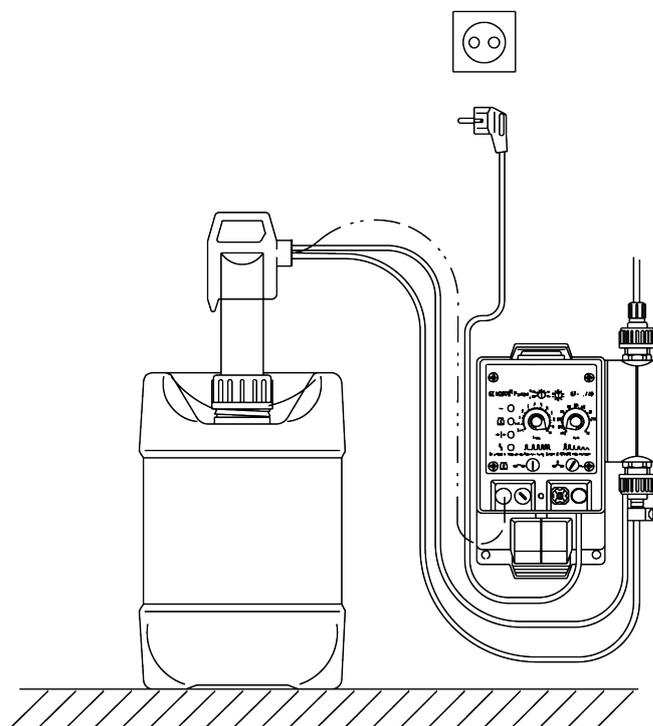


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# Operation manual

## GENODOS dosing systems

**SB 1/40, SBA 6/40, SBC 1/40, SBC1/40 Duo,  
SBC 6/40, SBF 0/40**



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A company certified by TÜV SÜD  
in accordance with DIN EN ISO 9001,  
DIN EN ISO 14001 and SCC

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## EU Declaration of Conformity

This is to certify that the system designated below meets the safety and health requirements of the applicable European guidelines in terms of its design, construction and execution.

If the system is modified in a way not approved by us, this certificate is void.

Manufacturer:	Grünbeck Wasseraufbereitung GmbH Josef-Grünbeck-Str. 1 89420 Hoechstädt/Germany
Responsible for documentation:	Markus Pöpperl
System designation:	GENODOS dosing systems
System type:	SB 1/40, SBA 6/40, SBC 1/40, SBC 1/40 Duo, SBC 6/40, SBF 0/40
Serial no.:	Refer to type plate
Applicable guidelines:	Low voltage (2014/35/EU) EMC (2014/30/EU)
Applied harmonised standards, in particular:	DIN EN 61000-6-2:2006-03, DIN EN 61000-6-3:2011-09
Applied national standards and technical specifications, in particular:	
Place, date and signature:	<u>Hoechstädt, 13.06.2017</u>  i. V.  M. Pöpperl Dipl.-Ing. (FH)
Function of signatory:	Head of Product Implementation and Product Launch

## 1 | General safety information

### 1.1 Symbols and notes

Important information in this operation manual is characterised by symbols. Please pay particular attention to this information to ensure the hazard-free, safe and efficient handling of the system.



**Danger!** Failure to adhere to this information will cause serious or life-threatening injuries, extreme damage to property or inadmissible contamination of the drinking water.



**Warning!** Failure to adhere to this information may cause injuries, damage to property or contamination of the drinking water.



**Attention!** Failure to adhere to this information may result in damage to the system or other objects.



**Note:** This symbol characterises information and tips that make your work easier.



Tasks with this symbol may only be performed by Grünbecks technical service/authorised service company or by persons expressly authorised by Grünbeck.



Tasks with this symbol may only be performed by trained and qualified electrical experts according to the VDE guidelines or according to the guidelines of a similar local institution.



Tasks with this symbol may only be performed by the water supply companies in charge or by approved installation companies. In Germany, the installation company must be registered in an installation directory of a water company as per §12(2) AVBWasserV (German Ordinance on General Conditions for the Supply of Water).

## 2 | General notes

Please read and observe this operation manual carefully prior to installation and start-up of the dosing system.

The systems must be handled with care and be operated, inspected and maintained according to our operation manual.

The dosing systems may only be operated, maintained and repaired by persons who are familiar with the operation manual.

According to the German Ordinance on Hazardous Substances (GefStoffV), the employer, by means of a workplace-related operation manual, must brief the persons working at the system about the dangers that occur due the hazardous substances being used.

The use of original parts which can be ordered from your sanitary company, Grünbeck's technical service/authorised service company or directly from our headquarters will ensure the function and long service life of your device.

In case of inquiries, please specify the information indicated on the type plate. Please copy the type designation and serial number from the system's type plate to the table below.

GENODOS dosing systems					
<input type="checkbox"/>	SB 1/40	Order no. 212 475	<input type="checkbox"/>	SBC 1/40 Duo	Order no. 212 445
<input type="checkbox"/>	SBA 6/40	Order no. 212 485	<input type="checkbox"/>	SBC 6/40	Order no. 212 495
<input type="checkbox"/>	SBC 1/40	Order no. 212 490	<input type="checkbox"/>	SBF 0/40	Order no. 212 500
				Serial no. ....	
				<small>(copied from type plate)</small>	

**You may order this operation manual separately using order no. 212 099.**



**Note:** Read the present operation manual in conjunction with the operation manual of GENODOS-pump GP (order no. 118 940) and the operation manual of the switch box of suction lance GENO Duo (order no. TD5-IS001gb).

## Publisher's information

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### 3 | Please observe

All Grünbeck products are made of high-quality materials in order to ensure a long and trouble-free service life.

A maintenance contract is the best way to ensure the proper and safe functioning of the system even beyond the warranty period.

We shall not be liable for damage arising from the improper handling, operation and repair of our systems.

Within the warranty period agreed upon, you must not tamper with or modify the system, unless explicitly authorised by us. In case of non-observance, the warranty will be void.

Always keep a sufficient stock of treatment agents to avoid encountering any problems.

You may order treatment agents and spare parts from your specialised sanitary company, Grünbeck's technical service/authorised service company or directly from our headquarters.

Regarding commercial chemicals that we do not carry in our product range, we would be pleased to provide you with the names of appropriate sources of supply, if so desired.

Ensure the trouble-free operation of your dosing system by checking it at regular intervals with the appropriate water test kits we offer.

We do our utmost to keep you a satisfied customer. For all questions of water and waste water treatment, e.g. retrofitting already installed systems with additional stages, please contact our field staff or get in touch with our headquarters directly.

In case of inquiries, please let us know your order number, type of system and year of construction, so that we can deal with your request properly and quickly.

We reserve the right to technical modifications.



**Note:** Our systems must be installed by an authorised specialist of the sanitary and heating trade.

Prior to installation, check the dosing system for possible transportation damage.

The device must be protected against frost and may not be installed next to heat sources which radiate a lot of heat.



#### Information in case of problems (safety measures)

Informing department: Grünbecks lab oratory  
Phone +49 9074 41-516

Information in case of emergencies: Emergency hotline Poison Control Centre Munich  
(or any other poison control centre)  
Phone +49 89 1924-0



**Danger!** Dosing systems and chemicals must be clearly assigned to each other to prevent mix-ups. Furthermore, the agents GENO-Chlor A and GENO-minus N must never be mixed with each other. When mixing these two chemicals, chlorine gas is generated → danger to life!

