

The Solution to Water & Wastewater Treatment

SUPERIOR

Gas Chlorinators



EML, INC. - CHEMICAL DOSERS & CAVITATION CONTROL EQ.

DIRECT CYLINDER MOUNTING GAS CHLORINATORS, SULFONATORS & AMMONIATORS

- MODULAR DESIGN • SAFE, ALL-VACUUM OPERATION •
- HIGHEST QUALITY • LOWER COST



Chemical Injection Technologies, Inc.

www.chlorinators.com

SUPERIOR™ Gas Chlorinators

THE "WORKHORSE" OF GAS CHLORINATORS

"This one works," and "Can't destroy this unit," say customers of Chemical Injection Technologies, Inc. **SUPERIOR™ Gas Chlorinator**. The **SUPERIOR™ Gas Chlorinator** is considered the industry "workhorse" of gas chlorinators. Its efficient design, coupled with the long lasting materials, creates reliable water disinfection systems with a safety first, user friendly design that is cost effective to install and so easy to operate and maintain. The **SUPERIOR™ Gas Chlorinator** is the optimum choice for water disinfection, whether for drinking water, sewage treatment, industrial processes, food processing, cooling water, or swimming pools.

The vacuum-operated, solution feed type **SUPERIOR™ Gas Chlorinator** can be either mounted directly on a chlorine cylinder valve, or wall mounted. Chlorine flow rate is manually adjusted. The design is such that a number of automatic flow rate control devices can be easily added. Modern modular design makes it easy and cost-effective to expand or upgrade the system.

The ejector assembly, made with extra-heavy ejector diffuser

FLOW METER CAPACITIES

Maximum Chlorine and Sulfur Dioxide flow meters are available in English/Metric "Dual" ranges with the following maximum feed rates:

English	Metric	English	Metric
1.5 Lbs./24 Hour	30 Gr./Hr.	4 Lbs./24 Hrs.	75 Gr./Hr.
10 Lbs./24 Hrs.	200 Gr./Hr.	25 Lbs./24 Hrs.	500 Gr./Hr.
50 Lbs./24 Hrs.	1000 Gr./Hr.	100 Lbs./24 Hrs.	2000 Gr./Hr.
200 Lbs./24 Hrs.	5 KG./Hr.	500 Lbs./24 Hrs.	10 KG./Hr.
1000 Lbs./24 Hrs.	20 KG./Hr.	2000 Lbs./24 Hrs.	40 KG./Hr.
4000 Lbs./24 Hrs.	80 KG./Hr.	6000 Lbs./24 Hrs.	120 KG./Hr.
8000 Lbs./24 Hrs.	160 KG./Hr.	10000 Lbs./24 Hrs.	200 KG./Hr.

outlet threads, contains a dual back-flow check valve system to prevent pressurized water from entering the chlorinator.

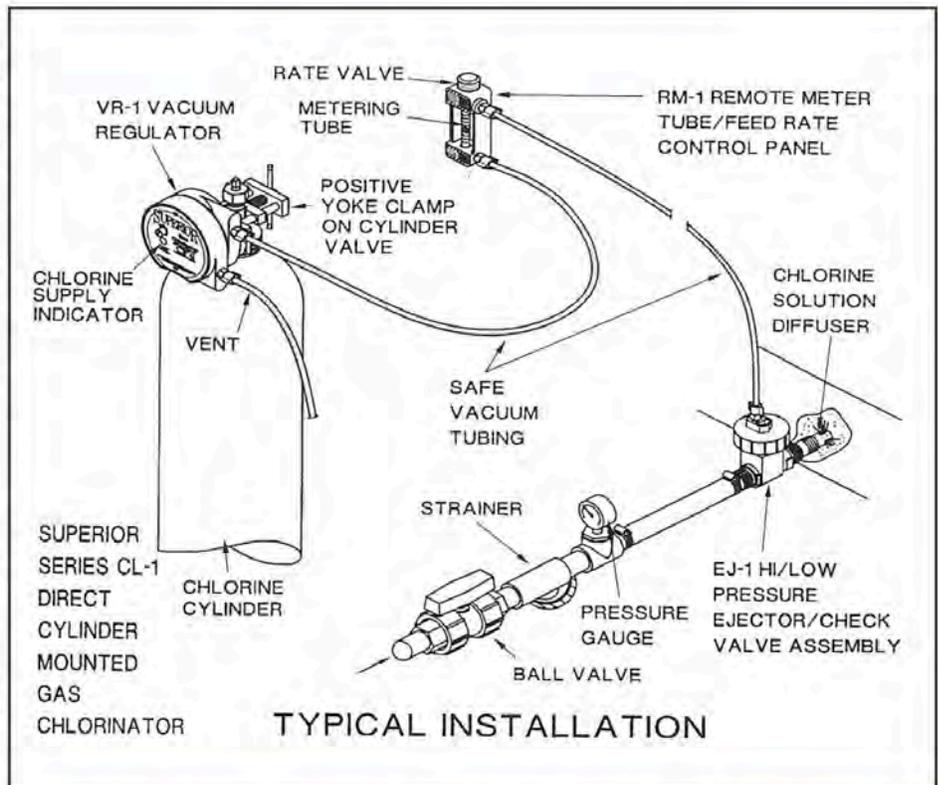
Extensive use of space-age Fluoroplastics and fiberglass-reinforced thermo-plastics give **SUPERIOR™ Gas Chlorinators** superior chemical resistance and superior strength. All external bolts and nuts are Titanium for ultimate corrosion resistance, a **SUPERIOR** exclusive. **SUPERIOR™ Gas Chlorinators** feature fewer parts, all made from the best materials. The system is easy to maintain and service, and cost-effective initially as well as long-term.

