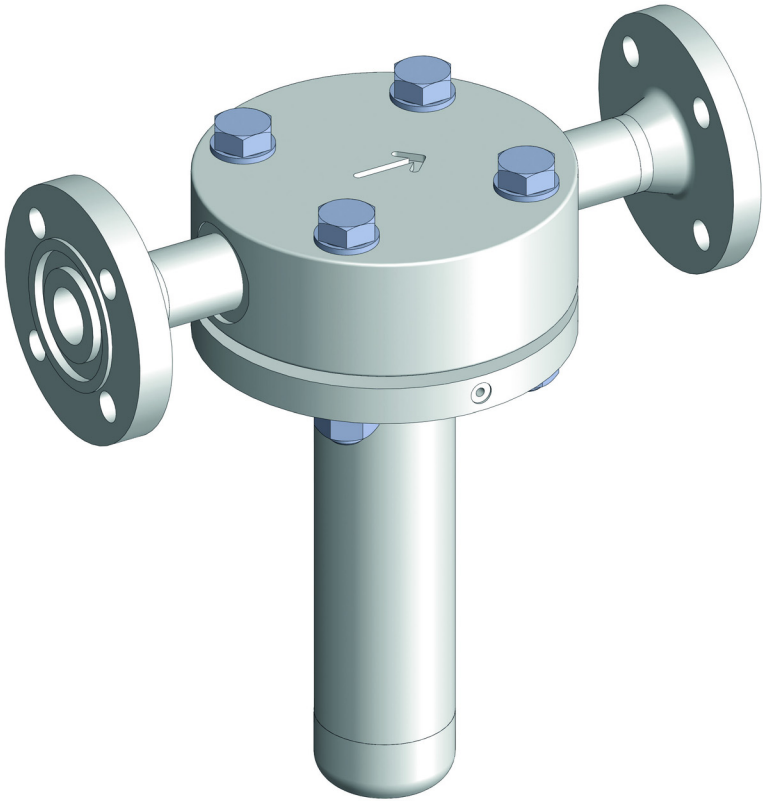
Chlorine Gas Filter

Operating Instructions



Read the Operating Instructions!

The user is responsible for installation and operation related mistakes!

Original Operating Instructions

BA-23301-02-V02

Dosing Conveying Control | Liquids Gases Systems

Contents

1 Notes to the reader

These Operating instructions contain information and behaviour rules for safe and designated operation of the .

Follow these principles:

- Read the entire Operating instructions prior to commissioning the unit.
- Ensure that everyone who works with or on the chlorine gas filter has read the Operating instructions and follows them.
- Maintain the Operating instructions throughout the service life of the chlorine gas filter.
- Pass the Operating instructions on to any subsequent owner of the chlorine gas filter.

1.1 General equal treatment

In these Operating instructions only the masculine gender is used where grammar allows gender allocation. The purpose of this is to make the text easy to read. Men and women are always referred to equally. We would like to ask female readers for understanding of this text simplification.

1.2 Explanations of signal words

Different signal words in combination with warning signs are used in these Operating instructions. Signal words illustrate the gravity of possible injuries if the risk is ignored:

Signal word	Meaning
DANGER!	Refers to imminent danger. Ignoring this sign may lead to death or the most serious injuries.
WARNING!	Refers to a potentially hazardous situation. Ignoring this sign might lead to death or the most serious injuries.
CAUTION!	Refers to a potentially hazardous situation. Ignoring this sign may lead to light injuries or damage to property.
NOTE!	Refers to a danger which, if ignored, may compromise the unit or its function.

Table 1-1: Explanations of signal words

1.3 Explanations of warning signs

Warning signs represent the type and source of a danger:

Warning sign	Type of danger
	Danger to life from chlorine poisoning
	General danger zone
	Danger of damage to machine or compromised function.

Table 1-2: Explanations of warning signs

1.4 Identification of warnings

Warnings shall help you recognise risks and avoid negative consequences.

This is how warnings are identified:

Warning sign	SIGNAL WORD
Description of danger. Consequences if ignored. ⇨ The arrow signals a precautionary measure to be taken to eliminate the danger.	

1.5 Identification of instructions for action

This is how pre-conditions for action are identified:

✓ Pre-condition for action which must be met before taking action.

This is how instructions for action are identified:

➔ Separate step with no follow-up action.

1. First step in a series of steps.
2. Second step in a series of steps.

▸ Result of the above action.

✓ **Action completed, aim achieved.**

2 Safety

2.1 General warnings

The following warnings are intended to help you eliminate the dangers that can arise while handling the Chlorine Gas Filter. Risk prevention measures always apply regardless of any specific action.

Safety instructions warning against risks arising from specific activities or situations can be found in the respective sub-chapters.

DANGER!

Danger to life from chlorine poisoning

Chlorine is poisonous. In severe cases, breathing in chlorine may lead to death. It irritates the eyes, the respiratory system and the skin.

⇨ Use sufficient personal protective equipment.

⇨ When carrying out any assembly and maintenance work, always use breathing apparatus with a Type B gas filter that complies with EN 14387.

⇨ Always comply with the accident prevention regulations that apply at the place of use.

DANGER!

Danger to life from chlorine poisoning

If chlorine gas escapes, a filter mask is ineffective, since it is not a self-contained breathing apparatus.

⇨ If chlorine gas escapes, wear a Type 2 self-contained breathing apparatus that complies with EN 137.

DANGER!

Danger to life from chlorine poisoning

Leaks may allow chlorine gas to escape. In severe cases, breathing in chlorine may lead to death.

⇨ Get rid of leaks without delay.

⇨ Only use seals once. Reusing them leads to leaks.

DANGER!

Danger to life from chlorine poisoning

Chlorinators without gas warning devices are an increased safety risk, since it is not possible to detect escaping chlorine gas in good time or at all.

⇨ Install a gas warning device.

WARNING!

Increased risk of accidents due to insufficient qualification of personnel

Chlorinators and their accessories must only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will raise the risk of accidents.

⇨ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications.

⇨ Prevent access to the system for unauthorised persons.

