



Anti-Siphon Ejectors **Up to 2,000 PPD (40 Kg/h)**

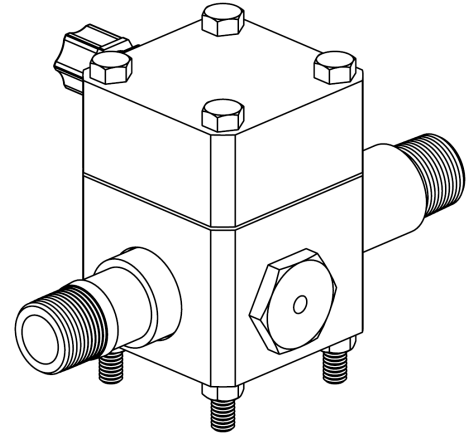
If the water piping system could possibly experience a siphon condition when the system is idle, then an Anti-Siphon ejector is used to break the siphon vacuum and prevent chemical from unintentionally being drawn into the system.

A siphon vacuum may occur in systems where:

1. The ejector solution line drains into an open basin.
2. The injection point goes into a pipe that drains during shutdown.

The Hydro Instruments anti-siphon ejector consists of a normal ejector check valve body assembly with an added anti-siphon valve, a specialized ejector nozzle specific for use with the anti-siphon ejector and a tail piece for connection to the solution line.

Hydro Instruments offers anti-siphon ejectors Chlorine and Sulfur Dioxide gases up to 2,000 PPD (40 Kg/h) and for Ammonia up to 500 PPD (10 Kg/h).



Operation

The anti-siphon ejector is provided with an anti-siphon valve for applications where a siphon vacuum may exist when the process is stopped to prevent the drawing of gas into an empty process.

- The anti-siphon valve will open at < 1 " Hg vacuum at the ejector inlet.
- Siphon vacuum must not exceed 5" Hg. An additional vacuum breaker may be required if the siphon vacuum exceeds this limit.
- The anti-siphon valve may weep a little water at very low pressures (< 5 PSI at ejector inlet).
- Nozzle selection—Refer to the ejector curves/tables in the corresponding Hydro Instruments manual.

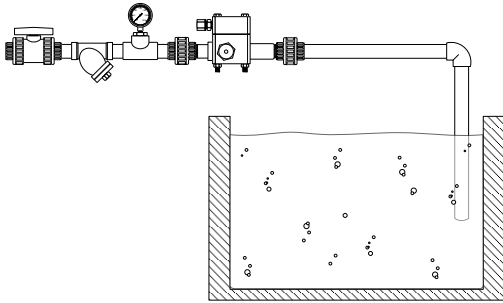
Applications

- Anti-siphon ejectors are well suited for swimming pool applications and in some areas are required.
- Any installation where a pressurized pipeline will or can drain and pull a vacuum at the point of chemical solution injection.
- Injection into an open basin or tank (i.e. clearwell or contact chamber) where the ejector is above the water level.



Anti-Siphon Ejector Examples

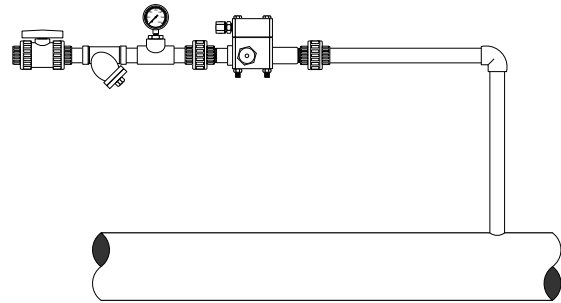
Figure 1



If the solution line can drain when the ejector water supply is turned off, the solution line could then fill with gas due to the siphon created. As the basin or pool is drained more gas could be drawn into the solution line and could escape if the water level gets low enough.

Important: Chemical containers should be closed before any pool or basin is drained to avoid such conditions regardless of whether an anti-siphon ejector is used.

Figure 2



If the pressurized water main can drain due to gravity then a siphon could be created. As a result gas could continue to feed until the vacuum is satisfied. A period of over chlorination will occur when the supply water to the ejector is turned back on and piping corrosion damage could occur over time.

Installation

The following instructions are meant to supplement the gas chlorination system instruction manual. You must read the related gas chlorination system manual before continuing.

1. Installing the anti-siphon ejector:
 - PVC unions with Viton O-ring for 3/4" and 1-1/4" ejectors or flanges with Viton gasket for larger 2" ejectors are recommended for ease of installation.
NOTE: Make sure that when the unions are undone that the capture nut will stay with the ejector.
 - If using a booster pump the ejector should be installed downstream at a sufficient distance (approximately 5ft. or more) so that chlorinated water is not re-circulated through the booster pump.
 - On the water inlet side to the ejector nozzle it is recommended that the following should be installed: a water inlet valve, a Y-strainer, and a pressure gauge.
2. Testing the anti-siphon ejector for sufficient supply pressure to operate the ejector:

NOTE: The vacuum regulator should not be connected at this time.

 - If operating with system pressure (no booster pump)—Open the water inlet valve to the ejector and feel for suction (with your hand or finger) at the vacuum fitting or union on the top of the ejector.
If using a booster pump—Open the water inlet valve to the ejector and start the booster pump. The pressure gauge should indicate a sufficient boost and there should be a strong vacuum at the fitting on the top of the ejector.
 - If the ejector has tested satisfactorily continue installation as prescribed in the O&M manual.
3. When the system is shut down, should a siphon effect exist at the ejector you may feel a slight vacuum at the anti-siphon valve.