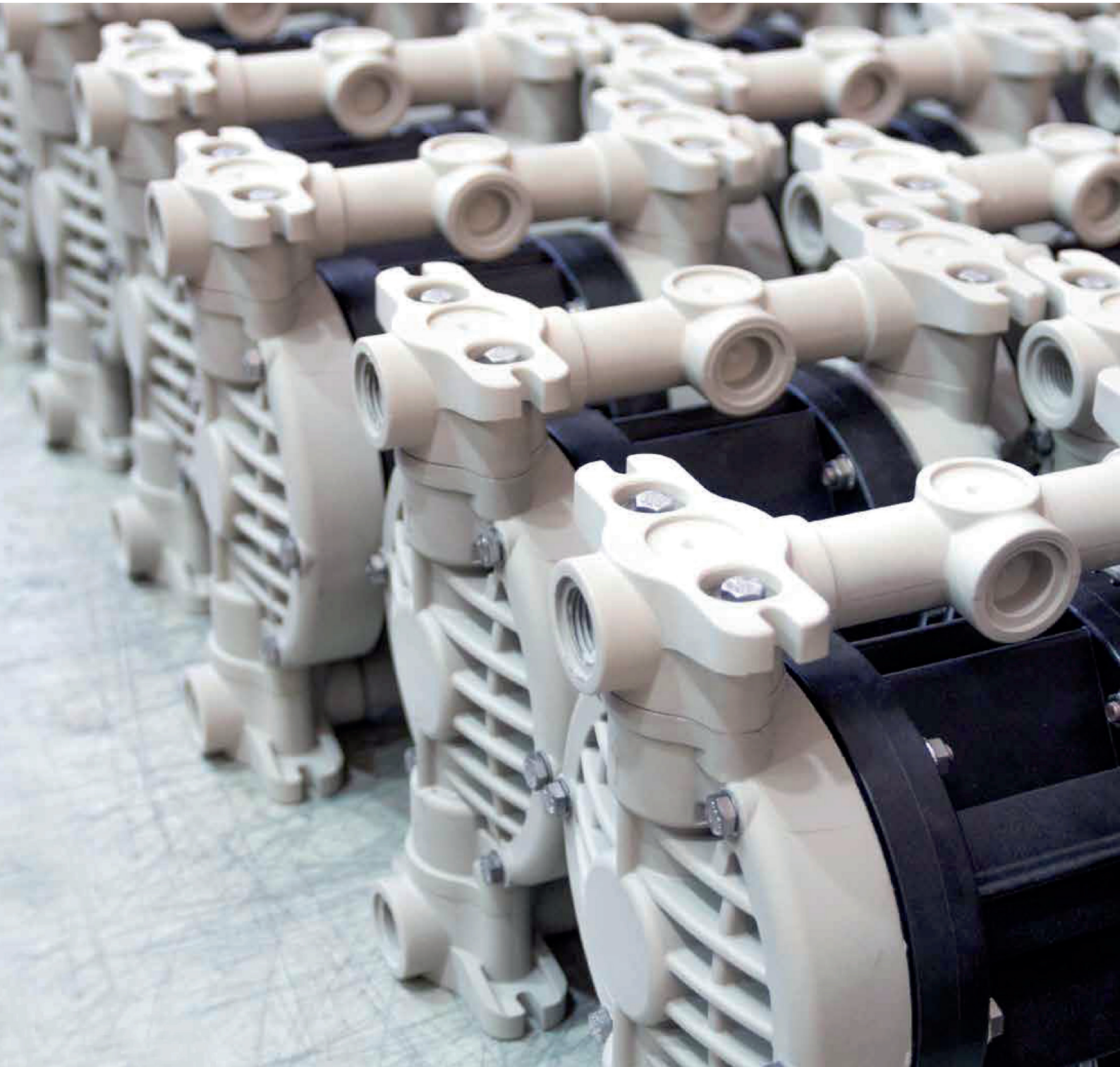


COMPRESSED AIR DRIVEN DIAPHRAGM PUMPS



INSPIRED. SOLUTIONS. FOR CUSTOMERS.

COMPRESSED AIR DRIVEN DIAPHRAGM PUMPS

AREAS OF APPLICATION

- Beverage industry
- Food industry
- Paint and varnish production
- Power plants
- Chemical suction devices
- Shipbuilding
- Electroplating
- Textile industry

ADVANTAGES AT A GLANCE

- Long service life
- Inexpensive
- Leakage free
- Overpressure protected
- ATEX compliant executions available
- Dry self priming
- Safe to run dry

OPTIONAL EQUIPMENT

- Pulsation damper, series MPD
- Compressed air supply units

Further accessories available by request.

DESIGNS

DRIVE

Compressed air driven diaphragm pumps consist of double housings which contain two diaphragms connected via a connecting rod.

The air control valve ensures that the air chambers behind the diaphragms are alternately supplied with compressed air. One diaphragm is pushed forward (= pressure stroke) and the other is pulled backwards (= suction stroke).

The special design of the air control valve ensures that the pumps can always be safely approached, so there are no unwanted stoppages. The valve balls open and close in the stroke rhythm of the diaphragms.

MATERIALS

The high quality of the materials guarantees the reliable long-term use. The optimum material is available for every requirement.

