

Product information

Series Primus 227 – Diaphragm Dosing Pumps



Primus 227 completes the proven range of this series of diaphragm dosing pumps at the upper end. From now on, capacity ranges of up to 2 x 4000 l/h (for duplex pumps with frequency converter) can be covered by the cost-effective technology of diaphragm dosing pumps, as Primus 227 is also available with two dosing heads.

Main application areas of this new pump generation are water and waste water treatment, where large amounts have to be dosed precisely, reliably and yet economically.

Construction and Function

The pumps of the Primus 227 series are reciprocating displacement pumps with mechanical diaphragm control and constant stroke length.

The modular construction comprises 3 gear options, a motor for various electrical supplies and dosing heads in 2 stroke volume sizes.

The rotation of the motor is reduced by a worm gear and then transformed by means of a precise eccentric-tappet system into the suction and discharge stroke of the dosing diaphragm. Thus, a definite volume (stroke volume) of the dosing medium is sucked by the suction valve into the dosing head and displaced through the pressure valve into the dosing line.

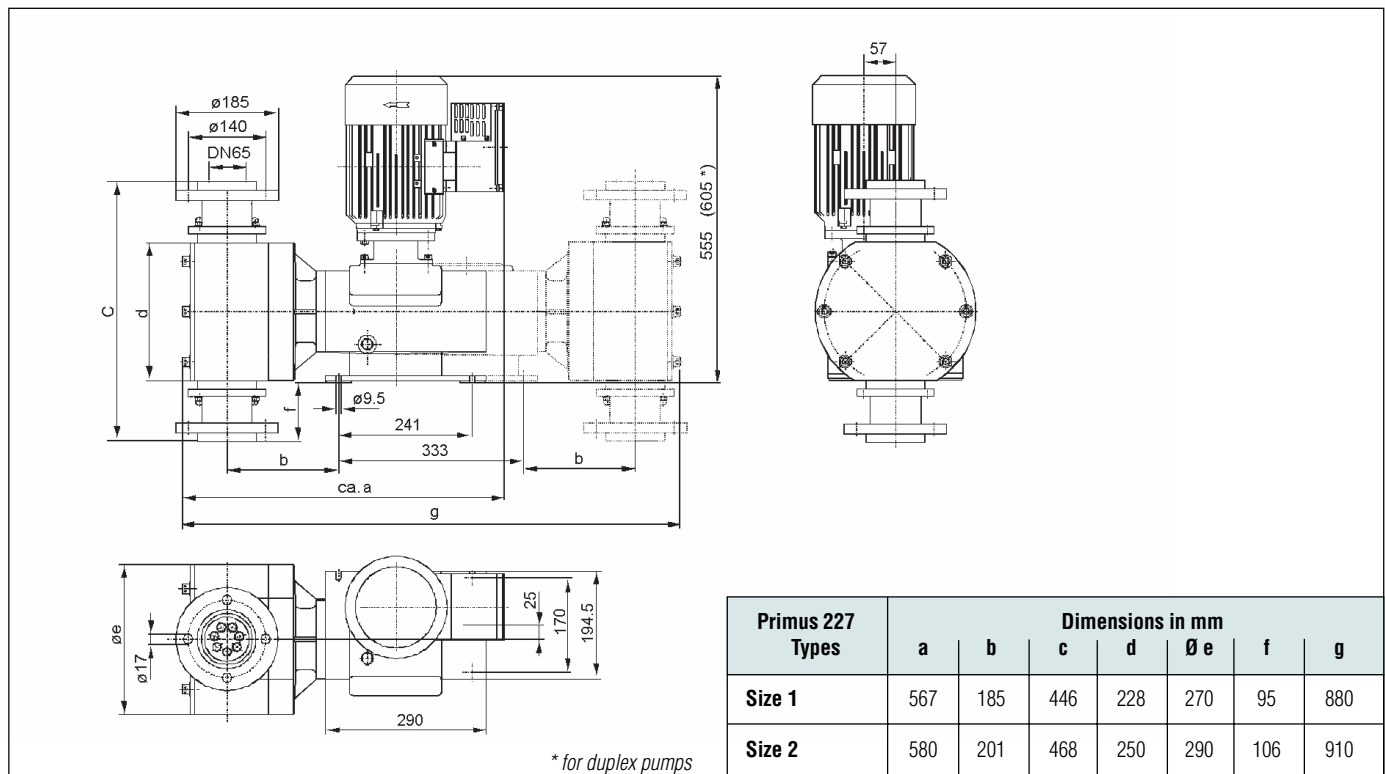
The dosing flow can be adjusted in the range of 1:10 by means of a frequency converter which is optionally mounted directly onto the clamp box of the motor.