SUPERIOR™ vacuum regulators are more rugged and durable. They are the heart of the All-Vacuum safety system. Easily upgrade to higher capacities with a change of vacuum tube fittings. Add another regulator and an automatic switchover module for uninterrupted 24 hour a day chlorination.

SUPERIOR™ remote rate valve/metering tube panels use only state-of-the-art materials to insure dependable, repeatable gas flow rates. Additional panels may be combined with ejectors to feed several applications from one chlorine source.

SUPERIOR™ vacuum producing ejectors are extremely efficient and extra-strong. A unique dual pressure check valve system eliminates the water "flooding" nuisance common in most designs.

SUPERIOR™ modular design allows all components to be located separately or all in one area, as safety and operator convenience considerations dictate.



SUPERIOR DESIGN & MATERIALS FOR SAFER OPERATION... LONGER LIFE... LESS MAINTENANCE... LOWER COST

All molded parts are fiberglass reinforced plastic, designed for superior strength, warp-resistance and chlorine resistance. Excellent UV resistance.

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.

Deeply recessed PVDF cylinder-to-chlorinator inlet adaptor assures easy, self-centering mounting during cylinder changes and prevents leaks caused by misalignment.

Positive, gravity operated, loss of gas supply indicator gives an easy-to-see bright red color when the chlorine supply is exhausted. A bright green color indicates adequate chlorine supply.

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 bubbling and peeling.

Special "Lip" type metering tube gaskets automatically center tubes, making removal and re-assembly a snap. No chance of misalignment.

The rate valve "Seat" is pure PVDF Fluoroplastic and will not swell, stick or become brittle with age or exposure to liquid chlorine.

Rugged, fiberglass-reinforced, high-impact plastic remote meter panel can be located wherever it is safest and most convenient for the operator.

All vacuum fitting holes are heavily reinforced to prevent the possibility of cracking from overtightening fittings.

Extra-heavy duty yoke with an integral vise-type tightening handle, prevents over-tightening. No need to find a wrench to change cylinders.

PVDF vacuum tubing fittings are standard, another SUPERIOR™ exclusive. "User friendly" design makes it easy to attach tubing, and to tighten or loosen ferrule nuts without tools.

THE SUPERIOR™ EJECTOR

RUGGEDIZED IS BETTER!

