

Parts and technical service guide

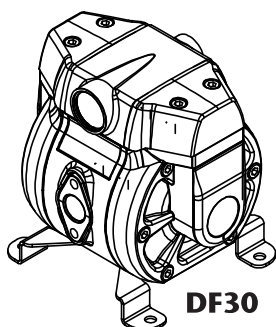
Guía de servicio técnico y recambio

Guide d'instructions et pièces de rechange

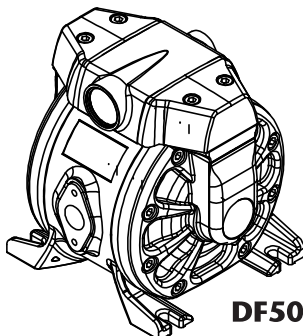
Bedienungsanleitung und Teileliste

Руководство по эксплуатации и обслуживанию

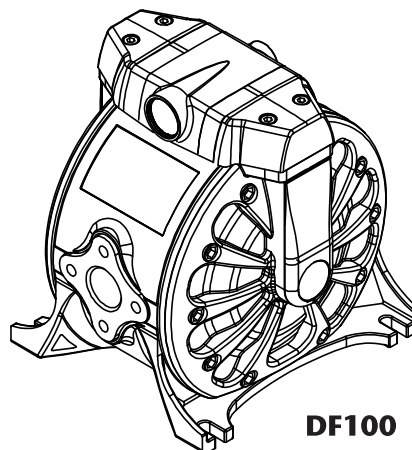
METALLIC / METÁLICAS / MÉTALLIQUES / METALLISCH / МЕТАЛЛИЧЕСКИЙ



DF30

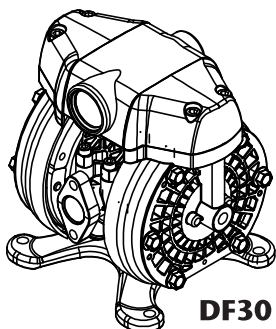


DF50

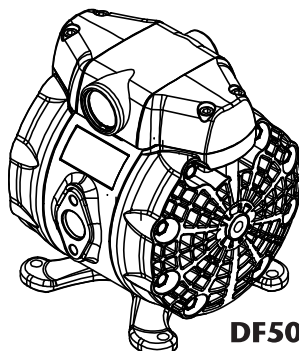


DF100

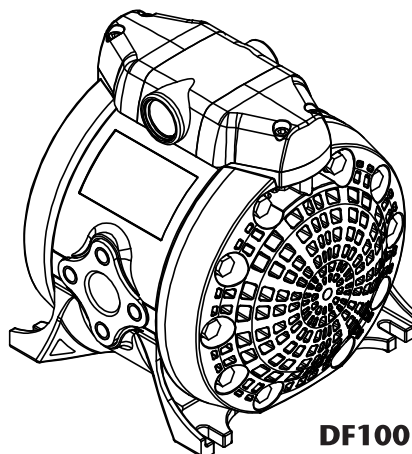
NON-METALLIC / NO-METÁLICAS / NON-MÉTALLIQUES / NICHTMETALLISCH / НЕМЕТАЛЛИЧЕСКИЙ



DF30



DF50



DF100

EN	1/2" DOUBLE DIAPHRAGM PUMP DF30 (38 l/min) 1/2" DOUBLE DIAPHRAGM PUMP DF50 (50 l/min) 1" DOUBLE DIAPHRAGM PUMP DF100 (100 l/min)	4
ES	1/2" BOMBA DE MEMBRANA SERIES DF30 (38 l/min) 1/2" BOMBA DE MEMBRANA SERIES DF50 (50 l/min) 1" BOMBA DE MEMBRANA SERIES DF100 (100 l/min)	16
FR	1/2" POMPE A MEMBRANES DF30 (38 l/min) 1/2" POMPE A MEMBRANES DF50 (50 l/min) 1" POMPE A MEMBRANES DF100 (100 l/min)	28
DE	1/2" DOPPELMEMBRANPUMPE DF30 (38 l/min) 1/2" DOPPELMEMBRANPUMPE DF50 (50 l/min) 1" DOPPELMEMBRANPUMPE DF100 (100 l/min)	40
RU	ДВУХМЕМБРАННЫЙ НАСОС DF30 1/2" (38 л/мин.) ДВУХМЕМБРАННЫЙ НАСОС DF50 1/2" (50 л/мин.) ДВУХМЕМБРАННЫЙ НАСОС DF100 1" (100 л/мин.)	52

NOTE: V4.0 Replacement kits valid for previous models.

NOTA: V4.0 Kits de recambio válidos para modelos anteriores.

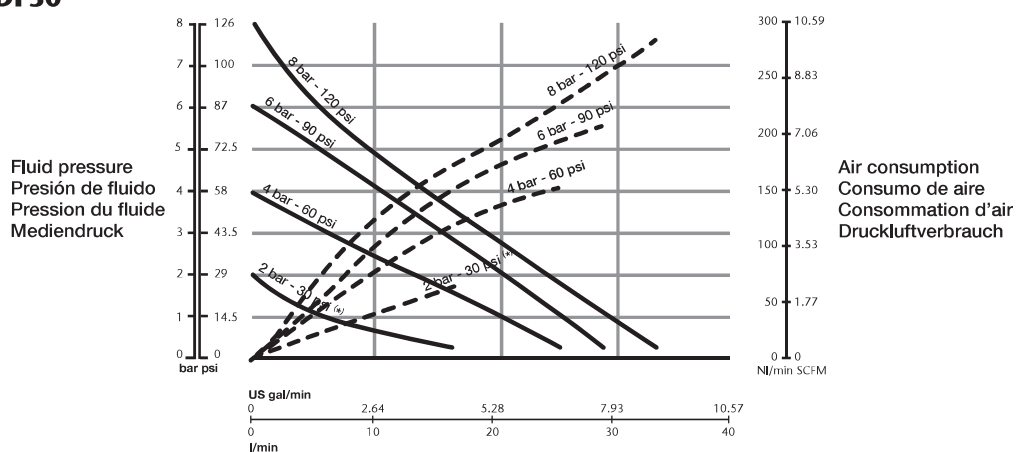
NOTA: les kits de remplacement V4.0 sont valables pour les modèles antérieurs.

Hinweis: V4.0 Ersatzteilsätze gelten auch für frühere Modelle.

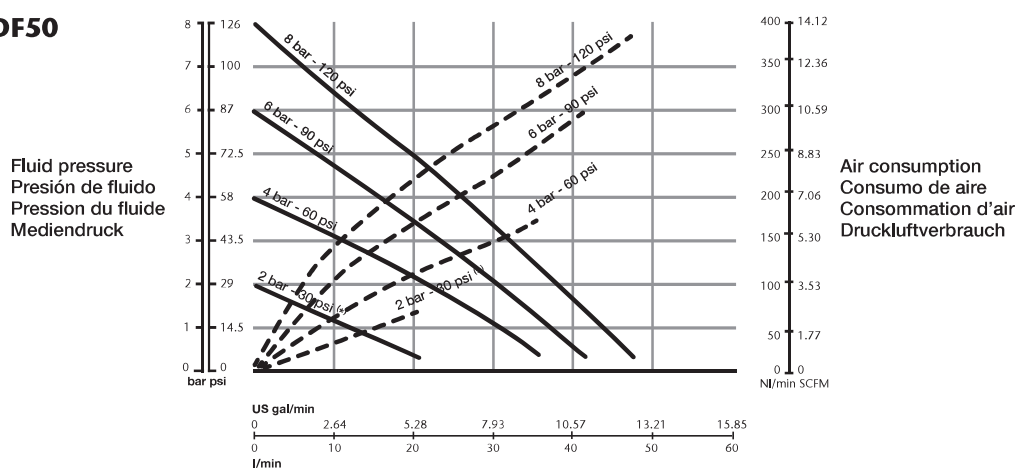
ПРИМЕЧАНИЕ: V4.0 Запасные комплекты подходят для предыдущих моделей

