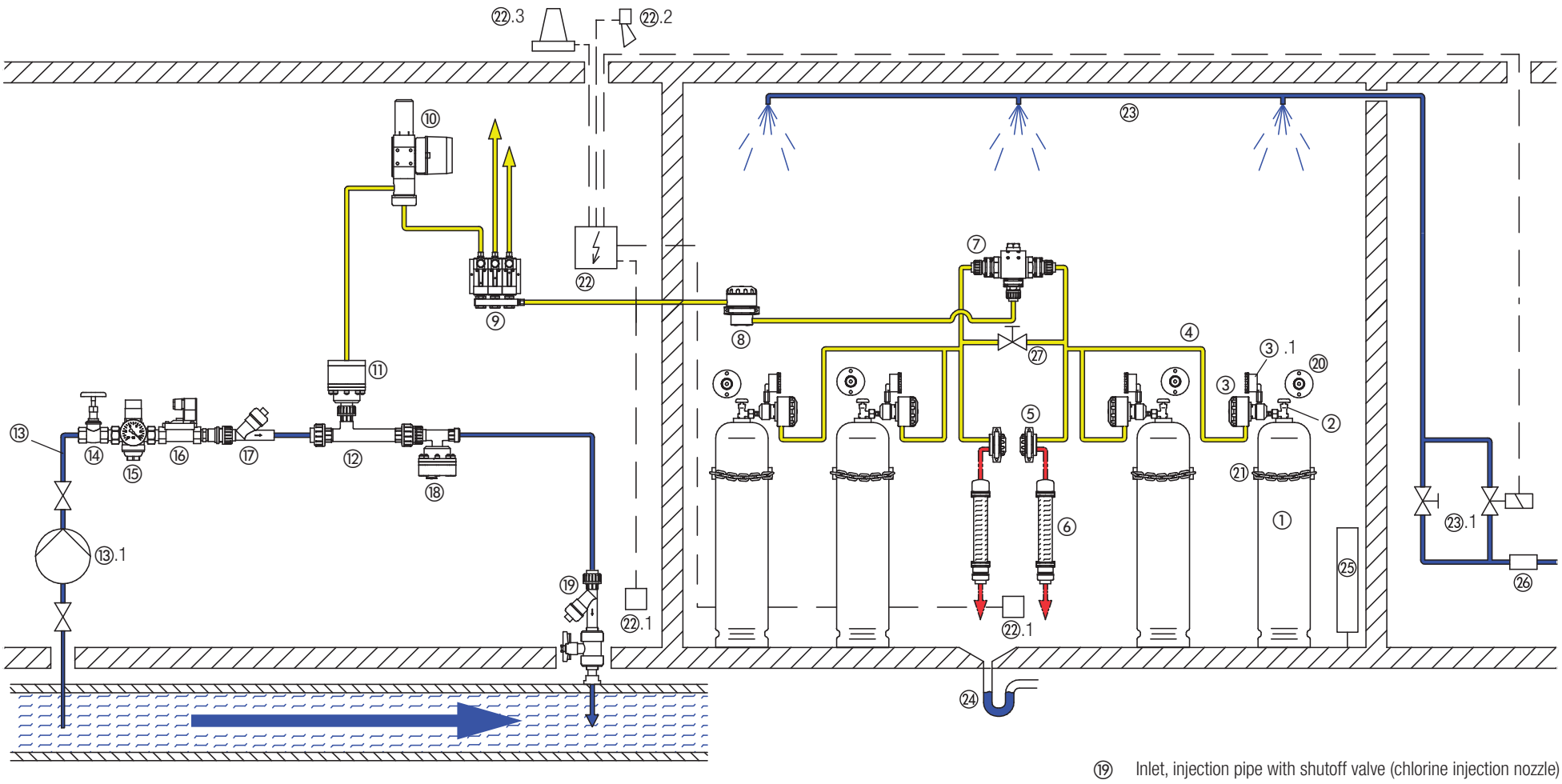
Quick guide to full vacuum chlorinator conforming to DIN 19606:2010

Continuous chlorination with automatic (mechanical) changeover



Item Description as per DIN (Lutz-Jesco description)

① Chlorine gas tank (chlorine gas cylinder)
② Chlorine gas cylinder shutoff valve (cylinder valve)
③ Chlorine gas inlet and quick-action stop valve with vacuum control valve (vacuum regulator)
③.1 Pressure measuring instrument (pressure gauge) (may be integrated in ③)
④ Vacuum manifold
⑤ Safety blow-off valve (may be integrated in ③)
⑥ Adsorption unit (activated carbon cartridge), optional
⑦ Automatic chlorine gas changeover unit (chlorine gas vacuum switch)
⑧ Vacuum safety valve (safety shutoff valve)
⑨ Measuring instrument for chlorine gas mass flow rate (flow meter)
⑩ Valve for controlling/regulating chlorine gas mass flow rate (control valve)
⑪ Injector non-return valve with back pressure regulator
⑫ Injector
⑬ Service water (motive water)
⑬.1 Booster pump (motive water pump)
⑭ Shutoff valve
⑮ Pressure reducer with pressure gauge (pressure reducing valve with pressure gauge) and dirt trap
⑯ Solenoid valve
⑰ Non-return valve (⑭… ⑰: (Motive water assembly)
⑱ Vacuum breaker
⑲ Inlet, injection pipe with shutoff valve (chlorine injection nozzle)
⑳ Wall holder
㉑ Chlorine gas tank retainer (cylinder holder)
㉒ Chlorine gas detector
㉒.1 Sensor for chlorine gas detector
㉒.2 Alarm horn
㉒.3 Warning beacon
㉓ Sprinkler system (sprinkler installation)
㉓.1 Fittings for sprinkler installation
㉔ Outlet with water trap
㉕ Heating system
㉖ Flow controller
㉗ Ball valve for take-off from all chlorine gas cylinders

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This quick guide assumes that the chlorination system has been installed professionally in accordance with applicable regulations, including BGV/GUV-V D 5, BG-R/GUV-R 108, DIN 19606 and DIN 19643. The regulations specified above and the device-specific operating instructions must be observed.

Safety instructions

The chlorine gas cylinders ① must be firmly secured to prevent them tipping over. The temperature of the chlorine cylinders must be allowed to adapt to room temperature but on no account must it be higher. The room temperature should not be lower than 15 °C.

Only chlorine conforming to DIN EN 937 or DIN EN 15363 may be used.

Breathing apparatus must be worn when working in the chlorine gas room.

The chlorine gas take-off quantity must not exceed 1 % of the fill weight of the connected chlorine gas cylinders.

All connections in the installation must be closed off air-tight.

1. Start-up

1.1 Open inlet ⑲.

1.2 Open motive water shutoff valves and solenoid valve ⑯ if necessary.

1.3 Release pressure reducing valve ⑮ by turning the adjustment knob anticlockwise.

1.4 If a booster pump ⑬ is installed, open the shutoff valves and switch on the booster pump.

1.5 Set the motive water pressure required for injector ⑫ at pressure reducing valve ⑮.

1.6 Open chlorine cylinder shutoff valve ② slowly and only a little for checking purposes.

1.7 The connection must be checked for leaks with ammonia vapour. In the case of leaks, immediately close chlorine cylinder shutoff valve ② , evacuate residual chlorine and repair leak.

1.8 If the leakage test is successful, fully open chlorine cylinder shutoff valve ② and then close again by one turn.

1.9 Set required quantity of chlorine gas at the adjustment valve on flow meter ⑨. The manual adjustment valves must be fully opened for automatic control.

2. Shutting down for short periods (e.g. filter backwashing)

2.1 Close chlorine cylinder shutoff valve ②. Maintain operation of the installation until the float in flow meter ⑨ and the pressure gauge on vacuum regulator ③.1 no longer indicate pressure.

2.2 Switch off booster pump ⑬.1 or shut off mains water supply.

2.3 Shut off chlorine solution inlet ⑲.

3. Shutting down for longer periods (e.g. winter break)

3.1 Close chlorine cylinder shutoff valve ②. Maintain operation of the installation until the float in flow meter ⑨ reaches zero and the pressure gauge on vacuum regulator ③.1 shows no or residual pressure.

3.2 Before laying up for prolonged periods, the lines and devices that come in contact with the chlorine gas should be flushed with nitrogen or compressed air for approx. 5 minutes.

3.3 Switch off booster pump ⑬.1 (service water ⑬).

3.4 Connections at which chlorine lines were disconnected must be closed off air-tight to prevent moist air entering the system.

3.5 Set the room thermostat of the heating system to a minimum temperature of 10 °C.

3.6 Close motive water shutoff valves.

3.7 Close off inlet ⑲.

3.8 If there is a danger of frost, drain off all lines and devices that come in contact with water. We recommend that you set all valves in mid-position for the winter break so that they can be released in both directions in the spring.

4. Changing chlorine cylinder

4.1 Tightly close chlorine cylinder shutoff valve ② as, in connection with vacuum devices with residual pressure safety devices, slight excess pressure remains in the cylinder and moisture must be prevented from entering the cylinder.

4.2 Switch on booster pump ⑬.1 (service water ⑬) for 5 minutes in order to evacuate the residual chlorine via injector ⑫.

4.3 Unscrew vacuum regulator ③ from chlorine cylinder shutoff valve ② and, using a seal, secure to wall holder ⑳ which also prevents moisture from entering. Close off side connection on the chlorine cylinder shutoff valve ② with dummy plug and fit protective cap of chlorine gas cylinder ① over valve ②.

4.4 Firmly secure chlorine gas cylinder ① to prevent it tipping over. Using a new seal, connect vacuum regulator ③. If necessary, wait until the chlorine gas cylinder has assumed room temperature.

4.5 Slowly open chlorine cylinder shutoff valve ② and check for leaks with ammonia vapour.

5. Maintaining the chlorination installation

5.1 If no other regulations and requirements apply, the chlorination installation must be serviced at last once a year by an authorised service specialist in accordance with the applicable regulations and operating instructions.

5.2 The chlorination installation must be visually inspected on a daily basis.

5.3 A record must be kept.

A/N 87539 | KA-20109-02-V04 | SD 20109 | Type: Mechanical changeover switch |

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