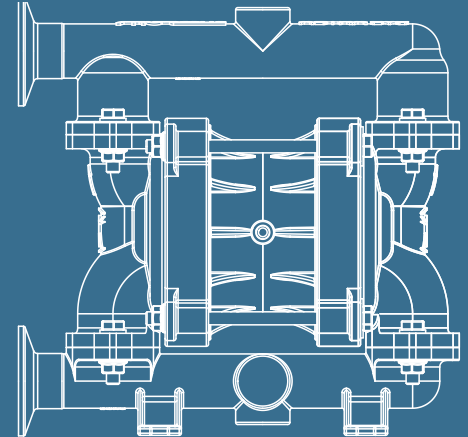
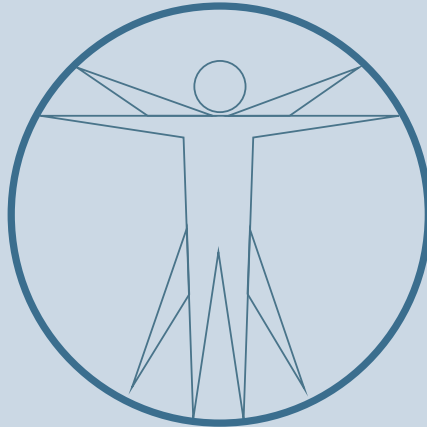
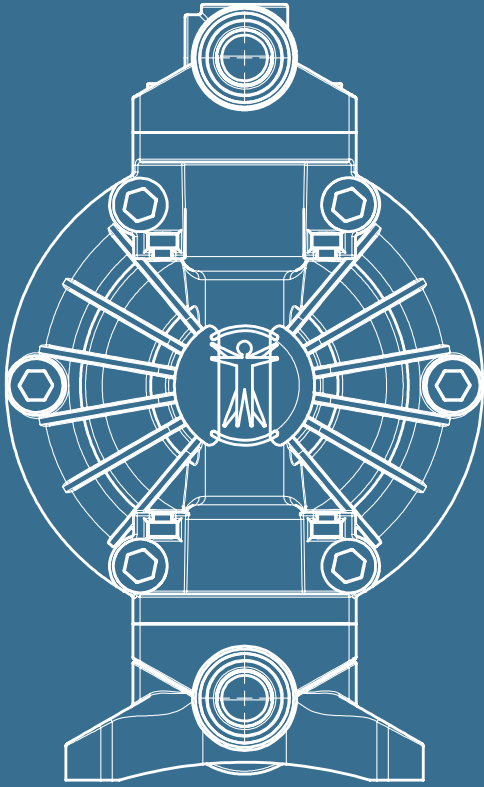


# ARGALAIR

by ARGAL



**PUMPS**  
FOR ALL TYPES  
OF LIQUIDS

*AIR-OPERATED DOUBLE-DIAPHRAGM*  
**ARGALAIR PUMPS**  
**PRODUCTION PROGRAM**



# STAY TUNED!



## Website

Find out all our services, information and contact details! To get the latest news, please subscribe to our newsletters!



WEBSITE



CONTACTS



NEWSLETTERS

## Follow us

We are also on social media! Follow us to be updated ontime on what happens in ARGAL



LINKEDIN



YOUTUBE



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# PUMP MANUFACTURERS

## SINCE 1975

**ARGAL** boasts +45 years of activity in the invention and production of pumps made of thermoplastic material, compounds and corrosion-resistant metal alloys. During the past decade, significant efforts were directed to research and development on the entire production. Such an effort resulted in entirely new or renovated pump ranges.

Our mission is a continuous and constant technological improvement, along the path of innovation instead of emulation.

How? By offering the best technical performance and engineering obtaining the leadership in performance while providing appropriate responses to the needs of market dynamics by realizing a “State-of-the-art quality.

Today the company has an extensive range of pumps in various constructions for industrial applications requiring temperatures ranging from  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ , with load capacities up to  $1700\text{ m}^3/\text{h}$ -head over the 100 m.

### ARGAL is certified ISO 9001:2015





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# OVERVIEW

## MATERIALS

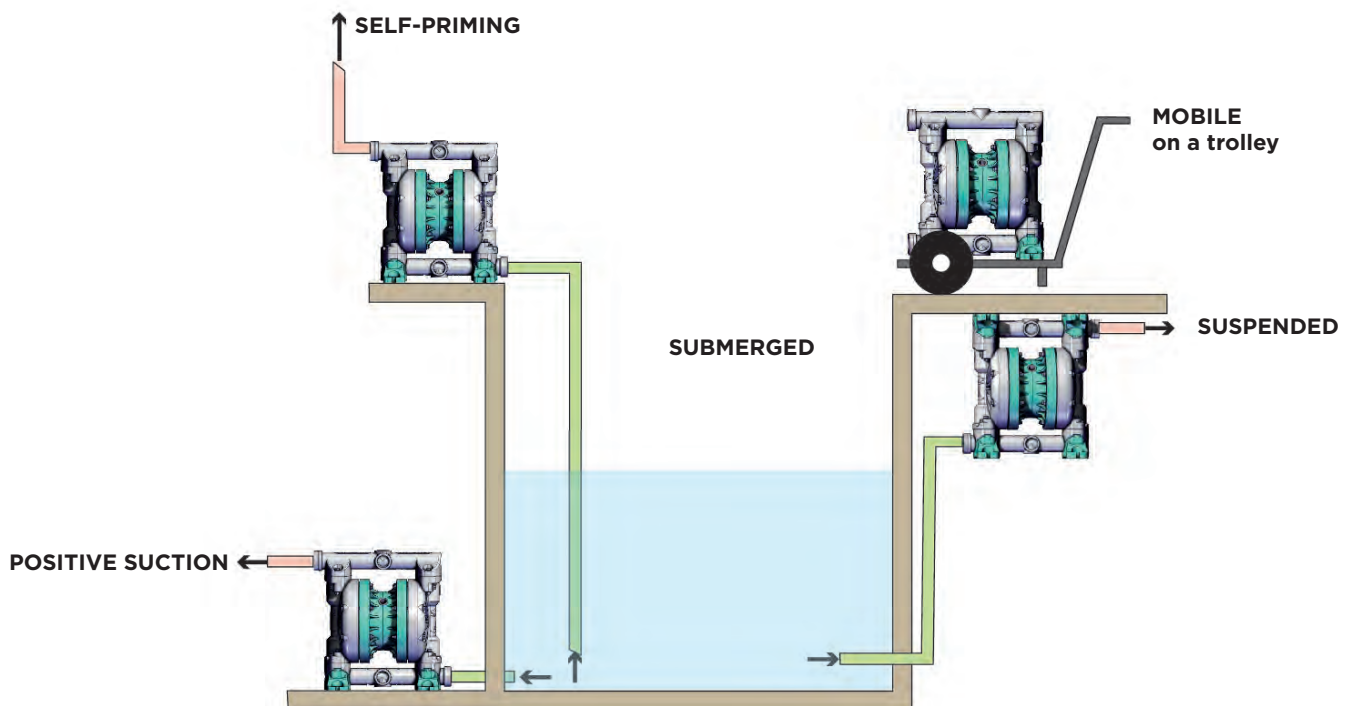
- PP +G** Glass reinforced Polypropylene
- PP +C** Carbon reinforced Polypropylene
- PVDF +C** Carbon reinforced Polyvinylidene Fluoride
- POMc** Acetal Copolymer
- PE 1000** Ultra-High Molecular Weight Polyethylene
- PTFE** Poly Tetra Fluoro Ethylene

- Alu** Aluminum
- AISI 316 L** Stainless Steel (low carbon)
- FRP** Fiberglass reinforced Polymer resin



CHEMICAL  
COMPATIBILITY  
CHART

## INSTALLATIONS



| series  | size (inch) | materials                                       | flow rate (l/min) | solids (mm) | compliance |
|---|-------------|---|-------------------|-------------|------------|
| ASTRAevo                                      | 1/4"        | PP+G • PVDF+C • POMc+G                          | 10                | 1.5         |            |
| ASTRAevo                                      | 3/8"        | PP+G • PVDF+C • AISI 316L                       | up to 20          | 3.5         |            |
| ASTRAevo<br>ASTRAevoFOOD<br>ASTRASolid<br>DDQ | 1/2"        | PP+G • PVDF+C • ALU • AISI 316L • PE1000 • PTFE | up to 75          | 3.8         | FDA        |
| ASTRAevo<br>ASTRAevoFOOD                      | 3/4"        | PP+G • PVDF+C                                   | up to 105         | 5.5         | FDA        |
| ASTRAevo<br>ASTRAevoFOOD<br>ASTRASolid<br>DDQ | 1"          | PP+G • PVDF+C • ALU • AISI 316L • PE1000 • PTFE | up to 170         | 6           | FDA        |
| ASTRAevo<br>ASTRAevoFOOD<br>ASTRASolid<br>DDQ | 1 1/2"      | PP+G • PVDF+C • ALU • AISI 316L • PE1000 • PTFE | up to 370         | 7           | FDA        |
| ASTRAevo<br>ASTRAevoFOOD<br>ASTRASolid        | 2"          | PP+G • PVDF+C • ALU • AISI 316L • PE1000        | up to 715         | 9           | FDA        |
| MISTRAL                                       | 3"          | AISI 316L • PE1000                              | up to 1100        | 11          |            |
| MISTRAL                                       | 4"          | AISI 316L                                       | up to 1280        | 13          |            |

## CONFORMITY



Upon request, **ASTRAevo** pumps can be set with conductive materials and be compliant with

- **ATEX Zone 2 (II 3G Ex h IIB T4 Gb X | II 3D Ex h IIIB T135°C Db X)**
- **ATEX Zone 1 (II 2G Ex h IIB T4 Gb X | II 2D Ex h IIIB T135°C Db X)**



Made for food applications and related operations: the wetted parts are made of **electropolished AISI 316L with 125 Ra surface finishing** - recommended material for Food&Beverages processing.

ARGAL delivers the declaration that the materials of construction are compliant with FDA conformity.

- **Great choice of high-quality materials**
- **Continuous, discontinuous and mobile operation**
- **Dry-running**
- **Self-priming**
- **Dead-head**
- **Low air consumption**
- **Ideal with shear-sensitive and/or viscous liquids**
- **Easy installation and maintenance**
- **Variable flow and discharge pressure**
- **Unique internal design and components**

## ASTRAevo



- 10 models available from ¼” to 2”
- Materials: PP+g · PP+c · PVDF+c · POMc · ALU · AISI 316I
- Max capacity: 715 l/min
- Integrated muffler up to 1”
- Upon request: ATEX Zone 2 or 1 compliance

| Main sectors         |
|----------------------|
| Chemical processes   |
| Industrial processes |
| Laboratories         |
| Flexography          |
| OEM market           |

They are ideal for transferring, dosing, injecting corrosive, aggressive and viscous liquids with high performance and reduced air consumption.

## ASTRAevoFOOD



- 6 models available from ½” to 2”
- Material: electropolished AISI 316I
- Max capacity: 715 l/min
- Shear-sensitive liquids

| Main sectors              |
|---------------------------|
| Food&Beverages            |
| Pharmaceutical processes  |
| Laboratories              |
| Cosmetics                 |
| Shear-sensitive processes |

The series is conceived for the Food & Beverages industry and related ones. All materials in contact with the liquid are FDA compliant.