The dosing heads are available of PP, PVC and stainless steel 1.4571, together with the PTFE-coated diaphragm they always guarantee optimal media resistance.

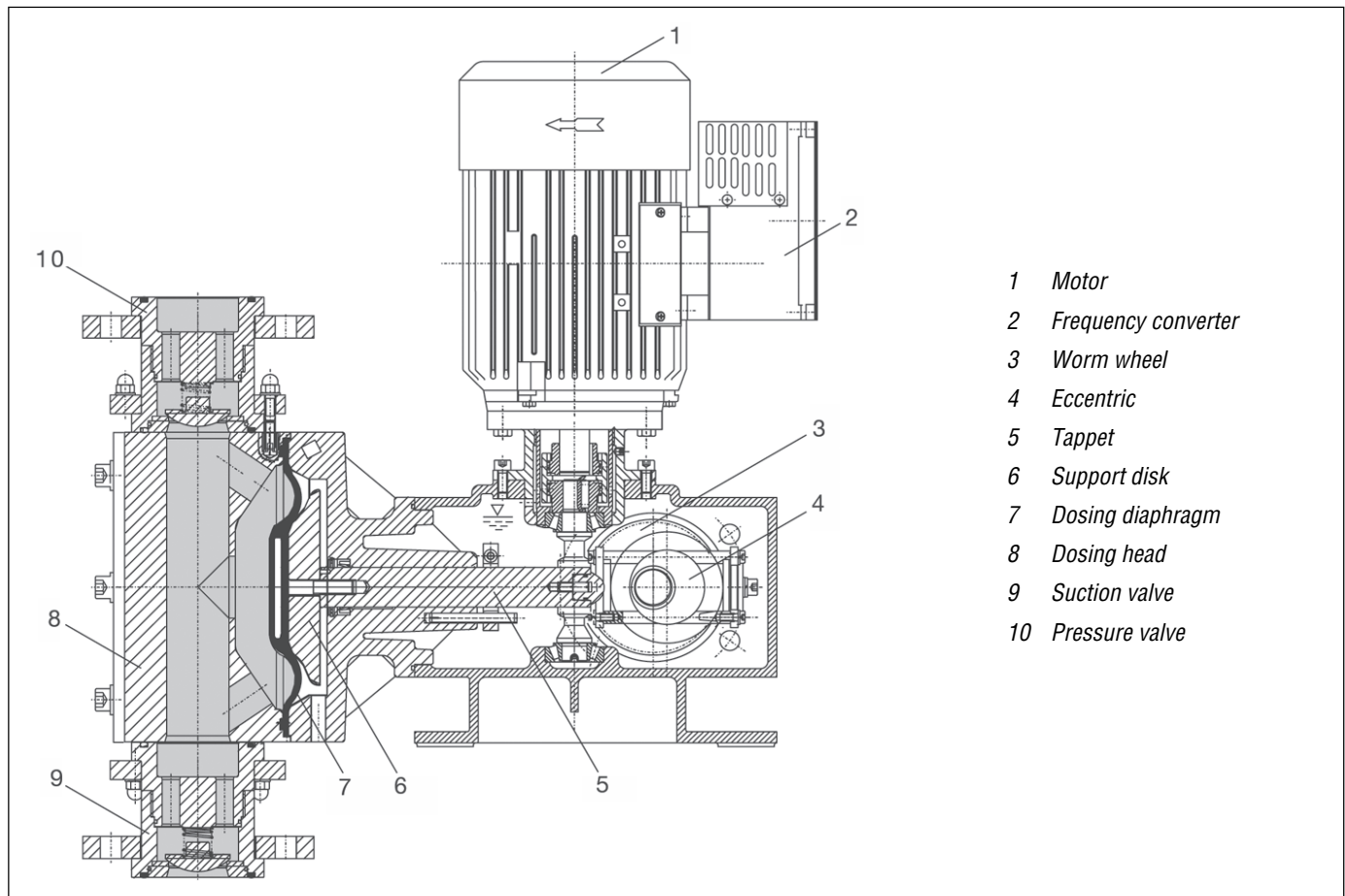
Advantages at a Glance

- The variety of dosing flow graduations covers any demand between 430 and 2 x 4000 l/h (for duplex pumps with frequency converter).
- Flexible and economic process integration by speed-variable drive.
- Compact by the frequency converter mounted directly onto the motor.
- Rugged pump even for rough conditions.

Dimensions Primus 227



Sectional Drawing Primus 227



Technical Data

General Technical Data	
Accuracy	Dosing flow $\pm 2\%$
Suction height	3 m w. c.
Capacity control	Optionally with frequency converter in the range 1:10
Materials	Parts in contact with media: PP/Viton Other materials: see selection table Dosing diaphragm and valve seats: PTFE
Connections	Flange connection DN 65
Drive	3-phase A. C. motor with PTC resistor A11 for frequency converter 220-240/380-420 V (50 Hz) (100 Hz with frequency converter) 440-480 V (60 Hz) 1.5 kW (simplex pumps) 2.2 kW (duplex pumps)
Deg. of prot.	IP 65
Iso. class	F other motors: see selection table
Weight	approx. 50 kg (simplex pumps), approx. 90 kg (duplex pumps)
Colour	RAL 6017 (may green)

Selection of dosing head and valve versions

different from standard version

Index no.		Materials	Flange	Counterflange
Simplex pump	Duplex pump			
D02 R52 A99	D12 R82 A99	PP/Viton	ANSI 2 1/2"	-
