

Product Information

Primus 226

The flexible diaphragm dosing pump



Primus 226 is incredibly compact

the dimensions of the enclosures enable a number of pumps to be connected adjacent to one another quite easily

Primus 226 reduces costs

as a duplex pump with two dosing heads, it provides a cost-effective means of dosing two different chemicals to individual litre capacities or a single chemical with a larger flow rate

Primus 226 has excellent chemical resistance

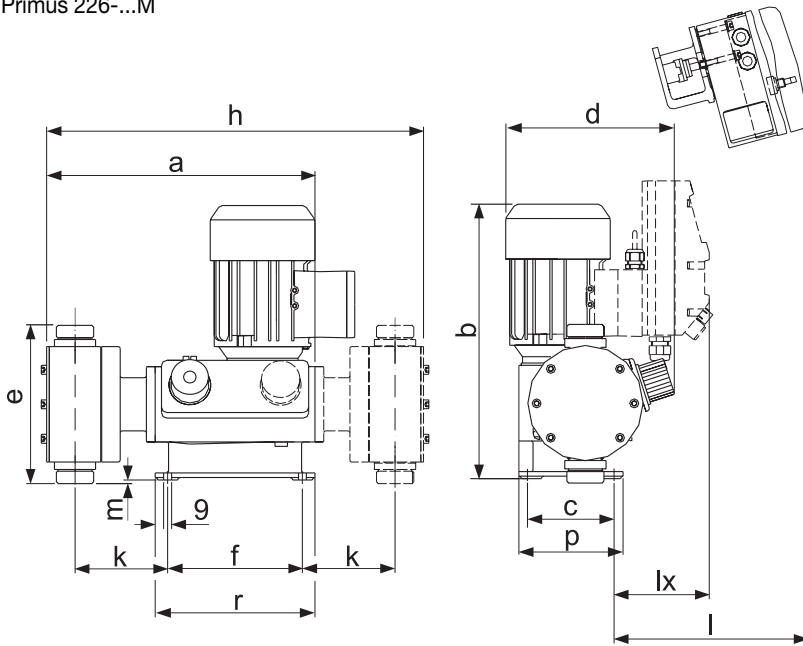
this is due to the adaptable combinations of materials which come into contact with the chemical dosed, e.g. special valves for caustic or abrasive chemicals

Even the accessories for Primus 226 are unique

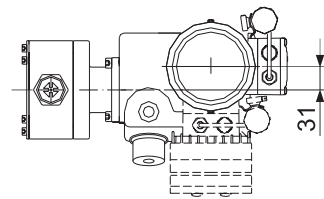
adjustable pressure relief valves, which can be integrally fitted into the dosing head making commissioning quick and easy by assisting suction and priming

