

APPLICATIONS

FOOD, PROCESSING,
BEVERAGE, BIOTECH
AND PHARMACEUTICAL



CHEMICAL AND
PETROCHEMICAL



PAINTS, RESINS
INKS AND COATINGS



OIL, GAS AND
AUTOMOTIVE



SURFACE
TREATMENT



CERAMIC
SLIP/GLAZE



SEWAGE
TREATMENT



DRY POWDER
HANDLING



MINING AND
CONSTRUCTION



PAPER
INDUSTRY



PUMP FEATURES

- ▶ Compact, solid design - minimum space required
- ▶ Excellent for abrasive and shear-sensitive materials - low internal velocities mean abrasive liquids do not damage the pump and low shear for fragile applications like chemicals
- ▶ Can be used to pump water, viscous liquids with solids and even powders
- ▶ Sealless - no seals or packing to leak
- ▶ Safe in hazardous areas - air driven and non-sparking
- ▶ Can run dry without damage
- ▶ Self-priming to over 8 meters
- ▶ Variable flow - simply regulate the inlet air supply to adjust from zero to maximum flow
- ▶ Pump virtually stalls if discharge is closed and restarts when discharge is opened (no heat build-up or wear)
- ▶ Expensive systems for pressure relief are not required
- ▶ Composite, long life diaphragms (no discs) are smooth and not interrupted by seals
- ▶ Operates without lubrication
- ▶ Fully groundable
- ▶ Easy maintenance
- ▶ Internationally recognised certification



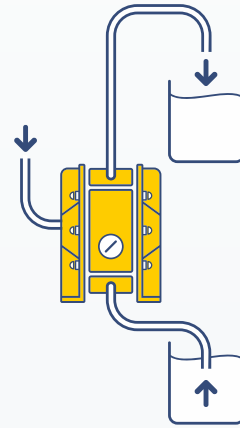
Management
System
ISO 9001:2008

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HOW TO INSTALL DELLMECO PUMPS

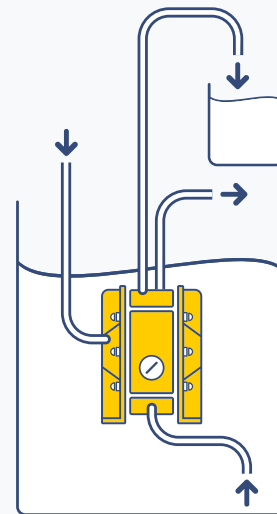
SELF-PRIMING APPLICATION

The suction lift range is up to 8 meters. This will vary according to construction materials and application parameters. All data are based upon pumping water at 20°C.



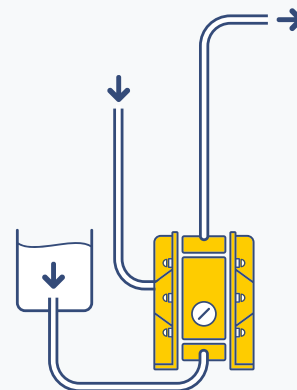
SUBMERGED OPERATION

Our pumps can operate under full submersion. The construction materials must be suitable for the surrounding liquid and the outlet must be positioned above the liquid level.



POSITIVE SUCTION HEAD

As a method for completely emptying holding tanks, clarifiers or similar containers. Optimum inlet pressure should be kept at 0.2-0.3 bar.