PUMP BODIES AND VALVES

PP, PP-CFK, PVDF, PVDF-CFK, ECTFE, Aluminium, AISI 316

VALVE BALLS

Boroglass, PTFE, AISI 316

VALVE SEALINGS

EPDM, FPM, PTFE

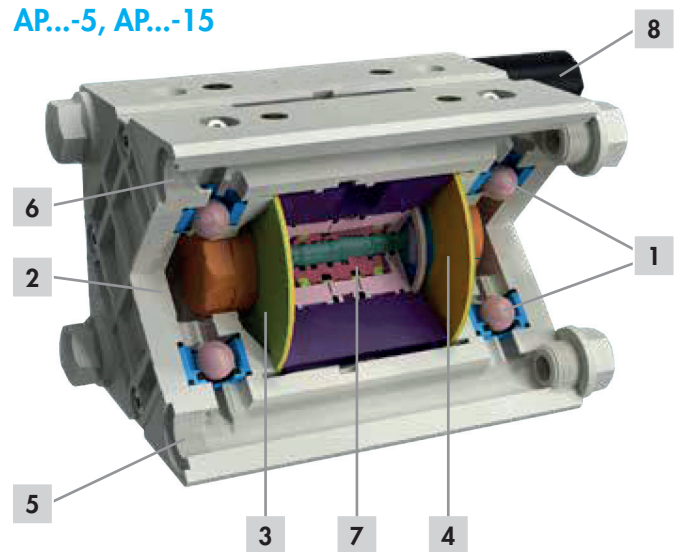
WORKING DIAPHRAGMS

NBR/PTFE, Santoprene/PTFE

ACCESSORIES

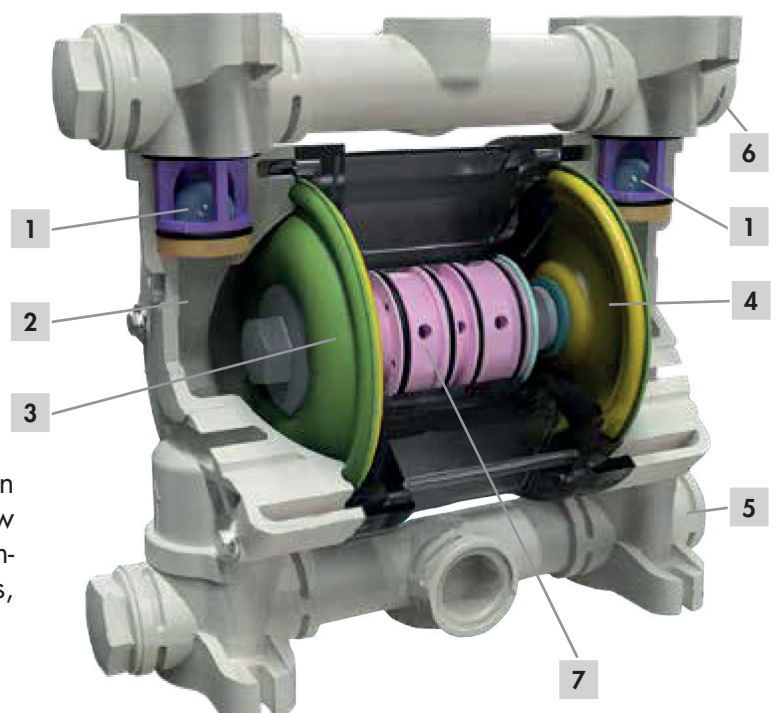
For optimal installation of dosing pumps, you can order all necessary accessories such as overflow valves, pressure holding valves, pulsation dampers, dosing valves, dosing tanks, flow monitors, etc.

AP...-5, AP...-15



1	Ball valve(s)
2	Pump body(s)
3	Diaphragm (fluid contacted)
4	Diaphragm (airside)
5	Suction side connection
6	Pressure side connection
7	Control air valve
8	Silencer

AP...-30 up to AP...-850

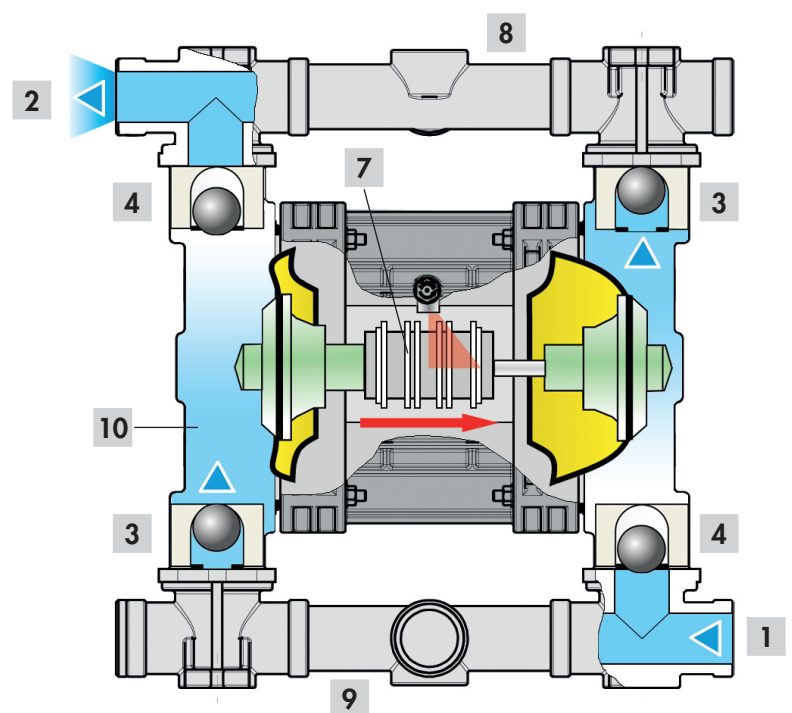
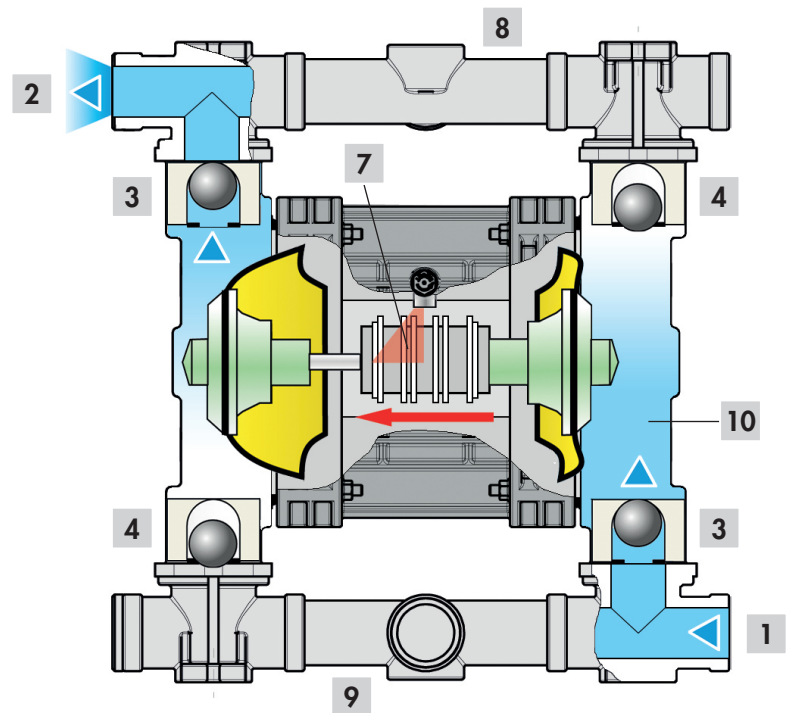


OPERATING PRINCIPLE

The compressed air, which is introduced through the control valve (7) behind one of the two diaphragms, leads to compression and pushes the medium into the pressure channel (8) (pressure stroke).

At the same time, the opposite diaphragm, which is connected to the shaft of the control valve, generates a negative pressure and thus sucks in the medium (10) (suction stroke).

1	Inlet medium
2	Outlet medium
3	Valve opened
4	Valve closed
5	Pressure stroke
6	Suction stroke
7	Air control valve
8	Pressure channel
9	Suction channel
10	Medium



