

USER GUIDE

UGD050-1216

Carousel Plus Dryer

W Series Models 600 through 5000 with DC-T TouchView™ Technology



Please record your equipment's model and serial number(s) and the date you received it in the spaces provided.



NOTE: The software, firmware and application file information for your specific Carousel Plus Dryer System is contained on a serial tag that was attached to the inside of the Carousel Plus Dryer's control panel during assembly.

Conair recommends recording the model and serial number(s) of your equipment and the date you received it in the User Guide. Our service department uses this information, along with the manual number, to provide help for the specific equipment you installed.

Please keep this User Guide and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date: _____

Manual Number: UGD050-1216 _____

Serial Number(s): _____

Model Number(s): _____

Software Version(s): _____

RedLion Operator Interface

Firmware Version Number: _____

Application File Name: _____

Programmable Logic Controller: _____

Firmware Version Number: _____

Application File Name: _____

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Purpose of the User Guide

This User Guide describes the Conair Carousel Plus Dryer with TouchView™ Technology and explains step-by-step how to install, operate, maintain and repair this equipment.

Before installing this product, please take a few moments to read the User Guide and review the diagrams and safety information in the instruction packet. You also should review manuals covering associated equipment in your system. This review won't take long, and it could save you valuable installation and operating time later.

How the Guide is Organized

Symbols have been used to help organize the User Guide and call your attention to important information regarding safe installation and operation.



Symbols within triangles warn of conditions that could be hazardous to users or could damage equipment. Read and take precautions before proceeding.



Numbers indicate tasks or steps to be performed by the user.



A diamond indicates the equipment's response to an action performed by the user.



An open box marks items in a checklist.



A circle marks items in a list.



Indicates a tip. A tip is used to provide you with a suggestion that will help you with the maintenance and the operation of this equipment.



Indicates a note. A note is used to provide additional information about the steps you are following throughout the manual.

Using the Carousel Plus Dryer with Your System

The Conair Carousel Plus Dryer with TouchView™ Technology used within your system is factory configured to be used as a central dryer or in conjunction with ResinWorks or a dedicated hopper using a Heater Pack or GasTrac. Therefore, this manual incorporates the information necessary to use these dryers for central drying applications.

Your Responsibility as a User

You must be familiar with all safety procedures concerning installation, operation and maintenance of this equipment. Responsible safety procedures include:

- Thorough review of this User Guide, paying particular attention to hazard warnings, appendices and related diagrams.
- Thorough review of the equipment itself, with careful attention to voltage sources, intended use and warning labels.
- Thorough review of instruction manuals for associated equipment.
- Step-by-step adherence to instructions outlined in this User Guide.

ATTENTION:

Read this so no one gets hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified within this system by following the procedures outlined below and elsewhere in the User Guide.



WARNING: Improper installation, operation or servicing may result in equipment damage or personal injury.

This equipment should be installed, adjusted and serviced by qualified technicians who are familiar with the construction, operation and potential hazards of this type of machinery.

All wiring, disconnects and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



WARNING: Voltage hazard

This equipment is powered by three-phase alternating current, as specified on the equipment's serial tags and data plates. Reference supplemental equipment's manuals for their power requirements.

A properly-sized conductive ground wire from the incoming power supply must be connected to the chassis ground terminal inside the electrical enclosure. Improper grounding can result in severe personal injury and erratic machine operation.

Always disconnect and lock out the incoming main power source before opening the electrical enclosure or performing non-standard operating procedures, such as routine maintenance. Only qualified personnel should perform troubleshooting procedures that require access to the electrical enclosure while power is on.

ATTENTION:

Read this so no one gets hurt (continued)

We design equipment with the user's safety in mind. You can avoid the potential hazards identified within this system by following the procedures outlined below and elsewhere in the User Guide.



CAUTION: Hot Surfaces.

Always protect yourself from hot surfaces inside the dryer and hopper. Also exercise caution around exterior surfaces that may become hot during use. These include the hopper door frame, the exterior of an uninsulated hopper, the return air hose and the dryer's process filter housing and exhaust outlet and the Hopper Temperature Controller (HTC) GasTrac Heater (CGT), or Heater Pack.



WARNING: Do not place aerosol, compressed gas or flammable materials on or near this equipment.

The hot temperatures associated with the drying process may cause aerosols or other flammable materials placed on the dryer or hopper to explode.

How to Use the Lockout Device



CAUTION: Before performing maintenance or repairs on this product, you should disconnect and lockout electrical power sources to prevent injury from unexpected energization or start-up. A lockable device has been provided to isolate this product from potentially hazardous electricity.

Lockout is the preferred method of isolating machines or equipment from energy sources. Your Conair product is equipped with the lockout device pictured.

To use the lockout device:

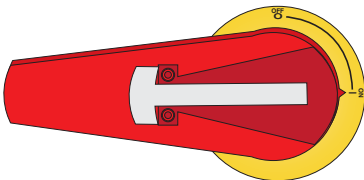
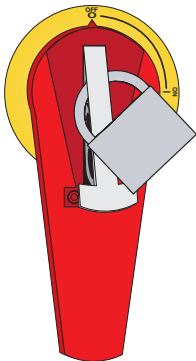
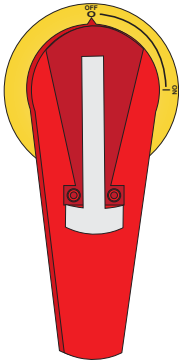
- 1 Stop or turn off the equipment.**
- 2 Isolate the equipment from the electric power.** Turn the rotary disconnect switch to the OFF, or “O” position.
- 3 Secure the device with an assigned lock or tag.** Insert a lock or tag in the holes to prevent movement.
- 4 The equipment is now locked out.**



WARNING: Before removing lockout devices and returning switches to the ON position, make sure that all personnel are clear of the machine, tools have been removed and all safety guards reinstalled.

To restore power, turn the rotary disconnect back to the ON position:

- 1 Remove the lock or tag.**
- 2 Turn the rotary disconnect switch to the ON or “I” position.**



Description

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Typical applications 2-2

How the dryer System works. 2-4

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 Plus W Series Dehumidifying Dryers 2-7

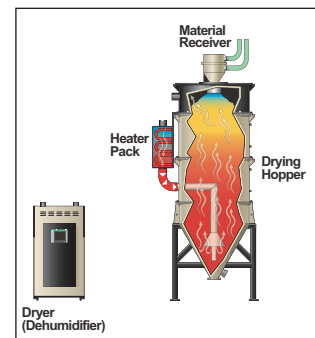
What is the Carousel Plus W Series Dryer?

The Carousel Plus W Series Dehumidifying Dryer produces low-dewpoint air that removes moisture from hygroscopic plastics. The dryer pulls moist air from a drying hopper and circulates it through a dehumidifying desiccant wheel. The dryer then circulates the air through the material in the hopper.

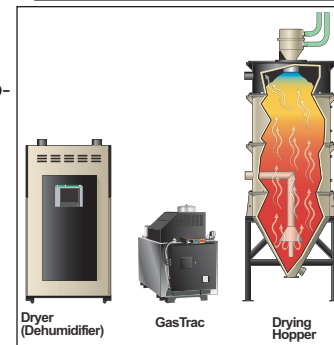
The dryer's closed-loop design ensures a continuous supply of dehumidified air while preventing contamination from moisture in the plant.

Typical Applications

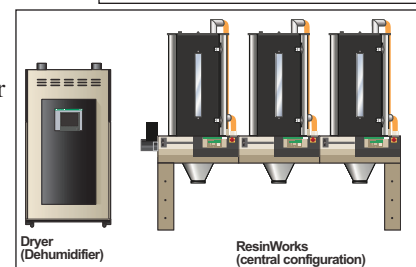
- 1 Dryer on the floor, single hopper (with delivery air heat Heater Pack on the hopper or a HTC on a floor stand).



- 2 Dryer on the floor, multiple hoppers in central configuration (ResinWorks) with separate heat source for each hopper.



- 3 Dryer on the floor, hopper(s) connected to Conair GasTrac delivery air heater.



The Carousel Plus W Series Dryer can be used successfully in applications that require:

- A contamination-free drying environment.
- A constant flow of dehumidified air.



NOTE: The W600 - 5000 provides no heat to the delivery air. A separate heat source is required at the hopper(s) inlet to heat the air to the desired drying temperature.

Typical Applications (continued)


Model	Drying Temperature Range
Low temperature (with precooler)*	100° - 150°F {38° - 66°C}
High heat (with aftercooler)*	150° - 375°F {66° - 191°C}
Low-high (with aftercooler & precooler)*	100° - 375°F {38° - 191°C}


** See Installation: Connecting the Aftercooler and Precooler of this User Guide for more information.*

- Throughput rates of 600 to 5000 lbs {271 to 2267 kg} per hour (some materials can be run at a higher rate).
- Dewpoints of -40°F {-40°C}.

Use the aftercooler when:

- Throughput rates are less than 50% of the dryer’s rated capacity.
- You are pre-drying material at temperatures over 150°F {66°C}
- The return air is 120°F {49°C} or above.

 **NOTE:** The aftercooler reduces the temperature of air returning from the drying hopper, improving the efficiency of the desiccant.

 **NOTE:** Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1300-5000 uses an aftercooler located after the process blower.

How It Works

■ The Process (Drying) Cycle (W600 - 1000)

Process air from the hopper is pulled into the dryer, through the process filter and then into the process blower inlet. Air exits the process blower and then enters the aftercooler, then passes through the desiccant wheel, where moisture is removed. The air exits the dryer and passes through the precooler (if installed), then into the delivery air heat source (Heater Pack, HTC, or GasTrac). After the air exits the delivery air heat source it then goes into the hopper inlet, then to the spreader cone, which evenly distributes the air through the material.

■ The Process (Drying) Cycle (W1300 - 5000)


Process air from the hopper is pulled into the dryer, through the process filter and then into the process blower inlet. Air exits the process blower and then enters the aftercooler, then passes through the desiccant wheel, where moisture is removed. The air exits the dryer and passes through the precooler (if installed), then into the delivery air heat source (Heater Pack, HTC, or GasTrac). After the air exits the delivery air heat source it then goes into the hopper inlet through internal piping, then to the spreader cone, which evenly distributes the air through the material.

■ The Regeneration Cycle

The regeneration blower pulls air through the regeneration filter into the dryer's regeneration heater. The air is heated to 350°F {177°C} before it is pushed into the "wet" section of the desiccant wheel. The hot air purges moisture from the desiccant. The moist air is blown out the moisture exhaust at the top of the dryer.

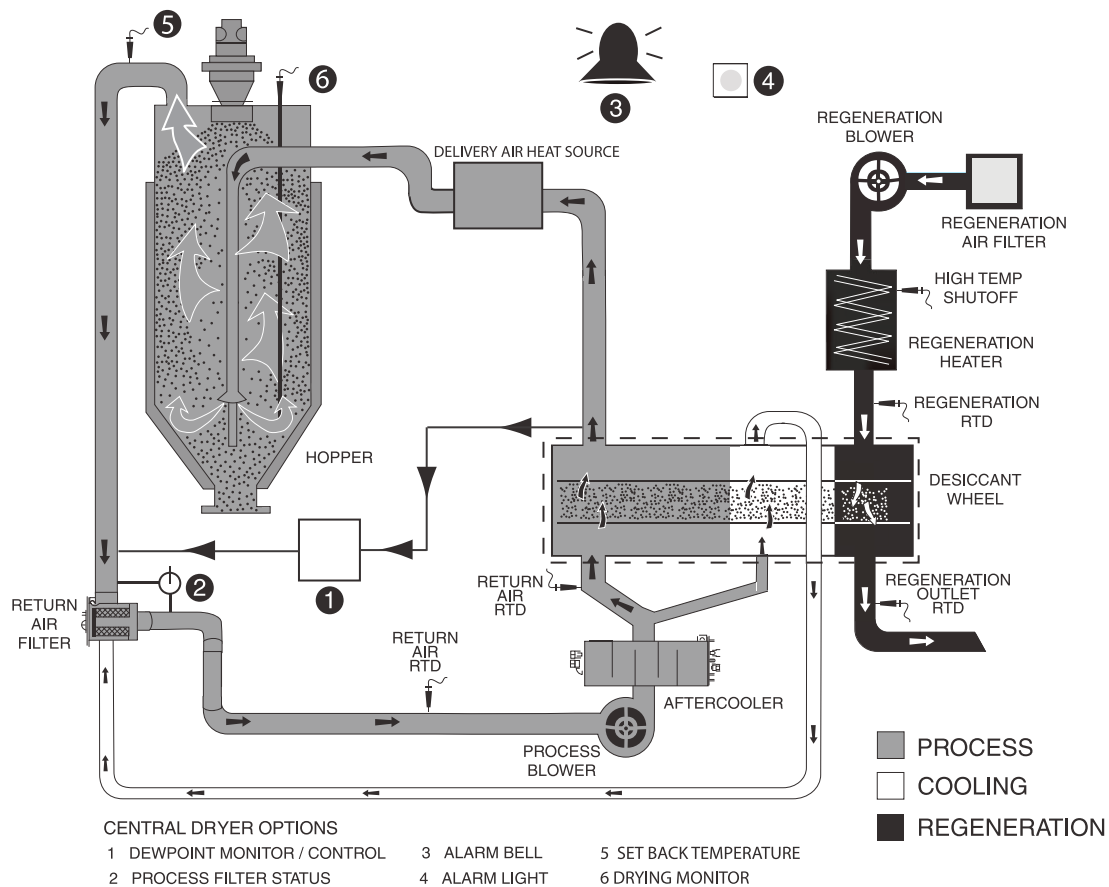
□ The Cooling Cycle (All models except W2400, W4000 and W5000)

Regenerated desiccant must be cooled before it rotates back into the process cycle. The process blower pushes the process air through the desiccant wheel. A small amount of the process air is diverted through a small section of the desiccant wheel to cool the air. The cooling air then returns back to the process air stream at the start of the process cycle.

 **NOTE:** Changing the regeneration cycle temperature setpoint requires a Maintenance level user login.
Activating the optional dewpoint control will override the temperature setting.

How It Works (continued)

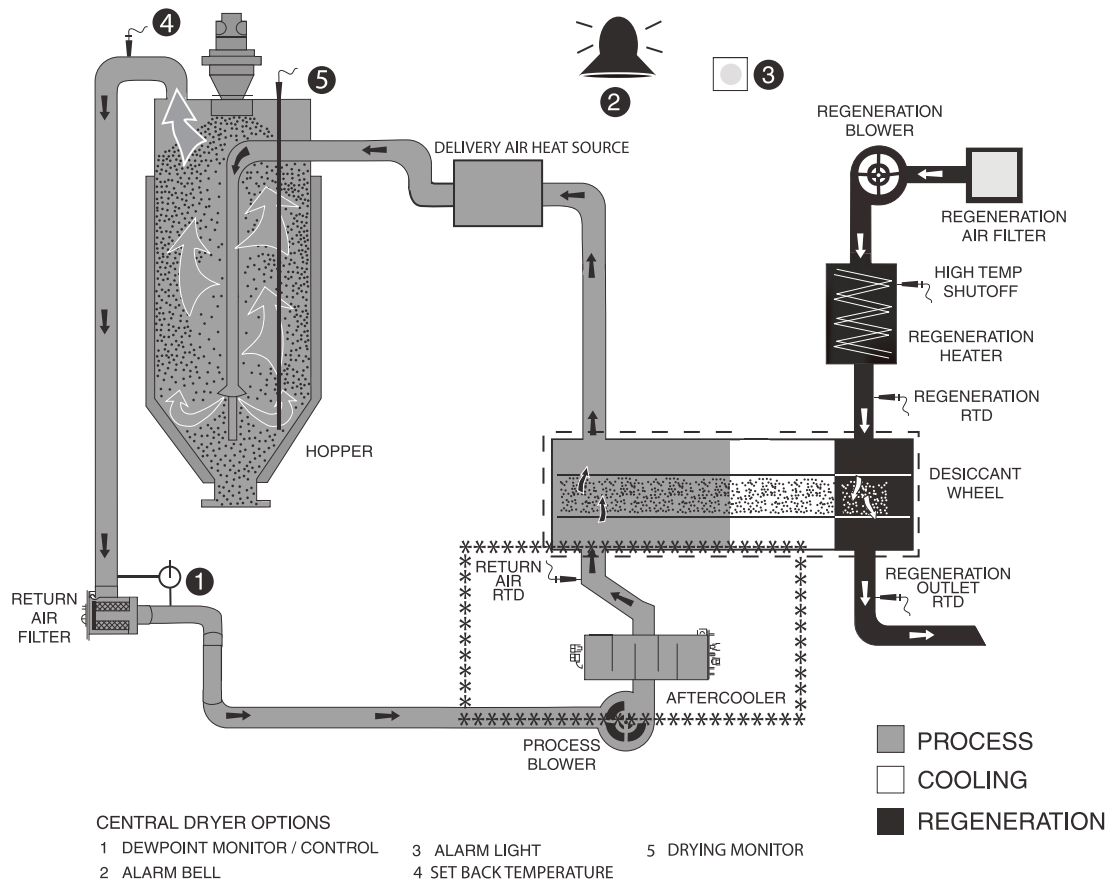
(W600 - 1600 and 3200)



NOTE: Depending on your system configuration, and available options, the system flow may be slightly different than this representation.

How It Works (continued)

(W2400, W4000 and W5000)

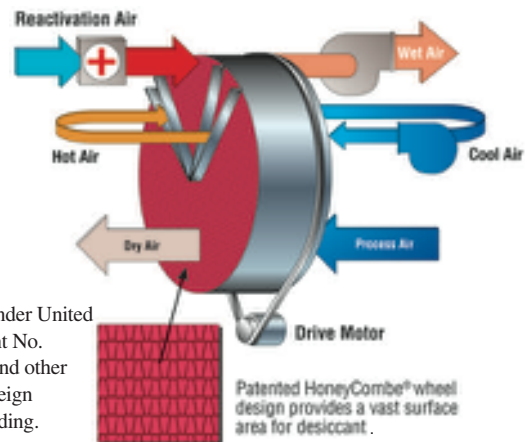


Power Purge

W2400, 4000 and 5000 models have a Power Purge (cooling fan) feature integral to the desiccant wheel assembly.

NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1300-5000 dryers use an aftercooler located after the process blower.

Protected under United States Patent No. 7,101,414 and other US and Foreign Patents Pending.



Specifications: Carousel Plus W Series Dehumidifying Dryers

See the next page for illustrations

MODELS	W600*	W800*	W1000*	W1300*	W1600*	W2000*	W2400*	W3200*	W4000*	W5000*
Performance characteristics (with full hopper)										
Drying temperature	All models 100° - 375°F {38° - 191°C} with options									
Dewpoint	All models -40°F {-40°C}									
Dimensions inches {cm}										
A - Height	93.8 {238.3}			92.2 {234.2}				98.3 {249.7}		
B - Width	49.3 {125.2}			53.9 {136.9}				58.2 {147.8}		
C - Depth	72.4 {183.9}			106.6 {270.8}				123.6 {313.9}		
Outlet/inlet hose diameter	8.0 {20.3}			12.0 {30.5}				12.0 {30.5}		
Approximate weight lbs {kg}										
Installed	1300 {590}	1300 {590}	1400 {636}	1600 {726}				2000 {907}		
Shipping	1495 {678}	1495 {678}	515 {687}	2620 {1188}				3385 {1535}		
Voltage - Standard/Central Full load amps†										
400 V/3 phase/50 Hz‡	89.2 / 34.3	115.9 / 33.5	116.6 / 34.2	152.7 / 42.9	159.4 / 49.6	213.7 / 76.4	248.7 / 84.0	282.7 / 90.5	371.3 / 96.8	371.9 / 97.4
460 V/3 phase/60 Hz	77.6 / 29.8	100.9 / 29.2	101.5 / 37.8	133.4 / 43.0	138.6 / 43.0	186.4 / 66.9	216.5 / 73.1	247.3 / 80.0	323.0 / 84.0	323.7 / 84.7
575 V/3 phase/60 Hz	62.1 / 23.9	80.7 / 23.4	81.1 / 23.8	106.6 / 30.2	110.8 / 34.4	149.1 / 53.6	173.0 / 58.4	197.7 / 64.0	258.1 / 67.1	258.7 / 67.7
380 V/3 phase/60 Hz	93.9 / 36.1	121.9 / 35.2	122.7 / 36.0	160.7 / 45.2	167.8 / 52.2	224.6 / 80.1	261.7 / 88.3	297.6 / 95.3	390.9 / 101.9	391.5 / 102.5
Water requirements {for aftercooler or optional precooler}§										
Recommended temperature**	45° - 85°F {7° - 29°C}			45° - 85°F {7° - 29°C}				45° - 85°F {7° - 29°C}		
Water flow gal./min. {liters/min.}	6 - 25 {22.7 - 94.6}††			12 - 40 {45.4 - 151.4}††				15 - 50 {56.8 - 189.3}††		
Water connections NPT	1 1/2 inch NPT			1 1/2 inch NPT				1 1/2 inch NPT		

SPECIFICATION NOTES:

* Dryers W600-W5000 that are central dryers do not have process heaters. Heater Packs, Hopper Temperature Controllers (HTC's), or GasTrac Dryers (CGT's) are used at the hopper for heating the process air. See the Hopper Temperature Controller (HTC) and GasTrac Dryer (CGT) specification sheets for further technical information. Even though Heater Packs are remote from the dryer, they are controlled by the dryer.

[†] The first full load amps number listed includes current to operate the dryer and the heat supply controlled by the dryer. The second full load amps number is current required for the dryer only, when operated as a central dryer with heaters (more than one) controlled and powered remotely.

[‡] Dryers running at 50 Hz will have 17% less airflow, and a 17% reduction in material throughput.

[§] When drying below 150°F {66°C} a precooler is required.

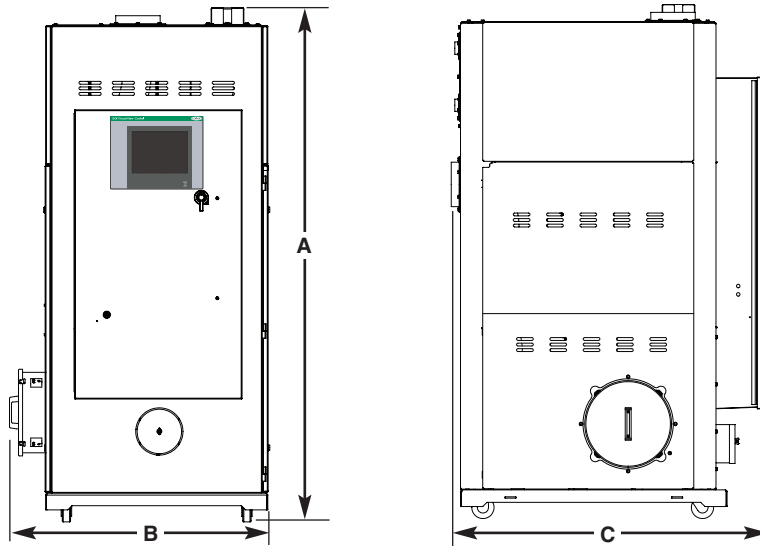
^{**} Temperatures above or below the recommended levels may affect dryer performance. Tower, chiller or municipal water sources can be used.

^{††} Higher chilling water temperatures will require a greater flow rate.

Wiring between process air heater, Heater Pack, and dryer where control for this heater is located is not included. Maximum working distance is 100 feet {30 meters}. Consult Conair or a qualified electrician to determine gauge of wire required for distance. Maximum physical distance between dryer and hopper is 20 feet {6 meters}.

Specifications may change without notice. Consult a Conair sales representative for the most current information.

Specifications: Carousel Plus W Series Dehumidifying Dryers (continued)



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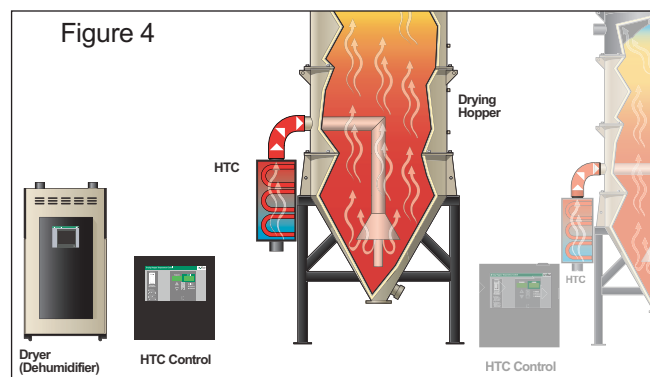
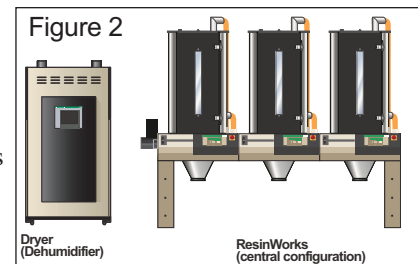
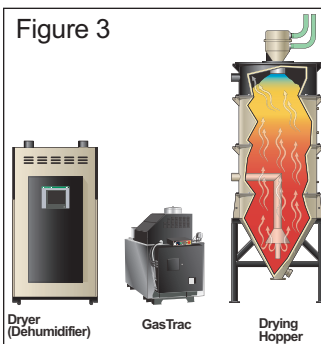
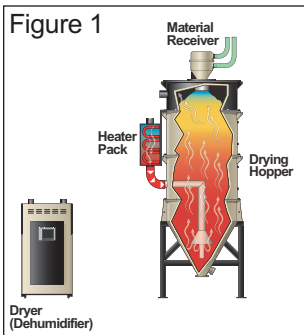
Unpacking the Boxes

The Carousel Plus W Series Dryer comes in one to four boxes, depending on the model and options ordered. The box(es) could include (depending on the options selected):

 **NOTE:** Depending on what configuration you ordered, your dryer may arrive with flexible hose, or a hard piping kit.

- Carousel Plus W Series Dryer
- Delivery air hose or pipe
- Return air hose or pipe
- Heater Pack (not applicable with Central/ResinWorks Systems)
- User Guide

- 1 Carefully remove the dryer and components** from their shipping container(s). Note that the dryer is secured to its shipping container with metal bands that pass through the bottom of the dryer frame.
- 2 Unbolt any additional items secured to the shipping pallet**, such as the regeneration exhaust cover and return air adapter. (Carousel Plus W Series 1300-2400 Dryers will have a dry air delivery adapter. Carousel Plus W Series 3200-5000 Dryers will have a dry air delivery adapter.)
- 3 Remove all packing material**, protective paper, tape, and plastic.
- 4 Cut and remove the desiccant wheel tie** securing the wheel assembly. (W600-1000)
- 5 Carefully inspect all components** to make sure no damage occurred during shipping, and that you have all the necessary hardware.
- 6 Take a moment to record serial numbers** and electrical power specifications in the blanks provided on the back of the User Guide's title page. The information will be helpful if you ever need service or parts.



- 7 You are now ready to begin installation.** Follow the preparation steps on the next page, then choose one of the following mounting options:
 - Dryer on the floor, single hopper (with process Heater Pack mounted to hopper) on a floor stand. (See Figure 1.)
 - Dryer on the floor, multiple hoppers in central configuration (ResinWorks) with separate heat source for each hopper. (See Figure 2.)
 - Dryer on the floor with Conair GasTrac or HTCs for process heat connected to hopper(s). (See Figures 3 and 4.)

Preparing for Installation

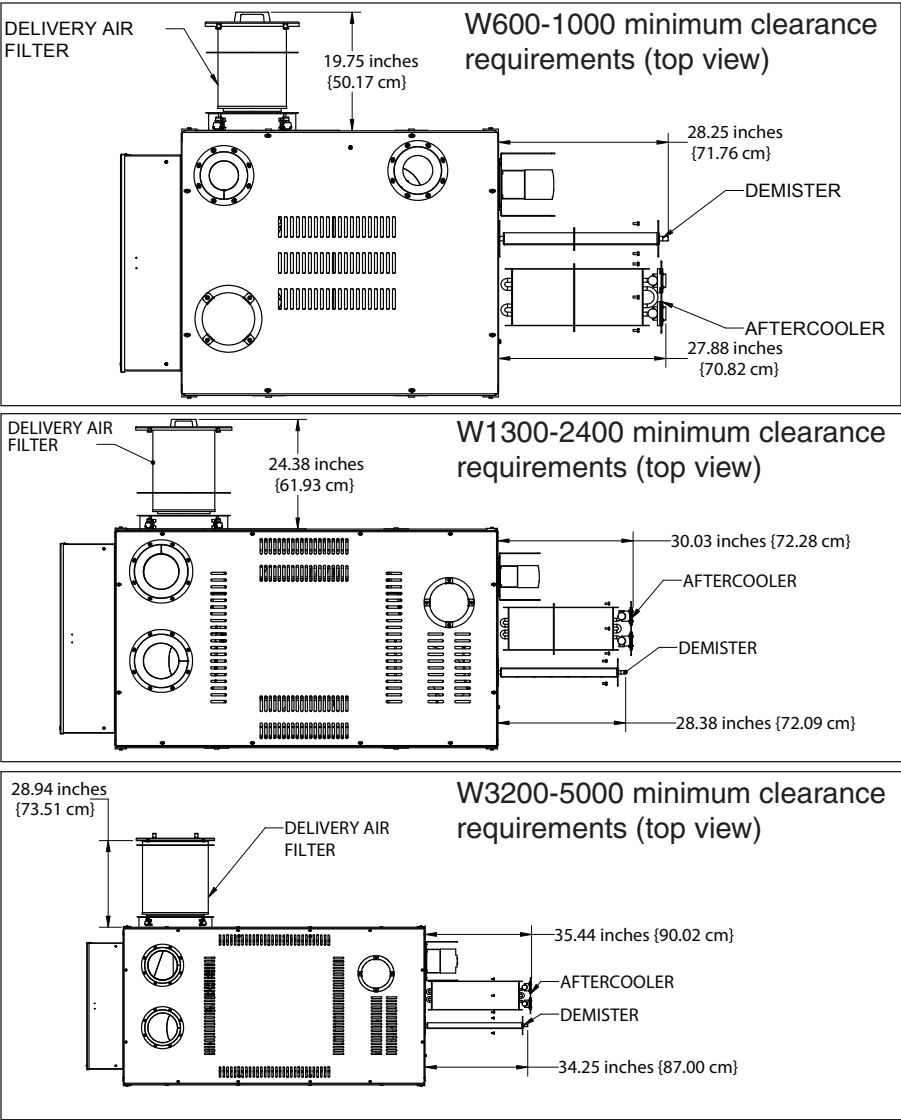
The Carousel Plus W Series Dryer is easy to install if you plan the location and prepare the mounting area properly.

1 Make sure the mounting area provides:

- ☐ **A grounded power source supplying the voltage and correct current** for your dryer model. Check the dryer's serial tag (on the control box) for the correct amps, voltage, phase, and cycles. Field wiring should be completed by a qualified personnel to the planned location for the dryer. All electrical wiring should comply with your region's electrical codes.
- ☐ **A source of water, when using the aftercooler and/or precooler.** The W Dryer's aftercooler and/or precooler require tower, city, or chiller water at temperatures of 45° to 85°F {7° to 29°C}. Refer to the Specifications Sheet (page 2-7) for flow rate for your unit. Piping should be ran to the planned dryer location. Use flexible hose to connect the water pipes to the aftercooler and/or optional precooler.
- ☐ **Minimum clearance for safe operation and maintenance.** Refer to the illustrations below for specific minimum clearance distance. Clearance on sides without specified distances should be 24 inches {61 cm} minimum.

TIP: If you plan to use vacuum or compressed air loaders to fill the hopper, install conveying lines to the drying hopper location.

NOTE: The aftercooler reduces the temperature of air returning from the drying hopper, improving the efficiency of the desiccant.



