlet/outlet connection. Use the new AISI 304 stainless steel flange available in the "accessories" section for the piping connection. Dual inlet version is suitable to mix together two different types of fluids e.g. water and antifreeze.

In accordance with



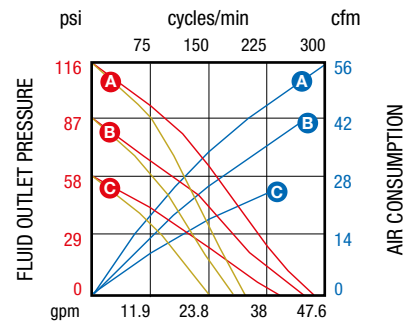
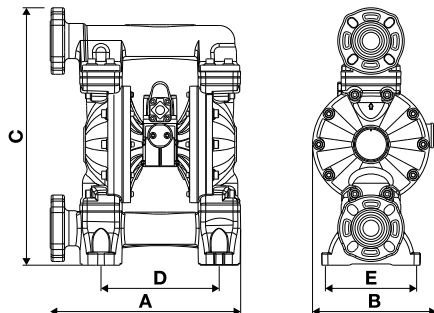
**Note:** The max flow rate shown in the below graphics has been obtained by laboratory test.



Model			APPB-1	APPB-1 dual inlet
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	AISI 316 stainless steel	2BD/26117EAI-55	2BG/26117EAI-55
Hytrel®	Hytrel®	AISI 316 stainless steel	2BD/26117HHI-55	2BG/26117HHI-55
NBR	Hytrel®	AISI 316 stainless steel	2BD/26117NHI-55	2BG/26117NHI-55
Santoprene™	Santoprene™	AISI 316 stainless steel	2BD/26117SSI-55	2BG/26117SSI-55
PTFE+Hytrel® *	PTFE	AISI 316 stainless steel	2BD/26117TTI-55	2BG/26117TTI-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			300 cpm	300 cpm
<b>Gallons per cycle **</b>			0.15 gal	0.15 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.12"	0.12"
<b>Max working temperature ***</b>			149 °F	149 °F
<b>Noise level</b>			75 dB	75 dB
<b>Max air consumption</b>			57 cfm	57 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 1/2" (f)	NPT 1/2" (f)
<b>Fluid inlet connection</b>			ANSI 150 - DIN PN 10 - JIS 10K 1"	dual inlet ANSI 150 - DIN PN 10 - JIS 10K 1"
<b>Fluid outlet connection</b>			ANSI 150 - DIN PN 10 - JIS 10K 1"	ANSI 150 - DIN PN 10 - JIS 10K 1"
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			12" - 7.9" - 16.5" - 7.5" - 5.1"	14.1" - 7.9" - 16.5" - 7.5" - 5.1"
<b>Screws for pump mounting</b>			M10 - 3/8"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 1.1 cf  15.4 lb	No. 1 1.1 cf  26.7 lb

\* 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 **A A** 116 psi **B B** 87 psi **C C** 58 psi