Measurements

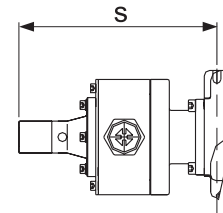
Primus 226-...M



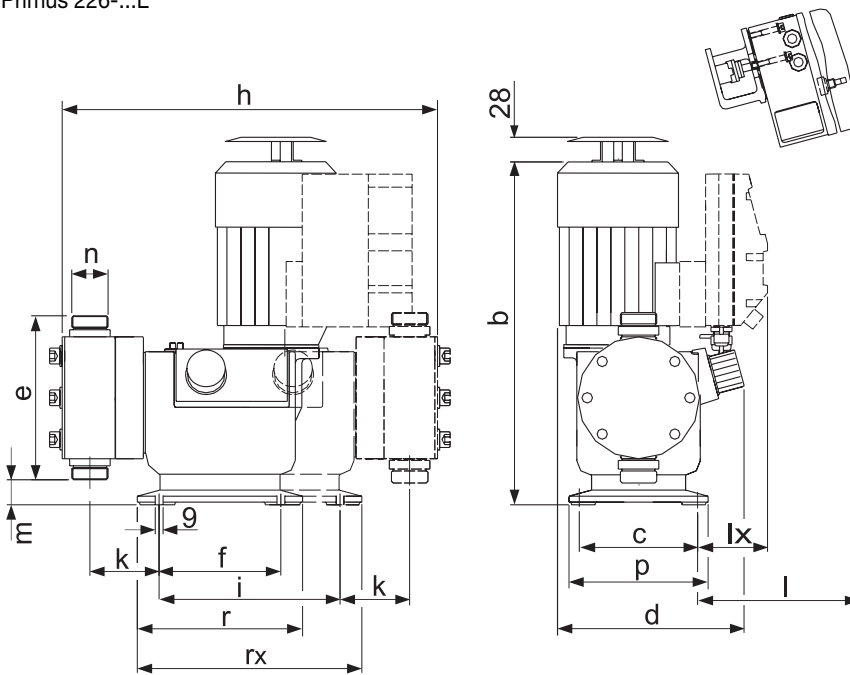
Primus 226-...M Top view



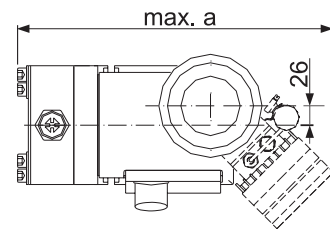
Primus 226-...M
integrated pressure relief valve



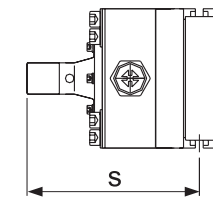
Primus 226-...L



Primus 226-...L Top view



Primus 226-...L
integrated pressure relief valve



Measurements in mm

Head size	a	b	c	d	e	f	g	h	i	k	l	l (EEx)	lx	m	n	p	r	rx	s
226-...M																			
1	302	310	97.5	190	178	152	85.5	425	-	104.5	250	315	107	4	G 1 1/4"	118	180	-	198
2	302	310	97.5	190	178	152	85.5	425	-	104.5	250	315	107	4	G 1 1/4"	118	180	-	198
3	302	310	97.5	190	178	152	85.5	425	-	104.5	250	315	107	4	G 1 1/4"	118	180	-	198
226-...L																			
1	366	372	136	222	178	140	123	440	208	80	233	352	80	34	G 1 1/4"	160	190	258	223
2	366	372	136	222	188	140	123	444	208	80	233	352	80	29	G 1 1/4"	160	190	258	223
3	-	372	136	222	208	140	123	453	208	83	233	352	80	19	G 1 1/4"	160	190	258	223
4	-	390	136	222	240	140	123	498	208	92	233	352	80	3	G 2"	160	190	258	-

Pump types

50 Hz				60 Hz				100 Hz ²⁾			V _{stroke}	Head size	Connec-tion PVC	Order number	
[l/h] ¹⁾	[n/min]	p _{max} [bar]		[l/h] ¹⁾	[n/min]	p _{max} [bar]		[l/h] ¹⁾	[n/min]	p _{max} [bar]				Simplex pump	Duplex pump
		3 AC	1 AC ³⁾			3 AC	1 AC ³⁾								

Motor 0.18 kW

24	29	8	8	28	34.8	8	8	48	58	8	13.8	1	hose 13/20	226-24M	226-24M/2
52	63	8	8	62	75.6	8	8	104	126	8				226-52M	226-52M/2
100	120	8	8	120	144	8	8	-	-	-				226-100M	226-100M/2
142	168	8	8	-	-	-	-	-	-	-				226-142M	226-142M/2
37	29	5	5	45	34.8	5	5	75	58	5	22	2	hose 13/20	226-37M	226-37M/2
82	63	5	5	98	75.6	5	5	164	126	5				226-82M	226-82M/2
160	120	5	5	192	144	5	5	-	-	-				226-160M	226-160M/2
224	168	5	5	-	-	-	-	-	-	-				226-230M	226-230M/2
60	29	3	3	72	34.8	3	3	120	58	3	36	3	hose 13/20	226-60M	226-60M/2
130	63	3	3	156	75.6	3	3	260	126	3				226-130M	226-130M/2
255	120	3	3	306	144	3	3	-	-	-				226-255M	226-255M/2
380	168	3	3	-	-	-	-	-	-	-				226-380M	226-380M/2

