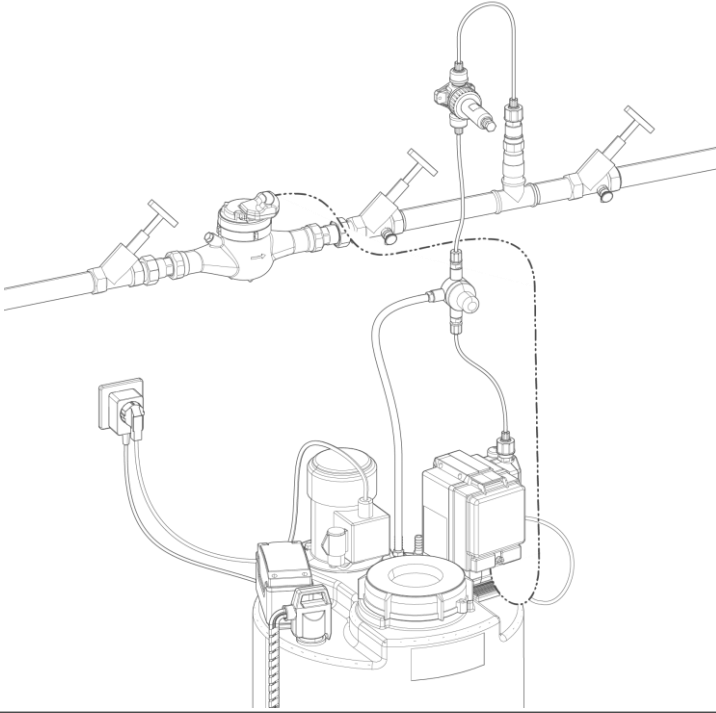


We understand water.



## Dosing system | Accessories for GENODOS pumps GP

Technical Information

grünbeck

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We reserve the right to technical modifications.  
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**Technical Information**

Edition: June 2022

Order no.: 100198900000\_en\_165

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# 1 Introduction

This Technical Information is intended for owners/operating companies and qualified specialists for dosing systems.

The Technical Information has the following purpose:

- Design of a dosing system with GENODOS pump GP
- Selection of the required accessories after selection of the GENODOS pump GP

## 1.1 Validity of the Technical Information

- Dosing systems with GENODOS pump GP

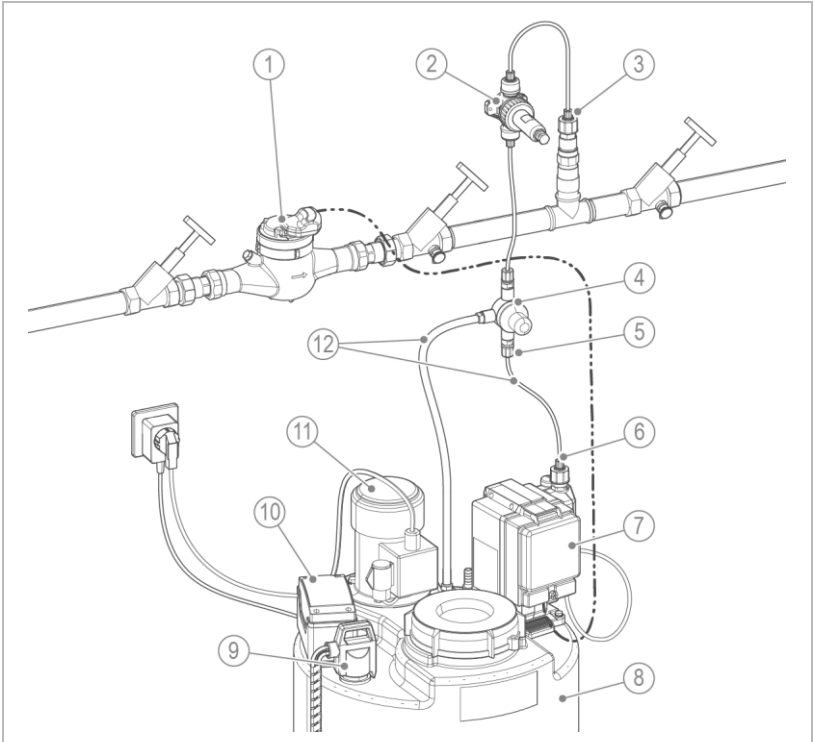
## 1.2 Other applicable documents

- Operation manual of GENODOS pump GP, order no. 118 940
- Operation manual of the respective dosing system
- Documents on the respective accessories

## 2 Overview



- Design your dosing system with the appropriate accessories for GENODOS pump GP (refer to chapter 3).



### Designation

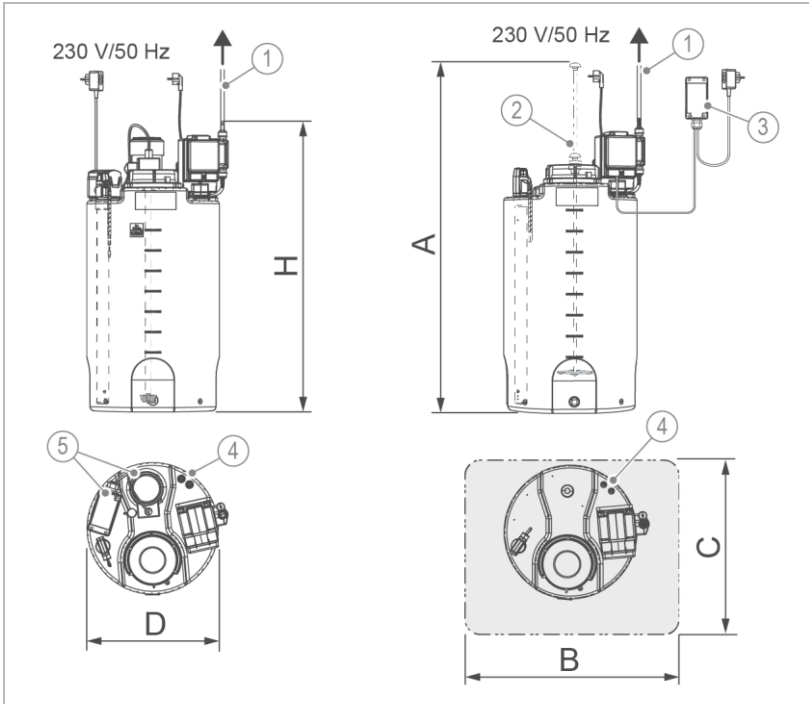
- |   |                                |
|---|--------------------------------|
| 1 | Contact water meter            |
| 2 | Pressure maintaining valve     |
| 3 | Injection point (dosing group) |
| 4 | Overflow valve                 |
| 5 | Hose connection                |
| 6 | Connection kit                 |

### Designation

- |    |                        |
|----|------------------------|
| 7  | Dosing pump GENODOS GP |
| 8  | Dosing tank            |
| 9  | Suction lance          |
| 10 | Agitator control       |
| 11 | Agitator               |
| 12 | Dosing line            |

## 2.1 Space required for the dosing systems

Space required to install, operate and clean the 60 – 500 litre dosing tanks.

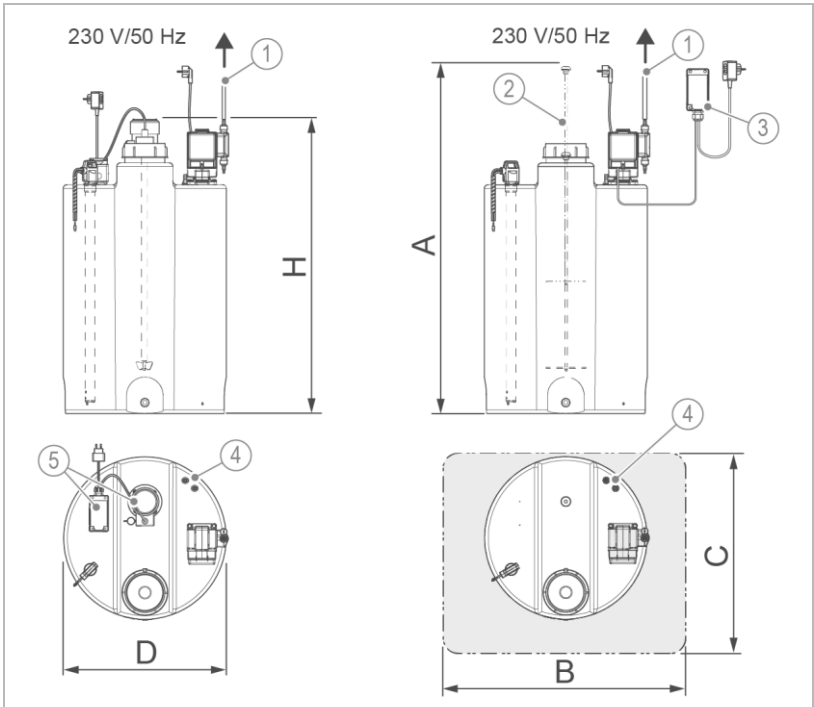


Designation	
1	Dosing line to injection point
2	Hand mixer
3	Digital timer

Designation	
4	Connection nozzles
5	Automatic agitator with analogue time control