PUMP CODE

e.g. DM 15/55 PTS-DM1

<p>DM - Dellmeco Pump 15 - Port dimension, DN 55 - Max capacity l/min at 8 bar</p>	<p>DM 1 - Optional equipment</p> <p>BC1 - Barrier Chamber with sensors (Namura) Bc2 - Barrier Chamber as BC1 with controllers BC3 - Barrier Chamber as Bc2 + ATEX DM1 - Diaphragm Monitoring, Namur – ATEX DM2 - Diaphragm Monitoring with controller F1 - Flange Connection PN 10 with EPDM O-ring F2 - Flange Connection PN 10 with NBR O-ring F3 - Flange Connection PN 10 with FEP/FPM O-ring F4 - Flange Connection JIS B2220 F7 - Flange Connection DIN 2576 PN10 F8 - Flange Connection ANSI 150 RF-SO F9 - Flange Connection PN10/16 DIN 2277/2278 NPT - NPT Thread Connection SC1 - Stroke sensor, ATEX SC2 - SC1 plus stroke counter SC3 - SC1 plus stroke counter - ATEX SC5 - Stroke counting pneumatical with pressure transmitter SC6 - SC5 plus stroke counter BF1 - Back flushing system, hand operated, EPDM seals BF2 - Back flushing system, hand operated, PTFE seals BF3 - Back flushing system, hand operated, FPM seals BF4 - Back flushing system, pneumatical, EPDM seals BF5 - Back flushing system, pneumatical, PTFE seals AF1, AF2 - Air filter, regulator, valve, nipple, connector D - Drum pump HJ - Heating/Cooling Jacket HP - High Pressure MV - pump with solenoid valve P - Powder pump Ra - Additional polishing to Ra= 0,5 µm (Hygienic series only) S - Sleeve with split connections T - Trolley CLEAN - Class 100 Clean-Room assembly for special pump applications (to meet added purity requirements)</p>
<p>P - Housing material:</p> <p>A - Aluminium B - Aluminium coated with PTFE C - Cast Iron H - AISI 316L Hygienic P - PE (Polyethylene) R - PE conductive S - AISI 316 Industrial T - PTFE (Polytetrafluoroethylene) Z - PTFE conductive</p>	
<p>T - Diaphragm material (all conductive):</p> <p>E - EPDM F - TFM/PFA N - NBR T - TFM/PTFE</p>	
<p>S - Material and type of valve:</p> <p>C - Ceramic, ball valve E - EPDM, ball valve F - PTFE, cylinder valve N - NBR, ball valve P - PE, cylinder valve S - AISI 316, ball valve T - PTFE, ball valve U - Polyurethane, ball valve</p>	

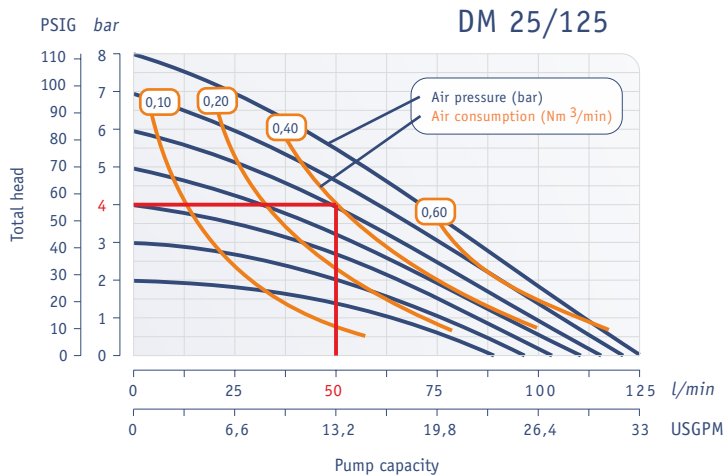
MATERIALS PROFILE

DIAPHRAGMS	OPERATING TEMPERATURES MIN MAX	WETTED PARTS
<p>NBR General purpose, shows good solvent, oil, water, and hydraulic fluid resistance. Should not be used with highly polar solvents like acetone and ketone (MEK), ozone, chlorinated hydrocarbons or nitro-hydrocarbons</p>	-30°C +90°C	<p>PE (polyethylene) is very tough and resistant to wear, its water absorption capacity is low and it displays good general resistance to chemicals. Only such strong oxidants such as nitric acid, oleum and halogens can damage PE.</p>
<p>EPDM Shows very good water and chemical resistance. However, poor resistance to oil and solvents and medium resistance to ketones and alcohols.</p>	-40°C +120°C	<p>PE competes with PP (polypropylene) and both are used in manufacturing pumps. They are thermally and chemically similar. However, the mechanical properties are different. Trials show that the abrasive resistance of PE is 7 times higher than that of PP and even 1.6 times higher than that of steel. It is also more resistant than, for example, cast iron or aluminum. This high resistance to abrasion plays a vital role in many applications (e.g. pickling baths in the electroplating industry, printing inks, lime slurry for wet desulphurisation, ceramics and glazing).</p>
<p>Virgin PTFE. Chemically inert, virtually impervious. Very few chemicals are known to react with PTFE e.g. molten alkali metals, gaseous fluorine and some fluoro-chemicals readily liberate free fluorine at elevated temperatures.</p>	-37°C +120°C	<p>PTFE (polytetrafluoroethylene) is a thermoplastic polymer. It has a smooth surface, very low friction coefficient and can be used over a wide range of temperatures. It also displays virtually universal resistance to chemicals. However, pure PTFE has a low resistance to abrasives and tends to 'cold-flow'.</p>

The temperature ranges given above are the limits for which these materials can be safely used. Both temperature and working pressure affects the longevity of AODD components. 'Preventive maintenance planning' (PMP) will increase the working lifespan at the extreme limits.

