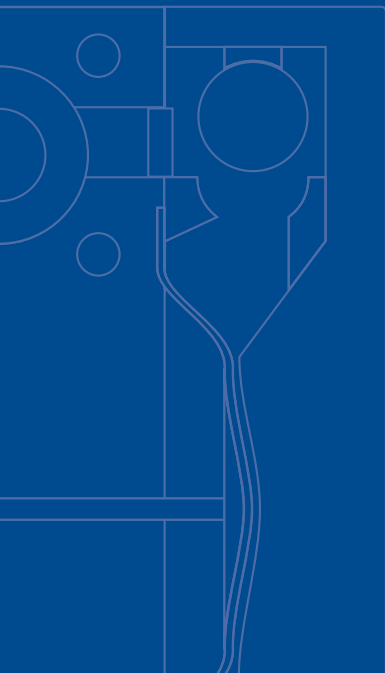




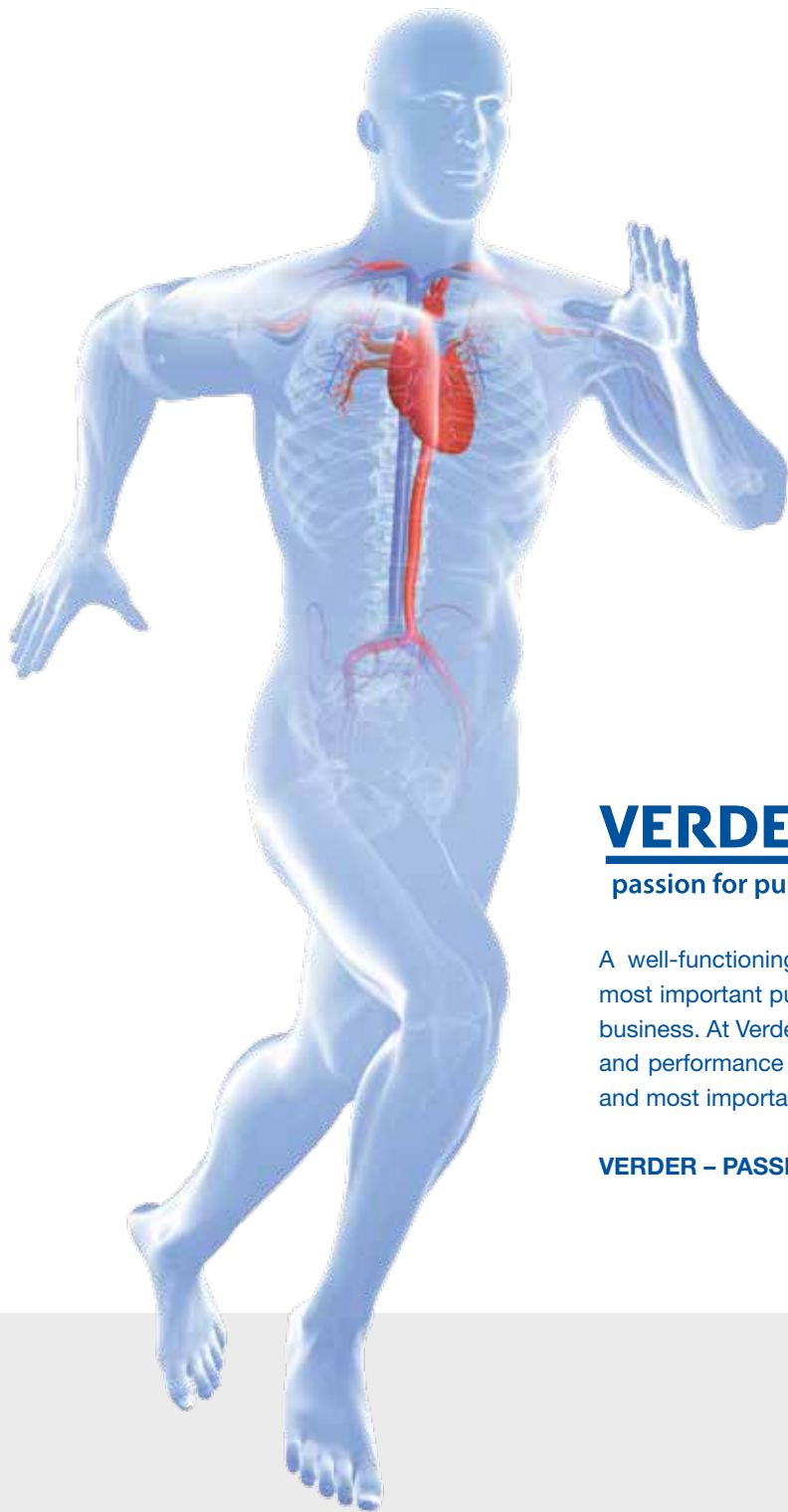
## VERDERAIR PURE

### Solid Machined Double Diaphragm Pumps

*Winner of the  
Differentiation Excellence Award 2012  
- Frost & Sullivan*



**The most efficient  
diaphragm pump**



**VERDER**  
passion for pumps

A well-functioning pump helps you succeed. That applies certainly to the most important pump in life, the human heart, but the same goes for pumps in business. At Verder, all energy and attention is focused on improving the quality and performance of our pump and service. We do so with energy, dedication and most importantly, with our heart.

**VERDER – PASSION FOR PUMPS**

## Verderair PURE

*The Verderair PURE is a robust, premium series of double diaphragm pumps, produced out of one solid piece of pure PE or PTFE (also conductive). The Verderair PURE is designed for heavy-duty operation, harsh liquids and severe process conditions.*