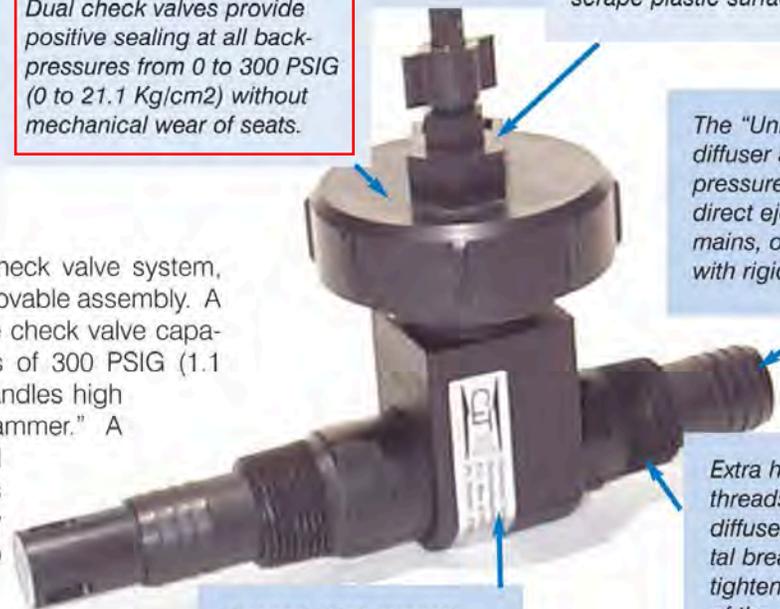
The SUPERIOR™ Gas Chlorinator ejector is an extremely rugged and highly efficient vacuum producer. If the ejector malfunctions in a gas chlorination or gas sulfonation system, the entire system will fail.

SUPERIOR™ uses a unique dual check valve system, incorporated into a single, easily removable assembly. A single-piece unitized "umbrella" type check valve capable of withstanding static pressures of 300 PSIG (1.1 kg/cm²) without being damaged, handles high back pressures as well as water "hammer." A positive sealing, spring opposed diaphragm type check valve provides tight sealing even when there is very little or no pressure differential to force the valve closed.

The SUPERIOR™ ejector operates with minimum water flows and water pressure differentials. It also is designed to withstand very harsh environments and is capable of handling excessive physical force. Its rugged design is impressive!

The diffuser outlet of the SUPERIOR™ ejector offers the strongest possible threaded area available.

Dual check valves provide positive sealing at all back-pressures from 0 to 300 PSIG (0 to 21.1 Kg/cm²) without mechanical wear of seats.



Rugged, high strength fiberglass reinforced ejector body has a standard pressure rating of 300 PSIG (21.1 Kg/cm²).

Easier to service and perform routine maintenance, with standard size wrench lugs provided on all screwed-together ejector parts. No more pipe wrenches to accidentally tear and scrape plastic surfaces.

The "Universal" ejector diffuser allows use of high pressure solution hose, direct ejector mounting in mains, or in-line piping with rigid solution pipe.

Extra heavy-duty outlet threads on the ejector diffuser prevent accidental breakage from over-tightening or "bumping" of the ejector assembly.

All parts that screw together are provided with standard size wrench "lugs" to make disassembly a very simple procedure. Additionally, the need of special tools, or the accidental tearing and scraping of plastic surfaces, is eliminated.

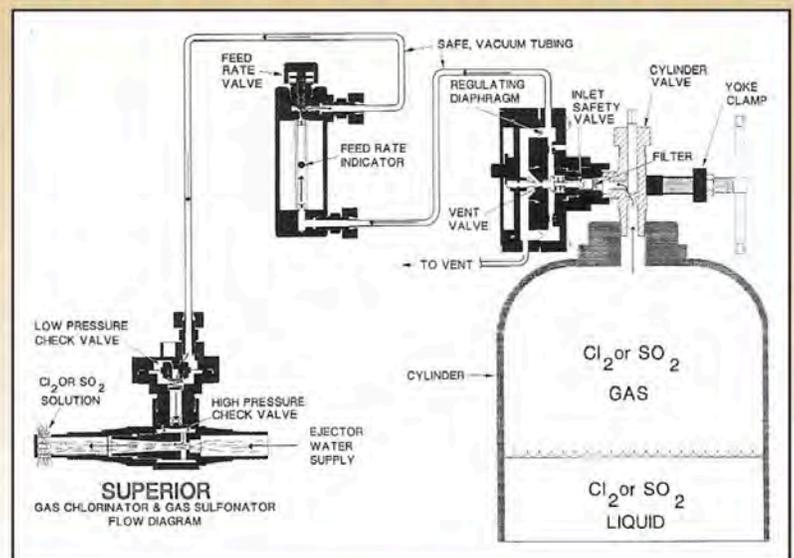
Superior ejectors also may be used as replacement assemblies in all brands of gas chlorinators and gas sulfonators.