## GENODOS SB 1/40 to add GENO-minus N or to add GENO-plus N

### 1 | pH value

The pH value is one of the most important water parameters and has an essential impact on the efficiency of the disinfectants and flocculants, the resistance of metal materials, the precipitation of scale and the well-being of the bather.

The pH value indicates whether the water is acid, alkaline or neutral. The pH value 7 indicates the so-called neutral point. Lower pH values exhibit an acid reaction, higher pH values an alkaline reaction.

#### Public pools:

DIN standard 19643, the German Ordinance on the Treatment of Water in Swimming Pools and Baths, indicates the microbiological, chemical and physio-chemical requirements on the quality of the pool water in public swimming pools. The stipulated pH values (subject to the flocculant and type of water used) must be respected.

#### Private pools:

In private swimming pools, the pH value should be between 7.0 and 7.4. In private whirlpools or hot water pools, the pH value can be within a slightly greater range (pH value 6.5 up to 7.5).

In a whirlpool, the fluctuations of the pH value are higher than in a swimming pool as the air blown in strips the carbon dioxide dissolved in the water. So it is not really uncommon for the pH value to increase from 7 to 8 within the normal bathing time of 15 minutes.

At this pH value, however, the efficiency of the disinfectant present decreases considerably. The water may become turbid and smelly and the natural acid mantle of the bathers' skin will be washed off to particularly high degree (skin irritation).

Various external influences as well as the dosing of disinfectants change the pH value. In order to keep the pH value within the optimum range, the respective agents to increase or decrease the pH value must be added.

Decreasing the pH value: Adding GENO-minus N (sulphuric solution).

Increasing & stabilising the pH value: Adding GENO-plus N (sodium hydroxide solution).

The amount to be dosed depends on the required correction of the pH value as well as on the buffer capacity of the water.

<b>GENODOS-pump</b>	<b>SB 1/40 GP-1/40 made of PPO/EPDM</b>
Output at 10 bar	0.9 l/h
Power supply	230 V/50-60 Hz, 18/21 VA
Protection	IP54
<b>Order no.</b>	<b>212 475</b>

The dosing volume is increased or decreased as needed; this takes place at the pump's stroke length controller or automatically via a pH control device (also observe the corresponding data sheets GENO-minus N and GENO-plus N).

## 2 | Start-up

1. Fasten the pump on the individually moveable slip-on pump foot at a max. height of 1.5 m (in case of active agents with a density of 1.0 g/ml) above the tank bottom (preferably as low as possible).
2. Install the dosing line safely and without kinks towards dosing group 2.71 (EPDM).
3. Install the dosing group 2.71 (EPDM) approx. 0.5 - 1 m upstream of chlorine dosing group T (but downstream of the heat exchanger).
4. Insert the suction lance into the disposable container.
5. Plug in the connector of the empty signal at the dosing pump (level probe).
6. Supply the dosing pump with a mains voltage of 230 V, 50-60 Hz.
7. In case of an internal stroke length control, set the selector switch to "INT-10" in the scale range.

If the dosing system is controlled via measuring and regulating devices, set the selector switch to "EXTERNAL".

8. Adjust the stroke length controller according to the desired chemical concentration.

For more information, refer to the operation manual of GENODOS-pump GP (order no. 118 940).

The system is in operation.



---

**Attention!** In order to ensure the trouble-free operation of the pump, clean the pump's suction, pressure and vent valves once a month.

---

## GENODOS SBA 6/40 to add GENO-aktiv/GENO-aktiv 12

### 1 | Intended use

Disinfection by means of UV systems alone is not sufficient in the swimming pool sector. Private pools are rarely operated 24 hours a day. UV-disinfection only takes place during the operational phase. Therefore, it is necessary to apply additional products for disinfection, oxidation as well as the elimination of algae to achieve a so-called depot effect in the swimming pool. The combined liquid GENO-aktiv/GENO-aktiv 12 ensures an excellent disinfection result and is perfectly suited for disinfection, oxidation and the prevention of algae. After 1 - 5 hours following the dosing, the pool water must have a concentration of 35 mg/l in order to have a corresponding disinfecting effect. The GENO-aktiv-/GENO-aktiv 12 concentration is determined by means of a manual test kit. The dosing volume is subject to the pool volume.

Dosing takes place via the GENODOS-pump.

GENODOS-pump	SBA 6/40 GP-6/40 made of PPO/EPDM
Output at 10 bar	6.0 l/h
Power supply	230 V/50-60 Hz, 18/21 VA
Protection	IP54
<b>Order no.</b>	<b>212 485</b>

The dosing volume is increased or decreased as needed; this takes place at the pump's stroke length controller (also observe the product data sheet GENO-aktiv/GENO-aktiv 12 and the safety measures).

### 2 | Start-up

1. Fasten the pump on the individually moveable slip-on pump foot at a max. height of 1.5 m (in case of active agents with a density of 1.0 g/ml) above the tank bottom (preferably as low as possible).
2. Install the dosing line safely and without kinks towards dosing group 2.71 (EPDM).

The swimming pool agents (GENO-aktiv, GENO-aktiv 12 and GENO-minus N) are dosed into the pure water line downstream of the UV disinfection system. The minimum distance between the dosing groups must at least be 0.5 - 1 m. In order to ensure the trouble-free maintenance or replacement of the dosing groups, a shut-off option must be provided upstream and downstream of the pure water line. In case of a new installation, the dosing groups must be installed in the pure water line by means of PVC fittings (T-piece 90°, reduced). For retrofitting, it is possible to drill a hole into a PVC fitting in the area of the bonded socket joint (Ø 16 mm).

3. Insert the suction lance into the disposable container.
4. Plug in the connector of the empty signal at the dosing pump (level probe).
5. Supply the dosing pump with a mains voltage of 230 V, 50-60 Hz.
6. Plug in the connecting cable of the external control device at the appropriate input of the dosing pump.
7. Adjust the stroke length controller according to the volume required.

For more information, refer to the operation manual of GENODOS-pump GP (order no. 118 940).

The system is in operation.



**Attention!** In order to ensure the trouble-free operation of the pump, clean the pump's suction, pressure and vent valves once a month.

## GENODOS SBC 1/40, SBC 6/40 to add GENO-Chlor A

### 1 | Intended use

Primarily, disinfection is used to quickly eliminate the pathogens that have got into the pool water, so that there is no risk of infection for the bather. The amount of GENO-Chlor A to be dosed depends on the composition of the water to be treated, the reaction time, the mixing, the pH value, the temperature, the intended use of the water and the desired amount of excess chlorine.

In swimming pool water, the chlorine concentration should be 0.3 - 0.6 mg/l.

In whirlpool water, it should be 0.7 - 1.0 mg/l as the chlorine consumption is much higher there.

Dosing takes place via the GENODOS-pump.

GENODOS-pump	SBC1/40 GP-1/40 made of PVDF/Viton (4G)	SBC 6/40 GP-6/40 made of PVDF/Viton (4G)
Output at 10 bar	0.9 l/h	6.8 l/h
Power supply	230 V/50-60 Hz, 18/21 VA	
Protection	IP54	
Order no.	212 490	212 495

The dosing volume is increased or decreased as needed; this takes place at the pump's stroke length controller or automatically via a chlorine control device (also observe the product data sheet GENO-Chlor A).

