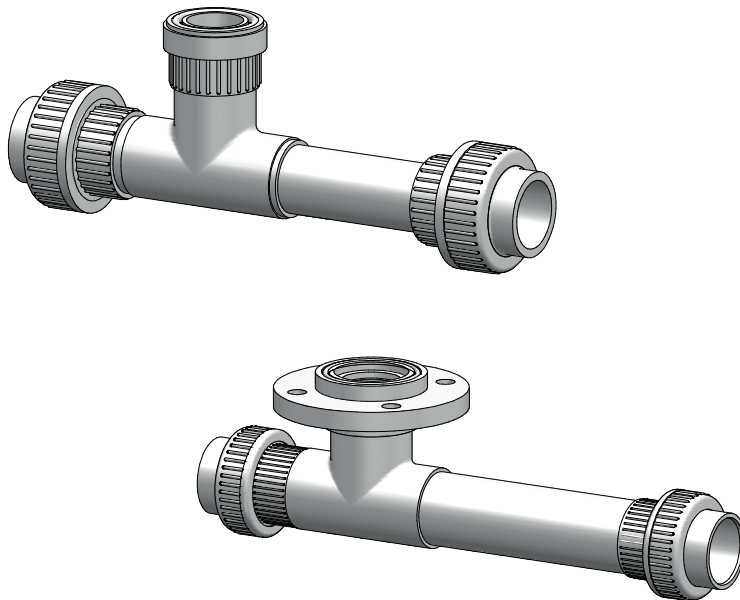


Standard ejectors

Up to 60 kg/h chlorine gas

Operating instructions



Read the operating manual!

The user is responsible for installation and operation related mistakes!

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1 Notes for the Reader

This operating manual contains information and behaviour rules for the safe and designated operation of the device.

Observe the following principles:

- read the entire operating instructions prior to inaugurating the device.
- Ensure that everyone who works with or on the device has read the operating manual and follows it.
- Maintain the operating manual throughout the service life of the device.
- Pass the operating manual on to any subsequent owner of the device.

1.1 General non-discrimination

In this operating manual, only the male 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 Explanation of the signal words





Different signal words in combination with warning signs are used in this operating manual. 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. Failure to follow this instruction may lead to death or severe injuries.
CAUTION!	Refers to a potentially hazardous situation. Failure to follow this instruction may lead to minor injury or damage to property.
PLEASE NOTE	Refers to a danger which, if ignored, may lead to risk to the machine and its function.

Tab. 1: Explanation of the signal words

1.3 Explanation of the warning signs

Warning signs represent the type and source of a danger:

Warning sign	Type of danger
	Danger point
	Danger from poisonous substances
	Danger from corrosive substances
	Danger of damage to machine or functional influences

Tab. 2: Explanation of the warning signs

1.4 Identification of warnings

Warnings are intended to 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 safety precaution to be taken to eliminate the danger.	

1.5 Instruction for action identification

This is how pre-conditions for action are identified:

- ✓ Pre-condition for action which must be met before taking action.
- ✗ A resource such as a tool or auxiliary materials required to perform the operating instructions.

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 device. 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
<p>Danger to life from chlorine poisoning!</p> <p>Chlorine is poisonous. In severe cases, breathing in chlorine may lead to death. It irritates the eyes, the respiratory system and the skin.</p> <ul style="list-style-type: none"> ⇒ Install a gas warning device. ⇒ Use sufficient personal protective equipment. ⇒ When carrying out any work on the system, use a respirator mask 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. ⇒ Get rid of leaks without delay. You must get rid of even very minor leaks without delay. Together with the humidity, chlorine forms hydrochloric acid and corrosion results in rapidly increasing leakage. ⇒ Use only chlorine-resistant seals. ⇒ Only use seals once. Reusing them leads to leaks. 	

	DANGER
<p>Increased danger to life from chlorine escape</p> <p>A fatal quantity of chlorine gas can be released from a leakage.</p> <ul style="list-style-type: none"> ⇒ If chlorine escapes, leave the room immediately. ⇒ Use sufficient personal protective equipment. ⇒ If chlorine gas escapes, wear a Type 2 self-contained breathing apparatus that complies with EN 137. ⇒ Only initiate counter measures after putting on the protective equipment. ⇒ Given a serious escape and insufficient equipment or qualifications, leave the work to professional emergency services personnel. Do not take any unnecessary risks. 	

	WARNING
<p>Increased risk of accidents due to insufficient qualification of personnel!</p> <p>Chlorinators and their accessories must only be installed, operated and maintained by personnel with sufficient qualifications. Insufficient qualification will increase the risk of accidents.</p> <ul style="list-style-type: none"> ⇒ Ensure that all action is taken only by personnel with sufficient and corresponding qualifications. ⇒ Prevent access to the system for unauthorised persons. 	


2.2 Information about chlorine

Chlorine is a hazardous substance. The chemical element chlorine is a greenish-yellow, toxic gas with a pungent odour, which can be detected in the air at concentrations clearly below 1 ppm (= 1 ml/m³).

Chlorine is 2.7 times heavier than air and accumulates at ground level.

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).

	PLEASE NOTE
<p>Faults due to insufficient chlorine quality</p> <p>Impurities in the chlorine gas form deposits in devices and valves and can attack the components chemically. This can lead to malfunctions.</p> <ul style="list-style-type: none"> ⇒ Only use technically pure chlorine that meets the following requirements: <ul style="list-style-type: none"> - Mass content of chlorine at least 99.5 % - Water content max. 20 mg/kg <p>Chlorine that complies with EN 937 meets these requirements.</p>	

2.3 Hazards due to non-compliance with the safety instructions

Failure to follow the safety instructions may endanger not only persons, but also the environment and the device.

The specific consequences can be:

- failure of important functions of the device and of the corresponding system
- Failure of required maintenance and repair methods
- danger to persons
- Danger to the environment caused by substances leaking from the system

2.4 Working in a safety-conscious manner





Besides the safety instructions specified in this operating manual, further safety rules apply and must be followed:

- Accident prevention regulations
- Safety and operating provisions
- Safety provisions for handling dangerous substances (mostly the safety data sheets to dosing media)
- Environmental protection provisions
- Applicable standards and legislation

2.5 Personal protective equipment

Based on the degree of risk posed by the dosing medium and the type of work you are carrying out, you must use corresponding protective equipment. Read the Accident Prevention Regulations and the Safety Data Sheets to the dosing media find out what protective equipment you need.

You will require the minimum of the following personal protective equipment:

Personal protective equipment required	
	Respirator mask
	Protective clothing
	Safety shoes
	Protective gloves

Tab. 3: Personal protective equipment required

Wear the following personal protective equipment when performing the following tasks:

- Commissioning
- All work on gas-bearing system parts
- Replacing the supply tanks
- Shut-down
- Maintenance work
- Disposal

2.6 Personnel qualification

Any personnel who work on the device must have appropriate special knowledge and skills.

