

Product Information

Primus 208 with Plus³ system

The dosing pump with calibration unit for difficult liquids



Primus 208 Plus³ doses even very small amounts

Accurate dosing down to 0.03 l/h with the double diaphragm system

Primus 208 Plus³ is reliable

Degassing liquids are automatically deaerated in the priming chamber

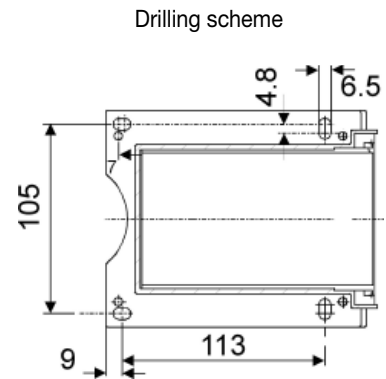
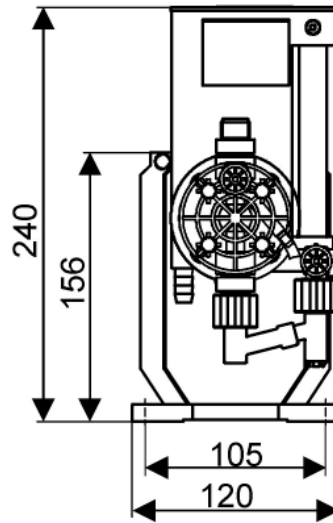
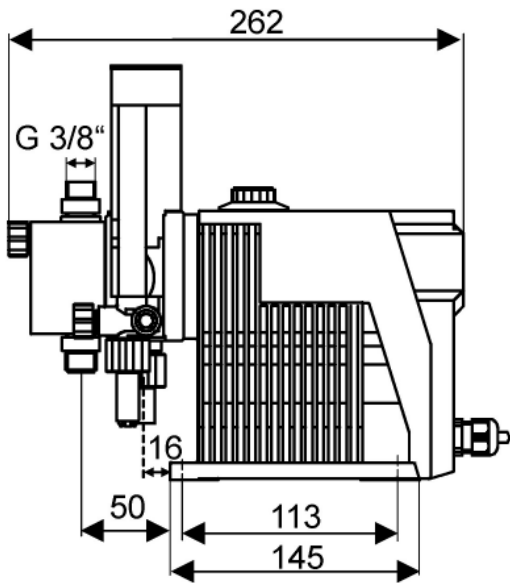
Primus 208 Plus³ is economic

Exact calibration while the process is running

Primus 208 Plus³ saves time

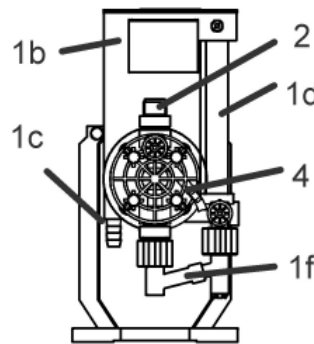
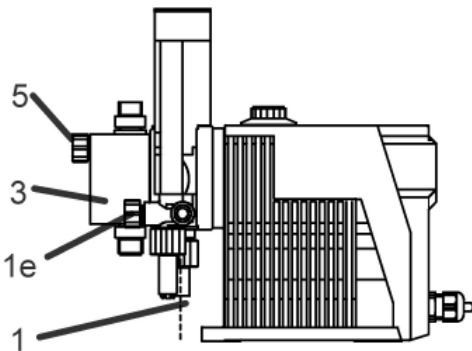
Containers can be exchanged while the process is running

Measurements



Measurements in mm

Functional description



- 1 Suction line from the tank
- Plus³ system:**
- 1b Priming unit with deaeration chamber
- 1c Overflow line to the tank
- 1d Calibration tube
- 1e Line from calibration tube to dosing head
- 1f shut-off valve at the calibrating tube
- 2 Dosing line
- 3 Dosing head
- 4 Deaeration line
- 5 Deaeration screw

Pump types

• without electronics, manual stroke adjustment, strokes per min: 120 by 50 Hz, 144 by 60 Hz

