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Technical Datasheet
DEPA DH® Next Generation Cast Stainless Steel Air Operated Double Diaphragm Pumps

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Features and Benefits

DEPA® Next Generation Cast Stainless Steel Air Operated Double Diaphragm Pumps are made of stainless steel developed for highly efficient operations within industrial and chemical applications.

Key Features

❶ **Optimized pump design** improves efficiency by up to 57% and increases flow rate by up to 10%*

❷ **Free-standing design** with reduced number of parts and bolted design allowing for improved service friendliness (maintenance-in-place)

❸ **Flexiport design** enables on-site adjustments to the port orientation and enhanced application opportunities with a pressure of up to 8.6 bar

**according to internal testing and compared to the old DL design.*

Sizes

DEPA® Next Generation Cast Stainless Steel Pumps are available in the fluid connection sizes of ½" (DH15), 1" (DH25), 1 ½" (DH40), 2" (DH50), and 3" (DH80). Equipped with DEPA® AirSave System (available up to size 40) or internal air-valve.

Type	15 (½")	25 (1")	40 (1½")	50 (2")	80 (3")
DHxx-SA	●	●	●	●	●
DHxx-SS	●	●	●	●	●

	Size				
	15	25	40	50	80
Suction height (m), dry [1]	4.0	6.0	6.9	7.2	7.5
Suction height (m), wet	9.5	9.5	9.5	9.5	9.5
Max. solid size (mm)	5	8	11	13	18
Weight (kg) DHxx-SA	7	12	20	42	73
Weight (kg) DHxx-SS	9.5	17	24	51	85
Min. start-up pressure (bar) [3]	0.5 [2]	0.5 [2]	0.5 [2]	1.5	1.5

1) For valve seat/valve ball combination of PTFE or stainless steel the suction height will be reduced
2) AirSave System (M-valve)
3) Start-up pressure will be increased in combination with PTFE or E4 diaphragms

Applications

The cast stainless steel housing material with universally selectable interior allows versatile application options.

- Paint & Varnish
- Galvanic & Coating
- Mining & Building
- Marine
- System Integrators

Temperature

The minimum and maximum operating temperatures of stainless steel are defined by the product wetted interior parts.

Product wetted interior	Temperature Range (°C)
NBR	-15 to +90
EPDM	-25 to +105
NRS	-15 to +70
FKM	-5 to +120
DEPA nopped S4®	-20 to +110
PTFE	-20 to +100
DEPA nopped E4® (composite closed surface PTFE diaphragms)	-10 to +130

Marking and Identification

The pumps are provided with a nameplate containing the pump code, serial number, date of manufacture and max. allowed temperature and pressure.

The DEPA® pump code provides all information about size, material and equipment, enabling accurate linkage to spare parts.

Materials & Characteristics

DHxx-SA/SS	
Wetted Housing Material	Cast Stainless Steel -316L
Center Block	Aluminium (DHxx-SA) Cast Stainless Steel - 316L (DHxx-SS)
Design	Bolted
Surface	Painted
Air chamber	Integrated in center block
Bolts	Stainless Steel (VA A2)

The manifolds are provided with plugs, which enable different port orientation on the customer premises.

Applied Guidelines

- Machinery Directive 2006/42/EC
- Eurasian Conformity
- The pump is ATEX compliant in accordance with directive 2014/34/EU

Device Group	Device Category	Explosive Atmosphere		Explosion Group*		
		G	D	IIA	IIB	IIC
I	M1	-	-	-	-	-
	M2	●	-	-	-	-
II	1	●**	-	●	●	●***
	2	●	●	●	●	●****

● available - not available

** only in combination with ATEX certified pump. The fluid temperature prescribes the temperature class.*
*** only applicable for DHxx-SS pumps*
**** only applicable for DHxx-SS pumps with conforming diaphragm*
***** only applicable for DHxx-SA pumps with conforming diaphragm*