ANIMATION



INSTALLATION EXAMPLES

SELF PRIMING

Series AP..-5 up to AP..-850



DOUBLE SUCTION SIDE

Series AP..-30 up to AP..-850



DOUBLE SUCTION- AND PRESSURE SIDE

Series AP..-30 up to AP..-850



IMMERSED

Series AP..-15 up to AP..-850



INFLOW

Series AP..-5 up to AP..-850



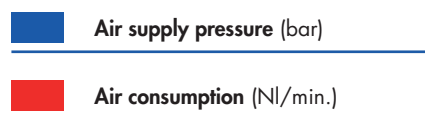
TECHNICAL DATA

Type*	material	max. flow rate [l/min.]	max. control air pressure [bar]	connec- tion of control air	suction-/ pressure- connec- tion	max. discharge head [m]	max. size of solids [mm]	weight approx. [kg]	max. tempera- ture [°C]
AP... - 5	PP	6	8	G 1/8 f	G 1/4 f	80	0,5	0,5	60
AP... - 15	PP	17	8	G 3/8 f	G 3/8 f	80	0,5	1,5	60
	ECTFE							1,5	95
AP... - 30	PP	35	8	G 1/4 f	G 1/2 f	80	2	1,6	60
	PVDF							1,9	95
	AISI316							3,8	95
AP... - 45	PP	60	8	G 3/8 f	G 1/2 f	80	4	3,6	60
	PVDF							4,2	95
	AISI316							6,5	95
AP... - 100	PP	110	8	G 3/8 f	G 1 f	80	4	5,0	60
	PVDF							6,5	95
AP... - 150	PP	160	8	G 3/8 f	G 1 f	80	4	7,5	60
	PVDF							8,5	95
	AISI316							11	95
AP... - 340	PP	340	8	G 1/2 f	G 2 f	80	6	16	60
	PVDF							20	95
	AISI316							32	95
AP... - 650	PP	650	8	G 1/2 f	G 3 f	80	8	45	60
	PVDF							52	95
	AISI316							54	95
AP... - 850	PP	850	8	G 3/4 f	G 3 f	80	10	50	60
	PVDF							67	95
	AISI316							71	95

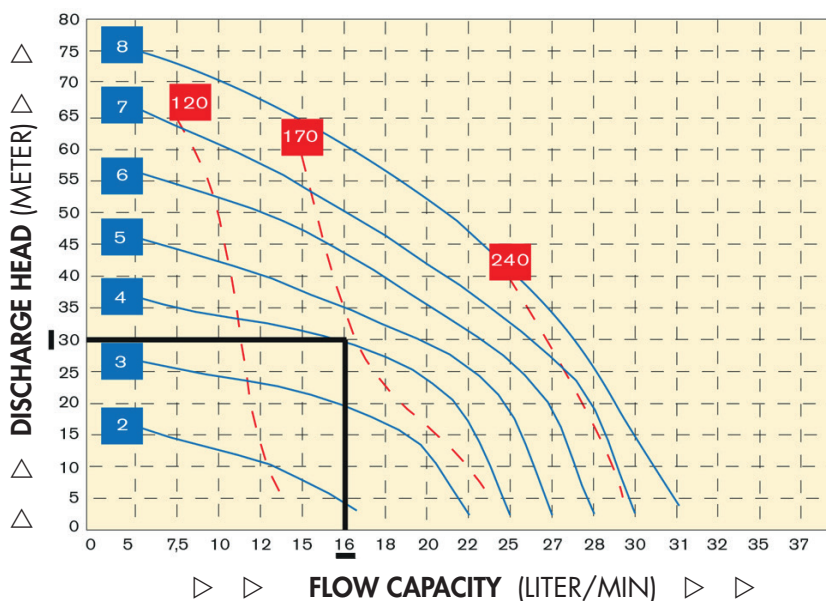
* **APB** ATEX 95: II 3G EEx c IIB T4
APE ATEX 95: II 2G EEx c IIB T4

CHARACTERISTIC CURVES

EXAMPLE



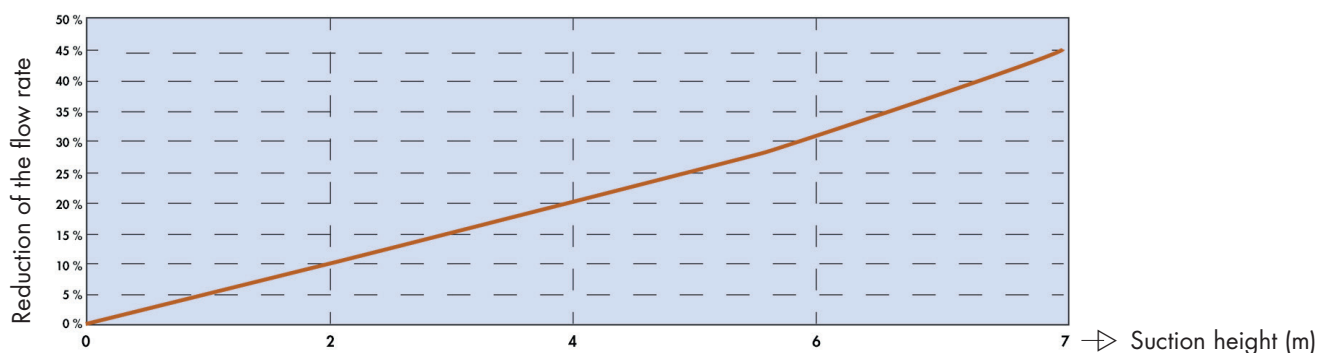
- Example:**
- Flow rate **16 L/min**
 - Discharge head appr. **30 m**
 - Air supply pressure **4 bar**
 - Air consumption **170 NI/min**



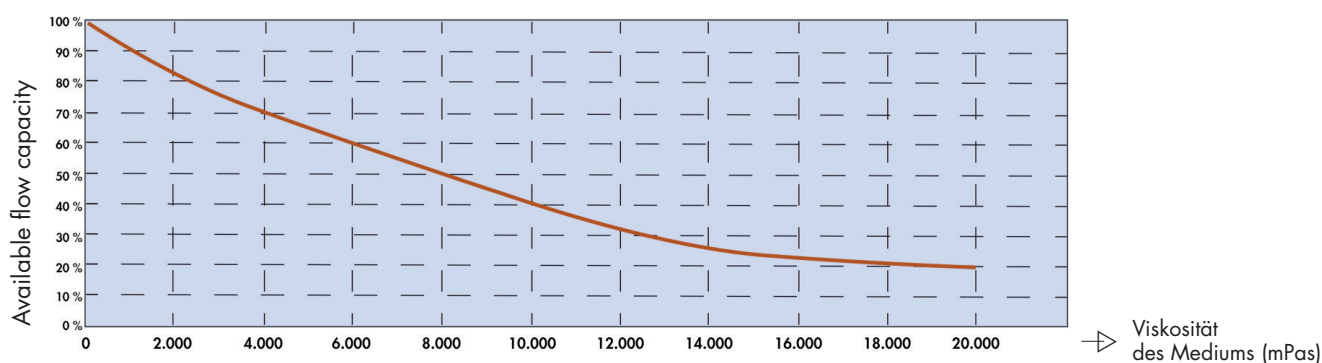
Note:

The curves and performance values refer to pumps with submerged suction and a free delivery outlet with water at 20°C, and vary according to the construction material.