### **Increase productivity**

#### **Higher flow rate, less maintenance**

With low 'pressure drop' when the liquid passes the pump chamber, with smoother flow, with increased efficiency pumping the liquid, the diaphragms have a special profile which is designed for an extremely long working life.

### **Reduce operational cost**

#### **Lower air consumption**

The quick-acting air valves are very fast in changing direction. No compressed air enters the air chamber when the stroke has completed. The used compressed air is removed with almost no restrictions. The compressed air is only used to move the liquid.

### **Improve working environment**

#### **Less noise**

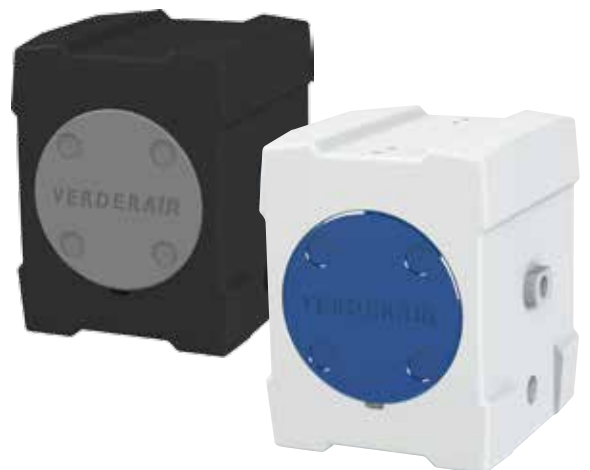
By using all of the compressed air the pump makes less noise and the risk of freezing the exhaust is reduced.

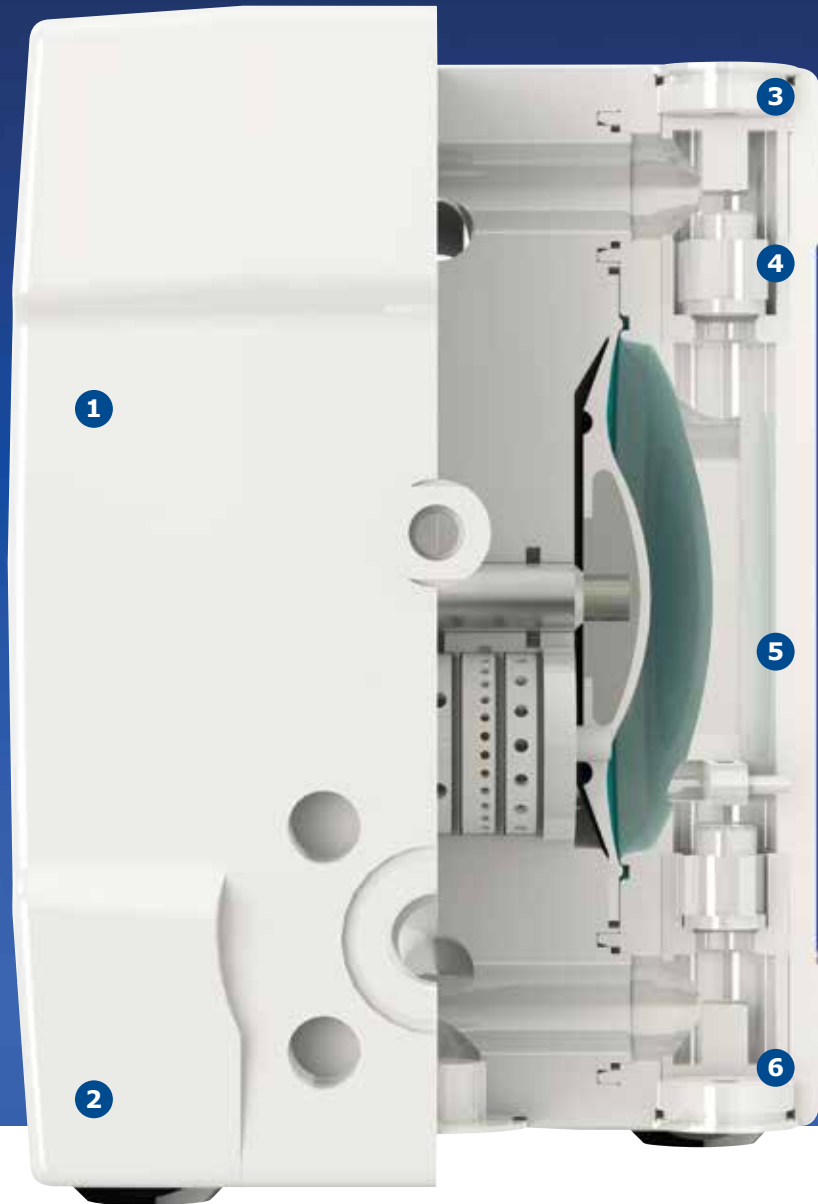
# Verderair PURE: made of the purest materials

