

# ASTRA evo



EU product  
Made in Italy

2018



AIR OPERATED  
DOUBLE DIAPHRAGMS  
PUMPS

ARGAL AIR



SINCE 1975

EN



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



# ASTRA evo

Advantages  
and technologies  
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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.

## 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.

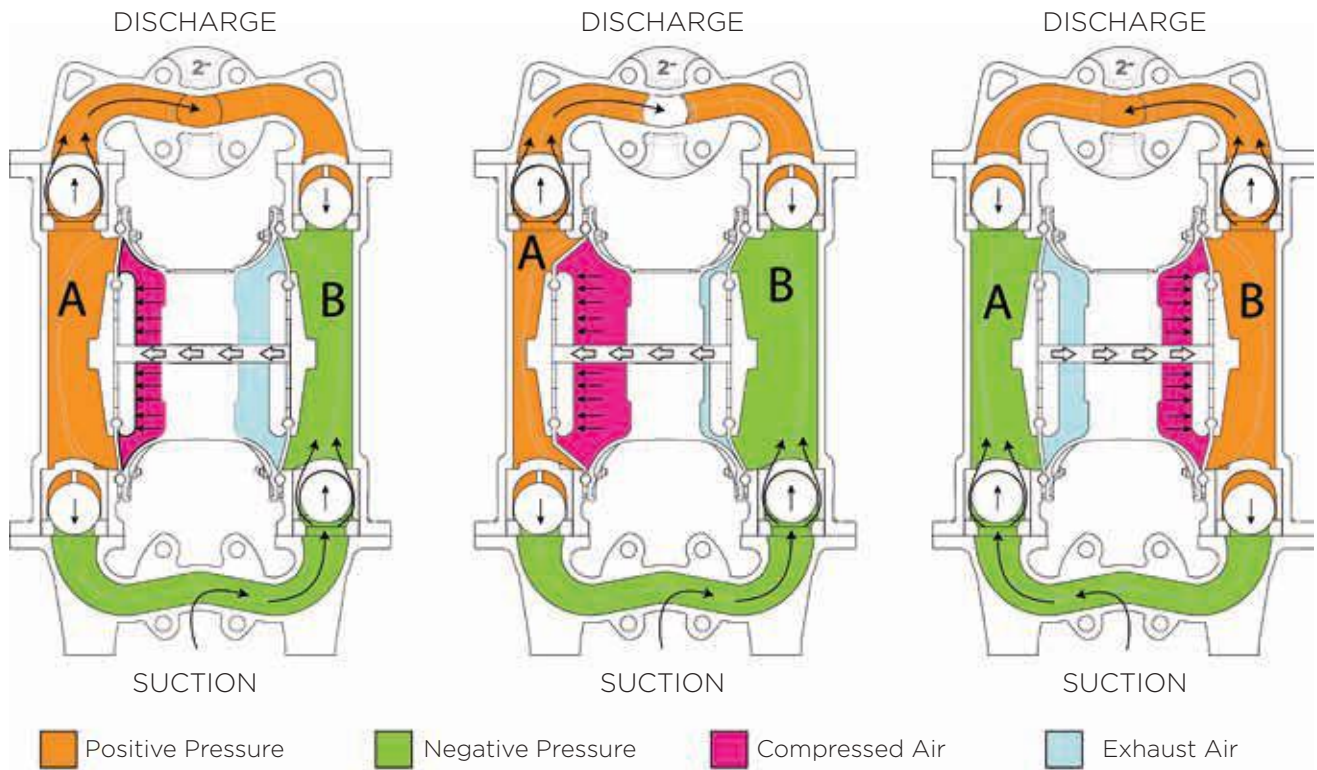
## Dead-head

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.

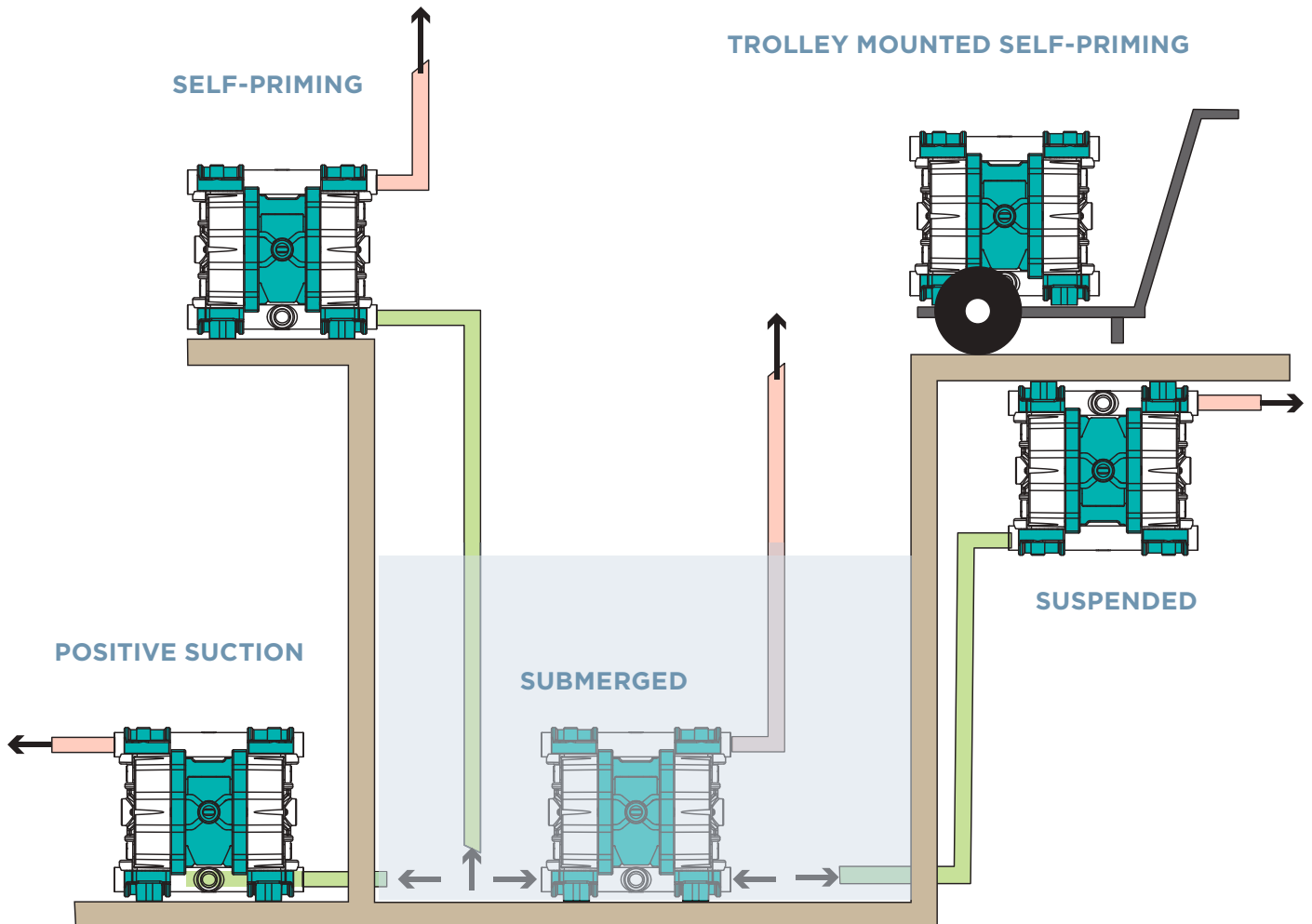
 <b>AODD ARGAL VS OTHERS</b>	 <b>AODD</b>	 <b>Centrifugal</b>	 <b>Lobe</b>	 <b>Gear</b>	 <b>Progressive (Screw)</b>	 <b>Peristaltic (Hose)</b>	 <b>Piston/ Plunger</b>
<b>Variable Flow &amp; Head Control (inherently adjustable)</b>	●	●	●	●	◐	◐	●
<b>Deadheads Safely (at zero energy consumption)</b>	●	●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