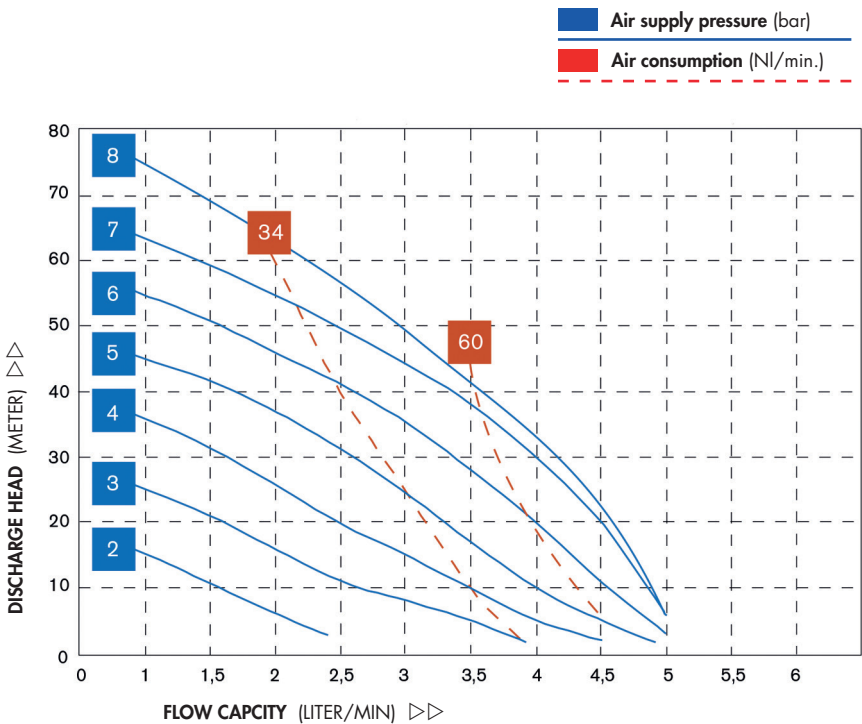
REDUCTION OF THE FLOW RATE BY SUCTION HEAD



REDUCTION OF THE FLOW CAPACITY BY VISCOSITY OF THE MEDIUM



APB/APE 5



MATERIALS

Housing: PP, PP-CFK

Diaphragms: NBR/PTFE

DIMENSIONS

PLASTIC
 Height ~ 75 mm
 Width ~121 mm
 Depth ~ 60 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-5	II 3G EEx c IIB T4	6	8	2-8	G 1/8	3	9,5
APE-5	II 2G EEx c IIB T4	6	8	2-8	G 1/8	3	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

MPD - 25.1 see page 17

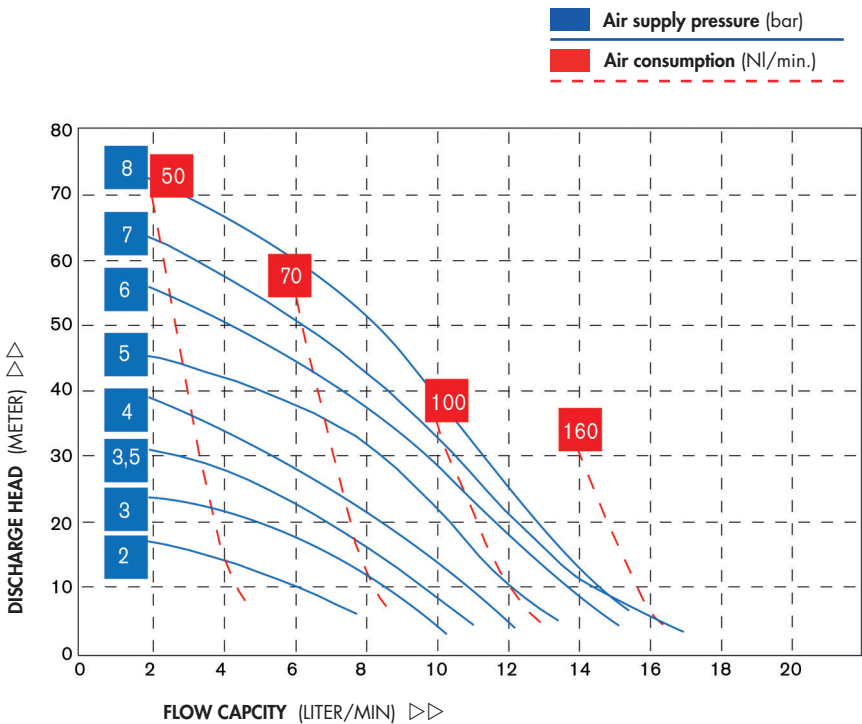
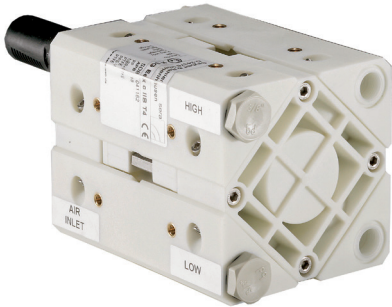
MPD-150

MPD-340

MDP-650.1

MPD-850.1

APB/APE 15



MATERIALS

Housing: PP, PP-CFK
 ECTFE
 Diaphragms: NBR/PTFE

DIMENSIONS

PLASTIC
 Height ~105 mm
 Width ~201 mm
 Depth ~105 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height	
						dry [m]	wet [m]
APB-15	II 3G EEx c IIB T4	16	8	2-8	G 1/8	3	9,5
APE-15	II 2G EEx c IIB T4	16	8	2-8	G 1/8	3	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

MPD - 25.1 see page 17

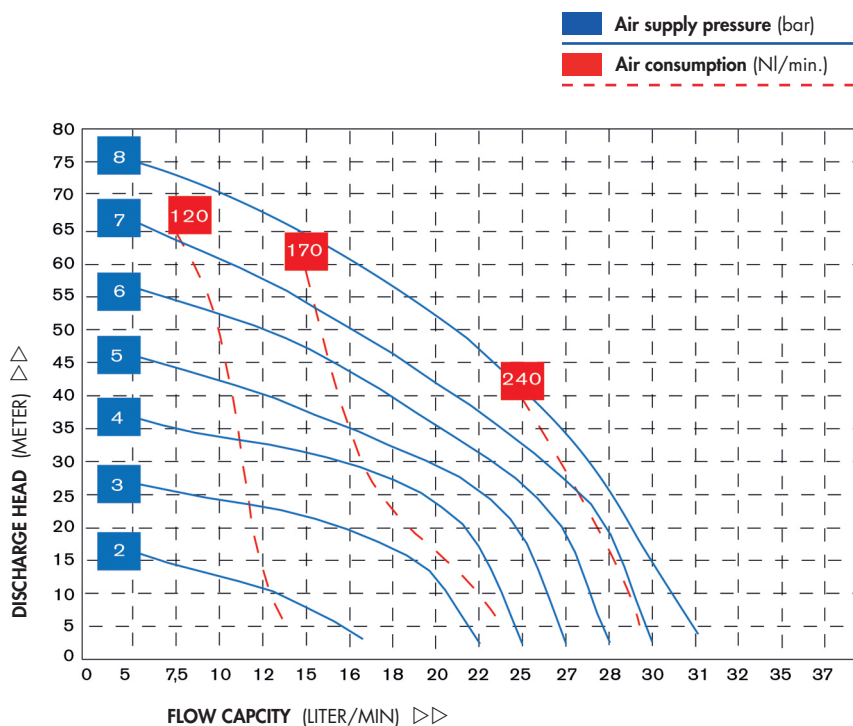
~~MPD-150~~

~~MPD-340~~

~~MDP-650.1~~

~~MPD-850.1~~

APB/APE 30



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

PLASTIC		STAINLESS STEEL	
Height	~168 mm	Height	~171 mm
Width	~165 mm	Width	~177 mm
Depth	~120 mm	Depth	~120 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	max. suction height wet [m]
APB-30	II 3G EEx c IIB T4	35	8	2-8	G 1/4	4	9,5
APE-30	II 2G EEx c IIB T4	35	8	2-8	G 1/4	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

