

OPERATING INSTRUCTIONS

FOR

DEHUMIDIFICATION SYSTEM

MODEL 5461

6/30/06



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1.0 GENERAL

Many applications require a small volume enclosure (less than 20 cubic feet), such as a sealed glove box, cabinet, etc. to be at a humidity level that is less than the prevailing room ambient. The Model 5461 Dehumidification System is designed to reduce the relative humidity level in a chamber to less than 10%. When used with an Automatic Humidity Controller such as the ETS Model 5112, 5100, or 5200, the humidity inside the chamber can be controlled to within $\pm 0.5\%$ R.H. of the setpoint.

2.0 DESCRIPTION

This Dehumidification System utilizes a desiccant to provide the air drying function. A pump draws air from the test chamber and pumps it through a plastic cylinder that contains Calcium Sulfate. The desiccant absorbs any moisture that is in the air. This dried air is then forced back into the chamber. The Calcium Sulfate contains an indicator that turns the normally blue colored desiccant pink as it absorbs moisture. When the entire cylinder turns pink, the cylinder should be replaced.

The desiccant can be renewed approximately ten (10) times before having to be replaced. The granules should be removed from the drying column and spread evenly, one granule deep on a tray. The desiccant should then be heated for approximately one (1) hour at about 200° C (400° F). It should be allowed to cool in an airtight container before refilling the acrylic drying column. The felt filters should also be pre-dried at 100° C (200° F) for about 30 minutes before assembly.

The complete Model 5461 Dehumidification System consists of a desiccator unit, a pump, two 60 inch and two 9 inch lengths of .312" ID plastic tubing plus associated fittings and hardware.

Specifications for the drying unit are as follows:

1. Column is molded acrylic plastic.
2. Dimensions: 2 5/8" O.D. x 11 3/8".
3. Anodized aluminum or molded acrylic cap is fitted with "O-Ring" gasket.
4. Safe for working pressures to 90 psig.
5. Desiccant supports and coil spring are of cadmium plated steel.
6. DRIERITE (Calcium Sulfate) is held firmly in place between felt filters.
7. Connections are for plastic or rubber flexible tubing. Tubing should be held with hose clamps when used under pressure.
8. Contents: 1¼ lbs. of 8 mesh Indicating DRIERITE.

9. Capacity for water vapor up to 50 grams.
10. Flow rate should be 200 liters per hour or 0.1 scfm for maximum efficiency.
11. Air and gases dried up to -100° F dew point.
12. Indicating DRIERITE is non-toxic and non-explosive.

Specifications for the pump are as follows:

1. Capacity (free air) – 1050-1200 cubic inch/minute
2. RPM – 1550
3. Power – 115 VAC/60 Hz, 1.5 Amps
230 VAC/50 Hz, 0.75 Amps

3.0 SET-UP

When used with any ETS 5500 Series Humidity Control Chamber, the hose barbs, and circulating fan (where required) are already installed. For other installations it is recommended that a 32-110 cfm fan be installed to evenly distribute the air within the chamber.

Place the desiccator with the cap at the top next to the chamber. Connect tubing from the upper ¼" hose barb to the pull side of the 5461 for air out. Connect tubing from the push side of the 5641 to the lower barb on the desiccant column and from the top barb of the desiccant column to the lower ¼" hose barb on the chamber for dry air in.

Plug the pump power cord into the DECREASE outlet on the rear of either the Model 5112 or 5100/5200 series Controller. If the pump line cord is equipped with an in-line ON/OFF switch, make sure the switch is in the ON position.

NOTE

A 230 VAC pump must be used with a Controller configured for 230 Volts. The pump will be fitted with a standard North American 3-prong plug to fit into the DECREASE outlet on the rear panel

The System is now ready to dehumidify the test chamber.

4.0 OPERATION

The user does not have to do anything else to operate the system. Total operation will be under the control of the Automatic Humidity Controller.

The user should periodically monitor the status of the desiccator. As the unit absorbs moisture the blue desiccant will turn pink starting at the bottom of the column. Once it has changed color it no longer is effective. The desiccant can either be renewed by heating the desiccant only in an oven per section 2.0 or be replaced.

5.0 WARRANTY

Electro-Tech Systems, Inc. warrants its equipment, accessories and parts of its manufacture to be and remain free from defects in material and workmanship for a period of one (1) year from date of invoice and will, at the discretion of Seller, either replace or repair without charge, F.O.B. Glenside, similar equipment or a similar part to replace any equipment or part of its manufacture which, within the above stated time, is proved to have been defective at the time it was sold. All equipment claimed defective must be returned properly identified to the Seller (or presented to one of its agents for inspection). This warranty only applies to equipment operated in accordance with Seller's operating instructions.

Seller's warranty with respect to those parts of the equipment which are purchased from other manufacturers shall be subject only to that manufacturer's warranty.

The Seller's liability hereunder is expressly limited to repairing or replacing any parts of the equipment manufactured by the manufacturer and found to have been defective. The Seller shall not be liable for damage resulting or claimed to result from any cause whatsoever.

This warranty becomes null and void should the equipment, or any part thereof, be abused or modified by the customer or if used in any application other than that for which it was intended. This warranty to replace or repair is the only warranty, either expressed or implied or provided by law, and is in lieu of all other warranties and the Seller denies any other promise, guarantee, or warranty with respect to the equipment or accessories and, in particular, as to its or their suitability for the purposes of the buyer or its or their performance, either quantitatively or qualitatively or as to the products which it may produce and the buyer is expected to expressly waive rights to any warranty other than that stated herein.

ETS must be notified before any equipment is returned for repair. ETS will issue an RMA (Return Material Authorization) number for return of equipment.

Equipment should be shipped prepaid and insured in the original packaging. If the original packaging is not available, the equipment must be packed in a sufficiently large box (or boxes if applicable) of double wall construction with substantial packing around all sides. The RMA number, description of the problem along with the contact name and telephone number must be included in formal paperwork and enclosed with the instrument. Round trip freight and related charges are the owner's responsibility.

WARNING

WOODEN CRATES MUST NOT BE USED. PACKAGING OF DELICATE INSTRUMENTS IN WOODEN CRATES SUBSTANTIALLY INCREASES THE CONTENT'S SUSCEPTIBILITY TO SHOCK DAMAGE. DO NOT PLACE INSTRUMENTS OR ACCESSORIES INSIDE OTHER INSTRUMENTS OR CHAMBERS. ELECTRO-TECH SYSTEMS, INC. WILL NOT ASSUME RESPONSIBILITY FOR ADDITIONAL COST OF REPAIR DUE TO DAMAGE INCURRED DURING SHIPMENT AS A RESULT OF POOR PACKAGING.

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