HOW TO SELECT THE PUMP SIZE

- 1) Enter Flow (l/min) and Head
(example: 50 l/min at 4bar)
- 2) Read off the approximate energy requirements in Volume and Pressure
(example: 0.40 Nm³/min at 6bar)

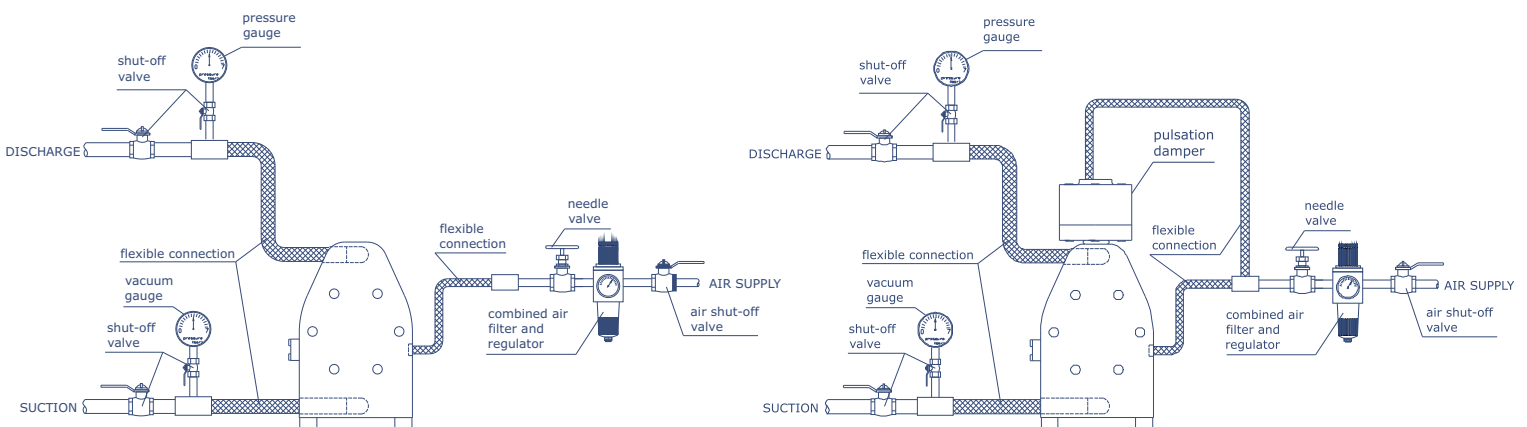


1" Pump - Performance Curve
Performance based on water at 20°C

RECOMMENDED INSTALLATION GUIDELINES

To reduce piping and pump connection stresses, we recommend flexible connections on both the inlet and outlet pipes and air inlet connections.

For best results DELLMECO recommends installing the pulsation dampener on the discharge side of the pump.



More detailed installation information is available upon request by our DELLMECO Technical Team

