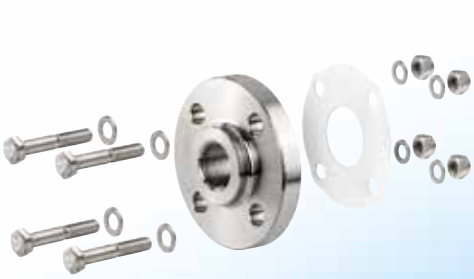
Accessories for diaphragm pump in...



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)

P/N **32/96 ***
1” polypropylene flange suitable to connect the pump with the plant. Thread G 1” (f)

P/N **32/97 ***
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)

P/N **33575**
Hose holder ø 1.3/4” (47,5 mm) with connection G 1.1/2” (m)

P/N **33576**
Hose holder ø 1.3/4” (47,5 mm) with connection G 2” (m)

P/N **38080**
Hose holder ø 1.1/4” (31,4 mm) with connection G 3/4” (m)

P/N **38081**
Hose holder ø 1.1/4” (31,4 mm) with connection G 1” (m)

P/N **38082**
Hose holder ø 1.1/4” (31,4 mm) with connection G 1.1/4” (m)

P/N **33571**
Hose holder ø 3/4” (22 mm) with connection G 3/4” (m) in AISI 304 stainless steel

P/N **38083**
Hose holder ø 3/4” (22 mm) with connection G 1” (m) in AISI 304 stainless steel

polypropylene

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 **33569**
Stainless steel suction tube ø 34 mm
- length 1240 mm straight connection ithout joint

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

P/N **33589**
Rigid suction tube kit ø 53 mm
- length 1240 mm

P/N **33595**
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

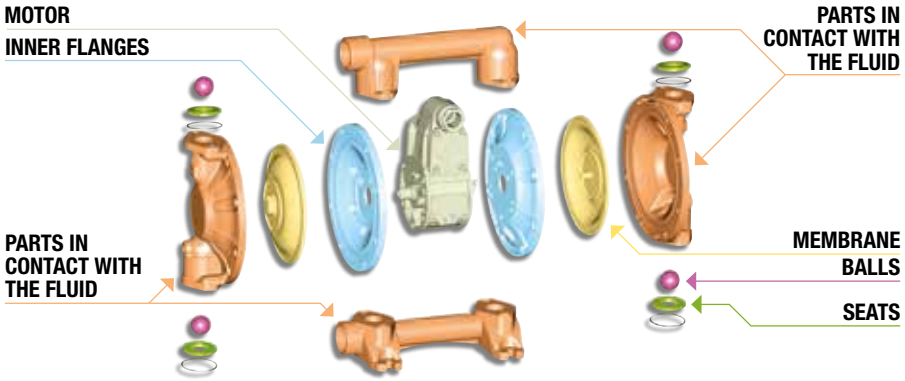
P/N **33578**
Stainless steel rigid suction tube kit ø 34 mm
- length 1260 mm

P/N **33597**
Stainless steel rigid suction tube kit ø 34 mm
- length 1240 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)**

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 can be threaded (G/BSP) or flanged, single, multiple and modular.

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.

It defines the inside diameter of the manifold.

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.

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

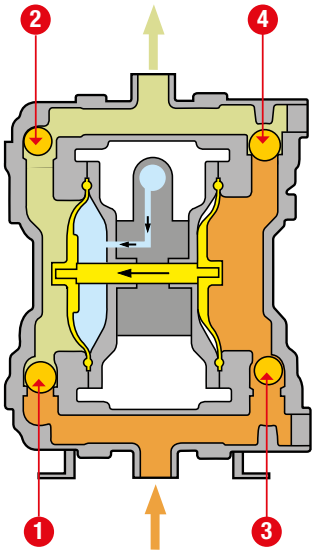
These are not in contact with the pumped liquid, but only with the compressed air feeding the motor.

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

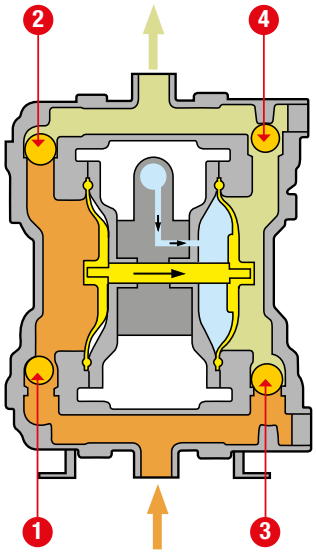
EXEMPLE 3C1/16111EAA								
3C = Aluminum for Zone 1	**1/** = threaded connection G/BSP	**16** = 1/2"	**1** = Nichel plat. aluminum	**1** = Nichel plat. aluminum	**1** = Nichel plat. aluminum	**E** = EPDM	**A** = Acetal	**A** = Acetal

Installation and operation

SIMPLE AND EFFECTIVE (1:1 RATIO)