*The Verderair PURE solid machined pumps work according to the diaphragm pump principle. The Verderair PURE has a reliable, integrated air valve and has no metal wetted or external parts. Therefore the pump is protected against corrosion from aggressive atmospheres, requires less maintenance and has a longer life time.*

## **Verderair PURE's features**

- *Excellent abrasive resistance*
- *Excellent chemical resistance*
- *Solid design*
- *Easy and cheap to maintain*
- *Overmolded diaphragms*
- *No metal wetted or external parts*





### **1 Purest Materials**

- Polyethylene 1000 (PE 1000 UHMW)
- Polytetrafluoroethylene (PTFE)
- Polyethylene conductive
- Polytetrafluoroethylene conductive

### **2 Finest Quality**

- Best abrasive resistant: PE
- Best chemical resistant: PTFE

### **3 Longest Durability**

- Fewer material stress points
- No need for inserts to handle higher pressures

### **4 Most Solid Design**

- Machined and not injection molded
- Mounted on feet: less material stress
- Better handling and toleration of mechanical forces than injection molded units

### **5 Highest Efficiency**

- Increased productivity with up to 30% higher flow rate
- Reduced operational costs because of lower air consumption and reduced maintenance
- Improved working environment due to lower noise levels

### **6 Fully Non-Metallic**

- No wetted metal parts
- No metal parts in contact with the atmosphere



## Verderair PURE series

The Verderair PURE pumps handle a huge diversity of fluids, high or low viscous, thixotropic, abrasive, corrosive, hazardous or toxic. They are generally used for applications that involves pumping sludge, acids, alkalis, solvents, slurries, emulsions, mixtures of liquids and solids, resins and powders. Conductive versions for ATEX applications are available.

### Applications

- Chemical industry
- Pharmaceutical industry
- Solar power industry
- Electronics-plating (Galvanics)
- Ceramic industry
- Paper industry

## MATERIALS

### Polyethylene (PE)

Extremely abrasion resistant. Up to 7 times better than Polypropylene. Chemical resistance is comparable to Polypropylene.

### Conductive polyethylene

Similar properties to polypropylene but conductive for ATEX applications.

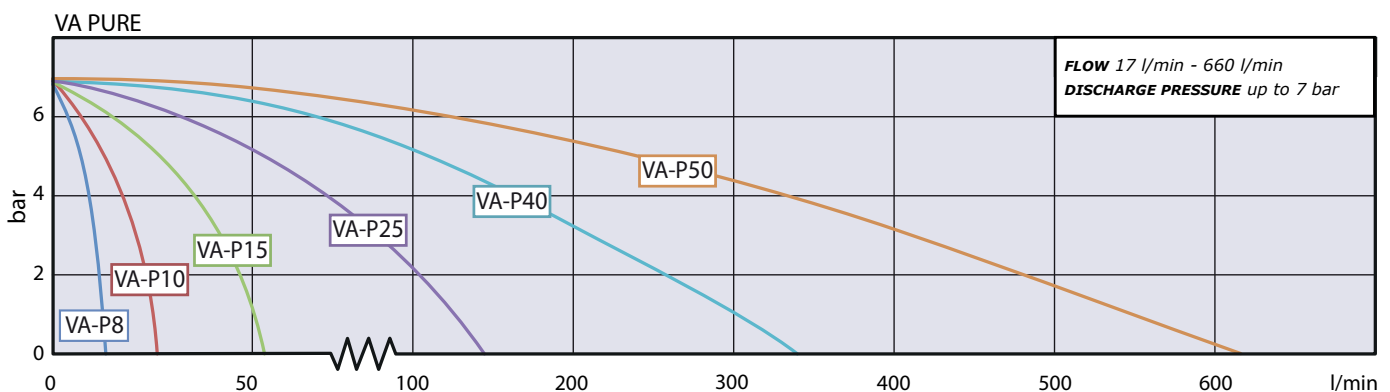
### Teflon (PTFE)

