



600 Emlen Way
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Specifications for the Hydro Model 501 Gas Chlorination System **Specification 501**

HYDRO GAS CHLORINATION SERIES 501 for 1.5 to 100 PPD CHLORINE FEED

1.01 GENERAL

1.01.1 Completeness

The system shall be complete with all components, equipment, and appurtenances.

1.01.2 Quality Assurance

All materials and components shall be new and unused of first quality by well-known manufacturers. Inferior materials or components shall not be allowed.

1.02 MANUFACTURER

The manufacturer shall be Hydro Instruments, Telford, PA, USA or approved equal. The chlorination system shall be Hydro Instruments Model 501.

1.03 CHLORINATION SYSTEM

1.03.1 General

1. The Chlorination system shall be a vacuum operated, solution feed, for dispensing chlorine gas from industry standard one hundred fifty (150) pound cylinders.
2. The Chlorination system shall have a chlorine gas feed capacity of not less than 100 pounds per day (2 kg/hr).
3. The system shall convey the gas under vacuum from the cylinder mounted vacuum regulator through a wall mounting remote flow meter to the ejector assembly.
4. The wall mounting remote flow meter will allow manual feed rate control.
5. The system design shall permit the entire system to be vacuum checked in the field without the use of special tools.
6. The system shall be constructed of materials suitable for wet or dry chlorine gas service. Vacuum regulator inlet valve springs shall be tantalum alloy.

1.03.2 Cylinder Mounted Vacuum Regulator

1. The one (1) vacuum regulator 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.
2. The vacuum regulator body parts shall be constructed of solid machined PVC material for maximum cracking resistance.
3. The regulator shall have a spring-opposed diaphragm that controls vacuum and closes tight upon loss of vacuum.
4. The regulator shall incorporate a pressure relief (vent) valve with separate ports for chlorine feed and chlorine vent.
5. Connections shall be provided for tubing vented gas away from the pressure relief (vent) port of the vacuum regulator to atmosphere outside the building. The outside end of the vent tubing shall be equipped with an insect screen.
6. The regulator shall be equipped with an inlet filter to remove particulate matter from the gas before it enters the inlet safety valve.
7. The regulator shall include a flow meter tube to indicate feed rate.
8. The regulator shall include a mechanism to indicate when the cylinder is empty and requires replacement.
9. The design of the regulator 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.

1.03.3 Gas Flow Meter

1. The one (1) 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 control valve for manual feed rate adjustment.
3. Flow meter tubes shall indicate flow rates up to 100 pounds per day and down to a minimum of 1/20 of the maximum value.

1.03.4 Ejector

1. The one (1) ejector shall be water operated venturi nozzle type. Ejectors shall provide the operating vacuum for the chlorination system.
2. 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 140 psi.
3. Ejector check valve shall automatically close upon the loss of vacuum in the Ejector.