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## **Specifications for the Hydro Model 3X4C Gas Chlorination System**

HYDRO GAS CHLORINATION SERIES 3X4C for up to 500 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 Series 300.

### **1.03 CHLORINATION SYSTEM**

#### **1.03.1 General**

1. The Chlorination system shall be a vacuum operated, solution feed type for dispensing chlorine gas from industry standard one Ton (2000 pound) chlorine containers.
2. The Chlorination system shall have a chlorine gas feed capacity of up to 500 pounds per day.
3. The system shall convey the gas under vacuum from the container 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, of the Ton container, by means of a corrosion resistant and gasketed

yoke assembly complying with the standards of The Chlorine Institute, Inc.

2. The inlet adapter shall be constructed of corrosion resistant Hastelloy C material
3. The vacuum regulator body parts shall be constructed of solid machined PVC material for maximum cracking resistance.
4. The regulator shall have a spring-opposed diaphragm that controls vacuum and closes tight upon loss of vacuum.
5. The regulator shall incorporate a pressure relief (vent) valve with separate ports for chlorine feed and chlorine vent.
6. 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.
7. The Ton mounting yoke assembly shall include a drip leg with 25-Watt heater to trap and evaporate any liquid chlorine exiting the cylinder valve.
8. The regulator shall be equipped with an inlet filter to remove particulate matter from the gas before it enters the inlet safety valve.
9. The regulator shall include a flow meter tube to indicate feed rate.
10. Flow meter tubes shall indicate flow rates up to 500 pounds per day and down to a minimum of 1/20 of the maximum value.
11. The regulator shall include a mechanism to indicate when the container is empty and requires replacement.

#### 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 solid silver control valve for manual feed rate adjustment.
3. Flow meter tubes shall indicate flow rates up to 500 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.