Compressed Air Dryer
Models: ACD/SCD

Part Number: 882.03168.00
Bulletin Number: DRY1-600.00
Effective: 03/2014

Write Down Your Serial Numbers Here For Future Reference:

_____ _____

_____ _____

_____ _____

We are committed to a continuing program of product improvement.
Specifications, appearance, and dimensions described in this manual are subject to change without notice.

DCN No. _____
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Shipping Info

Unpacking and Inspection

You should inspect the equipment for possible shipping damage.

Thoroughly check the equipment for any damage that might have occurred in transit, such as broken or loose wiring and components, loose hardware and mounting screws, etc.

In the Event of Shipping Damage

According to the contract terms and conditions of the Carrier, the responsibility of the Shipper ends at the time and place of shipment.

Notify the transportation company's local agent if you discover damage.

Hold the damaged goods and packing material for the examining agent's inspection. **Do not return any goods before the transportation company's inspection and authorization.**

File a claim with the transportation company. Substantiate the claim by referring to the agent's report. A certified copy of our invoice is available upon request. The original Bill of Lading is attached to our original invoice. If the shipment was prepaid, write us for a receipted transportation bill.

Advise customer service regarding your wish for assistance and to obtain an RMA (return material authorization) number.

If the Shipment is Not Complete

Check the packing list as back-ordered items are noted on the packing list. You should have:

- ☑ Compressed air dryer
- ☑ Bill of lading
- ☑ Packing list
- ☑ Operating and Installation packet
- ☑ Component instruction manuals

Re-inspect the container and packing material to see if you missed any smaller items during unpacking.

If the Shipment is Not Correct

If the shipment is not what you ordered, **contact the parts and service department immediately** at [262] 641-8600. Have the order and item numbers ready. *Hold the items until you receive shipping instructions*.

Returns

Do not return any damaged or incorrect items until you receive shipping instructions from the shipping department.

Table of Contents

CHAPTER 1: SAFETY 6

1-1 How to Use This Manual 6
Safety Symbols Used in this Manual 6
1-2 General Safety Regulations 7
1-3 Responsibility 7
1-4 Warnings and Precautions 8

CHAPTER 2: FUNCTIONAL DESCRIPTION 9

2-1 Models Covered in This Manual 9
2-2 General Description 9
2-3 Typical Features and Components 9
2-4 Options 9
2-5 Safety Features 10
Safety Circuit Standards 10
High Temperature Safety System 10
Airflow monitoring Safety System 10
Line Cord Plug (115/1/60 units only) 10
2-6 Drying Hopper Air Trap 10
2-7 Remote Membrane Dryer for Low-Dewpoint Operation (Optional) 11
2-8 Microprocessor Controls 12
Identifying the Controller's Buttons and Indicators 13
Understanding the Controller's Parameters 14
2-9 Restoring Factory Default Settings 15

CHAPTER 3: INSTALLATION 16

3-1 Uncrating the Equipment 16
3-2 Connecting a Hopper-Mount Dryer to a Hopper 16
3-3 Connecting a Floor-Mount Dryer to a Hopper 17
3-4 Making Electrical Connections 16
3-5 Making Compressed Air Connections 18
3-6 Installing the Remote-Mount Membrane Dryer (Optional) 19

CHAPTER 4: OPERATION 20

4-1 Auto-tuning the Dryer 20
4-2 Setting the Alarm Value 20
4-3 Start-up 21
4-4 Shut-down 21

CHAPTER 5: MAINTENANCE 22

5-1 Preventative Maintenance Schedule 22
5-2 Cleaning and Replacing the Filters 22
5-3 Replacing the Process Heater 21

CHAPTER 6: TROUBLESHOOTING 23

CHAPTER 7: APPENDIX 26

7-1 Warranty 26
7-2 Technical Specifications 27
Dryer Operating Parameters 28
Dimensions 29
Spare Parts List 30

Chapter 1: Safety

1-1 How to Use This Manual

Use this manual as a guide and reference for installing, operating, and maintaining your dryer. The purpose is to assist you in applying efficient, proven techniques that enhance equipment productivity.

This manual covers only light preventative maintenance. No other maintenance should be undertaken without first contacting a service engineer.

The Functional Description section outlines models covered, standard features, and safety features. Additional sections within the manual provide instructions for installation, pre-operational procedures, operation, and preventive maintenance.

The Installation chapter includes required data for receiving, unpacking, inspecting, and setup of the dryer. We can also provide the assistance of a factory-trained technician to help train your operator(s) for a nominal charge. This section includes instructions, checks, and adjustments that should be followed before commencing with operation of the dryer. These instructions are intended to supplement standard shop procedures performed at shift, daily, and weekly intervals.

The Operation chapter includes a description of electrical and mechanical controls, in addition to information for operating the dryer safely and efficiently.

The Maintenance chapter is intended to ensure that your dryer provides excellent, long service.

The Troubleshooting chapter serves as a guide for identification of most common problems. Potential problems are listed, along with possible causes and related solutions.

The Appendix contains technical specifications, drawings, schematics, parts lists, and available options. A spare parts list with part numbers specific to your machine is provided with your shipping paperwork package. Refer to this section for a listing of spare parts for purchase. Have your serial number and model number ready when ordering.

Safety Symbols Used in this Manual

The following safety alert symbols are used to alert you to potential personal injury hazards. Obey all safety messages that follow these symbols to avoid possible injury or death.

DANGER! ***DANGER indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.***

WARNING! ***WARNING indicates a potentially hazardous situation or practice that, if not avoided, could result in death or serious injury.***

Caution! ***CAUTION indicates a potentially hazardous situation or practice that, if not avoided, may result in minor or moderate injury or in property damage.***

1-2 General Safety Regulations

Read and follow the instructions in this manual before installing, operating or maintaining any equipment. Additional copies are available from the manufacturer.

Install, operate, and maintain this equipment according to applicable work and safety codes for your location. This includes OSHA, CE, NEC, CSA, SPI, and many other local, national, and international regulations. Only qualified persons should work on or with this equipment. Work only with approved tools and devices.

Before removing, adjusting, or replacing parts on a machine, remember to turn off all air and electric supplies and all accessory equipment at the machine. You must also disconnect and lock out electrical and pneumatic power and attach warning tags to the disconnect switch and air shut off valve.

