fluimac®
pump solution

PHOENIX

AIR-OPERATED DOUBLE DIAPHRAGM PUMPS

Made in Italy

www.fluimac.com

ENGLISH

fluimac
pump solution

MAIN FEATURES

Fluimac is an original, young and dynamic company built in 2012 for a new concept of product.
It is specialized in providing pump solutions with an innovative and continuously developing design of range.
The huge experience, knowledge and efficiency of its team is the starting point of its own business.
Fluimac stands out for its reliable and prompt technical support and assistance.
The internal research and development department ensures the proficiency of its team, which constantly grows in order to satisfy all the customers' needs.
The company keeps up with the constant evolution of the national and international market and its quality control guarantees innovative and certificated products, which respect current legal standards.
The organization of the warehouse and the assembly/testing department, allows the company to offer short delivery times, immediate check of availability, speedy shipments and fast service assistance.The policy of Fluimac relies also on excellent customer service and a network of efficient, reliable distributors who ensure willingness, quality and technical support. This makes Fluimac a high quality company, grounded in excellence.

FLUIMAC'S CERTIFICATES

CE CONFORMITY MARKING

ATEX

ISO 9001:2015

FDA COMPLIANT

EAC CONFORMITY MARKING

PRODUCTS

PRODUCTS	RANGE	CERTIFICATES

Air operated double diaphragm pumps have long been recognized as the most flexible pumps of the industry for handling difficult liquids at relatively low pressures and flows.
The range of applications is virtually limitless.
Fluimac AODD pumps come in many sizes and choices of materials of construction.
Almost every type of liquid from highly corrosive acids through high viscosity paints and adhesives, to food and drink products can be pumped.

PHOENIX
Air operated double diaphragm pumps
Realized in:
PP, PVDF, ALUMINIUM, SS AISI 316, POMc
Flow-rate from 7 lt/min to 1.000 lt/min. Connection from ¼" to 3".

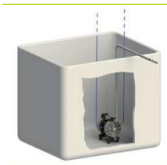
PHOENIX FOOD
Air operated double diaphragms pumps
Realized in:
SS AISI 316 electro-polished.
Flow-rate from 20 lt/min to 1.000 lt/min. Tri-Clamp Connection.

PHOENIX ATEX
Air operated double diaphragms pumps, ATEX certified for zone1.
Realized in:
PP+CF, PVDF+CF, ALUMINIUM, SS AISI 316, POMc+CF
Flow-rate from 7 lt/min to 1.000 lt/min. Connection from ¼" to 3".

ACCURATE PHOENIX
Double diaphragm pumps with remote control
Realized in:
PP, PVDF, ALUMINIUM, SS AISI 316, POMc
Flow-rate from 7 lt/min to 250 lt/min. Connection from ¼" to 1"¼.

DRUM PHOENIX
Air operated double diaphragms pumps with special features to empty drums and tanks
Realized in:
PP, PVDF, ALUMINIUM, SS AISI 316, POMc
Flow-rate from 20 lt/min to 170 lt/min. Connection from 3/8" to 1".

TWIN PHOENIX
Air operated double diaphragms pumps with special features with double inlet/outlet
Realized in:
PP, PVDF, ALUMINIUM, SS AISI 316, POMc
Flow-rate from 7 lt/min to 700 lt/min. Connection from ¼" to 2".



SUBMERSIBLE PHOENIX
Air operated double diaphragm pumps with special features, design to be submerged.
Applicable to all size of pumps.

POWDER PHOENIX
Air operated double diaphragms pump with special design to handle powder
Realized in: ALU, SS.
Size available 1"½ and 2".

DAMPER
Pneumatic, automatic pulsation dampeners.
Realized in:
PP, PVDF, ALUMINIUM, SS AISI 316, POMc
Applicable to all size of pumps.
Available also in ATEX and FOOD version.