= 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.

""ci f·Yl dYf]YbW·]b·h\ Y·Vffcgjj Y·UbX·  
UWfUgjj Y·k cf·X

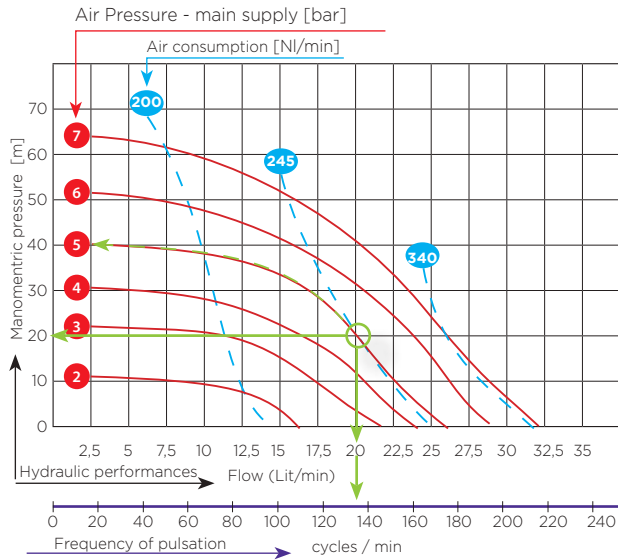
With our forty-year experience in corrosive and abrasive applications, we are specialists in design and problem-solving. Our goal is to offer a wide production program with high-quality and competitive prices solutions.





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 $\geq 80^{\circ}\text{C}$
AISI 316L	TEFLON®	TEFLON®	AISI 316	Aggressive acids. High temperatures $\leq 110^{\circ}\text{C}$
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 316L Polished	TEFLON®	AISI 316 Polished	AISI 316 Polished	Food. Cosmetic. High viscosity.

# INSTRUCTION FOR CHOOSING PNEUMATIC PUMPS



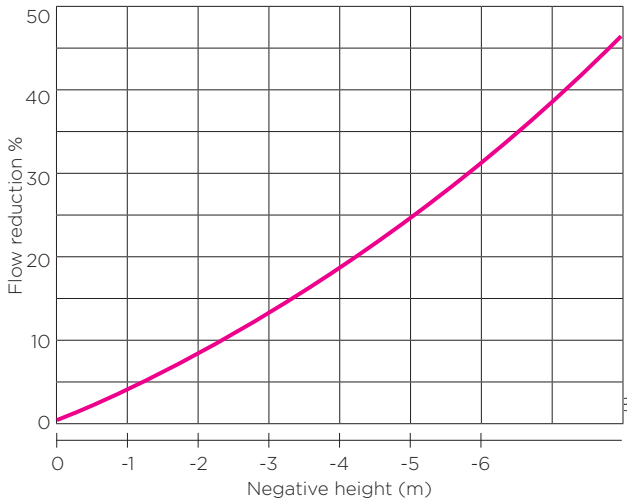
- Duty point - example: Flow 20 l/min - Manometric pressure 20 m.
- Air pressure - main supply: 5 bar
  - Air consumption: 245 NI/min
  - Frequency of cycles: 135 cycles/min

## Air supply

Air consumption	Pump intake air pipe external Ø	Air compressor absorbed power (approx.)
NI / 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

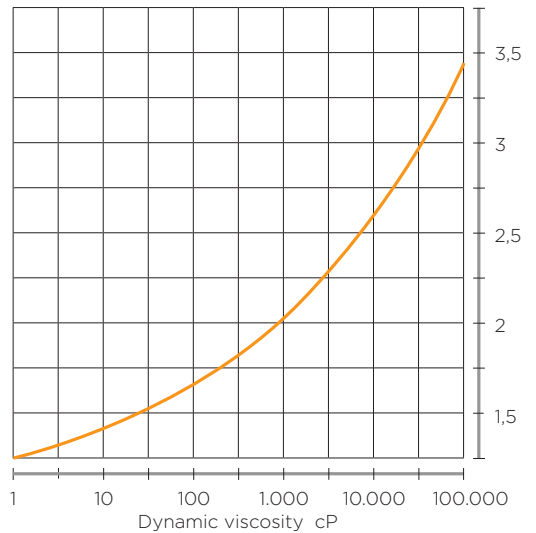
The power truly absorbed by the air compressor is around 70% of the value indicated in the table. The inlet pipe must be less than 1 meter to have the nominal values.

## Negative suction

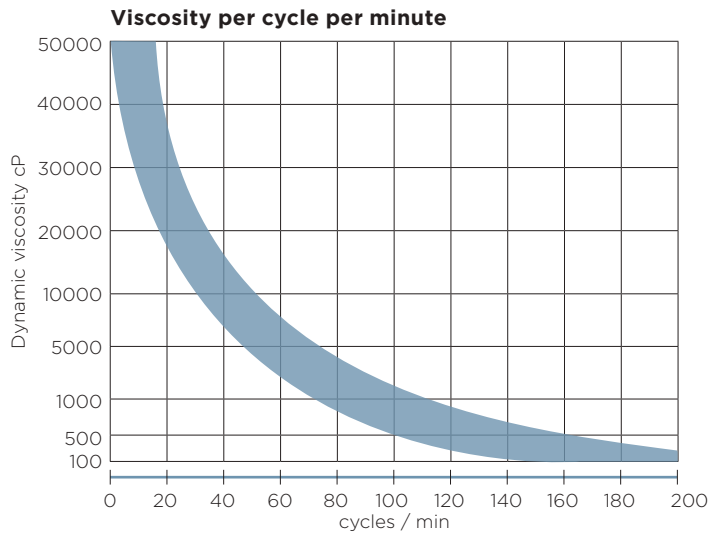


Lifting the liquid from a negative height reduces the flow of the pump as in standard circumstances (flooded suction). The maximum negative head is a function of the plant characteristics (hydraulic losses), the fluid's physical characteristics (density, viscosity, boiling point).

