

# AIR OPERATED PUMPS

FOR THE  
**OIL & GAS**  
INDUSTRY



# SAMOA: LEADING THROUGH INNOVATION

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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.



Headquarters Offices and  
Technical Centre in Gijón (Spain)



**OIL AND GAS  
PETROCHEMICAL**



**CHEMICAL PLANT  
PROCESSING**



**MINING AND  
CONSTRUCTION**



**PAINTS AND COATINGS**



**PULP AND PAPER**



**TEXTILES, LEATHER &  
GARMENTS**



**PLANT AND MECHANICAL  
ENGINEERING**



**MARINE**



**TANK FARMS / BULK  
TRANSFER**



**ELECTRONICS**



**CERAMICS**



**POWER STATIONS (ENERGY)**



**WASTEWATER AND WATER  
TREATMENT**

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.

A 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.



# AIR OPERATED DOUBLE

AODD pumps are positive displacement reciprocating pumps. They are the most versatile pumps for low to medium viscosity fluid transfer. SAMOA manufactures a wide range of AODD pumps for a wide variety of applications in the Oil & Gas industry.

Tank cleaning.

Tertiary well control.

Fuel transfer & stripping.

Seawater and mud make up.

Oil spill response and clean-up.

Glycol recirculation – heat trace.

Condensate produced water recirculation.

Utility chemical drain, pit, sump, slurry transfer.

Cellar pump-out.

General utility transfer.

Chemical and fuel flushing.

Tank bottom recirculation.

Flare knock-out drum pumping.

Chemical tote and drum unloading.

Well stimulation - acidization and coiled tubing.

Rapid filling pumps for well integrity pressure test units.



## SAMOA AODD PUMPS ADVANTAGES

### INTRINSICALLY SAFE

Compressed air drive, no electric hazards. CE and ATEX certified.

### EFFICIENT

Industry leading air efficiency.

### SEAL-LESS PUMPS

No mechanical seals or gland packings.

### LEAK FREE

Bolted construction ensures leak free reliable operation.

### RELIABLE

Non-stalling, non-freezing air motor with reliable low pressure start up.

### EXTERNALLY SERVICEABLE

Modular Cartridge style air valve design ensures easy maintenance.

### MINIMAL VIBRATION AND PULSATION

Thanks to the fast action Frictionless Pivot air valve.

### UNIVERSAL PUMPS

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.

### VARIABILITY

Adjustable flow rates, speed, discharge pressure.

# DIAPHRAGM (AODD) PUMPS

## FRICTIONLESS PIVOT AIR VALVE: THE KEY FOR A SUPERIOR PERFORMANCE

The air valve in an AODD pump makes the difference. SAMOA pumps incorporate a very simple and reliable air valve that features only one moving part: a pivoting rod with two drum-pads at each end. The reciprocating action of this patented Pivot Valve alternatively fills one of pump's air chambers while empties the opposite one.

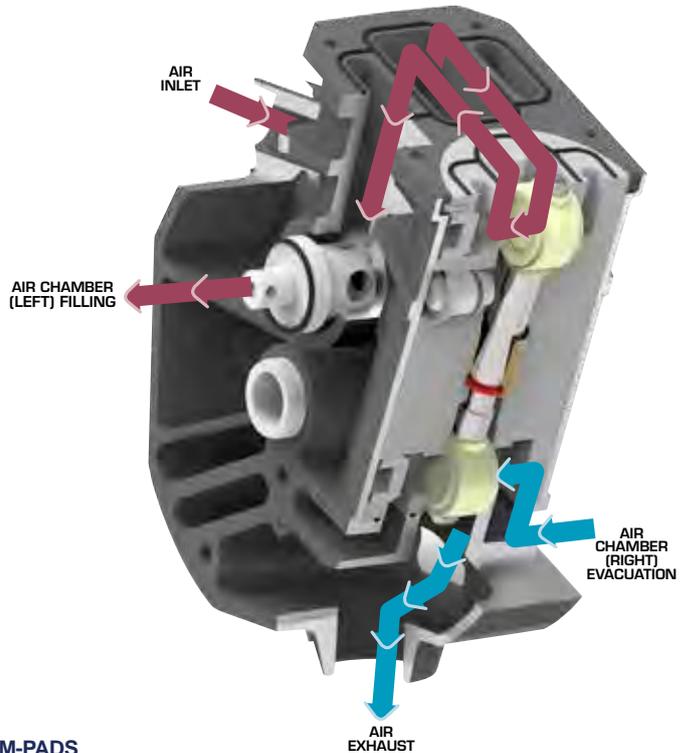
Two diaphragm end of stroke sensors detect when each diaphragm reaches its end position and instantaneously sends a pneumatic signal to create the reciprocation valve motion.

This pivot valve has no O-rings or sliding spools that create friction. The friction absence and the immediate pneumatic signal to change direction, provide this valve with the fastest reciprocation action in the industry. This contributes to increase efficiency, reduce compressed air consumption and minimize vibrations when compared with other AODD pumps.

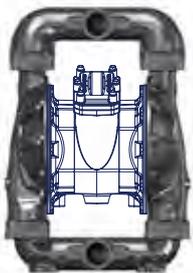
Additionally, the patented air motor incorporates an actuator that prevents stalling and increases pump performance reliability, even with very low air pressure.

The central block design, with generous air flow paths and a direct air exhaust, eliminates the possibility of ice formation, assuring a continuous operation even with the longest pump runs.

- RUNS WITH DRY, DIRTY, OR DAMP AIR
- LONG LIFE PIVOT DRUM-PADS
- LUBE-FREE OPERATION
- NO ICE FORMATION



## OPTIMIZED PUMP DESIGN FOR LONGER LIFE & INCREASED RELIABILITY

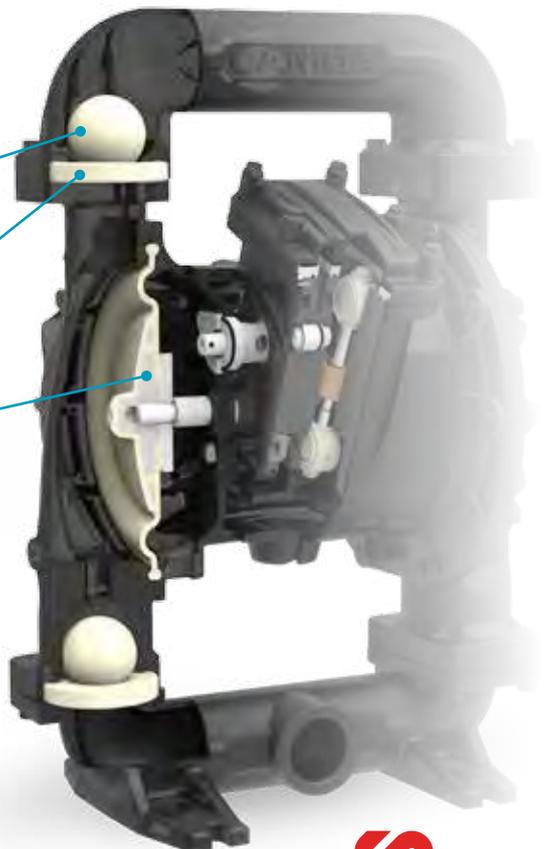


### PUMP HOUSING

- All bolted construction for enhanced safety, sealing capacity, reliability and easy assembly and disassembly. Four bolts pattern per union.
- Optimized fluid path and cross section for minimum internal friction.
- Designed to drop-in as a pump fit-replacement for existing systems which incorporate competitor's pumps.

### WET PARTS

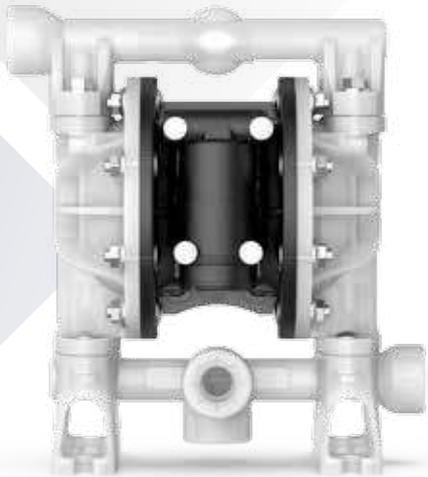
1. Perfect spherical balls, grinded and well balanced to guarantee a good performance.
2. Long life valve-seats design that facilitates preventive maintenance.
3. Conventional or overmolded (one piece) diaphragms.
  - Annular Vault shape design for extended diaphragm life in overmolded TPE and conventional PTFE / Elastomer, TPE and Rubber diaphragms.
  - Dome shape design with back-up concentric ribs for extra flexibility in over molded Rubber and PTFE – Rubber (bonded) diaphragms.



