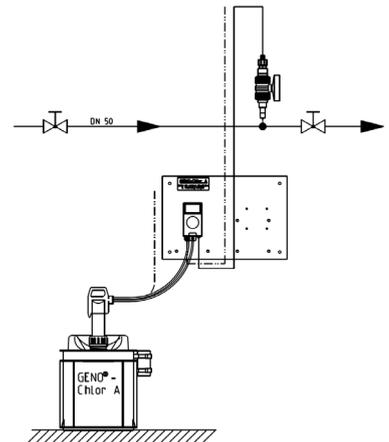


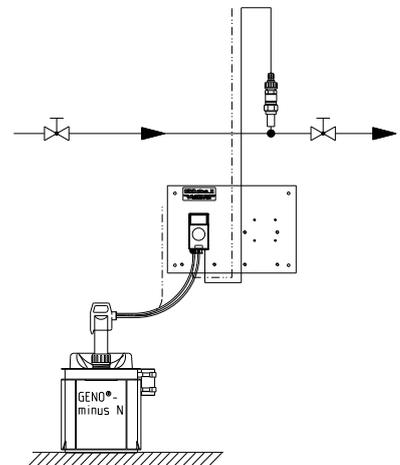
Operation Manual

Dosing systems GENO-Schlauflex

Cl 1.5 i,
Cl Duo 1.5 i,
pH 1.5 i



GENO-Schlauflex chlorine dosing system



GENO-Schlauflex for pH regulation dosing system

Edition June 2019
Order no. 100117320000_en_014

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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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Printed in Germany

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EU Declaration of Conformity

This is to certify that the system designated below complies with the safety and health requirements of the applicable European Directives in terms of its design, construction and execution. This certificate will become invalid if the system is modified in a way not approved by us.

| | | |
|---|--|---|
| Manufacturer: | Grünbeck Wasseraufbereitung GmbH Josef-Grünbeck-Str. 1 89420 Hoechstädt, Germany | |
| Responsible for documentation: | Markus Poepperl | |
| System designation: | Dosing system | |
| System type: | GENO-Schlauflex-CI 1.5 i, CI Duo 1.5 i, pH 1.5 i | |
| Serial no.: | Refer to type plate | |
| Applicable guidelines: | Low Voltage (2014/35/EU) EMC (2014/30/EU) | |
| Applied harmonised standards, in particular: | DIN EN 60335-1:2012-10, DIN EN 61000-6-2:2006-03, DIN EN 61000-6-3:2011-09 | |
| Applied national standards and technical specifications, in particular: | VDE 0700-1:2012-10 | |
| Place, date and signature | Hoechstädt, 20.11.2018 | p.p.  Markus Pöpperl Dipl. Ing. (FH) |
| Function of signatory: | Head of Product Implementation and Product Launch | |

A General

1 | Preface

Thank you for opting for a Grünbeck product. Backed by decades of experience in the area of water treatment, we provide customised solutions for all kind of processes.

All Grünbeck systems and devices are made from high-grade materials. This ensures reliable operation over many years, provided you treat your water treatment system with the required care. This operation manual assists you with important information. Please read the entire operation manual carefully before installing, operating or servicing the system.

Customer satisfaction is our primary aim and providing customers with qualified advice is crucial at Grünbeck. If you have any questions concerning this device, possible extensions or general water and waste water treatment, our field service staff, as well as the experts at our headquarters in Hoechststedt, are available to help you.

Advice and assistance For advice and assistance please contact your local representative (refer to www.gruenbeck.com). In case of emergency, please get in touch with our service hotline at +49 9074 41-333. We can connect you with the appropriate expert more quickly if you provide the required system data. In order to have this information handy at all times, please copy the data indicated on the type designation plate to the table in chapter C-1, paragraph 1.

2 | General safety information

Operating personnel

Only persons who have read and understood this operation manual are permitted to work with our systems and devices. The safety information in particular are to be strictly adhered to.

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.



Caution! 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 Grünbeck's technical service/authorised service company or by persons expressly authorised by Grünbeck.



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

3 | Shipping and storage



Caution! The systems and devices may be damaged by frost or high temperatures. Protect from frost during shipping and storage! Do not install or store the systems or devices next to objects which radiate a lot of heat.

The system may only be transported and stored in its original packing. Ensure that it is handled with care and placed the right side up (as indicated on the packing).

4 | Disposal

Comply with the applicable national regulations.

4.1 Packaging

Dispose of the packaging in an environmentally sound manner.

4.2 Product



If this symbol (crossed out waste bin) is on the product, this product is subject to the European Directive 2012/19/EU. This means that this product or the electrical and electronic components are not allowed to be disposed of in the household waste.

Find out about the local regulations on the separate collection of electrical and electronic products.

Make use of the collection points available to you for the disposal of your product.



For information on collection points for your product, contact your municipality, the public waste disposal authority, an authorised body for the disposal of electrical and electronic products or your waste collection service.

B Basic information

1 | General information about the GENO-Schlauflex dosing system

The dosing systems GENO-Schlauflex-Cl 1.5 i, GENO-Schlauflex-Cl Duo 1.5 i for chlorine dosing and GENO-Schlauflex-pH 1.5 i for pH dosing have been specially designed for use in private swimming pools. Here, the peristaltic dosing pump must operate as silently as possible for the addition of disinfectant as well as pH correction substances. The pump housing cover on the pump unit of the hose dosing pump protects against reaching into the rotor when it is turning, as well as stopping dosing agent emerging if the hose breaks.

Suction lances are used for removing the dosing media. Pure water is added through the tried-and-tested dosing points Lv-K for chlorine dosing and 2.71 for pH dosing.

C Product description**1 | Type plate**

The type plate is on the housing of the GENO-Schlauflex. To speed up the processing of your enquiries or orders, please specify the data shown on the device type plate when contacting Grünbeck. Please copy the indicated information to the table below in order to have it handy whenever necessary.

Dosing system GENO-Schlauflex-CI 1.5 i**Serial number:** **Order number:** **Dosing system GENO-Schlauflex-CI Duo 1.5 i****Serial number:** **Order number:** **Dosing system GENO-Schlauflex-pH 1.5 i****Serial number:** **Order number:** **2 | Intended use**

The GENO-Schlauflex hose dosing pump may only be used for dosing the following liquid media in private swimming pools and whirlpools.

- GENO-Chlor A
- GENO-minus N
- GENO-plus N
- GENO-flock P

Use is not allowed in the following circumstances:

- Dosing of liquid media not referred to in this manual
- Dosing of gaseous media or solids
- Dosing of flammable media
- Dosing of other substances not explicitly referred to in this manual

3 | Functional description of the dosing system

The GENO-Schlauflex hose dosing pump of the dosing system draws the corresponding chemical from a canister by means of a suction lance. This chemical is added to the water circuit via a pressure line and a dosing group.

By applying the operating voltage, the GENO-Schlauflex hose dosing pump continuously delivers at the set flow rate. A robust DC motor drives a rotor. Spring-loaded rollers are attached to the rotor ends and press a pump hose against the inner curvature of the dosing head (refer to Fig. C-1). Due to the circular motion of the rotor, the rollers push the liquid medium out of the pump hose into the pressure line. Suction of the liquid medium is provided by the dosing hose returning to its original shape.

The dosing quantity can be set using potentiometers (coarse and fine) within a range from 1 - 50 ml/min. A digital speed control with closed control loop (GCL control) guarantees high dosing accuracy in terms of the set dosing quantity irrespective of the hose status, viscosity, suction height as well as temperature and mains voltage fluctuations within the specified ranges.

4 | Product components GENO-Schlauflex hose dosing pump

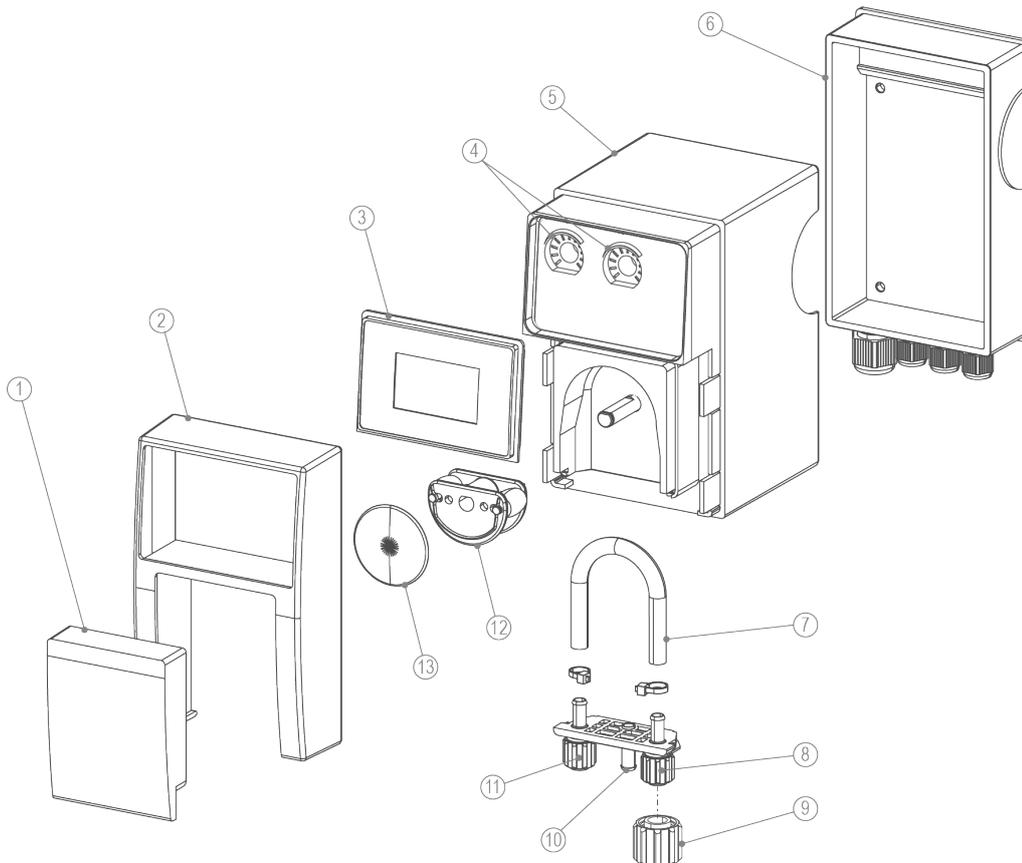
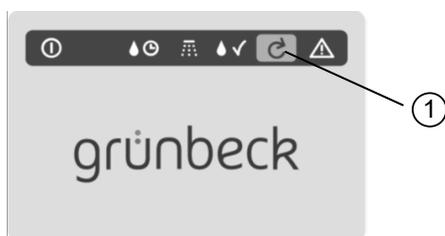