Positioning the Dryer on the Floor

- 1 Lift the dryer from the shipping container** using a fork truck.
- 2 Position the dryer on the floor** near the hopper or ResinWorks sled. Make sure the location allows for the connection of all hoses, keeping hose lengths as short as possible.

Removing the Cable Tie from the Desiccant Wheel (W600-1000 models)

- 1 Open the dryer side panels and remove the cable tie(s) securing the desiccant wheel**, if it was not done while unpacking the dryer. Depending upon which size dryer you have, there may be several cable ties.



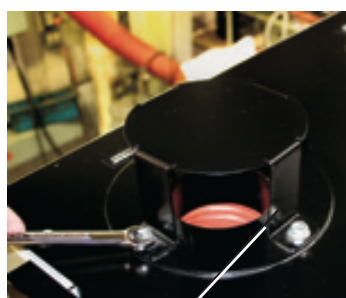
Desiccant Cable Tie

Installing the Regeneration Exhaust Cover

The Carousel Plus W Series Dryer's regeneration exhaust cover must be installed.

To install the regeneration exhaust cover:

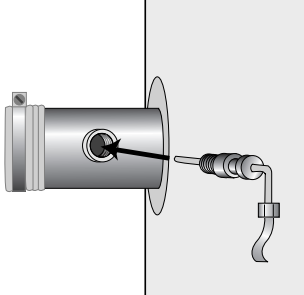
- 1 Remove the exhaust cover that is attached to the dryer's shipping pallet.**
- 2 Locate the bolt pattern at the top of the dryer**, on top of the regeneration exhaust outlet.
- 3 Position the regeneration exhaust cover on top of the regeneration exhaust outlet**, aligning both bolt patterns.
- 4 Secure the regeneration exhaust cover with supplied hardware**, using an appropriately sized wrench.



Regeneration Exhaust Cover

Connecting the Delivery Air RTD Probe

The delivery air RTD probe monitors the temperature of the drying air as it enters the hopper. If the probe is not installed correctly, temperature readings will be inaccurate.



- 1 Insert the probe at the inlet to the hopper.** The end of the probe must not touch the walls of the inlet. The tip of the probe should be approximately in the center of the tube. Tighten the compression fittings to lock the probe in place.



- 2 Plug the probe's cable into the receptacle labeled process on the left side of the electrical enclosure.** Hand tighten the connector. Coil any excess cable and secure it with a wire tie.



Central

When configured as a central dryer, monitoring the drying air temperature is not necessary since there is no delivery air heater in the system. Therefore, installation and connection of the RTD probe and/or setback probe is not applicable.

Installation
3

Connecting the Setback RTD Probe

(Optional)

- 1 Insert the probe in the hopper outlet** at the top of the hopper. The end of the probe must not touch the walls of the inlet. The tip of the probe should be approximately in the center of the tube. Tighten the compression fittings to lock the probe in place.
- 2 Plug the probe's cable into the receptacle labeled setback on the left side of the electrical enclosure.** Hand tighten the connector. Coil any excess cable and secure it with a wire tie.

Connecting the Process Protection RTD

(Optional)

- 1 Insert the probe into the 1/8 inch NPT coupling** on heater manifold (before the hopper inlet). The manifold will be threaded for the process protection connection.
- 2 Plug the probe's cable into the receptacle labeled Process Protection on the left side of the electrical enclosure.** Hand tighten the connector. Coil any excess cable and secure it with a wire tie.

Installing the Return Air Inlet and Air Outlet Adapters (W1300 - 5000)

The Carousel Plus W Series Dryer's return air inlet and air outlet adapters will be removed when the dryer is shipped.

To install the return air inlet and air outlet adapters:

- 1 Remove the return air inlet and air outlet adapters that are attached to the dryer's shipping pallet.**
- 2 Locate the bolt patterns on the top of the dryer, on top of the return air inlet and air out outlet.**
- 3 Position the return air adapter on top of the return air inlet, aligning both bolt patterns.**
- 4 Secure the return air adapter with supplied hardware, using appropriately sized wrench.**
- 5 Position the air inlet adapter on top of the inlet air inlet, aligning both bolt patterns.**
- 6 Secure the air inlet adapter with supplied hardware, using an appropriately sized wrench.**

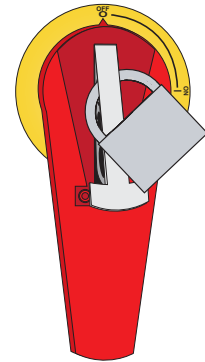


Connecting the Main Power

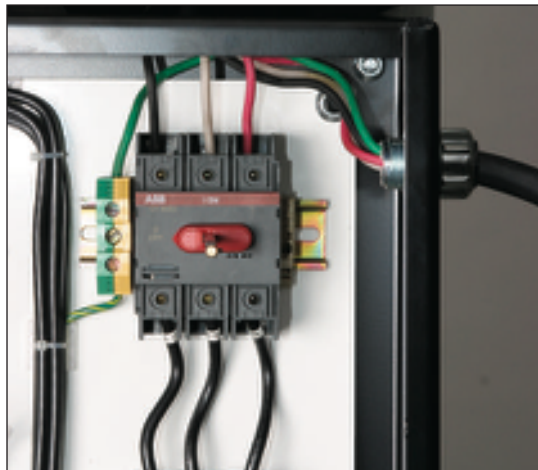


CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.

- 1 Open the dryer's electrical enclosure.** Turn the disconnect dial on the dryer door to the Off or "O" position. Lock out the main power. *See Introduction: How to Use the Lockout Device for complete lock out information.* Turn the captive screw, and swing the door open.
- 2 Insert the main power wire** through the knockout in the side of the enclosure. Secure the wire with an appropriate strain relief.



IMPORTANT: Always refer to the wiring diagrams that came with your dryer before making electrical connections.



- 3 Connect the power wires** to the three terminals at the top of the power disconnect holder.
- 4 Connect the ground wire** to the ground lug as shown in the photo.



NOTE: Models W600-5000 configured with process heat and a Heater Pack at the hopper will require conduit from the control panel to the Heater Pack. *See the Appendix, in this User Guide for more information about proper conduit and cable size for your application.*



NOTE: Wiring between process air heater, Heater Pack, and dryer where control for this heater is located is not included. Maximum working distance is 100 feet {30 meters}. Consult Conair or a qualified electrician to determine gauge of wire required for distance.

Opening the Dryer Doors

(W1300 - 5000)

Carousel Plus W Series 600-5000 Dryers designed after December 2012 will have locking removable side panels.

To unlock and remove the side panels:



NOTE: The panel surrounding the delivery air filter is bolted on. Remove bolts to remove this panel.

1 Rotate the locking panel bolt on each dryer panel counterclockwise with a regular screw driver.

2 Using the handle, lift the panel out and up to remove from the side of the dryer. Repeat for each panel as necessary.



Dryer Panel
Locking Bolts
(W1300-5000)



Connecting the Air Hoses to a Single Hopper (W1300 - 5000)

Depending on how your dryer was configured, using the two flexible hoses or the hard piping kit provided, connect the inlet of the Heater Pack and outlet of the drying hopper to the dryer. Make sure the dryer is located as close as possible to the hopper (10 ft {3.05 m} of hose supplied).

- 1 Attach one hose (or pipe) from the return air inlet, located on top of the dryer, to the outlet of the hopper.



Return Air Inlet

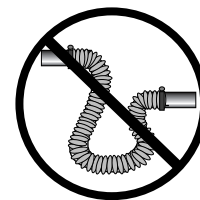
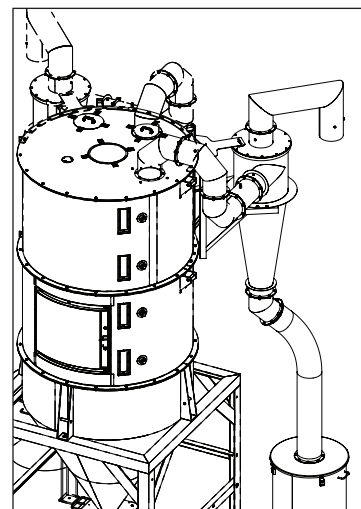
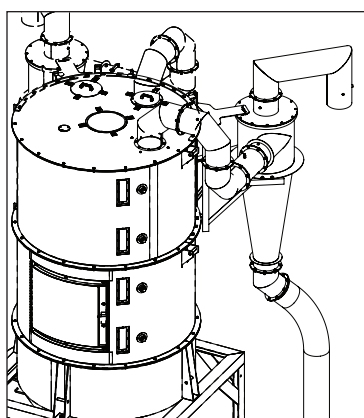
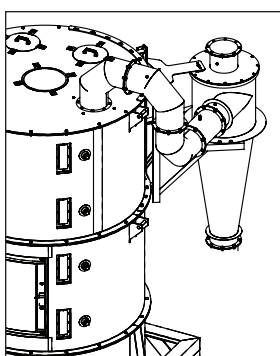
- 2 Attach one hose (or pipe) from the delivery air outlet, located on top of the dryer, to the inlet of the Heater Pack.



Delivery Air Outlet

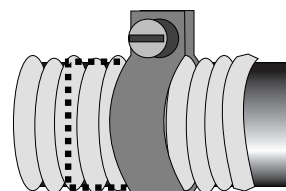
- 3 Secure hoses with clamps. The hose clamp should be secured at least 1/4 in. {0.64 cm} from the end of the inlet or outlet tube.

NOTE: If connecting your dryer to a cyclone or dust collector, your installation may vary slightly. Refer to the instruction that came with your equipment (cyclone, dust collector, heater pack) for more information.



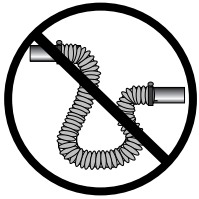
NOTE: Do not allow the flexible hoses to kink or crimp.


NOTE: Inlet and outlet locations may be different on your dryer. Refer to the labeling on your dryer.



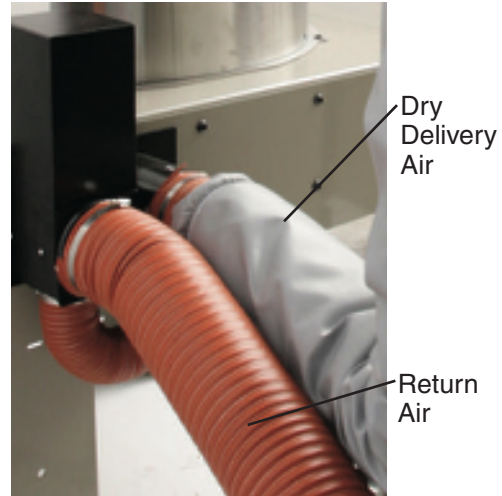
Connecting the Air Hoses to a ResinWorks

Using the two flexible hoses provided, connect the delivery air and return air manifolds of the ResinWorks to the dryer. Make sure the dryer is located as close as possible to the sleds (10 ft {3.05 m} of hose supplied).

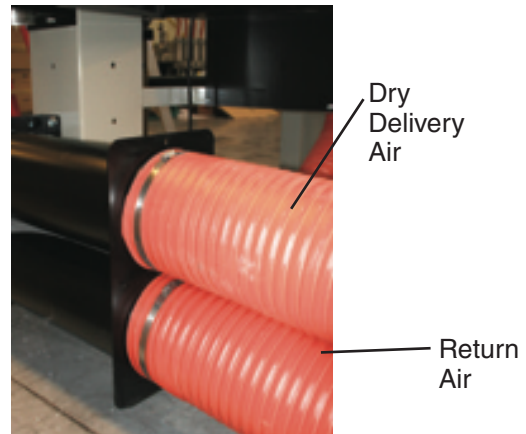


 **NOTE:** Do not allow the flexible hoses to kink or crimp.

- 1 Attach one hose from the return air inlet** of the dryer to the return air manifold of the ResinWorks.
- 2 Attach one hose from the delivery air outlet** of the dryer to the delivery air manifold of the ResinWorks.
- 3 Secure hoses with clamps.** The hose clamp should be secured at least 1/4 in. {0.64 cm} from the end of the inlet or outlet tube.




Insulated hose shown not standard.



Connecting the Dryer to the Hopper


If your dryer hose connection and your hopper Heater Pack hose connection are not the same size, you will need a hose adapter. Contact Conair Parts 1 800-458-1960.

 **NOTE:** Because the W600 - 5000 models require a separate heat source for the delivery air, all references to this heat source will be identified as a Heater Pack, or a Conair “HTC” (Hopper Temperature Controller). When using this dryer with an HTC, reference the User Guide supplied with the HTC for installation instructions.

Connecting the Dryer to ResinWorks

If your dryer hose connection and the connection on your ResinWorks sled are not the same size, you will need to use a hose adapter. Contact Conair Parts 1-800-458-1960.

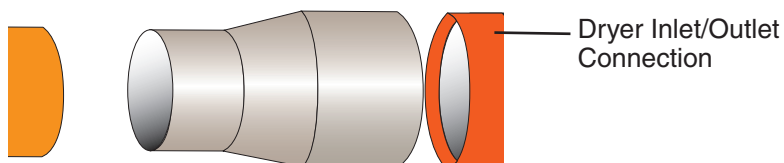
Connecting Air Hose Adapters

 **NOTE:** Adapters should be located as close to the hopper as possible, and maintain the largest line size possible for the longest distance.

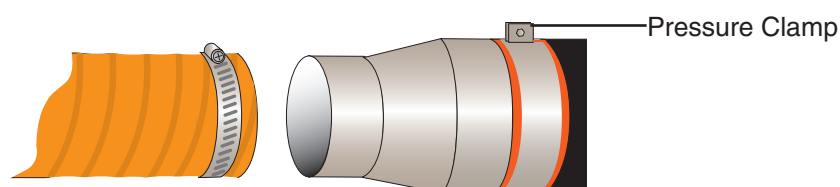
Depending on the hopper you purchased you may need to install an air hose adapter to connect the hopper to your dryer.

To connect the air hose adapter:

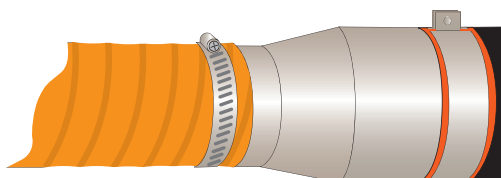
- 1 Place a high temperature gasket approximately half way down from the end of the dry air delivery outlet.**



- 2 Place hose adapter inside high temperature gasket flush to the dryer outlet, secure with pressure clamp.**



- 3 Attach the hopper inlet hose over the adapter, secure with clamp.**



Connecting the Aftercooler and Optional Precooler (W600 - 1000)

The aftercooler and/or optional precooler require a source of city, tower, or chiller water and a discharge or return line. You can use water at temperatures of 45 to 85°F {7 to 29°C}. The water flow should be at least 3 gal/min {11.4 liters/min}.



Aftercooler Inlet

1 Connect the water supply line to the aftercooler or precooler inlet.

If a manual shut off valve is used, it should be mounted on the inlet line. Conair recommends that both the supply and return water lines have a shut off valve.



Aftercooler Outlet

2 Connect the water discharge or return line to the aftercooler or precooler outlet.



IMPORTANT: Make the water supply and discharge / return connections with flexible hoses at least 24 in. (61 cm) long. This allows you to easily remove the aftercooler assembly for cleaning.



TIP: If an optional flow control is also being installed with the aftercooler, the manual shut off valve should be installed on the inlet line for the flow control.



NOTE: Models W600-1000 dryer aftercooler and dry air delivery configuration shown. Location on larger models are different. Refer to the labeling on your dryer.



IMPORTANT: Turn the water off when the dryer is not in use to prevent condensation.

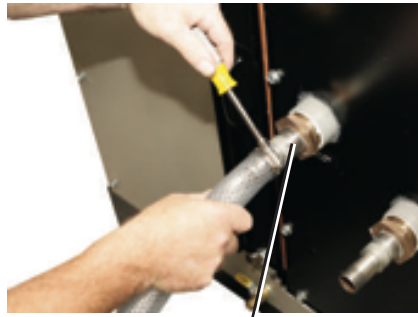
Recommended Water Flow Rates	
Dryer Model	gal./min. {liters/min.}
600	15 {56.8}
800	15 {56.8}
1000	20 {75.7}
1300	25 {94.6}
1600	25 {94.6}
2000	25 {94.6}
2400	25 {94.6}
3200	30 {113.6}
4000	30 {113.6}
5000	30 {113.6}

Connecting the Aftercooler and Optional Precooler (w1300 - 5000)

The aftercooler and/or optional precooler require a source of city, tower, or chiller water and a discharge or return line. You can use water at temperatures of 45 to 85°F {7 to 29°C}.

❖ **TIP:** Make the water supply and discharge / return connections with flexible hoses at least 24 in. (61 cm) long. This allows you to easily remove the aftercooler assembly for cleaning.

⚠ **IMPORTANT:** If an optional flow control is also being installed with the aftercooler, the manual shut off valve should be installed on the inlet line for the flow control.



aftercooler inlet

- 1 Connect the water supply line to the aftercooler or precooler inlet.**
If a manual shut off valve is used, it should be mounted on the inlet line. Conair recommends that a manual shut off valve be used on both the supply and return lines.



aftercooler outlet

- 2 Connect the water discharge or return line to the aftercooler or precooler outlet.**




IMPORTANT: Turn the water off when the dryer is not in use to prevent condensation.

Recommended Water Flow Rates	
Dryer Model	gal./min. {liters/min.}
600	15 {56.8}
800	15 {56.8}
1000	20 {75.7}
1300	25 {94.6}
1600	25 {94.6}
2000	25 {94.6}
2400	25 {94.6}
3200	30 {113.6}
4000	30 {113.6}
5000	30 {113.6}

Checking for Proper Air Flow

 **IMPORTANT:** This procedure must be performed before loading material into the hopper.

 **CAUTION:** If the airflow direction is incorrect due to improper phase connection, material from the hopper can be pulled back into the dryer, causing permanent damage to this equipment.


- 1 **Turn on the main power to the dryer.** Make sure the dryer's disconnect dial is in the ON position. This powers up the control and the display will illuminate.

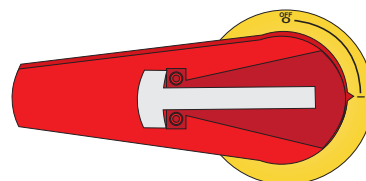



- 2 From the Home Screen , press the “Setup” button.



- 3 **Remove the dryer's side panels.** *See Installation section entitled, Opening the Dryer Doors.*

 **WARNING:** All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

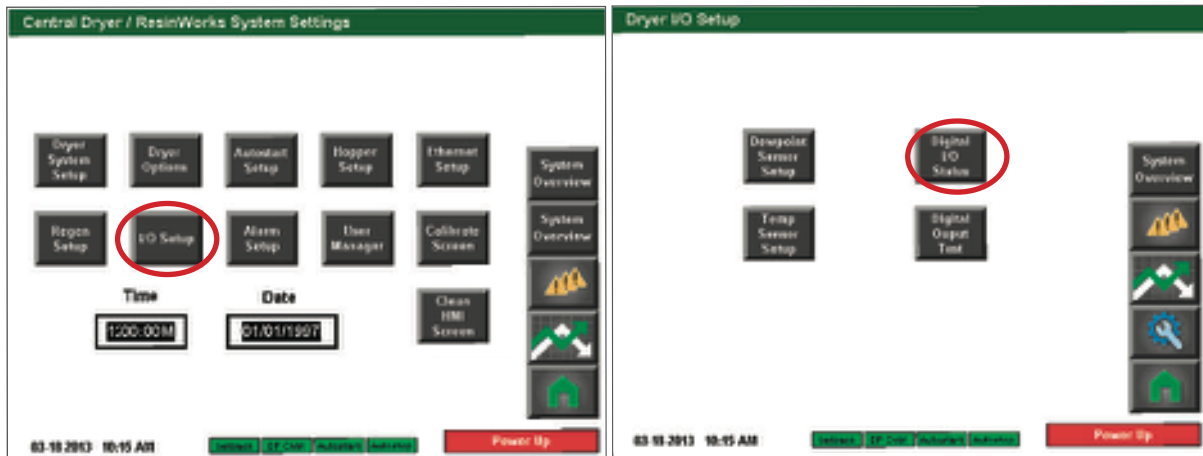


 **NOTE:** Users must be logged in as Maint 1 (user level 3) in order to perform this operational test.

Checking for Proper Air Flow (continued)

4 Press the “I/O Setup” button and then the “I/O Test” button.

5 Press the power button beside “Dryer I/O Test Mode” to enable test mode.



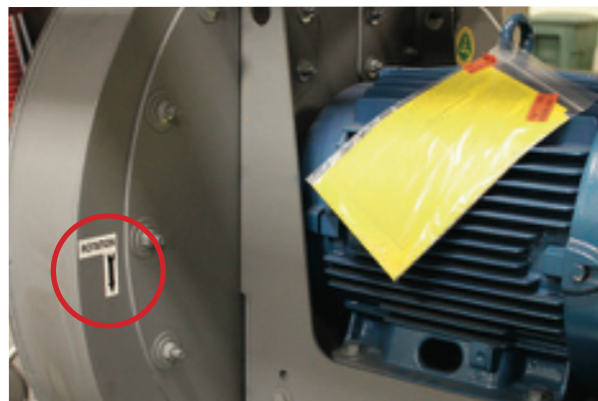
WARNING: All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.

6 Press the “Delivery Air Blower” power button to start the blower. Press the button again after about one second to stop the blower.



NOTE: On initial test (first time in Dryer I/O Test Mode) the process blower will automatically start. Press the button beside “Delivery Air Blower” to stop the blower.

7 Visually verify the delivery air blower motor is moving in the correct direction indicated by the arrow on the blower housing. The Carousel Plus W series 600-5000 dryers are equipped with centrifugal delivery air blowers.

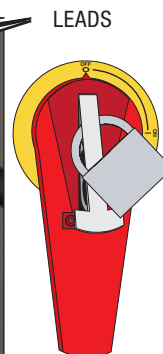


Checking for Proper Air Flow (continued)

- 8** If airflow is incorrect disconnect power, follow proper lockout procedures and swap any 2 of the 3 incoming main power wires.

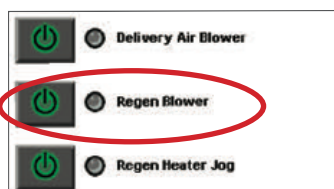


If the airflow is reversed, the delivery air blower is turning in the wrong direction. Turn off and lock out the main power source. Open the electrical enclosure and reverse any two leads connecting the main power supply to the dryer.



WARNING: All wiring, disconnects and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the the machine serial tag and data plate.

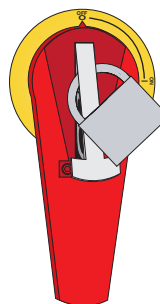
- 9** Press the “Regen Blower” power button to start the blower. Press the button again after about one second to stop the blower.



- 10** Visually verify the regeneration blower motor is moving in the correct direction indicated by the arrow on the blower housing.



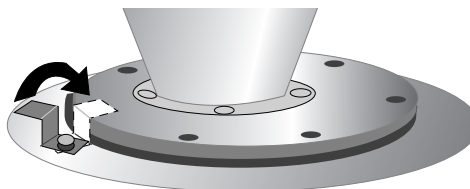
- 11** If airflow is incorrect disconnect power, follow proper lockout procedures and reverse the leads at the regeneration blower motor.



WARNING: All wiring, disconnects and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the the machine serial tag and data plate.

Mounting a Loader on the Hopper

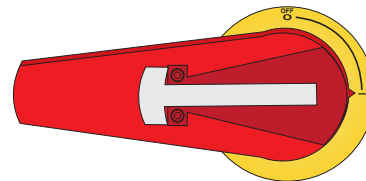
If you have a Conair loader or vacuum receiver, you can use the flange and mounting clips provided on the top of the hopper. Refer to the manuals that came with your specific receiver or loader for detailed installation instructions.



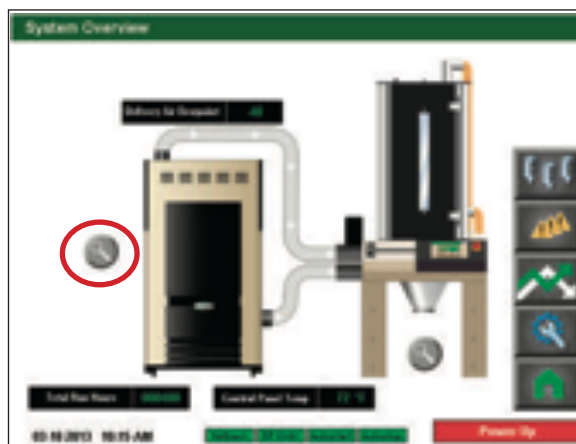
Testing the Installation

You have completed the installation. Now it's time to make sure everything works.

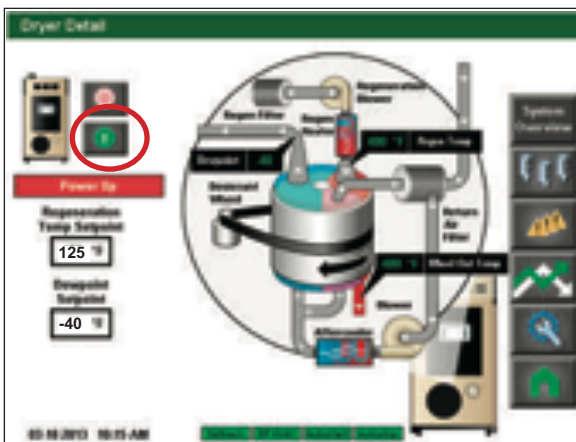
- 1 Check to ensure that there is no material in the drying hopper.** If you have mounted an optional vacuum receiver on the hopper, disconnect the material inlet hose at the source.
- 2 Turn on the main power to the dryer.** Check to ensure that the dryer's disconnect dial is in the ON position. This powers up the touch screen control.
- 3 From the Home Screen, press the “System Overview” button.**



- 4 From the Overview Screen, press the magnifying glass button beside the dryer. (Also referred to as the “Dryer Zoom” button.)**



- 5 From the Dryer Screen, verify that setpoints are correct, and press the dryer start button.**



(continued)

Testing the Installation (continued)

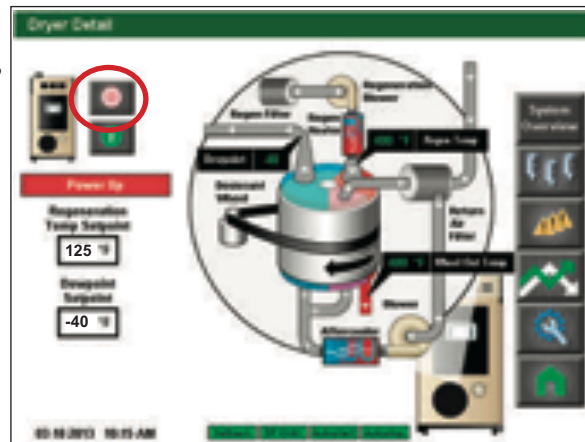
If everything is installed correctly:

- The regeneration and process blowers turn on
- The regeneration heater turns on
- The process heater will energize (if configured as a stand alone dryer)
- The dryer's desiccant wheel starts turning. (If the desiccant wheel does not turn, turn off the dryer, disconnect from power, and verify that the desiccant wheel tie has been removed)

6 From the Dryer Detail screen, press the dryer stop button.

If everything is installed correctly:

- The blowers will continue running as needed to cool the heaters. (Until regeneration heaters are less than 150°F {66°C}.)



7 The test is over. If the dryer performed the normal operating sequences as outlined, re-connect the material source to the optional hopper receiver and begin normal operation. If it did not, [refer to the Troubleshooting section of the User Guide.](#)

Operation

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Stopping the Dryer	4-85
Stopping the Dryer in an emergency.	4-86
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Dryer System Control Panel



NOTE: The bottom of the Home screen displays valuable information, including the current date and time, the HMI software version, the dryer board version, and Conair's copyright. The software version and board version will be helpful for service and troubleshooting purposes.

Dryer board version

HMI software version

On power-up, the Carousel Plus Dryer control displays the initial system Home screen.



At start-up, the system security level is "Default". Once the operator clicks the Login button and enters the user name and password, access is permitted to various areas of the control. The user, depending on security access level, can access the various system and setup screens for the entire Carousel Plus Dryer system.



Stand alone dryer



Central or ResinWorks dryer

Your DC-T Carousel Plus Dryer Control has been configured at the factory based on the configuration you chose when placing the order. The DC-T can be configured for use with a ResinWorks dryer with multiple hoppers, a central dryer with separate heat source to multiple hoppers, or as a stand alone dryer with heater pack at a single hopper. Once this factory configuration is set (based upon your order) a customer can not change this configuration. The screens, the screen flow, and operation will differ greatly depending on which configuration you are using. The Operation section of this user guide covers each of the three configurations individually.

How to Navigate the Control Screens

Navigate through the DC-T control screens by touching any navigation "buttons" and/or magnifying glass icons.



Navigation Buttons
Touching the navigation buttons will take the user to the control screen selected.


Magnifying Glass Icons
Touching the magnifying glass icons will take the user to screens that contain detailed information about the system component selected.

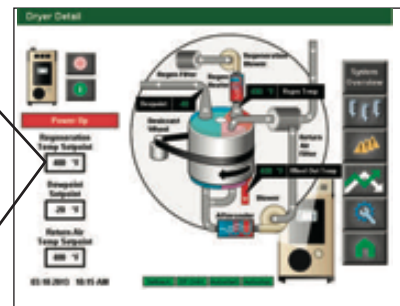
How to Navigate the Control Screens

(continued)

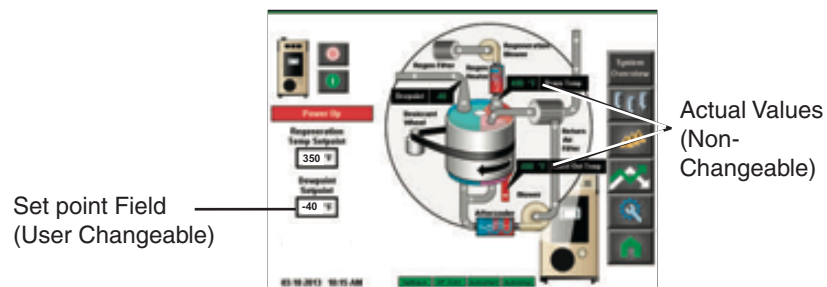
The user name, password and other information can be entered using the pop-up keyboard window that appears when an appropriate field is touched.



 **NOTE:** Changing most parameters will require a user login at the proper security level. *See the Operation section of this User Guide entitled DC-T System Security Levels for more information about user login levels and access.*



Set points can be entered within fields with a heavy black boundaries. Values shown within colored boxes are “actual” values and can not be changed.



How to Navigate the Control Screens (continued)

All beveled grey buttons on the DC-T control screen are selectable and will direct you to another screen. At any point, pressing the Home button will return you to the home screen.



The DC-T Control Panel

Below is a screen from the DC-T while in operation. This screen is shown as a sample of functionality of a typical DC-T screen. See the functional descriptions below. The following pages are helpful in understanding how to use the DC-T Control.

Screen name

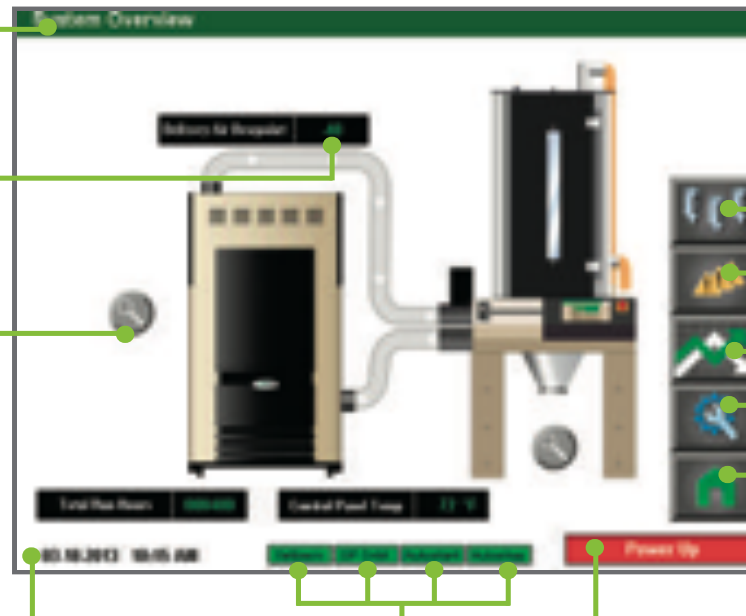
Indicates what screen you are currently looking at.