# 1/2" NON-METALLIC PUMP - UPO5 SERIES

54 L/MIN - 14.3 GAL/MIN

The 1/2" (13 mm) AODD pumps made of injected moulded plastic parts can reach a flow rate up to 53 l/min - 14.3 gal/min. They offer a wide range of construction materials and multiple porting configurations.

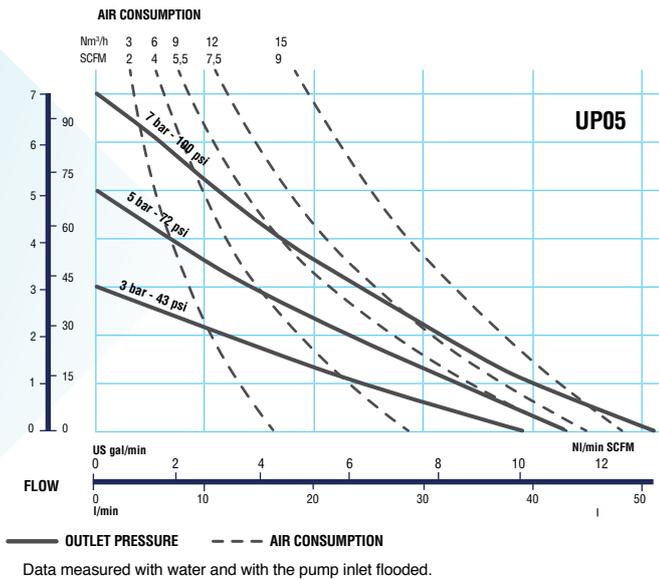


## UPO5 PUMP DESIGN ADVANTAGES:

- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same bolt size facilitates maintenance.
- Universal pump, matches relative dimensions of main competitive brands.
- Multiport BSP or NPT threaded manifolds for maximum installation versatility.
- Frictionless Air Pivot Valve.

Pumps in conductive polypropylene (black) are ATEX certified Ex II 2 GD IIB/IIC 95 °C.

## PERFORMANCE CHART



TECHNICAL DATA	UPO5 NON-METAL PUMPS
Pressure ratio	1:1
Maximum free delivery	54 l/min (14,3 US gal/min)
Air pressure range	1,5 to 7 bar (20 to 100 psi)
Ball valve maximum clearance	2,5 mm (3/32")
Max. dry suction lift	5 m (16')
Max. wet suction lift	8 m (26')
Pump delivery per cycle*	0,15 l (0,04 gal)
Fluid inlet / outlet ports	1/2" BSP (F) Threaded 1/2" NPT (F) Threaded
Air inlet port	1/4" NPSM (F)
Air exhaust port	1/2" NPT (F)
Sound level	75 dB (A) @ 50 cycles/min @ 70 psi
Weight	
Polypropylene pump	2,7 kg (6 lb)
Conductive Polypropylene pump	3 kg (6.6 lb)
PVDF pump	3,7 kg (8.2 lb)
Conductive Acetal pump	3,3 kg (7.3 lb)

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

## PUMP NOMENCLATURE

Example: **UPO5B-XXX-XXX**

PUMP TYPE	AIR BODY	HOUSINGS			WETTED PARTS		
Pump Type & Size	Central Body & Air Chambers	Fluid Ports / Location	Fluid Chambers & Manifolds	Hardware Bolts	Valve Seats	Valve Balls	Diaphragms Type & Material
<b>UPO5</b> Universal Pump (Bolted)	<b>ATEX Certified</b> <b>B*</b> = Conductive Polypropylene (black)	<b>B</b> = 1/2" BSP threaded ports <b>N</b> = 1/2" NPT threaded ports	<b>P</b> = Polypropylene (white) <b>W</b> = PVDF (Kynar®) (white)  <b>ATEX Certified</b> <b>B*</b> = Conductive Polypropylene (black) <b>D*</b> = Conductive Acetal (black)	<b>S</b> = Stainless Steel	<b>C</b> = Acetal <b>P</b> = Polypropylene <b>S</b> = AISI 316 Stainless Steel <b>T</b> = PTFE (Teflon®) <b>V</b> = FKM (Viton®)	<b>H</b> = Hytrel® <b>M</b> = Santoprene® <b>N</b> = Nitrile (Buna-N) <b>S</b> = AISI 316 Stainless Steel <b>T</b> = PTFE (Teflon®) <b>V</b> = FKM (Viton®)	<b>Conventional</b> <b>A</b> = Santoprene® <b>C</b> = Hytrel® <b>G</b> = Nitrile (Buna-N) <b>V</b> = FKM (Viton®)  <b>Two-piece</b> <b>Z</b> = PTFE (Teflon® with Santoprene backer)

\* **ATEX Certified** pumps for use in hazardous locations ATEX Group II 2GDx.

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# 1" METALLIC PUMP - UP10 SERIES

200 L/MIN - 53 GAL/MIN

The 1" (25 mm) AODD pumps made of cast metal can reach a flow rate of up to 200 l/min - 53 gal/min. They offer a wide range of construction materials and porting configurations.

## UP10 PUMP DESIGN ADVANTAGES:

- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same bolt size facilitates maintenance.
- Universal pump, matches relative dimensions of main competitive brands.
- Multiport BSP or NPT threaded manifolds for maximum installation versatility.
- Frictionless Air Pivot Valve.

Pumps available in Aluminium and Stainless Steel and they are ATEX certified Ex II2 GD IIB/IIC 95 °C.



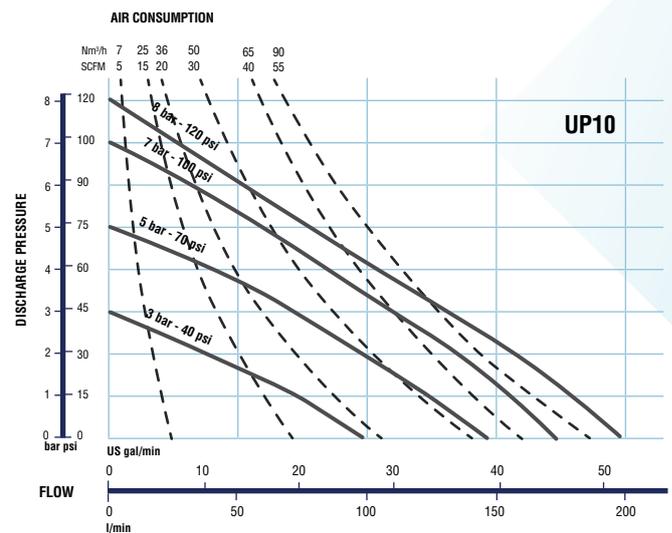
Stainless Steel version

Aluminium version

TECHNICAL DATA	UP10 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery	200 l/min (53 gal/min)
Air pressure range	1,5 to 8 bar (20 to 120 psi)
Ball valve maximum clearance	6,4 mm (1/4")
Max. dry suction lift	5 m (16')
Max. wet suction lift	8 m (26')
Pump delivery per cycle*	0,85 l (0.2 gal)
Fluid inlet / outlet ports	1" BSP (F) threads 1" NPT (F) threads
Air inlet port	1/2" NPT (F)
Air exhaust port	1" NPT (F)
Sound level	75 dB (A) @ 50 cycles/min @ 70 psi
Weight	
Aluminium pump	11,5 kg (25 lb)
Stainless steel pump	17,5 kg (38.6 lb)

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

## PERFORMANCE CHART



Data measured with water and with the pump inlet flooded.

## PUMP NOMENCLATURE

Example: **UP10X-XXX-XXX**

PUMP TYPE	AIR BODY	HOUSINGS			WETTED PARTS		
		Fluid Ports / Location	Fluid Chambers & Manifolds	Hardware Bolts	Valve Seats	Valve Balls	Diaphragms Type & Material
<b>UP10</b> Universal Pump (Bolted)	<b>ATEX Certified</b> A* = Aluminium B* = Conductive Polypropylene (black)	<b>B</b> = 1" BSP Threaded Ports <b>N</b> = 1" NPT Threaded Ports	<b>ATEX Certified</b> A* = Aluminium S* = AISI 316 Stainless Steel	<b>C</b> = Carbon Steel <b>S</b> = Stainless Steel	<b>A</b> = Aluminium <b>H</b> = Hytrel® <b>M</b> = Santoprene® <b>N</b> = Nitrile (Buna-N) <b>S</b> = AISI 316 Stainless Steel <b>V</b> = FKM (Viton®)	<b>H</b> = Hytrel® <b>M</b> = Santoprene® <b>N</b> = Nitrile (Buna-N) <b>T</b> = PTFE (Teflon®) <b>S</b> = AISI 316 Stainless Steel <b>V</b> = FKM (Viton®)	<b>Conventional</b> <b>A</b> = Santoprene® <b>C</b> = Hytrel® <b>G</b> = Nitrile (Buna-N) <b>V</b> = FKM (Viton®) <b>Two-piece</b> <b>Z</b> = PTFE (Teflon® with Santoprene backer)

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

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# 1" NON-METALLIC PUMP - UPO5 SERIES

200 L/MIN - 53 GAL/MIN

The 1" (25 mm) AODP pumps made of injected moulded plastic parts can reach a flow rate up to 200 l/min - 53 gal/min. They offer a wide range of construction materials and multiple porting configurations.