Dosing tank		60	100	200	300	500
D Diameter	mm	450	460	545	670	800
H Height	mm	620	830	1010	1020	1140
A Height	mm	1050	1500	1800	1800	2050
B Width approx (+500)	mm	<b>950</b>	<b>960</b>	<b>1045</b>	<b>1170</b>	<b>1300</b>
C Depth approx.	mm	<b>1250</b>	<b>1260</b>	<b>1345</b>	<b>1470</b>	<b>1600</b>

## 2.1.1 Space required with dosing tanks 60 – 500 HMI/ARW



Designation	
6	Dosing line to injection point
7	Hand mixer
8	Digital timer

Designation	
9	Connection nozzles
10	Automatic agitator with analogue time control

Dosing tank		60	100	200	300	500
D Diameter	mm	420	460	600	670	790
H Height	mm	760	940	1060	1210	1350
A Height	mm	1100	1400	1700	1950	2200
B Width approx (+500)	mm	<b>920</b>	<b>960</b>	<b>1100</b>	<b>1170</b>	<b>1290</b>
C Depth approx. (+800)	mm	<b>1220</b>	<b>1260</b>	<b>1400</b>	<b>1470</b>	<b>1590</b>

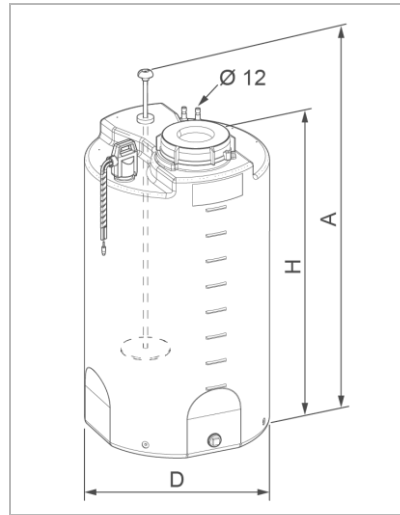
## 3 Accessories

### 3.1 Dosing tanks

The dosing tanks are made of transparent UV-stabilised polyethylene, with litre scale and draining plug.

#### 3.1.1 Dosing tank with hand mixer

- Suction lance with pre-alarm, empty signal and foot valve
- Hand mixer
- 2 Connection nozzles made of PPH for filling and for the connection of safety fittings such as an overflow valve



Content		60	100	200	300	500
D Diameter	mm	450	460	545	670	800
H Height	mm	620	830	1010	1020	1140
A Height	mm	1050	1500	1800	1800	2050
<b>Order no.</b>		<b>163 281</b>	<b>163 282</b>	<b>163 283</b>	<b>163 284</b>	<b>163 285</b>

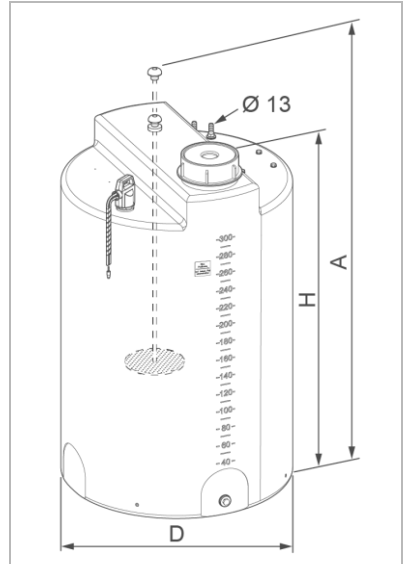


The dosing tanks with 6-digit order numbers are discontinued articles which are replaced by the new dosing tanks 60 – 500 HMI.



### 3.1.2 Dosing tank 60 – 500 HMI

- Suction lance with pre-alarm, empty signal and foot valve
- Hand mixer (HMI)
- 2 Connection nozzles made of PPH for filling and for the connection of safety fittings such as an overflow valve



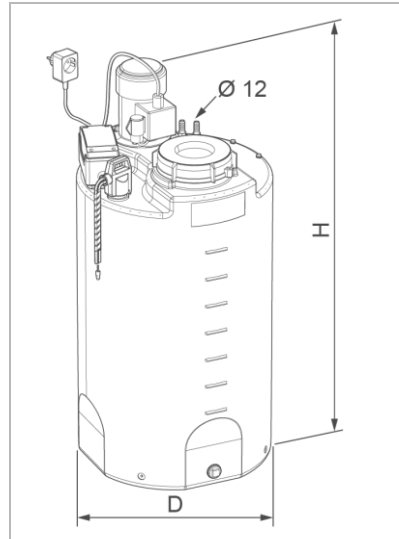
Content		60-HMI	100-HMI	200-HMI	300-HMI	500-HMI
D Diameter	mm	420	460	600	670	790
H Height	mm	645	835	995	1110	1250
A Height	mm	1100	1400	1700	1950	2200
<b>Order no.</b>		<b>163000 020000</b>	<b>163000 030000</b>	<b>163000 040000</b>	<b>163000 050000</b>	<b>163000 060000</b>

### 3.1.4 Dosing tank with automatic agitator



An automatic agitator **cannot be used** with: Chlorine, Baktox, acid and hydrazine dosing systems.

- Suction lance with pre-alarm, empty signal and foot valve
- Automatic agitator with analogue time control
- 2 Connection nozzles made of PPH for filling and for the connection of safety fittings such as an overflow valve



Content		60	100	200	300	500
D Diameter	mm	450	460	545	670	800
H Height	mm	730	950	1110	1120	1235
Order no.		163 291	163 292	163 293	163 294	163 295



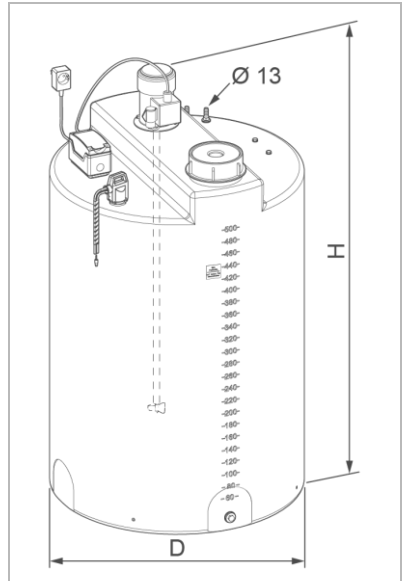
The dosing tanks with 6-digit order numbers are discontinued articles which are replaced by the new dosing tanks 60 – 500 ARW.

### 3.1.6 Dosing tanks 60 – 500 ARW



An automatic agitator **cannot be used** with: Chlorine, Bakttox, acid and hydrazine dosing systems.

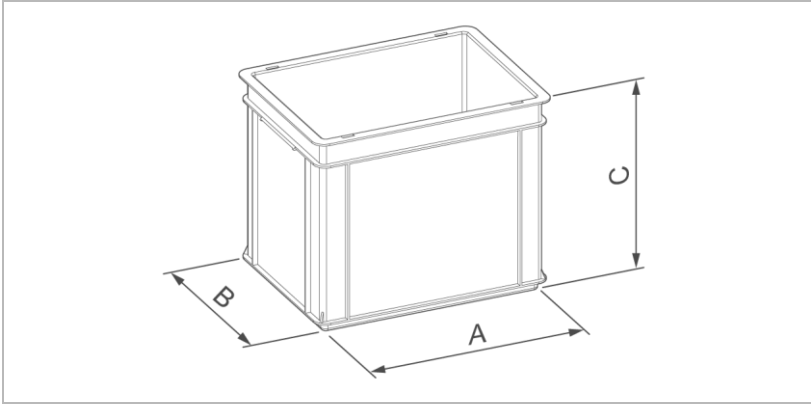
- Suction lance with pre-alarm, empty signal and foot valve
- Automatic agitator with analogue time control (ARW)
- 2 Connection nozzles made of PPH for filling and for the connection of safety fittings such as an overflow valve



Content		60-ARW	100-ARW	200-ARW	300-ARW	500-ARW
D Diameter	mm	420	460	600	670	790
H Height	mm	760	940	1060	1210	1350
Order no.		163000 070000	163000 080000	163000 090000	163000 100000	163000 110000

### 3.2 Collecting container

Chemical collecting trays made of acid and base resistant plastic to receive the dosing solution in case of leaks.



For containers/ dosing containers		20	35	60/100
A Length	mm	400	600	800
B Width	mm	300	400	600
C Height	mm	325	325	325
Volume	l	40	70	150
Material		PP	PP	PP
<b>Order no.</b>		<b>210 560</b>	<b>210 570</b>	<b>163 805</b>

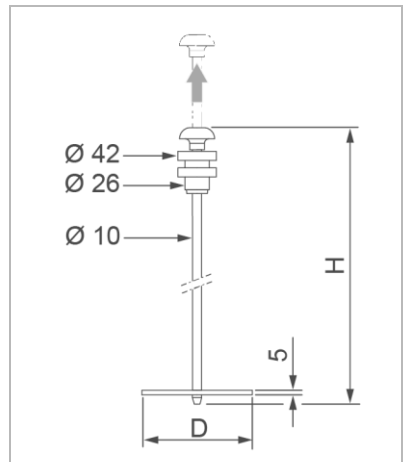
### 3.3 Stirring devices for dosing tanks

As hand mixer or automatic agitator to prepare and mix liquids as well as for intensive mixing of the dosing solution.

- Required if the dosing solution is prepared with solid substances and in case of solutions that tend to settle.

#### 3.3.1 Hand mixer

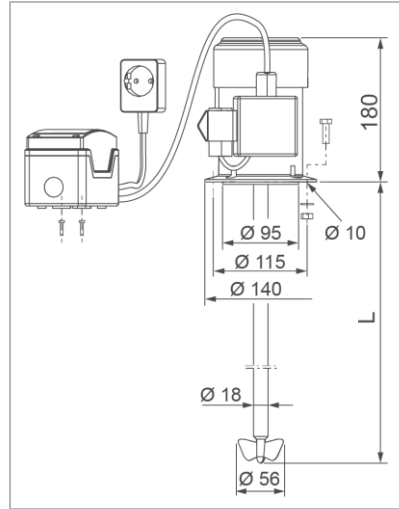
- PVC/PP
- Shaped as a tamper
- Handle



Dosing tank		60	100	200	300	500
D Diameter	mm	120	120	162	162	162
H Height	mm	510	760	890	890	1010
<b>Order no.</b>		<b>163 010</b>	<b>163 007</b>	<b>163 008</b>	<b>163 008</b>	<b>163 009</b>

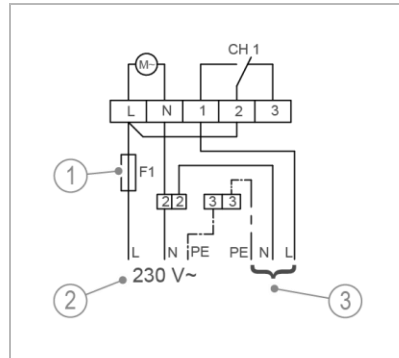
### 3.3.2 Automatic agitator

- For liquids up to a viscosity of approx. 40 cP
- Control as intermittent operation, 5 minutes every 0.5 hours
- Key for manual release
- Electric motor 230 V
- Agitator control
- Agitator shaft made of 1.4571 (V4A)
- Agitator blade made of PP



Technical specifications		
Switching voltage	V/Hz	230/50
Rated current	A	0.35
Capacity (operation)	kW	0.33
Protection/protection class		IP44/⊕
Insulation class		B
Rotational speed	min <sup>-1</sup>	1350
Temperature	°C	≤ 50

Designation	
1	Fuses for: Motor KR0-30 (F1= 0.315 AT) Motor KR0-120 (F1=3.15 AT)
2	Power supply
3	Agitator



Dosing tank		60	100	200	300	500
L Agitator shaft	mm	490	740	860	860	990
Order no.		163 015	163 011	163 012	163 012	163 013

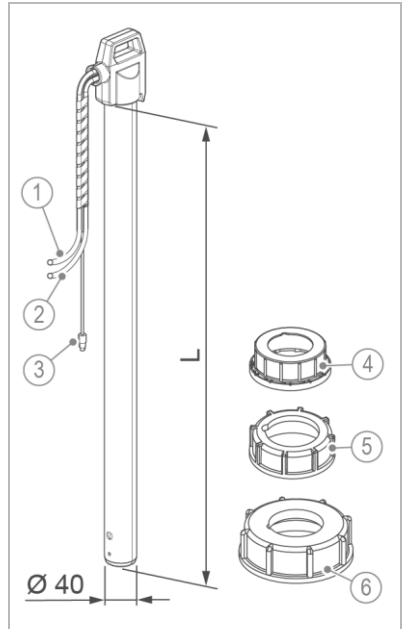


An automatic agitator **cannot be used** with: Chlorine, Bakttox, acid and hydrazine dosing systems.

### 3.4 Suction lances

#### 3.4.1 Suction lance made of PVC/PPO (chlorine-resistant)

- Bottom sieve
- With voltage-free float switch for empty signal, including pre-alarm
- Black connector plug for GENODOS pump GP (3-pole)
- Suction and return hose id =6/od = 9 mm, transparent or black (light-proof)



Designation	
1	PVC hose, L = 1350 mm
2	PVC hose, L = 1400 mm
3	Connector plug for empty signal, L = 1500 mm
4	Screw cap for 10 l container
5	Screw cap for 20 l container
6	Screw cap from 60 l container

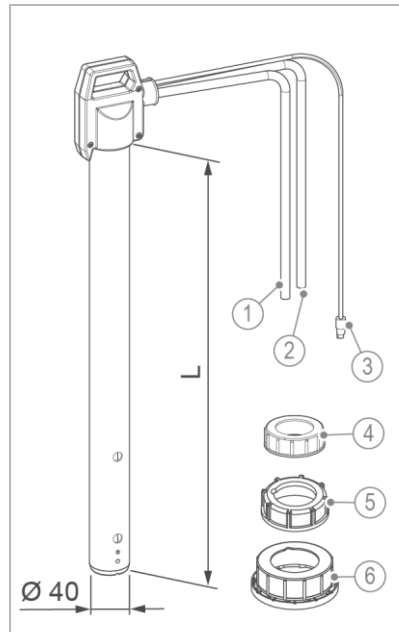
For GENODOS pumps GP-../40, only suction lances with pre-alarm are to be used.

Suction lance		B 10/20		B 10/20		B 10/20
Design		Empty signal only	Empty signal only	Empty signal + pre-alarm	Empty signal + pre-alarm	Empty signal + pre-alarm
						Light-proof
L Length	mm	465	750	465	750	465
GENODOS pump		GP-../25	GP-../40	GP-../40	GP-../40	GP-../40
Order no.		116 540	116 520	118 510	118 520	118 515

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### 3.4.2 Suction lance made of PVC/PPO (GENO-Baktox)

- Bottom sieve
- Light-proof and gas-tight
- With voltage-free float switch for empty signal and pre-alarm
- Black connector plug for GENODOS pump GP (3-pole)
- Suction and return hose id =6/od = 9 mm, black (light-proof)



Designation	
	PVC hose
1	L = 800 mm (118 525) L = 1400 mm (118 530)
	PVC hose
2	L = 800 (118 525) L = 1400 mm (118 530)
	Connector plug for empty signal
3	L = 800 mm (118 525) L = 1500 mm (118 530)
4	Screw cap for 3 l container (for 118 525)
5	Screw cap for 10 l container
6	Screw cap for 20 l container

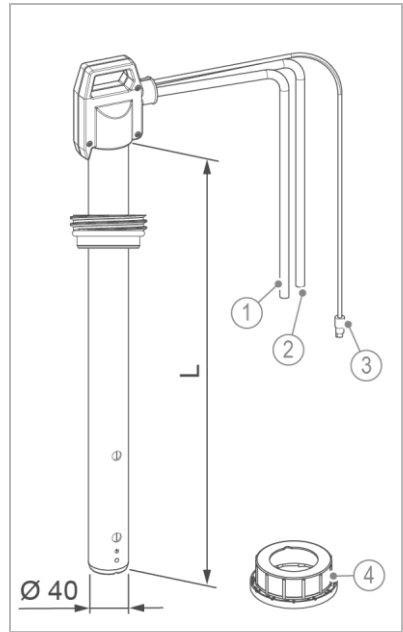
For GENODOS pumps GP-../40, only suction lances with pre-alarm are to be used.

Suction lance		3 L	B 10/20
Design		Empty signal + pre-alarm	Empty signal + pre-alarm
L Length	mm	260	465
GENODOS pump		GP-../40	GP-../40
<b>Order no.</b>		<b>118 525</b>	<b>118 530</b>



### 3.4.3 Suction lance for disposable 100/200 l barrel

- Bottom sieve
- With voltage-free float switch for empty signal
- Black connector plug for GENODOS pump GP ( 3-pole)
- Suction and return hose id =6/od = 9 mm, transparent or black (light-proof)



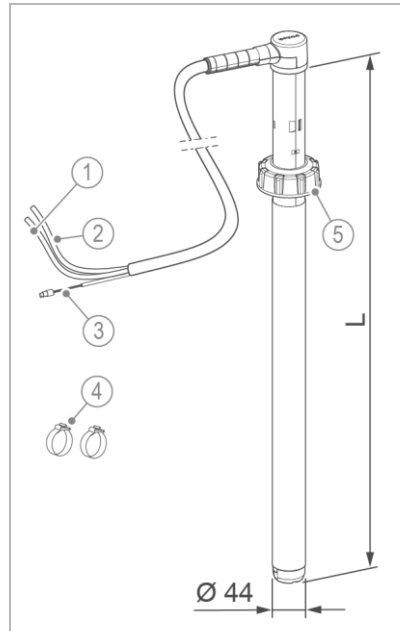
Designation	
1	PVC hose, L = 1350 mm
2	PVC hose, L = 1400 mm
3	Connector plug for empty signal, L = 1500 mm
4	Screw cap for container