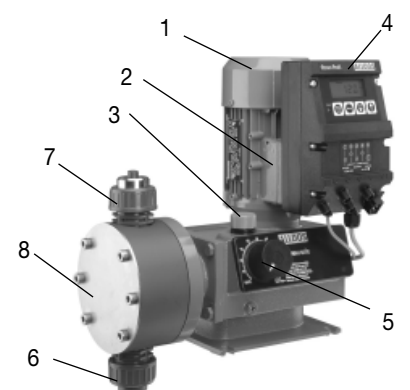
Motor 0.37 kW

67	57	10	10	80	68.4	10	10	134	114	10	18.5	1	hose 13/20	226-67L	226-67L/2
132	120	10	10	158	144	10	10	-	-	-				226-132L	226-132L/2
190	175	10	8	-	-	-	-	-	-	-				226-190L	226-190L/2
95	57	8	8	114	68.4	8	8	190	114	8	27.8	2	hose 13/20	226-95L	226-95L
199	120	8	8	239	144	8	8	-	-	-				226-199L	226-199L/2
280	175	8	6	-	-	-	-	-	-	-				226-280L	226-280L/2
152	57	6	6	182	68.4	6	6	304	114	6	44.6	3	hose 19/27	226-152L	226-152L/2
321	120	6	4	385	144	6	4	-	-	-				226-321L	226-321L/2
460	175	6	3.5	-	-	-	-	-	-	-				226-460L	226-460L/2
249	57	3	3	299	68.4	3	3	498	114	3	73	4	pipe 32/40	226-249L	226-249L/2
315	72	3	3	378	86.4	3	3	630	144	3				226-315L	226-315L/2
525	120	3	3	630	144	3	3	-	-	-				226-525L	226-525L/2
765	175	3	-	-	-	-	-	-	-	-				226-800L	226-800L/2

1) Remember to add the litre capacities of duplex pumps (2 dosing heads)! 2) Only with motor frequency control 3) Option: 1 AC motor for Etron Profi.

Technical data

Accuracy	Dosing flow < ± 1.5 %. Linearity < ± 4 %
Dosing flow adjustment	<ul style="list-style-type: none"> Manually by stroke length adjustment in the ratio 1:10 Electronic stroke length adjustment Motor frequency control
Suction height	According to size of dosing head up to 3 m water column
Parts in contact with chemicals	<ul style="list-style-type: none"> Dosing diaphragm: PTFE-coated Dosing head and valves > see page 4
Drive	Motors > see page 4
Weight	Simplex pumps: 15.5 - 16.5 kg Duplex pumps: 20.5 - 23 kg
Connections for:	
226-52M to 226-230M and 226-67L to 226-280L	Dosing head size 1 + 2 : PVC hose 13/20; PVC/PP/PVDF pipe 20/25; steel pipe ¾"
226-130M to 226-380M and 226-152L to 226-460L	Dosing head size 3 : PVC hose 19/27; PVC/PP/PVDF pipe 20/25; steel pipe ¾"
226-249L to 226-800L	Dosing head size 4 : PVC/PP tube 32/40; PVDF tube 35/40; steel tube 1 ¼"



Primus 226 M with Etron Profi

- | | |
|--------------------------|------------------|
| 1 Motor | 6 Suction valve |
| 2 Terminal box | 7 Pressure valve |
| 3 Ventilation valve | 8 Dosing head |
| 4 Etron Profi (option) | |
| 5 Stroke adjustment knob | |

Motors

Selection of other motors	Motor capacity / Motor suitable for pump type	
	226-...M and 226-...M/2	226-...L and 226-...L/2
3 AC, 220-240/380-420 V, 50/60 Hz, 440-480 V, 60 Hz, IP 65/F.	0.18 kW	0.37 kW
3 AC, 220-240/380-420 V, 50/60 Hz, 440-480 V, 60 Hz, IP 65/F, PTC	0.18 kW	0.55 kW

Flameproof motors 230/400 V (50Hz), IP 65/ F, ATEX guideline 94/9/EC*, with certificate

II 2G EEx e II T3	0.18 kW	0.37 kW
II 2GD EEx de II C T4	0.18 kW	0.37 kW
II 2GD EEx de II C T4, PTC	0.18 kW	0.55 kW

Motors for pumps with Etron Profi, single-phase (1 AC)

230 V, 50 Hz, IP 65/F	0.18 kW	0.37 kW ¹⁾
115 V, 60 Hz, IP 65/F	0.18 kW	0.37 kW ¹⁾

Motor assemblies

NEMA 56 C	X	X
IEC B5, frame size 63	X	-
IEC B5, frame size 71	-	X

*) The European guideline 94/9/EC ATEX applies to all facilities and security systems which are used in potentially explosive areas.

Our Primus 226 dosing pumps are examined and certified according to this guideline for non-electrical operating supplies.

