



**ZERO AIR GENERATOR MODEL 7000
INSTRUCTION MANUAL**

REVISION 6
January 2013

UNPACKING

Connect the intake filter to the Air In port as shown below. Use Teflon tape on filter thread if not supplied on the fitting.



POWER

The ZAG is electrically configured for one voltage and frequency. These electrical parameters are specified by the user when ordering the model 7000. Connect the system to 110-120 60 Hz, 220-240 VAC 50 Hz or 60 Hz, depending upon the electrical configuration of the system.

OPERATION

Power the system on, adjust the pressure to 25-30 PSIG (or lower) and regulate the output flow for approximately 5-15 LPM. The pressure will take approximately one minute to reach the regulated pressure after the power switch is activated. The system must burn in for approximately 24 hours to produce dry gas. Once operating the system will produce up to 20 LPM flow at 25 PSI, 15 LPM for 220 VAC systems. The ATM dew point of the gas will be as high as -10°C at 20 LPM flow. Connect a line to the drain port and route to a water collection container. Depending upon ambient humidity, water will exit this port via the coalescing filter.

IMPORTANT: during installation, do not block the cooling vents on the top front of the cover. These vents exhaust the heat dissipated by the internal components.

NOTE: The first stage output regulator is set for 35 PSIG. This regulator is mounted internally behind the front panel. Do not exceed a setting of 30 PSIG on the front panel mounted regulator for normal operation.

ADJUSTING THE OPTIONAL CATALYTIC CONVERTER TEMPERATURE

The system is shipped with a setting of 300°C. The converter can be adjusted as high as 550°C (482°C for 240 VAC systems) for improved efficiency.

1. Press and hold the PUSH TO SET button on the front panel temperature controller.
2. Turn the knob clockwise to increase the temperature setting.



DEW POINT INDICATOR

A color change dew point indicator is now standard on all Environics ZAGs. This indicator enables the user to determine the dryness of the air. Refer to picture on the next page. The dew point indicator is located in the upper right corner of the front panel. When the pneumatic toggle switch is on, less than 1 LPM of air from the ZAG flows through the indicator, exiting from a small hole in the front. The color of the indicator is dark blue when the air is driest. It turns from light blue to purplish when the dew point rises above approximately -10°C. At higher dew points, the color changes to pink and then white at its wettest. When the ZAG is not being used, switch the pneumatic switch off. This will prevent a flow draw on the ZAG which will result in the ZAG pump turning on and off to replenish what is lost through the dew point indicator. Once the significant color change has occurred and a problem has been diagnosed and fixed, it will take approximately 1 hour for the color to change back to blue.

