SAMOA®

LEADING THROUGH INNOVATION

AIR OPERATED DOUBLE DIAPHRAGM PUMPS

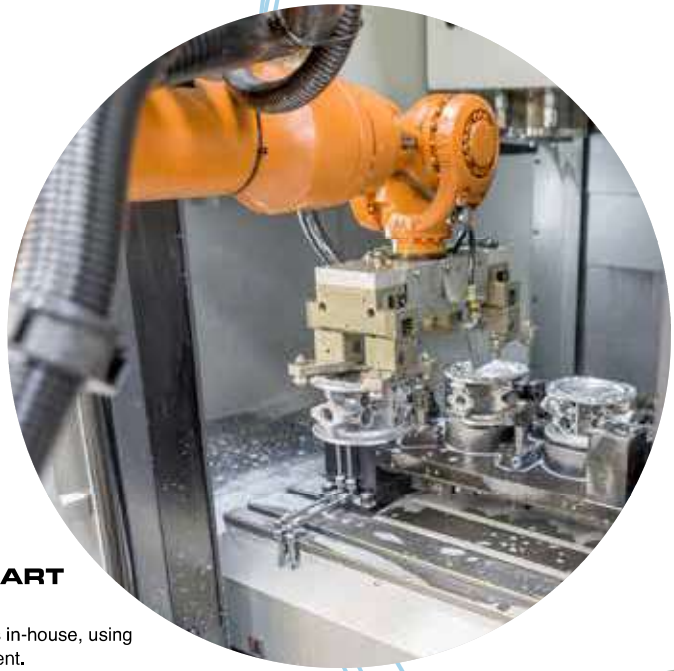
PIVOT

UNIVERSAL PUMP

TECHNOLOGY EXCELLENCE

ENVIRONMENT Concerned

Metal die-casting and thermoplastic materials moulding are optimally industrialized and produced using energy efficient and reliable resources.



STATE-OF-THE-ART Machinery

We produce all components in-house, using the most advanced equipment.

QUALITY First

Automated measuring of parts for consistent quality assurance.

SAMOA Headquarters and Technical Centre in Gijón (Spain)

SAMOA: LEADING THROUGH INNOVATION

SAMOA, a privately owned company, is a **leading European manufacturer of Lubrication and Fluid Handling Equipment.** SAMOA products are used for transferring, dispensing, dosing, and recovering different types of fluids in multiple industries and applications. SAMOA designs and manufactures **a wide program that includes air operated piston and double diaphragm pumps,** volume flow meters, delivery guns, electronic components for inventory control systems, hose reels, hand pumps and accessories for these products.

Product research and development is a fundamental part of SAMOA's philosophy. We are in permanent contact with the market to identify new customer needs, that we satisfy with existing product improvement and new product development.

SAMOA's headquarters have been in Gijón, on the Spanish North Coast, for over 60 years. SAMOA's manufacturing facilities are modern and equipped with the latest state-of-the-art production equipment and technology. We are **committed to design and manufacturing excellence, environmental sustainability and a healthy and safe workplace;** our work processes and facilities are consequently ISO 9001, ISO 14001 and ISO 45001 certified.

Our products are available through a network **of fully owned subsidiaries and knowledgeable distributors.** This global network provides a sales and consulting service, to identify the products that best meet each customer's needs, and when required offers after sales service to ensure the long and satisfactory use of our equipment.

Our continuous product improvement process ensures that **our products meet customer requirements worldwide,** including in even the most demanding applications and environments. As a result, we are proud to say that SAMOA products are reliably working away, night and day, in more than 100 countries.

PERFECTLLY Tested

All pumps are dry, wet, vacuum, and dead-head verified.

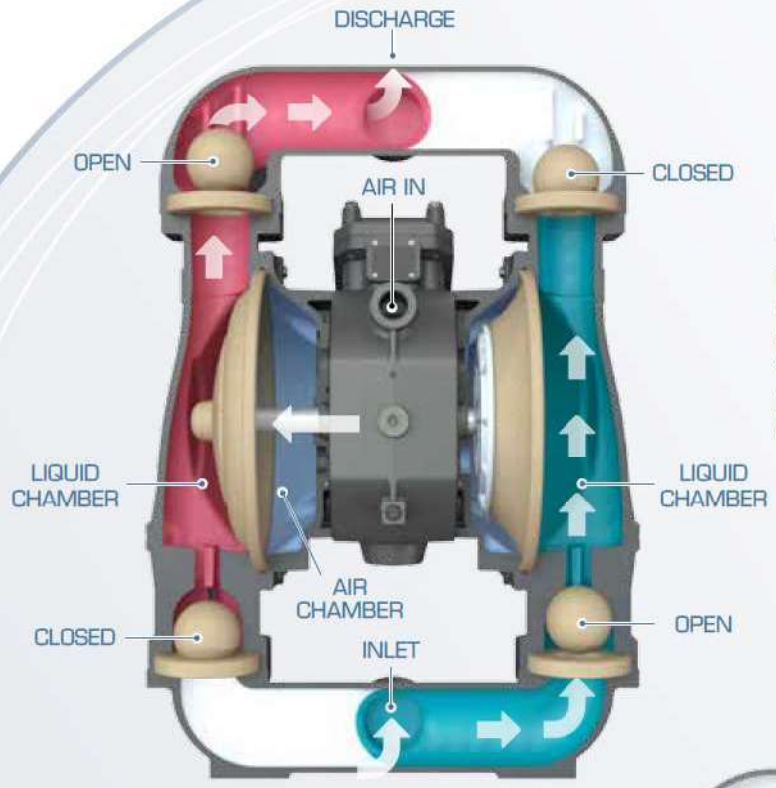
CONSISTENT ASSEMBLY

SAMOA

AIR OPERATED DOUBLE DIA

WORKING PRINCIPLE OF AN AODD PUMP

SAMOA Pivot Universal Pumps (UP) are air operated double diaphragm pumps with a reciprocating motion. They have two opposite pump volumes and a diaphragm divides each volume into an air and a liquid chamber. The diaphragms are connected with a shaft. During one pumping stroke, the fluid (blue), is suctioned into one liquid chamber, while simultaneously other fluid volume (red), is discharged from the opposite liquid chamber.

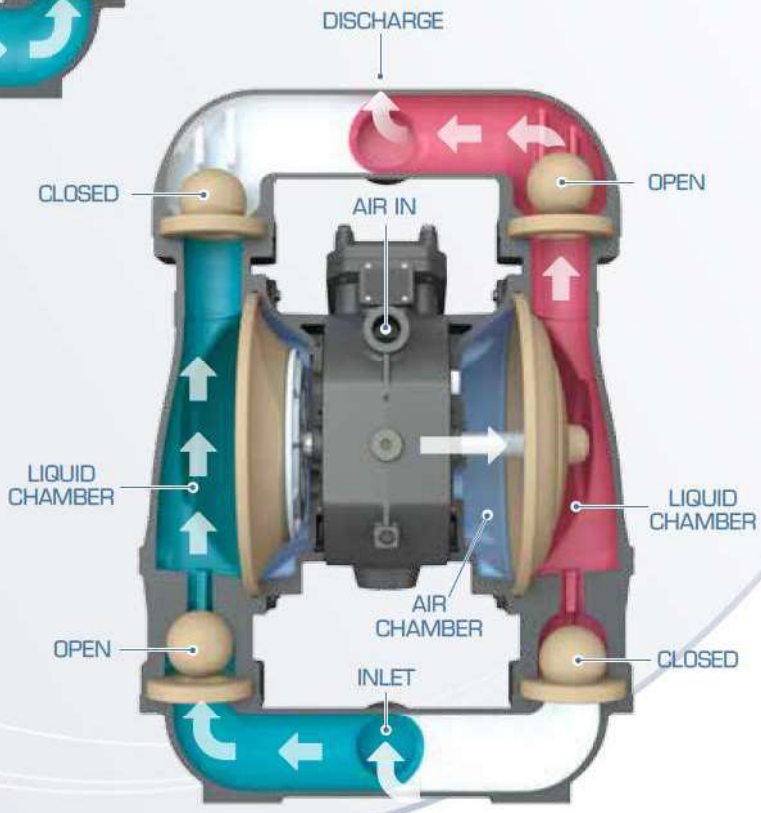


SUCTION STROKE (BLUE)

The air valve in the center of the pump fills the left inner chamber with compressed air, causing the right diaphragm to create a suction, lifting the lower check valve and pulling fluid in at inlet. Simultaneously, the left chamber is in Discharge Stroke (red).

DISCHARGE STROKE (RED)

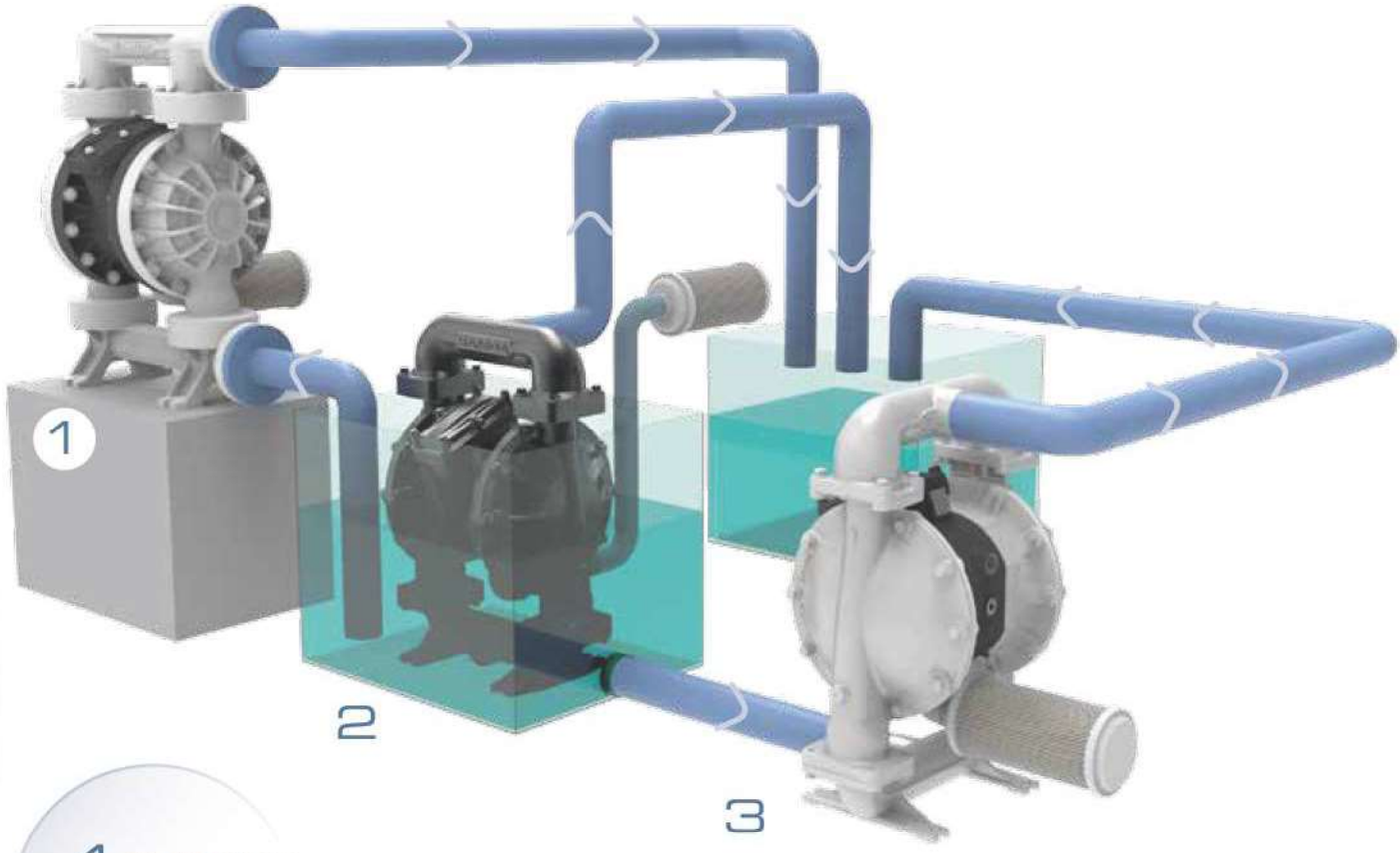
The air valve alternates the air flow, which now fills the right air chamber, causing the upper check valve to open and discharge fluid. Simultaneously, the left chamber is working in Suction Stroke (blue).



A suction stroke and a discharge stroke constitute a complete pump cycle. The pump may take several cycles to complete prime depending on the application conditions.

INSTALLATION OF AODD PUMPS

AODD pumps are suitable for a wide variety of applications: as fixed installations in process applications or as portable or mobile units, for easy transport to different places of use.
All Air Operated Double Diaphragm Pumps are able to run dry.



1. SUCTION LIFT

- Dry self-priming.
- Max lift up to 8,3 m (28') (water) with an adequate filler suction pipe.

2. SUBMERGED

- Pump can be totally submerged in the pumped liquid.
- Air exhaust outlet must be above the fluid level.
- Pump central body materials must be compatible with the pumped liquid.

3. FLOODED SUCTION

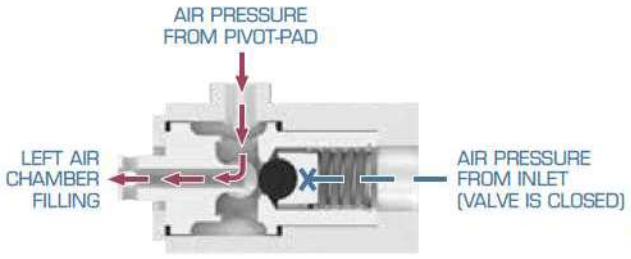
- Most common installation.
- Adequate for viscous fluids.
- Suction side inlet pressure should not exceed 0,7 bar / 10 psi and 7 m - 23' water column.

AIR DISTRIBUTION SYSTEM

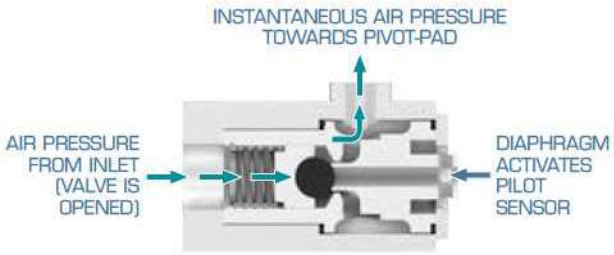
SAMOA Pivot Universal Pump (UP) combines the innovative concept of their Air Distribution System (Central Body, Air Covers, Air Valve and Pilot Sensors) with an enhanced Universal Air Operated Double Diaphragm Pump design.

The exclusive Air Distribution System (ADS) incorporates an innovative Pivot-Valve together with the "Smooth-Start-Shifter" (3S) actuator (patented). It provides a reliable operation with very low air pressure and / or low air flow.

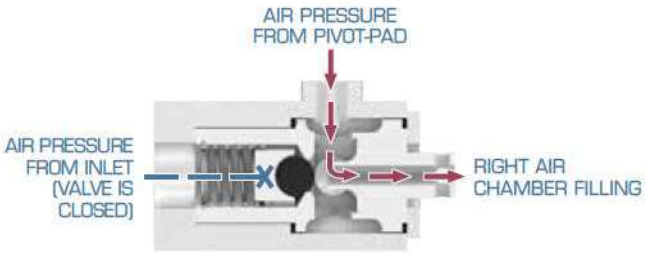
Additionally ADS design also prevents freezing and delivers higher and smoother flow with reduced air consumption when compared to other competitive AODD Pumps. Thanks to its modular concept, Samoa ADS is very simple to clean and maintain.

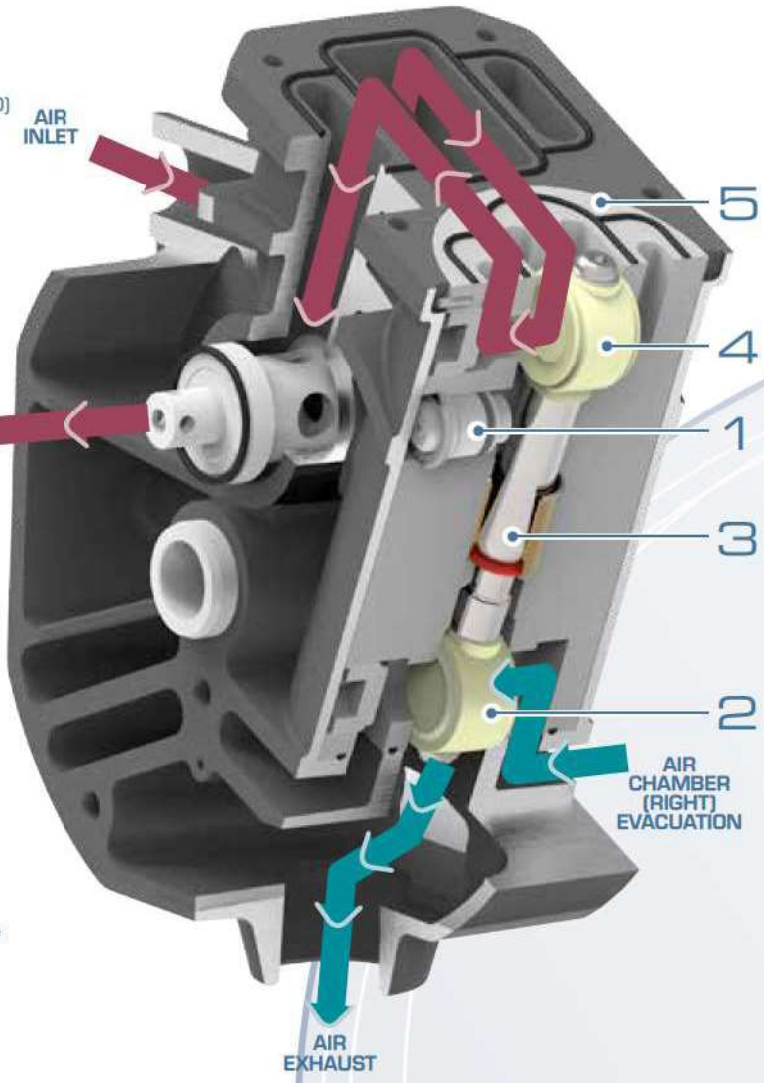


Left Pilot Sensor (closed)
Directs compressed air from the inlet through the pivot-pad (red) towards the left air chamber, which is, then, displacing the diaphragm and in Fluid Discharge Stroke.