The motor versions EEX are certified by the manufacturer according to the ATEX guidelines for electrical operating supplies.

1) not available for 226-800L and 226-800L/2

Dosing head and valve versions

- Dosing of non abrasive and non combustible liquids

Dosing head	Valve body	Material		
		Valve seat	Gasket	Valve ball
PVC	PVC	PTFE	Viton	Glass
PVC	PVC	PTFE	EPDM	Stainless steel
PP	PP	PTFE	Viton	Glass
PVDF	PVDF	PTFE	PTFE	PTFE
Stainless steel	Stainless steel	Stainless steel	Viton	Stainless steel

Options:

- Special valves for abrasive liquids
- Integrated sensor for diaphragm breakage indication **DBS**
- Integrated pressure relief valve (PVC/PVDF)

Microprocessor electronics Etron Profi

Remember to order a 1 AC pump motor for Etron Profi !

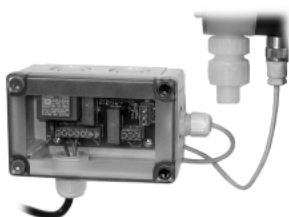
Not suitable for 226-800L and 226-800L/2 !

- Stroke frequency adjustable from 0-max., 0/4-20 mA signal
- Contact input with multiplier and divisor, with memory function
- Two-step tank empty signal, remote on/off
- Input for diaphragm breakage signal **DBS**

Description Etron Profi
for mounting on terminal box, contact N.O.
for wall mounting, contact N.O., length of cable to the pump: 5 m

Stroke sensor

Description	Order No.
Enclosure with built-in stroke sensor (inductive)	on request



Signal transmission

Description	Order No.
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Cable with plug for contact input, current input and remote ON/OFF

Cable length 2 m	321-205
Cable length 5 m	321-207

Cable with plug for output empty/error signal and stroke signal

Cable length 2 m	321-206
Cable length 5 m	321-208

Cable with plug for DBS

Combined plug, 5 poles	321-210
Cable, 5 poles, length 5 m	321-223

Electronics for DBS (for pumps without Etron Profi)

<ul style="list-style-type: none"> Contact load 250 V/6 A, max. 550VA Power consumption 1.15 VA Protection IP 65 Admissible temperature 0 - 40 °C 	Description	Order No.
	115 V ± 10%	334-22
	230 V ± 10%	334-23

Servomotors

Description	Order No. (pump type)	
	226-...M	226-...L
for simplex pumps	384-715	384-712
1 servomotor for duplex pumps	384-716	384-713
2 servomotors for duplex pumps	384-717	384-714

With feedback potentiometer 1000 Ohm

- 230 V, 50/60 Hz, IP 55
- 115 V, 50/60 Hz, IP 55, 1-phase
- 24 V AC, 50/60 Hz, IP 55, 1-phase

Flameproof servomotor

- EEx d II BT 4, IP 65, with fixing accessories
- EEx d II BT 4, IP 65, with 4-20 mA input, incl. support console

Option:

Servomotor with 4-20 mA input, with switch for manual adjustment ON/OFF

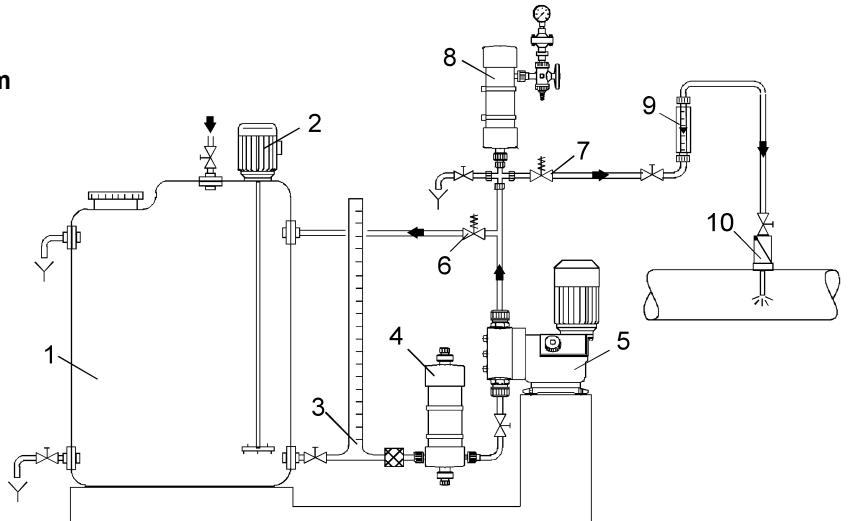


Primus 226 M with servomotor

Accessories and fittings

Flow scheme of a complete dosing system

- 1 Dosing tank 502
- 2 Electric agitator 509
- 3 Extraction device 521
- 4 Suction pulsation damper 516
- 5 Dosing pump Primus 226
- 6 Pressure relief valve 525
- 7 Pressure retention valve 525
- 8 Pulsation damper 517
- 9 Measuring tube
- 10 Injection unit 522