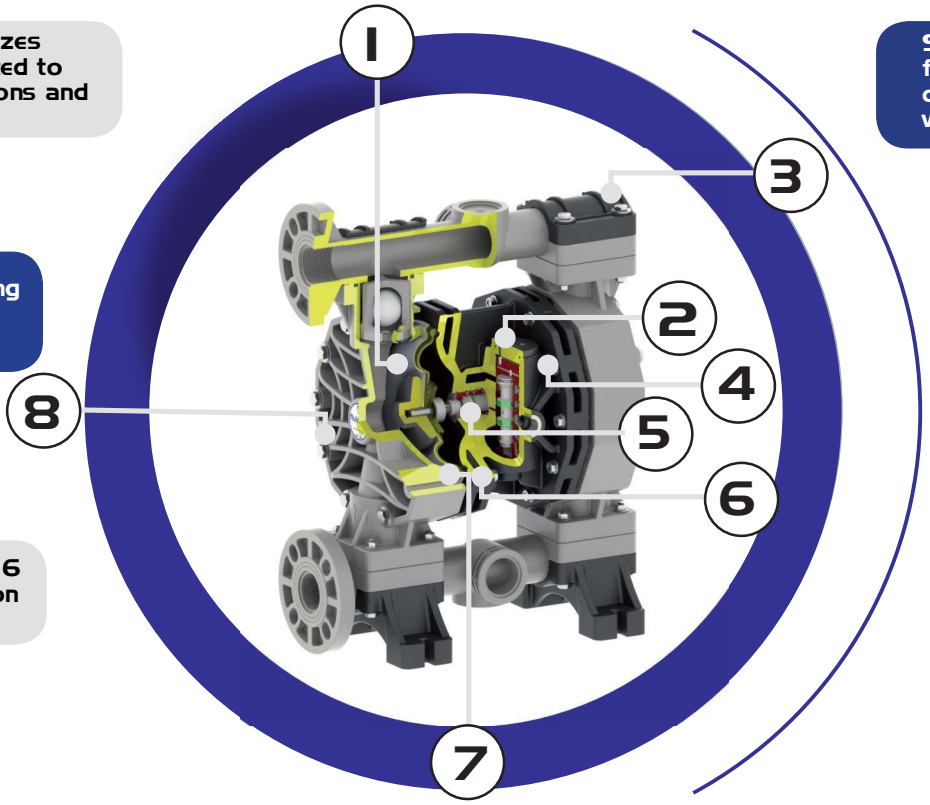
TECHNICAL FEATURES

Wide Range of sizes and materials suited to variety of conditions and chemicals fluids

Safely "dead head" function, against closed discharge, without pump damage

Dry-run without damaging the pump or system: seal-less design

Handled liquids with solids particles: ideal for abrasive and viscous media



Self-priming dry up to 6 meters: works in suction lift applications

Fully submersible: can be submerged completely according to the fluid compatibility

Efficient performance: high flow rates through optimal casings designs

Serviceability: easily and quickly maintained without any special tools

1	2	3	4	5	6	7	8
Long-lasting diaphragm construction ensures a consistent performance and a longer operating life.	Efficient air distribution design: low air consumption. Un-balanced pilot spool, precisely controls positioning of the main power spool to eliminate stalling and increase efficiency.	All bolted design for an effective sealing to extended leak-proof service.	Solid polypropylene air chambers and plastic air valve for maximum chemical resistance in highly corrosive environments.	Acetalic shuttle ensures long valve life,auto-lubricated material.	Pneumatic exchanger is easily externally accessible for a quick inspection. Special Air system: lube-free, non-stall, non-freeze.	Special pinch clamping, design to minimize wear and increase life of the diaphragm, and provides a uniform seal to avoid leak.	Special exhaust chamber with double silencer to expand diffusion passages, reduce the icing and assure low noise level.

QUALITY 100% wet tested after final assembly: deadheading, priming and sealing

SAFE ATEX certifications in all versions: Conductive plastic pumps available

FLEXIBILITY Multiple porting options available along with interface options

PUMP OPERATION

Fluid

Air

Suction Cycle

1

Compressed air fills right inner chamber, causing the opposing diaphragm to create suction, lifting the lower valve ball, pulling in fluid at inlet. Simultaneously, the right chamber is in “Discharge” cycle.

Discharge Cycle

2

Compressed air fills left inner chamber, causing upper valve ball to open and discharge fluid. Simultaneously, the right chamber is in “Suction” cycle.

