

DEPA®



NEW! ENHANCED PORTFOLIO FOR STERILE APPLICATIONS

DEPA® SteriTec™
Air Operated Double Diaphragm Pumps
SteriTec™ - HIGH GRADE OF CLEANLINESS

CRANE



www.depapumps.com
www.cranecpe.com

Features and Benefits

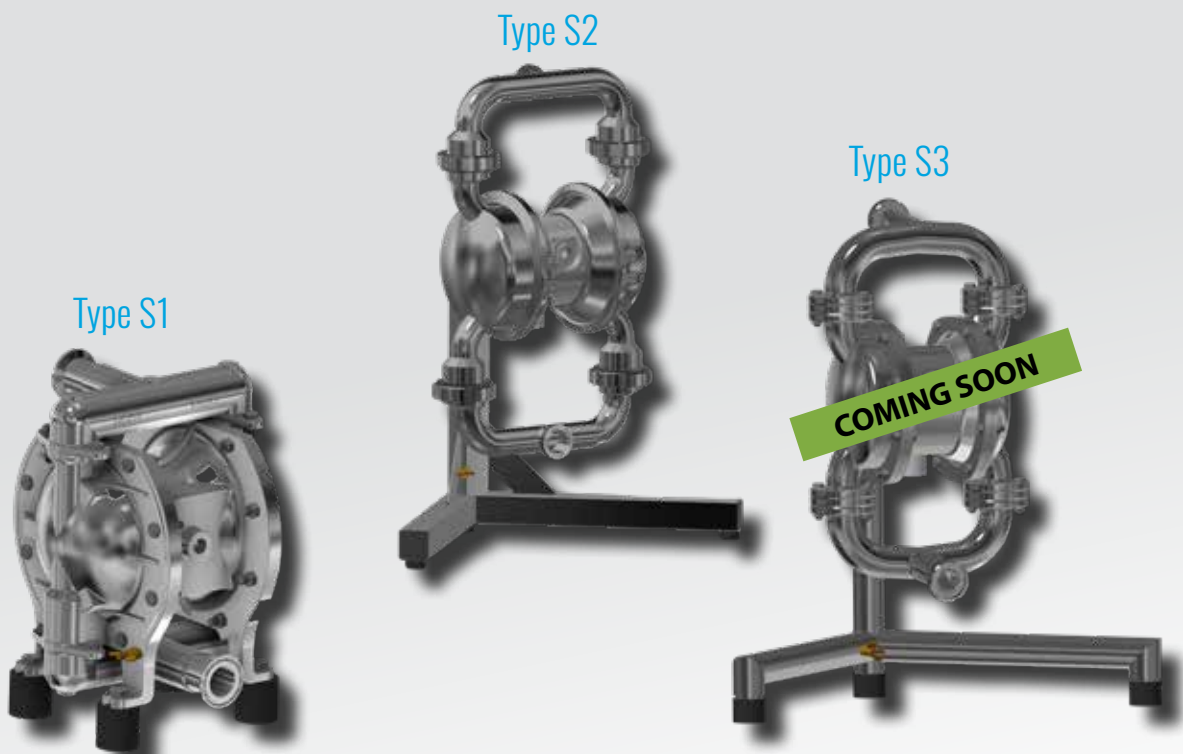
Introducing DEPA[®] SteriTec[™] Series

DEPA[®] SteriTec[™] Air Operated Double Diaphragm Pumps with closed surface diaphragms with outer-rim design meet the highest safety standards for food, beverage and pharmaceutical applications.

The DEPA[®] SteriTec[™] Series is available in 2 types:

- S1 = DEPA[®] SteriTec[™] S1 with single port casted manifold developed for highly efficient operations.
- S2 = DEPA[®] SteriTec[™] S2 with a roughness of 3.2µm for food processing and cleaning fluids that contain acids and alkalis.

The SteriTec[™] S1 and S2, made in stainless steel are equipped with cavity-free one-piece manifolds. All materials are approved by the Food & Drug Administration (FDA) and allow a high grade of cleanliness (CIP and SIP). The pumps distinguish themselves by their rugged construction, as well as their quick and easy dismantling.



Closed Surface Diaphragm

DEPA® SteriTec™ Air Operated Double Diaphragm Pumps serve a wide range of applications. They have been developed to ensure gentle and sterile handling of medium.

The mix of viscosity, temperature, pressure and particle sizes have the most impact on pump sizing and the overall pump configuration.

We would be pleased to support with the right configuration of the pump.