D00 R00 A00	D10 R10 A10	PVC/Viton	DN 65	•
D00 R50 A99	D10 R80 A99	PVC/Viton	ANSI 2 1/2"	-
D00 R46 A00	D10 R76 A10	PVC/EPDM	DN 65	•
D00 R56 A99	D10 R86 A99	PVC/EPDM	ANSI 2 1/2"	-
D01 R01 A01	D11 R11 A11	1.4571/Viton	DN 65	•
D01 R51 A99	D11 R81 A99	1.4571/Viton	ANSI 2 1/2"	-
Dosing heads for diaphragm breakage indication <i>prepared for installation of an opto-sensor *)</i>				
D62 R02 A02	D82 R12 A12	PP/Viton	DN 65	•
D62 R52 A99	D82 R82 A99	PP/Viton	ANSI 2 1/2"	-
D60 R00 A00	D80 R10 A10	PVC/Viton	DN 65	•
D60 R50 A99	D80 R80 A99	PVC/Viton	ANSI 2 1/2"	-
D60 R46 A00	D80 R76 A10	PVC/EPDM	DN 65	•
D60 R56 A99	D80 R86 A99	PVC/EPDM	ANSI 2 1/2"	-
D61 R01 A01	D81 R11 A11	1.4571/Viton	DN 65	•
D61 R51 A99	D81 R81 A99	1.4571/Viton	ANSI 2 1/2"	-

*) When ordering this version, please indicate the desired index no. E for sensor and electronics.

Order data

Standard versions

Order no. Simplex pump	Duplex pump	Size	V _{stroke} [cm ³]	P _{max.} [bar] [psi]	50 Hz			60 Hz			100 Hz ¹⁾		
					[l/h]*	[gal/h]*	[n/min]	[l/h]*	[gal/h]*	[n/min]	[l/h]*	[gal/h]*	[n/min]
227-430	227-430/2	1	256	5 72.5	430	114	28	516	136	34	860	227	56
227-860	227-860/2	1	256	5 72.5	860	227	56	1032	272	67	1720	454	112
227-1120	227-1120/2	1	256	5 72.5	1120	296	73	1344	355	88	2240	591	146
227-770	227-770/2	2	457	3 43.5	770	203	28	924	244	34	1540	407	56
227-1520	227-1520/2	2	457	3 43.5	1520	401	56	1824	482	67	3040	803	112
227-2000	227-2000/2	2	457	3 43.5	2000	528	73	2400	634	88	4000	1056	146

