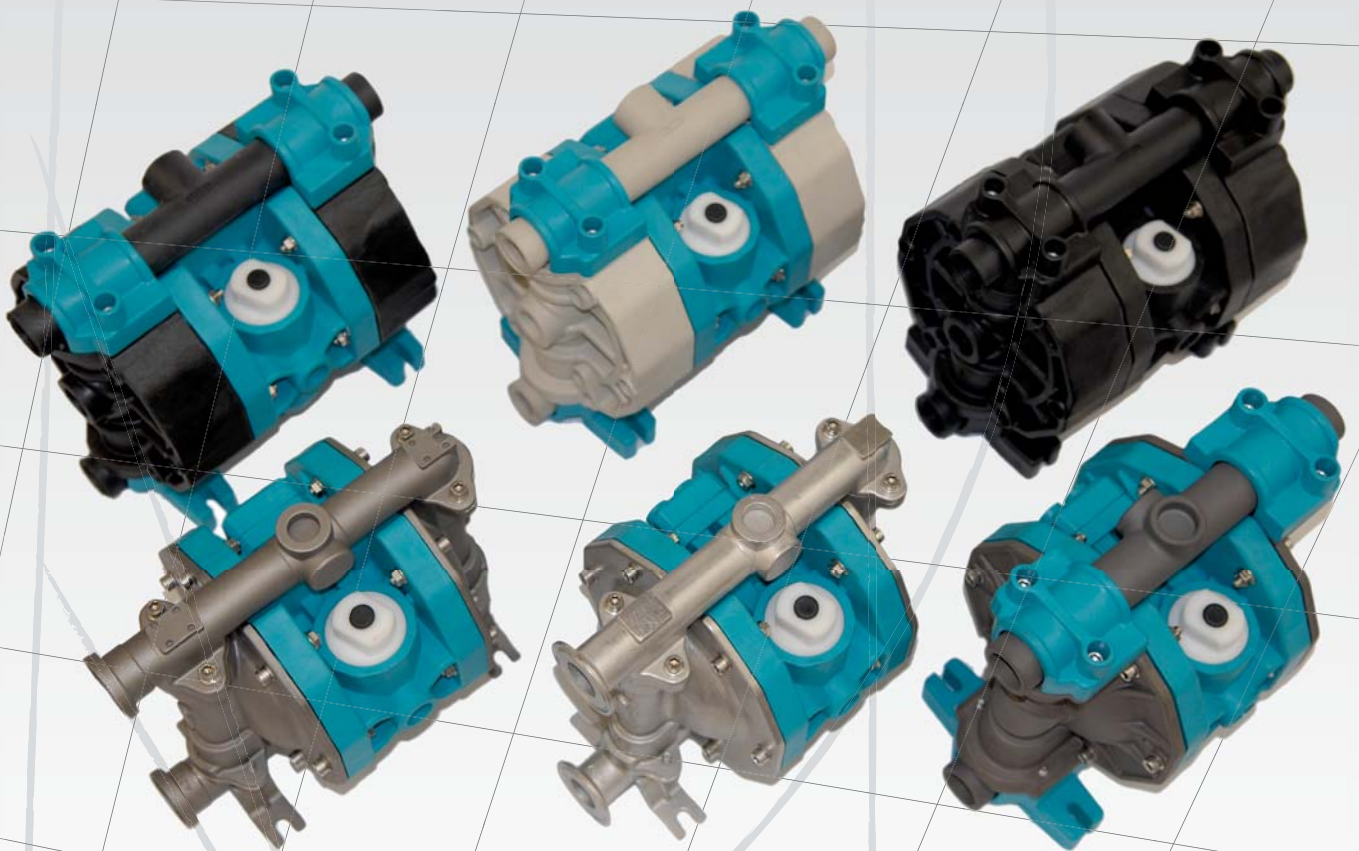


ARGAL

CHEMICAL PUMPS

ASTRA range
Air operated double
diaphragm pumps



PERFORMING AND EQUIPPED

ASTRA

the new Argal's AODD pumps range

The development of the new air operated double diaphragm AODD pumps pivots around the improved design of the air distributor system (ADS), the optimised geometries of the diaphragms, and the shape of the air and liquid chambers and targets

to broaden the traditional range of application from transfer to transfer / metering.