Widest chemical compatibility, extreme corrosion resistance, very low frictional coefficient, non-adhesive, high heat resistance.

### Conductive teflon





Similar properties to PTFE, but electrical conductive for ATEX applications.

mm	VA-P08	VA-P10	VA-P15	VA-P25	VA-P40	VA-P50
Connections	8	10	15	25	40	50



# Verderair PURE technical data

ISO measurements							
Device model		VA-P08	VA-P10	VA-P15	VA-P25	VA-P40	VA-P50
Nominal port size	NPT	1/4"	3/8"	1/2"	1"	1 1/2"	2"
Air inlet	BSP	R 1/8	R 1/8	R 1/4	R 1/4	R 1/2	R 1/2
Suction lift dry (mwc)	Ball Valves	0,5	1	2	3	4	4
	Cylinder Valves	1	2	3	4	5	5
Suction lift wet (mwc)	Ball Valves	9	9	9,5	9,5	9,5	9,5
	Cylinder Valves	9	9	9,5	9,5	9,5	9,5
Max. operating pressure (Bar)		7	7	7	7	7	7
Max. operating temperature (°C)	PE1000	70	70	70	70	70	70
	PTFE	100	100	120	120	120	120
Theoretical displacement volume (single stroke) (in liters)		0,0075	0,0215	0,1	0,34	0,98	2,6
Max. particle size of solids for pumps with ball valves (in mm)		2,2	3	4	6	9	11

PUMP CODING VA-P			
Pump size	Housing and center section		Valve seat
	Housing	Center section	
08 : 1/4"	E : PE	E : PE	EE : PE
10 : 3/8"	G : PE conductive 	G : PE conductive	GG : PE conductive 
15 : 1/2"	T : PTFE	T : PTFE	TT : PTFE
25 : 1"	U : PTFE conductive 	U : PTFE conductive	UU : PTFE conductive 
40 : 1 1/2"			
50 : 2"			

