



Water Treatment Products

Hydro Instruments has been manufacturing highest quality gas chlorination and sulfonation equipment since 1978. A commitment to quality, safety and convenience sets **Hydro Instruments** apart from its competition. We also manufacture equipment for feeding sulfur dioxide, ammonia, and carbon dioxide gases. Some of the reasons why you can feel and see the difference with **Hydro Instruments** are outlined below.

Quality

With **solid machined parts**, designed with **heavy wall thickness**, it is clear to see that **Hydro Instruments** makes the most durable gas chlorination and sulfonation equipment on the market. Many companies cut cost by using injection molded body parts. Hydro Instruments parts are precision **machined from only the finest materials** for use with chlorine, sulfur dioxide, ammonia, and carbon dioxide gases. Materials are selected for maximum chemical resistance, durability, & resistance to cracking.

Safety

Hydro Instruments makes safety the highest concern. Here are three points, which set **Hydro Instruments** apart from the competition:

1. Durable designs and highest quality machined parts maximize safety by avoiding cracks and breakage.
2. At **Hydro Instruments** a skilled technician follows a rigorous testing procedure for each and every piece of equipment.
3. Other brands rely upon O-Rings to prevent pressurized gas from leaking into the room while the **Hydro** vacuum regulators incorporate a unique design making **Hydro** the only brand to have no such pressurized leak path. (See diagram to right center.)

Convenience

Hydro Instruments makes every effort to maximize the convenience of our customers. This includes both designing our equipment for ease of operation and offering the best customer support. Examples of our commitment in each area are:

Ease of Operation: Each **Hydro Instruments** Vacuum Regulator is supplied with a **twisted cylinder wrench** that allows comfortable operation of both the **cylinder valve** and the **vacuum regulator yoke**.

FAST SERVICE: **Hydro Instruments** maintains a large inventory that allows us to **ship spare parts, components, and complete systems within 24 hours**. Most orders ship the same day.

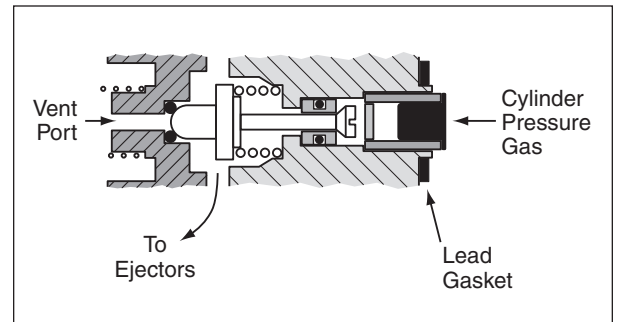
Chlorine & Sulfur Dioxide Gas Equipment

QUALITY



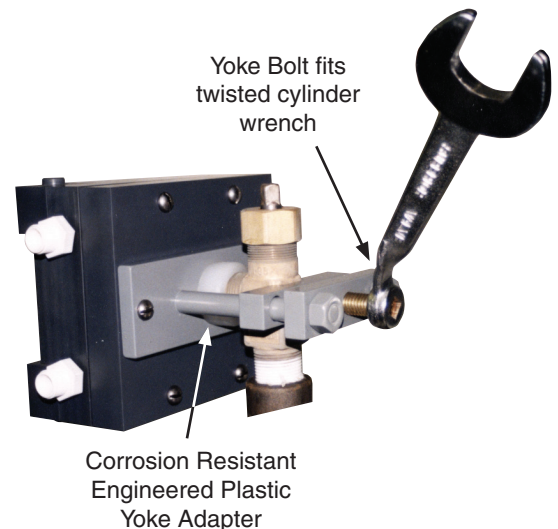
Rugged machined parts.

SAFETY



*No pressurized leak path to the room.
Any leak must go to vent.*

CONVENIENCE



Chlorine Specifications

Vacuum Regulator

1. Each regulator shall have a spring opposed two layer ECTFE (Halar) diaphragm which controls vacuum and closes tight upon loss of vacuum.
2. Each vacuum regulator shall have machined PVC bodies, Tantalum springs, and a solid Silver inlet valve stem
3. Each regulator shall incorporate a pressure relief (vent) valve with separate ports for chlorine feed and chlorine vent.
4. Connections shall be provided for tubing vented gas away from the pressure relief (vent) port of each vacuum regulator to atmosphere outside the building. The outside end of the vent tubing shall be equipped with an insect screen.
5. Each regulator shall be equipped with an inlet filter to remove particulate matter from the gas before it enters the inlet safety valve.
6. Each regulator shall include a flow meter tube to indicate feed rate and which cylinder is in use.
7. Each regulator shall include a mechanism to indicate when the cylinder is empty and requires replacement.
8. The design of the regulators shall not rely on any O-ring(s) to prevent pressurized chlorine leaks, into the room, from the region upstream of the inlet safety valve.