NOTICE

Damage to the plant due to the formation of hydrochloric acid

Chlorine gas is highly hygroscopic. This means that humidity enters the system at any open connection on equipment or pipes, which results in the formation of hydrochloric acid that inevitably causes damage to the equipment.

⇨ Keep all the connections closed at all times.

⇨ You must get rid of even very minor leaks without delay. Together with the humidity, chlorine forms hydrochloric acid and corrosion results in increased leakage.

2.2 Information about chlorine

Chlorine is a hazardous substance. The chemical element chlorine is a green-yellow, toxic gas with pungent odour. It is 2.5 times heavier than air and accumulates at ground level. It is toxic when inhaled. In severe cases chlorine may lead to death. It irritates the eyes, the respiratory system and the skin.

Chlorine is extremely toxic for water organisms. The reason for the toxicity of chlorine is its extraordinary reactivity. It reacts with animal and vegetable tissue and thus destroys it.

Air with a chlorine gas content of 0.5-1% leads to a quick death in mammals and humans, as it attacks the respiratory tract and the pulmonary alveolus (formation of hydrogen chloride or hydrochloride acid).

2.3 Hazards due to non-compliance with the safety instructions

Failure to observe the safety instructions can pose a risk not only to the personnel, but consequentially to the environment and the unit.

The specific consequences can be:

- Failure of vital functions of the Chlorine Gas Filter and the system,
- failure of required maintenance and repair methods,
- danger for individuals due to chlorine gas escaping,
- danger to the environment through substances leaking from the system.

2.4 Safe operation

Besides the safety instructions specified in these Operating instructions, further safety rules apply and must be followed:

- Accident prevention regulations,
- safety and operating provisions,
- Safety regulations on handling dangerous substances,
- environmental protection provisions,
- applicable standards and legislation.

2.5 Personal protective equipment

Depending on the type of work you are carrying out, you must use appropriate protective equipment. Read the Accident Prevention Regulations and the Safety Data Sheets to the dosing media find out what protective equipment you need.

As a minimum, the following protective equipment is recommended:


Mask


Protective clothing


Gloves


Safety footwear

Corresponding protective equipment must be used during these tasks:

- Commissioning,
- all work on gas-bearing sections of the plant
- changing the chlorine gas containers,
- decommissioning,
- maintenance work,
- disposal.

2.6 Personnel qualification

The precondition for any work on the Chlorine Gas Filter is special knowledge and skills of the personnel who operate the system.

Every person who works with the Chlorine Gas Filter must fulfil the preconditions specified below:

- Personal suitability for the respective job.
- Sufficient qualification for the respective job.
- Training in handling the Chlorine Gas Filter.
- Knowledge of safety equipment and the way this equipment functions.
- Knowledge of these Operating instructions, particularly of safety instructions and sections relevant for the job.
- Knowledge of fundamental regulations regarding health and safety and accident prevention.

All persons must generally have the following minimum qualification:

- Education as experts to perform work on their own.
- Sufficient training, so that they can work under the supervision and guidance of a trained expert.

These Operating instructions differentiate these user groups:

2.6.1 Expert staff

Expert staff are able, thanks to their professional training, knowledge and experience as well as knowledge of the respective provisions, to do the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

2.6.2 Trained electrician

Due to their professional training, knowledge and experience as well as knowledge of specific standards and provisions, trained electricians are able to do the electrical work assigned to them and to recognise and avoid any potential dangers by themselves.

They are specially trained for their specific working environment and are familiar with relevant standards and provisions.

The must comply with the legally binding regulations on accident prevention.

2.6.3 Trained person

Trained persons have been trained by the operator into the tasks they are supposed to perform and into the dangers stemming from improper behaviour.

Trained persons have attended all trainings offered by the operator.

In the table below you can check what qualifications are the pre-condition for the respective tasks. Only persons with corresponding qualification are allowed to perform these tasks.

Qualification	Tasks
Expert staff	■ Assembly ■ Hydraulic installations ■ Maintenance ■ Repairs ■ Commissioning ■ Decommissioning ■ Disposal ■ Troubleshooting
Trained electrician	■ Electrical installation of heating sleeve ■ Eliminating electrical faults
Trained person	■ Storage ■ Transportation ■ Control

Table 2-1: Personnel qualification

3 Appropriate and intended use

3.1 Notes on product warranty

Any non-designated use of the product can compromise its function or intended protection. This leads to invalidation of any warranty claims!

Please note that liability is on the side of the user in the following cases:

- If the Chlorine Gas Filter is operated in a manner which is not consistent with these Operating instructions in particular with the safety instructions, the handling instructions and the chapter entitled „Appropriate and intended use".
- If people operate the product who are not adequately qualified to carry out their respective activities.
- If non-original spare parts or accessories of Lutz-Jesco GmbH are used.
- If unauthorised changes are made to the device by the user.
- If the user uses different dosing media than those indicated in the order.

3.2 Intended purpose

- The chlorine gas filter is used in chlorine gas dosing systems for separating reliquefied chlorine gas and filtering the contaminants and solid matter that the chlorine gas contains.
- Using the heating sleeve that is available as an accessory, it is possible to evaporate the separated liquid chlorine in the chlorine gas filter.

3.3 Prohibited operating conditions

- The Chlorine Gas Filter is only intended for the applications described in Section 3.2 „Intended purpose“.
- You must comply with the information on usage and environmental conditions (see „Technical data“ on page 9).
- The Chlorine Gas Filter is not intended for use out of doors.
- The unit must not be operated if protective equipment has been removed and/or has not been properly installed or is dysfunctional.

3.4 Prohibited dosing media

You must not use the Chlorine Gas Filter for the following media and substances:

- Any gases except chlorine gas,
- Liquids,
- Solid substances.

4 Product description

4.1 Scope of delivery

Carefully check the delivery prior to installation and refer to the delivery note to ensure the delivery is complete and to check for any transport damage. Contact the supplier and/or carrier regarding any questions concerning the delivery and/or transport damage. Do not operate defective devices.