## QUANTUM



- 3 models available from ½” to 1 ½”
- Materials: PTFE · PE1000
- Max capacity: 450 l/min
- Ideal for ultra-pure liquid transfer
- Upon request: ATEX Zone 2 compliance

| Main sectors             |
|--------------------------|
| Pharmaceutical processes |
| Photovoltaic             |
| Laboratories             |
| Metal treatments         |
| OEM market               |

Cubic-shape pump from machined PTFE or pure PE which offers an unlimited chemical resistance, and allow the pumping of viscous liquids.



## ASTRA SOLID FDA

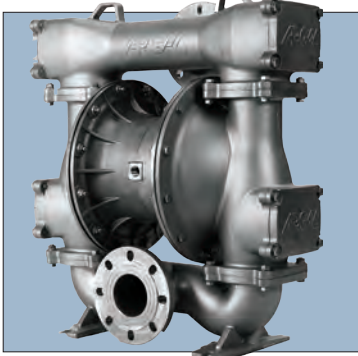


- 4 models available from ½" to 2"
- Materials: PE1000
- Max capacity: 715 l/min
- Integrated muffler up to 1"

| Main sectors               |
|----------------------------|
| Metal & mineral treatments |
| Wastewater treatments      |
| Seawater applications      |
| Heavy-duty processes       |
| Abrasive processes         |

The pump is entirely made from machined **Ultra High Molecular Weight Polyethylene**. It offers excellent mechanical properties, high-abrasion and stress resistance.

## MISTRAL



- 3 models available with size 3" and 4"
- Material: PE1000 (3") · AISI 316I (3" - 4")
- Max capacity: 1280 l/min
- Easy access valve
- Solid handling up to 13 mm
- Corrosion and abrasive-resistant materials

| Main sectors               |
|----------------------------|
| Offshore platforms         |
| Cement mixing              |
| Metal & mineral extraction |
| Heavy-duty processes       |
| Chemical processes         |

It represents the safest and most efficient pneumatic solution for heavy-industrial, dangerous and/or continuous operations.

### ARGALAIR's UNIQUE ADS\* made of only 5 components



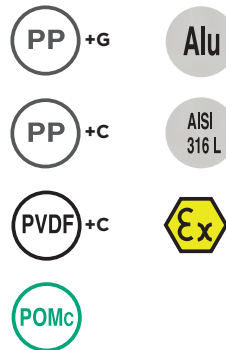
\*Air Distribution System

# ASTRAevo

The series distinguishes itself from competitors' AODD pumps thanks to the choice of materials: from thermoplastic polymers reinforced with glass or carbon fiber to the new distribution system, high-quality material for diaphragms, and optimized design.

They are ideal for transferring, dosing, injecting corrosive, shear-sensitive and viscous liquids with high performance and reduced air consumption.

- Dry-running
- Self-priming
- Non-icing air valve system
- Ideal with shear sensitive liquids
- Easy installation and maintenance
- Integrated muffler up to 1"



- Unique internal design and components
- High-quality materials for diaphragms
- Best-in-class air consumption
- Upon request: ATEX Zone 2 or Zone 1 compliance\* with special conductive material for body and parts

\* Zone 2 (II 3G Ex h IIB T4 Gb X | II 3D Ex h IIIB T135°C Db X)  
Zone 1 (II 2G Ex h IIB T4 Gb X | II 2D Ex h IIIB T135°C Db X)

## MATERIALS

|                               |                       |  |
|-------------------------------|-----------------------|--|
| <b>Pump materials</b>         | <b>1</b>              | • PP+G • PP+C • PVDF+C • ALU • AISI 316L • POM-c |
| <b>Diaphragms</b>             | <b>Fluoropolymer</b>  | • modified PTFE                                  |
|                               | <b>Thermoplastics</b> | • TPE (Keyflex®) • TPV (Santoprene®)             |
|                               | <b>Reinforced</b>     | • FKM (Viton®) • EPDM • NBR                      |
| <b>Valve balls</b>            | <b>3</b>              | • PTFE • AISI 316 • EPDM • NBR • FKM (Viton®)    |
| <b>Valve seats &amp; cage</b> | <b>4</b>              | • PP • PVDF • AISI 316 • PE1000 • ALU            |
| <b>O-ring</b>                 | <b>5</b>              | • EPDM • FKM (Viton®) • NBR • PTFE • FFKM        |



| MATERIALS                         | PP+g • PP+c  | PVDF+c         | Alu             | AISI 316L       |
|-----------------------------------|--------------|----------------|-----------------|-----------------|
| <b>TEMPERATURES<br/>min - max</b> | -5°C - +60°C | - 10°C - +90°C | - 10°C - +100°C | - 10°C - +100°C |

## CONNECTIONS

▶ Standard configuration with threaded connections BSP "L-L" for all plastic and aluminum pumps and for AISI 316L versions up to model DDE 160 (1)

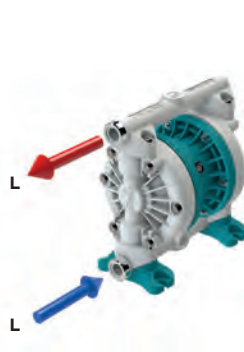
▶ Other connections are available upon request (2)

! Models DDE 400 and DDE 650 made of AISI 316 L are set with "F-B" connections.

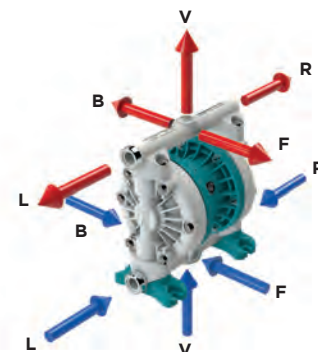
! Model DDE 020 cannot be set with F or B connections

! Model DDE 020 set with V connection is not recommended

For any questions on connection configuration, contact our sales force.



STANDARD<sup>(1)</sup>



UPON REQUEST<sup>(2)</sup>

## APPLICATIONS



**ASTRAevo pumps** (1 1/2" PP+glass version) installed for wastewater treatments (Belgium).



**ASTRAevo pumps** (1/2" PP+glass version) installed for chemical transfer (Europe).



**ASTRAevo pumps** (1 1/2" metallic version) installed for lubricant transfer (China).

- **Chemical processes**  
acids, concentrated liquids, acid mix, liquids with solids
- **Industrial processes**  
residual waste, cleaning solutions
- **Laboratories**  
cleaning solutions, mix of acids
- **Flexography**  
inks, paintings and glues
- **Seawater applications**  
seawater, brine, coolants

**bar** Air pressure

**l/min** Air consumption



Dimensions

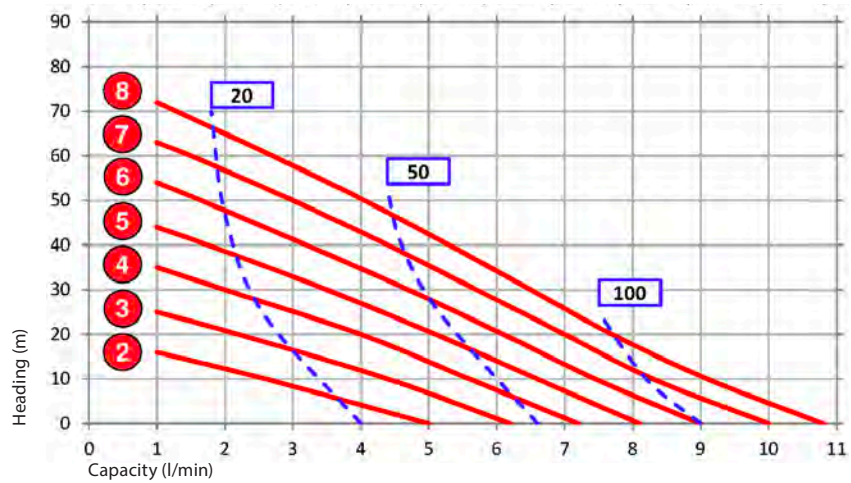
\* optional

## DDE 007 (1/4")

| TECHNICAL DATA     |                   |
|--------------------|-------------------|
| Fluid connections  | 1/4" BSP<br>• NPT |
| Air connections    | 4 mm              |
| Max flow rate      | 10 l/m'           |
| Max air pressure   | 8 bar             |
| Displacement/cycle | <70               |
| Max size solids    | <3 mm             |

| DIMENSIONS (mm)               |                  |
|-------------------------------|------------------|
| PP+g PP+c<br>PVDF+c<br>POMc+g | A 128 B 74 C 126 |

### MATERIALS

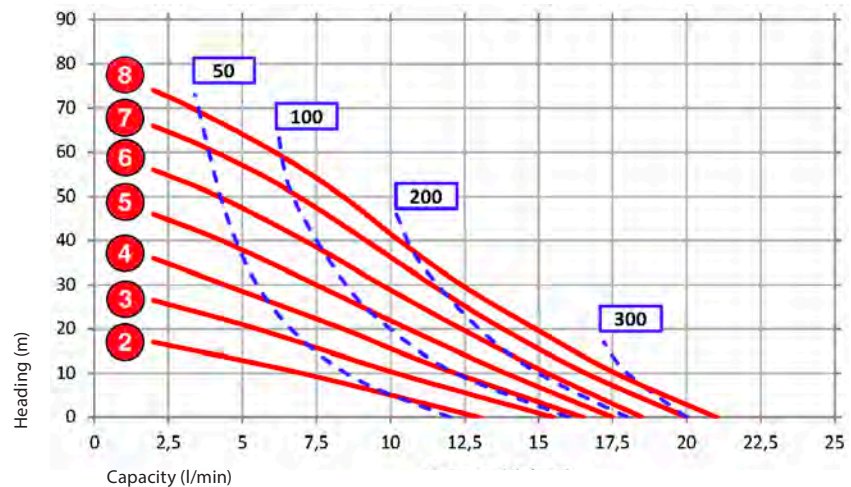


## DDE 015 (1/4")

| TECHNICAL DATA     |                   |
|--------------------|-------------------|
| Fluid connections  | 1/4" BSP<br>• NPT |
| Air connections    | 6 mm              |
| Max flow rate      | 15 l/m'           |
| Max air pressure   | 8 bar             |
| Displacement/cycle | 70                |
| Max size solids    | 3 mm              |

| DIMENSIONS (mm)     |                   |
|---------------------|-------------------|
| PP+g PP+c<br>PVDF+c | A 183 B 107 C 203 |