CAPACITY CURVES / CURVAS DE CAPACIDAD / COURBES DE CAPACITÉ / LEISTUNGSDIAGRAMM

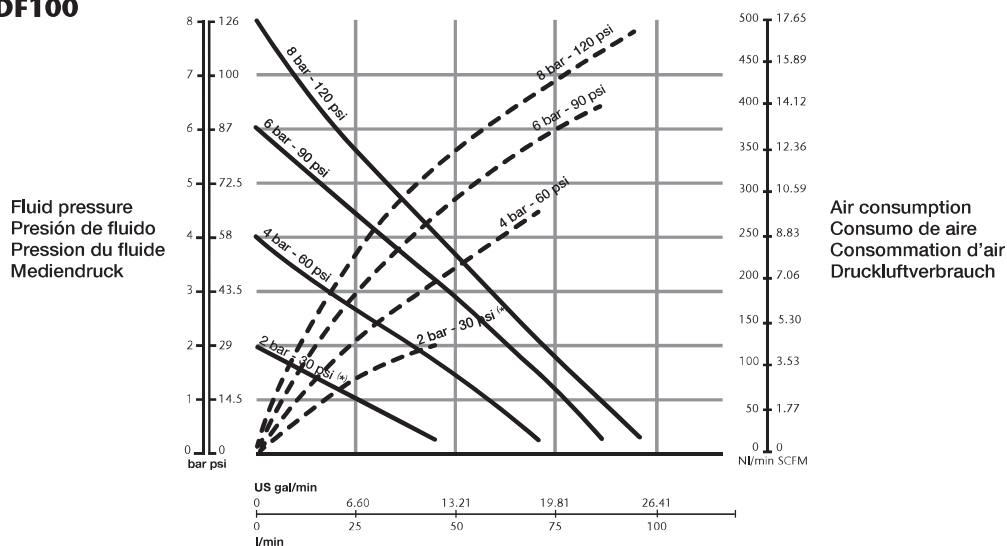
DF30



DF50



DF100

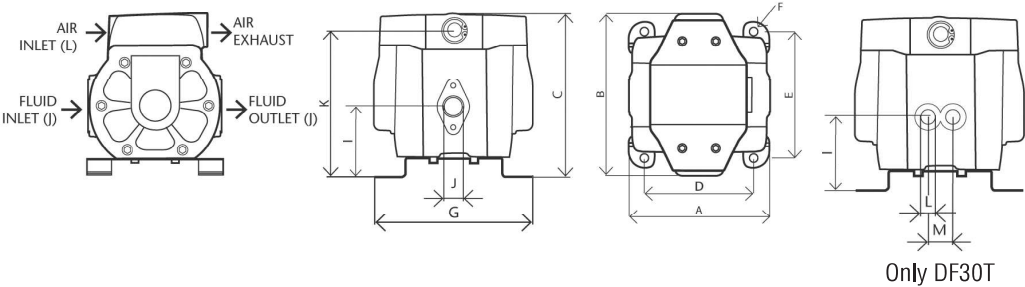


—— OUTLET PRESSURE / SALIDA DE PRESIÓN / PRESSION DE SORTIE / AUSGANGSDRUCK
 ---- AIR CONSUMPTION / CONSUMO DE AIRE / CONSOMMATION D'AIR / DRUCKLUFTVERBRAUCH

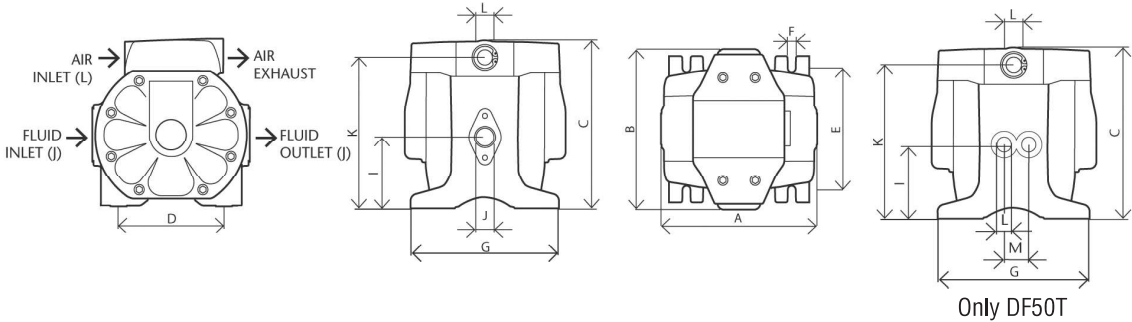
(*) 2 bar test with a PTFE (Teflon®) diaphragms pump.
2 bar testado con bombas de diafragma de PTFE (Teflon®).
Test à 2 bar de pression, réalisé avec les pompes à membranes PTFE (Teflon®).
2 bar Test mit einer PTFE-Membranen Pumpe.

DIMENSIONS / DIMENSIONES / DIMENSIONS / LEISTUNGSDIAGRAMM

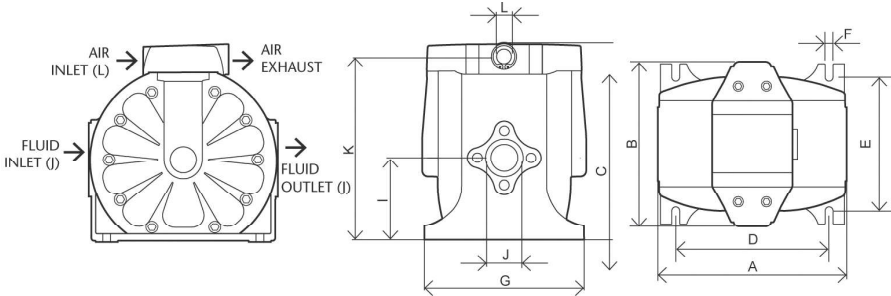
DF30 / DF30T														
A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
130 mm	160 mm	162 mm	105 mm	122 mm	8 mm	140 mm	135 mm	70 mm	1/2" BSP NPT	145 mm	3/8" BSP NPT	24 mm	M6	41 mm
5.12"	6.3"	6.38"	4.13"	4.8"	0.31"	5.51"	5.31"	2.76"		5.71"		0.94"		1.61"



DF50 / DF50T							
A	B	C	D	E	F	G	H
156 mm	160 mm	167 mm	105 mm	122 mm	8 mm	146 mm	140 mm
6.14"	6.3"	6.57"	4.13"	4.8"	0.31"	5.75"	5.51"
H	I	J	K	L	M	N	P
140 mm	70 mm	1/2" BPS NPT NPSM	150 mm	3/8" NPSM	24 mm	M6	41 mm
5.51"	2.76"		5.91"		0.94"		1.61"



DF100											
A	B	C	D	E	F	G	H	I	J	K	L
216 mm	189 mm	227 mm	175 mm	154 mm	9 mm	184 mm	210 mm	94,51 mm	1" BSP NPT	210 mm	3/8" NPSM
8.5"	7.44"	8.94"	6.89"	6.06"	0.35"	7.24"	8.27"	3.72"		8.27"	



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TECHNICAL DATA

	DF30	DF50	DF100
RATIO	1:1	1:1	1:1
MAXIMUM FREE FLOW	10 gal/min (38 l/min)	13.21 gal/min (50 l/min)	26.5 gal/min (100 l/min)
DELIVERY PER STROKE	2.37 oz (0,07 l)	3.38 oz (0,1 l)	32 oz (0,25 l)
AIR PRESSURE OPERATING RANGE	22 to 115 psi (1,5 to 8 bar)*	22 to 115 psi (1,5 to 8 bar)*	22 to 115 psi (1,5 to 8 bar)*
SOLID IN SUSPENSION MAX SIZE	0.12 in (3 mm)	0.12 in (3 mm)	0.16 in (4 mm)
MAXIMUM SUCTION HEAD	13.2 ft (4 m) dry, 26.25 ft (8 m) wet	19.69 ft (6 m) dry, 26.25 ft (8 m) wet	14.76 ft (4,5 m) dry, 22.97 ft (7 m) wet
WEIGHT	4.19 lb (1,9 kg)	7.72 lb (3,5 kg) metallic series with aluminium body 4.85 lb (2,2 kg) non metallic series	15.87 lb (7,2 kg) metallic series with Aluminium body 24.69 lb (11,2 kg) metallic series with Stainless steel body 11.24 lb (5,1 kg) non metallic series
FLUID INLET (SINGLE INLET)	1/2" BSP - NPT (F) and flange	1/2" BSP - NPT (F) and flange	1" BSP/NPT (F) and flange
FLUID INLET (DOUBLE INLET)	2 x 3/8" BSP - NPT (F)	2 x 3/8" BSP - NPT (F)	—
FLUID OUTLET	1/2" BSP - NPT (F) and flange	1/2" BSP - NPT (F) and flange	1" BSP/NPT (F) and flange
AIR INLET	3/8" NPSM (F)	3/8" NPSM (F)	3/8" NPSM (F)
WETTED PART MATERIALS	View model specifications	See model specifications	See model specifications
NOISE LEVEL	80 db	80 dB	80 dB
TEMPERATURE RANGE	32 - 158 °F (0 - 70 °C)	32 - 158 °F (0 - 70 °C)	32 - 158 °F (0 - 70° C)

* For Hytrel® and Santoprene® diaphragms: air pressure between 36 and 115 psi (2,5 bar-8 bar).