The version without counterflanges includes the following scope of delivery:

- Chlorine Gas Filter
- Flange seals DN 25 (2 pcs)
- Bolts (8 pcs, M12x50, DIN 931)
- Operating Manual

Versions with counterflanges include the scope of delivery stated above as well as the following:

- Counterflange DN 25 – 1" NPT female thread with tongue and groove (2 pcs) or
- Counterflange DN 25 – 1" NPT welding neck flange with tongue and groove (2 pcs)

The filter is assembled ready-to-install. All the flange openings are closed by transportation locks.

4.2 Accessories

4.2.1 Flange

Description	Part No.
Counterflange - 1" NPT female thread with tongue	15927
Counterflange - 1" NPT female thread with groove	15928
Counterflange - welding neck flange with tongue	39516
Counterflange - welding neck flange with groove	39517

Table 4-1: Flange

4.2.2 Heating sleeve

The optional heating sleeve virtually surrounds the filter hood and ensures that the relatively small amount of liquid chlorine in the chlorine gas filter evaporates.

Delivered complete with fastening materials.

Description	Part No.
Heating sleeve 240 VAC 50/60 Hz, without plug	40204
Heating sleeve 120 VAC 50/60 Hz, without plug	40205

Table 4-2: Heater

4.3 Structure of the Chlorine Gas Filter

The chlorine gas filter consists of a ceramic filter element that is located in a steel housing known as a "filter hood" and of a filter head with welded flanges for connecting the chlorine gas filter to the chlorine gas line.

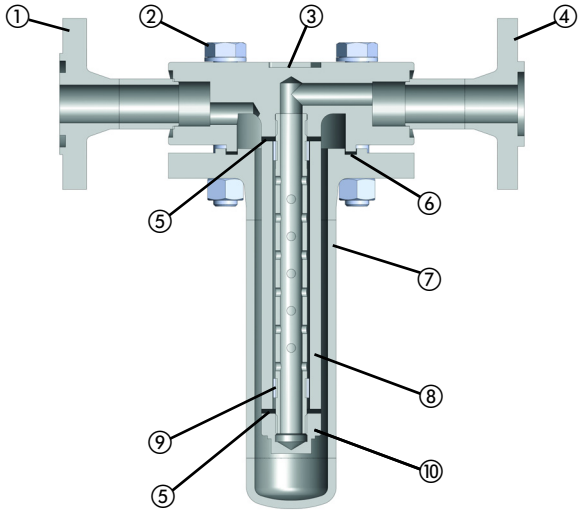


Fig. 4-1: Structure of the Chlorine Gas Filter

Item	Description
①	Inlet connecting flange:
②	Housing bolts
③	Filter head
④	Outlet connecting flange:
⑤	Seal on filter element
⑥	Housing seal
⑦	Filter hood
⑧	Filter element
⑨	Spacer sleeve
⑩	Screw cap

Table 4-3: Designations of the components of the chlorine gas filter

4.3.1 Nameplate

The nameplate shows information on the safety and functional method of the Chlorine Gas Filter. The nameplate must stay legible for the duration of the service life of the product.

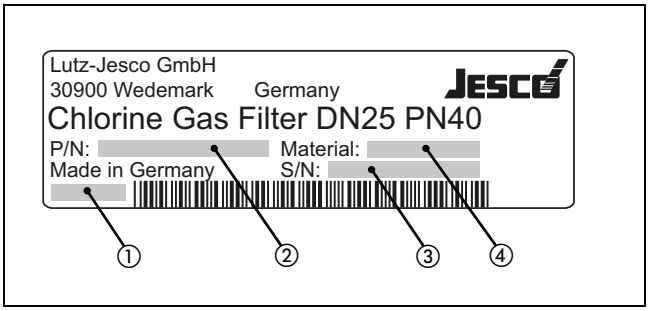


Fig. 4-2: Nameplate

Position	Meaning
①	Month / year of manufacture
②	Part number
③	Serial number
④	Housing material / sealing material

Table 4-4: Information on the nameplate

4.4 Technical data

Description	value
Throughput at 2 bar	100 kg Cl_2/h
Throughput at 6 bar	200 kg Cl_2/h
Max. operating pressure	PN 40
Weight	Approx. 20 kg
Max. operating temperature:	80° C
Connection of pipework	DN 25
Material of housing	C-steel
Material of seals	FPM, Klingersil
Filter material	Ceramic
Connections	DN 25 / PN 40 with groove (inlet) and tongue (outlet) according to EN 1092-1