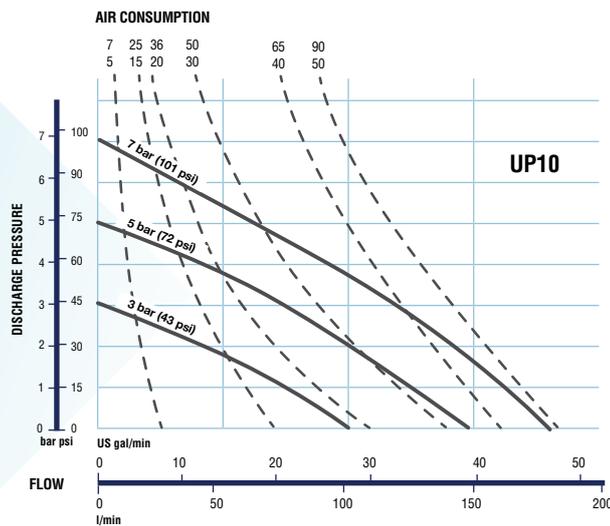


## UP10 PUMP DESIGN ADVANTAGES:

- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same bolt size facilitates maintenance.
- Universal pump, matches relative dimensions of main competitive brands.
- BSP or NPT lateral and central threaded ports or ANSI / DIN lateral and central ports available.

Pumps in conductive polypropylene (black) are ATEX certified Ex II2 GD IIB/IIC 95 °C.

## PERFORMANCE CHART



Data measured with water and with the pump inlet flooded.

TECHNICAL DATA	UP10 NON-METAL PUMPS	
Pressure ratio	1:1	
Maximum free delivery	200 l/min (53 gal/min)	
Air pressure range	1,5 to 7 bar (20 to 100 psi)	
Ball valve maximum clearance	6,4 mm (1/4")	
Max. dry suction lift	5 m (16')	
Max. wet suction lift	8 m (26')	
Pump delivery per cycle*	0,85 l (0.2 gal)	
Fluid inlet / outlet ports	1" BSP or NPT (F) Threaded FLANGE DIN DN25 / ANSI 1"	
Air inlet port	1/2" NPT (F)	
Air exhaust port	1" NPT (F)	
Sound level	75 dB (A) @ 50 cycles/min @ 70 psi	
Weight	<b>Threaded</b>	<b>Flanged</b>
Polypropylene pump	10,2 kg (22.5 lb)	10,5 kg (23.1 lb)
Conductive Polypropylene pump	11,6 kg (25.6 lb)	12 kg (26.4 lb)
PVDF pump	13,5 kg (29.8 lb)	14,1 kg (31.1 lb)

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

## PUMP NOMENCLATURE

Example: **UP10B-XXX-XXX**

PUMP TYPE	AIR BODY		HOUSINGS			WETTED PARTS	
Pump Type & Size	Central Body & Air Chambers	Fluid Ports / Location	Fluid Chambers & Manifolds	Hardware Bolts	Valve Seats	Valve Balls	Diaphragms Type & Material
<b>UPO5</b> Universal Pump (Bolted)	<b>ATEX Certified</b> B* = Conductive Polypropylene (black)	<b>Central ports</b> C = 1" ANSI/DIN flanged ports B = 1" BSP threaded ports N = 1" NPT threaded ports  <b>Lateral ports</b> F = 1" ANSI/DIN flanged ports P = 1" BSP threaded ports T = 1" NPT threaded ports	<b>P</b> = Polypropylene (white) <b>W</b> = PVDF (Kynar®) (white)  <b>ATEX Certified</b> B* = Conductive Polypropylene (black)	<b>S</b> = Stainless Steel	<b>P</b> = Polypropylene <b>T</b> = PTFE (Teflon®) <b>V</b> = FKM (Viton®)	<b>H</b> = Hytrel® <b>M</b> = Santoprene® <b>N</b> = Nitrile (Buna-N) <b>T</b> = PTFE (Teflon®) <b>V</b> = FKM (Viton®)	<b>Conventional</b> A = Santoprene® C = Hytrel® G = Nitrile (Buna-N) V = FKM (Viton®)  <b>Two-piece</b> Z = PTFE (Teflon®) with Santoprene backer

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# 2" METALLIC PUMP - UP20

650 L/MIN - 172 GAL/MIN

The 2" (51 mm) AODD pumps made of cast metal can reach a flow rate up to 650 l/min – 172 gal/min. They offer a wide range of construction materials and porting configurations.

## UP20 PUMP DESIGN ADVANTAGES:

- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same size bolts facilitates maintenance.
- Universal pump, matches relative dimension of main competitive brands.
- Pump design ensures high abrasion resistance when pumping abrasive media.
- BSP or NPT threaded inlet and outlet ports or central ANSI / DIN Flanges.
- Frictionless Air Pivot Valve.

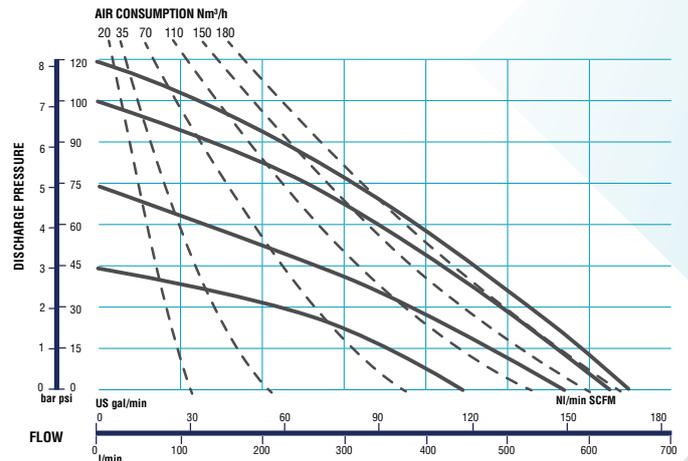
Pumps available in Aluminium, Ductile Iron and Stainless Steel and they are ATEX certified Ex II2 GD IIB/IIC 95 °C.



TECHNICAL DATA	DP200 METAL PUMPS	
Pressure ratio	1:1	
Maximum free delivery	650 l/min (172 gal/min)	
Air pressure range	1,5 to 8 bar (20 to 120 psi)	
Ball valve maximum clearance	6,4 mm (1/4")	
Max. dry suction lift	5 m (16')	
Max. wet suction lift	8 m (26')	
Pump delivery per cycle*	5,1 l (1.35 gal)	
Fluid inlet / outlet ports	2" BSP (F) threads 2" NPT (F) threads 2" ANSI / DIN flange	
Air inlet port	3/4" NPT (F)	
Air exhaust port	1-1/2" NPT (F)	
Sound level	85 dB (A) @ 50 cycles/min @ 70 psi	
<b>Weight</b> Aluminium pump Ductile Iron pump Stainless Steel (Central body: Stainless Steel) Stainless Steel (Central body: Conductive PP) Stainless Steel (Central body: Aluminium)	<b>Threaded</b>	<b>Flanged</b>
	46 kg (101 lb)	48 kg (106 lb)
	74 kg (163 lb)	78 kg (172 lb)
	98 kg (168 lb)	102 kg (181 lb)
	85 kg (168 lb)	90 kg (168 lb)
	76 kg (168 lb)	82 kg (168 lb)

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

## PERFORMANCE CHART



Data measured with water and with the pump inlet flooded.

## PUMP NOMENCLATURE

Example: **UP20A-BSS-TTZ**

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

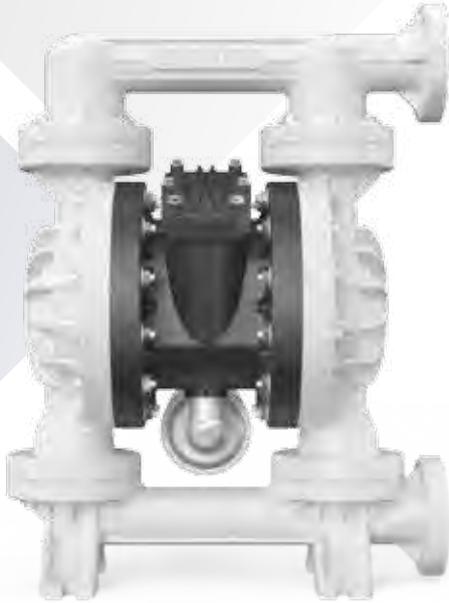
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# 2" NON-METALLIC PUMP - UP20

650 L/MIN - 172 GAL/MIN

The 2" (51 mm) AODD pumps made of injected molded 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.