### MATERIALS

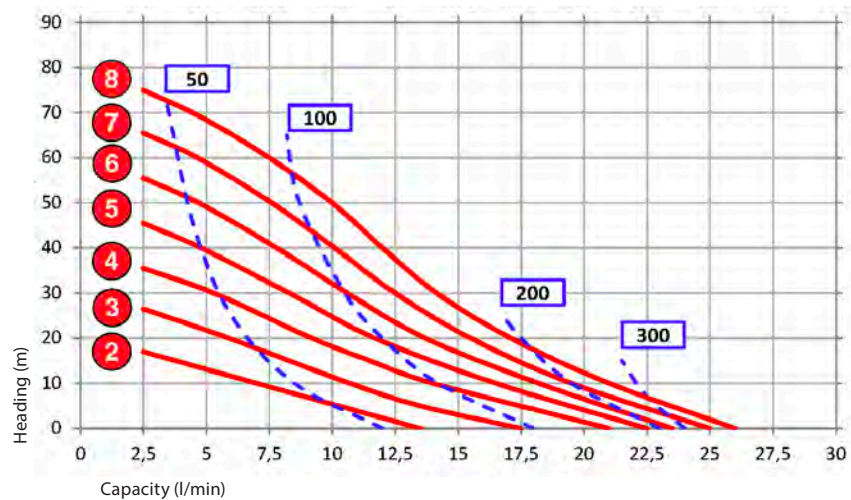


## DDE 020 (3/8")

| TECHNICAL DATA     |                   |
|--------------------|-------------------|
| Fluid connections  | 3/8" BSP<br>• NPT |
| Air connections    | 6 mm              |
| Max flow rate      | 20 l/m'           |
| Max air pressure   | 8 bar             |
| Displacement/cycle | 70                |
| Max size solids    | 3 mm              |

| DIMENSIONS (mm)     |                     |
|---------------------|---------------------|
| PP+g PP+c<br>PVDF+c | A 192,5 B 107 C 209 |

### MATERIALS

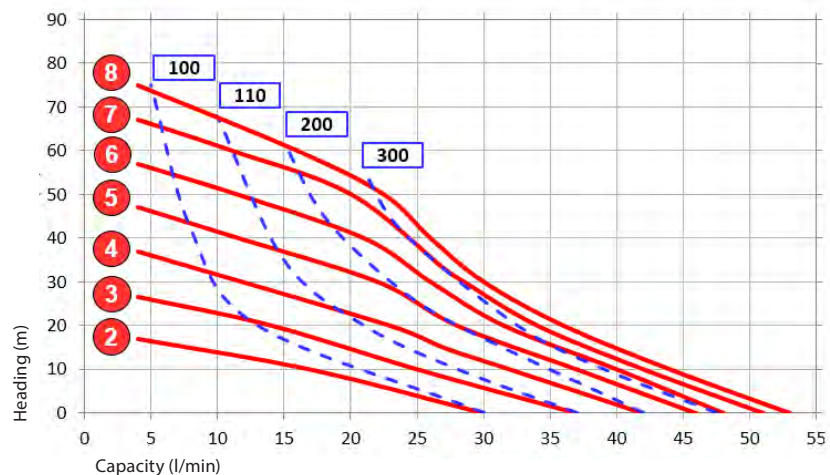


## DDE 030 (1/2")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1/2" BSP<br>• NPT •<br>FLANGED<br>DN15 |
| Air connections    | 6 mm                                   |
| Max flow rate      | 50 l/m'                                |
| Max air pressure   | 8 bar                                  |
| Displacement/cycle | 70                                     |
| Max size solids    | 3 mm                                   |

| DIMENSIONS (mm)     |                     |
|---------------------|---------------------|
| PP+g PP+c<br>PVDF+c | A 192,5 B 107 C 209 |
| Alu                 | A 194 B 107 C 205   |
| AISI 316L           | A 203 B 107 C 197   |

### MATERIALS



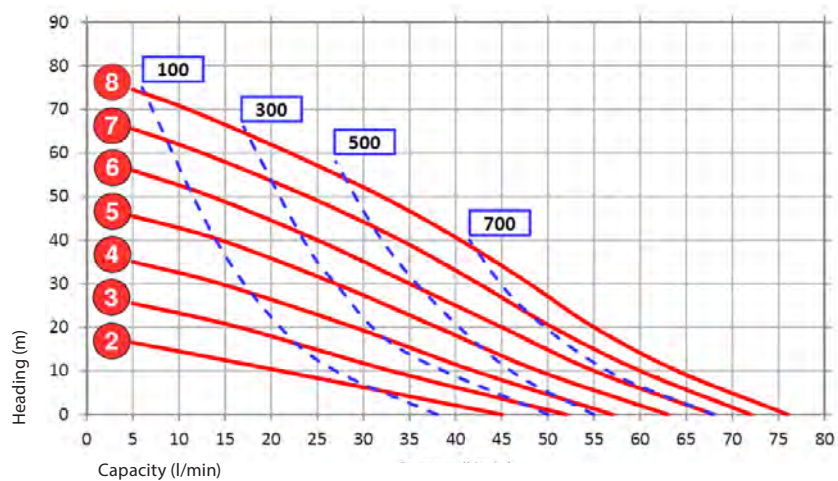
# ASTRA evo

## DDE 060 (1/2")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1/2" BSP<br>• NPT •<br>FLANGED<br>DN15 |
| Air connections    | 3/8" BSP<br>• NPT*                     |
| Max flow rate      | 76 l/m'                                |
| Max air pressure   | 8 bar                                  |
| Displacement/cycle | 160                                    |
| Max size solids    | 3,2 mm                                 |

| DIMENSIONS (mm) |                       |
|-----------------|-----------------------|
| PP+g<br>PVDF+c  | A 243 B 160 C 260,5   |
| Alu             | A 245,5 B 160 C 253,5 |
| AISI 316L       | A 246,5 B 160 C 247,5 |

### MATERIALS

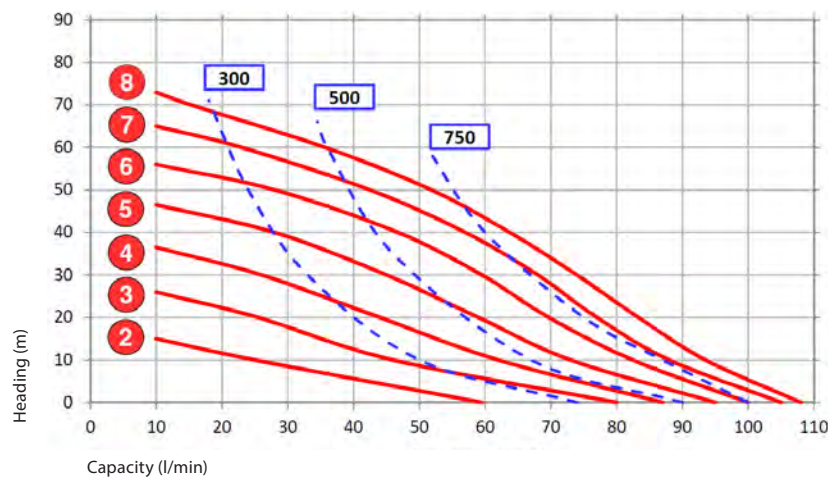


## DDE 080 (3/4")

| TECHNICAL DATA     |   |
|--------------------|---|
| Fluid connections  | 3/4" BSP<br>• NPT* •<br>FLANGED<br>DN20 |
| Air connections    | 3/8" BSP<br>• NPT*                      |
| Max flow rate      | 105 l/m'                                |
| Max air pressure   | 8 bar                                   |
| Displacement/cycle | 160                                     |
| Max size solids    | 3,2 mm                                  |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| PP+g PVDF+c     | A 288 B 170 C 297 |

### MATERIALS

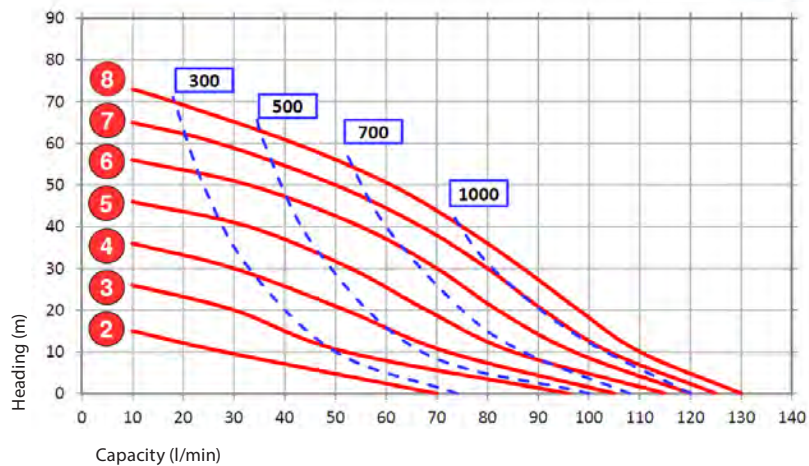


## DDE 100 (1")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1" BSP •<br>NPT* •<br>FLANGED<br>DN25* |
| Air connections    | 3/8" BSP<br>• NPT*                     |
| Max flow rate      | 130 l/m'                               |
| Max air pressure   | 8 bar                                  |
| Displacement/cycle | 240                                    |
| Max size solids    | 5,5 mm                                 |

| DIMENSIONS (mm) |                     |
|-----------------|---------------------|
| PP+g<br>PVDF+c  | A 288 B 170 C 297   |
| Alu             | A 292 B 170 C 289   |
| AISI 316L       | A 275,5 B 170 C 288 |

### MATERIALS

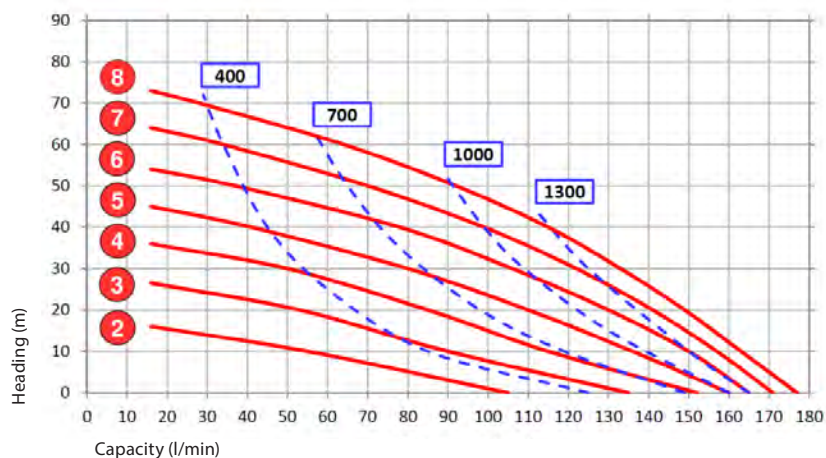


## DDE 160 (1")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1" BSP •<br>NPT* •<br>FLANGED<br>DN25* |
| Air connections    | 3/8" BSP<br>• NPT*                     |
| Max flow rate      | 175 l/m'                               |
| Max air pressure   | 8 bar                                  |
| Displacement/cycle | 440                                    |
| Max size solids    | 6 mm                                   |

| DIMENSIONS (mm)     |                     |
|---------------------|---------------------|
| PP+g PP+c<br>PVDF+c | A 310 B 203 C 344,5 |
| Alu                 | A 310 B 203 C 335   |
| AISI 316L           | A 312 B 203 C 321,5 |