Suction lance	for disposable 100/200 l barrel	
Design	With empty signal	
L Length	mm	980
<b>Order no.</b>	<b>118 540</b>	

### 3.4.4 60 l suction lance for exaliQ mineral substances

- Bottom sieve
- With rod electrode for empty signal
- Black connector plug for GENODOS pump GP (3-pole)
- Suction and return hose id =6/od = 9 mm, transparent

Designation	
1	PVC hose, L = 1400 mm
2	PVC hose, L = 1400 mm
3	Connector plug for empty signal, L = 1500 mm
4	Hose clamp
5	Screw cap for 60 l container



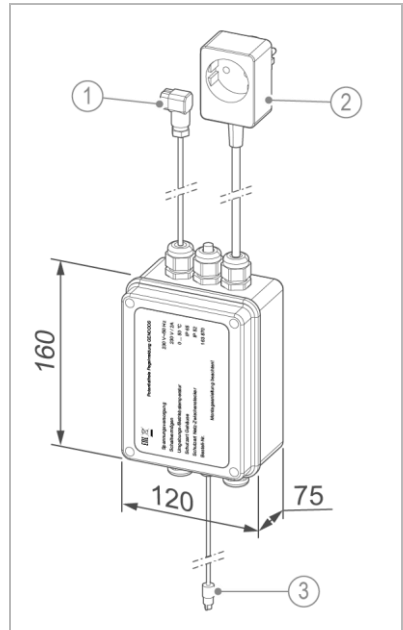
The retrofitting kit GENODOS DME 60 l suction lance must only be used for dosing systems GENODOS DME 6 – 100 which dose **exaliQ** mineral substances

Suction lance	60 l (exaliQ mineral substances)
Design	Empty signal + pre-alarm
L Length mm	770
GENODOS pump	GP-../40
Order no.	163 765

### 3.5 Voltage-free level signal/collective fault

By means of the voltage-free level signal, the level “pre-alarm” as well as the empty/fault signal can be passed on separately as a voltage-free contact, e.g. to a control room.

- Only suction lances with pre-alarm and empty signal can be used.
- Fully connected:
  - Mains cable with mains adaptor plug
  - Connecting line to level input (3-pole, black, round)
  - Connecting line to voltage-free empty/fault signal (3-pole, black, square)



Designation	
1	Cable socket with Pg 7 screw connection, L = 1400 mm
2	Shock-proof connector plug with mains cable, L = 1500 mm
3	Connector plug for empty signal, L = 1500 mm

Using the voltage-free level signal GENODOS is only possible for GENODOS pumps GP-./40.

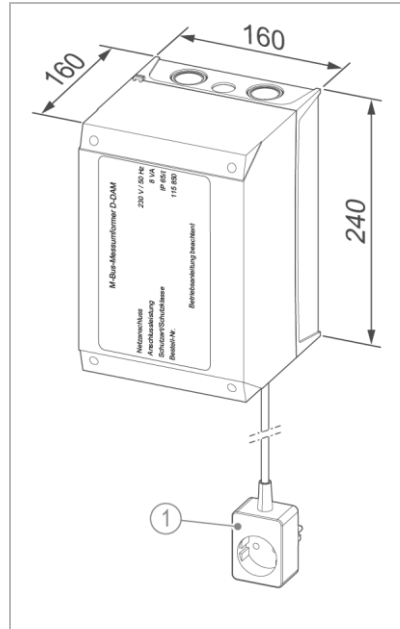
Level signal	GENODOS
Design	Empty signal + pre-alarm
GENODOS pump	GP-./40
Technical specifications	Refer to manual (order no. 163 951)
<b>Order no.</b>	<b>163 870</b>

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### 3.6 M-Bus measuring transducer D-DAM

The M-Bus measuring transducer D-DAM receives the pulses of water meters with Reed or Hall signal on the input side and forwards them to the possible destinations below on the output side as:

- Open collector pulse signal 1:1 (turbine water meter), or in any division desired, to Grünbeck control units
- Analogue signal 4 - 20 mA to Grünbeck control units (e.g. GENODOS pump GP../40)
- Relay contact for evaluation by client (e.g. counter).
- M-Bus protocol according to IEC 870 to an M-Bus master provided by the client.
- D-DAM = Digital input / digital analogue M-Bus output



**Designation**

- 1 Shock-proof connector plug with mains cable, L = 1500 mm

M-Bus	D-DAM
Design	D-DAM = Digital input / digital analogue M-Bus output
Technical specifications	Refer to manual (order no. 115 934)
Order no.	<b>115 850</b>

### 3.7 Connector plugs

Connector plug to solder on for the respective input connection to the GENODOS pumps GP.

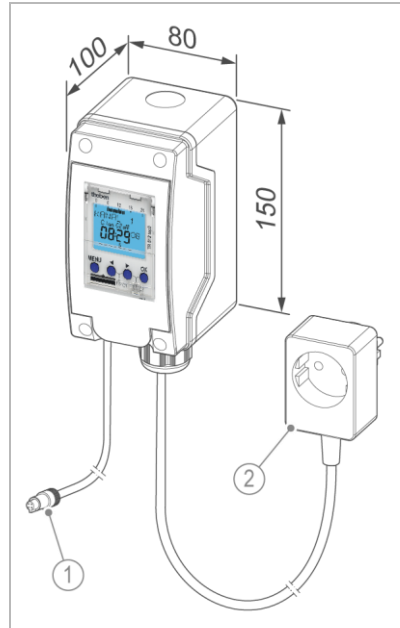
Illustration	Product	Order no.
	<b>Coupling socket for empty signal</b> <b>Type 09-9748-70-03</b>	<b>9 23 03020</b>
	3-pole level plug (black)	
	<b>Coupling plug for empty signal</b> <b>Type 09-9747-70-03</b>	9 23 03 030
	3-pole level connecting plug (black) for extension lead	
	<b>Coupling socket for external control</b> <b>Type 09-9764-73-04</b>	<b>9 23 03021</b>
	4-pole external plug (red)	
	<b>Connecting cable for fault signal</b> <b>(3 m)</b>	<b>116 219</b>
	With grey 3-pole cable socket (order no. 9 23 07 101)	
	<b>Connecting cable for external control</b> <b>(3 m)</b>	<b>116 094</b>
	With coupling socket (order no. 9 23 03 021)	
	<b>Connecting cable for empty signal</b> <b>(3 m)</b>	<b>116 093</b>
	With coupling socket (order no. 9 23 03 020)	
	<b>Connecting cable for empty signal</b> <b>(2x 2 m)</b>	<b>203 038</b>
	2x Extension lead (Order no. 116 215) with coupling plug (Order no. 9 23 03 030)	

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### 3.8 Digital time control

For digital time control of dosing systems with GENODOS pump GP-../40

- Switching times with holiday function
- Voltage-free contact for automatic control of GENODOS pump GP-../40 (red, 4-pole plug)
- Manual or continuous switching
- Operating hour meter



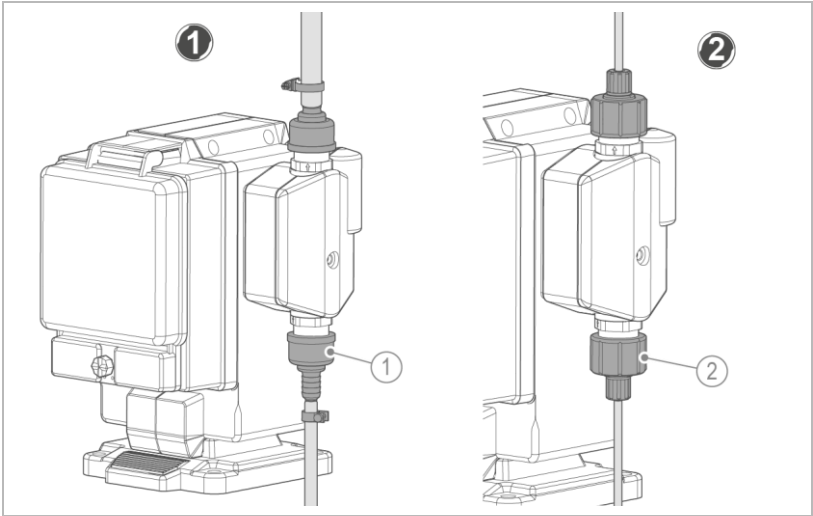
Designation	
1	Connecting cable for external control, L = 3000 mm
2	Shock-proof connector plug with mains cable, L = 1500 mm

Timer	1 Channel
Design	Digital
Technical specifications	Refer to manual (order no. 163 950)
Order no.	163 090

### 3.9 Dosing lines

In the overview below, the dosing lines are assigned to the corresponding connection kits or hose connections (refer to chapter 3.9.1).

#### Example

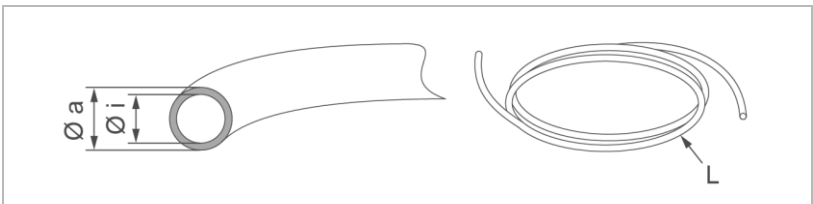


#### Designation

- 1** Standard connection kit for hose id = 6 or id = 12 mm, G5/8 union nut

#### Designation

- 2** Connection kit for hose id = 4/od = 6 mm, G5/8 union nut



#### Designation

- Øi** Inside diameter (id)  
**Øo** Outside diameter (od)

#### Designation

- L** Length by the metre in mm

### 3.9.1 Overview of dosing lines with connection kits

► Select the appropriate combination

Øi – Øi Øi – Øo	Connection kit								
	6 - 12	4/6	2/4	6 - 12	4/6	2/4	6 - 12	4/6	8/10
Material	PPO/FPM	PVC/FPM	PVC/FPM	PPO/EPDM	PVC/EPDM	PVC/EPDM	PVDF/FPM	PVDF/FPM	V2A pipe
Connection kit	116 018	116 091	116 034	116 387	116 388	116 389	116 351	116 352	853 76 010
Dosing lines									
857 72 002			✓			✓			
857 70 104			✓			✓			
857 71 004		✓			✓			✓	
857 70 015		✓			✓			✓	
857 71 006	✓			✓			✓		
857 71 109	✓			✓			✓		
857 74 006	✓			✓			✓		
857 71 109	✓			✓			✓		
857 74 006	✓			✓			✓		
857 70 020	✓			✓			✓		
857 71 008	✓			✓			✓		
857 74 010	✓			✓			✓		
857 71 012	✓			✓			✓		
812 51 004									✓
									



### Dosing lines (Ø<sub>i</sub> 2 mm)

Order no.		857 72 002	
Diameter	Material	Pressure	Temperature
id = 2/od = 4 mm	Soft PA 12, white	25 bar	20 °C
<b>For connection kit</b>	<b>116 034 / 116 389</b>		

Order no.		857 70 104	
Diameter	Material	Pressure	Temperature
id = 2/od = 4 mm	Black PTFE	25 bar	20 °C
<b>For connection kit</b>	<b>116 034 / 116 389</b>		

### Dosing lines (Ø<sub>i</sub> 4 mm)

Order no.		857 71 004	
Diameter	Material	Pressure	Temperature
id = 4/od = 6 mm	Transparent PVC	–	20 °C
<b>For connection kit</b>	<b>116 091 / 116 388 / 116 352</b>		

Order no.		857 70 015	
Diameter	Material	Pressure	Temperature
id = 4/od = 6 mm	Natural-coloured PTFE	25 bar	20 °C
<b>For connection kit</b>	<b>116 091 / 116 388 / 116 352</b>		

### Dosing lines (Ø<sub>i</sub> 6 mm)

Order no.		857 71 109	
Diameter	Material	Pressure	Temperature
id = 6/od = 8 mm	Natural-coloured PTFE	10 bar	20 °C
<b>For connection kit</b>	<b>116 018 / 116 387 / 116 351</b>		

Order no.		857 71 006	
Diameter	Material	Pressure	Temperature
id = 6/od = 9 mm	Transparent, soft PVC, free of silicone	–	20 °C
<b>For connection kit</b>	<b>116 018 / 116 387 / 116 351</b>		

Order no.		857 71 109	
Diameter	Material	Pressure	Temperature
id = 6/od = 9 mm	Black PVC	–	20 °C
For connection kit		116 018 / 116 387 / 116 351	

Order no.		857 74 006	
Diameter	Material	Pressure	Temperature
id = 6/od = 12 mm	Soft, fabric-reinforced PVC	15 bar	20 °C
For connection kit		116 018 / 116 387 / 116 351	

### Dosing lines (Ø<sub>i</sub> 8 mm)

Order no.		857 71 008	
Diameter	Material	Pressure	Temperature
id = 8/od = 12 mm	Soft, transparent PVC, free of silicone	–	20 °C
For connection kit		116 018 / 116 387 / 116 351	

Order no.		812 51 004	
Diameter	Material	Pressure	Temperature
id = 8/od = 10 mm	Stainless steel 1.4571, DIN EN ISO 1127	40 bar	300 °C
For connection kit		853 76 010	

### Dosing lines (Ø<sub>i</sub> 10 mm)

Order no.		857 74 010	
Diameter	Material	Pressure	Temperature
id = 10/od = 16 mm	Soft, fabric-reinforced PVC	12 bar	20 °C
For connection kit		116 018 / 116 387 / 116 351	

### Dosing lines (Ø<sub>i</sub> 12 mm)

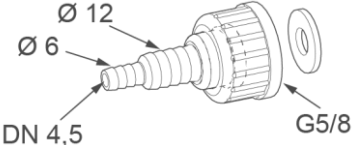
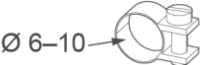

Order no.		857 71 012	
Diameter	Material	Pressure	Temperature
id = 12/od = 16 mm	Soft, transparent PVC	–	20 °C
For connection kit		116 018 / 116 387 / 116 351	

### 3.10 Connection kits

Connection kits with G5/8" union nut for pump head of GENODOS pump GP.

Depending on the version of the GENODOS pump GP, the connection kits made of the respective material are included in the scope of supply.

#### Connection kits (D 6 – 12 mm)

Connection kit (standard)		
Order no.	Material	id = 6 or 12 mm
<b>116 018</b> 1 piece	PPO/FPM	
<b>116 387</b> 1 piece	PPO/EPDM	
<b>116 351</b> 1 piece	PVDF/FPM	
Incl. union nut, seal		
<b>With accessories:</b>		
<b>850 190 75</b> 1 piece	Hose clamp NORMA S 10/9 (galvanised steel)	
<b>850 190 29</b> 1 piece	Worm drive clamp 8-16/9-C7 W2 (1.4016/galvanised steel)	

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Connection kit (4G)		
Order no.	Material	id = 6 or 12 mm
<b>118 054</b> 2 pieces	PVDF/Viton	
Incl. union nut, seal and 3-pole coupling socket (level plug) 4-pole coupling socket (external plug)		
<b>With accessories:</b>		
<b>850 190 75</b> 4 pieces	Hose clamp NORMA S 10/9 (galvanised steel)	
<b>850 190 29</b> 2 pieces	Worm drive clamp 8-16/9-C7 W2 (1.4016/galvanised steel)	

Connection kit (Baktox)		
Order no.	Material	id = 6 or 12 mm
<b>116 768</b> 2 pieces	PVDF/PTFE	
Incl. union nut, seal and 3-pole coupling socket (level plug) 4-pole coupling socket (external plug)		
<b>With accessories:</b>		
<b>850 190 75</b> 2 pieces	Hose clamp NORMA S 10/9 (galvanised steel)	

### Connection kits (D 4/6 mm)

Connection kit		
Order no.	Material	id = 4/od = 6 mm
<b>116 091</b> 1 piece	PVC/FPM	
<b>116 388</b> 1 piece	PVC/EPDM	
<b>116 352</b> 1 piece	PVDF/FPM	
Incl. union nut and seal		

### Connection kits (D 2/4 mm)

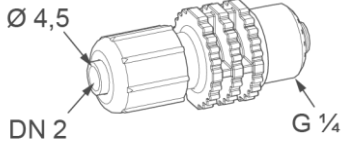
Connection kit		
Order no.	Material	id = 2/od = 4 mm
<b>116 034</b> 1 piece	PVC/FPM	
<b>116 389</b> 1 piece	PVC/EPDM	
Incl. union nut and seal		

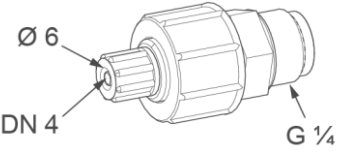
### Connection kit (D 8/10 mm)

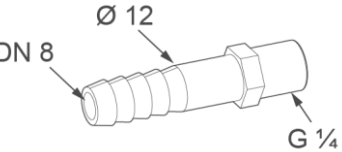
Connection kit		
Order no.	Material	Pipe id = 8/od = 10 mm
<b>853 76 010</b> 1 piece	Stainless steel 1.4571	
Incl. union nut and seal		

### 3.11 Hose connections

Hose connections with G $\frac{1}{4}$  connection threads for dosing lines, suitable for pressure maintaining valves (refer to chapter 3.12) and overflow valves (refer to chapter 3.13).

Hose connection		
Order no.	Material	id = 2/od = 4 mm
160 033	PPO/EPDM	 <p>Ø 4,5 DN 2 G <math>\frac{1}{4}</math></p>

Pressure hose nozzle		
Order no.	Material	id = 4/od = 6 mm
160 034e	PVC	 <p>Ø 6 DN 4 G <math>\frac{1}{4}</math></p>

Pressure hose nozzle		
Order no.	Material	id = 10 mm
852 39 101	PVC	 <p>Ø 12 DN 8 G <math>\frac{1}{4}</math></p>

Angled hose connector		
Order no.	Material	id = 6/od = 9 mm
851 48 512	PP	

Hose connection		
Order no.	Material	id = 6 mm or od = 10 mm
163 232	PTFE	

Y-type hose connector		
Order no.	Material	id = 6 mm
851 48 402	PVDF	

### 3.12 Pressure maintaining valves

For accurate dosing, a pressure maintaining valve (spring-loaded diaphragm valve) is required in conjunction with a dosing pump

- if the dosing pump is pressurised on the suction side
- in case of fluctuating pressure in the system line
- in case of dosing into unpressurised system lines (free outlet)

A pressure maintaining valve might **not** be required if the counter-pressure created by the opening pressure of a spring-loaded ball-type injection point or hose injection point is sufficient.



The pressure maintaining valve must not be used as a non-return valve to prevent backflow.

The pressure maintaining valves are pre-set to 4 bar at the factory.

Technical specifications		DN 6
Nominal connection diameter	male thread 5/8 – male thread 5/8	
Flow rate	≤ 75 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
Order no.	855 60 008	



Technical specifications		DHV1. CB18
Nominal connection diameter of hose (A)	id = 2/od = 4 mm	
Flow rate	≤ 30 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 133</b>	

Technical specifications		DHV2. CB18
Nominal connection diameter of hose (A)	id = 4; od = 6	
Flow rate	≤ 40 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar (163 134) 2 bar (203 173)	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 134</b> <b>203 173</b>	

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Technical specifications		DHV3. CB18
Nominal connection diameter of hose (A)	id = 6/od = 12 mm	
Flow rate	≤ 60 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
Order no.	163 137	

Technical specifications		DHV4. CB18
Nominal connection diameter of hose (A)	G 5/8 id = 4/od = 6 mm	
Flow rate	≤ 40 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
Order no.	163 138	

Technical specifications		DHV5. CB18
Nominal connection diameter of hose (A)	G 5/8 id = 2/od = 4 mm	
Flow rate	≤ 30 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 139</b>	

Technical specifications		DHV6. CB18
Nominal connection diameter of hose (A)	G 5/8 id = 6/od = 12 mm	
Flow rate	≤ 60 l/h	
Nominal pressure	10 bar	
Pre-set and sealed	4 bar	
Adjustable operating range	1 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 141</b>	

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### 3.13 Overflow valves



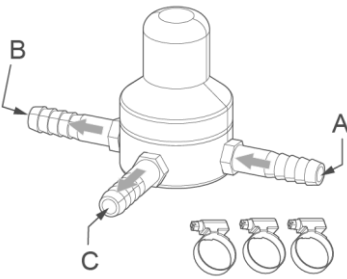
Always use an overflow valve, especially in case of aggressive media.

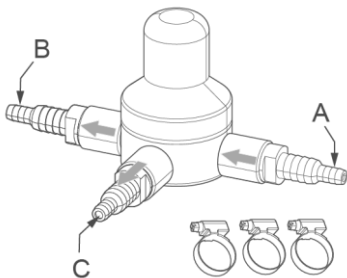
An overflow valve has the following purpose:

- It is a safety device to protect the dosing pump and the corresponding fittings and pipes.
- It prevents the system pressure from rising to an impermissibly high level on the delivery side of the dosing pump that might, for instance, occur if the fittings clog although the pump is running or if they are being closed.

The overflow valves have a smooth passage and are to be installed in the pressure line. If the desired operating pressure is exceeded, the valve opens and vents the overpressure via the lateral connection. The desired operating pressure can be set.

Technical specifications		DN 5 V 85
Nominal connection diameter		
A = Dosing pump	Female thread 1/4"	
B = Dosing point	Female thread 1/4"	
C = Dosing tank	Female thread 1/4"	
Connections	none	
Flow rate	≤ 60 l/h	
Adjustable operating range	3 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>855 02 120</b>	

Technical specifications		No. 1
Nominal connection diameter		
A = Dosing pump	id = 10 mm	
B = Dosing point	id = 10 mm	
C = Dosing tank	id = 10 mm	
Flow rate	≤ 60 l/h	
Adjustable operating range	3 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>160 240</b>	

Technical specifications		id = 6 / id = 10 mm
Nominal connection diameter		
A = Dosing pump	id = 6/id = 10 mm	
B = Dosing point	id = 6/id = 10 mm	
C = Dosing tank	id = 6/id = 10 mm	
Flow rate	≤ 60 l/h	
Adjustable operating range	3 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
<b>Order no.</b>	<b>160 255</b>	

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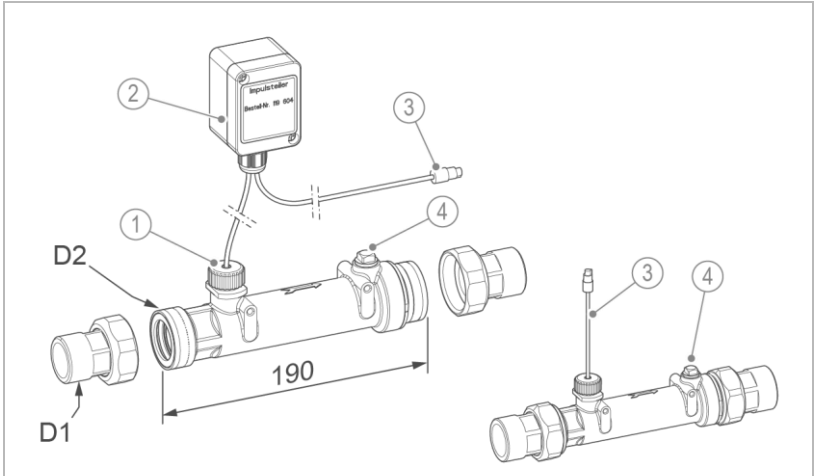
Technical specifications		Kombi 1 (oxi)
Nominal connection diameter		
A = Dosing pump	id = 4/id = 6 mm	
B = Dosing point	id = 4/od = 6 mm	
C = Dosing tank	id = 6/id = 10 mm	
Y-type hose connector	PVDF 851 48 402	
Hose line	Black PVC id = 6/od = 9 mm	
Flow rate	≤ 60 l/h	
Adjustable operating range	3 – 10 bar	
Housing material	PVC	
Membrane material	EPDM-PTFE-coated	
Temperature	≤ 35 °C	
Order no.	<b>163 790</b>	

### 3.14 Contact water meters

Contact water meters made of brass and plastic with connector plug for GENODOS pump.

Water meters up to nominal connection diameters of R2" with 2 water meter screw connections each and seals.

Large water meters with connection diameters DN 80 and DN 100 without counterflange and without seal.



**Designation**

- 3 Hall sensor
- 4 Pulse division

**Designation**

- 5 4-pole coupling socket, external plug (red) with 2 m cable
- 6 Blind plug G $\frac{1}{4}$ "

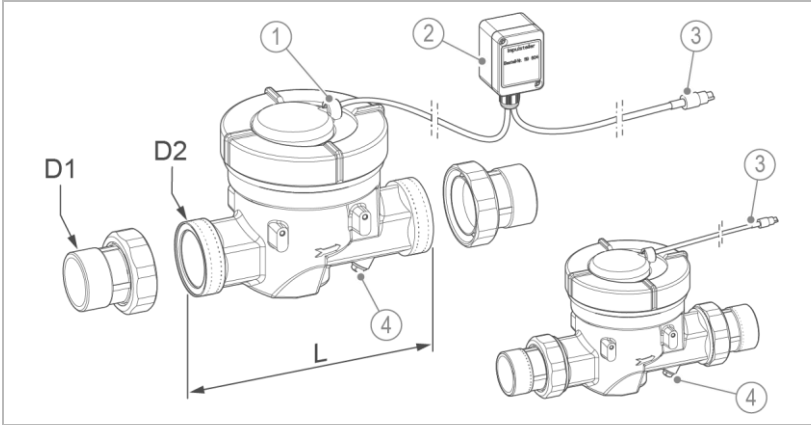
**Turbine water meter without pulse division**

Connection diameter	D1	R $\frac{3}{4}$ "	R1"	R $1\frac{1}{4}$ "
	D2	R $1\frac{1}{4}$ "	R $1\frac{1}{4}$ "	R $1\frac{1}{2}$ "
Nominal connection diameter		DN 20	DN 25	DN 32
Nominal flow	m <sup>3</sup> /h			
Q <sub>min</sub> /Q <sub>N</sub> /Q <sub>max</sub>		0.03/2/4	0.03/3/6	0.03/5/10
Pulse sequence K	l/pulse	0.03	0.03	0.03
Type of contact		Hall		
<b>Order no.</b>		<b>119 781</b>	<b>119 712</b>	<b>119 715</b>