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



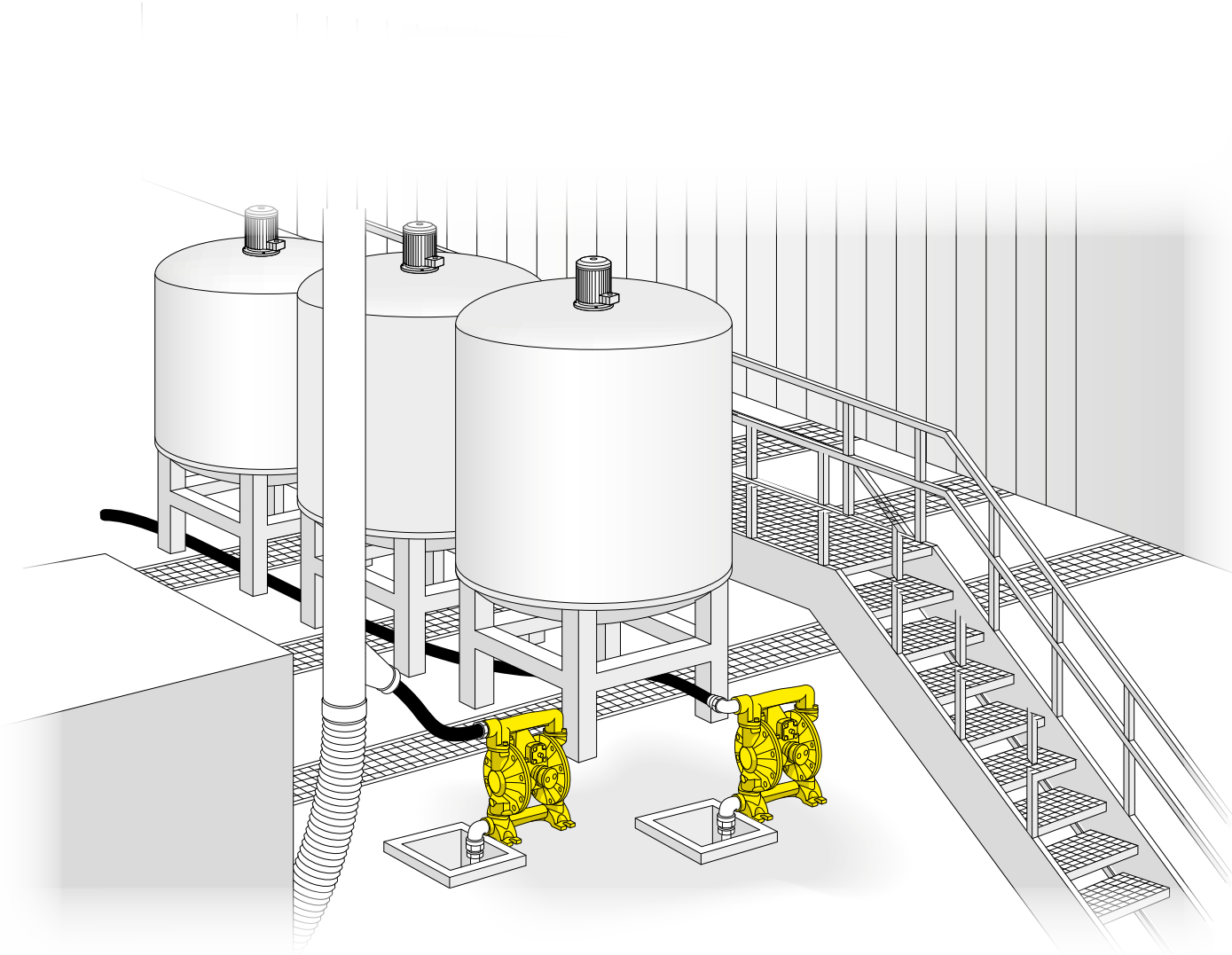
# DIAPHRAGM PUMPS IN POLYPROPYLENE WITH POLYPROPYLENE MOTOR

**RAASM diaphragm pumps completely made of polypropylene** are designed to handle particularly aggressive fluids (acids and alkalis) and are the best solution to be used in many working environments, even the most aggressive.

The screws on these pumps are made entirely of stainless steel to ensure quality, longevity and a better aesthetic design of the product.









**1/2" - Flow rate 17 gpm**

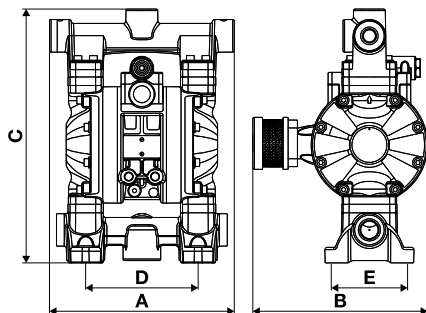
**Diaphragm pumps**  
**R. 1:1 for fluids transfer,**  
 produced entirely in polypropylene, are recommended for applications with industrial fluids, also corrosive, and in working environments with aggressive atmospheres. Dual inlet version is suitable to mix together two different types of fluids e.g. water and antifreeze.

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

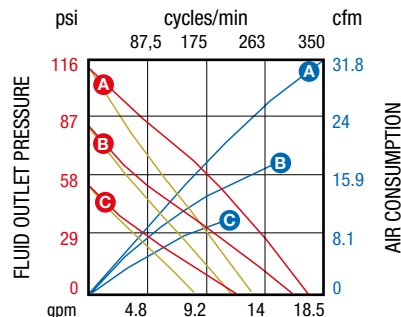


Model			PPB-12 with multiple inlet/outlet	PPB-12 dual inlet/multiple outlet
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	Polypropylene and AISI 316	2AC/1677EA5-55	2AH/1677EA5-55
Hytrel®	Hytrel®	Polypropylene and AISI 316	2AC/1677HH5-55	2AH/1677HH5-55
NBR	Hytrel®	Polypropylene and AISI 316	2AC/1677NH5-55	2AH/1677NH5-55
Santoprene™	Santoprene™	Polypropylene and AISI 316	2AC/1677SS5-55	2AH/1677SS5-55
PTFE+Hytrel® *	PTFE	Polypropylene and AISI 316	2AC/1677TT5-55	2AH/1677TT5-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			350 cpm	350 cpm
<b>Gallons per cycle **</b>			0.05 gal	0.05 gal
<b>Max suction lift</b>			dry column 15 ft - wet column 25 ft	dry column 15 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.06"	0.06"
<b>Max working temperature ***</b>			149 °F	149 °F
<b>Noise level</b>			76 dB	76 dB
<b>Max air consumption</b>			31 cfm	31 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Fluid inlet connection</b>			NPT 3/4" (f) - NPT 1" (f) for drum	dual inlet NPT 3/4" (f)
<b>Fluid outlet connection</b>			NPT 1/2" (f)	NPT 1/2" (f)
<b>Balls for inlet and outlet</b>			with spring	with spring
<b>Overall dimensions (A - B - C - D - E)</b>			8.2" - 8.7" - 12.8" - 5.7" - 3.9"	8.7" - 8.7" - 12.8" - 5.7" - 3.9"
<b>Screws for pump mounting</b>			M8 - 5/16"	M8 - 5/16"
<b>Packing - Weight</b>			No. 1 0.7 cf  12.8 lb	No. 1 0.7 cf  12.8 lb

\* 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 **A A** 116 psi **B B** 87 psi **C C** 58 psi



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

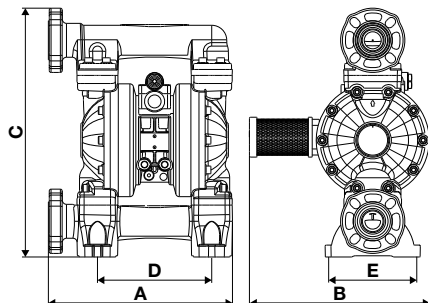
The family of 1" diaphragm pumps, R. 1:1 for fluid transfer, produced entirely in polypropylene, maintain their performance on applications with industrial fluids, also aggressive, and in working environments with corrosive atmospheres. Dual inlet version is suitable to mix together two different types of fluids e.g. water and antifreeze.