When you need to perform maintenance or repair work on a dryer above floor level, use a solid platform or a hydraulic elevator. If there is a permanently installed catwalk on your dryer, use it. The work platform should have secure footing and a place for tools and parts. Do not climb on dryers, machines, or work from ladders.

If you need to repair a large component, use appropriate handling equipment. Before you use handling equipment (portable “A” frames, electric boom trucks, fork trucks, overhead cranes), be sure the load does not exceed the capacity of the handling equipment or cause it to become unstable. Carefully test the condition of lifting cables, chains, ropes, slings, and hooks before using them to lift a load.

Be sure that all on-current carrying parts of electrical apparatus, electrical enclosures, and the dryer frame are correctly connected to earth ground with an electrical conductor that complies with current codes Install in accordance with national and local codes, which apply.

When you have completed the repair or maintenance procedure, check your work, remove your tools, rigging, and handling equipment. Do not restore power to the dryer until all persons are clear of the area. Do not start and run the dryer until you are sure all parts are functioning properly.

1-3 Responsibility

These machines are constructed for maximum operator safety when used under standard operating conditions and when recommended instructions are followed in the maintenance and operation of the machine.

All personnel engaged in the use of the machine should become familiar with its operation as described in this manual.

Proper operation of the machine promotes safety for the operator and all workers in its vicinity.

Becoming familiar with materials, inspection, and maintenance and total user responsibility will assist you in learning potential areas in need of observation for danger.

Each individual must take responsibility for observing the prescribed safety rules as outlined. All caution, warning and danger signs must be observed and obeyed. All actual or potential danger areas must be reported to your immediate supervisor.

1-4 Warnings and Precautions

Our equipment is designed to provide safe and reliable operation when installed and operated within design specifications, following national and local safety codes.

To avoid possible personal injury or equipment damage when installing, operating, or maintaining this dryer, use good judgment and follow these safe practices:

- ☑ Never place your hands or any part of your body in any dangerous location.
- ☑ Never operate, service, or adjust the dryer without appropriate training and first reading and understanding this manual.
- ☑ Never try to pull material out of the dryer with your hands while it is running.
- ☑ Before you start the dryer, remove all objects (tools, nuts, bolts, clamps, bars) from the hopper area.
- ☑ If your dryer has been inoperative or unattended, check all settings before starting the unit.
- ☑ At the beginning of your shift and after breaks, verify that the controls and other auxiliary equipment are functioning properly.
- ☑ Keep all safety guards in place and in good repair. Never attempt to bypass, modify, or remove safety guards. Such alteration is not only unsafe, but will void the warranty on your equipment.
- ☑ When changing control settings to perform a different mode of operation, be sure selector switches are correctly positioned. Locking selector switches should be adjusted only by authorized personnel, and the keys removed after setting.
- ☑ Report unsafe operation, unsafe conditions, unusual dryer action, leakage, and improper maintenance immediately.
- ☑ Never stand or sit where you could slip or stumble into the dryer while working on it.
- ☑ Do not wear loose clothing or jewelry, which can be caught while working on a dryer. In addition, cover or tie back long hair.
- ☑ Clean the dryer and surrounding area daily, and inspect the machine for loose, missing, or broken parts.
- ☑ Shut off power to the dryer when it is not in use. Turn the switch to the off position, or unplug it from the power source.
- ☑ Never attempt to move the dryer while it is in operation.
- ☑ Always allow time for the dryer to cool off before moving it or servicing the fuse or air filter.

We have long recognized the importance of safety and have designed and manufactured our equipment with operator safety as a prime consideration. We expect you, as a user, to abide by the foregoing recommendations in order to make operator safety a reality.

Chapter 2: Functional Description

2-1 Models Covered in This Manual

This manual provides instructions for installing and operating your 5, 10 or 15 cfm compressed air dryer.

2-2 General Description

Mini compressed air dryers are designed to generate heated, dehumidified air at carefully controlled temperatures for use in plastic drying systems. Drying systems are sized to meet specific requirements stated by the purchaser at the time of purchase.

Moisture removal from hygroscopic (moisture attracting) plastic pellets is an essential step in the manufacture of high-quality plastic products. This dehumidifying dryer is used to generate very low dew point air, heated to a controlled temperature for drying plastic pellets and regrind.

Many variables were considered in the selection of your drying system, including type of materials, residence time, throughput of the extruder or injection molding machine. Should your operating environment change, the manufacturer can advise you on necessary equipment and process time and temperature modifications required for your system.

2-3 Typical Features and Components

- Electrical solenoid valve
- Compressed air filter, regulator, and gauge
- Drying temperature range of 120ºF to 400ºF
- Display of process temperature set point and actual settings
- Process thermocouple located in the process air stream just before the hopper inlet
- Nema 1 control enclosure:
    a. Fusing
    b. Power On light
    c. IEC process heater contactor
    d. Solid state relay
    e. Alarm light
    f. High temperature safety system
    g. Airflow detection system

2-4 Options

Options can tailor your dryer to meet the exact requirements of the drying task being performed.

- Floor-mount configuration
- Membrane compressed air dryer for low dew point operation
- 220/1/50 operation
- 230/1/60 operation

2-5 Safety Features

This section includes information on safety devices and procedures that are inherent to the 10 cfm compressed air dryer. This manual is not intended to supersede or alter safety standards established by the user of this equipment. Instead, the material contained in this section is recommended to supplement these procedures in order to provide a safer working environment.

Safety Circuit Standards

Safety circuits used in industrial systems protect the operator and maintenance personnel from dangerous energy. They also provide a means of locking out or isolating the energy for servicing equipment.

Various agencies have contributed to the establishment of safety standards that apply to the design and manufacture of automated equipment. The Occupational Safety and Health Administration (OSHA) and the Joint Industrial Council (JIC) are just a few of the organizations that have joined with the plastics industry to develop safety standards.

Every effort has been made to incorporate these standards into the design of the dryer; however, it is the responsibility of the personnel operating and maintaining the equipment to familiarize themselves with the safety procedures and the proper use of any safety devices.