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Pump Sizes and Equipment

DH	25	-	SA	-	S	E	T

Connecting Dimension DH (mm) / inch
15 / ½“
25 / 1“
40 / 1 ½“
50 / 2“
80 / 3“

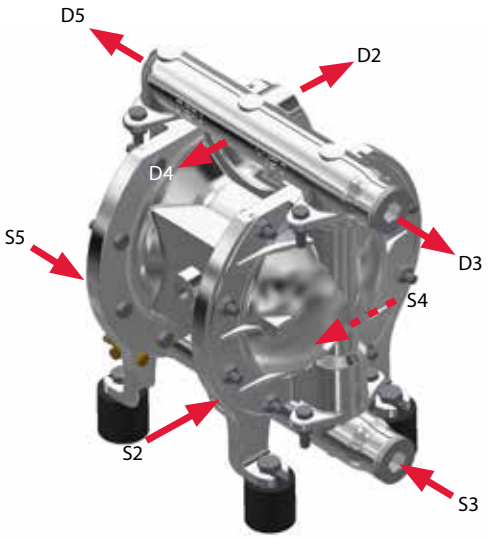
	Wetted Parts	Center Block
SA	Cast Stainless Steel	Aluminium
SS	Cast Stainless Steel	Cast Stainless Steel

Material Options			
Material	Diaphragm	Valve Seat	Valve Ball
NBR	N	N	N[1)]
EPDM	E	E	E[1)]
NRS	B	B	B[1)]
FKM	F	F	-
DEPA nopped S[4®]	S	-	-
PTFE	T	T	T
DEPA nopped E[4®]	Z	-	-
Stainless Steel	-	R	R
NBR with core	-	-	Y[1)]
NRS with core	-	-	V[1)]

1) Not for size 15 *(Further material options are available upon request)*

Product Ports / Orientation of Flexiport Manifolds					
		Discharge Port			
		D2	D3	D4	D5
		(outlet at opposite side of air inlet)	outlet right hand side / view to air inlet)	(outlet at same side as air inlet)	(outlet left hand side / view to air inlet)
Suction Port	S2 (inlet aligned with air inlet)	-	E	Q[1)]	R
	S3 (inlet right hand side / view to air inlet)	G	H	T[1)]	U
	S4 (inlet at opposite side of air inlet)	J	K	W[1)]	X
	S5 (inlet left hand side / view to air inlet)	M	N	Y[1)]	Z