### 2 | Start-up

1. Fasten the pump on the individually moveable slip-on pump foot at a max. height of 1.5 m (in case of active agents with a density of 1.0 g/ml) above the tank bottom (preferably as low as possible).
2. Install the dosing line safely and without kinks towards dosing group T.
3. Install the dosing group approx. 0.5 - 1 m downstream of the dosing group for pH correction (downstream of the heat exchanger).
4. Insert the suction lance into the disposable container.
5. Plug in the connector of the empty signal at the dosing pump (level probe).
6. Supply the dosing pump with a mains voltage of 230 V, 50-60 Hz.
7. In case of an internal stroke length control, set the selector switch to "INT-10" in the scale range.

If the dosing system is controlled via measuring and regulating devices, set the selector switch to "EXTERNAL".

8. Adjust the stroke length controller according to the desired chemical concentration.

For more information, refer to the operation manual of GENODOS-pump GP (order no. 118 940).

The system is in operation.



**Attention!** In order to ensure the trouble-free operation of the pump, clean the pump's suction, pressure and vent valves once a month.

## GENODOS SBC 1/40 Duo to add GENO-Chlor A

### 1 | Intended use

Primarily, disinfection is used to quickly eliminate the pathogens that have got into the pool water, so that there is no risk of infection for the bather. The amount of GENO-Chlor A to be dosed depends on the composition of the water to be treated, the reaction time, the mixing, the pH value, the temperature, the intended use of the water and the desired amount of excess chlorine.

In swimming pool water, the chlorine concentration should be 0.3 - 0.6 mg/l.

In whirlpool water, it should be 0.7 - 1.0 mg/l as the chlorine consumption is much higher there.

Dosing takes place via the GENODOS-pump.

In case of the GENODOS SBC 1/40 Duo, two diaphragm dosing pumps type GENODOS SBC 1/40 deliver the GENO-Chlor A via the respective dosing groups T into two different water circuits. The two diaphragm dosing pumps draw the GENO-Chlor A from the disposable container via a suction lance „Suction lance 6/6 for 2 diaphragm dosing pumps“.

GENODOS-pump	SBC 1/40 Duo 2 GP-1/40 units made of PVDF/Viton (4G)
Output at 10 bar	2 x 0.9 l/h
Power supply	2 x 230 V/50-60 Hz, 18/21 VA
Protection	IP54
Order no.	212 445

The dosing volume of each GENODOS SBC 1/40 Duo is increased or decreased as needed; this takes place at the pump's stroke length controller or automatically via a chlorine control device (also observe the product data sheet GENO-Chlor A).

### 2 | Start-up

The two diaphragm dosing pumps GENODOS SBC 1/40 are delivered pre-assembled on a mounting plate. By means of the fastening material supplied with the system, the mounting plate with the two diaphragm dosing pumps GENODOS SBC 1/40 can be fastened to a vertical wall in the technical room. When doing so, respect the max. height above the tank bottom of max. 1.5 m (in case of active agents with a density of 1.0 g/ml), preferably as low as possible, however.

1. Insert the suction lance into the disposable container and mount the screw cap onto the disposable container.
2. Check whether the lines of the suction lance to the diaphragm dosing pumps are long enough.
3. Cut the corresponding return line from the suction lance to the return connection of the diaphragm dosing pump to length square/at a right angle. Install the corresponding return line at the connection on the return side of the diaphragm dosing pumps.

This connection serves as return to direct possibly occurring chemicals back to the disposable container.



**Note:** In case of GENODOS SBC 1/40 Duo, connect 1 return line each to the respective dosing pump.

4. Cut the corresponding suction line from the suction lance to the suction valve of the diaphragm dosing pump to length square/at a right angle. Install the suction line at the suction valve of the diaphragm dosing pump.



**Note:** In case of GENODOS SBC 1/40 Duo, connect 1 suction line each to the respective dosing pump.

5. Install the respective dosing/pressure line safely and without kinks from the diaphragm dosing pump towards dosing group T.
6. Install dosing group T approx. 0.5 - 1 m downstream of the dosing group for pH correction (but downstream of the heat exchanger).
7. Connect the connection cable of the suction lance with the level signals pre-alarm and empty signal to the switch box of suction lance GENO Duo (refer to operation manual order no. TD5-IS001gb).
8. Supply the dosing pump with a mains voltage of 230 V, 50-60 Hz.
9. In case of an internal stroke length control, set the selector switch to "INT-10" in the scale range.

If the dosing system is controlled via measuring and regulating devices, set the selector switch to "EXTERNAL".

10. Adjust the stroke length controller according to the desired chemical concentration.

For more information, refer to the operation manual of GENODOS-pump GP (order no. 118 940).

The system is in operation.



**Attention!** In order to ensure the trouble-free operation of the pump, clean the pump's suction, pressure and vent valves once a month.

## GENODOS SBF 0/40 to add GENO-flock P

### 1 | Intended use

Not only visible impurities such as hair, flakes, leaves and dust get into the pool water but also those that seemingly dissolve completely in the water (the so-called colloids) or that are submicroscopically small, e.g. bacteria, germs, proteins, body fat including cosmetics, etc.

Even high-performance filters can only retain these ultra-fine impurities - which must not be confounded with truly water-soluble substances such as minerals, urea, etc. - to a certain degree. If you dose so-called flocculants into the water prior to filtration, however, these micro-dispersed contraries are destabilised (electrically discharged), integrated into the forming flakes and finally retained with them in the filter bed.

It is important to continuously dose the flocculant into the used pool water as the decisive destabilisation processes only takes place at the moment the flocculant is mixed with the water. Although flakes that have already formed and are already located on the filter bed improve the filtration result, they let the non-discharged colloids that have not "docked at the flakes" pass, however.

This is why GENO-flock is dosed into the pool water. Dosing takes place via the GENODOS-pump.

GENODOS-pump	SBF 0/40 GP-0/40 made of PPO/EPDM
Output at 10 bar	0.15 l/h
Power supply	230 V/50-60 Hz, 18/21 VA
Protection	IP54
<b>Order no.</b>	<b>212 500</b>

Depending on the load of the water, the dosing volume is 0.5 - 2.0 ml/m<sup>3</sup> of circulated water (also observe the product data sheet GENO-flock P).

Therefore, the agent has to be diluted accordingly in case of systems with smaller circulation capacities and the dosing pump must be adjusted accordingly as well.

Dosing must be in operation during filter time and first filtrate but not during the backwash.

### 2 | Start-up

1. Fasten the pump on the individually moveable slip-on pump foot at a max. height of 1.5 m (in case of active agents with a density of 1.0 g/ml) above the tank bottom (preferably as low as possible).
2. Install the dosing line safely and without kinks towards dosing group 2.71 (EPDM).
3. Install the dosing group between the circulation pump and the filter tank but always downstream of the measuring water sampling, if present.
4. Insert the suction lance into the disposable container.
5. Plug in the connector of the empty signal at the dosing pump (level probe).
6. Supply the dosing pump with a mains voltage of 230 V, 50-60 Hz.
7. In case of an internal stroke length control, set the selector switch to "INT-10" in the scale range.