**Turbine water meter with pulse division**

Connection diameter	D1	R $\frac{3}{4}$ "	R1"	R $1\frac{1}{4}$ "
	D2	R $1\frac{1}{4}$ "	R $1\frac{1}{4}$ "	R $1\frac{1}{2}$ "
Nominal connection diameter		DN 20	DN 25	DN 32
Nominal flow	m <sup>3</sup> /h			
Q <sub>min</sub> /Q <sub>N</sub> /Q <sub>max</sub>		0.03/2/4	0.03/3/6	0.03/5/10
Pulse sequence K	l/pulse	0.33	0.33	0.5
Type of contact		Hall		
<b>Order no.</b>		<b>119 780</b>	<b>119 711</b>	<b>119 714</b>

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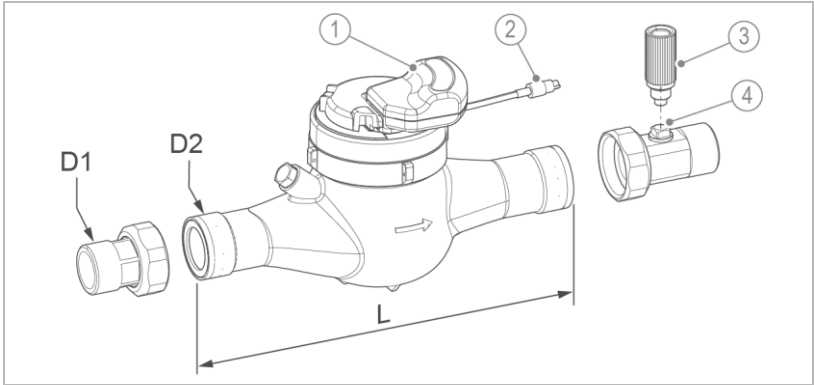


Designation	
1	Hall sensor
2	Pulse division

Designation	
3	4-pole coupling socket, external plug (red) with 2 m cable
4	Blind plug G $\frac{1}{4}$ "

Water meter		without pulse division		with pulse division		
Connection diameter	D1	R1½"	R2"	R1½"	R2"	
	D2	R2"	R2½"	R2"	R2½"	
Nominal connection diameter		DN 40	DN 50	DN 40	DN 50	
L Length without screw connection		mm	190	240	190	240
Nominal flow		m³/h				
Q <sub>min</sub> /Q <sub>N</sub> /Q <sub>max</sub>			0.05/10/20	0.08/15/30	0.05/10/20	0.08/15/30
Pulse sequence K		l/pulse	0.25	0.25	0.93	1.33
Type of contact		Hall				
Order no.		119 741	119 751	119 705	119 750	

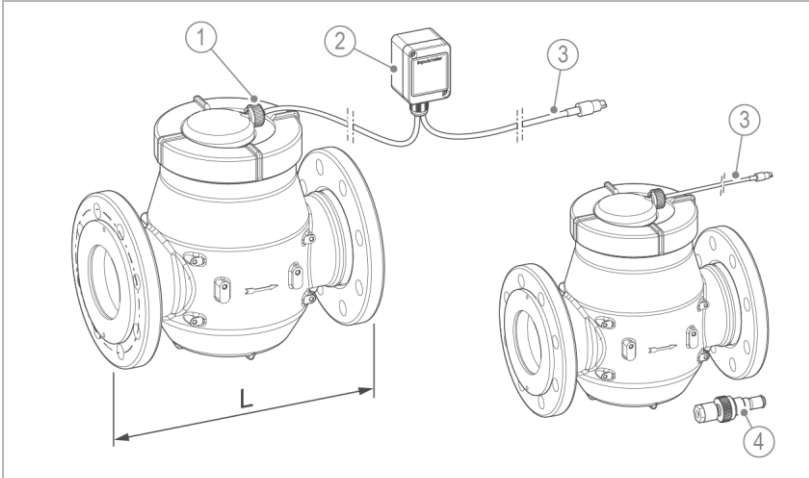




Designation	
1	Reed sensor
2	4-pole coupling socket, external plug (red) with 2 m cable

Designation	
3	Adapter for dosing valve for order no. 163 076 only
4	Blind plug G $\frac{1}{4}$ "

Water meter					
Connection diameter	D1	R1"	R1 $\frac{1}{2}$ "	R1 $\frac{1}{2}$ "	R2"
	D2	R1 $\frac{1}{4}$ "	R2"	R2"	R2 $\frac{1}{2}$ "
Nominal connection diameter		DN 25	DN 40	DN 40	DN 50
L Length without screw connection	mm	260	300	300	270
Nominal flow	m $^3$ /h	0.07/6/12	0.12/10/20	0.12/10/20	0.30/15/30
Pulse sequence K	l/pulse	2.5	5	10	5
Type of contact		Reed			
Order no.		163 076	163 082	163 083	119 756

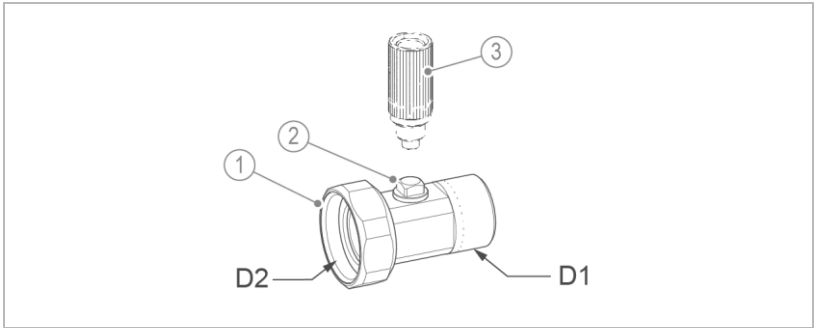


Designation	
1	Hall sensor
2	Pulse division
3	4-pole coupling socket, external plug (red) with 2 m cable

Designation	
4	Dosing valve with pulse generator for order no. 119 707 only

Water meter		with pulse generator and dosing valve		with pulse division	
		DN 80	DN 80	DN 80	DN 100
Nominal connection diameter		DN 80	DN 80	DN 80	DN 100
L Length without counterflange	mm	310	310	310	310
Nominal flow $Q_{min}/Q_N/Q_{max}$	m <sup>3</sup> /h	0.10/40/80	0.10/40/80	0.10/50/100	
Pulse sequence K	l/pulse	0.25	3.8	3.8	
Type of contact		Hall			
Order no.		119 707	119 706	119 786	

### 3.15 Water meter screw connections with lateral connection



Designation	Designation
1 Union nut with flat seal	3 Adapter for dosing valve G $\frac{1}{4}$ " (black PE)
2 Draining connection R $\frac{1}{4}$ "	

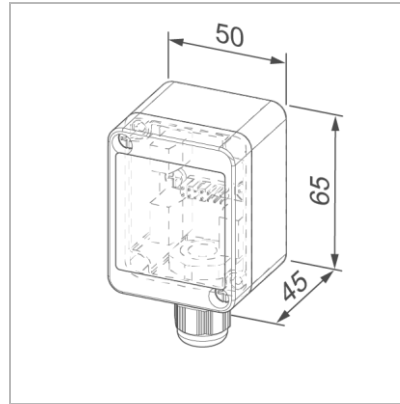
Water meter screw connection	with adapter		without adapter	
	Connection diameter	D1 D2	R1" R1 $\frac{1}{4}$ "	R1 $\frac{1}{4}$ " R2 $\frac{1}{2}$ "
Nominal connection diameter		DN 25	DN 32	DN 40 DN 50
Order no.		855 01 683	855 01 686	855 01 689 855 01 692

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### 3.16 Pulse division

If the pulse division is delivered with a water meter, dosing units or dosing systems, it is already pre-set at the factory.

- Input = Connection of the pulse signal to be divided (e.g. from the Hall sensor or Reed switch of a water meter).
- Output = Divided signal to the analysis electronics
- With jumpers to set the division factor



Pulse division	
Design	Without Hall cable
Technical specifications	Refer to manual (order no. 119 949)
Order no.	<b>119 604</b>

### 3.17 Dosing valves

To dose the mineral solution into the flow line.