MPD - 25.1 see page 17

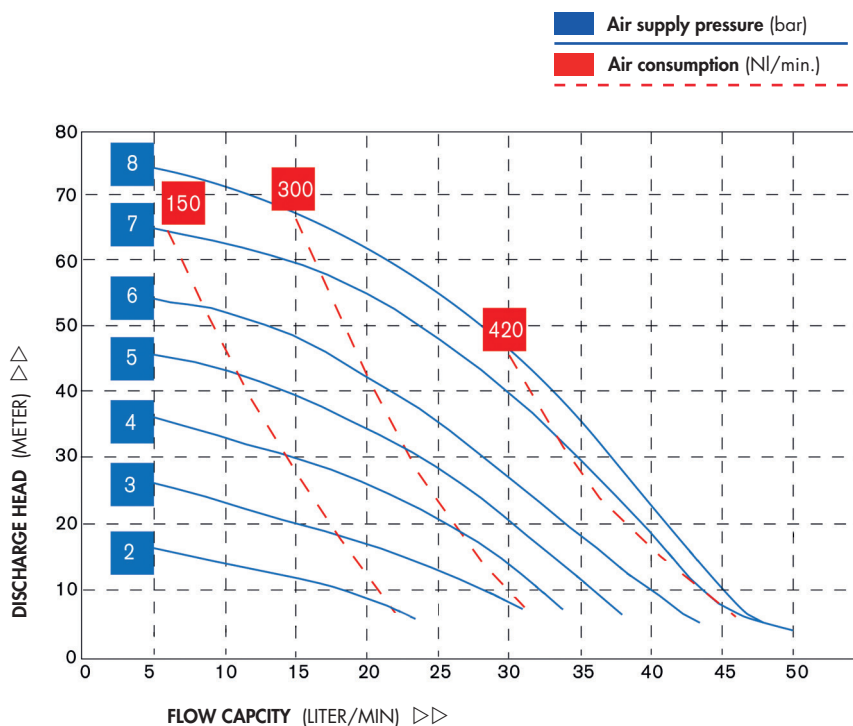
MPD-150

MPD-340

MDP-650.1

MPD-850.1

APB/APE 45



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

	PLASTIC	STAINLESS STEEL
Height	~241 mm	~232 mm
Width	~247 mm	~230 mm
Depth	~153 mm	~153 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-45	II 3G EEx c IIB T4	60	8	2-8	G 3/8	4	9,5
APE-45	II 2G EEx c IIB T4	60	8	2-8	G 3/8	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

MPD - 150

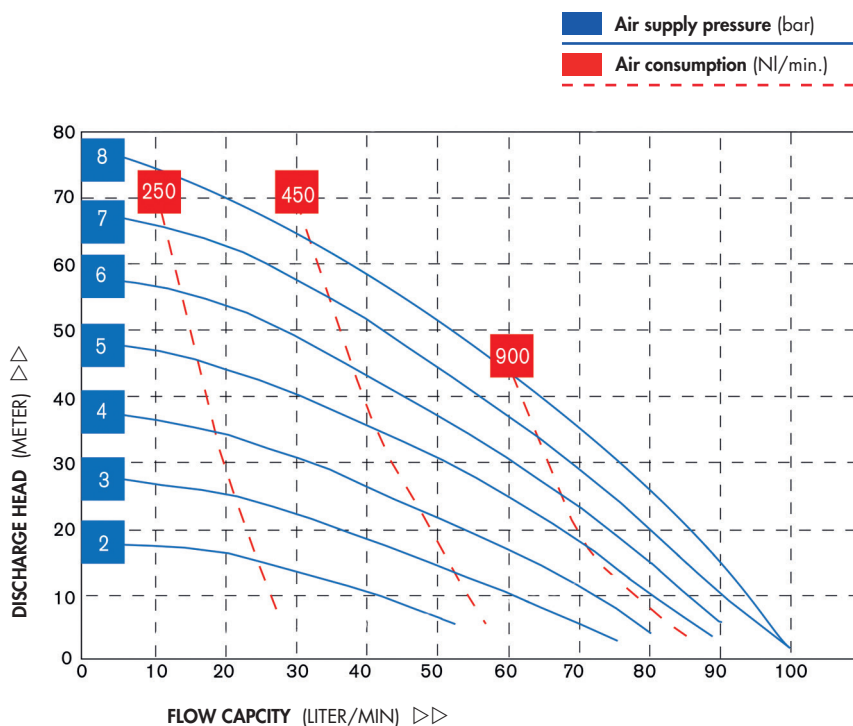
see page 17

~~MPD-340~~

~~MDP-650.1~~

~~MPD-850.1~~

APB/APE 100



MATERIALS

Housing: PP, PP-CFK
PVDF

Diaphragms: Santoprene/PTFE

DIMENSIONS

PLASTIC

Height ~274 mm
Width ~308 mm
Depth ~170 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-100	II 3G EEx c IIB T4	110	8	2-8	G 3/8	4	9,5
APE-100	II 2G EEx c IIB T4	110	8	2-8	G 3/8	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

MPD - 150

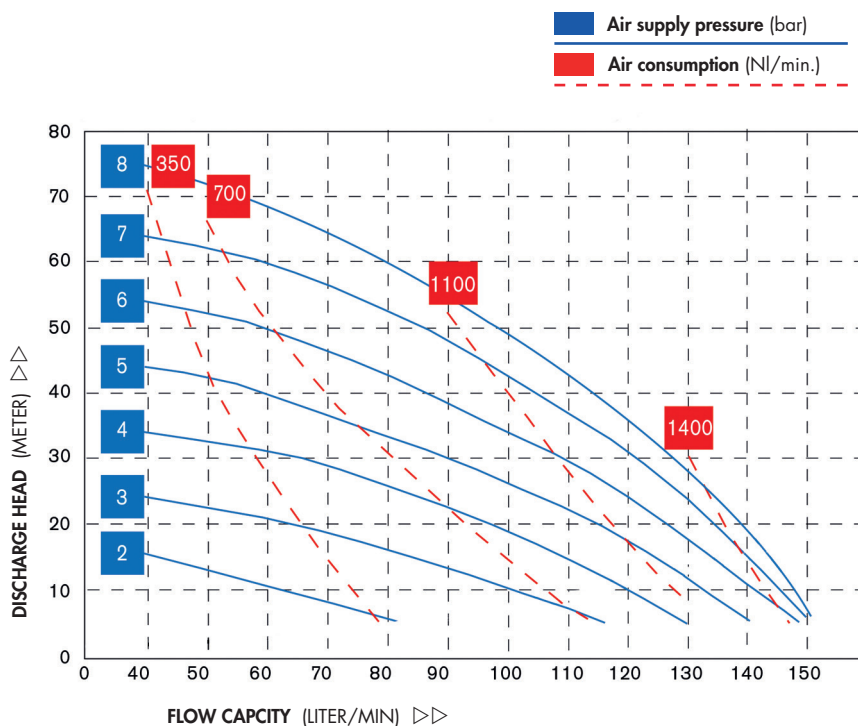
see page 17

~~MPD-340~~

~~MDP-650.1~~

~~MPD-850.1~~

APB/APE 150



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

	PLASTIC	STAINLESS STEEL
Height	~325 mm	~327 mm
Width	~329 mm	~308 mm
Depth	~202 mm	~202 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	max. suction height wet [m]
APB-150	II 3G EEx c IIB T4	160	8	2-8	G 3/8	4	9,5
APE-150	II 2G EEx c IIB T4	160	8	2-8	G 3/8	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