A mix of conventional and innovative solutions obtains the targeted goal.

PUMPS CONFIGURATION

Main characteristics:

- Pump with reciprocating coaxial chambers (H) with inbuilt valve chambers (A) and manifolds (B - C) located above and below of the chambers.
- Un balanced air distributor system (D) with air spring assisted differential air distributor spool.
- Separate pilot spool (F) coaxial to the diaphragms' shaft.
- Air distributor command reversed only at the end of each run of the shaft
- Pump is absolutely stall free.

Air supply and air exhaust passages optimises the efficiency of the pump by fine tuning its performances to the characteristics of the liquid, (viscosity and content of solids in suspension) smoothes pulsations and reduces the overall air consumption.



RANGES

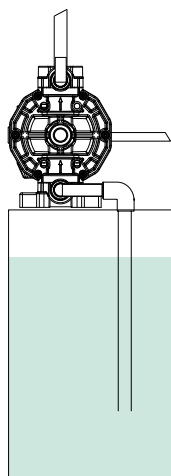
This new AODD pumps are divided in five ranges each including two sizes.

Each size of each range is obtained from chambers and manifolds of same exterior dimensions and valves, inner sections of liquid, connections and air passages of specific dimensions.

Specific air passages are obtained customising a part of the air distributor system.

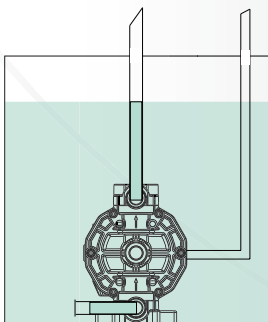
The solutions offered for the most sophisticated uses as dosing or supply of dosing lines or fine flow tuning of the pumped product foreseen in this project are implemented in all ranges.

INSTALLATIONS

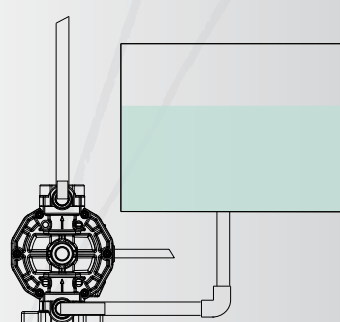


Self-priming

Submerged operation



Filling / Injection / Dosing



THE STANDARD FEATURES AND OPTIONS

- Choice of materials for chambers, diaphragms valves and o-rings.
- Choice valves design (Ball Valve / Duck beak valves).
- Choice of the kind of standards for air feed side and liquid side connections. (BSP NPT).
- Split manifold kit to pump different fluids.
- Configuration for submerged applications (also for plastic pumps).
- Flow rate control and/or performances limiter.
- Two in one delivery manifolds.
- Diaphragm position detection signals.
- Extremely low pressure operation.
- ATEX version.
- FDA version in Polished SS 316.

Some of the mentioned solutions are standard, others optional, others can be retrofitted even on site by the end user with minimal modifications of existent parts of the pump or replacement of those parts with replacements delivered by factory. For a further customisation of the pump for specific uses is available a choice of accessories as:

- Adaptor to feed the air chambers from a external source than the standard air distributor
- ATEX compliant probe to detect the pumping cycles
- Electric transducer to detect the position of the diaphragms
- Automatic flow stabiliser (pulsation damper)
- Air filter / pressure reducer with adapters
- Programmable electronic flow controller
- Pneumatic cycle counter for batch dosing process
- Air distributor exhausts cover with connections to plumb the exhaust air to the atmosphere and to collect pneumatic signals that tracks the positions of the diaphragms.

