



1044 S.E. Dixie Cutoff Road
Stuart, Florida 34994-3436

APPLICATION / INSTALLATION DATA SHEET

SWIMMING POOL GAS CHLORINATOR INSTALLATIONS

PRESSURE FILTRATION SYSTEM

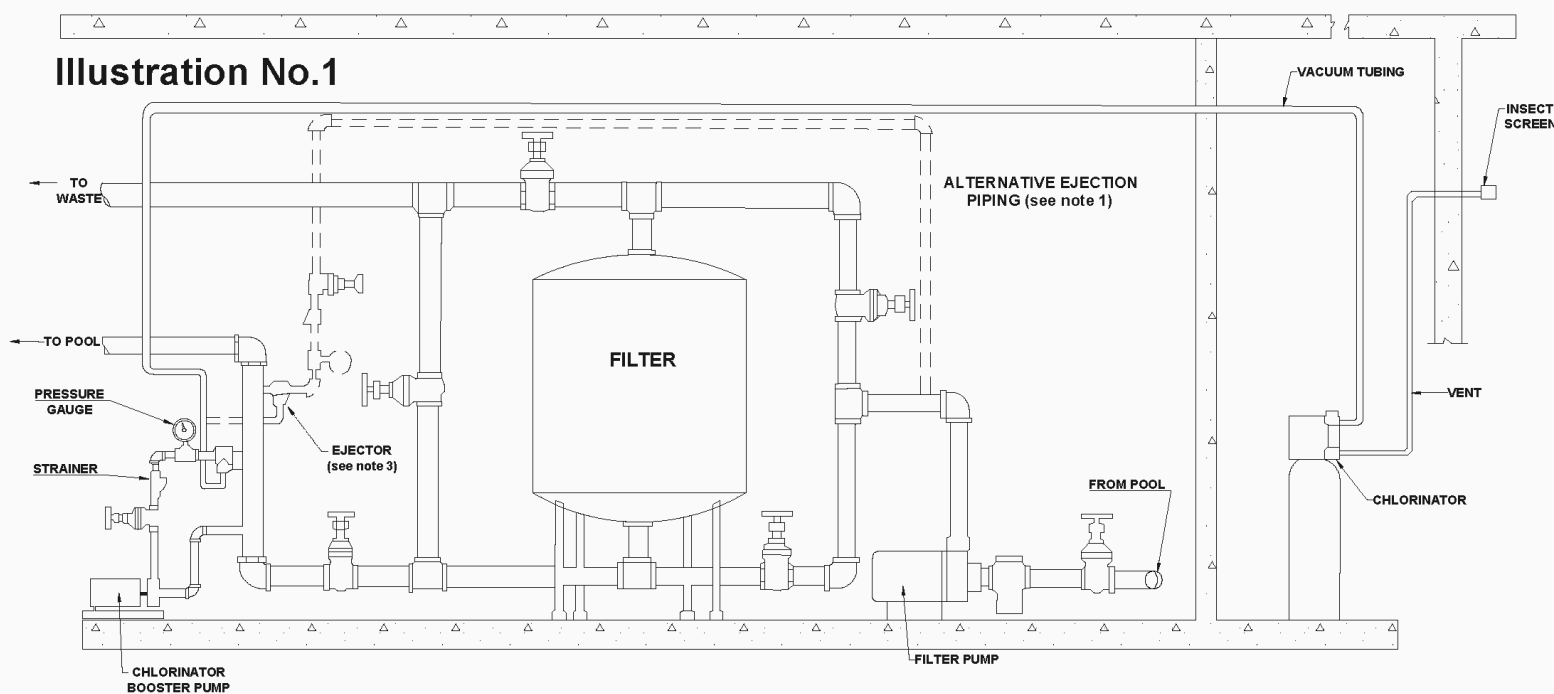
In a pressure filtration system, it is recommended that chlorine be added to the swimming pool return water line (after the filter). In order to operate a gas chlorinator, sufficient vacuum must be created in a water-operated venturi, contained in the ejector.

Vacuum is created using a differential in water pressure across the venturi (or nozzle), operating the ejector.

Water and chlorine gas are mixed in the ejector, and the resulting chlorine solution is diffused into the pool water return piping (See NOTE 3). The ejector also contains a check valve to prevent water from entering the gas system when the ejector is not operating (not producing vacuum).

The differential water pressure to operate the ejector in a pressure filter system is usually created by using a small booster pump (See "Installation Precautions"). Regal Systems, Inc. DBA Chlorinators does not recommend installing the ejector in the filter pump suction line.