50 Hz			60 Hz						V _{stroke} [cm ³]	Order number <i>Please indicate: with Plus³ system !</i>
l/h [3 bar]	l/h [p _{max}]	Pmax [bar]	l/h [3 bar]	l/h [p _{max}]	Pmax [bar]	USg/h [3 bar]	USg/h [p _{max}]	Pmax [psi]		

Max. backpressure up to 10 bar, referring to 50 Hz

0.28	0.17	10 *	0.3	0.2	10	0.079	0.053	145	0.04	208-0.3
1.30	0.70	10	1.6	0.8	10	0.422	0.211	145	0.14	208-1.0
2.25	1.75	10	2.7	2.1	10	0.713	0.554	145	0.22	208-1.6
3.1	2.75	10	3.7	3.3	7	0.977	0.871	102	0.42	208-3.0
4.5	4.0	8	5.4	4.8	6	1.426	1.267	87	0.55	208-4.0
5.8	5.2	8	7.0	6.24	6	1.848	1.647	87	0.84	208-6.0

Max. backpressure up to 16 bar, referring to 50 Hz

1.3	0.40	16	1.6	0.48	16	0.422	0.127	232	0.13	208-0.8
2.25	1.40	16	2.7	1.68	13	0.713	0.444	189	0.16	208-1.1
4.5	3.5	16	5.4	4.2	13	1.426	1.109	189	0.50	208-3.6

*) 208-0.3: p_{max}=10 bar only for non-degassing chemicals, such as PAC, for chlorine bleaching p_{max}=1.5 bar!

Technical data

Application	<ul style="list-style-type: none"> • Suitable for moderately degassing, slightly crystallizing and/or concentrated liquids as well as very small amounts. Examples: Chlorine bleaching, flocculation agents, hydrochloric acid • Not suitable for H₂O₂ or peracetic acid!
Accuracy	Dosing flow variation ± 1.5 %, linearity ± 4 %
Noise level	± 45 dB(A), testing by DIN 45635-01-KL3
Max. suction height	1.5 m WC No flooded suction!
Max. viscosity	100 mPa s
Max. temperature	Max. ambient temperature 40 °C
Parts in contact with liquid	PVC/Viton/Ceramics, dosing diaphragm Viton /PTFE coated
Motor	Synchronous motor with gear reduction 230 V or 115 V, 50/60 Hz 11 W: for 208-0.3 / -1.0 / -1.6 / -3.0 / -4.0 22 W: for 208-0.8 / -1.1 / -3.6 / -6.0 daphragm control by eccentric-tappet-spring system
Protection	IP 65 pump protection
Weight	Approx. 2.9 kg

Connections

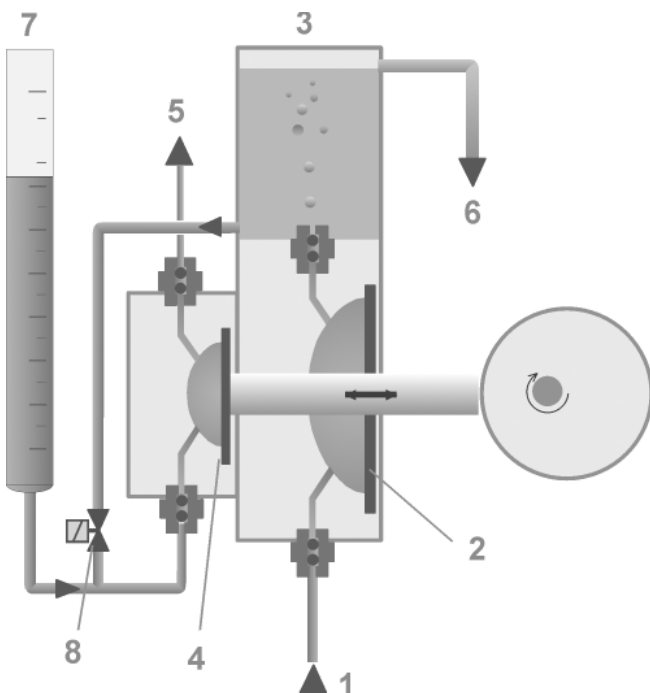
Pumps ≤ 10 bar

208-0.3 / -1.0 / -1.6 / -3.0 / -4.0 / -6.0	<ul style="list-style-type: none"> • Suction side: PVC or PE tube 4/6 • Pressure side: PE tube 4/6
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10 bar < Pumps ≤ 16 bar