Displayed data

Displays the current live data for the piece of equipment. If this data displays as all dashes or blanks, there is a communication error.

Magnifying glass / "Zoom button"

Use these buttons to zoom to more information about the equipment. In this example, this Dryer Zoom button takes you to the Resin-Works Dryer screen.



Hopper Selection button

Go to the Hopper Selection screen.

Alarms button

Go to the Alarms area.

Trending buttons

Go to the Trend Selection screen.

Setup button

Go to the Setup screen.

Home button

Go to the Home screen.

Date and Time

This area displays the current date and time.

Enabled Options

This area displays icons to let you see what options are currently being used. For example, this dryer is using the Temperature Setback feature, the Dewpoint Control, and Autostart and Autostop.

System status

This area displays messages to let you know the current status of the dryer.



NOTE: Depending upon which options were ordered or are enabled, different icons may appear as available or unavailable.



Help Overview button

Help for the current screen.

Previous button

Returns to the previous list of items.

Next button

Moves to the next list of items.

System Overview button

Go to the System Overview screen.

Login/Logout button

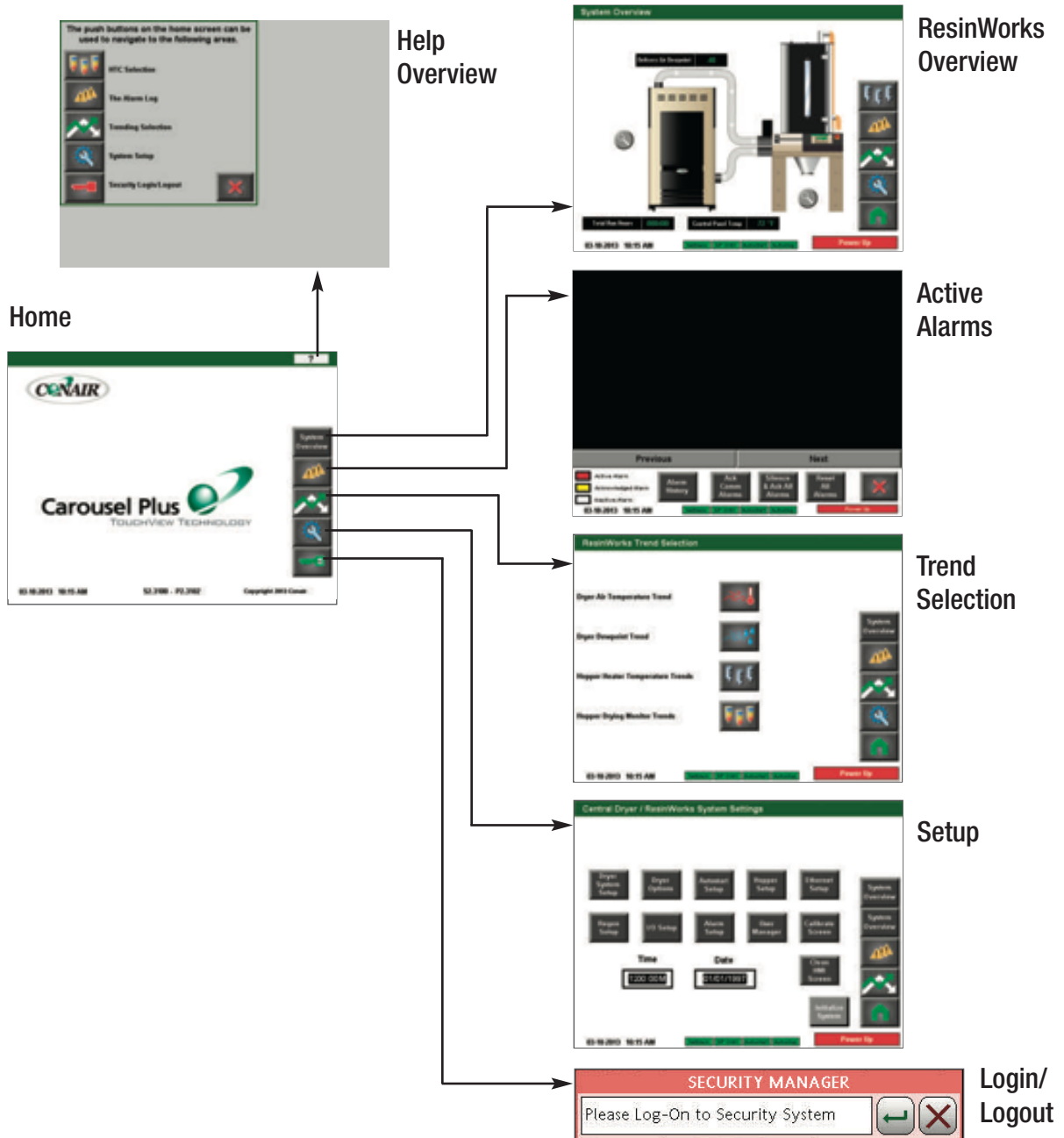
This button is used to login or log out as a user.

Operation - ResinWorks Configuration

The following pages (screen flow charts, screen descriptions, and basic operation) describe the operation of the dryer when factory configured as a ResinWorks dryer attached to multiple hoppers, or as a central dryer attached to one or multiple hoppers with delivery air heat at each hopper.

Control Function Flow Charts

From the Home screen

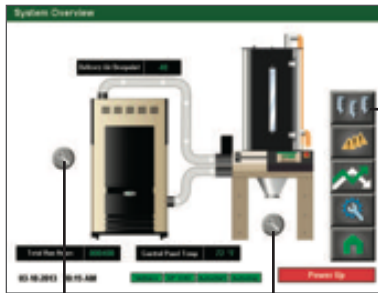


Control Function Flow Charts

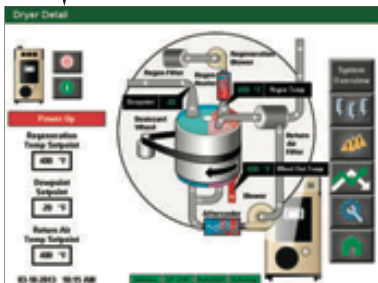
From the Overview screen



System Overview



Dryer Detail



Individual hopper DM3-e (if equipped) settings screen



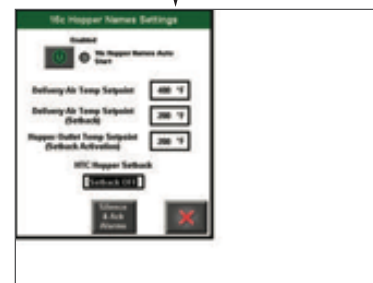
Hopper Selection



Individual hopper screen



Individual hopper settings screen



Control Function Flow Charts

From the Alarm screen



Home

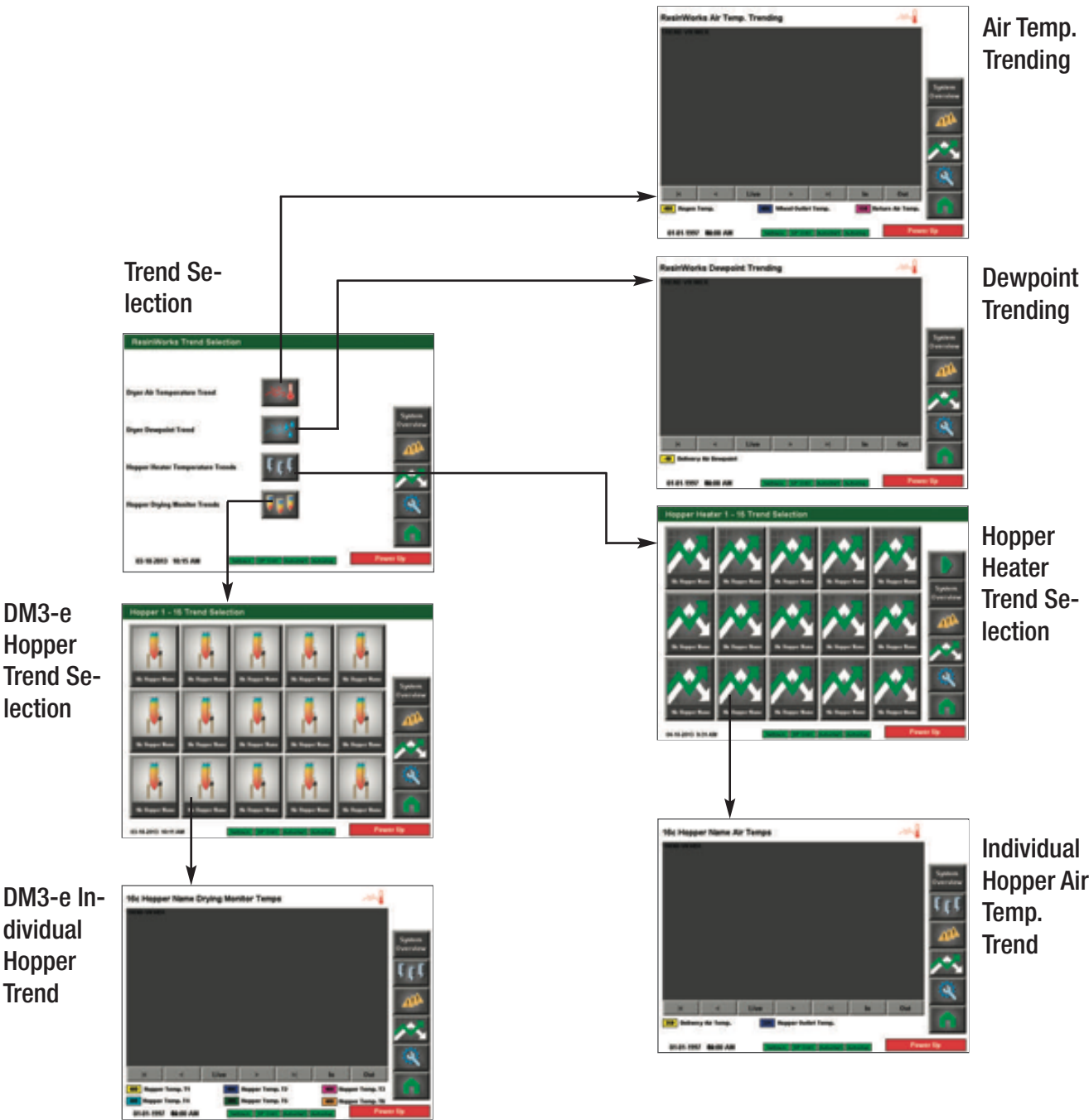


Alarms



Control Function Flow Charts

From the Trend Selection screen

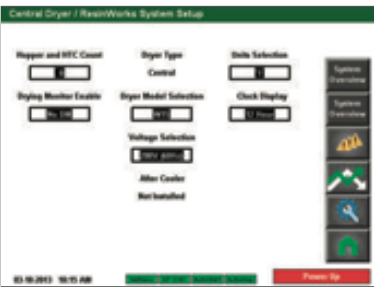
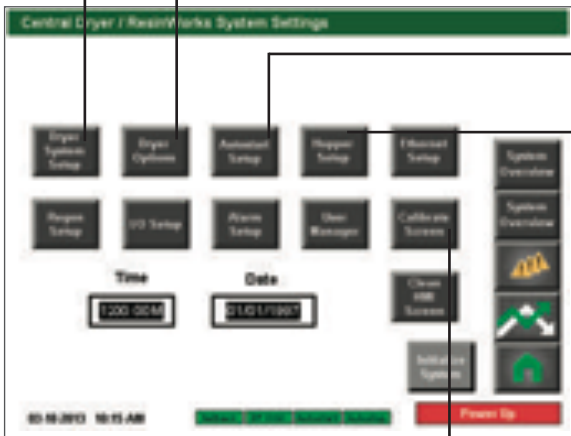


Control Function Flow Charts

From the Setup screen



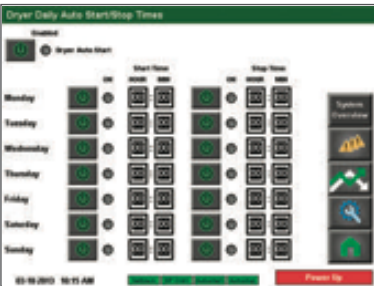
Setup



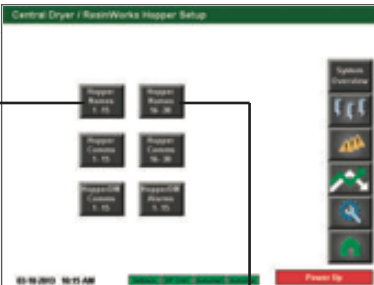
ResinWorks Setup



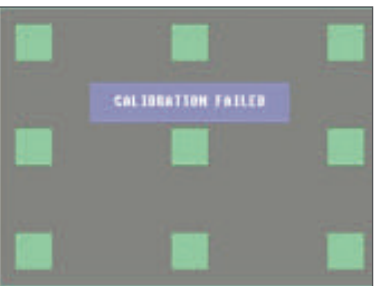
RW Dryer Op-
tions



Autostart
Setup



Hopper
Setup



or

Hopper
Names

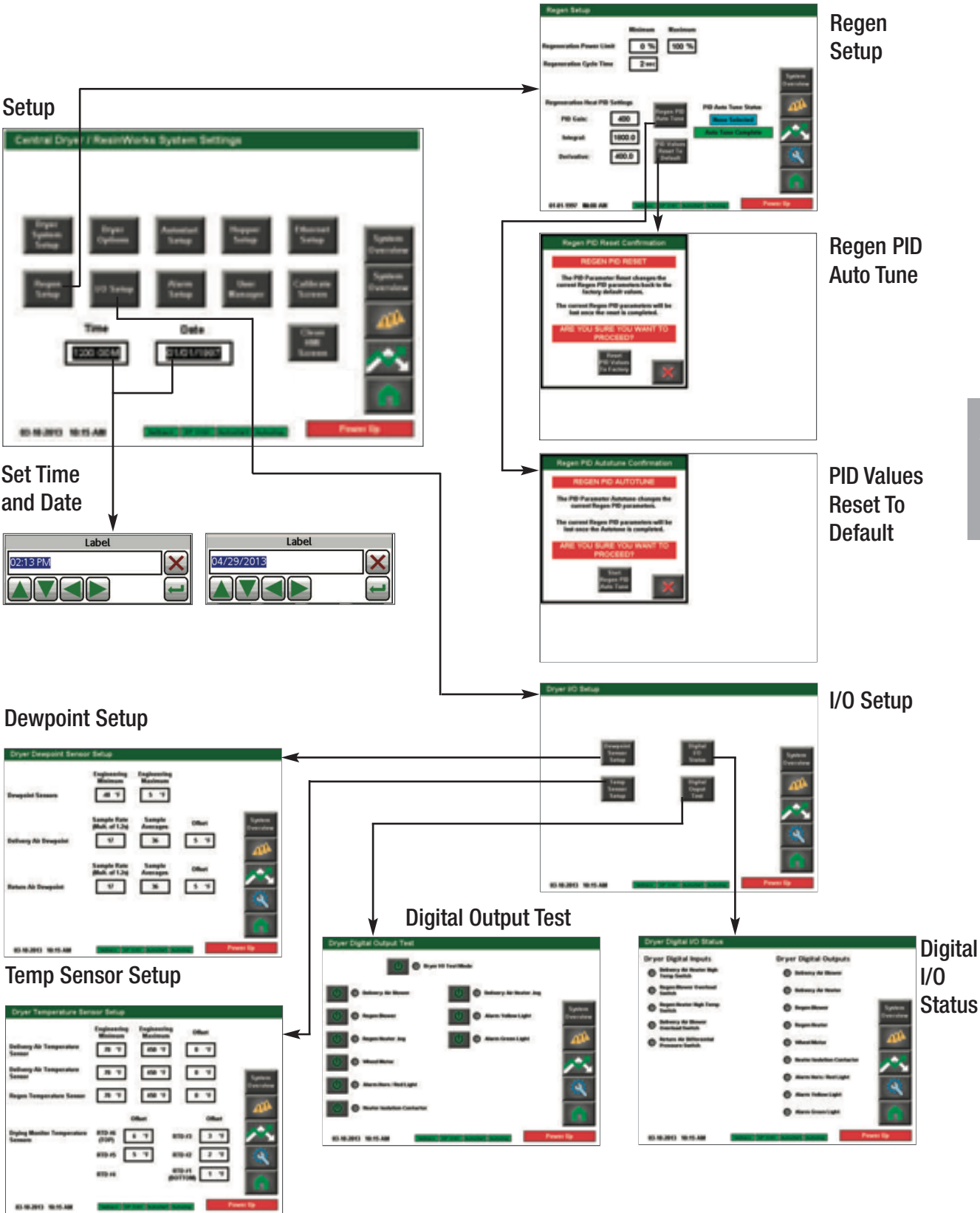
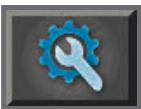


Hopper
Comms



Control Function Flow Charts

From the Setup screen (continued)



Control Function Flow Charts

From the Setup screen (continued)



Setup

User Manager

Clean Screen

Ethernet Setup

Alarm Setup

Shutdown Alarm Setup 2

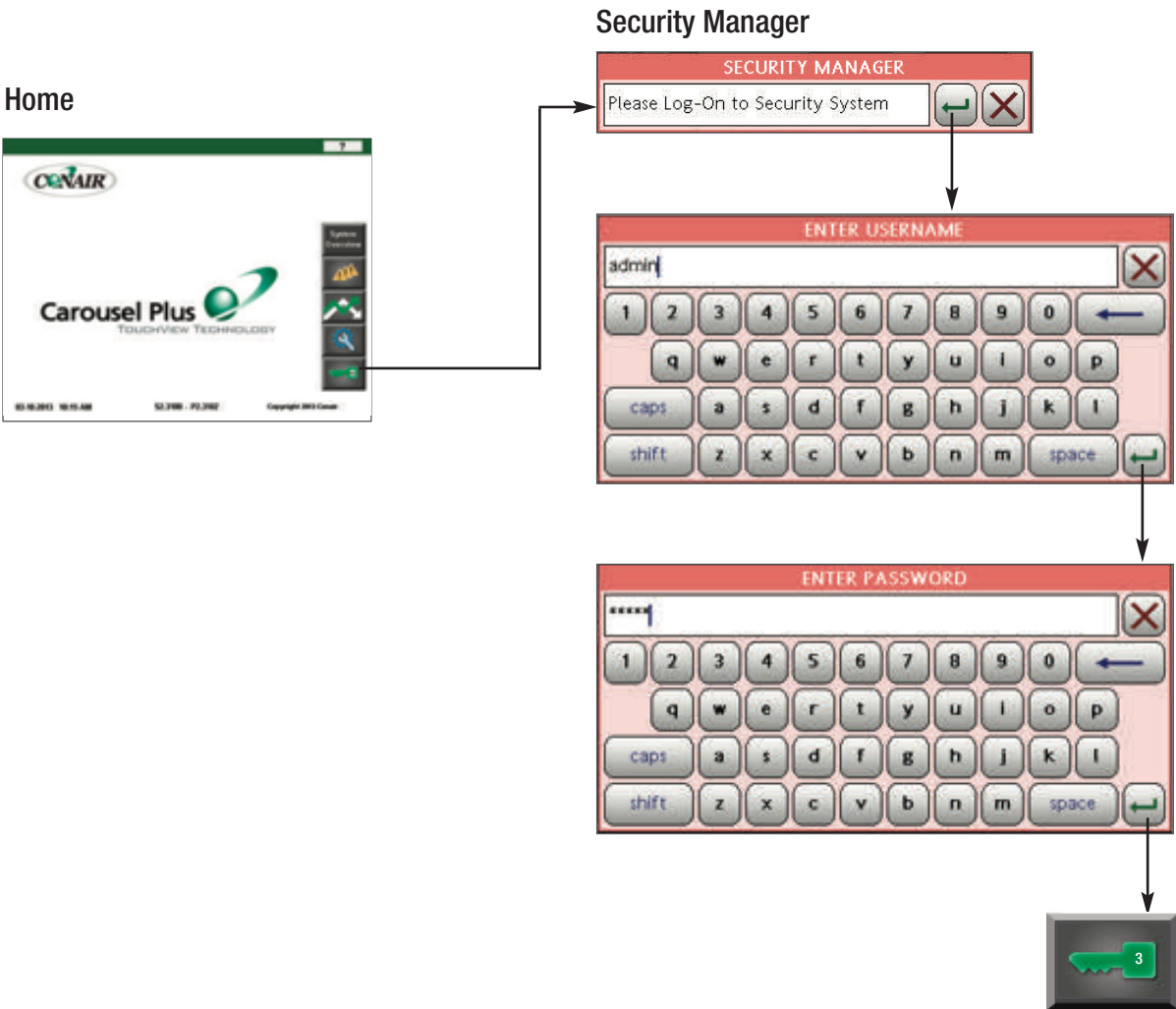
Shutdown Alarm Setup 1

Passive Alarm Setup 1

Passive Alarm Setup 2

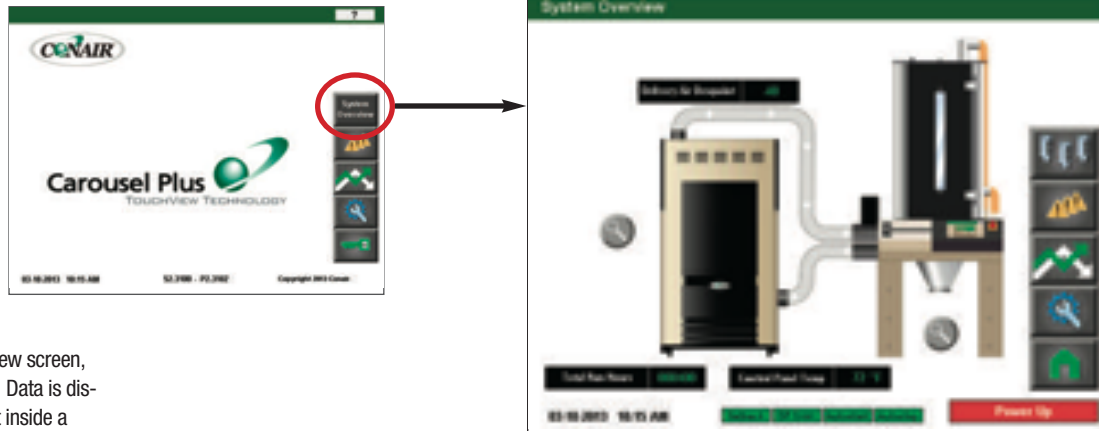
Control Function Flow Charts

From the Login/Logout screen



Control Function Descriptions - RW Configuration

System Overview Screen



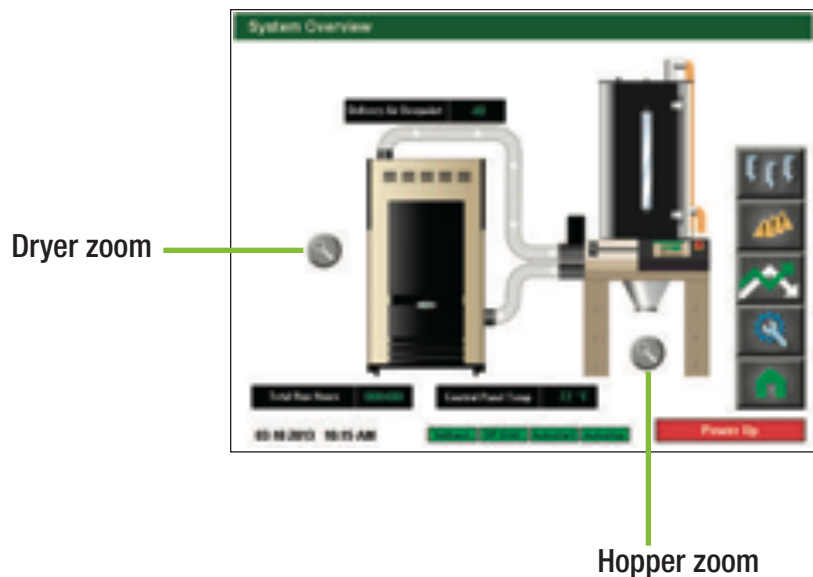
NOTE: On this Overview screen, live data is displayed. Data is displayed as colored text inside a solid black box. Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. [See Operation section entitled, How to Navigate the Control Screens.](#) After the new set point value has been entered, press the "Enter" key to lock in the new set point.

To access the System Overview Screen:

- 1 Press the **System Overview** button located on the home screen.

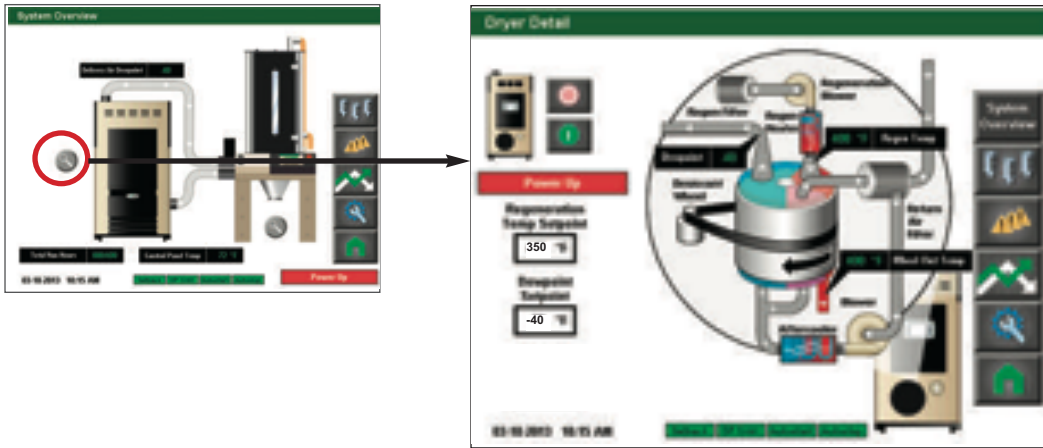
The System Overview screen provides the user with the current live information concerning the delivery air dewpoint, the total run hours, and the control panel temperature.

This screen also allows the user to use the zoom buttons and select the dryer detail information or the hopper(s) detail information.



Control Function Descriptions - RW Configuration (continued)

System Overview Screen



To access the System Overview screen:

- 1 Press the **Magnifying Glass (zoom) button** associated with the dryer on the System Overview screen.

The System Overview screen provides the user with the current live information concerning the processes within the dehumidifying dryer including:


- Regeneration Temperature (Regen. Temp)
- Return Air Temperature (Temp)
- Dewpoint
- Wheel Out Temperature (Temp)

It also tells the user the current status of the dryer blower (running or idle), as well as which features (Autostart, Autostop, Setback, Dewpoint Control) are enabled.

If the user is logged-in at the proper security level, setpoint changes can be made to:

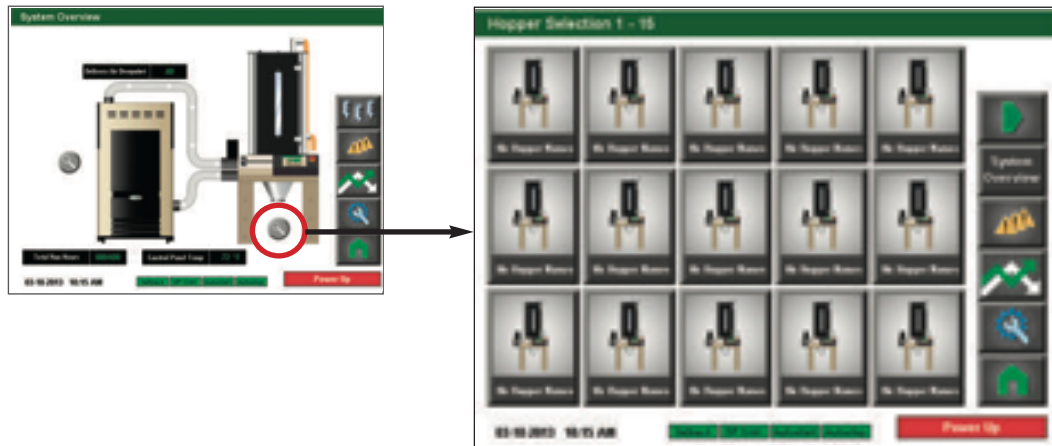
- Regeneration Temperature Setpoint - Conair recommends not changing this setting.
- Dewpoint Setpoint (optional)

This screen also allows the user to start or stop the dryer. The user can also view the other system parameters, view alarms, view trending, view hopper settings, return to the System Overview screen, or return to the Home screen by pressing the applicable buttons on the right of the screen.

 **NOTE:** Live data is displayed as colored text inside a solid black box. Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. *See Operation section entitled, How to Navigate Control Screens.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

Control Function Descriptions - RW Configuration (continued)


Hopper Selection Screen



To access the Hopper Selection screen:

- 1 Press the **Magnifying Glass (zoom) button** associated with the hopper on the System Overview screen.

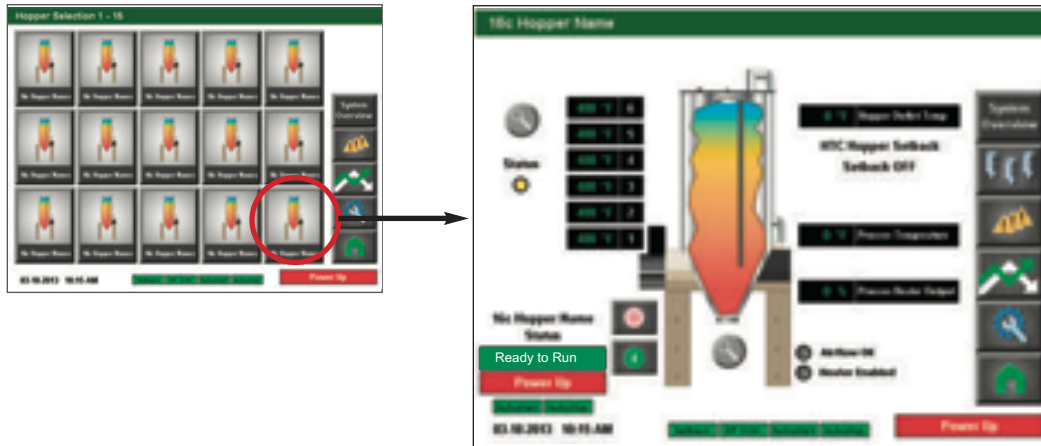
The Hopper Selection screen provides the user with the list of enabled hoppers. If the list is empty, or does not show the proper number of hoppers, Setup has not been completed yet. *See Operation section entitled: Hopper Setup.*

 **NOTE:** Depending on which options your dryer has been configured with, and whether or not you have the DM3-e Drying Monitor enabled, your screens and icons may appear different. For example, if your Resin-Works system is DM3-e equipped, your hoppers will display as Drying Monitor hoppers.



Control Function Descriptions - RW Configuration (continued)

Individual Hopper Screen



NOTE: Depending on which options your dryer has been configured with, and whether or not you have the DM3-e Drying Monitor enabled, your screens and icons may be different from what is shown here. For example, if your ResinWorks system is DM3-e equipped, your hoppers will display as Drying Monitor hoppers (as shown in these graphics).

To access the Individual Hopper screen:

- 1 Press the **hopper button** of the hopper you would like to view.

