



Chemical Injection Technologies

Product/Specification Bulletin

SUPERIOR™ Chlor-Clear™ Liquid Chlorine Eductor Tube Evacuator for Ton Containers (Patent Pending)

WHAT DOES IT DO?

The CHLOR-CLEAR™ device is intended to evacuate (remove) liquid Chlorine which may be trapped in the UPPER Eductor Tube of a Chlorine Ton Container prior to changing containers. This is to prevent the introduction of liquid Chlorine into a gas chlorinator system whenever a new Ton Container is brought into service. Whenever a Chlorine Ton Container is rotated into the service position, it is highly likely that some amount of liquid Chlorine is trapped in the upper eductor tube inside the container (see **FIGURE 2**). When the Ton Container is attached to a chlorinator system, this liquid Chlorine must pass out of the eductor tube and into the chlorinator system. Normally, heated drip legs or traps are installed to collect this liquid Chlorine and allow it to evaporate harmlessly. However, when a chlorinator system is operating at high flow rates, liquid Chlorine can bypass the drip legs or traps and enter the chlorinator system, possibly causing serious damage. The CHLOR-CLEAR™ device attaches to a chlorine ton container with a standard chlorine yoke inlet and lead washer. A disposable Nitrogen gas cartridge attaches to a puncture device on the CHLOR-CLEAR™ assembly which allows pressurized nitrogen gas to flow through the upper eductor tube and force any trapped liquid chlorine back into the ton container.



WHY DO I NEED THE CHLOR-CLEAR?

Aside from the damage that liquid chlorine can cause to some brands of gas chlorination equipment, it also leaves behind various residues and impurities when it evaporates in the vacuum areas of the chlorinator. These impurities can cause sticking and/or plugging of orifices which necessitates frequent cleaning, if not replacement of parts, in the case of chemical damage caused by the reaction of liquid chlorine with materials such as PVC. Additionally, the liquid that settles in the ton container eductor tube invariably contains stirred up sediment from the rolling of the containers into position for withdrawal of the gas. This sediment, which often contains large amounts of ferric chloride, is supposed to be trapped in some type of liquid drip leg trap before entering the vacuum regulator. Even when the ejector vacuum is turned off, the liquid that evaporates in the drip leg trap leaves behind a brownish, mud-like goo that often plugs up the piping to the point where no chlorine can pass

through. Use of the CHLOR-CLEAR™, before attaching your gas chlorination equipment to a new ton container, will eliminate these problems before they even have a chance to start.

FEATURES

1. The CHLOR-CLEAR™ device attaches to a Chlorine Ton Container with a standard chlorine yoke inlet and lead washer.
2. A disposable Nitrogen gas cartridge attached to a puncture device on the CHLOR-CLEAR™ assembly.
3. When the Ton Container valve is opened briefly, it allows pressurized nitrogen gas to flow through the upper eductor tube to flow through the upper eductor tube.
4. Any trapped liquid chlorine is forced back into the ton Container.
5. After use of the CHLOR-CLEAR™ device, the Chlorine Ton Container is immediately ready to be placed into service.
6. A safety check valve prevents the escape of Chlorine gas if the Nitrogen gas cartridge is detached accidentally.
7. The controlled amount of Nitrogen gas introduced is negligible and is chemically inert to the chlorine.
8. Increases life of chlorine gas filter media in vacuum regulators.
9. Prevents danger of trapping chlorine liquid between valves which can cause damage to vacuum regulator inlet valves.