(oz, ft, gal/min) all in EEUU units

WARNINGS AND CAUTIONS

In this document you will find warnings and cautions for installation, use and maintenance of the DirecFlo pumps.



WARNING: This symbol aware that there is a danger of serious bodily injury or death if you ignore the warning described.

CAUTION: This symbol aware that there is a danger of personal injury or property damage if you ignore the caution described.



WARNING: ¡CAREFULLY READ THE INSTRUCTIONS AND WARNINGS BEFORE OPERATING THE EQUIPMENT!

- This equipment is for professional use only.
- Do not degrade the integrity of the equipment. Use only original replacement components from Samoa Industrial, S.A.
- Fluids not suitable for the pump can cause damage to the pump unit and involve risk of serious personal injury.
- Always consult Samoa Industrial, S.A. if you have any questions about the compatibility within the fluids and the pump materials, including elastomers.
- Install and use the pump according to all local and national regulations and abide all health and safety laws or legislation.
- The pump can produce fluid pressures equal to the air supply pressure. Do not exceed the maximum allowable pressure of 115 psi (8 bar) air supply. The total hydraulic pressure (differential pressure + system) should never exceed 115 psi (8 bar).
- Never use a pump that leaks, that is damaged, that is corroded or otherwise it may lack the capacity to contain the fluid.
- Frequently check that the bolts on the diaphragm cover of the pump are torqued correctly.
- Do not use a model with aluminium wetted surfaces to pump fluids for human consumption, there is a possibility of trace contamination of lead.
- Danger of explosion if used 1,1,1-trichloroethane, methylene chloride or other halogenated hydrocarbon solvents with aluminium wetted materials. It could cause serious injury and property damage.
- Inside the pump, diaphragms separate the fluid that is being pumped from the air supply. If a diaphragm breaks, the fluid can leak out of the air exhaust and contaminate the environment.
- When handling hazardous fluids, always route the air exhaust into a suitable container and locate it in a safe place.
- When the fluid source level is situated higher than the pump, (flooded suction), the outlet tank must be at a higher level than the product to prevent spills.
- For pumps handling hazardous fluids that are a danger to humans or to the environment, install a suitable container surrounding the pump to prevent any leaks or spills.
- Ensure that the operators of this equipment are trained on the operation and limitations. Use safety equipment as safety goggles or other equipment required.

DESCRIPTION

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 directional valve 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 whilst the opposite diaphragm 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.

MATERIAL	TEMPERATURE RANGE
PTFE	5 °C - 105 °C / 41 °F - 221 °F
NBR	10 °C - 80 °C / 50 °F - 176 °F
Acetal	10 °C - 90 °C / 50 °F - 194 °F
Hytrel®	10 °C - 90 °C / 50 °F - 194 °F
Neoprene®	-18 °C - 93 °C / 0 °F - 200 °F
Santoprene®	-29 °C - 135 °C / -20 °F - 275 °F
Polypropylene®	10 °C - 80 °C / 50 °F - 176 °F

INSTALLATION

INSTALLATION RECOMMENDATIONS

- Remove the pump from its package and install it on the chosen location.
- Try to minimize the suction head. Install the pump as close as possible to the fluid being pumped.
- Remember to have enough space around the pump to perform maintenance tasks.
- Keep in mind to connect the inlet and outlet of the pump correctly.
- In case of diaphragm pump failure, the air exhaust will expell the product being pumped.
- When the pump is installed in a place where a spill of fluid can cause an environmental impact, the exhaust should be directed to a place where this spill could be contained.
- When installing the pump in its place, use brackets to secure its base.
- Fasten all bolts with the torques contained in this manual.

DF pumps are very easily configured and easy to install.

FLOODED:

The pumping system was designed with positive pressure at the inlet. This is the best possible installation when you need to evacuate the liquid from the drum or tank, or when working with viscous fluids.

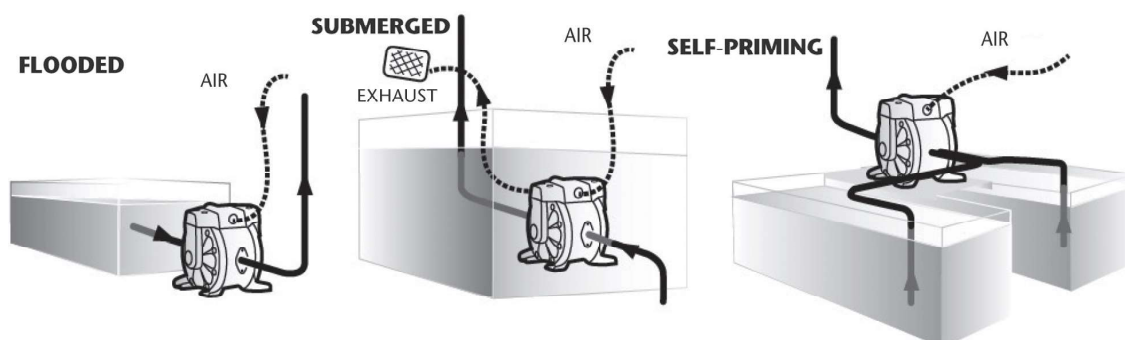
Not recommended for hazardous fluids.

SELF-PRIMING:

Pump is designed to generate vacuum. It is possible to evacuate all the air from a hose or pipe without damaging the pump. Maximum suction height is 19.69 ft (6 m), with the suction hose empty and up to 26.25 ft (8 m) with the hose primed. (See page 4 for corresponds suction lift).

SUBMERGED:

All pumps can be immersed in fluids. It is important to verify that all components that are in contact with the fluid are chemically compatible. In this case, air exhaust and fluid must be carried by hoses (optional air connection).

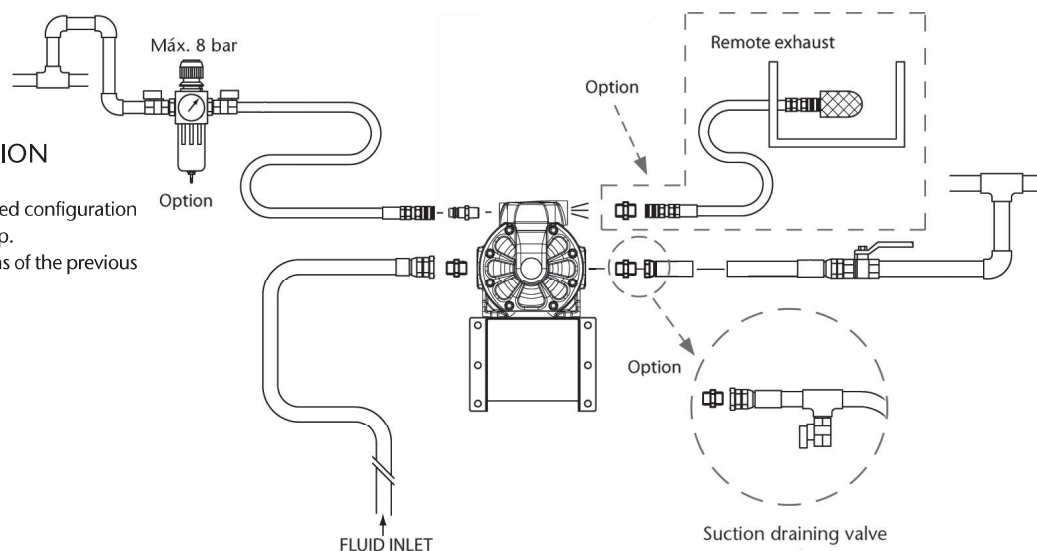


NOTE: Use a pressure regulator with built-in filter inlet.