- Suitable for exaliQ dosing systems

Dosing valve 2/4		for hose id = 2/od = 4 mm
Operating pressure	≤ 10 bar	
Operating temperature	≤ 60 °C	
<b>Order no.</b>	<b>163 024</b>	
Material	FPM	
<b>Order no.</b>	<b>163 038</b>	
Material	PPO/EPDM	

Dosing valve 2/4 kit		
<b>Order no.</b>	<b>163 505</b>	
Material	PPO/FPM	
Dosing valve 2/4 (163 024) Dosing hose, black PTFE, 3 m Connection kit D 2/4, PVC/FPM (116 034)		
<b>Order no.</b>	<b>163 514</b>	
Material	PPO/EPDM	
Dosing valve 2/4 (163 038) Dosing hose, PTFE, 3 m Connection kit D 2/4, PVC/EPDM (116 389)		

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- Suitable for dosing systems GENODOS DM and GENODOS DME

Dosing valve 4/6		for hose id = 4/od = 6 mm
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
Order no.	<b>163 234</b>	
Material	PVC/EPDM/silicone	
Order no.	<b>163 236</b>	
Material	PTFE/FKM/FPM	

Dosing valve 4/6 kit		
Order no.	<b>163 515</b>	
Material	PVC/EPDM/silicone	
Dosing valve 4/6 (163 234) Dosing hose, natural-coloured PTFE, 3 m Connection kit D 4/6, PVC/EPDM (116 388)		
Order no.	<b>163 510</b>	
Material	PVC/FPM	
Dosing valve 4/6 (163 236) Dosing hose, natural-coloured PTFE, 3 m Connection kit D 4/6, PVC/FPM (116 091)		

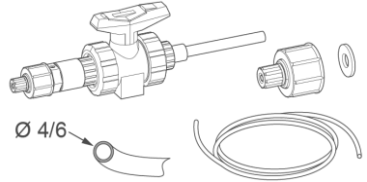
### 3.18 Dosing groups

Dosing groups to dose mineral solutions at the injection point of the pipe.

### 3.18.1 Plastic dosing groups

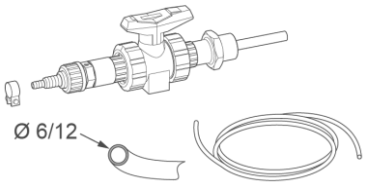
<b>Dosing group 2.73</b>		<b>for hose id = 4/od = 6 mm</b>
Material	PVC	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 228</b>	

<b>Dosing group 2.73 kit</b>	
Dosing group 2.73 (163 228) Dosing hose, natural-coloured PTFE, 3 m Connection kit D 4/6, PVC/EPDM (116 388)	
<b>Order no.</b>	<b>163 512</b>

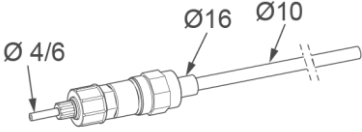


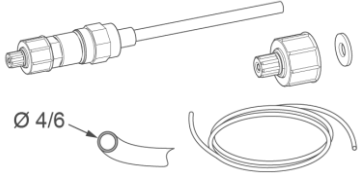
<b>Dosing group 3.02</b>		<b>for hose id = 6 – 12 mm</b>
Material	PVC	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 229</b>	

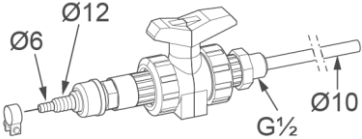
<b>Dosing group 3.02 kit</b>	
Dosing group 3.02 (163 229) Dosing hose, PVC, 3 m Connection kit 6/12 is included in the scope of supply of GENODOS pump GP	
<b>Order no.</b>	<b>163 513</b>

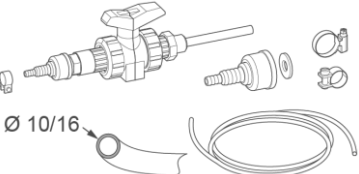


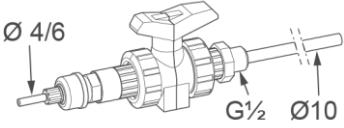
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Dosing group 2.71		for hose id = 4/od = 6 mm
Material	PVC/EPDM	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
Order no.	163 215	

Dosing group 2.71 kit		
Dosing group 2.71 (163 215) Dosing hose, natural-coloured PTFE, 3 m Connection kit D 4/6, PVC/EPDM (116 388)		
Order no.	163 511	

Dosing group 2.60		for hose id = 6 – 12 mm
Material	PVDF	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
Order no.	163 300	

Dosing group 2.60 kit		
Dosing group 2.60 (163 300) Dosing hose, PVC, 3 m Connection kit D 6/12, PVDF/FPM (116 351)		
Order no.	163 590	

Dosing group 2.61		for hose id = 4/od = 6 mm
Material	PVDF	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
Order no.	163 360	



Dosing group 2.70		for hose id = 4/od = 6 mm
Material	PVC/FPM/PP	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 210</b>	
Dosing group 2.72		for hose id = 4/od = 6 mm
Material	PVC/PP/FPM	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
<b>Order no.</b>	<b>163 220</b>	
Dosing group Lv-K		for hose id = 4/od = 6 mm
Material	PVC/FPM	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 40 °C	
<b>Order no.</b>	<b>203 326</b>	

Dosing group 3.01		for hose id = 6 – 12 mm
Material	PVC/Viton	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 35 °C	
Order no.	163 225	

Dosing group 3.01 kit	
Dosing group 3.01 (163 225) Dosing hose, PVC, 3 m	
Order no.	163 585

Dosing group T (DN 20)		for hose id = 4/od = 6 mm
Material	PVC/FPM	
Operating pressure	≤ 2 bar	
Operating temperature	≤ 35 °C	
Installation height	≥ 550 mm	
Order no.	212 091	

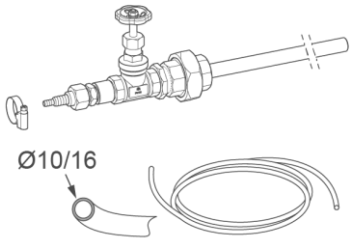
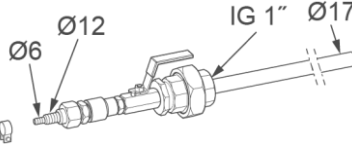
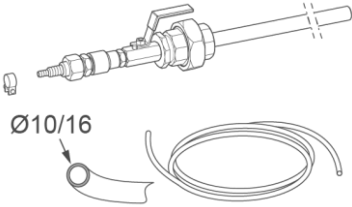
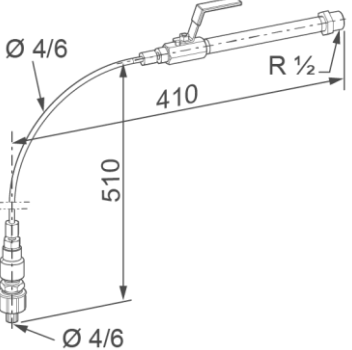
### 3.18.3 Steel dosing group

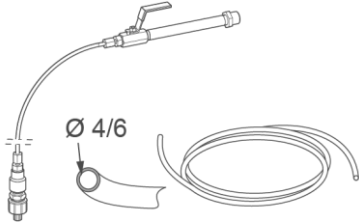
Dosing group 2.21		for hose id = 10/od = 16 mm
Material	PPE/red brass/malleable cast iron/steel 37 Steel injection pipe	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 110 °C	
<b>Order no.</b>	<b>163 330</b>	

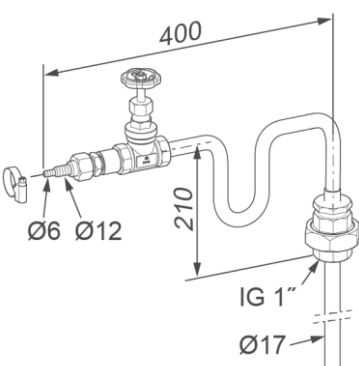
Dosing group 2.21 kit	
Dosing hose, PVC, 3 m Dosing group 2.21 (163 330)	
<b>Order no.</b>	<b>163 640</b>

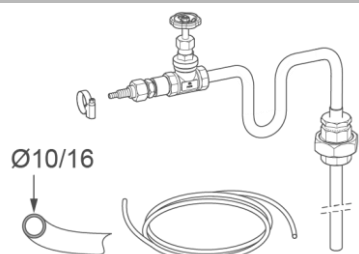
Dosing group 2.25		for hose id = 10/od = 16 mm
Material	PPE/red brass/malleable cast iron/steel Stainless steel injection pipe (1.4571)	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 110 °C	
<b>Order no.</b>	<b>163 335</b>	

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Dosing group 2.25 kit		
Dosing hose, PVC, 3 m Dosing group 2.55 (163 335)		
<b>Order no.</b>	<b>163 645</b>	
Dosing group 2.55 VA		for hose id = 10/od = 16 mm
Material	Stainless steel (1.4571)	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 110 °C	
<b>Order no.</b>	<b>163 355</b>	
Dosing group 2.55 VA kit		
Dosing hose, PVC, 3 m Dosing group 2.55 VA (163 355)		
<b>Order no.</b>	<b>163 690</b>	
Dosing group KE 4/6		for hose id = 4/od = 6 mm
Material	Stainless steel (1.4571)	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 130 °C	
<b>Order no.</b>	<b>163 345</b>	

Dosing group KE 4/6 kit	
Dosing hose, PTFE, 3 m Dosing group KE 4/6 (163 345)	
	
<b>Order no.</b>	<b>163 650</b>

Dosing group 2.31		for hose id = 10/od = 16 mm
Material	PPE/red brass/ malleable cast iron/ steel 37	
Operating pressure	≤ 10 bar	
Operating temperature	≤ 140 °C	
<b>Order no.</b>	<b>163 340</b>	

Dosing group 2.31 kit	
Dosing hose, PVC, 3 m Dosing group 2.31 (163 340)	
	
<b>Order no.</b>	<b>163 680</b>





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