The Individual Hopper screen provides the user with the current live information concerning the processes within the hopper including:

- Current temperature in each of the six DM3-e sensor zones (if equipped).
- DM3-e status (if equipped).
- Hopper process heater status (if equipped).
- Hopper Outlet Temperature (Temp)
- Setback status (if equipped)
- Process Temperature
- Process Heater Output %
- Dryer Status
- Dryer features active (Setback, Dewpoint Control, Autostart, Autostop)

This screen allows the user to start or stop the hopper heater.

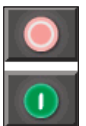
It also tells the user the current status of the dryer (running or idle), as well as which features (Autostart, Autostop, Setback, Dewpoint Control) are active.

If the user is logged-in at the proper security level, they can use the Magnifying Glass (zoom) button near the temperature zones to access DM3-e Settings, and the Magnifying Glass (zoom) button near the bottom of the hopper to access the hopper setpoint settings.

The user can also view the other system parameters, view alarms, view trending, view hopper settings, return to the System Overview screen, or return to the Home screen by pressing the applicable buttons on the right of the screen.

NOTE: See the Appendix of this User Guide for more information about using the DM3-e Drying Monitor.

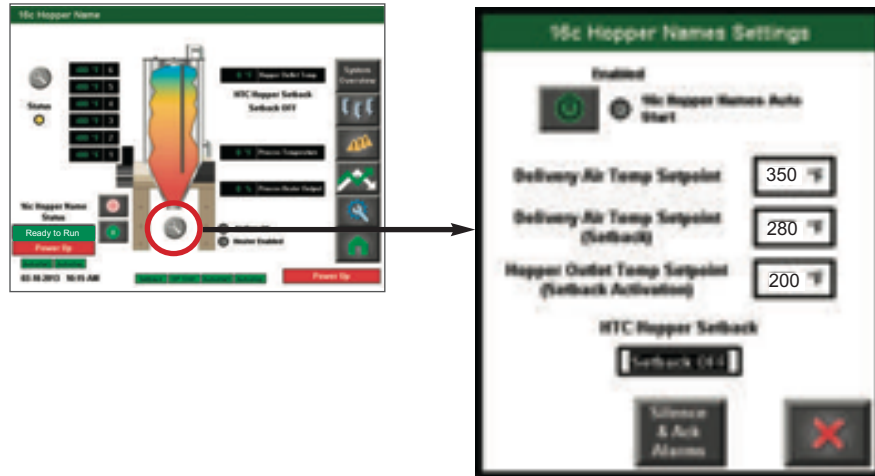
NOTE: In addition to starting and stopping the dryer, the Start and Stop buttons indicate whether the dryer can currently be started or stopped. A faded or not vibrant button indicates that the dryer is not ready/able to complete that function. For example, a faded Stop button indicates the dryer is not ready to stop.



Control Function Descriptions - RW Configuration (continued)

Hopper Setpoint Settings screen

NOTE: Depending on which options your dryer has been configured with, and whether or not you have the DM3-e Drying Monitor enabled, your screens and icons may appear different. For example, if your Resin-Works system is DM3-e equipped, your hoppers will display as Drying Monitor hoppers.



NOTE: Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. [See Operation section entitled, How to Navigate the Control Screens.](#) After the new set point value has been entered, press the "Enter" key to lock in the new set point.

To access the Hopper Setpoint Settings screen:

- 1 Press the **Magnifying Glass (zoom) button** associated with the hopper on the Individual Hopper screen.

The Hopper Settings Screen allows the user to establish the setpoints for the Delivery Air, the Setback, the Hopper Outlet Temperature, and to enable/disable the Setback feature. These setpoints can be adjusted for each hopper in your drying system (if equipped with setback).

NOTE: Setback must be installed and enabled at each HTC in a central drying system.

Temperature Setback explained:

The purpose of Temperature Setback is to save on delivery air heat (energy) and to minimize resin degradation due to overheating the material.

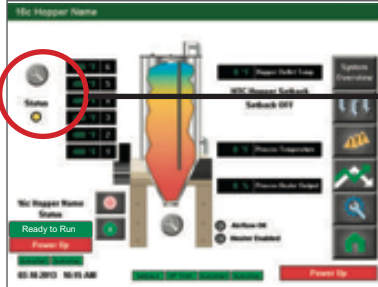
Temperature Setback works by monitoring the air temperature at the top of the hopper. The setback features drops the delivery air temperature if the air temperature at the top of the hopper gets too high. This saves energy and keeps the material from overheating.

NOTE: High temperature at the top of the hopper could be the result of dried resin not leaving the hopper as it should, or fresh resin not entering the hopper as it should. Check the conveying system to make sure that material is entering and exiting the hopper when it should be.

NOTE: [See the Appendix of this User Guide for more information about using the DM3-e Drying Monitor.](#)

Control Function Descriptions - RW Configuration (continued)

DM3-e Hopper Settings Screen (if equipped)



NOTE: See the Appendix of this User Guide for more information about using the DM3-e Drying Monitor.

NOTE: The Drying Monitor board version number is listed on the bottom of this pop up window. This information is helpful for service and troubleshooting.

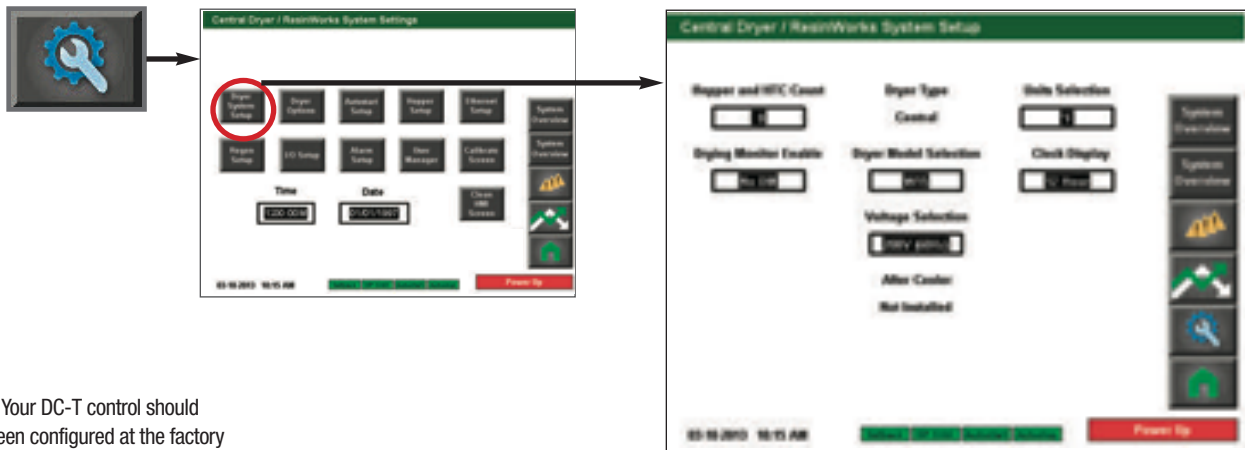
To access the DM3-e Hopper Settings screen:

- 1 Press the Magnifying Glass (zoom) button** associated with the Drying Monitor (beside the temperature zones).

The DM3-e Hopper Settings Screen provides the user with the current alarm location zone, and the Alarm Setpoint, as well as a button to enable or disable DM3-e for this hopper. These settings can be adjusted for each hopper in your DM3-e system.

Control Function Descriptions - RW Configuration (continued)

ResinWorks System Setup screen



NOTE: Your DC-T control should have been configured at the factory for your ResinWorks system. These settings should not need changed unless your system changed, or the control was replaced. Proper login is required to change these settings.

To access the ResinWorks Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the ResinWorks Setup button.**

The ResinWorks System Setup screen provides the user with the ability to change the system settings of this ResinWorks system.

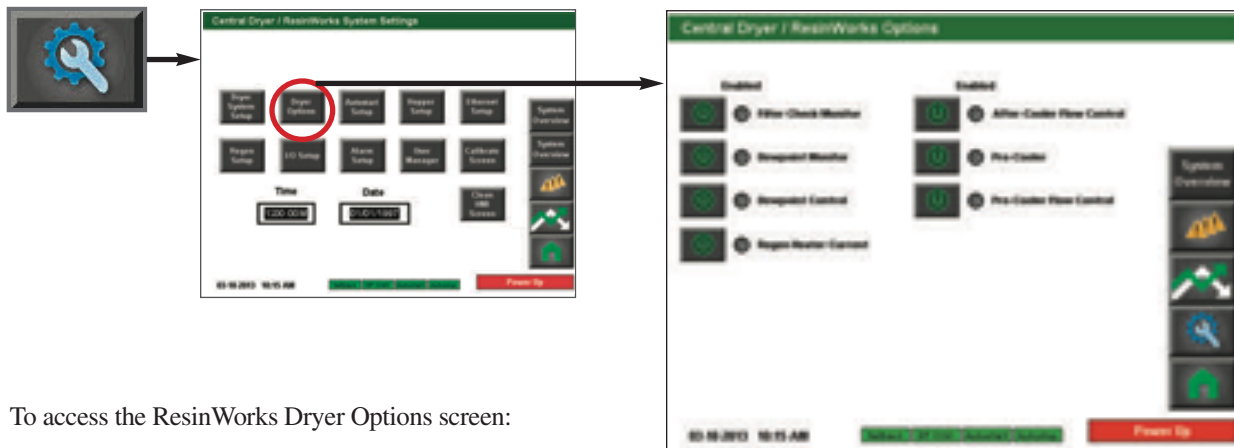
NOTE: See the Appendix of this User Guide for more information about using the DM3-e Drying Monitor.

This screen allows you to change:

- Hopper and hopper heater count
- Units selection (Fahrenheit and Celsius)
- Drying Monitor (DM3-e) enabling
- Dryer model
- Clock display (12 hour and 24 hour)
- Voltage selection

Control Function Descriptions - RW Configuration (continued)

ResinWorks Dryer Options screen



To access the ResinWorks Dryer Options screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the ResinWorks Dryer Options button.**

The ResinWorks Dryer Options screen provides the user with the ability to enable or disable options.

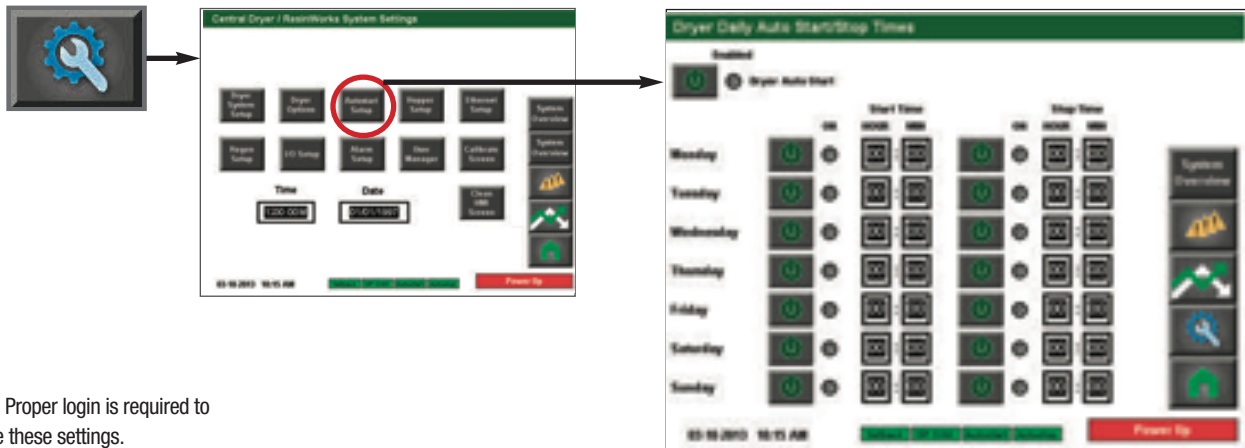
This screen allows you to change:

- Filter Check Monitor
- Dewpoint Monitor
- Dewpoint Control
- Regen Heater Current

 **NOTE:** Proper login is required to change these settings.

Control Function Descriptions - RW Configuration (continued)

Autostart Setup screen



NOTE: Proper login is required to change these settings.

To access the ResinWorks Autostart screen:

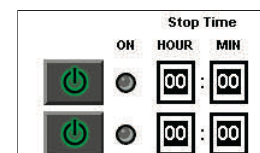
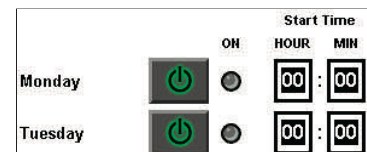
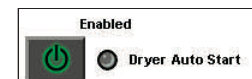
- 1 Press the **Settings** button from the Home screen.
- 2 Press the **Autostart Setup** button.

NOTE: Autostart timer uses 24 hour time format. 00:00 is midnight. Note that this is a seven (7) day repeating calendar, and not real time.

The ResinWorks Autostart Setup screen provides the user with the ability to enable or disable and set the start and stop time for dryer for each day of the week.

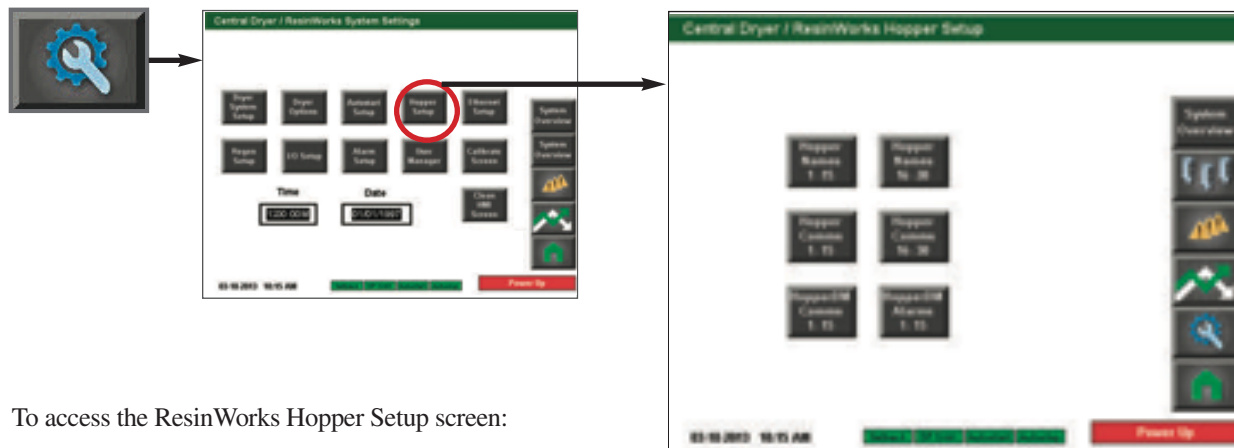
To setup Auto Start and Auto Stop:

- 1 Press the **Enable** button to enable Dryer Auto Start.
- 2 Press the **Enable** button next to each day of the week you would like to set the Auto Start time.
- 3 Set the Auto Start time for each day you have enabled.
- 4 Press the **Enable** button next to each day of the week you would like to set the Auto Stop time.
- 5 Set the Auto Stop time for each day that you have enabled.



Control Function Descriptions - RW Configuration (continued)

ResinWorks Hopper Setup screen




To access the ResinWorks Hopper Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Hopper Setup button.**

The ResinWorks Hopper Setup screen provides the user with the ability to move to a screen where you can:

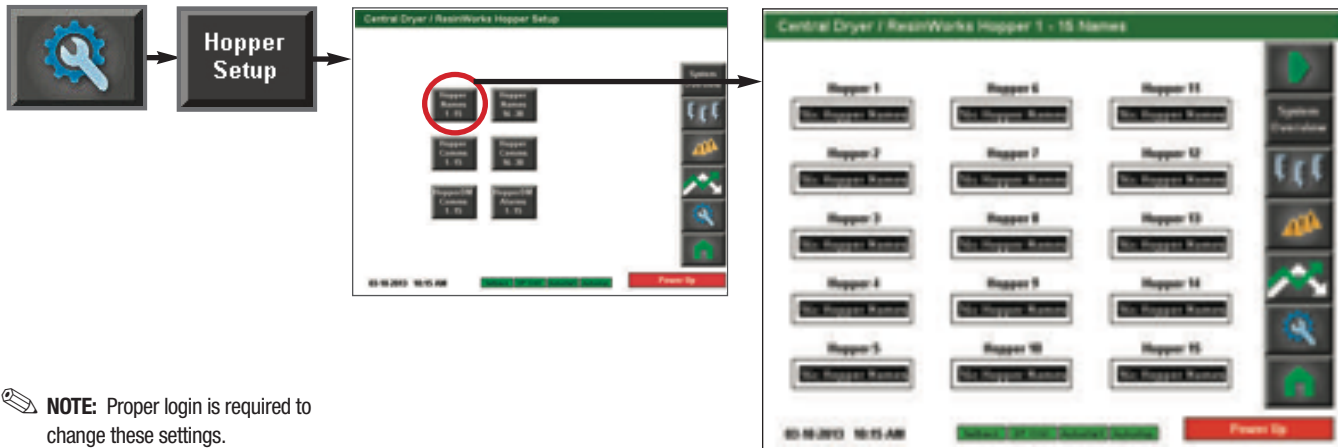
- Customize hopper names
- Enable hopper heater communication
- Enable DM3-e communication (if equipped)
- Enable DM3-e alarms (if equipped)

 **NOTE:** Proper login is required to change these settings.

 **NOTE:** See the Appendix of this User Guide for more information about using the DM3-e Drying Monitor.

Control Function Descriptions - RW Configuration (continued)

Hopper Names screen



NOTE: Proper login is required to change these settings.

To access the Hopper Names screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Hopper Setup button.**
- 3 Press the Hopper Names button.**

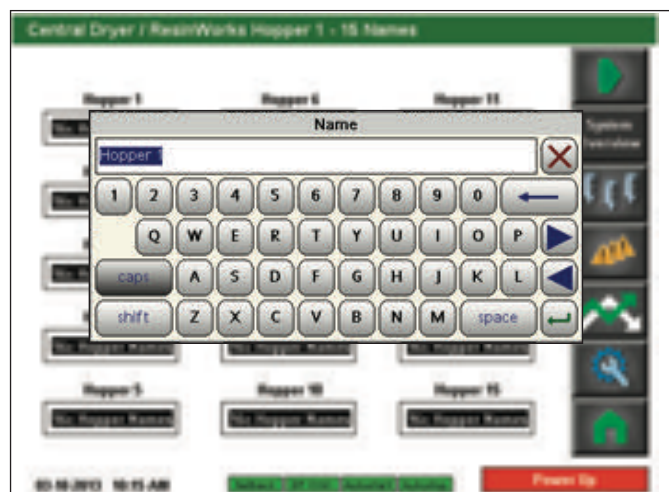
The Hopper Names screen provides the user with the ability to customize the name of any hopper in the system. This name will be displayed as the hopper name on all future screens.

NOTE: Changing the hopper display name does not change the order of the hoppers. This order is based on the hopper communications settings and can not be changed.

To customize a hopper name:

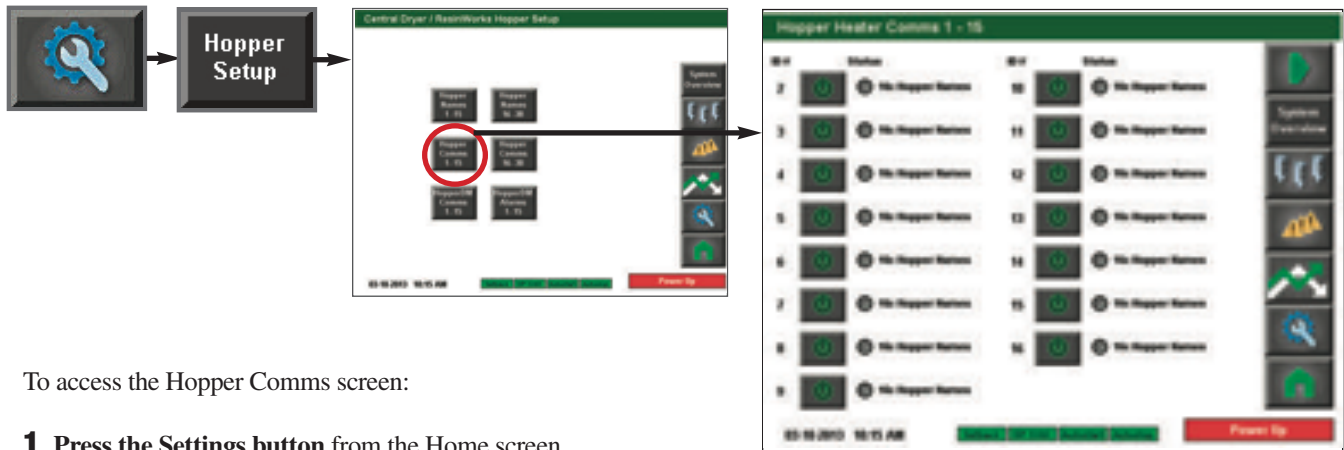
- 1 Press the text inside the box of the hopper you would like to rename.** All hoppers are factory named “16c Hopper Name”. (This is simply a space holder for a user entered hopper name up to 16 characters.)
- 2 Use the keypad to enter your new hopper name.** Hopper names can be up to 16 characters in total length.
- 3 Press the enter button when complete.**
- 4 Use steps 1 through 3 to change the name of each hopper you would like to customize.**

NOTE: Hopper names can be changed multiple times as necessary. Conair recommends naming the hopper using whatever system works for your application. Some users may choose to name hoppers by material type or color; others may choose to name hoppers based on physical characteristics, such as CH-54 Hopper.



Control Function Descriptions - RW Configuration (continued)

Hopper Comms (Communications) screen



To access the Hopper Comms screen:

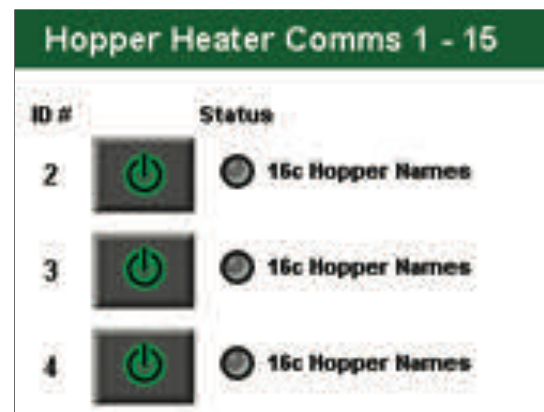
- 1** Press the **Settings** button from the Home screen.
- 2** Press the **Hopper Setup** button.
- 3** Press the **Hopper Comms** button.

The Hopper Comms screen provides the user with the ability to enable or disable communications to the hopper heater(s).

NOTE: Proper login is required to change these settings.

To enable communications to a hopper heater:

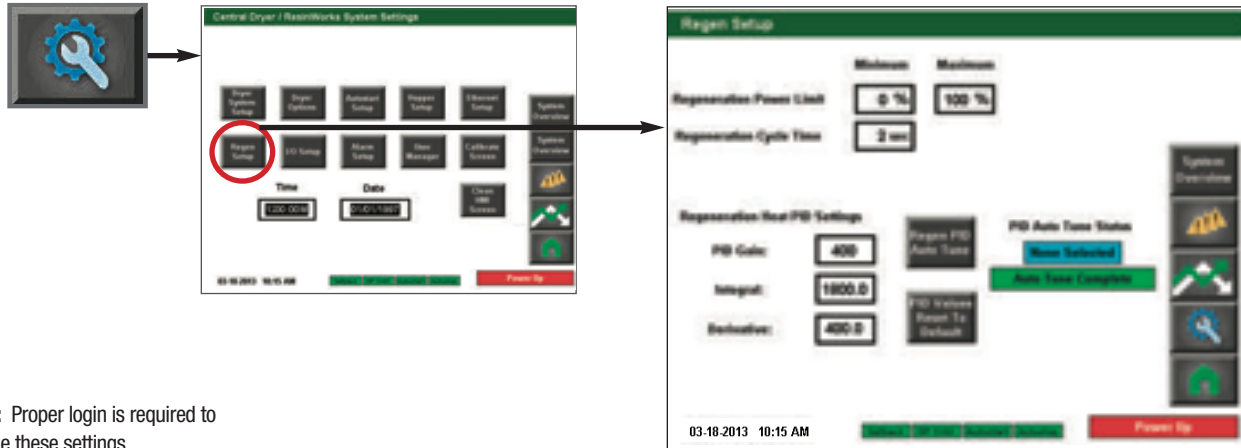
- 1** Press the **Enable** button beside the hopper heater you would like to enable. The button will illuminate green. If communications are successful, the LED beside the button will change from grey to green.
- 2** Enable communications to any other hopper heaters you would like to enable.



NOTE: The ID # refers to the RS-485 Modbus ID address. This number will never change. The text "16c Hopper Names" will change to whatever name you change it to in the hopper name screen. [See Operation: Control Function Descriptions - RW Configuration, Hopper Names screen.](#)

Control Function Descriptions - RW Configuration (continued)

Regen Setup screen



NOTE: Proper login is required to change these settings.

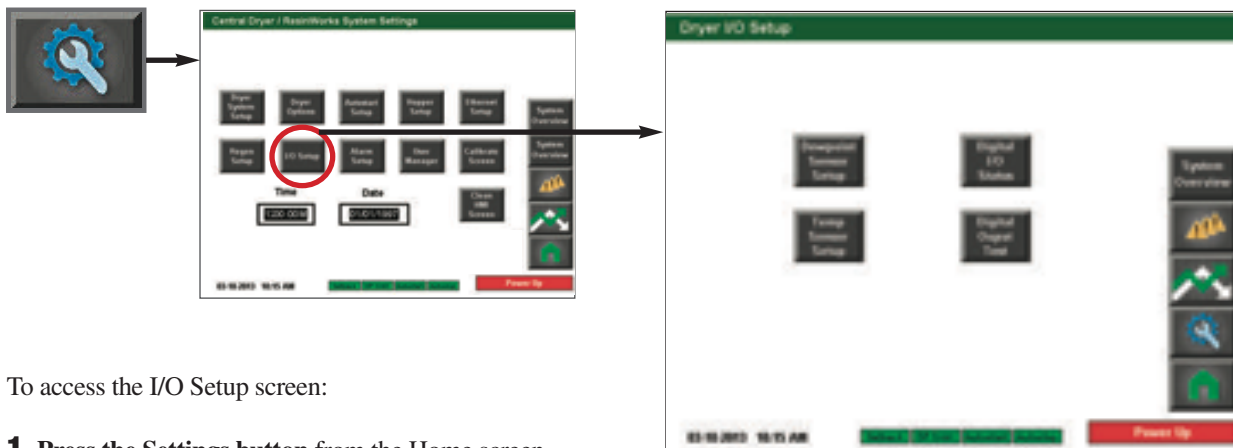
To access the Regen Setup screen:

- 1** Press the **Settings** button from the Home screen.
- 2** Press the **Regen Setup** button.

NOTE: It is not typically necessary to use the Regen PID Auto Tune or the Reset PID Values to Factory button. Contact the Conair Service department if you have questions about these items. Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Control Function Descriptions - RW Configuration (continued)


I/O Setup screen



To access the I/O Setup screen:

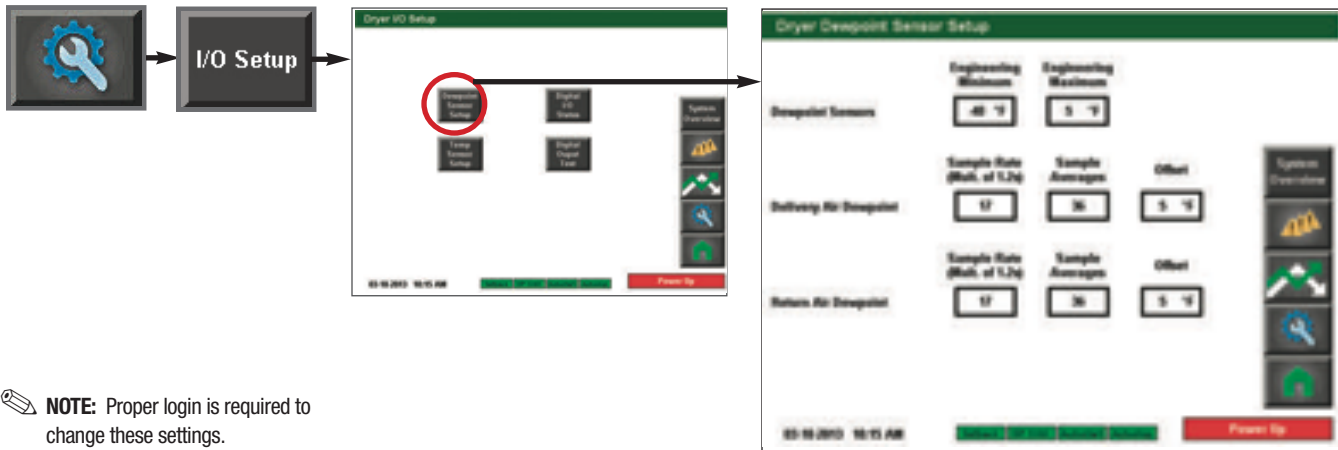
- 1** Press the **Settings** button from the Home screen.
- 2** Press the **I/O Setup** button.

The Dryer I/O Setup screen provides the user with the ability to open the Dewpoint Sensor Setup, the Temp Sensor Setup, the Digital I/O Status or the Digital Output Test screen.

 **NOTE:** Proper login is required to change these settings.

Control Function Descriptions - RW Configuration (continued)

Dewpoint Setup screen



NOTE: Proper login is required to change these settings.

To access the Dryer Dewpoint Sensor Setup screen:

NOTE: These are factory settings and should not need changed. Consult with Conair before making any changes to these settings. Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Dewpoint Setup button.**

The Dryer Dewpoint Sensor Setup screen provides the user with the ability to adjust the settings for the Dewpoint sensors. This screen allows for adjustment of:

- Sensor minimum and maximum
- Delivery air dewpoint sample rate, sample averages, and offset
- Return air dewpoint sample rate, sample averages, and offset

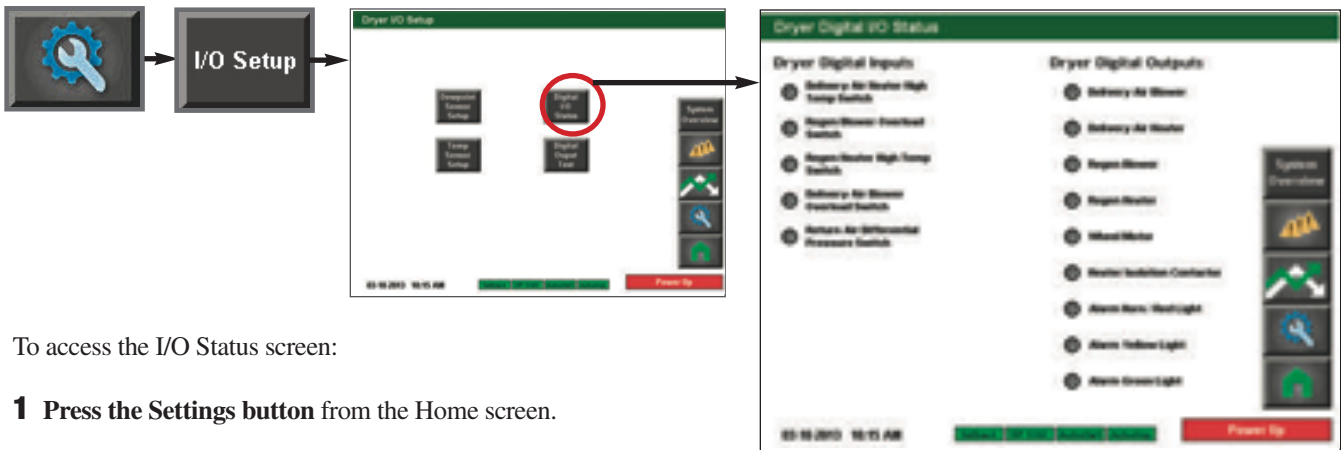
To change a setpoint:

- 1 Press the text inside white box with thick black outline of the setting you would like to change.**
- 2 Use the keypad to enter the new setting.** Setting range will be displayed at the bottom of the pop up keypad.
- 3 Press the enter key.**

	Engineering Minimum	Engineering Maximum	
Dewpoint Sensors	40 °F	5 °F	
	Sample Rate (Mult. of 1.2s)	Sample Averages	Offset
Delivery Air Dewpoint	17	36	5 °F
	Sample Rate (Mult. of 1.2s)	Sample Averages	Offset
Return Air Dewpoint	17	36	5 °F

Control Function Descriptions - RW Configuration (continued)


Digital I/O Status screen



To access the I/O Status screen:

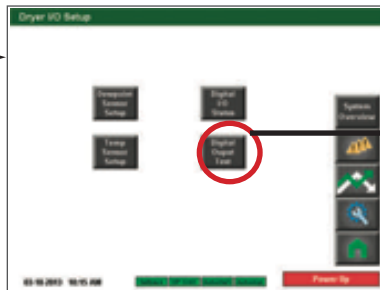
- 1 Press the **Settings** button from the Home screen.
- 2 Press the **I/O Setup** button.
- 3 Press the **I/O Status** button.