Please contact our headquarters in Düsseldorf, Germany at +49 211 5956-0 or customer-dus@cranecpe.com

Application Examples

Medium	Dynamic viscosity (mPas)
Applesauce	500-3000
Blood plasma	2
Cacao mass	4000
Fruit juice concentrate	3900 - 50300
Glycerin	950
Honey	2000 - 3000
Liquid soap	1000 - 3500
Molasses	5000 - 10000
Resin	1-10000
Tomato paste	130000
Toothpaste	70000



DEPA® SteriTec™ S1

DEPA's solution for food and chemical application meets the highest cleanability requirements due to its electro-polished surface. Its bolted design combined with best-in-class sealing, increases the leak tightness of the diaphragm significantly and reduces maintenance time for reassembly. The pump is equipped with closed surface diaphragms with outer-rim design which increases the cleanliness grade, as well as leak tightness.



Features and Benefits Type S1

- 1 ELECTROPOLISHED SURFACE**
 To meet the high cleanability requirements, the surface of the pump is electropolished cast stainless steel.
- 2 CAVITY-FREE MANIFOLD**
 The pump is equipped with a standard Tri-Clamp ISO connection for easy plug-in.
- 3 BOLTED DESIGN**
 Best-in-class sealing increases the leak tightness of the diaphragm significantly and reduces maintenance time for reassembly.

Sizes

Type	15 (½")	25 (1")	40 (1 ½")	50 (2")	80 (3")
DH-S1 - Cast Stainless Steel/Nickel Plated Aluminium Centerblock	●	●	●	●	●
DH-S1S - Cast Stainless Steel/1.4404/ 316L Centerblock	●	●	●	●	●

Suction Lift – Weight – Solid Size

Size (mm)	15 (½")	25 (1")	40 (1 ½")	50 (2")	80 (3")
Dry suction height (mWs)	4	6	6.9	7.2	7.5
Max. solid size (mm)	5	8	11	13	18
Weight (kg) DH-S1	7	12	20	42	71
Weight (kg) DH-S1S	10	17	24	51	83

Product Details Type S1

Temperature

Temperature Range: -25°C to +130°C

Product wetted interior	Max. Temperature (°C)
DEPA nopped E4, EPDM grey	-25 to +90
DEPA nopped E4, EPDM	-25 to +105
DEPA nopped E4, PTFE Compound	-10 to +130
DEPA nopped E4, NBR	-15 to +90
DEPA nopped E4, NRS	-15 to +70
DEPA nopped E4, FKM	-5 to +120

Applied Guidelines

- ATEX 2014/34/EU compliant
 - S1 and S1S: II 2GD Ex h IIB T6...T4 GbDb and II 2GD Ex h IIC T6...T4 GbDb
 - S1S: I M2 Ex h IIB T6...T4 Mb
- Machinery Directive 2006/42/EC
- EC 1935/2004, EU 10/2011, FDA
- TR CU 010/2011, TR CU 012/2011



Types, Materials & Design

	DH-S1	DH-S1S
Housing Material	Cast stainless steel 1.4404/316L electropolished	Cast stainless steel 1.4404/316L electropolished
Center block/Air chamber	Aluminium, nickel plated	1.4404/ 316L, electropolished
S-/D manifold	1-piece	1-piece
Standard connections	Tri-Clamp ISO	Tri-Clamp ISO
Surface (wetted parts)	Electropolished	Electropolished
Diaphragm design	Closed surface with outer-rim design	Closed surface with outer-rim design

Safety

Increased safety with optimised pump design

Reduced potential leak paths with:

- new bolted design
- new center block
- new Nopped E4 diaphragm

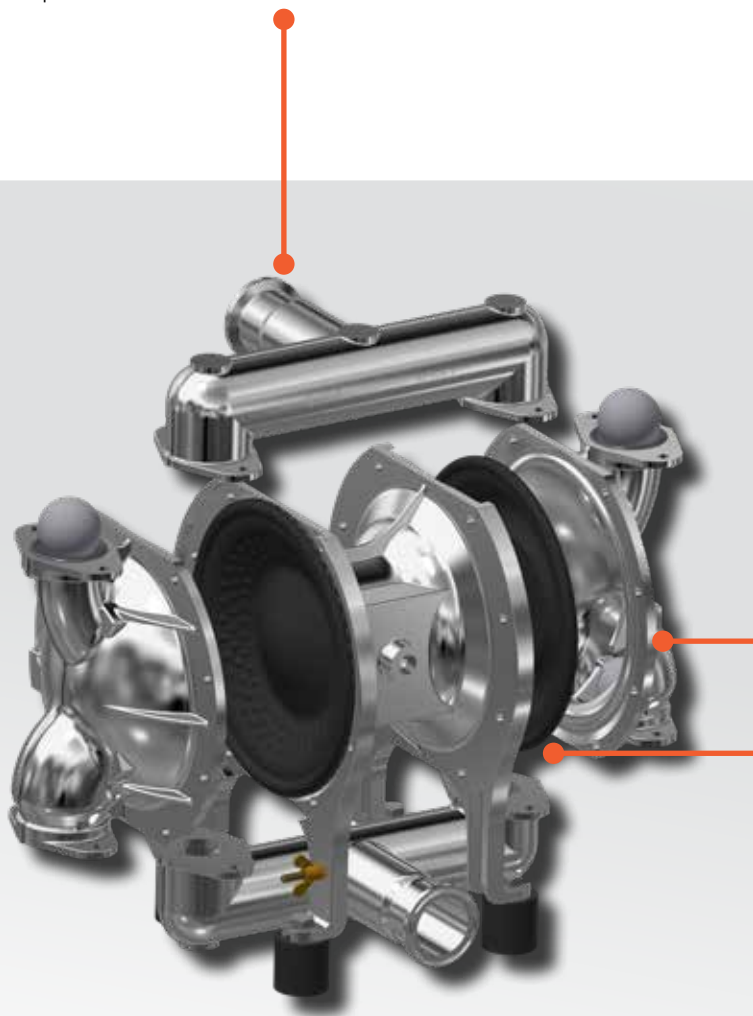
Housing pressure 8.6 bar enables a higher operating pressure and associated flow volume.