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



PVDF+C  
carbon filled



PP+G  
glass reinforced



PP  
carbon filled



Aluminium



Stainless Steel  
(low carbon)



# C

## CERTIFICATIONS/WARRANTY



Atex



Food and Drug Administration



European Conformity



Eurasian Conformity



12 months



24 months



60 months



# CONTENTS



## TECHNOLOGY



Self-priming



Submersible



## TEMPERATURES (°C)



# AODD PUMPS

WITH THERMOPLASTIC CENTER

## ASTRAevo

**ASTRAevo** range is ideal for the most **various industrial applications**.

This newest project made with the very last technologies guarantees a major reliability and performance of the pump: lifetime and diaphragms are improved, as well as performance and air consumption, and maintenance operations are reduced.

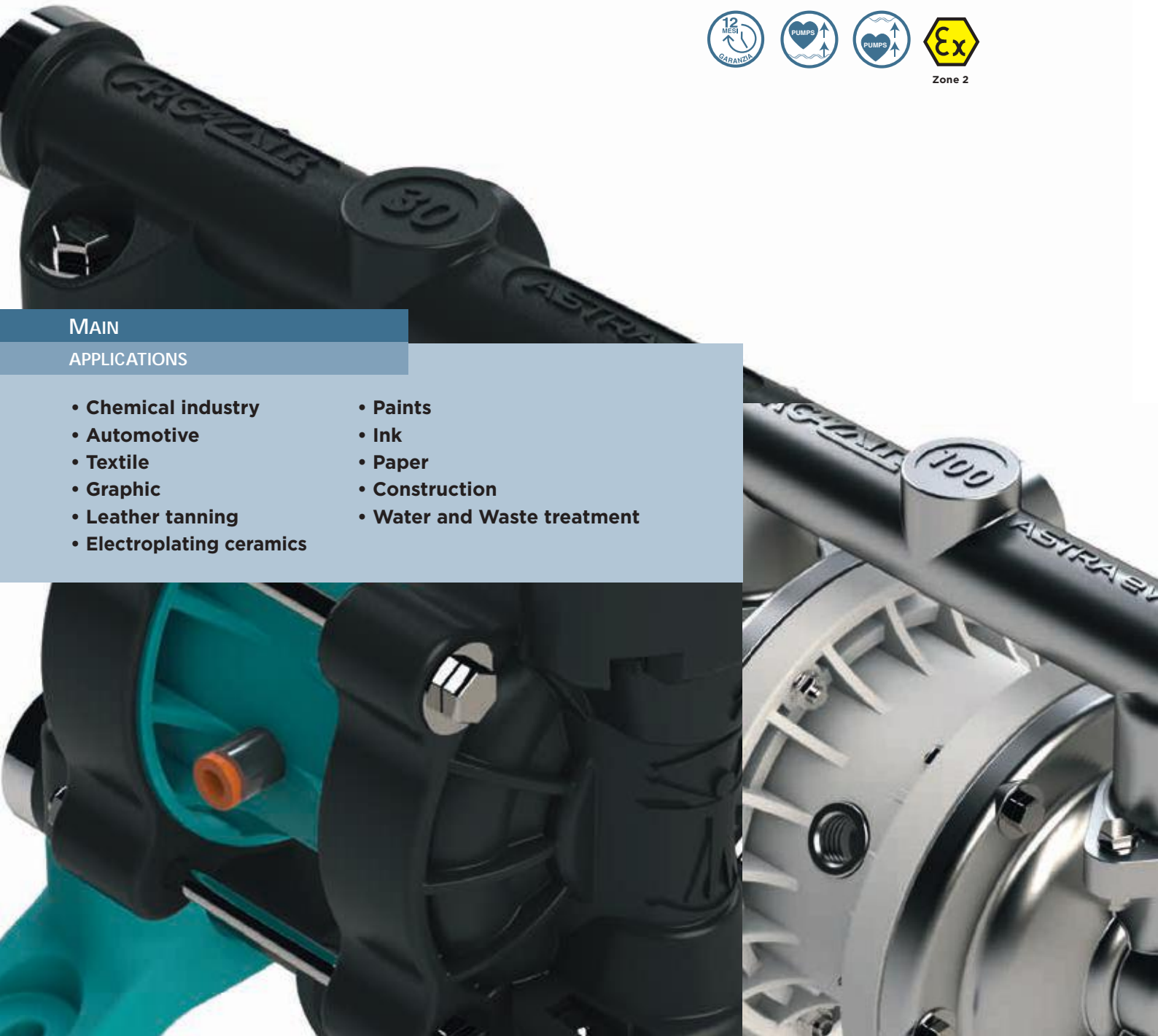








Zone 2

### MAIN

#### APPLICATIONS

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



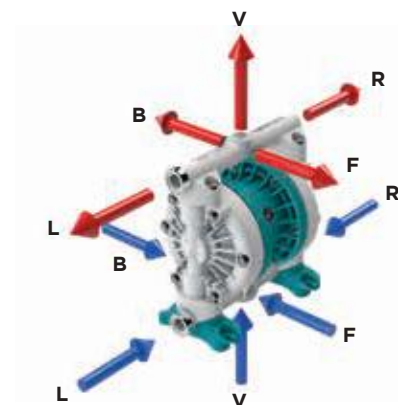
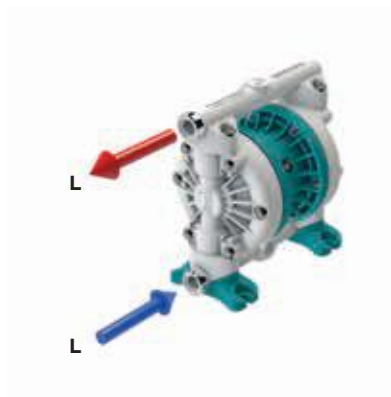
ASTRAevo (*)		Flow rate (l/min")	Ports (inch)	Materials	Solids (mm)
<b>DDE 30</b>		52	1/2"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
<b>DDE 60</b>		76	1/2"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
<b>DDE 100</b>		130	1"	• PP+G • PVDF+C • ALU • AISI 316L	3,5
<b>DDE 160</b>		175	1"	• PP+G • PVDF+C • ALU • AISI 316L	7,5
<b>DDE 400</b>		370	1 1/2"	• PP+G • PVDF+C • ALU • AISI 316L	8,5
<b>DDE 650</b>		715	2"	• PP+G • PVDF+C • ALU • AISI 316L	8,5