Anybody who works on the device must meet the conditions below:

- Attendance at all the training courses offered by the owner
- Personal suitability for the respective activity
- Sufficient qualification for the respective activity
- Training in how to handle the device
- Knowledge of safety equipment and the way this equipment functions
- Knowledge of this operating manual, particularly of safety instructions and sections relevant for the activity
- Knowledge of fundamental regulations regarding health and safety and accident prevention

All persons must generally have the following minimum qualification:

- Training as specialists to carry out work on the device unsupervised
- Sufficient training that they can work on the device under the supervision and guidance of a trained specialist

These operating instructions differentiate between these user groups:

2.6.1 Specialist staff

Thanks to their professional training, knowledge, experience and knowledge of the relevant specifications, specialist staff are able to perform the job allocated to them and recognise and/or eliminate any possible dangers by themselves.

2.6.2 Trained persons

Trained persons have received training from the operator about the tasks they are to perform and about the dangers stemming from improper behaviour.

Trained persons have attended all trainings offered by the operator.

2.6.3 Personnel tasks

In the table below you can check what qualifications are the pre-condition for the respective tasks. Only people with appropriate qualifications are allowed to perform these tasks!

Qualification	Activities
Specialist staff	<ul style="list-style-type: none"> ■ Assembly ■ Commissioning ■ Taking out of operation ■ Maintenance ■ Repairs ■ Fault rectification ■ Disposal
Trained persons	<ul style="list-style-type: none"> ■ Control ■ Transportation ■ Storage

Tab. 4: Personnel qualification

3 Intended use

3.1 Notes on product warranty

Any non-designated use of the device can impair its function and the protection provided. This leads to invalidation of any warranty claims!

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

- the device is operated in a manner which is not consistent with these operating instructions, particularly safety instructions, handling instructions and the section "Intended Use".
- Information on usage and environment (see section 5 „Technical data“ on page 10) is not adhered to.
- If people operate the device who are not adequately qualified to carry out their respective activities.
- No original spare parts or accessories of Lutz-Jesco GmbH are used.
- Unauthorised changes are made to the device.
- The user uses different dosing media than those indicated in the order,
- Maintenance and inspection intervals are not adhered to as required or not adhered to at all.
- The device is commissioned before it or the corresponding system has been correctly and completely installed.
- Safety equipment has been bridged, removed or made inoperative in any other way.

3.2 Intended purpose

The device is used for dosing chlorine gas into water as a part of water treatment systems.

3.3 Prohibited dosing media

The device must not be used for the following media and substances:

- Any gases except chlorine gas
- Fluids of all kinds

4 Product description

4.1 Scope of delivery

Please compare the delivery note with the scope of delivery. The following items are part of the scope of delivery:

- Ejector
- Operating instructions

Item	Description
4	Components coming into contact with the media
5	Production date

Tab. 6: Rating plate

4.2 Design and function

The water set in rotation by the twist element (1) in accordance with the sketch in Fig. 1 „Design of the ejectors“ on page 9 leaves the nozzle (2) at high speed and expands to a greater diameter as a result of the centrifugal force of the rotating jet. This jet exerts a piston effect in the opposite diffuser (3). The chlorine gas is pulled from the vacuum space by the water particles and dissolved in the water. The continually generated vacuum sucks in ever more chlorine gas.

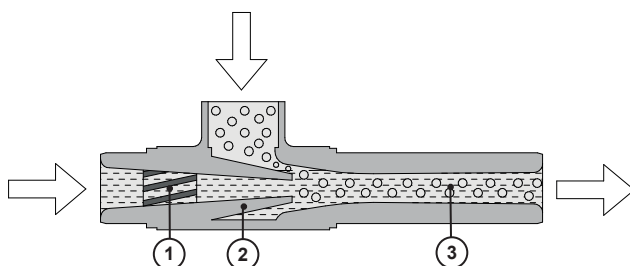


Fig. 1: Design of the ejectors

Item	Description
1	Twist element
2	Nozzle
3	Diffuser

Tab. 5: Design of the ejector

4.3 Rating plate

The rating plate contains information on the safety and functional method of the product. The rating plate must be kept legible for the entire service life of the product.

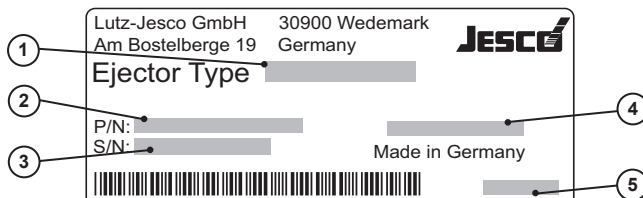


Fig. 2: Rating plate

Item	Description
1	Product name
2	Part number
3	Serial number

Tab. 6: Rating plate

5 Technical data

5.1 General technical data

Information		Value
Medium dosed		Chlorine gas
Capacity range	with normal back pressure	1.6 / 3.2 / 6.4 / 20 / 24 / 60 kg/h Cl ₂
	with increased back pressure	2 / 4 / 8 / 16 kg/h Cl ₂
Suction pressure		0.8 bar absolute
Motive water pressure		See the performance charts of the ejectors
Backpressure		
Permissible motive water temperature		+ 5 °C to + 30 °C
Permissible ambient temperature		+ 5 °C to + 40 °C
Connections	Water	PVC screw connection DN15 up to DN50
	Gas	PVC screw-in part G1 up to G2 1/4, flange DN65
Material in contact with the media		PVC
Weight		approx. 1 kg

Tab. 7: General technical data

5.2 Design of the ejectors

The selection criteria of the ejectors are suction capacity, back pressure and motive water pressure. The requisite suction capacity is usually known. It is calculated from the volume flow of the water to be treated and the requisite chlorine concentration in the water. The back pressure must usually be estimated via the relevant formula for the calculation of pressure loss in piping, taking into account the system pressure.

The respective motive water pressure and the water quantity per hour for the operation of the ejector can be ascertained from the ejector performance charts (see section 13 „Standard ejectors performance charts“ on page 19) on the basis of the suction capacity and back pressure criteria.

5.2.1 Design example

The following example explains the design of an ejector. The example taken is an indoor swimming pool.

Information		Value
Recycling capacity	m ³ /h	250
Max. chlorine concentration in the water	mg/l	2
Water temperature	°C	20
Suction capacity ascertained	g/h	500

Tab. 8: Design example

Information		Value
System pressure	bar (ü)*	0.7
Pressure loss (pipe length, pipe fixtures)	bar	0.3
Back pressure (system pressure + pressure loss between ejector and the injection nozzle)	bar (ü)	1
Suction pressure of the ejector	bar (a)**	0.8

Tab. 8: Design example

* ü = positive pressure

** a = absolute

For the above application, a type A ejector is selected after investigation of the individual ejector performance charts. The diagram of the type A ejector shows that a back pressure of c. 1 bar, a motive pressure of 3.4 bar and a water volume of 0.38 m³/h is required (see Fig. 3 „Performance chart ejector type A“ on page 11). As in this case, the chlorine solution is injected in the same pipe line from which one of the centrifugal pumps takes the motive water required for operation of the ejector, the centrifugal pump must only deploy a motive pressure reduced by the amount of the system pressure, i.e. 3.4 bar – 0.7 bar = 2.7 bar.