### MATERIALS



## DDE 400 (1 1/2")

| TECHNICAL DATA     |                                       |
|--------------------|---------------------------------------|
| Fluid connections  | FLANGED<br>DN40 • 1 1/2"<br>BSP • NPT |
| Air connections    | 3/4" BSP<br>• NPT                     |
| Max flow rate      | 375 l/m'                              |
| Max air pressure   | 8 bar                                 |
| Displacement/cycle | 1,340                                 |
| Max size solids    | 7 mm                                  |

| DIMENSIONS (mm) |        |         |                |
|-----------------|--------|---------|----------------|
| PP+v<br>PVDF+c  | thread | A 429,5 | B 263* C 538   |
|                 | flange | A 465,5 | B 263* C 573   |
| Alu             |        | A 467   | B 263,5* C 573 |
| AISI 316L       |        | A 400   | B 263,5* C 501 |

\*with muffler: 317 mm

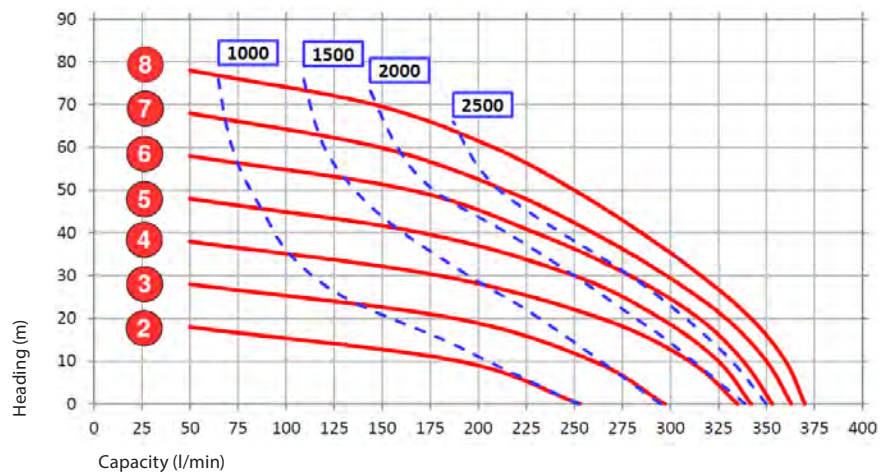
### MATERIALS



flanged



threaded



## ARgemini

### Pumping two liquids simultaneously

The upper manifold has two outlets and the lower manifold two inlets, this allows a double pumping.

This pump configuration is ideal for paintings, inks or varnishes used in flexographic sector or pulp and paper industry.





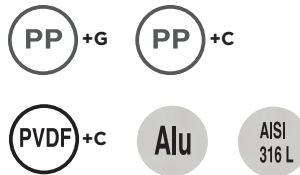
## DDE 650 (2")

| TECHNICAL DATA     |                                   |
|--------------------|-----------------------------------|
| Fluid connections  | FLANGED<br>DN50 • 2"<br>BSP • NPT |
| Air connections    | 3/4" BSP<br>• NPT                 |
| Max flow rate      | 715 l/m'                          |
| Max air pressure   | 8 bar                             |
| Displacement/cycle | 3.820                             |
| Max size solids    | 9 mm                              |

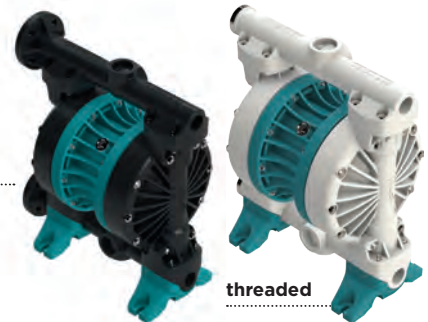
| DIMENSIONS (mm) |        |                      |
|-----------------|--------|----------------------|
| PP+v<br>PVDF+c  | thread | A 594 B 345* C 690   |
|                 | flange | A 563 B 345* C 662,5 |
| Alu             |        | A 594 B 345* C 688   |
| AISI 316L       |        | A 478 B 346* C 694   |

\*with muffler: 381 mm

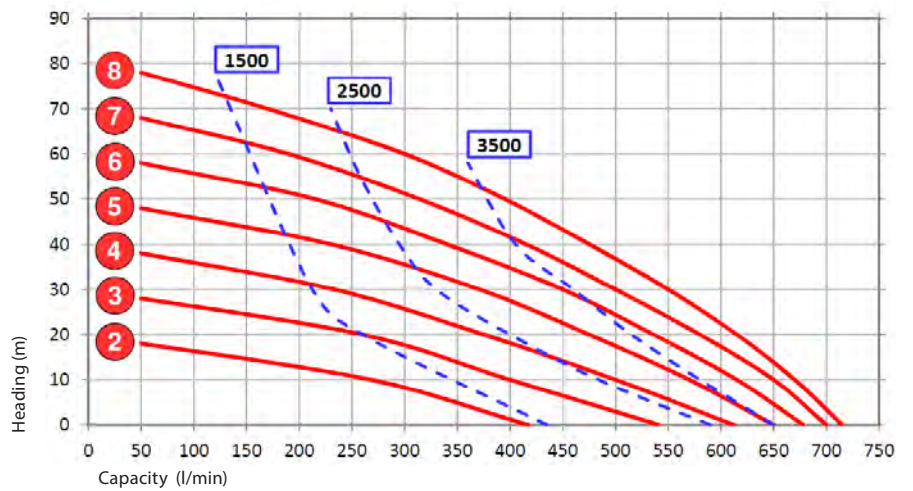
### MATERIALS



flanged



threaded



## ARdrum

### Drum kit for unloading

Available in size 1/2" and 1". The pump comes with the fixing bracket and suction tube.



# ASTRAevoFOOD

**ASTRAevoFOOD** series is conceived for products used in the Food & Beverages industry and related ones. All materials in contact with the liquid are FDA compliant.

The DDE SPN models ensure an **optimal reliability, clean operations** with **relevant performance and efficiency** on a short and long term.

AISI 316 L **electropolished**

PE 1000

Ex

FDA



- Electropolished AISI 316L with surface finishing 125 Ra (roughness around 2,7 Qm)
- FDA conformity
- For shear-sensitive liquids, also with solids
- For high viscous liquids
- No heat neither alteration of the liquid
- Temperature up to 120°C
- Upon request: ATEX Zone 2 or Zone 1\*
- Ideal for cosmetics and pharmaceutical processes

\* Zone 2 (II 3G Ex h IIB T4 Gb X | II 3D Ex h IIIB T135°C Db X)  
Zone 1 (II 2G Ex h IIB T4 Gb X | II 2D Ex h IIIB T135°C Db X)

## MATERIALS

|                               |          |                                      |
|-------------------------------|----------|--------------------------------------|
| <b>Body materials</b>         | <b>1</b> | • AISI 316L electropolished • PE1000 |
| <b>Diaphragms</b>             | <b>2</b> | • HYTREL+PTFE • PTFE • EPDM          |
| <b>Valve balls</b>            | <b>3</b> | • PTFE • AISI 316 • EPDM             |
| <b>Valve seats &amp; cage</b> | <b>4</b> | • AISI 316 • PE1000                  |
| <b>O-ring</b>                 | <b>5</b> | • PTFE • EPDM                        |



|                                  | electropolished AISI316I                                      | PE1000           |
|----------------------------------|---|------------------|
| <b>Pumped liquids</b>            | Raw chemical, active chemicals, solvents, oils and lubricants | Abrasive liquids |
| <b>Working temperature (max)</b> | 120°C   | 70°C             |

## APPLICATIONS

|                    | Pumped liquids  | Viscosity cPs | Ideal Construction |
|--------------------|-----------------|---------------|--------------------|
| Food & Beverages   | Butter          | 50.000        | PE1000             |
|                    | Mayonaise       | 6.000         | PE1000             |
|                    | Honey           | 1.500÷3.000   | AISI 316I          |
|                    | Jam             | <1.000        | PE1000             |
|                    | Yogurt          | 100           | AISI 316I          |
|                    | Olive oil       | 100           | AISI 316I          |
| Cosmetics & Pharma | Toothpaste      | 200.000       | PE1000             |
|                    | Shampoo         | 3.000         | AISI 316I          |
|                    | Wax             | 500           | PE1000             |
|                    | Hand cold cream | 780           | PE1000             |
|                    | Detergent       | 1.470         | AISI 316I          |
| Various industries | SAE70 oil       | 18.000        | AISI 316I          |
|                    | Barbottine      | 50.000        | PE1000             |
|                    | Lubricants      | 2.000         | AISI 316I          |
|                    | Varnished       | 300           | AISI 316I          |
|                    | Printer inks    | 550÷2.200     | AISI 316I          |
|                    | Glue            | 1.200÷1.400   | PE1000             |



*ASTRAevo FOOD pumps (1/2" metallic version) installed at PHARMASYSTEMS (Europe).*

- **Chili sauce production**  
transfer from stockage tank to mixing tank
- **Chocolate production**  
lecitine dosing
- **Distillery**  
alcol transfer
- **Brewery**  
brine unloading
- **Laboratory**  
6% hydrogen peroxyde circulation
- **Cosmetics**  
viscous substances loading (shower gel, shampoo,...)





Air pressure

NI/min

Air consumption



Dimensions

\* optional

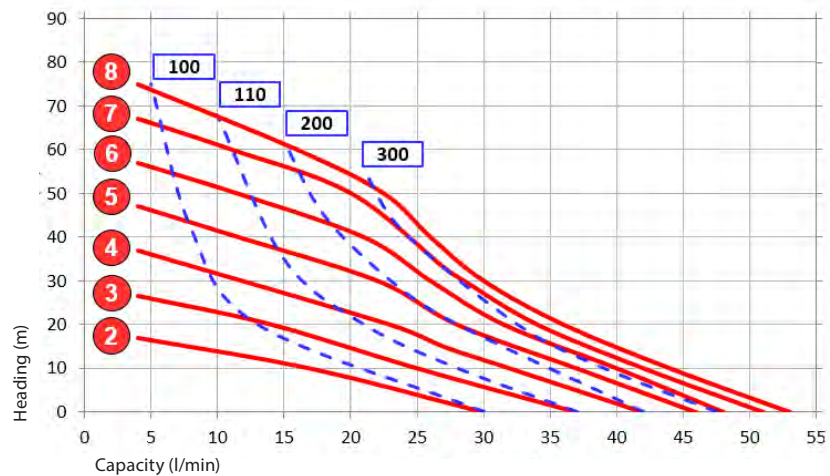
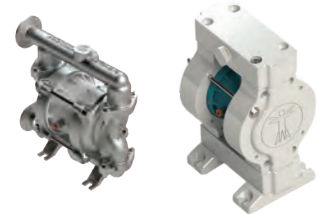
## DDE SPN 030 (1")

| TECHNICAL DATA     |   |
|--------------------|---|
| Fluid connections  | <ul style="list-style-type: none"> <li>• Tri-Clamp 1"</li> <li>• BSP • NPT</li> </ul> |
| Air connections    | 6 mm  |
| Max flow rate      | 50 l/m'   |
| Max air pressure   | 8 bar   |
| Displacement/cycle | 70  |
| Max size solids    | 3 mm  |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 203 B 106 C 197 |
| PE1000          | A 170 B 140 C 260 |

