

PM 2, 1:1 STAINLESS STEEL PUMP



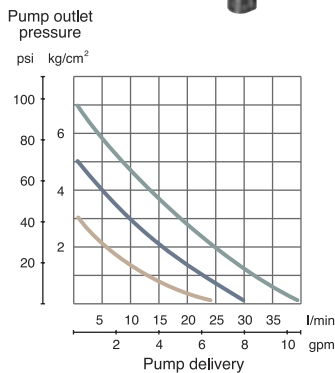
Model 331 120 Old Model 296 SS

Double acting, low pressure and high delivery air operated pumps manufactured in AISI 316 stainless steel. Pumps can be used as transfer pumps or in systems that include pipelines and several outlets even with simultaneous operation. The air motor is divorced from the pump to avoid fluid contamination inside the motor, making this pump compatible with slightly corrosive, low viscosity fluids such as paint solvents, cleaning fluids, anti-freeze (glycol), detergents, grease removers, alcohols, turpentine, petrochemical products, anticorrosion products, light inks, lacquer, wood varnish, etc.

Pumps include bung adapter and a 28" PVC suction tube for use with 55 gallon drums.

Technical data	
Pressure ratio	1:1
Pump tube diameter	2" (52 mm)
Air piston diameter	2" (50 mm)
Air piston stroke	3" (100 mm)
Maximum free flow capacity ¹	11.5 gpm (41 l/min)
Minimum air pressure	40 psi (3 bar)
Maximum air pressure	140 psi (10 bar)
Maximum fluid pressure	140 psi (10 bar)
Air inlet	1/4" NPSM (F)
Fluid outlet	3/4" BSP (F)
Fluid inlet	1" BSP (F)
Wetted parts	AISI 316 stainless steel, PTFE and Viton®

¹ Free delivery at 100 psi air inlet pressure, using water.



- Air inlet pressure 84 psi (6 bar).
- Air inlet pressure 63 psi (4,5 bar).
- Air inlet pressure 42 psi (3 bar).

PM 4, 3:1 STAINLESS STEEL PUMP



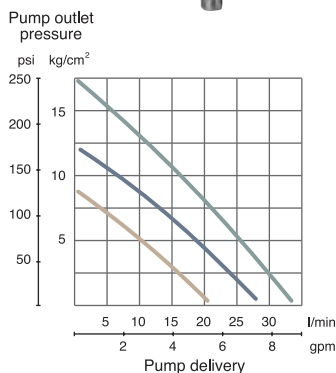
Model 333 120 Old Model 496 SS

Double acting, medium pressure and high delivery air operated pumps manufactured in AISI 316 stainless steel. Pumps can be used in large systems that include pipelines and several outlets even with simultaneous operation. The air motor is divorced from the pump to avoid fluid contamination inside the motor, making this pump compatible with slightly corrosive, low viscosity fluids such as paint solvents, cleaning fluids, anti-freeze (glycol), detergents, grease removers, alcohols, turpentine, petrochemical products, anticorrosion products, light inks, lacquer, wood varnish, etc.

Pumps include bung adapter and a 28" PVC suction tube for use with 55 gallon drums.

Technical data	
Pressure ratio	3:1
Pump tube diameter	2" (52 mm)
Air piston diameter	3.55" (90 mm)
Air piston stroke	4" (100 mm)
Maximum free flow capacity ¹	9.8 gpm (35 l/min)
Minimum air pressure	40 psi (3 bar)
Maximum air pressure	140 psi (10 bar)
Maximum fluid pressure	420 psi (30 bar)
Air inlet	3/8" NPSM (F)
Fluid outlet	1" NPT (F)
Fluid inlet	1" NPT (F)
Wetted parts	AISI 316 stainless steel, PTFE and Viton®

¹ Free delivery at 100 psi air inlet pressure, using water.

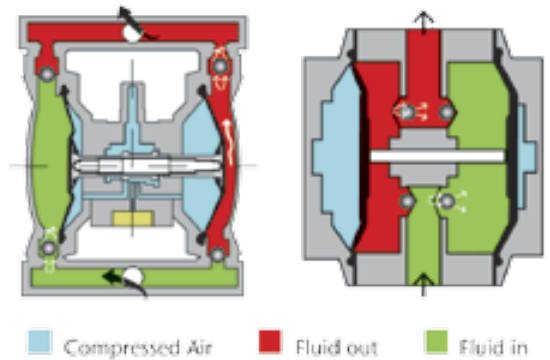


- Air inlet pressure 84 psi (6 bar).
- Air inlet pressure 63 psi (4,5 bar).
- Air inlet pressure 42 psi (3 bar).