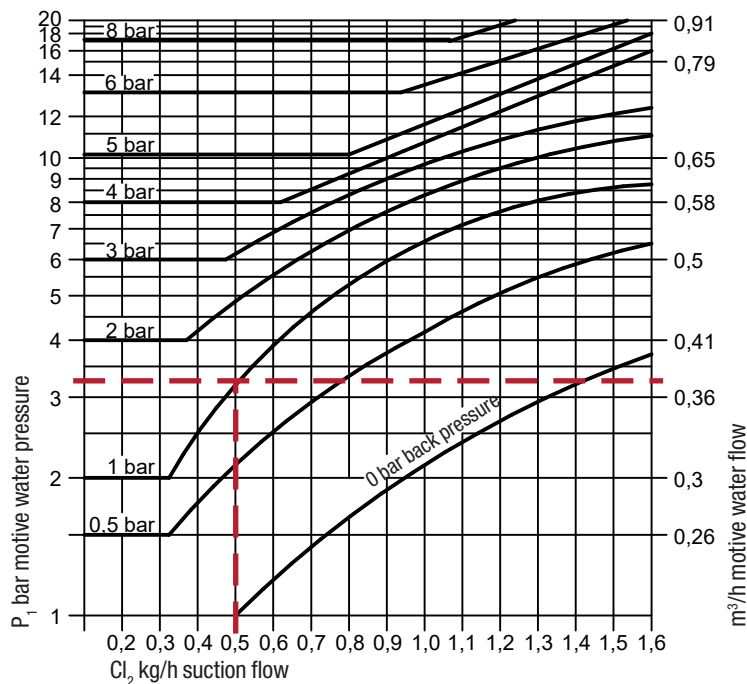
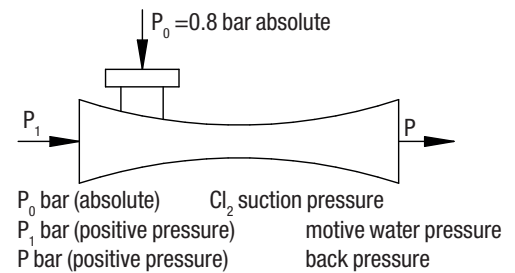


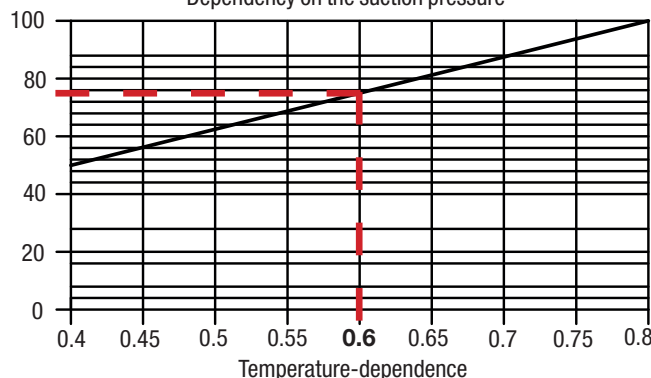
Fig. 3: Performance chart ejector type A



5.2.2 Influence factors on the ejector performance

The courses of the work curves of the ejectors were determined with a suction pressure of 0.8 bar absolute and a temperature of the motive water of 20 °C. Every deviation in these measurements from the standard values must be taken into account in the design of the ejector. Thus a stronger vacuum (low suction pressure) and a higher water temperature (low solubility of chlorine gas in the water) reduce the suction capacity of the ejector in comparison to the standard work curve.

Dependency on the suction pressure



Temperature-dependence

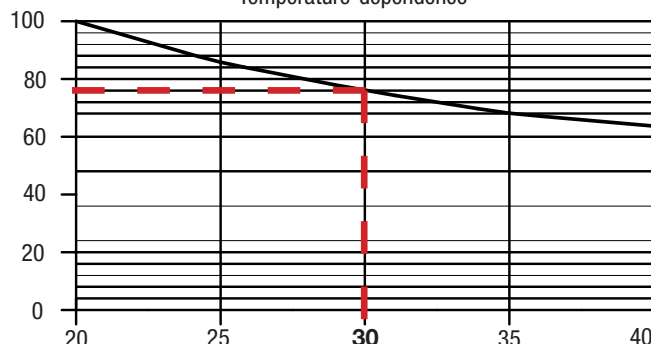


Fig. 4: Influence factors on the ejector performance

Fig. 4 „Influence factors on the ejector performance“ on page 11 shows the dependence of the ejector performance from the suction pressure and the water temperature. If the suction pressure in the design example in section 5.2.1 „Design example“ on page 10 were 0.6 bar absolute and the water temperature 30 °C, the suction capacity of ejector A would be 43 % ($75 \% \times 76 \% = 57 \%$) lower than at 20 °C and 0.8 bar absolute. In this case, the motive pressure and the water quantity would be relevant for operation of ejector A to enable a higher suction capacity, in this case, 700 g/h.



The performance charts of all standard ejectors are provided in section 13 „Standard ejectors performance charts“ on page 19.

6 Dimensions

All dimensions in mm

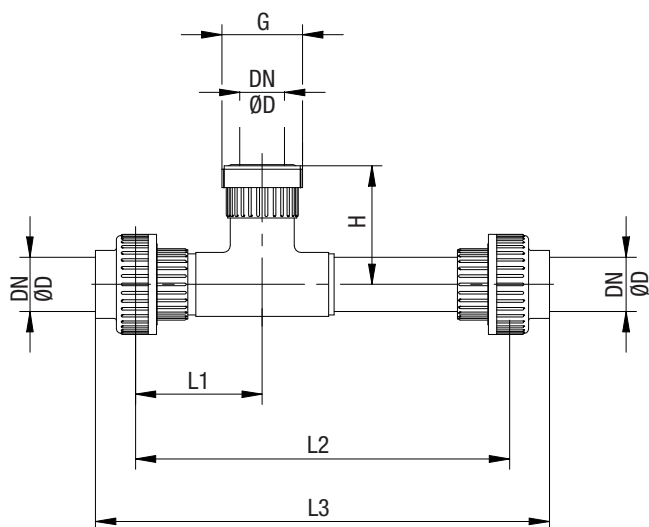


Fig. 5: Dimensions standard ejectors types A, B, C, D, E, F, AH, BH, CH, DH

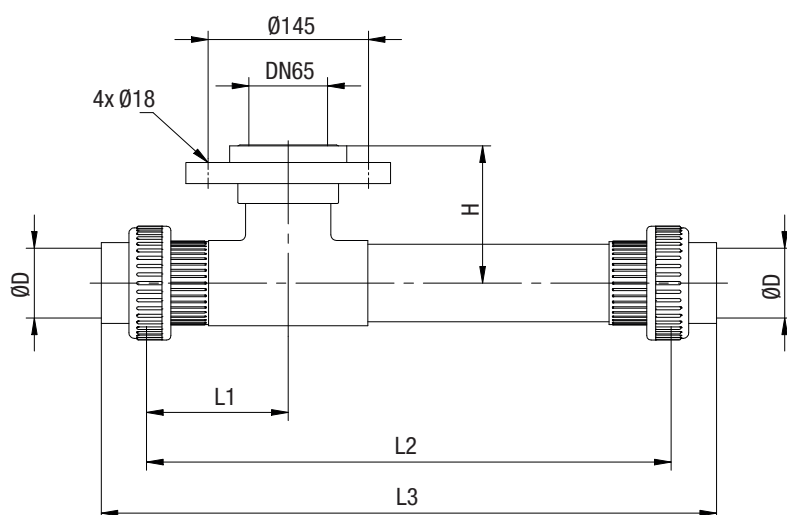



Fig. 6: Dimensions standard ejectors type D with flange

Ejector type	Max. capacity [kg/h]	Motive water connection Input and output DN/ØD	Gas connection G	H	L1	L2	L3
A	1.6	DN15/Ø20	G1	54	55	173	214
AH	2	DN15/Ø20	G1	54	55	173	214
B	3.2	DN15/Ø20	G1	54	55	173	214
BH	4	DN20/Ø25	G1	59.5	65	210	254
E	6.4	DN15/Ø20	G1	54	55	173	214
C	20	DN32/Ø40	G2	87.5	93.5	276	335
CH	8	DN32/Ø40	G2	87.5	93.5	276	335
D (PVC threaded connection)	25	DN50/Ø63	G2	110.5	128	474	556
D (Flange)	60	DN50/Ø63	flange DN65	125	128	474	556
DH	16	DN40/Ø50	G2 1/4	104.5	114	413	483
F	24	DN32/Ø40	G2	87.5	93.5	276	335

Tab. 9: Connecting dimensions and dimensions

7 Installation



PLEASE NOTE

Damage to the system due to incorrect installation

The failure to observe installation instructions (e.g. use of unsuitable tools) can damage the system parts.

- ⇒ Use suitable tools only.
- ⇒ Only apply the appropriate amount of force to the plastic parts. Plastic threads (especially PVC threads) can be tightened and loosened more easily by applying a thin layer of amount of silicone grease or PRFE grease.

7.1 Installation location and position

Installation location

The room must fulfil the following requirements:

- Secured against access by unauthorised persons
- Protected against weather conditions
- Frost-free
- Room of sufficient size to allow trouble-free assembly as well as inspection and maintenance of the device at all times
- Room can be ventilated well
- Room complies with the locally valid prescriptions

Mounting position

The ejector should preferably be fitted in the water line horizontally in the prescribed direction (see arrow on the device) without tension. Given vertical installation, make sure that the axis of the injector non-return valve fitted on the suction side remains vertical.

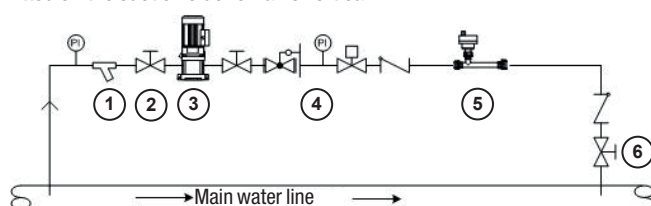



Fig. 7: Installation example

Item	Description
1	Dirt trap
2	Shut-off valve
3	Motive water pump
4	Motive water set
5	Ejector with injector non-return valve
6	Injection nozzle, shut-off valve and non-return valve

Tab. 10: Installation example

7.2 Installing the device



PLEASE NOTE


Damage to the device if any gas other than chlorine gas is used

The ejector is suitable for dosing chlorine gas. Other gases could damage the device.

- ⇒ Use only chlorine gas of sufficient quality (see usage instructions).

Take into account the following information when planning the installation of the ejector:

- The pipe line directly in front and behind the ejector should be installed straight and in the nominal width of the ejector.
- The minimum length of the straight pipe line in front of the ejector amounts to 3x the length of the ejector. The minimum length behind the ejector amounts to 1x the length of the ejector.
- When using a motive water pump in front of the ejector, reduction of the nominal width of the motive water pump to the nominal width of the ejector is permissible.
- To avoid unnecessary pressure losses in the pipe line behind the ejector, which as back pressure can act to reduce the performance of the ejector, it is permissible to expand the pipe line after the minimum length has been reached.
- For the same reason, the ejector should be fitted as near as possible to the injection nozzle. Unavoidable alterations of direction in the conduit should be realized with loops and not angles.



PLEASE NOTE

Damage to the unit due to prohibited water quality

The motive water must be free of particles to operate the ejector correctly.

- ⇒ If it is not possible to guarantee the water quality, install water equipment with a dirt trap in front of the ejector.

Precondition for action:

- ✓ A sufficient level of particle-free motive water with the requisite inlet pressure is available.
- ✓ The PVC pipes are clean and dry inside and out.

Perform the following working steps:

1. Install a PVC pipe line from the motive water extraction point to the ejector and from the ejector to the injection point of the chlorine solution.
2. Glue the PVC piping in the two inserts of the ejector. Proceed as follows:
 - a. Use PVC connection pipes cut at right angles and with a 15° bevel and a length of 2–4 mm.
 - b. Clean the adhesion side of the pipe and the ejector insert (e.g. with Tangit cleaner or Acetone).

- c. Guide the union nut far enough over the PVC pipe and apply the PVC adhesive lengthwise.
 - d. Slide the pipe into the insert of the ejector quickly and without rotating. Work carefully to remove any excess adhesive (e.g. using non-fuzzing paper towels).
 - e. Allow the bond to harden sufficiently prior to the leak test. The waiting time is dependent on the temperature, the adhesive and the inside pressure load of the pipes. We recommend a waiting time of 1 hour per 1 bar with pipes up to 50 mm.
3. Mount the connection on the ejector. Ensure that the O-ring is fitted. The union nut is tightened without tools.

✓ **Ejector mounted.**

7.3 Completing the installation



PLEASE NOTE

Damage of the chlorinators through the entry of water into the chlorine gas line


Should the motive water supply to the ejector be interrupted, the entire water pressure will be applied to the suction connection of the ejector. As a result, the water enters the chlorine gas line and the connected chlorinators will suffer damage.

⇒ Fit the injector non-return valve to the suction connection of the ejector.



After completing installation, you must check that all the connections are leak-proof.

8 Commissioning

	WARNING
<p>Danger of personal injury and material damage!</p> <p>If the leak-tightness check is not carried out correctly, leakage may occur or the system may even get destroyed.</p> <p>⇒ The leak test must be performed by sufficiently-qualified personnel (see chapter 2 „Safety“ on page 5).</p>	

5. Place a finger on the open end of the gas supply connection of the injector non-return valve.

▶ You must be able to feel a clear level of suction.

If there is no suction from the ejector:


➔ Read chapter 12 „Troubleshooting“ on page 18.

If the ejector performs suction:

➔ Re-connect the gas supply to the ejector.

✓ **Function of the ejector was checked.**

8.1 Leak test of the hydraulic installation

	<p>An injector non-return valve must be installed on the suction connection in order to perform the leak test.</p>
---	--

Precondition for action:

- ✓ All system components were installed and are ready for operation.
- ✓ Water of sufficient quality is available.

Perform the following working steps:

1. Disconnect the union nut. Of the PVC screw connection or the hose clamp connection of the injector non-return valve and disconnect the device from the gas supply.
2. Open the shutoff valve at the injection nozzle.
3. Open the shutoff valve of the water supply.
4. Switch on the motive water pump.
 - ▶ No water may be permitted to leave the pipe line between the motive water pump and the injection nozzle.

In case of water leakage:

5. Switch off the motive water pump.
6. Close the shut-off valves in the pipe line.
7. Repair the leak.
8. Perform a fresh leak test after the adhesion points have dried.

No water leakage:

➔ Re-connect the gas supply to the injector non-return valve.

✓ **The leak test has been performed.**

8.2 Checking the function of the ejector

Perform the following working steps:

1. Release the union nut of the PVC screw connection or the hose clamp connection on the ejector and disconnect the device from the gas supply.
2. Open the shutoff valve of the water supply.
3. Open the shutoff valve of the injection nozzle.
4. Switch on the motive water pump.

9 Operation

The ejector does not require any special operating technique. Given a sufficient level of motive water pressure and quantity, the ejector generates a vacuum. If the motive water supply is interrupted, the ejector will not generate a vacuum.

9.1 Shutting down in an emergency



DANGER

Increased danger to life from chlorine escape

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

- ⇒ If chlorine escapes, leave the room immediately.
- ⇒ Use sufficient personal protective equipment.
- ⇒ If chlorine gas escapes, wear a Type 2 self-contained breathing apparatus that complies with EN 137.
- ⇒ Only initiate counter measures after putting on the protective equipment.
- ⇒ Given a serious escape and insufficient equipment or qualifications, leave the work to professional emergency services personnel. Do not take any unnecessary risks.

The measures depend on the type of accident and should be planned and executed by professional personnel.

9.2 Check intervals

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

10 Shutdown and disposal

10.1 Short-term shutdown

Perform the following working steps:

1. Close the chlorine tank valves.
2. Use the ejector to suck off the remaining chlorine.
3. Switch off the ejector.

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

10.2 Long-term shutdown

Perform the following working steps:

1. Close the chlorine tank valves.
2. Use the ejector to suck off the remaining chlorine.
3. Switch off the ejector.
4. Close all the connections to protect the lines and devices from humidity and dirt.

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

10.3 Disposal

Pre-conditions for actions:

✓ Section 10.2 „Long-term shutdown“ on page 17 was performed.

Perform the following working steps:

1. Consult your supplier or the manufacturer to learn more about the various methods of disposal.
2. Ensure that the delivery package can be dispatched safely.
3. Take advantage of the manufacturer's offer for free-of-charge disposal.

✓ **The device was disposed of.**

11 Maintenance



The ejector does not have any moving parts which would be subject to wear. It is maintenance-free.



PLEASE NOTE

Calcium deposits in the ejector

Hard water can leave calcium deposits through decarbonization in the ejector. This can exert strong restrictions on the performance of the ejector or cause an outage.

⇒ Inspect the ejector regularly for calcium deposits.

⇒ Should any calcium deposits develop, clean the calcified ejector with 10 % hydrochloric acid. Do not use any auxiliary mechanical equipment to do so.

12 Troubleshooting

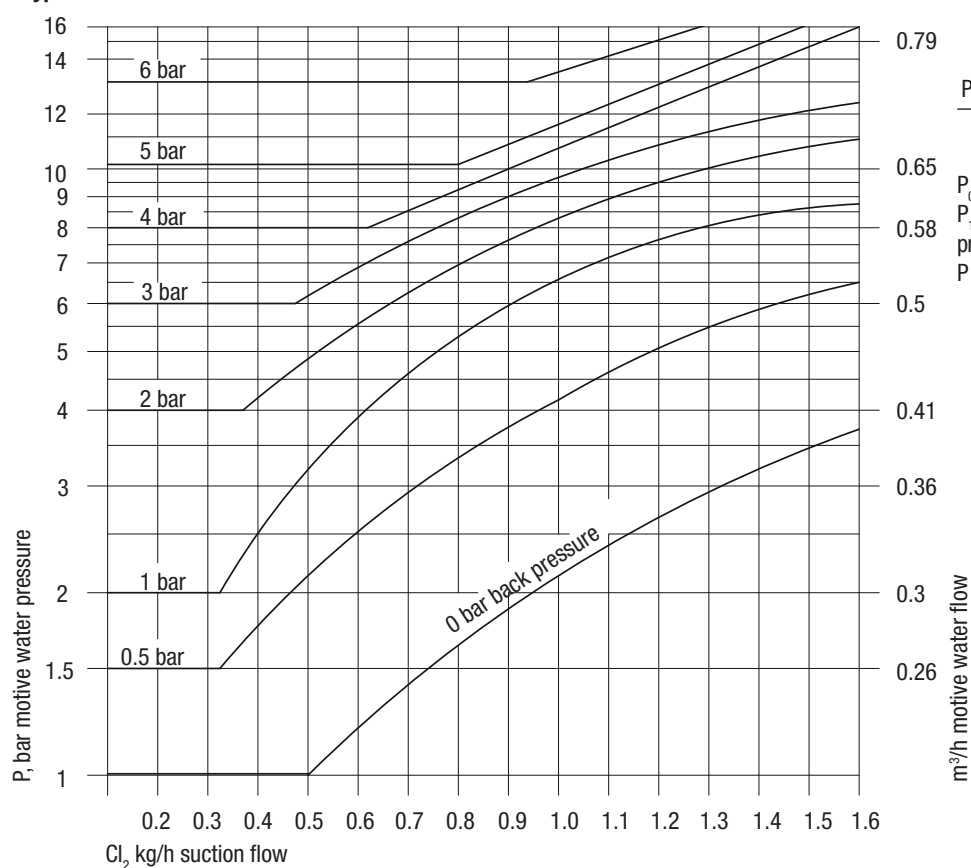
All possible errors are listed in this table.

Problem	Possible cause	Remedy
The maximum dosing capacity has not been reached.	The back pressure on the ejector is too high because the chlorine solution line is too long or the line cross-section is too low.	<ul style="list-style-type: none"> ■ Move ejector closer to the injection nozzle ■ Increase the line cross-section at a distance of 1 – 3x length of the ejector.
	The motive water pressure or quantity has not been set correctly.	Check the settings using the performance chart of the ejector in section 13 „Standard ejectors performance charts“ on page 19
	Motive water temperature is higher than 20 °C	Lower motive water temperature or increase motive water pressure or quantity
	Entry of ambient air	Leak test (see chapter 8.1 „Leak test of the hydraulic installation“ on page 15)
	Soiling from solids in the motive water	Install the dirt trap in front of the ejector or the pre-filter in front of the motive water pump
	Calcium deposits in the diffuser	Clean the ejector (see section 11 „Maintenance“ on page 17)

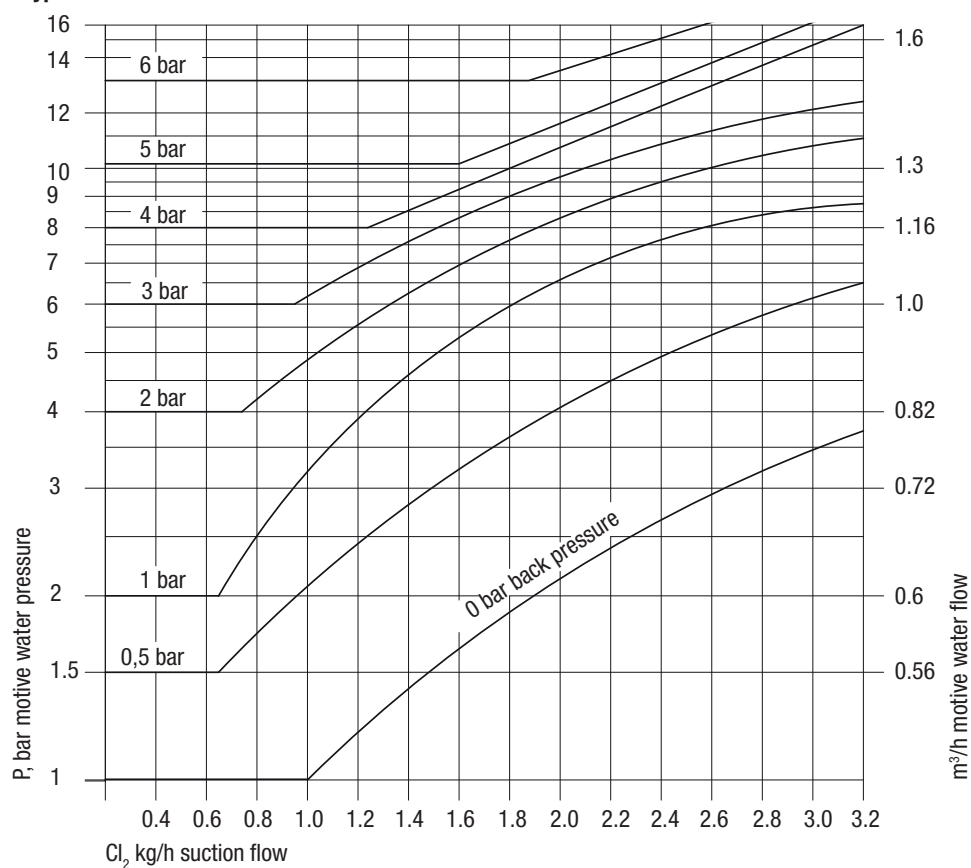
Tab. 11: Troubleshooting

13 Standard ejectors performance charts

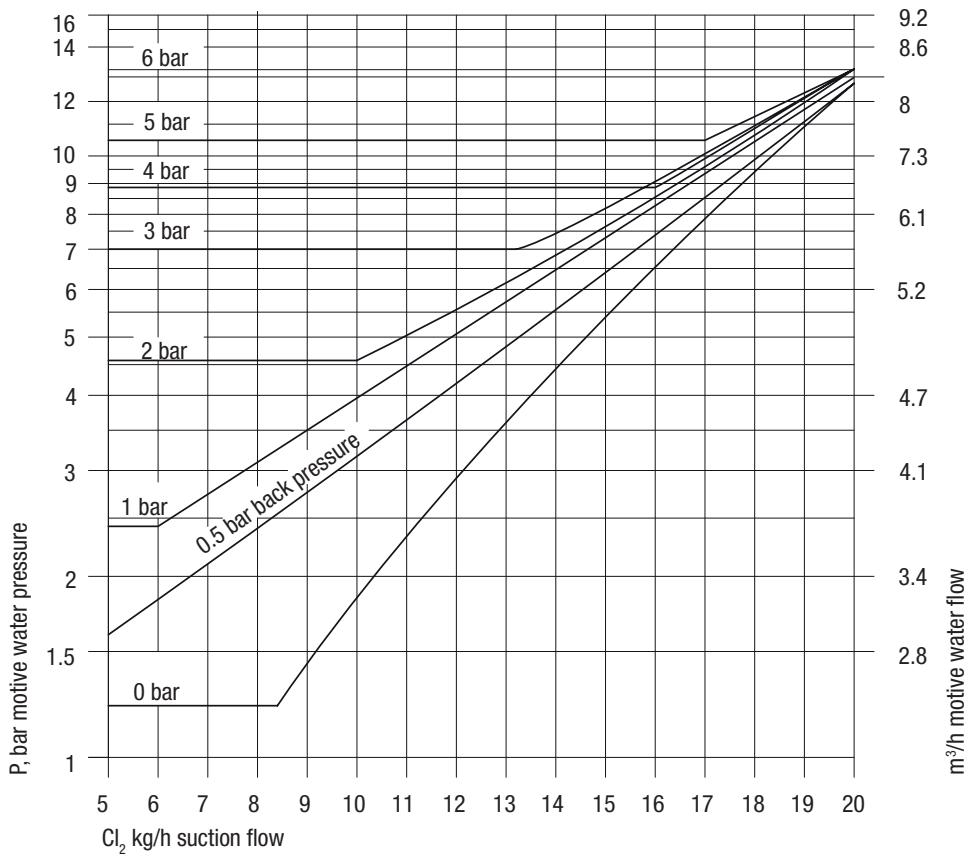
Type A



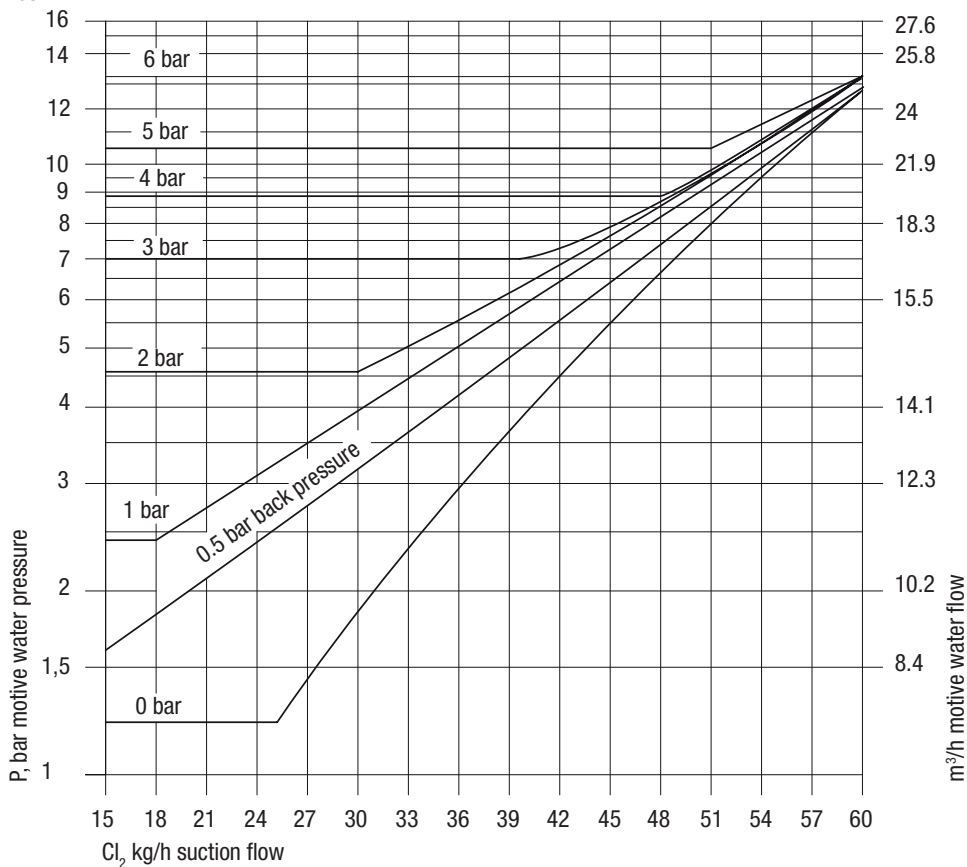
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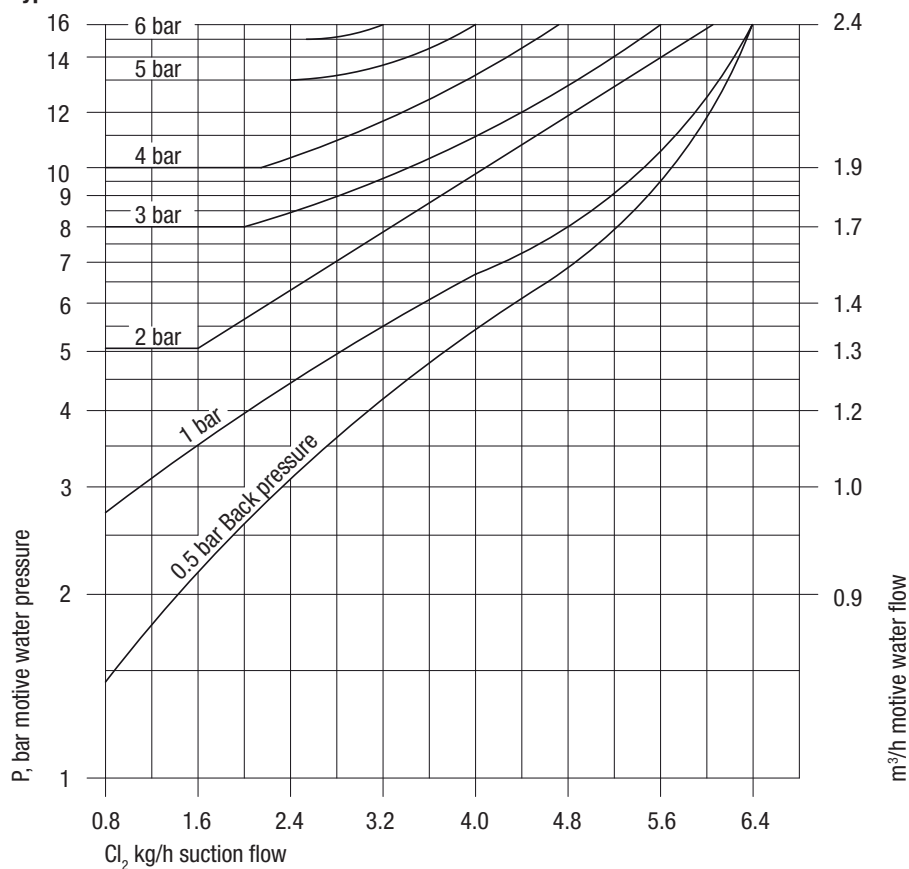
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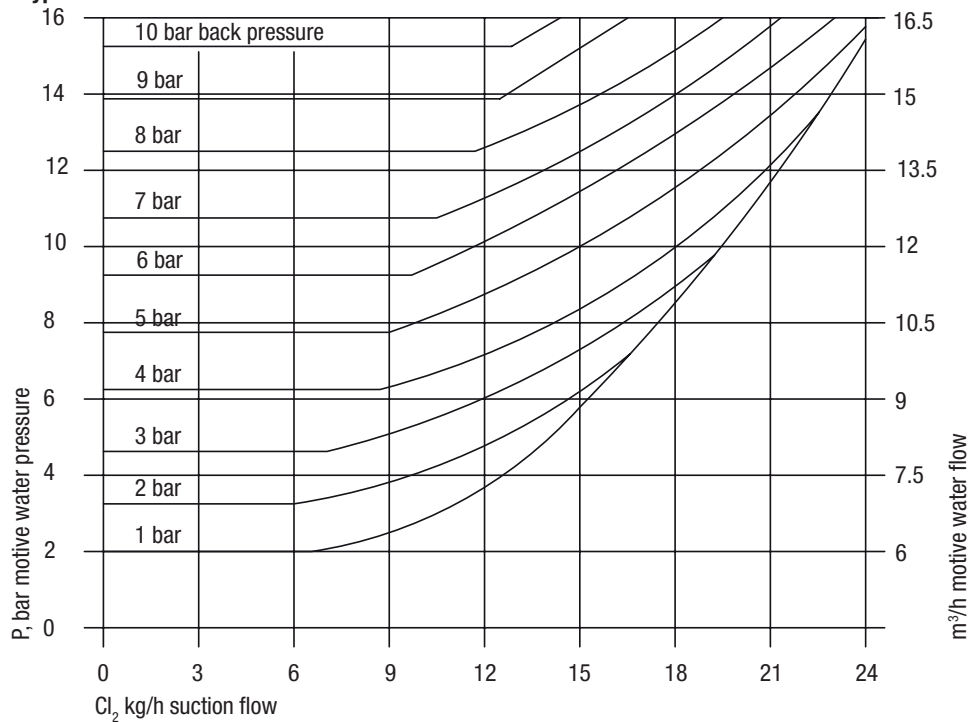
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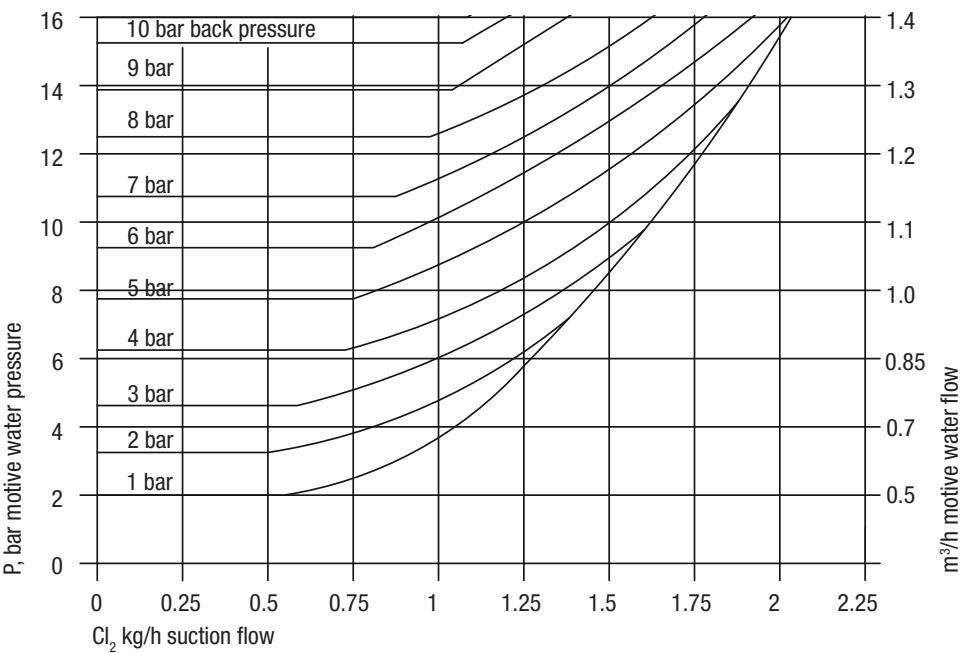
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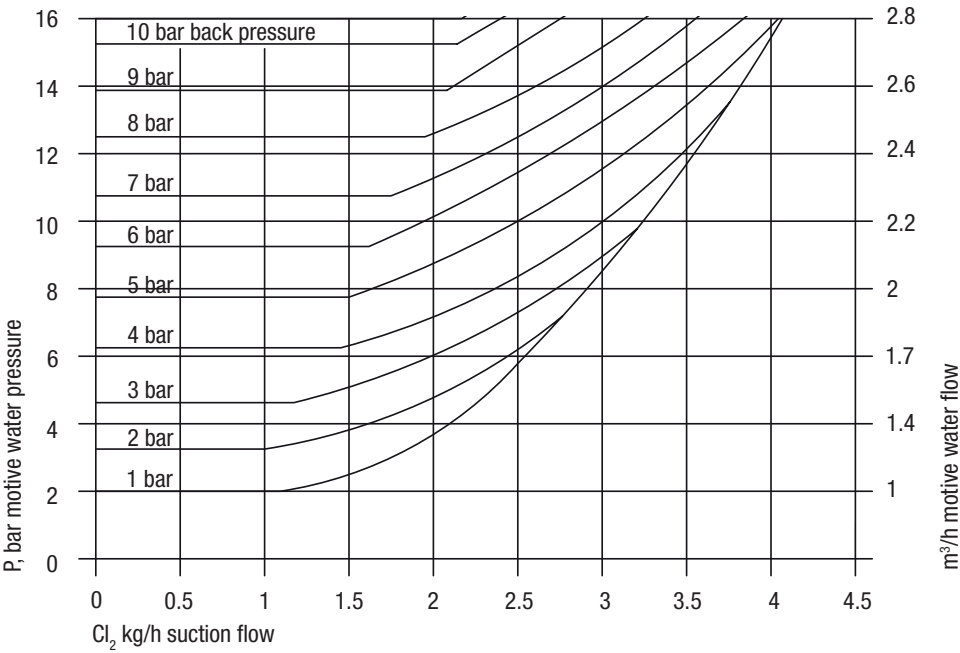
Type F



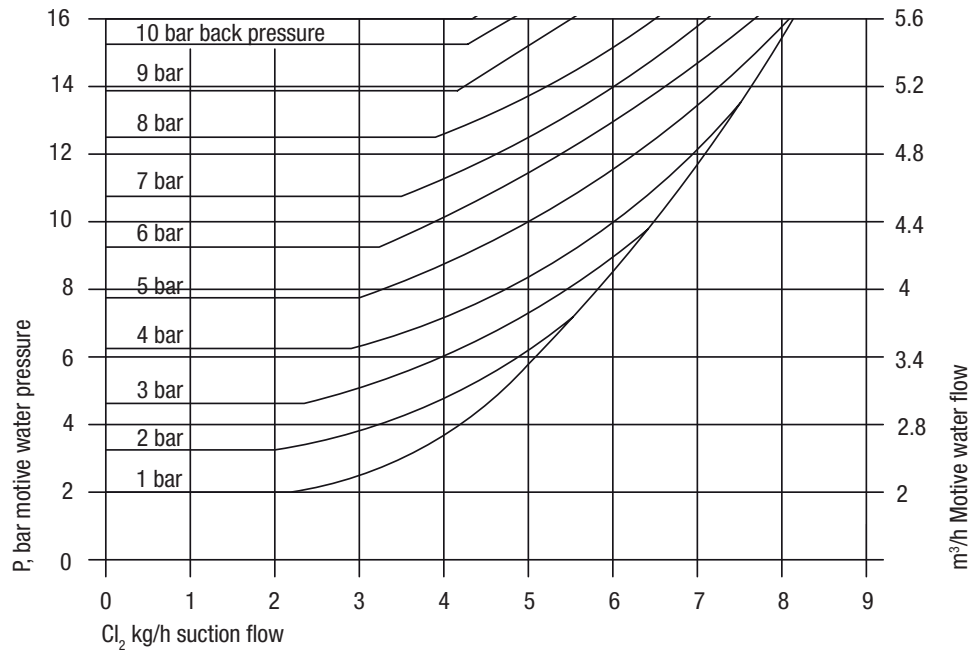
Type AH



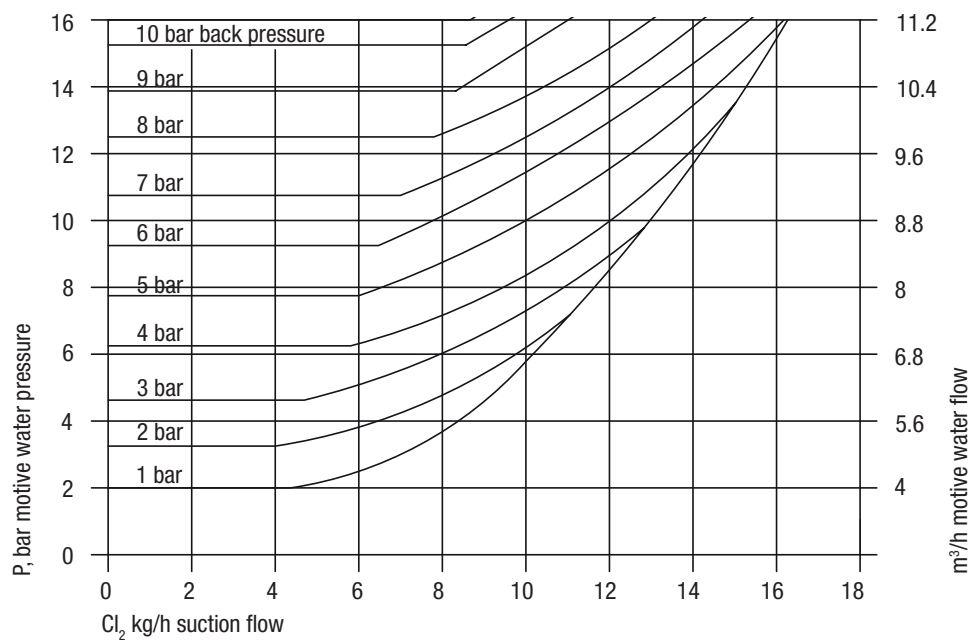
Type BH



Type CH



Type DH



14 Notes to EU conformity

The devices fall under the purview of the pressure equipment directive 2014/68/EU. The values stated below do not exceed the limit values according to article 4, paragraph 1 a – c. Therefore, it is designed and manufactured in accordance with valid good engineering practice. This pressure device may not carry a CE marking and an EU declaration of conformity will not be issued.

15 Declaration of no objection

Please copy the declaration, stick it to the outside of the packaging and return it with the device.

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:

16 Warranty claim

Warranty claim

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 claim.

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.

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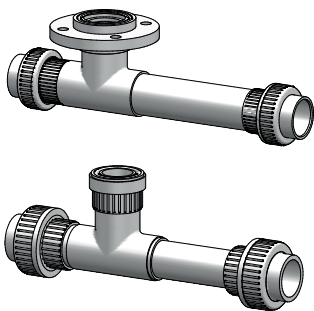
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Operating instructions
Standard ejectors