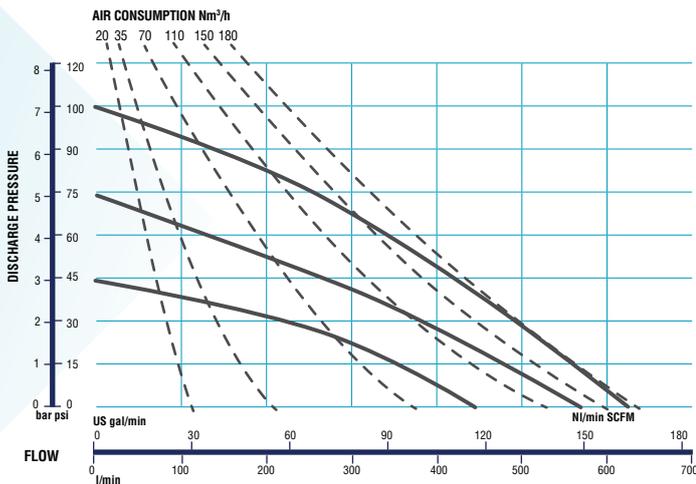


## UP20 PUMP DESIGN ADVANTAGES:

- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same size bolts facilitates maintenance.
- Universal pump, matches relative dimensions of main competitive brands.
- Side offset flanged ports to avoid fluid leaks onto the pump footprint. ANSI / DIN Flanges.
- Frictionless Air Pivot Valve.

Pumps in conductive polypropylene (black) are ATEX certified Ex II2 GD IIB/IIC 95 °C.

## PERFORMANCE CHART



Data measured with water and with the pump inlet flooded.

TECHNICAL DATA	UP20 METAL PUMPS
Pressure ratio	1:1
Maximum free delivery	650 l/min (172 gal/min)
Air pressure range	1,5 to 7 bar (20 to 120 psi)
Ball valve maximum clearance	6,4 mm (1/4")
Max. dry suction lift	5 m (16')
Max. wet suction lift	8 m (26')
Pump delivery per cycle*	4,5 l (1.2 gal)
Fluid inlet / outlet ports	2" DIN / ANSI lateral flanges.
Air inlet port	3/4" NPT (F)
Air exhaust port	1-1/2" NPT (F)
Sound level	85 dB (A) @ 50 cycles/min @ 70 psi
Weight	
Polypropylene pump	42 kg (92 lb)
Conductive Polypropylene pump	46 kg (102 lb)
PVDF pump	54 kg (119 lb)

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

## PUMP NOMENCLATURE

Example: **UP20B-FPS-PMA**

PUMP TYPE	AIR BODY	HOUSINGS			WETTED PARTS		
Pump Type & Size	Central Body & Air Chambers	Fluid Ports / Location	Fluid Chambers & Manifolds	Hardware Bolts	Valve Seats	Valve Balls	Diaphragms Type & Material
<b>UP20</b> Universal Pump (Bolted)	<b>ATEX Certified</b> B* = Conductive Polypropylene (black)	F = 2" ANSI/DIN Flanged Ports / Side Ends.	P = Polypropylene (white) W = PVDF (Kynar®) (graphite)  <b>ATEX Certified</b> 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®)	<b>Conventional</b> A = Santoprene® C = Hytrel® G = Nitrile (Buna-N) V = FKM (Viton®)  <b>Two-piece</b> Z = PTFE (Teflon® with Santoprene backer)  <b>Overmolded</b> N = Nitrile (Buna N) H = Hytrel® M = Santoprene® T = PTFE / EPDM (Bonded)

\* **ATEX Certified** pumps for use in hazardous locations ATEX Group II 2GDx.

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# 3" METALLIC PUMP - UP30

1.000 L/MIN - 264 GAL/MIN

The 3" (76 mm) AODD pumps made of cast metal can reach a flow rate up to 1.000 l/min – 264 gal/min. They offer a wide range of construction materials and porting configurations.

## UP30 PUMP DESIGN ADVANTAGES:

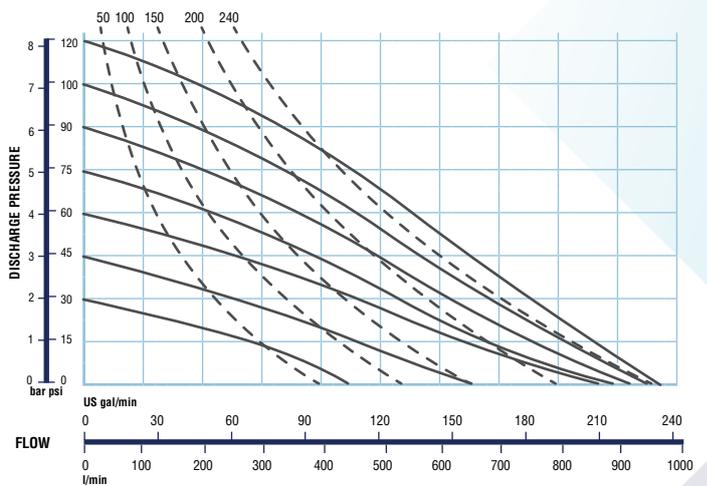
- Higher efficiency. Maximum fluid flow with reduced air consumption.
- Full bolted construction for better seal and no leaks. Same size bolts facilitates maintenance.
- Universal pump, matches relative dimension of main competitive brands.
- Pump design ensures high abrasion resistance when pumping abrasive media.
- BSP or NPT threaded inlet and outlet ports or central ANSI / DIN Flanges.
- Frictionless Air Pivot Valve.

Pumps available in Aluminium and Stainless Steel and they are ATEX certified Ex II2 GD IIB/IIC 95 °C.



TECHNICAL DATA	UP30 METAL PUMPS	
Pressure ratio	1:1	
Maximum free delivery	1.000 l/min (264 gal/min)	
Air pressure range	1,5 to 8 bar (20 to 120 psi)	
Ball valve maximum clearance	12,7 mm (1/2")	
Max. dry suction lift	6 m (19.7')	
Max. wet suction lift	8 m (26')	
Pump delivery per cycle*	10,2 l (2.6 gal)	
Fluid inlet / outlet ports	3" BSP (F) threads 3" NPT (F) threads 3" ANSI / DIN flange	
Air inlet port	3/4" NPT (F)	
Air exhaust port	1-1/2" NPT (F)	
Sound level	83 dB (A) @ 50 cycles/min @ 70 psi	
Weight	<b>Threaded</b>	<b>Flanged</b>
Aluminium pump	68 kg (163 lb)	71 kg (156 lb)
Stainless steel pump	120 kg (270 lb)	125 kg (276 lb)

## PERFORMANCE CHART



Data measured with water and with the pump inlet flooded.