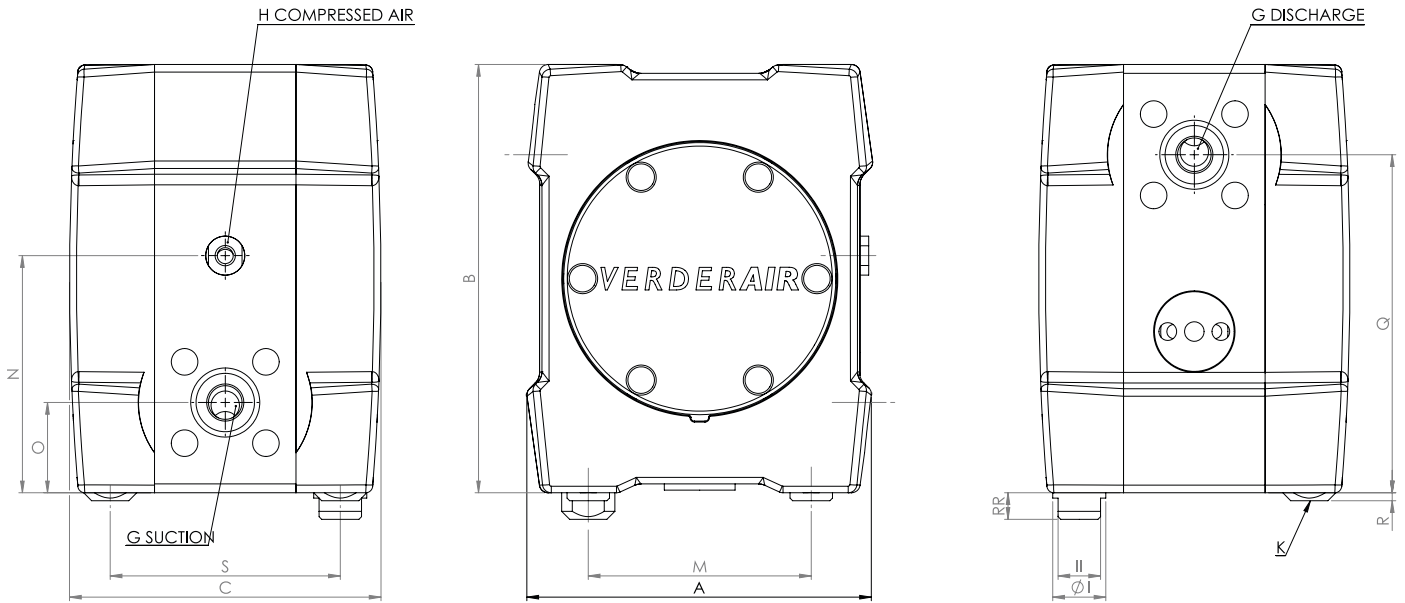
Valve Ball	Diaphragm	Connections	Options	
EP : EPDM	TO : PTFE overmolded	TN : Threated NPT	OO : standard, no option	PB : PD + BS
TF : PTFE	EO : EPDM overmolded	FD : flanged DIN	SS : stroke sensor	PE : PD + RE
SS : SS316		FA : Flanged Ansi	RE : remote	PL : PD + LS
CV : cylinder valve		FJ : Flanged JIS	DM : draining manual	PS : PD + SS
			DP : draining pneumatical	RS : RE + SS
			BS : barrier system with sensors only	SB : SS + BS
			LS : leak detection, sensor only	SL : SS + LS
			PD : prepared for dampener	RL : RE + LS
			MD : DM + PD	BM : PD + BS + DM
			SL : SS + LS	LP : PD + LS + SS
			AP : Ansi prepared	MS : DM + SS + LS
			VS : Vertical suction	RM : DM + RE + PD
			BL : BS + LS	DS : DM + SS + PD
			DB : DM + BS	X1 : SD + DM + PD
			LD : LS + DM	LM : LS + SS + PD + DM
			MD : DM + PD	FO : PD + DP + BS + LS + SS

Note: not all combinations are available

 II 2G/2GDc IIC/IIIC Tx

EXAMPLE: VA-P25EE EE TF TO TN OO

# Verderair PURE dimensions



TYPE	A	B	C	G	H	I	II	K	M	N	O	Q	R	RR	S
08	99	124	109	NPT 1/4"	R 1/8	16	14	M6	69	62	19	105	2	10	80
10	132	165	126	NPT 3/8"	R 1/8	16	14	M6	85	82,5	21,5	143,5	2	10	97
15	196	242	176	NPT 1/2"	R 1/4	30	24	M8	126	134	51	191	4,5	15	130
25	250	312	239	NPT 1"	R 1/4	30	24	M8	180	137	54	258	4,5	15	185
40	329	440	320	NPT 1 1/2"	R 1/2	38	28	M10	230	220	79	361	4	25	270
50	449	550	430	NPT 2"	R 1/2	38	28	M10	310	280	94	466	4	25	340

Dimensions in mm







## Verderair Air Control Pro

*To have an optimum use and life-time of your AODD pump, Verderair has developed the AIR CONTROL PRO. This is a range of accessories to help you to regulate the flow of your AODD and to protect the air valve and the diaphragms against early failures.*

### AVAILABLE UNITS

**Filter-regulator:** to keep the compressed air pressure supply to your pump on a constant set pressure

**Throttle valve:** to regulate the flow generated by your AODD pump

**On/Off valve:** To open or close the air supply to your pump. Manual or electrical operated.

**Soft Start valve:** to protect the diaphragms of your AODD from pressure shocks in opening the on/off

**Flow stop valve:** To protect the diaphragms and to save energy by dry-running of the pump.

*All above mentioned units can be combined in a set as shown in the picture.*






# Verderair PURE dampeners

A double diaphragm pump gives a pulsating flow. Wherever this cannot be tolerated in a pumping system, the use of a pulsation dampener is recommended. Verderair PURE pulsation dampeners are active dampeners. They are fed with the same compressed air line as the pump. The operation is fully automatic, this guarantees an optimum dampening effect even when there are changes to the process conditions.

The liquid parts of the Verderair PURE dampeners are made out of the same materials as the PURE pumps and can be installed directly on the discharge side of the pump. Ensuring that the pump and dampener remain a compact combination.

The installation of the dampener on the pump can be done by threaded connection or by flanged connection.