Right Pilot Sensor (open)
When the opposite diaphragm (right) has completed the Suction Stroke, it activates the sensor, that sends an instantaneous pneumatic signal to the air side pivot-pad for changing the Pivot-Valve position, initiating the pump reciprocating action, filling with air the right chamber while evacuating the air from the left chamber.





RELIABILITY, EFFICIENCY AND SIMPLICITY

AIR VALVE

- With an innovative cartridge design, the air valve assembly can be easily removed and cleaned or replaced if necessary, reducing pump down time.
- Air valve has the fewest moving parts in the industry: no spools, no o-rings. Unique Frictionless Pivot Valve.
- On-Off-On maximum reliability. Patented Smooth Start Shifter (3S) actuator activates the pivot-valve for reliable start on-demand systems, even with reduced air pressure.
- **Air valve cartridge manufactured in aluminium for metal pumps and in conductive polypropylene for non-metal pumps.**

RUNS WITH DRY, DIRTY OR DAMP AIR.

LUBE-FREE OPERATION.

LONG LIFE PIVOT-PADS.

3S Smooth-Start-Shifter

1. NO PUMP STALLING

SAMOA UP Series pumps do not stall even with low air pressure, as it can happen with other pumps. The patented "Smooth Start Shifter" (3S) actuator activates the pivot-shaft of the frictionless pivot-valve just when needed and thus prevents stalling.

2. NO PUMP FREEZING

The pivot-shaft action exhausts one air chamber to the atmosphere, for fast air evacuation, while compressed air simultaneously fills the opposite air chamber. The two large sides of the exhaust pivot-pad act as fast dump valves to exhaust the used air from each chamber directly through the exhaust port and muffler. This prevents freezing and pump slowdown.

3. SMOOTH FLOW

The unique ADS, which combines two end of stroke sensors that send an instantaneous pneumatic signal with the frictionless pivot-valve, provides the fastest reciprocating action in the industry against conventional spool or sliding block valves. This contributes to provide a smoother flow and reduced vibration when compared to many competitor AODD pumps.

4. EFFICIENT PUMP

The close tolerances at the ADS air inlet pivot-pad check-valves and the optimized pilot-sensors, avoid internal air leaks, reduce air consumption and optimize the flow delivery versus most of competitors' AODD Pumps.

5. SIMPLE MAINTENANCE

The ADS used in the Pivot Universal Pumps has the fewest number of moving parts in the Industry. Its modular and easy to replace design contributes to reduce downtime and simplifies maintenance.
The air valve module is fully accessible and can be replaced in minutes, while the pump is installed in line.

DIRECTFLO® PUMPS

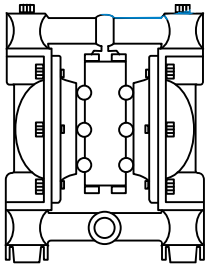
ADVANTAGES OF AIR OPERATED DOUBLE DIAPHRAGM PUMPS

- Dry-running capacity and dry self-priming.
- Can pump clean fluids or fluids with suspended solids.
- Best pump for abrasive, corrosive and shear sensitive fluids.
- Air driven pump, no electricity required, no electrical hazard.
- On-demand operation. Pump stops when fluid outlet closes and automatically starts when the fluid outlet opens.
- Adjustable flow and head pressure with only an air pressure regulator.
- No dynamic mechanical seals or packings.

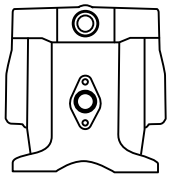
ADDITIONAL DIRECTFLO® PUMPS ADVANTAGES:

INNOVATIVE DESING

- One piece fluid section guarantees no leakage.
- Fast and easy maintenance
- No manifolds, very compact design.



TRADITIONAL 1/2" PUMP



DIRECTFLO® DF50 PUMP

Directflo® pumps are more compact allowing easy and economical installation in applications with:

- OEMs
- Hard to access places
- Congested areas with many pipes and other equipment.

While producing equal to higher flow rates with reduced air consumption.

PROVEN SUPERIOR PERFORMANCE

- Superior dry suction.
- Non icing, no stalling.
- Superior start-up reliability.
- Tolerates dry, damp, dirty and oily air.
- Gentle pumping, reduced pulsations and vibration.

INCREASED DURABILITY

- First quality materials.
- Long diaphragm life.
- Short diaphragm stroke.

MORE EFFICIENT PUMP

- Reduced air consumption.
- Reduced internal pressure drop.

REVOLUTIONARY DIRECTFLO® TECHNOLOGY

Directflo® pumps are based in an “inside-out” techonology: the fluid is pumped through the center of the pump while the compressed air acts on the external face of the diaphragms.

EXTREMELY FAST CHANGEOVER FRICTIONLESS PIVOT VALVE DESIGN

Very reliable and fast action air valve that reduces air consumption and minimizes pulsation.

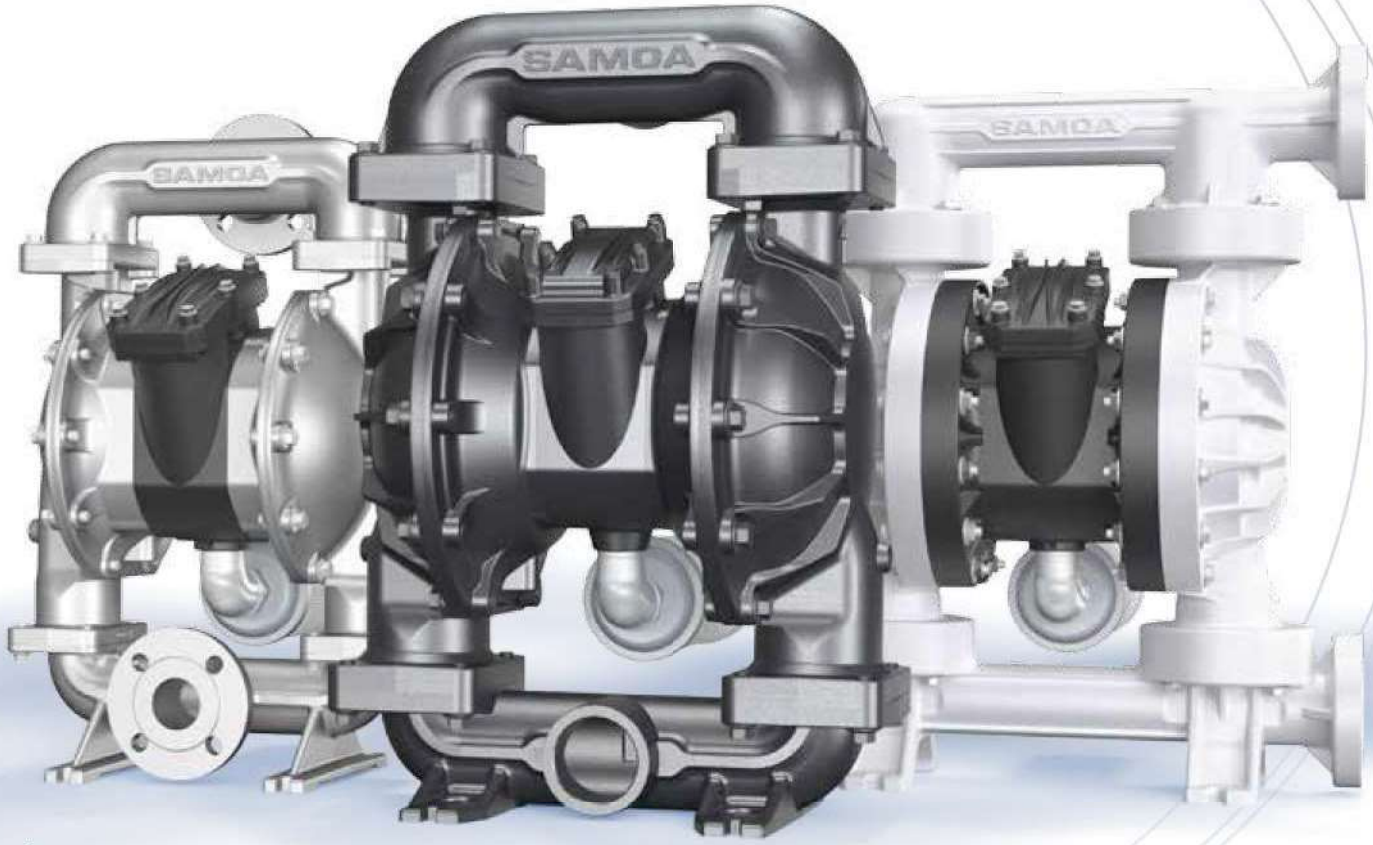
SHORT STROKE DIAPHRAGMS GREATLY EXTENDS LIFE

UP: PIVOT UNIVERSAL PUMP

The new SAMOA Pivot Universal Pump (UP) combines a Universal design with a unique frictionless Pivot Air Valve to provide maximum performance and energy efficiency, exceeding market expectations.

ADVANTAGES OF AODD PUMPS

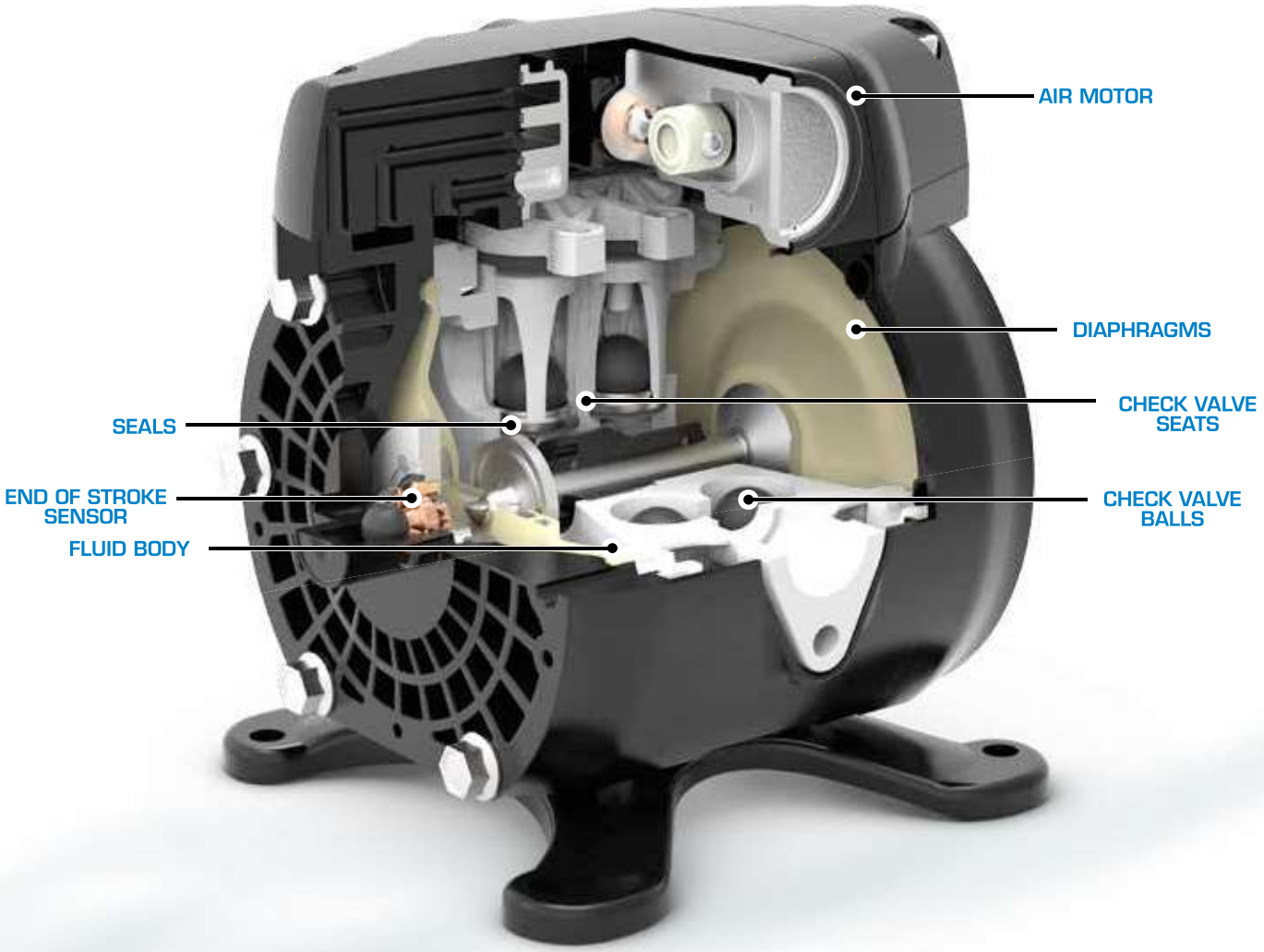
Dry-running capability.
Dry self-priming.
Can pump clean fluids or fluids with suspended solids.
Best pump for abrasive, corrosive and shear sensitive fluids.
Air driven pump, no electricity required, no electrical hazard.
Can be submerged completely with no performance or safety issues.
On-demand operation. Pump stops when fluid outlet closes and automatically starts when the fluid outlet opens.
Adjustable flow and discharge pressure with only an air pressure regulator.
No dynamic mechanical seals or packings.



ADDITIONALLY, UP SERIES PUMPS OFFER:

HIGHER EFFICIENCY: Maximum fluid flow with reduced air consumption, versus competitive pumps.
INCREASED RELIABILITY: No stall, no icing, and reliable start-up even with the lowest air pressure.
MINIMAL VIBRATION AND PULSATION: Thanks to the fast action Frictionless Pivot air valve.
BOLTED CONSTRUCTION: Provides better seal and eliminates pump leaks. Same size bolts in covers and manifolds for easier maintenance.
EASIER SERVICING: Components designed for a simpler and easier maintenance, with reduced number of parts.
UNIVERSAL PUMP: Matches relative dimension of main competitive brands. Direct replacement for existing installed pumps.
SUPERB ABRASION RESISTANCE: Optimized design manifolds and fluid paths reduce fluid speed and minimize wear caused by abrasion.

CONSTRUCTION MATERIALS



ALUMINIUM
- Versatile material with good overall properties. Ideal for general purpose applications.
- Used in metal pumps for fluid bodies, air motors housings and valve seats in DP pumps.
- Not for use with halogenated hydrocarbons.

AISI 316 STAINLESS STEEL
- High corrosion resistance, mostly used in the chemical industry. High tensile resistance.
- Used in metal pumps for fluid bodies, valve seats and valve balls.

POLYPROPYLENE
- General purpose material. Good with water soluble acids and caustics.
- Used in plastic pumps for fluid bodies, air motor housings and valve seats (DC and DP pumps).
- Also available as conductive Polypropylene (black color) for groundable pumps (ATEX).

ACETAL
- Material with good mechanical properties. Compatible with most solvents.
- Used for valve balls and for valve seats in DC and DP pumps.
- Also available as conductive Acetal in fluid bodies for groundable pumps (ATEX).

PVDF
- A fluoroplastic, durable and with excellent chemical resistance.
- High tensile strength and impact resistance. Excellent temperature resistance.
- Used in plastic pumps for fluid bodies and valve seats.

PTFE (TEFLON®)
- Excellent chemical resistance and good resistance to high temperatures.
- Used in diaphragms and valve balls.

DIAPHRAGM MATERIALS

Hytrel® diaphragms

PTFE diaphragms

Santoprete® diaphragms

SANTOPRENE®
- Good compatibility with mild acids and alkalis. Ideal for abrasive fluids.
- Used in diaphragms and valve seats in DP pumps.

TPE (HYTREL®)
- Excellent for general purpose. Good for abrasive but non corrosive fluids.
- Used in diaphragms and valve seats in DP pumps.

NBR (BUNA-N)
- Excellent resistance to lubricants. Good resistance to flexion and abrasion.
- Used for diaphragms, valve balls and seals and in DP pumps also for valve seats.

HASTELLOY®
- Excellent corrosion resistance to strong acids and alkalies.
- Used in the diaphragm connecting rods.

AISI 420 STAINLESS STEEL
- Hard material with good corrosion resistance.
- Used in diaphragm connecting rod.