### MATERIALS

AISI 316 L electropolished PE 1000



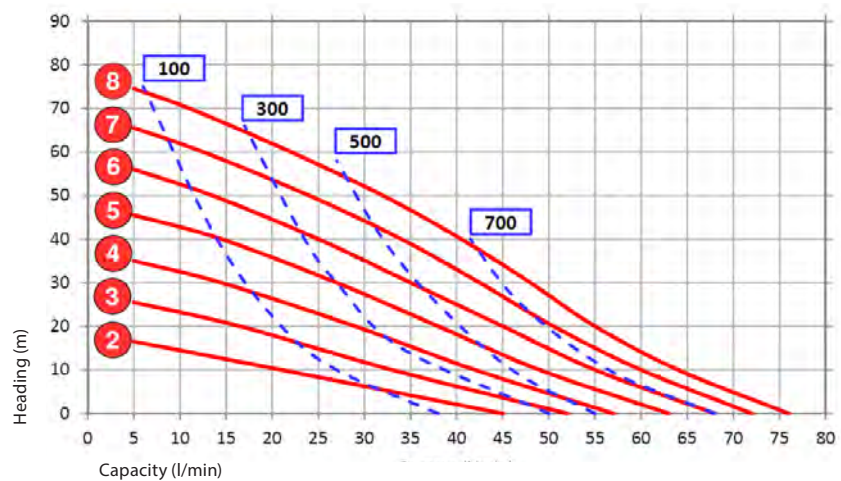
## DDE SPN 060 (1")

| TECHNICAL DATA     |   |
|--------------------|---|
| Fluid connections  | <ul style="list-style-type: none"> <li>• Tri-Clamp 1"</li> <li>• BSP • NPT</li> </ul> |
| Air connections    | <ul style="list-style-type: none"> <li>• 1/4" BSP</li> <li>• NPT*</li> </ul>          |
| Max flow rate      | 76 l/m  |
| Max air pressure   | 8 bar   |
| Displacement/cycle | 160   |
| Max size solids    | 3,2 mm  |

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

### MATERIALS

AISI 316 L electropolished



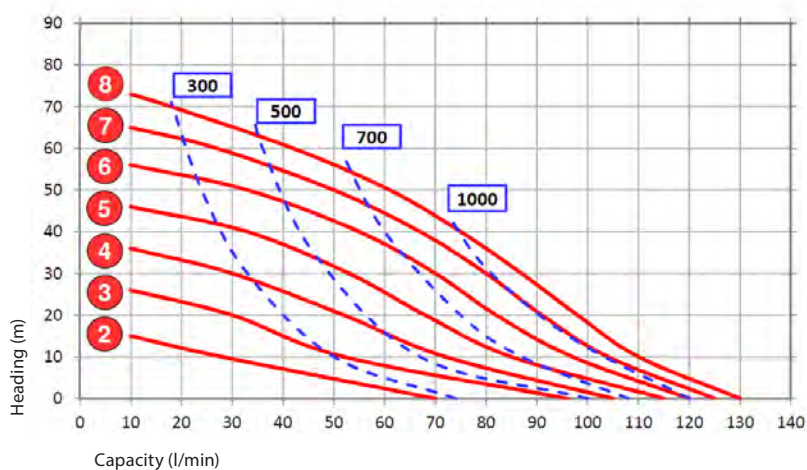
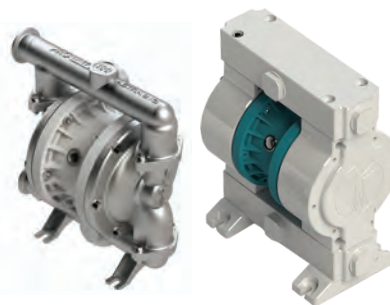
## DDE SPN 100 (1")

| TECHNICAL DATA     |                               |
|--------------------|-------------------------------|
| Fluid connections  | 1" BSP • NPT* • FLANGED DN25* |
| Air connections    | 3/8" BSP • NPT*               |
| Max flow rate      | 130 l/m                       |
| Max air pressure   | 8 bar                         |
| Displacement/cycle | 240                           |
| Max size solids    | 5,5 mm                        |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 273 B 170 C 288 |
| PE1000          | A 285 B 170 C 349 |

### MATERIALS

AISI 316 L electropolished PE 1000



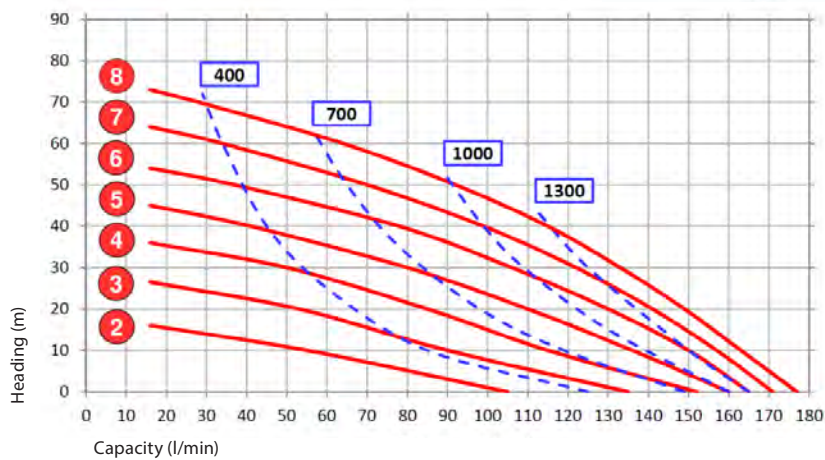
## DDE SPN 160 (1 1/2")

| TECHNICAL DATA     |                              |
|--------------------|------------------------------|
| Fluid connections  | • Tri-Clamp<br>1" 1/2 • BSP* |
| Air connections    | 3/8" BSP • NPT*              |
| Max flow rate      | 176 l/m                      |
| Max air pressure   | 8 bar                        |
| Displacement/cycle | 440                          |
| Max size solids    | 6 mm                         |

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

### MATERIALS

AISI 316 L electropolished



## DDE SPN 400 (2")

| TECHNICAL DATA     |                      |
|--------------------|----------------------|
| Fluid connections  | • Tri-Clamp 2"       |
| Air connections    | • 1/2" BSP<br>• NPT* |
| Max flow rate      | 370 l/m'             |
| Max air pressure   | 8 bar                |
| Displacement/cycle | 1.340                |
| Max size solids    | 7 mm                 |

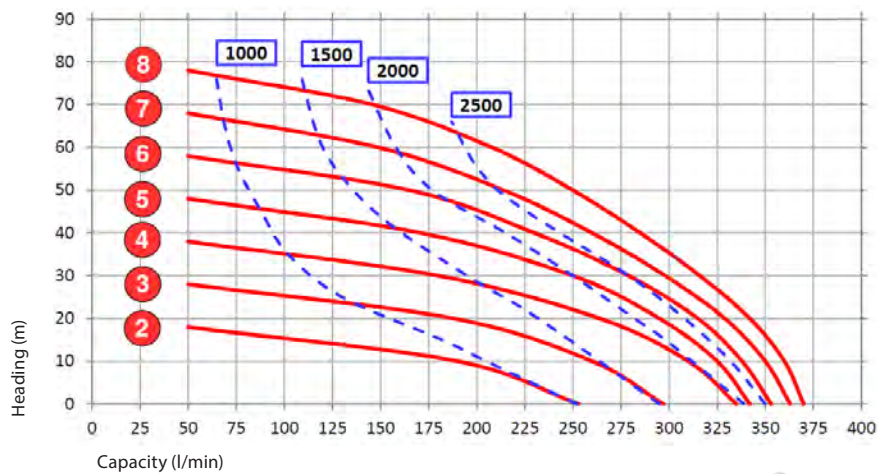
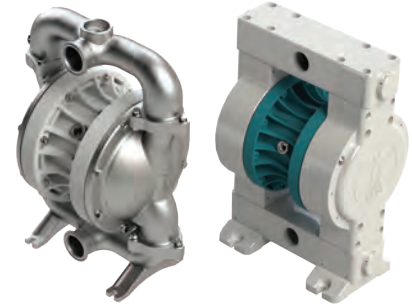
| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 203 B 106 C 197 |
| PE1000          | A 433 B 262 C 575 |

### MATERIALS

AISI 316 L

electropolished

PE 1000



## DDE SPN 650 (2 1/2")

| TECHNICAL DATA     |                              |
|--------------------|------------------------------|
| Fluid connections  | • Tri-Clamp 2 1/2"<br>• BSP* |
| Air connections    | • 3/4" BSP<br>• NPT*         |
| Max flow rate      | 715 l/m'                     |
| Max air pressure   | 8 bar                        |
| Displacement/cycle | 3.820                        |
| Max size solids    | 9 mm                         |

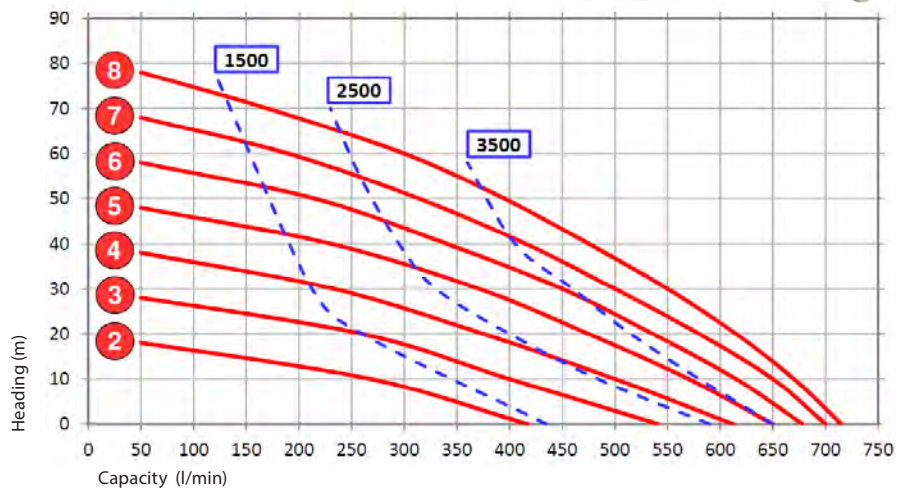
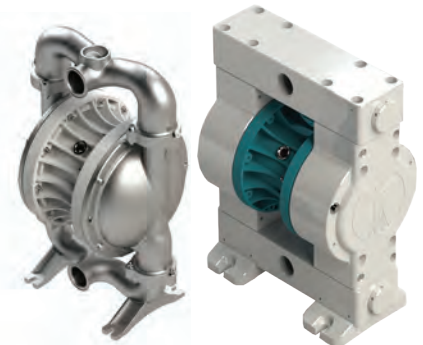
| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 247 B 160 C 253 |
| PE1000          | A 493 B 345 C 710 |