If the dosing system is controlled via measuring and regulating devices, set the selector switch to "EXTERNAL".

8. Adjust the stroke length controller according to the desired chemical concentration.

For more information, refer to the operation manual of GENODOS-pump GP (order no. 118 940).

The system is in operation.



**Attention!** In order to ensure the trouble-free operation of the pump, clean the pump's suction, pressure and vent valves once a month.

## Installation and maintenance instructions for dosing group 2.71

### 1 | Installation

1. The dosing group must be positioned in a way that there is a shut-off option upstream and downstream to allow for easy removal for maintenance and renewal.
2. If possible, drill a 16 mm hole into a double-walled PVC pipe or a fitting or fit a bonded socket joint of 16 mm.
3. Glue in a DN 10 pipe. Let the pipe dry.

The dosing group will be able to withstand a pressure of 6 bar and will be ready to use 6 hours after the glued joint has hardened.

### 2 | Maintenance

Only use Grünbeck dosing agents. If you use third-party chemicals, the warranty will be void.

The non-return valve on dosing group 2.71 must be serviced every six months and/or checked for clogging and cleaned. Furthermore, it has to be replaced every year by Grünbeck's technical service/authorised service company.

### 3 | Error search

#### Dosing rate declines

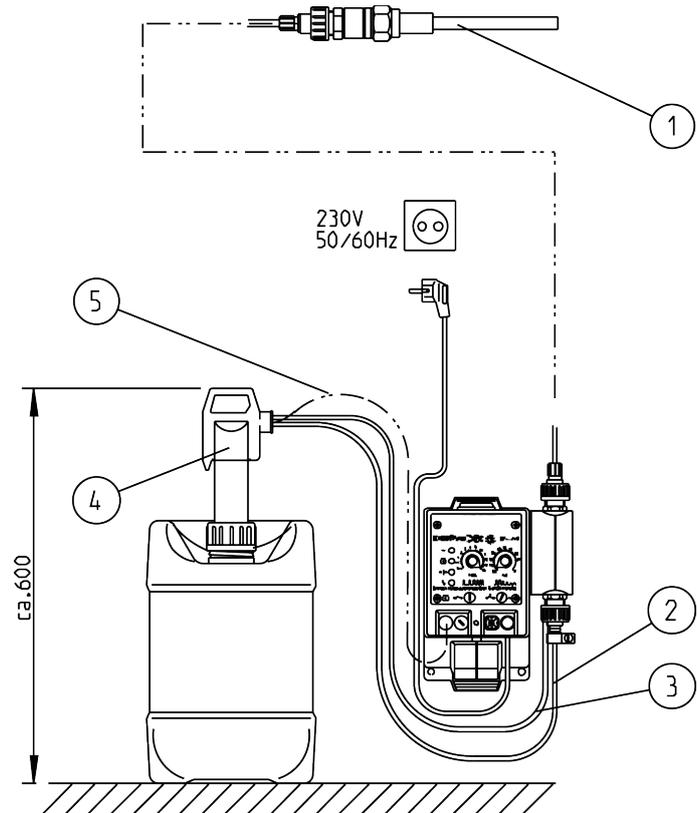
1. Check whether the valves have clogged.
2. Check whether the hoses have clogged.
3. Third-party dosing chemical is being used (wrong concentration).

### 4 | Troubleshooting

1. Replace the valves or hoses respectively, or clean them.
2. Clean the dosing tank.

## GENODOS SB 1/40, SBA 6/40, SBF 0/40

1. The dosing system comes pre-assembled.
2. Install the dosing pieces according to the installation drawing of dosing group 2.71.
3. Insert the suction lance together with the appropriate union nut into the full, disposable container and tighten the nut.
4. Plug the connector of the empty signal into the designated jack at the dosing pump. If the empty signal is triggered, the pump is switched off and this is indicated via the yellow LED at the pump.
5. Power is supplied by the pool water switch cabinet. In case of an automatic measuring and control system, activation takes place via a control device.
6. Adjust the pump according to the operation manual of the respective pump used.



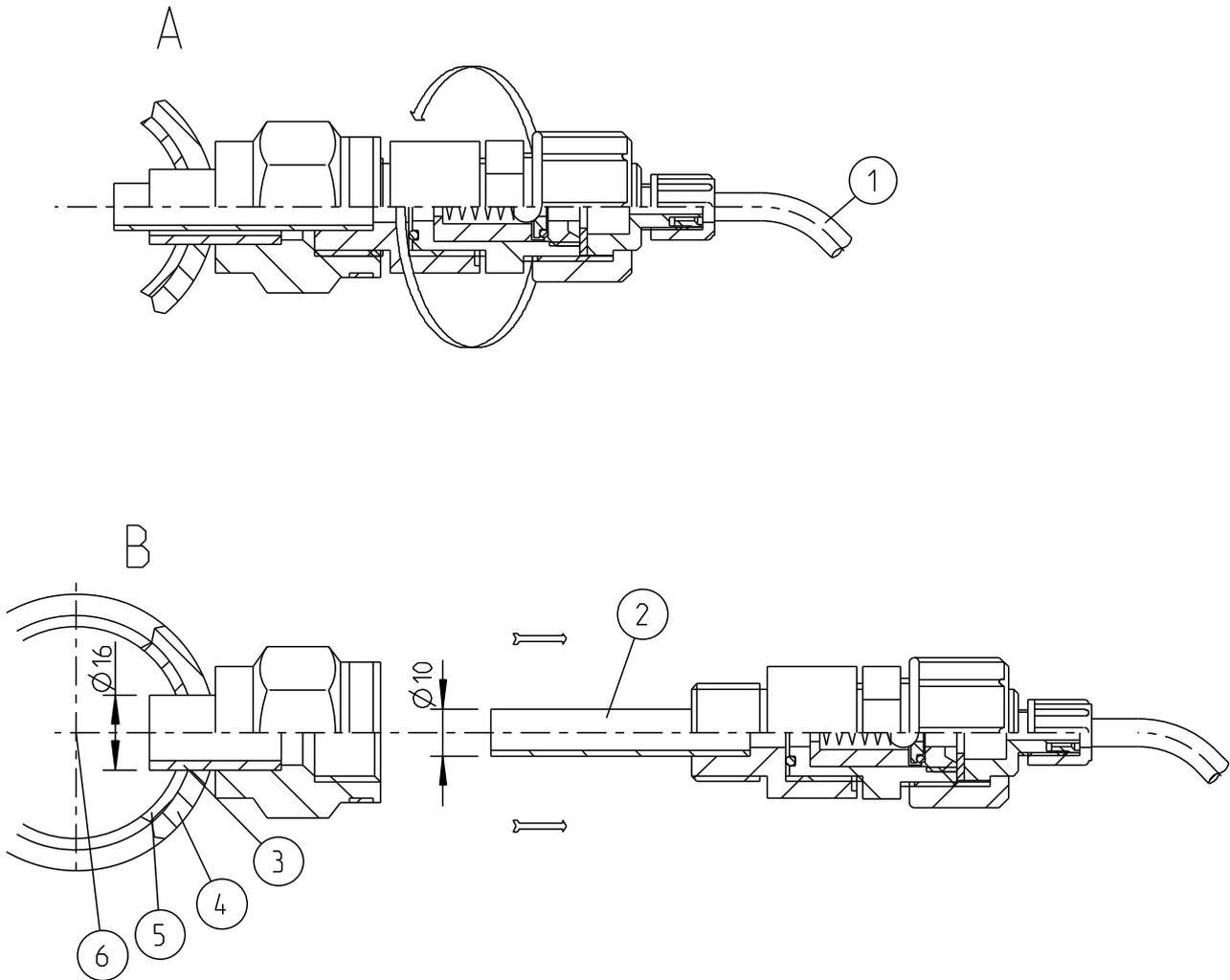
- ① Dosing group 2.71
- ② Suction line
- ③ Return line
- ④ Suction lance
- ⑤ Empty signal

Fig. 1: Installation example for GENODOS SB 1/40, SBA 6/40, SBF 0/40

**Installation drawing of dosing group 2.71**



**Warning!** Dosing group 2.71 (EPDM) is resistant against GENO-plus N, GENO-minus N, GENO-aktiv, GENO-aktiv 12, GENO-flock P, but only has a limited resistance against chlorine, i.e. GENO-Chlor A.