High Temperature Safety System

A high temperature safety system will disable the dryer if the process temperature is too hot. The high temperature safety is designed so that if it fails, the failure causes a “safe” condition, and the dryer will not run. The compressed air continues flowing to cool down the system.

Airflow monitoring Safety System

If the airflow source to the compressed air dryer is below 35 PSI, the unit will shut down and not run. This is an indication that there is not enough pressure and flow for proper operation of the unit.

Line Cord Plug (115/1/60 units only)

The line cord plug allows the operator or maintenance personnel to unplug the dryer from its power source and tag it out. This plug may be tagged with any number of approved electrical lockout tags. These tags are available at most electrical supply stores. Always disconnect power before servicing or moving this unit.

DANGER! ***At no time should anyone remove the lockout or reconnect the twist plug, other than the person who installed the lockout or who unplugged the twist plug.***

2-6 Drying Hopper Air Trap

Refer to the drying hopper Operation and Installation manual for proper operation of the drying hopper.

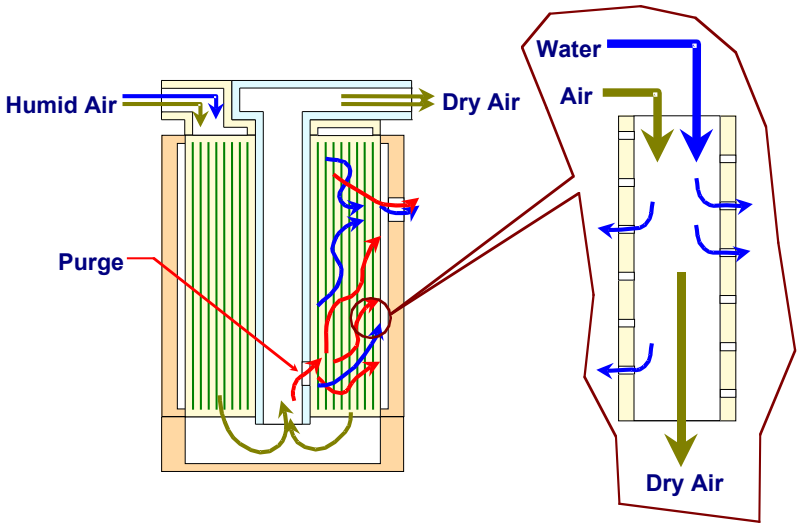
2-7 Remote Membrane Dryer for Low-Dew point Operation (Optional)

Membrane dryers take a small percentage of the dried gas and direct it back in a sweeping pattern through the module shell. This provides a driving force to remove the moisture with the minimum purge required.

The moisture vent membrane dryer consists of thousands of hollow-fiber membranes made of tough temperature and pressure-resistant plastic. The inside surface of these hollow fibers is coated with an ultra-thin layer of a second plastic that actually separates the water vapor from the air. This second coating allows air to pass through it over 20,000 times easier than it allows water to pass. As a result, moisture is expelled rapidly with very little air loss. Two-stage drying provides the option of using the moisture vent directly at the point-of-use in combination with refrigerated air dryer.

As a single stage unit, the dryer provides consistent performance from 60ºF to –20ºF outlet dew point. When combined with a refrigerated air dryer, the moisture vent system will suppress or reduce the inlet pressure dew point to below –40ºF with very low sweep requirements.

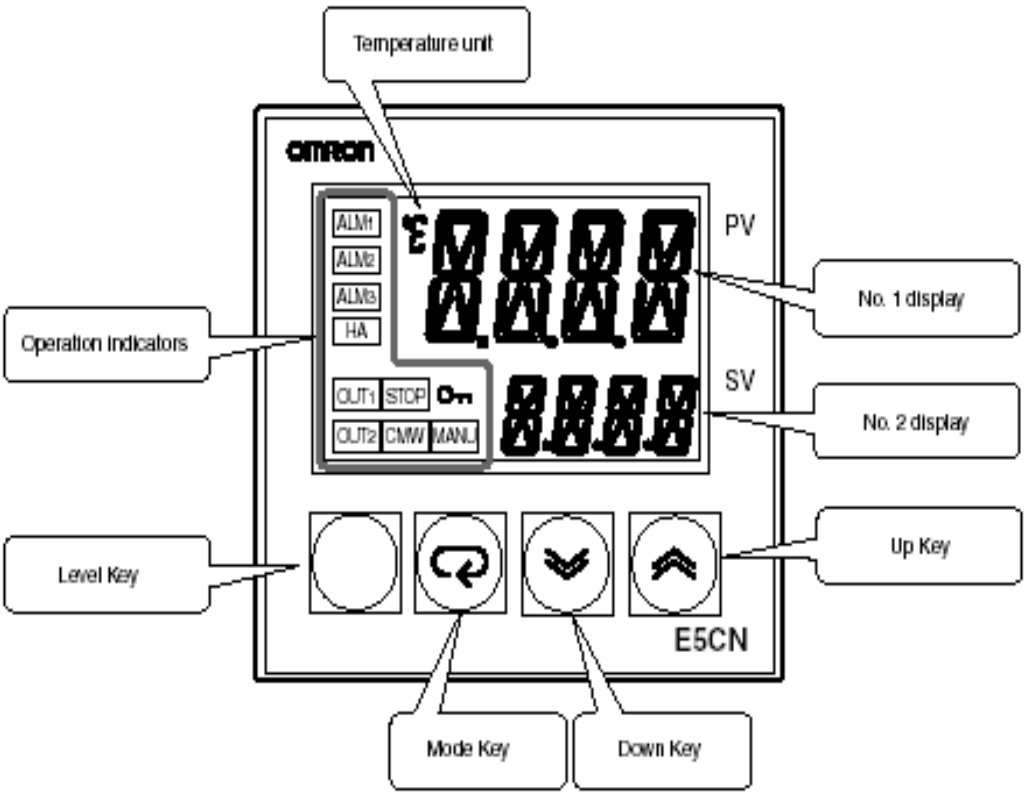
Figure 1: Remote-Mount Membrane Dryer Airflow Schematic



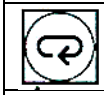
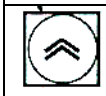
2-8 Microprocessor Controls

The 10 cfm compressed air dryer uses a microprocessor-based PID temperature controller for maintaining process air temperature. The controller is a modular, self-contained unit that you can remove from the mounting housing. All parameters except for the process air set point are factory set and adjusted. Normally, no field adjustment to the internal controls is necessary.