ClassicFlo®

DirectFlo®



Air operated double diaphragm pumps are air-powered, reciprocating positive displacement pumps with two pumping chambers. Two diaphragms, centrally located in the chambers, separate the compressed air (dry side) from the fluid being pumped (wet side). A shaft transmits the reciprocating motion of one diaphragm to the other. A valve (air motor) alternatively distributes the air from one chamber to the other; thus a reciprocating movement of the diaphragms is created. With each stroke fluid is discharged by one of the diaphragms while the opposite diaphragms sucks new fluid into the expanding chamber. Check valves, two on the discharge side and two on the suction side, control and direct the fluid flow.

MAIN DirectFlo® PUMP FEATURES

In most conventional design diaphragm pumps, the wet side of each diaphragm is on the outside and the dry side is on the inside. This means that manifolds, which create added friction and pressure loss, are required for collecting the fluid into the pump and for its delivery. Traditional diaphragm pump designs result in negative consequences such as high air consumption, highly pulsating flow, complicated maintenance, etc. DirectFlo® pumps work differently. The pumped fluid follows a straight and direct flow path, through the interior of the pump body. This way, DirectFlo® pumps avoid using manifolds. As consequence of their innovative design, DirectFlo® pumps present the following advantages when compared with traditional external flow pumps:

- Compact design.
- Reduced air consumption.
- Reduced flow pulsation.
- Superior performance against back pressure.
- Improved suction capacity.
- Increased diaphragm and shaft life.
- Reduced number of components.
- Lubricant free air motor.
- Extremely easy maintenance.
- In-line installation.

High value innovations for the market

DirectFlo® pumps are designed to be used as both transfer and system pumps. As system pumps, they can work on demand, for example starting immediately once a delivery valve is opened and stopping once it is closed. In the stalled condition the pump has no air leaks, a common issue with conventional diaphragm pumps.



In addition to the central ball-valves fluid path technique DirectFlo® pumps feature two significant innovations: the Flexible Diaphragm Suspension (FDS) and the Frictionless Pivoting Air Valve (FPV).

Flexible diaphragm suspension

One of the innovations behind the pump's smooth operation is the patented FDS technology (Flexible Diaphragm Suspension). The diaphragms are not fixed to the shaft and they can move independently of each other and work with soft, overlapping movements. This minimizes pulsations, increases time between services and enables a central flow.

Flexible Diaphragm Suspension reduces fatigue on the diaphragms, contributing to extend their service life. Also, shaft life is significantly increased especially with heavy suction delivery loads, since the diaphragm only pushes the shaft and does not transmit any non-axial loads.

Frictionless pivoting air valve

The FDS principle is complemented with the use of short stroke diaphragms that reciprocate very quickly thanks to a unique and patented pivoting air mechanism concept. Short strokes dramatically reduces the fatigue on the diaphragms and this contributes to extend their life. A traditional sliding air valve could not be used as the friction in this kind of air valves is too high to allow the extremely fast reversing action required. Therefore a new friction free air valve, the Frictionless Pivoting Air Valve, was developed.

This air valve is the heart of the drive system and ensures very high operational reliability. The air motor, including the power valve module, the end of stroke signal valve sensors and the castings, is self-cleaning and withstands oily, dry, humid or dirty compressed air.

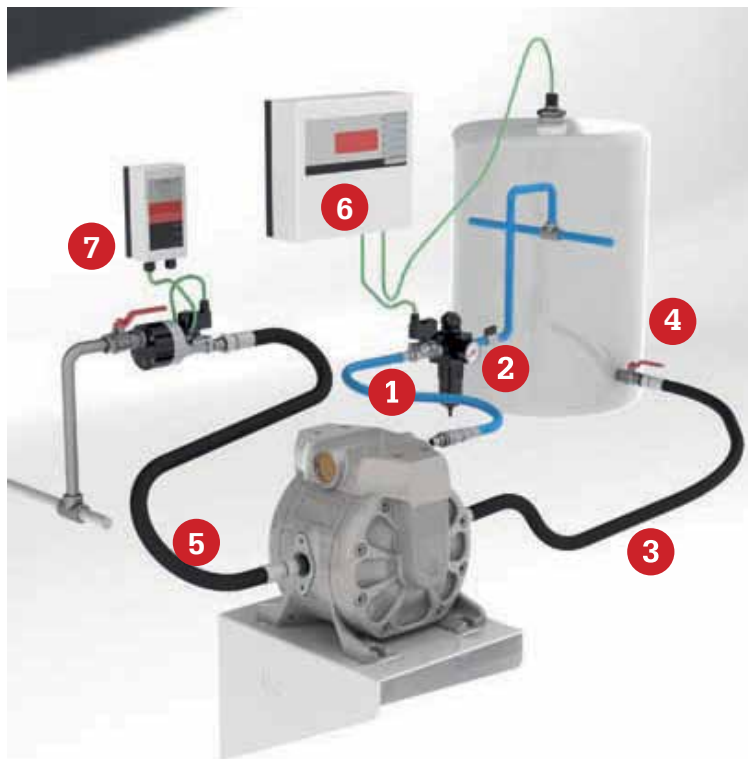
This patented pivot type air valve switches faster than any other diaphragm pump air valve. Switching time is about 3 to 4 milliseconds, while a conventional air valve requires at least 20 times longer switching time.