- Ⓐ Loosening the injection nozzle
- Ⓑ Pulling out the injection nozzle

- ① Hose id = 4; od = 6
- ② Adapt length of pipe DN 6 to central axis (fitting/pipe)
- ③ Glue pipe DN 10 into the bore  $\varnothing 16$  mm (fitting/pipe)
- ④ Fitting
- ⑤ Pipe
- ⑥ Central axis (fitting/pipe)

Fig. 2: Installation drawing of dosing group 2.71

## Installation and maintenance instructions for dosing group T

### 1 | Installation

In general, the dosing groups may only be installed in the pure water pipe, i.e. between the filter system and the inlet nozzles. Furthermore, make sure that dosing group T is installed downstream of the heat exchanger and pH dosing group 2.71. The minimum distance between pH dosing group 2.71 and dosing group T must at least be 0.5 - 1.0 m. For safety reasons, we recommend always setting up the canisters containing the agents at a distance of 1.5 m.

Dosing group T has to be glued vertically into a PVC T-piece 90°. The diameter of the bonded socket joint must be 25 mm.



**Note:** The adhesive will require approx. 1 hour hardening time for every 1 bar of overpressure.

### 2 | Maintenance

Only use Grünbeck agents. If you use third-party chemicals, the warranty will be void.

The non-return valve of dosing group T has to be checked every six months and if necessary, has to be replaced by Grünbeck's technical service/authorised service company.

The maximum water level in the transparent PVC pipe must not touch the dosing valve; a non-contact transfer must take place between GENO-Chlor A and the pool water.

However, if the maximum water level rises towards the dosing valve, it can be adjusted to the normal level using the draining valve (see Fig. 3, item 2). Before the water level is adjusted, the filter system must be switched off and the shut-off valve (see Fig. 3, item 3) closed.



**Attention!** For recommissioning, open the shut-off valve (item 3) and close the draining valve (item 2).

**GENODOS SBC 1/40, SBC 6/40**



**Danger!** Dosing systems and chemicals must be clearly assigned to each other to prevent mix-ups. Furthermore, the agents GENO-Chlor A and GENO-minus N must never be mixed with each other. When mixing these two chemicals, chlorine gas is generated → danger to life!

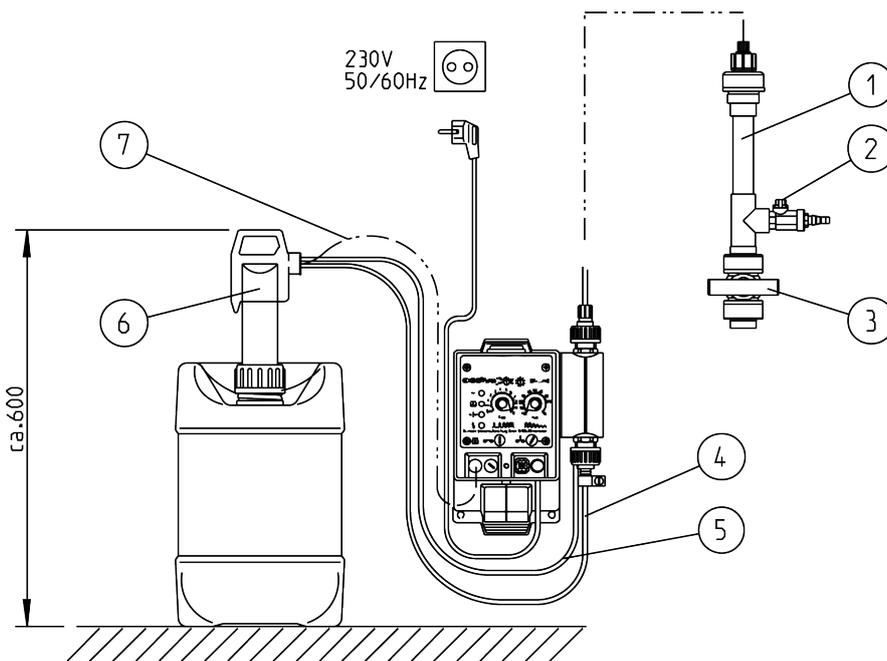
The dosing system comes pre-assembled.

1. Install the dosing group according to the installation drawing of dosing group T.
2. Insert the suction lance together with the appropriate union nut into the container containing the agent and tighten the union nut.
3. Plug the connector of the empty signal into the designated jack of the dosing pump. If the empty signal is triggered, the dosing pump is switched off and this is indicated via the yellow LED at the dosing pump.

If the dosing system is controlled via an automatic measuring and control system, set the selector switch to “EXTERNAL” and make the electrical connection with the external control cable.

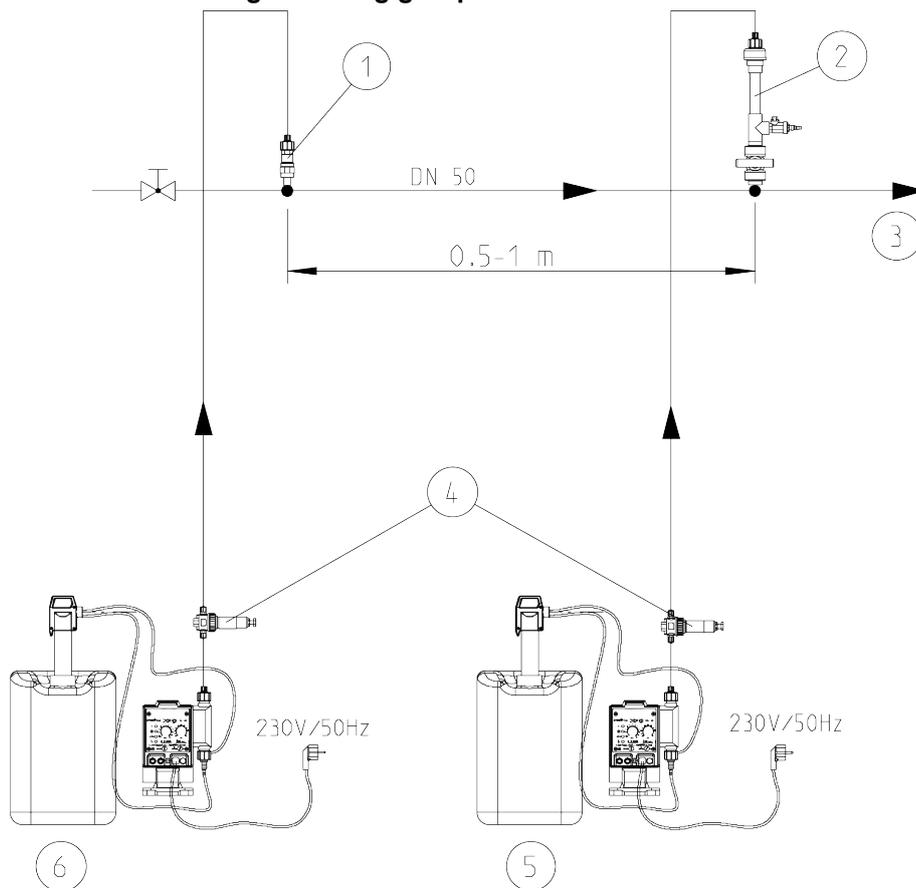
A shock-proof socket is required for electrical connection 230V/50Hz. The socket must be located at a max. distance of 1.2 m from the dosing pump and must carry continuous voltage (do not couple with light switch or heating emergency switch)!