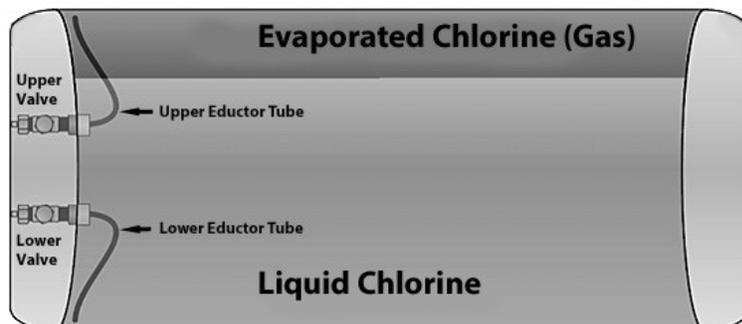
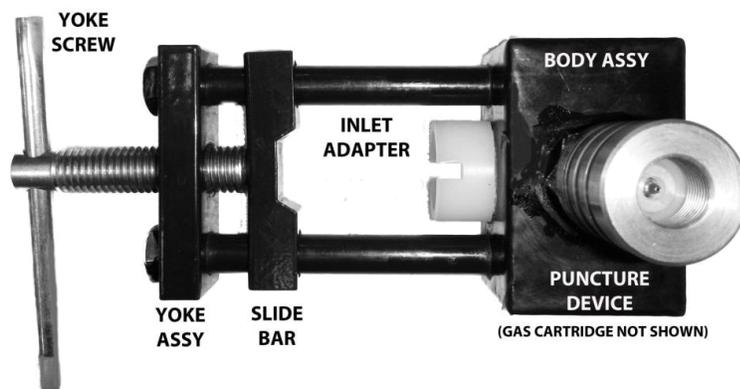
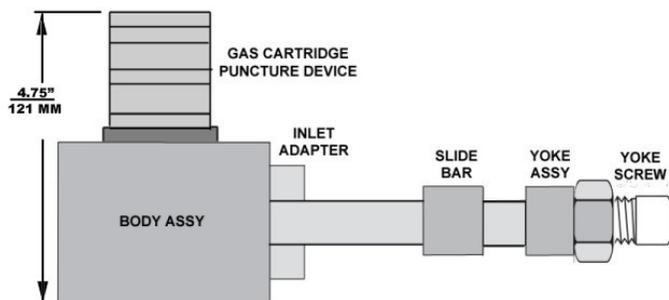
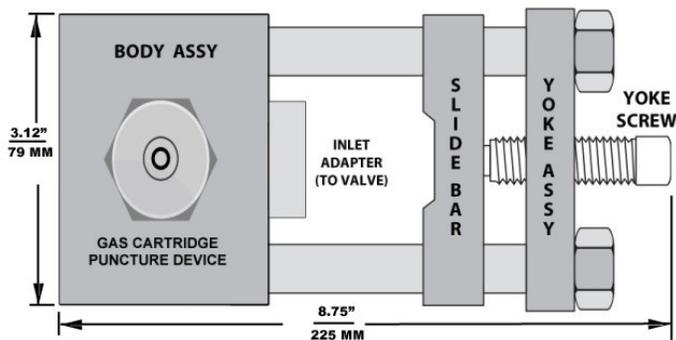


Figure 2 - Cutaway view of Chlorine Ton Container



CHLOR-CLEAR DIMENSIONS & COMPONENTS

EASY TO OPERATE

1. Remove the empty ton container from service.
2. Place the new ton container into service position.
3. Attach the CHLOR-CLEAR™ assembly to the ton container valve.
4. Install the Nitrogen gas cartridge into the CHLOR-CLEAR™ assembly by screwing it into the puncture device until it bottoms out.
5. Open the ton container valve counterclockwise one-quarter ($\frac{1}{4}$) to one-half ($\frac{1}{2}$) turn to allow Nitrogen gas to flow into the ton container.
6. Wait approx. THREE (3) seconds for the pressure to equalize.
7. CLOSE the ton container valve clockwise, fully.
8. Remove the CHLOR-CLEAR™ assembly from the ton container valve.
9. Remove the depleted Nitrogen gas cartridge from the puncture device and discard.
10. Place gas chlorinator vacuum regulator or flexible connector onto the ton container gas valve.

SPECIFICATION

The chlorine ton container gas valve eductor tube clearing device shall be the SUPERIOR CHLOR-CLEAR™ Liquid Chlorine Eductor Tube Evacuator, Model TCC-1, manufactured by Chemical Injection Technologies, Inc., Ft. Pierce, Florida, USA.

The chlorine ton container gas eductor tube clearing device shall consist of a positive, yoke type chlorine gas valve connector for directly mounting the CHLOR-CLEAR™ assembly onto the upper (gas) valve of the ton container; a non-corroding PVDF inlet adaptor to mate with the valve; a stainless steel nitrogen cartridge puncture device; and a check valve to prevent escape of chlorine gas in the event that the nitrogen cartridge is removed prior to closing the ton container chlorine gas valve.

The CHLOR-CLEAR™ device shall evacuate any liquid chlorine and impurity residues from the gas eductor tube prior to placing the chlorine gas feeding equipment into service.

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