NOTE: The compressed air supply must be between 22 psi (1,5 bar) and 115 psi (8 bar), Hytrel® and Santoprene® between 36 and 115 psi (2,5 and 8 bar).

RECOMMENDED INSTALLATION

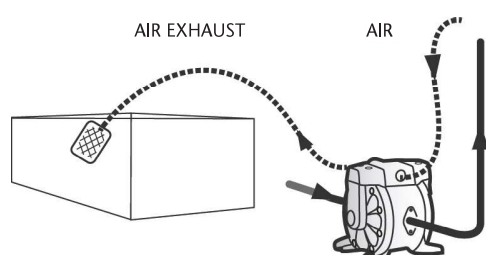
The figure below shows the recommended configuration for the installation of a diaphragm pump. Read the warnings and recommendations of the previous page before starting.



AIR EXHAUST DISPOSAL



WARNING: The pump exhaust should be directed to a safe place, away from people, animals and food.



- Optional kit is required for remote exhaust.
- Remove the muffler.
- Connect a hose to the exhaust port of the pump and install the muffler at the end of the hose. Use a hose with the same diameter as the exhaust port. (If the hose is more than 5 feet (1.5 m), consult your dealer or Samoa Industrial, S.A.).
- Have a moat, a protective housing, etc. at the end of the hose.

INSTALLATION



WARNING

AIR CONNECTION

To ensure that the air supply is sufficient to meet the demand of the pump, the diameter of the pipe must be equal to the diameter of the supply port of the pump. Choose auxiliary air treatment equipment and fittings with sufficient airflow to exceed the air consumption of the pump. In addition,

peripheral air treatment equipment must be installed as close as possible to the pump unit.

The use of a coupler to connect the hoses aids future operation and maintenance tasks.

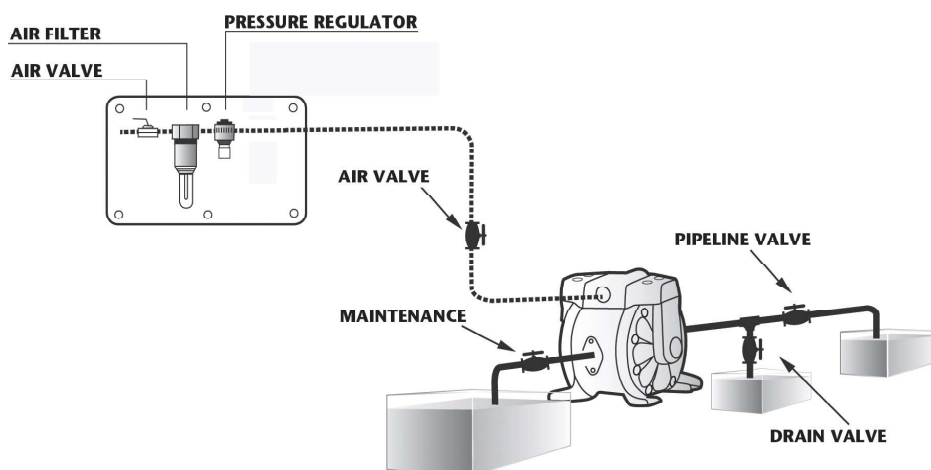
OPERATING INSTRUCTIONS

This pump is self-priming.

To prime it the first time, you must connect the air pump supply to a low pressure using the pressure regulators while keeping the outlet valve open. When fluid begins to flow from the pump outlet, the pump is primed. For regulation of fluid pressure, the unit must be supplied with an air pressure between 22 and 115 psi (1,5 and 8 bar), Hytrel® and Santoprene® between 36 and 115 psi (2,5 and 8 bar). Adjust the discharge valve on the discharge side to control flow. For the performance characteristics of the pump see the capacity curve shown on page 6.

STOPPING THE PUMP

- Close the inlet valve of the pump.
- Open the air valve of the pump, turn on the pump and flush the remaining fluid.
- Close the discharge valve on the discharge side, then begin to slowly open the drain valve and discharge pressure fluid.
- After ensuring that the pump was turned off and the pressure was released, fully open and close the regulator valve and drain valve of the pump.



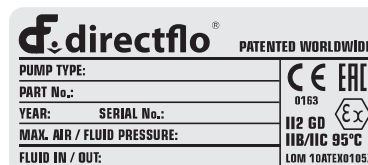
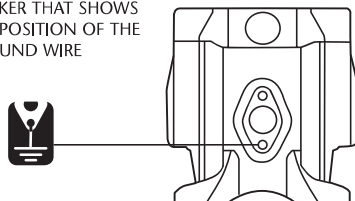
GROUNDING THE PUMP

- When installing the pump, be sure to perform grounding in the specified location.
- Also connect ground wires for the auxiliary equipment and piping.
- Use a grounding cable of at least 12 gauge (2.0 mm²).

- If the pump you have purchased is valid for Atex, a specific Atex manual will accompany this one. Read this manual before operating the pump.

- If the unit is marked with the symbol,  it can be used in potentially explosive atmospheres. Below this symbol, in the nameplate of the pump, are indicated the areas for which the equipment is approved. You will also find the maximum allowable surface temperature in the same plate.

STICKER THAT SHOWS THE POSITION OF THE GROUND WIRE



WARNING: Connect grounding wires to the pump, piping and all other equipment too.

When the pump operates ungrounded or with an incorrect connection, friction between parts and abrasion caused by some fluids that flow inside the pump, can generate static electricity. Moreover, according to the type of fluid pump and the installation environment (such as gases in the air or the type of the surrounding facilities) static electricity can cause fire or electric shock.

TROUBLESHOOTING

THE PUMP DOES NOT WORK	
Cause	Recommended measure
The discharge valve on the discharge side is not open.	Open the discharge valve on the discharge side.
No air supply.	Turn on the compressor and open the air valve and air regulator.
The air supply pressure is low.	Check the compressor and the configuration of the air line. Adjust the air pressure.
Air leaks in connecting elements.	Check the connection elements and the tightening of the screws.
The air pipes or ancillary equipment is clogged with mud.	Check and clean the air line.
The exhaust port (muffler) of the pump is clogged with mud.	Check and clean the exhaust port and muffler. Replace if necessary.
The fluid pipe is clogged with mud.	Check and clean the fluid line.
Pump is clogged with mud.	Remove, inspect and clean the pump body.

THE PUMP RUNS BUT NO FLUID COMES OUT	
Cause	Recommended measure
The valve on the suction side is not open.	Open the valve on the suction side.
Too much suction or discharge height.	Confirm the configuration of the pipe and reduce the height of the same.
Fluid pipe discharge side (including the filter) is clogged with mud.	Check and clean the fluid line.
Pump is clogged with mud.	Dismantle the pump, check and clean.
The ball and ball seat is worn or damaged.	Inspect and replace parts.

THE FLOW IS DECREASING	
Cause	Recommended measure
The air supply pressure is low.	Check the compressor and the configuration of the air line. Adjust the air pressure.
The air line or peripheral equipment clogged with mud.	Check and clean the air line.
Valve discharge side drive will not open normally.	Adjust the discharge valve discharge side.
The air mixes with the fluid.	Replenish fluid and check the configuration of the pipe on the suction side.
Cavitation occurs.	Adjust air supply pressure and discharge pressure and reduce the suction.
Vibrations.	Adjust air supply pressure and discharge pressure. Reduce the flow of the inlet valve to adjust pressure and volume of fluid.
Ice formation in the air exhaust.	Remove ice from the air bypass valve and check and clean the air filter. Use a pipe in the exhaust air that the ice does not form in the muffler.
The fluid line (including the filter) plugged with mud.	Check and clean the fluid pipe and strainer.
The exhaust port (muffler) of the pump is clogged with mud.	Check and clean the exhaust port and muffler. Replace if necessary.
Pump is clogged with mud.	Remove, inspect and clean the pump body.

LEAKAGE OF FLUID THROUGH THE HOLLOW EXHAUST (SILENCER)	
Cause	Recommended measure
The diaphragm is damaged.	Remove and inspect the pump and replace the diaphragm.