Adjust the pump according to the operation manual of the respective pump used.



- |                  |                 |
|------------------|-----------------|
| ① Dosing group T | ⑤ Return line   |
| ② Draining valve | ⑥ Suction lance |
| ③ Shut-off valve | ⑦ Empty signal  |
| ④ Suction line   |                 |

Fig. 3: Installation example for GENODOS SBC 1/40, SBC 6/40

**Installation drawing of dosing group T**


- ① Dosing group 2.71  
(included in order no. 212 475)
- ② Dosing group T  
(included in order no. 212 490)
- ③ To pool
- ④ Pressure maintaining valve DHV 2  
(Order no. 203 174)
- ⑤ Dosing system GENODOS SBC 1/40  
(chlorine dosing) (order no. 212 490)  
+ GENO-Chlor A (order no. 210 012)
- ⑥ Dosing system GENODOS SB 1/40  
(pH regulation) (order no. 212 475)  
+ GENO-minus N (order no. 210 013)

Fig. 4: Installation example for dosing group T

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**GENODOS SBC 1/40 Duo**

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**Danger!** Dosing systems and chemicals must be clearly assigned to each other to prevent mix-ups. Furthermore, the agents GENO-Chlor A and GENO-minus N must never be mixed with each other. When mixing these two chemicals, chlorine gas is generated → danger to life!

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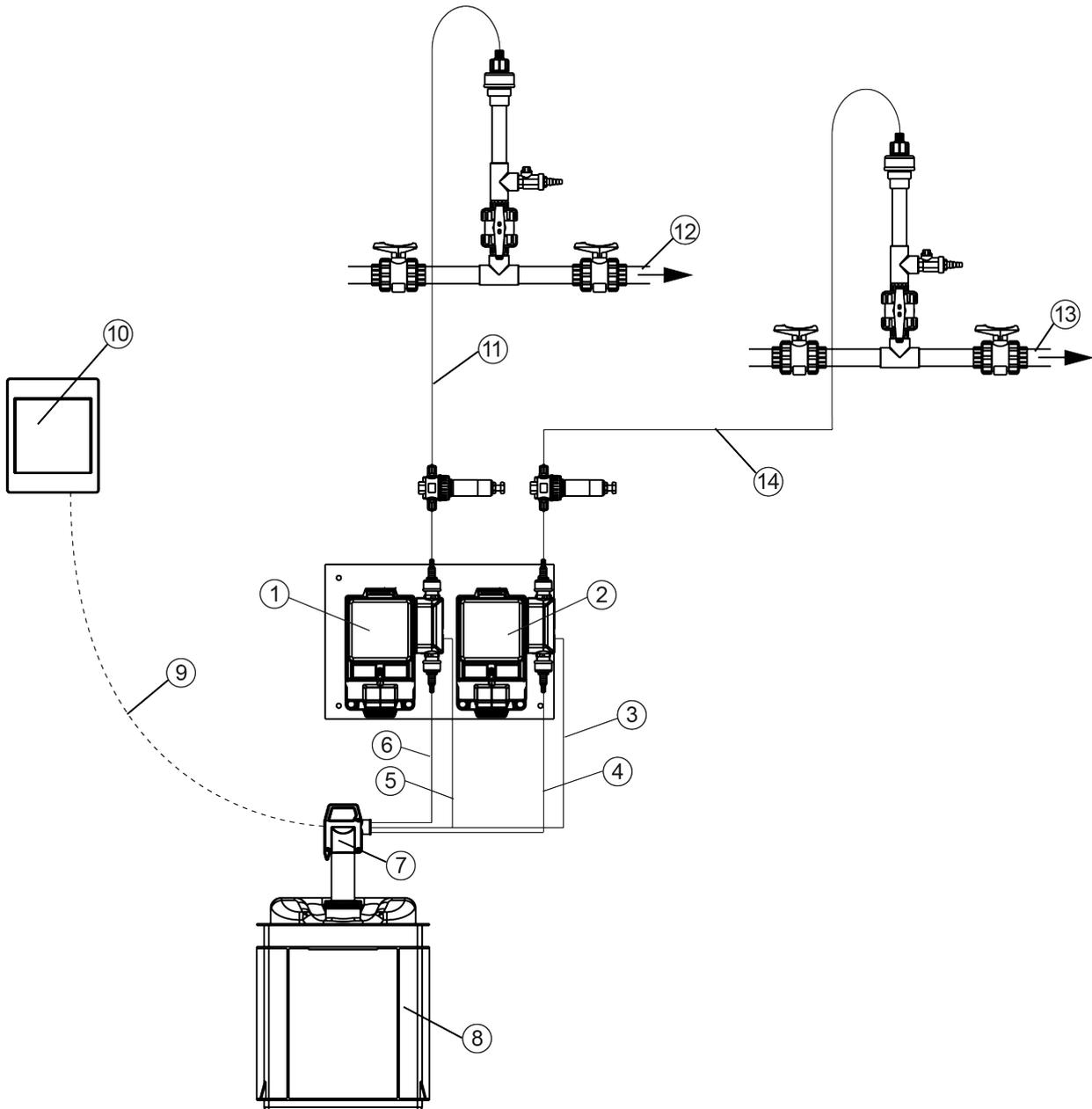
The dosing system comes pre-assembled. The two diaphragm dosing pumps are assembled on a mounting plate.

1. Install the dosing groups according to the installation drawing of dosing group T.
2. Insert the suction lance together with the appropriate union nut into the container containing the agent and tighten the union nut.
3. Connect the connection cable of the suction lance with the level signals pre-alarm and empty signal to the switch box of suction lance GENO Duo (refer to operation manual order no. TD5-IS001gb).

If the dosing system is controlled via an automatic measuring and control system, set the selector switch to "EXTERNAL" and make the electrical connection with the external control cable.

A shock-proof socket per diaphragm dosing pump is required for electrical connection 230V/50Hz. The socket must be located at a max. distance of 1.2 m from the dosing pump and must carry continuous voltage (do not couple with light switch or heating emergency switch)!

Adjust the pump according to the operation manual of the respective pump used.