Simple reliability, reduced to the max

DirectFlo® pumps are extremely simple. The number of internal components is very small, resulting in a very reliable pump with minimum maintenance requirements. Thanks to its central flow design with no manifolds, the pump can be fully serviced without the need to dismount it from the fluid distribution line. Thanks to its simplicity, regular service and maintenance (air motor service, cleaning or replacing valves, replacing worn diaphragms, etc.) can be performed faster and without errors even by untrained personnel.

DIRECTFLO® PUMP INSTALLATION

Like any other air operated pump, DirectFlo® diaphragm pumps should be installed appropriately to ensure a long and dependable operation life



Air supply

Compressed air should be clean and dry. The use of a combined air filter and pressure regulator (1) or an air pressure regulator is recommended. Always install an air shut-off valve (2) for isolating the pump for eventual maintenance purposes. Always use a flexible hose for connecting the pump to the air supply with a quick air coupler at the hose end. At the pump air inlet always fasten an air nipple.

Suction side

DirectFlo® pumps can be installed flooded, submerged and with negative suction head. When the pump is installed submerged, the air outlet must be vented outside the fluid. Use the shortest possible suction line. Never exceed pump maximum suction head. Use the suction hose or tube with the largest possible diameter. When using a suction tube, always use a hose (3) to connect the tube to the pump fluid inlet. Install a shut-off valve (4) for isolating the pump from the suction line for eventual maintenance purposes.

Delivery side

Like air operated piston pumps, DirectFlo® pumps stall against back pressure. The pump operation can be controlled by simply opening and closing the fluid dispensing valve. When the pump is installed in fluid distribution systems, please observe the following recommendations: Always use a flexible hose for connecting the pump outlet to the fluid distribution line (5). Always install a shut off valve close to the pump outlet to isolate it for eventual to instale it maintenance purposes.

Pump control

The pump can be controlled using the Advanced Monitoring, Tank Management or Tank Alert Systems. When connected to an air solenoid valve in the air supply, the Tank Management or the Tank Alert System (6) can prevent the pump from running dry as the system can be programmed to close the solenoid valve once the tank level has reached a minimum value. This way pump life can be increased and there is no possibility of air entering into the fluid line. The Advanced Monitoring System (7) can be used as a powerful batch and dosing system. It offers multiple control options and helps to keep deliveries under control. Through the IFDM module, the system can work with a variety of meters and solenoid valves compatible with the fluid used. Please refer to pages 43-48 for more information about monitoring and control systems.

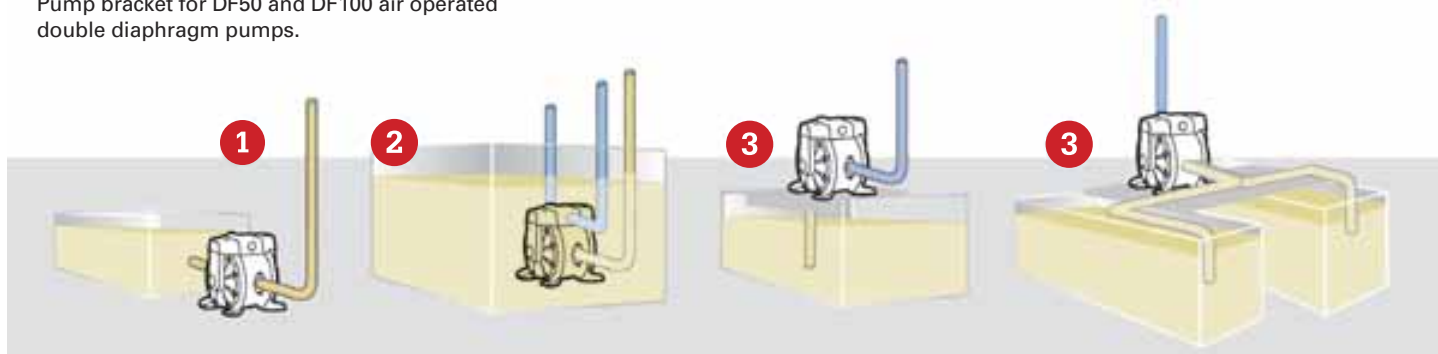
PUMP MOUNTING ACCESSORIES

Please refer to page 24 for installation accessories. Check material compatibility of suction accessories before using them.

360 100 Pump bracket

Pump bracket for DF50 and DF100 air operated double diaphragm pumps.