Fig. C-1: Product components GENO-Schlauflex hose dosing pump

- | | | |
|--|-----------------------------------|----------------------------------|
| ① Pump housing cover | ⑥ Wall box | ⑪ Connection on the suction side |
| ② Cover | ⑦ Pump hose incl. connections | ⑫ Rotor |
| ③ Housing cover with display and operating panel | ⑧ Connection on the pressure side | ⑬ Rotor cover |
| ④ Potentiometer (coarse and fine) | ⑨ Hose connection with union nut | |
| ⑤ Main housing | ⑩ Connection on the return side | |



- ① High-speed button (all other display and operating panels without function)

Fig. C-2: Housing cover with display and operating panel

5 | Technical specifications

| Table C-1: Technical specifications | GENO-Schlauflex dosing system | | |
|---|-------------------------------|---|---|
| | CI 1.5 i | pH 1.5 i | CI Duo 1.5 i |
| Connection data | | | |
| Hose connection size (od x id) | | | |
| Suction/pressure side | [mm] | 6 x 4 | |
| Return side | | 8 x 6 | |
| Schlauflex mains connection | [V/Hz] | 230/50 – 60 | 2 x 230/50 – 60 |
| Schlauflex power input | [W] | 3 | 2 x 3 |
| Schlauflex protection/protection class | | IP65/ □ | |
| Mains connection | [V/Hz] | - | 230 / 50 |
| Connected load* | [W] | - | 100 |
| Protection/protection class* | | - | IP54/ ⊕ |
| Performance data | | | |
| Delivery rate** | [ml/min] | 1 – 50 | 2 x 1 – 50 |
| at (max.) counter-pressure of 1.5 bar | | | |
| Max. suction height | [m] | 1.8 | |
| Permitted max. counter-pressure | [bar] | 1.5 | |
| Max. operating time | [h/d] | 12 | |
| Dimensions and weights | | | |
| Dimensions (w x h x d) | [mm] | 90 x 170 x 130 | 300 x 260 x 140 |
| Weight | [g] | 900 | 2700 |
| Ambient data/miscellaneous | | | |
| Suction lance | | Suction lance 4/6 for hose dosing pump | Suction lance 4/6 for two hose dosing pumps |
| Dosing group | | Lv-K | 2.71 2 x Lv-K |
| Hose material suction line (suction side) | | PVC (transparent) | |
| Hose material pressure line (pressure side) | | PTFE (Teflon) | |
| Hose material return line (return) | | PVC (transparent) | |
| Permitted ambient temperature | [°C] | 10 – 40 | |
| Permitted storage temperature | [°C] | 10 – 40 | |
| Permitted medium temperature | [°C] | 10 – 40 | |
| Order no. | | 203 586 | 203 591 203 596 |

*Switch box suction lance GENO Duo

**depends on the counter-pressure

6 | Suction lance

By means of the suction lance, the hose dosing pump draws the chemical from the chemical container. The suction lance is equipped with one or two suction lines and one or two return lines. The suction line(s) and the return line(s) are marked with a sticker.

The suction lance is fitted with a connection cable for the installed level signals (pre-warning 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

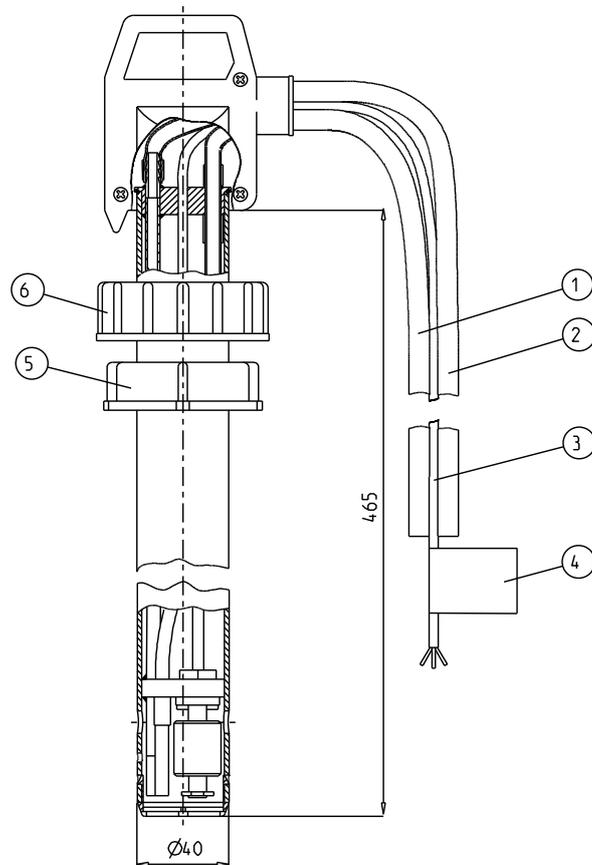
Empty signal:

- 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 because this level signal is indicated first and so there is more time to procure a new supply of dosing agents.

With the GENO-Schlauflex-CI Duo 1.5 i dosing system, both level signals (pre-warning and empty signal) can be passed on to two corresponding control units with the help of the GENO Duo suction lance switch box.

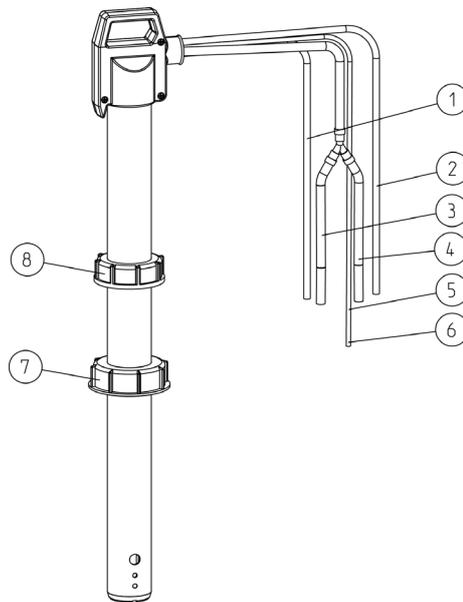
6.1 Suction lance 4/6 for hose dosing pump



- ① PVC return pipe (id = 6; od = 8, l = 2000)
- ② PVC suction line (id = 4; od = 6, l = 2000)
- ③ Connection cable for level signals (l = 5000 mm)
- ④ Sticker
- ⑤ Screw cap for Grünbeck 10 litre canister
- ⑥ Screw cover for Grünbeck 20 litre canister

Fig. C-3: Suction lance 4/6 for hose dosing pump (order no. 118 575)

6.2 Suction lance 4/6 for 2 hose dosing pumps



- ① Suction line pump 2 (id = 4. Od = 6)
- ② Suction line 1 (id = 4; od = 6)
- ③ Return line pump 1 (id = 6; od = 8)
- ④ Return line pump 2 (id = 6; od = 8)
- ⑤ Connection cable for level signals (l = 5000 mm)
- ⑥ Sticker
- ⑦ Screw cover for Grünbeck 20 litre canister
- ⑧ Screw cap for Grünbeck 10 litre canister

Fig. C-4: Suction lance 4/6 two hose dosing pumps (order no. 118 480)

7 | Dosing group 2.71

The dosing group 2.71 is used for dosing the liquid pH-regulating substances, GENO-plus N for increasing the pH value or GENO-minus N for reducing the pH value. In this dosing group, the pH-regulating additives are admixed directly drop-by-drop to the filtered bathing water after the filter system and before the dosing group Lv-K (for GENO-Chlor A).

8 | Dosing group Lv-K

The dosing group Lv-K is used for dosing the liquid disinfectant GENO-Chlor A.

9 | Scope of supply

Order no.

Dosing system GENO-Schlauflex-CI 1.5 i 203 586

Consisting of:

- GENO-Schlauflex 1.5 i hose dosing pump
- Suction lance 4/6 for hose dosing pump (order no. 118 575)
- Dosing group Lv-K (order no. 203 326)
- Pressure line (Teflon) 5 m (order no. 857 70 015)
- GENO-Schlauflex 1.5 i operation manual (order no. TD3-CI000de)

Dosing system GENO-Schlauflex-pH 1.5 i 203 591

Consisting of:

- GENO-Schlauflex 1.5 i hose dosing pump
- Suction lance 4/6 for hose dosing pump (order no. 118 575)
- Dosing group 2.71 (order no. 163 215)
- Pressure line (Teflon) 5 m (order no. 857 70 015)
- GENO-Schlauflex 1.5 i operation manual (order no. TD3-CI000dee)

Dosing system GENO-Schlauflex-CI Duo 1.5 i 203 596

Consisting of:

- GENO-Schlauflex 1.5 i 2 hose dosing pumps mounted on mounting plate
- Suction lance 4/6 two hose dosing pumps (order no. 118 480)
- GENO Duo suction lance switch box (order no. 203 095)
- 2 Lv-K dosing groups (order no. 203 326)
- 2 pressure lines (Teflon) 5 m (order no. 857 70 015)
- GENO-Schlauflex 1.5 i operation manual (order no. TD3-CI000de)

10 | Accessories

| | Order no. |
|--|------------|
| • Safety package for pool water (personal protective equipment) | 210 880 |
| • Mounting plate for up to two GENO-Schlauflex 1.5 idosing systems (for order no. 203 586 and 203 591) | 203 576 |
| • Pump hose 0.8 mm incl. connections (for flocculation) | 855 47 644 |

D Installation

1 | Requirements for the installation site



Caution! The system must be protected from direct sunlight and frost.

Observe local installation directives, general guidelines and technical specifications.

The installation site must be frost-proof. The system must be protected from chemicals, dyes, solvents and vapours.

The installation site must be sufficiently ventilated and must not be prone to flooding.

The system must be easily accessible for maintenance and repair work.

Regarding the power supply on site, a power outlet that has a ground fault circuit interrupter (30 mA) is required. A feeder cable must be laid on-site for the electrical connection.

2 | Checking the scope of supply

Check the scope of supply for completeness and possible damage.

3 | Installation of the hose dosing pump(s)



The installation may only be carried out by specially trained personnel or a specialist company.



Danger! Certain chemicals must not come into contact with each other. For safety reasons, dosing systems, chemical canisters and collection trays must be mounted or installed at a sufficient distance from each other.



Caution! In case of leaks at the connections of the hose dosing pump or the dosing groups, suitable collecting trays must be provided to collect leaking chemicals.



Warning! The dosing systems are resistant to normal atmospheres in mechanical room. The peristaltic dosing pump is not allowed to be used without additional protection (enclosure) for outdoor applications. The degree of protection does not apply to moisture present at the seals, and the housing can be degraded by direct exposure to sunlight. Comply with the applicable national regulations during installation.



Caution! The hose dosing pump must be installed above the level of the chemical canister. The maximum suction height (Table C-1) and the max. line lengths of the suction lance must be observed. If the position of the dosing group is below the level of the chemical canister, only a dosing group with a non-return valve may be installed to prevent the chemical canister from running empty.



Caution! The mounting must be carried out on a vertical and level wall in the mechanical room. If installing on uneven surfaces, make sure that the housing does not distort.



Caution! When dosing, the chemical canister should not be placed directly under the hose dosing pump, because outgassing chemicals can cause damage to the components.

3.1 Mounting the hose dosing pumps without mounting plate

The hose dosing pump is to be mounted vertically, with the hose connections pointing downwards. The housing of the Schlauflex 1.5 i hose dosing pump consists of two separable housing parts, the wall box and the main housing (refer to Fig. C-1).

1. To mount the hose dosing pump on a wall in the mechanical room, the cover must first be removed in order to loosen the screw fastenings underneath. The wall box can then be removed.
2. Fasten the wall box to the vertical and level wall in the mechanical room using the 4 holes for wall mounting.
3. Subsequently, or after the electrical installation, the main housing can be placed back on the wall box, fixed using the screw fastenings and the cover can be fitted.

3.2 Mounting the hose dosing pumps with mounting plate

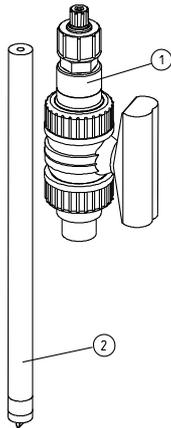
If the two hose dosing pumps are already installed on the mounting plate, this mounting plate can be fixed directly to a vertical wall using the enclosed fixing material.

Alternatively, the mounting plate (order no. 203 576) can also be ordered as an accessory.

4 | Installation of the dosing group Lv-K



The installation may only be carried out by specially trained personnel or a specialist company.



- ① Ball valve with PVC adapter and non-return valve
- ② Dosing rod

Fig. D-1 dosing group Lv-K (2-piece)

The dosing groups may only be installed in the pure water line, i.e. between the filter system and inlet jets. Furthermore, make sure that the dosing group Lv-K is installed after the heat exchanger and the pH dosing group 2.71. The distance between the pH dosing group 2.71 and dosing group Lv-K must be at least 0.5 m (see Fig. D-9). For safety reasons, we recommend always setting up the canisters containing the agents at a distance of 1.5 m.

The installation conditions are clarified by the corresponding installation diagram in the complete operation manual of the automatic measuring and control system GENO-CPR-tronic 02 family/public in chapter D.

1. The dosing group must be positioned in such way that there is a shut-off possibility before and after it, to allow straightforward removal for maintenance and renewal.

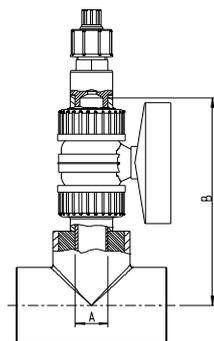


Fig. D-2: Installation of dosing group Lv-K

The dosing group Lv-K is glued vertically from above into a PVC T-piece (90°) with PVC adhesive. This requires a bonded socket joint of 25 mm in the PVC T-piece (Fig. D-2, dimension A). The PVC pipe DN 20 of the ball valve functions as a connection possibility in this case.

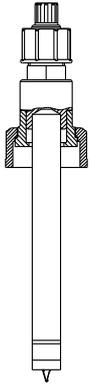


Fig. D-3: Bonding dosing group Lv-K

Once the ball valve has been glued into the filtrate line accordingly, the dosing rod must be cut to length at the turned end with a 90° angle, chamfered and glued into the PVC adapter with PVC adhesive. The dosing rod must be cut to length so that the lip valve is in the middle of the filtrate line pipe when the dosing group Lv-K is mounted (Fig. D-2, dimension B).



Note: Only glue the dosing rod into a PVC adapter.



Note: Note the time required for the PVC adhesive to harden! The adhesive will require approx. 1 hour hardening time for every 1 bar overpressure.

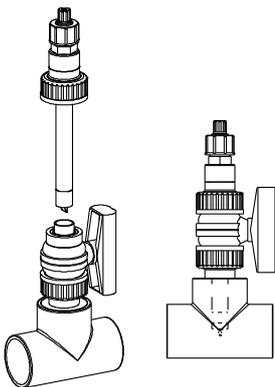


Fig. D-4: Installation of dosing group LV-K

The dosing rod glued with the PVC adapter must be mounted on the ball valve so the lip valve in the filtrate line will be immersed in the bathing water flow on the broad lip side.

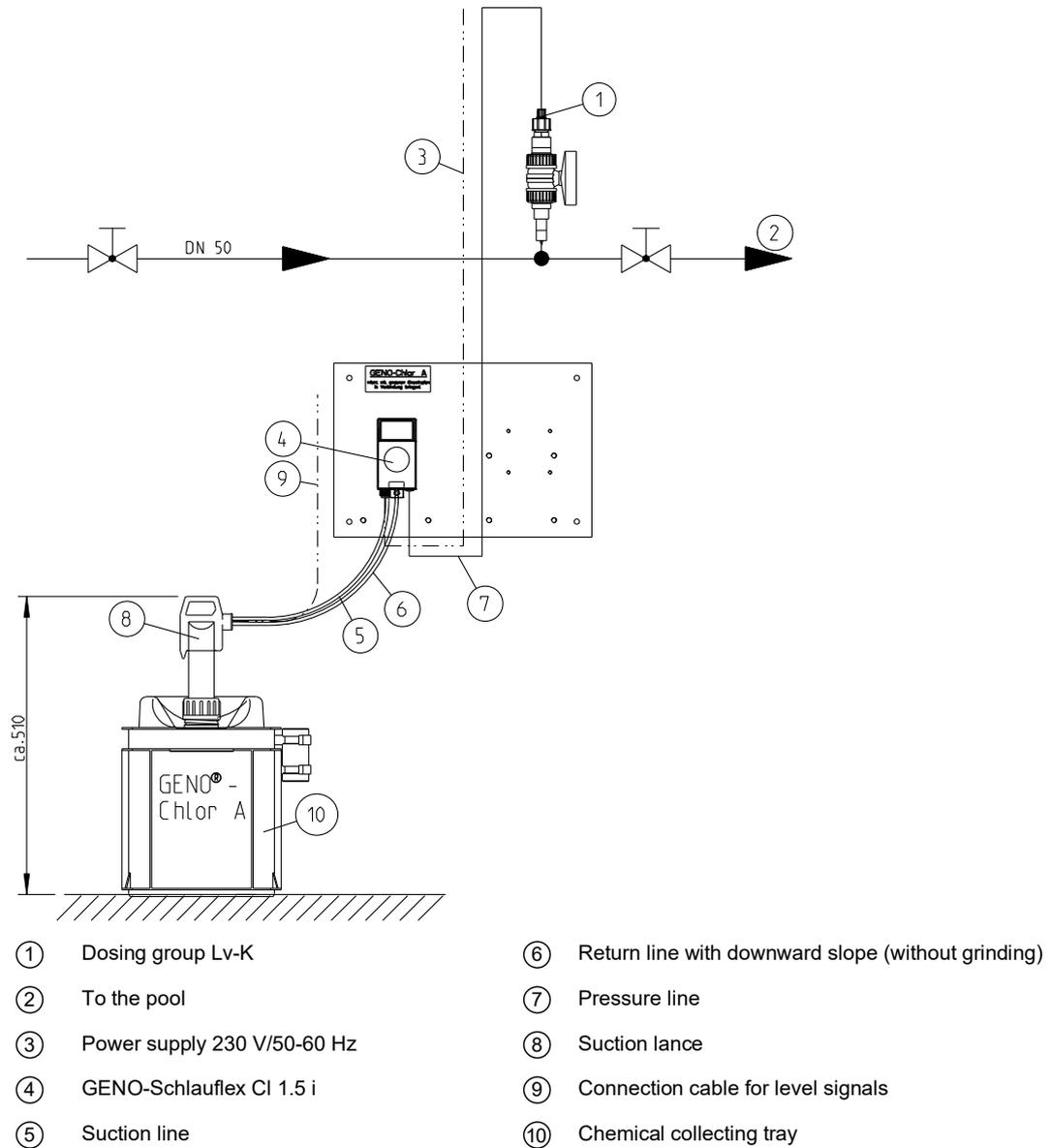
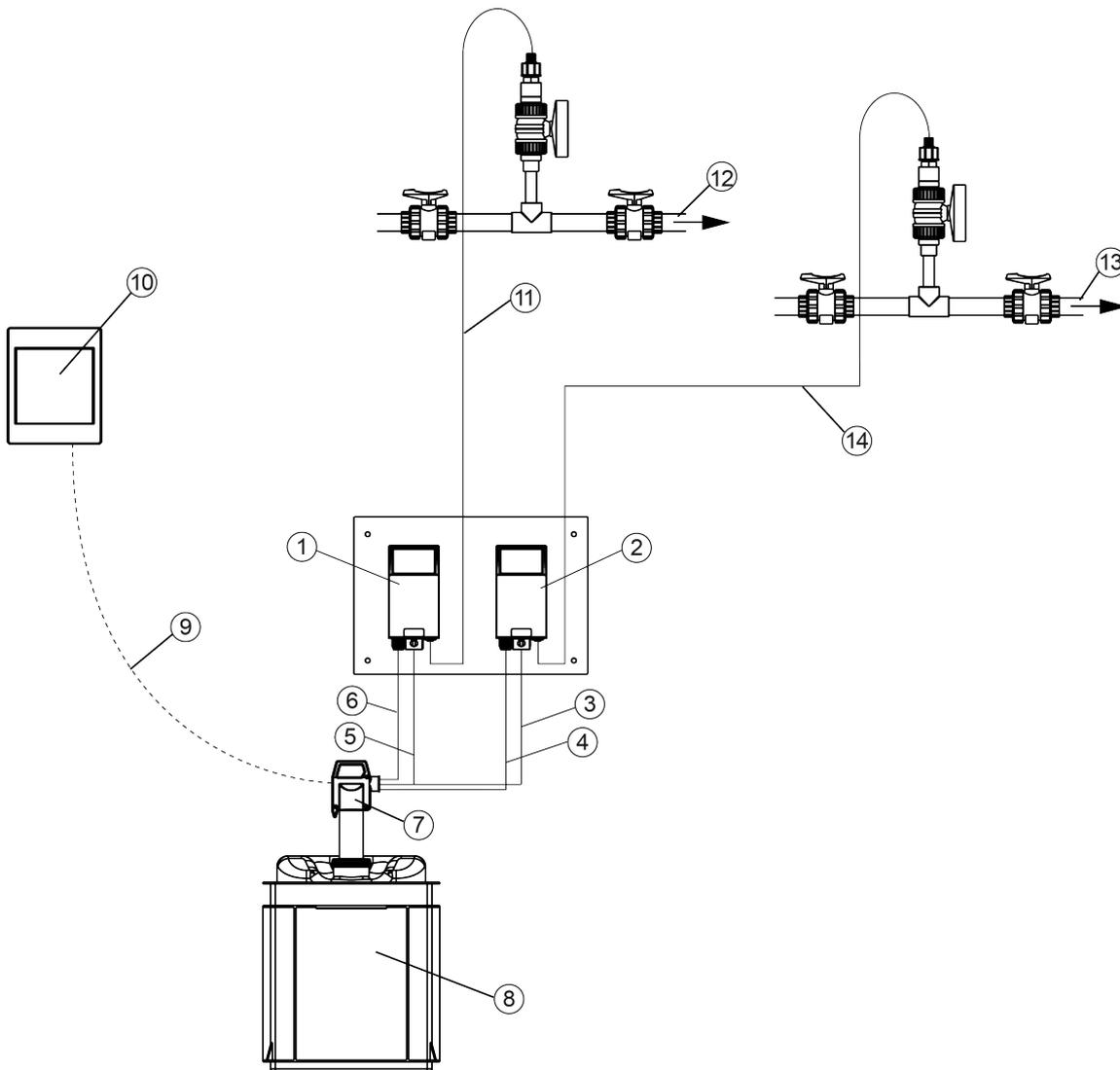


Fig. D-5: GENO-Schlauflex-Chlor CI 1.5 i dosing system installation example



- | | | | |
|---|---|---|------------------------------------|
| ① | GENO-Schlauflex-CI 1.5 i – Pump 1 | ⑧ | Chemical collecting tray |
| ② | GENO-Schlauflex-CI 1.5 i – Pump 2 | ⑨ | Connection cable for level signals |
| ③ | Return line with downward slope (without grinding) - Pump 2 | ⑩ | GENO Duo switch box suction lance |
| ④ | Suction line - Pump 2 | ⑪ | Pressure line – Pump 1 |
| ⑤ | Return line with downward slope (without grinding) - Pump 1 | ⑫ | Circuit 1 |
| ⑥ | Suction line - Pump 1 | ⑬ | Circuit 2 |
| ⑦ | Suction lance for 2 hose dosing pumps | ⑭ | Pressure line – Pump 2 |

Fig. D-6: GENO-Schlauflex-CI Duo 1.5 i dosing system installation example

5 | Installation of the dosing group 2.71



The installation may only be carried out by specially trained personnel or a specialist company.

The dosing group must be positioned so there is a shut-off possibility before and after it to allow for straightforward removal for maintenance and renewal. If possible, drill a 16 mm hole or fit a bonded socket joint with 16 mm in a double-walled PVC pipe. Glue in pipe DN 10 and allow to dry (see Fig. D-8). The dosing group will be able to withstand 6 bar overpressure and will be ready to use 6 hours after the glued joint has hardened. The installation conditions are clarified by the corresponding installation diagram in the complete operation manual of the automatic measuring and control system GENO-CPR-tronic 02 family/public in chapter D.