Note: available PP+C for ATEX plastic versions

(\*) Max pressure 8 bar

STANDARD CONNECTIONS

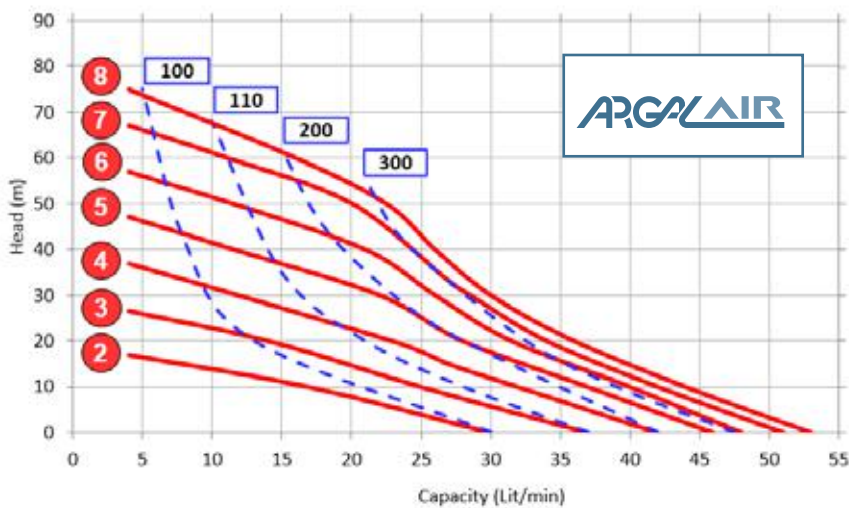
CONNECTIONS SCHEME ON REQUEST



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



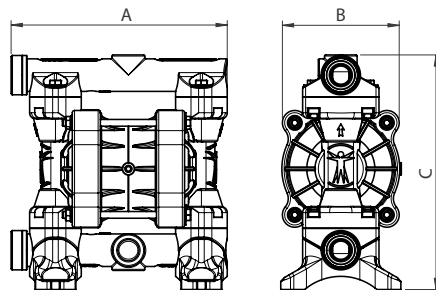
<b>WR</b> PP+G	<b>+60°</b>	<b>5</b>	<b>1,2 Kg + 0,2 Kg</b> Pump Packaging	<b>FC</b> PVDF+C	<b>+80°</b>	<b>-10°</b>	<b>1,5 Kg + 0,2 Kg</b> Pump Packaging	<b>POMc</b>	<b>+80°</b>	<b>-10°</b>	<b>1,5 Kg + 0,2 Kg</b> Pump Packaging	<b>AISI 316 L</b>	<b>+80°</b>	<b>-10°</b>	<b>2,2 Kg + 0,2 Kg</b> Pump Packaging
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**bar** Air Pressure main supply      **NI/min** Air consumption

TECHNICAL DATA	
Fluid connections	½" BSP • NPT* • FLANGED* DN15
Air connection	6 mm
Max flow rate	52 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	4 mca
Max suction lift wet	9,8 mca
Max size solids	3 mm
Noise level	72 dB(A)
Displacement per cycle	70

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

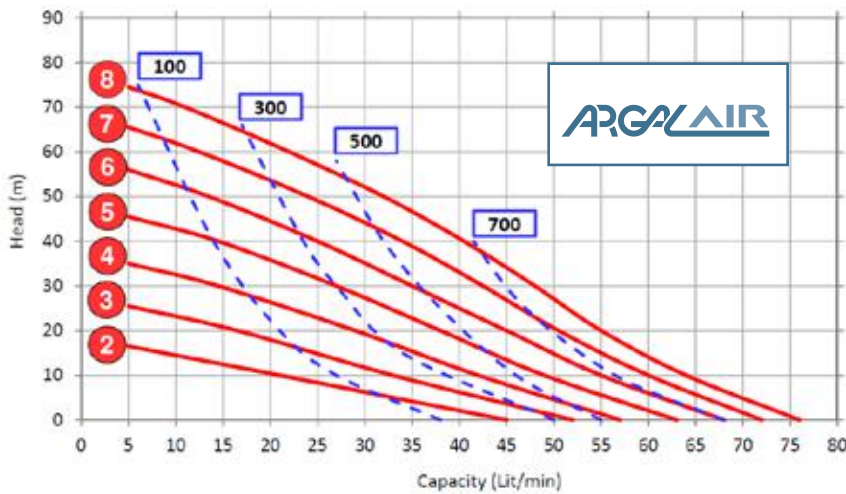
Connections scheme page 15

\* Optional





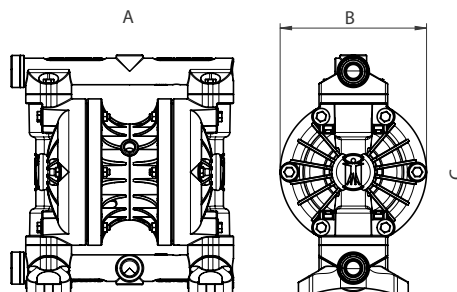
 PP+G	 +60°C	 5	 5,3 Kg	 0,4 Kg	 PVDF+C	 +80°C	 -10°C	 6,1 Kg	 0,4 Kg	 Alu	 +80°C	 -10°C	 5,5 Kg	 0,4 Kg	 AISI 316 L	 +80°C	 -10°C	 7,8 Kg	 0,4 Kg
Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging		Pump Packaging	



Air Pressure main supply      Air consumption

TECHNICAL DATA	
Fluid connections	½" BSP • NPT* • FLANGED* DN15
Air connection	¾" BSP • NPT*
Max flow rate	76 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	4 mca
Max suction lift wet	9,8 mca
Max size solids	3,2 mm
Noise level	75 dB(A)
Displacement per cycle	160