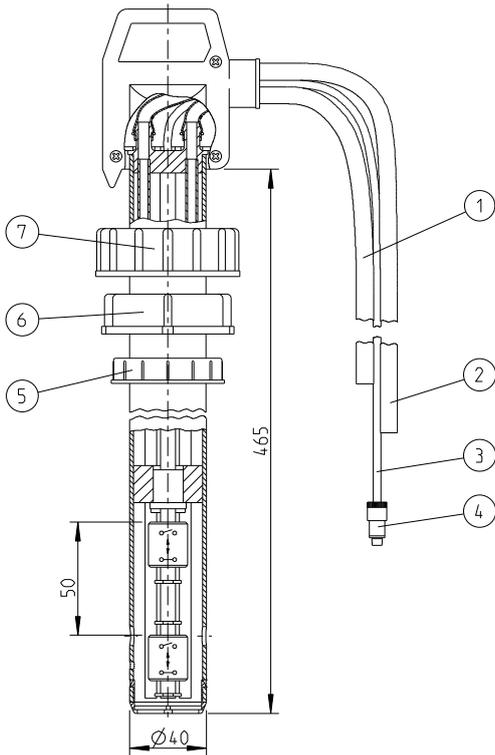
- |  |  |
|--|--|
| ① GENODOS SBC 1/40 Duo – pump 1              | ⑧ Collecting tray  |
| ② GENODOS SBC 1/40 Duo – pump 2              | ⑨ Connection cable for level signals                     |
| ③ Return line with downward slope - pump 2   | ⑩ Switch box of suction lance GENO Duo                   |
| ④ Suction line - pump 2                      | ⑪ Dosing line/pressure line with dosing group T - pump 1 |
| ⑤ Return line with downward slope - pump 1   | ⑫ Circuit 1  |
| ⑥ Suction line - pump 1                      | ⑬ Circuit 2  |
| ⑦ Suction lance for 2 diaphragm dosing pumps | ⑭ Dosing line/pressure line with dosing group T - pump 2 |

Fig. 5: Installation example for GENODOS SBC 1/40 Duo

**GENODOS-suction lance B 10/20 (order no. 118 510)**

**Note:** Only and exclusively suction lances with pre-alarm should be used for the GENODOS pumps GP-../40.

By means of the suction lance, the diaphragm dosing pump draws the agent from the disposable container. To do so, the suction lance features a suction and a return line. In addition, the suction lance is equipped with a connection cable with connector plug for the level signals installed (pre-alarm and empty signal).



- |   |   |
|---|---|
| ① PVC suction line (id = 6; od = 9; l = 1350)     | ⑤ Cap for Grünbeck's folding canisters    |
| ② PVC return hose (id = 6; od = 9; l = 1400)      | ⑥ Screw cap for Grünbeck's 10 l canisters |
| ③ Connection cable for level signal(s) (l = 1600) | ⑦ Screw cap for Grünbeck's 20 l canisters |
| ④ Connector plug for GENODOS-pump                 |   |

Fig. 6 Suction lance B10/20 with pre-alarm (order no. 118 510)

### Suction lance

The suction lance is completely pre-assembled.

1. Fasten the suction hose at the lower connection set of the dosing pump.
2. Connect the return line at the hose adapter of the dosing pump.
3. Insert the suction lance with the appropriate union nut into the container and tighten the union nut.
4. Plug the connector of the empty signal into the designated jack of the dosing pump. Prior to doing so, remove the factory-provided contact sleeve at the connection of the level probe. If the empty signal is triggered, the pump is switched off and this is indicated via the yellow LED at the pump. If the pre-alarm is triggered, the yellow LED (GP-../40) will be flashing.

### Suction lance 6/6 for 2 diaphragm dosing pumps (order no. 118 485)

By means of the suction lance, the two diaphragm dosing pumps draw the agent from the disposable container. To do so, the suction lance features two suction lines and two return lines. The suction lines and the return lines are marked with a sticker.

The suction lance features a connection cable for the level signals installed (pre-alarm and empty signal). The connection cable is marked with a sticker on which the connections options for the level signals (pre-alarm and empty signal) are indicated.

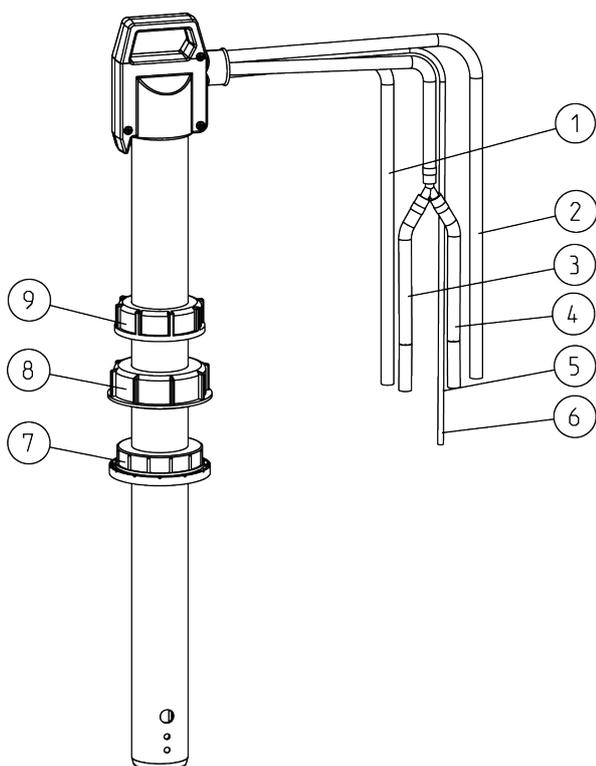
#### Pre-alarm:

- Brown wire = Ground/common
- Green wire = Pre-alarm/refill signal

#### Empty signal:

- Brown wire = Ground/common
- White wire = Empty signal/error signal

During installation, it might be necessary to decide whether the pre-alarm or the empty signal should be transmitted to the corresponding controller (e.g. GENO-CPR-tronic 02 family) in the event that the corresponding controller can only process one signal. In this case, we recommend using the pre-alarm as this level signal is indicated first and so there is more time to procure a new supply of dosing agents.



- ① Suction line pump 1 – PVC (id = 6; od = 9)
- ② Suction line pump 2 – PVC (id = 6; od = 9)
- ③ Return line pump 1 – PVC (id = 6; od = 9)
- ④ Return line pump 2 – PVC (id = 6; od = 9)
- ⑤ Connection cable for level signals (l = 5000)
- ⑥ Sticker
- ⑦ Cap for Grünbeck's folding canisters
- ⑧ Screw cap for Grünbeck's 10 l canisters
- ⑨ Screw cap for Grünbeck's 20 l canisters

Fig. 7: Suction lance 6/6 for 2 diaphragm dosing pumps (order no. 118 485)

**Suction lance**

The suction lance is completely pre-assembled.

1. Fasten the suction hose at the lower connection set of the dosing pump.
2. Connect the return line at the hose adapter of the dosing pump.
3. Insert the suction lance with the appropriate union nut into the container and tighten the union nut.
4. Connect the connection cable of the suction lance with the level signals pre-alarm and empty signal to the switch box of the suction lance GENO Duo (refer to operation manual order no. TD5-IS001gb).