* for duplex pumps: capacity per dosing head

¹⁾ operation with frequency converter

Selection of motors

different from standard version

Index no.	data
V43	as standard version, with built-on frequency converter 230/400 V (50/60 Hz), 3-phase, IP 65/F, without display and control elements, with interface RS 485 and current input 4-20 mA (for simplex pumps)
V45	as standard version, with built-on frequency converter 230/400 V (50/60 Hz), 3-phase, IP 65/F, without display and control elements, with interface RS 485 and current input 4-20 mA (for duplex pumps)
V66	as standard version, but EEx de II T4 (for simplex pumps)
V67	as standard version, but EEx de II T4 (for duplex pumps)
V80	without motor, with adaptor flange for NEMA 145C
V82	without motor, with adaptor flange for IEC size 90 B14-C140
V83	without motor, with adaptor flange for IEC size 100 B14-C160
Accessories for frequency converters in V43 and V45	
326-0014	Operator panel with plain-text display, IP 54

Spare parts sets

consisting of: Gaskets for dosing head and valves, inner valve parts and 1 dosing diaphragm.

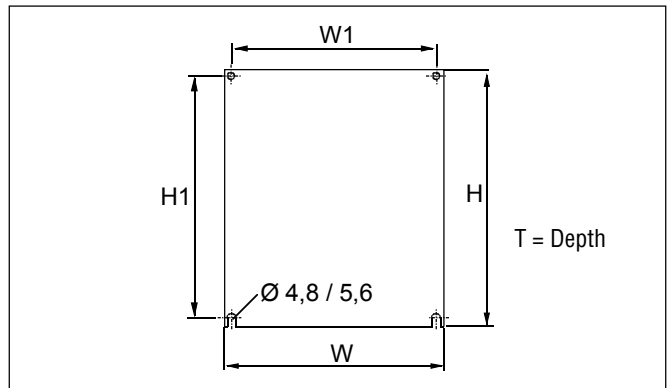
For duplex pumps, please order 2 sets.

Order no.	Materials	for pump types
553-1330	PP/Viton	size 1
553-1329	PVC/Viton	size 1
553-1329.1	PVC/EPDM	size 1
553-1331	1.4571/Viton	size 1
553-1333	PP/Viton	size 2
553-1332	PVC/Viton	size 2
553-1332.1	PVC/EPDM	size 2
553-1334	1.4571/Viton	size 2

Frequency converter Rotatron 326

or automatic speed control of the motors with PTC resistor, input 0(4)-20 mA, frequency converter 10-100 Hz, capacity adjusting range 1:10, power supply 220-240 V, 50/60 Hz, control panel enclosure IP 20

Order no.	Description
for simplex pumps	
326-0074	Output 1.5 kW, input 2,8 kVA
326-0075	Output 1.5 kW, input 2,8 kVA, with output 0(4)-20 mA
for duplex pumps	
326-0094	Output 2.2 kW, input 4 kVA
326-0095	Output 2.2 kW, input 4 kVA, with output 0(4)-20 mA



Order no.	Dimensions in mm					Weight (kg/lb)
	H	W	T	H1	W1	
326-0074, -0075	175	73	141	160	-	0.8/1.8
326-0094, -0095	184	149	172	174	138	2.6/5.7

Opto-electronic diaphragm breakage indication

consisting of opto-sensor and evaluation electronics in wall mounting enclosure IP 54, 1 potential output and 1 potential-free contact output max. 250 V/1.5 VA ohmic load and 3 LEDs for operation and contact

Index no.	Description
E01	Opto-sensor and evaluation electronics 230 V (50/60 Hz)
E02	Opto-sensor and evaluation electronics 115 V (50/60 Hz)