- 1** Flooded mounting
- 2** Submerged mounting
- 3** Negative suction head mounting



AIR OPERATED DOUBLE DIAPHRAGM PUMP

03

DF50 METALLIC PUMPS

For fluid transfer and distribution systems. 50 l/min, 14 US gpm 1/2" fluid port.
Very robust construction, the pump is fully enclosed in an aluminum shield.

MODELS AND APPLICATIONS

APPLICATION	WETTED MATERIAL	CHECK BALLS	DIAPHRAGMS	PART N°
Lubricants, waste oil, antifreeze, water.	Aluminum	NBR	Hytrel®	552 010
Lubricants, waste oil, antifreeze, water, windshield wash, brake fluid.	Nickel coated aluminum	Acetal	Hytrel®	552 011

TECHNICAL DATA

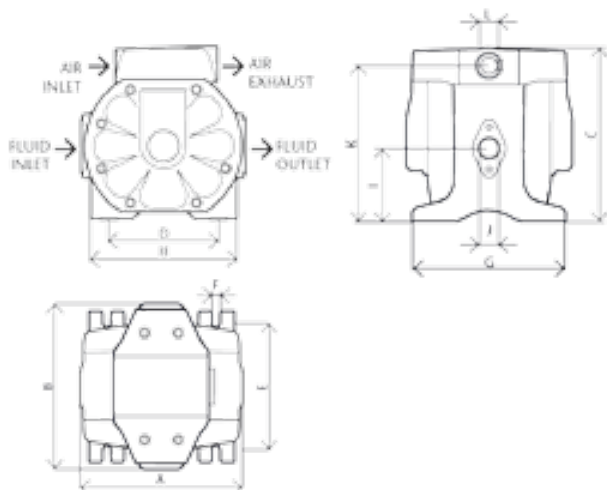
Pressure ratio	1:1
Maximum free delivery (1)	14 US gpm (50 l/min)
Delivery per stroke aprox. (1)	0.026 US gallons (0.1 litres)
Air pressure operating range	45 to 100 psi (3 to 7 bar)
Solids in suspension max size	1/8" (3 mm)
Max dry suction head (1)	20' (6 m)
Max wet suction head (1)	26' (8 m)
Weight	9.4 lb (3.5 Kg)
Fluid inlet	1/2" NPSM (F) and flange
Fluid outlet	1/2" NPSM (F) and flange
Air inlet	3/8" NPSM (F)
Wetted part materials	See Models and Applications

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

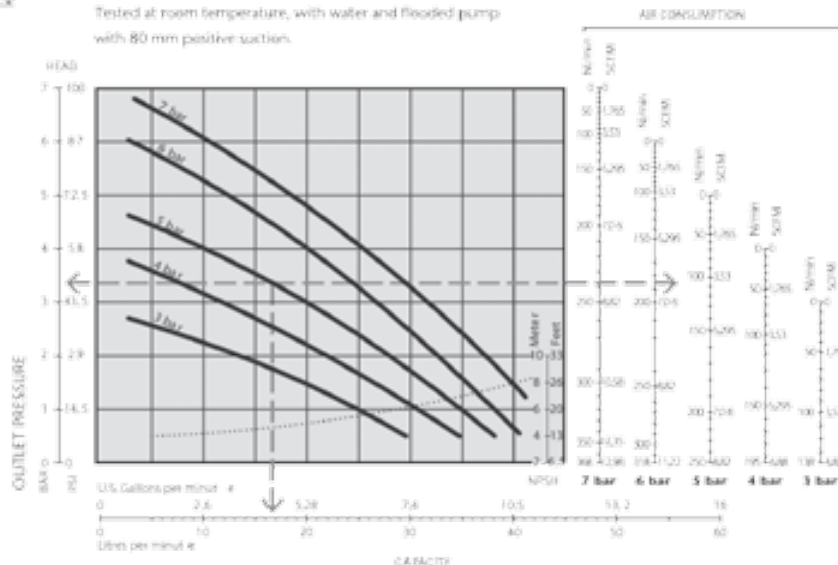


DIMENSIONS – INCHES (MM)

A	B	C	D	E	F
6.14 (156)	6.3 (160)	6.57 (167)	4.13 (105)	4.8 (122)	.31 (8)
G	H	I	J	K	L
5.75 (146)	5.51 (140)	2.76 (70)		5.9 (150)	



Tested at room temperature, with water and flooded pump with 80 mm positive suction.



AIR OPERATED DOUBLE DIAPHRAGM PUMP

03

DIRECTFLO MIXING PUMPS

DF50 MIXING PUMPS

Metallic and non-metallic pumps for 1:1 mixing of fluids (water/antifreeze, water/windshield washer fluid). 50% proportioning of each fluid is fixed and can not be changed. Very robust construction, the pump is fully enclosed in a shield and has corrosion proof wetted materials.