MODULAR DESIGN FOR SAFETY AND CONVENIENCE

The SUPERIOR™ modular approach to chlorinator system design allows the maximum flexibility in placement of the system components for safety and convenience. The cylinder mounted vacuum regulator can be located in the most secure area, while the all-vacuum remote metering tube/feed rate control panel may be placed wherever it is most convenient for the operator. In this manner the pressurized chlorine gas can be isolated where it is safe and secure, allowing only gas under vacuum in the operations areas. Any break in a vacuum line results in immediate, positive tight shut-off of chlorine gas at the vacuum regulator inlet valve.

The SUPERIOR™ ejector may be located directly at the point of chlorine solution injection for greatest safety and optimum mixing of chlorine gas and water.

EXCLUSIVE HI/LO DUAL BACKPRESSURE EJECTOR



THE SUPERIOR VACUUM REGULATOR

LIFETIME warranty on main regulating spring.

All TITANIUM screws and nuts...no corrosion.

Special Viton O-Rings cured with lead oxide prevents swelling or chemical attack.

LIFETIME warranty on ECTFE main diaphragm... won't crack, impervious to chemicals.

Replaceable, reusable, high efficiency inlet filter.

Solid, rugged, fiberglass reinforced regulator bodies... no warping or cracking.



EASY MAINTENANCE & FEWER PARTS = LOWER OPERATING COSTS

The SUPERIOR™ way of "user friendly" design incorporates less parts and SUPERIOR™ materials. Maintenance and downtime is reduced and simplified, translating into smoother operation, ease of use, and lower operating costs.

By starting out with fewer parts SUPERIOR™ gets a quick advantage by virtue of the fact that there is less to go wrong. With up to 60% fewer parts than some other brands, Superior makes life much easier. And when there is a need for some preventive maintenance, or even to perform service, SUPERIOR™'s design lets you do it much easier and without any special tools.

A quick look at the exploded parts drawings on this page will show you how few parts are involved and how easily everything fits together. And the fact that all of these parts are made of the very highest quality materials available, ensures that you will not have to replace very many of them...if any. Most routine maintenance and service consists of cleaning out deposits of impurities carried by the chlorine gas. This can be done either by the user or a local SUPERIOR™ dealer, at minimum cost.

PTFE diaphragm won't swell or crack. Inert to chlorine.

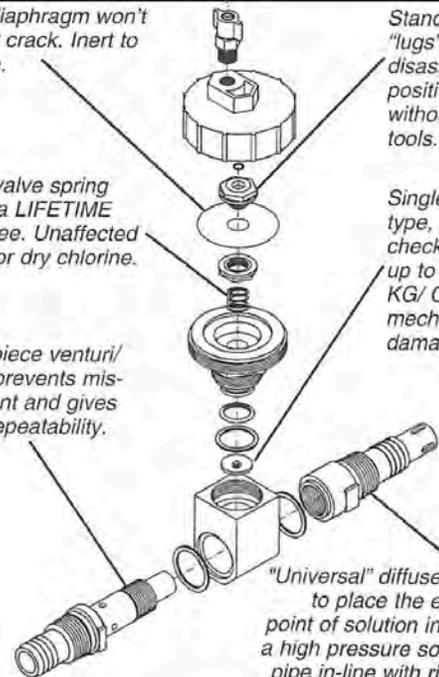
Standard wrench "lugs" allow ease of disassembly, and positive re-assembly without any special tools.