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

## PUMP NOMENCLATURE

Example: **UP30A-BAC-NNG**

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

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

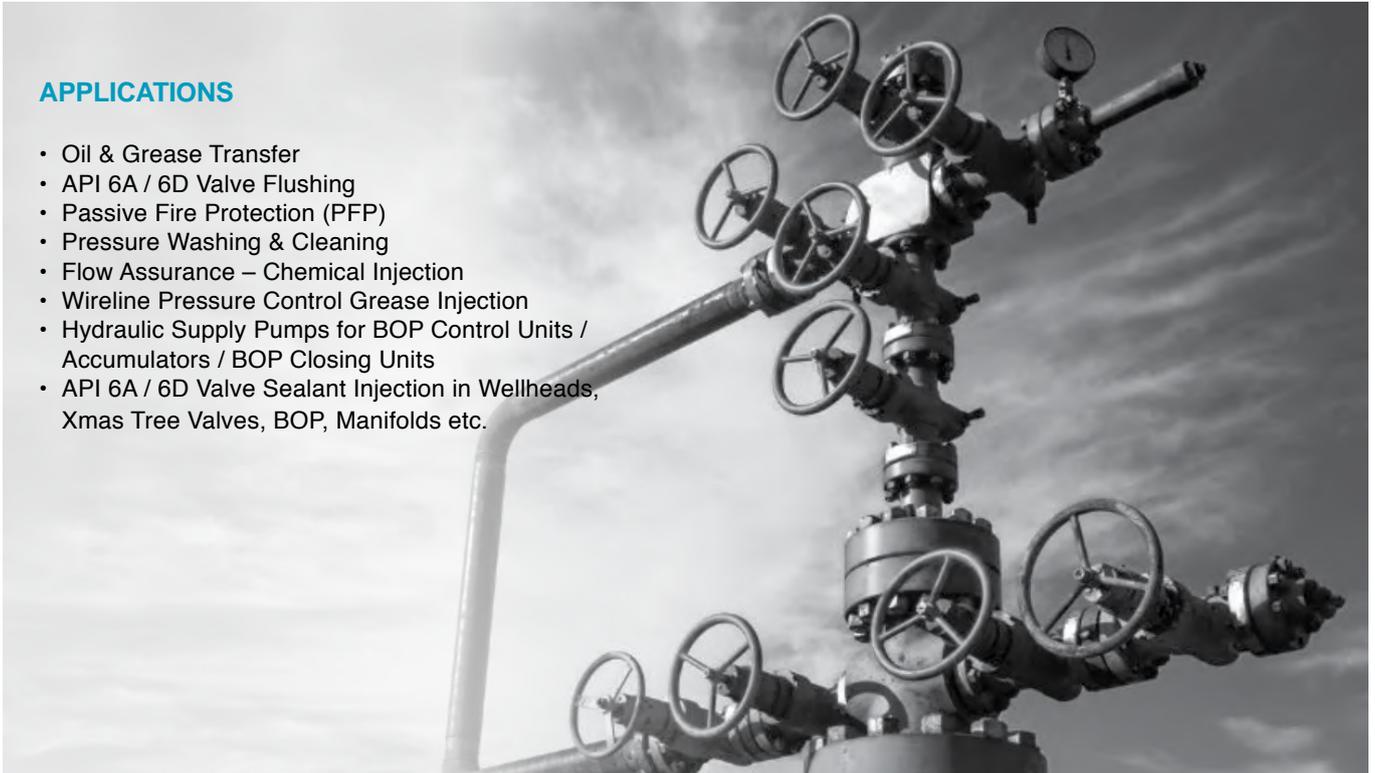
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# AIR OPERATED

Air Operated Piston Pumps are positive-displacement reciprocating pumps. They are the ideal choice for transferring medium to high viscosity clean fluids. The availability of various discharge pressure ratios makes that these pumps can be used in a wide variety of applications including transfer, extrusion, circulation, injection, metered dispensing, lubrication, high pressure cleaning etc.

## APPLICATIONS

- Oil & Grease Transfer
- API 6A / 6D Valve Flushing
- Passive Fire Protection (PFP)
- Pressure Washing & Cleaning
- Flow Assurance – Chemical Injection
- Wireline Pressure Control Grease Injection
- Hydraulic Supply Pumps for BOP Control Units / Accumulators / BOP Closing Units
- API 6A / 6D Valve Sealant Injection in Wellheads, Xmas Tree Valves, BOP, Manifolds etc.



## FEATURES & BENEFITS

### INTRINSICALLY SAFE

Compressed air driven pumps with CE ATEX certification – suitable for hazardous zones and inflammable liquids.

### RELIABLE

Proven non-stalling, non-freezing air motor with quick changeover and recovery design.

### HEAVY-DUTY

Suitable for intensive or intermittent duty applications

### RUGGED CONSTRUCTION

Suitable for dry, hot, humid, wet, damp and cold conditions.

### BROAD RANGE

Wide range of discharge pressure ratios and fluid displacement rates

### VARIABILITY

Adjustable flowrates, speed and fluid discharge pressure.

### LOW DOWNTIME

Modular construction, reduced parts count and simple to use various repair kit options minimizes repair time and cost.

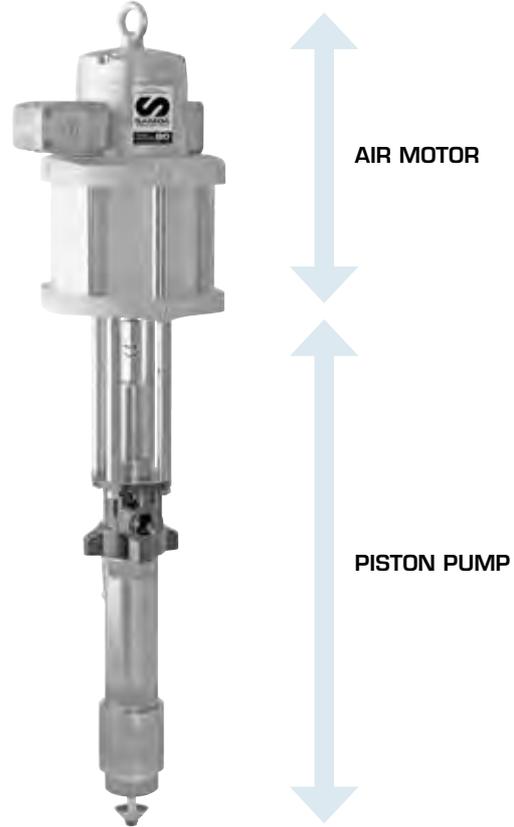
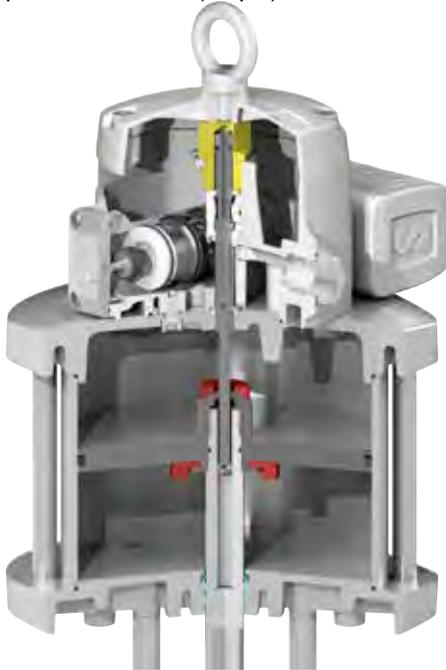
# PISTON PUMPS

**AN AIR OPERATED PUMP HAS TWO WELL DIFFERENTIATED COMPONENTS:**

## **THE AIR MOTOR AND THE PISTON PUMP**

The Air Motor has an air valve that creates a reciprocating motion to the air motor piston. This piston is fixed to the pump piston using a rigid rod that transmits this reciprocation motion and the force created by the air pressure on the air motor piston.

The relation between the air piston and the pump piston effective areas is known as PUMP RATIO. The Pump Ratio corresponds to a multiplying factor for the air inlet pressure, and it indicates the maximum pressure the pump can develop in stall condition: a pump with a 45:1 pressure ratio can develop up to 225 bar (3,375 psi) in stall conditions when the air inlet pressure is 5 bar (75 psi).



## **RELIABLE AIR MOTORS**

SAMOA air motors provide the reliability and dependability required for assuring a no stalling operation and superb performance under every working condition. The very simple air valve has no energy consuming springs that could fail due to material fatigue or pneumatic end of stroke sensors that could get blocked because of dirty air.

All SAMOA air motors include a well dimensioned air exhaust manufactured in Aluminium for an efficient heat transfer to avoid icing. The air exhaust includes a muffler to reduce noise level, to meet or exceed OSHA requirements.

## **SAMOA PISTON PUMP TYPES**

### **DYNAMIC-PRIMER PUMPS**

The primer rod extends below pump cylinder to penetrate and work the material as well as to provide positive priming of the heaviest pumpable materials.



### **DOUBLE-BALL PUMPS**

They have a large porting for positive priming and pumping of light to medium viscosity fluids.



# HYDRAULIC OIL SUPPLY PUMP

45:1 PRESSURE RATIO - 125 CC PER PUMP CYCLE

**PM80**  
AIR MOTOR

Accumulator charging pumps for hydraulic oil supply in Blow-Out Prevention (BOP) Control Units or Closing Systems.

These pumps are used as main pumps or auxiliary pumps in the BOP control systems for charging accumulator with hydraulic oil. In the event of kick, the hydraulic pressure stored in accumulators allow the valves to be closed quickly, preventing the combustible formation liquids escaping to atmosphere through the wellhead.

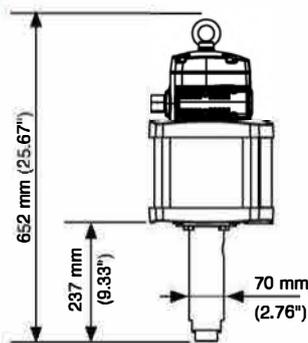
High pressure hydraulic fluids (3,000 psi nominal pressure) are used for closing these valves in a fast and safe mode.