Design Features Type S1

The DEPA® SteriTec™ S1 is equipped with a Tri-Clamp connection to meet food and pharma industry standards. The easy cleaning of the cavity-free Tri-Clamp design enables a quick connection to hoses and pipelines without any additional repair tools.

The DEPA® SteriTec™ S1 bolted design is a self-aligning block mounted pump chamber and air chamber fixture. Due to the bolted design, the simple assembly of pump chambers with a defined diaphragm clamping ensures leak tightness without squeezing diaphragm materials.

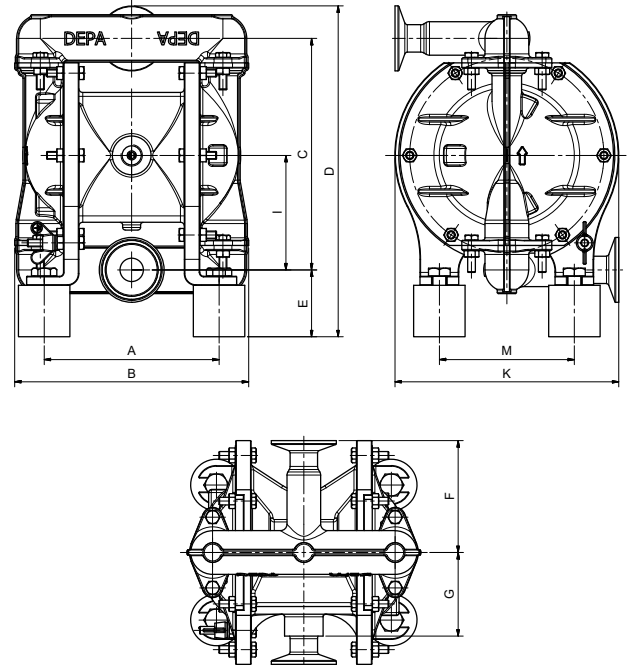


All DEPA® SteriTec™ pumps are equipped with our Closed Surface Diaphragms (CSD). The CSD has an extended life time and eliminates leaks, due to an integrated insert, which eliminates a potential leak path in the pump. The pump maintenance is simplified and requires only hand tightening of the diaphragm. Its modular design ensures all diaphragms are interchangeable with all DEPA® pumps, and its clean surface reduces the build-up of impurities, improves flow and increases energy savings.