1) Not valid for DH15/DH25 with AirSave System

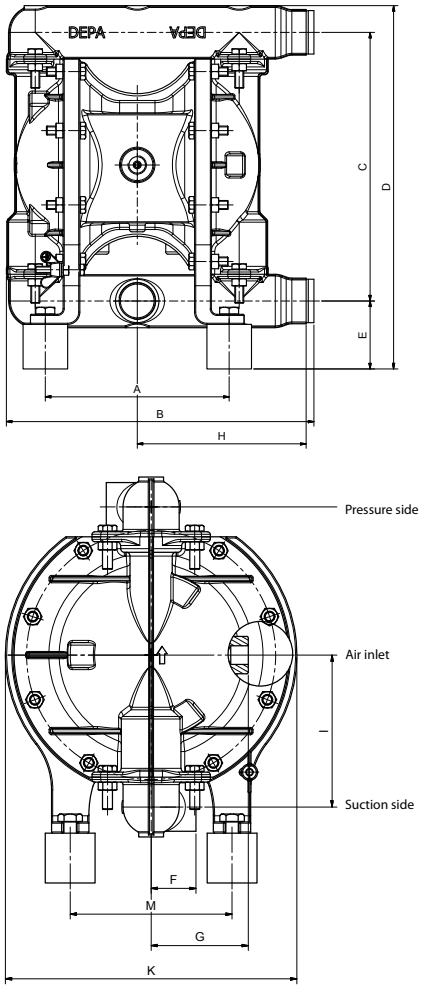


D = Discharge Side
S = Suction Side

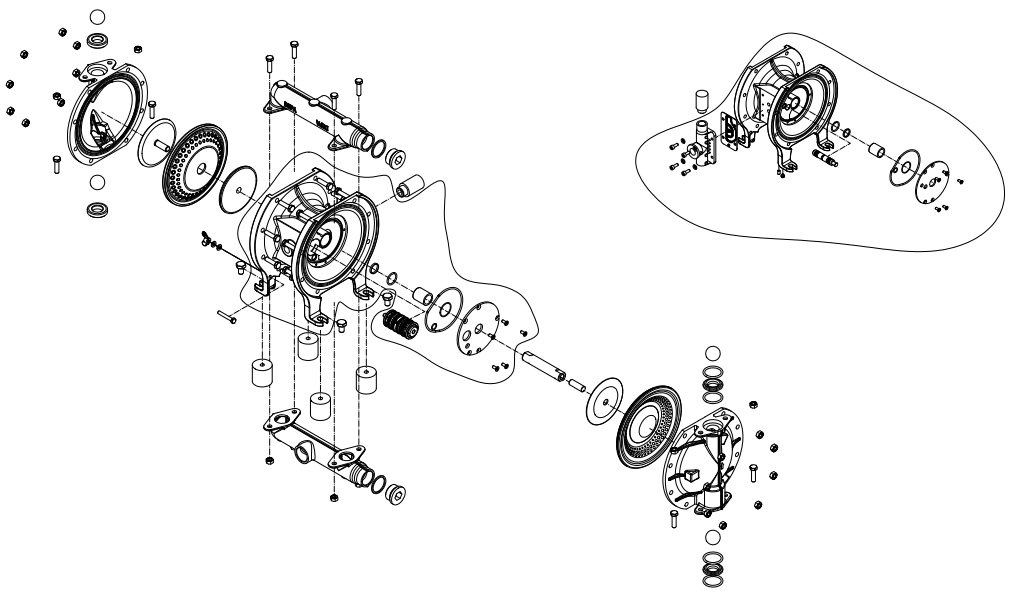
Dimensions Flexiport

Dimensions (mm)	Size				
	15	25	40	50	80
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	32	36	48	68	88
G	65	78	78	120	120
H	114	152	204	273	338
I	89	122	155	208	262
K	174 (186)[1)]	234	266	351	434
M	105	130	165	220	280
Air inlet Internal Air Valve (inch)	G 3/8"			G 3/4"	
Air inlet AirSave Sytem (M-Valve) (inch)	G 1/2"			-	

1) External DEPA® AirSave System



Exploded view



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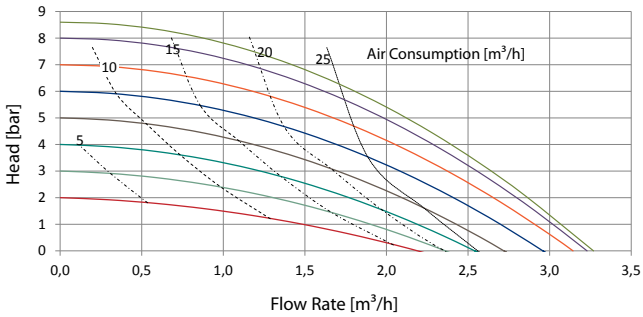
Performance Curves

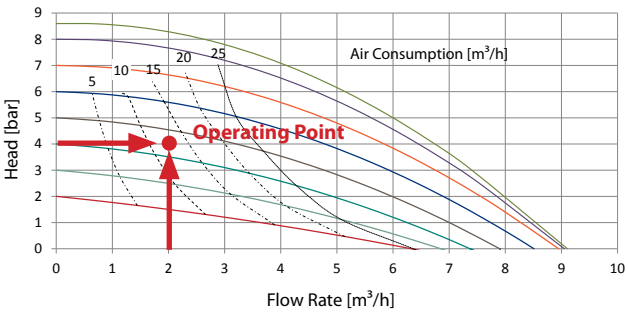
Example for pump selection

Required is 2 m^3/h as the flow rate at a discharge pressure of 4 bar. Recommend is the DH25 for this application. The needed air supply pressure is 4.3 bar. This equals an air consumption rate of 13 m^3/h (between QI = 10 m^3/h and QI = 20 m^3/h).