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

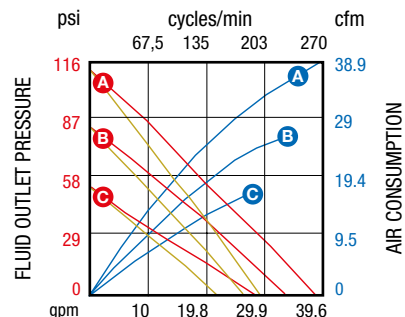


Model			PPB-1	PPB-1 dual inlet
Membranes	Balls	Seats	P/N	P/N
EPDM	Acetal	AISI 316 stainless steel	2AD/2677EAI-55	2AG/2677EAI-55
Hytrel®	Hytrel®	AISI 316 stainless steel	2AD/2677HHI-55	2AG/2677HHI-55
NBR	Hytrel®	AISI 316 stainless steel	2AD/2677NHI-55	2AG/2677NHI-55
Santoprene™	Santoprene™	AISI 316 stainless steel	2AD/2677SSI-55	2AG/2677SSI-55
PTFE+Hytrel® *	PTFE	AISI 316 stainless steel	2AD/2677TTI-55	2AG/2677TTI-55
<b>Max pressure</b>			116 psi	116 psi
<b>Max cycles per min</b>			270 cpm	270 cpm
<b>Gallons per cycle **</b>			0.14 gal	0.14 gal
<b>Max suction lift</b>			dry column 16 ft - wet column 25 ft	dry column 16 ft - wet column 25 ft
<b>Max size pumpable solids</b>			0.12"	0.12"
<b>Max working temperature ***</b>			149 °F	149 °F
<b>Noise level</b>			78 dB	78 dB
<b>Max air consumption</b>			39 cfm	39 cfm
<b>Air working pressure</b>			29 - 87 psi	29 - 87 psi
<b>Air inlet connection</b>			NPT 3/8" (f)	NPT 3/8" (f)
<b>Air outlet connection (muffler)</b>			NPT 3/4" (f)	NPT 3/4" (f)
<b>Fluid inlet connection</b>			ANSI 150 - DIN PN 10 - JIS 10K 1"	dual inlet ANSI 150 - DIN PN 10 - JIS 10K 1"
<b>Fluid outlet connection</b>			ANSI 150 - DIN PN 10 - JIS 10K 1"	ANSI 150 - DIN PN 10 - JIS 10K 1"
<b>Balls for inlet and outlet</b>				
<b>Overall dimensions (A - B - C - D - E)</b>			12" - 11.8" - 16.5" - 7.5" - 5.1"	14.1" - 11.8" - 16.5" - 7.5" - 5.1"
<b>Screws for pump mounting</b>			M10 - 3/8"	M10 - 3/8"
<b>Packing - Weight</b>			No. 1 1.1 cf  21.2 lb	No. 1 1.1 cf  21.2 lb

\* 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 **A A** 116 psi **B B** 87 psi **C C** 58 psi



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












**3/4" - Flow rate 18.5 gpm**

**1/2" - Flow rate 15.8 gpm**

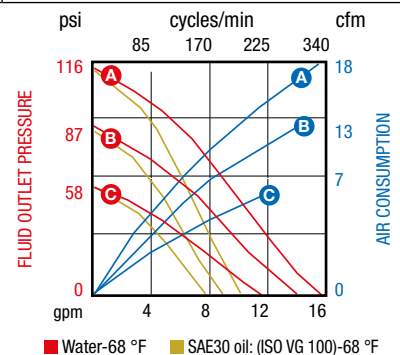
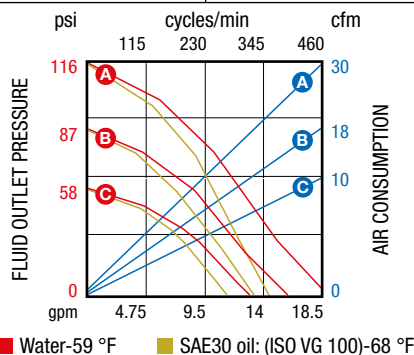
**The transfer diaphragm pumps** in die-cast aluminum, with high-quality components, ensure lasting and reliable operation even in extreme conditions. Equipped with rigid suction tube they can be easily installed on 55 gal drums or totes