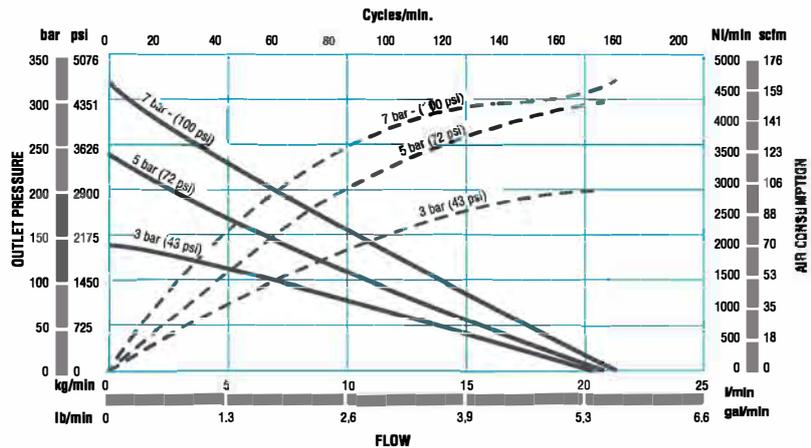
TECHNICAL DATA	
Pump Ratio	45:1
Pump delivery per cycle	125 cc
Fluid delivery at 120 cycle/min	15 l/min (3.9 gal/min)
Air pressure range	1,5 to 7 bar (20 to 100 psi)
Nominal fluid pressure	207 bar (3,000 psi)
Air motor piston effective diameter	200 mm (8")
Air motor piston stroke	100 mm (4")
Air inlet thread	3/4" NPT (F)
Fluid outlet thread	3/4" NPT (F)
Fluid inlet thread	1" NPT (F)
Fluid outlet thread (gauge / bleeding)	-
Wetted parts materials	Zinc plated steel/ Hard chromed steel/ carbon steel/ PU.
Pump type	Double ball stub pump

ATEX certified pump  $\text{Ex}$  II 2G Ex h IIB T4 Gb.

## DIMENSIONS



## PERFORMANCE CHART



NLGI-2 GREASE 21 °C (70 °F)

— Outlet pressure  
- - - Air consumption

## ORDER INFORMATION

MODEL	DESCRIPTION
DB-45-125-CSA-N	HYDRAULIC OIL SUPPLY PUMP, 45:1, 125 CC, STUB.

# HIGH PRESSURE PUMP

100:1 PRESSURE RATIO - 34 CC PER PUMP CYCLE

**PM60**  
AIR MOTOR

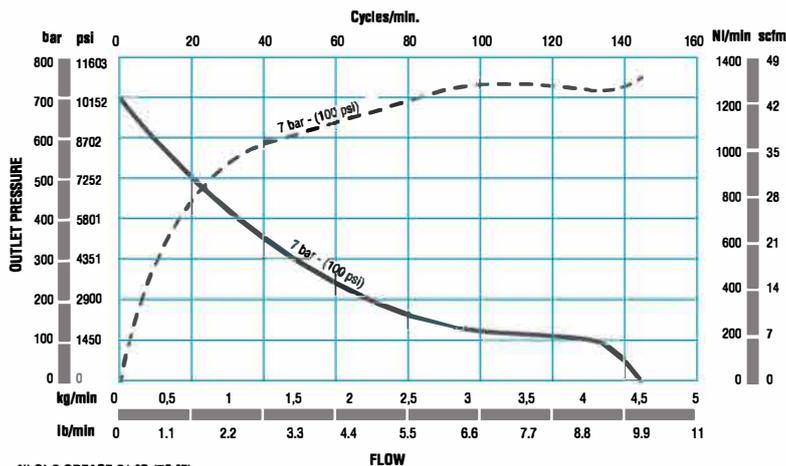
High pressure pumps used for wellhead valve integrity services such as lubrication and sealant injection in API 6A / 6D valves in wellheads, Christmas trees, BOP systems and manifolds.



TECHNICAL DATA	
Pump Ratio	100:1
Pump delivery per cycle	34 cc
Maximum free flow fluid delivery	4.4 Kg/min (9.7 lb/min)
Air pressure range	1,5 to 7 bar (20 to 100 psi)
Maximum fluid pressure	700 bar (10,000 psi)
Air motor piston effective diameter	150 mm (6")
Air motor piston stroke	100 mm (4")
Air Inlet thread	1/2" NPT (F)
Fluid outlet thread	3/4" NPT (F)
Fluid inlet thread	-
Fluid outlet thread (gauge/ bleeding)	1/4" NPT (F)
Wet parts materials	Ductile iron/ Hard chromed steel/ Carbon steel/ Viton/ Zinc plated steel/ 8una-N/ PTFE/ POM Flanged
Pump type	Dynamic primer pump

ATEX certified pump  II 2D Ex h IIB T6...T5 Gb.  
II 2D Ex h IIIB T70°C...T95°C Db.

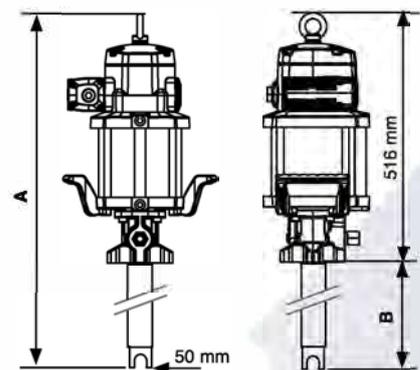
## PERFORMANCE CHART



NLGI-2 GREASE 21 °C (70 °F)

— Outlet pressure  
- - - Air consumption

## DIMENSIONS



## ORDER INFORMATION

MODEL	DESCRIPTION
<b>PD-100-34-CSA-N</b>	HIGH PRESSURE PUMP, 100:1, 34 CC, 30 KG / 35 LB PAILS
<b>PD-100-34-CSB-N</b>	HIGH PRESSURE PUMP, 100:1, 34 CC, 50 KG / 120 LB DRUMS
<b>PD-100-34-CSC-N</b>	HIGH PRESSURE PUMP, 100:1, 34 CC, 180 KG / 400 LB DRUMS

DIMENSIONS		
MODEL	A (mm)	B (mm)
<b>30 kg / 35 lb pumps</b>	1.006	490
<b>50 kg / 120 lb pumps</b>	1.166	650
<b>180 kg / 400 lb pumps</b>	1.371	855

# ULTRA-HIGH PRESSURE PUMPS

168:1 PRESSURE RATIO - 34 CC PER CYCLE

200:1 PRESSURE RATIO - 28 CC PER CYCLE

**PM80**  
AIR MOTOR



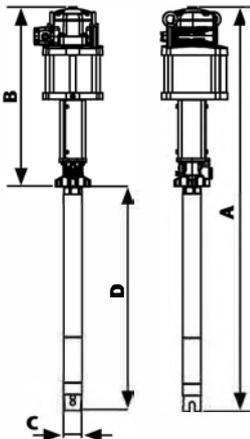
Ultra-High pressure pumps designed for grease injection in wireline pressure control equipment. Can also be used for wellhead sealant injection for valve integrity services.

In wireline pressure control equipment, the high-pressure grease / sealant seals the well pressure while the wirelines are operated (lowering/raising tools and equipment, logging, data collection etc.)

TECHNICAL DATA		
Pump Ratio	168:1	200:1
Pump delivery per cycle	34 cc	28 cc
Maximum free flow fluid delivery	4.2 Kg/min (9.2 lb/min)	3.4 Kg/min (7.5 lb/min)
Air pressure range	1.5 to 7 bar (20 to 100 psi)	1,5 to 7 bar (20 to 100 psi)
Maximum fluid pressure	1,180 bar (16,900 psi)	1,400 bar (20,000 psi)
Air motor piston effective diameter	200 mm (8")	200 mm (8")
Air motor piston stroke	100 mm (4")	100 mm (4")
Air Inlet thread	3/4" NPT (F)	3/4" NPT (F)
Fluid outlet thread	Autoclave Engineers Medium Pressure port for 9/16" tube, 13/16 -16 thread (SF562CX20)	Autoclave Engineers Medium Pressure port for 9/16" tube, 13/16 -16 thread (SF562CX20)
Fluid inlet thread	-	-
Fluid outlet thread (gauge/bleeding)	Autoclave Engineers Medium Pressure port for 1/4" tube, 7/16-20 thread (SF250CX20).	Autoclave Engineers Medium Pressure port for 1/4" tube, 7/16-20 thread (SF250CX20).
Wetted parts materials	Ductile iron/ Carbon steel/ Bronze/ PEEK/ PTFE	Ductile iron/ Carbon steel/ Bronze/ PEEK/ PTFE
Pump type	Dynamic primer pump	Dynamic primer pump

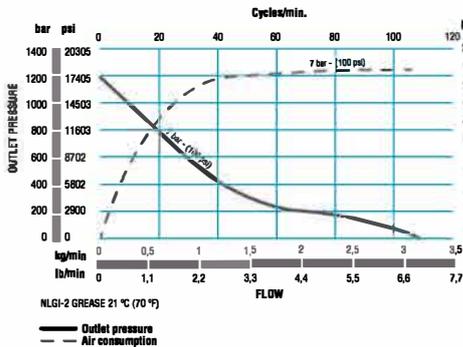
ATEX certified pump II 2D Ex h IIB T6...T5 Gb.  
II 2D Ex h IIIB T70 °C...T95 °C Db.

