ASTRA evo

EU product
Made in Italy

2018

AIR OPERATED
DOUBLE DIAPHRAGMS
PUMPS

ARGAL AIR

ARGAL ITALY PUMPS

SINCE 1975

EN

...there's something new in the air...

ASTRA evo

INDEX

ARGALAIR

Why an AODD pump?

Safe
ARGALAIR pump is operated by compressed air and are intrinsically safe.

Able to run dry

Self-priming
The pump design allows high suction lift even at dry-start and with heavier fluids.

Shear Sensitive
The gentle pneumatic movement makes the ARGALAIR an excellent choice for shear sensitive fluids.

Portable and simple installation
ARGALAIR pump can be easily transported to the application site. Simply connect your air supply line and liquid lines and the pump is ready to perform. There is no complex control for installing and operating.

Submersible
If external material are compatible, then the pump can run submerged in the liquid by simply running the exhaust line above the liquid level.

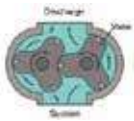
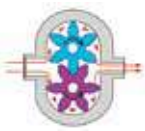
Variable flow rate and discharge pressure
ARGALAIR offers the ability too vary flow and discharge pressure up to 120 psi with a simple adjustment of the air supply.

Handles a wide variety of fluids with high solids content
No close fitting or rotating parts so liquids with high solids content can be easily pumped, actually any liquids with max of 90% solids.

Dead-head
Because the discharge pressure can never exceed air inlet pressure, the discharge line can be closed with no damage or wear. The pump will simply slow down and stop.

AODD ARGAL VS OTHERS

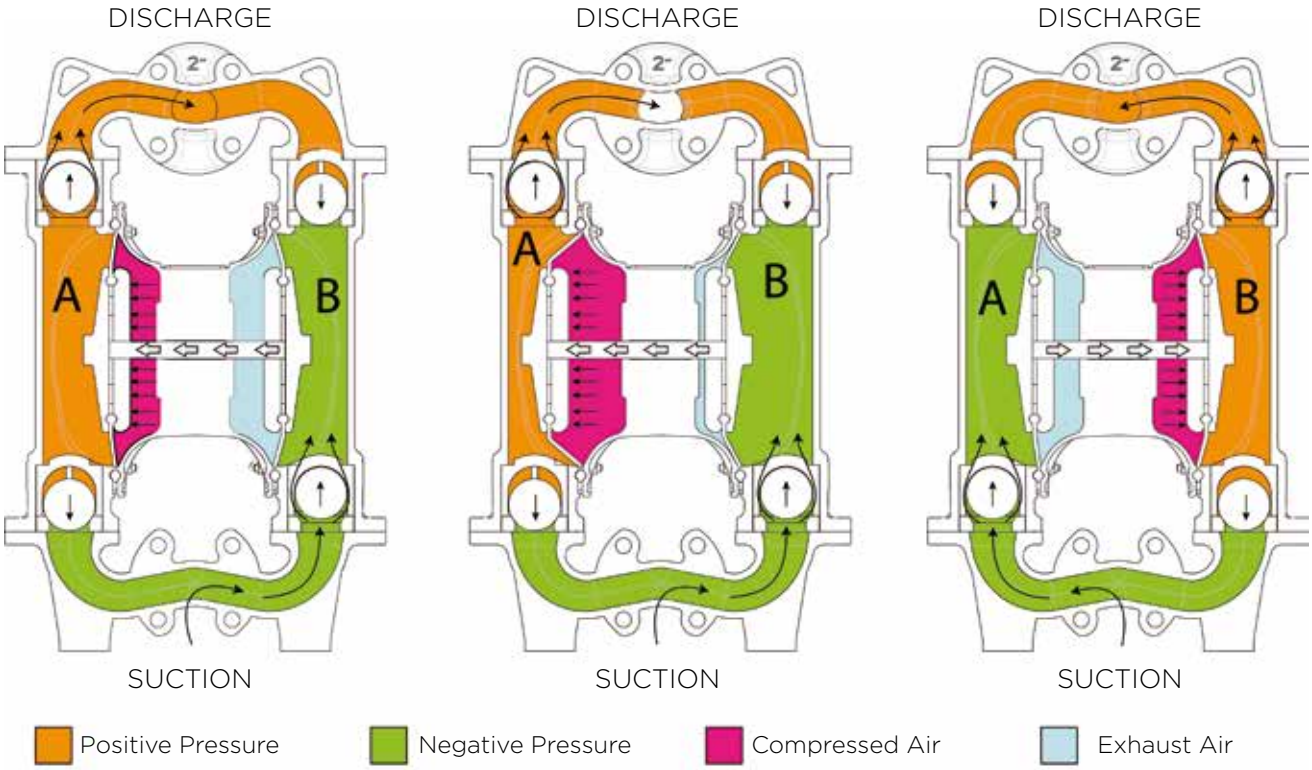


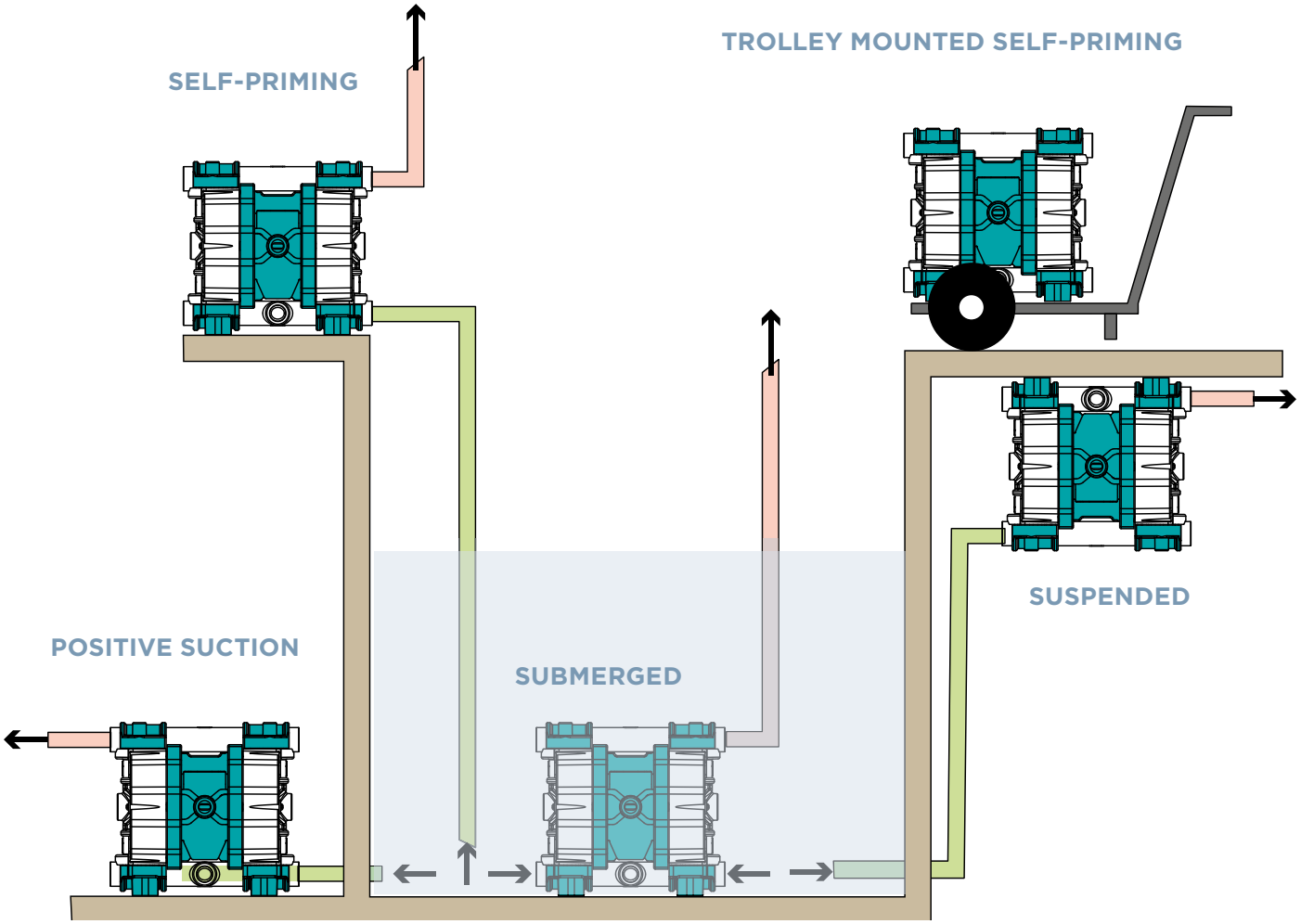

	AODD	Centrifugal	Lobe	Gear	Progressive (Screw)	Peristaltic (Hose)	Piston/ Plunger
Variable Flow & Head Control (inherently adjustable)	●	●	●	●	◒	◒	●
Deadheads Safely (at zero energy consumption)	●	●	◒	◒	◒	◒	◒
Dry-Running	●	○	○	○	○	○	○
Dry-Priming (lift installations)	●	○	○	○	○	●	◒
No Mechanical Installation Alignment Required	●	○	○	○	○	○	○
No Electrical Installation Required	●	○	○	○	○	○	○
Portability	●	◒	◒	◒	◒	◒	◒
Submersible	●	◒	○	○	○	○	◒
Sealless (no packing or mechanical seals)	●	◒	◒	◒	◒	◒	◒
Cavitation Tolerance (low NPSHr)	●	○	◒	◒	●	◒	◒
Low Shear & Degradation	●	○	●	◒	◒	◒	◒

● = Suitable ◒ = Limitations ○ = Not Recommended

... operating principles



The pneumatic distribution system sends compressed air behind one of the two diaphragms **(A)**, which pushes the fluid towards the delivery circuit. Simultaneously, the opposite diaphragm **(B)** is in the intake phase as it is dragged by the shaft that connects it to diaphragm **(A)**, under pressure; air presents behind diaphragm **(B)** is discharged into the environment through the flow rate regulator on the pump, while a pressure drop is created in the fluid chamber which 'sucks' the fluid from the suction circuit. When the diaphragm **(A)**, under pressure, reaches the stroke limit, the distributor switches the two inputs to the chamber on the diaphragms air side, putting diaphragm **(B)** under pressure and diaphragm **(A)**, in discharge. When the pump reaches its original starting point, each diaphragm has carried out one air discharge stroke and one fluid delivery stroke. This sequence of movements makes up a complete pumping cycle.



... easy to apply

Thanks to its multiple and simple installations, the pumps are convenient for every operation, from transfer to supply, circulation, injection, evacuation or liquid metering.

Why choosing an ARGALAIR AODD pump?

... high-quality materials

Our AODD pumps are obtained using **the best thermoplastic polymers.**
Moulded with injected polymers reinforced with composite fiber, AOOD pumps guarantee an optimal mechanical seal as well as a notable corrosive resistance.

Solutions are in fiberglass polypropylene **(GRF/PP)** and in polyvinylidene fluoride reinforced with carbon fiber **(CFF+PVDF)** and are also available in ATEX ZONE 1 - application version, for strict and dangerous areas.

The metallic variations can be distinguished for their reliability in **aluminum and AISI 316L** of the ASTRAevo range, it's present a version compliant to FDA standard called ASTRAevo Food.

... a complete range

A "custom-made production series" cover the entire market requirements but not only: ASTRA and MISTRAL ranges offer various alternatives for the most requested dimensions.

For the compact sizes **from ¼" to ½"**, Argal submits six models corresponding to the different materials.
Four other models are available for the medium sizes until 1". Two versions are realised for the **1 ½" as well as for the 2".**
We are part of the ring of few world designers to offer large sizes **from 3" to 4".**

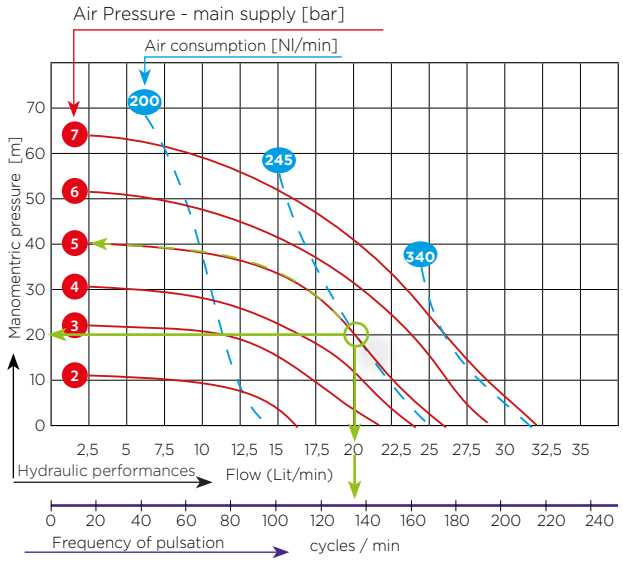
Last but not least, Argal designed and produced a range of economically and energetically advantageous pumps capable of sensible air consumption savings with same dimensions but different performances at an affordable price.

... Our experience into the corrosive and abrasive world

With our forty-year experience in corrosive and abrasive applications, we are specialists in design and problem-solving. Our goal is to offer a wide production program with high-quality and competitive prices solutions.

WETTED PARTS 1	DIAPHRAGM 2	VALVE BALLS 3	VALVE SEAT 4	APPLICATIONS
GRF/PP	**TEFLON®**	**TEFLON®**	**PP**	Great chemical resistance. Optimal aspiration dry and silent. Adapted to paintings
GRF/PP	**TEFLON®**	**AISI 316**	**AISI 316**	High viscosity products. Glues and resins
GRF/PP	**Santoprene®**	**EPDM**	**UPPE**	High abrasion resistance
Aluminum	**Hytrel®**	**TEFLON®**	**Aluminum**	Economic solution adapted for pumping hydrocarbons
Aluminum	**TEFLON®**	**TEFLON®**	**Aluminum**	Solvents. Inks. Painting
CFF/PVDF	**TEFLON®**	**TEFLON®**	**PVDF**	Aggressive acids. High temperatures >=80°C
AISI 316L	**TEFLON®**	**TEFLON®**	**AISI 316**	Aggressive acids. High temperatures <=110°C
AISI 316L	**TEFLON®**	**AISI 316**	**AISI 316**	Very high-viscosity and high temperatures
AISI 316L Polished	**TEFLON®**	**TEFLON®**	**AISI 316 Polished**	Food. Cosmetic (spheres version and polished AISI 316 polished seats for high viscosity products)
AISI 31L6 Polished	**TEFLON®**	**AISI 316 Polished**	**AISI 316 Polished**	Food. Cosmetic. High viscosity.

INSTRUCTION FOR CHOOSING
PNEUMATIC PUMPS



Duty point – example: Flow 20 l/min - Manomentric pressure 20 m.

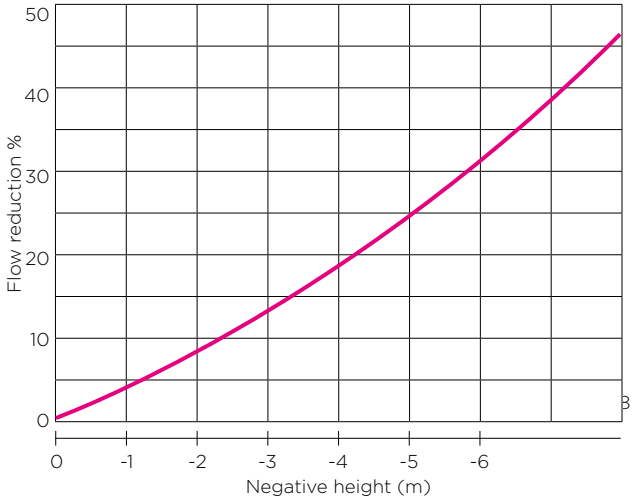
- Air pressure - main supply: 5 bar
- Air consumption: 245 Nl/min
- Frequency of cycles: 135 cycles/min

Air supply

Air consumption	Pump intake air pipe external Ø	Air compressor absorbed power (approx.)
Nl / min	mm	HP
50	6	0.5
100	6	1
200	6	2
250	8	2.5
350	8	3.5
450	8	4.5
550	8	5.5
850	10	8.5
1000	10	10
1500	12	15
2000	12	20
3500	12	30
4000	15	40

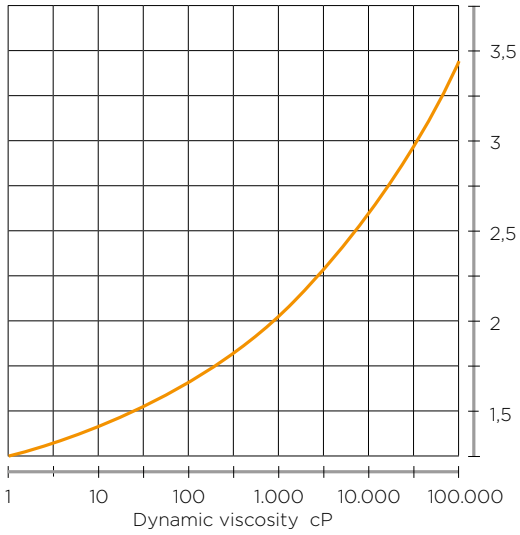
The power truly absorbed by the air compressor is around 70% of the value indicated in the table.
The inlet pipe must be less than 1 meter to have the nominal values.

Negative suction

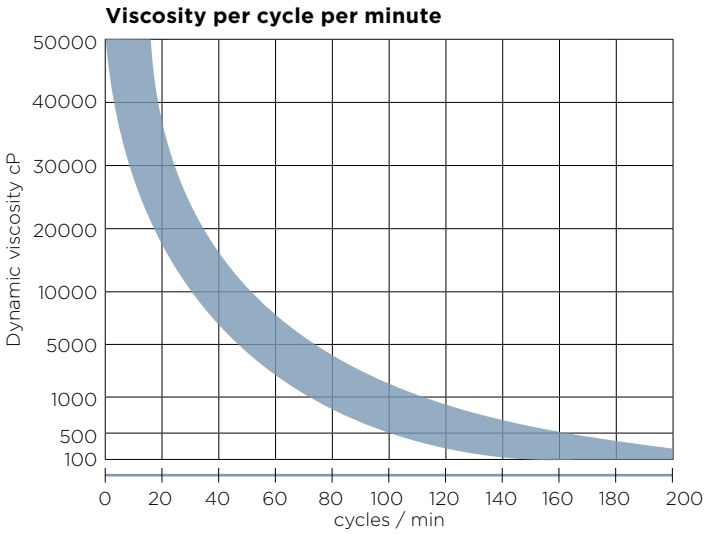


Lifting the liquid from a negative height reduces the flow of the pump as in standard circumstances (flooded suction).
The maximum negative head is a function of the plant characteristics (hydraulic losses), the fluid's physical characteristics (density, viscosity, boiling point).

If the fluid is viscous, it increases the diameter of the pipelines by multiplying the coefficient reported below.



Multiply coefficient for pipeline diameter referred to a non viscous fluid and constant hydraulic losses.



A general indication assumes that the more fluid is viscous, and the less number of cycles per minute is performed.

ASTRAevo DRUM

Perfect for emptying barrels, drums, cans.

Main applications

- AUTOMOTIVE INDUSTRY
- CHEMICAL INDUSTRY
- FOOD INDUSTRY
- WASTE DISPOSAL TECHNOLOGY

ASTRAevo GEMINI

Delivery and suction manifolds can be doubled in this configuration so that two products can simultaneously be pumped.

Main applications

- FLEXOGRAPHIC INDUSTRY
- PAINTING INDUSTRY
- PAPER PROCESSING
- PRINTING INDUSTRY
- WASTE WATER TECHNOLOGY

M MATERIALS

- FC — PVDF+C carbon filled
- WR — PP+G glass reinforced
- PP +C — PP carbon filled
- Alu — Aluminium
- AISI 316 L — Stainless Steel (low carbon)

C CERTIFICATIONS/WARRANTY

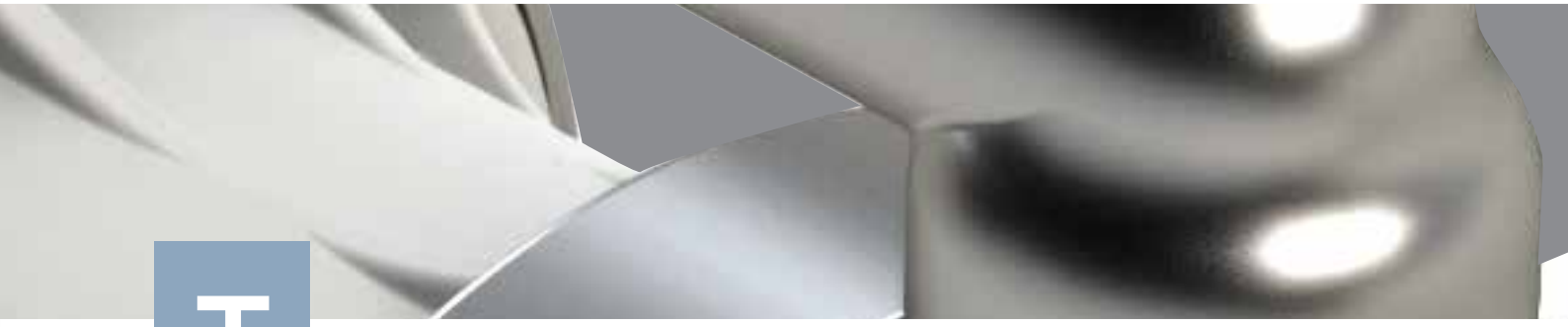
- Atex
- FDA COMPLIANT — Food and Drug Administration
- CE — European Conformity
- EAC — Eurasian Conformity
- 12 MESI GARANZIA — 12 months
- 24 MESI GARANZIA — 24 months
- 60 MESI GARANZIA — 60 months

CONTENTS

TECHNOLOGY

Self-priming

Submersible



TEMPERATURES (°C)