### MATERIALS

AISI 316 L

electropolished

PE 1000

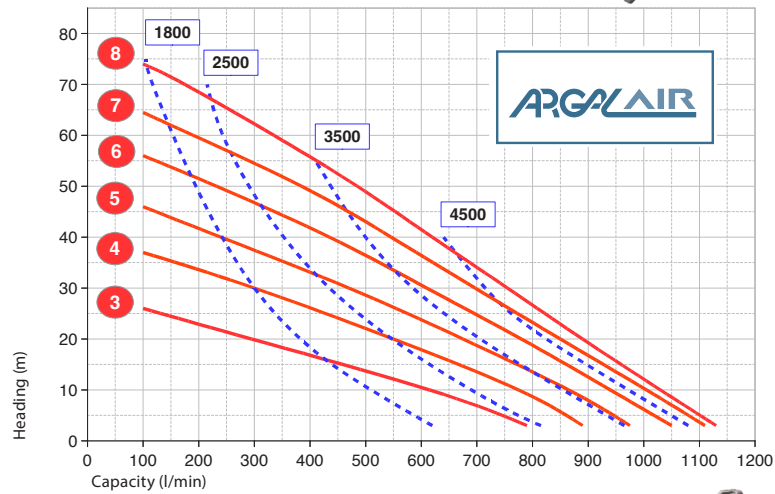
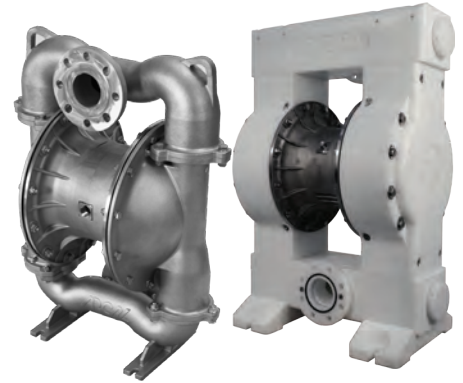


## DDE SPN 3" (3")

| TECHNICAL DATA     |            |
|--------------------|------------|
| Fluid connections  | 3" DN80    |
| Air connections    | 3/4" F NPT |
| Max flow rate      | 1.100 l/m' |
| Max air pressure   | 8 bar      |
| Displacement/cycle | 96         |
| Max size solids    | 11 mm      |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 624 B 435 C 815 |
| PE1000          | A 693 B 520 C 980 |

### MATERIALS

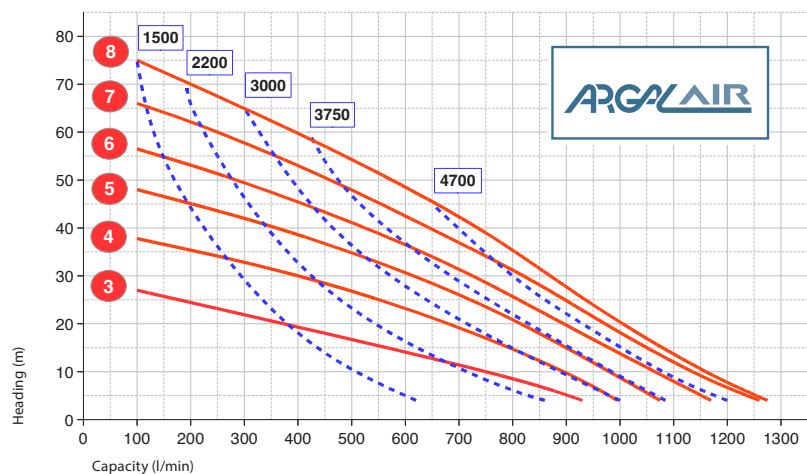


## DDE SPN 4" (4")

| TECHNICAL DATA     |            |
|--------------------|------------|
| Fluid connections  | 4" DN100   |
| Air connections    | 3/4" F NPT |
| Max flow rate      | 1.280 l/m' |
| Max air pressure   | 8 bar      |
| Displacement/cycle | 96         |
| Max size solids    | 13 mm      |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 725 B 435 C 815 |

### MATERIALS



# ASTRA SOLID

**ASTRA solid** range is **made of solid-block PE1000 (Ultra High Molecular Weight Polyethylene)** and distinguishes itself from the competitors' AODD range.



PE1000 offers excellent mechanical properties and high abrasion and stress resistance.

- Made of solid-block
- 5-component air distributor system
- modified PTFE diaphragms inert to chemicals
- Auto-lubricating and anti-friction ADS\*
- Easy installation and maintenance
- Internal or external installation
- Ideal for operations in cryogenic conditions (up to -40°C)
- For acids, alkalis and basic acids, shear-sensitive liquids

\* Air Distribution System

## MATERIALS

|                    |   |   |
|--------------------|---|---|
| Body materials     | 1 | • PE1000                                      |
| Diaphragms         | 2 | • modified PTFE                               |
| Valve balls        | 3 | • PTFE • AISI 316 • EPDM • NBR • FKM (Viton®) |
| Valve seats & cage | 4 | • PE 1000                                     |
| O-ring             | 5 | • EPDM • FKM (Viton®) • NBR • PTFE            |



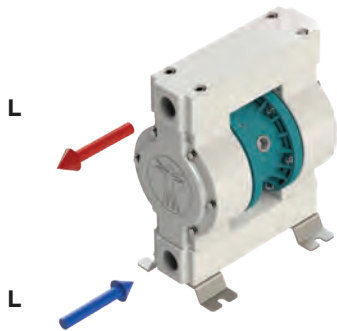
|                           | PE1000           |
|---------------------------|------------------|
| Pumped liquids            | Abrasive liquids |
| Working temperature (max) | 70°C             |



## CONNECTIONS

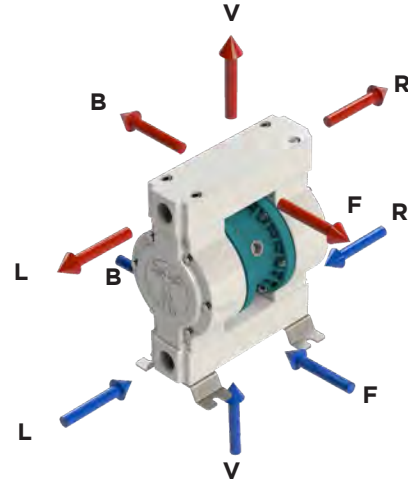
- Standard configuration (1) with threaded connections BSP "L-L" for all models.

### STANDARD<sup>(1)</sup>



- Other connections are available upon request (2).

### UPON REQUEST<sup>(2)</sup>



For any questions on connection configuration, contact our sales force.

## APPLICATIONS

- Heavy-duty industrial processes**  
abrasive liquids and waste circulation
- Ceramics industry**  
transfer of cleaning liquids containing residues
- Metal and precious metal treatments**  
extraction, metal waste circulation
- Wastewater treatments**  
waste transfer with toxic particles, polluted mix
- Seawater applications**  
seawater, brine, water containing solids



*ASTRAsolid pumps (2") installed outside the plant, nearby the coastline for polluted and waste treatments (Italy)*

**bar**

Air pressure

**l/min**

Air consumption



Dimensions

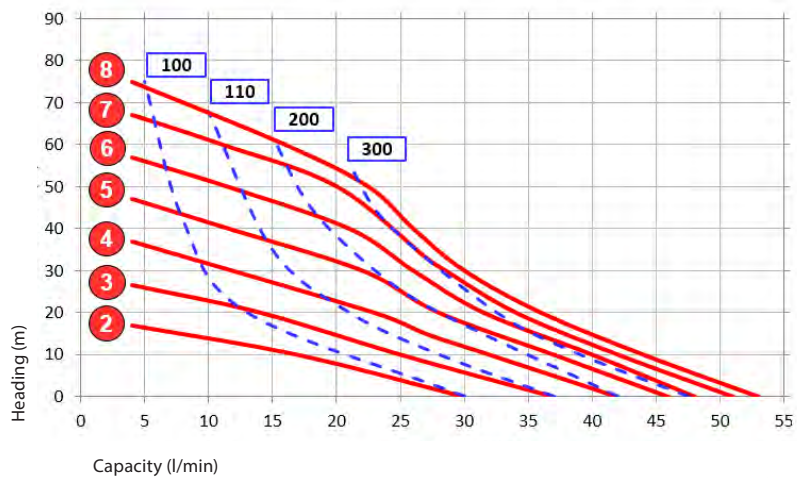
\* optional

## DDS 030 (1/2")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1/2" BSP<br>• NPT*<br>• FLANGED<br>DN15* |
| Air connections    | 6 mm                                     |
| Max flow rate      | 50 l/m'                                  |
| Max air pressure   | 8 bar                                    |
| Displacement/cycle | 70                                       |
| Max size solids    | 3 mm                                     |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| PE1000          | A 170 B 140 C 260 |

### MATERIALS

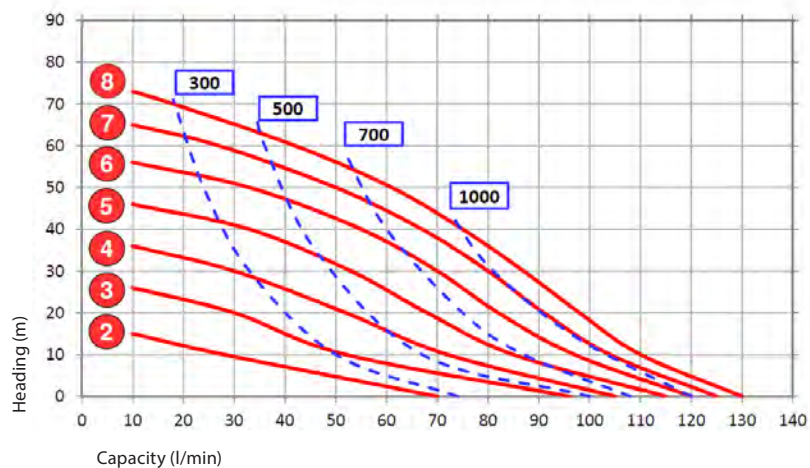


## DDS 100 (1")

| TECHNICAL DATA     |  |
|--------------------|--|
| Fluid connections  | 1" BSP<br>• NPT*<br>• FLANGED<br>DN25* |
| Air connections    | 3/8" BSP<br>• NPT*                     |
| Max flow rate      | 130 l/m'                               |
| Max air pressure   | 8 bar                                  |
| Displacement/cycle | 240                                    |
| Max size solids    | 5,5 mm                                 |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| PE1000          | A 285 B 170 C 349 |

### MATERIALS



## DDS 400 (1 1/2")



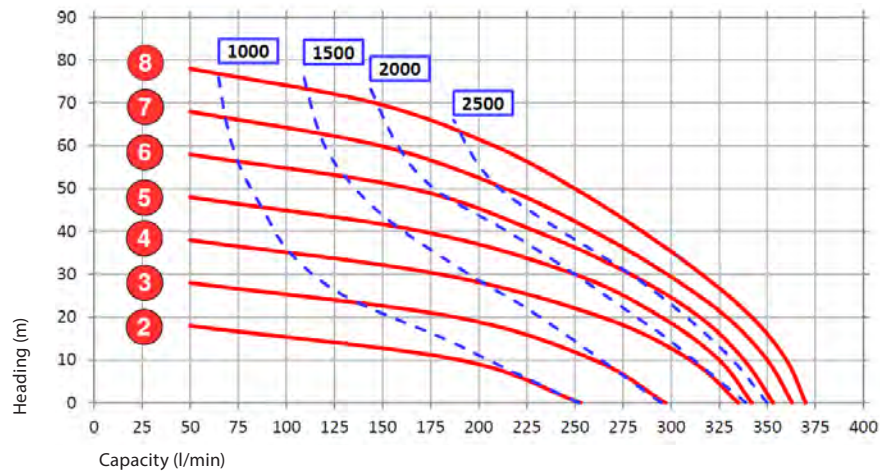
### TECHNICAL DATA

|                           |  |
|---------------------------|--|
| <b>Fluid connections</b>  | FLANGED<br>DN40 • 1 1/2"<br>BSP • NPT* |
| <b>Air connections</b>    | 1/2" BSP<br>• NPT*                     |
| <b>Max flow rate</b>      | 375 l/m'                               |
| <b>Max air pressure</b>   | 8 bar                                  |
| <b>Displacement/cycle</b> | 1.340                                  |
| <b>Max size solids</b>    | 7 mm                                   |