## DIMENSIONS

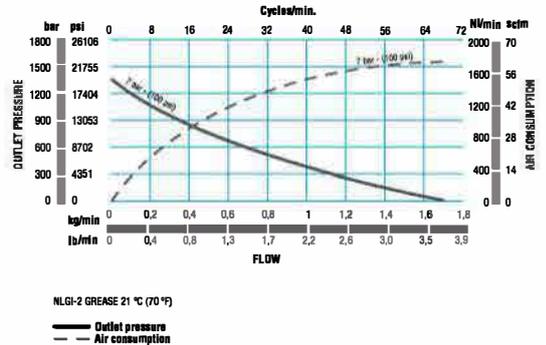


## PERFORMANCE CHARTS

168:1 PUMP



200:1 PUMP



## ORDER INFORMATION

MODEL	DIMENSIONS	
	180 KG / 400 LB DRUMS	50 KG / 120 LB DRUMS
A (mm)	1.540	1.390
B (mm)	684	684
C (mm)	70	70
D (mm)	855	700

MODEL	DESCRIPTION
PD-168-34-CSB-A	ULTRA HIGH PRESSURE PUMP, 168:1, 34 CC, 50 KG / 120 LB PAILS
PD-168-34-CSC-A	ULTRA HIGH PRESSURE PUMP, 168:1, 34 CC, 180 KG / 400 LB DRUMS
PD-200-28-CSB-A	ULTRA HIGH PRESSURE PUMP, 200:1, 28 CC, 50 KG / 120 LB DRUMS
PD-200-28-CSC-A	ULTRA HIGH PRESSURE PUMP, 200:1, 28 CC, 180 KG / 400 LB drum

# ULTRA-HIGH PRESSURE PUMP

240:1 PRESSURE RATIO - 52 CC PER CYCLE

# PM100 AIR MOTOR

Ultra-High pressure grease pump designed for grease injection in wireline pressure control equipment.

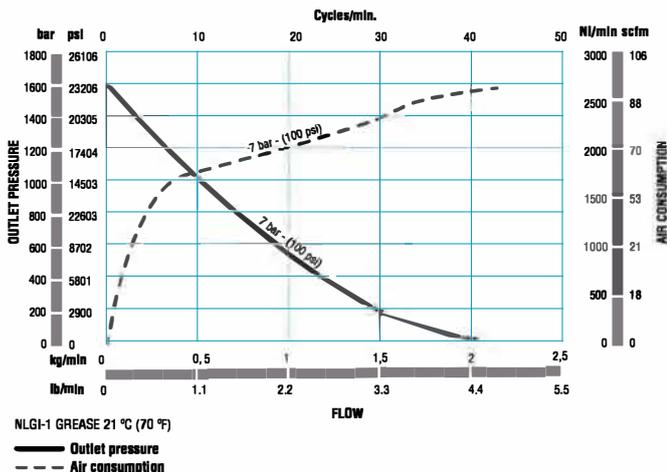
The grease / sealant injected at very high pressure seals the well pressure while the wirelines are operated (lowering/raising of tools & equipment, logging, data collection etc.)



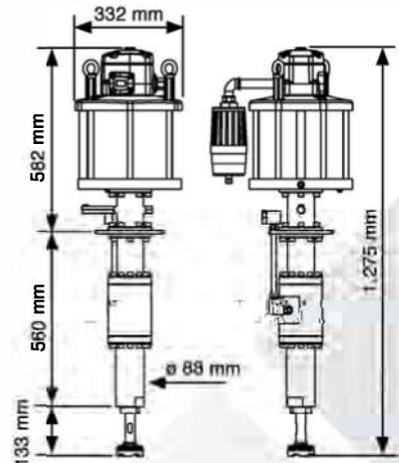
TECHNICAL DATA	
Pump Ratio	240:1
Pump delivery per cycle	52 cc
Fluid delivery at 60 cycle/min	3 l/min (0.8 gal/min)
Air pressure range	1,5 to 7 bar (20 to 100 psi)
Maximum fluid pressure	1.780 bar (24,000 psi)
Air motor piston effective diameter	250 mm (10")
Air motor piston stroke	150 mm (6")
Air inlet thread	3/4" NPT (F)
Fluid outlet thread	Autoclave Engineers Medium Pressure port for 9/16" tube, 13/16 -16 Thread (SF562CX20).
Fluid inlet thread	3/4" NPT. Includes suction filter.
Fluid outlet thread (gauge / bleeding)	Autoclave Engineers Medium Pressure port for 1/4" tube, 7/16-20 thread (SF250CX20).
Wet parts materials	Carbon steel/ Bronze/ PEEK/ PTFE
Pump type	Double ball stub pump

ATEX certified pump  II 2G Ex h IIB T4 Gb.

## PERFORMANCE CHARTS



## DIMENSIONS



## ORDER INFORMATION

MODEL	DESCRIPTION
DB-240-52-CSA-A	ULTRA HIGH PRESSURE PUMP, 240:1; 52 CC; STUB

# HIGH PRESSURE AIR OPERATED WASH PUMPS

Air Operated High-Pressure wash pumps have multiple advantages when compared with electric or fuel driven wash pumps:



- Compressed air driven **intrinsically safe pumps** with CE-ATEX certification. Air operated air motor with no toxic emissions, can be used in confined areas.
- **On demand operation.** Air motor starts and stops automatically opening and closing the wash gun, no need for by-pass valves or pressure switches.
- **Multiple pressure output.** Pump outlet pressure can be adjusted simply regulating the air inlet pressure.
- **Self-priming pumps.** Air operated piston pumps can siphon out a drum or any other type or reservoir. No need to pressure feed the pump.
- **High Pressure & High Flow cleaning.** Up to 310 bar (4,500 psi) pressure and 32 l/min (7 g.p.m.) delivery.
- Models with higher delivery output can **work with several wash guns working simultaneously.**

## ALL MODELS INCLUDE:

- Air operated stainless steel piston pump, with compressed air filter and pressure regulator
- Siphon suction kit for 200 l (55 gal) drum for wall and trolley mounted models.
- 15 m x 3/8" high pressure delivery hose.
- Spray gun with 170 cm (67") wand and three stainless steel spray tips.
- Corrosion resistant trolley for the trolley mounted pumps and wall bracket for the wall mounted pumps.



PART No.		AIR MOTOR EFFECTIVE DIAMETER	PUMP RATIO	MAX. OUTLET PRESSURE	DELIVERY PER CYCLE	MAX. DELIVERY	INCLUDED SPRAY TIPS
LA152 B12	DRUM MOUNTED	4-1/4" - 108 mm	10:1	70 bar / 1,000 psi	200 CC	12 l/min	0.02", 0.03" & 0.04"
LA152 B10	TROLLEY MOUNTED					2.6 gpm	
LA154 B10	TROLLEY MOUNTED	7" - 180 mm	10:1	70 bar / 1,000 psi	530 cc	32 l/min	0.05", 0.075" & 0.08"
LA154 B11	WALL MOUNTED					8.5 gpm	
LA155 B20	TROLLEY MOUNTED	10" - 254 mm	20:1	140 bar / 2,000 psi	530 cc	32 l/min	0.05", 0.075" & 0.08"
LA155 B21	WALL MOUNTED					8.5 gpm	
LA155 B30	TROLLEY MOUNTED	10" - 254 mm	30:1	210 bar / 3,000 psi	380 cc	22 l/min	0.02", 0.04" & 0.06"
LA155 B31	WALL MOUNTED					5.8 gpm	
LA154 B23	TROLLEY MOUNTED	7" - 180 mm	23:1	160 bar / 2,300 psi	230 cc	14 l/min	0.02", 0.04" & 0.06"
LA154 B24	WALL MOUNTED					3.7 gpm	
LA154 B34	TROLLEY MOUNTED	7" - 180 mm	34:1	238 bar / 3,450 psi	190 cc	11 l/min	0.02", 0.03" & 0.05"
LA154 B35	WALL MOUNTED					2.9 gpm	
LA155 B45	TROLLEY MOUNTED	10" - 254 mm	45:1	315 bar / 4,560 psi	230 cc	13,8 l/min	0.02", 0.03" & 0.05"
LA155 B46	WALL MOUNTED					3.7 gpm	

# GREASE PUMPS

## GREASE TRANSFER PUMPS

### 12:1 PRESSURE RATIO 300 CC DELIVERY PER CYCLE

High delivery grease pump for fast and efficient grease transfer from totes, bins, fluid bags, etc. fitted with a 3" Cam-Lock adaptor.