+115° +100° +95° +80° +60° −5 −10° −20° −35° −40°

AODD PUMPS

WITH THERMOPLASTIC CENTER

ASTRA evo

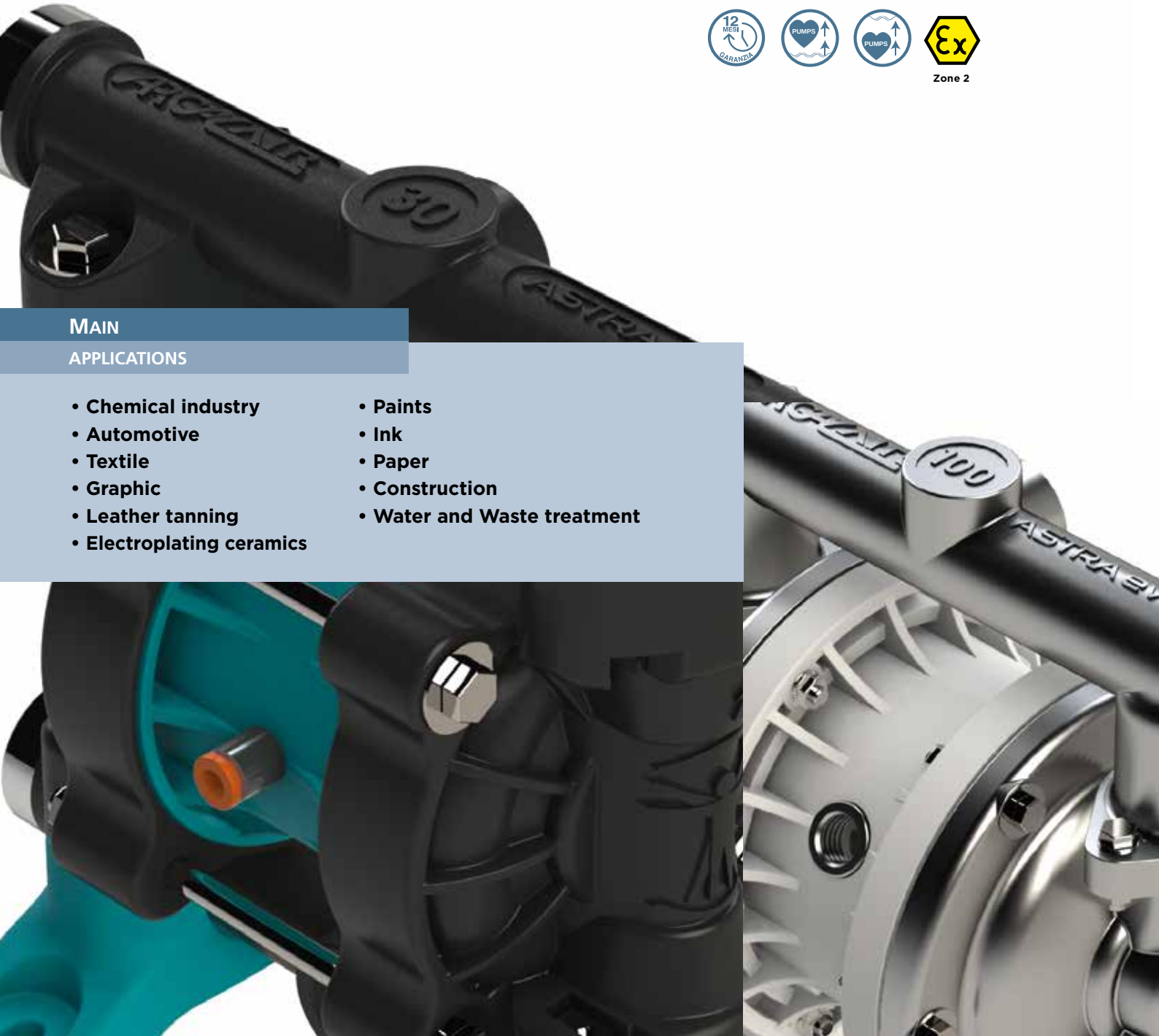
ASTRAEVO range is ideal for the most **various industrial applications.**
This newest project is made with the very last technologies to guarantee a major reliability of the pump: lifetime and diaphragms are improved, maintenance operations are reduced and it has an enviable quality/price offer.

12 MESI GARANZIA

PUMPS

PUMPS

Ex Zone 2



MAIN APPLICATIONS

- **Chemical industry**
- **Automotive**
- **Textile**
- **Graphic**
- **Leather tanning**
- **Electroplating ceramics**
- **Paints**
- **Ink**
- **Paper**
- **Construction**
- **Water and Waste treatment**

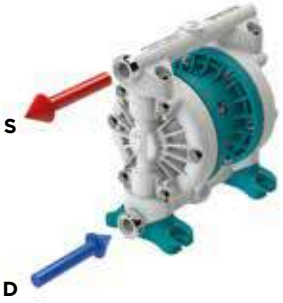
ASTRAEVO OVERVIEW

ASTRAEVO (*)		Flow rate (l/min")	Ports (inch)	Materials	Solids (mm)
DDE 30		30	½"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
DDE 60		65	½"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
DDE 100		100	1"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
DDE 160		160	1"	• PP+G • PVDF+C • ALU • AISI 316L	7,5
DDE 400		400	1 ½"	• PP+G • PVDF+C • ALU • AISI 316L	8,5
DDE 650		650	2"	• PP+G • PVDF+C • ALU • AISI 316L	8,5

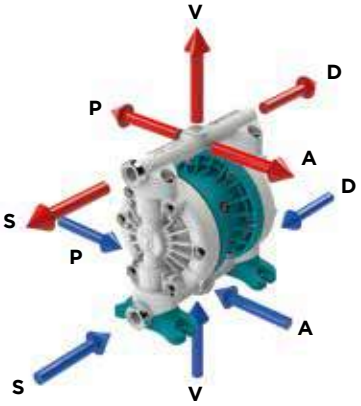
Note: available PP+C for ATEX plastic versions

(*) Max pressure 8 bar

STANDARD CONNECTIONS



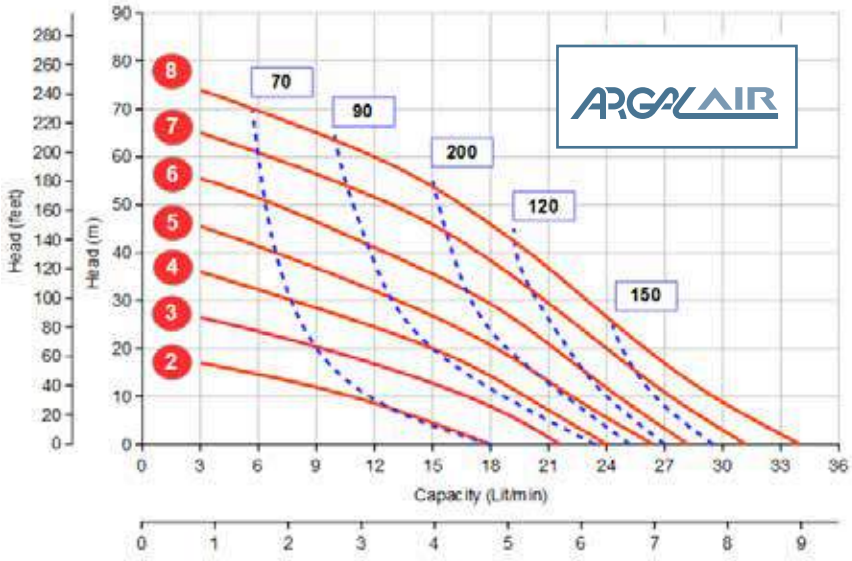
CONNECTIONS SCHEME ON REQUEST



Connections scheme referring to all Plastics and Aluminum pumps.
About stainless steel pumps are possible up to model 160.
All Astra Evo Food are excluded.