208-0.8 / -1.1 / -3.6	<ul style="list-style-type: none"> • Suction side: PVC or PE tube 4/6 • Pressure side: PVC tube 6/12
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The Plus³ functional principle



- The conveying diaphragm (2) takes a large volume of liquid out of the dosing station (tank) (1) and transfers it into the priming (deaeration) chamber (3). **No problem when drawing in very small amounts.**
- Any gass bubbles in the liquid are **vented to the atmosphere** in the priming chamber.
- The separate working diaphragm (laid out for the required liter capacity) (4) doses the liquid into the process line (4).
- Any excess liquid is returned to the tanks via the deaeration bypass (6).
- The integrated calibration system comprising a graded calibration tube (7) and a calibration valve (8) allows precise **calibration of the dosing flow while the pump is running.**
- **Additional advantage:** tank exchange without stopping the system.

Material of dosing head and valves

Materials				
Dosing head	Valve	Seat	Gasket	Valve ball
PVC	PVC	Viton	Viton	Ceramics
PVC	PVC	EPDM	EPDM	Ceramics
PP	PP	Viton	Viton	Ceramics
PP	PP	EPDM	EPDM	Ceramics
Stainless steel	Stainless steel	PTFE	Stainless steel	Stainless steel

Options:

Position of dosing head

- 0°, 90°, 270°

Pump motor

- without On/Off switch
- with On/Off switch

Options

Mains voltage:

- 220-240 V, 50/60 Hz
- 110-120 V, 50/60 Hz
- 24 V AC, 50 Hz, not for 208-18IN

Mains plug / cable

- Euro / 1.5 m
- Switzerland / 1.5 m

Electronics

- Diaphragm breakage indication
- Dosing controller

Optional electronics Etron

Contact signal and stroke frequency signal electronics

Electronics without outputs

Etron	Input contacts N. O.
Unidos	Input contacts N. O.

Electronics with outputs

Etron, with multiplier /divisor	Outputs for error signal + pre-alert signal contacts N. O.
	Outputs for error signal + stroke signal, contacts N. O.
	Outputs for error signal + stroke signal with Hall sensor, contact N. O.
Unidos, contact signal 1:1	Outputs for error signal + stroke signal, contacts N. O.
	Outputs for error signal + stroke signal with Hall sensor, contact N. O.

Signal transmission

Description	Order number
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Cable with plug, length 2 m

for contact input, analog signal input and remote On/Off	321-205
for output pre-alert / error signal and stroke signal	321-206

Cable with plug, length 5 m

for contact input, analog signal input and remote On/Off	321-207
for output pre-alert / error signal and stroke signal	321-208

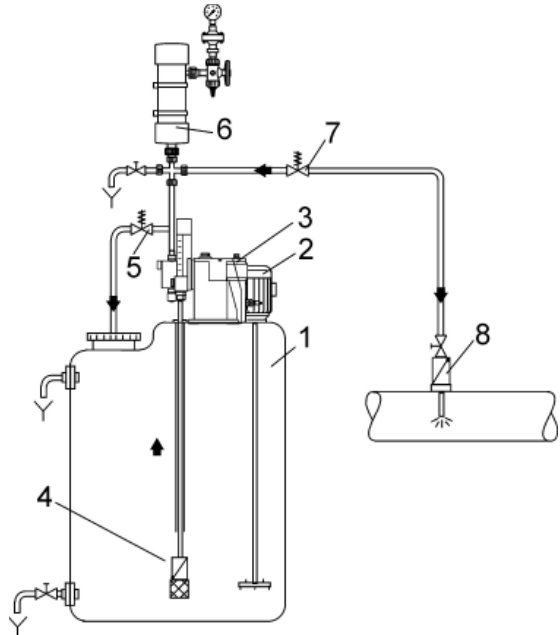
Combined plug / cable for diaphragm breakage indication and dosing controller