PUMP IDENTIFICATION:



		MODEL		MATERIAL							CONNECTIONS						
				CHAMBERS (1)		CODICE				O-Rings		TYPE		SCHEME			
							DIAPHRAGM	VALVE									
								BALLS	SEATS								
PLASTIC	DDA	25R	1/4"	WR	GFR-PP	10	Polyurethane	EPDM	PE-UHMW	E V N T	EPDM FPM NBR PTFE	G N I	BSP Parallel Threa NPT thread (2) ISO ANSI flanges	2 3 4	standard (1IN-1OUT) (2) mixing (2IN-1OUT) (2) parallel (2IN-2OUT)		
		38R	3/8"			11	PTFE	EPDM	PE-UHMW								
		50R	1/2"			12	Santoprene®	PTFE	PE-UHMW								
		50	1/2"			13	PTFE	PTFE	PE-UHMW								
		75	3/4"			14	PTFE	AISI 316	PE-UHMW								
		100C	1"			15	Santoprene®	AISI 316	PE-UHMW								
		100	1"			16	Santoprene®	EPDM	AISI 316								
		125	1"1/4			17	PTFE	AISI 316	AISI 316								
		150	1"1/2			18	Santoprene®	AISI 316	AISI 316								
		200	2"			19	PTFE	PTFE	PVDF								
			FC	CF-PVDF	18	Santoprene®	AISI 316	AISI 316									
			DF	PVDF	19	PTFE	PTFE	PVDF									
METALLIC		DDA	50	1/2"	SS	AISI 316	17	PTFE	AISI 316	AISI 316	N V E T	NBR FPM EPDM PTFE	G N I	BSP Parallel Threa NPT thread (2) ISO ANSI flanges	2 3 4	standard (1IN-1OUT) (2) mixing (2IN-1OUT) (2) parallel (2IN-2OUT)	
			75	3/4"			18	Santoprene®	AISI 316	AISI 316							
			100	1"			19	PTFE	PTFE	PVDF							
			125	1"1/4			20	PTFE	PTFE	AISI 316							
			150	1"1/2			AL	Aluminium	10	Polyurethane							EPDM
			200	2"	17	PTFE			AISI 316	AISI 316							
				21	PTFE	PTFE			Aluminium								
				22	Keyflex®	PTFE			Aluminium								
				50	1/2"	SP	Polished AISI 316	23	PTFE	PTFE	Polished AISI 316	T	PTFE	C	Clamp	2 3 4	standard (1IN-1OUT) (2) mixing (2IN-1OUT) (2) parallel (2IN-2OUT)
	100		1"	24	PTFE			SS 316	Polished AISI 316								
	150		1"1/2														
	200		2"														

1) to configure the pump for ZONE 1 add a 'X' after chambers material (e.g. WR becomes WRX)

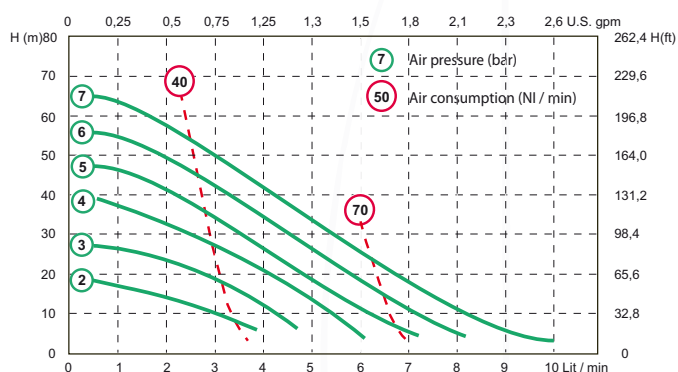
(2) not available for 25C -38C -50C models

25 R**Technical Data**

Max. Delivery	10 l/min
Max. Head	70 m
Air Inlet	1/4" BSP
Suction Lift	5 m
Solid Pass	3 mm