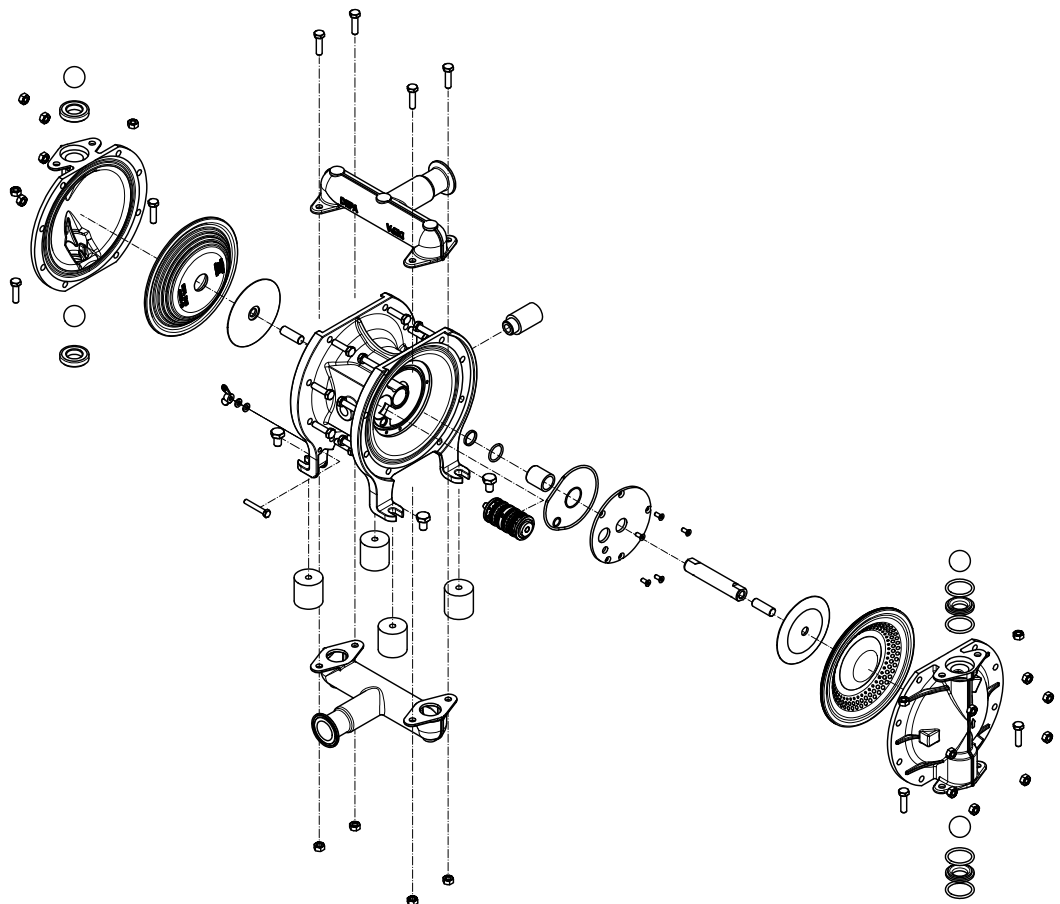
Dimensions Type S1

Dimensions

Dimensions (mm)	Size				
	15 (½")	25 (1")	40 (1 ½")	50 (2")	80 (3")
A	136	165	180	243	296
B	211	276	380	508	629
C	180	241	307	414	522
D	251	326	421	546	686
E	52	61	80	88	105
F	87	116	133	175	216
G	65	78	78	120	120
I	89	122	155	208	262
K	174	234	266	351	434
M	105	130	165	220	280
Air inlet Internal Air Valve (inch)	G 3/8"		G 3/4"		



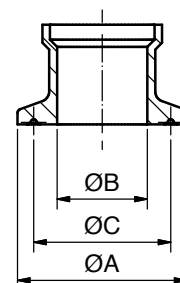
Exploded View



Connection and Pump Coding Type S1

Tri-Clamp Dimensions

Connecting dimensions of Tri-Clamp ISO pipe (mm)	15 (½")		25 (1")	40 (1 ½")	50 (2")	80 (3")
	DIN 32676 ISO	ISO 2852* NW 21,3	ISO	ISO	ISO	ISO
ØA	50,5	34	50,5	64	77,5	106,0
ØB	18,1	18,1	29,7	44,3	56,3	84,3



* Optional available

Coding

DH	25	-	S1-	Z	T	T
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Connecting dimension DN (mm) / inch
15 ½"
25 / 1"
40 / 1 ½"
50 / 2"
80 / 3"

Material	Diaphragm	Valve Seat	Valve Ball
EPDM grey	3	G	G
EPDM grey with core	-	-	X
PTFE	Z	T	T
PTFE core	-	-	Z
Stainless Steel	-	R	R

*other diaphragm materials on request

	Material
S1-	Housing Material: Cast Stainless Steel 1.4404/ 316L electropolished Center Block: Aluminium, nickel plated
S1S	Housing Material: Cast Stainless Steel 1.4404/ 316L electropolished Center Block: 1.4404/ 316L electropolished