P/N	33500-55	33505-55	33507-55
Motor and inside flanges material	Aluminum	Aluminum	Aluminum
Wetted parts	Aluminum	Aluminum	Polypropylene
Membrane material	NBR High Nitrile	NBR High Nitrile	Teflon®
Ball valve material	Hytrel®	Hytrel®	Teflon®
Compatible fluids	water, oils, diesel fuel, waste oil, antifreeze	water, oils, diesel fuel, waste oil, antifreeze	windshield washing liquid, antifreeze, DEF
Air inlet connection	NPT 3/8" (f)	NPT 3/8" (f)	NPT 3/8" (f)
Fluid inlet-outlet connection	Suction tube ø 1.34" NPT 3/4" (f)	Suction tube ø 1.34" NPT 3/4" (f)	NPT 3/4" (f) x NPT 1/2" (f)
Cycles per gallon	25	25	21.25
Max working temperature	212 °F	212 °F	14 - 149 °F
Air working pressure	30 - 90 psi	30 - 90 psi	30 - 90 psi
Max. air consumption 120 psi	30 cfm	30 cfm	18 cfm
Noise level	75 dB	75 dB	75 dB
Suction tube material and length	carbon steel - 37"	carbon steel - 48.8"	AISI 304 Stainless steel - 37"
Max. solids diameter	ø 0.06"	ø 0.06"	ø 0.06"
Type of installations	suitable for drum 55 gal	tank - max height 48"	suitable for drums 55 gal
Suction-delivery ball valve			
Packaging - Weight	 No. 1 3.63 ft <sup>3</sup>  20 lb	 No. 1 3.63 ft <sup>3</sup>  21 lb	 No. 1 3.85 ft <sup>3</sup>  25 lb

PUMP AIR FEEDING PRESSURE

- A A 116 psi
- B B 87 psi
- C C 58 psi







# 3/4" DIAPHRAGM PUMP KITS

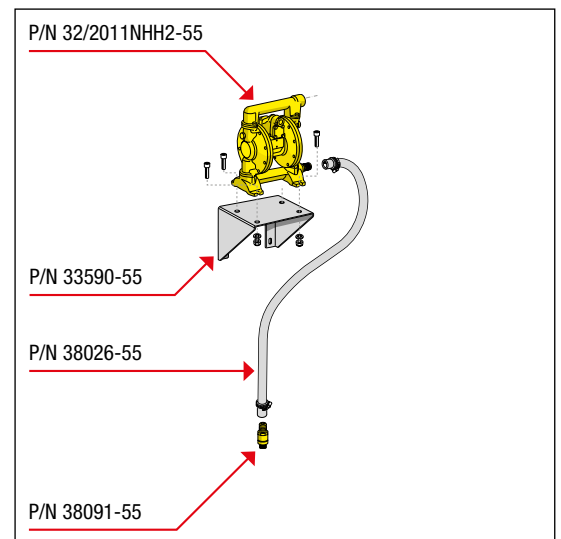
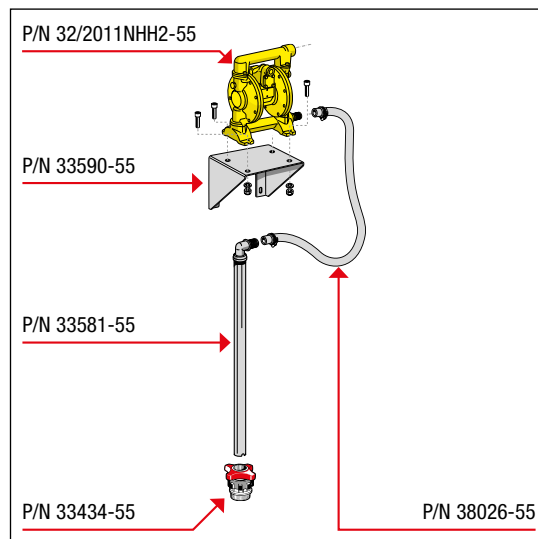
## Modular wall-mounted kit for transfer from drums or tanks.

Ideal for transferring low/medium-viscosity fluids such as: oil, antifreeze, diesel fuel, etc.

Wall-mounting, with connection to a fixed system enables fluids to be transferred from the place of storage to the dispensing station. Suction tubes of various lengths are available on page 37.



P/N	<b>33510-55</b> Modular wall-mounted kit, for transfer from drums 55 gal	<b>33530-55</b> Modular wall-mounted kit for transfer from tanks with connection to the tank's discharge
<b>Pump 1:1 - 18.5 gpm</b>	32/2011NHH2-55 - seals NBR	32/2011NHH2-55 - seals NBR
<b>Bung adapter</b>	33434-55	-
<b>Check valve</b>	-	38091-55
<b>Flexible suction tube ø 1-1/4"</b>	38026-55	38026-55
<b>Rigid suction tube</b>	33581-55	-
<b>Hose connection</b>	38080-55	38080-55
<b>Pump support bracket</b>	33590-55	33590-55
<b>Packaging - Weight</b>	No. 1 3.63 ft <sup>3</sup> 33 lb	No. 1 1.1 ft <sup>3</sup> 23 lb





# ACCESSORIES FOR DIAPHRAGM PUMPS



## P/N 37819-55

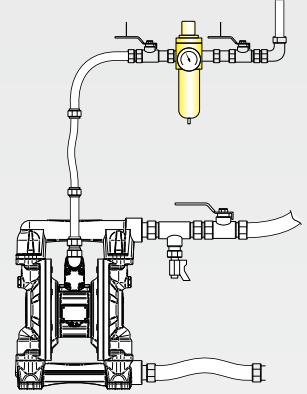
**Pressure regulator** with condensate discharge filter and pressure gauge.