50 l/min - 14 US gpm; 2 x 3/8" fluid inlet and 1/2" fluid outlet ports.

MODELS AND APPLICATIONS

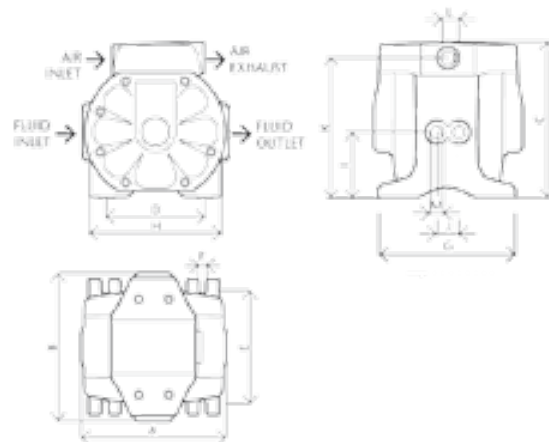
APPLICATION	WETTED MATERIAL	CHECK BALLS	DIAPHRAGMS	PART N°
1:1 solutions of water/antifreeze, windshield wash/water.	Nickel coated aluminium	Acetal	Hytrel®	552 021
1:1 solutions of water/antifreeze, windshield wash/water.	Acetal	Acetal	Hytrel®	552 026



TECHNICAL DATA

Pressure ratio	1:1
Maximum free delivery (1)	14 US gpm (50 l/min)
Delivery per stroke aprox. (1)	0.026 US gallons (0.1 litres)
Air pressure operating range	45 to 100 psi (3 to 7 bar)
Solids in suspension max size	1/8" (3 mm)
Max dry suction head (1)	20' (6 m)
Max wet suction head (1)	26'8 m (26')
Weight	9.4 lb (3.5 Kg)
Fluid inlet	2 x 3/8" NPSM (F) and flange
Fluid outlet	1/2" NPSM and flange
Air inlet	3/8" NPSM
Wetted part materials	See Models and Applications

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



DIMENSIONS – INCHES (MM)

A	B	C	D	E	F	
6.14 (156)	6.3 (160)	6.57 (167)	4.13 (105)	4.8 (122)	.31 (8)	
G	H	I	J	K	L	M
5.75 (146)	5.51 (140)	2.76 (70)	.944 (24)	5.9 (150)		3/8"

Pump capacity curve same as DF50 metallic (PN 552 021) and non metallic (PN 552 026) pumps

AIR OPERATED DOUBLE DIAPHRAGM PUMP

03

DF50 NON METALLIC PUMPS

For fluid transfer and distribution systems.
Very robust construction. The pump is fully enclosed in a shield and has non-metallic wetted parts.

MODELS AND APPLICATIONS

APPLICATION	WETTED MATERIAL	CHECK BALLS	DIAPHRAGMS	PART N°
Lubricants, waste oil, antifreeze, transmission fluid, windshield wash, solvents, biodiesel	Acetal	Acetal	Hytrel®	552 016
Lubricants, waste oil, antifreeze, transmission fluid, windshield wash, detergents	Polypropylene	Polypropylene	Hytrel®	552 015