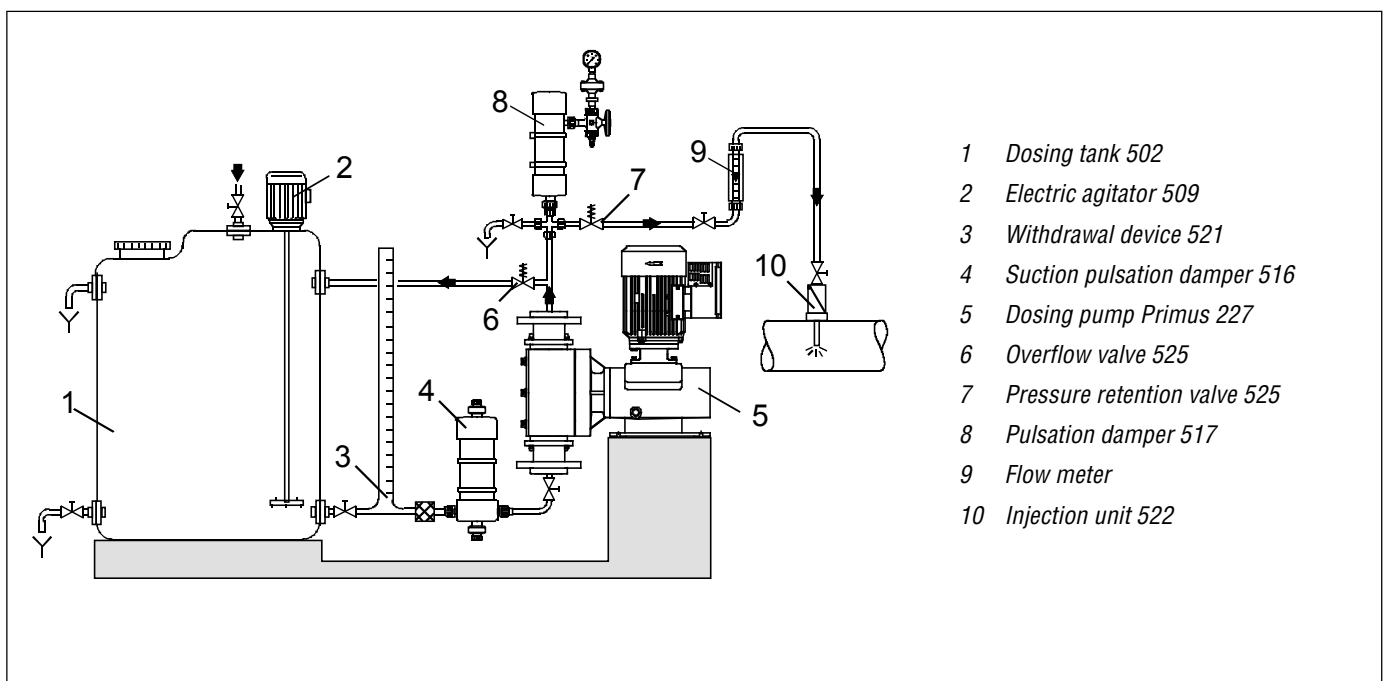
Fittings and accessories for Primus 227

The ALLDOS product range comprises besides the main product all components needed for a dosing system programme.

On the following pages, you will find information on pressure retention valves, overflow valves, injection units and pulsation dampers.

For more detailed information concerning further system components, as dosing tanks and electric agitators, please see the corresponding Product Information and Data Sheets.

Example of a dosing system with Primus 227



- 1 Dosing tank 502
- 2 Electric agitator 509
- 3 Withdrawal device 521
- 4 Suction pulsation damper 516
- 5 Dosing pump Primus 227
- 6 Overflow valve 525
- 7 Pressure retention valve 525
- 8 Pulsation damper 517
- 9 Flow meter
- 10 Injection unit 522

Overflow valves 525

The installation of an overflow valve protects the whole line system on the discharge side of the dosing pump against possibly too high pressure build-up. The mentioned overflow valves are designed as bypass-valves with a connected T-piece.

The overflow functions via a diaphragm-spring system.

Pressure retention valves 525

The installation of a pressure retention valve is essential, if the sum of backpressure and geodetic level difference between the suction valve of the dosing pump and the point of injection is less than 10 m w. c. The ALLDOS pressure retention valves work according to the back-pressure principle. The pressure is built up in the diaphragm chamber of the valve. The required pressure can be adjusted via a spring-loaded adjusting screw.

The pressure retention valve ensures reliable operation of the dosing head valves by exercising a specific positive pressure on them.