combined plug 5 poles	321-210
cable 5 poles, length 5 m	321-223

Accessories and fittings

Flow scheme of a complete dosing system

- 1 Dosing tank 502
(see Product Information 502/509)
- 2 Electric agitator 509
(see Product Information 502/509)
- 3 Dosing pump Primus 208 Plus³
- 4 Suction line 531 with empty signal
- 5 Overflow valve 525
- 6 Pulsation damper 517
(see Product Information 516/517)
- 7 Pressure relief valve 525
- 8 Injection unit 522



Suction line systems

- **Flexible lines:**
PE plug ø 44 mm for tank, ceramic weight
- **Rigid lines for tanks:**
PE plug ø 44 mm for tank, protective PVC pipe, for ALLDOS tank 75 l (502-0075.1) without agitator
- **Rigid lines for containers:**
protective PVC pipe, container cover according to DIN 6131, for 5-12 l containers
- **Lines with empty signal / pre-alert for pumps with electronics:**
with foot valve, N.O. contact

Description	Order number		
	flexible	rigid for tanks	rigid for containers
without empty signal	531-0100	531-0110	531-0120
with empty signal	531-0101	531-0111	531-0121
with pre-alert /empty signal	531-0102	531-0112	531-0122

Different materials, line and cable length on request!

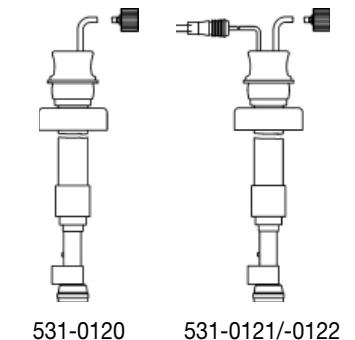
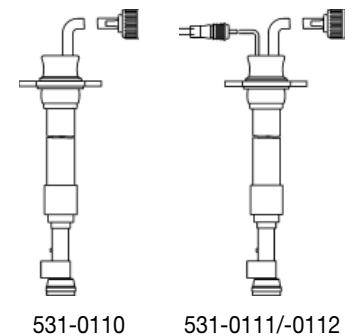
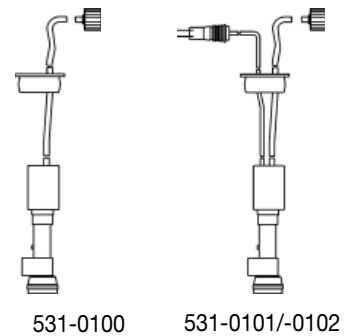
Suction lines for ALLDOS tanks

- **Please indicate the tank size!**
When ordering together with an ALLDOS dosing tank, the length of the suction line is adapted.
- **Please indicate, whether you use a tank with or without agitator**
For tanks with agitators, the suction line is equipped with a knurled nut.

Reed contact float switch

- To use as tank empty signal or additional level sensor
- To plug on the suction line

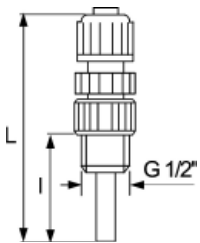
Description	Order number
Reed contact PVC with plug and cable 2 m, for connections 4/6 and 6/12	338-212
Reed contact PP with plug and cable 2 m, for connections 4/6 and 6/12	338-213



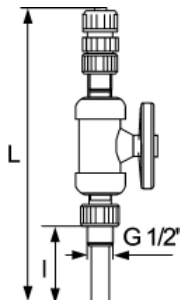
Injection unit 522

- Ball check valve, spring Hastelloy C
- Threaded piece with integrated injection tube for installation into the threaded sleeve of the process line