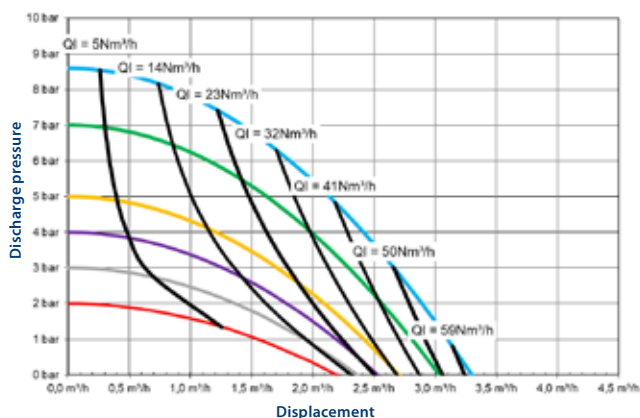


Performance Curves Type S1

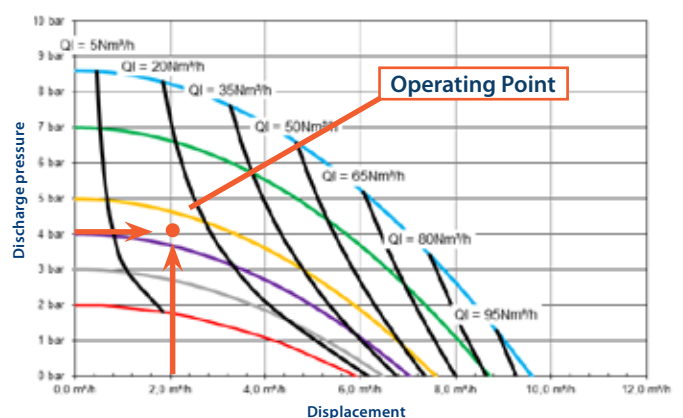
Example for pump selection

A flow rate of 2m³/h at a discharge pressure of 4 bar is required. The DH 25 is recommended for this application. The needed air supply pressure is 4.3 bar, which equals an air consumption rate of 17 Nm³/h.

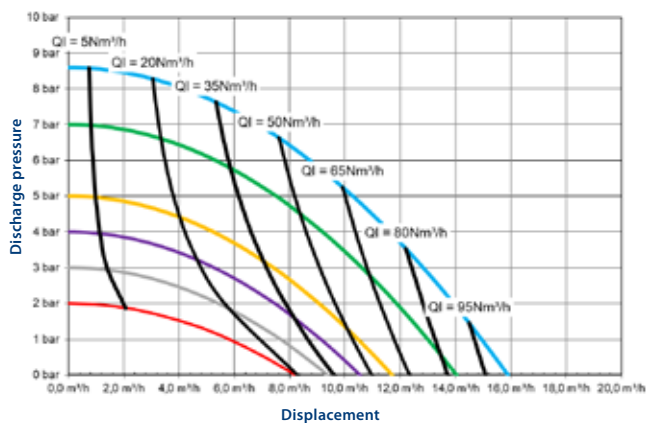
DH15-S1



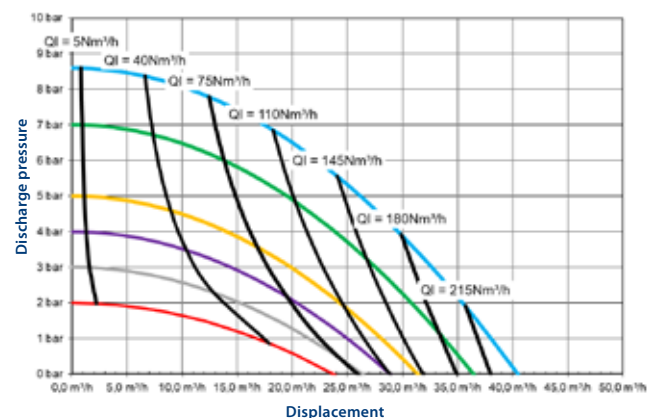
DH25-S1



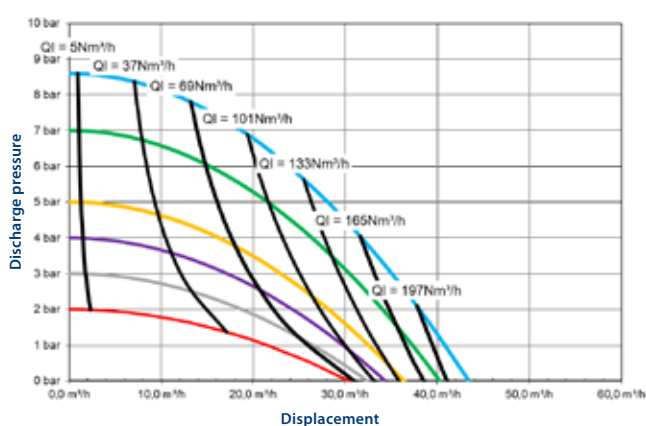
DH40-S1



DH50-S1



DH80-S1



DEPA® SteriTec™ S2

DEPA's solution for food, beverage and chemical applications with a roughness of 3.2 µm meets the highest safety standards in the competitor landscape. The FDA-approved stainless steel pump is made for hygienic applications to secure the reliability of your production process. A Flap Valve is optional available to handle large solids for an optimum gentle treated fluid guidance. To significantly increase the grade of cleanliness and leak tightness, the pump is equipped with closed surface diaphragms with outer-rim design. The unique V-frame for quick and easy dismantling reduces downtime and allows the pump to be easily and completely drained.



Features and Benefits Type S2

- 1 POLISHED STAINLESS STEEL SURFACE**
Roughness of 3.2µm made for hygienic applications to secure reliability of production processes.
- 2 CONNECTIONS**
Standard connection according to DIN 11851 or optionally SMS (Swedish Manufacturing Standard) for high demanding applications.
- 3 ROTATABLE V-FRAME DESIGN**
Unique V-frame for quick and easy dismantling reduces downtime and allows the pump to be easily and completely drained.
- 4 FLAP VALVE**
A Flap Valve is optional available to handle large solids for an optimum gentle treated fluid guidance.