INSTALLATION

Pump installed below head (positive suction)

when it is necessary to empty completely the container

Self priming pump installed above head (negative suction)

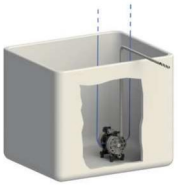
pump initially works with dry column without problem

Pump installed above drum or tank

with special featuring pump

Pump installed on hopper for high viscosity liquid

hopper’s height helps the pump to treat the fluid. Air pressure has to be high, Suction tube has to be bigger than pump’s size



Submerged pump

it is necessary to check the chemical compatibility

Suspended

special version with fixing feet also in the upper part, for ceiling fixing

Pump installed on a mobile unit

with a trolley or cart when pump must be often moved

P 0160 P- HT T

MODEL	SIZE	CASING	DIAPHRAGM	BALL

MODEL

P
PHOENIX

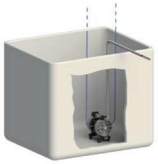
PF
PHOENIX FOOD

AP
ACCURATE PHOENIX

TP
TWIN PHOENIX

PP
POWDER PHOENIX

SP
SUBMERSIBLE PHOENIX



SIZE

7- 7 lt/min

18 - 20 lt/min

30 - 35 lt/min

55 - 55 lt/min

60 - 65 lt/min

90 - 100 lt/min

120 - 120 lt/min

170 - 170 lt/min

252 - 250 lt/min

400 - 380 lt/min

700 - 700 lt/min

1000 - 1050 lt/min

CASING

P
POLYPROPYLENE
Wide chemical compatibility. General purpose.Reinforced with glass-fiber.

PC
CONDUCTIVE POLYPROPYLENE
Wide chemical compatibility. General purpose. Groundable.

KC
CONDUCTIVE PVDF
Strong chemical resistance to acids. High temperature resistance. Groundable.

O
ACETAL
Wide range of solvent and hydrocarbons resistance. Good level of abrasion resistance.

OC
CONDUCTIVE ACETAL
Wide range of solvent and hydrocarbons. Good level of abrasion resistance. Groundable.

A
ALUMINIUM
Wide range of solvent and hydrocarbons. Good level of abrasion resistance.

S
SS AISI 316
High level of corrosion and abrasion resistance.

S
SS – AISI 316 Electropolished
High level of corrosion and abrasion resistance. Phoenix Food.

DIAPHRAGM

N
NBR
Good for petroleum-based fluids, water, oils, hydrocarbons and MILD chemicals

D
EPDM
Good with caustic solutions, dilute acids, ketones and alcohols. Good abrasion resistance

T
PTFE
Widest chemical compatibility, extreme corrosion resistance, non-adhesive, high heat resistance.

H
HYTREL
Good low temperature properties. Good abrasion resistance.

M
SANTOPRENE
solutions and dilute acids.

BALL

N
NBR
Good for petroleum-based fluids, water, oils, hydrocarbons and MILD chemicals

D
EPDM
Good with caustic solutions, dilute acids, ketones and alcohols. Good abrasion resistance

T
PTFE
Widest chemical compatibility, extreme corrosion resistance, non-adhesive, high heat resistance.

S
SS
High level of corrosion and abrasion resistance. Good for viscous fluids.

P V 1 - AB

BALL SEAT	GASKET	CONNECTIONS	ATEX ZONE CERTIFICATION	PORTS

P
POLYPROPYLENE
Wide chemical compatibility.
General purpose.

K
PVDF
Strong chemical resistance to acids.
High temperature resistance.

A
ALUMINIUM
Wide range of solvent and hydrocarbons.
Good level of abrasion resistance.

S
SS
High level of corrosion and abrasion resistance.

Z
PE
With high molecular weight: High level of abrasion resistance

O
ACETAL
Wide range of solvent and hydrocarbons resistance. Good level of abrasion resistance.

V
VITON
High heat resistance.
Good resistance to aggressive chemicals and hydrocarbons.

N
NBR
Good for petroleum-based fluids, water, oils, hydrocarbons and MILD chemicals.

D
EPDM
Good with caustic solutions, dilute acids, ketones and alcohols.
Good abrasion resistance.

T
PTFE
Widest chemical compatibility, extreme corrosion resistance, non-adhesive, high heat resistance.