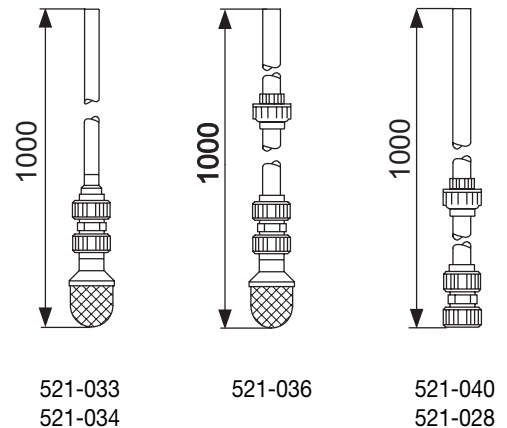


Suction line systems 521

Principal components:

- Foot valve with filter (ball check valve)
- Flexible or rigid line

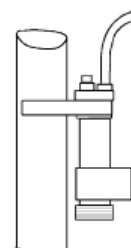
Type	Valve material body/seat/valve	Suitable for	Order Number
PVC hose 13/20	PVC/PVC/glass	pumps up to 380 l/h	521-033
PVC hose 19/27	PVC/PVC/glass		521-034
PVC pipe 20/25	PVC/PVC/glass		521-036
PP pipe 20/25	PP/PTFE/glass		521-040
PVDF pipe 20/25	PVDF/PTFE/PTFE		521-028
PVC pipe 32/40, flange	PVC/PVC/glass	pumps from 460 l/h	521-037



Reed contact float switch (with clip)

- as tank empty signal or additional level indicator
- for connection to suction line 521 (for pumps up to 380 l/h)

Description	Order Number
PVC Reed contact with plug and 2 m cable	338-211
PP Reed contact with plug and 2 m cable	338-211.1



338-211
338-211.1

Injection units 522

- Ball check valve (Hastelloy C spring), threaded piece with integrated injection pipe for installation in the coupling thread of the process line, connections included

Material body / gaskets / ball	Order Number	l [mm]	L [mm]	T _{max} [°C]	PN [bar]	Connections
PVC / Viton / Glass	522-1511	60	140	20°	16	hose 13/20, pipe 20/25
PVC / St. steel / Glass + with threaded piece of steel	522-1411	129	205	20°	16	
PP / Viton / Glass	522-0351	120	189	40°	10	pipe 20/25
PVDF / Viton / PTFE	522-0161	120	189	20°	10	
Stainless steel / Viton / Stainless steel	522-1811	120	212	70°	100	3/4"
PVC / Viton / Glass	522-194	200	276	40°	10	flange 32/40
PP / Viton / Glass	522-203	200	275	20°	10	
PVDF / PTFE / PTFE	522-205	200	265	40°	10	
Stainless steel / Viton / Stainless steel	522-204	200	265	70°	16	
St. steel / Viton / St. steel + spring-loaded valve	522-206	200	266	70°	16	