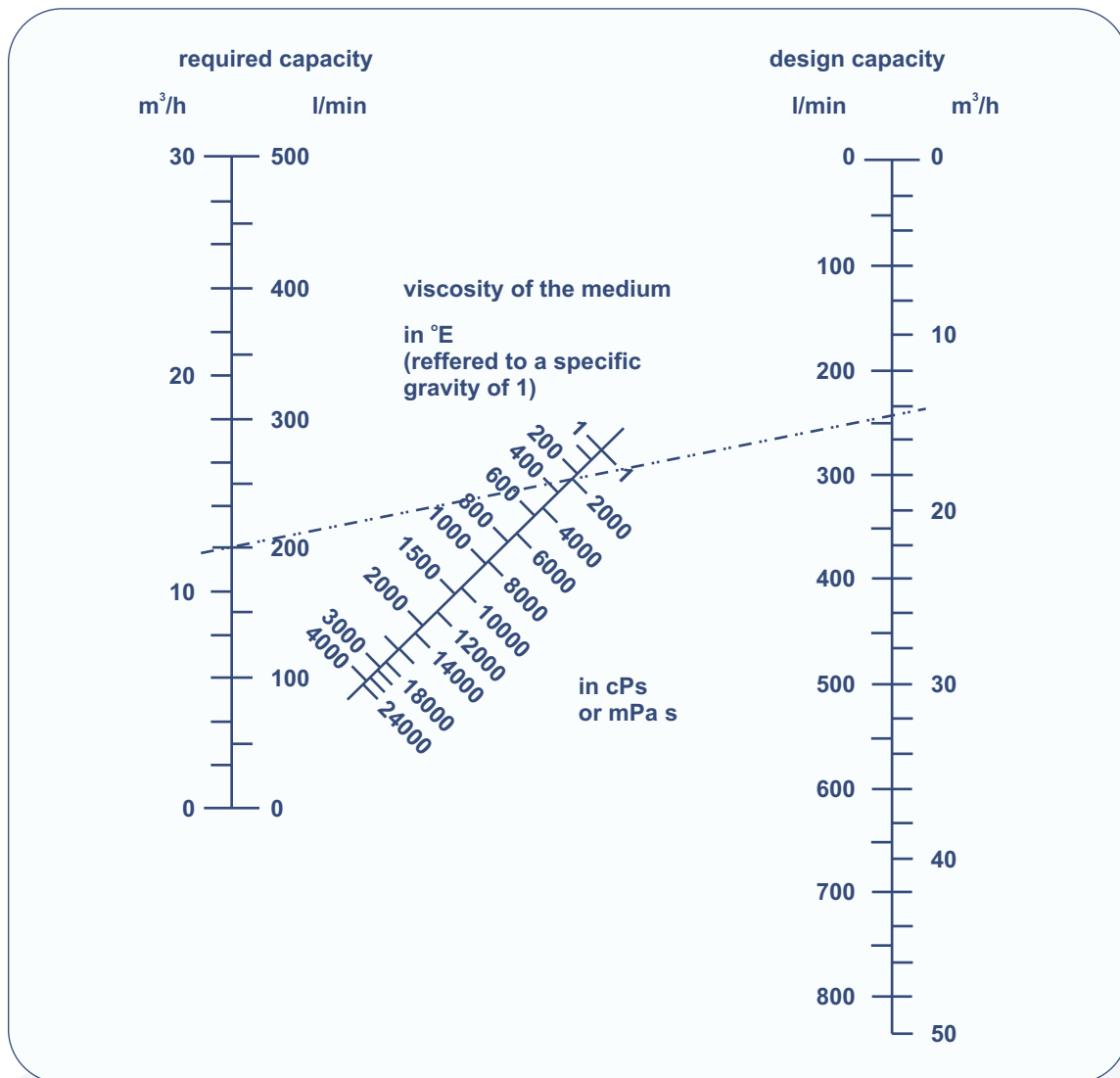
REDUCTION OF FLOW RATE

The viscosity of the media affects pump capacity.

The capacities specified in the pump performance charts generally refer to water (1cPs).

The volume must be reduced accordingly when pumping media with higher viscosities. The design capacity can be read directly from the graph below and the corresponding pump size selected.

The example shown here is based upon a required capacity of 200 l/min with a product viscosity of 2000 cPs. The dotted line intersects the design capacity at 248 l/min.



HIGH PRESSURE PUMPS (I)

