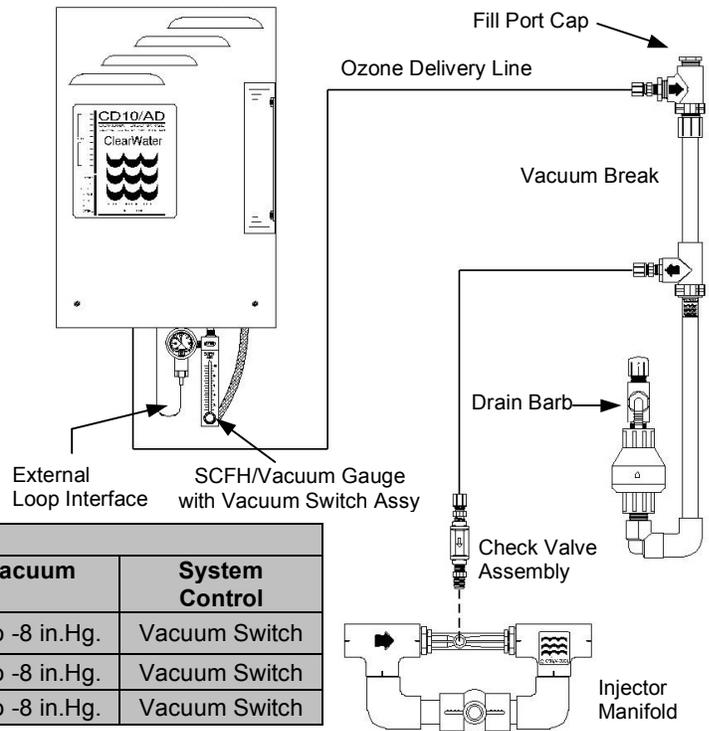


Apex II and III Quick Installation Guide

Product Description

The ClearWater Tech, Apex Packages are complete and fully integrated for easy installation. The Apex II system includes the CD10/AD ozone generator with internal air dryer for output efficiency, a variable 0-100% ozone output control, with a LED display. The Apex III system includes the CD12/AD or M15/AD ozone generator with internal air dryer. All systems include a positive atmospheric Vacuum Break for water back flow prevention, an Injector Manifold with Check Valve Assembly for mass transfer of ozone in solution, and a SCFH (Standard Cubic Feet Per Hour) and Vacuum Gauge Assembly for accurate operating parameter measurements. This gauge assembly also includes a normally open Vacuum Switch that connects to the External Loop of the ozone generator. When vacuum is sensed this vacuum switch will close creating continuity through the External Loop and initiate ozone production, similarly when vacuum is not sensed the vacuum switch will open interrupting ozone production. A booster pump, contact vessel and off-gas vent not included in this system may also be required.

Shown: Apex II System



Specification Chart

System	Ozone Generator	Ozone Output	Vacuum	System Control
APEX II	CD10/AD	1.3g/h @ 4 SCFH 1% by weight	-3 to -8 in.Hg.	Vacuum Switch
APEX III	CD12/AD	2.8g/h @ 7 SCFH 1% by weight	-3 to -8 in.Hg.	Vacuum Switch
APEX III	M15/AD	2.8g/h @ 7 SCFH 1% by weight	-3 to -8 in.Hg.	Vacuum Switch

Quick Install

NOTE: The CD10/AD, CD12/AD, and M15/AD ozone generators are equipped with an internal heat regenerative dry air system. It is recommended that the unit be energized for 24 hours prior to installation. This will allow the dryer to reach operating temperature and vaporize any moisture that may have built up in the sieve beds.

- Step 1:** Unpack and placement. Mount ozone generator to a suitable flat vertical surface.
- Step 2:** Plug the ozone generator into a main power source (CD10/AD 90-250VAC 47-63Hz., CD12/AD 90-240VAC 47-63Hz., M15/AD 120/240VAC 50/60Hz.) **NOTE: The ozone generator must be energized by a constant unswitched power source.**
- Step 3:** Mount the SCFH/Vacuum Gauge with Vacuum Switch Assembly to the ozone generator according to the installation directions provided.
- Step 4:** Mount Vacuum Break to a suitable flat vertical surface, using the Clic® clamps provided.
- Step 5:** Install the side stream booster pump, if required. The booster pump will require separate dedicated power.
- Step 6:** Install the Injector Manifold and thread the Check Valve Assembly into the Venturi. To prepare for start-up close the by-pass valve half way. This will create vacuum at the injector as soon as the water is flowing through the injector manifold.
- Step 8:** Install the contact vessel and off-gas vent (if so equipped).
- Step 9:** Remove Vacuum Break Fill Port Cap. Fill the Vacuum Break with water through fill port until the water spills out of the drain barb. Replace fill port cap.
- Step 10:** Connect the Teflon® ozone delivery line; from the ozone generator to the vacuum break, then from the vacuum break to the injector manifold check valve assembly.
- Step 11:** An external 4-20mA control signal may be used to control ozone output. According to the 4-20mA control device I/O Manual, wire in the Orange (+) and Purple (-) leads (located under the CD10/AD and CD12/AD) to the 4-20mA controller. **NOTES: The 4-20mA signal will over-ride the Manual Ozone Output Control setting. This feature is only available with the CD10/AD and CD12/AD.**
- Step 12:** The External Loop (located under the ozone generator) must be removed. Install the two-position male connector of the Vacuum Switch (located on the gauge assembly) into the two-position female connector located on the chassis of the ozone generator. **NOTE: The term 'dry contact' means that this loop does not supply output nor except input voltages.**
- Step 13:** Switch the main power switch of the ozone generator to the 'ON' position (if not already done so).
- Step 14:** Apply main power to the booster pump and/or side stream booster pump to initiate water flow.
- Step 15:** Make final adjustments to the by-pass valve on the injection manifold and needle valve of the SCFH/Vacuum gauge with Vacuum Switch Assembly to set the SCFH, while at the same time achieving the correct vacuum (middle of the 'Green Zone'). **NOTE: See Specification Chart above for the normal operating parameter settings.**



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