

## CHLORINATOR MODEL TJ-C 27

### General

Type TJ-C27 devices are full-vacuum chlorinators and are used in waterworks, cooling-water circuits and industrial processes. The devices consist of operational components to be maintained easily and stand out for their high reliability.

The measuring ranges with maximum values between 40 kg/h and 200 kg/h can be changed simply by replacing the measuring glass or the ejector if necessary. Thus it is always possible to optimally adapt the chlorinator to the configuration of the installation. The reading ratio is 1:20 with an error of +/-4 % of the maximum scale reading. The measuring glasses are 300 mm long.

Standard ejectors for throughputs of up to 200 kg/h chlorine gas are available.



As the volume of chlorine gas delivered per hour from chlorine tanks must not exceed 1 %, we recommend to use a chlorine evaporator if 40 kg/h or more are required.

The chlorinator can be mounted to the wall or is available in a hood cabinet for floor mounting.

The hood cabinet consists of an epoxy-coated steel frame covered with a removable plastic hood. The front plate is made from black polypropylene and is fitted with pressure gauges for measuring the chlorine supply pressure, the chlorine suction pressure and the motive water pressure. The ejector is delivered separately. It should be installed close to the injection point.

### Order example

For the shock chlorination of cooling water, 80 kg/h chlorine gas are required. It is sensible not to use standard barrels delivering chlorine gas for this quantity. Liquid chlorine is evaporated instead to make the gas available. As the evaporator has floor-mounted housing the chlorinator to be selected should be a standard device matching the evaporator for optical reasons.

**TOSHCON JESCO ( INDIA ) PVT. LTD.,**

Jaipur Road, P.O. Gagwana – 305 023, Distt.: Ajmer (Raj.) INDIA

Phone:+91-145-6450603, 3208147 Fax:2787131 E-mail: [info@toshcon.com](mailto:info@toshcon.com)

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# TOSHCON JESCO

Select the appropriate ejector for 100 kg/h and determine the required working data concerning the motive water. If the working data fit ejector 6A, chlorinator No. 20327377 can be used. It has a max. metering capacity of 100 kg chlorine gas per hour and is supplied together with ejector 6A.

## The order text would be:

Chlorinator assembly for floor mounting with ejector and non-return valve, 5 m relief hose with fastening material and test ammonia Type TJ -C 27/SL Part No. 20327377

## Technical data

Version	:	Full-vacuum chlorinator
Measuring ranges	:	40 - 60 - 100 - 200 kg/h Cl <sub>2</sub>
Reading ratio	:	20: 1
Accuracy	:	+/- 4 % of the maximum scale reading
Measuring devices	:	<b>TJ-C27/WL</b> Flow meter Vacuum regulator for suction pressure Pressure gauge for chlorine supply
		<b>TJ-C27/SL</b> Vacuum regulator for suction pressure Pressure gauge for chlorine supply Pressure gauge for motive water
Operation	:	1. with valve for manual adjustment 2. Start - Stop operation by switching the driving water supply on / off 3. Electrical remote adjustment manually or by a controller using a control valve
Motive water	:	Clean water. Required pressures and water quantities are selected from the ejector data sheets in dependence of the back pressure.
Weight	:	TJ-C27/WL : 24 kg TJ-C27/SL : 62 kg Ejector : approx. 12 kg

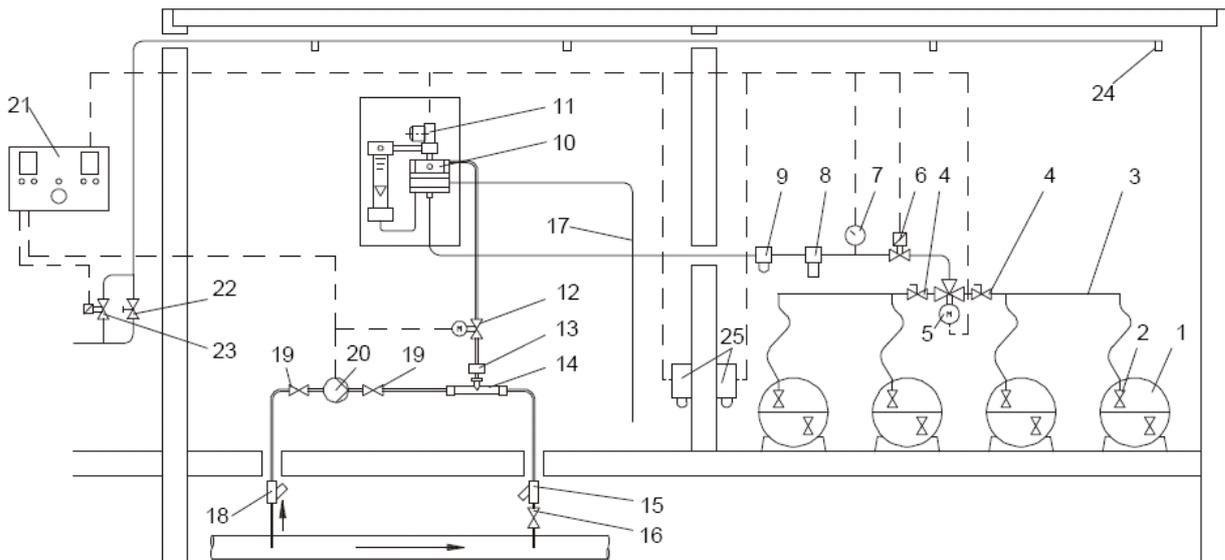
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## Installation



## Legend

1. Chlorine barrel
2. Chlorine barrel auxiliary valve with flexible copper line
3. Manifold
4. Main shutoff valve
5. Electrical changeover valve
6. Solenoid safety valve
7. Pressure gauge for chlorine changeover
8. Pressure reducing valve
9. Chlorine gas filter
10. Chlorinator TJ-C 27
11. Electrical control valve
12. Shutoff ball valve
13. Ejector non-return valve
14. Ejector
15. Non-return valve
16. Shutoff valve w. solution injection
17. Safety blowoff line
18. Filter
19. Shutoff valve
20. Booster pump
21. Control cabinet
22. Solenoid valve for sprinkler valve
23. Externally accessible shutoff valve for sprinkler installation
24. Sprinkler nozzle
25. Sensors of the gas warning device

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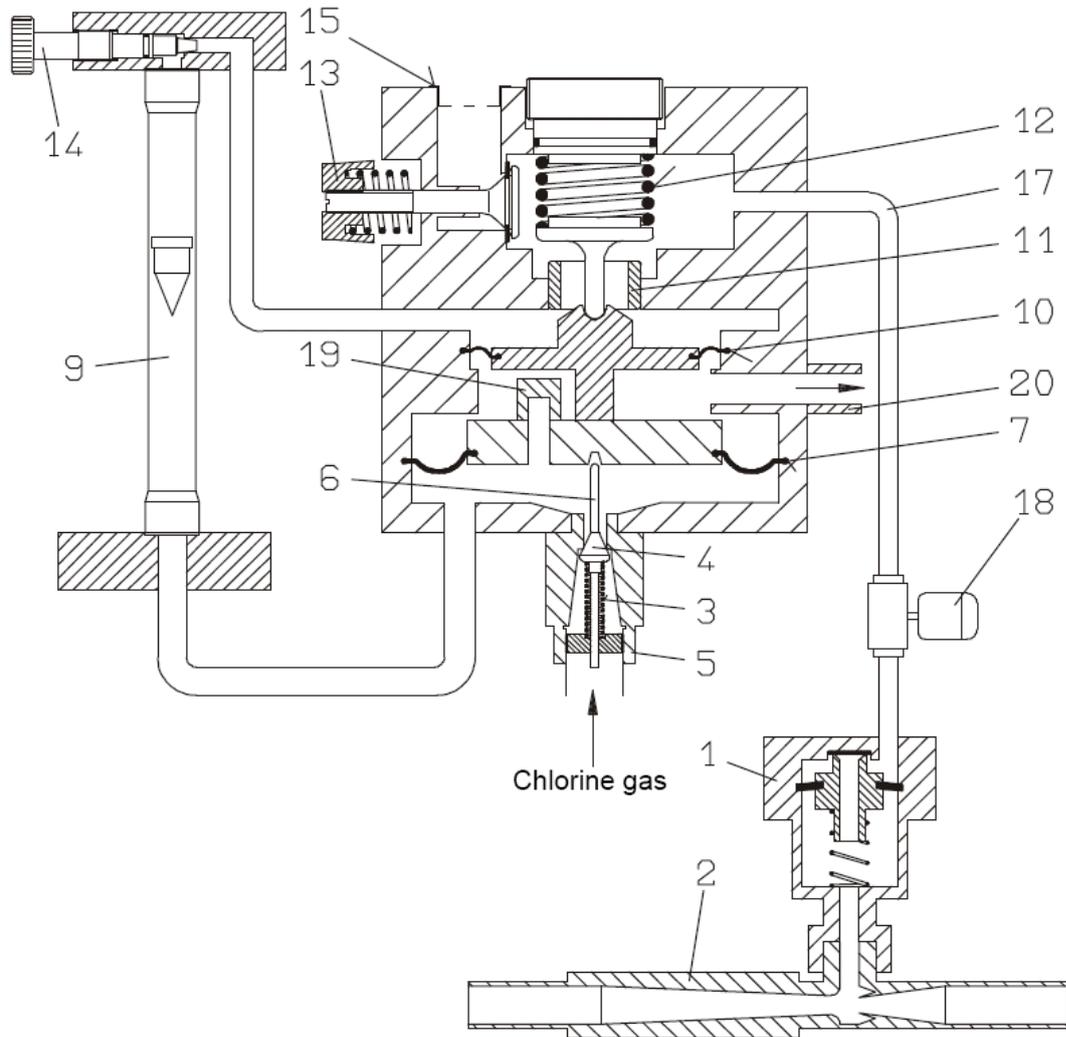
## Functional Description

The high reliability of a full-vacuum chlorinator, such as the TJ - C 27, is due to the fact that the chlorine gas coming from the tank cannot pass the inlet valve (5) because it is completely closed by means of a cone (4) and a spring (3).

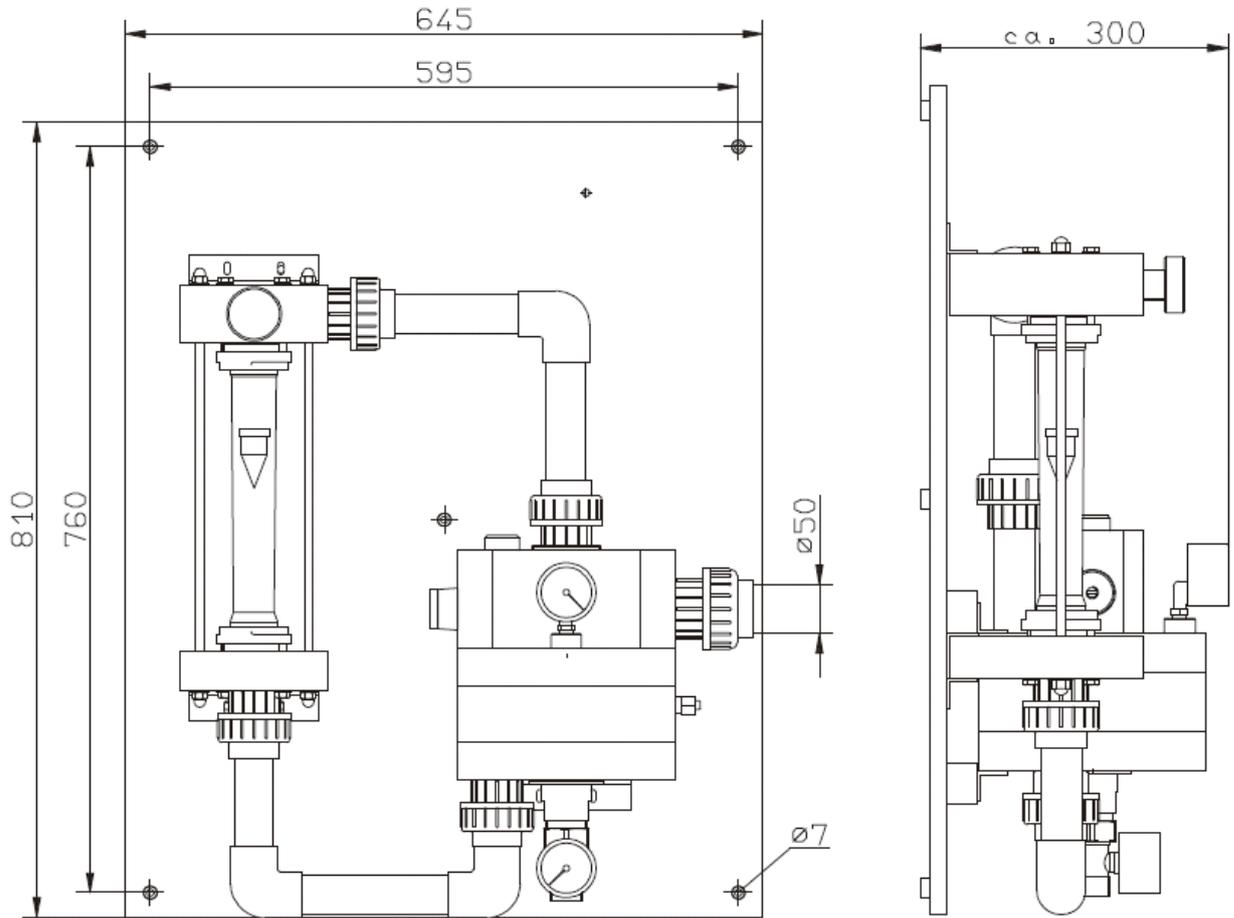
The valve opens only if, with the help of the pin (6), the diaphragm (7) pushes the cone (4) down against the spring (3). The diaphragm (7) can be moved downward only if the pressure below the diaphragm is lower than above it. As there is always a constant atmospheric pressure above the diaphragm, the pressure below the diaphragm must be reduced by producing a vacuum with the help of the ejector (2).

After switching on the motive water supply, the valve (18) closed electrically by the booster pump (not part of the delivery scope) is opened. When the non-return valve (1) is open, the vacuum produced by the ejector propagates from the suction line (17) over the measuring glass (9) to the lower diaphragm chamber. As soon as the vacuum applies a force to the diaphragm (7) which causes the inlet valve to open against the force of the spring (3), chlorine gas starts to flow.

The required quantity is set with the adjusting valve (14) at the float flow meter (9). When calibrating the measuring glass (9), the pressure before and after the glass is taken into account. While the lower regulator consisting of diaphragm (7) and inlet valve (5) ensures a constant pressure before the measuring glass, the upper regulator consisting of diaphragm (10) and valve seat (11) controls the pressure after the measuring glass. To avoid cavitation and precipitation due to decarbonization in the ejector, a separate-air valve (13) is provided in the case of small chlorine quantities. The valve opens completely at 0.5 bar and allows air to enter in addition to chlorine. The minimum response pressure can be set within broad limits. The primed air passes an inlet filter (15). The safety valve (19) protects the device against excessive pressure. The blowoff line (20) is installed close to the sensor of the gas warning device.



**Dimension Drawing of Wall-Mounted Device TJ-C 27**



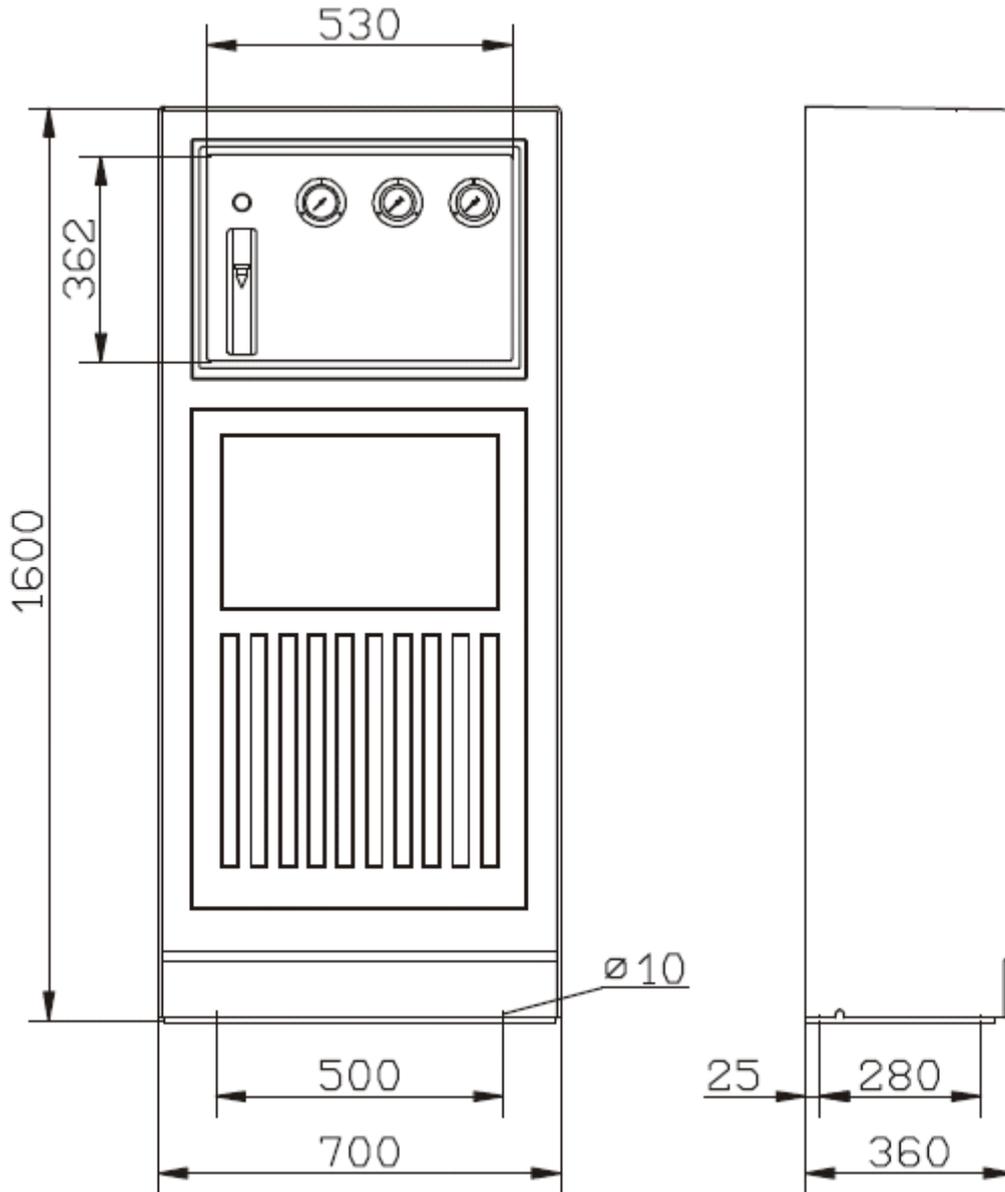
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**Dimension Drawing of Floor-Mounted Device in Cabinet TJ-C 27**



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