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

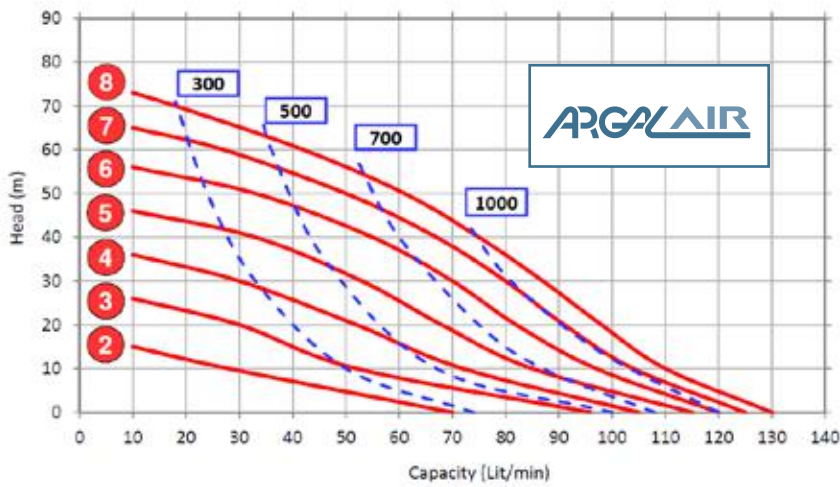
\* Optional

# ASTRA evo

## DDE 100



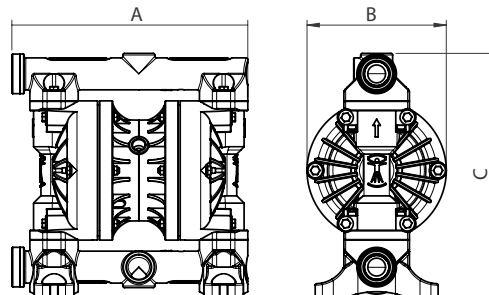
<b>WR</b> PP+G  Pump Packaging: 5,3 Kg + 0,4 Kg	<b>FC</b> PVDF+C  Pump Packaging: 6,1 Kg + 0,4 Kg	<b>Alu</b>  Pump Packaging: 5,5 Kg + 0,4 Kg	<b>AISI 316 L</b>  Pump Packaging: 7,8 Kg + 0,4 Kg
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**bar** Air Pressure main supply      **NI/min** Air consumption

TECHNICAL DATA	
<b>Fluid connections</b>	1" BSP • NPT* • FLANGED* DN25
<b>Air connection</b>	3/8" BSP • NPT*
<b>Max flow rate</b>	130 l/m'
<b>Max air pressure</b>	8 bar
<b>Max delivery head</b>	80 mca
<b>Max suction lift dry</b>	4 mca
<b>Max suction lift wet</b>	9,8 mca
<b>Max size solids</b>	5,5 mm
<b>Noise level</b>	80 dB(A)
<b>Displacement per cycle</b>	240

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



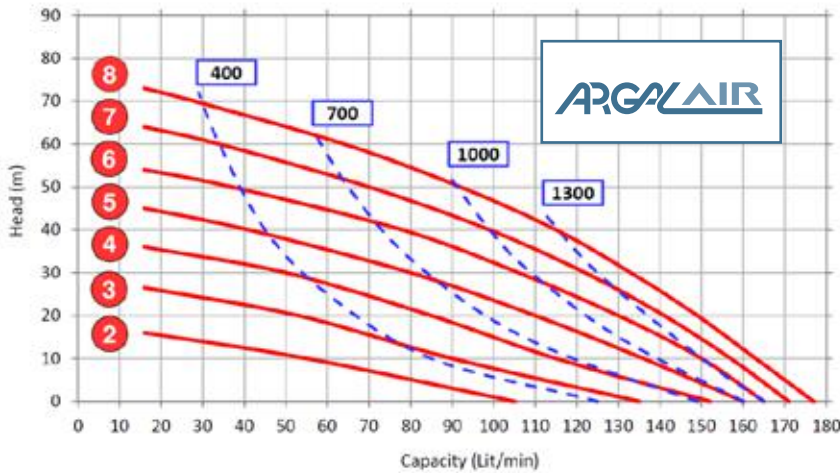
COMPOSITION	
<b>Wetted parts</b>	• PP+G • PVDF+C • ALU • AISI 316L
<b>Diaphragms</b>	• KEYFLEX + PTFE • SANTOPRENE + PTFE • KEYFLEX • SANTOPRENE
<b>Valve Balls</b>	• PTFE • SS • EPDM • NBR
<b>Valve Seats</b>	• PP • PVDF • AISI 316 • UPPE
<b>Gaskets</b>	• EPDM • FKM • NBR • PTFE

Connections scheme page 15

\* Optional



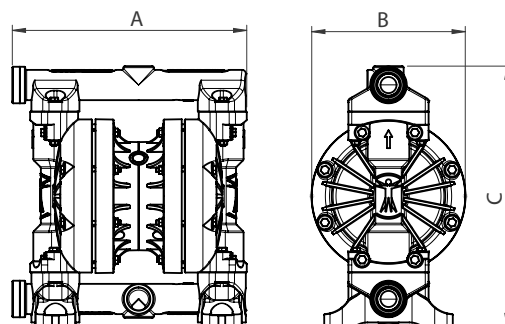
<b>WR</b> PP+G +60° -5 11 Kg + 0,7 Kg Pump Packaging	<b>FC</b> PVDF+C +80° -10° 13,4 Kg + 0,7 Kg Pump Packaging	<b>Alu</b> +80° -10° 12,4 Kg + 0,7 Kg Pump Packaging	<b>AISI 316 L</b> +80° -10° 16,9 Kg + 0,7 Kg Pump Packaging
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**bar** Air Pressure main supply      **NI/min** Air consumption

TECHNICAL DATA	
<b>Fluid connections</b>	1" BSP • NPT* • FLANGED* DN25
<b>Air connection</b>	½" BSP • NPT*
<b>Max flow rate</b>	175 l/m'
<b>Max air pressure</b>	8 bar
<b>Max delivery head</b>	80 mca
<b>Max suction lift dry</b>	4,5 mca
<b>Max suction lift wet</b>	9,8 mca
<b>Max size solids</b>	6 mm
<b>Noise level</b>	80 dB(A)
<b>Displacement per cycle</b>	440

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



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

Connections scheme page 15

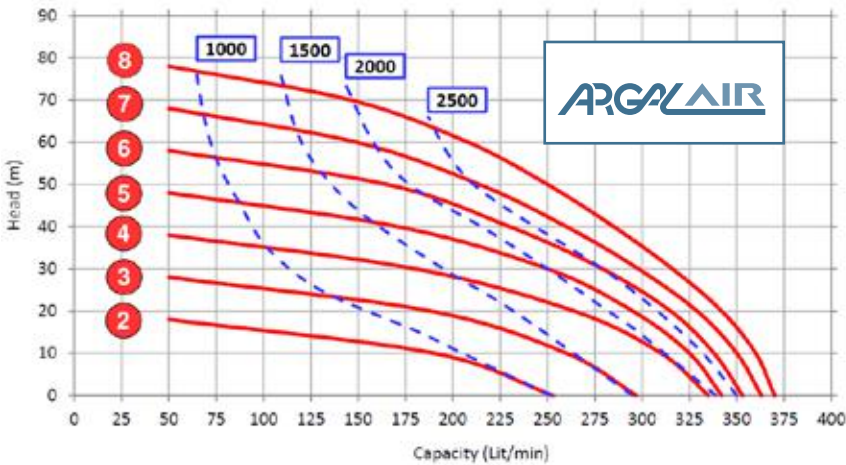
\* Optional

# ASTRA evo

## DDE 400



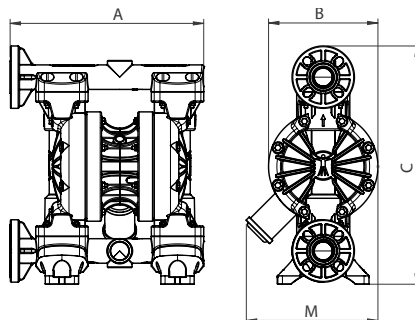
<b>WR</b> PP+G  Pump Packaging: 34 Kg + 2,2 Kg	<b>FC</b> PVDF+C  Pump Packaging: 41 Kg + 2,2 Kg	<b>Alu</b>  Pump Packaging: 38 Kg + 2,2 Kg	<b>AISI 316 L</b>  Pump Packaging: 54 Kg + 2,2 Kg
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**bar** Air Pressure main supply      **NI/min** Air consumption

TECHNICAL DATA	
Fluid connections	1½" BSP* • NPT* • FLANGED DN40
Air connection	¾" BSP • NPT*
Max flow rate	375 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	4,5 mca
Max suction lift wet	9,8 mca
Max size solids	7 mm
Noise level	80 dB(A)
Displacement per cycle	1.340

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

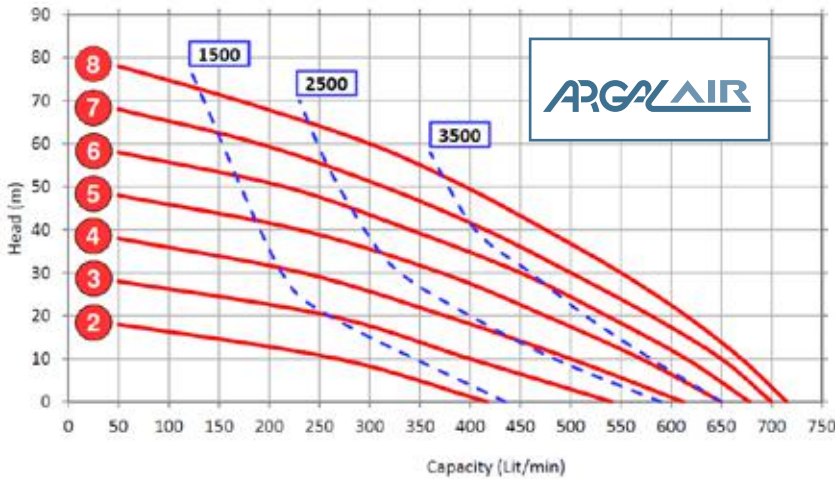
\* Optional

# ASTRA<sup>evo</sup> DDE 650

ARGALAIR



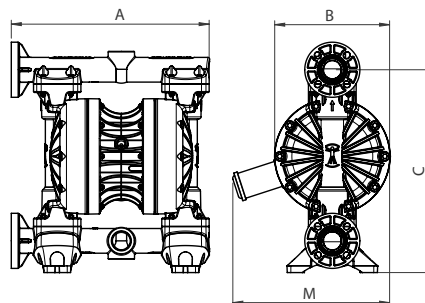
<b>WR</b> PP+G +60° -5° 34,5 Kg + 2,2 Kg Pump Packaging	<b>FC</b> PVDF+C +80° -10° 41,5 Kg + 2,2 Kg Pump Packaging	<b>Alu</b> +80° -10° 38,5 Kg + 2,2 Kg Pump Packaging	<b>AISI 316 L</b> +80° -10° 54,5 Kg + 2,2 Kg Pump Packaging
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**bar** Air Pressure main supply      **NI/min** Air consumption

TECHNICAL DATA	
Fluid connections	2" BSP* • NPT* • FLANGED DN50
Air connection	3/4" BSP • NPT*
Max flow rate	715 l/m'
Max air pressure	8 bar
Max delivery head	80 mca
Max suction lift dry	4,5 mca
Max suction lift wet	9,8 mca
Max size solids	9 mm
Noise level	80 dB(A)
Displacement per cycle	3.820

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	<ul style="list-style-type: none"> <li>PP+G • PVDF+C</li> <li>ALU • AISI 316L</li> </ul>
Diaphragms	<ul style="list-style-type: none"> <li>KEYFLEX + PTFE</li> <li>SANTOPRENE + PTFE</li> <li>KEYFLEX</li> <li>SANTOPRENE</li> </ul>
Valve Balls	<ul style="list-style-type: none"> <li>PTFE • AISI 316</li> <li>EPDM • NBR</li> </ul>
Valve Seats	<ul style="list-style-type: none"> <li>PP • PVDF</li> <li>AISI 316 • UPPE</li> </ul>
Gaskets	<ul style="list-style-type: none"> <li>EPDM • FKM</li> <li>NBR • PTFE</li> </ul>

Connections scheme page 15

\* Optional

## ASTRAevo 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



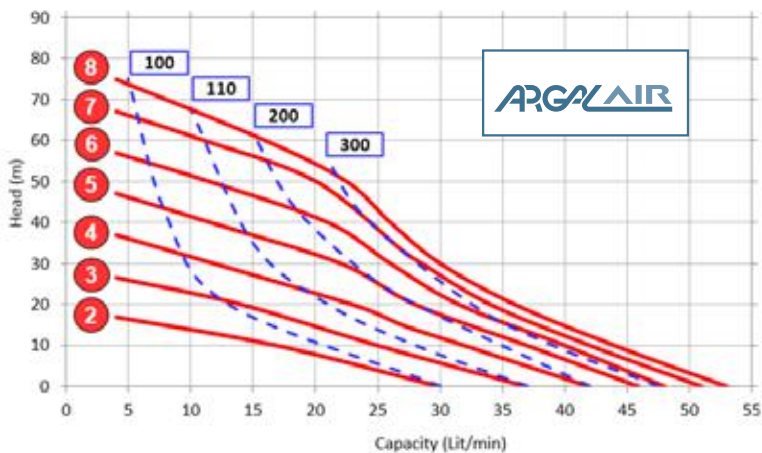
FOOD INDUSTRY		COSMETIC PHARMACEUTICAL INDUSTRY		VARIOUS INDUSTRY	
Product	cP	Product	cP	Product	cP
<b>Butter</b>	50.000	<b>Toothpaste</b>	200.000	<b>Oil SAE70</b>	18.000
<b>Mayonnaise</b>	6.000	<b>Glycerin</b>	1.400	<b>Barbotine</b>	50.000
<b>Honey</b>	1.500÷3.000	<b>Shampoo</b>	250	<b>Grease lubr.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