- connections NPT 3/8" (f) x NPT 3/8" (f) for application at the start of the compressed air line feeding the pump.

## P/N 37815-55

**Pressure regulator** with condensate discharge filter and pressure gauge.

- connections NPT 1/2" (f) x NPT 1/2" (f) for application at the start of the compressed air line feeding the pump.



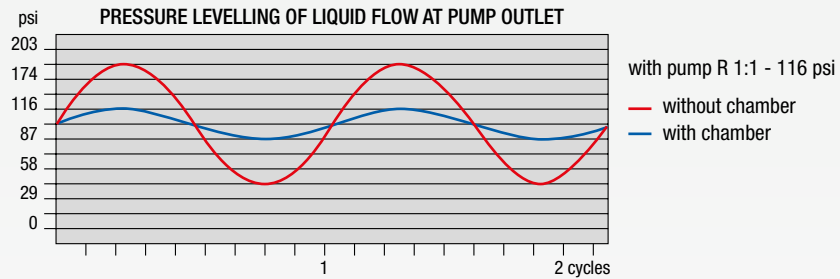
## P/N 38097-55

**Flow regulator chamber**

NPT 3/4" (f) x NPT 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 1450 psi.

## PRESSURE TREND OF PUMP OUTLET



## P/N KR4506

**Grounding cable provided with clamp.** 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 working area.

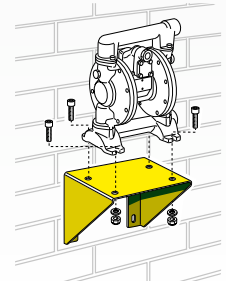


## P/N 33590-55

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

## P/N 33591-55

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





# ACCESSORIES FOR DIAPHRAGM PUMPS

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 increasing the pump performance.

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## Standard mufflers



### P/N 32/90

Muffler G 3/4" (m) thread, mounted on 1" pumps with polypropylene motor.

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### P/N 32/91

Muffler G 1" (m) thread, mounted on 1.1/2" and 2" pumps with aluminum motor.

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### P/N KR33/04

Muffler G 1/2" (m) thread, mounted on 1/2" and 3/4" pumps with aluminum motor.

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### P/N KR33/211

Muffler G 1/2" (m) thread, mounted on 1" pumps with aluminum motor.

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### P/N KR33/15

Muffler G 1" (m) thread, mounted on 1.1/4" pumps with aluminum motor.

---



### P/N KR33/151

Muffler G 3/4" (m) tapered thread, mounted on 1/2" pumps with polypropylene motor.

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## Mufflers available on request



### P/N 32/89-55

Muffler G 1/2" (m) thread, enlarged version, mounted on 1/2", 3/4" and 1" pumps with aluminum motor.



# ACCESSORIES FOR DIAPHRAGM PUMPS



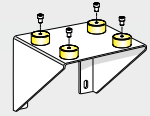
## P/N KR33/90

**Antivibration kit in rubber**  $\varnothing 1.2 \times h. 0.8''$  thread M/M  
- M8 - 5/16" for 1/2" and 3/4" diaphragm pump.  
It reduces the vibrations in heavy applications.



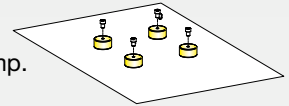
## P/N KR33/91

**Antivibration kit in rubber**  $\varnothing 2 \times h. 1.2''$  thread M/M  
- M10 - 3/8" for 1" and 1.1/4" diaphragm pump.  
It reduces the vibrations in heavy applications.



## P/N KR33/88

**Antivibration kit in rubber**  $\varnothing 1.2 \times h. 0.8''$   
thread F/F - M12 - 1/2" for 1.1/2" and 2" diaphragm pump.  
It reduces the vibrations in heavy applications.



## P/N 32/95-55 \*

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

## P/N 32/96-55 \*

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

## P/N 32/97-55 \*

**2" aluminum flange** suitable to connect the pump to the plant.  
Thread NPT 2" (f).

\* accessory only for flanged diaphragm pumps.