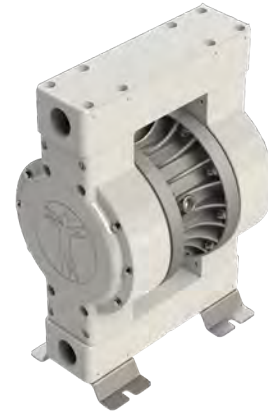
### DIMENSIONS (mm)

|        |                   |
|--------|-------------------|
| PE1000 | A 433 B 262 C 575 |
|--------|-------------------|

### MATERIALS



## DDS 650 (2")



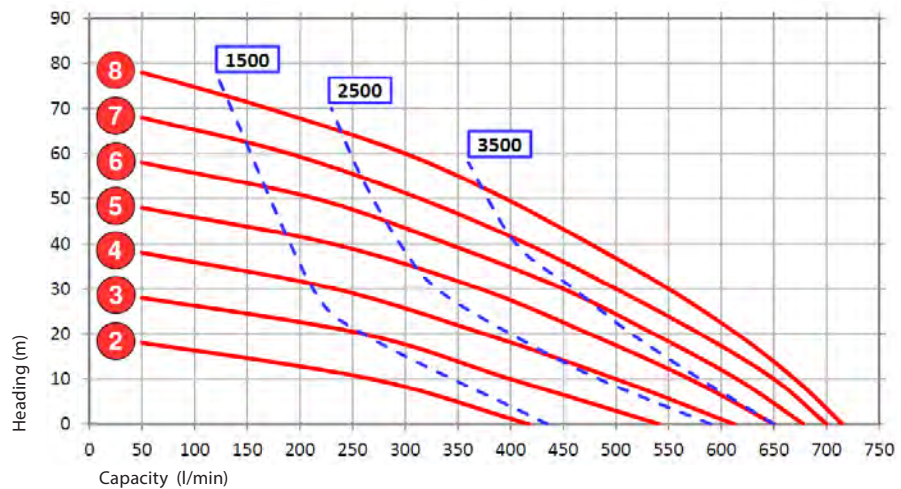
### TECHNICAL DATA

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Fluid connections</b>  | FLANGED<br>DN50 • 2"<br>BSP • NPT* |
| <b>Air connections</b>    | 3/4" BSP<br>• NPT*                 |
| <b>Max flow rate</b>      | 715 l/m'                           |
| <b>Max air pressure</b>   | 8 bar                              |
| <b>Displacement/cycle</b> | 3.820                              |
| <b>Max size solids</b>    | 9 mm                               |

### DIMENSIONS (mm)

|        |                   |
|--------|-------------------|
| PE1000 | A 493 B 345 C 710 |
|--------|-------------------|

### MATERIALS



# QUANTUM

**QUANTUM** series is made of pure polymers solid-block construction and with original internal design.

The idea was conceived to offer a **unique pump perfectly balanced between efficiency** (linear pumping directly to the center block and reduced air consumption) **and sustainability** (reduced use of materials, longer life cycles and all parts are recyclable).

PE  
1000

PTFE

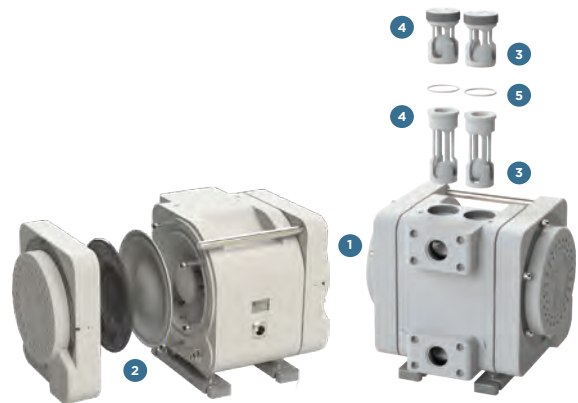
- Made of solid-block PTFE or PE1000
- Unique and super efficient internal design
- Non-icing valve system
- Unlimited chemical resistance
- Diaphragms are not coupled to the shaft
- Acids, mixtures, glues, additives, inks, adhesives, solvents...
- Auto-lubricating and anti-friction material
- Easy installation and maintenance

## MATERIALS

|                    |   |                             |
|--------------------|---|-----------------------------|
| Body materials     | 1 | • PE1000 • PTFE             |
| Diaphragms         | 2 | • TPE*+PTFE • TPV**+PTFE    |
| Valve balls        | 3 | • PTFE • EPDM • NBR • VITON |
| Valve seats & cage | 4 | • PTFE • PE1000             |
| O-ring             | 5 | • PTFE • FFKM               |

\* Santoprene®, Geolast® (ExxonMobil)

\*\* Keyflex®, Hytrel® (LG Chem Ltd.)



|                           | PTFE                   | PE1000                              |
|---------------------------|------------------------|-------------------------------------|
| Pumped liquids            | For ultra-pure liquids | All types, especially abrasive ones |
| Working temperature (max) | 100°C                  | 70°C                                |

## UNIQUE & INNOVATIVE

### ► Advantages of the free-fastened diaphragms

- easy maintenance and replacing
- more safety with aggressive liquids

### ► Advantages of the special design for the valves

- guaranteed easy maintenance operations
- no need to remove the pump from the system

### ► Advantages of the non-icing valve system

- utterly not affected by humidity

### ► Advantages of the air distributor system

- equipped with air capacity regulator
- quick discharging valve (30% less air consumption)
- operations in any conditions

### ► Advantages of the security system

- longer life cycle
- in case of diaphragm leakage, the liquid cannot enter the air supply line

## APPLICATIONS



*QUANTUM pump installed for HF transfer to reactors (Italy)*



*QUANTUM pumps for acid mix transfer (Belgium)*

- **Solar panel systems**

ultra-pure liquids

- **Display production**

nematic, smectic liquid crystals

- **Chemical waste treatments**

HF from reactors

- **Pharmaceutics and Laboratories**

strong acids, viscous mix, cleaning solutions

**bar**

Air pressure

**l/min**

Air consumption



Dimensions

## DDQ 060 (1/2")

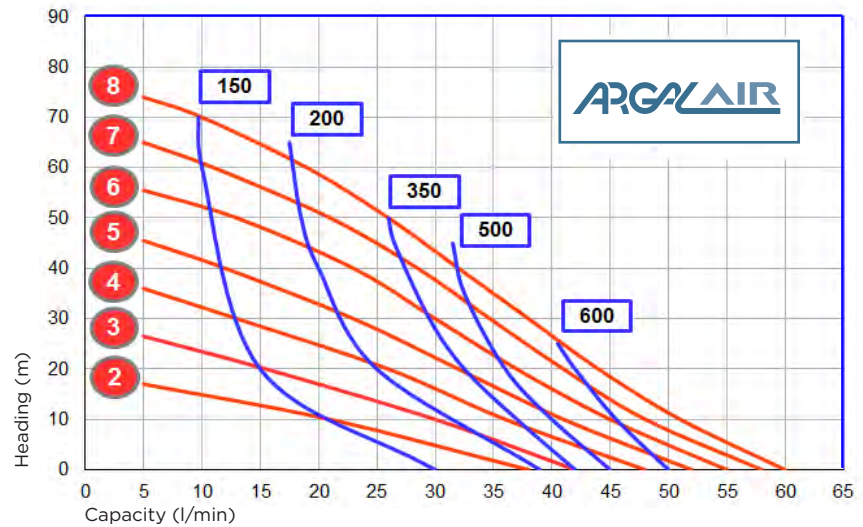
### TECHNICAL DATA

|                           |            |
|---------------------------|------------|
| <b>Fluid connections</b>  | G 1/2" BSP |
| <b>Air connections</b>    | G 1/4" BSP |
| <b>Max flow rate</b>      | 60 l/m'    |
| <b>Max air pressure</b>   | 8 bar      |
| <b>Displacement/cycle</b> | 160        |
| <b>Max size solids</b>    | 7.5 mm     |

### DIMENSIONS (mm)

PE1000 PTFE    **A** 220 **B** 210 **C** 186

### MATERIALS



## DDQ 160 (1")

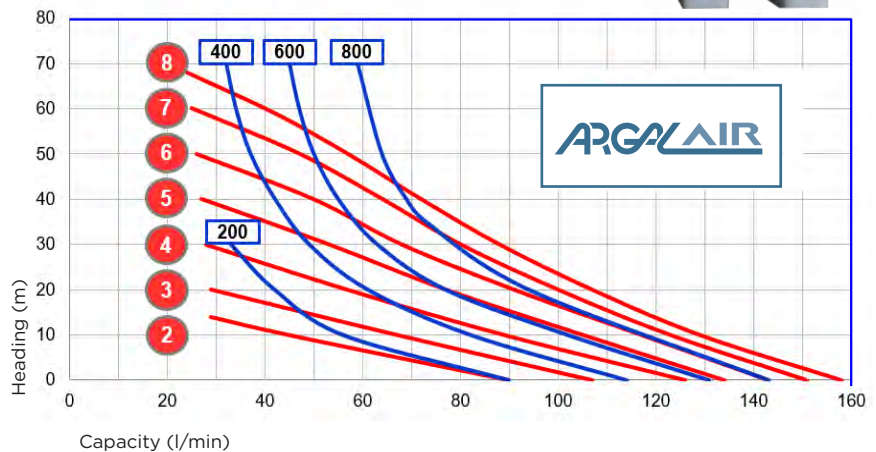
### TECHNICAL DATA

|                           |            |
|---------------------------|------------|
| <b>Fluid connections</b>  | G 1" BSP   |
| <b>Air connections</b>    | G 3/8" BSP |
| <b>Max flow rate</b>      | 160 l/m'   |
| <b>Max air pressure</b>   | 8 bar      |
| <b>Displacement/cycle</b> | 440        |
| <b>Max size solids</b>    | 11 mm      |

### DIMENSIONS (mm)

PE1000 PTFE    **A** 270 **B** 250 **C** 227

### MATERIALS



## DDQ 400 (1 1/2")

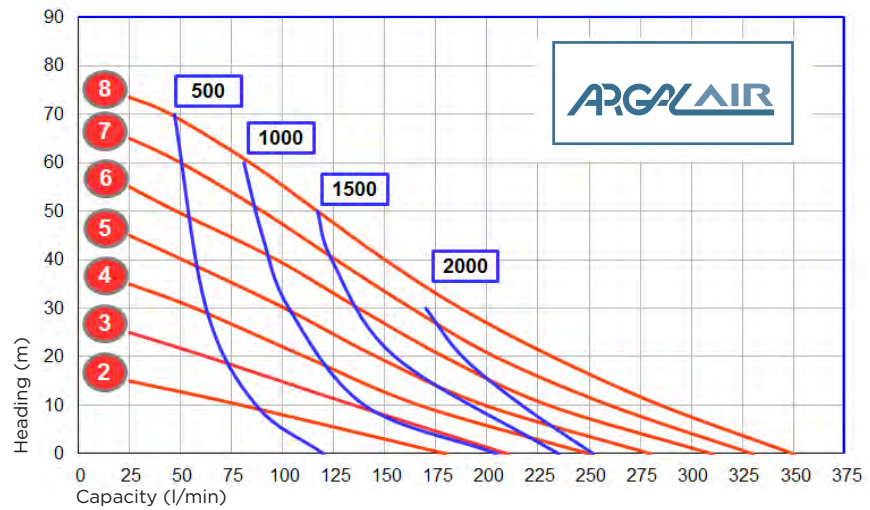
### TECHNICAL DATA

|                           |              |
|---------------------------|--------------|
| <b>Fluid connections</b>  | G 1 1/2" BSP |
| <b>Air connections</b>    | G 1/2" BSP   |
| <b>Max flow rate</b>      | 400 l/m'     |
| <b>Max air pressure</b>   | 8 bar        |
| <b>Displacement/cycle</b> | 1,340        |
| <b>Max size solids</b>    | 19 mm        |

### DIMENSIONS (mm)

|                    |                          |
|--------------------|--------------------------|
| <b>PE1000 PTFE</b> | <b>A 381 B 330 C 310</b> |
|--------------------|--------------------------|

### MATERIALS



# MISTRAL

**MISTRAL** series represents the safest and most efficient pneumatic solution for heavy-industrial, dangerous and/or continuous operations.



The range came out first with the metallic version, entirely made of stainless steel, to allow the pumping of highly corrosive agents. Then the solid-block plastic version was conceived to resolve the market issue of abrasion.

- High capacities for large loadings
- Extremely robust big-size AODD solutions
- 5-component air distributor system
- Non-icing valve system
- Corrosion and abrasive-resistant materials
- Auto-lubricating and anti-friction ADS\*
- Easy installation and maintenance
- Ideal for solid handling (up to 13 mm)
- Internal or external installation
- Upon request: ATEX Zone 1\*\*

\* Air Distribution System

\*\* Zone 1 (II 2G Ex h IIB T4 Gb X | II 2D Ex h IIB T135°C Db X)

## MATERIALS

|                    |   |  |
|--------------------|---|--|
| Body materials     | 1 | • AISI 316L • PE1000                       |
| Diaphragms         | 2 | • EPDM • NBR • EPDM+PTFE • NBR+PTFE        |
| Valve balls        | 3 | • EPDM • NBR • PTFE • AISI 316L            |
| Valve seats & cage | 4 | • POLYURETHANE • PE1000 • PVDF • AISI 316L |
| O-ring             | 5 | • EPDM • NBR • FKM • PTFE                  |

|                           | AISI 316L | PE1000 |
|---------------------------|-----------|--------|
| Working temperature (max) | 100°C     | 70°C   |



## MADE FOR HEAVY-INDUSTRIAL OPERATION



*MISTRAL solid pump 3" for ceramic production plant (Italy)*



*MISTRAL pump 4" for silice extraction (Italy)*



*MISTRAL pump 3" for brine circulation, offshore platform (Asia)*

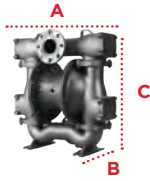
- **Offshore platforms**  
waste, brine, mud, seawater
- **Chemical processes**  
strong acids, concentrated acids, cleaning solutions
- **Construction processes**  
cement mixing loading/unloading
- **Metal and mineral treatments**  
liquid extraction, cleaning solution circulation

bar

Air pressure

NI/min

Air consumption



Dimensions

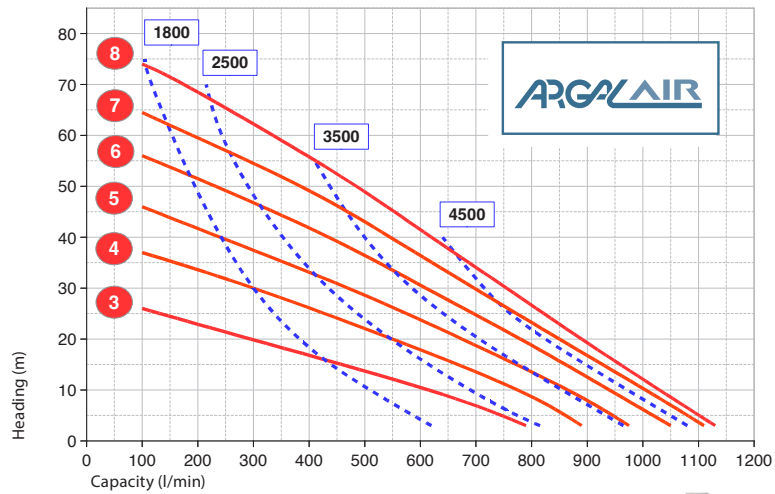
## DDM 300 (3")

| TECHNICAL DATA     |            |
|--------------------|------------|
| Fluid connections  | 3" DN80    |
| Air connections    | 3/4" F NPT |
| Max flow rate      | 1100 l/m'  |
| Max air pressure   | 8 bar      |
| Displacement/cycle | 96         |
| Max size solids    | 11 mm      |

| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 624 B 435 C 815 |

\*with muffler: 570 mm

### MATERIALS



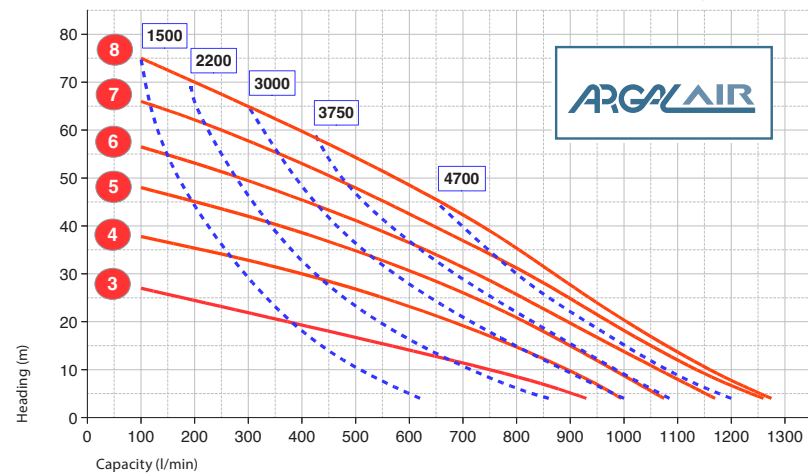
## DDM 400 (4")

| TECHNICAL DATA     |            |
|--------------------|------------|
| Fluid connections  | 4" DN100   |
| Air connections    | 3/4" F NPT |
| Max flow rate      | 1280 l/m'  |
| Max air pressure   | 8 bar      |
| Displacement/cycle | 96         |
| Max size solids    | 13 mm      |

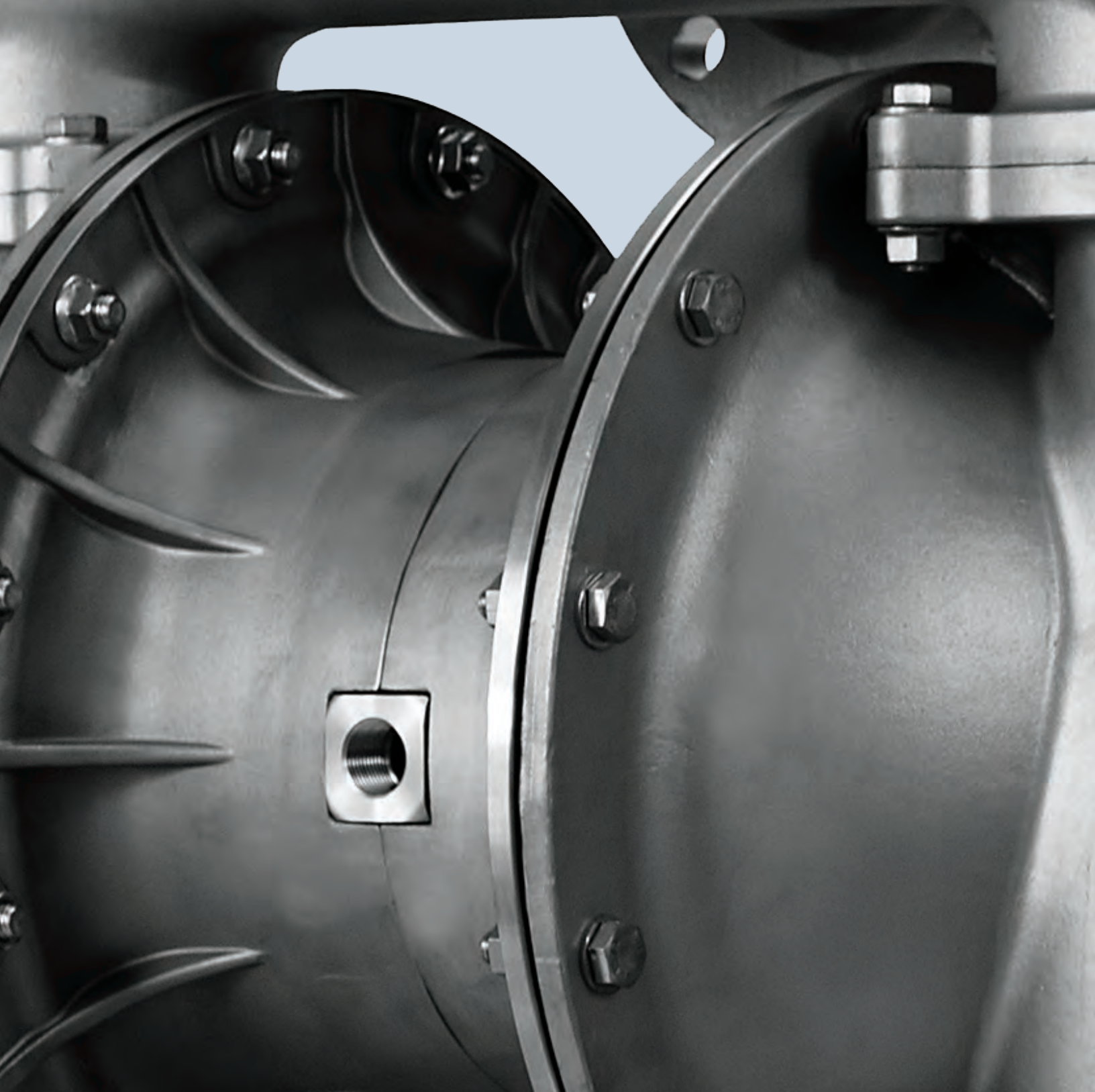
| DIMENSIONS (mm) |                   |
|-----------------|-------------------|
| AISI 316L       | A 725 B 435 C 815 |

\*with muffler: 570 mm

### MATERIALS



ARGAL



**MECH-SEALED  
& MAG-DRIVEN  
CENTRIFUGAL  
PUMPS**

**AODD  
PUMPS**

**SELF-PRIMING  
PUMPS**



**VERTICAL SUMP  
PUMPS**

cod. 01-22 • EN

**ARGAL PUMPS**  
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www.argalpumps.com