MPD - 150

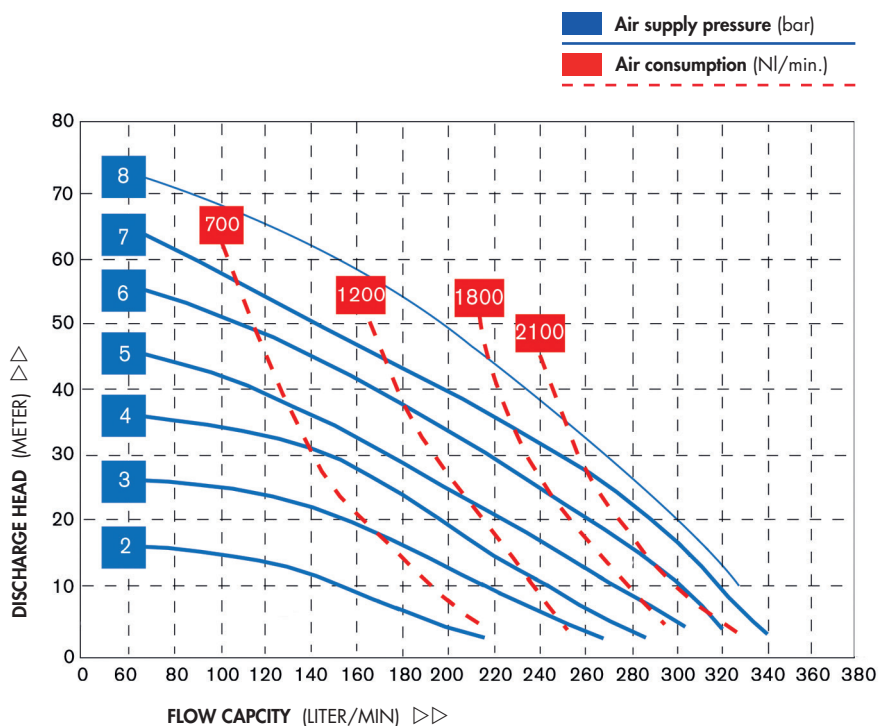
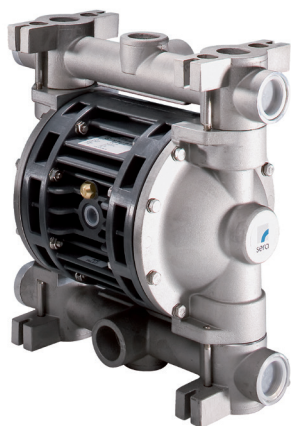
see page 17

~~MPD-340~~

~~MDP-650.1~~

~~MPD-850.1~~

APB/APE 340



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

	PLASTIC	STAINLESS STEEL
Height	~492 mm	~538 mm
Width	~493 mm	~417 mm
Depth	~254 mm	~254 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-340	II 3G EEx c IIB T4	340	8	2-8	G 1/2	4	9,5
APE-340	II 2G EEx c IIB T4	340	8	2-8	G 1/2	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

~~MPD-150~~

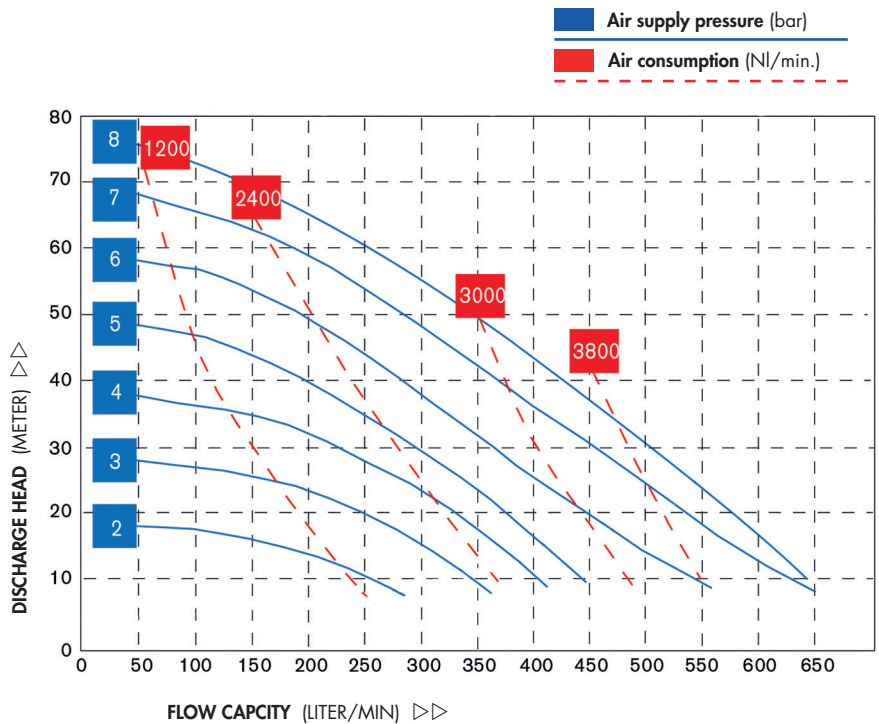
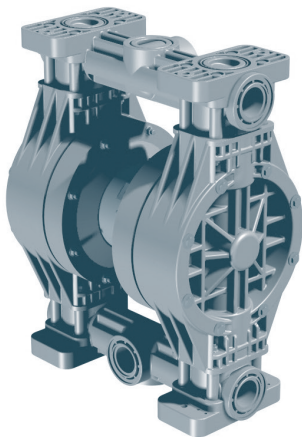
MPD - 340

see page 17

~~MDP-650.1~~

~~MPD-850.1~~

APB/APE 650



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

PLASTIC		STAINLESS STEEL	
Height	~650 mm	Height	~705 mm
Width	~590 mm	Width	~470 mm
Depth	~404 mm	Depth	~404 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-650	II 3G EEx c IIB T4	600	8	2-8	G 1/2	5	9,5
APE-650	II 2G EEx c IIB T4	600	8	2-8	G 1/2	5	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