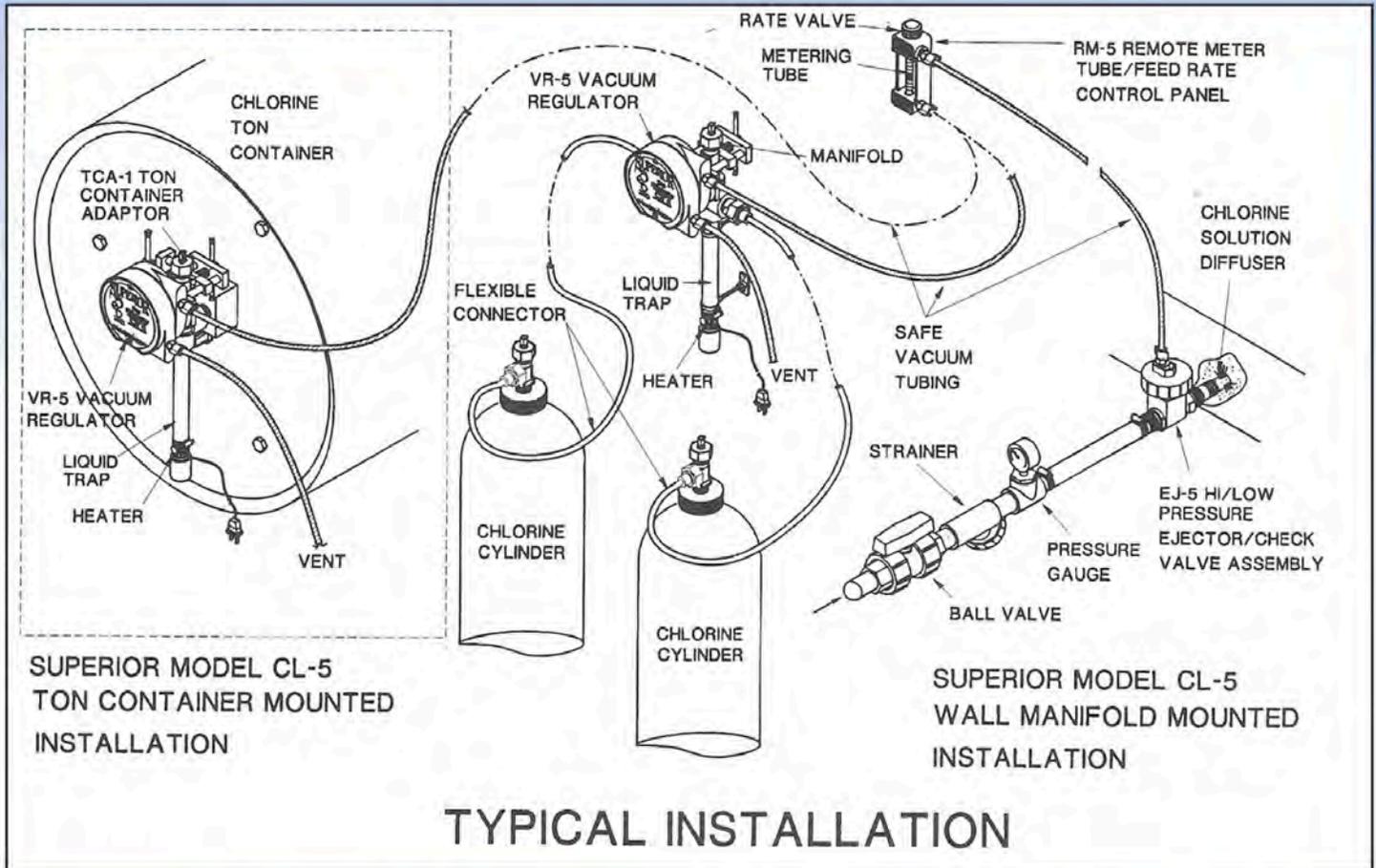
Check valve spring carries a LIFETIME warranty. Unaffected by wet or dry chlorine.

Single piece, umbrella type, high pressure check valve handles up to 300 PSIG (21.1 KG/CM²) without mechanical wear or damage.

Single piece venturi/nozzle prevents misalignment and gives 100% repeatability.

"Universal" diffuser allows the user to place the ejector, directly at point of solution injection, or to use a high pressure solution hose, or to pipe in-line with rigid solution pipe. No special adaptors are needed.





CHLORINE FEED RATES UP TO 500 PPD (10 KG/HR) FOR CYLINDER, WALL MANIFOLD OR TON CONTAINER MOUNTING

When sustained chlorine feed rates over 100 PPD (2000 GR/HR) are required, SUPERIOR™ Gas Chlorinators can easily be mounted on optional multi-cylinder wall manifolds. Wall manifolds are available for any number of chlorine cylinders which can be joined together to increase the total chlorine withdrawal rate. For short periods of time, depending on the ambient temperature, chlorine gas can be withdrawn at very high rates from a single chlorine cylinder. But, when continuous feed rates over 100 PPD are needed, it is not possible to use a single cylinder source of supply.

Another alternative for higher feed rates is the SUPERIOR™ Ton Container Adaptor. It is specially designed to allow a SUPERIOR™ cylinder mounted gas chlorinator to be mounted directly onto the top gas outlet valve of a standard one (1) ton chlorine container. The SUPERIOR™ Ton Container Adaptor may also be used with any other brand of direct cylinder mounted gas chlorinator.