IRREGULAR VIBRATION	
Cause	Recommended measure
The air supply pressure is too high.	Adjust air supply pressure.
The pump is clogged with particles larger than the diameter allowed.	Remove, check and clean the pump body.
The elements of connection and the support of the pump are loose.	Review each element of connection and tighten the screws.

POWERED AIR LEAK PRESSURE OF 3 TO 8 BAR	
Cause	Recommended measure
Wear directional valve.	Replace directional valve components.

IN FLUID WITH AIR BUBBLES	
Cause	Recommended measure
Diaphragm damaged.	Replace diaphragm.
Suction hose loose or broken.	Tighten or replace.

NO START-UP AND IS LEAKING AIR WITHOUT CYCLES	
Cause	Recommended measure
Stiff air sensors.	Change air sensor.
Wear directional valve.	Replace.

8 855 837 R. 04/18



ATTENTION!
TIGHTENING SEQUENCE:
PLASTIC PUMP: 5 Nm
METALLIC PUMP: 8 Nm

METALLIC PUMPS OR PLASTIC PUMPS WITH ALUMINUM DIAPHRAGM COVERS

Regular maintenance screws and tools

	SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE		
DIAPHRAGM COVERS (Diaphragm and central pushing rod)	Hex socket head cap screw M6	Allen wrench Metric: 5 mm Standard: 3/16"
VALVE COVERS (Valve, seat and seals)	Hex socket head cap screw M5	Allen wrench Metric: 4 mm Standard: 5/32"

*Further maintenance (Air Sensors) will require an Allen wrench: Metric 3 mm

NON METALLIC PUMPS

Regular maintenance screws and tools

	SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE	Hex socket head cap screw M6	Allen wrench Metric: 3/16" 5 mm Standard: 3/16"
VALVE COVERS (Valve, seat and seals)	Hex socket head cap screw M5	Allen wrench Metric: 4 mm Standard: 5/32"
DIAPHRAGM COVERS (Diaphragm and central pushing rod)	Flanged hex head screw M6	Socket wrench Metric: 10 mm

*Further maintenance (Air Sensors) will require an Allen wrench; Metric 3 mm

COMPONENTS

Pos.	Part. No	DESCRIPTION	Cant
1-21	755117	Diaphragm cover (Metallic pumps)	2
1-22	855685	Diaphragm cover (Non metallic pumps)	2
11	855420	Diaphragm washers	4
15	855414	Pump bracket (Metallic pumps)	1
16	855687	Pump bracket (Plastic pumps)	1
17	940319	Pump bracket screws	4
17	855646	Diaphragm cover trim	2
18	940380	Diaphragm cover screws (Metallic pumps)	12
18	940072	Diaphragm cover (Non metallic pumps)	12
19	855645	Pump trims (Single inlet metallic pumps)	2
19	855645+855670	Pump trims (Double inlet metallic pumps)	1+1

DF30	1	2	3	4	5	6	7	8	9
	AIR VALVE	BODY PUMP	PUSH ROD	SEALS	SEATS	BALLS	DIAPHRAGMS	CONNECTIONS	OPTIONS
A Aluminum	B Conductive PP	S Stainless steel	N NBR	S Stainless steel	T PTFE	C POM	H Hytrel®	B BSP	A Standard pump
P Polypropylene	D Conductive POM	Y Hastelloy® C	V FKM	W PVDF	C POM	S Stainless steel	T PTFE	N NPT	B Remote exhaust kit included
	W PVDF		E EPDM		N NBR		M Santoprene®	F Flange	E Externally controlled with solenoid valve (not included)
	K Conductive PVDF		T PTFE				N NBR		F Nose muffler included
									G Externally controlled with solenoid valve (not included) and inductive end of stroke sensors NPN (included)
									I Externally controlled with solenoid valve (not included) and inductive end of stroke sensors ATEX-Namur (included)
									U Pump suitable for UV fluids

1	AIR VALVE	AIR VALVE	AIR SENSORS	REMOTE EXHAUST
A	558300		558301	-
P	558343			-

2	PUMP BODY	PART. No
	SIMPLE	DOUBLE
	BSP	NPT
B	855661	855661.300
D	855660	855660.300
P	855644	855644.300
W	855676	855676.300
K	855677	855677.300

3	PUSH ROD	SEALS	KIT CODE	PUSH ROD REPAIR KIT
	S	N	558325.001	NUMERICAL CODING 55XXXX
	S	V	558326.001	-
	S	E	558328.001	553010, 553020, 553124, 553160, 553162, 553164
	S	T	558431.001	553161
	Y	V	558427.001	-
	Y	T	558425.001	-

NOTE: For Serial numbers prior to 329041/250 the replacement kit has to be ordered without .001 suffix.

6	BALLS	KIT CODE	CHECK VALVE BALL REPAIR KIT
	T	558319	NUMERICAL CODING 55XXXX
	C	558321	553010, 553020, 553124, 553160, 553161, 553162, 553164
	S	558342	-
	N	558320	-

2	PUMP BODY	SEALS	SEATS	CÓD. KIT	VALVE REPAIR KIT
					NUMERICAL CODING 55XXXX
P	V	S	S	558316.001	553010, 553020, 553124, 553160, 553164
P	E	S	S	558336.001	553161
P	T	S	S	558349.001	
P	T	W	W	558318.001	
P	T	W	W	558407.001	
D	V	S	S	558417.001	
D	E	S	S	558418.001	
D	T	S	S	558419.001	
B	V	S	S	558410.001	553162
B	E	S	S	558411.001	
B	T	S	S	558412.001	
K, W	T	W	W	558346.001	

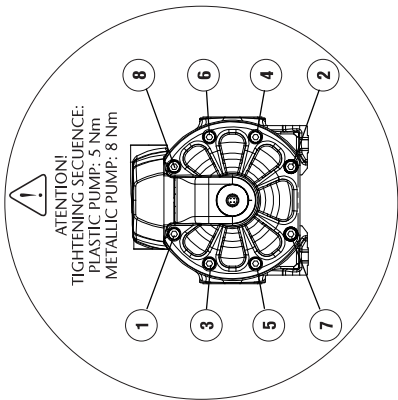
7	DIAPHRAGMS	PUSH ROD	KIT CODE	DIAPHRAGMS
	H	S	558337.001	NUMERICAL CODING 55XXXX
	M	S	558343.001	553010, 553020, 553124, 553164
	N	S	-	-
	T	S	558344.001	553160, 553161, 553162
	T	Y	558345.001	-

MODEL EXAMPLE

df.directflo	PATENTED WORLDWIDE
PUMP TYPE:	CE EAC
PART No.:	0118
YEAR:	112 CD
MAX. AIR / FLUID PRESSURE:	118/11C 95°C
FLUID IN / OUT:	LOW / UNTERDRUCK

Part. No: 55XXXX (numerical coding)
Pump type: DF30XXXXXXX (alphanumeric coding)

DF50 BODY PUMP PARTS



METALLIC PUMPS OR PLASTIC PUMPS WITH ALUMINUM DIAPHRAGM COVERS

Regular maintenance screws and tools

SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE	
DIAPHRAGM COVERS (Diaphragm and central pushing rod)	Hex socket head cap screw M6 Metric: 5 mm Standard: 3/16"
VALVE COVERS (Valve, seat and seals)	Hex socket head cap screw M5 Metric: 4 mm Standard: 5/32"

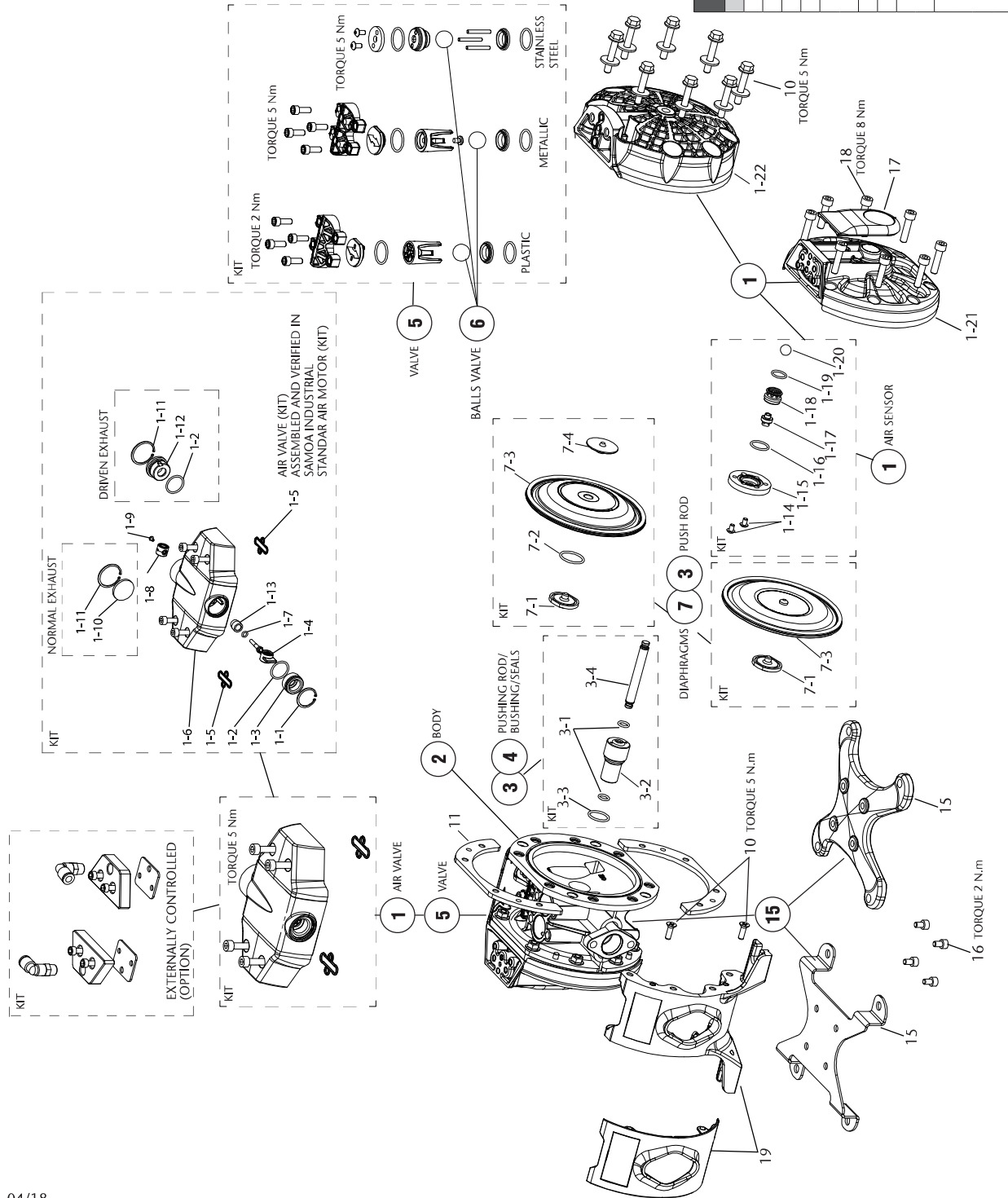
*Further maintenance (Air Sensors) will require an Allen wrench: Metric 3 mm

NON METALLIC PUMPS

Regular maintenance screws and tools

SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE	
Hex socket head cap screw M6	Allen wrench Metric: 5 mm Standard: 3/16"
Hex socket head cap screw M5	Allen wrench Metric: 4 mm Standard: 5/32"
DIAPHRAGM COVERS (Valve, seat and seals)	Flanged hex head screw M6 Metric: 10 mm

*Further maintenance (Air Sensors) will require an Allen wrench: Metric 3 mm



POS.	Part. No	DESCRIPTION	CANT
1-21	755106	Diaphragm cover (Metallic pumps)	2
1-22	894622	Diaphragm cover (Plastic pumps)	16
10	940506	Fixing bolt (metallic pump shield)	8
11	855413	Diaphragm washers	4
15	855414	Pump bracket (Metallic pumps)	1
16	855687	Pump bracket (Plastic pumps)	1
17	940319	Pump bracket screws	4
18	855601	Diaphragm cover trim	2
19	940380	Diaphragm cover screws (Metallic pumps)	16
	940072+942156	Diaphragm cover (Non metallic pumps)	16+16
	755108	Pump trims (Single inlet metallic pumps)	2
	755108+755109	Pump trims (Double inlet metallic pumps)	1+1
	855625	Pump trims (Single inlet plastic pumps)	2
	855625+855626	Pump trims (Double inlet plastic pumps)	1+1

DF50																	
1		2		3		4		5		6		7		8		9	
AIR VALVE		BODY PUMP		PUSH ROD		SEALS		SEATS		BALLS		DIAPHRAGMS		CONNECTIONS		OPTIONS	
A Aluminum		A Aluminum		S Stainless steel		N NBR		S Stainless steel		T PTFE		H Hytrel®		B BSP		A Standard pump	
P Polypropylene		S Stainless steel		Y Hastelloy® C		V FKM		W PVDF		C POM		T PTFE		N NPT		B Remote exhaust kit included	
		P Polypropylene				E EPDM				S Stainless steel		M Santoprene®		F Flange		E Externally controlled with solenoid valve (not included)	
		B Conductive PP				T PTFE				N NBR		N NBR				F Nose muffler included	
		C POM														G Externally controlled with solenoid valve (not included) and inductive end of stroke sensors NPN (included)	
		D Conductive POM														I Externally controlled with solenoid valve (not included) and inductive end of stroke sensors ATEX-Namur (included)	
		W PVDF														U Pump suitable for UV fluids	
		K Conductive PVDF															

3				4				PUSH ROD REPAIR KIT			
PUSH ROD		SEALS		KIT CODE		NUMERICAL CODING 55XXXX					
S		N		558304.001		552010, 552030					
S		V		558307.001		552015, 552016, 552017, 552018, 552025, 552026, 552124, 552160, 552162, 552164					
S		E		558333.001		552161					
S		T		558432.001		552013, 552014, 552023, 552024, 552050					
Y		V		558312.001		-					
Y		T		558426.001		-					

NOTE: For Serial numbers prior to 329041/250 the replacement kit has to be ordered without .001 suffix.

6				CHECK VALVE BALL REPAIR KIT			
		KIT CODE		NUMERICAL CODING 55xxxx			
T		558319		552012, 552013, 552014, 552015, 552017, 552022, 552023, 552024, 552025, 552050, 552124, 552160, 552161, 552162, 552164,			
C		558321		552010, 552011, 552016, 552018, 552021, 552026,			
S		558342		-			
N		558320		552030			

7				DIAPHRAGMS			
DIAPHRAGMS		PUSH ROD		KIT CODE		NUMERICAL CODING 55xxxx	
H		S		558303.001		552010, 552011, 552015, 552016, 552018, 552021, 552025, 552026, 552124, 552164	
M		S		558306.001		-	
N		S		558430.001		552030	
T		S		558309.001		552012, 552013, 552014, 552017, 552022, 552023, 552024, 552050, 552160, 552161, 552162	
T		Y		558347.001		-	

MODEL EXAMPLE

dfdirectflo®

PATENTED WORLDWIDE

PUMP TYPE:

PART No.:

YEAR:

MAX. AIR / FLUID PRESSURE:

FLUID IN / OUT:

CE

EN10182

112 G1

118/116 95°C

LOW 10M3/105K

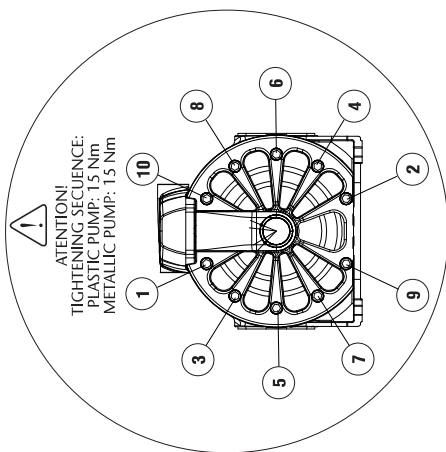
Part. No:

55XXXX (numerical coding)

Pump type:

DF50XXXXXXXXXX (alphanumeric coding)

12 855 837 R. 04/18



METALLIC PUMPS OR PLASTIC PUMPS WITH ALUMINUM DIAPHRAGM COVERS

	SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE	Hex socket head cap screw M6	Allen wrench Metric: 5 mm Standard: 3/16"
DIAPHRAGM COVERS (Diaphragm and central pushing rod)	Hex socket head cap screw M8	Allen wrench Metric: 6 mm Standard: N.A.
VALVE COVERS (Valve, seat and seals)	Hex socket head cap screw M5	Allen wrench Metric: 4 mm Standard: 5/32"

*Further maintenance (Air Sensors) will require an Allen wrench: Metric 3 mm

NON METALLIC PUMPS

Regular maintenance screws and tools

	SCREW TYPE	REQUIRED TOOL
DIRECTIONAL VALVE	Hex socket head cap screw M6	Allen wrench Metric: 5 mm Standard: 3/16"
VALVE COVERS (Valve, seat and seals)	Hex socket head cap screw M5	Allen wrench Metric: 4 mm Standard: 5/32"
DIAPHRAGM COVERS (Diaphragm and central pushing rod)	Flanged hex head screw M8	Socket wrench Metric: 13 mm Standard: 1/2"

*Further maintenance (Air Sensors) will require an Allen wrench: Metric 3 mm

Pos.	Cód	Descripción	Cant
1-21	755111	Diaphragm cover (Metallic pumps)	2
1-22	894621	Diaphragm cover (Plastic pumps)	2
11	855416	Diaphragm washers	4
15	755114	Pump bracket (Metallic pumps)	1
	855637	Pump bracket (Plastic pumps)	1
16	940914	Pump bracket screws	7
17	855604	Diaphragm cover trim	2
18	940334	Diaphragm cover screws (Metallic pumps)	20
	940086+942158	Diaphragm cover screws (Plastic pumps)	20+20
19	755113	Pump trims (Single inlet pumps)	1
	855636	Pump trims (Double inlet pumps)	1

DF100									
1	2	3	4	5	6	7	8	9	
AIR VALVE A Aluminum P Polypropylene	BODY PUMP A Aluminum S Stainless steel P Polypropylene B Conductive PP D Conductive POM W PVDF K Conductive PVDF	PUSH ROD S Stainless steel Y Hastelloy® C	SEALS N NBR V FKM E EPDM T PTFE	SEATS S Stainless steel W PVDF	BALLS T PTFE C POM S Stainless steel N NBR	DIAPHRAGMS H Hytrel® T PTFE M Santoprene® N NBR	CONNECTIONS B BSP N NPT F Flange	OPTIONS A Standard pump B Remote exhaust kit included D Cycle sensor E Externally controlled with solenoid valve (not included) F Nose muffler included G Externally controlled with solenoid valve (not included) and inductive end of stroke sensors NPN (included) I Externally controlled with solenoid valve (not included) and inductive end of stroke sensors ATEX-Namur (included) U Pump suitable for UV fluids	

1		AIR VALVE	
AIR VALVE		AIR SENSORS	
A	558350	558301	
B	558395	-	

2		PUMP BODY	
BSP		PART. No	
A	755110	NPT	
B	855651	855651.300	
D	855632	855632.300	
P	855630	855630.300	
S	855051	855051.300	
W	894623	894623.300	
K	855698	855698.300	

2			5	
PUMP BODY			VALVE REPAIR KIT	
SEALS	SEATS	KIT CODE	NUMERICAL CODING 55XXXX	
P	N	S	558463.001	-
P	V	S	558360.001	551015, 551160, 551164
P	E	S	558393.001	-
P	T	S	558450.001	-
P	V	W	558362.001	-
P	T	W	558454.001	-
D	N	S	558357.001	551017
D	V	S	558359.001	-
D	E	S	558391.001	-
D	T	S	558453.001	-
B	N	S	558464.001	-
B	V	S	558465.001	551162
B	E	S	558466.001	-
B	T	S	558467.001	-
K, W	T	W	558452.001	-
S	T	S	558378.001	ASK SAMOA 551050
A	N	S	558460.001	-
A	V	S	558461.001	-
A	E	S	558462.001	-
A	T	S	558459.001	-
			558472.001	551010, 551030
			558473.001	551020

3				4		
PUSH ROD				KIT CODE		
SEALS				NUMERICAL CODING 55XXXX		
S	N			Hytrel and Santoprene diaphragms	PTFE and NBR diaphragms	PTFE and NBR diaphragms
S	V			558352.001	558398.001	551010, 551030
S	E			558353.001	558399.001	551015, 551164
S	T			558382.001	558379.001	-
Y	V			558475.001	558474.001	551050
Y	T			-	558355.001	-
Y	T			558458.001	-	-

NOTE: For Serial numbers prior to 329041/250 the replacement kit has to be ordered without .001 suffix.

6		CHECK VALVE BALL REPAIR KIT	
KIT CODE		NUMERICAL CODING 55XXXX	
T	558363	551015, 551017, 551050, 551160, 551162, 551164	
C	558365	551010, 551020	
S	558367	-	
N	558364	551030	

7			3	
DIAPHRAGMS			DIAPHRAGMS	
PUSH ROD			NUMERICAL CODING 55XXXX	
KIT CODE			KIT CODE	
H	S	558368.001	551010, 551015, 551164	
M	S	558369.001	-	
N	S	558457.001	551030	
T	S	558371.001	551017, 551020, 551050, 551160, 551162	
T	Y	558395.001	-	

MODEL EXAMPLE



PUMP TYPE: **CE** **EH**

PART No.: 0163

YEAR: 112 60

MAX. AIR / FLUID PRESSURE: 112/160

FLUID IN / OUT: LOW / 100T/105K

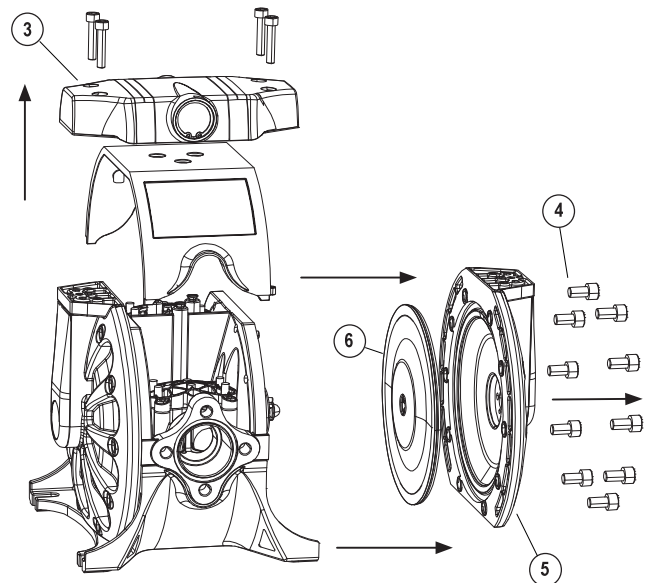
Part. No: 55XXXX (numerical coding)
Pump type: DF100XXXXXXX (alphanumeric coding)

REPAIR AND MAINTENANCE PROCEDURES

DIAPHRAGM REPLACEMENT

Before any intervention: DISCONNECT AIR SUPPLY OF THE PUMP. IT IS NOT NECESSARY TO REMOVE THE PUMP FROM THE FLUID LINE.

1. Close fluid valves.
2. Drain the fluid inside the pump. Anticipate a drainage of fluid from inside the pump.
3. Remove the directional valve while being careful not to damage the seals shown in the figure.
4. Remove the diaphragm cap.
NOTE: To tighten these screws you must use a torque wrench calibrated to (see torque table in this page).
5. Remove the cover by gently pulling back.
6. Remove the used diaphragm and place the new one in the proper position.
7. Mount the side covers again following the tightening sequence and torque (see torque table page 8, 10 and 12).