PUMP BODY MATERIALS

PVDF pump body

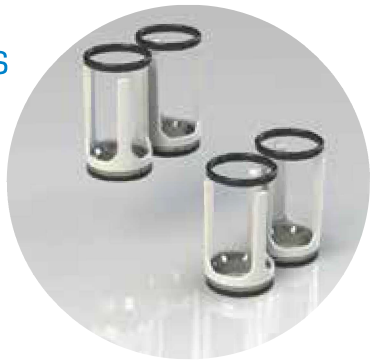
Polypropylene pump body

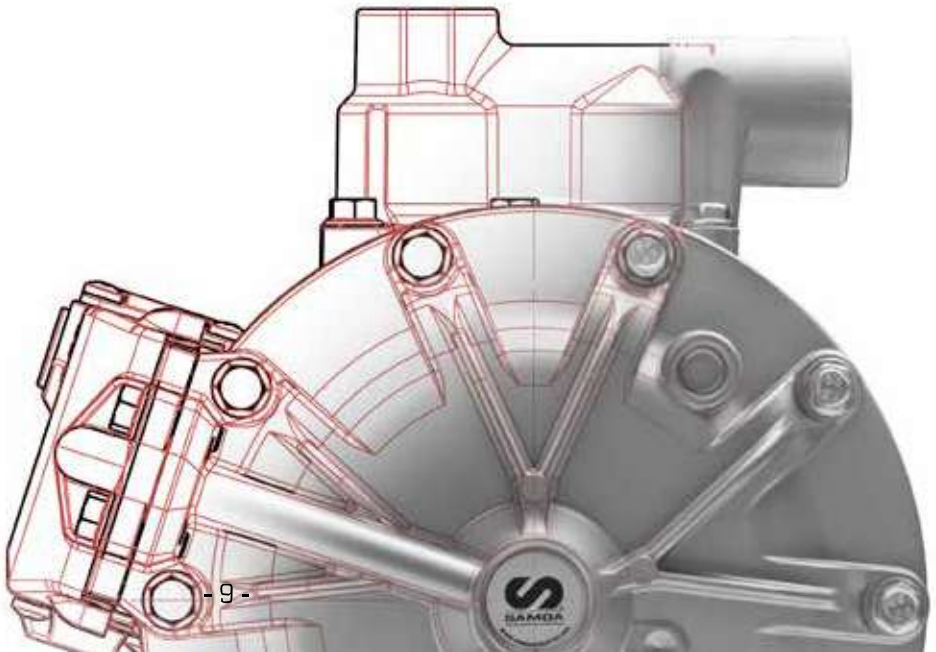
Aluminum pump body

Stainless Steel pump body

Acetal pump body

SEAT MATERIALS





UP PUMPS CODING SYSTEM

1	2	3		4	5	6		7	8	9
X	X	X	X	X	-	X	X	X	-	X	X	X
Central Body				Housings				Wetted Parts		

Example: **UP20A-BAC-HHC**

CENTRAL BODY SPECIFICATIONS

1 PUMP TYPE
UP = Universal Pump (Bolted type)

2 PUMP SIZE – Connection Ports (Ø)
20 - 2" (51 mm)
30 - 3" (76 mm)

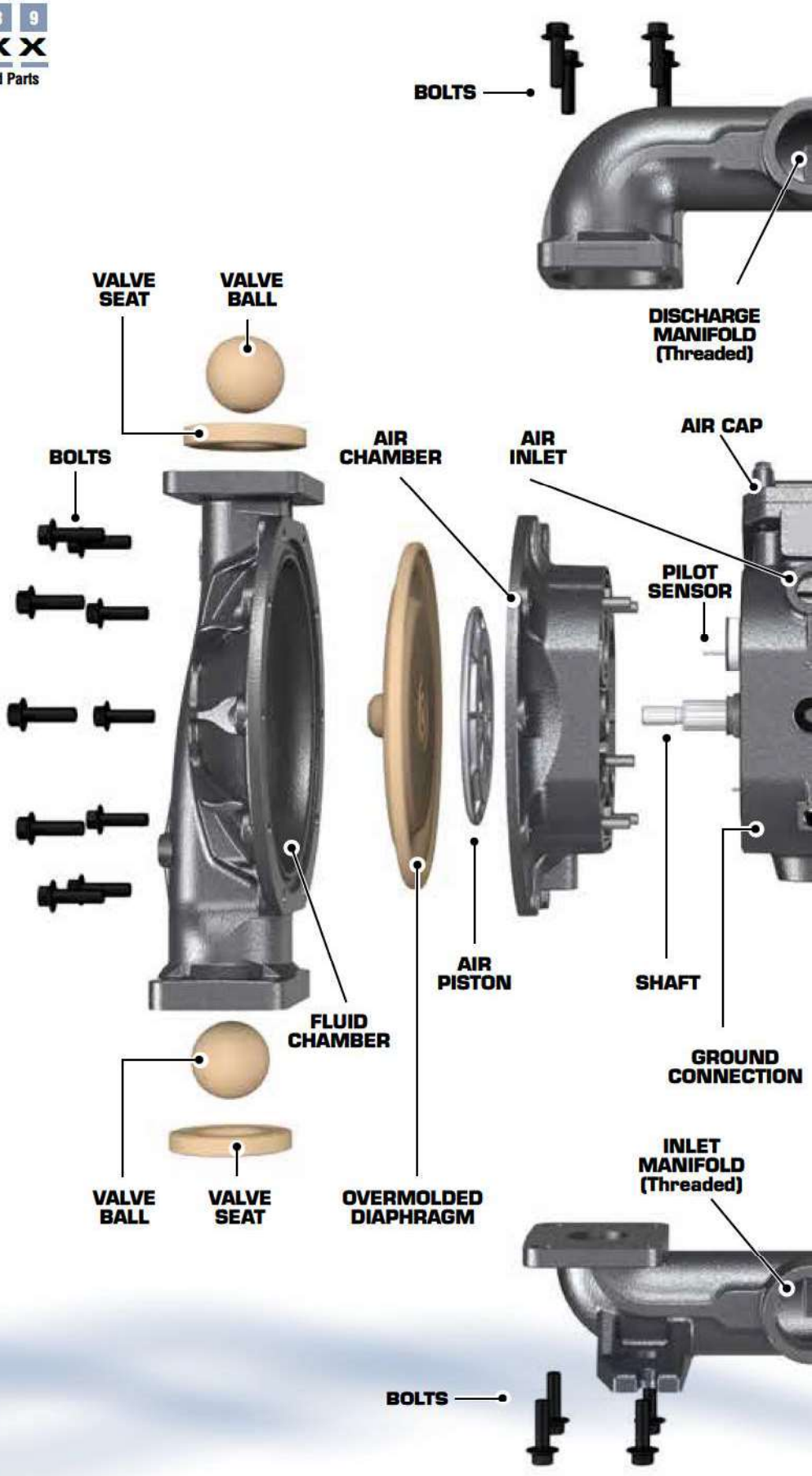
3 AIR MOTOR & AIR CHAMBERS
A = Aluminium
B = Conductive Polypropylene-ATEX
L = Conductive Polypropylene-ATEX with air chambers in AISI 316 Stainless Steel
S = Aluminium with air chambers in AISI 316 Stainless Steel

HOUSINGS SPECIFICATIONS

4 FLUID CONNECTION PORTS
B = BSP (Threaded - Central Location)
N = NPT (Threaded - Central Location)
C = ANSI/DIN (Flanged-Central Location)
F = ANSI/DIN (Flanged-Side Location)

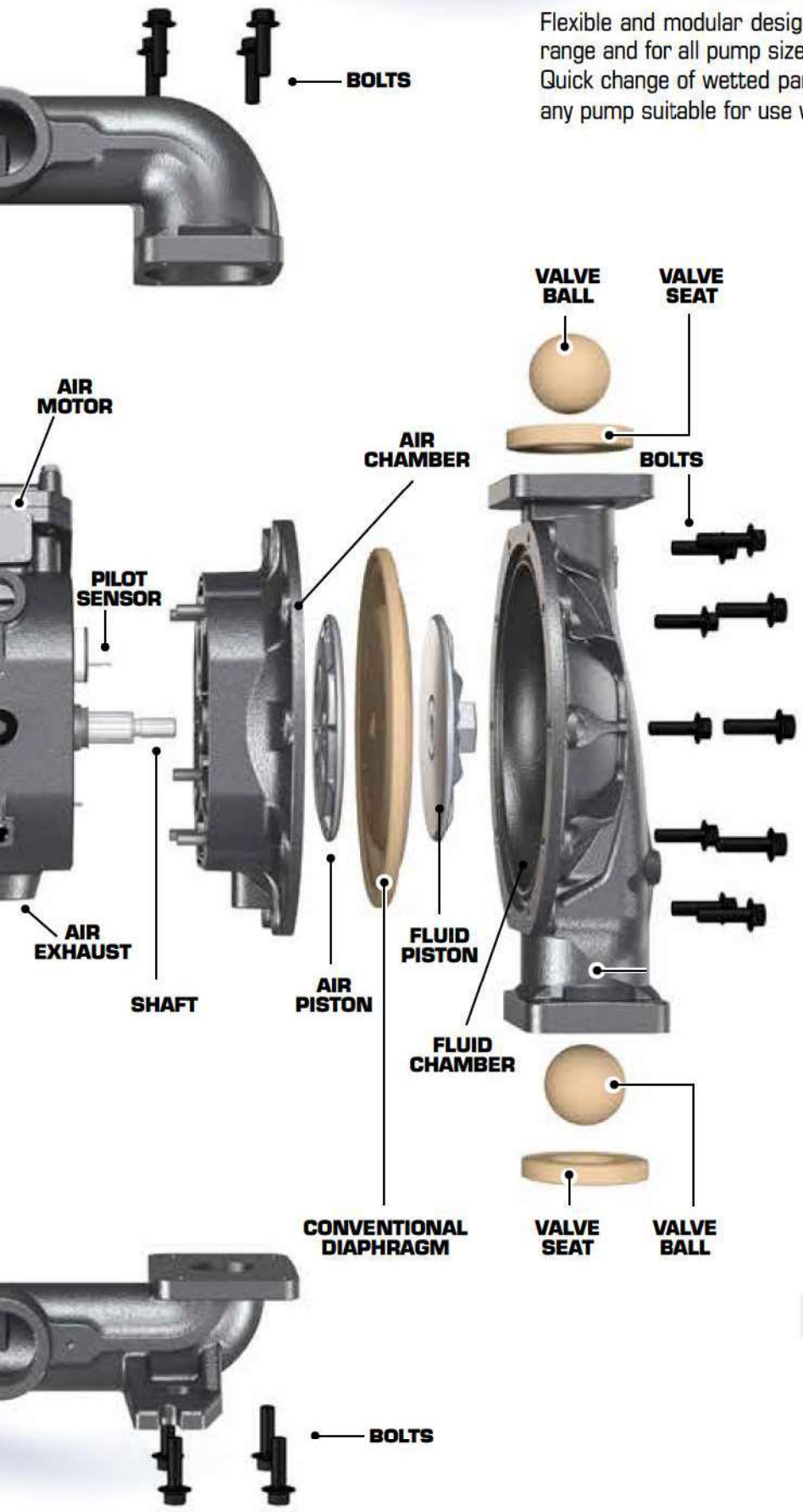
5 FLUID CHAMBERS/MANIFOLDS
A = Aluminium
F = Ductile Iron
P = Polypropylene / 1 Port
B = Conductive Polypropylene-ATEX / 1 Port
S = AISI 316 Stainless Steel
W = PVDF / 1 Port

6 HARDWARE (Bolts)
C = Carbon Steel
S = Stainless Steel



FLEXIBLE, MODULAR DESIGN

Flexible and modular design pumps concept for the widest product range and for all pump sizes.
Quick change of wetted parts (diaphragms, seats and balls) makes any pump suitable for use with other fluids.



WETTED PARTS SPECIFICATIONS

7 VALVE SEATS MATERIAL OPTIONS

A = Aluminium
D = AISI 440 Hardened Stainless Steel
H = Hytrel®
M = Santoprene®
N = NBR (Buna-N)
P = Polypropylene
S = AISI 316 Stainless Steel
T = PTFE (Teflon®)

8 VALVE BALLS MATERIAL OPTIONS

H = Hytrel®
M = Santoprene®
N = NBR (Buna-N)
S = AISI 316 Stainless Steel
T = PTFE (Teflon®)
V = FKM (Viton®)

9 DIAPHRAGM MATERIAL OPTIONS

Conventional Diaphragm (with exposed fluid piston)
A = Santoprene®
C = Hytrel®
G= NBR (Buna-N)
V = FKM (Viton®)
Z = PTFE with Santoprene® backer
Overmolded one piece Diaphragm (inserted fluid piston)
M = Santoprene®
H = Hytrel®
T = PTFE/EPDM-Bonded
N = NBR (Buna-N)

Not all material options are available to all pump sizes.

AIR OPERATED DIAPHRAGM PUMP RANGE

PLASTIC PUMPS

Plastic Directflo® and **Universal Pivot** pump fluid bodies are compatible with even the most aggressive chemicals. Air sections (air chambers and housings) are suitable for use in corrosive environments.



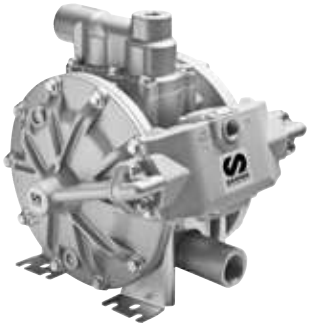

	DC20	DF30	DF50	DF100
Pressure ratio	1:1	1:1	1:1	1:1
Maximum free delivery (1)	5 US gal/min (20 l/min)	10 US gal/min (38 l/min)	14 US gal/min (50 l/min)	28 US gal/min (100 l/min)
Delivery per stroke approx. (1) (2)	0.008 US gal (0,03 liters)	0.02 US gal (0,07 liters)	0.026 US gal (0,1 liters)	0.07 US gal (0,25 liters)
Delivery per cycle (2 x strokes) (1) (2)	0.016 US gal (0,06 liters)	0.04 US gal (0,14 liters)	0.05 US gal (0,2 liters)	0.13 US gal (0,5 liters)
Air pressure operating range	20 to 100 psi (1,5 to 7 bar)	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)
Solids in suspension max. size	3/32" (2 mm)	1/8" (3 mm)	1/8" (3 mm)	3/16" (4 mm)
Maximum dry suction lift (1)	6 1/2' (2 m)	13' (4 m)	20' (6 m)	15' (4,5 m)
Maximum wet suction lift (1)	23' (7 m)	26' (8 m)	26' (8 m)	23' (7 m)
Weight	2,65 lb (1,2 kg)	4.19 lb (1,9 kg)	4.85 lb (2,2 kg)	11.24 lb (5,1 kg)
Fluid inlet connection	Int.:1/4" NPT/ BSP (F) Ext.: 3/4" NPT (M)	1/2" NPT/ BSP (F)	1/2" NPT/ BSP (F)	1" NPT/ BSP (F)
Fluid outlet connection	Int.:1/4" NPT/ BSP (F) Ext.: 3/4" NPT (M)	1/2" NPT/ BSP (F)	1/2" NPT/ BSP (F)	1" NPT/ BSP (F)
Air inlet connection	3/8" NPSM (F)	3/8" NPSM (F)	3/8" NPSM (F)	3/8" NPSM (F)


	DP200	UP20
Pressure ratio	1:1	1:1
Maximum free delivery (1)	53 US gal/min (200 l/min)	172 US gal/min (650 l/min)
Delivery per stroke approx. (1) (2)	0.13 US gal (0,5 liters)	0.6 US gal (2,25 liters)
Delivery per cycle (2 x strokes) (1) (2)	0.26 US gal (1 liter)	1.2 US gal (4,5 liters)
Air pressure operating range	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)
Solids in suspension max. size	1/4" (6 mm)	1/4" (6 mm)
Maximum dry suction lift (1)	16' (5 m)	16' (5 m)
Maximum wet suction lift (1)	26' (8 m)	26' (8 m)
Weight	23.15 lb (10,5 kg)	62 lb (28 kg)
Fluid inlet connection	1" DIN PN-10 DN25 flange and ANSI B16.5 1" 150 lb flange	2" ANSI/DIN. Side ends
Fluid outlet connection	1" DIN PN-10 DN25 flange and ANSI B16.5 1" 150 lb flange	2" ANSI/DIN. Side ends
Air inlet connection	3/8" NPSM (F)	3/4" NPT (F)

(1) Data measured with water, air inlet pressure 100 psi (7 bar) with DC models 115 psi (8 bar) with DF and DP models), 68 °F (20 °C) and flooded fluid inlet.
(2) Approximate value; real value may vary depending on working conditions, fluid pumped and pump materials.

METAL PUMPS

Metal Directflo® and **Universal Pivot** models handle a wide range of materials.