Figure 2: Microprocessor Controller

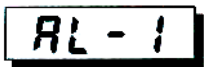
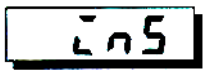


Identifying the Controller's Buttons and Indicators

Button or Indicator	Function
PV display	During normal operation, the PV numeric LED indicator displays the process temperature at the To Process thermocouple. It also lists parameters during set-up and error messages if any errors occur.
SV display	During normal operation, the SV numeric LED indicator displays the set point temperature selected for the dryer. The dryer then maintains this set point temperature. This LED indicator also displays parameter and preset function values during configuration set-up.
Temperature Unit display	This LED indicator displays the temperature units (ºF or ºC) that the dryer is configured to use.
Level button	The Level button is used to enter set-up. There are two set-up levels available: Operation and Adjustment.
 Mode button	The Mode button is used to scroll through paramenters in set-up modes.
Down Arrow button	The Down Arrow button is used to decrease the set point temperature during operation. It also decreases the parameter values in set-up modes.
 Up Arrow button	The Up Arrow button is used to increase the set point temperature during operation. It also increases the parameter values in set-up modes.
AL1 Alarm 1 indicator	The Alarm 1 indicator lights when the process temperature exceeds the set point temperature by more than the alarm deviation value. Alarm output de-energizes the heaters. Heaters re-energize when the temperature falls within the acceptable range.
AL2 Alarm 2 indicator	The Alarm 2 indicator is not used.
HB Heater Burnout indicator	(Optional) The Heater Burnout indicator lights when a heater burnout is detected. The heater burnout alarm remains On by setting the heater burnout latch. To reset, turn the power supply off and then on or set the heater burnout alarm vale to 0.0A.
OT1 Output 1 indicator	The Output 1 indicator lights when the controller signals the process heaters to be energized.
OT2 Output 2 indicator	The Output 2 indicator is not used.
STOP Stop indicator	The Stop indicator lights when the controller has been stopped.
CMW Communications indicator	The Communications indicator is not used.

MANU Manual Mode	Lights when the auto/manual mode is set to manual mode.
(Key)	Lights when the setting change protect is ON.

Understanding the Controller's Parameters

Set-up Level	Parameter	Function
Operation	Run/Stop (r-S)	Can be set to "RUN" or "STOP." When "RUN" is selected, the control is running. When "STOP" is selected, the control is stopped, and the Stop indicator lights. The default value is "RUN."
	 Alarm Value (AL-1)	Can be set from –1999 to 9999. This parameter is used to indicate how many degrees the process temperature will be allowed to exceed the set point temperature. An alarm output will de-energize the heaters. The default value is 25.
Adjustment	Auto-tune (At)	Can be set to "ON" or "OFF." This feature is used to automatically set the optimum PID parameters "proportional band," "integral time" and "derivative time" for the set point value by changing the variables that had been modified previously. The default value is "OFF."
	 Temperature Input Shift (Tns)	Can be set from –199.9 to 999.9. This setting is used to offset an error between the set point and the actual temperature. The entire input range is shifted by a set figure preprogrammed by the operator. The default value is 0.
	Proportional Band (P)	Can be set from 0.1 to 999.9. This setting controls the amount in which the manipulated variable (MV) is proportionate to the deviated value or controller error. The default value is 8.0.
	Integral Time (I)	Can be set from 0 to 3999. Setting this feature gives the control an action that is proportionate to the time integral of the control error. By using this setting, proportional action is used in combination with integral action to offset the control error and the set point will begin to match the control temperature (PV or process value). The default value is 233.
	Derivative Time (d)	Can be set from 0 to 3999. Setting the derivative control provides the controller with the ability to correct for a future error in the previously set process output. The default value is 40.

2-9 Restoring Factory Default Settings

If the preset parameters on the controller have been tampered with and it no longer properly controls temperature and displays dew point, you can restore the controllers to the factory setup. Contact the Service department for detailed instructions.

Chapter 3: Installation

3-1 Uncrating the Equipment

The 10 cfm compressed air dryer has a handle at the top of the cabinet to use for lifting. For hopper-mount configurations, be sure to support the hopper when lifting and placing the dryer. Use caution and observe safety rules when lifting and placing your dryer. Be sure it is securely attached and additional bracing is used if necessary.

3-2 Connecting a Hopper-Mount Dryer to a Hopper

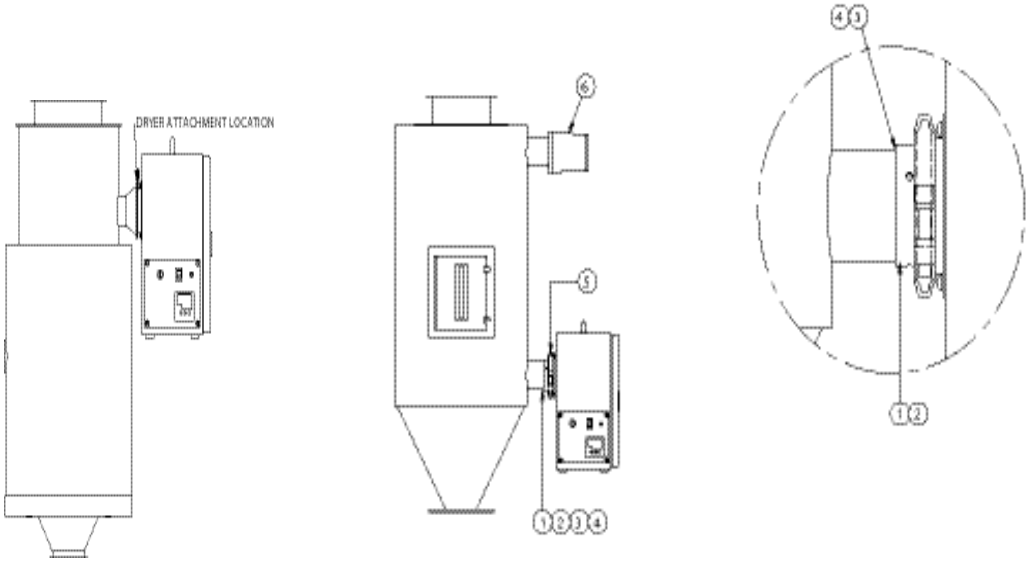
When mounting the dryer to an existing hopper, use the adapter and the self-tapping screws that are provided with the unit to mount the dryer to the inlet of the hopper. The adapter is pre-drilled with three holes that are used to mount it to the hopper.

> ***Note:*** ***In some cases, depending on the drying hopper model, an adapter may not be required. If an adapter is not required, attach the dryer to the hopper with the clamps provided, and install the exhaust filter to the drying hopper outlet/return line.***

Use the following procedure to mount the dryer to a hopper using an adapter (See Figure 3):

1. Mark the holes in the inlet tube of the hopper for drilling.
2. Use a 9/64" drill bit to pre-drill for the #8-32 screws that are provided.
3. Spread silicone adhesive over the area where the adapter will mount to the hopper inlet tubing.
4. Place the adapter onto the tubing and install the three screws to hold it in place. Allow sufficient time for the silicon to cure before you operate the dryer.
5. Attach the dryer to the hopper with the clamps provided.
6. Install an exhaust filter to the drying hopper outlet/return line.

Figure 3: Typical Hopper-Mount Configuration



3-3 Connecting a Floor-Mount Dryer to a Hopper (Optional)

Use high-temperature flexible dryer hose or rigid tubing to connect the dryer to the drying hopper. Keep the delivery hose to the drying hopper as short as possible to minimize heat loss. We strongly recommend insulated hose for maximum energy savings. Make sure that hoses are not kinked or collapsed.

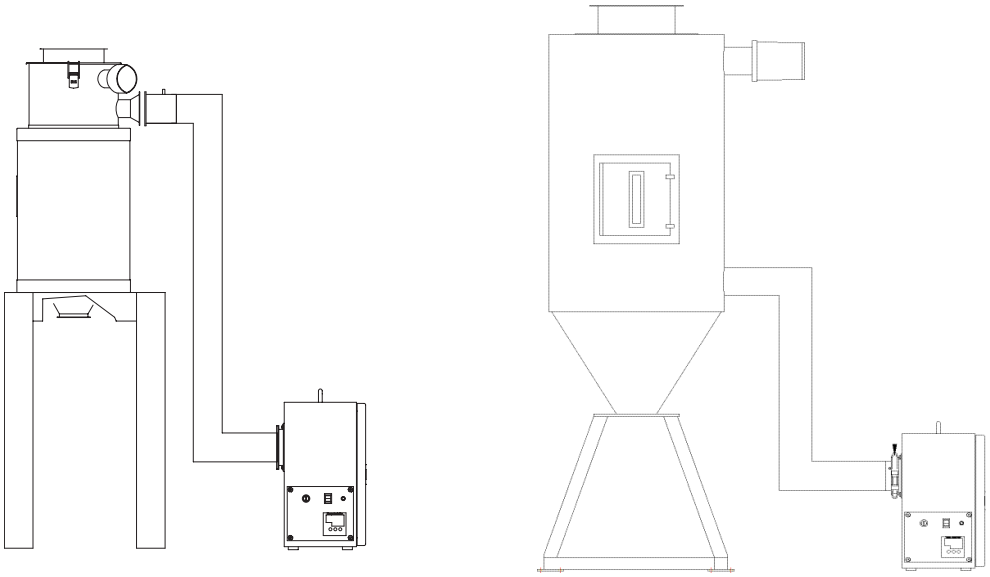
Use the following procedure to connect a floor-mount dryer to a hopper:

1. Using the clamps provided, clamp a hose adaptor onto the dryer and the hopper. (See Figure 4.)

Note: ***Depending on the drying hopper model, the clamp and hose adapter may not be required. Connect the dryer hose with the hose clamp directly to the process air inlet of the drying hopper.***

2. Install an exhaust filter to the drying hopper outlet/return line.
3. Drying hopper air inlet and outlet locations vary, but always connect hoses so the dry process air from the dryer enters the bottom of the drying hopper and flows out the top.

Figure 4: Floor-Mount Configuration



3-4 Making Electrical Connections

The serial tag lists voltage, phase, and amp draw information. Line voltage must be within plus or minus ten percent of the voltage listed on the serial tag, or damage may occur. Never supply any voltage other than what the dryer is configured for.

Fulfill all national, state, and local safety and electrical code requirements. A qualified electrician should make all electrical connections.

Connect main power to the dryer. Install a fused disconnect with a lockout feature in the power main leading to the dryer. The power drop must include a ground wire. Make sure all electrical connections are tight.

Note: Due to variances in 220-240 V connections, customers must supply the plug for these dryer models.

3-5 Making Compressed Air Connections

The compressed air supply must be regulated to 80 PSI (5.5 bars). Low air pressure will create poor drying performance. If the pressure in the system drops below 35 PSI, the alarm light will activate and the process heater and solenoid valve will shut off.

Note: For maximum drying efficiency, we recommend a refrigerated compressed air connection. Not using refrigerated compressed air (to provide pre-conditioned compressed air to this unit) will affect drying performance and material drying capabilities.

To achieve the lowest possible dew points, an optional remote-mount membrane dryer assembly is available. See Section 2-7 on page 11 for more information about the remote-mount membrane dryer assembly.

Connect a minimum of 3/8” (9 mm) air line to the top of the filter regulator. Compressed air must be clean, dry, and free of oil. A shut-off is recommended for your in-plant air supply. In-line filters can handle small amounts of moisture; in-line desiccant filters or packed beds of granular absorbing polymer can remove oil mist and condensed oil.