Cylinder or Wall Mounted Option

1. The vacuum regulator(s) shall mount directly on the gas cylinder valve by means of a corrosion resistant and gasketed yoke assembly complying with the standards of The Chlorine Institute, Inc.

Ton Cylinder Mounting Option

1. The vacuum regulator(s) shall mount directly on the gas cylinder valve, of the ton cylinder, by means of a corrosion resistant and gasketed yoke assembly complying with the standards of The Chlorine Institute, Inc.
2. The ton mounting yoke assembly shall include a Monel drip leg with 25 watt heater to trap and evaporate any liquid chlorine exiting the ton container valve.

Ejector

1. The ejector(s) shall be the water operated venturi nozzle type. The ejector shall provide the operating vacuum for the chlorination system.
2. The ejector shall incorporate a spring loaded, normally closed check valve to prevent the backflow of water into the chlorine gas equipment. The check valve shall be suitable for back pressures up to a minimum of 145 psi (10 kg/cm²).
3. Ejector check valve shall automatically close upon the loss of vacuum in the Ejector.

Ejector Options

1. The ejector(s) can be ordered with two identical spring loaded check valves for additional back flow protection.
2. For back pressures exceeding 145 psi (10 kg/cm²) the ejector(s) must be fitted with high pressure support plates.

Automatic Switchover Module

1. A separate mechanical device shall be provided to automatically switch from empty cylinder to the standby cylinder. The switchover module shall be suitable for wall mounting.

Remote Meter

1. A gas flow meter shall be provided to indicate the gas flow rate. The gas flow meter shall be suitable for wall mounting.
2. This gas flow meter shall be equipped with a V-Notch control valve for manual feed rate adjustment.
3. Flow meter tubes shall indicate flow rates up to _____ and down to a minimum of 1/20 of the maximum value.

Ordering Information

Gas: Chlorine, Sulfur Dioxide

Capacity (maximum feed rate):

English: 1.5, 4, 10, 25, 50, 100, 200, 250, 500, 1000, 2000 PPD
Metric: 75, 200, 500, 1000 & 2000 gr/hr
4, 5, 10, 20 & 40 kg/hr

Mounting: Direct cylinder, wall, or ton

Power (ton only): 120 or 240 VAC or 24 VDC (heater)

Automatic Switchover: Yes or No

Number of Feed Points: Specify capacity of each

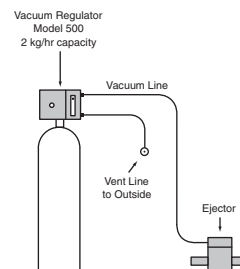
Optional: Double check valve ejectors?
High pressure ejectors?

Hydro Model System

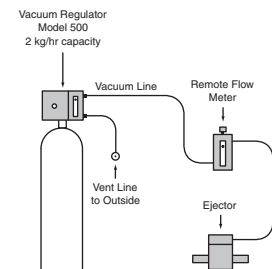
0-100 PPD 0-2 kg/hr	Series 500
250 PPD 5 kg/hr	Series 200
500 PPD 10 kg/hr	Series 700/750
1000/2000 PPD 20/40 kg/hr	Series 20/40

Example for Up to 100 PPD (Series 500)

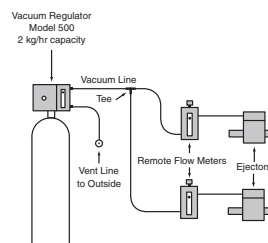
Simple System



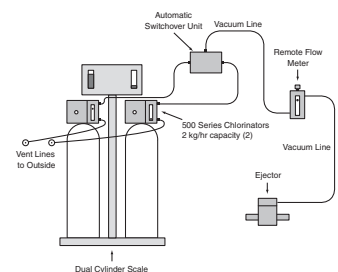
Remote Feed System



Additional Feed Point



Switchover System



INSTRUMENTS



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