Thanks to their characteristics and design **ASTRAevo FOOD** 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 where 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 made of **125 Ra** (average **2,7 µm**) both certified for food

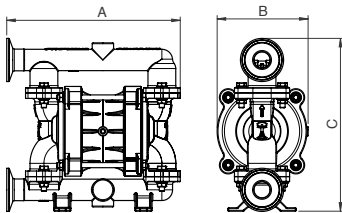
applications. All **ASTRAevo FOOD** pumps comply with ATEX Zone 2 regulation and are adequate to operate in areas with atmosphere potentially explosive and, with the variant of the conductive executions, can operate also in areas classified ATEX Zone 1. These pumps are capable to pump fluids with very high viscosity and temperature up to **95°C**. All other constructive features and functional characteristics are shared with the former Astra FOOD (DFA).



## DFE 30



**bar** Air Pressure main supply      **NI/min** Air consumption



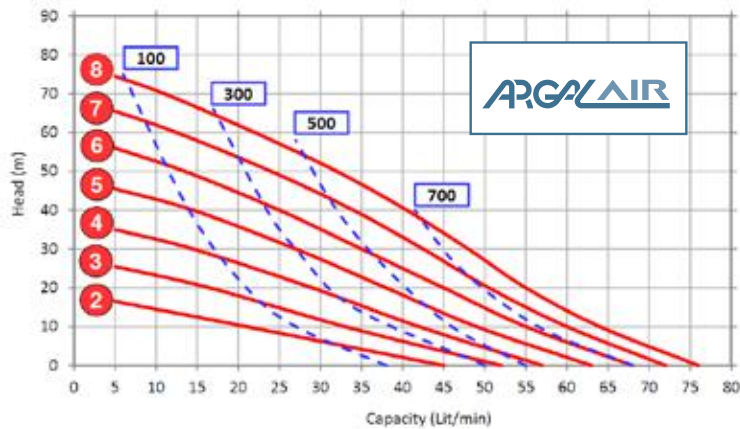
DIMENSIONS (mm)	
AISI 316L	A 203 B 106 C 197

TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1" • BSP • NPT
Air connection	6 mm
Max flow rate	52 l/m'
Max air pressure	8 bar
Displacement per cycle	70

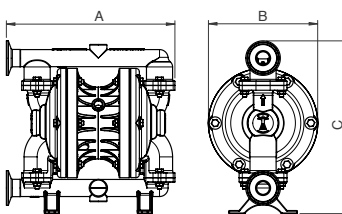
COMPOSITION	
Wetted parts	• AISI 316L Polished
Diaphragms	• KEYFLEX+PTFE
Valve Balls	• PTFE • AISI 316
Valve Seats	• AISI 316 • UPPE
Gaskets	• PTFE

Connections scheme page 15

## DFE 60



**bar** Air Pressure main supply      **NI/min** Air consumption



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

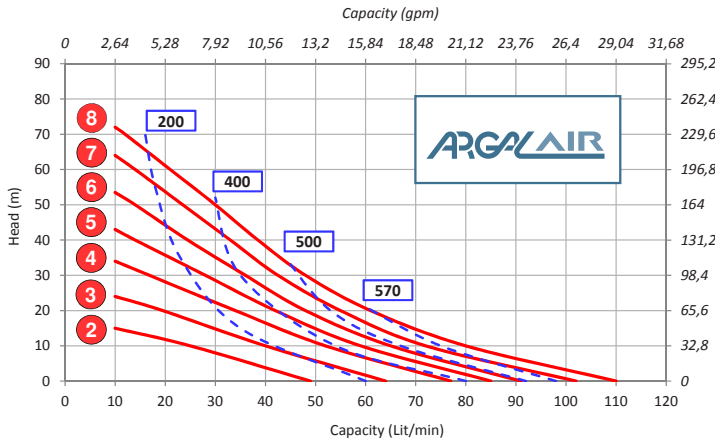
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1" • BSP • NPT
Air connection	¼" BSP • NPT*
Max flow rate	76 l/m
Max air pressure	8 bar
Displacement per cycle	60

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

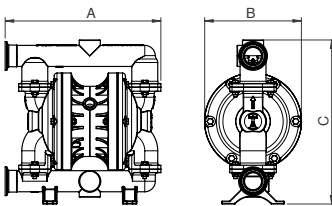
Connections scheme page 15



# DFE 100



**bar** Air Pressure main supply      **NI/min** Air consumption



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

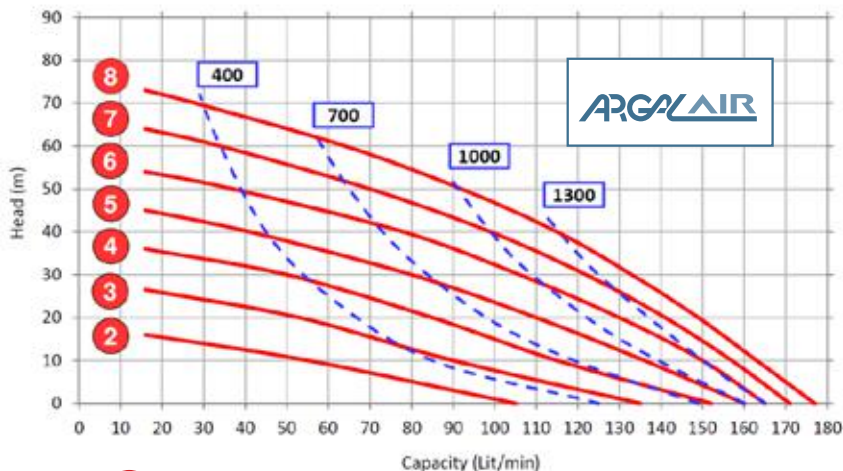
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1" 1/2 • BSP*
Air connection	3/8" BSP • NPT*
Max flow rate	130 l/m'
Max air pressure	8 bar
Displacement per cycle	240