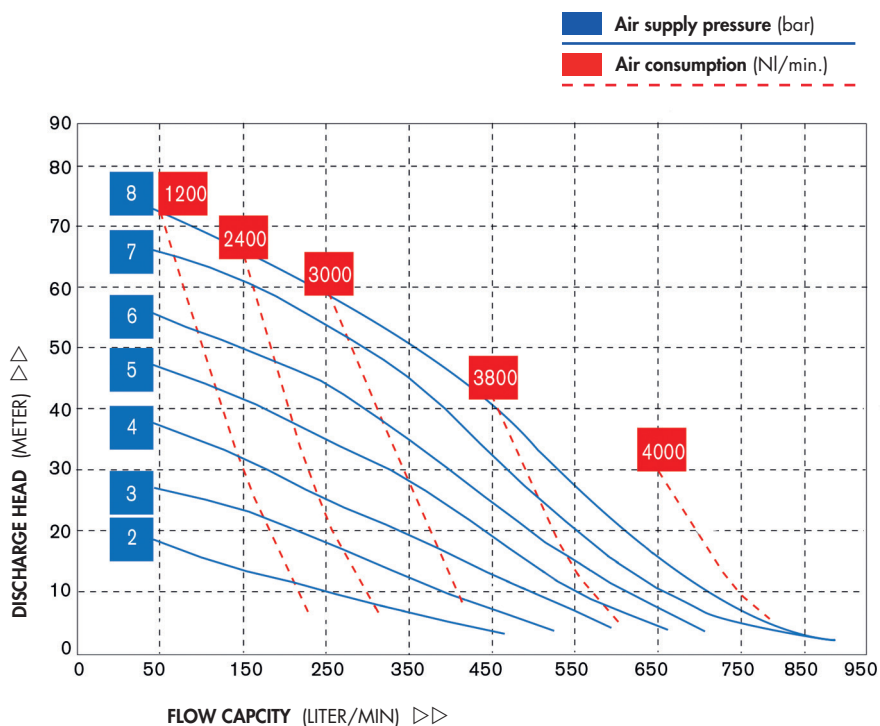
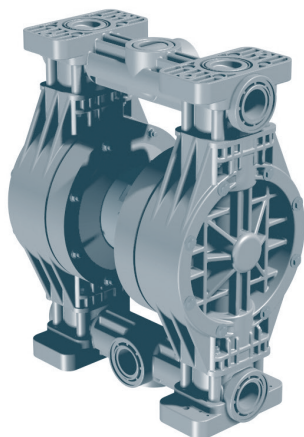
~~MPD-150~~

~~MPD-340~~

MDP - 650.1 see page 17

~~MPD-850.1~~

APB/APE 850



MATERIALS

Housing: PP, PP-CFK
PVDF, AISI 316

Diaphragms: Santoprene/PTFE

DIMENSIONS

	PLASTIC	STAINLESS STEEL
Height	~726 mm	~826 mm
Width	~585 mm	~546 mm
Depth	~403 mm	~404 mm

TECHNICAL DATA

Type	ATEX95	max. flow capacity [Litres/min.]	max. permissible counterpressure [bar]	Air supply pressure min - max [bar]	Air supply connection	max. suction height dry [m]	wet [m]
APB-850	II 3G EEx c IIB T4	800	8	2-8	G 1/2	4	9,5
APE-850	II 2G EEx c IIB T4	800	8	2-8	G 1/2	4	9,5

ALLOCATION OF DIAPHRAGM PULSATION DAMPER

~~MPD-25.1~~

~~MPD-150~~

~~MPD-340~~

~~MDP-650.1~~

MPD - 850.1

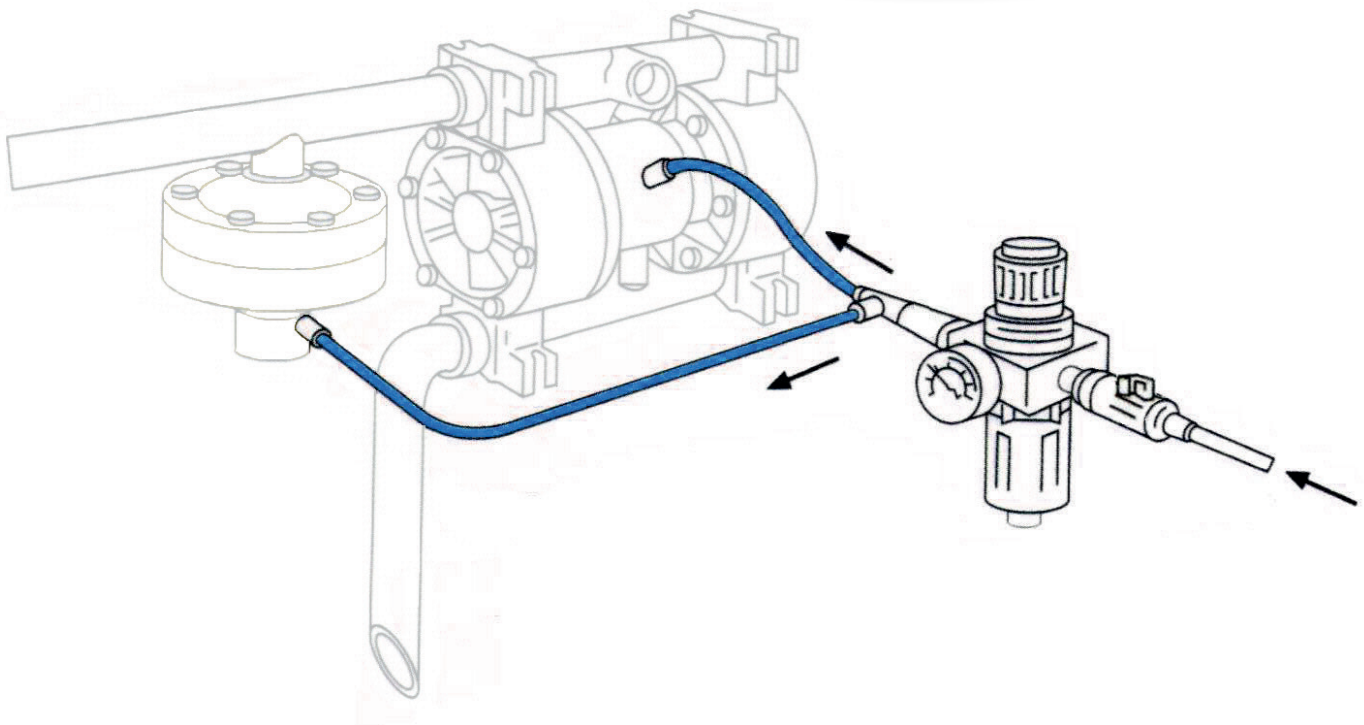
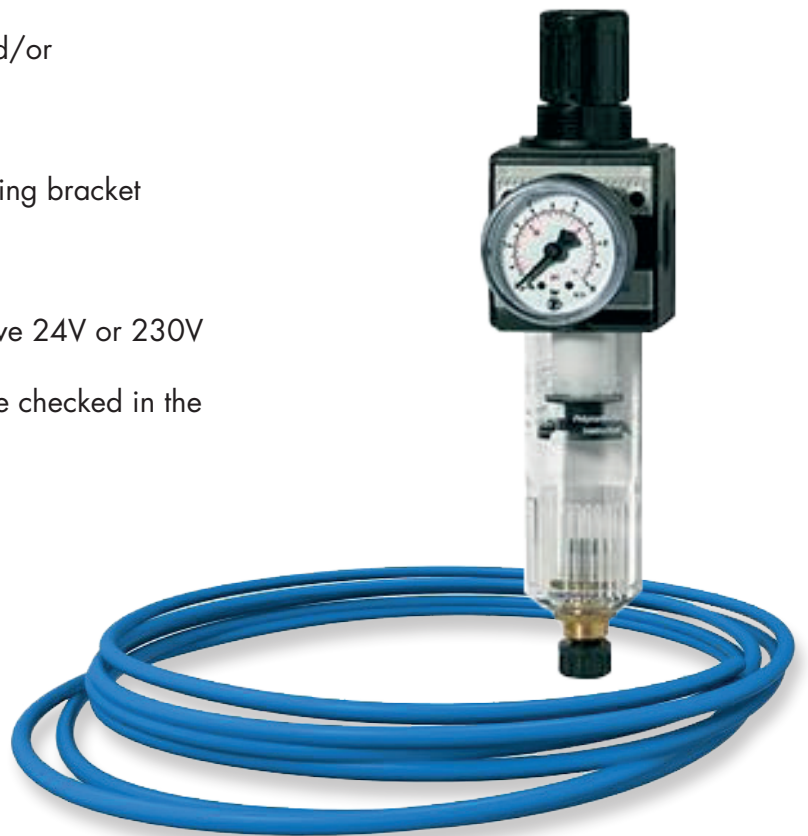
see page 17