TECHNICAL DATA

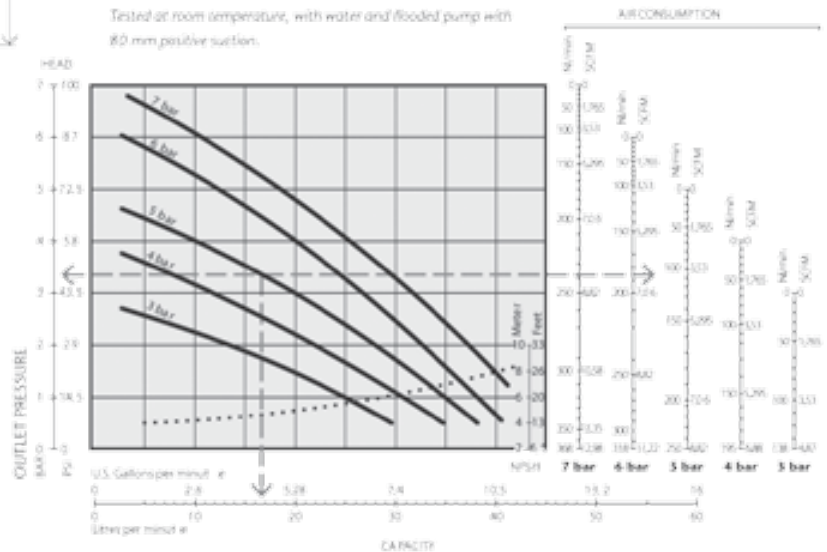
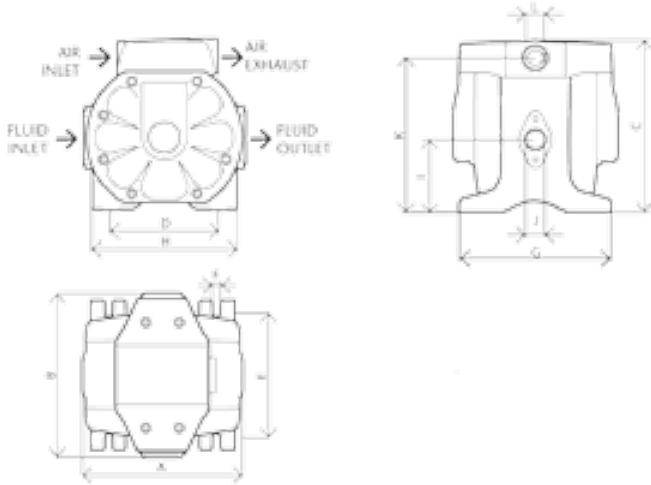
Pressure ratio	1:1
Maximum free delivery (1)	14 US gpm (50 l/min)
Delivery per stroke aprox. (1)	0.026 US gallons (0.1 litres)
Air pressure operating range	45 to 100 psi (3 to 7 bar)
Solids in suspension max size	1/8" (3 mm)
Max dry suction head (1)	20' (6 m)
Max wet suction head (1)	26' (8 m)
Weight	9.4 lb (3.5 Kg)
Fluid inlet	1/2" NPSM (F) and flange
Fluid outlet	1/2" NPSM (F) and flange
Air inlet	3/8" NPSM (F)
Wetted part materials	See Models and Applications

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



DIMENSIONS – INCHES (MM)

A	B	C	D	E	F
6.14 (156)	6.3 (160)	6.57 (167)	4.13 (105)	4.8 (122)	.31 (8)
G	H	I		K	
5.75 (146)	5.51 (140)	2.76 (70)		5.9 (150)	



AIR OPERATED DOUBLE DIAPHRAGM PUMP

03

DF100 METALLIC PUMPS

For fluid transfer, evacuation and distribution systems. 22.7 gallon -28 US gpm 1" fluid port.
Very robust construction, the pump is fully enclosed in an aluminum shield.

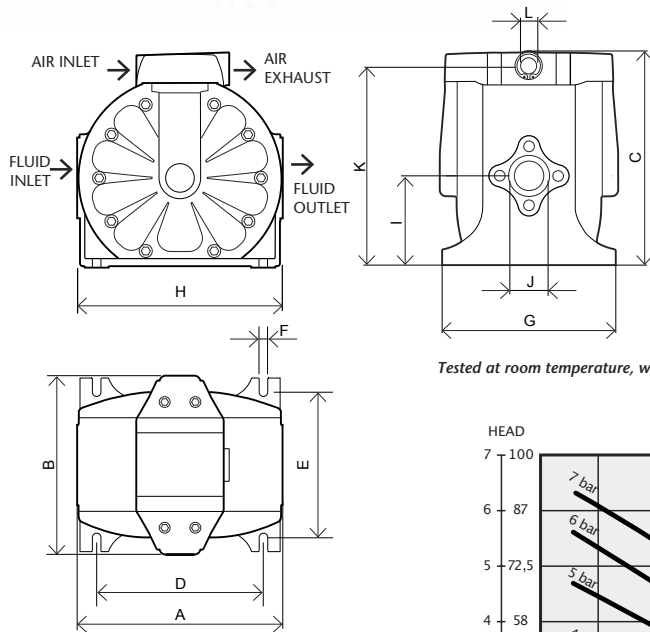
MODELS AND APPLICATIONS

APPLICATION	WETTED MATERIAL	CHECK BALLS	DIAPHRAGMS	PART N.º
Lubricants, waste oil, antifreeze, transmission fluid, water	Aluminium	Hytrel®	Hytrel®	551 010