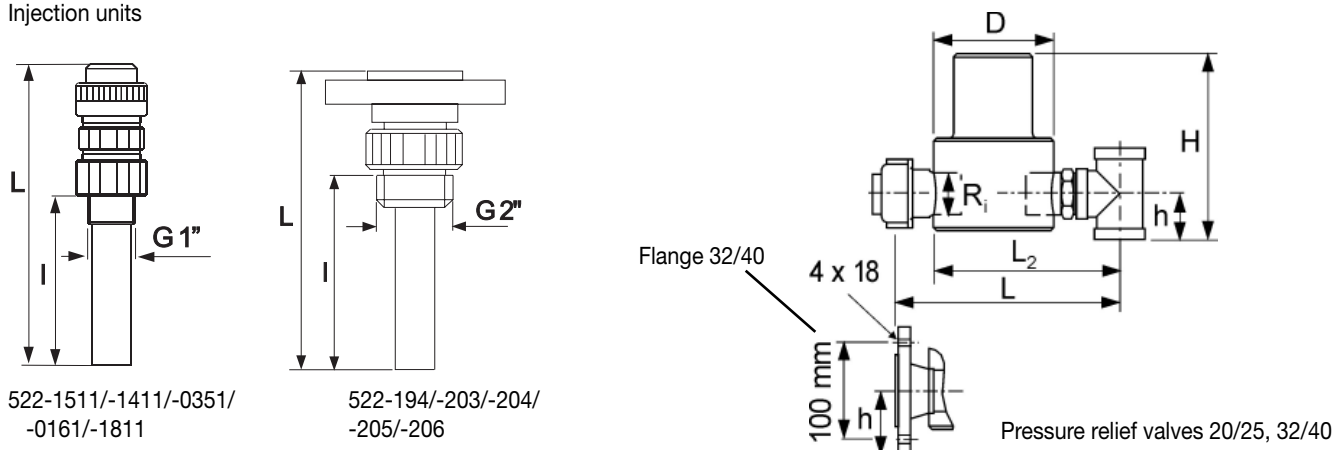
Pressure relief valves 525

protect the discharge pipework from too high pressures.

- Overflow function by a diaphragm-spring system, bypass pressure relief valves with connected T-piece (pumps up to 380 l/h)
- Opening pressure adjustable, pre-adjusted at the factory at 10 to 11 bars, connections included

Material	Connections	L [mm]	L ₁ [mm]	L ₂ [mm]	H [mm]	h [mm]	ø D [mm]	R _i	Order Number
PVC / Viton	Hose 13/20, pipe 20/25	204	-	-	149	33	90	-	525-3023
PVC / EPDM	Hose 13/20, pipe 20/25	204	-	-	149	33	90	-	525-3023.1
PP / Viton	Hose 13/20, pipe 20/25	206	-	-	148	32	90	-	525-3153
PP / EPDM	Hose 13/20, pipe 20/25	206	-	-	148	32	90	-	525-3153.1
PVDF / Viton	Pipe 20/25	199	-	-	148	32	90	-	525-3103
PVDF / PTFE	Pipe 20/25	199	-	-	148	32	90	-	525-3103.1
Stainless steel / Viton	Pipe 3/4" female thread	-	-	134	134	33	90	3/4"	525-3073
PVC / Viton	Pipe 32/40	283	-	200	49	129	-	-	525-3043
PVC / EPDM	Pipe 32/40	283	-	200	49	129	-	-	525-3043.1
PVC / Viton	Flange 32/40 according to DIN	305	-	200	49	129	-	-	525-3053
PVC / EPDM	Flange 32/40 according to DIN	305	-	200	49	129	-	-	525-3053.1
PP / Viton	Flange 32/40 according to DIN	298	-	195	44	129	-	-	525-3163
PP / EPDM	Flange 32/40 according to DIN	298	-	195	44	129	-	-	525-3163.1
PVDF / PTFE	Flange 32/40 according to DIN	298	-	195	44	129	-	-	525-3133
Stainless steel / Viton	Pipe 1 1/4" female thread	-	195	195	44	129	-	1 1/4"	525-3083

Injection units

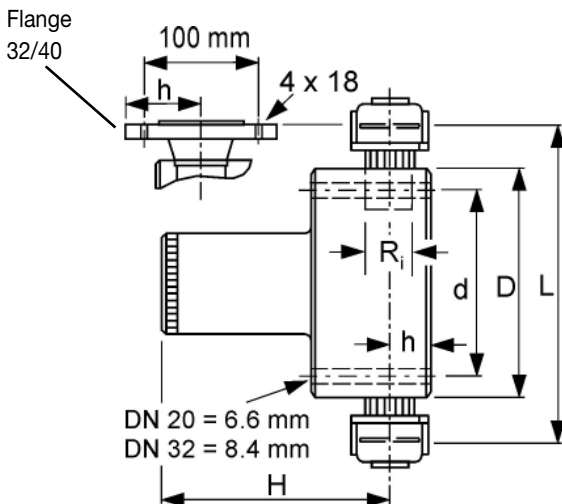


Pressure loading valves 525

are required, if the dosing system has no backpressure, if the backpressure varies or if the injection point is situated below the pump.