The I/O Status screen allows for a visual display of active outputs attached to the DC-T control. Inputs or outputs that are active will turn green. Inactive inputs and outputs will appear grey.

 **NOTE:** Proper login is required to test the outputs. Depending on the configuration of your dryer, some inputs and outputs may not be available.

Control Function Descriptions - RW Configuration (continued)

Digital Output Test screen



NOTE: The dryer must be stopped in order to perform the test mode.

To access the Test screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Digital Output Test button.**

NOTE: Proper login is required to test the outputs. Depending on the configuration of your dryer, some inputs and outputs may not be available.

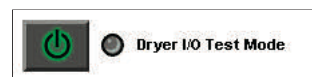
The test screen allows for digital output tests of various outputs attached to the DC-T control. This screen allows for testing of:

- Delivery air blower
- Regen blower
- Regen heater (jog)
- Wheel motor
- Alarm horn/red light
- Heater isolation contactor
- Delivery air heater (jog)
- Alarm yellow light
- Alarm green light

NOTE: On initial test, the delivery air blower will start automatically. This is not unusual and should be expected.

To test an output:

- 1 Press the power button to enable the Dryer I/O Test Mode.** The button should illuminate and the LED beside the button should change from grey to green indicating that test mode is enabled.



- 2 Press the power button beside the output you would like to test.** The button should illuminate and the LED beside the button should change from grey to green indicating power has been sent to the output.



- 3 Press the power button beside the output again to stop the test.** Note that some tests are a jog test and will not require pressing the button again to stop. Jog tests are programmed to run for three (3) seconds.



- 4 Press the power button beside the Dryer I/O Test Mode text to disable test mode.**

Control Function Descriptions - RW Configuration (continued)

Temperature Sensor Setup screen



To access the Temperature Sensor Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Temperature Sensor Setup button.**




	Engineering Minimum	Engineering Maximum	Offset
Regen Temperature Sensor	70 °F	450 °F	0 °F
Delivery Air Temperature Sensor	70 °F	375 °F	0 °F

The test screen allows the user to set the setpoints for the Temperature Sensors:

- Regen Temperature Sensor

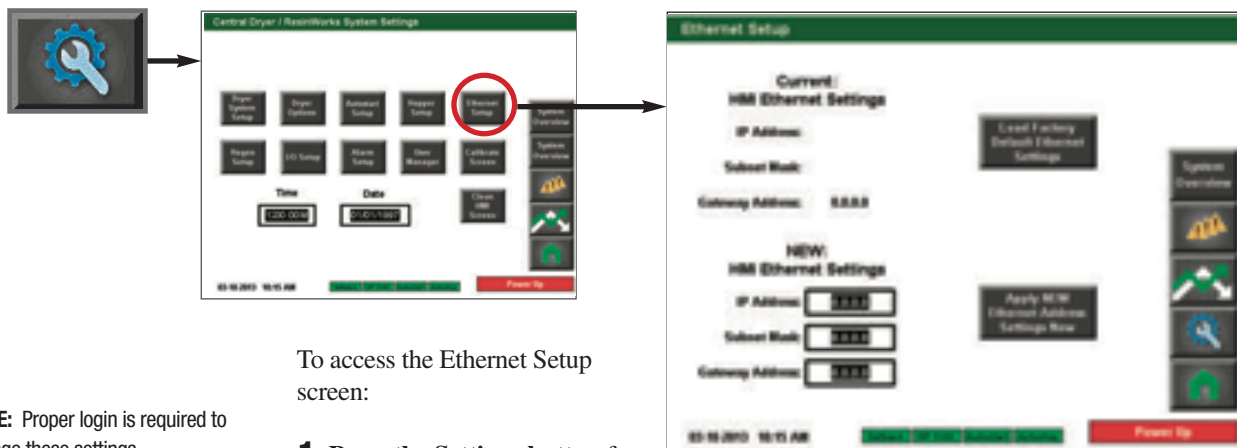
To change a setting:

- 1 Press the white outlined setpoint box.** A pop up number pad will appear.
- 2 Enter the desired setting.** Press enter after you have entered the numbers.
- 3 Repeat steps 1 and 2 for all settings you would like to adjust.** Note that depending on your dryer configuration and your enabled options, your screen may appear different than what is shown here.

 **NOTE:** Proper login is required to change these settings.

Control Function Descriptions - RW Configuration (continued)

Ethernet Setup screen



NOTE: Proper login is required to change these settings.

To access the Ethernet Setup screen:

- 1 Press the Settings button from the Home screen.

- 2 Press the Ethernet Setup button.

The Ethernet Setup screen provides the user with the ability to view current HMI Ethernet settings, load factory default Ethernet settings, or to change and apply new Ethernet settings.

To load the factory default Ethernet settings:

- 1 Press the Load Factory Default Ethernet Settings button.

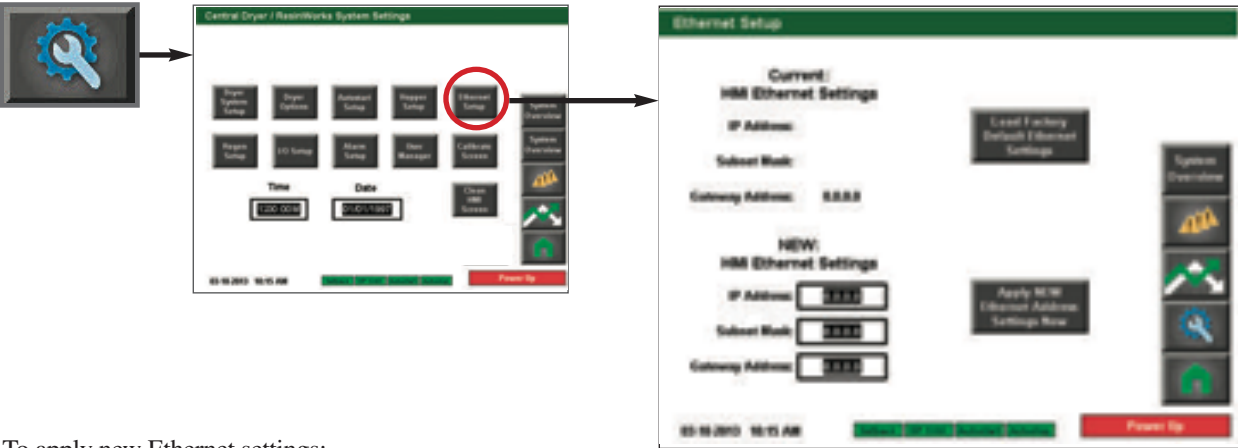
- 2 Press the button to confirm that you want to load the factory default settings. Press the X button if you want to exit without loading the default factory settings.



NOTE: The default IP address established by Conair is 10.1.12.1

Control Function Descriptions - RW Configuration (continued)

Ethernet Setup screen



To apply new Ethernet settings:

- 1 Enter the new settings in the white boxes with thick black borders.** When you touch the setting inside the box, a pop up number pad will appear.
- 2 Use the number pad to enter the new setting.** Press the enter button on the number pad to enter the new setting.
- 3 Repeat steps 1 and 2 for each address setting.**
- 4 Press the Apply NEW Ethernet Address Settings Now button.**
- 5 Press the button to confirm that you want to apply the new settings.** Press the X button if you want to exit without applying the new settings.

NEW:
HMI Ethernet Settings

IP Address:

Subnet Mask:

Gateway Address:

NEW Ethernet Address Confirmation

NEW ETHERNET ADDRESS

The 'Apply NEW Ethernet Address Settings' button changes the HMI Ethernet IP address to the NEW address.

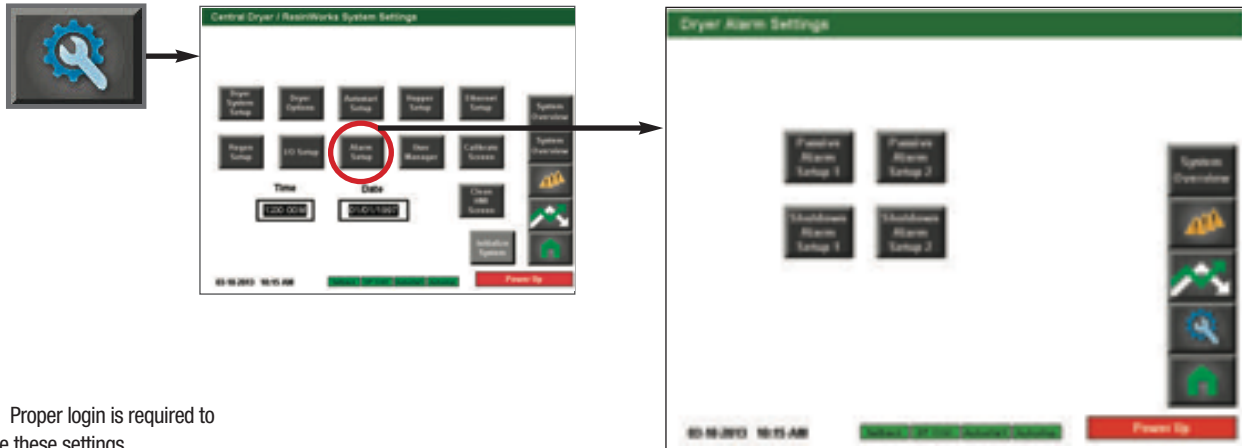
The current Ethernet Address settings will be updated to the NEW settings.


ARE YOU SURE YOU WANT TO PROCEED?

NOTE: Proper login is required to change these settings.

Control Function Descriptions - RW Configuration (continued)

Alarm Setup screen



 **NOTE:** Proper login is required to change these settings.

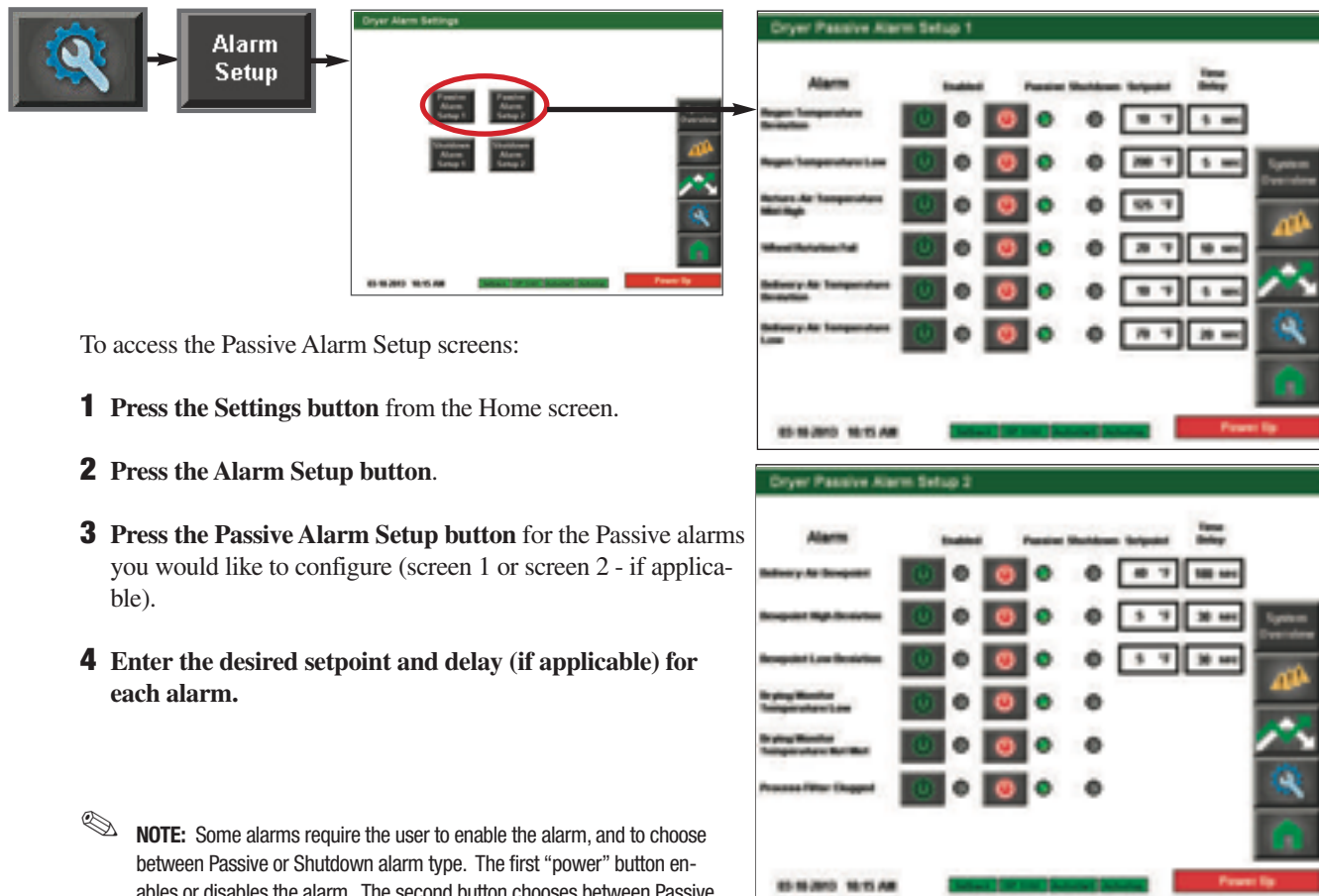
To access the Alarm Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Alarm Setup button.**

The Alarm Setup screen provides the user with the ability to enable, disable and adjust set-points for alarms in the ResinWorks system. Both passive and shutdown alarms can be modified from these screens.

Control Function Descriptions - RW Configuration (continued)

Passive Alarm Setup (1 & 2)



To access the Passive Alarm Setup screens:

- 1** Press the **Settings** button from the Home screen.
- 2** Press the **Alarm Setup** button.
- 3** Press the **Passive Alarm Setup** button for the Passive alarms you would like to configure (screen 1 or screen 2 - if applicable).
- 4** Enter the desired setpoint and delay (if applicable) for each alarm.

NOTE: Some alarms require the user to enable the alarm, and to choose between Passive or Shutdown alarm type. The first "power" button enables or disables the alarm. The second button chooses between Passive or Shutdown alarm.

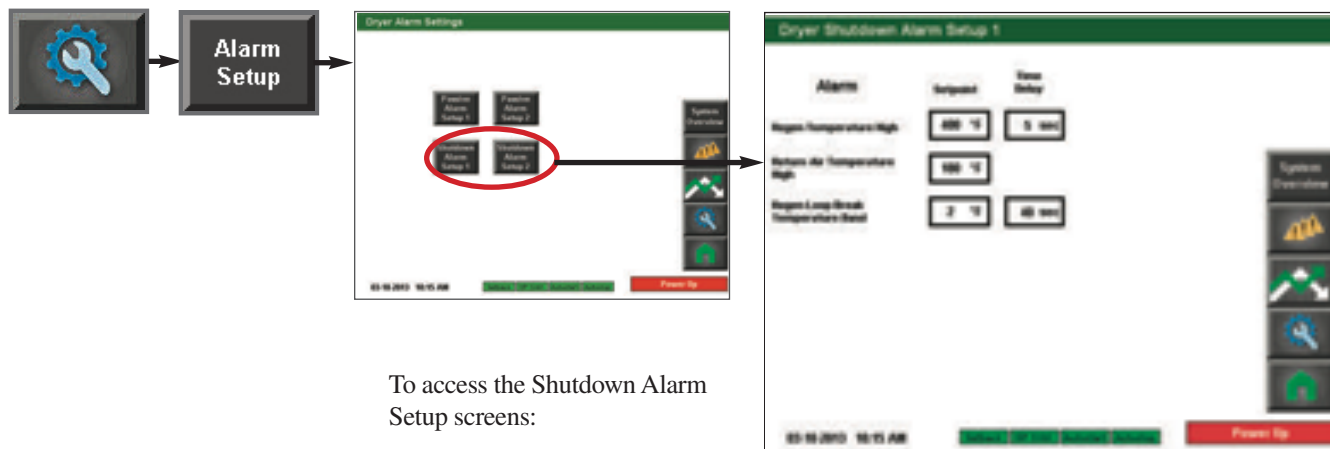
NOTE: Proper login is required to modify alarm settings. Depending on your dryer configuration, your alarm choices and screen configurations may vary from what is shown in this User Guide.

IMPORTANT: Factory default alarm setpoints should not be changed without first consulting with Conair.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Control Function Descriptions - RW Configuration (continued)

Shutdown Alarm Setup (1 & 2)



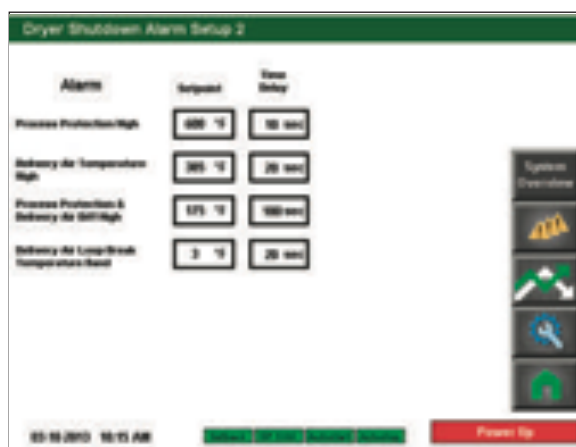
To access the Shutdown Alarm Setup screens:

NOTE: Proper login is required to modify alarm settings.

- 1 Press the **Settings** button from the Home screen.
- 2 Press the **Alarm Setup** button.
- 3 Press the **Shutdown Alarm Setup** button for the Shutdown alarms you would like to configure (screen 1 or screen 2 - if applicable).
- 4 Enter the desired setpoint and delay for each shutdown alarm.

IMPORTANT: Factory default alarm setpoints should not be changed without first consulting with Conair.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.



Control Function Descriptions - RW Configuration (continued)

Trending



NOTE: Depending on your DC-T configuration, and system security, different users may not be able to access the trending screens. Also, if you do not have DM3-e enabled, or the Drying Monitor equipment at your drying hoppers, you will not be able to view Drying Monitor Trends.

To access the Trending screens:

- 1 Press the **Trending button** from the Home screen.

The Trend Selection screen allows you to choose which trending screens you would like to view. From this screen, you can choose to view:

- Dryer Air Temperature Trend
- Dryer Dewpoint Trend
- Hopper Heater Temperature Trends
- Hopper Drying Monitor Trends (if equipped)

Trending Screen Navigation



Each trending screen will allow the user to scroll through data. When the screen first opens, it will be displaying a two (2) hour window, and will have saved the data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, or jump immediately to live data. The user can also touch any point on the trend line and the display will show the data reading, date, and time for that spot in the trend.



Scroll to the beginning or end of the record.



Scroll back or forward one point at a time (30 seconds).



Move to live data.



Zoom in (Instead of seeing 2 hours of trend in the window, you will see 1 hour, 30 minutes, 15 minutes, etc.)



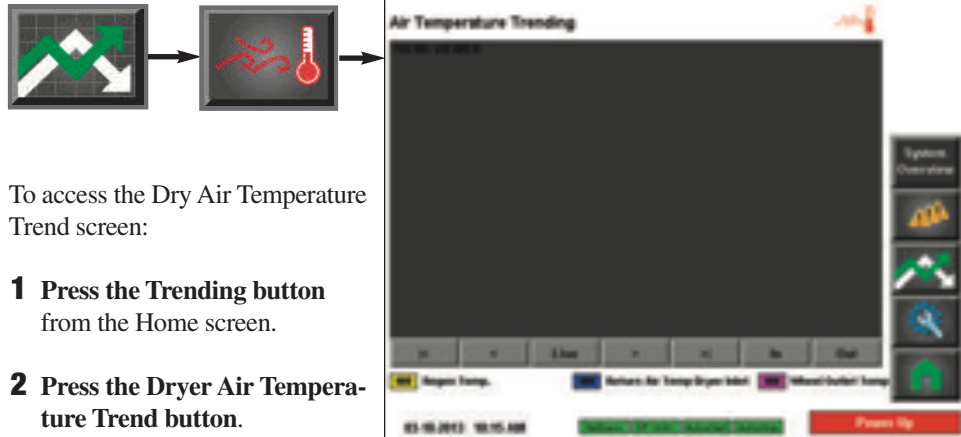
Zoom out (Instead of seeing 2 hours of trend in the window, you will see 3 hours, 4 hours, 5 hours, etc.)

TIP: A dashed line or a break in the trend line represents a time where power to the dryer was off (either due to shutdown or to power outage).

(continued)


Control Function Descriptions - RW Configuration (continued)

Dry Air Temperature Trend



To access the Dry Air Temperature Trend screen:


- 1 Press the Trending button** from the Home screen.
- 2 Press the Dryer Air Temperature Trend button.**

 **NOTE:** Using the scroll backward and scroll forward arrows will move the line 30 seconds at a time.

The Dryer Air Temperature Trending screen allows the user to view the air temperature trend vs. time at several locations in the Carousel Plus Dryer. The air temperature reading locations are denoted by various colors. The colors associated with the locations are:

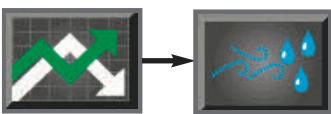
Yellow: Regeneration Temperature (within the dryer)
Blue: Return Air Dryer Inlet Temperature
Purple: Wheel Outlet Temperature

The Dryer Air Temperature Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.

 **NOTE:** See *Trending Screen Navigation* (Operation Section: Control Function Descriptions- RW Configuration: Trending) for more information on how use the navigation buttons to navigate through individual trending screens.

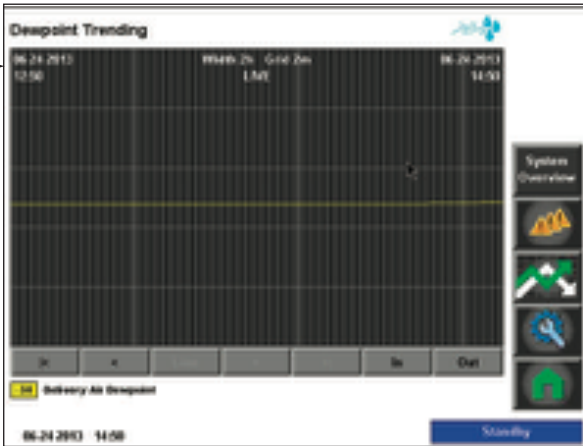
Control Function Descriptions - RW Configuration (continued)

Dryer Dewpoint Trend



To access the Dryer Dewpoint Trend screen:

- 1 Press the **Trending** button from the Home screen.
- 2 Press the **Dryer Dewpoint Trend** button.



NOTE: Using the scroll backward and scroll forward arrows will move the line 30 seconds at a time.

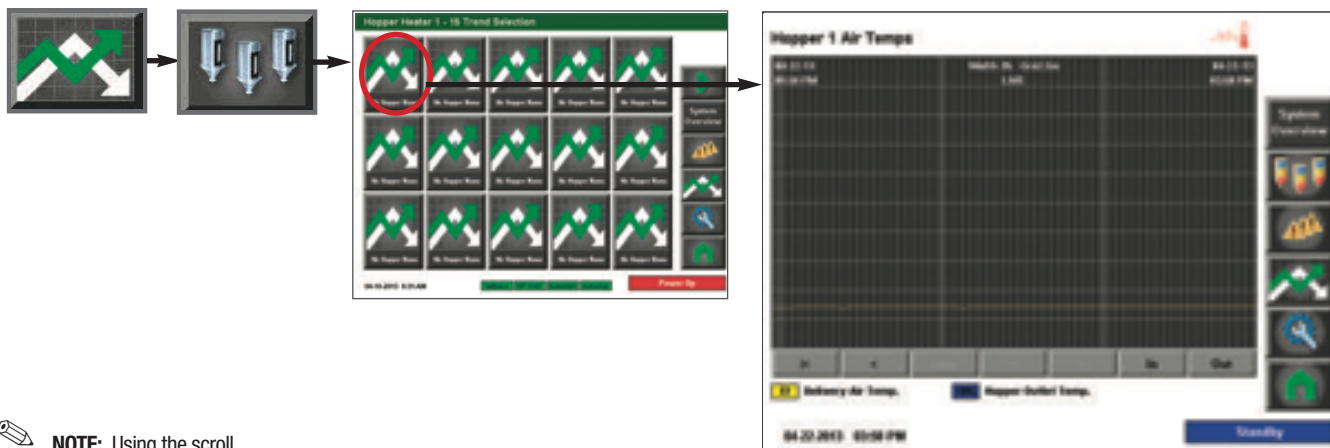
The Dewpoint Trending screen allows the user to view the dewpoint trend vs. time in the Carousel Plus Dryer.

The Dewpoint Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.

NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- RW Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

Control Function Descriptions - RW Configuration (continued)

Hopper Heater Temperature Trends



NOTE: Using the scroll backward and scroll forward arrows will move the line 30 seconds at a time.

To access the Hopper Heater Temperature Trends screen:

- 1** Press the **Trending** button from the Home screen.
- 2** Press the **Hopper Heater Temperature Trend** button.
- 3** Press the **Hopper trend** you would like to view.

The Hopper Heater Temperature Trending screen allows the user to view the air temperature trend vs. time in two locations related to the hopper. The temperature reading locations are denoted by various colors. The colors associated with the locations are:

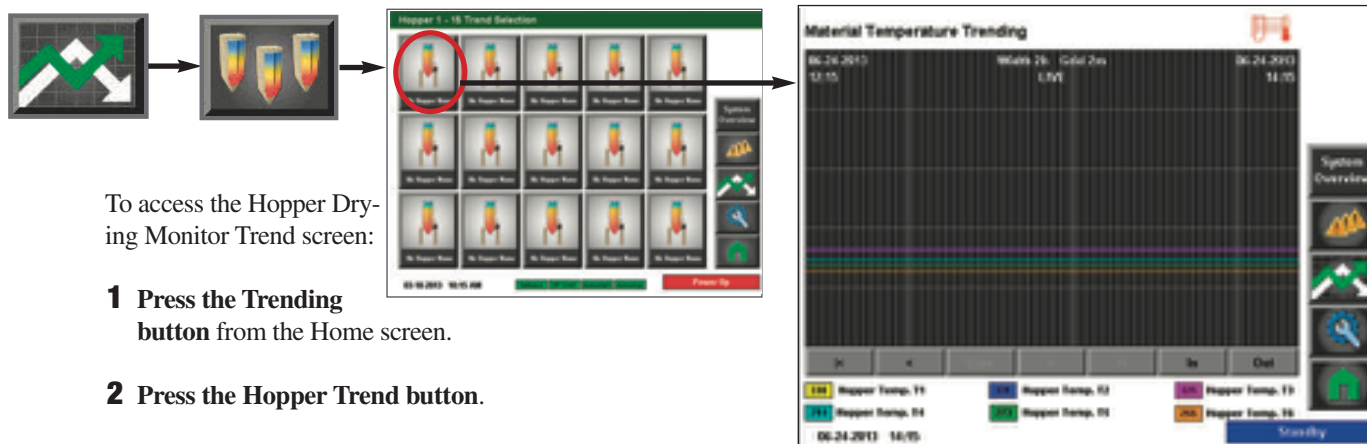
Yellow: Hopper Delivery Air Temperature
Blue: Hopper Outlet Temperature (if equipped with setback)

The Hopper Heater Temperature Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.

NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- RW Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

Control Function Descriptions - RW Configuration (continued)

Hopper Drying Monitor Trends (if equipped)



To access the Hopper Drying Monitor Trend screen:

- 1 Press the Trending button** from the Home screen.
- 2 Press the Hopper Trend button.**
- 3 Select the individual hopper you want to see trending for.**

The Hopper Drying Monitor Trending screen allows the user to view the temperatures at each of the six (6) temperature zones of the DM3-e probe.

The DM3-e Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.

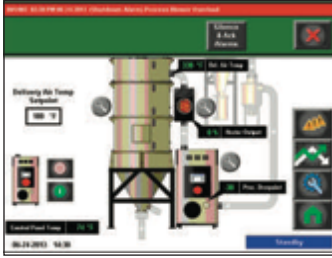
NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- RW Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

NOTE: Using the scroll backward and scroll forward arrows will move the line 30 seconds at a time.

NOTE: See the *DM3-e User Guide* for more information about using the DM3-e Drying Monitor.

Control Function Descriptions - RW Configuration (continued)

Alarms



When an alarm occurs, an audible sound will be triggered and the operator interface will display a flashing alarm message.

To view an alarm from any operator screen, press the Alarm button.

1 Press the Alarms button.

2 View the current alarms.

3 Decide if you want to Acknowledge Alarms, Silence and Acknowledge Alarms, Reset All Alarms or clear individual alarms.

The following buttons are available from the Alarms log screen:

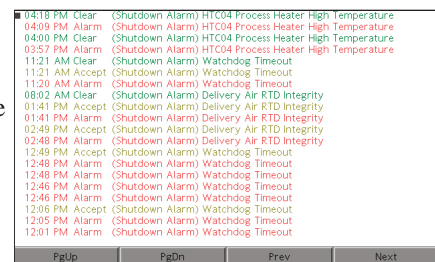
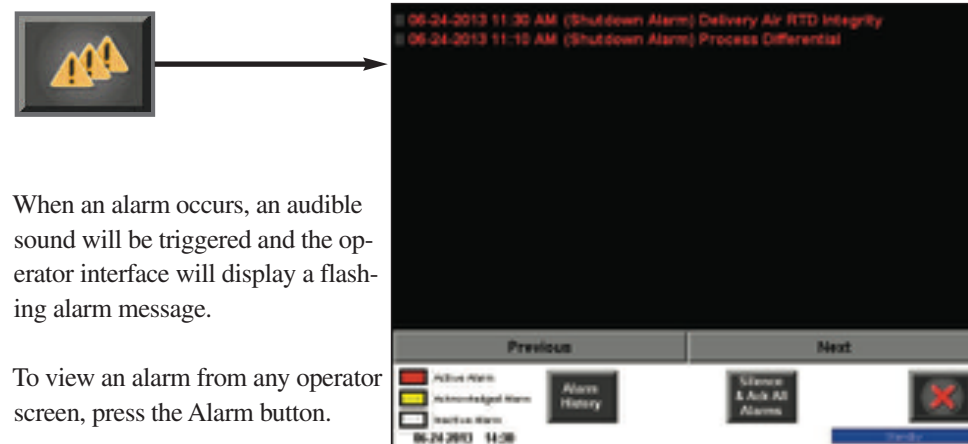
Previous Previous - The previous button is used to select the previous alarm when multiple alarms are displayed.

Next Next - The next button is used to select the next alarm when multiple alarms are displayed.

Alarm History Alarm History- Pressing the Alarm History button will show a detailed list of the alarm history.