DDE 30

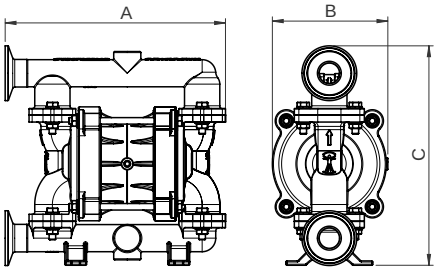
WR	+ 60°	− 5	1,2 Kg	+	0,2 Kg	FC	+ 80°	− 10°	1,5 Kg	+	0,2 Kg	POMc	+ 80°	− 10°	1,5 Kg	+	0,2 Kg	AISI 316 L	+ 80°	− 10°	2,2 Kg	+	0,2 Kg
PP+G			Pump		Packaging	PVDF+C			Pump		Packaging				Pump		Packaging				Pump		Packaging



bar Air Pressure main supply Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	½" BSP • NPT* • FLANGED* DN15
Air connection	6 mm
Max flow rate	30 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	5 mca
Max suction lift wet	9,8 mca
Max size solids	3,5 mm
Noise level	65 dB(A)
Displacement per cycle	56

DIMENSIONS (mm)	
PP+G	**A** 193 **B** 106 **C** 209
PVDF+C	**A** 193 **B** 106 **C** 209
ALU	**A** 194 **B** 107 **C** 205
AISI 316L	**A** 203 **B** 106 **C** 197



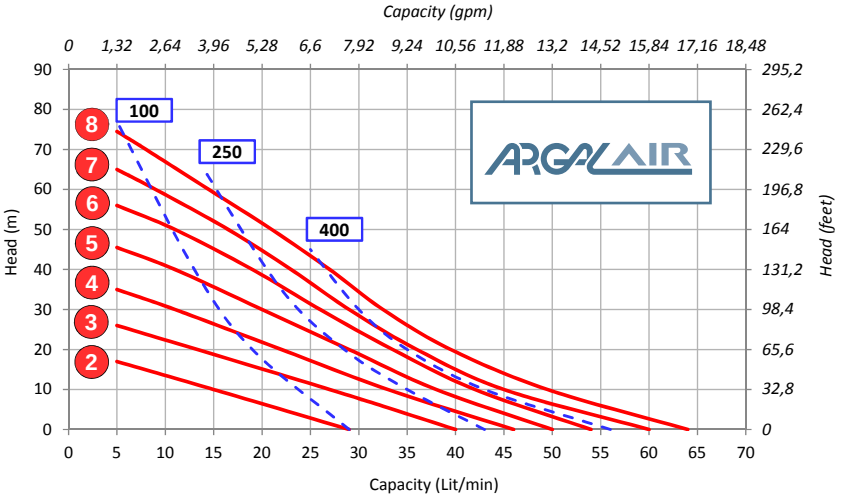
COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • AISI 316 • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

DDE 60

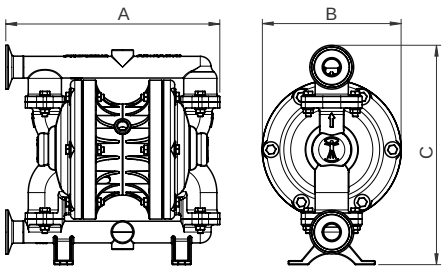
WR	+60°	−5	5,3 Kg	+	0,4 Kg	FC	+80°	−10°	6,1 Kg	+	0,4 Kg	Alu	+80°	−10°	5,5 Kg	+	0,4 Kg	AISI 316 L	+80°	−10°	7,8 Kg	+	0,4 Kg
PP+G			Pump		Packaging	PVDF+C			Pump		Packaging				Pump		Packaging				Pump		Packaging



bar Air Pressure main supply Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	½" BSP • NPT* • FLANGED* DN15
Air connection	⅜" BSP • NPT*
Max flow rate	65 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	6 mca
Max suction lift wet	9,8 mca
Max size solids	3,5 mm
Noise level	72 dB(A)
Displacement per cycle	129

DIMENSIONS (mm)	
PP+G	**A** 243 **B** 160 **C** 260
PVDF+C	**A** 243 **B** 160 **C** 260
ALU	**A** 245 **B** 160 **C** 254
AISI 316L	**A** 247 **B** 160 **C** 248



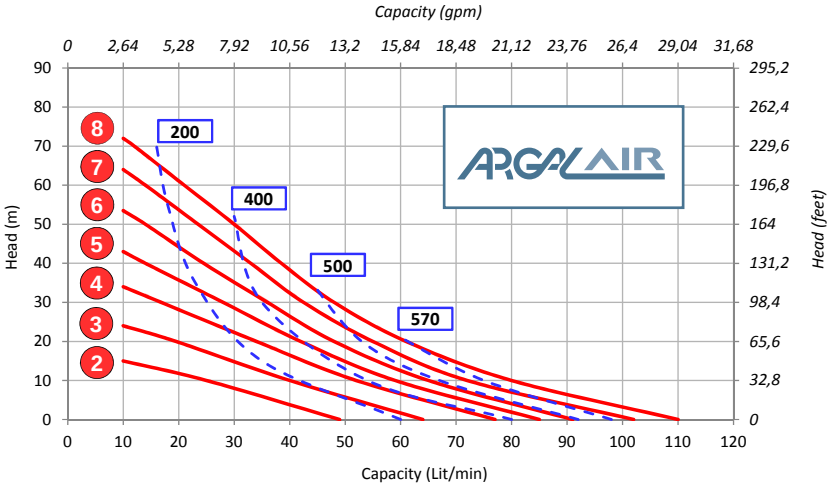
COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • AISI 316 • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

DDE 100

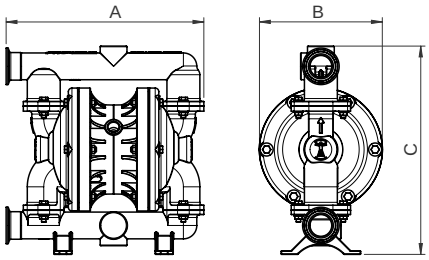
WR	+60°	−5	5,3 Kg	+	0,4 Kg	FC	+80°	−10°	6,1 Kg	+	0,4 Kg	Alu	+80°	−10°	5,5 Kg	+	0,4 Kg	AISI 316 L	+80°	−10°	7,8 Kg	+	0,4 Kg
PP+G			Pump		Packaging	PVDF+C			Pump		Packaging				Pump		Packaging				Pump		Packaging



bar Air Pressure main supply — Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	1" BSP • NPT* • FLANGED* DN25
Air connection	⅜" BSP • NPT*
Max flow rate	100 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	6 mca
Max suction lift wet	9,8 mca
Max size solids	3,5 mm
Noise level	72 dB(A)
Displacement per cycle	200

DIMENSIONS (mm)	
PP+G	**A** 288 **B** 170 **C** 297
PVDF+C	**A** 288 **B** 170 **C** 297
ALU	**A** 292 **B** 170 **C** 289
AISI 316L	**A** 203 **B** 170 **C** 288



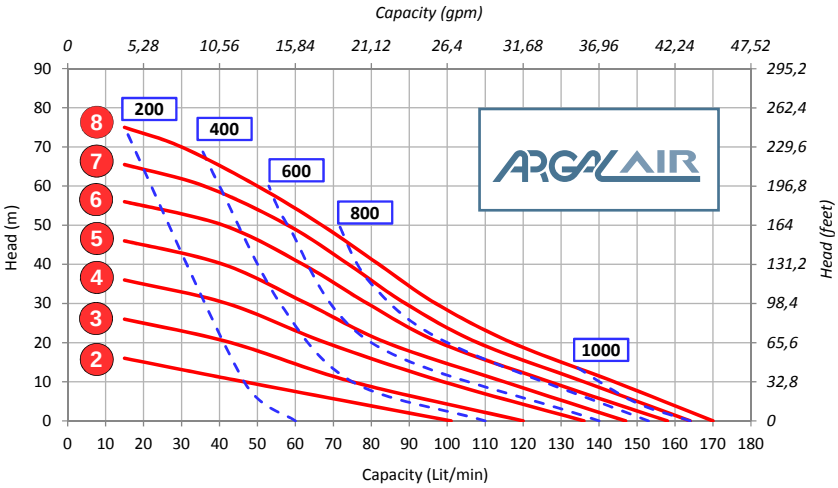
COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • SS • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