DAMPENER CODING PD-P				
Dampener size	Housing and air section		Diaphragm	Connection
	Housing	Air section		
10 : 3/8"	E : PE	A : PA	TO : PTFE overmolded	TN : Threaded NPT
15 : 1/2"	G : PE conductive 	G : PE conductive 	EO : EPDM overmolded	FS : Flanged slotted for DIN/ANSI/JIS
25 : 1"	T : PTFE			
40 : 1 1/2"	U : PTFE conductive 			
50 : 2"				

Note: not all combinations are available

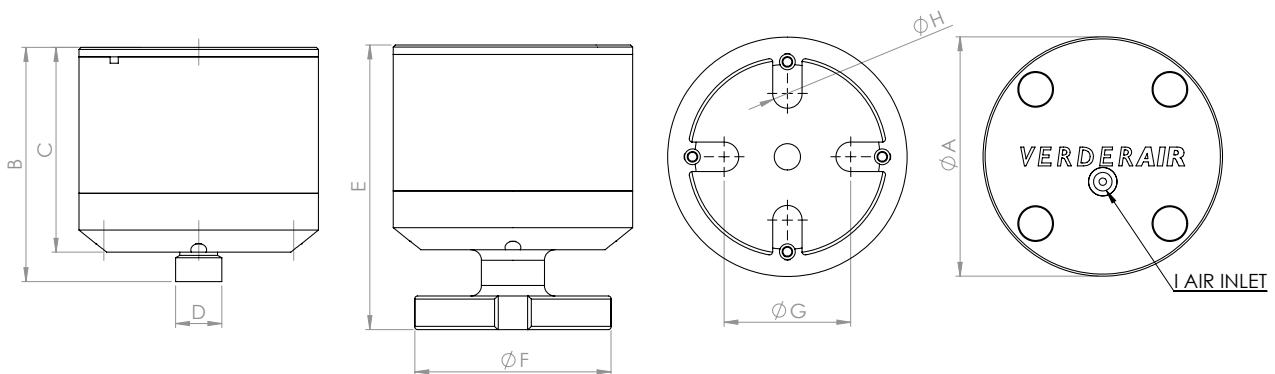
 II 2G/2GDc IIC/IIIC Tx

EXAMPLE: PD-P25EG TO TN





## Verderair PURE dampener dimensions



TYPE	A	B	C	D	E	F	G	H	I
P10	75	102	90	NPT 3/8"	-	-	-	-	R 1/8"
P15	114	115	97,5	NPT 1/2"	135,5	95	60,30	14	R 1/8"
P25	158	149	131	NPT 1"	179	112	79,40	14	R 1/8"
P40	213,75	192	166	NPT 1 1/2"	222	145	98,40	18	R 1/4"
P50	295	259	227	NPT 2"	287	165	120	18	R 1/4"

Dimensions in mm



## Verderair accessories

To assist you in optimizing your production process, VERDER now offers an extended line of accessories for the PURE double diaphragm pumps.

### Stroke Sensor (option SS)

To measure the number of strokes a pump is making, you can use the option SS (stroke sensor). An inductive proximity switch is mounted in the centre part of the pump. This switch generates a pulse with every stroke of the diaphragms. The switch can be connected to a controller (article number 6850002). This controller can show you the number of strokes the pump has made or can stop the pump after a preset number of strokes. The switches used have an Atex classification Ex II 2G EEx ia IICT6.



Option SS

### Remote Operated pump (option RE)

If you want to control the stroke frequency of your pump by using a solenoid valve, you can use option RE on the Verderair PURE pumps. Pumps with this option have 2 air connections in direct contact with the air side of each diaphragm. The pumps are not having an air valve neither an air muffler. As the complete volume of air to operate your pump has to pass through the solenoid valve, we recommend to use a solenoid valve with the same size of air connections as the air connections of your pump.



Option RE

### Manual draining (option DM)

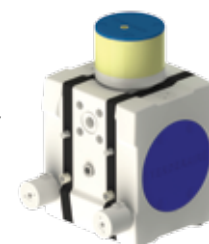
Because the valve balls or the cylinder valves are working as non-return valves, liquid will be kept in the pump when the pump is stopped. To be able to evacuate the remaining liquid on top of the valves you can use the manual draining system on a Verderair PURE. Both side housings are equipped with a bypass system and a manual operated valve.



Options BS + DM

### Pneumatical draining (option DP)

Instead of using the manual draining system (option DM), pumps with option code DP are equipped with a side housing, bypass system and pneumatically operated valves. By using a 4/2 electro-pneumatical valve, the draining system can be activated by an electrical signal.