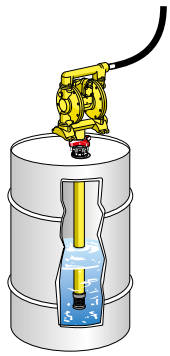
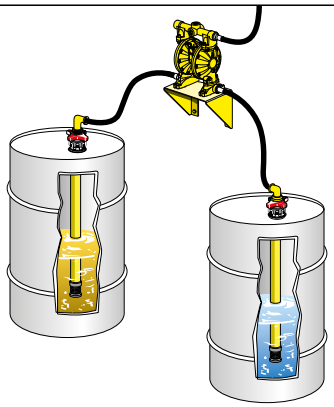
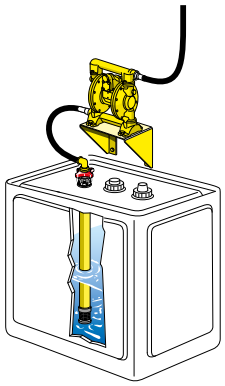
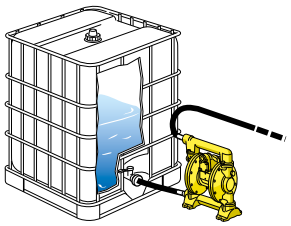


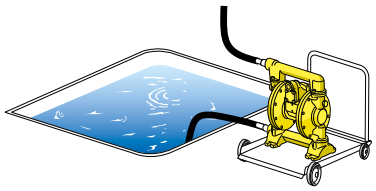
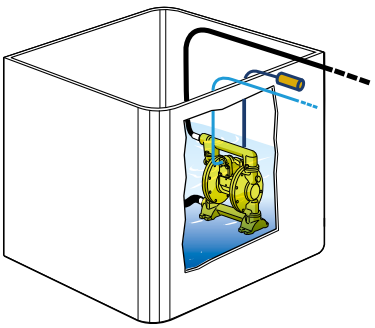
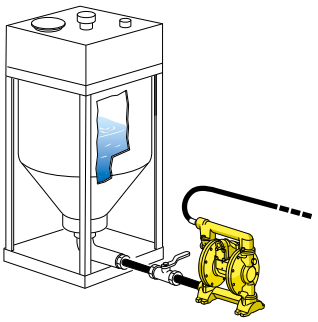
The slide valve of the air motor sends air (blue) to the left chamber which, pushing the membrane outwards, compresses the previously filled liquid (green). Through the effect of the pressure created valve ❶ closes and valve ❷ opens allowing the liquid to dispense (green). The right membrane then carries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

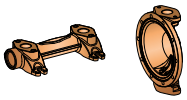
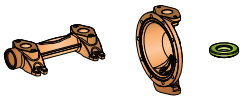
PUMP INSTALLATION

ON DRUM (suitable with fluids with max viscosity 10000 cps, 20 °C)	**DUAL INLET SUCTION** (suitable with fluids with max viscosity 50000 cps, 20 °C)	**TOP FEED** (suitable with fluids with max viscosity 10000 cps, 20 °C)	**BOTTOM FEED** (suitable with fluids with max viscosity 50000 cps, 20 °C)
			

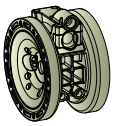
ON A MOBILE UNIT (suitable with fluids with max viscosity 10000 cps, 20 °C)	**SUBMERGED PUMP** (suitable with fluids with max viscosity 50000 cps, 20 °C)	**BULK TANK** (suitable with fluids with max viscosity 50000 cps, 20 °C)
		

Wide choice of materials

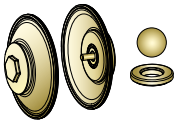
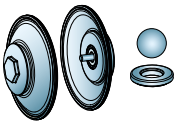
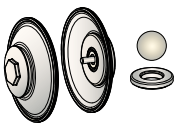
PARTS IN CONTACT WITH FLUID

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
	**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**
	**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**
	**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**
	**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**
	**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®**
	**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®**

* 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 +55 °C

Guide to choosing a pump

HOW TO CHOOSE A PUMP SUITABLE FOR ONE'S NEEDS

PUMP SIZE	DELIVERY (FLOW RATE)	MAX Ø SOLID PARTS	MODEL		
			POLYPROPYLENE	POLYPROPYLENE AND ALUMINUM	ALUMINUM
1/2"	60 l/min	1,5 mm	-	APPB-12	-
	65 l/min	1,5 mm	PPB-12	-	-
	70 l/min	1,5 mm	-	-	AAB-12
1"	170 l/min	3 mm	-	APPB-1	AAB-1
	145 l/min	3 mm	PPB-1	-	-
1.1/4"	200 l/min	3 mm	-	-	AAB-114
1.1/2"	480 l/min	5,5 mm	-	-	AAB-112
2"	580 l/min	6,5 mm	-	-	AABM-2 flanged
	610 l/min	6,5 mm	-	-	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 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 MODEL	**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 MODEL	**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 MODEL	Central body and manifolds in non-conductive plastic material (PP)	not certified

SPECIFIC TESTS AND OVERALL TESTING