- Pressure adjustable by a spring-loaded screw, for installation in the dosing line, pre-adjusted at the factory at approx. 2 to 3 bars
- incl. connections

Materials	Connection	L [mm]	H [mm]	h [mm]	ø D [mm]	d [mm]	R _i	Order Number
PVC / Viton	Hose 13/20, pipe 20/25	149	144	28	90	72	-	525-1113
PVC / EPDM	Hose 13/20, pipe 20/25	149	144	28	90	72	-	525-1113.1
PP / Viton	Hose 13/20, pipe 20/25	153	144	28	90	72	-	525-1163
PP / EPDM	Hose 13/20, pipe 20/25	153	144	28	90	72	-	525-1163.1
PVDF / Viton	Pipe 20/25	146	144	28	90	72	-	525-1183
PVDF / PTFE	Pipe 20/25	146	144	28	90	72	-	525-1183.1
St. steel / Viton	Pipe R 3/4"	-	144	28	90	72	3/4"	525-2133
PVC / Viton	Pipe 32/40	205	118	40	129	105	-	525-1223
PVC / EPDM	Pipe 32/40	205	118	40	129	105	-	525-1223.1
PVC / Viton	Flange 32/40 according to DIN	229	218	70	129	105	-	525-1243
PVC / EPDM	Flange 32/40 according to DIN	229	218	70	129	105	-	525-1243.1
PP / Viton	Flange 32/40 according to DIN	229	218	70	129	105	-	525-1173
PP / EPDM	Flange 32/40 according to DIN	229	218	70	129	105	-	525-1173.1
PVDF / PTFE	Flange 32/40 according to DIN	229	218	70	129	105	-	525-2403
St. steel / Viton	Flange 32/40 according to DIN	200	218	70	129	105	-	525-2243



Pressure loading valves 20/25, 32/40

Connections for dosing pumps and fittings

Designation for	Pressure (PN)	Order No.
PVC pipe 20/25	10	529-023
St. steel pipe R 3/4"	100	529-025
Hastelloy C pipe R 3/4"	100	529-026
PP pipe 20/25	10	529-027
PVDF pipe 20/25	10	529-028
PVC hose 19/27	10	529-029

Dosing lines

Description	Order No.
PVC hose 13/20, per m	526-023
PVC hose 19/27, per m	526-024
PVC pipe 20/25, per m	526-014
Stainless steel pipe G 3/4", per m	526-028
PVC pipe 32/40, per m	526-016

Counterflange sets for dosing pumps and fittings

- Incl. screws, disks and nuts

Description	Order No.
PVC, with loose flange and bushing	529-417
PP, with loose flange and bushing	529-421
PVDF, with loose flange and bushing	529-420
St. steel, with pre-welded flange and flat gasket	529-423

Wall consoles with fixing material

Description	Order No.
for 226-...M simplex pumps, PP	539-033
for 226-...L simplex pumps, lacquered steel sheet	539-026
for 226-...L duplex pumps, lacquered steel sheet	539-027

Spare parts sets

- gaskets for the dosing head, 1 dosing diaphragm, 4 valve o-rings, 2 valve balls, 2 valve seats

Spare parts sets for:	PVC/Viton/ glass	PVC/EPDM/ stainless steel	PP/Viton/glass	PVDF/PTFE/PTFE	Stainless steel/ PTFE/stainless steel
Head size 1 226-52M / -100M / -142M 226-67L / -132L / -190L	553-1470	553-1470-2	553-1471	553-1473	553-1472
Head size 2 226-82M / -160M / -230M 226-95L / -199L / -280L	553-1474	553-1474-2	553-1475	553-1477	553-1476
Head size 3 226-130M / -255M / -380M 226-152L / -321L / -460L	553-1478	553-1478-2	553-1479	553-1481	553-1480
Head size 4 226-249L / -315L / -525L / -800L	553-1482	553-1482-2	553-1483	553-1485	553-1484

Spare parts set for integrated pressure relief valves

Description	Order No.
1 diaphragm NBR/PTFE, 1 ball PTFE, 1 o-ring Viton/PTFE	553-1490

Primus 226-...L



Primus 226-...M



Primus 226-...M
duplex pump



Primus 226-...M
with Etron Profi



Presented by: