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**Specifications for the Hydro Model WR-10000**  
**Vacuum Regulator**  
**Specification WR-10000**

**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 vacuum regulator shall be Hydro Instruments Model WR-10000.

**1.03 SPECIFICATIONS**

**1.03.1 General**

1. The vacuum regulator shall be a vacuum operated, solution feed type for dispensing chlorine gas from a chlorine gas pressure manifold.
2. The vacuum regulator shall have a chlorine gas feed capacity of not less than 10,000 pounds per day (200 kg/hr).
3. The vacuum regulator shall be constructed of materials suitable for wet or dry chlorine gas service.

**1.03.2 Vacuum Regulator**

1. The vacuum regulator shall include a panel for wall mounting.
2. The vacuum regulator shall include a diaphragm protected compound vacuum/pressure gauge with Tantalum diaphragm and Hastelloy C process connection.
3. The pressurized steel inlet piping shall include a ¾" or 1" inlet Union Flange for connection to the outlet of the chlorine gas manifold.
4. The vacuum outlet shall be 2" Schedule 80 PVC socket.
5. The vacuum regulator body parts shall be constructed of solid machined PVC material for maximum durability and cracking resistance.

6. The vacuum regulator shall have a spring-opposed diaphragm assembly, using a two layer Halar diaphragm, which controls vacuum and closes tight upon loss of vacuum.
7. All vacuum regulator springs shall be made of Tantalum alloy.
8. The vacuum regulator inlet safety valve stem shall be constructed of solid Silver and shall seal against a machined PTFE valve seat.
9. The vacuum regulator shall incorporate a dedicated pressure relief (vent) valve with separate ports for chlorine feed and chlorine vent. The vent valve shall open to relieve pressure at 1 PSI or less.
10. Connections shall be provided for tubing vented gas away from the pressure relief (vent) port of the vacuum regulator to atmosphere outside the building or to scrubber intake. The outside end of the vent tubing shall be equipped with an insect screen.
11. The vacuum regulator shall be equipped with a Silver screen type inlet filter to remove particulate matter from the gas before it enters the inlet safety valve. The silver filter screen shall have an effective area of 4 square inches or larger for longer life between servicing. The inlet filter shall be designed so that the clean out filter cap shall be at the bottom and impurities will fall down to the cap for easy cleaning.
12. The vacuum regulator can optionally be provided with a drip leg with 25 Watt heater in either 24VDC, 115VAC, or 230VAC.