Silence & Ack All Alarms Acknowledge All - The acknowledge all button is used to acknowledge all the alarms on the list.

Reset All Alarms Reset All Alarms - The Reset button is used to clear all alarms on the list. If the condition has not been remedied, the alarm will reappear.

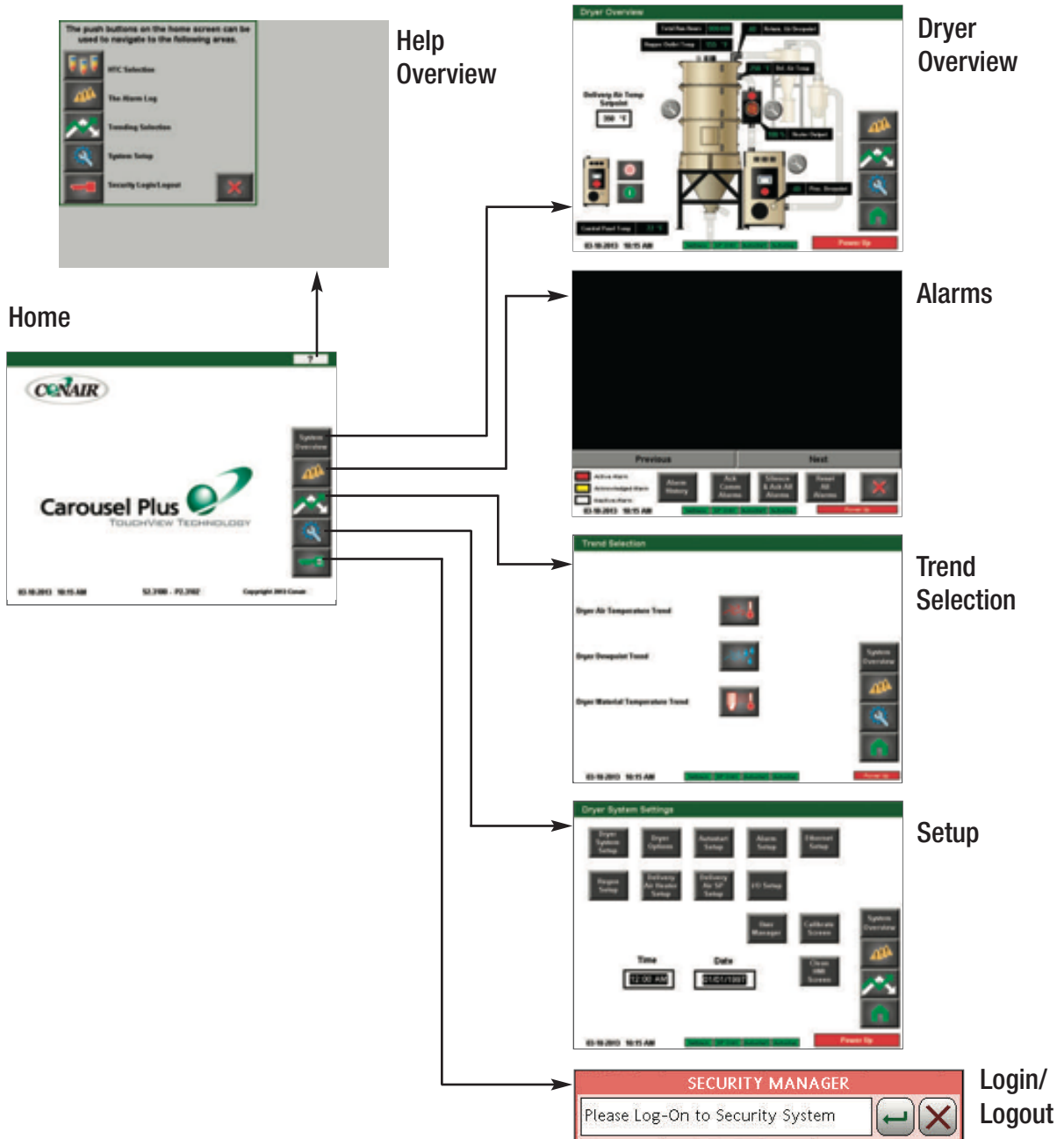


Operation - Stand Alone Dryer Configuration

The following pages (screen flow charts, screen descriptions, and basic operation) describe the operation of the dryer when factory configured as a stand alone dryer attached to a single hopper with a Conair Heater Pack.

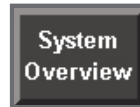
Control Function Flow Charts

From the Home screen

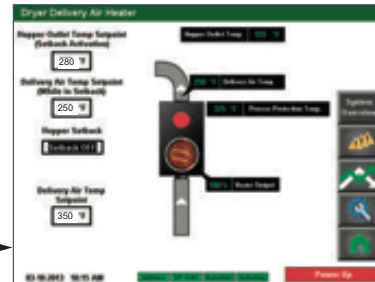
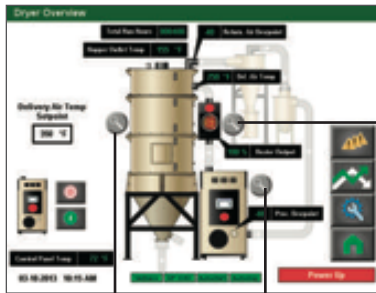


Control Function Flow Charts

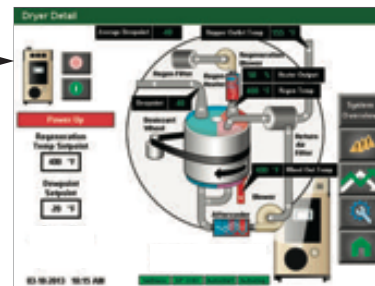
From the Overview screen



Dryer Overview

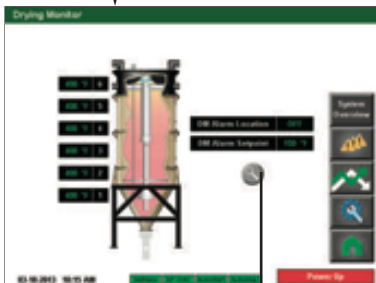


Dryer Delivery Air Heater



Dryer Detail

Dryer DM-II Drying Monitor



DM-II Low Alarm Settings

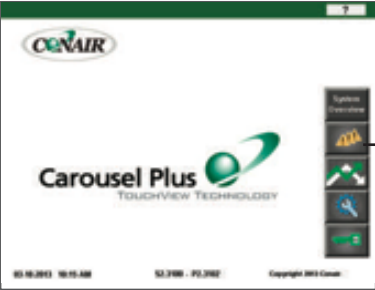


Control Function Flow Charts

From the Alarm screen



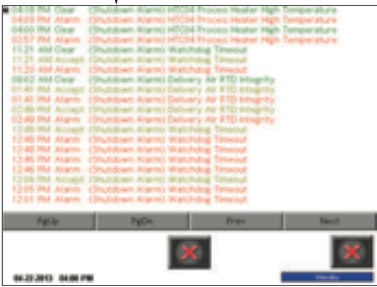
Home



Alarms

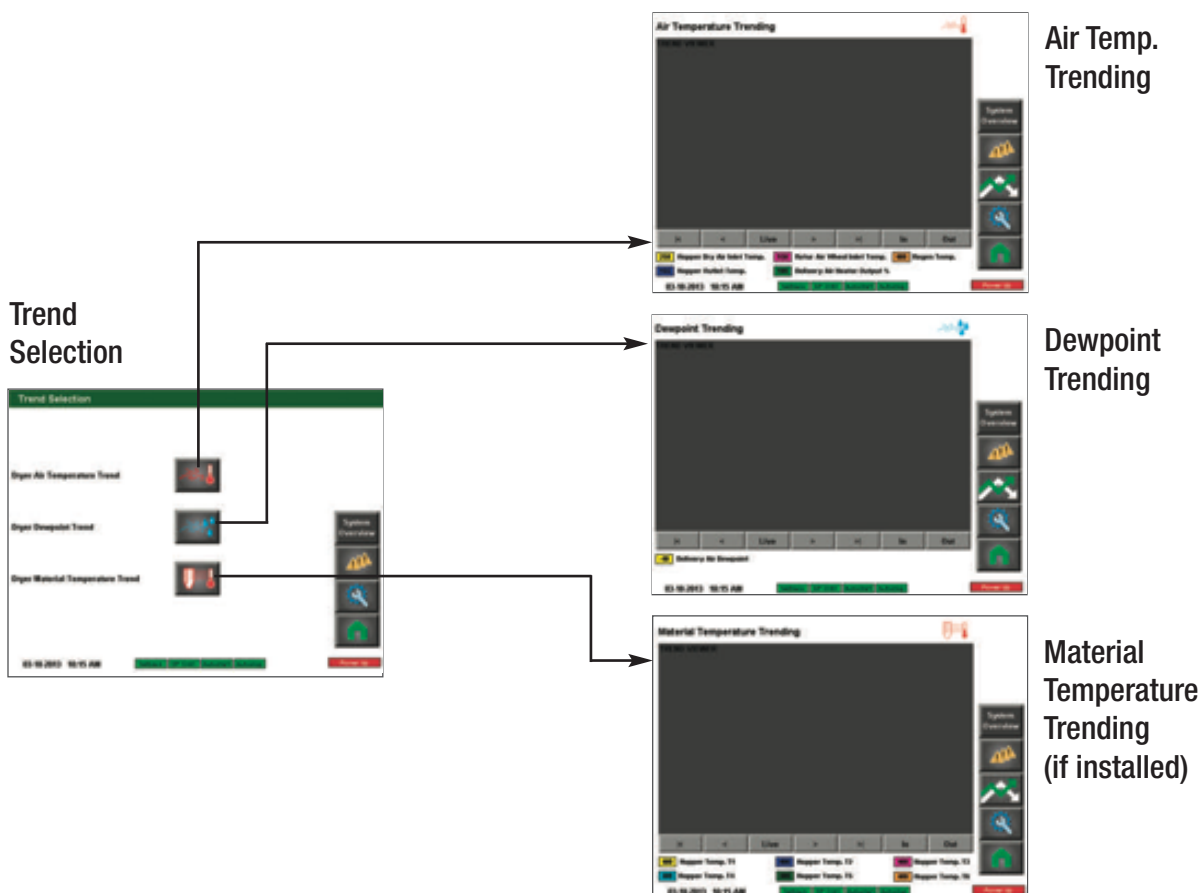


Alarm Banner Pop-up



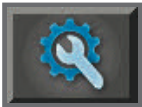
Control Function Flow Charts

From the Trend Selection screen

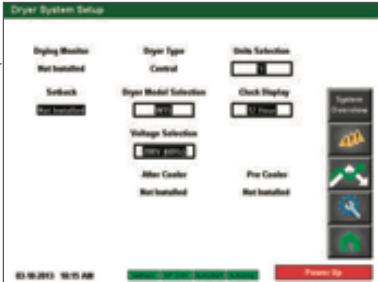
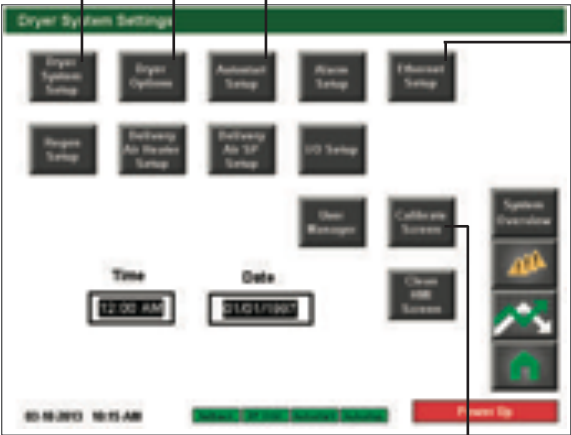


Control Function Flow Charts

From the Setup screen



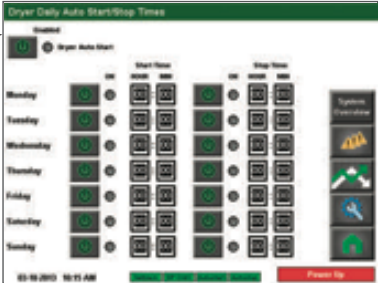
Setup



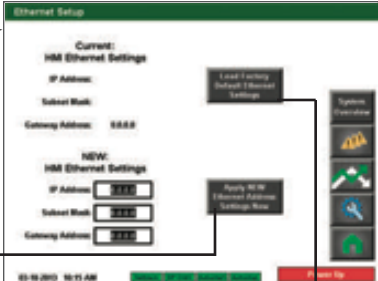
Dryer System Setup



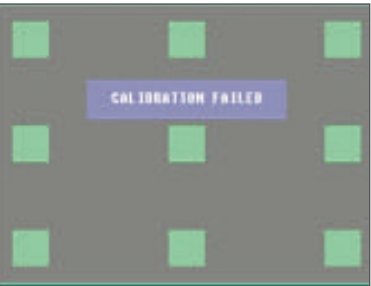
Dryer Options



Autostart Setup



Ethernet Setup



Apply Settings



Default Settings

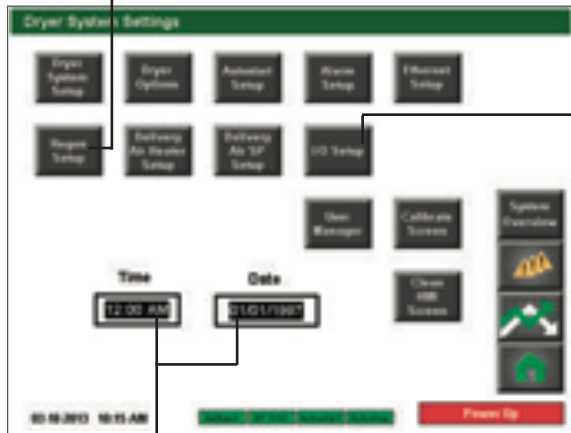


Control Function Flow Charts

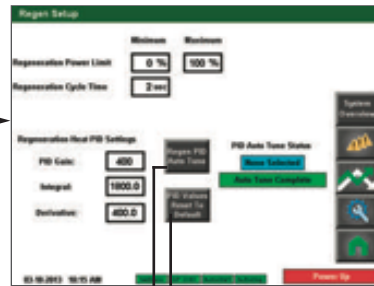
From the Setup screen (continued)



Setup



Set Time and Date



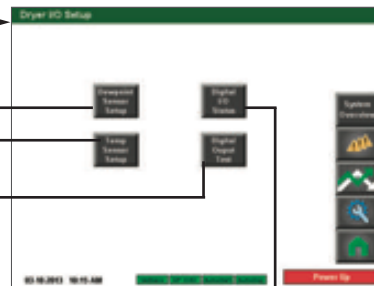
Regen Setup



Regen PID Auto Tune

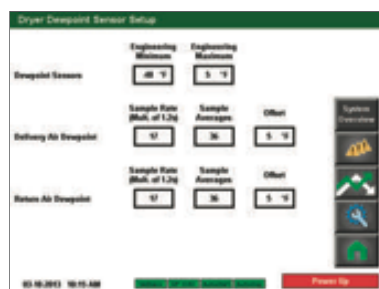


PID Values Reset To Default

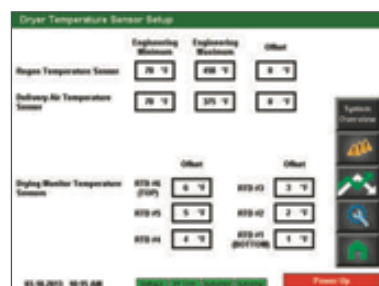


I/O Setup

Dewpoint Setup



Temp Sensor Setup



Digital Output Test



Digital I/O Status

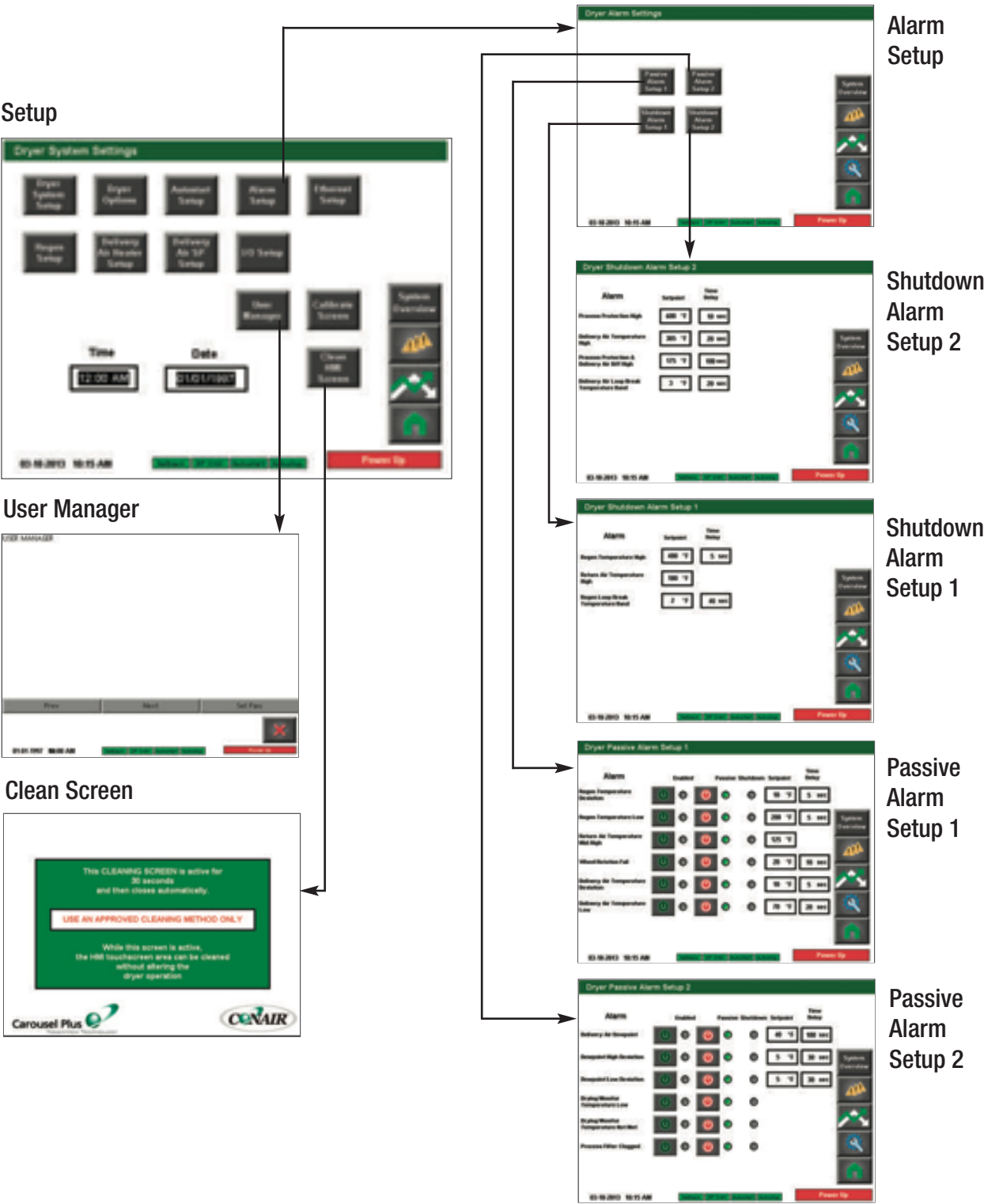
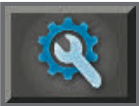


(Continued)

Operation | 4-51

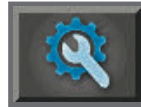
Control Function Flow Charts

From the Setup screen (continued)

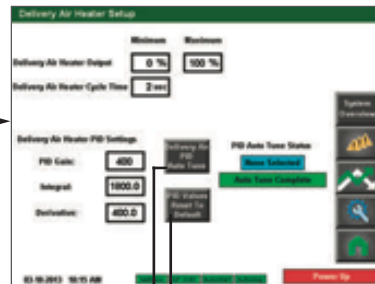
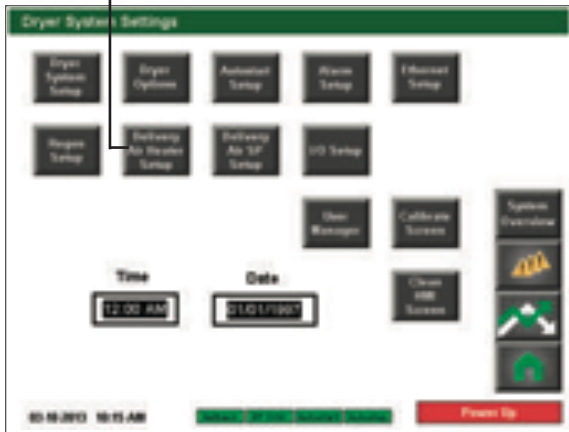


Control Function Flow Charts

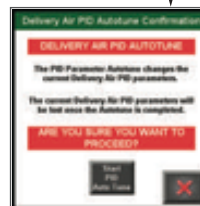
From the Setup screen (continued)



Setup



Delivery Air Heater Setup



Delivery Air PID Autotune



PID Values Reset To Default

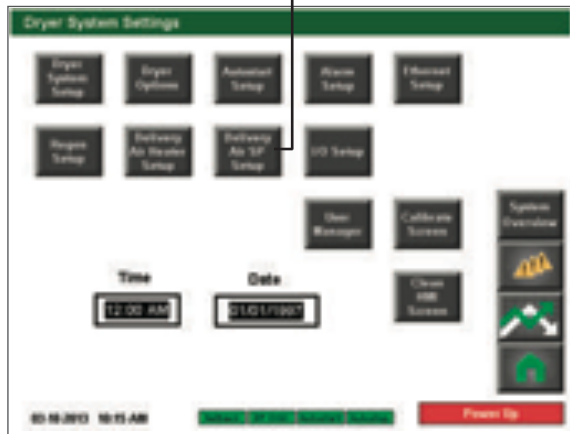
Operation
4

Control Function Flow Charts

From the Setup screen (continued)



Setup



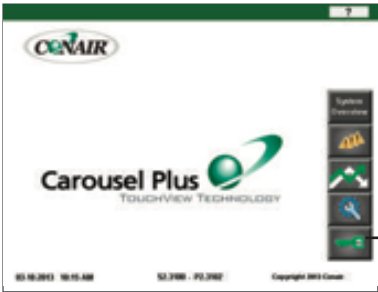
Delivery Air
SP Setup

Control Function Flow Charts

From the Login/Logout screen



Home



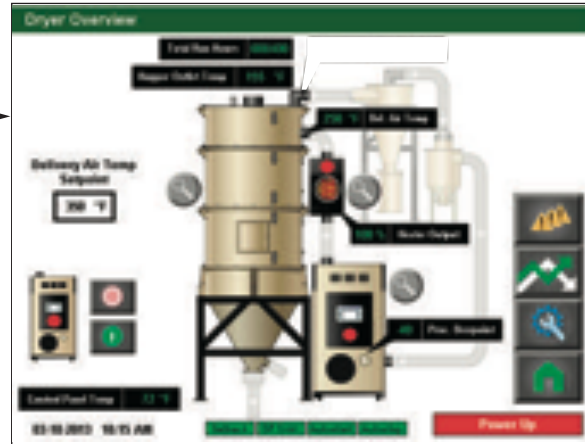
Security Manager



Operation
4

Control Function Descriptions - Stand Alone Configuration

Dryer Overview Screen



NOTE: On this Overview screen, live data is displayed. Data is displayed as colored text inside a solid black box. Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. *See Operation section entitled, How to Navigate the Control Screens.* After the new set point value has been entered, press the "Enter" key to lock in the new set point.

To access the Dryer Overview Screen:

- 1 Press the **Dryer Overview** button located on the home screen.

The Dryer Overview screen provides the user with the current live information concerning the delivery air temperature, the process dewpoint, the total run hours, and the ambient temperature.

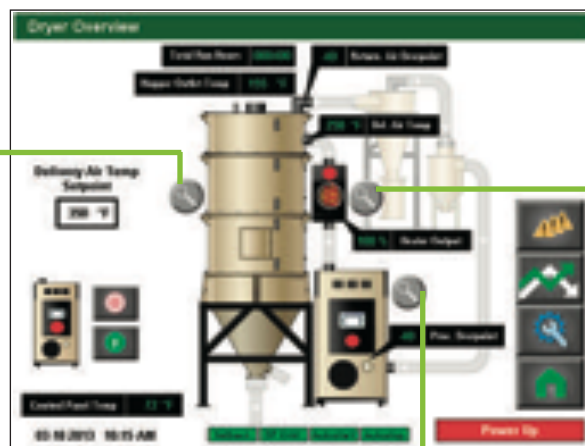
This screen also allows the user to use the zoom buttons and select the dryer detail information or the hopper(s) detail information.

NOTE: The dots on the Heater Pack and dryer (shown as red on the screen to the right) indicate current operating status. Red=stopped Green=on/running

During the shut down process, the dot on the dryer stays green until has cooled down.

Cycling between red and green on the heater pack is normal. This indicates that the heater is turning on and off as necessary.

DM-II zoom
(if applicable)

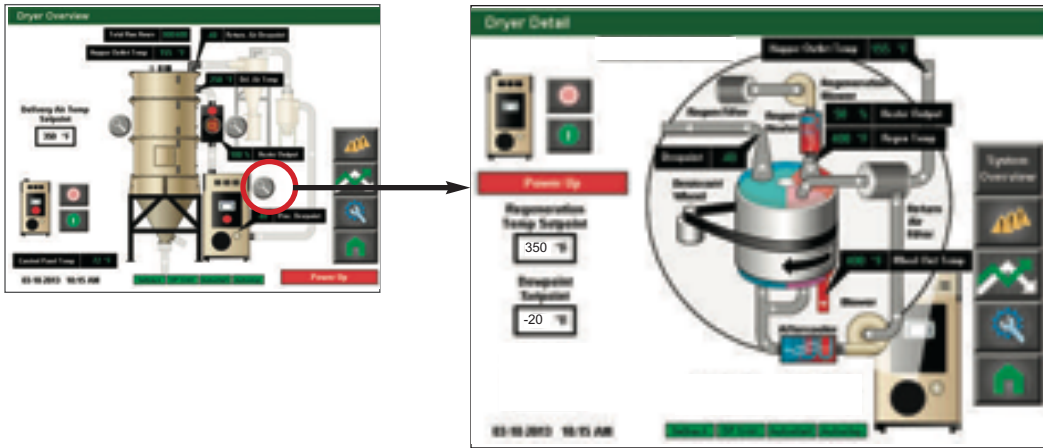


Delivery Air Heater zoom

Dryer zoom

Control Function Descriptions - Stand Alone Configuration (continued)

Dryer Detail Screen



To access the Dryer Detail screen:

- 1 Press the **Magnifying Glass (zoom)** button associated with the dryer on the Dryer Overview screen.

This screen allows the user to start or stop the dryer.

The Dryer Detail screen provides the user with the current live information concerning the processes within the dehumidifying dryer including:

- Hopper Outlet Temperature (if equipped with setback)
- Heater Output
- Regeneration Temperature (Regen. Temp)
- Dewpoint
- Wheel Out Temperature (Temp)

It also tells the user the current status of the aftercooler and precooler (if applicable), as well as which features (Autostart, Autostop, Setback, Dewpoint Control) are enabled.

If the user is logged-in at the proper security level, setpoint changes can be made to:

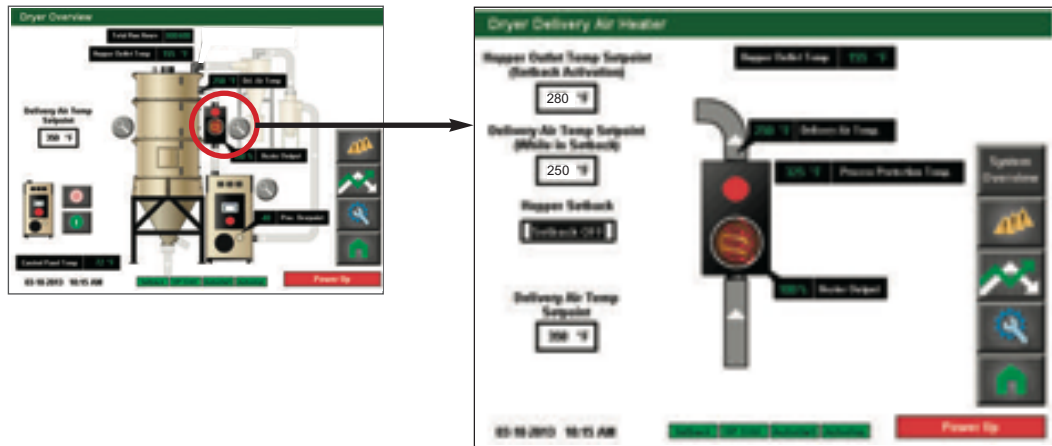
- Regeneration Temperature Setpoint
- Dewpoint Setpoint

The user can also view the other system parameters, view alarms, view trending, return to the Dryer Overview screen, or return to the Home screen by pressing the applicable buttons on the right of the screen.

NOTE: Live data is displayed as colored text inside a solid black box. Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. *See Operation section entitled, How to Navigate Control Screens.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

Control Function Descriptions - Stand Alone Configuration (continued)

Delivery Air Heater Screen



NOTE: Depending on which options your dryer has been configured with, and whether or not you have the DM-II Drying Monitor enabled, your screens and icons may appear different.

NOTE: On this screen, live data is displayed as well as setpoints which can be changed. Data is displayed as colored text inside a solid black box. Setpoints boxes are white with heavy black borders. Setpoints can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the setpoint. [See Operation section entitled, How to Navigate the Control Screens.](#) After the new setpoint value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Delivery Air Heater screen:

- 1 Press the **Magnifying Glass (zoom) button** associated with the heater on the Dryer Overview screen.

The Dryer Detail screen provides the user with the current live information concerning the processes within the dehumidifying dryer including:

- Heater Output
- Process Protection Temperature
- Delivery Air Temperature

It also tells the user the current status of the heater, as well as which features of the dryer (Autostart, Autostop, Setback -if equipped, Dewpoint Control) are enabled.

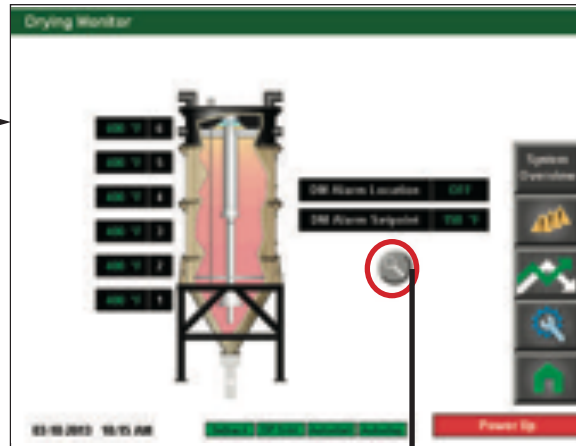
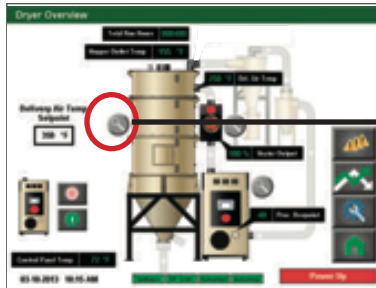
If the user is logged-in at the proper security level, setpoint changes can be made to:

- Hopper Outlet Temperature Setpoint
- Delivery Air Temperature Setpoint
- Delivery Air Temperature Setpoint (for setback - if equipped)
- Hopper Setback activation

This screen also allows the user to view the other system parameters, view alarms, view trending, return to the Dryer Overview screen, or return to the Home screen by pressing the applicable buttons on the right of the screen.

Control Function Descriptions - Stand Alone Configuration (continued)

DM-II Drying Monitor Screen (if equipped)



NOTE: Depending on which options your dryer has been configured with, and whether or not you have the DM-II Drying Monitor enabled, your screens and icons may be different from what is shown here.