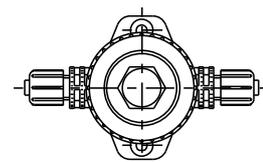
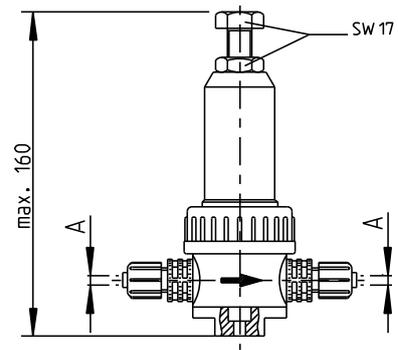
**Accessories and spare parts**

**1 | Pressure maintaining valves**

If the dosing pump is pressurised on the suction side, in case of fluctuating pressure in the system line or in case of dosing into un-pressurised system lines (free outlet), a pressure maintaining valve (spring-loaded diaphragm valve) is required in combination with a dosing pump for accurate dosing.

A pressure maintaining valve might be obsolete, if the counter-pressure possibly occurring due to the opening pressure of a spring-loaded ball-type injection point or hose injection point is sufficient.

The pressure maintaining valve is factory-set to a system counter-pressure of 2 bar.



Ⓐ Hose id = 4; od = 6

Fig. 8: Pressure maintaining valve DN 6



**Warning!** This valve **must not** be used as non-return valve to prevent backflow.

Pressure maintaining valve DN 6	
Max. temperature	35 °C
Operating range	1 - 10 bar
Flow rate	75 l/h
Material	PVC housing; membrane EPDM-PTFE coated

<b>Order no.</b>	<b>203 174</b>
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**2 | Overflow valves**

We recommend to generally use an overflow valve, in particular in case of aggressive media.

An overflow valve 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 discharge 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.

For the connection of the overflow valve to the return hose of the suction lance, the hose connection (order no. 163 222) and the Y-type hose connector (order no. 851 48 402) have to be used.

<b>Overflow valve V 85 DN 5 G 1/4</b>	
Max. temperature	35 °C
Operating range	2 - 10 bar
Flow rate	60 l/h
Material	PVC housing; membrane EPDM-PTFE coated
<b>Order no.</b>	<b>855 02 120</b>

For additional pressure maintaining valves, please inquire.

Select the appropriate hose connections with connection thread G 1/4 according to the dosing lines (see paragraph 3 Hose connections).

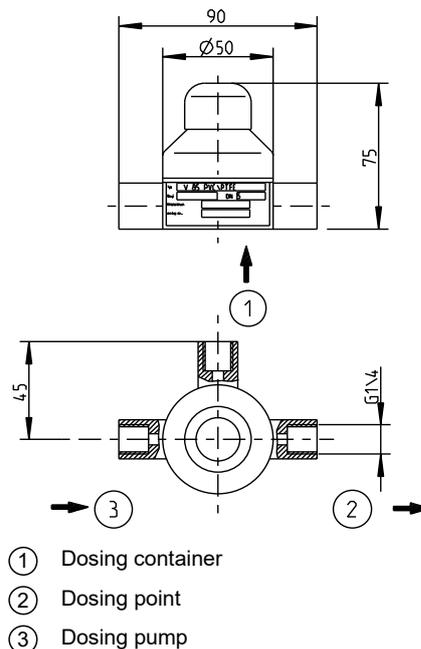
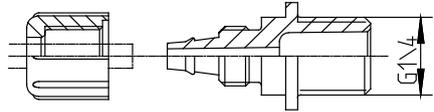
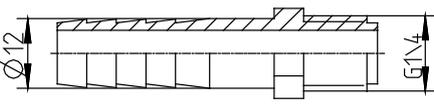
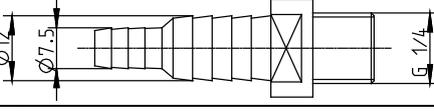
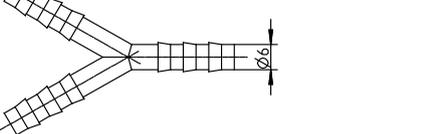


Fig. 9: Overflow valve V 85 DN 5 G 1/4

**3 | Hose connections**

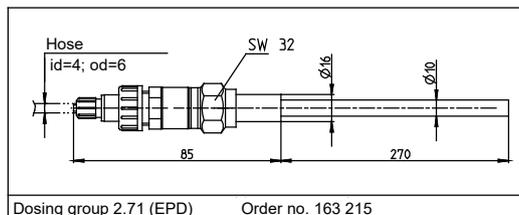
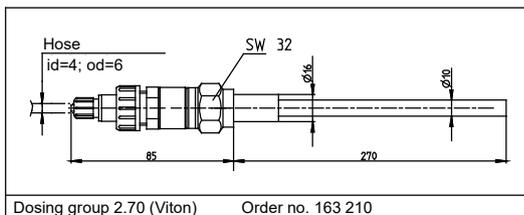
Hose connections with connection thread G ¼ for dosing lines, suitable for pressure maintaining valves and overflow valves.

	<b>Designation</b>	<b>Material</b>	<b>Order no.</b>
	Hose connection id = 4/od = 6	PPO	160 034
	Pressure connection DN 8	PVC	852 39 101
	Hose connection id = 6 or id = 10, G ¼	PVC	163 222
	Y-type hose connector for hose 5-7	PVDF	851 48 402

**4 | Injection points (dosing groups)**

**4.1 Technical specifications**

<b>Designation</b>	<b>Medium contacting parts</b>	<b>Max. operating temperature [°C]</b>	<b>Max. operating pressure [bar]</b>
Dosing group 2.70 <b>Order no. 163 210</b>	PVC; EPDM; glass; Hastelloy	35	10
Dosing group 2.71 <b>Order no. 163 215</b>	PVC; EPDM; glass; Hastelloy	35	10
Non-return valve DN 4, complete (Viton), for dosing group 2.70 <b>Order no. 855 60 111</b>			
Non-return valve DN 4, complete (EPDM), for dosing group 2.71 <b>Order no. 855 60 311</b>			



## 5 | Digital timer control (order no. 163 090)

For time-controlled activation of the GENODOS dosing pump. The timer control has to be installed at a suitable location close to the automatic measuring and control system or the dosing pump.

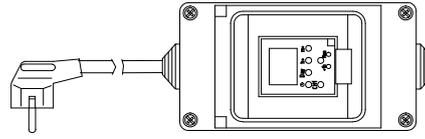


Fig. 10: Digital timer control

## 6 | Pool water safety package (order no. 210 880)

The safety package consists of the following components:

Prohibition sign:	1 x No access for unauthorised persons
Warning sign:	1 x Corrosive
	1 x Irritant
	1 x Development of chlorine gas
Mandatory sign:	1 x Use face mask
	1 x Use hand protection
Information sign for suction lance:	1 x GENO-minus N
	1 x GENO-Chlor AT
	1 x GENO-Chlor A
	1 x GENO-plus N
Information sign for chemical collecting tray:	1 x GENO-Chlor A
	1 x GENO-minus N
	1 x GENO-Chlor AT
	1 x GENO-plus N
	1 x Face mask
	1 x Eyewash bottle
	1 Pair of safety gloves

## Additional accessories

Also refer to technical information "Accessories for GENODOS-pumps" (order no. 118 950).