Options BS + DP



### Barrier system (option BS)

Verderair PURE pumps with a barrier system are equipped with double liquid chambers and double diaphragms at each side. In the double liquid chambers, between the double diaphragms, a neutral liquid is placed. In each double chamber this neutral liquid is monitored by a conductive sensor (article number 6580004) and a capacitive sensor (article number 6580003). When a diaphragm fails, one of the sensors will detect this and will generate a signal. The sensors can be connected to a controller (article number 6580001).



Option BS

### Leak detection (option LS)

The diaphragms can be monitored by the assembly of a capacity sensor (article number 6580003) in the muffler of the pump. When a diaphragm fails, the liquid will enter the air side of the pump and will be blown into the muffler. The sensor will detect the presence of the liquid and generate a signal. The sensor can be connected to a controller (article number 6580001).



Option LS

#### Important note

*This way of diaphragm monitoring cannot prevent liquid being pushed out of the pump via the muffler. To prevent this, the barrier system (option BS) needs to be used.*

### Prepared for pulsation dampener (option PD)

Every AODD pump will have a pulsating flow. To reduce the pulsations a dampener can be used. The Verderair PURE has a complete range of dampeners which can be used with the pumps. (For more details see separate info on the VA PURE Dampeners). To be able to mount a VA PURE dampener on the pump, the center block needs to be turned 180° to have the extra center connection located at the top of the pump. When you are using the option code PD, the pump will be delivered with center connection upwards.



Option PD

*Note: Some of the above options can be combined in one pump. For those different possible combinations, a specific 2-digit code is used. Please check the coding options. If the combination of your choice is not mentioned, please contact your Verderair Pure specialist (can be found on [www.verderair.com](http://www.verderair.com)).*

# We always have a solution for your application!

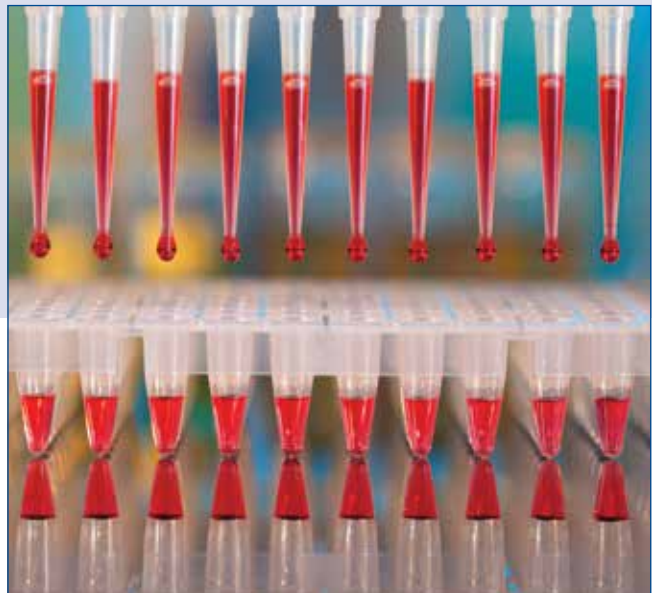
*VERDER has a broad pumping program and will always find a solution for your pumping problem. With our skilled engineers, our well trained technicians and our (after) sales support you will have the best pump for your process.*

*The Verderair series can be used in a diverse range of applications in many industries, detailed below are 6 industry examples.*



## **Chemical industry**

Solvents, bases, acids, alcohols, mixtures, emulsions.



## **Pharmaceutical industry**

Waste chemicals, vegetable extracts, tablet pastes, alcohols, filtering acids.



**Electroplating industry (Galvanics)**

Solvents, etching acids, carrier fluids for ultra sonic washing, polishing compounds.



**Ceramic industry**

Sludge, glaze, paint, waste.



**Paper industry**

Glue, inks.



**Solar power industry**

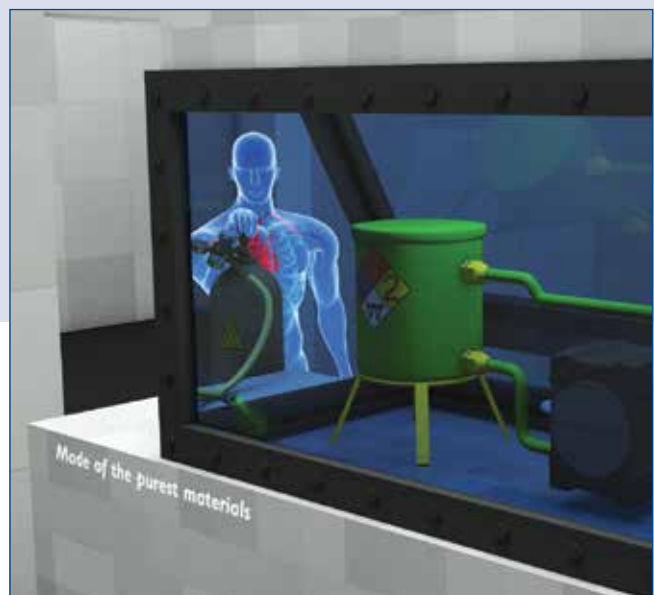
Silicon dioxide slurry, HF, filter press applications, crystalline silicon, polishing, anti-reflective coating.