	DF50	DF100	DF250	DP200
Pressure ratio	1:1	1:1	1:1	1:1
Maximum free delivery (1)	14 US gal/min (50 l/min)	28 US gal/min (100 l/min)	66 US gal/min (250 l/min)	53 US gal/min (200 l/min)
Delivery per stroke approx. (1) (2)	0.026 US gal (0,1 liters)	0.07 US gal (0,25 liters)	0.16 US gal (0,6 liters)	0.13 US gal (0,5 liters)
Delivery per cycle (2 x strokes) (1) (2)	0.05 US gal (0,2 liters)	0.13 US gal (0,5 liters)	0.32 US gal (1,2 liters)	0.26 US gal (1 liters)
Air pressure operating range	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)
Solids in suspension max. size	1/8" (3 mm)	3/16" (4 mm)	1/4" (6 mm)	1/4" (6 mm)
Maximum dry suction lift (1)	20' (6 m)	15' (4,5 m)	16,4' (5 m)	16' (5 m)
Maximum wet suction lift (1)	26' (8 m)	23' (7 m)	26' (8 m)	26' (8 m)
Weight	7.72 lb (3,5 kg)	16 lb (7,2 kg)	45 lb (20 kg)	23.35 lb (11,5 kg)
Fluid inlet connection	1/2" NPSM (F)	1" NPT/ BSP (F)	1 1/2" NPT (F) and ANSI 1" B16.5 150 lb flange or 1 1/2" BSP (F) and DIN PN-10 DN40 flange	1" NPT/ BSP (F)
Fluid outlet connection	1/2" NPSM (F)	1" NPT/ BSP (F)	1 1/2" NPT (F) and ANSI 1" B16.5 150 lb flange or 1 1/2" BSP (F) and DIN PN-10 DN40 flange	1" NPT/ BSP (F)
Air inlet connection	3/8" NPSM (F)	3/8" NPSM (F)	1/2" NPSM (F)	3/8" NPSM (F)

	UP20	UP30
Pressure ratio	1:1	1:1
Maximum free delivery (1)	172 US gal/min (650 l/min)	264 US gal/min (1,000 l/min)
Delivery per stroke approx. (1) (2)	0.6 US gal (2,25 liters)	1.3 US gal (5 liters)
Delivery per cycle (2 x strokes) (1) (2)	1.2 US gal (4,5 liters)	2,6 US gal (10 liters)
Air pressure operating range	20 to 120 psi (1,5 to 8 bar)	20 to 120 psi (1,5 to 8 bar)
Solids in suspension max. size	1/4" (6 mm)	1/2" (127 mm)
Maximum dry suction lift (1)	16' (5 m)	19.7' (6 m)
Maximum wet suction lift (1)	26' (8 m)	26.2' (8 m)
Weight	101 lb (46 kg) / 163 lb (74 kg) / 168 lb (76 kg)	150 lb (68 kg) / 270 lb (120 kg)
Fluid inlet connection	2" ANSI/DIN flanged	3" NPT / 3" ANSI/DIN flanged
Fluid outlet connection	2" NPT / 2" ANSI/DIN flanged	3" NPT / 3" ANSI/DIN flanged
Air inlet connection	3/4" NPT (F)	3/4" NPT (F)

(1) Data measured with water, air inlet pressure 100 psi (7 bar) with DC models 115 psi (8 bar) with DF and DP models), 68 °F (20 °C) and flooded fluid inlet.
(2) Approximate value; real value may vary depending on working conditions, fluid pumped and pump materials.

DC20 PLASTIC PUMPS

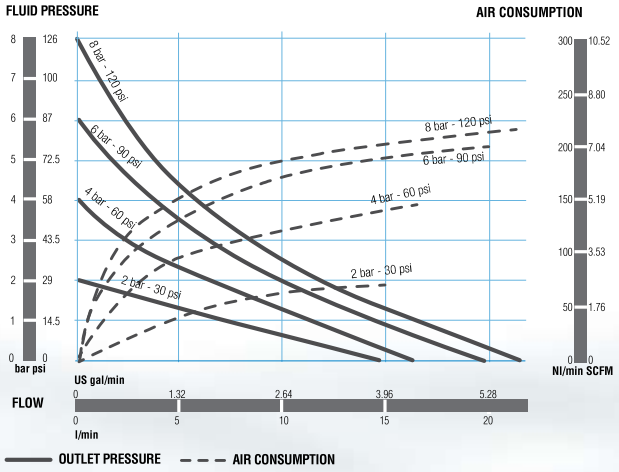
20 L/MIN (5 US GAL/MIN) - 1/4"

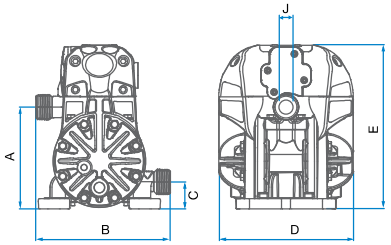
TECHNICAL DATA	DC20 PLASTIC PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	20 l/min (5 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,06 litres (0.016 US gal)
Air pressure operating range	1,5 to 7 bar (22 to 100 psi)
Solids in suspension max. size	2 mm (3/32")
Maximum dry suction lift (1)	2 m (6 1/2')
Maximum wet suction lift (1)	7 m (23')
Weight	1,2 kg (2.65 lb)
Fluid inlet port	Int.: 1/4" BSP/NPT (F) Ext.: 3/4" NPT (M)
Fluid outlet port	Int.: 1/4" BSP/NPT (F) Ext.: 3/4" NPT (M)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

Tested at room temperature, with water and flooded pump with 800 mm (31 1/2") height of water above the pump inlet.



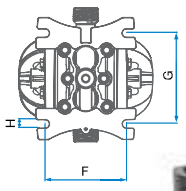


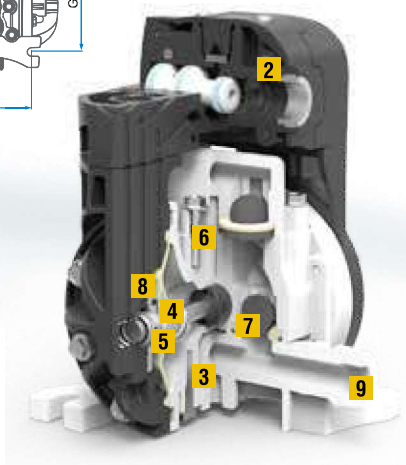
Dimensions (mm)

A	B	C	D	E
108	142	29	142	173

F	G	H*	J
86	96	9	1/4" - 3/4" (F)

** Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DC20P - PSE - PTM- BAS

DC20X		XXX			XXX			XXX	
1 **Pump Size**	**2** **Air motor**	**3** **Fluid Body**	**4** **Diaphragm Connecting Rod**	**5** **Seals**	**6** **Seats**	**7** **Balls**	**8** **Diaphragms**	**9** **Fluid Connection Threads**	**10** **Options**
DC20	⟨Ex⟩ **ATEX Certified*** **P**= Conductive Polypropylene	**P** = Polypropylene **W** = PVDF ⟨Ex⟩ **ATEX Certified*** **D** = Conductive Acetal	**S** = Stainless Steel AISI 420 **Y** = Hastelloy® C	**E** = EPDM **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**C** = Acetal **P** = Polypropylene **W** = PVDF	**C** = Acetal **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **ES** = Externally driven

* ⟨Ex⟩ ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF30 PLASTIC PUMPS

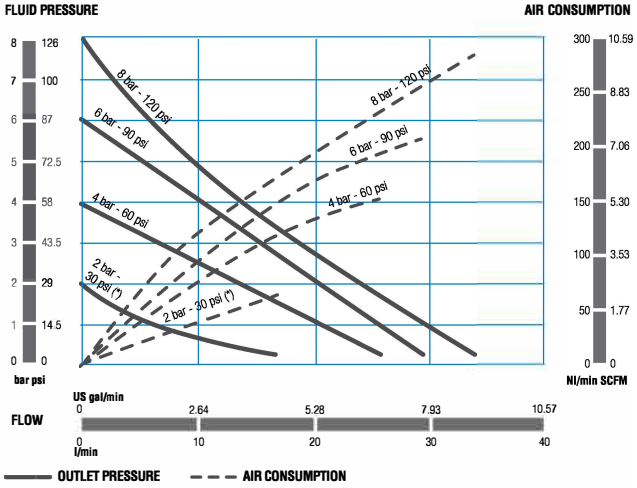
38 L/MIN (10 US GAL/MIN) - 3/8"

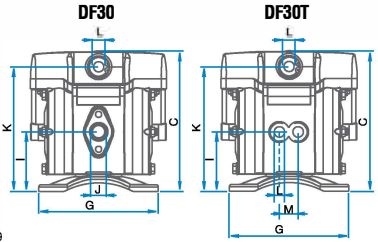
TECHNICAL DATA	DF30 & DF30T PLASTIC PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	38 l/min (10 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,14 litres (0.04 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	3 mm (1/8")
Maximum dry suction lift (1)	4 m (13')
Maximum wet suction lift (1)	8 m (26')
Weight	1,9 kg (4.19 lb)
Fluid inlet port	1/2" BSP/NPT (F) 2 x 3/8" BSP/NPT (F) (DF30T)
Fluid outlet port	1/2" BSP/NPT (F)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.



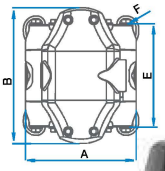


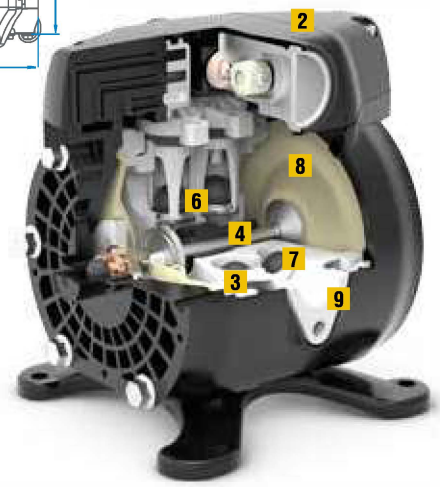
Dimensions (mm)

A	B	C	D	E	F*
130	160	165	105	122	8

G	I	J	K	L	M
140,7	70	1/2" (F)	146	3/8" (F)	24

** Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DF30P - PST - STT- BAS

DF30X - DF30TX		XXX			XXX			XXX	
1 Pump Size	**2** Air motor	**3** Fluid Body	**4** Diaphragm Connecting Rod	**5** Seals	**6** Seats	**7** Balls	**8** Diaphragms	**9** Fluid Connection Threads	**10** Options
DF30 **DF30T** Dual inlet	Ⓔx **ATEX Certified*** **P**= Conductive Polypropylene	**P** = Polypropylene **W** = PVDF Ⓔx **ATEX Certified*** **D** = Conductive Acetal	**S** = Stainless Steel AISI 420 **Y** = Hastelloy® C	**E** = EPDM **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316 **W** = PVDF	**C** = Acetal **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust **ES** = Externally driven **FS** = Quiet exhaust

* Ⓔx ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF50 PLASTIC PUMPS

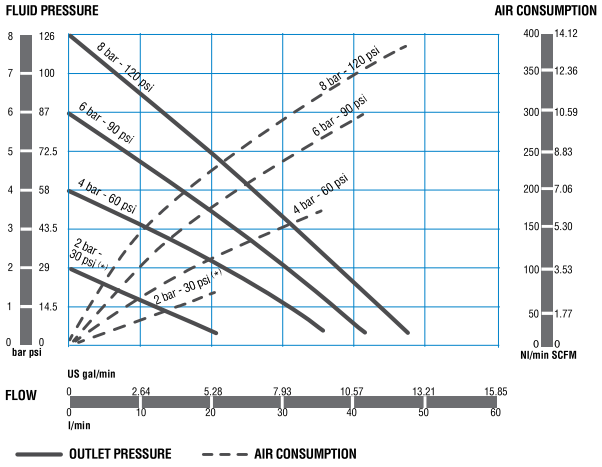
50 L/MIN (14 US GAL/MIN) - 1/2"

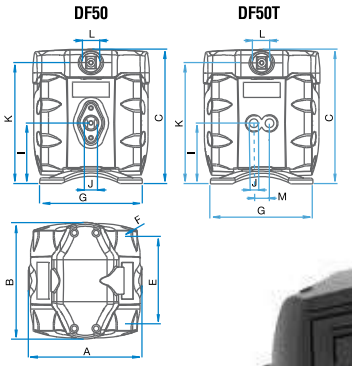
TECHNICAL DATA	DF50 & DF50T PLASTIC PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	50 l/min (14 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,2 litres (0.05 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	3 mm (1/8")
Maximum dry suction lift (1)	6 m (20')
Maximum wet suction lift (1)	8 m (26')
Weight	2,2 kg (4.85 lb)
Fluid inlet port	1/2" BSP/NPT (F) 2 x 3/8" BSP/NPT DF50T
Fluid outlet port	1/2" BSP/NPT (F)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.



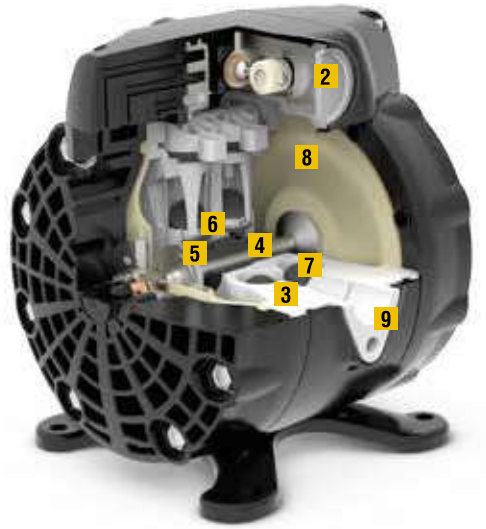


Dimensions (mm)

A	B	C	D	E	F*
156	160	185	105	122	8

G	I	J	K	L	M
140,7	83	1/2" (F)	166	3/8" (F)	24

** Diameter of the holes for fasteners in each of the four pump feet.*



PUMP NOMENCLATURE

DF50P - PST - STT- BAS

DF50X - DF50TX		XXX			XXX			XXX	
1 Pump Size	2 Air motor	3 Fluid Body	4 Diaphragm Connecting Rod	5 Seals	6 Seats	7 Balls	8 Diaphragms	9 Fluid Connection Threads	10 Options
DF50 **DF50T** Dual inlet	⟨Ex⟩ **ATEX Certified*** **P**= Conductive Polypropylene	**P** = Polypropylene **W** = PVDF ⟨Ex⟩ **ATEX Certified*** **D** = Conductive Acetal	**S** = Stainless Steel AISI 420 **Y** = Hastelloy® C	**E** = EPDM **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316 **W** = PVDF	**C** = Acetal **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust **ES** = Externally driven **FS** = Quiet exhaust

*⟨Ex⟩ ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF50 METAL PUMPS

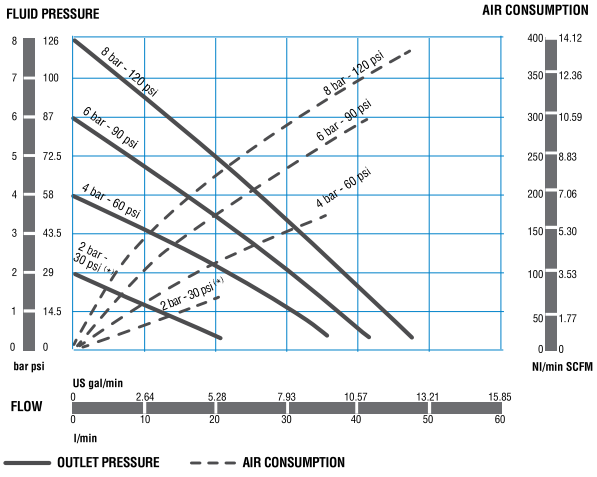
50 L/MIN (14 US GAL/MIN) - 1/2"

TECHNICAL DATA	DF50 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	50 l/min (14 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,2 litres (0.05 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	3 mm (1/8")
Maximum dry suction lift (1)	6 m (20')
Maximum wet suction lift (1)	8 m (26')
Weight	3,5 kg (7.72 lb)
Fluid inlet port	1/2" NPSM (F)
Fluid outlet port	1/2" NPSM (F)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.

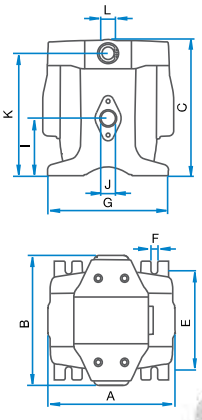


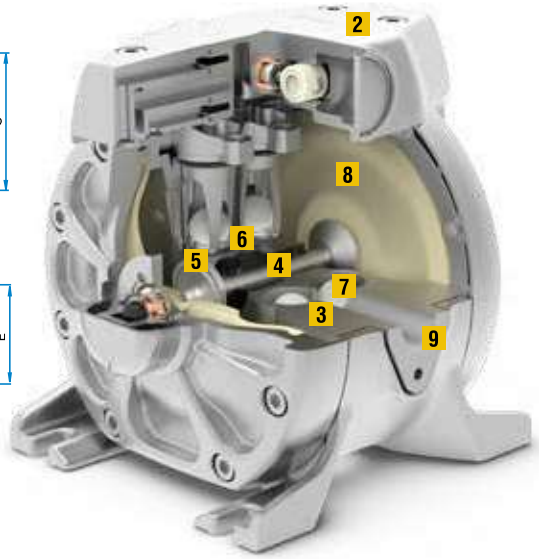
Dimensions (mm)

A	B	C	D	E	F*
156	160	167	105	122	8

G	I	J	K	L
146	70	1/2" (F)	150	3/8" (F)

** Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DF50A - ASN - SNT- BAS

DF50X		XXX			XXX			XXX	
1 Pump Size	2 Air motor	3 Fluid Body	4 Diaphragm Connecting Rod	5 Seals	6 Seats	7 Balls	8 Diaphragms	9 Fluid Connection Threads	10 Options
DF50	⟨Ex⟩ **ATEX Certified*** **A** = Aluminum	⟨Ex⟩ **ATEX Certified*** **A** = Aluminum **S** = Stainless Steel AISI 316	**S** = Stainless Steel AISI 420	**E** = EPDM **N** = Buna-N **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316	**C** = Acetal **N** = Buna-N **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **T** = PTFE (Teflon®) **N** = Buna-N	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust **ES** = Externally driven **FS** = Quiet exhaust

* ⟨Ex⟩ ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF100 PLASTIC PUMPS

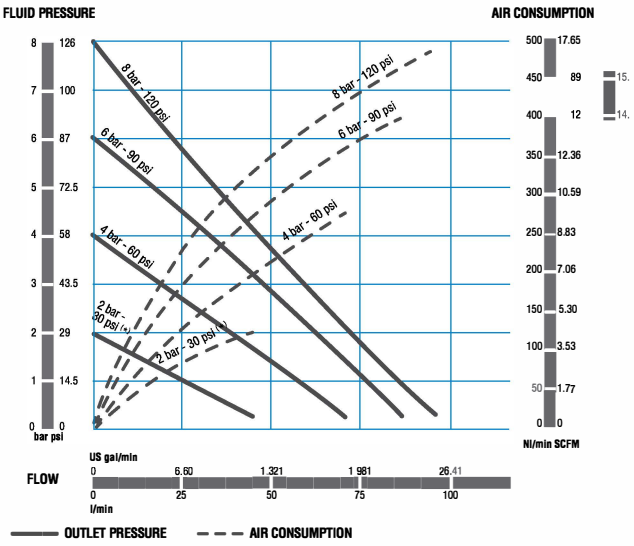
100 L/MIN (28 US GAL/MIN) - 3/4"

TECHNICAL DATA	DF100 PLASTIC PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	100 l/min (28 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,5 litres (0.13 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	4 mm (3/16")
Maximum dry suction lift (1)	4,5 m (15')
Maximum wet suction lift (1)	7 m (23')
Weight	5,1 kg (11.24 lb)
Fluid inlet port	1" BSP/NPT (F)
Fluid outlet port	1" BSP/NPT (F)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.

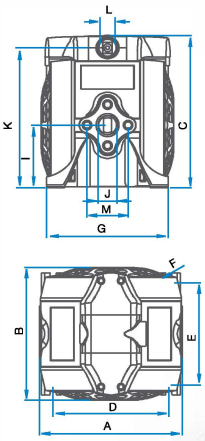


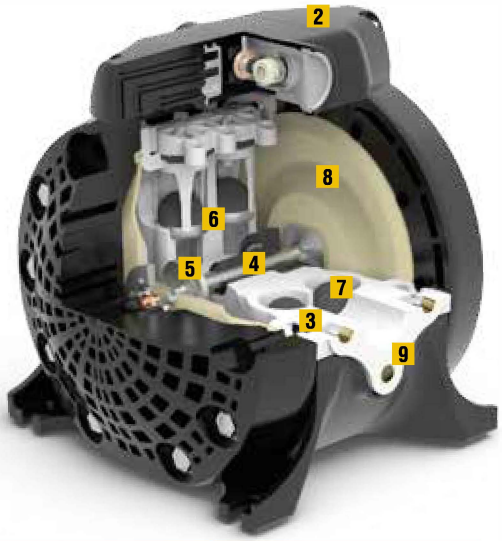
Dimensions (mm)

A	B	C	D	E	F*
216	218	230	175	154	8

G	I	J	K	L	M
184	94,5	1" (F)	211,5	3/8" (F)	62**

** Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DF100P - PST - STM- BAS

DF100X		XXX			XXX			XXX	
1 Pump Size	2 Air motor	3 Fluid Body	4 Diaphragm Connecting Rod	5 Seals	6 Seats	7 Balls	8 Diaphragms	9 Fluid Connection Threads	10 Options
DF100	(Ex) **ATEX Certified*** **P**= Conductive Polypropylene	**P** = Polypropylene **W** = PVDF (Ex) **ATEX Certified*** **D** = Conductive Acetal	**S** = Stainless Steel AISI 420 **Y** = Hastelloy® C	**E** = EPDM **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316 **W** = PVDF	**C** = Acetal **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust **ES** = Externally driven **FS** = Quiet exhaust

*(Ex) ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF100 METAL PUMPS

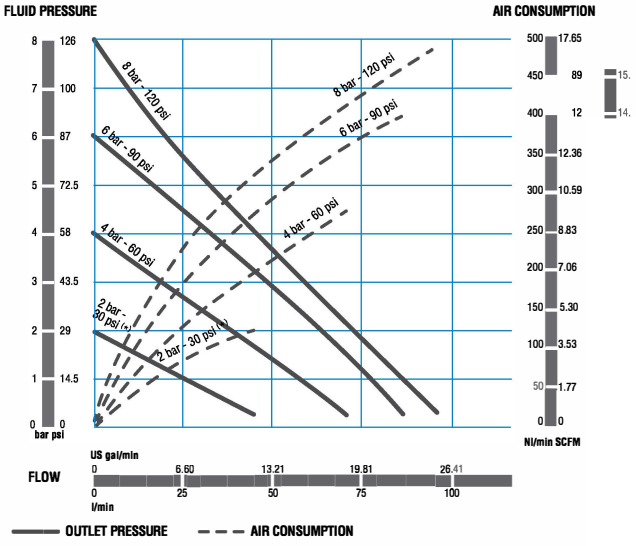
100 L/MIN (28 US GAL/MIN) - 3/4"

TECHNICAL DATA	DF100 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	100 l/min (28 US gal/min)
Displacement per cycle (2 x strokes) (1)	0,5 litres (0.13 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	4 mm (3/16")
Maximum dry suction lift (1)	4,5 m (15')
Maximum wet suction lift (1)	7 m (23')
Weight	7,2 kg (16 lb)
Fluid inlet port	1" BSP/NPT (F)
Fluid outlet port	1" BSP/NPT (F)
Air inlet port	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.

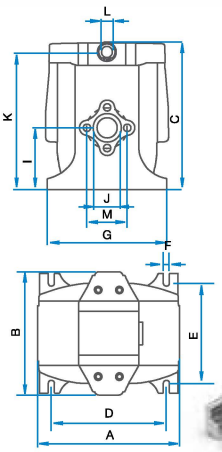


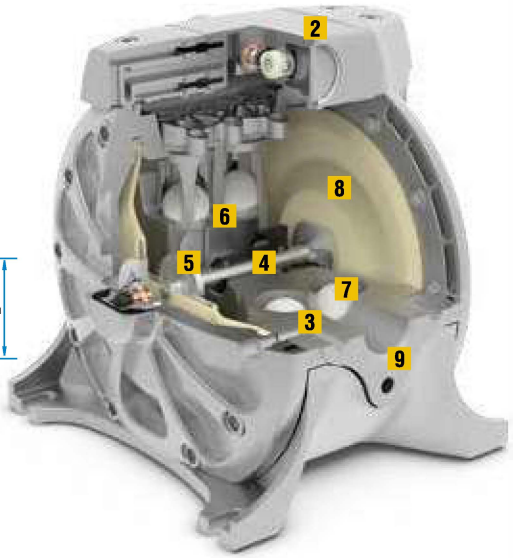
Dimensions (mm)

A	B	C	D	E	F*
216	189	227	175	154	9

G	I	J	K	L	M
184	94,5	1" (F)	210	3/8"(F)	62**

** Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DF100A - ASN - SNN- BAS

DF100X		XXX			XXX			XXX	
1 Pump Size	2 Air motor	3 Fluid Body	4 Diaphragm Connecting Rod	5 Seals	6 Seats	7 Balls	8 Diaphragms	9 Fluid Connection Threads	10 Options
DF100	ATEX Certified* **A** = Aluminum	ATEX Certified* **A** = Aluminum **S** = Stainless Steel AISI 316	**S** = Stainless Steel AISI 420	**E** = EPDM **N** = Buna-N **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316	**C** = Acetal **N** = Buna-N **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**ES** = Externally driven **FS** = Quiet exhaust

* ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DP200 PLASTIC PUMPS

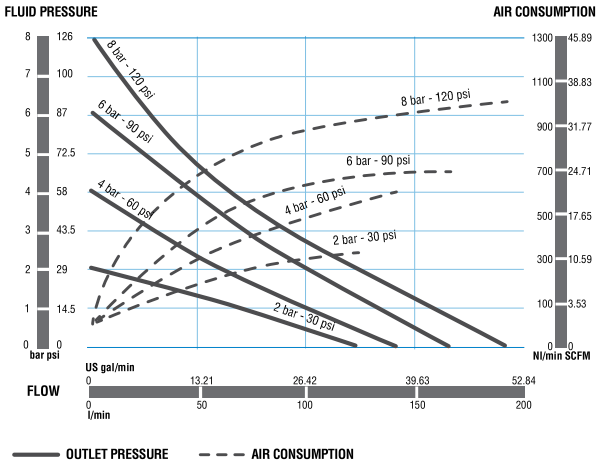
200 L/MIN (53 US GAL/MIN) - 1"

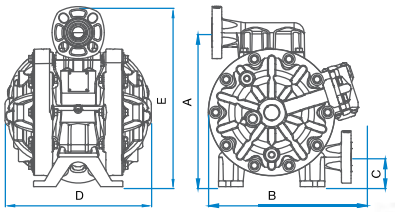
TECHNICAL DATA	DP200 PLASTIC PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	200 l/min (53 US gal/min)
Displacement per cycle (2 x strokes) (1)	1 litre (0.26 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	6 mm (1/4")
Maximum dry suction lift (1)	5 m (16')
Maximum wet suction lift (1)	8 m (26')
Weight	10,5 kg (23.15 lb)
Fluid inlet connection	1" DIN PN-10 DN25 flange and ANSI B16.5 1" 150 lb flange
Fluid outlet connection	1" DIN PN-10 DN25 flange and ANSI B16.5 1" 150 lb flange
Air inlet connection	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.



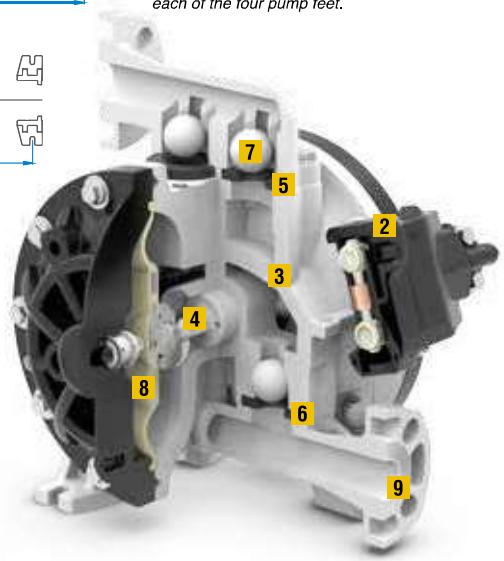


Dimensions (mm)

A	B	C	D
311	320	60	295

E	F*	H	I
364	9	154	175

* *Diameter of the holes for fasteners in each of the four pump feet.*



PUMP NOMENCLATURE

DP200P - PSE - MTM- FAS

DP200X		XXX			XXX			XXX	
1 Pump Size	**2** Air motor	**3** Fluid Body	**4** Diaphragm Connecting Rod	**5** Seals	**6** Seats	**7** Balls	**8** Diaphragms	**9** Fluid Connection Threads	**10** Options
DP200	ATEX Certified* **P** = Conductive Polypropylene	**P** = Polypropylene **W** = PVDF ATEX Certified* **D** = Conductive Acetal	**S** = Stainless Steel AISI 420 **Y** = Hastelloy® C	**E** = EPDM **N** = Buna-N **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**C** = Acetal **H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **P** = Polypropylene	**C** = Acetal **N** = Buna-N **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **T** = PTFE (Teflon®)	**F** = Flange	**AS** = Standard **BS** = Remote air exhaust

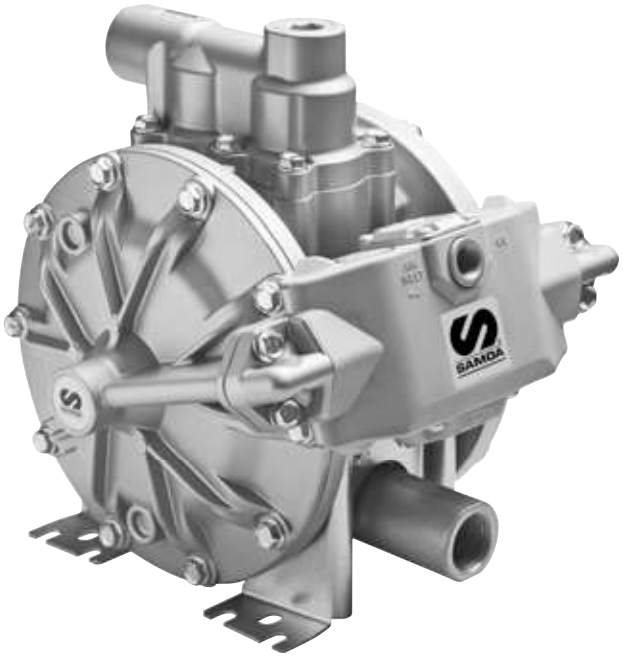
* ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DP200 METAL PUMPS

100 L/MIN (28 US GAL/MIN) - 1"

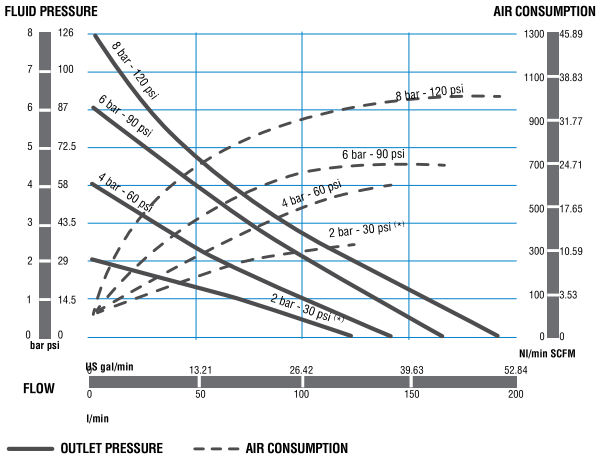
TECHNICAL DATA	DP200 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	200 l/min (53 US gal/min)
Displacement per cycle (2 x strokes) (1)	1 litre (0.26 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	6 mm (1/4")
Maximum dry suction lift (1)	5 m (16')
Maximum wet suction lift (1)	8 m (26')
Weight	11,5 kg (23.35 lb)
Fluid inlet connection	1" BSP/NPT (F)
Fluid outlet connection	1" BSP/NPT (F)
Air inlet connection	3/8" NPSM (F)
Wetted part materials	See pump nomenclature

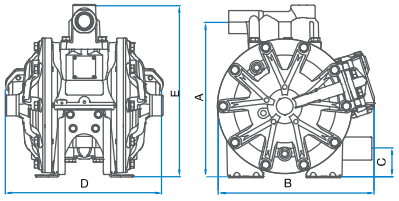
(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).



PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.



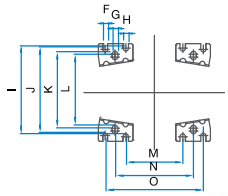


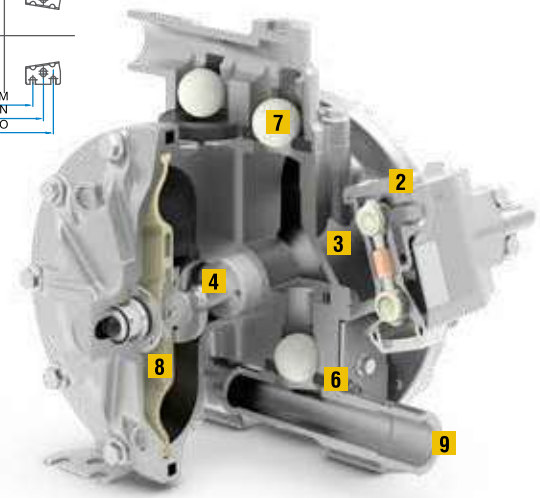
Dimensions (mm)

A	B	C	D	E	F*	G*/H*
278	280	52	281	308	9	10

I	J	K	L	M	N	O
158	154	137	127	102	140	175

* *Diameter of the holes for fasteners in each of the four pump feet.*





PUMP NOMENCLATURE

DP200A - ASN - ANN- BAS

DP200X		XXX			XXX			XXX	
1 Pump Size	**2** Air motor	**3** Fluid Body	**4** Diaphragm Connecting Rod	**5** Seals	**6** Seats	**7** Balls	**8** Diaphragms	**9** Fluid Connection Threads	**10** Options
DP200	**ATEX Certified*** **A** = Aluminum	**ATEX Certified*** **A** = Aluminum **S** = Stainless Steel AISI 316	**S** = Stainless Steel AISI 420	**E** = EPDM **N** = Buna-N **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**A** = Aluminum **H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **S** = Stainless Steel AISI 316	**C** = Acetal **N** = Buna-N **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust*

* ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DF250 METAL PUMPS

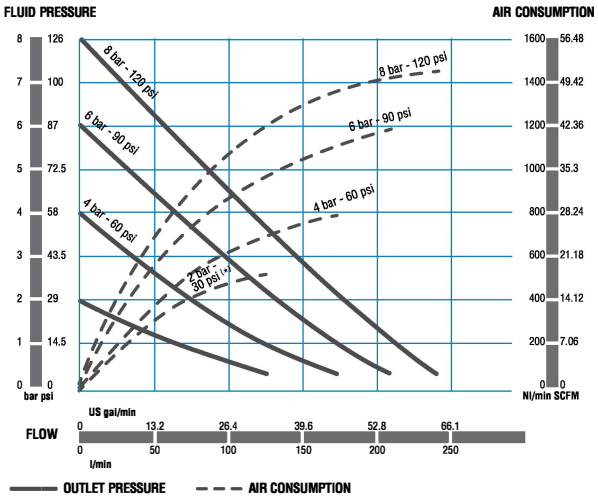
250 L/MIN (66 L/S GAL/MIN) - 1 1/4"

TECHNICAL DATA	DF250 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery (1)	250 l/min (66 US gal/min)
Displacement per cycle (2 x strokes) (1)	1,2 litres (0.32 US gal)
Air pressure operating range	1,5 to 8 bar (22 to 115 psi)
Solids in suspension max. size	6 mm (1/4")
Maximum dry suction lift (1)	5 m (16')
Maximum wet suction lift (1)	8 m (26')
Weight	20 kg (45 lb)
Fluid inlet port	1 1/2" BSP (F) and DIN PN-10 DN40 flange or 1 1/2" NPT (F) and ANSI 1" B16.5 150 lb flange
Fluid outlet port	1 1/2" BSP (F) and DIN PN-10 DN40 flange or 1 1/2" NPT (F) and ANSI 1" B16.5 150 lb flange
Air inlet port	1/2" NPSM (F)
Wetted part materials	See pump nomenclature

(1) Data measured with water, air inlet pressure 7 bar (100 psi), 20 °C (68 °F).

PERFORMANCE CHART

(*) 30 psi test with a PTFE (Teflon®) diaphragm pump at room temperature, with water and flooded pump with 31 1/2" (800 mm) height of water above the pump inlet.

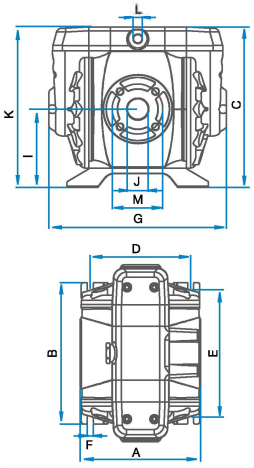


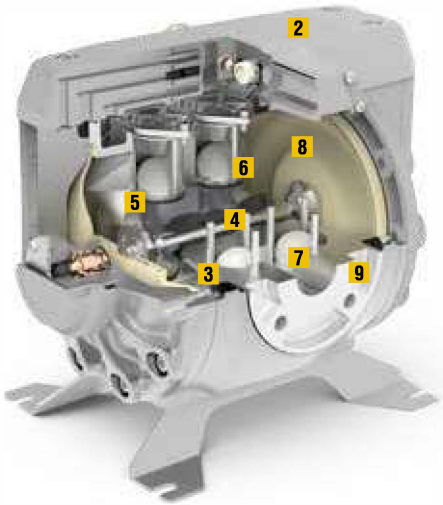
Dimensions (mm)

A	B	C	D	E	F*
216	310	353	220	280	13

G	I	J	K	L	M
390	172	1 1/2" (F)	327	1/2" (F)	110**

** Diameter of the holes for fasteners in each of the four pump feet.*
*** DIN PN-10 flange connection: 4 bolts - M 16 (110 mm between centres).*
*** ANSI B16.5 150 lb flange connection: 4 bolts - UNC 1/2" - 13 (98,4 mm between centres).*





PUMP NOMENCLATURE

DF250A - ASN - SNN- BAS

DF250X		XXX			XXX			XXX	
1 Pump Size	**2** Air motor	**3** Fluid Body	**4** Diaphragm Connecting Rod	**5** Seals	**6** Seats	**7** Balls	**8** Diaphragms	**9** Fluid Connection Threads	**10** Options
DF250	**ATEX Certified*** **A** = Aluminum	**ATEX Certified*** **A** = Aluminum	**S** = Stainless Steel AISI 420	**E** = EPDM **N** = Buna-N **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**S** = Stainless Steel AISI 316	**C** = Acetal **N** = Buna-N **S** = Stainless Steel AISI 316 **T** = PTFE (Teflon®)	**H** = TPE (Hytrel®) **M** = Santoprene® **N** = Buna-N **T** = PTFE (Teflon®)	**B** = BSP **N** = NPT	**AS** = Standard **BS** = Remote air exhaust*

* ⟨Ex⟩ ***ATEX Certified versions available*** *Ex II2 GD IIB/IIC 95 °C.*
Not all possible material combinations are available.

DIAPHRAGM PUMP OPTIONS

EXTERNALLY DRIVEN PUMP.

EXTERNALLY DRIVEN PUMP

DF pumps without air motor can be controlled with an external control devide such as a PLC for use in dosing applications.

REMOTE AIR EXHAUST

A threaded connection replaces the standard stainless steel sintered air exhaust muffler for connecting a hose for remote air exhaust. 3/8" NPSM connection for DF30, DF50, DF100 and DC20 pumps; 3/4" NPT for DP200 pumps and 1" BSP for DF250 pumps.

REDUCED NOISE MUFFLER.

REDUCED NOISE MUFFLER

Replaces the standard sintered stainless steel disc muffler to further reduce the noise produced by compressed air expansion.

ACCESSORIES

DIAPHRAGM PUMP WALL BRACKETS

360 100

360 101

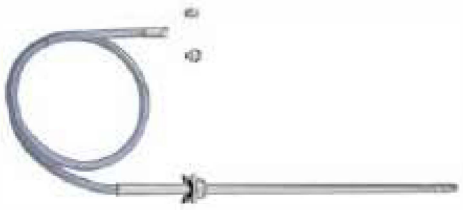
360 100 Wall bracket for DF30 and DF50 pumps.

360 101 Wall bracket for DF100 pumps.

360 142 Wall bracket for DP200 pumps.

360 144 Wall bracket for DF250 pumps.

DIAPHRAGM PUMP SUCTION KITS



For use with 205 l drums or 1.000 l IBCs.

367 005. Suction kit for DF100 and DF50 pumps.
Includes metal suction tube with foot valve and bung adaptor. 1,20 m suction tube and 2 m suction hose. Includes a 3/4" x 1" MM and a 3/4" x 1/2" MM connection adaptor for connecting to a DF100 or a DF50 pump.

367 007 Suction kit for DF250 and DP200 pumps.
Includes 1,20 m x 1" metal suction tube with foot valve and bung adaptor and elbow for connecting to a 2 m x 1" M suction hose.

367 022 Suction kit for DF50 pumps.
Includes 3/4" hydraulic connector, 1,5 m x 3/4" suction hose, Y-strainer and connecting adaptors for mounting the assembly to a DF50 aluminium pump.

367 023 Suction kit for DF100 and DP200 pumps.
Includes 3/4" hydraulic connector, 1,5 m x 1" suction hose, Y-strainer and connecting adaptors for mounting the assembly to a DF100 or a DP200 aluminium pump.

367 020 Suction kit for DF30 and DF50 pumps.
Includes 1,5 m x 1/2" EPDM suction hose, foot valve with filter and two 1/2" BSP (M) hose barb connector with clips.

367 021 Suction kit for DF100 and DP200 pumps.
Includes 1,5 m x 1" EPDM suction hose, foot valve with filter and two 1" BSP (M) hose barb connector with clips.

2" METALLIC PUMPS

The 2" (51 mm) Air Operated Double Diaphragm Pumps made of cast metal can reach a flow rate of up to 650 l/min (172 gal/min) and they offer a wide range of construction materials and porting configurations. The pump design ensures high abrasion resistance when pumping abrasive media and low flow resistance.
Opposite inlet and outlet ports as standard. The discharge and inlet manifolds can rotate 180° for maximum pump installation versatility. These pumps are often used for transferring, filling, recirculating and batch dispensing in a variety of industries.

MAIN APPLICATIONS

- CERAMIC & PORCELAIN
- PAINT & VARNISH INDUSTRY
- OIL & GAS / PETROCHEMICAL
- WASTE WATER / WATER TREATMENT
- MARINE & SHIPBUILDING
- FILTER PRESS
- MINING & CONSTRUCTION
- CHEMICAL / PROCESSING
- PULP AND PAPER / CARDBOARD

Non contractual pictures.

TECHNICAL DATA	UP20 METALLIC PUMPS	
Pressure Ratio	1:1	
Maximum Free Delivery	650 l/min (172 US gal/min)	
Air pressure range	1,5 to 8 bar (20 to 120 psi)	
Solids in suspension, Max. size	6,4 mm (1/4")	
Max dry suction lift	5 m (16')	
Max wet suction lift	8 m (26')	
Displacement per cycle*	4,5 l (1.2 gal)	
Fluid inlet/outlet ports (Female) (Female)	2" NPT (F) Threaded 2" BSP (F) Threaded 2" ANSI/DIN Flanged	
Air Inlet Port (Female)	3/4" NPT (F)	
Air Exhaust Port (Female)	1 1/2" NPT (F)	
Sound level	85 dB (A) @ 50 cycles/min @ 70 psi	
Weight Aluminium version Ductile Iron version Stainless Steel version	**Threaded** 46 kg (101 lb) 74 kg (163 lb) 76 kg (168 lb)	**Flanged** 48 kg (106 lb) 78 kg (172 lb) 82 kg (181 lb)

** Delivery per cycle depends on the diaphragms material, air inlet pressure and fluid viscosity.*

PUMP NOMENCLATURE

Example: **UP20A-BSS-TTZ**

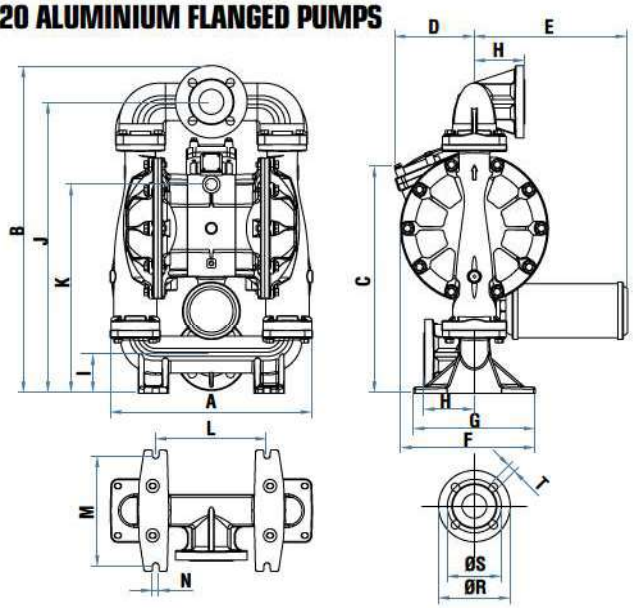
UX20X	XXX	XXX

PUMP TYPE	AIR BODY	HOUSINGS		WETTED PARTS		
1 Pump Type & Size	**2 Central Body & Air Chambers**	**3 Fluid Ports / Location**	**4 Fluid Chambers & Manifolds**	**5 Hardware Bolts**	**6 Valve Seats**	**7 Valve Balls**	**8 Diaphragms Type & Material**
UP20 Universal Pump (Bolted)	⟨Ex⟩ **ATEX Certified** **A***= Aluminium **L***= Conductive polypropylene with Stainless Steel air chambers	**B** = 2" BSP Threaded Ports / Centre horizontal **C** = 2" ANSI/ DIN Flanged Ports / Centre Horizontal **N** = 2" NPTF Threaded Ports / Centre Horizontal	⟨Ex⟩ **ATEX Certified** **A***= Aluminium **F***= Ductile Iron **S***= Stainless Steel	**C** = Carbon Steel **S** = Stainless Steel	**A** = Aluminium **D** = AISI 440 Hardened Stainless Steel **H** = Hytrel® **M** = Santoprene® **N** = Nitrile (Buna-N) **S** = AISI 316 Stainless Steel **T** = PTFE (Teflon®)	**H** = Hytrel ® **M** = Santoprene® **N** = Nitrile (Buna-N) **S** = AISI 316 Stainless Steel **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**Conventional** **A** = Santoprene® **C** = Hytrel® **G** = Nitrile (Buna-N) **V** = FKM (Viton®) **Two-piece** **Z** = PTFE (Teflon® with Santoprene backer) **Overmolded** **H** = Hytrel® **M** = Santoprene® **N** = Nitrile (Buna N) **T** = PTFE / EPDM (Bonded)

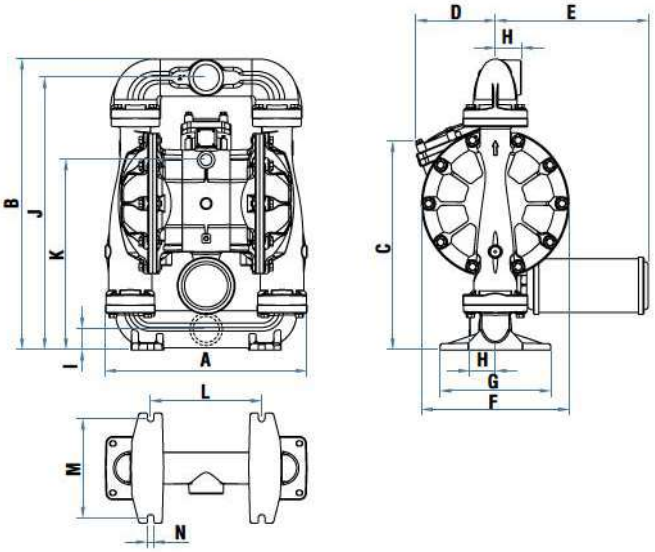
* ⟨Ex⟩ ***ATEX Certified pumps*** *for use in hazardous locations ATEX Group II 2GDx.*

2" (51 mm) METALLIC PUMPS: DIMENSIONS AND PERFORMANCE CHARTS

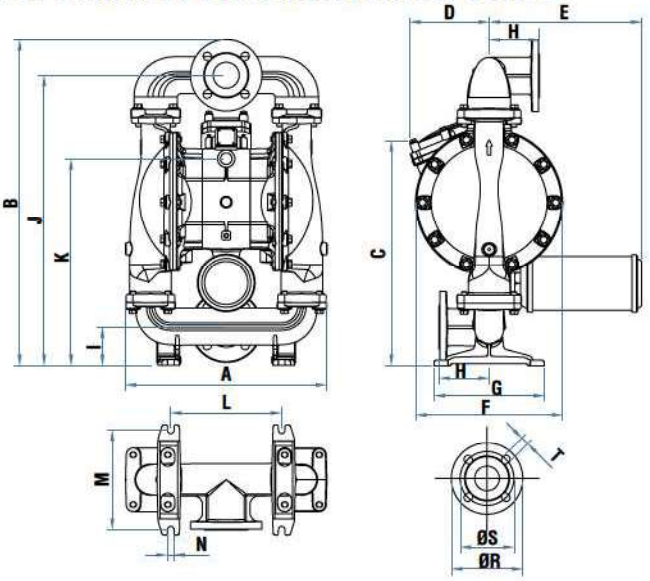
UP20 ALUMINIUM FLANGED PUMPS



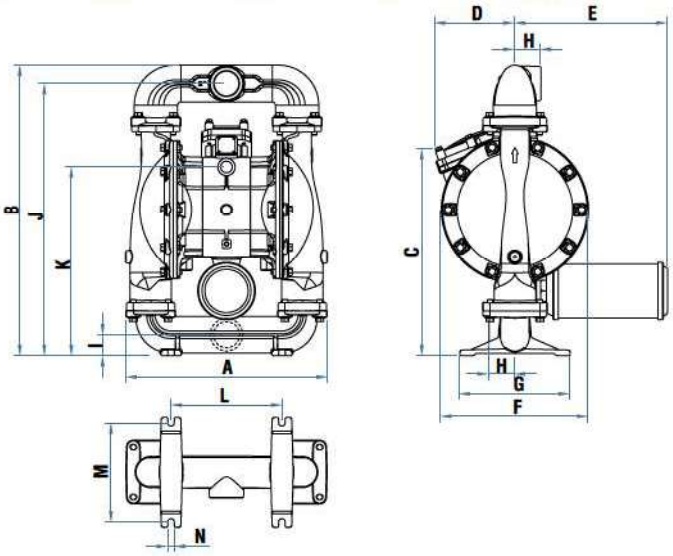
UP20 ALUMINIUM THREADED PUMPS



UP20 STAINLESS STEEL/IRON FLANGED PUMPS

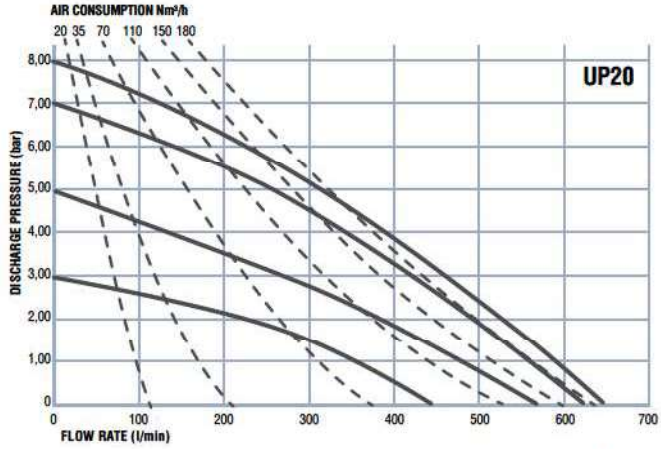


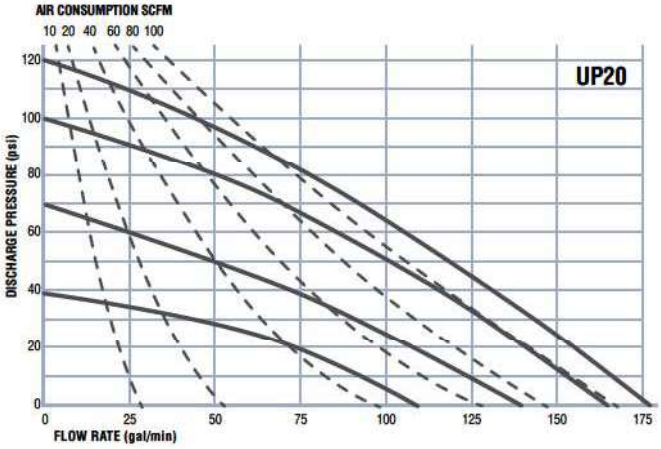
UP20 STAINLESS STEEL/IRON THREADED PUMPS



DIMENSIONS (mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T
UP20 FLANGED PUMP	465	754	251	184	353	340	255	116	89	671	479	256	230	15	165	120,6-125	19
UP20 THREADED PUMP	465	672	480	184	353	340	255	60	48	630	438	256	230	15	-	-	-

DIMENSIONS (inches)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T
UP20 FLANGED PUMP	18 5/16	29 11/16	9 7/8	7 1/4	13 57/64	13 25/64	10 3/64	4 9/16	3 1/2	26 27/64	18 55/64	10 5/64	9 1/16	19/32	6 1/2	4 3/4-4 59/64	3/4"
UP20 THREADED PUMP	18 5/16	26 29/64	18 57/64	7 1/4	13 57/64	13 25/64	10 3/64	2 23/64	1 57/64	24 51/64	17 1/4	10 5/64	9 1/16	19/32	-	-	-





Performance charts with water at room temperature (20 °C - 70 °F)

2" NON-METALLIC PUMPS

The 2" (51 mm) Air Operated Diaphragm Pumps made of injected moulded plastic parts can reach a flow rate up to 650 l/min (172 gal/min). They are available in natural or conductive polypropylene and PVDF for optimum fluid compatibility and corrosion resistance.
Side off-set inlet and outlet ports to avoid eventual material leaks onto the pump footprint. The discharge and inlet manifolds can rotate 180° for maximum pump installation versatility. The flanged bolted ports meets both DIN and ANSI standards.
These pumps are used for transferring, filling and batch dispensing in a variety of industries.

MAIN APPLICATIONS

- OIL & GAS/PETROCHEMICAL
- PAINT & COATING INDUSTRY
- CHEMICAL PROCESSING
- WASTE WATER/WATER TREATMENT
- FILTER PRESS (WATER DISPOSAL)
- PLANT & MECHANICAL ENGINEERING
- PULP & PAPER/CARDBOARD
- POWER STATIONS (ENERGY)
- TANK FARM/BULK TRANSFER

Non contractual picture.

TECHNICAL DATA	UP20 NON-METALLIC PUMPS
Pressure Ratio	1:1
Maximum Free Delivery	650 l/min (172 US gal/min)
Air pressure range	1,5 to 8 bar (20 to 120 psi)
Solids in suspension, Max. size	6,4 mm (1/4")
Max dry suction lift	5 m (16')
Max wet suction lift	8 m (26')
Displacement per cycle*	4,5 l (1.2 gal)
Fluid inlet/outlet ports (Flanged)	2" ANSI/DIN. Side Ends.
Air Inlet Port (Female)	3/4" NPT (F)
Air Exhaust Port (Female)	1 1/2" NPT (F)
Sound level	85 dB (A) @ 50 cycles/min @ 70 psi
Weight Polypropylene version PVDF version	 42 kg (92 lb) 54 kg (119 lb)

** Delivery per cycle depends on the diaphragms material, air inlet pressure and fluid viscosity.*

PUMP NOMENCLATURE

Example: **UP20B-FPS-PMA**

UX20X	XXX	XXX
PUMP TYPE	AIR BODY	HOUSINGS	WETTED PARTS

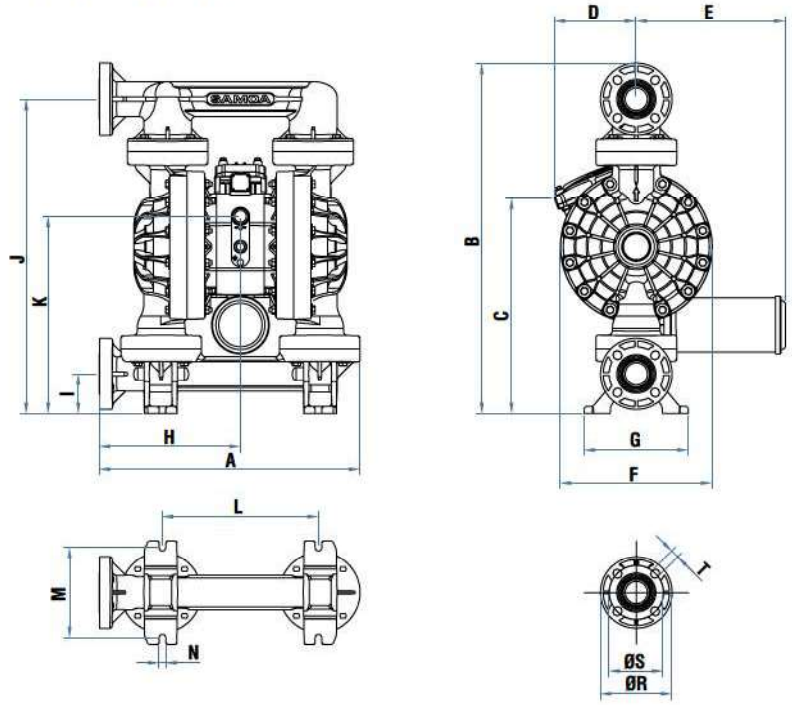
1 Pump Type & Size	2 Central Body & Air Chambers	3 Fluid Ports / Location	4 Fluid Chambers & Manifolds	5 Hardware Bolts	6 Valve Seats	7 Valve Balls	8 Diaphragms Type & Material
UP20 Universal Pump (Bolted)	⟨Ex⟩ **ATEX Certified** **B***= Conductive Polypropylene (black)	**F** = 2" ANSI/DIN Flanged Ports / Side Ends.	**P** = Polypropylene (white) **W** = PVDF (Kynar®) (graphite) ⟨Ex⟩ **ATEX Certified** **B***= Conductive Polypropylene (black)	**S** = Stainless Steel	**P** = Polypropylene **T** = PTFE (Teflon®)	**H** = Hytrel ® **M** = Santoprene ® **N** = Nitrile (Buna-N) **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**Conventional** **A** = Santoprene® **C** = Hytrel® **G** = Nitrile (Buna-N) **V** = FKM (Viton®) **Two-piece** **Z** = PTFE (Teflon® with Santoprene backer) **Overmolded** **N** = Nitrile (Buna N) **H** = Hytrel® **M** = Santoprene® **T** = PTFE / EPDM (Bonded)

* ⟨Ex⟩ ***ATEX Certified pumps*** *for use in hazardous locations ATEX Group II 2GDx.*

Hytrel® is a registered trademark of the DuPont Company, Viton® & Teflon® of the Chemours Company and Santoprene® of the Monsanto Company, licensed for Advanced Elastomer Systems, L.P. Kynar® is a registered trademark of Arkema, Inc.

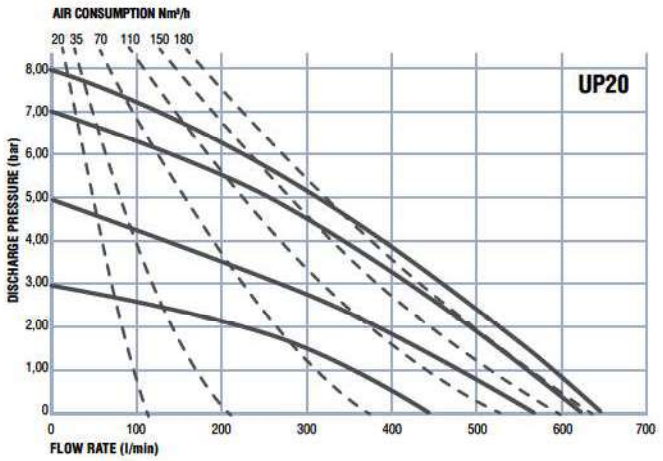
2" (51 mm) NON-METALLIC PUMPS: DIMENSIONS AND PERFORMANCE CHARTS

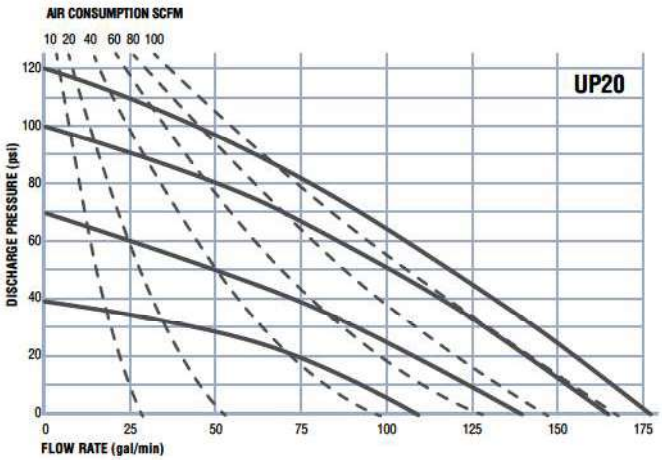
UP20 NON-METALLIC FLANGED PUMPS



DIMENSIONS (mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T
UP20 FLANGED PUMP	602	808	497	189	344	350	240	326	92	725	455	360	208	15	165	120,5-125	19

DIMENSIONS (inches)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S	T
UP20 FLANGED PUMP	23 45/65	31 13/16	19 9/16	7 7/16	13 35/64	13 25/32	9 29/64	12 53/64	23/64	28 35/64	17 29/32	14 11/64	8 3/16	19/32	6 1/2	4 3/4-4 59/54	3/4





Performance charts with water at room temperature (20 °C - 70 °F)

3" METALLIC PUMPS

The 3" (76 mm) Air Operated Double Diaphragm Pumps made of cast metal can reach a flow rate of up to 1.000 l/min (264 gal/min) and they offer a wide range of construction materials and porting configurations. The pump design ensures high abrasion resistance when pumping abrasive media and low flow resistance.
Opposite inlet and outlet ports as standard. The discharge and inlet manifolds can rotate 180° for maximum pump installation versatility. These pumps are often used for transferring, filling and batch dispensing in a variety of industries.

MAIN APPLICATIONS

- CERAMIC & PORCELAIN
- PAINT & VARNISH INDUSTRY
- OIL & GAS / PETROCHEMICAL
- WASTE WATER / WATER TREATMENT
- MARINE & SHIPBUILDING
- FILTER PRESS
- MINING & CONSTRUCTION
- CHEMICAL / PROCESSING
- PULP AND PAPER / CARDBOARD

Non contractual picture.

TECHNICAL DATA	UP30 METALLIC PUMPS	
Pressure Ratio	1:1	
Maximum Free Delivery	1.000 l/min (264 US gal/min)	
Air pressure range	1,5 to 8 bar (20 to 120 psi)	
Solids in suspension, Max. size	12,7 mm (1/2")	
Max dry suction lift	6 m (19.7')	
Max wet suction lift	8 m (26')	
Displacement per cycle*	10,2 l (2.6 gal)	
Fluid inlet/outlet ports (Female) (Female)	3" NPT (F) Threaded 3" BSP (F) Threaded 3" ANSI/DIN Flanged	
Air Inlet Port (Female)	3/4" NPT (F)	
Air Exhaust Port (Female)	1 1/2" NPT (F)	
Sound level	83 dB (A) @50 cycles/min @70 psi	
Weight Aluminium version Stainless Steel version	**Threaded** 64 kg (141 lb) 118 kg (260 lb)	**Flanged** 71 kg (156.5 lb) 125 kg (275.6 lb)

** Delivery per cycle depends on the diaphragms material, air inlet pressure and fluid viscosity.*

PUMP NOMENCLATURE

Example: **UP30A-BAC-NNG**

UX30X	XXX	XXX

PUMP TYPE	AIR BODY	HOUSINGS			WETTED PARTS		
1 **Pump Type & Size**	**2** **Central Body & Air Chambers**	**3** **Fluid Ports / Location**	**4** **Fluid Chambers & Manifolds**	**5** **Hardware Bolts**	**6** **Valve Seats**	**7** **Valve Balls**	**8** **Diaphragms Type & Material**
UP30 Universal Pump (Bolted)	(Ex) ATEX Certified **A***= Aluminium	**B** = 3" BSP Threaded Ports / Centre Horizontal **C** = 3" ANSI/ DIN Flanged Ports / Centre Horizontal **N** = 3" NPTF Threaded Ports / Centre Horizontal	(Ex) ATEX Certified **A***= Aluminium **S***= Stainless Steel	**C** = Carbon Steel **S** = Stainless Steel	**A** = Aluminium **D** = AISI 440 Hardened Stainless Steel **H** = Hytrel® **M** = Santoprene® **N** = Nitrile (Buna-N) **S** = AISI 316 Stainless Steel **T** = PTFE (Teflon®)	**H** = Hytrel® **M** = Santoprene® **N** = Nitrile (Buna-N) **S** = Stainless Steel 316 **T** = PTFE (Teflon®) **V** = FKM (Viton®)	**Conventional** **A** = Santoprene® **C** = Hytrel® **G** = Nitrile (Buna-N) **V** = FKM (Viton®) **Two-piece** **Z** = PTFE (Teflon® with Santoprene backer)

* (Ex) ***ATEX Certified pumps*** *for use in hazardous locations ATEX Group II 2GDx.*

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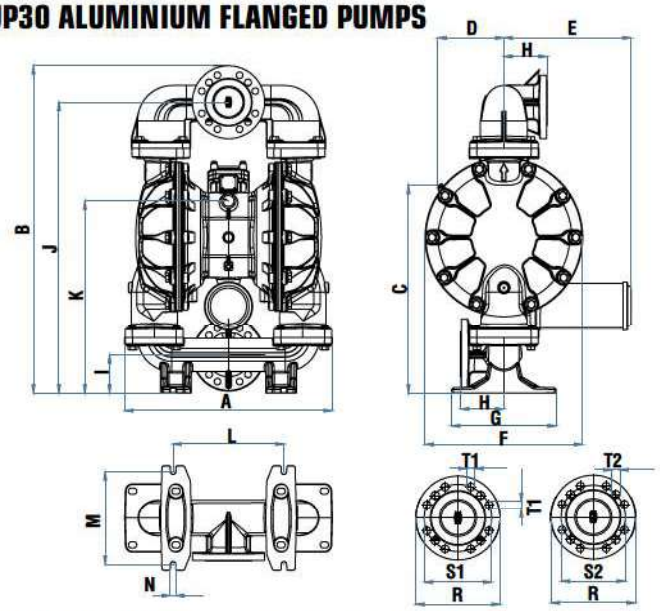
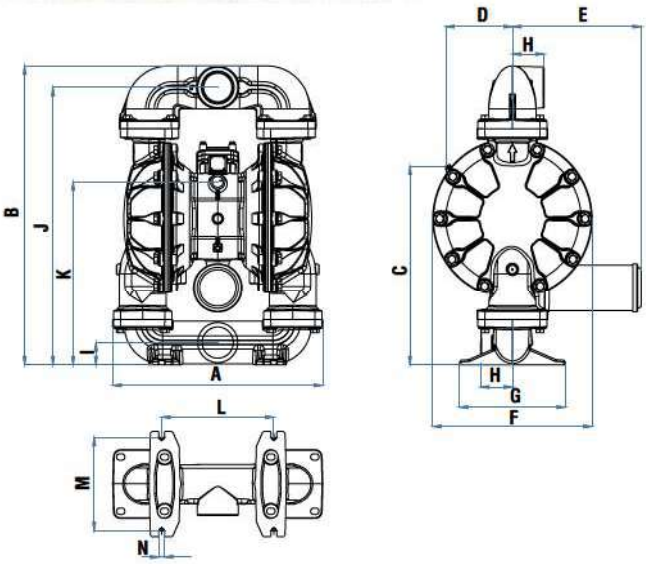
3" (76 mm) METALLIC PUMPS: DIMENSIONS AND PERFORMANCE CHARTS