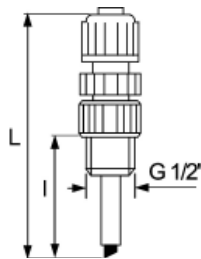
Materials	Order number	l [mm]	L [mm]	T _{max} [C]	PN [bar]	Connections
PVC / Viton / Glass	522-0311	62	118	40° to 10 bar 20° to 16 bar	16	Hose 6/12 or 4/6, pipe 10/12
PVC / EPDM / Stainless steel	522-0312	62	118			
PVC / Viton / Glass + ball valve	522-0411	62	257			
PVC / Viton / Glass + threaded piece st. steel	522-0611	62	118			
PVC / Viton / Glass + lip valve	522-4931	55	114			
PP / Viton / Glass	522-0051	62	121	40°	10	Hose 4/6
PVDF / PTFE / Ceramics	522-0081	62	130	50°	16	Pipe 4/6
Stainless steel / Viton / Stainless steel	522-0071	27	118	70°	25	
Stainless steel / Viton / Stainless steel cooling pipe length 1000 mm for 522-0911	522-0911 522-096	27 -	92 -	70° -	16 -	1/4"
PP / Viton / Glass	522-0341	62	118	40°	10	Pipe 12/16
PVDF / PTFE / PTFE	522-0151	62	118	50°	16	Pipe 14/16



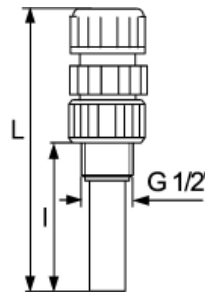
522-0311/-0312



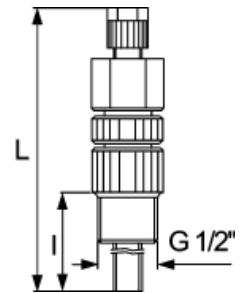
522-0411/-0611



522-4931



522-0051

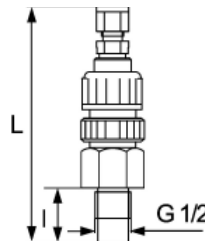


522-0081

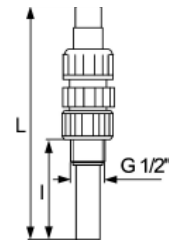
Dosing lines

- without fastening material
- PE hose 4/6
- PVC hose 6/12, for pumps > 10 bar

PVC is not suitable for pressure lines 4/6 !



522-0071



522-0341/-0151

Length	Order number	
	PE hose 4/6	PVC hose 6/12
1 m	526-005	526-022
1.5 m	526-005/1.5	526-022/1.5
3 m	526-005/03	526-022/03
5 m	526-005/05	526-022/05
10 m	526-005/10	526-022/10
15 m	526-005/15	526-022/15
25 m	526-005/25	526-022/25
50 m	526-005/50	526-022/50
100 m	526-005.1	-
per m	-	526-012 (PVC pipe)



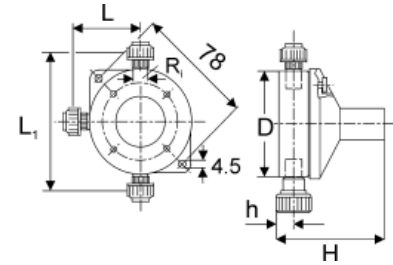
Injection unit 522-4931
with lip valve

Pressure relief valves 525

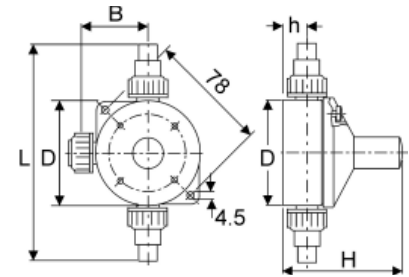
Protect the line system on the discharge side against too high pressures.