Sizes

Type	15 (½")	25 (1")	40 (1 ½")	50 (2")	80 (3")
DL-S2	-	●	●	●	●

Suction Lift – Weight – Solid Size

Size (mm)	15	25	40	50	80
Dry suction height (mWs) - Ball Valve	-	4	4	4	4
Max. solid size (mm) - Ball Valve	-	10	16	18	25
Dry suction height (mWs) - Flap Valve	-	1,5	1,5	1,5	1,5
Max. solid size (mm) - Flap Valve	-	18	22	30	40
Weight (kg)	-	21	30	57	94

Product Details Type S2

Temperature

Temperature Range: -25°C to +130°C

Product wetted interior	Max. Temperature (°C)
DEPA nopped E4, EPDM grey	-25 to +90
DEPA nopped E4, EPDM	-25 to +105
DEPA nopped E4, PTFE Compound	-10 to +130
DEPA nopped E4, NBR	-15 to +90
DEPA nopped E4, NRS	-15 to +70
DEPA nopped E4, FKM	-5 to +120

Applied Guidelines

- ATEX 2014/34/EU compliant
 - II 2GD Ex h IIB T6...T4 GbDb
 - II 2 GD Ex IIC T6...T4 GbDb
- Machinery Directive 2006/42/EC
- EC 1935/2004, EU 10/2011, FDA
- TR CU 010/2011



Materials, Connections & Air Valve Technology

Type S2	
Housing material	Stainless steel 1.4404 / 316L
Design (wetted parts)	Forged & welded
Surface (wetted parts)	Polished 3.2µm
Centerblock	304 / 1.4301
Air chamber	316L / 1.4404 polished
Diaphragm fixture	Clamp band
S-/D manifold	1-piece
Connections	Standard: DIN 11851 Optional: SMS
Valve system	Standard: Valve ball Optional: Flap valve
Air Valve sytem	Internal & external

Flap Valve

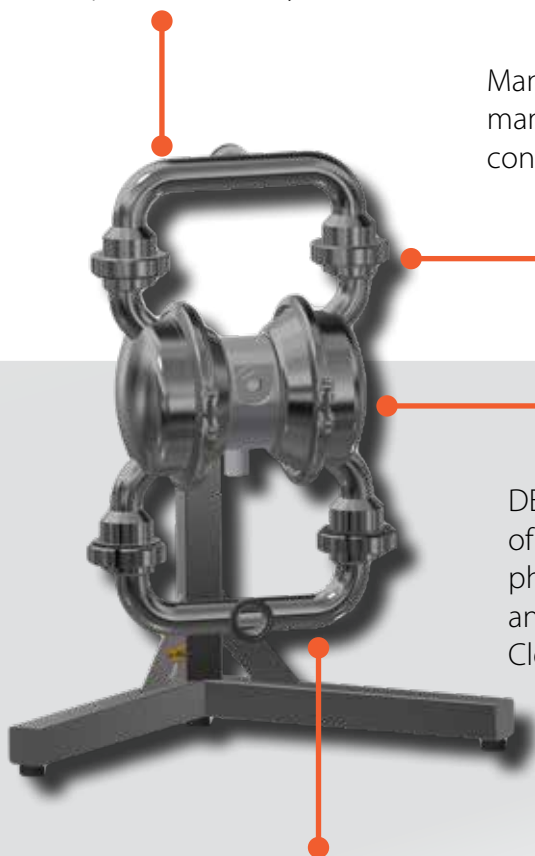
For the handling of larger solids, the pump could be equipped with Flap Valves, which allows the following particle sizes:

- Size 25: max. 18 mm
- Size 40: max. 22 mm
- Size 50: max. 30 mm
- Size 80: max. 40 mm



Design Features Type S2

The DEPA® SteriTec™ S2 is equipped with a DIN 11851 connection to meet the hygienic standard in the European food and pharma industry.



Manifolds can be turned into preferred position. Flexible manifold orientation enables good accessibility for pipeline connection and draining.

DEPA® SteriTec™ S2 has a polished surface with a roughness of 3.2µm to ensure a high hygienic standard in food or pharmaceutical processes, which prevents product build-up and can be cleaned very efficiently and residue-free either via Clean in Place or Clean out of Place.

The rotatable pump body mounted on a stainless steel V-frame can be easily and quickly drained of remaining fluids. This also allows for easy pump maintenance.

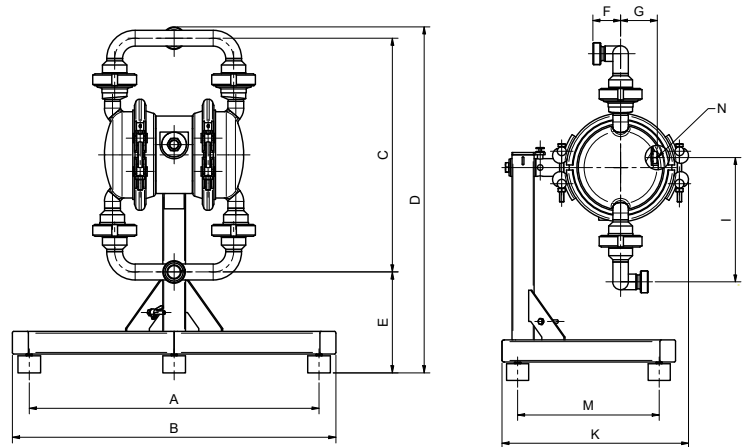
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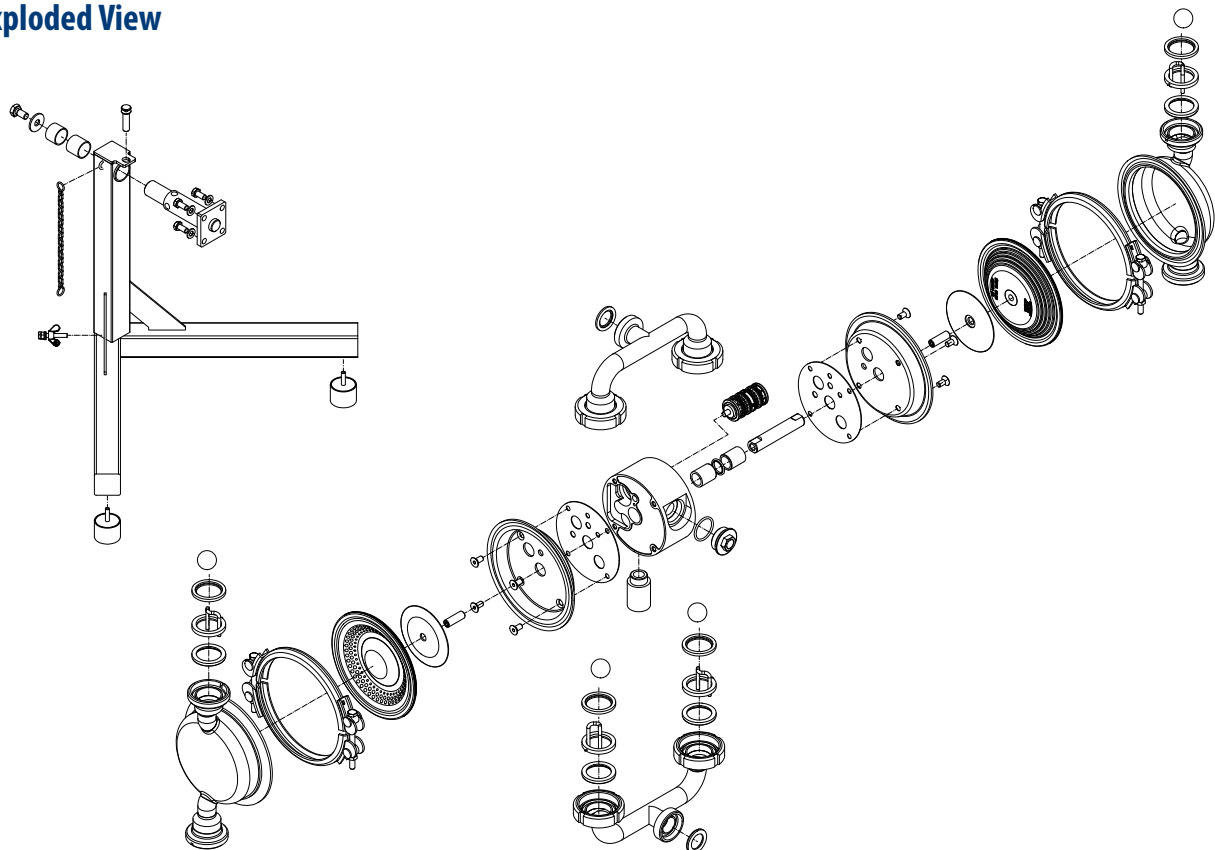
Dimensions Type S2

Dimensions

Dimensions (mm)	Size			
	25	40	50	80
A	512	512	762	762
B	571	571	834	834
C	413	575	714	854
D	618	705	974	1063
E	179	98	221	152
F	50	55	57	100
G	67	67	123	123
I	225	306	384	453
K	337	363	495	540
M	265	265	381	381
N (air inlet)	G 3/8"	G 3/8"	G 3/4"	G 3/4"



Exploded View



Pump Coding

Coding

DL	25	-	S2-	Z	-	T	-	-	-	N
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Connecting dimension DN mm (inch)
25 1"
40 1 1/2"
50 2"
80 3"

Material	Diaphragm	Valve Ball
EPDM grey	3	G
EPDM grey with core	-	X
PTFE	Z	T
PTFE core	-	Z
Stainless Steel	-	R

Connections	
	DIN 11851 (Standard)
---N	SMS

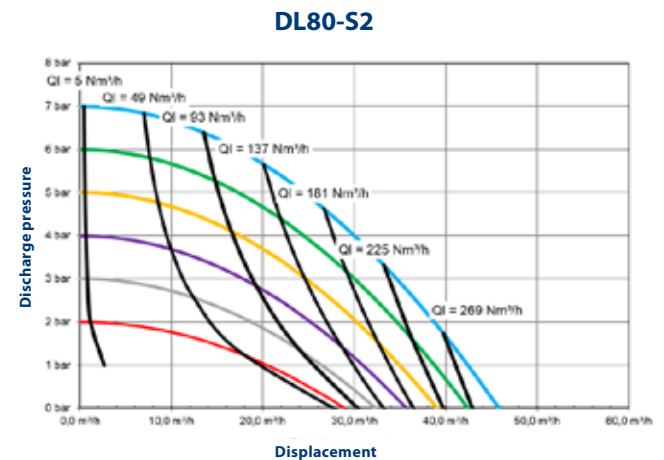
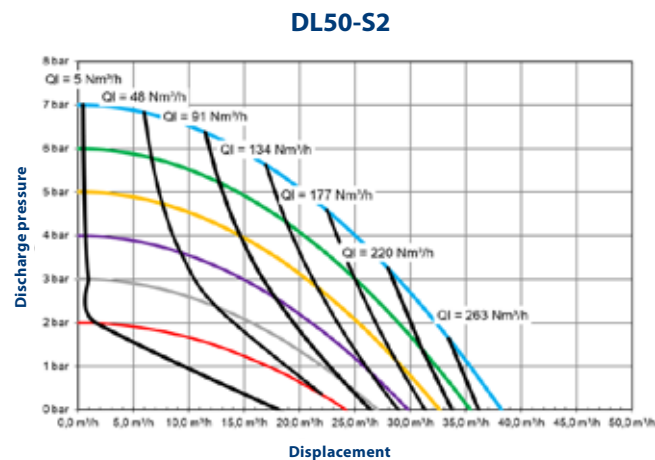
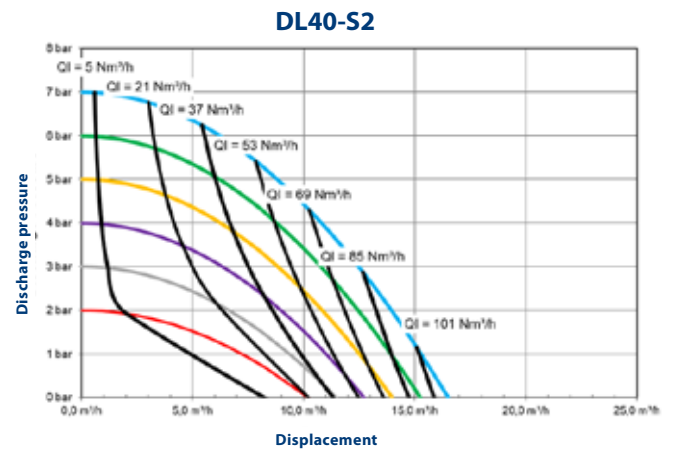
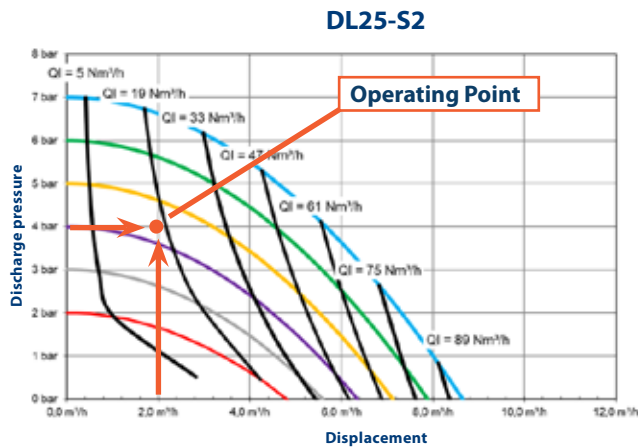
	Material
S2-	Stainless Steel 1.4404/ 316L



Performance Curves Type S2

Example for pump selection

A flow rate of 2m³/h at a discharge pressure of 4 bar is required. The DH 25 is recommended for this application. The needed air supply pressure is 4.3 bar, which equals an air consumption rate of 17 Nm³/h.





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