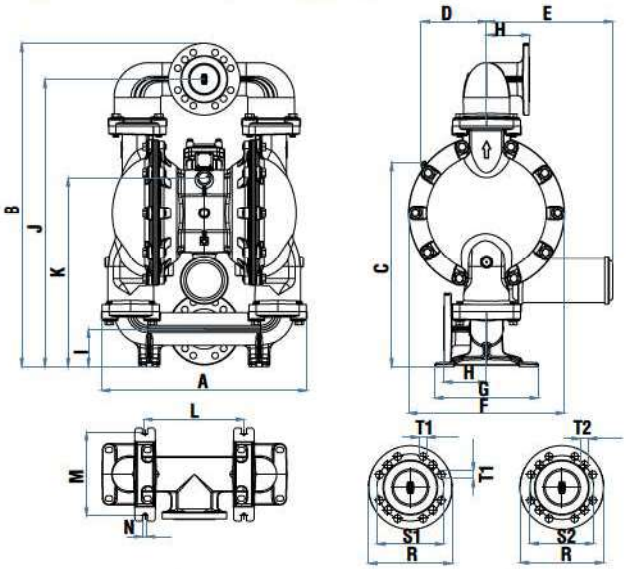
UP30 ALUMINIUM FLANGED PUMPS



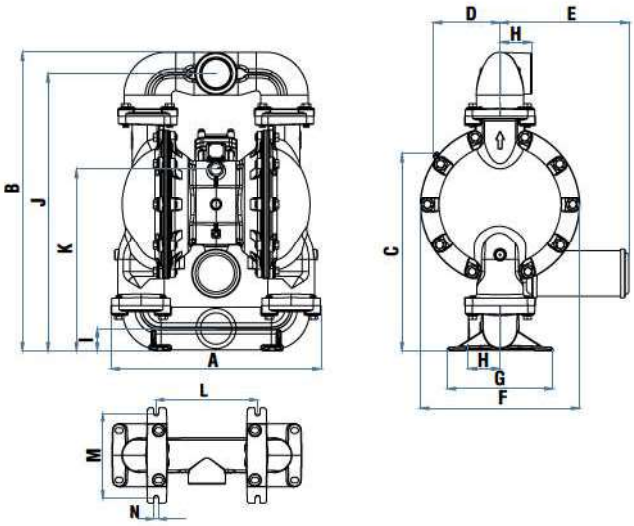
UP30 ALUMINIUM THREADED PUMPS



UP30 STAINLESS STEEL FLANGED PUMPS

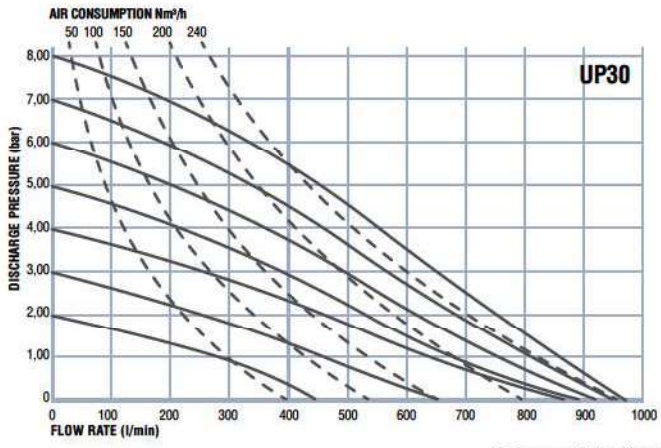


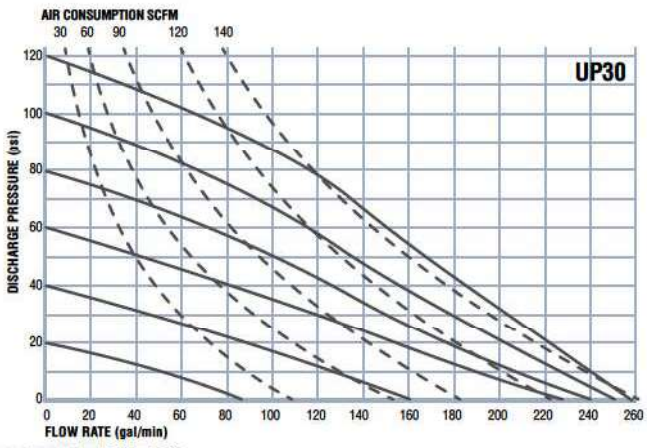
UP30 STAINLESS STEEL THREADED PUMPS



DIMENSIONS (mm)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S1 (DIN)	S2 (ANSI)	T1 (DIN)	T2 (ANSI)
UP30 FLANGED PUMP	575	905	579	183	353	436	290	140	105	805	536	307	257	15	200	160	152,4	21	21
UP30 THREADED PUMP	575	820	543	183	353	436	290	87	61	761	500	307	257	15	-	-	-	-	-

DIMENSIONS (inches)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	R	S1 (DIN)	S2 (ANSI)	T1 (DIN)	T2 (ANSI)
UP30 FLANGED PUMP	21 105/64	35 5/8	22 51/64	7 7/32	13 57/64	17 11/64	11 27/64	5 33/64	4 5/32	31 45/64	21 3/32	12 3/32	10 1/8	19/32	7 7/8	6 5/16	6	53/64	53/64
UP30 THREADED PUMP	21 105/64	32 9/32	21 25/64	7 7/32	13 57/64	17 11/64	11 27/64	3 7/16	2 13/32	29 31/32	19 11/16	12 3/32	10 1/8	19/32	-	-	-	-	-





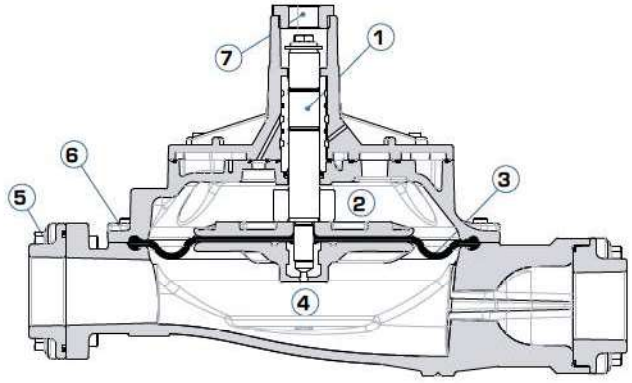
Performance charts with water at room temperature (20 °C - 70 °F)

ACTIVE PULSATION DAMPENERS

Air Operated Double Diaphragm Pumps have, at least, two points in their cycle where they do not supply pressure nor flow to the system. This originates pressure fluctuations and flow pulsations. An Active Pulsation Dampener, installed at the pump outlet, minimizes pressure fluctuation on the discharge end, providing a consistent laminar flow.

An Active Pulsation Dampener has an air chamber, connected to compressed air, that keeps a constant pressure on the diaphragm that divides the Dampener in an air and a fluid chamber. When the pump begins the discharge stroke, pressure in the line increases and flexes the diaphragm inward, accumulating fluid in the fluid chamber. Once the pump completes a stroke and redirects its motion, the pressure at the pump outlet decreases and the compressed air in the air chamber flexes the diaphragm outwards, displacing the accumulated fluid into the discharge line.

The dampener size and its materials (chambers and diaphragm) must be selected to be compatible with the corresponding pump.



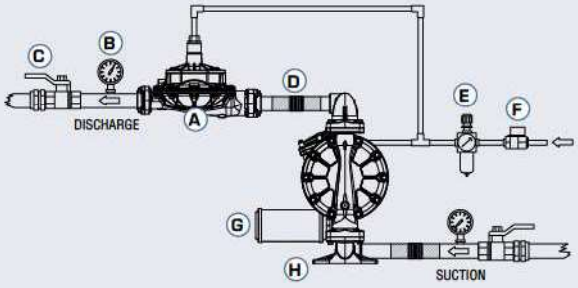
ACTIVE PULSATION DAMPENER

① Main valve
② Air chamber
③ Diaphragm
④ Fluid chamber
⑤ Fluid inlet/outlet ports NPT/BSP
⑥ Bolted fasteners
⑦ Air inlet

ADVANTAGES

- Stabilized discharge pressure
- Minimized flow pulsation
- No fluid foam formation
- No fluid splashing
- Less piping vibration
- Equipment protection in long pipe runs and valve protection.
- Bolted construction (leak free)
- Automatic air actuation (Active)
- Easy installation

INSTALLATION



Ⓐ Active Pulsation Dampener
Ⓑ Gauge (optional)
Ⓒ Shut-off Valve
Ⓓ Flexible connection
Ⓔ Filter Regulator
Ⓕ Air Shut-off Valve
Ⓖ Muffler
Ⓗ Footpad

ACTIVE PULSATION DAMPENERS - NOMENCLATURE

APDXOX	XXX	X

Example: **APD20A-BAC-A**

PULSATION DAMPENER	AIR CONTROL SECTION	WETTED PATH SECTION			FLEXIBLE DIAPHRAGM
1 **Model Type & Size**	**2** **Air Chamber Material**	**3** **Fluid Ports**	**4** **Fluid Chamber Material**	**5** **Fasteners Bolts**	**6** **Diaphragm Material**
APD20 2" = 2,6 l. Max Volume For use with 1 1/2" & 2" pumps **APD30** 3" = 8,3 l. Max Volume For use with 3" pump	**(Ex) ATEX Certified** **A*** = Aluminium **B*** = Conductive Polypropylene (black) **F*** = Ductile Iron **S*** = Stainless Steel	**THREADED PORTS** **B** = BSP (Female) **N** = NPT (Female) **2" FLANGED PORTS (Non-Metallic APD only)** **F** = ANSI/DIN	**P** = Polypropylene (white) **W** = PVDF (Kynar®) (Dark Grey) **(Ex) ATEX Certified** **A*** = Aluminium **B*** = Conductive Polypropylene (black) **F*** = Ductile Iron **S*** = Stainless Steel	**C** = Carbon Steel **S** = Stainless Steel	**Conventional** **A** = Santoprene® **C** = Hytrel® **G** = Nitrile (Buna-N) **V** = FKM (Viton®) **Two-piece** **Z** = PTFE(Teflon® with Santoprene backer)

* (Ex) ***ATEX Certified*** *for use in hazardous locations ATEX Group II 2GDx.*
3" APD available in Aluminium only.

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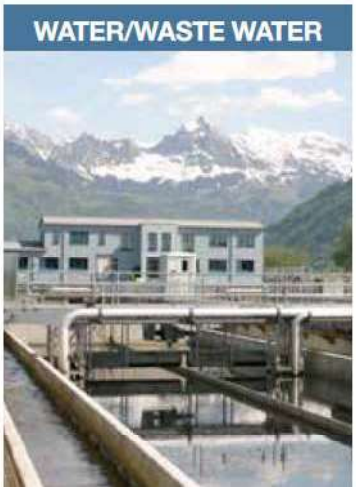
ADVANTAGES

AODD PUMPS VS. OTHER PUMP TECHNOLOGIES

PUMP TYPES	AODD Diaphragm	Piston / Plunger	Peristaltic Hose	Lobe	Vane	Gear	Centrifugal
Pump Classification PD = Positive Displacement Pump	PD Reciprocating	PD Reciprocating	PD Rotary	PD Rotary	PD Rotary	PD Rotary	Kinetic
PUMPED FLUID CHARACTERISTICS							
SUSPENDED SOLIDS No pump or product damage	▲	▼	–	▼	▲	–	–
ABRASIVE SLUDGE & SLURRIES Low internal velocities-No damage	▲	▼	▲	▼	▼	▼	▲
CORROSIVE FLUIDS Compatible pump materials	▲	▼	▲	–	▼	▼	▼
SHEAR SENSITIVITY Low shear and product separation	▲	▼	▼	▲	▼	▼	▼
PUMP OPERATION							
DRY-RUNNING CAPABILITY No pump or system damage	▲	▲	▲	▼	–	▼	▼
DRY SELF-PRIMING High suction-lift	▲	–	▼	▼	▼	▼	▼
PORTABLE & SUBMERSIBLE Integral pump with air motor	▲	▼	▼	▼	▼	▼	–
COOL OPERATION No heat build-up during transfer	▲	–	–	–	–	–	–
SAFETY (ATEX models) Air Driven. No electrical hazard	▲	–	–	–	–	–	–
PUMP COST ADVANTAGES							
ON-DEMAND OPERATION Bypass and relief valves cost savings	▲	▲	–	–	–	–	–
ADJUSTABLE FLOW & PRESSURE Additional regulation costs savings	▲	–	–	–	–	–	–
DYNAMIC & MECHANICAL SEALS Replacement and maintenance cost savings	▲	▼	▼	▼	▼	▼	▼
NO ELECTRICAL INSTALLATION Intrinsically safe, cost savings	▲	▼	▼	▼	▼	▼	▼
INITIAL PURCHASE PRICE Compared to other pump types	▲	▼	▼	▼	▼	▼	▼

▲ = Excellent – = With limitations ▼ = Not recommended

APPLICATIONS AND INDUSTRIES



DIRECTFLO® PUMPS APPLICATIONS

CHEMICAL, PETROCHEMICAL AND REFINERIES

CERAMIC

PRINTING AND PACKAGING

WATER PROCESS

VEHICLE PRODUCTION AND MAINTENANCE

SURFACE TREATMENTS

FLUID DISTRIBUTION

DETERGENT AND SOAP DISPENSING

USED FLUIDS DISPOSAL

LEATHER INDUSTRY

CHEMICAL INDUSTRY

CUTTING OIL TRANSFER

APPLICATIONS

- FLUID TRANSFER AND DISPENSING
- FLUID EVACUATION
- DOSING / BLENDING / FORMULATION
- FLUID RECIRCULATION
- LOW PRESSURE SPRAY
- FLUID FLUSHING
- PUMPING SAMPLES
- FILTER & FILTER PRESS FEEDING
- SLURRY HANDLING
- TANK / BARREL FILLING & EMPTYING

PULP AND PAPER CONVERTERS

WASTEWATER

CONSTRUCTION AND MINING

PAINT AND COATINGS

HYGIENIC-SANITARY APPLICATIONS

METALWORKING

CHEMICAL INDUSTRY

PAINT ADDITIVES DOSING

CEMENT ADDITIVE DOSING

WOOD VARNISH SPRAYING

FLEXOGRAPHIC INK DOSING

SOLVENT DOSING AND RECOVERY

FLUIDS

- ACIDS
- ALKALIS
- ALCOHOLS
- SOLVENTS
- WATER BASED FLUIDS
- CHEMICALS
- FUELS & OILS
- INKS, PAINTS & VARNISHES
- ADDITIVES
- ETC.

- ABRASIVE
- CORROSIVE
- HAZARDOUS
- FLAMMABLE
- SOLIDS IN SUSPENSION
- SHEAR SENSITIVE
- MEDIUM VISCOSITY

DIAPHRAGM PUMP MARKETS AND APPLICATIONS

OIL AND GAS. PETROCHEMICAL

- Loading and unloading of tanks, totes, and drums.
- Well stimulation - acidization.
- General utility transfer.
- Cellar pump-out.
- Oil spill clean-up / response.
- Drilling mud make-up.
- Glycol feed.
- Slurry transfer.
- Saltwater transfer and disposal.
- Fuel transfer.

CHEMICAL PLANT PROCESSING

- Loading and unloading tanks, totes and drums.
- Packaging.
- Acids, alkalis, esters, ethers, alcohols, solvents and polymers transfer.
- Dosing.
- Chemical effluent transfers.

MINING AND CONSTRUCTION

- Loading and unloading of tanks and totes.
- Fuel and lubricants transfer.
- Waste fluids and water evacuation.
- Dewatering.
- Cement additives mixing.
- Plaster spraying.
- Soil testing.

PAINTS AND COATINGS

- Loading and unloading of tanks, totes and drums.
- Pigments, solvents and resins transfer.
- Dosing of chemical additives
- Paint filtration.
- Solvent reclamation.
- Filling machines.

PULP AND PAPER

- Loading and unloading tanks, totes and drums.
- Paper treatment chemicals for deinking, chelation, filling, sizing, causticizing, strengthening, etc.
- Rosin, bleach and green liquor transfer.
- Additive dosing.
- Chemical recovery.
- Packaging.
- Starch preparation and transfer.
- Adhesives and ink transfer and dispensing.

TEXTILES, LEATHER & GARMENTS

- Loading and unloading tanks, totes and drums.
- Filter press.
- Dosing.
- Transfer of chemicals agents for desizing, scouring, bleaching, mercerizing, etc.
- Transfer of dyes, pigments, colours, etc.
- Colour formulation and colour spraying.
- Slurry transfer.
- Filtration.
- Effluent & wastewater disposal / dispensing.

DIAPHRAGM PUMP MARKETS AND APPLICATIONS

PLANT AND MECHANICAL ENGINEERING

- Loading and unloading tanks, totes and drums.
- Filtration.
- Cleaning processes.
- Metal refining.
- Surface treatment (galvanizing, zinc plating, etc.).

CERAMICS

- Mould filling and cleaning.
- Ceramic slip transfer.
- Glazing and glaze transfer.
- Filter press.
- Waste-water transfer and evacuation.

MARINE

- Loading and unloading tanks, totes and drums.
- Lubricants and fuel transfer.
- Seepage clean-up.
- Tank strip-outs.
- Dewatering.
- Bilge pumping.

POWER STATIONS (ENERGY)

- Loading and unloading tanks, totes and drums.
- Transfer of heat transfer fluids in solar plants.
- Water transfer and evacuation.
- Refrigeration.

TANK FARMS / BULK TRANSFER

- Loading and unloading tanks, totes and drums.
- Product storage.
- Field treatment.
- Fermentation.
- CIP (Solvent / Nitric Acid / Sodium Hydroxide) transfer.

WASTEWATER AND WATER TREATMENT

- Mobile water systems.
- Wastewater and sewage treatment.
- pH neutralization.
- Sludge removal.
- Irrigation.
- Sampling.
- Drum unloading for chemical injection skids.
- Filtration.

ELECTRONICS

- Loading and unloading tanks, totes and drums.
- Acid washing.
- Chemical treatment of wafers.
- Silicon slurry transfer.
- Wastewater transfer.

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