Chambers material

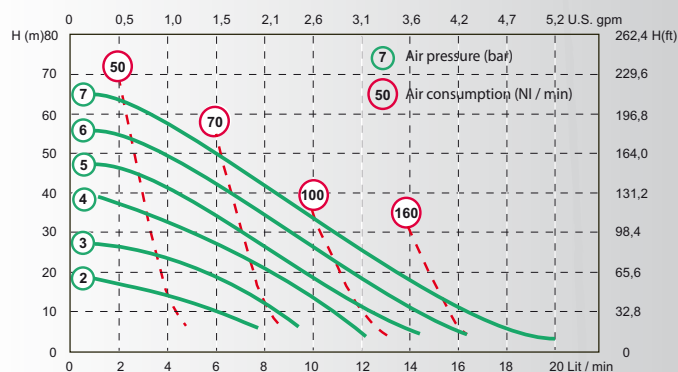
Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)

Performance Curve**38 R****Technical Data**

Max. Delivery	20 l/min
Max. Head	70 m
Air Inlet	1/4" BSP
Suction Lift	6 m
Solid Pass	3 mm

Chambers material

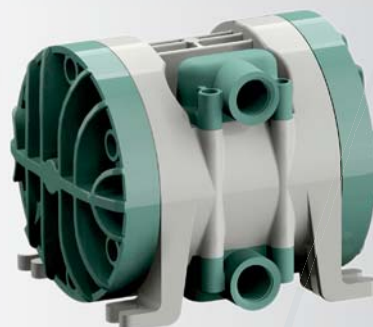
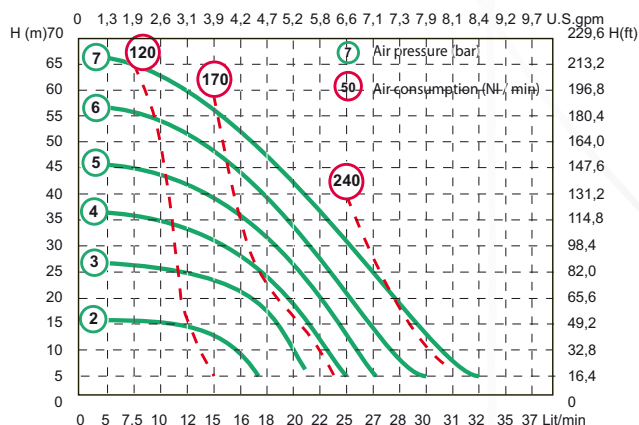
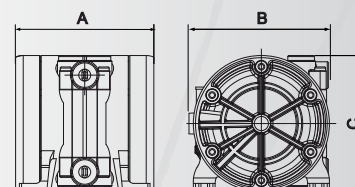
Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)

Performance Curve**50 R****Technical Data**

Max. Delivery	32 l/min
Max. Head	70 m
Air Inlet	1/4" BSP
Suction Lift	5 m
Solid Pass	3 mm

Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)

Performance Curve**Dimension****Thermoplastic****Metallic**

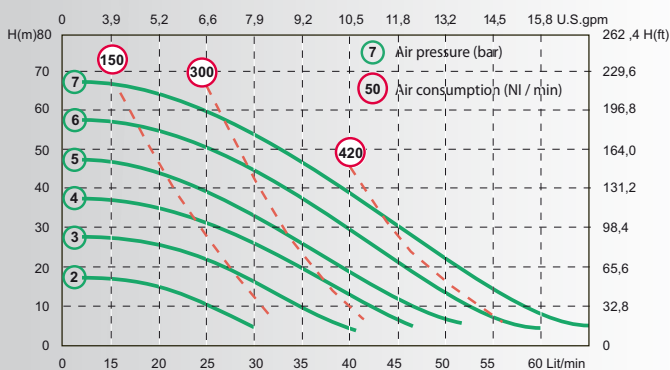
	PP			PVDF			Al	AISI 316
	25R	38R	50R	25R	38R	50R		
A [mm]	155			155			na	na
B [mm]	135			135			na	na
C [mm]	125			125			na	na
Weight [kg]	1			1,5			na	na
Connections	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"	na	na