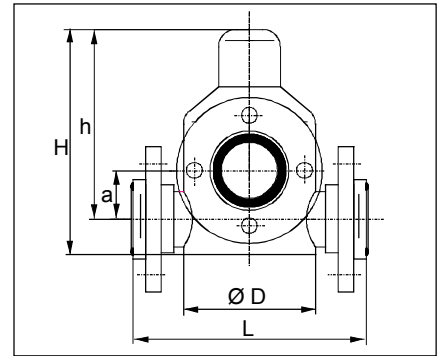
Injection units 522

The mentioned injection units are composed of a disk check valve, a flange for the installation of the injection unit into the the process line as well as an injection tube.

The check valves of the injection units are equipped with a PTFE-coated spring.

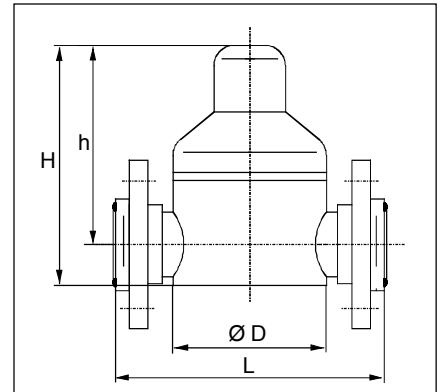
Overflow valves

Order no.	DN	Materials [body/o-ring]	L [mm]	ø D [mm]	H [mm]	h [mm]	a [mm]	for connection to
525-0616	40/65	PP/Viton	326	130	230	195	46	flange DN 65
525-0614	40/65	PVC/Viton	266	130	230	195	46	flange DN 65
525-0615	40/65	PVC/EPDM	266	130	230	195	46	flange DN 65
525-0617	65	1.4571/Viton	394	198	243	203	-	flange DN 65



Pressure retention valves

Order no.	DN	Materials [body/o-ring]	L [mm]	ø D [mm]	H [mm]	h [mm]	for connection to
525-0612	40/65	PP/Viton	326	130	230	195	flange DN 65
525-0610	40/65	PVC/Viton	266	130	230	195	flange DN 65
525-0611	40/65	PVC/EPDM	266	130	230	195	flange DN 65
525-0613	40/65	1.4571/Viton	280	198	243	203	flange DN 65



Injection units

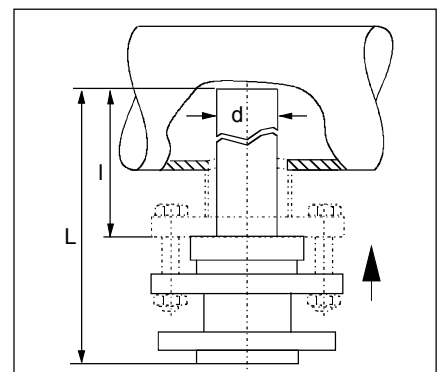
Order no.	DN	PN ¹⁾ [bar]	Materials ²⁾	Temp ³⁾ max. [°C]	d ⁴⁾ [mm]	I [mm]	L [mm]	for connection to
522-218	65	6	PP/Viton	40 °C	63	220	354	flange DN 65
522-217	65	6	PVC/Viton	40 °C	63	220	354	flange DN 65