## P/N 33574-55

**Hose barb  $\varnothing 1.3/4''$**  with thread NPT 1.1/4" (m).

## P/N 33575-55

**Hose barb  $\varnothing 1.3/4''$**  with thread NPT 1.1/2" (m).

## P/N 33576-55

**Hose barb  $\varnothing 1.3/4''$**  with thread NPT 2" (m).

## P/N 38080-55

**Hose barb  $\varnothing 1.1/4''$**  with thread NPT 3/4" (m).

## P/N 38081-55

**Hose barb  $\varnothing 1.1/4''$**  with thread NPT 1" (m).

## P/N 38082-55

**Hose barb  $\varnothing 1.1/4''$**  with thread NPT 1.1/4" (m).



## P/N 33571-55

**Hose barb  $\varnothing 3/4''$**  with thread NPT 3/4" (m) in AISI 304 stainless steel.

## P/N 38083-55

**Hose barb  $\varnothing 3/4''$**  with thread NPT 1" (m) in AISI 304 stainless steel.





# ACCESSORIES FOR DIAPHRAGM PUMPS



**P/N 38026-55**  
Flexible suction hose 7'  
- ID  $\varnothing$  1.1/4"

**P/N 38028-55**  
Flexible suction hose 3'  
- ID  $\varnothing$  1.1/4"

**P/N 33584-55**  
Flexible suction hose 7'  
- ID  $\varnothing$  1.3/4"



**P/N 33426-55**  
Flexible suction hose 7'  
- ID  $\varnothing$  3/4"



**P/N 33581-55**  
Rigid suction tube OD  $\varnothing$  1.3/8"  
- length 37"

**P/N 33582-55**  
Rigid suction tube OD  $\varnothing$  1.3/8"  
- length 49"

**P/N 33586-55**  
Rigid suction tube OD  $\varnothing$  2"  
- length 37"

**P/N 33588-55**  
Rigid suction tube OD  $\varnothing$  2"  
- length 49"

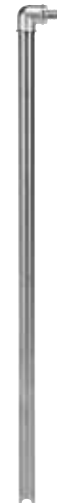
**P/N 33594-55**  
Rigid suction tube OD  $\varnothing$  1.3/8"  
- length 57"



**P/N 33434-55**  
Bung adaptor for pump  
with OD  $\varnothing$  1.3/8" suction tube.



**P/N 10/15-55**  
Bung adaptor for pump  
with OD  $\varnothing$  2" suction tube.



**P/N 33569-55**  
Stainless steel suction  
tube OD  $\varnothing$  1.3/8"  
- length 49" straight  
connection without joint.

**P/N 33579-55**  
Stainless steel suction  
tube OD  $\varnothing$  1.3/8"  
- length 37"

**P/N 33580-55**  
Stainless steel suction  
tube OD  $\varnothing$  1.3/8"  
- length 49"

**P/N 33596-55**  
Stainless steel suction  
tube OD  $\varnothing$  1.3/8"  
- length 57"



**P/N 33583-55**  
Rigid suction tube  
OD  $\varnothing$  1.3/8"  
- length 37"

**P/N 33585-55**  
Rigid suction tube  
OD  $\varnothing$  1.3/8"  
- length 49"

**P/N 33587-55**  
Rigid suction tube kit  
OD  $\varnothing$  2"  
- length 37"

**P/N 33589-55**  
Rigid suction tube kit  
OD  $\varnothing$  2"  
- length 49"

**P/N 33595-55**  
Rigid suction tube kit  
OD  $\varnothing$  1.3/8"  
- length 57"



**P/N 33577-55**  
AISI 304 stainless steel rigid  
suction tube kit OD  $\varnothing$  1.3/8"  
- length 37"

**P/N 33578-55**  
AISI 304 stainless steel rigid  
suction tube kit OD  $\varnothing$  1.3/8"  
- length 49"

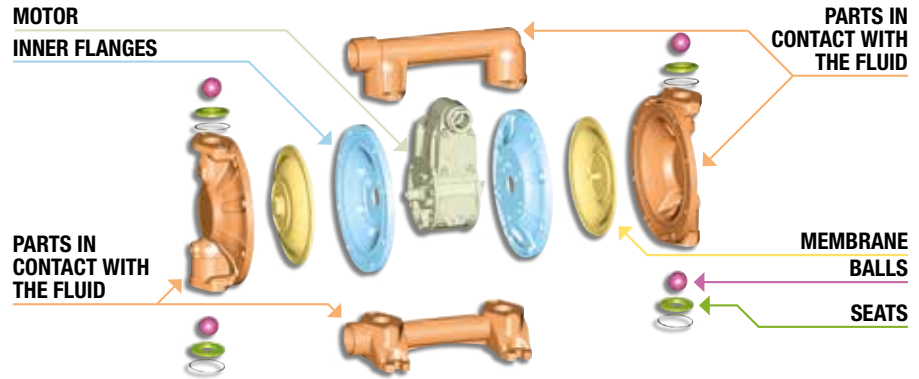
**P/N 33597-55**  
AISI 304 stainless steel rigid  
suction tube kit OD  $\varnothing$  1.3/8"  
- length 57"



# 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 the pump is made of.  
**II 3GD** (for zone 2)    **II 2GD** (for zone 1)

The valve seats are to be coupled to the balls and must ensure correct closing. Like the balls, they must be made of 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 of 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 of 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.

They can be threaded (G) 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.