TECHNICAL DATA	
Pump ratio	12:1
Delivery per cycle	300 cc
Max. delivery at 60 cycle/min	18 l/min (4.75 gal/min)
Max. air pressure	7 bar (100 psi)
Max. fluid pressure	84 bar (1,200 psi)
Air motor	PM60
Fluid outlet thread	3/4" NPT (F)
Fluid Inlet	Priming disc
Air inlet thread	1/2" NPT (F)
ORDER INFORMATION	
<b>PD-12-300-CSA-N</b>	Stub pump, with 3" Cam-Lock adaptor

### 35:1 PRESSURE RATIO 156 CC DELIVERY PER CYCLE

High delivery grease pumps for transferring large volumes of grease from drums to smaller containers.

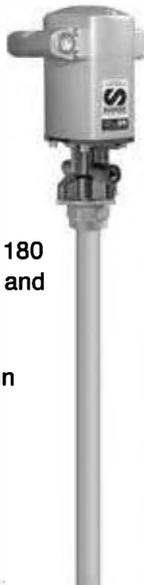
Large air motor and large pressure ratio allows moving big amounts of grease efficiently.



TECHNICAL DATA	
Pump ratio	35:1
Delivery per cycle	156 cc
Max. delivery at 60 cycle/min	9,4 l/min (2.5 gal/min)
Max. air pressure	7 bar (100 psi)
Max. fluid pressure	245 bar (3,500 psi)
Air motor	PM80
Fluid outlet thread	1" NPT(F)
Fluid Inlet	Priming disc
Air inlet thread	3/4" NPT (F)
ORDER INFORMATION	
<b>PD-35-156-CSB-N</b>	Pump for use with 50 kg (120 lb) drum.
<b>PD-35-156-CSA-N</b>	Pump for use with 180 kg (400 lb) drum

## GREASE LUBRICATION / FLUSHING PUMPS

**60:1 PRESSURE RATIO  
14 CC DELIVERY PER CYCLE** High pressure lubrication pumps for use with 180 kg (400 lb) drums, 50 kg (120 lb) drums and 18 kg (35 lb) pails. Available as loose pumps or complete kits including pump, drum cover, grease hose and grease gun with Z-swivel and hydraulic type nozzle.



TECHNICAL DATA	
Pump ratio	60:1
Delivery per cycle	14 cc
Max. free flow delivery	2 kg/min (4.4 lb/min)
Max. air pressure	10 bar (140 psi)
Max. fluid pressure	600 bar (8,700 psi)
Air motor	PM35
Fluid outlet thread	3/8" NPT (F)
Fluid Inlet	Priming disc
Air inlet thread	3/8" NPT (F)
ORDER INFORMATION	
<b>PD-60-16-CSA-N</b>	Pump for 18 kg (35 lb) pails.
<b>PD-60-16-CSB-N</b>	Pump for 50 kg (120 lb) drums
<b>PD-60-16-CSC-N</b>	Pump for 180 kg (400 lb) drum

## LUBRICATION PUMP KITS

**PART NO. 423021  
PM35 60:1 GREASE PUMP KIT FOR 18 KG – 35 LB. PAILS.** Includes pump PD-60-16-CSA, drum cover with carrying handle, follower plate, 2 m x 3/8" high pressure hose and grease gun with Z-swivel and hydraulic type coupler.



**PART NO. 423160  
PM35 60:1 GREASE PUMP KIT FOR 50 KG – 120 LB. DRUMS.** Includes pump PD-60-16-CSB, drum cover, trolley, 3 m x 3/8" high pressure hose and grease gun with Z-swivel and hydraulic type coupler.



**PART NO. 426244  
PM35 60:1 GREASE PUMP KIT FOR 180 KG – 400 LB. DRUMS.** Includes pump PD-60-16-CSC, drum cover, follower plate, trolley, 4 m x 3/8" high pressure hose and grease gun with Z-swivel and hydraulic type coupler.



# OIL TRANSFER PUMPS

Air operated piston pumps for transferring lubricants, wireline fluids and other fluids from drums, totes, and tanks. Two-ball valve pumps for use with low to medium viscosity fluids.

## LA100 TRANSFER PUMPS

**1:1 PRESSURE RATIO  
200 CC PER CYCLE**

ATEX certified pumps: ATEX II 2 G c IIB T4  
Stainless steel divorced pump with PTFE seals.



TECHNICAL DATA	
Max. delivery at 80 cycle/min	16 l/min (4.3 gal/min)
Max. fluid outlet pressure	10 bar (45 psi)
Air motor	LA100
Fluid outlet	3/4" BSP (F)
Fluid inlet (stub pump only)	M36X2 (M)
Air inlet	1/4" BSP (F)

ORDER INFORMATION	
<b>LA100 1S0</b>	Transfer stub pump, 1:1 ratio – 200 cc. Stainless Steel, ATEX certified.
<b>LA100 1S2</b>	Transfer pump for 205 l (55 gal) drums, 1:1 ratio -200 cc. Stainless Steel, ATEX certified.

## LA300 TRANSFER PUMPS

**5:1 PRESSURE RATIO  
160 CC PER CYCLE**

ATEX certified pumps: ATEX II 2 G c IIB T4 in-line or divorced pump with PTFE seals.



TECHNICAL DATA	
Max. delivery at 80 cycle/min	12,8 l/min (3,4 gal/min)
Max. fluid outlet pressure	35 bar (500 psi)
Air motor	LA300
Fluid outlet	3/4" BSP (F)
Fluid inlet (stub pump only)	1" BSP(M)
Air inlet	3/8" BSP (F)

ORDER INFORMATION	
<b>LA101 1L2</b>	Transfer pump for 205 l (55 gal) drums, 5:1 ratio-160 cc. Carbon Steel, ATEX certified.
<b>LA101 1S2</b>	Transfer pump for 205 l (55 gal) drums, 5:1 ratio -160 cc. Stainless Steel, ATEX certified.

## PM35 TRANSFER PUMPS

**5:1 PRESSURE RATIO  
170 CC PER CYCLE**

Carbon steel in line pump with Polyurethane seals.



TECHNICAL DATA	
Max. delivery at 80 cycle/min	13,6 l/min (3.6 gal/min)
Max. fluid outlet pressure	50 bar (725 psi)
Air motor	PM35
Fluid outlet	1/2" NPT (F)
Fluid inlet (stub pump only)	1-1/2" NPT (M)
Air inlet	3/8" NPT (F)

ORDER INFORMATION	
<b>DB-5-170-CSC</b>	Transfer pump, stub, 5:1 ratio – 170 cc.
<b>DB-5-170-CSA</b>	Transfer pump for 205 l (55 gal) drums, 5:1 ratio – 170 cc.

## UTILITY OIL PUMP

**3:1 PRESSURE RATIO  
170 CC PER CYCLE**

Carbon steel in line pump with Polyurethane seals.



TECHNICAL DATA	
Max. delivery at 80 cycle/min	13,6 l/min (3.6 gal/min)
Max. fluid outlet pressure	21 bar (300 psi)
Air motor	PM4
Fluid outlet	3/4" NPT (F)
Fluid inlet (stub pump only)	1 NPT (M)
Air inlet	3/8" NPT (F)

ORDER INFORMATION	
<b>DB-3-170-CSC-N</b>	Utility oil pump, stub, 3:1 ratio - 170 cc.
<b>DB-3-170-CSA-N</b>	Utility oil pump for 205 l (55 gal) drums, 3:1 ratio - 170 cc.

## GREASE BUCKET PUMP

**PART NO. 150 000**

Lever action grease pump with a 16 kg capacity oval shape bucket. Heavy duty construction, ductile iron pump body. Pump lever with three alternative positions to adjust pump pressure and delivery.



Maximum pressure range between 175 to 350 bar (2,500 to 5,000 psi) with a delivery of 20 g, 15 g or 10 g per stroke depending on the position of the lever chosen. Ideal pump for high pressure greasing and valve flushing. Includes 1,5 m high pressure hose with a three-jaw hydraulic connector.

## GREASE PEDAL PUMP

**PART NO. 157 000**

High pressure grease pump with pedal action and 5 kg reservoir. Ductile iron pump mechanism and spring primed follower plate.



Maximum working pressure: 500 bar (7,250 psi).

Can be used in Pressure Control Equipment Skids for emergency applications if the pneumatic pump or air supply fails. Includes 2 m pressure grease hose and hydraulic type.





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