- 3-way valve, overflow function by a diaphragm spring system, diaphragm PTFE
- Opening pressure adjustable, factory pre-adjustment approx. 11 bar, incl. connections

Materials body / gasket	Connections	L [mm]	B [mm]	H [mm]	h [mm]	ø D [mm]	Order number
PVC / Viton or EPDM	Hose 4/6 or 6/12, Pipe 10/12	96	48	90	21	68	525-0584.1
PP / Viton	Hose 4/6	96	48	90	21	68	252-0582
PP / EPDM	Hose 4/6	96	48	90	21	68	525-0582.1
PVDF / PTFE	Pipe 4/6	120	60	90	21	68	525-0580.1
Stainless steel	Pipe 4/6	108	54	82	11	68	525-0581
PVC / Viton or EPDM	Hose 4/6 or 6/12, Pipe 10/12 opening pressure 17 bar	140	49	90	21	68	525-1584.1
Stainless steel	Pipe R 1/4" female thread	-	-	82	11	69	525-0586
PP / Viton	Pipe 12/16	140	50	90	21	68	525-0583
PP / EPDM	Pipe 12/16	140	50	90	21	68	525-0583.1
PVDF / PTFE	Pipe 14/16	140	50	90	21	68	525-0585.1



Pressure relief valve PVC



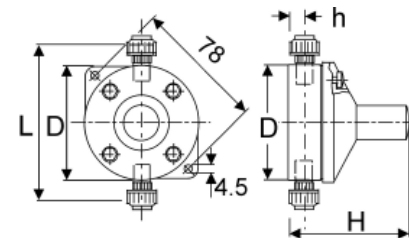
Pressure relief valve PP/PVDF

Pressure loading valves 525

Necessary, if the dosing system has no backpressure, if the backpressure varies or if the injection point is situated lower than the pump.

- Adjustable by a spring-loaded screw, factory pre-adjustment approx. 2 to 3 bars, incl. connections

Materials body / gasket	Connections	L [mm]	H [mm]	h [mm]	ø D [mm]	Order number
PVC / Viton or EPDM	Hose 4/6 or 6/12, Pipe 10/12	96	90	21	68	525-0567.1
PP / Viton	Hose 4/6	96	90	21	68	525-0565
PP / EPDM	Hose 4/6	96	90	21	68	525-0565.1
PP / Viton	Pipe 12/16	140	90	21	68	525-0568
PP / EPDM	Pipe 12/16	140	90	21	68	525-0568.1
PVDF / PTFE	Pipe 14/16	140	90	21	68	525-0569.1



Pressure loading valve

Adapter for installation of the pressure relief valves and pressure loading valves on the pumps

Materials	Connections	Order number
PVC	4/6	529-057
PP	4/6	529-062
PVC	6/12	529-061
PP	12/16	529-063



Pressure relief and pressure loading valve

Installation sets

for pumps up to 10 bar.

- Suction line with foot valve and filter
- Deaeration and suction hose 1.5 m, pressure hose 5 m
- Including injection unit, connection G 1/4"

Description	Materials	Order number
Pumps without electronics	PVC	553-048
Suction line with empty signal	PP	553-063
Pumps with electronics	PVC	553-049
Suction line with empty signal	PP	553-064

Spare parts sets

- 4 suction / pressure valves (st. steel: only inner valve parts)
- Gaskets for dosing head and valves
- 1 deaeration cartridge
- 1 dosing diaphragm
- 4 dosing head screws

Pumps	Materials	Order number
208-0.3	PVC / Viton / Ceramics	553-11487
	PVC / EPDM / Ceramics	553-1492
	PP / Viton / Ceramics	553-1493
	PP / EPDM / Ceramics	553-1494
208-0.8 to 208-4.0	PVC / Viton / Ceramics	553-1486
	PVC / EPDM / Ceramics	553-1495
	PP / Viton / Ceramics	553-1496
	PP / EPDM / Ceramics	553-1497
208-6.0	PVC / Viton / Ceramics	553-1488
	PVC / EPDM / Ceramics	553-1498
	PP / Viton / Ceramics	553-1499
	PP / EPDM / Ceramics	553-1500

Transparent cover

- For dirt protection: optional for pumps with horizontal display
- Material: Makrolon

Wall console

- With fastening material

Description	Order number
PE black	539-006



Presented by: