



# Chemical Injection Technologies

## Product/Specification Bulletin

### SUPERIOR™ Gas Chlorinator Series CL-10/20 1000 PPD & 2000 PPD - 20 Kg/hr & 40 Kg/hr High Capacity

#### GENERAL DESCRIPTION

The SUPERIOR™ Series CL-10/20 Gas Chlorinator is a state-of-the-art, vacuum-operated, solution feed type, for high chlorine gas feed rates up to 2000 pounds per 24 hours (40 Kg/hr). The vacuum regulator is mounted onto the chlorine valve of a wall manifold, using a very heavy-duty, positive yoke clamp connection. A chlorine gas flow meter panel indicates the amount of chlorine being fed and may be located wherever it is safest and most convenient. Chlorine flow rate is manually adjusted and the design permits easy addition of a number of automatic flow rate control devices. A high efficiency, water operated ejector produces the vacuum necessary to operate the system. A back-flow check valve system prevents pressurized water from entering the chlorinator. A spring-opposed diaphragm vacuum regulator controls the chlorine gas flow rate and also acts as the safety shut-off valve.

#### FEATURES

The SUPERIOR™ Series CL-10/20 represents the most modern design technology coupled with the very best materials available to create an outstanding, user friendly piece of equipment. It is designed with user safety as a primary concern.

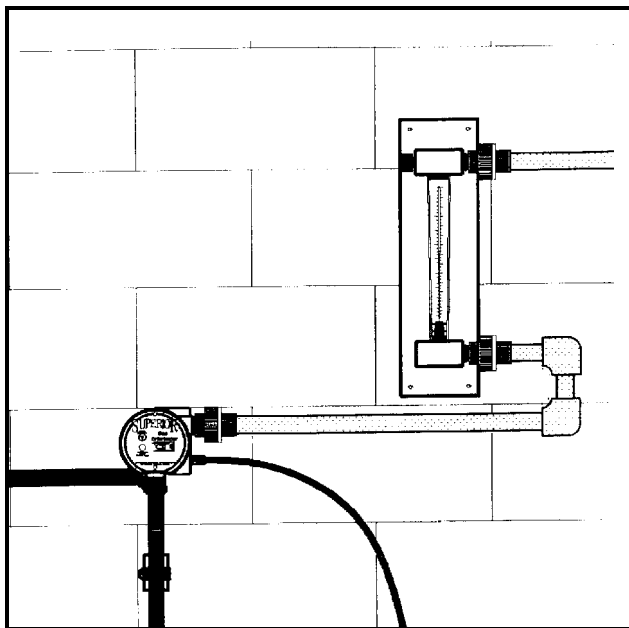
1. A new ultra-thick, fluoroplastic yoke coating gives SUPERIOR™ corrosion resistance, won't crack, peel or chip. Chlorine will not diffuse through it to cause coating bubbling and peeling.
2. All molded parts are fiber-glass reinforced ABS plastic, designed for SUPERIOR™ strength, warp-resistance and chlorine resistance.
3. All external bolts and nuts are Titanium for complete corrosion resistance..a SUPERIOR™ exclusive. There are no stainless steel or monel nuts and bolts to corrode and freeze up in the presence of moist chlorine gas.
4. All vacuum fitting holes are heavily reinforced to prevent the possibility of cracking from over-tightening fittings.
5. "Y-Check" check valve design offers very low cracking pressure and virtually no pressure drop due to friction. Check valves are complete modules and can be closecoupled to the ejector or located anywhere in the vacuum piping system for maximum flexibility.
6. "Capsule" type inlet safety valve design allows easy removal for inspection or cleaning, using no special tools.
7. All-vacuum operation, combined with modular design of the major operating components, allows pressurized chlorine gas to be isolated from the operating areas for greater safety.
8. Fewer parts, combined with SUPERIOR™ materials and a SUPERIOR™ design gives you a SUPERIOR™ Gas Chlorinator.

#### FLOW METER CAPACITIES

SUPERIOR™'s modular design concept allows the chlorine gas indicating meter and flow rate control valve to be located wherever it is most convenient for the operator, and also in the safest location. A dual English/Metric scale variable area flow metering tube is provided with a maximum capacity of 1000 pounds per 24 hours - 20 Kg/hr (Model CL-10) or 2000 pounds per 24 hours - 40 Kg/hr (Model CL-20). All metering tubes are interchangeable and may be changed in the field without special tools.

#### MODULAR DESIGN

SUPERIOR™ Gas Chlorinators have been designed to give the maximum flexibility in system installation. Each component of the chlorinator, vacuum regulator, metering tube panel, check valve, and ejector can be placed wherever it is safest and most convenient for operating personnel. The regulator may be mounted on the chlorine gas manifold in a safe storage area while the remote meter tube panel is placed in an easily accessible place since it operates completely under vacuum. The ejector can be located wherever plumbing and/or hydraulic conditions make it most desirable. Modular design also makes it easy and inexpensive to expand or upgrade the system.



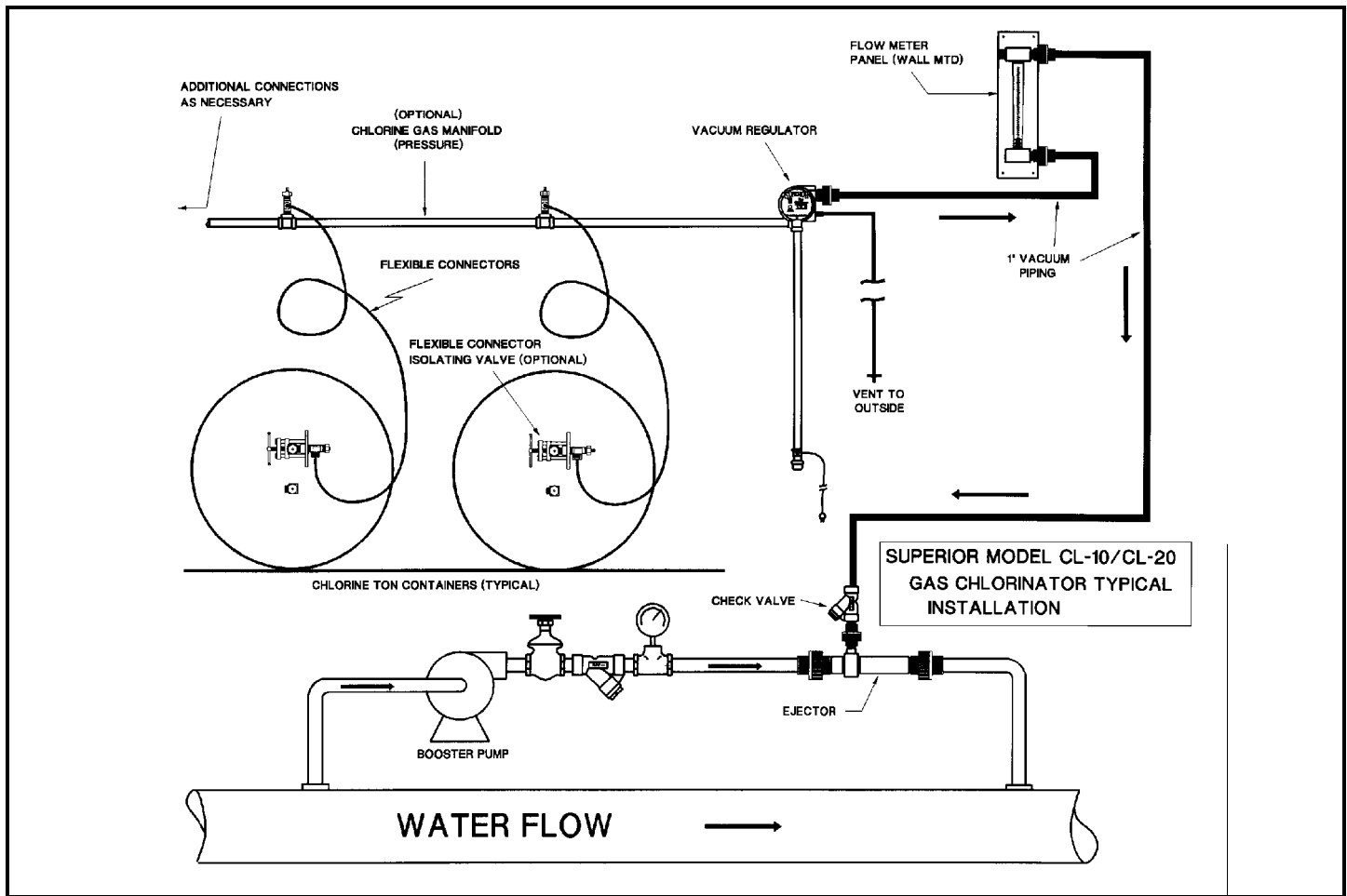
#### MATERIALS OF CONSTRUCTION

One of SUPERIOR™'S major competitive advantages is the use of the finest, strongest and most durable materials available. Extensive use of Fluoroplastics and fiberglass reinforced thermoplastics allow SUPERIOR™ Gas Chlorinators to withstand attack by chlorine in any form and to give the longest operational life. Many parts are guaranteed for the life of the equipment against chlorine damage.

#### SYSTEM OPERATION

The vacuum regulator is securely clamped onto the auxiliary chlorine valve of a chlorine gas manifold. Water under pressure flows through the ejector at high velocity which causes a strong vacuum to be created. This opens the check valve in the vacuum piping between the ejector and metering panel, and transmits a vacuum signal through the remote meter tube/rate valve panel and back to the vacuum regulator. When the vacuum reaches a pre-set level, the diaphragm in the regulator moves to open the chlorine inlet safety valve, permitting gas to flow from the chlorine cylinder. The spring-opposed diaphragm and inlet valve regulate the vacuum at this point.

Chlorine gas passes through the remote flow meter panel and rate control valve to the ejector. The gas mixes with the ejector water and the resulting chlorine/water solution is discharged into the water being treated.



## SPECIFICATIONS

The chlorinator shall be SUPERIOR™ MODEL CL-10/20 manufactured by Chemical Injection Technologies, Inc., Ft. Pierce, Florida, and shall have a maximum capacity of \_\_\_\_\_ pounds per day (Kg/hr) of chlorine feed and shall be equipped with a chlorine flow meter of \_\_\_\_\_ pounds per day (Kg/hr).

The chlorinator shall be of modular design consisting of a vacuum regulator, flow meter/rate valve panel, check valve and ejector. Each of these assemblies shall be capable of being individually located wherever safety and/or operator convenience dictates.

The vacuum regulator shall mount directly on the auxiliary chlorine valve of a chlorine gas wall manifold by means of a positive yoke type clamp having an integral tightening screw with slide bar handle. No wrenches or other tools shall be required to mount or dismount the vacuum regulator from the chlorine valve. The chlorine valve/chlorinator inlet adaptor shall be constructed of corrosion-proof fluoroplastic material which shall be inert to the effects of wet, dry or liquid chlorine. The inlet safety shut-off/vacuum regulating valve shall be of capsulated design, easily removable as a unit from the outlet side of the yoke. A pressure relief valve shall be incorporated into the vacuum regulator to prevent pressure from building up in the system. All external screws and nuts shall be made of Titanium to prevent corrosion.

The flow meter/rate control valve panel shall be separate from the vacuum regulator and ejector assemblies and shall be capable of mounting wherever it is safest and most convenient for operating personnel.

Vacuum shall be created by a fixed-throat venturi/ejector system. A spring loaded "Y" type check valve system shall prevent water from entering the gas system. The ejector assembly shall be capable of withstanding water pressure up to 150 PSIG (10.2 Bars).

## STANDARD ACCESSORIES (Included with Chlorinator)

- |                             |                            |
|-----------------------------|----------------------------|
| 1 - Remote vacuum regulator | 10 - Lead cylinder gaskets |
| 1 - Remote metering panel   | 1 - Vent insect screen     |
| 1 - Remote Ejector Assembly | 25" - 3/8" vent tubing     |
| 1 - Check valve assembly    |                            |

## OPTIONAL ACCESSORIES AVAILABLE

- |                        |                      |
|------------------------|----------------------|
| Inlet Water Assembly   | Gas Masks            |
| Wall manifold kits     | Gas Detectors        |
| Booster pumps          | Scales               |
| Residual Analyzers     | Gauges               |
| Automatic Controls     | Chlorine Comparators |
| Ton Container Adaptors | Others Available     |

## OTHER SUPERIOR™ SYSTEMS AVAILABLE

- AUTOMATIC SWITCHOVER GAS CHLORINATORS
- MULTIPLE-POINT GAS CHLORINATORS
- 100 POUNDS PER DAY (2000 gr/hr)
- 200 POUNDS PER DAY (5 Kg/hr)
- 500 POUNDS PER DAY (10 Kg/hr)
- GAS SULFONATORS (DECHLORINATOR)
- AMMONIATORS
- AUTOMATIC FLOW PROPORTIONING
- AUTOMATIC RESIDUAL CONTROL

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