COMPRESSED AIR SUPPLY UNIT

Compressed air supply units for regulating and/or adjusting the pressure of the control air.

Consisting of:
Filter pressure reducer incl. manometer, mounting bracket
5m hose, ball valve and various connections.

Compressed air supply units incl. solenoid valve 24V or 230V
for use outside of hazardous areas possible.
(Use in conjunction with the APE series must be checked in the
case of application.)



The pulsation dampers must be connected in the bypass to the compressed air supply of the pump.

DIAPHRAGM PULSATION DAMPER

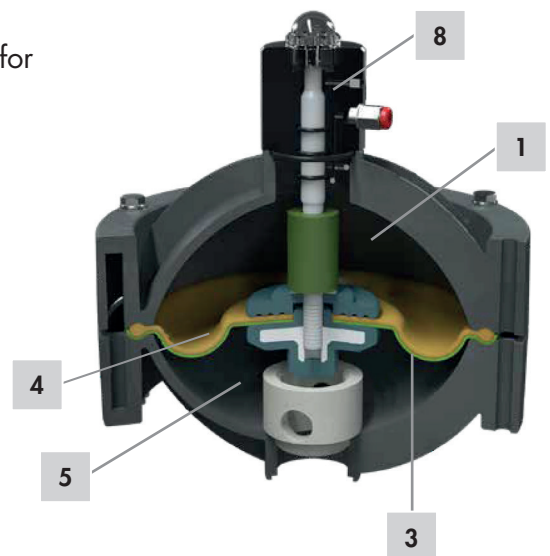
Pulsation dampers in the MPD series are a real must for any compressed air driven pump in those applications where a smooth, regular fluid output is required.

Their self-regulating characteristic makes them extremely user friendly, with top notch effectiveness in protecting your pipings and machinery from water hammers generated by a diaphragm pump.

The ample choice in materials for housings and diaphragms in an MPD damper grants the same chemical compatibility of any accompanying pump.

They have no troubles with viscosities and solids in the range of their compressed air driven pumps counterparts.

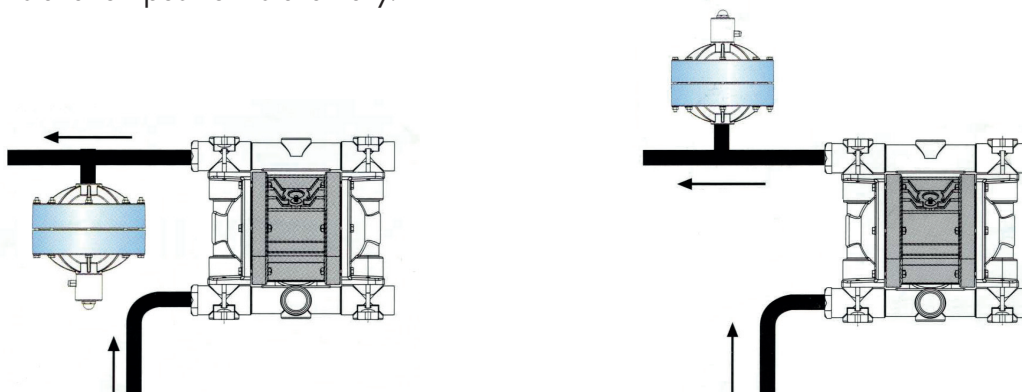
They are also available as ATEX-certified, making them suitable for potentially explosive environments.



1	Compressed air chamber
2	Automatic pneumatic valve
3	Diaphragm (medium contacted)
4	Diaphragm (air side)
5	Medium-/expansion chamber

INSTALLATION

The diaphragm pulsation damper must be installed on the pressure side in the immediate vicinity of the pump. The installation position is arbitrary.



TECHNICAL DATA

MPD-25.1

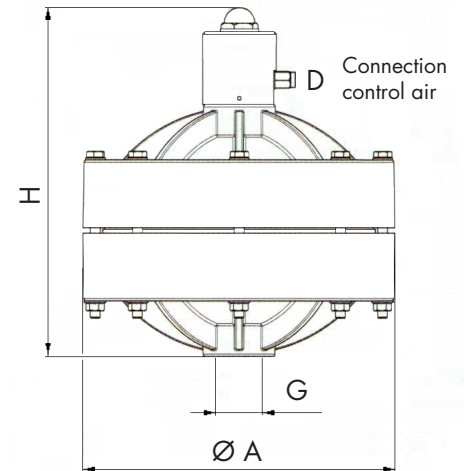


MATERIALS

PP
PVDF
PPS-V
PP-CFK
PVDF-CFK

DIMENSIONS

G: G 3/4
D: G 1/8
A: 117 mm
H: 120 mm



MPD-150



MATERIALS

PP
PVDF
PPS-V
PP-CFK
PVDF-CFK

DIMENSIONS

G: G 1
D: G 1/8
A: 170 mm
H: 180 mm

MPD-340



MATERIALS

PP
PVDF
PPS-V
PP-CFK
PVDF-CFK

DIMENSIONS

G: G 1 1/2
D: G 1/8
A: 254 mm
H: 290 mm

MPD-650.1

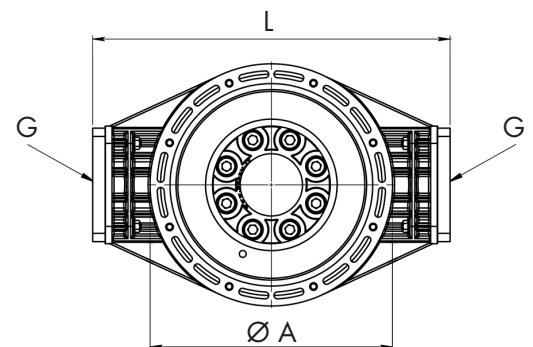


MATERIALS

PP
PVDF
Aluminium
AISI 316

DIMENSIONS

G: G 2
D: G 3/4
A: 350 mm
H: 398 mm
L: 516 mm



MPD-850.1



MATERIALS

PP
PVDF
Aluminium
AISI 316

DIMENSIONS

G: G 3
D: G 3/4
A: 350 mm
H: 398 mm
L: 516 mm