1
BSP THREATED

2
FLANGED

3
TRI-CLAMP
(PHOENIX FOOD)

5
NPT THREATED

6 - DIN 11851/3
(PHOENIX FOOD)

-
ATEX ZONE 2
EX II 3/3 GD h IIB T4

X
ATEX ZONE 1
EX II 2/2 GD h IIB T4

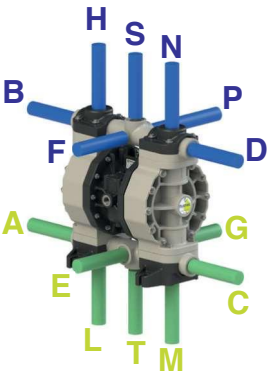


TABLE CODE

PUMP SELECTION

To select the right FLUIMAC pump for your application, the following factors should be considered to achieve economy of operation, long pump life, and minimal maintenance costs:

- The nature of the medium to be pumped, its viscosity, and the solids content
- Pumping capacity in relation to the desired output
- Suction and pressure conditions

Considering these parameters, an optimal pump size is selected when the intersection of the intended installation "pressure vs. flow rate" is near the middle section of the curves.

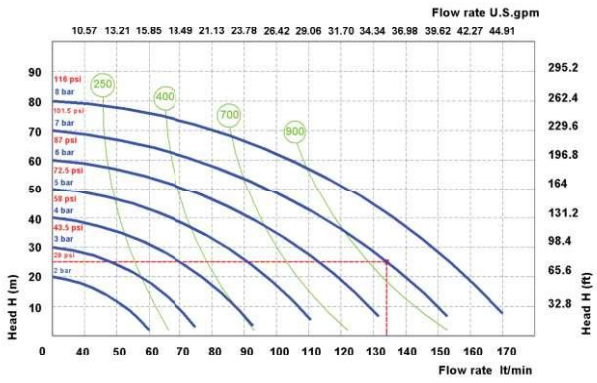
USING PERFORMANCE CURVES

To determine compressed air requirements and proper size for a FLUIMAC AODD pump, two elemerts of information are required:

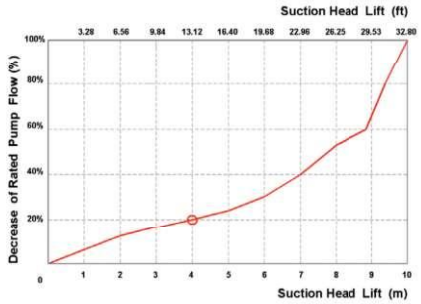
1 Required Flow Rate

2 Total Delivery Head

As an example, consider a P170 pump performance curve, pumping about 135 lt/min at 25m.Point A on the performance curve is where the desired Flow Rate and Total Delivery Head points intersect. This point determines compressed air requirements for the particular pump. At performance point A, the pump will require approximately 7 bar air inlet pressure. To arrive at this figure, follow the solid blue curve to the left to read the air pressure rating in BAR.By looking at the nearest green curve, it is determined the pump will require approximately 900 nl/min (Normal Liter per minute) of air consumption.

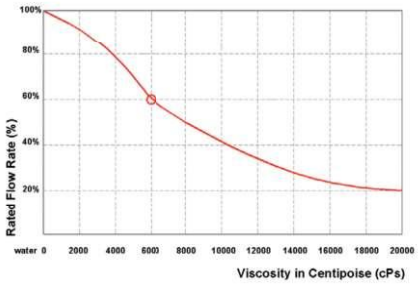


SPECIFIED SUCTION LIFT



With a suction lift of 4 m, pump rate decreases by approximately 20%. Valid for pumps 3/4" and larger; data varies with pump configuration.

VISCOUS LIQUIDS PERFORMANCE DATA



During the conveyance of a fluid with a viscosity of 6000cPs, the pump rate decreases to 60% of its rated value (100% = water). Valid for 3/4" pumps & larger.