To access the DM-II Drying Monitor screen:

- 1 Press the **Magnifying Glass (zoom) button** associated with the Drying Monitor (beside the hopper).

The DM-II Drying Monitor screen provides the user with the current alarm location zone, and the Alarm Setpoint, as well as a button to zoom to DM-II settings. These settings can be adjusted.

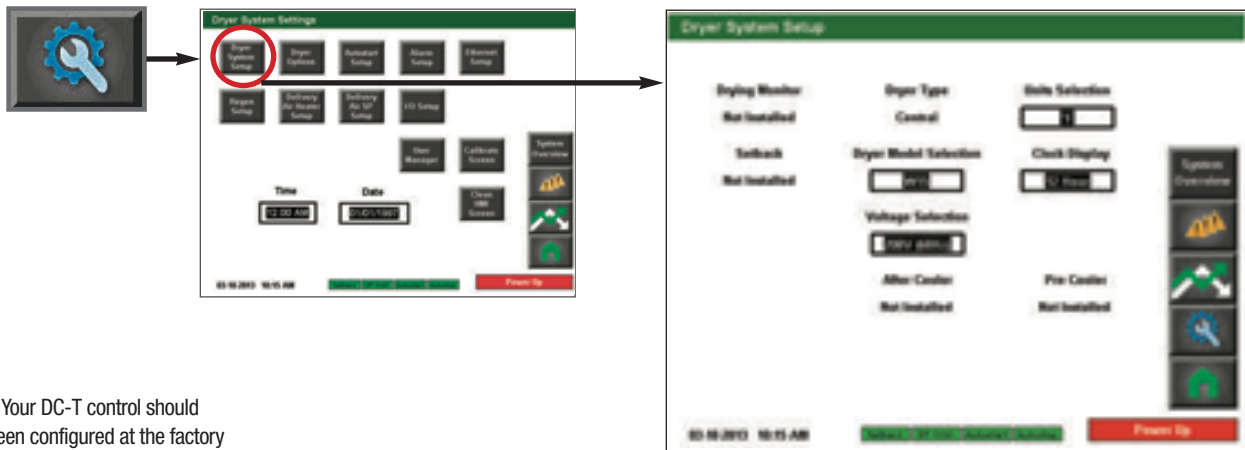


NOTE: On these screens, live data is displayed as well as setpoints which can be changed. Data is displayed as colored text inside a solid black box. Setpoints boxes are white with heavy black borders. Setpoints can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the setpoint. [See Operation section entitled, How to Navigate the Control Screens.](#) After the new setpoint value has been entered, press the **"Enter"** key to lock in the new set point.

NOTE: [See the Drying Monitor User Guide for more information about using the Drying Monitor.](#)

Control Function Descriptions - Stand Alone Configuration (continued)

Dryer System Setup screen



NOTE: Your DC-T control should have been configured at the factory for your Dryer. These settings should not need changed unless your system changed, or the control was replaced. Proper login is required to change these settings.

To access the Dryer System Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Dryer System Setup button.**

The Dryer System Setup screen provides the user with the ability to change the system settings of this Dryer.

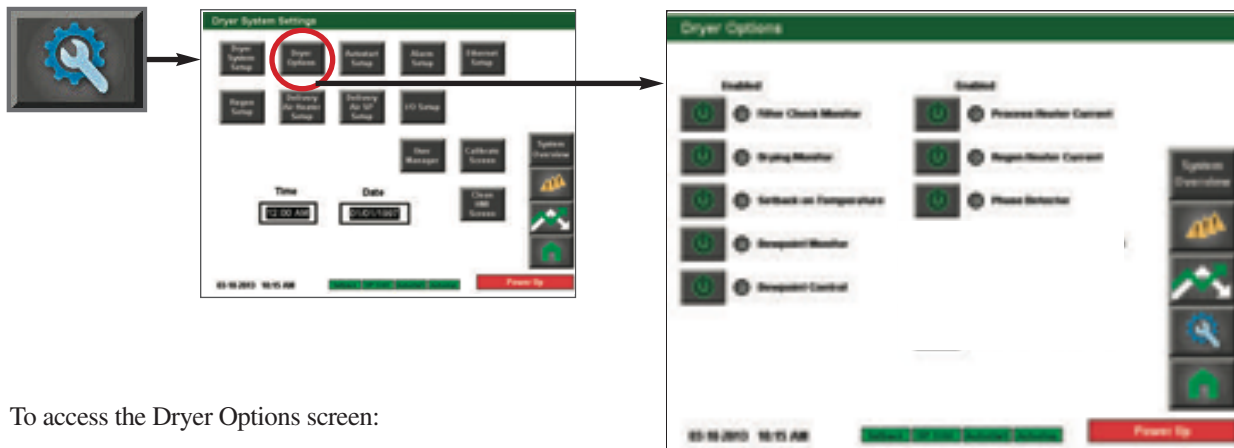
NOTE: See the *DM-II User Guide* for more information about using the *DM-II Drying Monitor*.

This screen allows you to change:

- Units selection (Fahrenheit and Celsius)
- Dryer model
- Clock display (12 hour and 24 hour)
- Voltage selection

Control Function Descriptions - Stand Alone Configuration (continued)

Dryer Options screen



To access the Dryer Options screen:


- 1** Press the **Settings** button from the Home screen.
- 2** Press the **Dryer Options** button.

The Dryer Options screen provides the user with the ability to enable or disable options.

This screen allows you to change the status of:

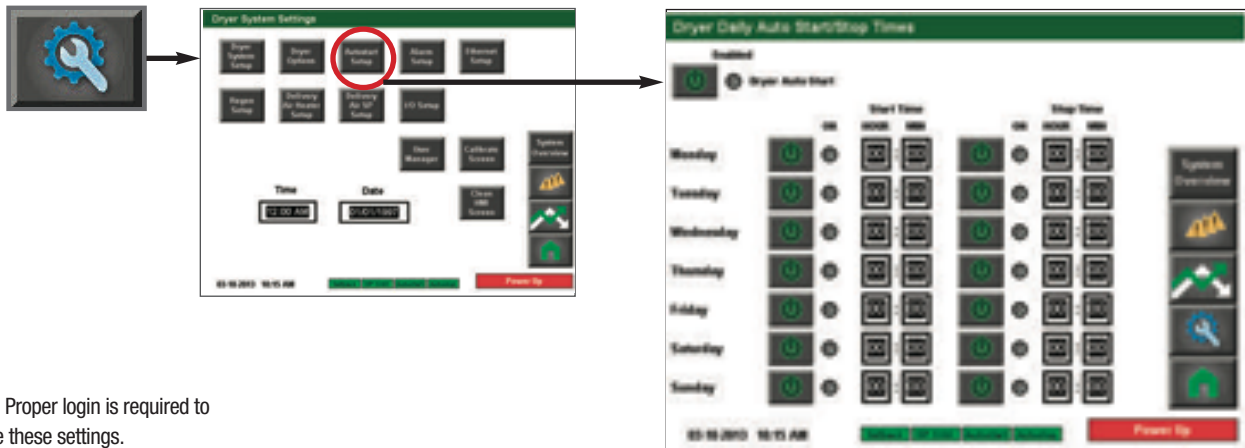
- Filter Check Monitor
- Drying Monitor
- Setback
- Dewpoint Monitor
- Dewpoint Control
- Process Heater Current
- Regen Heater Current
- Phase Detector

 **NOTE:** Proper login is required to change these settings.

 **NOTE:** Depending on the configuration of your dryer and your drying system, some of the options may not be available or visible on your screen. Your screen may appear different from what is shown here.

Control Function Descriptions - Stand Alone Configuration (continued)

Autostart Setup screen



NOTE: Proper login is required to change these settings.

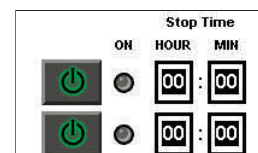
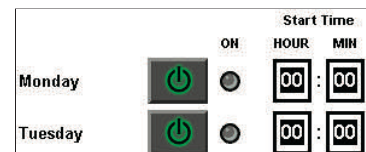
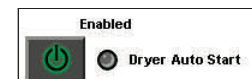
To access the Autostart screen:

- 1 Press the **Settings** button from the Home screen.
- 2 Press the **Autostart Setup** button.

The Autostart Setup screen provides the user with the ability to enable or disable and set the start and stop time for dryer for each day of the week.

To setup Auto Start and Auto Stop:

- 1 Press the **Enable** button to enable Dryer Auto Start.
- 2 Press the **Enable** button next to each day of the week you would like to set the Auto Start time.
- 3 Set the Auto Start time for each day you have enabled.
- 4 Press the **Enable** button next to each day of the week you would like to set the Auto Stop time.
- 5 Set the Auto Stop time for each day that you have enabled.



NOTE: Autostart timer uses 24 hour time format. 00:00 is midnight. Note that this is a seven (7) day repeating calendar, and not real time.

Control Function Descriptions - Stand Alone Configuration (continued)

Alarm Setup screen



To access the Alarm Setup screen:

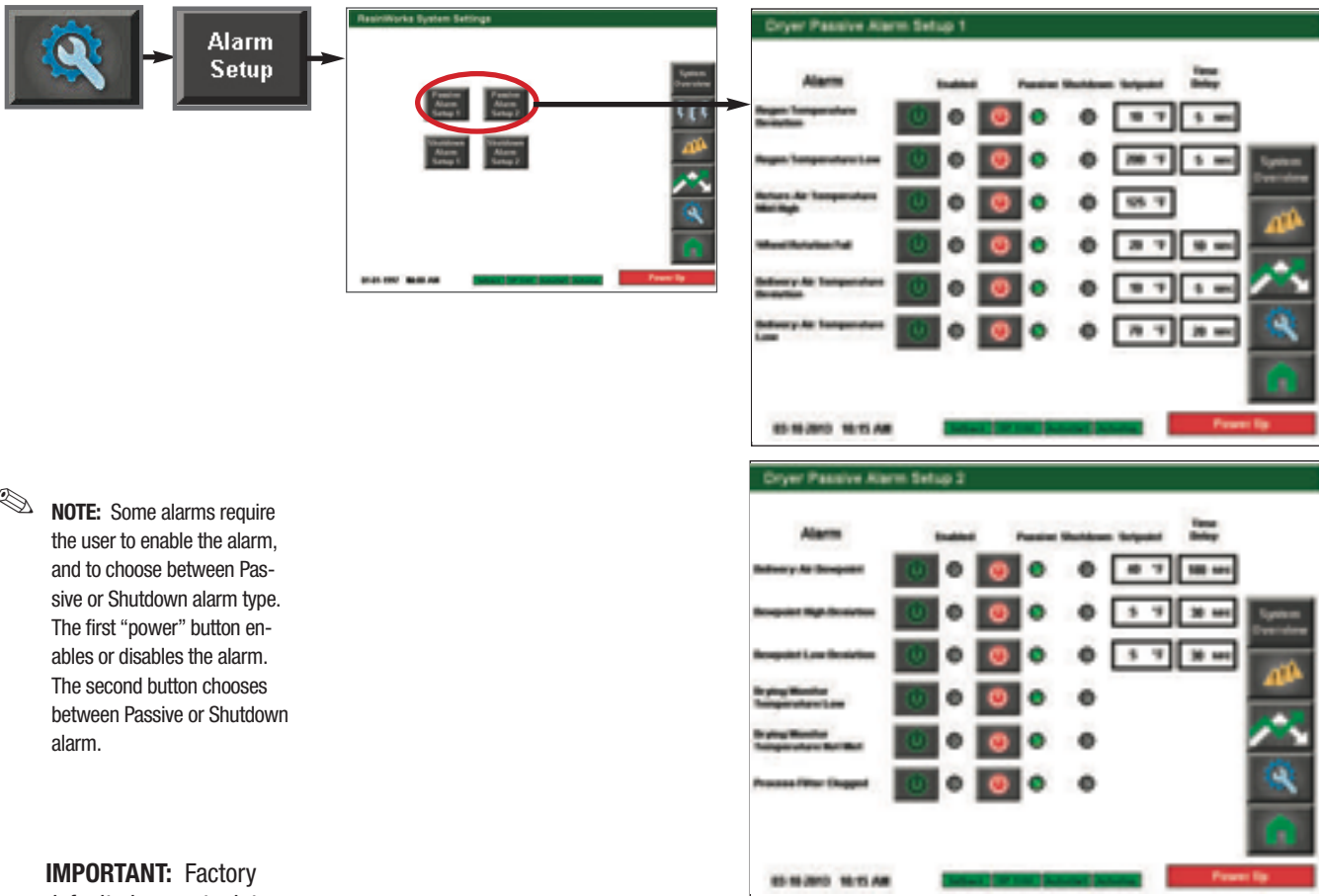
- 1 Press the Settings button** from the Home screen.
- 2 Press the Alarm Setup button.**

The Alarm Setup screen provides the user with the ability to enable, disable and adjust set-points for alarms in the Drying system. Both passive and shutdown alarms can be modified from these screens.

NOTE: Proper login is required to change these settings.

Control Function Descriptions - Stand Alone Configuration (continued)

Passive Alarm Setup (1 & 2)



NOTE: Some alarms require the user to enable the alarm, and to choose between Passive or Shutdown alarm type. The first “power” button enables or disables the alarm. The second button chooses between Passive or Shutdown alarm.

IMPORTANT: Factory default alarm setpoints should not be changed without first consulting with Conair.

Conair’s Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

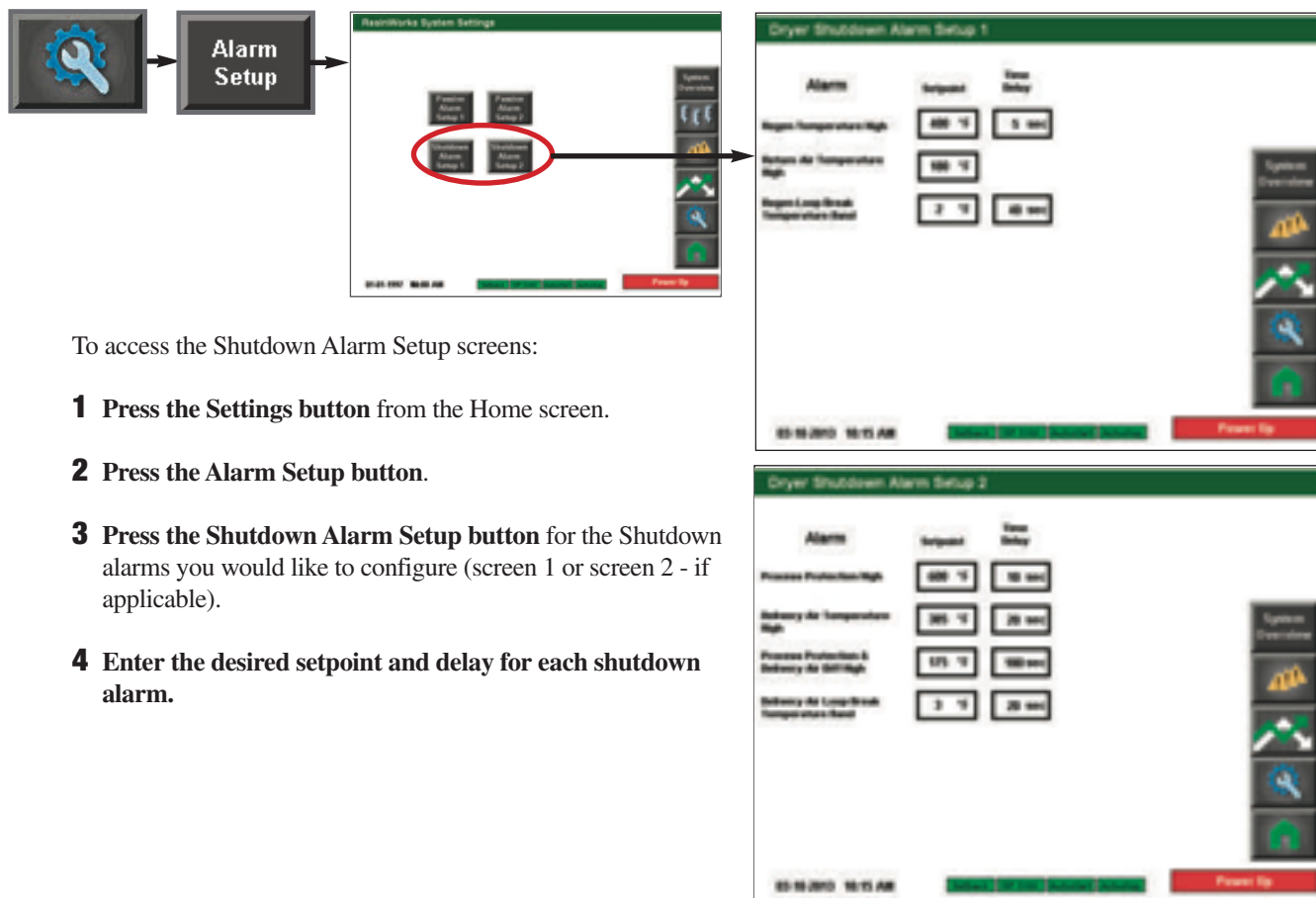
To access the Passive Alarm Setup screens:

- 1 Press the **Settings** button from the Home screen.
- 2 Press the **Alarm Setup** button.
- 3 Press the **Passive Alarm Setup** button for the Passive alarms you would like to configure (screen 1 or screen 2- if applicable).
- 4 Enter the desired setpoint and delay (if applicable) for each alarm.

NOTE: Proper login is required to modify alarm settings. Depending on your dryer configuration, you may have different alarm settings or different screen configurations.

Control Function Descriptions - Stand Alone Configuration (continued)

Shutdown Alarm Setup (1 & 2)



To access the Shutdown Alarm Setup screens:

- 1** Press the **Settings** button from the Home screen.
- 2** Press the **Alarm Setup** button.
- 3** Press the **Shutdown Alarm Setup** button for the Shutdown alarms you would like to configure (screen 1 or screen 2 - if applicable).
- 4** Enter the desired setpoint and delay for each shutdown alarm.

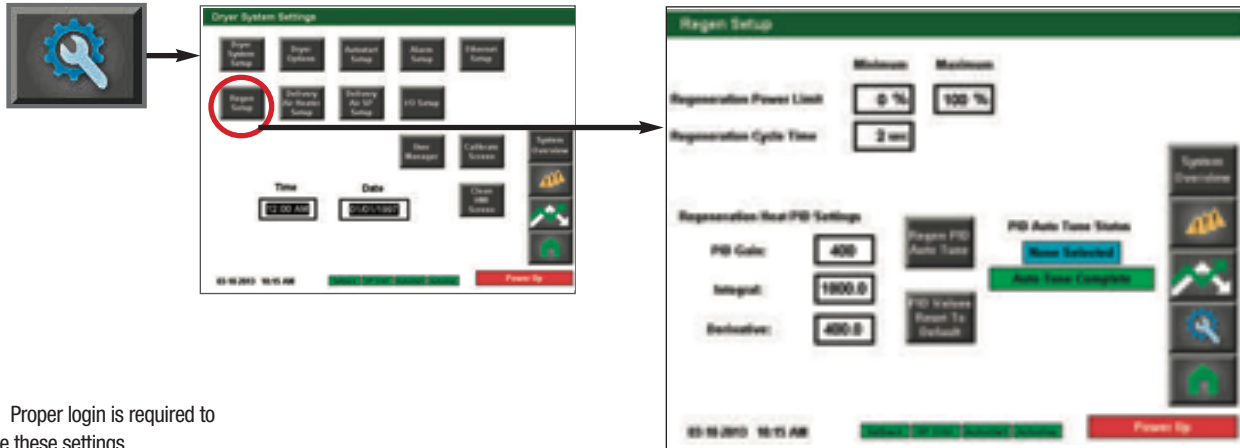
NOTE: Proper login is required to modify alarm settings.

IMPORTANT: Factory default alarm setpoints should not be changed without first consulting with Conair.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Control Function Descriptions - Stand Alone Configuration (continued)

Regen Setup screen



NOTE: Proper login is required to change these settings.

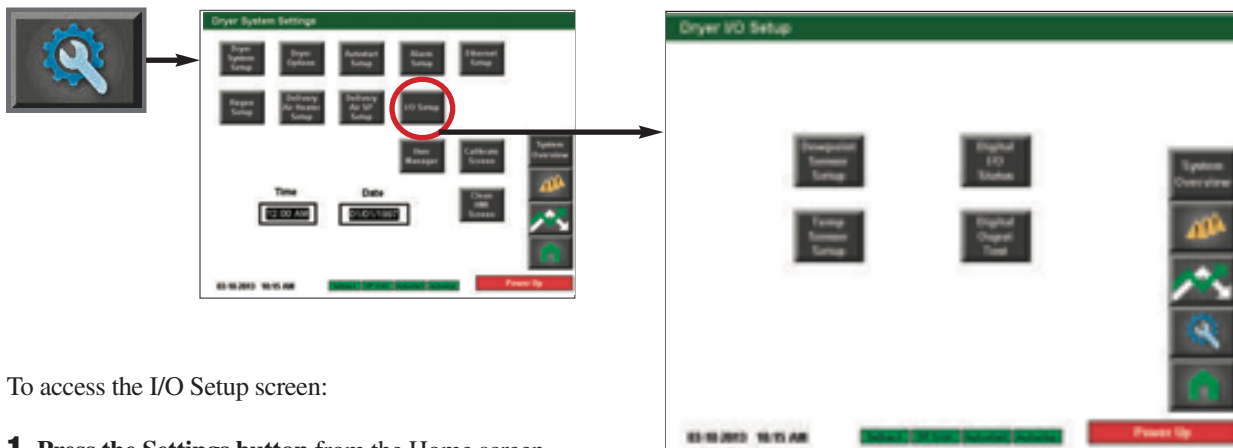
To access the Regen Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Regen Setup button.**

NOTE: It is not typically necessary to use the Regen PID Auto Tune or the Reset PID Values to Factory button. Contact the Conair Service department if you have questions about these items. Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Control Function Descriptions - Stand Alone Configuration (continued)


I/O Setup screen



To access the I/O Setup screen:

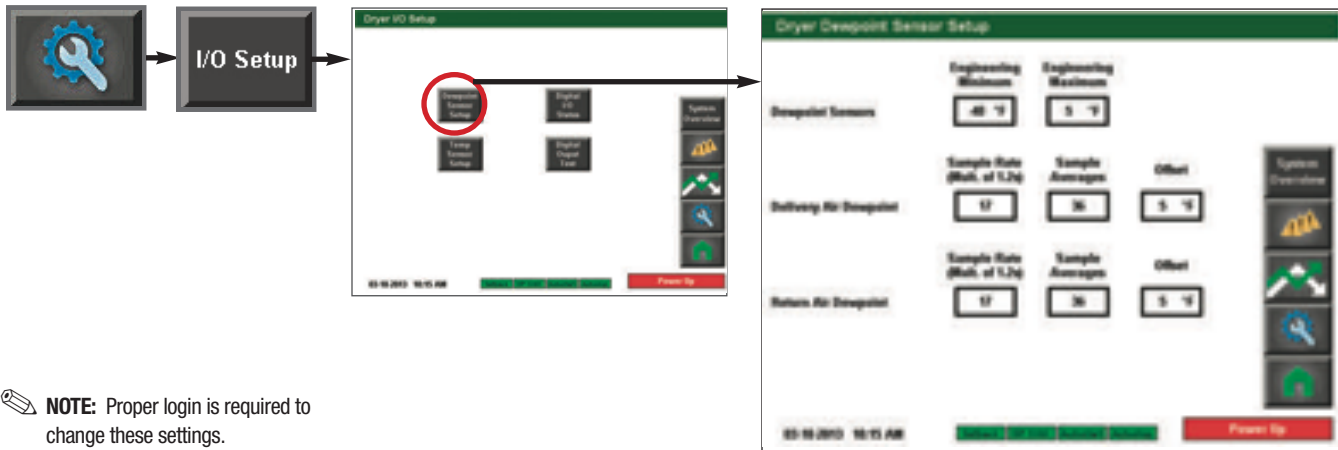
- 1** Press the **Settings** button from the Home screen.
- 2** Press the **I/O Setup** button.

The Dryer I/O Setup screen provides the user with the ability open to the Dewpoint Setup or the I/O Test screen.

 **NOTE:** Proper login is required to change these settings.

Control Function Descriptions - Stand Alone Configuration (continued)

Dewpoint Setup screen



NOTE: Proper login is required to change these settings.

To access the Dryer Dewpoint Sensor Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Dewpoint Setup button.**

IMPORTANT: Factory default settings should not be changed without first consulting with Conair.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

The Dryer Dewpoint Sensor Setup screen provides the user with the ability to adjust the settings for the Dewpoint sensors. This screen allows for adjustment of:

- Sensor minimum and maximum
- Delivery air dewpoint sample rate, sample averages, and offset
- Return air dewpoint sample rate, sample averages, and offset

To change a setpoint:

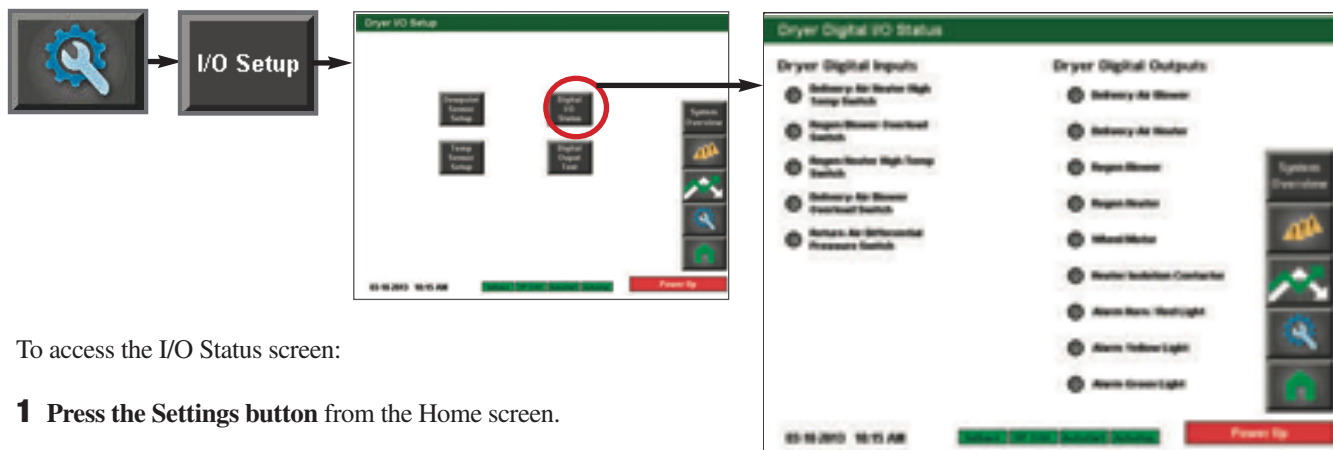
- 1 Press the text inside white box with thick black outline of the setting you would like to change.**

- 2 Use the keypad to enter the new setting.** Setting range will be displayed at the bottom of the pop up keypad.

	Engineering Minimum	Engineering Maximum	
Dewpoint Sensors	40 °F	5 °F	
	Sample Rate (Mult. of 1.2s)	Sample Averages	Offset
Delivery Air Dewpoint	17	36	5 °F
	Sample Rate (Mult. of 1.2s)	Sample Averages	Offset
Return Air Dewpoint	17	36	5 °F

Control Function Descriptions - Stand Alone Configuration (continued)

Digital I/O Status screen



To access the I/O Status screen:

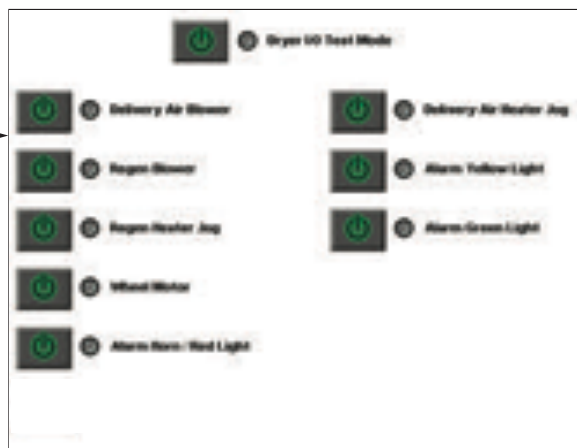
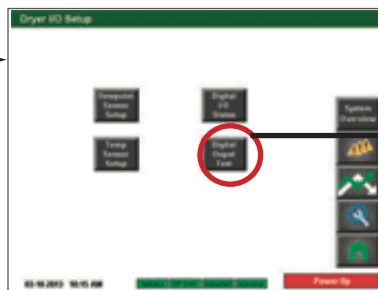
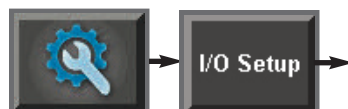
- 1** Press the **Settings** button from the Home screen.
- 2** Press the **I/O Setup** button.
- 3** Press the **I/O Status** button.

The I/O Status screen allows for a visual display of active outputs attached to the DC-T control. Inputs or outputs that are active will turn green. Inactive inputs and outputs will appear grey.

NOTE: Proper login is required to test the outputs. Depending on the configuration of your dryer, some inputs and outputs may not be available.

Control Function Descriptions - Stand Alone Configuration (continued)

Digital Output Test screen



NOTE: Dryer must be stopped to perform test mode.

To access the Test screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Digital Output Test button.**

The test screen allows for digital output tests of various outputs attached to the DC-T control. This screen allows for testing of:

- Delivery air blower
- Regen blower
- Regen heater (jog)
- Wheel motor
- Alarm horn/red light
- Heater isolation contactor
- Delivery air heater (jog)
- Alarm yellow light
- Alarm green light

To test an output:

NOTE: Upon initial test mode, the delivery air blower will start automatically. This only occurs the first time test mode is activated. This is not unusual and should be expected.

- 1 Press the power button to enable the Dryer I/O Test Mode.** The button should illuminate and the LED beside the button should change from grey to green indicating that test mode is enabled.
- 2 Press the power button beside the output you would like to test.** The button should illuminate and the LED beside the button should change from grey to green indicating power has been sent to the output.
- 3 Press the power button beside the output again to stop the test.** Note that some tests are a jog test and will not require pressing the button again to stop. Jog tests are programmed to run for three (3) seconds.
- 4 Press the power button beside the Dryer I/O Test Mode text to disable test mode.**

Control Function Descriptions - Stand Alone Configuration (continued)

Temperature Sensor Setup screen



To access the Temperature Sensor Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the I/O Setup button.**
- 3 Press the Temperature Sensor Setup button.**



	Engineering Minimum	Engineering Maximum	Offset
Regen Temperature Sensor	70 °F	450 °F	0 °F
Delivery Air Temperature Sensor	70 °F	375 °F	0 °F
Drying Monitor Temperature Sensors	Offset		Offset
	RTD #6 (TOP)	6 °F	RTD #3 3 °F
	RTD #5	5 °F	RTD #2 2 °F
	RTD #4	4 °F	RTD #1 (BOTTOM) 1 °F

The test screen allows the user to set the setpoints for the Temperature Sensors:

- Delivery Air Temperature Sensor
- Regen Temperature Sensor
- Drying Monitor Temperature Sensors (if equipped)

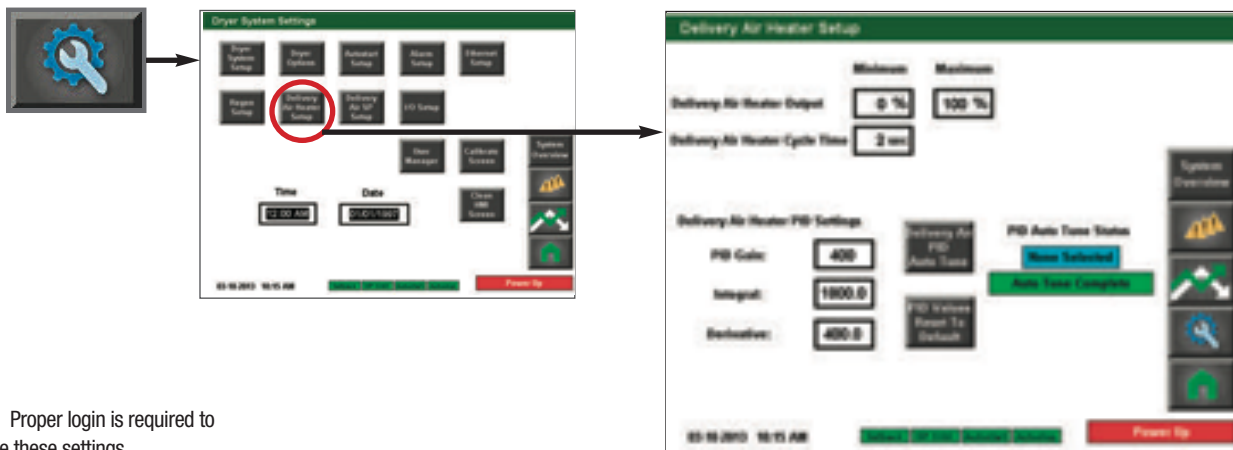
To change a setting:

- 1 Press the white outlined setpoint box.** A pop up number pad will appear.
- 2 Enter the desired setting.** Press enter after you have entered the numbers.
- 3 Repeat steps 1 and 2 for all settings you would like to adjust.** Note that depending on your dryer configuration and your enabled options, your screen may appear different than what is shown here.