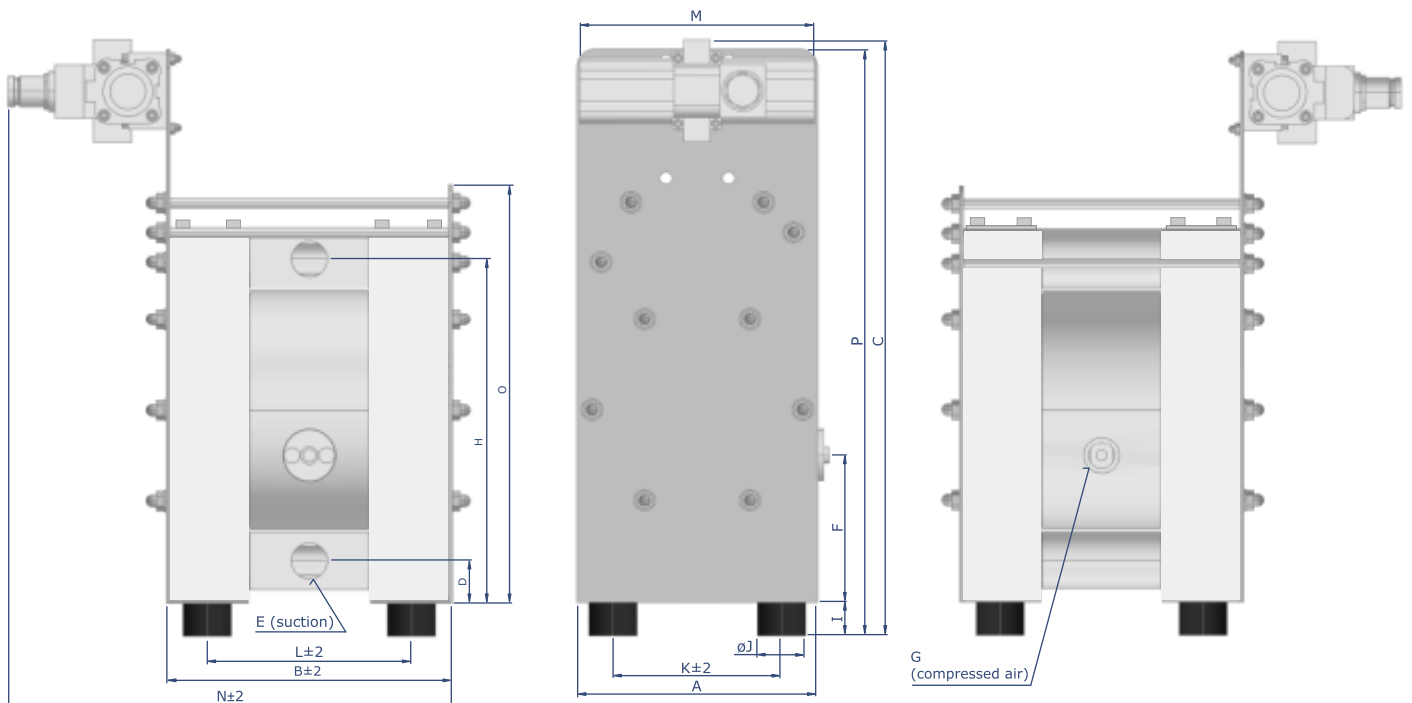


The high pressure (HP) option is a compact booster that can be directly mounted to the pump. It is capable of doubling the delivery pressure and, for example, with an available air pressure of 7bar the delivery pressure can be up to 14bar.

The design is based upon the standard DELLMECO pump made from machined polyethylene (PE). A pressure regulator is already incorporated with the unit for easy adjustment.

Applications include filter presses and slurry drying especially in the food and beverage industry as well as for water and wastewater management.

DIMENSIONS - PLASTIC PUMPS



DIMENSIONS	A	B	C	D	E	F	G	H	I	∅J	K	L	M	N	O	P
DM 15/55	153	183	335	25	G 1/2"	87	R 1/4"	217	18	30	112	136	195	321	253	333
DM 25/125	200	238	469	35	G 1"	123	R 1/4"	287	28	40	140	170	195	377	349	462
DM 40/315	270	318	600	42	G 1 1/2"	109	R 1/2"	388	30	60	190	227	290	529	500	600
DM 50/565	350	391	690	45	G 2"	158	R 1/2"	485	30	60	270	282	404	612	560	690

HIGH PRESSURE PUMPS (II)