MATERIALS AND ATEX VERSIONS	MANIFOLD FOR INLET AND OUTLET	FLOW INSIDE DIAMETER	TYPE OF MATERIAL					
			MOTOR	INNER FLANGES	PARTS IN CONTACT WITH THE FLUID	MEMBRANE	BALLS	SEATS
2B = Polypropylene for Zone 2	A/ = threaded connection NPT	16 = 1/2"	1 = Nickel plat. aluminum	1 = Nickel plat. aluminum	1 = Nickel plat. aluminum	E = EPDM	A = Acetal	A = Acetal
	C/ = mult. thread. connection NPT	26 = 1"				H = Hytrel®	H = Hytrel®	H = Hytrel®
3C = Aluminum for Zone 1	D/ = connection with flange	30 = 1.1/4"	6 = Alum. with cataphoresis	6 = Alum. with cataphoresis	5 = AISI 316 st. steel	N = NBR st. steel	S = Santoprene™	P = Polypropylene
2A = Polypropylene	F/ = multiple modular connection with flange	40 = 1.1/2"	7 = Polypropylene	7 = Polypropylene	7 = Polypropylene	T = PTFE + Hytrel®	T = PTFE	S = Santoprene™
4C = AISI 316 stainless steel for Zone 1	G/ = dual inlet connection with flange	50 = 2"			V = Alum. with cataphoresis			I = AISI 316 st. steel
	H/ = dual inlet threaded connection NPT							5 = Polypropylene and AISI 316 st. steel

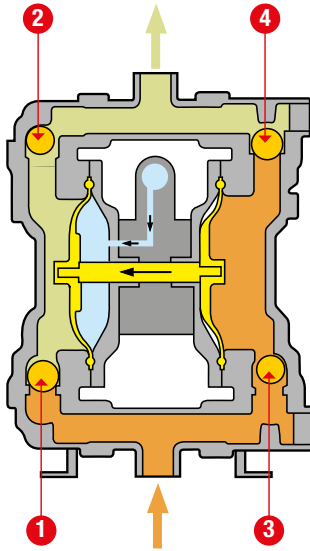
### EXAMPLE 3CA/16111EAA-55

3C = Aluminum for Zone 1	A/ = threaded connection NPT	16 = 1/2"	1 = Nickel plat. aluminum	1 = Nickel plat. aluminum	1 = Nickel plat. aluminum	E = EPDM	A = Acetal	A = Acetal
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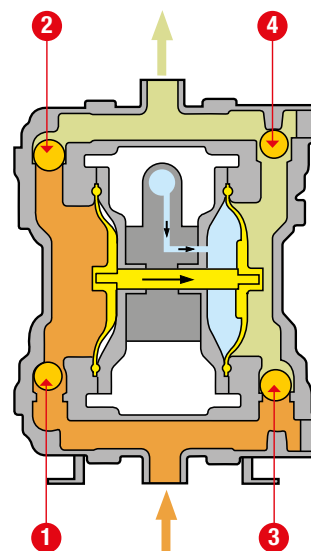


# INSTALLATION AND OPERATION

## SIMPLE AND EFFECTIVE (1:1 RATIO)

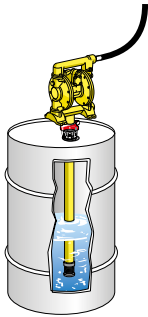
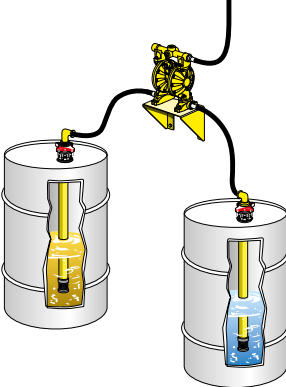
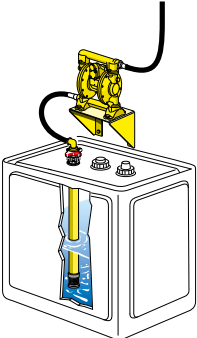
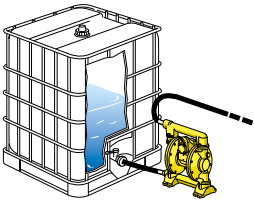
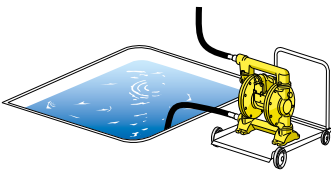
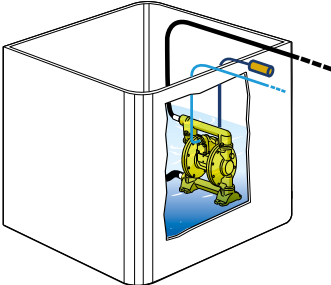
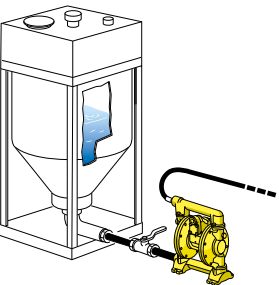


The slide valve of the air motor sends air (blue) to the left chamber which, pushing the membrane outwards, compresses the previously filled liquid (green). Through the effect of the pressure created valve **1** closes and valve **2** opens allowing the liquid to dispense (green). The right membrane 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 valve **1** opens and the valve **2** closes, enabling suction of the liquid (orange).