DDE 160

WR	+60°	−5	11 Kg	+	0,7 Kg	FC	+80°	−10°	13,4 Kg	+	0,7 Kg	Alu	+80°	−10°	12,4 Kg	+	0,7 Kg	AISI 316 L	+80°	−10°	16,9 Kg	+	0,7 Kg
PP+G			Pump		Packaging	PVDF+C			Pump		Packaging				Pump		Packaging				Pump		Packaging

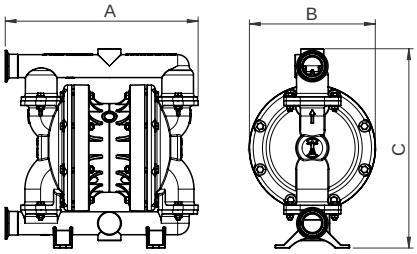


bar Air Pressure main supply

Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	1" BSP • NPT* • FLANGED* DN25
Air connection	½" BSP • NPT*
Max flow rate	160 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	6 mca
Max suction lift wet	9,8 mca
Max size solids	7,5 mm
Noise level	75 dB(A)
Displacement per cycle	400

DIMENSIONS (mm)	
PP+G	**A** 310 **B** 203 **C** 345
PVDF+C	**A** 310 **B** 203 **C** 345
ALU	**A** 310 **B** 203 **C** 335
AISI 316L	**A** 312 **B** 203 **C** 322



COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • AISI 316 • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

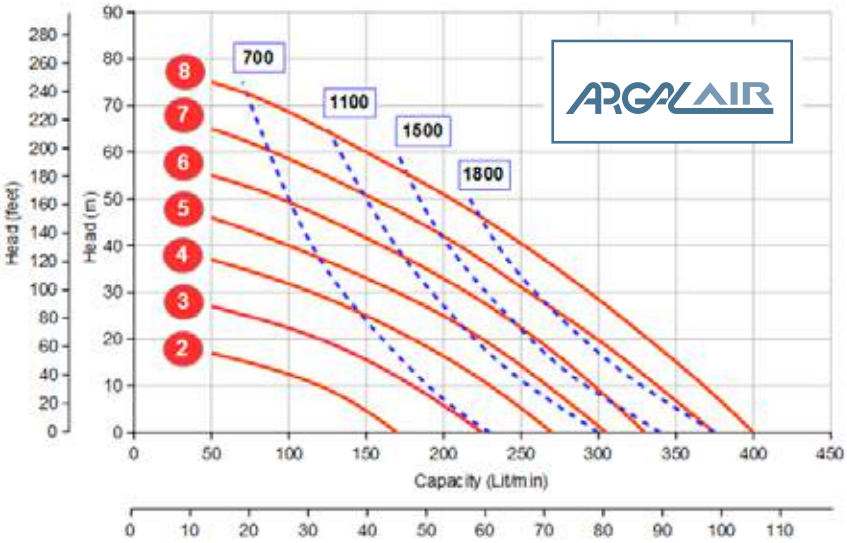
DDE 400

WR PP+G | +60° | −5 | 34 Kg + 2,2 Kg (Pump Packaging)

FC PVDF+C | +80° | −10° | 41 Kg + 2,2 Kg (Pump Packaging)

Alu | +80° | −10° | 38 Kg + 2,2 Kg (Pump Packaging)

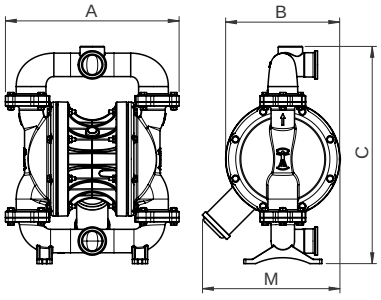
AISI 316 L | +80° | −10° | 54 Kg + 2,2 Kg (Pump Packaging)



bar Air Pressure main supply | Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	1½" BSP* • NPT* • FLANGED DN40
Air connection	¾" BSP • NPT*
Max flow rate	400 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	5 mca
Max suction lift wet	9,8 mca
Max size solids	8,5 mm
Noise level	78 dB(A)
Displacement per cycle	1.276

DIMENSIONS (mm)	
PP+G	**A** 465 **B** 263 **C** 573 **M** 317
PVDF+C	**A** 465 **B** 263 **C** 573 **M** 317
ALU	**A** 467 **B** 263 **C** 573 **M** 317
AISI 316L	**A** 400 **B** 263 **C** 501 **M** 317



COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • AISI 316 • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

DDE 650

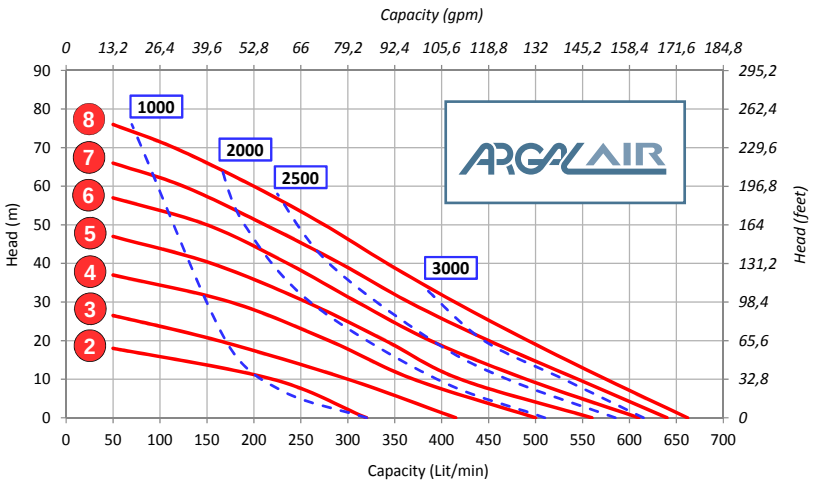



WR PP+G | +60° | −5 | 34,5 Kg Pump + 2,2 Kg Packaging

FC PVDF+C | +80° | −10° | 41,5 Kg Pump + 2,2 Kg Packaging

Alu | +80° | −10° | 38,5 Kg Pump + 2,2 Kg Packaging

AISI 316 L | +80° | −10° | 54,5 Kg Pump + 2,2 Kg Packaging

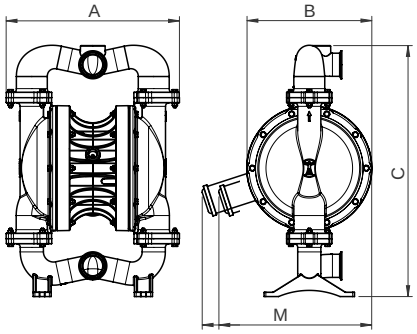


bar Air Pressure main supply

Nl/min Air consumption

TECHNICAL DATA	
Fluid connections	2" BSP* • NPT* • FLANGED DN50
Air connection	¾" BSP • NPT*
Max flow rate	650 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	5 mca
Max suction lift wet	9,8 mca
Max size solids	8,5 mm
Noise level	78 dB(A)
Displacement per cycle	3.040

DIMENSIONS (mm)	
PP+G	**A** 594 **B** 345 **C** 690 **M** 381
PVDF+C	**A** 594 **B** 345 **C** 690 **M** 381
ALU	**A** 592 **B** 345 **C** 687 **M** 381
AISI 316L	**A** 479 **B** 345 **C** 695 **M** 381



COMPOSITION	
Wetted parts	• PP+G • PVDF+C • ALU • AISI 316L
Diaphragms	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
Valve Balls	• PTFE • AISI 316 • EPDM • NBR
Valve Seats	• PP • PVDF • AISI 316 • UPPE
Gaskets	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