3-6 Installing the Remote-Mount Membrane Dryer (Optional)

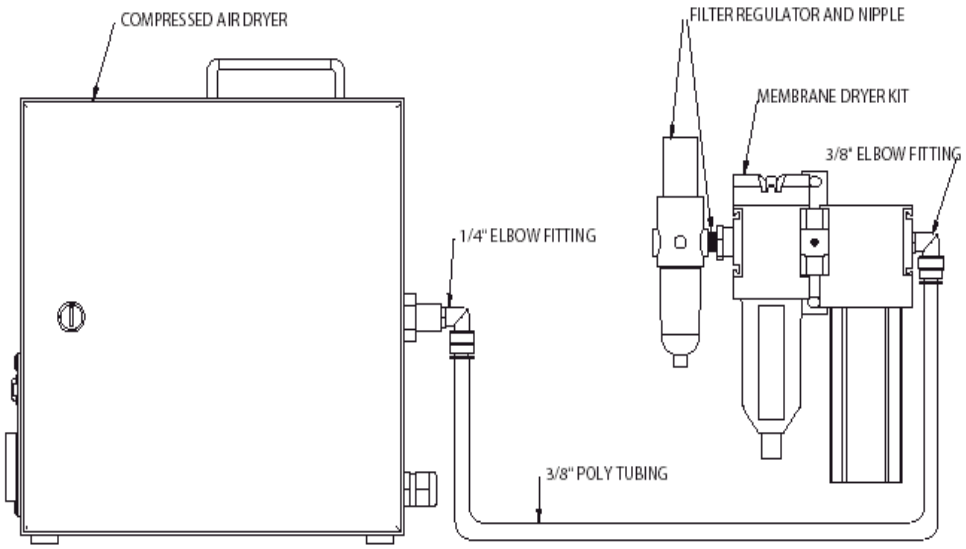
The membrane drying kit can be mounted anywhere near the compressed air dryer. The kit is pre-assembled with a bracket that can be mounted to any flat surface with two screws. Use Figure 5 as a reference for this installation.

1. Remove the large particle filter, including the close nipple, from the inlet of the compressed air dryer.
2. Attach the large particle filter (including the close nipple) to the membrane drying kit.

Note: ***The membrane drying kit must have the large particle and the coalescing filters in place and functioning properly to ensure full drying capabilities of the membrane. Both filters must be checked and cleaned regularly.***

3. Attach the 1/4" NPT elbow to the inlet of the compressed air dryer.
4. Run the 3/8" hose between the outlet of the membrane drying kit and the inlet of the compressed air dryer. Use thread sealant on all threaded connections.

Figure 5: Membrane Dryer Assembly



Chapter 4: Operation

Before beginning dryer operation, make sure that there is a good compressed air connection and that the main power is securely plugged in. Check the process hose and hopper exhaust filter for tight connections. Check all companion equipment, such as the drying hopper; verify that the loading system is ready for operation. The dryer will not run if a fault condition exists. Investigate the cause of any faults.

DANGER! ***Always turn the dryer off before servicing. Do not attempt to check the alarms on the controller located within the unit enclosure unless you are a qualified electrician.***

4-1 Auto-tuning the Dryer

Although the controller is calibrated at the factory, the unit should be auto-tuned prior to dryer start-up.

Use the following procedure to auto-tune the dryer:

1. Press the Level button one time to enter the Adjustment level.
2. Press the Mode Key one time. The PV display will read "At."
3. Press the Up Arrow button to change the value to "ON."
4. Press the Level button to begin auto-tuning and return to the Operation level.

   The unit will automatically auto-tune. While this process is taking place, the SV display will blink the set point value. When the SV display stops blinking, the auto-tune process is finished.

Note: ***It is recommended that the unit be auto-tuned when the pressure and airflow of the compressed air have been adjusted, and the dryer is running close to process temperature set point.***

4-2 Setting the Alarm Value

The Alarm Value setting determines how many degrees the process temperature is allowed to exceed the set point temperature before the high temperature alarm is triggered and the heater turned off.

Use the following procedure to set the alarm value:

1. Press the Mode button two times to select the Alarm Value 1 parameter. (The PV display will read "AL-1").
2. Use the Up Arrow and Down Arrow buttons to change the value.
3. Press the Mode button to accept the value and begin operation.

Note: ***The factory default valve for this setting is 25.***

4-3 Start-up

Use the following procedure to start the dryer:

1. Turn on the disconnect switch in the power drop, close the slide gate at the bottom of the drying hopper.
2. Close the slide gate at the bottom of the drying hopper.
3. Fill the drying hopper with material.
4. Turn the ON/OFF switch to "ON" to energize the display panel and turn on the solenoid and the heater.
5. Use the Up Arrow and Down Arrow buttons to set the process set point on the temperature controller.

Note: Consult the resin manufacturer for the recommended drying temperature.

6. Press the Mode button one time to make sure the controller's Run/Stop parameter is set to "RUN."
7. Use the Up Arrow or Down Arrow button to change the value to "RUN."
8. Press the Mode button to begin operation.
9. After the proper pre-drying time for the initial hopper fill has elapsed, fully open the drying hopper slide gate.

Note: To allow proper residence time during continuous processing, maintain the material level in the hopper at the midpoint of the air trap assembly.

4-4 Shut-down

Use the following procedure to shut down the dryer:

1. When processing is complete, close the hopper slide gate and shut down any in-line companion equipment.
2. Lower the process temperature controller set point to a value of 100º Fahrenheit.
3. Allow at least one minute of run time so that the compressed air continues to flow through the unit and cool down the heating components.
4. Turn the On/Off switch to "Off."
5. If needed, empty the drying hopper.
6. For maintenance or a long-term shutdown, open the electrical disconnects at the dryer and at the power drop.

Chapter 5: Maintenance

This dryer is designed to be virtually maintenance-free. This unit is factory-sealed. Any service required on this unit must be performed by factory personnel at the manufacturer's facility.

WARNING! ***The compressed air dryer is sealed at the factory. Removing this seal and opening the box that houses the dryer will void your warranty. Please contact the manufacturer for assistance.***

5-1 Preventative Maintenance Schedule

Weekly	Inspect all filters for wear, and replace/clean if dirty or worn
	Check to make sure that all hose connections are air tight
Monthly	Lock out electrical power and inspect the main power supply for integrity.

5-2 Cleaning and Replacing the Filters

The 10 cfm compressed air dryer uses a large particle air filter in the process air system to clean the compressed air before it enters the drying cabinet. The optional remote-mount membrane dryer assembly features a coalescing filter in addition to the large particle air filter. Regular filter cleaning is essential to keep the dryer operating at peak efficiency.