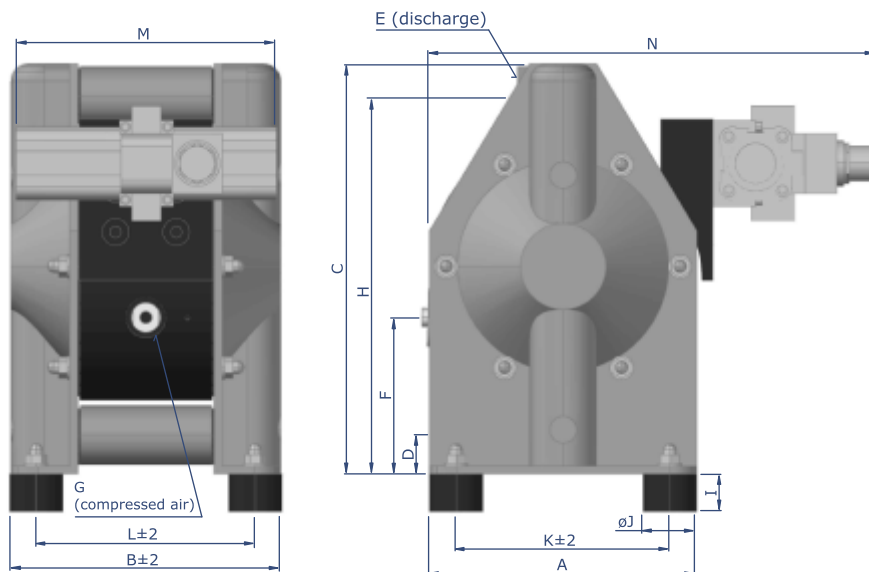
INSTALLATION

Our HP pumps are self-regulating and additional devices for regulating the media flow are not necessary. Just mount it to the unit, connect, and it's ready. Even the pressure regulator for the air supply is included.

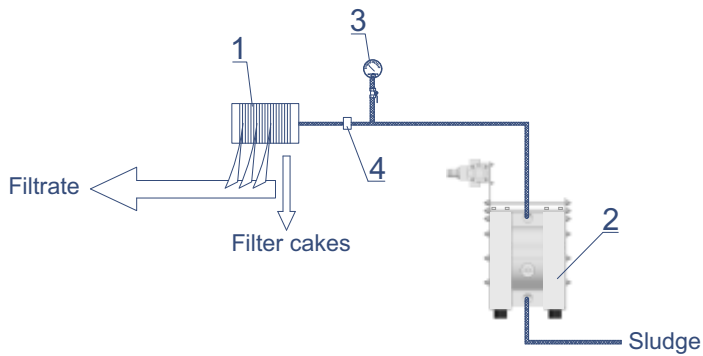
In applications such as for example filter presses, the filling level can be monitored by stroke sensors and stroke counters which are available as optional equipment.

The pump is also self priming and can run dry.

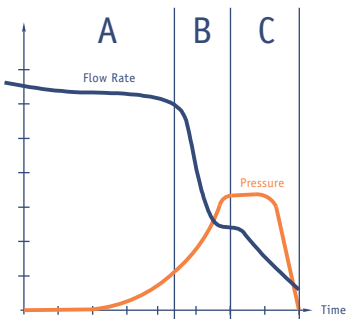
DIMENSIONS - METAL PUMPS



DIMENSIONS	A	B	C	D	E	F	G	H	I	øJ	K	L	M	N
DM 20/75	150	173	228	19	G 3/4"	84	R 1/4"	209	18	30	118	139	195	297
DM 25/125	200	202	302	27	G 1"	115	R 1/4"	279	18	30	160	164	195	351
DM 40/315	270	267	412	34	G 1 1/2"	100	R 1/2"	380	28	40	213	213	290	372
DM 50/565	350	345	538	48	G 2"	115	R 1/2"	493	30	60	286	285	404	573