1) at a temperature of 20 °C

3) max. admissible temperature at the injection point

2) materials of body and gaskets

4) prepared for flange DN 80



Pulsation dampers 517 without separating diaphragm

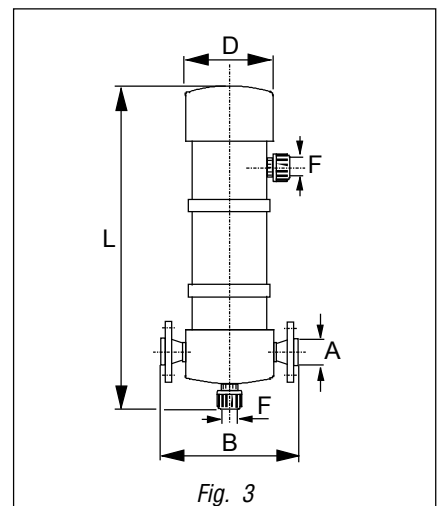
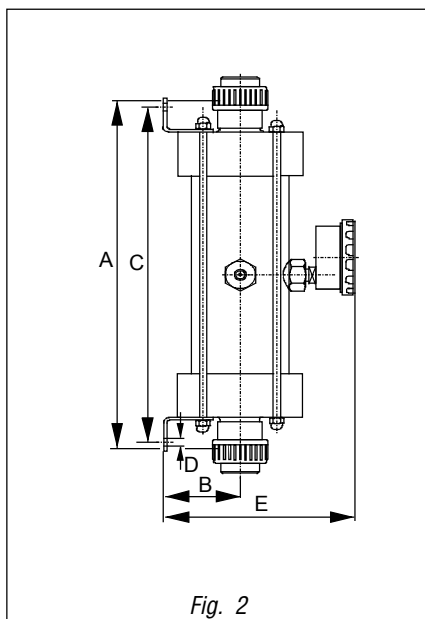
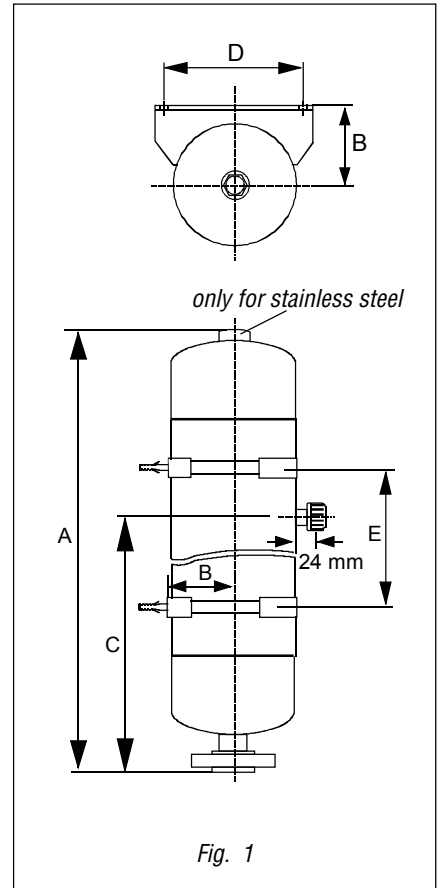
Order no.	Cont. [l]	Materials body/gasket		Connection	Dimensions in mm					Fig.
					A	B	C	D	E	
for Primus 227 size 1										
517-1324	20.0	1.4571	-	flange DN 65	525	150	-	270	310	1
517-1341	20.0	PP	Viton	flange DN 65	1062	108	827	-	-	1
517-1342	20.0	PP	EPDM	flange DN 65	1062	108	827	-	-	1
for Primus 227 size 2										
517-1424	40.0	1.4571	-	flange DN 65	935	150	--	270	720	1
517-1441	40.0	PP	Viton	flange DN 65	902	166	667	--	--	1
517-1442	40.0	PP	EPDM	flange DN 65	902	166	667	--	--	1

Pulsation dampers 517 with separating diaphragm

Order Nr.	Cont. [l]	Materials body/gaskets/diaphragm			p _{max.} [bar]	Connection	Dimensions in mm					Fig.
							A	B	C	D	E	
for Primus 227 size 1 and size 2												
517-0512	7.5	PVC	EPDM	Hypalon	4	PVC pipe DN 50	720	126	710	-	300	2
517-0542	7.5	PP	EPDM	Hypalon	4	PP pipe DN 50	20	126	710	-	300	2

Suction pulsation dampers 516 without separating diaphragm

Order no.	Cont. [l]	Material body	p _{max.}	Conn. (A) for	Dimensions in mm				Fig.
					B	Ø D	F	L	
for Primus 227 size 1									
516-4641	20.0	PP	PN 6	flange DN 65	320	315	DN 8	1060	3
516-5541	20.0	1.4301	PN 6	flange DN 65	344	254	R 1/4"	500	3
for Primus 227 size 2									
516-4741	40.0	PP	PN 4	flange DN 65	450	315	DN 8	1060	3
516-5641	40.0	1.4301	PN 4	flange DN 65	344	254	R 1/4"	1000	3



Dimensions in mm.
Technical data subject to change.

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