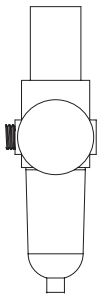
Use the following procedure to clean or replace the process air filter or the membrane dryer coalescing filter:

1. Turn off and lock out electrical power to the dryer.
2. Remove the clear bowl at the bottom of the filter. (See Figure 6).
3. Discard the contents of the clear filter bowl.
4. Visually inspect the filter element.
5. If needed, clean the filter element with compressed air or replace it.

Caution! ***Do not clean or wash the filter with water.***

6. Replace the clear bowl.

Figure 6: Large Particle Filter



5-3 Replacing the Fuse Outside of the Cabinet

Note: If the compressed air dryer does not start when the ON/OFF switch is in the "ON" position, check the main power supply to ensure that it is properly installed. If the main power supply is correct, check the fuse. This is located on the front of the driver cabinet. Use the following procedure to check and, if needed, replace the fuse.

1. Make sure that the main power to the dryer is shut off and locked out.
2. Locate the fuse holder that houses the fuse for the dryer (see picture below for fuse holder location).
3. Using a standard flat-head screwdriver, remove the insert that holds the fuse from the fuse holder.
4. Separate the insert from the fuse.
5. Using a multimeter, check for continuity between the two ends of the fuse.
6. If there is no continuity, replace the fuse. See Spare Parts List for fuse part number.
7. Insert new fuse into the fuse holder.
8. Using a standard flat-head screwdriver, turn the fuse into the installed position within the fuse holder.

Fuse Holder

Chapter 6: Troubleshooting

The utmost in safety precautions should be observed at all times when working on or around the machine and the electrical components. All normal trouble-shooting must be accomplished with the unit turned off, power disconnected, and with the machine tagged as out of service.

Problem	Possible Cause	Possible Remedy
Loss or reduction in drying capacity.	Material being dried differs from material specified at the time of purchase.	Drying systems are designed for the material that was originally specified. Different materials may need a longer residence time or a different drying temperature.
	Break in flex hose to drying hopper.	Inspect for air leaks; replace as needed.
Material in drying hopper cakes, or meltdown occurs.	Process temperature set too high due to operator error.	Check resin manufacturer's data sheet for proper drying temperature. Make sure plant personnel are aware of the correct process temperature set point.
	High temperature alarm not set properly.	Reset high temperature alarm.
Nothing displays when the controller is turned on.	Process set point is out of acceptable range.	Restore temperature controller to factory pre-sets.
	Function set for degrees Celsius (ºC), set point at degrees Fahrenheit (ºF).	Verify correct Celsius or Fahrenheit settings.
	Process thermocouple not in airflow.	Verify that the thermocouple is properly installed in the inlet tube.
No setting change possible on temperature controller.	The internal mechanism is not inserted properly into the housing.	Properly insert the internal mechanism into the housing.
	The power supply is not connected to its terminals properly.	Properly connect the power supply to the power supply terminals.
	No power is supplied, or the supplied power is not within the specified range.	Supply a voltage of 85 to 125 VAC to the power supply terminals of the controller or 220-240 V for higher voltage units.

Problem	Possible Cause	Possible Remedy
	Disconnect switch or Control Power switch not set to **ON**. Control Power fuse blown.	Check control power fuse for continuity. Turn disconnect switch and control power switch **ON**.
	The key protection switch is set to **ON**.	Set the key protection switch to **OFF**.
Alarm light is on and unit has no air pressure.	Compressed air source is no longer sufficiently above 35 psi.	Check compressed air source for proper functioning.
	Regulator is set below 35 psi.	Check regulator for proper functioning.

Chapter 7: Appendix

7-1 Warranty

Warranty Returns

Prior to the return of any material, **authorization** must be given by **the manufacturer.** A RMS number will be assigned for the equipment to be returned.

Reason for requesting the return must be given.

All returns are to be shipped prepaid.

The invoice number and date or purchase order number and date must be supplied.

After inspecting the material, a replacement or credit will be given, at **the manufacturer's** discretion, if the item is found to be defective in materials or workmanship**.** Purchased components are covered under their specific warranty terms.

7-2 Technical Specifications

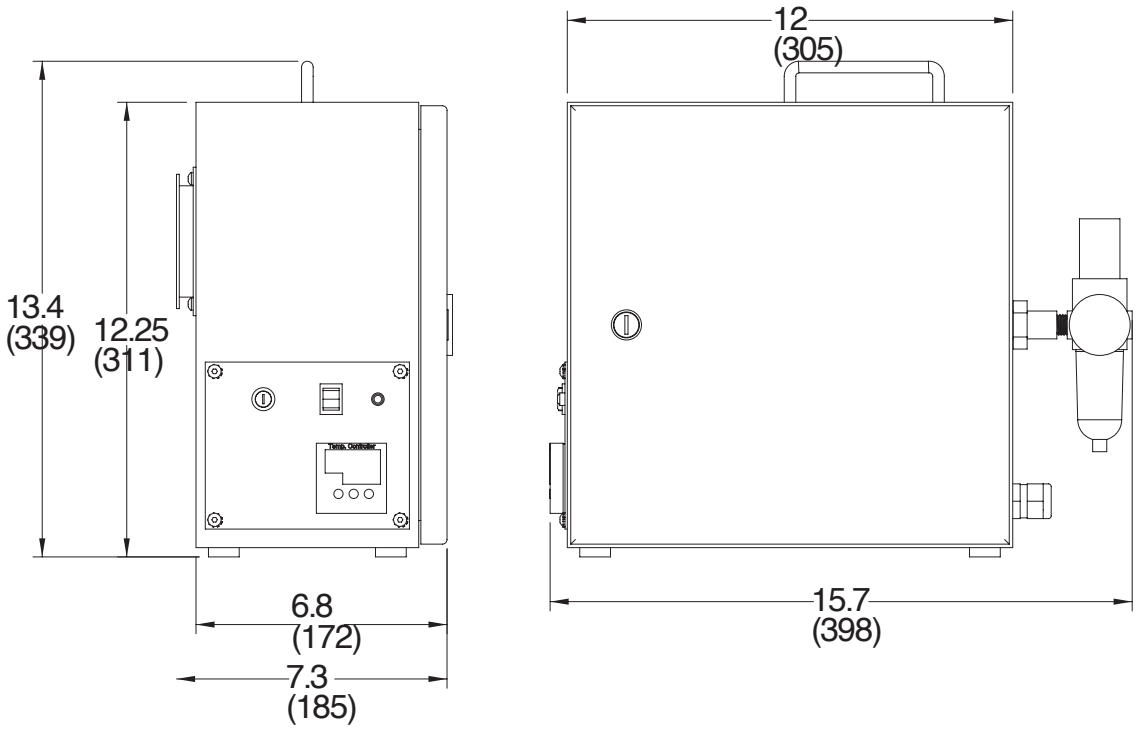
- Average dew point: -10ºF (-23ºC)
- Average dew point with optional membrane dryer: -40ºF (-40ºC)
- Heating capabilities up to 400ºF
- Large particle compressed air filter
- Exhaust air cartridge filter
- 1/16 DIN PID temperature controller
- High process temperature alarm light
- Automatic shutoff system to monitor compressed air supply
- Full load amps: 12.5 @ 115V
  6.25 @ 240V
- 1.5”, 2”, 2.5”, or 3” OD process air outlet (specify)
- Approximate weight: 25 lbs. (11.3 kg)