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

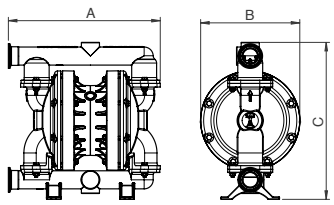
Connections scheme page 15

\* Optional

# DFE 160



**bar** Air Pressure main supply      **NI/min** Air consumption



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

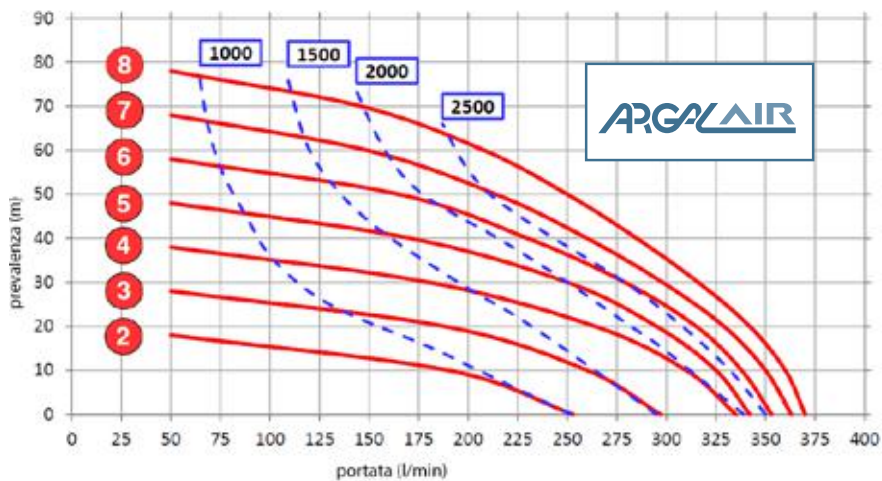
TECHNICAL DATA	
Fluid connections	• Tri-Clamp 1" 1/2 • BSP*
Air connection	3/8" BSP • NPT*
Max flow rate	175 l/m'
Max air pressure	8 bar
Displacement per cycle	440

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

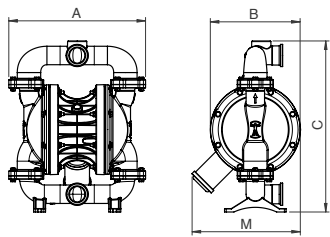
Connections scheme page 15

\* Optional

## DFE 400



**bar** Air Pressure main supply      **NI/min** Air consumption



DIMENSIONS (mm)	
<b>AISI 316L</b>	<b>A 400 B 263 C 501 M 317</b>

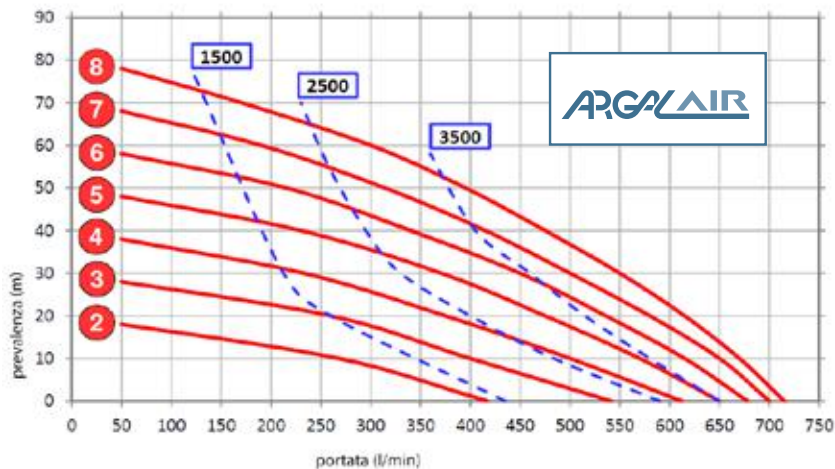
TECHNICAL DATA	
<b>Fluid connections</b>	• Tri-Clamp 2"
<b>Air connection</b>	½" BSP • NPT*
<b>Max flow rate</b>	370 l/m'
<b>Max air pressure</b>	8 bar
<b>Displacement per cycle</b>	1.340

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

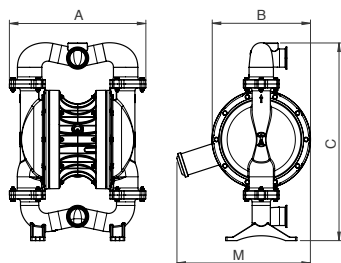
**Connections scheme page 15**

\* Optional

## DFE 650



**bar** Air Pressure main supply      **NI/min** Air consumption



DIMENSIONS (mm)	
<b>AISI 316L</b>	<b>A 479 B 345 C 695 M 381</b>

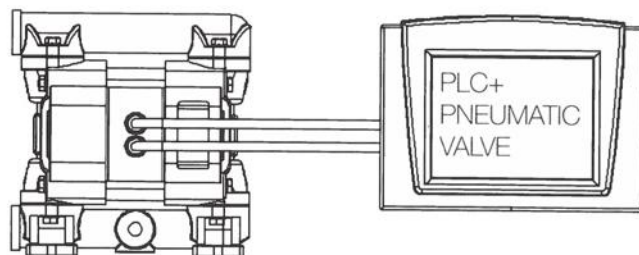
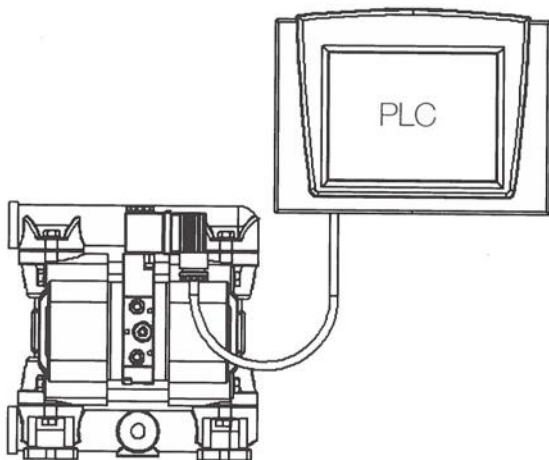
TECHNICAL DATA	
<b>Fluid connections</b>	• Tri-Clamp 2½" • BSP*
<b>Air connection</b>	¾" BSP • NPT*
<b>Max flow rate</b>	715 l/m'
<b>Max air pressure</b>	8 bar
<b>Displacement per cycle</b>	3.820

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

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\* Optional

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 “ASTRAevo FREE” versions can be interconnected with a large range of devices to completely automatise 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

**ARGAL srl**

Via Labirinto, 159 - 25125 BRESCIA - (Italy)  
Phone +39 030 3507011 - fax +39 030 3507077  
info@argal.it - [www.argalpumps.com](http://www.argalpumps.com)



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