Illustration No.1

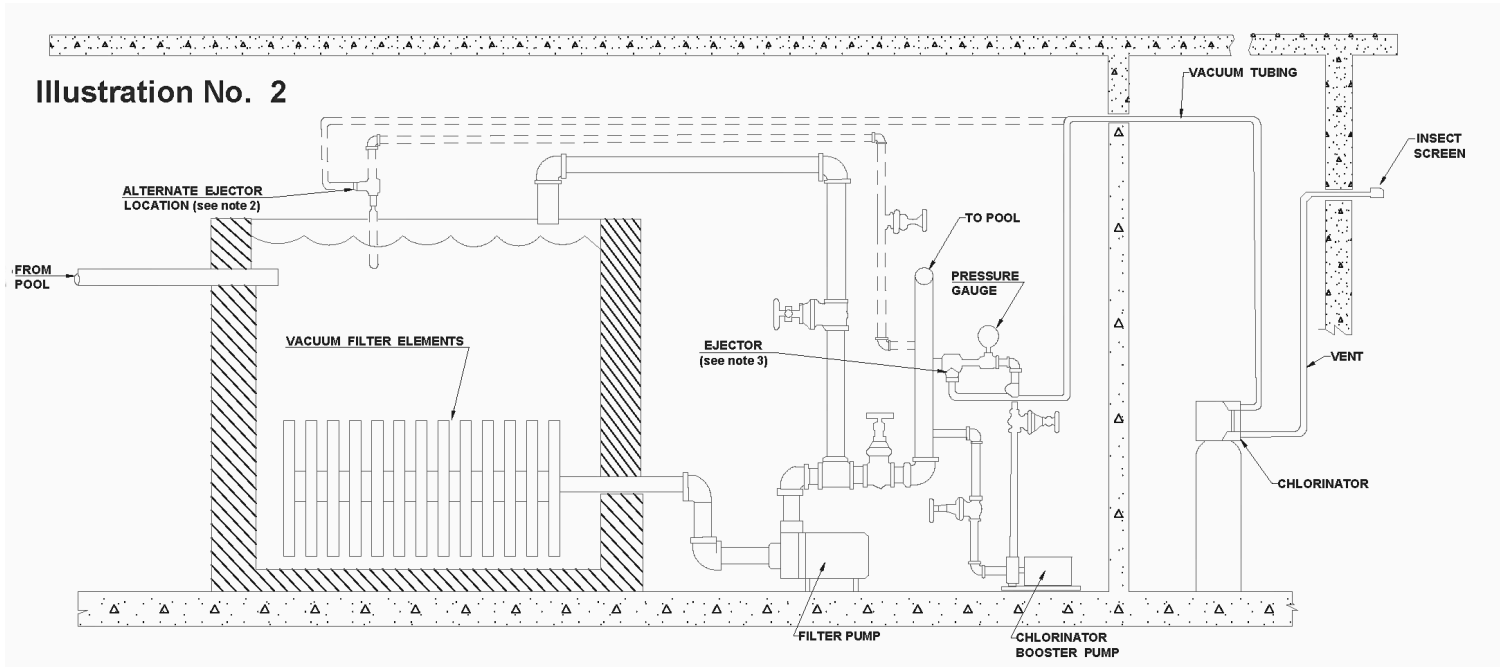


NOTE 1: Some pools may have sufficient pressure drop available across the filter to utilize this differential for ejector operation. Before using this installation technique, a complete study of the system hydraulics and chlorine feed rate are required, since the differential pressure across the filter will change as the filter is used.

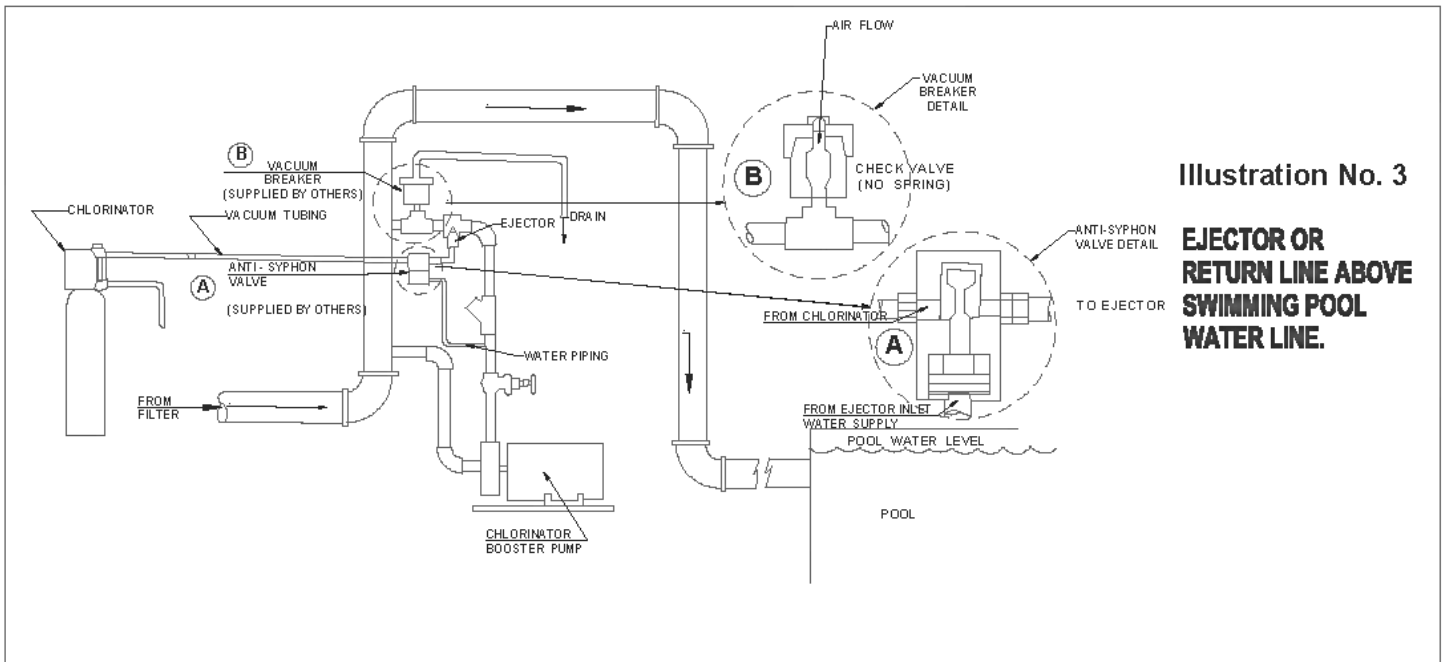
VACUUM FILTRATION SYSTEM

In a vacuum filtration system, there are two generally recommended installation techniques, both of which are shown in Illustration No. 2. The first uses a separate booster pump to operate the ejector in the pool water return line, as in a pressure filtration system.

The second technique utilizes the discharge pressure from the filter pump to operate the ejector and feed the chlorine solution into the vacuum filter tank. Most vacuum filter systems will have sufficient pressure in the discharge to create the necessary differential in the ejector nozzle to operate the chlorinator this way.



NOTE 2: When utilizing the filter pump discharge to operate the ejector, care must be taken to ensure that water does not pass through the ejector when re-coating the filter elements. The best way to ensure this is to tap the ejector water supply line into the pool water return piping, **after** the valve used to isolate the filter pump from the pool when coating the filter elements. If this is not possible, a valve must be installed in the ejector water supply line and shut off when coating the filter elements.



NOTE 3: When the ejector or any part of the return system is plumbed **above the pool water line**, there is a likelihood that an “ARTIFICIAL VACUUM” or “SIPHON” may be created by the weight of the water above the pool level, seeking to return to the pool water level when the filter system is turned off. If this condition exists, the gas chlorinator installation must be provided with either an anti-siphon device (**A** - supplied by others), or a vacuum breaker (**B** - supplied by others), to prevent raw chlorine gas from being drawn into the system and then forced into the pool area when the filter system is turned on.

- A. Anti-Siphon Secondary Check Valve** (supplied by others) - this device is placed in the chlorine gas vacuum line. It is a special, spring opposed, normally closed valve which uses water pressure from the ejector water supply line to open. The amount of ‘positive’ water pressure necessary to open is pre-set, depending on system operating condition. The anti-siphon valve will not allow chlorine gas to be drawn into the system unless there is a specific, positive pressure in the circulating system. The anti-siphon valve also acts as a “backup” or secondary check valve for the chlorinator.
- B. Vacuum Breaker** (supplied by others) - a check valve may be installed between the ejector discharge and the point of chlorine solution injection. The check valve is installed so that it closes tightly when pressure is applied from the circulating system, but opens when an “artificial vacuum” or “negative head pressure” is present, allowing air to enter the system. This prevents the “artificial vacuum” from building up and chlorine gas from being drawn into the return piping. Either a non-spring loaded ball check valve or springless diaphragm check valve may be used, with minimum size of $\frac{3}{4}$ inches. All materials must be capable of withstanding high concentration chlorine solution, and a drain line must be provided.

INSTALLATION PRECAUTIONS

1. The booster pump must be wired so that it can only be energized when the filter pump is in operation.
2. Piping of the ejector and/or wiring of the booster pump should be in such a manner that chlorine solution cannot be injected into a pipe or any portion of the circulating system that does not have water flowing through it. The booster pump circuit must be de-activated during backwash and waste cycles... If system pressure differentials are used to operate the ejector, the valves in the ejector supply piping must be shut off.