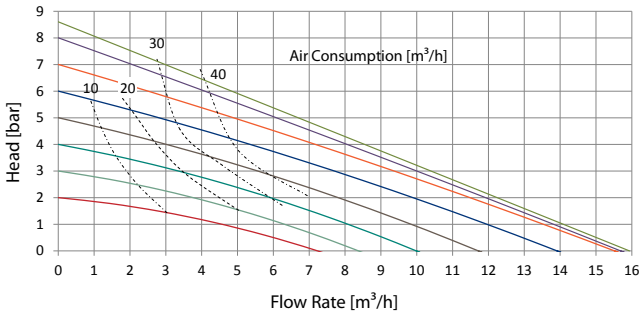
DH15-SA/SS



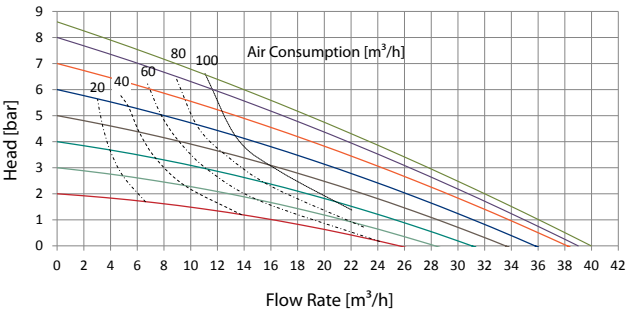
DH25-SA/SS



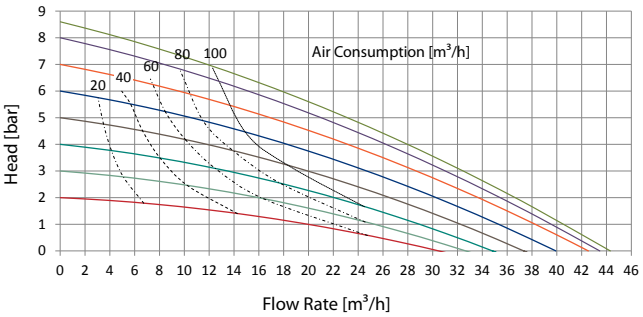
DH40-SA/SS



DH50-SA/SS



DH80-SA/SS



Curves are based on internal Air Valve.

Accessories and Options

Active Pulsation Dampers

Active pulsation dampers are particularly suitable for intermittent operating conditions and, due to their integrated control, they automatically adjust to provide an optimal degree of damping. A separate air supply is required. As with the air-operated double diaphragm pumps, a principle guiding the development of pulsation dampners is the modular use of common components.

Stroke Counter

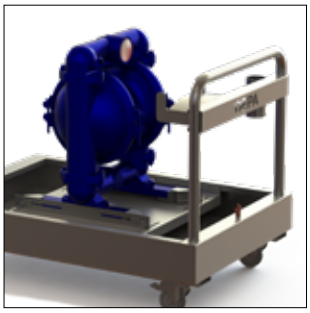
The stroke counter sensor counts each cycle of the diaphragm movement. Multiplying the number of cycles with the pump chamber volumes, the discharge flow rate can be determined. For dosing applications, the stroke counter provides for precise measurement and accurate regulation. The stroke counter sensor is located within the center block and provides an electrical output each time the diaphragm is in the end position.

Diaphragm Leakage Monitoring System

In case of diaphragm failure occurs, the pumped fluid enters the air chamber and triggers the sensor. The sensor sends subsequently an electrical output to the monitoring device for evaluation of the signal. The control unit switches of the air supply to the air valve, and thus halting the operation of the pump.

Valve Ball Lifter

Innovative design enables in-place drainage for residue-free operation in critical applications such as paint & varnish, storage tanks and filling machines. A dual-rotating pin ensures flawless operation in both clockwise and counter-clockwise direction, eliminating the challenges associated with sticking caused by media remaining in the pump housing. The design in combination with 316L stainless steel delivers superior resistance to corrosive chemicals such as alkalis, acids and solvents.



Mobile Transport Unit with Catch Basin

The bottom of the Transport Unit is designed as a catch basin to transport pumps of varying sizes together with hoses and a suction lance. Applications are industrial environments, in which a flexible fluid handling solution is needed, or in which a stationary operation of the DEPA® pump is economically or technically not feasible.

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