## PUMP INSTALLATION

<p><b>ON DRUM</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	<p><b>DUAL INLET SUCTION</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	<p><b>TOP FEED</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	<p><b>BOTTOM FEED</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>
			
<p><b>ON A MOBILE UNIT</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	<p><b>SUBMERGED PUMP</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	<p><b>BULK TANK</b> (suitable with fluids with max viscosity 10000 cps, 68 °F)</p>	
			






# RANGE OF MATERIALS


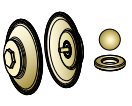
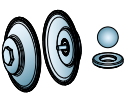

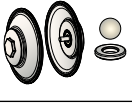


## PARTS IN CONTACT WITH FLUID

PUMP PARTS	MATERIALS	CHARACTERISTICS	TEMPERATURE MAX *
	<b>Nickel-plated aluminum</b>	- average resistance to abrasion and corrosion - not intended for use with HHC (halogenated hydrocarbons)	+212 °F
	<b>Aluminum with treatment in cataphoresis</b>	- wide chemical compatibility - high resistance to abrasion and corrosion	+212 °F
	<b>AISI 316 stainless steel</b>	- wide chemical compatibility - best alternative with aggressive fluids	+212 °F
	<b>Polypropylene</b>	- wide chemical compatibility - best alternative with aggressive fluids	+149 °F

## AIR MOTOR BLOCK

PUMP PARTS	MATERIALS	CHARACTERISTICS	TEMPERATURE MAX *
	<b>Nickel-plated aluminum</b>	- high mechanical strength - electrically conductive material for ATEX directive	+212 °F
	<b>Aluminum with treatment in cataphoresis</b>	- high mechanical strength - wide chemical compatibility - electrically conductive material for ATEX directive - cheaper solution	+212 °F
	<b>Polypropylene</b>	- wide chemical compatibility - general use - cheaper solution	+149 °F

## DIAPHRAGMS - SEATS - BALLS

PUMP PARTS	MATERIALS	CHARACTERISTICS	TEMPERATURE MAX *
	<b>High Nitrile NBR</b>	- high resistance to aliphatic hydrocarbons, oils and greases - good flexibility	+194 °F
	<b>Hytrel®</b>	- 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
	<b>Santoprene™</b>	- 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
	<b>EPDM</b>	- good compatibility with organic and non-organic acids - excellent resistance to heat and steam - insensitive to the action of oxidising agents	+230 °F
	<b>PTFE Teflon®</b>	- inert with nearly all chemical reagents - excellent heat resistance - excellent dielectric characteristics - excellent resistance to ageing	+248 °F
	<b>Acetal resin Delrin®</b>	- high fatigue strength - high compressive strength - good dimensional stability (low humidity absorption) - resistance to alcohols and organic compounds	+239 °F
	<b>AISI 316 stainless steel</b>	- high resistance to corrosion even in saline environments - excellent compatibility with chemical and industrial fluids	+212 °F

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

⚠ Use these pumps only with fluids with flash point not less than +131 °F





# GUIDE TO CHOOSING A PUMP

## HOW TO CHOOSE A PUMP SUITABLE FOR ONE'S NEEDS

PUMP SIZE	FLOW RATE	MAX Ø SOLID PARTS	MODEL			
			POLYPROPYLENE	POLYPROPYLENE AND ALUMINUM	ALUMINUM AND CATAPHORESIS	AISI 316 STAINLESS STEEL
1/2"	16 gpm	0.06"	-	APPB-12	-	-
	17 gpm	0.06"	PPB-12	-	-	-
	18.5 gpm	0.06"	-	-	AAB-12	-
1"	45 gpm	0.12"	-	APPB-1	AAB-1 / AAB-1-9	-
	38 gpm	0.12"	PPB-1	-	-	-
	34 gpm	0.12"	-	-	-	PIIB-1
	40 gpm	0.12"	-	-	-	AIB-1
1.1/4"	52 gpm	0.12"	-	-	AAB-114	-
1.1/2"	125 gpm	0.22"	-	-	AAB-112	-
2"	155 gpm	0.26"	-	-	AABM-2 flanged	-
	160 gpm	0.26"	-	-	AAB-2	-

## 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 of must be chemically compatible with the liquid.

### DIMENSIONS OF SUSPENDED SOLIDS

The maximum dimensions 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 the pump is made of 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 suction point; 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 APPROVAL

PUMP FAMILY	DESCRIPTION	CERTIFICATION CLASS
ENTIRELY ALUMINUM MODEL	<b>Conductive material version</b> Built with central body and manifolds in conductive metallic material (Aluminum)	 II 2 GD (zone 1)
CATAPHORESIS MODEL	<b>Conductive material version</b> Built with central body and manifolds in conductive metallic material (Aluminum)	 II 2 GD (zone 1)
AISI 316 STAINLESS STEEL WITH ALUMINUM MOTOR	<b>Conductive material version</b> Built with central body (Aluminum) and manifolds (AISI 316 stainless steel) in conductive metallic material	 II 2 GD (zone 1)
AISI 316 STAINLESS STEEL WITH POLYPROPYLENE MOTOR	Central body in non-conductive plastic material (PP)	not certified
ALUMINUM AND POLYPROPYLENE MODEL	<b>Partially conductive material version</b> Manifolds built with non-conductive plastic material (PP) and central body with conductive material (Aluminum)	 II 3 GD (zone 2)
ENTIRELY POLYPROPYLENE MODEL	Central body and manifolds in non-conductive plastic material (PP)	not certified







**RAASM USA, Inc.**  
5531 Equipment Drive, Suite B  
Charlotte, NC 28262 USA

Phone +1 704 370 1906  
Fax +1 980 236 9365  
Toll free number +1 877 370 1906

info@raasmusa.com  
www.raasmusa.com



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