The SUPERIOR™ Ton Container Adaptor employs a unique liquid chlorine trap and heater system that virtually eliminates the possibility of liquid chlorine entering the chlorinator. It enables the user to take advantage of lower gas chlorine costs of ton containers, while eliminating the use of pressurized flexible connectors and wall manifolds. The SUPERIOR™ adaptor has an ultra-thick Fluoroplastic coating that prevents corrosion.



FEED RATES

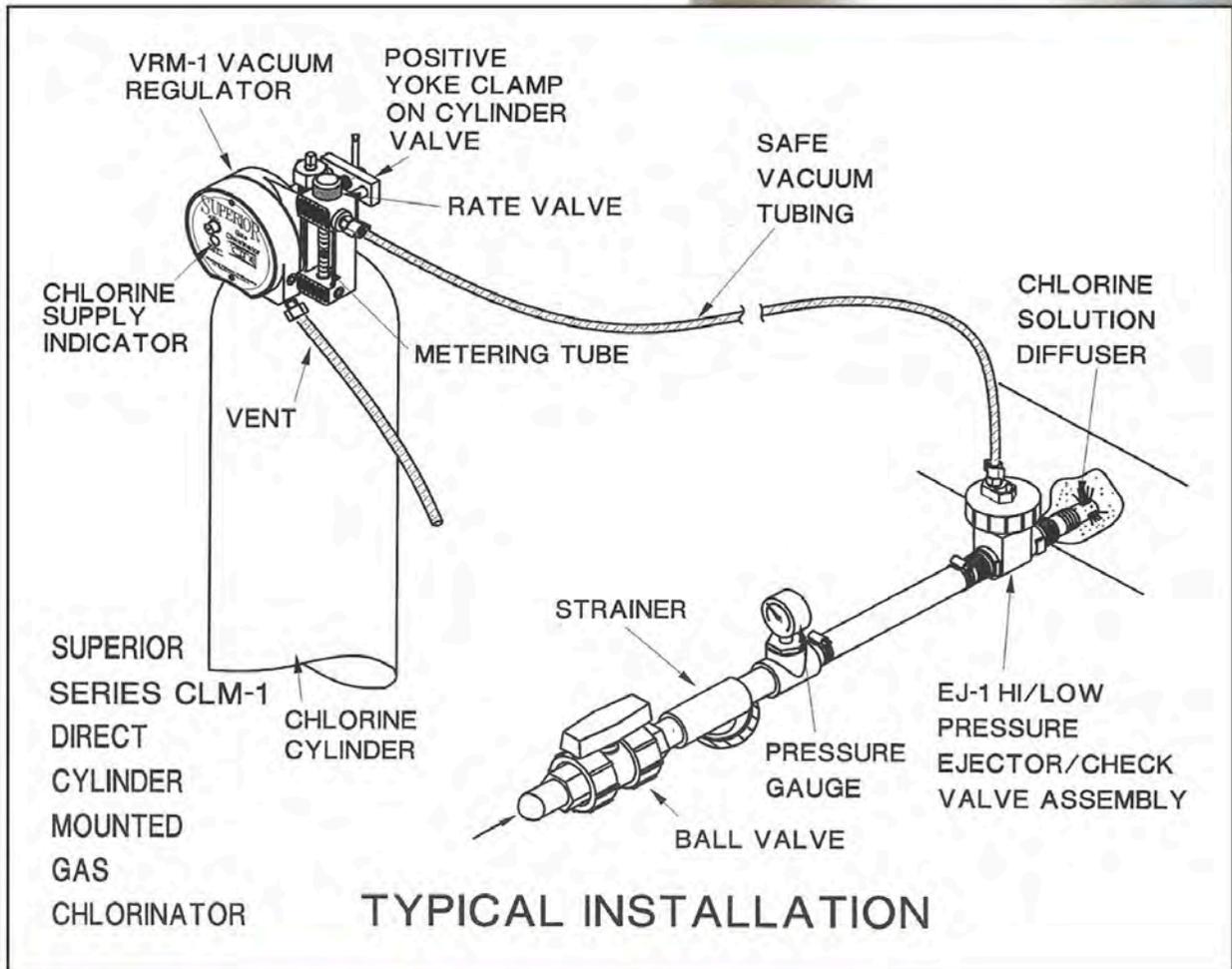
All SUPERIOR™ Gas Chlorinators and Gas Sulphonators are available with variable area flow meters and flow rate adjusting valves that have a usable range of 20 to 1. SUPERIOR™ dealers, as well as Chemical Injection Technologies will be happy to provide assistance in determining your gas flow requirements. Feed rates from just a fraction of a pound per 24 Hours (GR/HR) up to 500 pounds per 24 hours (10 KG/HR) are available as standard units.