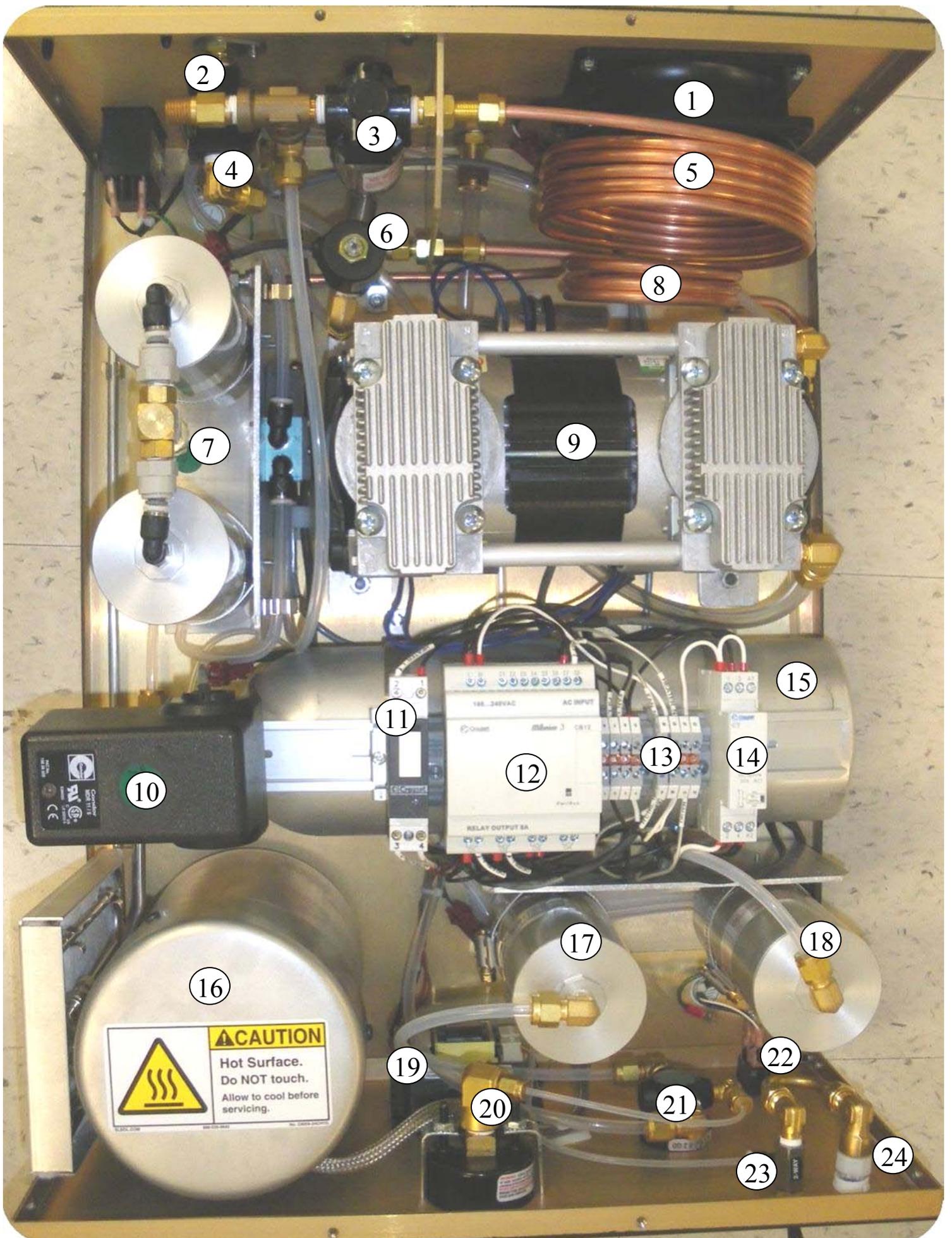


NOTE ON DEWPOINT HYGROMETER OPTION (NOT INSTALLED INTO THIS UNIT)