TECHNICAL DATA

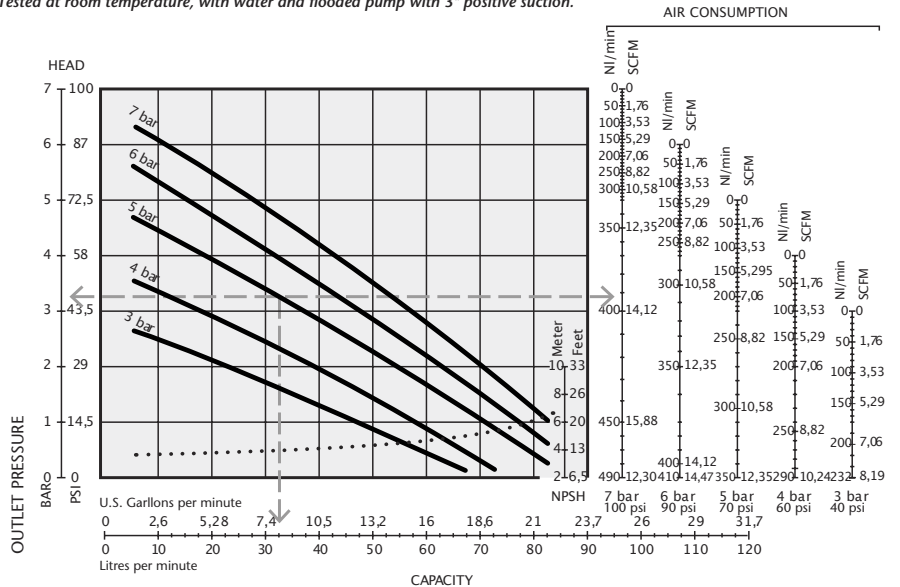
Pressure Ratio	1:1
Maximum free delivery	28 US gpm (100 l/min)
Delivery per stroke	0.09 US gallons (0.35 l)
Air pressure operating range	45 to 100 psi (3 to 7 bar)
Solids in suspension max size	3/16" (4 mm)
Max dry suction head	15' (4.5 m)
Max wet suction head	23' (7 m)
Weight	19.3 lb (7.2 Kg)
Fluid inlet	1" NPSM and flange
Fluid outlet	1" NPSM and flange
Air inlet	3/8" NPSM
Wetted part materials	See Models and Applications



DIMENSIONS

A	B	C	D	E	F
8.5"	7.4"	8.9"	6.9"	6.1"	0.3"
G	H	I	J	K	L
7.24"	8.3"	3.7"	1"	8,3"	3/8"

Tested at room temperature, with water and flooded pump with 3" positive suction.





AIR OPERATED DIAPHRAGM PUMPS

Rugged Bolted Construction

All pumps feature bolted construction, which eliminates leaks and simplifies post-maintenance reassembly. Bolted construction is superior to clamp band retainers, which frequently require frustrating, unnecessary leakage rebuilds from misalignment during reassembly.

Readily Accessible Air Valve

Inspection and maintenance may be performed without removing the pump from service.

Pilot Valve Assembly

Maintenance free with no cumbersome snap rings or lubricated o-rings to replace or repair.



Diaphragm Dynamics

Extensive research has led to the development of an optimal stroke length that maximizes diaphragm life and performance while minimizing downtime and maintenance costs.

Non-Metallic Components

Engineered design, utilizing state-of-the-art solid modeling and finite element analysis techniques. Patented rib and shell methods of injection molding greatly increase the component strength and reduce material usage.



Classic Flo Air Operated Diaphragm Pumps

Air Valve Technology

Air valve technology is the heart of any air-powered double diaphragm pump and determines reliability. Classic Flo pumps have three patents on the "field proven" valve and enjoy a superior reputation throughout the industry.

Unified Air Valve Concept

To simplify, Samson offers two common size air valve assemblies within five sizes of pumps. (3/4" & 1" pumps and 1-1/2", 2" & 3" pumps) further reducing reassembly confusion and parts inventory. Other air-powered double diaphragm pump manufacturers offer multiple air valve designs and revisions in an effort to address pump reliability problems. Multiple designs and revisions typically create maintenance rebuild issues, parts confusion and obsolete inventory. Whether your pumps are functioning continuously or intermittently, at high flow or low pressure, using dirty or clean air, we've got one field proven design.

Truly Non-Lubricated Air Valve

This patented air valve never needs lubrication or pre-packing. The advanced design eliminates the need for external lubrication which can lead to contamination and maintenance headaches.

Component Replaceable

All air valve can be restored with individual components, without requiring complete valve and housing replacement. Many competitor air valves incorporate a complicated design which requires complete replacement of the valve assembly and housing, further increasing the cost of ownership.

For use with 250, 260, 261, 262, 263, 264 & 265
For use with 266, 267, 268, 269 & 270



Non-Stalling

A patented non-centering, spring assisted shifter is incorporated into every Classic Flo pump, ensuring a positive shift every time. The 304 Stainless Steel C-springs provide exceptional durability and longevity and are tested to over 300 million cycles! The spring also helps to aid in reliable start-up after long dead head applications.