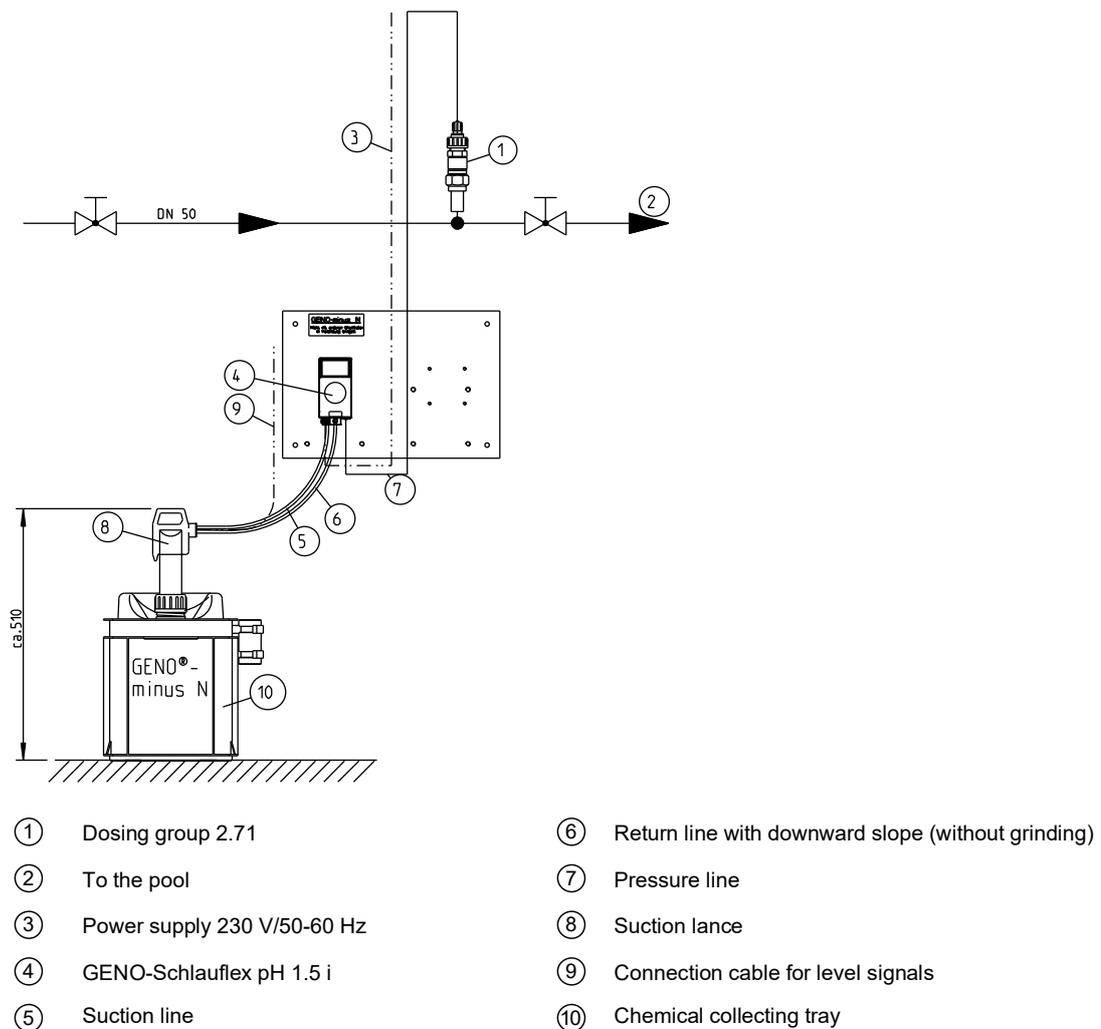
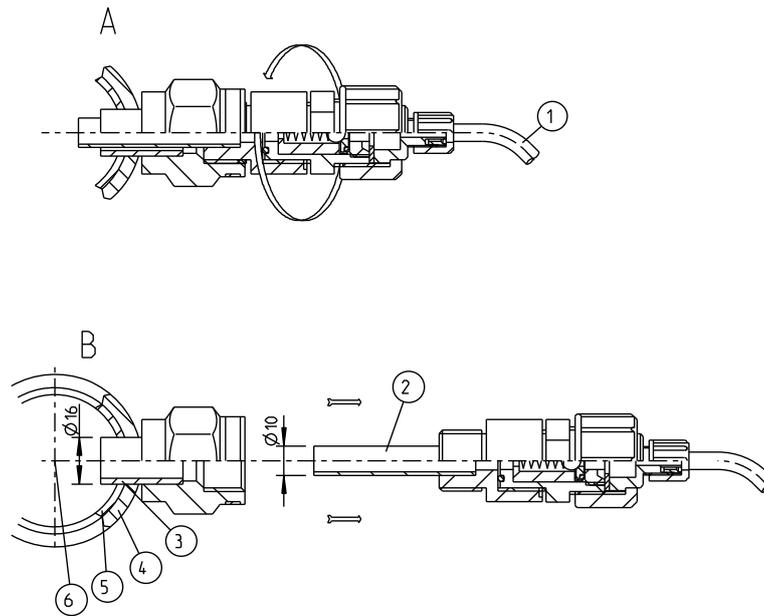


Fig. D-7: GENO-Schlauflex-pH 1.5 i dosing system installation example



- ① Pressure line (Teflon) hose id = 4, od = 6
- ② Length for pipe DN 6 on central axis (adapt fitting/pipe)
- ③ Pipe DN 10 in hole Ø 16 mm (glue fitting/pipe)
- ④ Fitting
- ⑤ Tube
- ⑥ Central axis (fitting/pipe)

A Releasing the injection nozzle

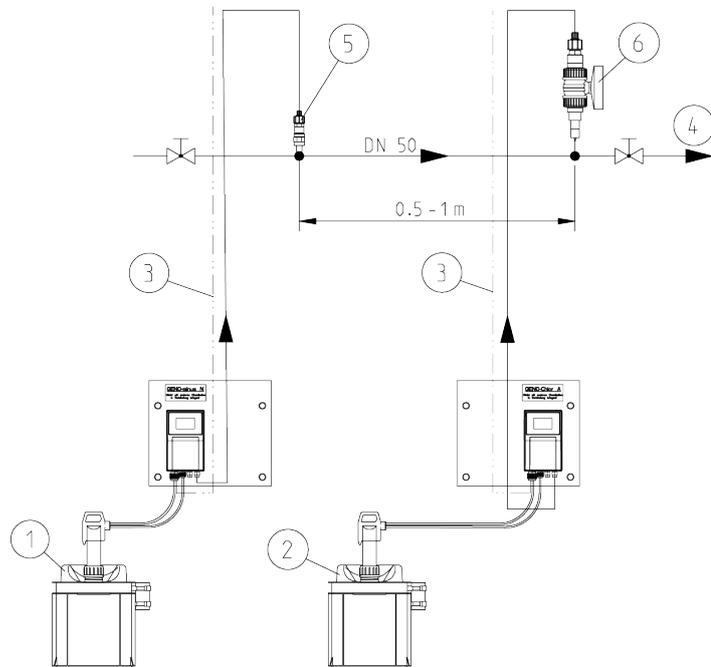
B Pulling out the injection nozzle

Fig. D-8: Installation example for dosing group 2.71

6 | Installation of the GENO-Schlauflex CI 1.5 i and pH 1.5 i dosing systems



The installation may only be carried out by specially trained personnel or a specialist company.



- ① GENO-Schlauflex-pH 1.5 i dosing system for pH regulation
(order no. 203 591)
GENO-minus N (order no. 210 013) resp.
GENO-plus N (order no. 210 018)
- ② GENO-Schlauflex-CI 1.5 i dosing system for chlorine dosing
(order no. 203 586)
GENO-Chlor A (order no. 210 012)
- ③ Power supply 230 V/50-60 Hz
- ④ to the pool
- ⑤ Dosing group 2.71 (pH) included in order no. 203 591
- ⑥ Dosing group Lv-K (chlorine) included in order no. 203 586

Fig. D-9: GENO-Schlauflex CI 1.5 i and pH 1.5 i dosing systems installation example



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

7 | GENO Duo switch box suction lance installation

Only for dosing system GENO-Schlauflex CI Duo 1.5 i
(order no. 203 596)

Refer to the separate operation manual of the switch box suction lance GENO Duo (order no. TD5-IS001en).

8 | Installation of the hose lines

The hose lines used must be able to withstand the corresponding operating pressure of the hose dosing pump. Only use genuine hoses with the following dimensions and materials:

Suction line: od = 6 mm id = 4 mm (PVC hose)
Pressure line: od = 6 mm id = 4 mm (Teflon hose, PTFE)
Return line: od = 8 mm id = 6 mm (PVC hose)

1. Place the chemical collecting tray with the chemical canister next to the mounted hose dosing pump on the floor of the mechanical room.
2. Insert the suction lance into the chemical canister and mount the screw cap onto the chemical canister.
3. Check whether the line lengths of the suction lance to the hose dosing pump are sufficient.
4. Cut the corresponding return line from the suction lance to the connection on the return side of the hose dosing pump to the correct length straight/perpendicular and mount it. This connection serves as an overflow to be able to feed the dosing medium into the chemical canister in the event of leaks in the pump hose. For the GENO-Schlauflex-CI Duo 1.5 i dosing system, connect 1 return line to each respective hose dosing pump.



Caution! The return line must be shortened to the required length and routed to the canister without kinks and with a continuous downward slope (without loops).

5. Cut the corresponding suction line from the suction lance to the hose dosing pump connection on the suction side to the correct length straight/perpendicular.
6. Mount this using the existing hose connection with union nut.
7. For the GENO-Schlauflex-CI Duo 1.5 i dosing system, connect 1 suction line to each respective hose dosing pump.
 - a. Unscrew the union nut from the suction-side connection.
 - b. Push the union nut together with the clamping ring over the suction line

(PVC hose od = 6 mm, id = 4 mm) of the suction lance.
 - c. Push the PVC hose end as far as it will go over the nozzle of the suction-side connection on the hose dosing pump. Fix in place with the aid of the union nut.



Caution! Push the PVC hose onto the suction-side connection by hand (without heating!).

8. Cut the corresponding pressure line (Teflon hose), between the pump and the corresponding dosing group to the correct length, straight/perpendicular and mount this using the existing hose connection with union nut. For the GENO-Schlauflex-CI Duo 1.5 i dosing system, connect 1 pressure line to each respective hose dosing pump.
 - a. Unscrew the union nut from the pressure-side connection on the hose dosing pump. Push the union nut together with the clamping ring over the pressure line (Teflon hose).
 - b. Slightly widen the pressure line (Teflon hose) with a screwdriver (cross slot). Push it over the nozzle of the pressure-side connection on the hose dosing pump as far as it will go. Fix in place with the aid of the union nut.
-



Caution! The Teflon hose (PTFE) is not allowed to be heated with a lighter, hot air blower or similar in order to facilitate fitting the pressure line. Heating the hose not only represents a risk of burning fingers, it is also possible that the excessively hot Teflon hose could damage the nozzle of the peristaltic dosing pump, resulting in leakage problems.

9 | Electrical installation



The electrical installation may only be carried out by an authorised electrician in accordance with the regulations of the electrical utility and the applicable VDE regulations. The client must provide a ground fault circuit interrupter (trip current 30 mA). The electrical connection is made via a 230V/50-60Hz alternating current (AC) network.



Danger! Electrical work on the hose dosing pump is only allowed to be carried out when the system is de-energised.



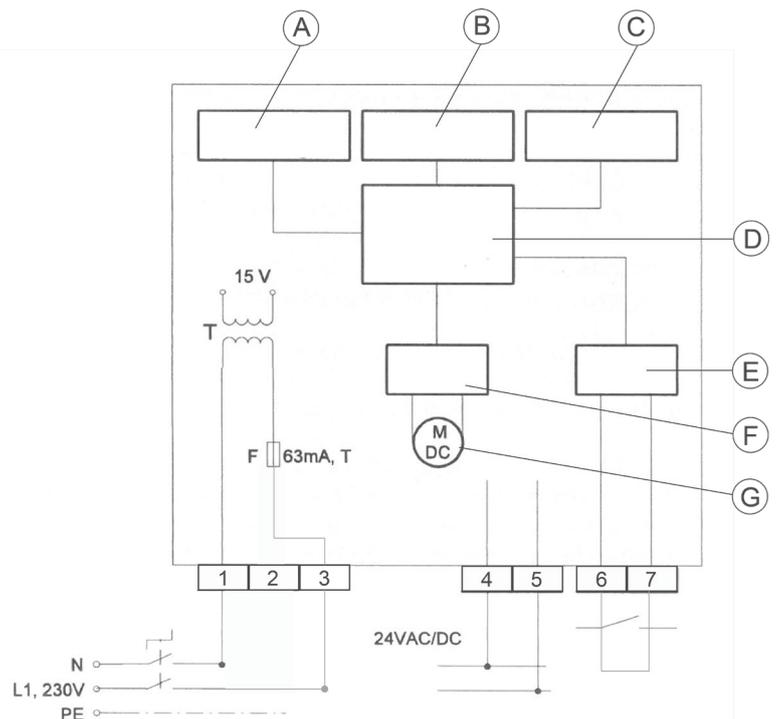
Caution!

- The peristaltic dosing pump does not have a mains switch.
- The electrical installation may only be carried out after the hose dosing pump has been completely installed on the wall in the mechanical room.
- During the installation, the mains cable is not allowed to be live and it must be protected against switching back on.
- The hose dosing pump offers 24 V AC/DC as a power supply in addition to 230 V AC. Simultaneous connection of both voltage supplies will destroy the electronics.

9.1 Voltage supply connection hose dosing pump

1. Connect the GENO-Schlauflex hose dosing pumps using a suitable cable to the on-site power supply or directly to a superordinate control unit (e.g. GENO-CPR-tronic 02 family).
2. Use the 230 V AC power supply on the hose dosing pump (terminals 1 + 3).
3. When routing the cable in the wall box, ensure that the cable is not laid in the area of the gear motor. The gear motor is located inside the circular cut-out in the wall box.
4. When using a GENO-CPR-tronic 02 family, connect the GENO-Schlauflex-CI 1.5 i to the control unit of the GENO-CPR-tronic 02 family to terminals 5 (neutral conductor) and 7 (phase).
5. When using a GENO-CPR-tronic 02 family, connect the GENO-Schlauflex-pH 1.5 i to the control unit of the GENO-CPR-tronic 02 family to terminals 9 (neutral conductor) and 10 (phase).

For other superordinate control units, the corresponding terminals can be found in the wiring diagrams applicable to these products.



- | | |
|---------------------------------|-----------------|
| Ⓐ Potentiometer P1 coarse speed | Ⓔ Detection K5 |
| Ⓑ Potentiometer P2 fine speed | Ⓕ Speed control |
| Ⓒ Filling button | Ⓖ Dosing pump |
| Ⓓ Microprocessor | |

Terminals 1 + 3 Voltage supply 230 V

Terminals 4 + 5 Not in use (24 V AC/DC)

Terminals 6 + 7 Voltage-free normally open contact (release)

Fig. D-10: GENO-Schlauflex 1.5 i circuit board

9.2 | GENO Duo switch box suction lance connection

Refer to the separate operation manual of the switch box suction lance GENO Duo (order no. TD5-IS001de).

E Start-up



The work described here may only be performed by Grünbeck's technical service/authorised service company or by persons expressly authorised by Grünbeck.



Danger! Electrical work on the hose dosing pump is only allowed to be carried out when the system is de-energised.



Caution! Before starting commissioning, you must read through the operation manual carefully.

The peristaltic dosing pump may only be operated following correct installation.

The hose dosing pump may only be operated when the pump housing cover is snapped into place.

Protect yourself when handling the liquid media by using suitable personal protective equipment (goggles, protective clothing, etc.).

The hose pump continuously doses at the speed set on the potentiometer as soon as the operating voltage is applied.

The potentiometers are located under the housing cover with the display and control panel (refer to Fig. C-1).

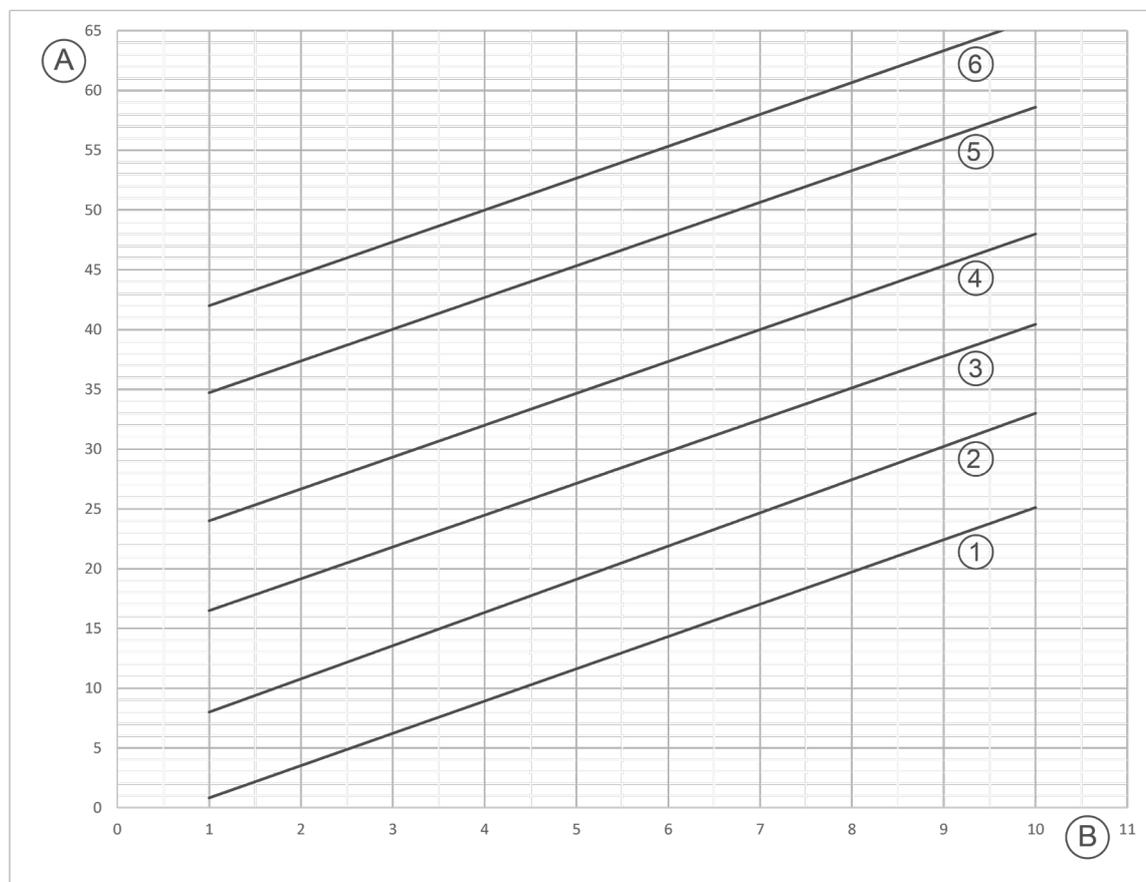


Fig. E-1: Potentiometer coarse (P1) and fine (P2)

The dosing systems are delivered with the delivery volume set.

| Table E-1: Dosing systems, delivery volumes, potentiometer positions | | | |
|--|-----------------------------------|---------|---------|
| Dosing system | Delivery volume approx. [ml/min.] | Pos. P1 | Pos. P2 |
| GENO-Schlauflex-CI 1.5 i (order no. 203 586) | 13 | 1 | 5 |
| GENO-Schlauflex-CI Duo 1.5 i (order no. 203 596) | 13 | 1 | 5 |
| GENO-Schlauflex-pH 1.5 i (order no. 203 591) | 27 | 3 | 5 |

These settings are based on experience and can be adapted at any time to local requirements with the help of the potentiometers. Refer to Fig. E-2 Diagram.