Dryer Operating Parameters

Material	Drying Temp, ºF, (ºC)	Drying time in hours	Drying Hopper Capacity,* lbs./hr (kg/hr)				
			Initial moisture content. H_20 in %	Final moisture content H_20 in %	0.4 cu. ft. (11 liter) drying hopper	0.8 cu. ft. (22 liter) drying hopper	0.9 cu. ft. (25 liter) drying hopper
ABS	176 (80)	2-3	0.45	0.15	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)
ASA	212 (100)	3			4.6 (2.1)	9.2 (4.2)	10.4 (4.7)
CA	176 (80)	2-3	0.7	0.15	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)
CP	167 (75)	2-3	1.0	0.15	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)
EVA	176 (80)	2-3			5.6 (2.5)	11.2 (5.1)	9.0 (4.1)
Ionomere	194 (90)	3.5			4.0 (1.8)	8.0 (3.6)	5.2 (2.3)
PA11	167 (75)	4-6	0.7	0.07	2.8 (1.3)	5.6 (2.5)	6.3 (2.9)
PA12	167 (75)	4-6	0.7	0.07	2.8 (1.3)	5.6 (2.5)	6.3 (2.9)
PA6	176 (80)	4-6	0.5	0.05	2.8 (1.3)	5.6 (2.5)	6.3 (2.9)
PA6.6	176 (80)	4-6	0.5	0.05	2.8 (1.3)	5.6 (2.5)	6.3 (2.9)
PA6.6 GF35	176 (80)	4-6	0.5	0.04	2.8 (1.3)	5.6 (2.5)	6.3 (2.9)
PBT	266 (130)	3-4	0.25	0.02	4.0 (1.8)	8.0 (3.6)	9.0 (4.1)
PC	248 (120)	2-4	0.16	0.01	4.6 (2.1)	9.2 (4.2)	10.4 (4.7)
PE Filled	185 (85)	3-4	0.5	0.02	4.6 (2.1)	9.2 (4.2)	10.4 (4.7)
PE	194 (90)	1-2	0.05	0.01	7 (3.2)	14 (6.4)	15.8 (7.1)
PEEK	302 (150)	4			3.5 (1.6)	7 (3.2)	7.9 (3.6)
PEI	302 (150)	4	0.25	0.01	3.5 (1.6)	7 (3.2)	7.9 (3.6)
PES	302 (150)	4	0.43	0.02	3.5 (1.6)	7 (3.2)	7.9 (3.6)
PETP	300-392 (150-200)	4-6	0.25	0.002	2.3 (1.0)	4.6 (2.1)	5.2 (2.3)
PETG	149 (65)	4-5	0.1	0.04	3.5 (1.6)	7 (3.2)	7.9 (3.6)
PMMA	176 (80)	2-3	0.25	0.02	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)
POM	212 (100)	3-4	0.2	0.05	4.6 (2.1)	9.2 (4.2)	10.4 (4.7)
PP	194 (90)	2	0.1	0.05	7 (3.2)	14 (6.4)	15.8 (7.1)
PPO	212 (100)	2-3	0.2	0.02	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)
PPS	284 (140)	3-4	0.1	0.05	4.6 (2.1)	9.2 (4.2)	10.4 (4.7)
PS	176 (80)	1-2	0.05	0.02	7 (3.2)	14 (6.4)	15.8 (7.1)
PSU	302 (150)	3-4	0.3	0.05	4.6 (2.1)	9.2 (4.2)	16.4 (7.4)
PUR	176 (80)	3-4	0.4	0.01	4.6 (2.1)	9.2 (4.2)	16.4 (7.4)
PVC	158 (70)	1-2	0.3	0.10	9.3 (4.2)	18.6 (8.4)	41.9 (19)
SAN	176 (80)	2-3	0.3	0.03	5.6 (2.5)	11.2 (5.1)	25.2 (11.4)
SB	176 (80)	2	0.3	0.03	7 (3.2)	14 (6.4)	31.5 (14.3)
TPE	230 (110)	3-4			4.6 (2.1)	9.2 (4.2)	16.4 (7.4)
TPU	194 (90)	2-3	0.4	0.02	5.6 (2.5)	11.2 (5.1)	12.6 (5.7)

* Performance may vary based on initial quality of the compressed air supply to the dryer.

Dimensions



7-3 Spare Parts List

Parts not included in this list must be replaced by the factory.

Part No.	Quantity	Description
35452	1	Filter Regulator
725.00002.00	1	Fuse (110 volt)
725.00001.00	1	Fuse 220/1/50
725.00001.00	2	Fuse 230/1/60
CT92241	1	Hopper Mounting CLDMP
CT94233	1	Hopper Mounting Gasket

Technical Assistance

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Call toll-free 7am–5pm CST [800] 423-3183 or call [262] 641-8600 Fax: [262] 641-8653

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