* Optional

ASTRA evo
FOOD

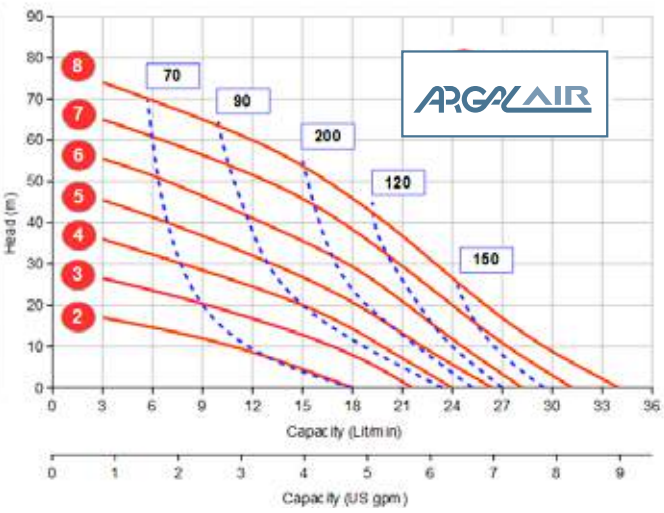
ASTRAEVO FOOD range can be used for handling and pumping products from food industry and related ones. These pumps comply with **FDA recommendations**, as the parts in contact with the fluid are made of **AISI 316 electro-polished** with *125 Ra* finish and PTFE - both certified for food usage.

FDA COMPLIANT

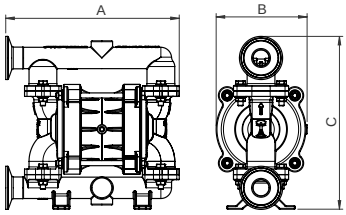
FOOD INDUSTRY		COSMETIC PHARMACEUTICAL INDUSTRY		VARIOUS INDUSTRY	
Product	cP	Product	cP	Product	cP
Butter	50.000	**Toothpaste**	200.000	**Oil SAE70**	18.000
Mayonnaise	6.000	**Glycerin**	1.400	**Barbotine**	50.000
Honey	1.500÷3.000	**Shampoo**	250	**Grease lubr.**	2.000
Marmalade	<1.000			**Mineral oil**	800
Tomato sauce	180			**Oil SAE30**	350
Yogurt	100			**Varnish**	300
Olive oil	100	PRODUCTS VISCOSITY			

Thanks to their characteristics and design **ASTRAEVO FOOD "DFA"** series can be applied for the transfer of fluids deployed in industries as food, the cosmetics, pharmaceuticals, or chemical additives, beverages, dairy, biotechnologies, medical appliances, paint and in all those applications were a quick release clamp connection is required or appreciated.
These pumps are usually used to transfer or to remove the products from the mixing contains or storage basins or to pack them in bottles or similar containers.
The air operated double diaphragm pumps **ASTRAEVO FOOD** are constructed with materials compliant with the FDA regulation: the wet parts are made of AISI 316 electro-polished and the surface finish is realised in **125 Ra** (average **2,7 µm**) both certified for food applications. All **ASTRAEVO FOOD** pumps comply with ATEX Zone 2 regulation and are adequate to operate in areas with atmosphere potentially explosive and, with the variant of the conductive executions, can operate also in areas classified ATEX Zone 1.
These pumps are capable to pump fluids with very high viscosity and temperature up to **95°C.**
All other constructive and functional characteristics are equal to those of the ASTRA.

DFE 30



bar Air Pressure main supply Nl/min Air consumption



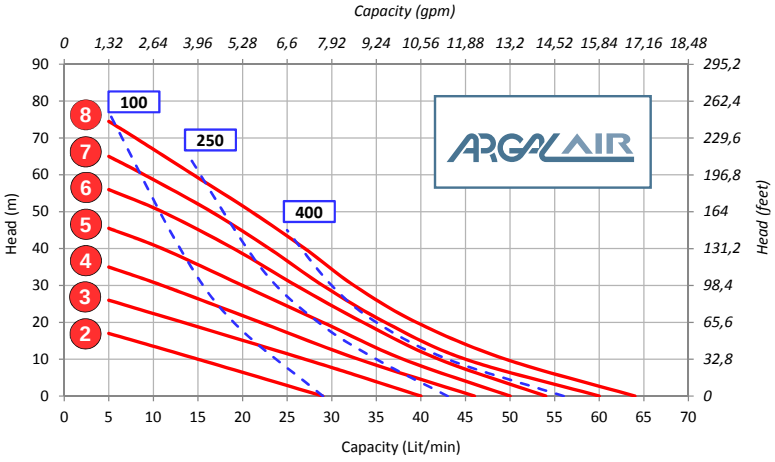
DIMENSIONS (mm)	
AISI 316L	**A** 203 **B** 106 **C** 197

TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1” • BSP • NPT
Air connection	6 mm
Max flow rate	30 l/m’
Max air pressure	8 bar
Displacement per cycle	56

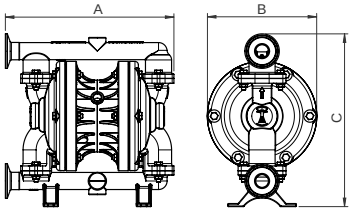
COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

Connections scheme page 15

DFE 60



bar Air Pressure main supply Nl/min Air consumption



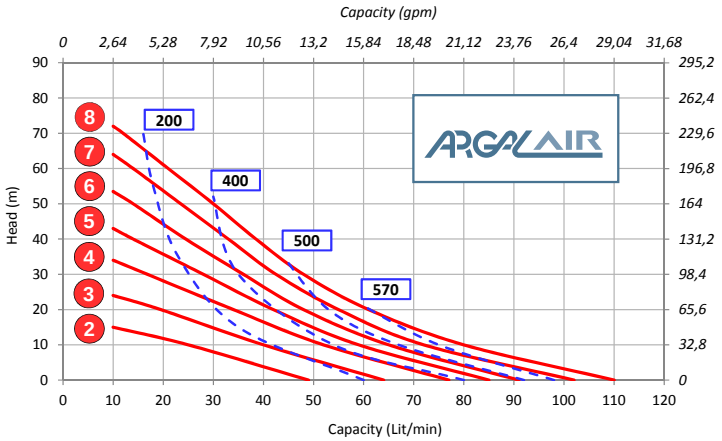
DIMENSIONS (mm)	
AISI 316L	**A** 247 **B** 160 **C** 253

TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1” • BSP • NPT
Air connection	¼” BSP • NPT*
Max flow rate	50 l/m
Max air pressure	8 bar
Displacement per cycle	129

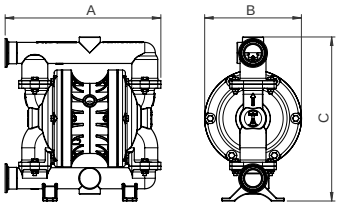
COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

Connections scheme page 15

DFE 100



bar Air Pressure main supply Nl/min Air consumption



DIMENSIONS (mm)	
AISI 316L	**A** 273 **B** 170 **C** 288

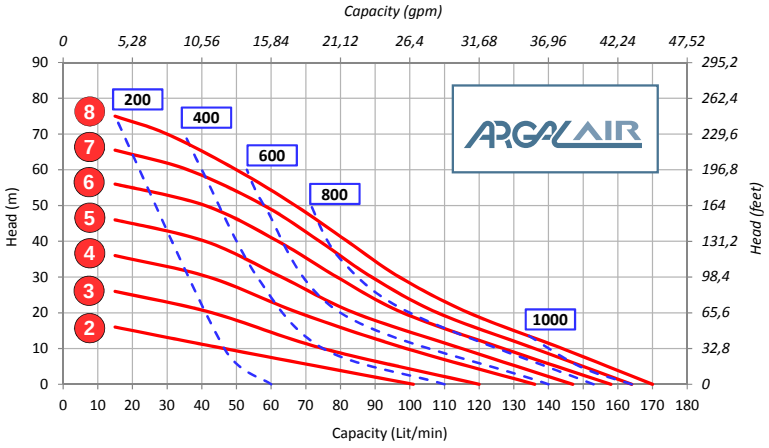
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1” • BSP*
Air connection	⅜” BSP • NPT*
Max flow rate	100 l/m’
Max air pressure	8 bar
Displacement per cycle	200

COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

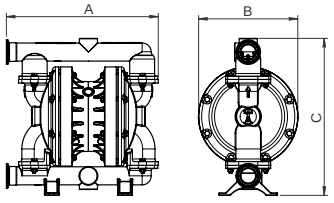
Connections scheme page 15

* Optional

DFE 160



bar Air Pressure main supply Nl/min Air consumption



DIMENSIONS (mm)	
AISI 316L	**A** 310 **B** 203 **C** 322

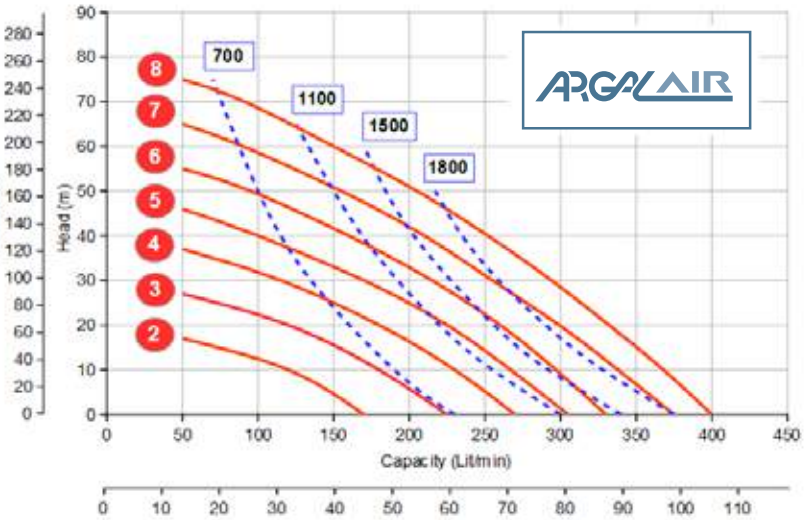
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1 ¼” • BSP*
Air connection	½” BSP • NPT*
Max flow rate	250 l/m’
Max air pressure	8 bar
Displacement per cycle	400

COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

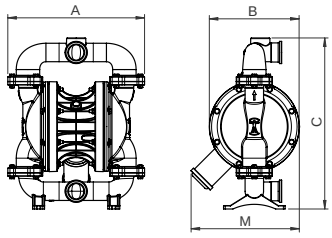
Connections scheme page 15

* Optional

DFE 400



bar Air Pressure main supply Nl/min Air consumption



DIMENSIONS (mm)	
AISI 316L	**A** 400 **B** 263 **C** 501 **M** 317

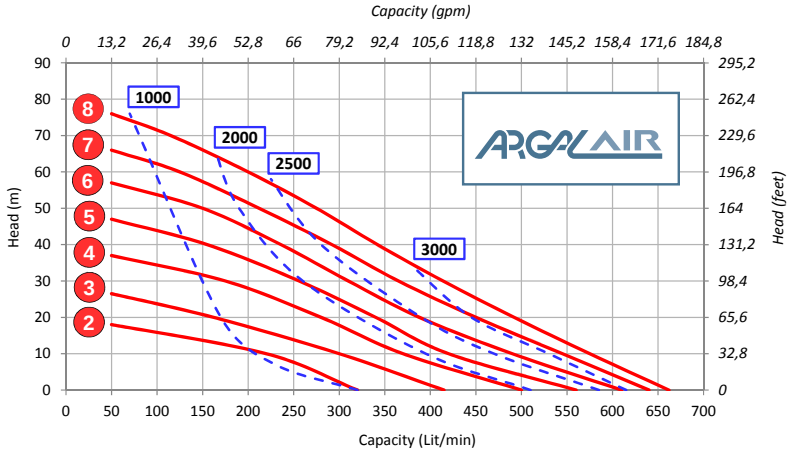
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 2"
Air connection	¾" BSP • NPT*
Max flow rate	400 l/m'
Max air pressure	8 bar
Displacement per cycle	1.276

COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• NBR+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

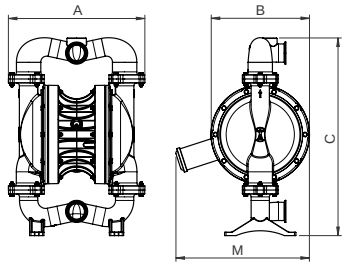
Connections scheme page 15

* Optional

DFE 650



bar Air Pressure main supply Nl/min Air consumption



DIMENSIONS (mm)	
AISI 316L	**A** 479 **B** 345 **C** 695 **M** 381

TECHNICAL DATA	
Fluid connections	• Tri-Clamp 2½" • BSP*
Air connection	¾" BSP • NPT*
Max flow rate	650 l/m'
Max air pressure	8 bar
Displacement per cycle	3.040

COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

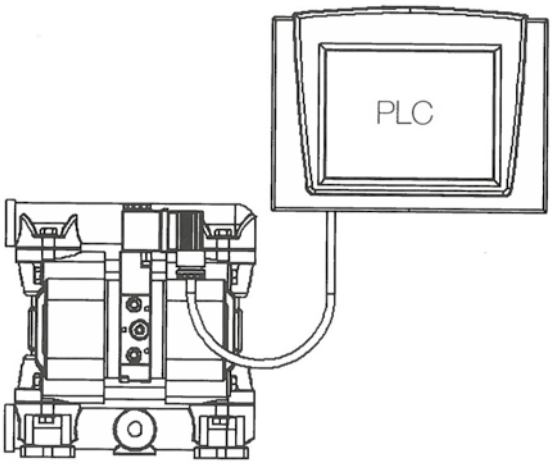
Connections scheme page 15

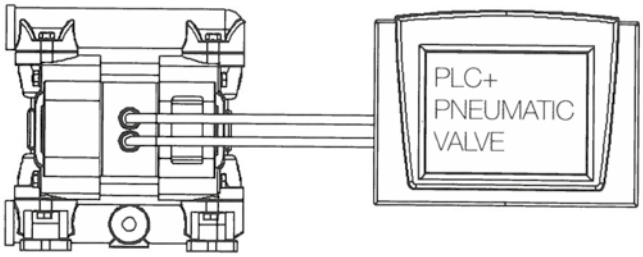
* Optional

REMOTE CONTROL

ASTRAevo FREE

The fluid is carried by compressed air while an electric signal controls the speed. In this way, metering, measurement and other applications of the electric command can be majorly accurate. The "ASTRA FREE" versions can be interconnected with a large range of devices to completely automise the operation.





MAIN APPLICATIONS

- CHEMICAL INDUSTRY
- FLEXOGRAPHIC INDUSTRY
- PAINTING INDUSTRY
- PRINTING INDUSTRY
- WASTE WATER TECHNOLOGY

MAG-DRIVE & MECH-SEALED CENTRIFUGAL PUMPS

ARGAL AIR

AIR-METERING & AODD PUMPS PULSATION DAMPENERS

VERTICAL SUMP PUMPS

SUBMERSIBLE PUMPS

SELF-PRIMING PUMPS

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