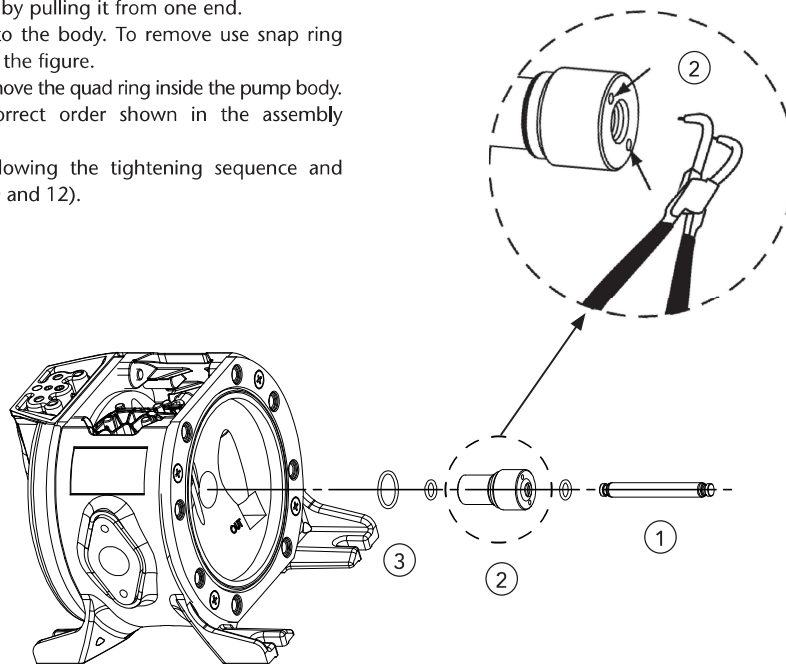


PUSHING ROD

Remove the side covers, following the procedure to "Replace diaphragms".

Once the shaft is visible, use the following procedures:

1. Remove the shaft from its housing by pulling it from one end.
The Teflon® sleeve is threaded into the body. To remove use snap ring pliers in the two holes indicated in the figure.
2. Once the cap has been removed, remove the quad ring inside the pump body.
3. Replace the kit following the correct order shown in the assembly drawing.
4. Mount the side covers again following the tightening sequence and torque (see torque table page 8, 10 and 12).



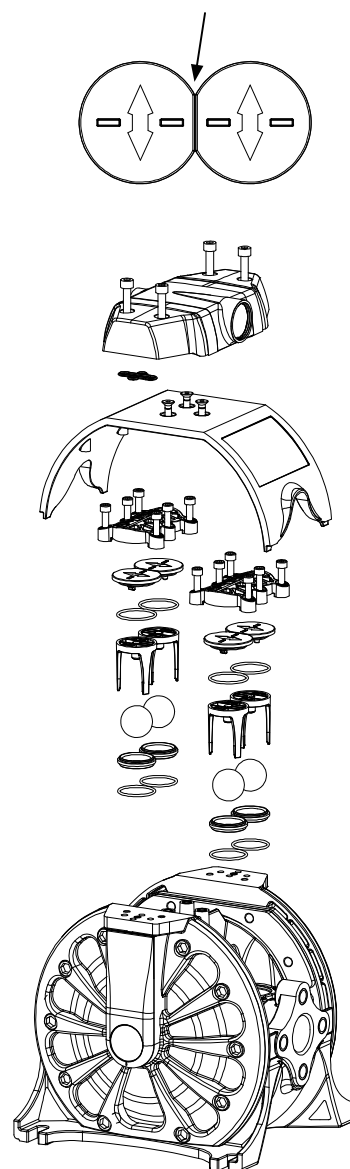
REPAIR AND MAINTENANCE PROCEDURES

BALL VALVES REPLACEMENT

1. Close fluid valves.
2. Drain the fluid from inside the pump. Anticipate a drainage of fluid from inside the pump.
3. Loosen the screws to remove the directional valve. Take special care with the seals.
4. Remove the valve cover by loosening the screws with an Allen wrench. Take note of the orientation of the cap, as it is critical to replace it correctly during reassembly.
5. Install a new set of valves according to these assembly drawings. Ensure that the ball guides are assembled as shown in the figure on the left, and tighten the screws with a maximum torque (see torque table page 8, 10 and 12).
6. Assemble the directional valve with being careful not to damage the O-rings and tighten the screws with a maximum torque of 44.25 lbf-in (5 N·m).



ATTENTION: To avoid fluid restriction and leakages, follow the position of the ball checks guides in the figure above.

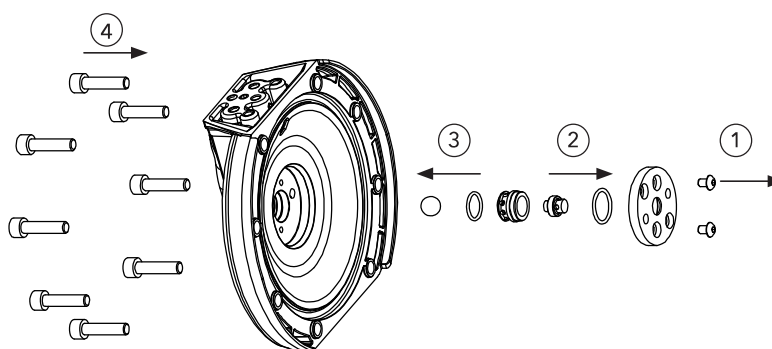


AIR SENSOR (ONLY FOR MODELS WITH DIRECTIONAL VALVE)

The air sensors are on the inside part of the diaphragm covers. To access them, follow the procedure for "Replacing diaphragms".

Once removed the covers following procedure:

1. Remove the two screws that secure the air sensor to the top.
2. Remove all components of the sensor. Clean the area.
3. Introduce new components in the order shown.
4. Fit the cover on the pump and tighten the screws to the body of the pump. Maximum tightening torque (see torque of body pump parts).
5. Fit the remaining components in reverse order.



2018_04_05-11:00

EC CONFORMITY DECLARATION / DECLARATION CE DE CONFORMIDAD /
DÉCLARATION CE DE CONFORMITÉ / EG-KONFORMITÄTSERKLÄRUNG /
DECLARAÇÃO DE CONFORMIDADE

EN

SAMOA INDUSTRIAL, S.A., Pol. Ind. Porceyo, I-14 · Camino del Fontán, 831 · 33392 - Gijón - Spain, declares that this product conforms with the EU Directive:

2006/42/EC

FR

SAMOA INDUSTRIAL, S.A., Pol. Ind. Porceyo, I-14 · Camino del Fontán, 831 · 33392 - Gijón - Espagne, déclare que ce produit est conforme au Directive de l'Union Européenne:

2006/42/CE

PT

SAMOA INDUSTRIAL, S.A., Pol. Ind. Porceyo, I-14 · Camino del Fontán, 831 · 33392 - Gijón - Espanha, declara que os produtos 9041,9041-M e 9042 cumprem as diretrizes da União Europeia):

2006/42/EG

For **SAMOA INDUSTRIAL, S.A.**

Por **SAMOA INDUSTRIAL, S.A.**

Pour **SAMOA INDUSTRIAL, S.A.**

Für **SAMOA INDUSTRIAL, S.A.**

Por **SAMOA INDUSTRIAL, S.A.**

От лица компании **SAMOA INDUSTRIAL, S.A.**

Pedro E. Prallong Álvarez

Production Director

Director de Producción

Directeur de Production

Produktionsleiter

Diretor de Produção

Директор по производству

RU

Сертификат соответствия:

№ TC RU C-ES.AB58.B.01839, срок действия с 28.07.2017 по 27.07.2020, выдан органом по сертификации продукции «М-ФОНД» ООО «Агентство по экспертизе и испытаниям продукции»; Адрес 125167, Россия, г. Москва, ул. Викторенко, дом 16, стр. 1. Телефон: +74951501658, e-mail: info@mfond.org. Аттестат аккредитации №РА.RU.11AB58 от 07.04.2016 года.

Дата производства указана на маркировке изделия

ES

SAMOA INDUSTRIAL, S.A., Pol. Ind. Porceyo, I-14 · Camino del Fontán, 831 · 33392 - Gijón - España, declara que este producto cumple con la Directiva de la Unión Europea:

2006/42/CE

DE

SAMOA INDUSTRIAL, S.A., Pol. Ind. Porceyo, I-14 · Camino del Fontán, 831 · 33392 - Gijón - Spanien, bestätigt hiermit, dass dieses Produkt der EG-Richtlinie(n):

2006/42/EG

entspricht.

EAC

Транспортировка

Изделие должно транспортироваться в заводской упаковке для защиты от повреждений и влаги.

Хранение

Изделие должно храниться запакованным, в хорошо проветриваемом и сухом помещении.

Утилизация

Выполняйте национальные правила утилизации и переработки отслужившего оборудования, упаковки и принадлежностей.

2018_04_05_11:00