AIR OPERATED DOUBLE DIAPHRAGM PUMP

03

CLASSICFLO PUMPS

Part No.	Body	Diaphragms	Balls & O-Rings	Free Delivery in GPM	Fluid Inlet/Outlet	Max Suction Lift	Air Inlet	Max Inlet Air PSI	Applications
2825	Polypropylene	Teflon	Teflon	3	1/4"	5'	1/4"	100 PSI	DEF, LUBRICANTS, ANTIFREEZE, WINDSHIELD FLUID
2827	Polypropylene	Buna N	Buna N	5	3/8"	10'	1/4"	100 PSI	LUBRICANTS, ANTIFREEZE, WINDSHIELD FLUID
2829	Polypropylene	Buna N	Buna N	13	1/2"	5'	1/4"	100 PSI	LUBRICANTS, ANTIFREEZE, WINDSHIELD FLUID
2831	Aluminum	Buna N	Buna N	13	1/2"	5'	1/4"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2845	Polypropylene	Santoprene	EPDM	13	1/2"	5'	1/4"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2833	Aluminum	Buna N	Buna N	30	1"	18'	3/8"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2834	Aluminum	Buna N	Buna N	30	1"	18'	3/8"	100 PSI	UL LISTED; LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2841	Polypropylene	Santoprene	EPDM	30	3/4"	18'	3/8"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2835	Aluminum	Buna N	Buna N	45	1"	18'	3/8"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2842	Polypropylene	Santoprene	EPDM	45	1"	18'	3/8"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2838	Aluminum	Buna N	Buna N	100	1 1/2"	18'	1/2"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2843	Polypropylene	Santoprene	EPDM	100	1 1/2"	18'	1/2"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2840	Aluminum	Buna N	Buna N	160	2"	19'	3/4"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL
2844	Polypropylene	Santoprene	EPDM	160	2"	19'	3/4"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2850	Polypropylene	Santoprene	EPDM	215	3"	19'	3/4"	100 PSI	DEF, ANTIFREEZE, WINDSHIELD FLUID
2851	Aluminum	Buna N	Buna N	215	3"	19'	3/4"	100 PSI	LUBRICANTS, USED OIL, USED ANTIFREEZE, ANTIFREEZE, DIESEL

- Data sheets on each pump model available at www.samsoncorporation/datasheets
 - All data sheets include specifications and performance curves
- Check with Samson customer service for compatibility issues, higher flow rates, or other diaphragm pump needs not shown here

DIAPHRAGM PUMP ACCESSORIES

Optional Accessories						
Pump Model No.	Wall Mount Bracket	Pressure Relief Kit	Air Filter/Reg combo	50/50 inlet mixing manifold	Drum Mount Kit	Hose Connection Kit*
2825	360100	107004	955	N/A	N/A	922000
2827	360100	107006	955	N/A	N/A	923000
2829	360109	107008	955	2805	208602	949000
2831	360109	107008	955	2805	208602	949000
2833	360109	107016	957	2807	N/A	961000
2834	360109	107016	957	2807	N/A	961000
2835	360131	107016	957	2810	N/A	961000
2838	N/A	107024	958	N/A	N/A	961015
2840	N/A	107032	952	N/A	N/A	961020

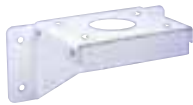
A low pressure ball-valve is included with each pump to control air supply.



*Hose Connection Kit Breakdowns					
Hose Kit Model No.	Product Inlet/Outlet Hose Model No.	Hose Liner Material	Product Hose End Material	Product Hose Fittings	Air Hose Model Number
922000	802000 – 5' x 1/4"	Teflon	Nylon	1/4" NPTM BE	802 – 5' x 1/4"
923000	813000 – 5' x 3/8"	Buna-N	Nylon	3/8" NPTM BE	802 – 5' x 1/4"
949000	823000 – 5' x 1/2"	Buna-N	Nylon	1/2" NPTM BE	802 – 5' x 1/4"
961000	863405 – 5' x 1"	Buna-N	Nylon	1" NPTM BE	813 – 5' x 3/8"
961015	863505 – 5' x 1 1/2"	Buna-N	Nylon	1 1/2" NPTM BE	823 – 5' x 1/2"
961020	863605 – 5' x 2"	Buna-N	Nylon	2" NPTM BE	857405 – 5' x 3/4"

Diaphragm pump hose kit includes a quantity of three five foot long hoses: one inlet and one outlet product hose and one air hose. Product hose liners are matched to the pump diaphragm material for full compatibility, and have nylon end fittings. Air hoses have EPDM liners and zinc plated steel ends.

WALL MOUNT BRACKETS



Steel bracket for wall mounting of diaphragm pump. Model 360 109 shown.

PRESSURE RELIEF VALVE



0-250 psi adjustable pressure relief valve kit sized to fit pump. Manufactured in aluminum with Buna N diaphragm and brass fittings. Includes line mounting tee and tank return line.

DUAL INLET MANIFOLD



Dual inlet manifold kit. Enables pump to pull product from two separate reservoirs and output a 50/50 mixture. Poly model 2805 shown. Models 2807 and 2810 are similar, but in aluminum.

DRUM MOUNTING KIT

The drum mount kit allows you to mount a diaphragm pump to a standard bung opening with a unique polypropylene suction kit.