SUPERIOR™ SERIES "CLM" GAS CHLORINATORS

When space is at a premium, or convenience dictates having all components in one compact area, the SUPERIOR™ Series "CLM" gas chlorinators will meet and exceed your needs! The SUPERIOR™ Series "CLM" gas chlorinators have all the SUPERIOR™ features, along with the 3 year warranty. This series differs from the standard "CL" Series because the remote metering/feed rate panel is close-coupled to the vacuum regulator to form an integral unit.

The "CLM" vacuum regulator is extremely versatile and user friendly. Should requirements change, the meter panel can be easily dismantled to create a remote meter application.

Series "CLM" is available with chlorine feed rates to 500 pounds per 24 hours (10 Kg/Hr).



All TITANIUM screws insure maximum corrosion protection. The only other metal used is a special Tantalum alloy spring, which is inert to chlorine.

THE SUPERIOR™ MODULAR AUTOMATIC SWITCHOVER SYSTEM



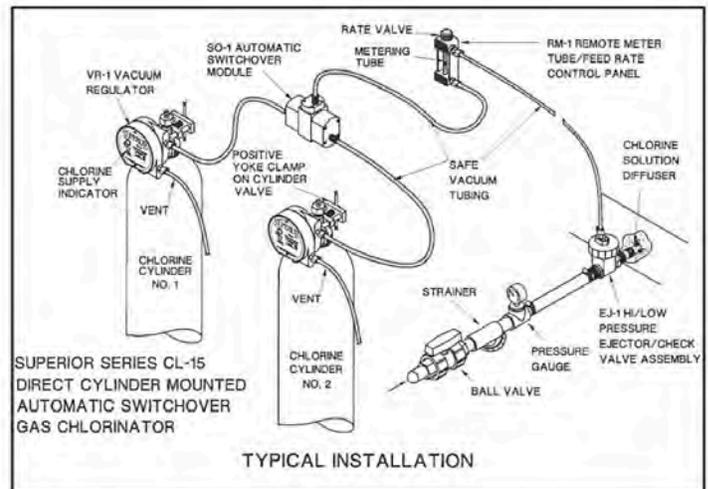
Automatic reset... the SUPERIOR™ Automatic Switchover system requires no manual resetting once the empty source is replaced with a new source.

All internal parts are made from non-corrosive, non-sticking materials providing friction-free operation. SUPERIOR™ switchover modules do not hang up or stick, even in very low feed rate situations where the module does not change over very frequently.

SUPERIOR™ switchover module is designed to prevent sticking, misalignment or wear on internal parts. Up to 20% fewer parts than some other brands.

The SUPERIOR™ Modular Automatic Switch-over Gas Chlorination system is state-of-the-art, totally vacuum operated, designed to automatically switch chlorine feed from an empty cylinder to a full cylinder. It allows around the clock protection without concern for running out of chlorine when the system is unattended. Potable water systems are never without necessary disinfection, and wastewater won't be discharged without being chlorinated.