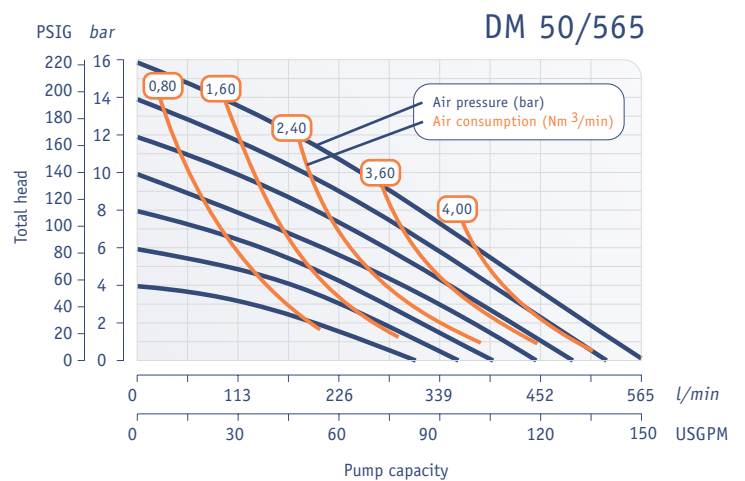
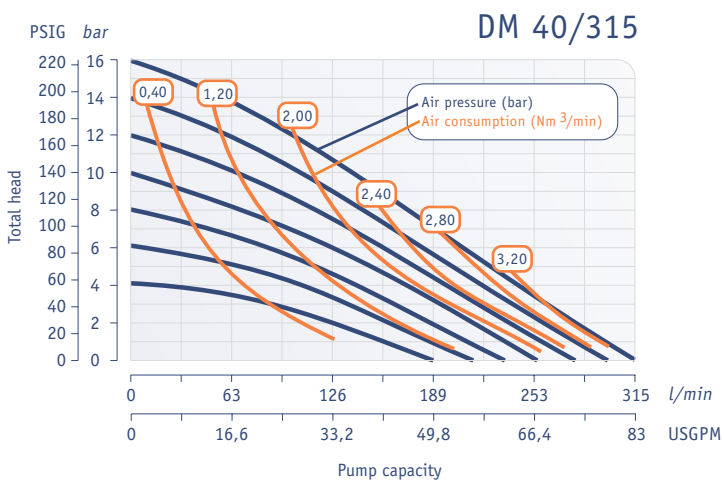
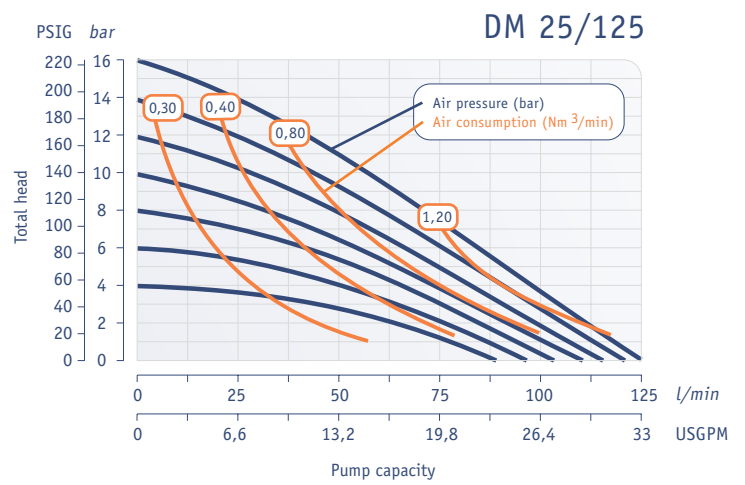
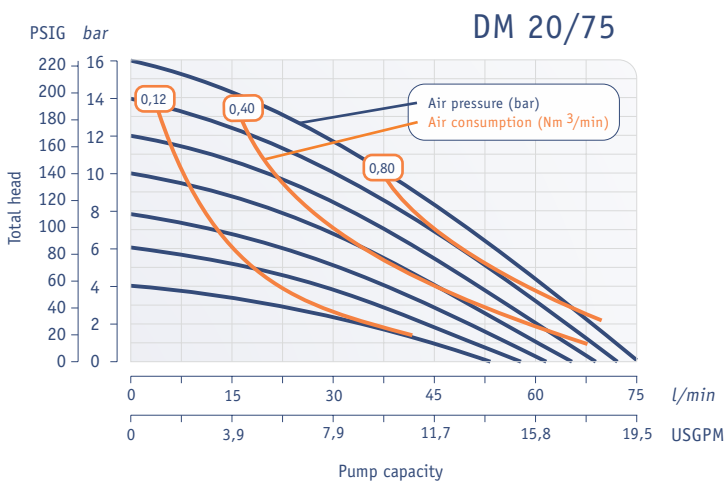


Part no.	Name
1	Filter press
2	Pump with high pressure booster
3	Pressure gauge
4	Bursting disk



Typical operating cycle of a filter press

- A – High capacity inlet: allowing filter cake formation
- B – End of filling: filtration resistance, capacity reduction
- C – Pressure maintenance: filter cake formed, high filtration resistance, reduction of filtrate flow to minimum flow at end of pressing process



HOW TO SELECT THE PUMP SIZE

Enter flow rate and pressure (e.g. 75 l/min and 14bar)
 Read off the pump size - in this case a DM 25/125 will be suitable with 7bar compressed air