Table 4-5: Technical data

5 Dimensions

All dimensions in mm

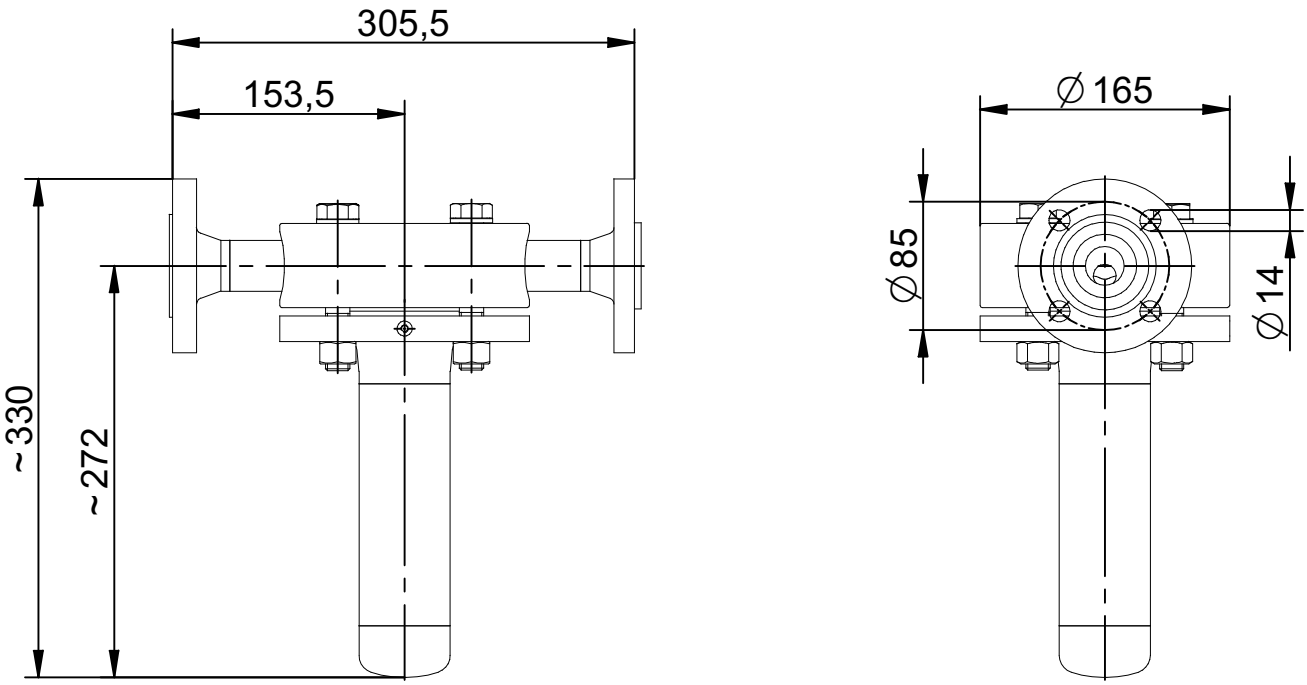


Fig. 5-1: Dimensions of chlorine gas filter

6 Installation

WARNING!

Danger of personal injury and material damage

The chlorine gas filter weighs approximately 20 kg. If the device is not fixed adequately, there is a danger of injury due to pipes bursting. During operation, this can also lead to chlorine gas escaping.

⇨ Make sure that the filter is adequately fixed in the pipe.

6.1 Installation location

The chlorine gas filter is installed in the overpressure line in front of the pressure reducing valve; in systems with chlorine evaporators, the installation location is between the chlorine evaporator and the pressure reducing valve.

You should mount the Chlorine Gas Filter such there is a clear space below the flange of at least 300 mm to allow access for maintenance.

6.2 Mounting the chlorine gas filter

Precondition for action:

- ✓ The flanges are free from temporary coatings, e.g. to protect from corrosion.
- ✓ The sealing surfaces of the flanges are free of contamination and damage.
- ✓ Bolts, nuts and washers are clean and undamaged. In this connection, pay particular attention to the thread and the supporting surfaces.
- ✓ Seals must be clean, undamaged and dry. You are not allowed to use adhesive paste and fitting lubricant.

Any bolts, nuts and washers that are removed in assembly work must be replaced with new ones according to risk assessment or after inspection if they are damaged. Used bolts, nuts and washers may only be installed if they are in at least new condition.

Perform the following working steps:

1. Before tightening, lubricate the sliding surfaces of the bolts, nuts and washers with suitable lubricants.
2. To make the connection to the chlorine gas line, inflow and outflow flanges with tongues and grooves are welded on the filter head of the chlorine gas filter. These flanges are connected to the corresponding counterflanges of the chlorine gas line.

When mounting, ensure that the installation method is correct. There is an arrow on the end face of the chlorine gas filter's filter head that shows the specified direction of throughflow of the chlorine gas filter.

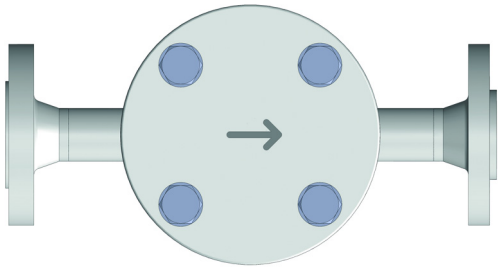


Fig. 6-1: Top view of chlorine gas filter with arrow showing direction of throughflow

3. Tighten the bolts evenly – starting crosswise – in three stages: 20 Nm, 35 Nm and 50 Nm. After this, retighten all the bolts to the full target tightening torque (50 Nm).
4. Setting the seal (adapting to the flange seal surface) can make it necessary to retighten the bolts. This means that you should retighten the bolts again after a few hours with the flange connection depressurized.

✓ **Chlorine gas filter mounted.**

6.3 Mounting the heating sleeve

Perform the following working steps:

1. Push the heating sleeve over the filter hood such that it is located approximately in the middle of the filter hood.
2. The preassembled open ends of the heating sleeve are connected by a qualified electrician to a junction box located on-site. When doing this, you must observe the voltage rating of the heating sleeve.
3. Fasten the ground loop of the heating sleeve to the filter hood of the Chlorine Gas Filter. There is a tapped hole for this purpose on the flange of the filter hood.

✓ **Heating sleeve mounted.**

6.4 Completing mounting

After completing mounting, you must check that all the connections are leak-proof (see Commissioning).

6.5 Installation examples

6.5.1 Installation with a chlorine evaporator

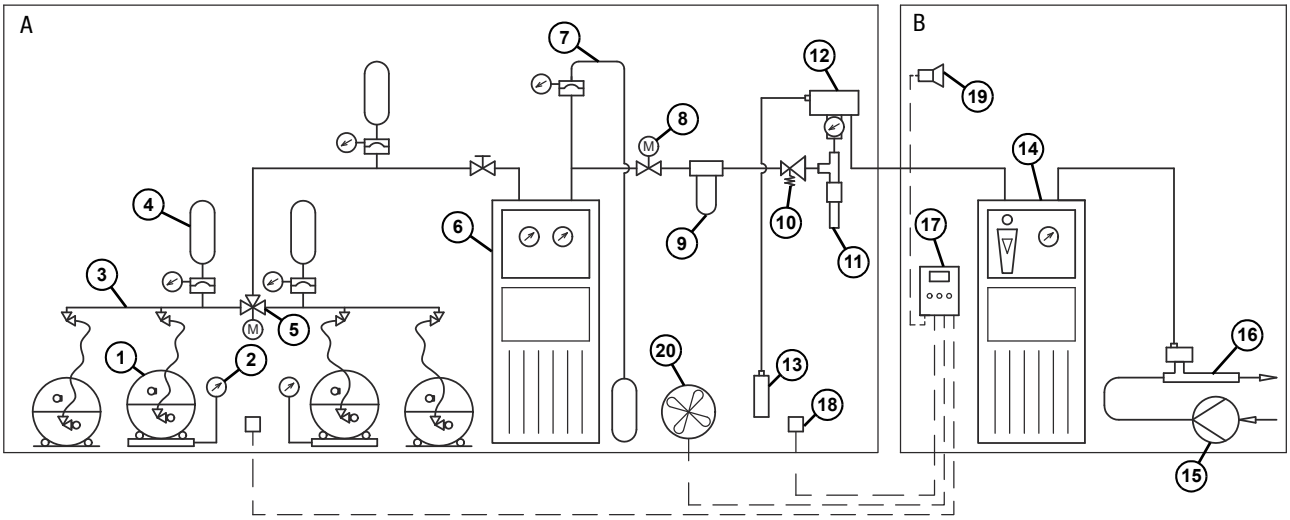


Fig. 6-2: Installation with a chlorine evaporator

Item	Description
A	Space for chlorine supply
B	Dosing unit space
1	Chlorine barrel
2	Chlorine barrel scale
3	Manifold
4	Rupture disk with expansion container
5	Changeover switch
6	Chlorine evaporator
7	Expansion system
8	Quick-action valve
9	Chlorine gas filter
10	Pressure reducing valve
11	Moisture eliminator with heating collar
12	Vacuum regulator
13	Activated carbon cartridge
14	Dosing device
15	Motive water pump
16	Injector with non-return valve
17	Gas warning device
18	Gas sensor
19	Horn
20	Entrance port of the chlorine eliminator

Table 6-1: Designation of components

6.6 Installation of the overpressure line

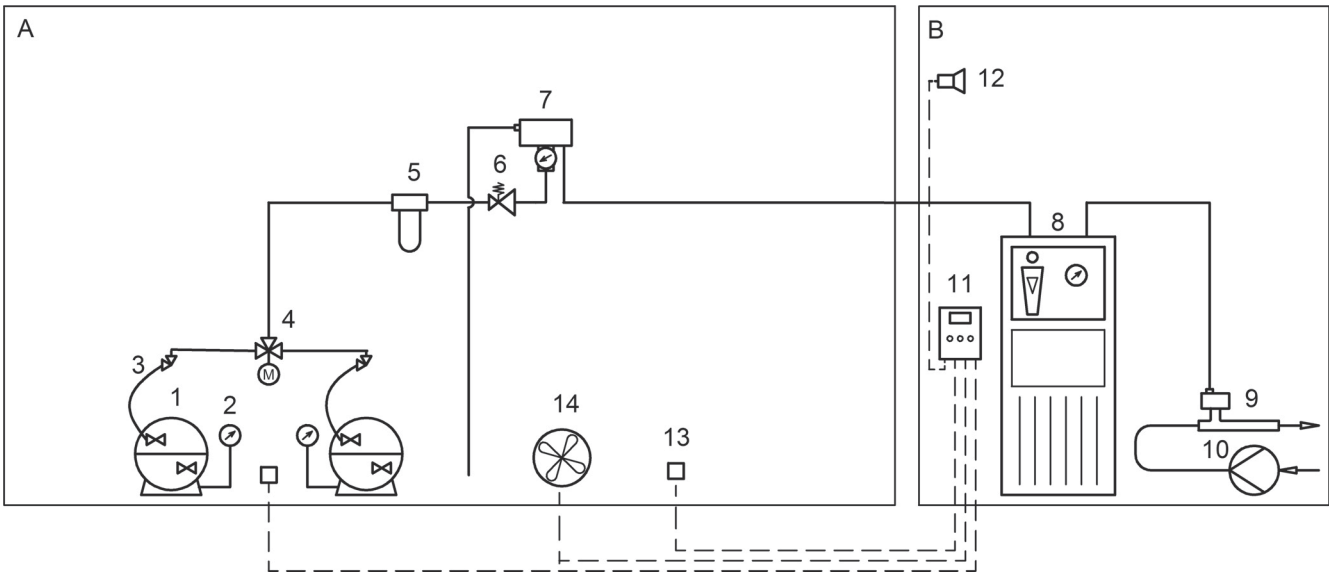


Fig. 6-3: Installation of the overpressure line

Item	Description
A	Space for chlorine supply
B	Dosing unit space
1	Chlorine drum
2	Chlorine drum scales
3	Manifold
4	Changeover switch
5	Chlorine gas filter
6	Pressure reducing valve
7	Vacuum regulator
8	Dosing unit
9	Injector with non-return valve
10	Booster pump
11	Gas warning device
12	Horn
13	Gas sensor
14	Entrance port of the chlorine eliminator

Table 6-2: Designation of components

7 Operation

7.1 Start-up

DANGER!

Chlorine gas can escape due to systems that are leaky or not installed correctly

There is an increased safety risk due to chlorinators that are commissioned without having previously been inspected for adequate tightness and correct installation as well as for all components being in the proper condition.

⇨ Before commissioning the system, have an expert inspect that it is tight and in the proper condition.

⇨ Carry out a regular inspection of the condition of the Chlorine Gas Filter, the connecting flanges and all the other plant components.

WARNING!

Danger of personal injury and material damage

The housing seal may have loosened during transportation of the chlorine gas filter.

⇨ Before commissioning the filter, tighten the bolts evenly crosswise. The maximum tightening torque must not exceed 80 Nm.

7.1.1 Inspecting the pressure system

Check the pressure system of the chlorine container to the Chlorine Gas Filter in two stages:

Carrying out the leak test with nitrogen

You are strongly recommended to carry out this inspection before carrying out the leak test with chlorine, since it demonstrates leaks in the pressure system without the risk of chlorine escaping. As an alternative, you can carry out the inspection using dry compressed air.

Precondition for action:

✓ All the open connections of the overpressure installation were closed.

✓ All the shut-off valves in the pipe system were opened.

✓ A nitrogen cylinder was connected.

Perform the following working steps:

1. Slowly raise the system pressure on the nitrogen cylinder's pressure reducer to the maximum system pressure.
2. Close the nitrogen cylinder's valve.
3. Apply soap solution to all the potential leaks. Bubbles will appear at leak locations.
4. Close the outlet on the nitrogen cylinder's pressure reducer and observe the pressure gauge in the installation. The pressure must not drop within one hour.
5. If necessary, repair leaks and repeat the leak test.

✓ **Leak test with nitrogen carried out.**

Carrying out the leak test with chlorine

DANGER!

Danger to life from chlorine poisoning

If you start the leak test with chlorine before the entire plant has been installed and the injectors are ready for operation, chlorine may not be extracted immediately in the case of a leak.

⇨ Make sure that all the components in the plant are installed correctly and the injectors are ready for operation before starting the leak test with chlorine.

⇨ Put on protective clothing before carrying out the leak test.

Precondition for action:

✓ The leak test with nitrogen was carried out successfully.

✓ All the open connections of the pressure system were closed correctly.

✓ A chlorine container was connected.

Perform the following working steps:

1. Briefly open the chlorine container valve and close it again.
2. Carry out the ammonia test on the entire pressure system: Ammonia steam with chlorine forms a white vapour and makes even very small leaks visible. With the ammonia test, you hold an open bottle containing the ammonia solution close to the pipe and make a slight pumping motion with the plastic bottle.

NOTICE

Damage to the plant by the ammonia solution

If the ammonia solution comes into contact with the plant, this leads to corrosion on the equipment.

⇨ Make sure that you do not spill any ammonia.

3. If you find leaks: Use the injector to suck off the chlorine immediately!
4. After this, repair the leak.
5. Carry out the leak test again.
6. If you do not find any leaks: Briefly open the chlorine container valve and leave it open.
7. Carry out the ammonia test again.

You must get rid of even very minor leaks without delay. Together with the humidity, chlorine forms hydrochloric acid and corrosion results in increased leakage.

✓ **Leak test with chlorine carried out.**

7.2 Inspection intervals

You must check the components of the chlorinator for leaks on a daily basis and after maintenance or commissioning work.

7.3 Shutdown

7.3.1 Short-term shutdown

Perform the following working steps:

1. Close the chlorine gas container valves.
2. Use the injector to suck off the remaining chlorine.
3. Switch off the injector.

✓ **Chlorinator shut down for the short term.**

7.3.2 Long-term shutdown

Precondition for action:

✓ The chlorine gas container valves were closed

✓ The remaining chlorine was sucked off using the injector.

✓ The injector was switched off.

Perform the following working steps:

1. Run the chlorinator for approximately five minutes with nitrogen.
2. Close all the connections to protect the lines and equipment from humidity and dirt.

✓ **Chlorinator shut down for the long term.**

7.4 Troubleshooting

Problem	Possible cause	Remedy
Serious drop in pressure after the Chlorine Gas Filter	Filter blocked	Carry out maintenance, see “Maintenance” on page 16.
Chlorine Gas Filter blocked from inside	Direction of flow is not correct	Clean and replace the connection sides of the connecting piece. The Chlorine Gas Filter must be perfused from outside to inside.
Ice, frost or condensed humidity on the filter hood to a specific height.	Liquid chlorine in the filter hood	Reduce the extraction quantity or attach the heating sleeve and heat the Chlorine Gas Filter.

Table 7-1: Troubleshooting

7.5 Disposal of old equipment

- Before disposal of the Chlorine Gas Filter, you must clean off the remaining chlorine from it by rinsing it with nitrogen or air.
- Any residual dosing media must be removed in a professional manner.
- The Chlorine Gas Filter must be disposed of in accordance with applicable local laws and regulations. The unit does not belong to household waste!

As the disposal regulations may differ from country to country in the European Union, please consult your supplier if necessary.

8 Maintenance

DANGER!

Danger to life from chlorine poisoning

Do not carry out maintenance or any other work on the chlorinator until the plant has been decommissioned and there is no more chlorine gas in the pipes. Otherwise, chlorine gas may escape.

⇨ Close the chlorine container valves before carrying out any work.

⇨ Use the injector to suck out all the chlorine-bearing pipes.

- In order to avoid hazardous incidents, chlorinators must be maintained and tested at least once a year.
- In some cases, regional regulations may require shorter maintenance intervals. Working on the system requires special safety precautions and may only be carried out by instructed technical personnel.
- Carry out maintenance before recommissioning the system after a long period out of service.
- if there is a significant pressure drop across the Chlorine Gas Filter, the filter is very dirty and you must replace it.
- Regardless of the contamination level, you must change the filter element and all the seals at the latest at the end of each year of operation.

The following maintenance kit is available for maintenance:

Maintenance kit	Contents	Part number
Spare parts kit for Chlorine Gas Filters	1x filter element 1x housing seal 2x flat gaskets	40206

Table 8-1: Spare parts sets for Chlorine Gas Filters

8.1 Replacing the filter element

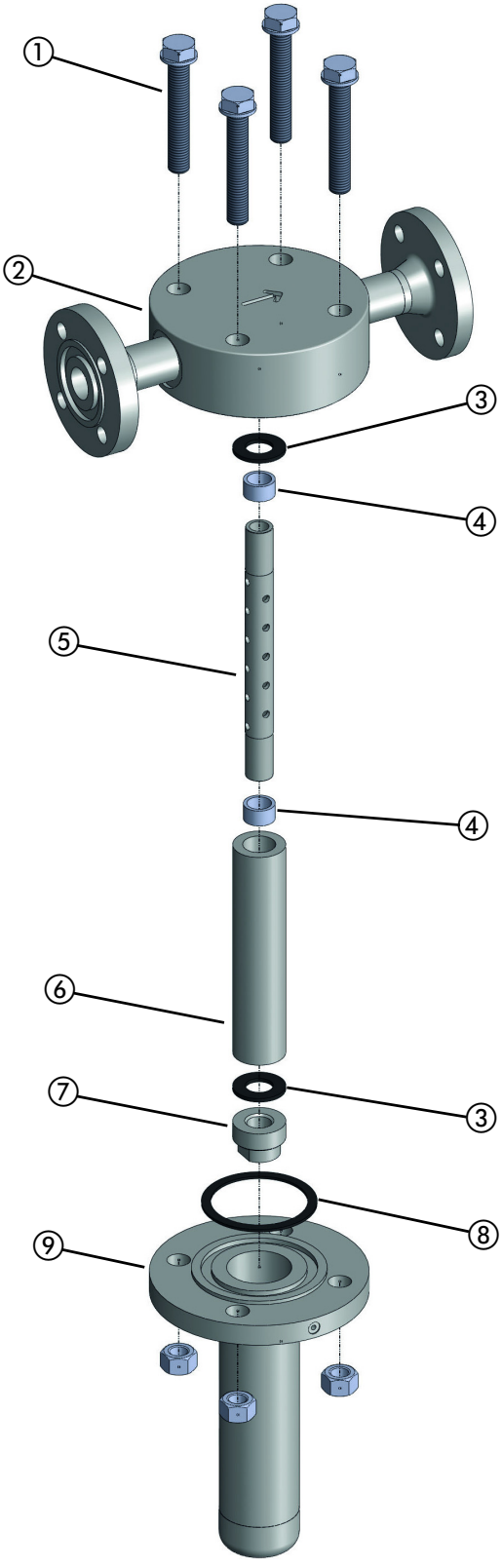


Fig. 8-1: Exploded view of the chlorine gas filter

8.1.1 Dismounting the filter element and the housing seals

Precondition for action:

- ✓ The chlorine gas supply line was closed.
- ✓ The remaining chlorine was sucked off using the injector.
- ✓ The chlorine gas filter was purged with nitrogen for approximately five minutes.
- ✓ All the connections were closed to protect the lines and equipment from humidity and dirt.
- ✓ It is not possible to reconnect the system inadvertently.
- ✓ The chlorine gas filter is not pressurized.

Perform the following working steps:

1. Release the housing bolts ① and take off the filter hood ⑨ downwards.
2. Remove the screw cap ⑦ and the bottom seal ③ on the filter element ⑥. Slowly take off the filter element downwards.
3. Screw the pipe ⑤ out of the filter head ②.
4. Remove the top seal ③ on the filter element ⑥.
5. Remove the housing seal ⑧ in the flange groove in the top part of the filter hood ⑨.
6. Thoroughly clean the filter and the filter hood using lukewarm water and then allow the components to dry completely.

8.1.2 Installing a new filter element and housing seal

Perform the following working steps:

1. Push a new seal ③ over the tube ⑤ to the spacer sleeve ④.
2. Screw the screw cap ⑦ loosely to the seal.
3. Place a spacer sleeve ④ at the bottom on the tube ⑤ and push the tube through the filter element ⑥ until the filter element rests.
4. Place a new seal ③ on the filter element ⑥.
5. Bolt the tube ⑤ back to the filter head ②. After this, tighten the screw cap ⑦ fingertight until the seal ③ is pressed onto the filter element on the filter head ②.
6. Carefully tighten the screw cap ⑦ using a hand wrench until it is not possible to rotate the filter element ⑥.
7. Insert a new housing seal ⑧ into the groove of the filter hood ⑨.
8. Bolt the filter hood ⑨ to the filter head ②. Tighten the bolts evenly – starting crosswise – in three stages: 20 Nm, 50 Nm and 80 Nm. After this, retighten all the bolts to the full target tightening torque (80 Nm).
9. Setting the seal (adapting to the flange seal surface) can make it necessary to retighten the bolts. This means that you should retighten the bolts again after a few hours with the flange connection depressurized.

✓ **Filter element changed.**

9 Declaration of Incorporation

(DE) Einbauerklärung im Sinne der EG-Richtlinie 2006/42/EG über Maschinen (Anhang II B)
Hiermit erklären wir, dass die nachstehend beschriebene unvollständige Maschine alle grundlegenden Anforderungen der Maschinenrichtlinie 2006/42/EG erfüllt, soweit es im Rahmen des Lieferumfangs möglich ist. Ferner erklären wir, dass die speziellen technischen Unterlagen gemäß Anhang VII Teil B dieser Richtlinie erstellt wurden. Wir verpflichten uns, den Marktaufsichtsbehörden auf begründetes Verlangen die speziellen Unterlagen zu der unvollständigen Maschine über unsere Dokumentationsabteilung zu übermitteln. Die unvollständige Maschine darf erst dann in Betrieb genommen werden, wenn ggf. festgestellt wurde, dass die Maschine oder Anlage, in welche die unvollständige Maschine eingebaut werden soll, den Bestimmungen der Richtlinie 2006/42/EG über Maschinen entspricht und die EG-Konformitätserklärung gemäß Anhang II A ausgestellt ist.

(EN) Declaration of Incorporation according to EC directive 2006/42/EC on machinery (Annex II B)
Herewith we declare, that the partly completed machinery described below is complying with all essential requirements of the Machinery Directive2006/42/EC, as far as the scope of delivery allows. Additional we declare that the relevant technical documentation is compiled in accordance with part B of Annex VII. We commit to transmit, in response to a reasoned request by the market surveillance authorities, relevant documents on the partly completed machinery by our documentation department.The partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of Directive 2006/42/EC on Machinery, where appropriate, and until the EC Declaration of Conformity according to Annex II A is issued.

(FR) Notice de montage dans le cadre de la directive européenne 2006/42/CE relative aux machines (annexe II B)
Nous expliquons ici que la machine incomplète décrite ci-après répond à toutes les exigences fondamentales de la directive relative aux machines 2006/42/CE, pour autant que cela soit possible dans le cadre du volume de livraison. Plus loin nous expliquons que les documents techniques spéciaux sont établis conformément à l'annexe VII partie B de cette directive. Pour ce qui est de notre service de documentation, nous nous engageons à communiquer aux autorités de surveillance du marché les explications fondées des documents spéciaux pour la machine incomplète. La machine incomplète doit d'abord être mise en service, quand il est constaté que la machine ou l'installation dans laquelle la machine incomplète doit être montée répond aux dispositions de la directive 2006/42/CE relative aux machines, et que la notice de conformité européenne est présentée conformément à l'annexe II A.

(ES) Declaración de incorporación según la Directiva 2006/42/CE sobre máquinas (Anexo II B)
Por la presente declaramos que la siguiente cuasi máquina cumple con todas las disposiciones pertinentes de la Directiva 2006/42/CE de máquinas, siempre y cuando lo permita el volumen de suministro. También declaramos que la documentación técnica descrita en el anexo VII parte B se ha elaborado conforme a la presente Directiva. Nos comprometemos a enviar los documentos de la cuasi máquina a las autoridades de vigilancia del mercado a través de nuestro departamento de documentación en respuesta a una previa solicitud motivada. La cuasi máquina no puede ponerse en servicio sin antes verificar que la máquina o el sistema en el que se instale la cuasi máquina, cumpla con las disposiciones de la Directiva 2006/42/CE de máquinas y con la declaración CE de conformidad según el anexo II A.

(PT) Declaração de Construção de acordo com a Directiva-CE 2006/42/CE de máquinas (Anexo II B)
Esclarecemos por meio deste que a máquina incompleta descrita a seguir segue os requerimentos da directiva de máquinas 2006/42/CE, contanto que sua utilização seja mantida dentro do escopo original. Esclarecemos ainda que a documentação técnica especial segue o disposto no Anexo VII Parte B de tal directiva. Comprometemo-nos a a cumprir com as exigências das autoridades de fiscalização que forem feitas a nosso departamento de documentação que estejam relacionadas a qualquer documentação da máquina incompleta. A máquina poderá ser colocada em operação, se necessário for, desde que seja verificado que o sistema ou a máquina na qual a máquina incompleta será instalada foi montada, em conformidade com a directiva 2006/42/CE de máquinas e com à declaração de conformidade 2006/42/CE.

Bezeichnung des Gerätes:	**Chlorgasfilter**	Descripción de la mercancía:	
Description of the unit:	**Chlorine Gas Filter**	Designação do aparelho:	**Filtro do gás cloro**
Désignation du matériel:	**Filtre de chlore gazeux**		
Typ / Type	**DN25 PN40**		

Die unvollständige Maschine entspricht allen Bestimmungen der Richtlinie(n):
The partly completed machine is in conformity with all requirements of the directive(s):

2006/42/EG **Maschinenrichtlinie** **Machinery Directive**

Folgende harmonisierte Normen wurden angewandt:
The following harmonised standards were applied:

-

i. V. Dipl. Ing. (FH) Gerd-Richard Sacht
Leiter Abteilung Gasdosierung
Head of Gas Dosing Department
Lutz-Jesco, Wedemark, 23.02.2012

Dokumentationsbevollmächtigter:
Authorized person for documentation:
Gerd-Richard Sacht
Adresse: siehe Adresse des Herstellers
Address: see manufacturer's address

Lutz-Jesco GmbH
Am Bostelberge 19
30900 Wedemark
Germany

10 Declaration of harmlessness

Copy the Declaration of harmlessness and complete it separately for each unit. Enclose one copy to the unit you are sending. Please send the Declaration of Conformity to us also in advance per fax or e-mail!

Declaration of no objection

Please fill out a separate form for each appliance!

We forward the following device for repairs:

Device and device type: ..... Part-no.: .....

Order No.: ..... Date of delivery: .....

Reason for repair: .....

.....

.....

Dosing medium

Description: ..... Irritating: ☐ Yes ☐ No

Properties: ..... Corrosive: ☐ Yes ☐ No

We hereby certify, that the product has been cleaned thoroughly inside and outside before returning, that it is free from hazardous material (i.e. chemical, biological, toxic, flammable, and radioactive material) and that the lubricant has been drained.

If the manufacturer finds it necessary to carry out further cleaning work, we accept the charge will be made to us.

We assure that the aforementioned information is correct and complete and that the unit is dispatched according to the legal requirements.

Company / address: ..... Phone: .....

..... Fax: .....

..... Email: .....

Customer No.: ..... Contact person: .....

Date, Signature: .....

11 Warranty application

In the event of a repair, copy the warranty application and complete it separately for each unit. Enclose one copy to the unit you are sending. Please send the warranty application to us also in advance per fax or e-mail!

Warranty Application

Please copy and send it back with the unit!

If the device breaks down within the period of warranty, please return it in a cleaned condition with the complete warranty application, filled out.

Sender

Company: ..... Phone: ..... Date: .....

Address: .....

Contact person: .....

Manufacturer order no.: ..... Date of delivery: .....

Device type: ..... Serial number: .....

Nominal capacity / nominal pressure: .....

Description of fault: .....

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Service conditions of the device

Point of use / system designation: .....

.....

.....

Accessories used (suction line etc.): .....

.....

.....

.....

.....

Commissioning (date): .....

Duty period (approx. operating hours): .....

Please describe the specific installation and enclose a simple drawing or picture of the chemical feed system, showing materials of construction, diameters, lengths and heights of suction and discharge lines.

Notes

12 Index

Product Range

Lutz Pumpen GmbH
P.O. Box 1462 • D-97864 Wertheim
www.lutz-pumpen.de


Barrel and Container Pumps


Flow Meters


Double Diaphragm Pumps


Centrifugal Pumps

Product Range

Lutz-Jesco GmbH
P.O. Box 100164 • D-30891 Wedemark
www.lutz-jesco.com


Dosing Pumps


Chlorinators


Chemical Centrifugal Pumps


TECHNOPOOL

Products for the disinfection of swimming pool water based on salt water electrolysis and domestic water technology


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Disinfection


Standard Plus

Available on the App Store

The Lutz-Jesco App for iPads is available from the iTunes App Store. Additional information can be found at www.lutz-jesco.com

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