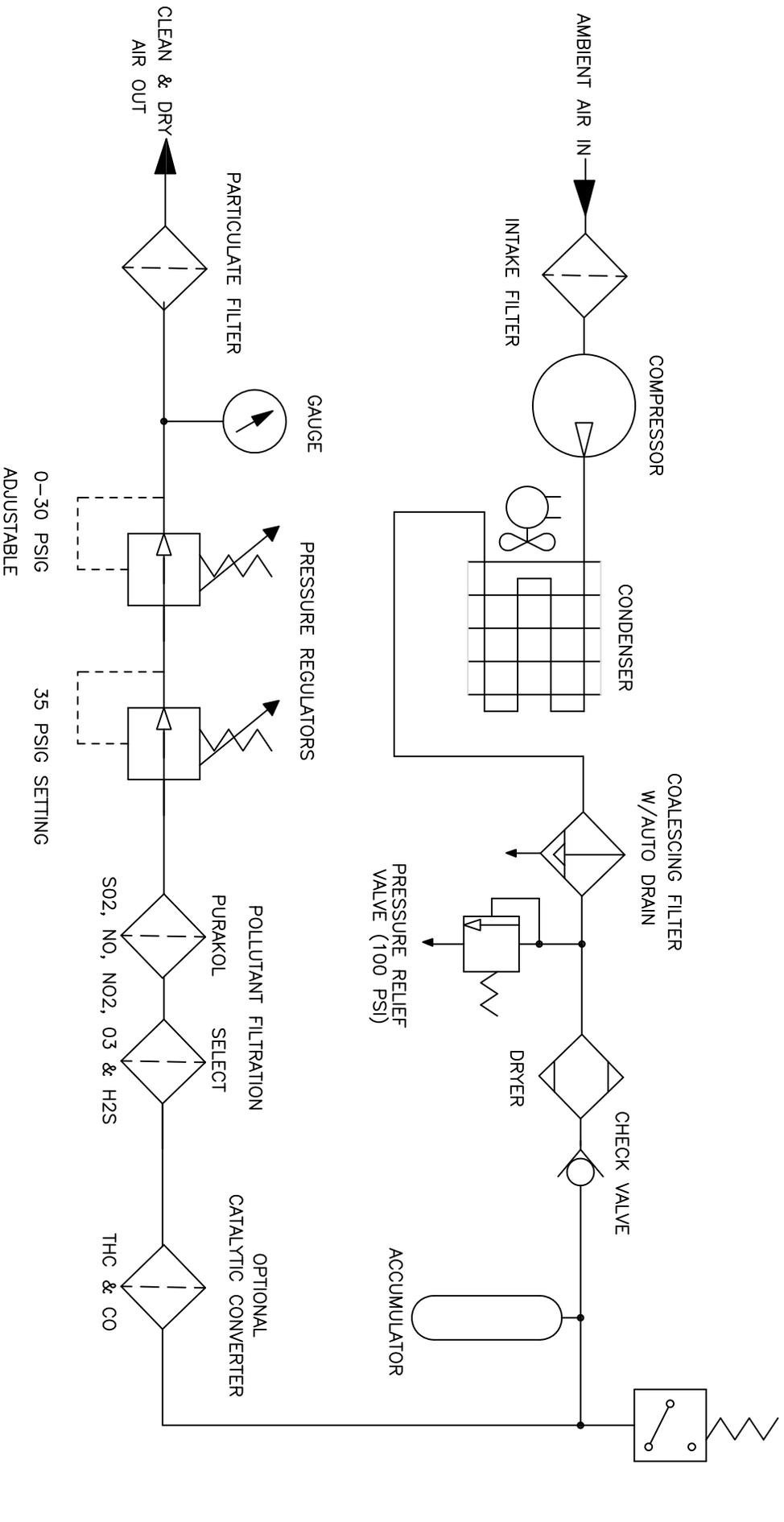
The effectiveness of most PSA dryers relies heavily upon the bleed orifice of the shuttle valve and the cycling of the dryer solenoid valve. In the Environics model 7000, this bleed orifice is .015" to allow approximately 15% of the typical flow rate of the dryer to purge the unused tower. If this orifice becomes clogged or the PSA dryer valve fails, the zeolite material of the dryer will eventually saturate with water vapor, carrying moisture downstream to the porous filter media of the pollutant scrubbers as well as out of the system in the zero gas. Once the dryer has been restored, it takes a substantial amount of time to remove the moisture from the pollutant scrubbers. The optional dew point hygrometer allows for a real time LCD display of dew point as well as the option to use the hygrometer for an external source. The dew point is measured as the gas exits the dryer, giving fair warning of elevated moisture in the gas prior to reaching the pollutant scrubbers. An optional analog output can be added to graph and monitor dew point based on a 0-5 VDC signal.

INTERNAL ZAG COMPONENTS

1. Cooling fan
2. Pressure relief valve (100 PSIG)
3. Coalescing filter
4. Final particle filter (5 micron)
5. Compressor cooling coil
6. Drain valve for coalescing filter (timed interval 80 seconds off 1 second on)
7. PSA heatless dryer (molecular sieve, Zeolite, vents approximately 6 LPM air)
8. Catalytic converter cooling coil
9. Compressor
10. Pressure switch
11. Catalytic converter relay (solid state)
12. Controller
13. Power distribution terminal block
14. Compressor relay (solid state)
15. Pressure vessel (accumulator)
16. Catalytic converter (THC & Co) (optional)
17. Secondary pollutant scrubber (activated carbon, charcoal)
18. Pollutant scrubber/converter (active ingredient Potassium Permanganate)
19. Catalytic converter temperature controller
20. Pressure gauge
21. Pressure regulators (2)
22. Illuminated power switch
23. Pneumatic switch for dew point indicator
24. Dew point indicator



50 - 85 PSIG
PRESSURE SWITCH



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TOLLAND, CT 06094-2805

ZAG P&ID