600 Emlen Way
Telford, PA 18969

Specifications for the Hydro Model 3105C Gas Chlorination System

Specification 3105C

HYDRO GAS CHLORINATION SERIES 3105C for (20 kg/hr) 1000 PPD Cl_2 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 3105C.

1.03 CHLORINATION SYSTEM

1.03.1 General

1. The Chlorination system shall be a vacuum operated, solution feed, and automatic switchover type for dispensing chlorine gas from two chlorine gas pressure manifolds.
2. The Chlorination system shall have a chlorine gas feed capacity of not less than 1000 pounds per day (20 kg/hr).
3. The system shall convey the gas under vacuum from the wall mounted vacuum regulators to the ejector assembly.
4. The chlorination system shall automatically switch the gas supply from an empty chlorine manifold to a full one.
5. The system shall be constructed of materials suitable for wet or dry chlorine gas service.
6. All vacuum connections shall be 1” Schedule 80 PVC threaded Unions.

1.03.2 Manifold Mounted Vacuum Regulators

1. The two (2) vacuum regulators shall each include a panel for wall mounting, a drip leg with heater, and a diaphragm protected pressure gauge. It shall include a ¾” Union Flange for connection to the chlorine gas manifold.

2. The vacuum regulator body parts shall be constructed of solid machined PVC material for maximum durability and cracking resistance.
3. The regulator shall have a spring-opposed diaphragm, which controls vacuum and closes tight upon loss of vacuum.
4. Vacuum regulator springs shall be made of Tantalum alloy.
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 regulator shall be equipped with an inlet filter to remove particulate matter from the gas before it enters the inlet safety valve.
8. The regulator shall include a diaphragm protected, pressure gauge that will indicate if there is chlorine gas pressure in the manifold.

1.03.3 Automatic Switchover Module

1. One (1) 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.
2. The device shall operate entirely by vacuum with no need for external adjustments.

1.03.4 Gas Flow Meter

1. 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 1000 pounds per day and down to a minimum of 1/20 of the maximum value.

1.03.5 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 backpressures up to a minimum of 100 psi.
3. Ejector check valve shall automatically close upon the loss of vacuum in the Ejector.
4. The ejector shall have 2” Flange Connections with Van Stone four bolt pattern.