- ① P1; Pos. 1
- ② P1; Pos. 2
- ③ P1; Pos. 3
- ④ P1; Pos. 4
- ⑤ P1; Pos. 5
- ⑥ P1; Pos. 6
- Ⓐ Dosing capacity in ml/min.
- Ⓑ Position P2

Fig. E-2: Potentiometer settings diagram and their delivery volumes

1 | How to start up the hose dosing pump

1. Remove the housing cover with display and operating panel.
2. Set the required delivery volume via the potentiometer.
3. Remove the pressure line from the hose dosing pump and place a small container for collecting escaping dosing agent under the connection on the pressure side.
4. Let the hose dosing pump run briefly until the suction and pump hoses are completely filled. To speed up the process, the high-speed button can be pressed. Once the pump hose has been completely filled, switch off the hose dosing pump.
5. Dispose of the dosing agent collected properly.
6. Mount the pressure line.
7. Let the hose dosing pump run for some time to remove the air from the hose lines. While doing so, check the components used for leak tightness.
8. Check the delivery volume by gauging and adjust the positions of the potentiometers if necessary.
9. Lift the suction lance out of the chemical canister piece by piece.
10. While doing so, check whether the level signals "Pre-alarm and Empty signal" are forwarded to the superordinate control unit accordingly. Also refer to the separate operation manual of the switch box suction lance GENO Duo (order no. TD5-IS001de).
11. Record the setting parameters in the operation log. The operating log is attached to this manual.
12. Explain the system functions and operation to the owner resp. customer.
13. Complete the commissioning.

F Troubleshooting

| Table F-1: Eliminating errors | | |
|---|--|--|
| This is what you observe | This is the cause | This is what to do |
| The hose dosing pump no longer achieves the full delivery rate. | The pump hose has lost elasticity. | Renew pump hose. |
| Dosing capacity declines. | Valves have scale deposits. | Renew or clean valves. |
| | Hoses have scale deposits. | Renew or clean hoses. |
| | Dosing agent from another manufacturer (incorrect concentration) | Clean dosing tank and use original dosing agent from Grünbeck. |
| | Delivery rate setting is no longer correct. | Readjust delivery rate using the potentiometer. |
| Hose dosing pump has stopped dosing or is no longer running. | Incorrect voltage. | Check the voltage supply and compare it with the information on the type plate. |
| | No voltage supply because the superordinate control unit is switched off. | Switch on the superordinate control unit. |
| | No voltage supply even although the superordinate control unit is switched on. | It may be that there is no voltage supply from the superordinate control unit because no chemical is required. Check the need for chemical dosing. |
| | No voltage supply, even although the superordinate control unit is switched on and there is a demand for chemicals. Defective cable or defective hose dosing pump. | Replace the defective cable. Replace defective hose dosing pump. |
| | On-site fuse has tripped or is damaged. | Find the cause and eliminate it, renew damaged fuse if necessary. |
| | Chemical canister is empty. Empty signal has tripped. | Reorder chemical. |
| Leaks | Worn O-rings or seals | Replace defective seals Notify Grünbeck's technical service/ authorised service company. |



Notes: In all other cases, please notify the agent responsible for your area or Grünbeck's technical customer service/authorised service company (refer to www.gruenbeck.de). In case of emergency, please get in touch with our service hotline at +49 9074 41-333.

G Cleaning, inspection, maintenance, shutdown, spare parts



Notes: In order to ensure the proper functioning of the system in the long term, certain tasks have to be performed at regular intervals. We recommend six-monthly and annual maintenance. By concluding a maintenance contract you ensure that all maintenance work will be performed in due time.



Danger! Electrical work on the hose dosing pump is only allowed to be carried out when the system is de-energised.



Caution! Before working on the peristaltic dosing pump, disconnect it from the electrical power supply and take measures to prevent it from being switched back on!



Caution! The turning rotor of the peristaltic dosing pump can trap fingers!



Caution! Do not touch the motor of the peristaltic dosing pump directly following operation (allow the motor to cool down)!



Caution! Protect yourself when handling the liquid media by using suitable personal protective equipment (goggles, protective clothing, etc.).

1 | Cleaning

1. Regularly clean the dosing system to remove dirt and chemical residues.
2. Clean the product with lukewarm soapy water. Do not use any strong or abrasive cleaning agents as these may damage the surface.

2 | Inspection



Notes: The inspections must be carried out by the owner/user at the specified time intervals at the latest. Shorter time intervals may be required depending on the operating conditions.

2.1 Daily inspection

1. Check the system function.
2. Check the leak tightness of the components.

2.2 Weekly inspections

1. Check the filling level of the chemical canisters and order any chemicals if required.

2.3 Monthly inspections

1. Check the system function.
2. Check that there is sufficient dosing of chemicals.

3 | Maintenance



Carrying out maintenance work requires specialist knowledge. This maintenance work may only be performed by Grünbeck's technical service/authorised service company or by specialist installers trained by Grünbeck.



Notes: Record data and work performed, including repair work, in the operation log.

3.1 Semi-annual maintenance

1. Conduct a visual inspection of the hose dosing pump.
2. Check the pump hose for leak tightness.
3. Check the hose lines and hose connections for leak tightness. Remedy the leaks.
4. Check the seals of the Lv-K dosing group for leakage and incrustations (see Section G-3.5).
5. Service the check valve on the dosing groups 2.71 and Lv-K every six months. Check them for clogging and clean them (see Section G-3.4, G-3.5).
6. Check the level signals of the suction lance as well as the forwarding of the level signals "Pre-alarm and Empty signal" to the superordinate control unit.
7. Check the filling level of the chemical canisters.

3.2 Annual maintenance

1. Conduct a visual inspection of the hose dosing pump.
2. Check the hose lines and hose connections for leak tightness. Remedy the leaks.
3. Replace the pump hose including connections (refer to Section G-3.3).
4. Replace the non-return valve on the dosing groups 2.71 and Lv-K (see Sections G-3.4, G-3.5).
5. Replace the lip valve on the dosing group LV-K (refer to Section G-3.5).
6. Check the level signals of the suction lance as well as the forwarding of the level signals "Pre-alarm and Empty signal" to the superordinate control unit.
7. Check the filling level of the chemical canisters.



Note: Over time, there can be a reduction in the delivery rate depending on the operating conditions. As a result, change the pump hose incl. connections more frequently if required.

3.3 | Change of the pump hose incl. connections



Caution! When removing the pump hose incl. connections it is possible that drops of the dosing medium could spray out! As a result, flush the hose with approx. 1 litre water before removing it. Only use a genuine pump hose incl. connections! Never grease the hose!

1. De-energise the system.
 2. Lift the cover off the latching device at the bottom on the inside next to the hose connections using a suitable tool (e.g. screwdriver).
 3. Remove the pump housing cover and rotor cover.
 4. Detach the suction hose and the pressure hose from their hose connections.
 5. Pull the pump hose incl. connections out to the front while turning the rotor clockwise.
-



Note: If the pump housing has been contaminated by pumped medium that has escaped, the rotor must be removed and the inside of the pump housing carefully cleaned and dried.

6. Slide the pump hose incl. connections into the seat.
 7. Insert the hose into the track in a clockwise direction by rotating the rotor once.
 8. Fit the rotor cover and pump housing cover.
-



Caution! The hose dosing pump must only be operated when the pump housing cover is in place! This prevents anyone reaching into the moving rotor and protects any dosing agent from escaping if the hose breaks!

9. Mount the suction hose and the pressure hose on their hose connections.
10. Mount the cover.
11. Reconnect the voltage supply.

3.4 Maintenance of the dosing group 2.71

Service the complete non-return valve on the dosing group 2.71 every six months resp. check for clogging and clean.

The non-return valve and the dosing group must be replaced by Grünbeck's technical service/authorised service company during annual maintenance.

3.5 Maintenance of the dosing group Lv-K

Regularly inspect the entire dosing group Lv-K, especially the non-return valve DN 4 (4) as well as all seals and the lip valve (5).

Service the non-return valve DN 4 (4) and all seals and the lip valve (5) at least every six months. During annual maintenance, have all seals and the lip valve replaced by Grünbeck's technical service/authorised service company.

Reduce the maintenance intervals in the event of crystallised media and faults. Check the lip valve for incrustations and clogging.

Dismantling the dosing group Lv-K:

1. Thoroughly rinse the dosing group Lv-K and the lines coming from the pump with clear water.
2. Unscrew the upper union nut (1) of the ball valve to remove the jammed dosing rod (2) together with the non-return valve DN 4 (4). As soon as the lip valve (5) has passed the ball valve (3), close it. The ball valve (3) remains in the filtrate line as a shut-off possibility. A PVC sleeve limits the amount of pool water that emerges to a minimum.

The removed part can be inspected or disassembled and serviced.

3. Then reassemble the serviced part on the ball valve (3) in such a way that the lip valve (5) in the filtrate line is flowed against by the pool water on the wide lip side (refer to "Installation").
4. When servicing the ball valve (3), shut off the filtrate line via the shut-off valves provided on site.

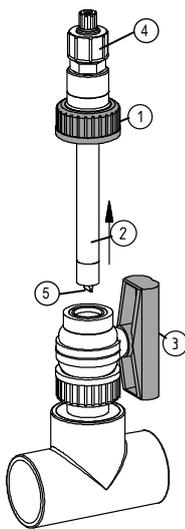


Fig. G-1: Dismantling dosing group Lv-K

4 | Shutdown



The work described here may only be undertaken by Grünbeck's technical service/authorised service company.



Danger! Electrical work on the hose dosing pump is only allowed to be carried out when the system is de-energised.



Caution! Before working on the peristaltic dosing pump, disconnect it from the electrical power supply and take measures to prevent it from being switched back on!



Caution! Protect yourself when handling the liquid media by using suitable personal protective equipment (goggles, protective clothing, etc.).



Note: Comply with the currently applicable regulations at your location! The cleaned old parts can be taken to municipal waste collection point.

1. Remove the suction lance from the chemical canister.
2. Insert the suction lance into a container with softened resp. demineralised drinking water.
3. Rinse the entire hose lines, as well as the hose dosing pump and the dosing group sufficiently with drinking water. Empty the container afterwards.
4. De-energise the system.
5. Dismantle and dispose of the pump hose incl. connections. Replace with a new part when putting back into operation.
6. Clean the suction lance.
7. Clean the dosing group.

5 | Spare parts

You may order spare parts and consumables from your local Grünbeck representative (refer to www.gruenbeck.de) or an authorised specialist company (Grünbeck Wassermeister).

Wearing parts:

Various components are subject to a certain wear and tear or ageing and therefore are considered to be wearing parts.

The following parts are considered to be wearing parts:

- Hose dosing pump GENO-Schlauflex
- Dosing groups

7 | Operation log

- | | | | |
|--------------------------|--|-------------------|-----------|
| <input type="checkbox"/> | Dosing system GENO-Schlauflex-CI 1.5 i | Order no. 203 586 | S/N _____ |
| <input type="checkbox"/> | Dosing system GENO-Schlauflex-CI Duo 1.5 i | Order no. 203 596 | S/N _____ |
| <input type="checkbox"/> | Dosing system GENO-Schlauflex-pH 1.5 i | Order no. 203 591 | S/N _____ |

Start-up

Customer

Name: _____

Address: _____

Pool version

- | | | | | |
|-------------|--------------------------|---|--------------------------|---|
| Design | <input type="checkbox"/> | Indoor swimming pool | <input type="checkbox"/> | Open-air pool |
| | <input type="checkbox"/> | Pool with overflow channel with vertical flow | <input type="checkbox"/> | Pool with overflow channel with horizontal flow |
| | <input type="checkbox"/> | Pool with skimmer | | |
| Pool lining | <input type="checkbox"/> | Concrete pool, tiled | <input type="checkbox"/> | Vinyl-lined pool |
| | <input type="checkbox"/> | Prefab pool | <input type="checkbox"/> | Sealing mass |
| Pool size | | Length [m] | | Depth [m] |
| | | Width [m] | | Volume [m ³] |

Technology

Use in conjunction with a measuring and control system yes no

Name measuring and control system _____

Use in conjunction with a filter system for disinfecting during filter rinsing. yes no

Name filter system/filter system control unit _____

Installation/accessories

- | | | | | |
|---------------------|--------------------------|-----|--------------------------|----|
| GENO-Chlor A dosing | <input type="checkbox"/> | yes | <input type="checkbox"/> | no |
| GENO-minus N dosing | <input type="checkbox"/> | yes | <input type="checkbox"/> | no |
| GENO-plus N dosing | <input type="checkbox"/> | yes | <input type="checkbox"/> | no |

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]

GENO-Schlauflex-CI Duo 1.5 i dosing capacity: -

Pump 1: _____ [ml/min]

Pump 2: _____ [ml/min]

GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Remarks

Start-up

Installer: _____

Customer service technician: _____

Company: _____

Work time certificate (no.): _____

Date/signature: _____

1st maintenance

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]
GENO-Schlauflex-CI Duo 1.5 i dosing capacity: -
Pump 1: _____ [ml/min]
Pump 2: _____ [ml/min]
GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Maintenance work

OK

- Product components checked for cleanliness, cleaned or renewed if necessary.
- Product components checked for function, defective components repaired or renewed .
- Product components checked for leaks, defective components renewed .
- Pump hose checked for leak tightness and cleaned if necessary or renewed .
- Seals and lip valve of the dosing group Lv-K checked for leakage and incrustations and cleaned if necessary.
- Non-return valves checked on the dosing groups Lv-K and 2.71 and cleaned or renewed if necessary.
- Pump hose incl. connections renewed.
- Function of the suction lance levels (pre-alarm and empty signal), as well as transmission of the level signals to the superordinate control unit checked.
- Filling level chemical canister checked; chemical canister replaced if necessary.

Remarks

Performed by

Customer service technician: _____

Company: _____

2nd maintenance

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]
 GENO-Schlauflex-CI Duo 1.5 i dosing capacity: _____ -
 Pump 1: _____ [ml/min]
 Pump 2: _____ [ml/min]
 GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Maintenance work

OK

- Product components checked for cleanliness, cleaned or renewed if necessary.
- Product components checked for function, defective components repaired or renewed .
- Product components checked for leaks, defective components renewed .
- Pump hose checked for leak tightness and cleaned if necessary or renewed .
- Seals and lip valve of the dosing group Lv-K checked for leakage and incrustations and cleaned if necessary.
- Non-return valves checked on the dosing groups Lv-K and 2.71 and cleaned or renewed if necessary.
- Pump hose incl. connections renewed.
- Function of the suction lance levels (pre-alarm and empty signal), as well as transmission of the level signals to the superordinate control unit checked.
- Filling level chemical canister checked; chemical canister replaced if necessary.

Remarks

Performed by

Customer service technician: _____

Company: _____

3rd maintenance

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]
GENO-Schlauflex-CI Duo 1.5 i dosing capacity: -
Pump 1: _____ [ml/min]
Pump 2: _____ [ml/min]
GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Maintenance work

OK

- Product components checked for cleanliness, cleaned or renewed if necessary.
- Product components checked for function, defective components repaired or renewed .
- Product components checked for leaks, defective components renewed .
- Pump hose checked for leak tightness and cleaned if necessary or renewed .
- Seals and lip valve of the dosing group Lv-K checked for leakage and incrustations and cleaned if necessary.
- Non-return valves checked on the dosing groups Lv-K and 2.71 and cleaned or renewed if necessary.
- Pump hose incl. connections renewed.
- Function of the suction lance levels (pre-alarm and empty signal), as well as transmission of the level signals to the superordinate control unit checked.
- Filling level chemical canister checked; chemical canister replaced if necessary.

Remarks

Performed by

Customer service technician: _____

Company: _____

4th maintenance

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]
 GENO-Schlauflex-CI Duo 1.5 i dosing capacity: _____
 Pump 1: _____ [ml/min]
 Pump 2: _____ [ml/min]
 GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Maintenance work

OK

- Product components checked for cleanliness, cleaned or renewed if necessary.
- Product components checked for function, defective components repaired or renewed .
- Product components checked for leaks, defective components renewed .
- Pump hose checked for leak tightness and cleaned if necessary or renewed .
- Seals and lip valve of the dosing group Lv-K checked for leakage and incrustations and cleaned if necessary.
- Non-return valves checked on the dosing groups Lv-K and 2.71 and cleaned or renewed if necessary.
- Pump hose incl. connections renewed.
- Function of the suction lance levels (pre-alarm and empty signal), as well as transmission of the level signals to the superordinate control unit checked.
- Filling level chemical canister checked; chemical canister replaced if necessary.

Remarks

Performed by

Customer service technician: _____

Company: _____

4th maintenance

Operating values

GENO-Schlauflex-CI 1.5 i dosing capacity: _____ [ml/min]
GENO-Schlauflex-CI Duo 1.5 i dosing capacity: -
Pump 1: _____ [ml/min]
Pump 2: _____ [ml/min]
GENO-Schlauflex-pH 1.5 i dosing capacity: _____ [ml/min]

Maintenance work

OK

- Product components checked for cleanliness, cleaned or renewed if necessary.
- Product components checked for function, defective components repaired or renewed .
- Product components checked for leaks, defective components renewed .
- Pump hose checked for leak tightness and cleaned if necessary or renewed .
- Seals and lip valve of the dosing group Lv-K checked for leakage and incrustations and cleaned if necessary.
- Non-return valves checked on the dosing groups Lv-K and 2.71 and cleaned or renewed if necessary.
- Pump hose incl. connections renewed.
- Function of the suction lance levels (pre-alarm and empty signal), as well as transmission of the level signals to the superordinate control unit checked.
- Filling level chemical canister checked; chemical canister replaced if necessary.

Remarks

Performed by

Customer service technician: _____

Company: _____