PUMP TYPE	AODD	CENTRIFUGAL	LOBE	GEAR	SCREW	PERISTALIC	PISTON
							
Variable Flow & Head Control	☑	☑	☑	☑	!	☑	☑
Deadhead Safely	☑	!	!	!	!	!	!
Dry-Running	☑	x	x	x	x	☑	x
Dry Self-Priming	☑	x	x	☑	x	☑	!
No Mechanical Alignment	☑	x	x	x	x	x	x
No Electrical Installation	☑	x	x	x	x	x	x
Portability	☑	☑	!	!	!	☑	!
Submersible	☑	!	x	x	x	x	!
Sealless	☑	!	!	!	!	!	!
Cavitation Tolerance	☑	x	!	!	☑	☑	!
Low Shear & Degradation	☑	x	☑	☑	!	☑	!

☑ = Suitable ! = Limitations x = Not Recommended

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PHOENIX FOOD

Air operated double diaphragms pumps
Realized in:
SS AISI 316 electro-polished
Flow-rate from 20lt/min to 1.000 lt/min
Tri-Clamp Connection.
ATEX certification
Atex zone 2 - EX II 3/3 GD h IIB T4
Atex zone 1 - EX II 2/2 GD h IIB T4

PHOENIX FOOD 18 | TECHNICAL DATA | PERFORMANCE

PF 18

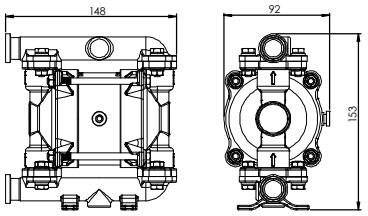
AISI 316 ELECTRO-POLISHED

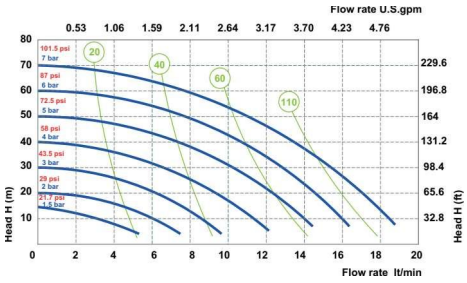
Fluid connections	**3/4" TRI-CLAMP**
Air connection	**6 mm**
Max. Flow rate	**20 lt/min**
Max air pressure	**7 bar**
Max delivery head	**70 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**2,5 mm**
Noise level:	**65 dB**
Max Viscosity:	**10.000 cps**
Displacement per Stroke:	**30 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
2,3 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0018	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**AB =** STANDARD

PHOENIX FOOD 30 | TECHNICAL DATA | PERFORMANCE

PF 30

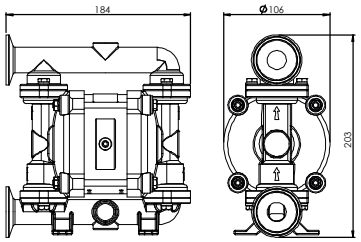
AISI 316 ELECTRO-POLISHED

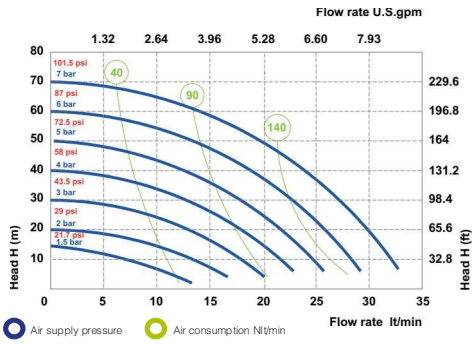
Fluid connections	**1" TRI-CLAMP**
Air connection	**6 mm**
Max. Flow rate	**35 lt/min**
Max air pressure	**7 bar**
Max delivery head	**70 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**3 mm**
Noise level:	**65 dB**
Max Viscosity:	**15.000 cps**
Displacement per Stroke:	**65 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
3,8 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0030	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X=** zone 1	**AB =** STANDARD

PHOENIX FOOD 60 | TECHNICAL DATA | PERFORMANCE

PF 60

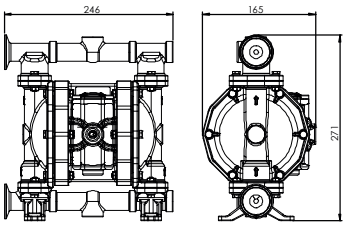
AISI 316 ELECTRO-POLISHED

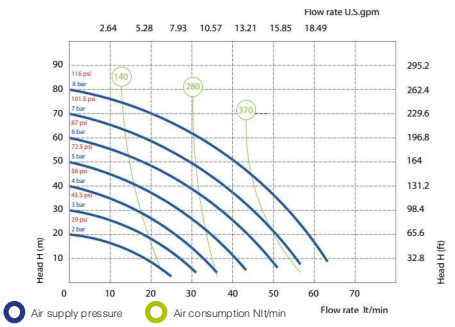
Fluid connections	**1" TRI-CLAMP**
Air connection	**1/4" BSP**
Max. Flow rate	**65 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**3,5 mm**
Noise level:	**72 dB**
Max Viscosity:	**20.000 cps**
Displacement per Stroke:	**140 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
7,3 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0060	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**AB =** STANDARD

PHOENIX FOOD 120 | TECHNICAL DATA | PERFORMANCE

PF 120

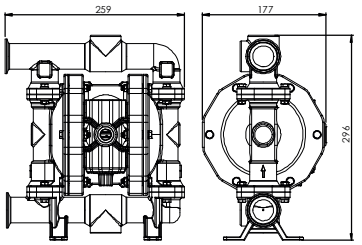
AISI 316 ELECTRO-POLISHED

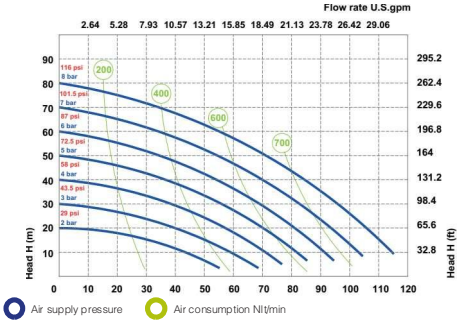
Fluid connections	**1"1/2"TRI-CLAMP**
Air connection	**3/8" BSP**
Max. Flow rate	**120 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**4 mm**
Noise level:	**72 dB**
Max Viscosity:	**25.000 cps**
Displacement per Stroke:	**200 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
9,6 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0120	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6=** DIN	**- =** zone 2 **X =** zone 1	**AB =** STANDARD

PF 170

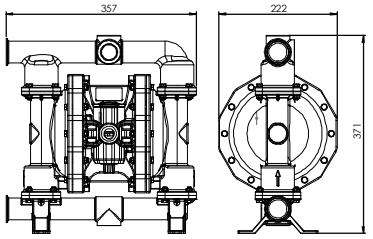
AISI 316 ELECTRO-POLISHED

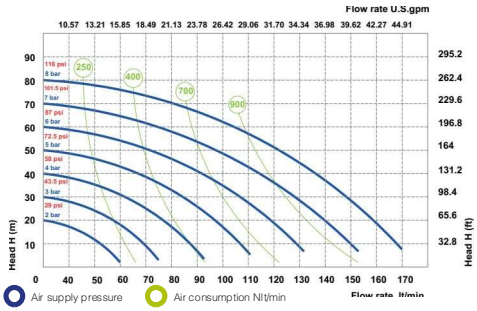
Fluid connections	**1”1/2 TRI-CLAMP**
Air connection	**1/2” BSP**
Max. Flow rate	**170 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**7,5 mm**
Noise level:	**75 dB**
Max Viscosity:	**35.000 cps**
Displacement per Stroke:	**700 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
17,2 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0170	**S =** SS POLISHED	**HT =**HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**AB =** STANDARD

PF 400

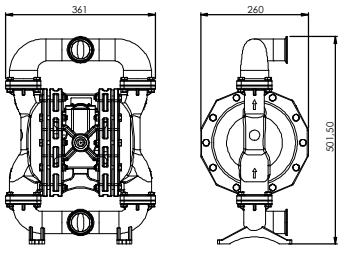
AISI 316 ELECTRO-POLISHED

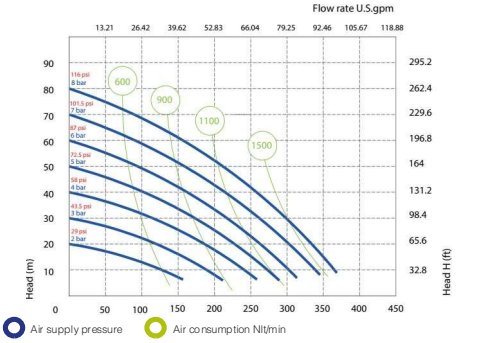
Fluid connections	**2” TRI-CLAMP**
Air connection	**1/2” BSP**
Max. Flow rate	**380 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**8 mm**
Noise level:	**78 dB**
Max Viscosity:	**40.000 cps**
Displacement per Stroke:	**1200 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
25,3 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0400	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**EF =** STANDARD

PHOENIX FOOD 700 | TECHNICAL DATA | PERFORMANCE

PF 700

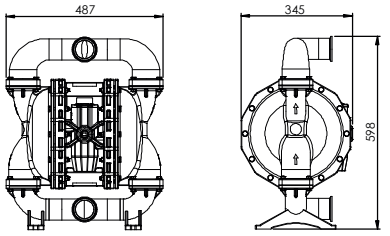
AISI 316 ELECTRO-POLISHED

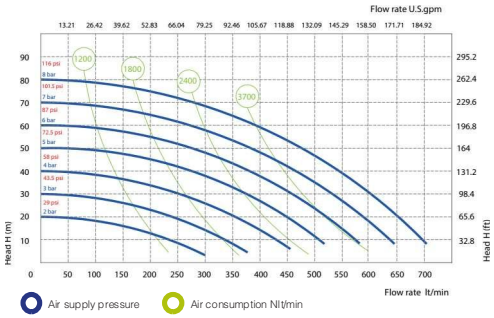
Fluid connections	**2”1/2 TRI-CLAMP**
Air connection	**3/4” BSP**
Max. Flow rate	**700 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**8,5 mm**
Noise level:	**78 dB**
Max Viscosity:	**50.000 cps**
Displacement per Stroke:	**3050 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
51 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF0700	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**EF =** STANDARD

PHOENIX FOOD 1000 | TECHNICAL DATA | PERFORMANCE

PF 1000

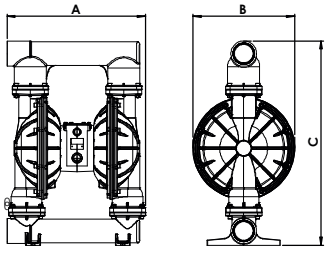
AISI 316 ELECTRO-POLISHED

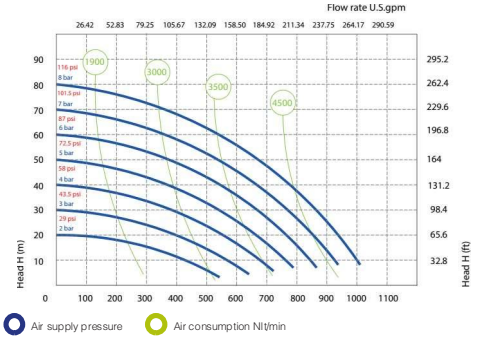
Fluid connections	**3” BSP**
Air connection	**3/4” BSP**
Max. Flow rate	**1050 lt/min**
Max air pressure	**8 bar**
Max delivery head	**80 m**
Max Suction Lift Dry	**5 m**
Max Suction Lift Wet	**9,8 m**
Max Solid passing	**12 mm**
Noise level:	**82 dB**
Max Viscosity:	**55.000 cps**
Displacement per Stroke:	**9750 CC ~**

EX II 3/3 GD h IIB T4 (STD. zone 2)

EX II 2/2 GD h IIB T4 (zone 1)

Displacement per stroke may vary based on suction condition, discharge head, air pressure and fluid type.





The curves and performance values refer to pumps with submerged suction and free delivery outlet, with water at 20°C. These data may vary according to the construction materials and hydraulic conditions.

Net Weight	Temperature
111,5 Kg	-20°C +95°C

MODEL	CASING	DIAPHRAGM	BALLS	SEATS	GASKET	CONNECTIONS	ATEX	PORTS
PF1000	**S =** SS POLISHED	**HT =** HYTREL+PTFE	**T =** PTFE **S =** SS	**S =** SS	**T =** PTFE	**3 =** TRI-CLAMP **1 =** BSP **6 =** DIN	**- =** zone 2 **X =** zone 1	**AB =** STANDARD