50**Technical Data**

Max. Delivery	65 l/min
Max. Head	70 m
Air Inlet	3/8" BSP
Suction Lift	6 m
Solid Pass	3,5 mm

Chambers material

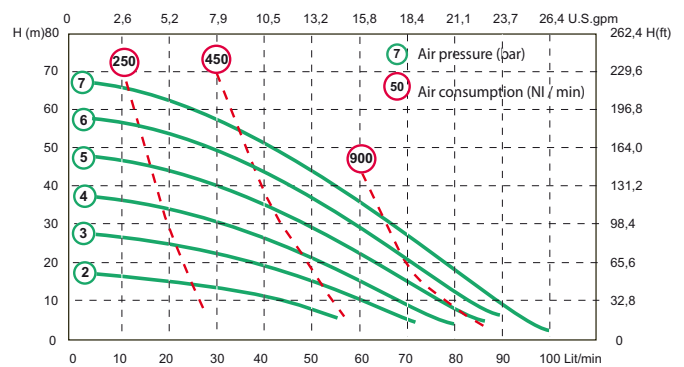
Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)

Performance Curve**75****Technical Data**

Max. Delivery	100 l/min
Max. Head	70 m
Air Inlet	3/8" BSP
Suction Lift	6 m
Solid Pass	3,5 mm

Chambers material

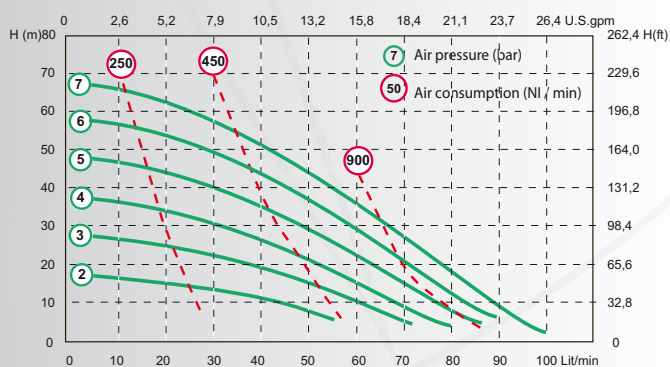
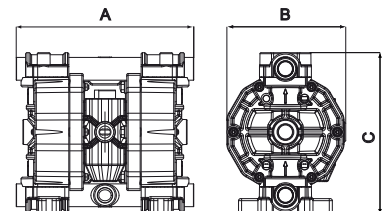
Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)

Performance Curve**100 C****Technical Data**

Max. Delivery	100 l/min
Max. Head	70 m
Air Inlet	3/8" BSP
Suction Lift	6 m
Solid Pass	3,5 mm

Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)

Performance Curve**FDA****Dimension****Thermoplastic****Metallic**

	PP			PVDF			Al		AISI 316	
	50	75	100C	50	75	100C	50	75	50	75
A [mm]	265	290	290	265	290	290	265	290	265	290
B [mm]	175	175	175	175	175	175	175	175	175	175
C [mm]	245	245	245	245	245	245	245	245	245	245
Weight [kg]	6,5	7	7	7	7	7	7	7	9	9
Connections	1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1/2"	3/4"

Upon request: ISO-ANSI flanged connections

100

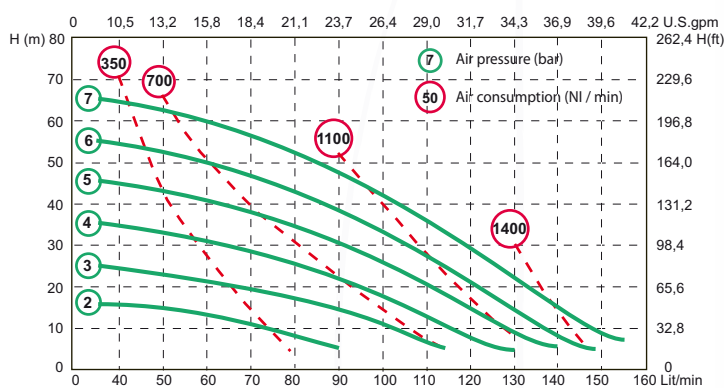
Technical Data

Max. Delivery	160 l/min
Max. Head	70 m
Air Inlet	1/2" BSP
Suction Lift	6 m
Solid Pass	7,5 mm

Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)

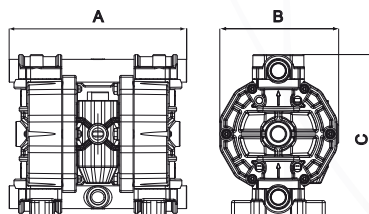
Performance Curve



FDA



Dimension



Thermoplastic

Metallic

	PP	PVDF	Al	AISI 316
A [mm]	370	370	370	360
B [mm]	220	220	220	220
C [mm]	364	364	364	350
Weight [kg]	15	16	16	20
Connections	1" BSP-NPT			1" BSP-NPT CLAMP 1 1/2"

Upon request: ISO-ANSI flanged connections

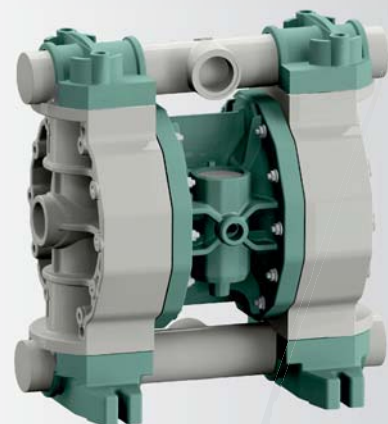
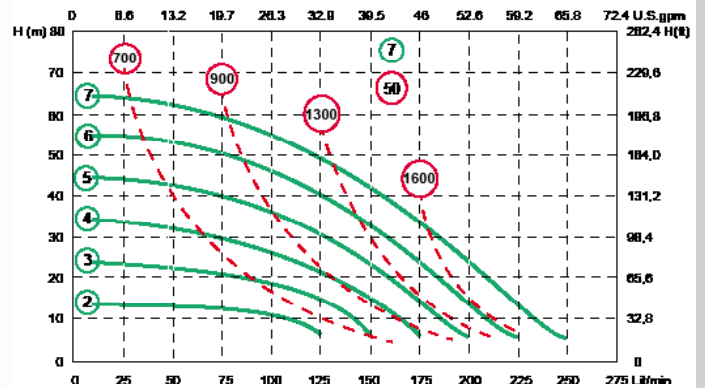
125

Technical Data

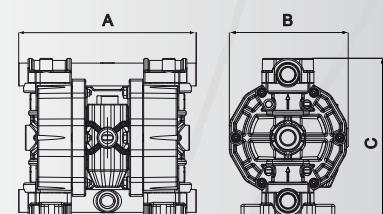
Max. Delivery	250 l/min
Max. Head	70 m
Air Inlet	1/2" BSP
Suction Lift	6 m
Solid Pass	7,5 mm

Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)



Dimension



Thermoplastic

Metallic

	PP	PVDF	Al	AISI 316
A [mm]	595	595	595	
B [mm]	340	340	340	340
C [mm]	572	572	572	
Weight [kg]	31	36	36	60
Connections	1 1/4" BSP - NPT			

Upon request: ISO-ANSI flanged connections

150

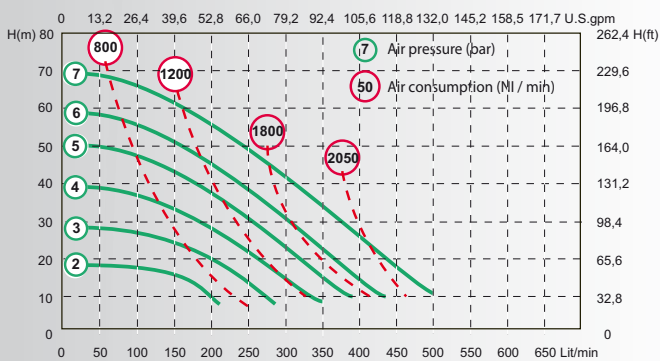
Technical Data

Max. Delivery	500 l/min
Max. Head	70 m
Air Inlet	3/4" BSP
Suction Lift	6 m
Solid Pass	8,5 mm

Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)

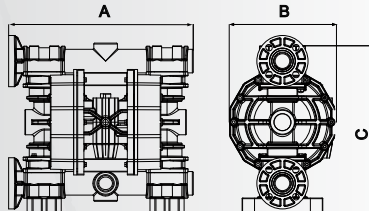
Performance Curve



FDA



Dimension



Thermoplastic

Metallic

	PP	PVDF	AI	AISI 316
A [mm]	595	595	595	
B [mm]	340	340	340	340
C [mm]	565	565	245	
Weight [kg]	30	35	35	58
Connections	FLANGE (*) 1 1/2" ANSI - DN 40 ISO		1 1/2" BSP-NPT CLAMP 2"	

(*) Upon request: Threaded connections

200

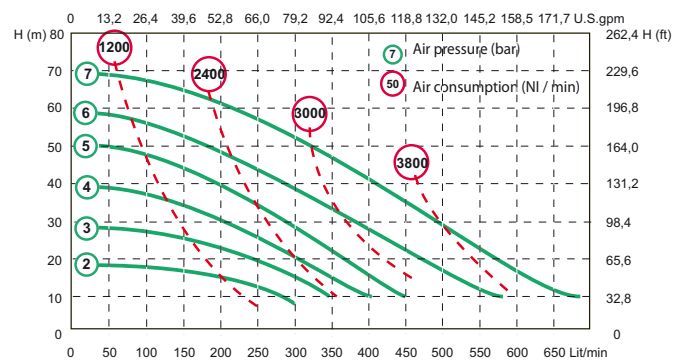
Technical Data

Max. Delivery	680 l/min
Max. Head	70 m
Air Inlet	3/4" BSP
Suction Lift	6 m
Solid Pass	8,5 mm

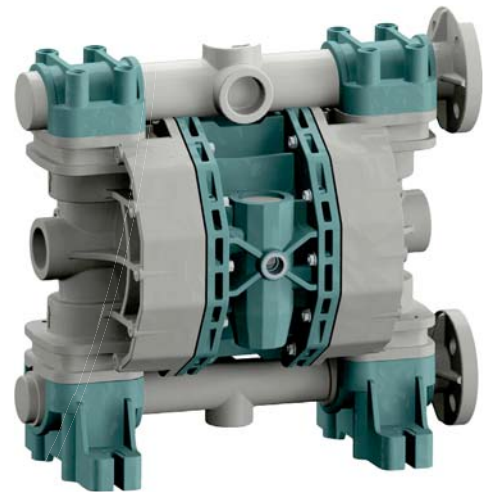
Chambers material

Polypropylene + glass fibre (PP)
Polyvinylidene fluoride + carbon fibre (PVDF)
Polyvinylidene fluoride (PVDF)
AISI 316
Aluminium (Al)

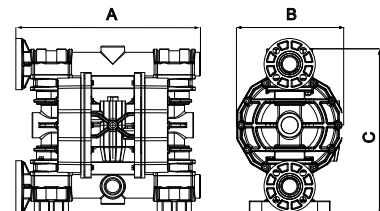
Performance Curve



FDA



Dimension



Thermoplastic

Metallic

	PP	PVDF	AI	AISI 316
A [mm]	595	595	595	580
B [mm]	340	340	340	340
C [mm]	572	572	572	570
Peso [kg]	31	36	36	60
Conessioni	FLANGE (*) 2" ANSI - DN 50 ISO		2" BSP-NPT CLAMP 2 1/2"	

(*) Upon request: Threaded connections



rev. 08 - EN



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