*A robust series of double diaphragm pumps, produced from one-piece solid and pure PE or PTFE (also conductive). The Verderair PURE is designed for heavy-duty operation, harsh liquids and severe process conditions, such as manufacturing of photovoltaic solar panels. The series has fewer material stress points due to the solid block construction.*



**The most efficient double diaphragm pump**  
Field tests show that the Verderair PURE is 30% more efficient than the competition.



**The ideal pump for transferring all kinds of liquids**

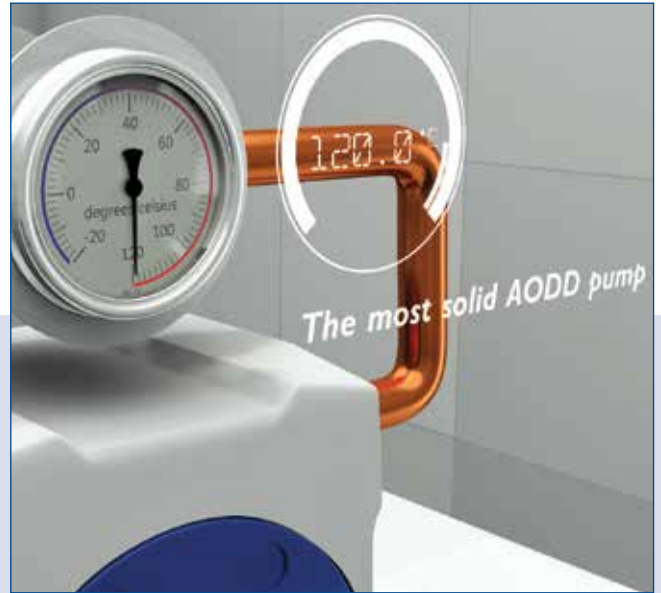
Thanks to its design and the use of the purest materials, the Verderair PURE is capable to transfer the most extreme liquids.





### Operating in extreme environments

Due to the solid design and the use of the purest materials the Verderair PURE is the ideal AODD pump to operate in the most extreme environments.



Optimal operation, pumps liquids up to 120°C.



Optimal operation, pumps liquids as low as -20°C.



### Extreme durability

Due to the construction of the pump and the materials used, the Verderair PURE achieves long duty cycles with no maintenance.



## **Verderair PURE** spare part kits

*The Verderair PURE pump structure design is engineered to create long working life. However, as with all industrial process equipment, the working wear parts will sooner or later need to be replaced. VERDER can advise on the number of spare part kits to keep in stock, based upon the number of pumps you have purchased.*

Verderair offers spare part kits for parts exposed to natural wear. Our fast delivery ensures your production process remains operational. To order spare parts immediately send an email to **[info@verderair.com](mailto:info@verderair.com)**

# 55 years of experience more than 650,000 diaphragm pumps sold



## Verderair certifications

The Verderair air operated diaphragm pumps can be supplied with all the necessary certification to meet your production process!





**Any questions?** For more information, please visit our website [www.verderair.com](http://www.verderair.com) or call on tel.: +32 (0)3 877 1112.

**VERDERAIR**

VA\_broch\_rev02-2017\_UK\_(uk)

**VERDERAIR**  
Kontichsesteenweg 17  
B-2630 Aartselaar  
Belgium

**TEL** +32 3 877 11 12  
**FAX** +32 3 877 05 75  
**MAIL** [info@verderair.com](mailto:info@verderair.com)  
**WEB** [www.verderair.com](http://www.verderair.com)

**AT** Wien **BE** Aartselaar **BG** Sofia **CH** Basel **CN** Shanghai **CZ** Praha  
**DE** Haan **DK** Rødovre **FR** Eragny s/Oise **GB** Castleford **HU** Budapest  
**IN** Pune **NL** Groningen/Vleuten **PL** Katowice **RO** Bucuresti/Sibiu  
**SK** Bratislava **TH** Bangkok **US** Macon (GA) **ZA** Northriding