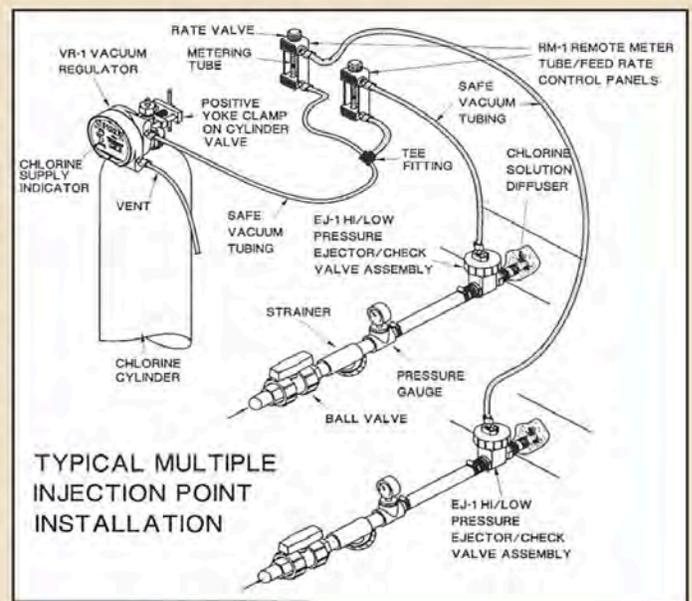
A vacuum operated switchover module is wall mounted and connected to two vacuum regulators which may be directly mounted on two chlorine cylinders, two wall manifolds or two ton container adaptors. The regulators and chlorine supplies may be located in an area separate from the switchover module and other system components for safety and operator convenience. One or more chlorine gas flow meter panels and ejectors may be used with the switchover module and located wherever desired.



MULTIPLE POINT GAS CHLORINATION

SUPERIOR's™ modular system versatility is most apparent when used in a multiple feed point application. Every SUPERIOR™ Gas Chlorinator is easily adaptable to precise, and independent, control of chlorine feed to more than one point. By using separate ejectors and separate remote metering panels, chlorine solution can be added to two, three or even ten independent systems... all using just a single chlorine source.

Each remote meter panel/ejector combination acts as an independent gas chlorinator, and each may feed at different rates, start and stop individually, with no change in the feed rates of any other application point. It is the same as having several completely separate and independent gas chlorinators, but at a fraction of the cost. Food processing plants, pre- and post-chlorination in water and waste treatment plants, as well as step-feed control for multi-well systems are some applications that lend themselves to multiple point chlorination.



Chemical Injection Technologies, Inc. provides SUPERIOR™ state-of-the-art solutions for water purification needs, including:

MUNICIPAL AND INDUSTRIAL WATER TREATMENT

DRINKING WATER – disinfection of potable water; taste and odor control; iron & manganese precipitation; Hydrogen Sulphide removal.

INDUSTRIAL PROCESS WATER – food processing; poultry processing; canning & bottling.

CHILLING WATER – meat, fish & poultry processing; canning.

WASHDOWN WATER – food processing; poultry processing; dairies; canning & bottling.

COOLING TOWER SYSTEMS – algae & slime control; Legionnaire's disease control.

DRIP IRRIGATION SYSTEMS – eliminate slime & algae deposits.

CITRUS PACKING – citrus canker destruction; washing.

FRUIT & VEGETABLE PROCESSING – increase shelf life; washing.

POULTRY PROCESSING – hand washers; eviscerating line; bacteria reduction; chilling water; increases shelf life.

SWIMMING POOLS – community, hotel & motel, country club, schools; disinfection & algae control.

MUNICIPAL AND INDUSTRIAL WASTEWATER TREATMENT

SANITARY SEWAGE – effluent disinfection; pre-chlorination; odor control; reduce Biochemical Oxidation Demand (BOD); control filter ponding.

PACKAGE TREATMENT PLANTS

PROCESS WASTEWATER – disinfection; odor control; up-sewer chlorination.

PLATING WASTEWATER – cyanide destruction.

COLOR REMOVAL – dye waste treatment

GAS SULFONATORS – SULFUR DIOXIDE

DECHLORINATION – sewage plant effluent

WINE MAKING – retards fermentation

PLATING INDUSTRY – chrome removal

SUPERIOR™ COMPONENTS ARE "INDUSTRY COMPATIBLE"

All SUPERIOR™ vacuum regulators, remote meter panels, ejectors and automatic switchover modules are hand-assembled and tested to rigid standards. They are fully compatible with most other chlorination systems. One or more of these SUPERIOR™ assemblies may be used as replacement or upgrade components for other brands, usually at significant cost savings. And SUPERIOR™ assemblies are just that...superior to virtually all original equipment components.

Since 1992, Chemical Injection Technologies, Inc. has been setting the standard for excellence supplying technologically advanced SUPERIOR™-brand Gas Chlorinators, Sulfonators and Ammoniators designed for water and wastewater treatment needs. SUPERIOR™ products are safer, economical and user friendly. Chemical Injection Technologies, Inc. is recognized as a world leader in water and wastewater treatment and an ISO certified company.



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