NOTE: Proper login is required to change these settings.

Control Function Descriptions - Stand Alone Configuration (continued)

Delivery Air Heater Setup screen



NOTE: Proper login is required to change these settings.

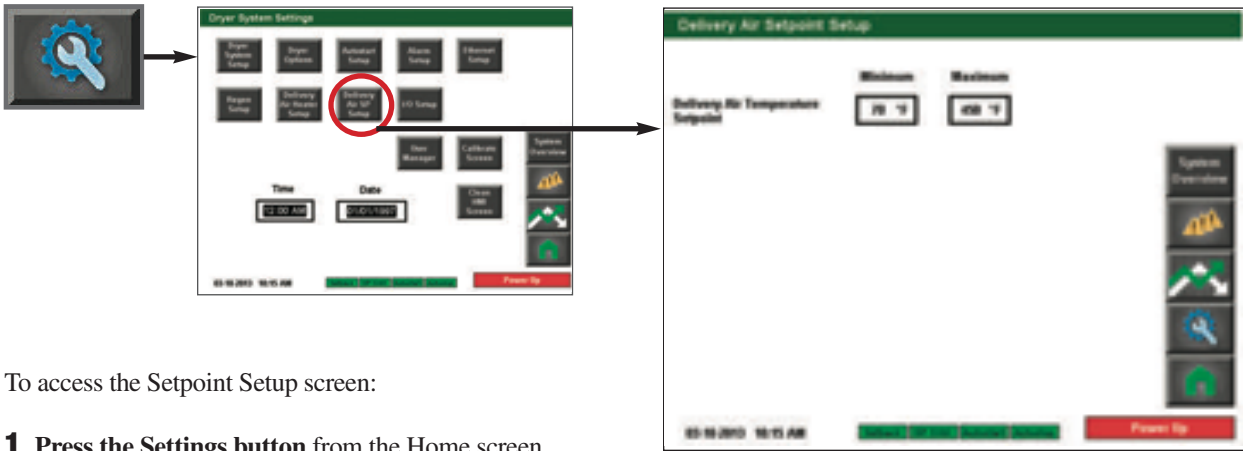
To access the Delivery Air heater Setup screen:

- 1 Press the Settings button** from the Home screen.
- 2 Press the Delivery Air Heater Setup button.**

NOTE: It is not typically necessary to use the PID Auto Tune or the Reset PID Values to Factory button. Contact the Conair Service department if you have questions about these items. Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Control Function Descriptions - Stand Alone Configuration (continued)

Delivery Air Setpoint Setup screen



To access the Setpoint Setup screen:

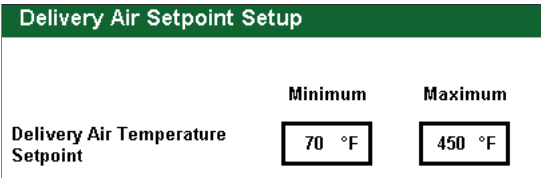
- 1 Press the **Settings** button from the Home screen.
- 2 Press the **Delivery Air Setpoint Setup** button.

The Delivery Air Setpoint Setup screen provides the user with the ability change the setpoint for the Hopper Heater (or other delivery air heat device).

NOTE: Proper login is required to change these settings.

To change the setpoint:

- 1 Press the text inside white box with thick black outline of the setting you would like to change.

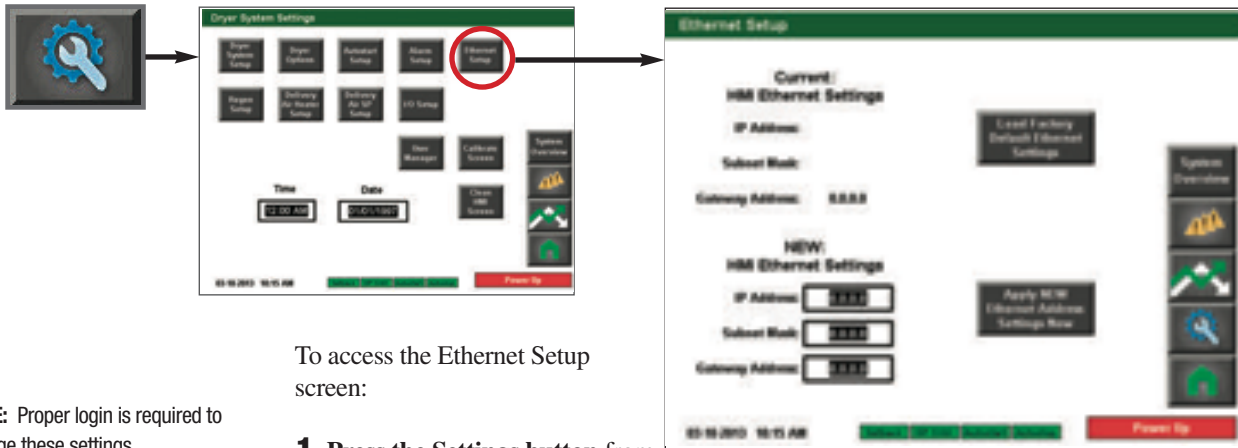


- 2 Use the keypad to enter the new setting. Setting range will be displayed at the bottom of the pop up keypad.



Control Function Descriptions - Stand Alone Configuration (continued)

Ethernet Setup screen



NOTE: Proper login is required to change these settings.

To access the Ethernet Setup screen:

1 Press the Settings button from the Home screen.

2 Press the Ethernet Setup button.

The Ethernet Setup screen provides the user with the ability to view current HMI Ethernet settings, load factory default Ethernet settings, or to change and apply new Ethernet settings.

To load the factory default Ethernet settings:

1 Press the Load Factory Default Ethernet Settings button.

2 Press the button to confirm that you want to load the factory default settings. Press the X button if you want to exit without loading the default factory settings.

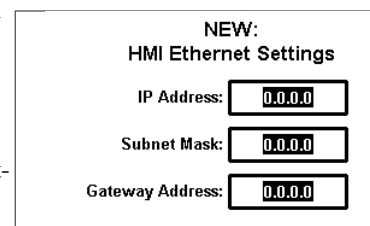
NOTE: Conair's default IP address setting for the DC-T control is 10.1.12.1 as shown in the graphic to the right.



To apply new Ethernet settings:

1 Enter the new settings in the white boxes with thick black borders. When you touch the setting inside the box, a pop up number pad will appear.

2 Use the number pad to enter the new setting. Press the enter button on the number pad to enter the new setting.

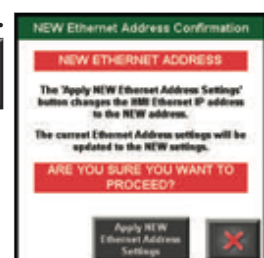


3 Repeat steps 1 and 2 for each address setting.

4 Press the Apply NEW Ethernet Address Settings Now button.

5 Press the button to confirm that you want to apply the new settings. Press the X button if you want to exit without applying the new settings.

Apply NEW Ethernet Address Settings Now



Control Function Descriptions - Stand Alone Configuration (continued)

Trending



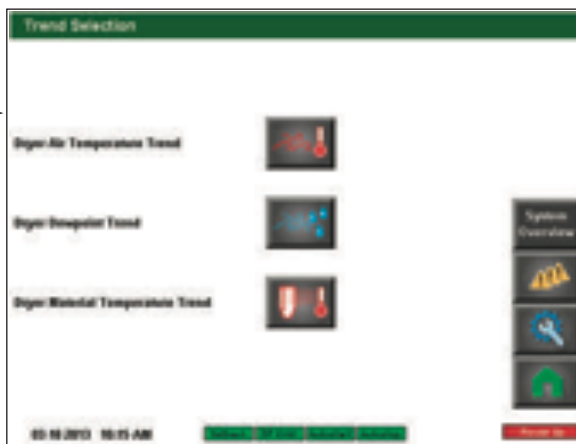
To access the Trending screens:

- 1 Press the Trending button from the Home screen.

The Trend Selection screen allows you to choose which trending screens you would like to view.

From this screen, you can choose to view:

- Dryer Air Temperature Trend
- Dryer Dewpoint Trend
- Dryer Material Temperature Trends



NOTE: Depending on your DC-T configuration, and system security, different users may not be able to access the trending screens. Also, if you do not have Drying Monitor enabled, or the Drying Monitor equipment at your drying hoppers, you will not be able to view Drying Monitor Trends.

Trending Screen Navigation



Each trending screen will allow the user to scroll through data. When the screen first opens, it will be displaying a two (2) hour window, and will have saved the data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, or jump immediately to live data. The user can also touch any point on the trend line and the display will show the data reading, date, and time for that spot in the trend.

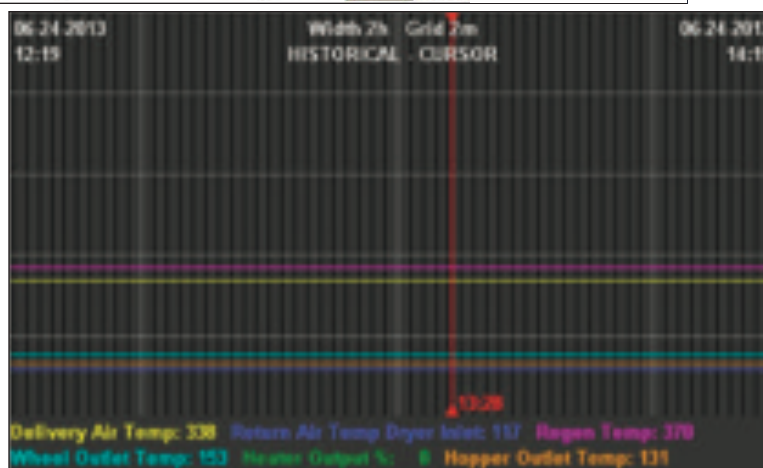
<| **>|** Scroll to the beginning or end of the record.

< **>** Scroll back or forward one point at a time (30 seconds).

Live Move to live data.

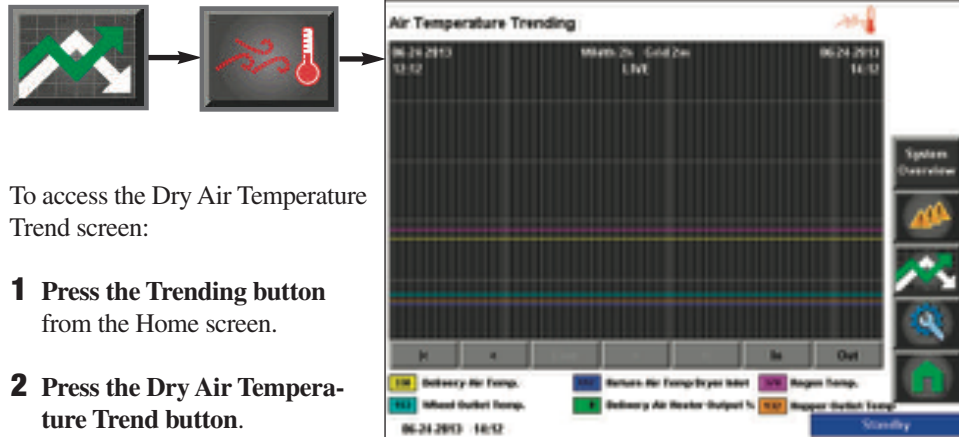
In Zoom in (Instead of seeing 2 hours of trend in the window, you will see 1 hour, 30 minutes, 15 minutes, etc.)

Out Zoom out (Instead of seeing 2 hours of trend in the window, you will see 3 hours, 4 hours, 5 hours, etc.)



Control Function Descriptions - Stand Alone Configuration (continued)

Dry Air Temperature Trend



To access the Dry Air Temperature Trending screen:

- 1 Press the Trending button** from the Home screen.
- 2 Press the Dry Air Temperature Trend button.**

The Dry Air Temperature Trending screen allows the user to view the air temperature trend vs. time at several locations in the Carousel Plus Dryer. The air temperature reading locations are denoted by various colors. The colors associated with the locations are:

- Yellow: Delivery Air Temperature
- Blue: Return Air Temp Dryer Inlet
- Pink: Regeneration Temperature (within the dryer)
- Light Blue: Wheel Outlet Temperature
- Green: Delivery Air Heater Output Percentage
- Orange: Hopper Outlet Temperature

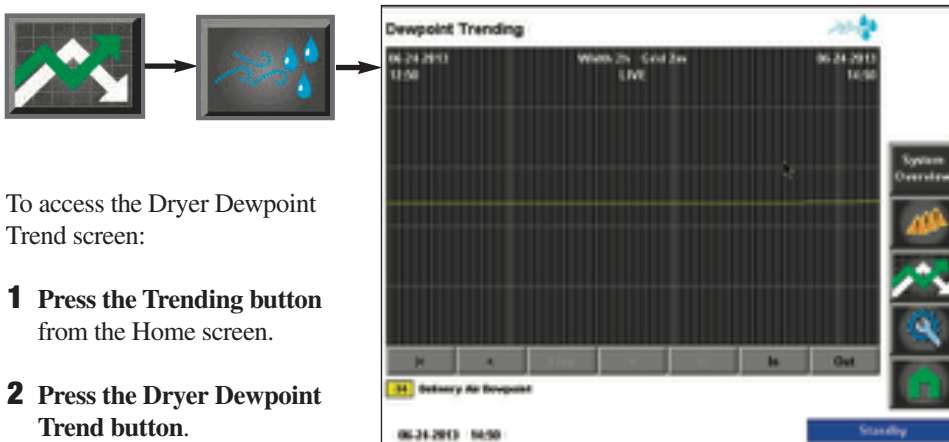
The Dry Air Temperature Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.



NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- Stand Alone Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

Control Function Descriptions - Stand Alone Configuration (continued)

Dryer Dewpoint Trend



To access the Dryer Dewpoint Trend screen:

- 1 Press the Trending button** from the Home screen.
- 2 Press the Dryer Dewpoint Trend button.**

The Dewpoint Trending screen allows the user to view the dewpoint trend vs. time in the Carousel Plus Dryer.

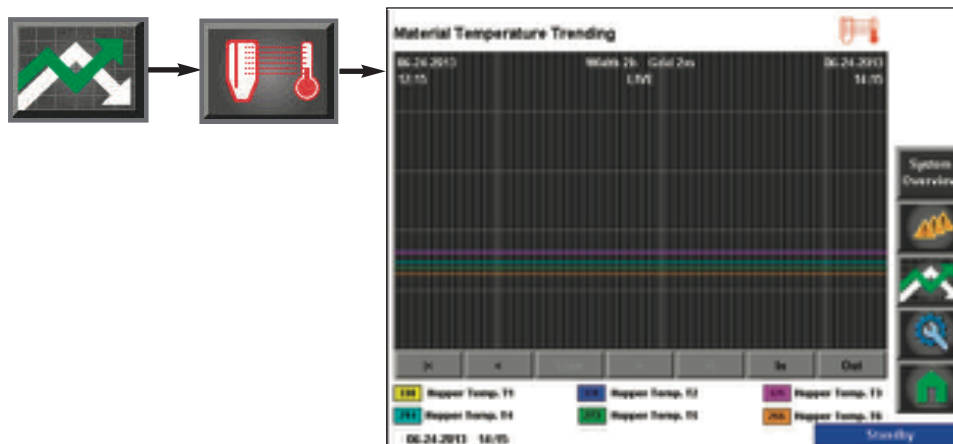
The Dewpoint Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.



NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- Stand Alone Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

Control Function Descriptions - Stand Alone Configuration (continued)

Material Temperature Trends



To access the Material Temperature Trends screen:

- 1 Press the Trending button** from the Home screen.
- 2 Press the Material Temperature Trend button.**



NOTE: See the *Drying Monitor User Guide* for more information about using the *Drying Monitor*.

The Hopper Drying Monitor Trending screen allows the user to view the temperatures at each of the six (6) temperature zones of the Drying Monitor probe.

The Drying Monitor Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last seven (7) day period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present (Live) time from any time within the trending record.



NOTE: See *Trending Screen Navigation (Operation Section: Control Function Descriptions- Stand Alone Configuration: Trending)* for more information on how use the navigation buttons to navigate through individual trending screens.

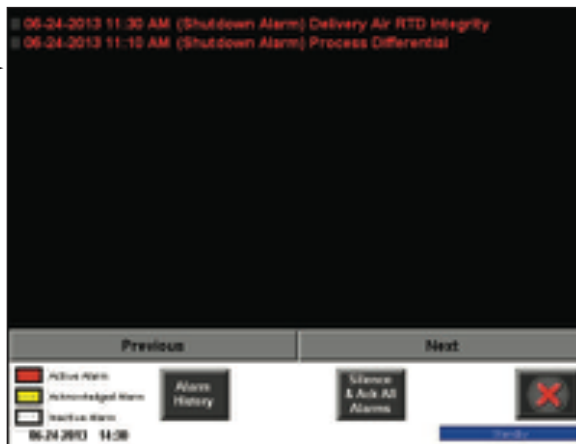
Control Function Descriptions - Stand Alone Configuration (continued)

Alarms



When an alarm occurs, an audible sound will be triggered and the operator interface will display a flashing alarm message.

To view an alarm from any operator screen, press the Alarm button.



1 Press the Alarms button.

2 View the current alarms.

3 Decide if you want to Acknowledge Alarms, Silence and Acknowledge Alarms, Reset All Alarms or clear individual alarms.

The following buttons are available from the Alarms log screen:

Previous Previous - The previous button is used to select the previous alarm when multiple alarms are displayed.

Next Next - The next button is used to select the next alarm when multiple alarms are displayed.

Alarm History Alarm History- Pressing the Alarm History button will show a detailed list of the alarm history.

Silence & Ack All Alarms Acknowledge All - The acknowledge all button is used to acknowledge all the alarms on the list.

Reset All Alarms Reset All Alarms - The Reset button is used to clear all alarms on the list. If the condition has not been remedied, the alarm will reappear.

04:18 PM	Clear	(Shutdown Alarm) HTC04 Process Heater High Temperature
04:09 PM	Alarm	(Shutdown Alarm) HTC04 Process Heater High Temperature
04:00 PM	Clear	(Shutdown Alarm) HTC04 Process Heater High Temperature
03:57 PM	Alarm	(Shutdown Alarm) HTC04 Process Heater High Temperature
11:21 AM	Clear	(Shutdown Alarm) Watchdog Timeout
11:21 AM	Accept	(Shutdown Alarm) Watchdog Timeout
11:20 AM	Alarm	(Shutdown Alarm) Watchdog Timeout
08:02 AM	Clear	(Shutdown Alarm) Delivery Air RTD Integrity
01:41 PM	Accept	(Shutdown Alarm) Delivery Air RTD Integrity
01:41 PM	Alarm	(Shutdown Alarm) Delivery Air RTD Integrity
02:49 PM	Accept	(Shutdown Alarm) Delivery Air RTD Integrity
02:48 PM	Alarm	(Shutdown Alarm) Delivery Air RTD Integrity
12:49 PM	Accept	(Shutdown Alarm) Watchdog Timeout
12:48 PM	Alarm	(Shutdown Alarm) Watchdog Timeout
12:48 PM	Alarm	(Shutdown Alarm) Watchdog Timeout
12:46 PM	Alarm	(Shutdown Alarm) Watchdog Timeout
12:46 PM	Alarm	(Shutdown Alarm) Watchdog Timeout
12:06 PM	Accept	(Shutdown Alarm) Watchdog Timeout
12:05 PM	Alarm	(Shutdown Alarm) Watchdog Timeout
12:01 PM	Alarm	(Shutdown Alarm) Watchdog Timeout

General Operation - Stand Alone and ResinWorks Dryer Configuration

DC-T System Security Levels

There are five (5) customer security levels within the DC-T control. The DC-T is shipped with the password security level set at guest.

To log in at a different user level:



- 1 Press the Security/Login button** from the Home screen.
A Log-in screen pop up window will appear.

- 2 Press the green arrow.** A pop up window will appear with a keypad.



- 3 Using the keypad, enter your username.** Finish by pressing the green enter arrow.




- 4 Using the keypad, enter your password.** Finish by pressing the green enter arrow.



The green key at the bottom of the home page will have a number in it, representing your current security level. Pressing the Login button again will log the user out of the system. Also, inactivity for 10 minutes will log you out of the control. The control will return to security level guest.

Basic user level information:

User	Real name	Password	Change password	Security Level
oper1	Oper1	oper1	No	0, 1
oper2	Oper2	oper2	Yes	0, 1
oper3	Oper3	oper3	Yes	0, 1, 2
maint1	Maint1	maint1	Yes	0, 1, 2, 3
maint2	Maint2	maint2	Yes	0, 1, 2, 3, 4
maint3	Maint3	maint3	Yes	0, 1, 2, 3, 4, 5
admin	Admin	admin	Yes	0, 1, 2, 3, 4, 5, 6

 **NOTE:** Proper login may be required to view certain screens or make changes to various settings. Conair recommends that the administrator logs in first and changes the admin password.

Starting the Dryer

To start the dryer:


1 Turn on the main power to the dryer and system components. Check to make sure that all disconnect dials are in the “ON” position.

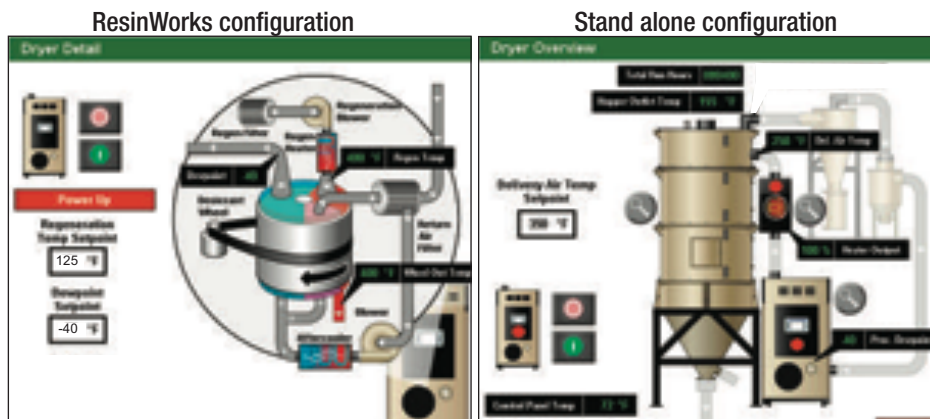
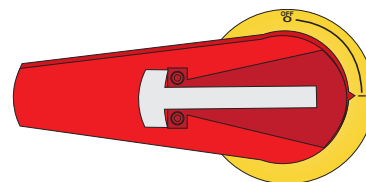
2 Fill the drying hopper with material.

3 Navigate to the Dryer Detail screen.

4 Enter setpoints as necessary on this page. (Depending on your dryer configuration, you may need to make settings to the hopper heater by pressing the zoom button beside the hopper heater.)

5 Press the green start button beside the dryer graphic to start the dryer system.

 **NOTE:** The Start and Stop buttons will appear as grey when that function is not available, and bright when it is available. The greyed buttons mean that the dryer can not be stopped or started at this time. For example, when the dryer is running, the green button is greyed. The dryer can not be started because it is already running. Similar conditions may occur during cool down or start up.



Adjusting the Temperature Setpoint

Any changes to the setpoint temperature once the dryer is operating will affect the on time value. To minimize energy usage, Conair recommends using the lowest setpoint temperature that is required to dry your material and maintain the required material throat temperature. In situations where the incoming material moisture content is low (1000 ppm or less - in the winter) you will be able to run lower setpoint temperatures.

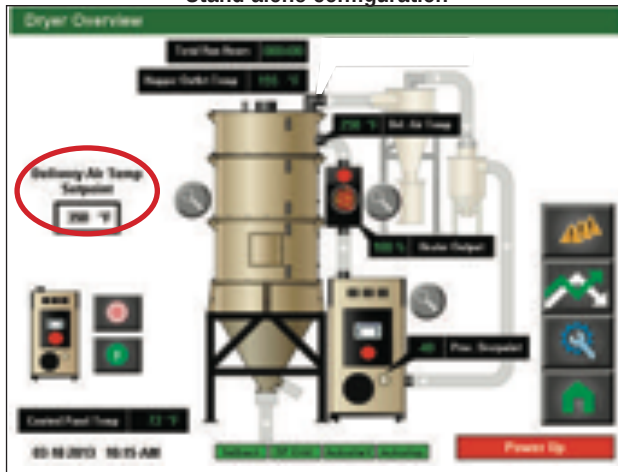
Changes to material temperatures will affect the material temperature profile and the hopper outlet temperature.

NOTE: Making too large of a change in the setpoint will change the material throat temperature too fast for the processing machine to react. This may cause changes to barrel temperatures, back pressures, and injection pressures.

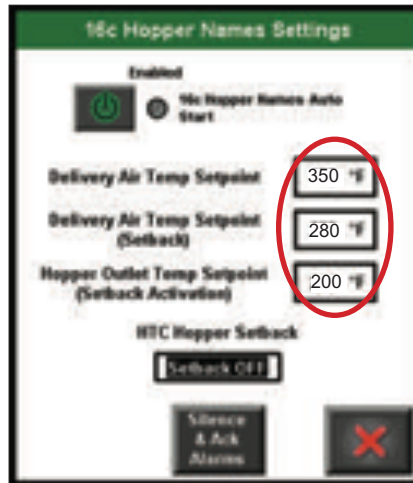
IMPORTANT: Always consult with the material manufacturer for correct processing temperatures.

Increasing the hopper outlet temperature will increase the pressure drop in filters due to the velocity of the air increasing. Increasing air temperature decreases its density (air expands as it is heated). This decrease in density causes an increase in the velocity of the air. Increased velocity increases the pressure drop.

Stand alone configuration



ResinWorks configuration



Stopping the Dryer

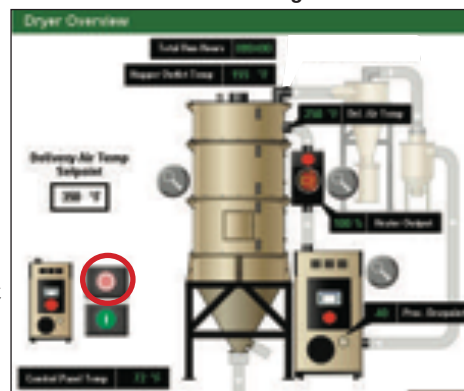
The DC-T Dryer control is programmed to follow a procedure for proper stopping the dryer. Once the stop button has been pressed (or the Autostop time is reached), the heaters will be turned off (RW hopper heaters, heater pack, or other hopper heater) and the dryer blower will continue to run until the regen temperature reaches the factory set cooldown setpoint.

To stop the dryer:

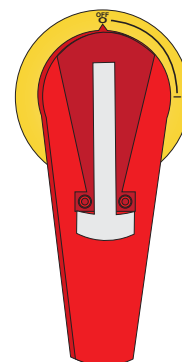
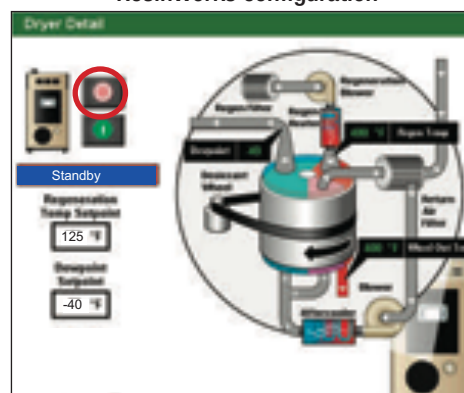
- 1 Press the stop button on the dryer control.** The hopper heaters will turn off immediately and the blower will continue to run until the dryer reaches the cooldown setpoint.
- 2 Observe the dryer status changing to “Stopping” or “Shut-down”.**
- 3 Wait until the dryer status changes to “Standby” which will alert you that the cooldown setpoint has been reached.** Depending on your process temperature, this cooldown time could only take a few seconds, or could take longer.
- 4 If you would like to shut down the dryer at this time, turn the rotary disconnect switch to the OFF position.**

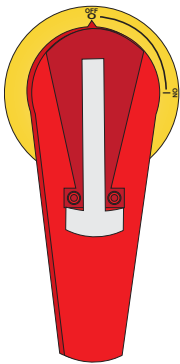
⚠ IMPORTANT: Except in an emergency, always wait until the dryer control displays “Standby” in the status display before turning the rotary disconnect to the OFF position. Failure to do so will not allow the dryer to progress through the cooldown procedure and could result in damage to your equipment.

Stand alone configuration



ResinWorks configuration



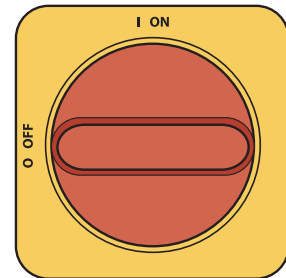


Stopping the Dryer in an emergency

To stop the dryer in an emergency:

1 Rotate the rotary disconnect to the OFF position. Power will be immediately disconnected from the control and the dryer.

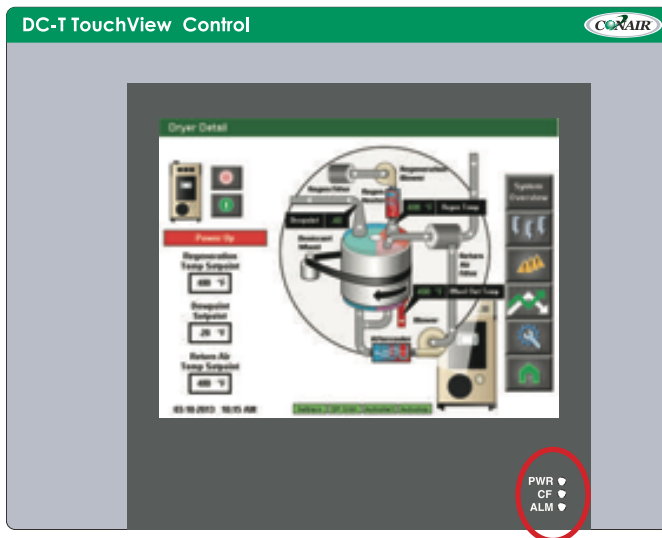
2 If using your dryer as part of a ResinWorks system, use the disconnect on each hopper on the RW sled to disconnect the hopper heaters from power.



IMPORTANT: Except in an emergency, always wait until the dryer control displays “Standby” in the status display before turning the rotary disconnect to the OFF position. Failure to do so will not allow the dryer to progress through the cooldown procedure and could result in damage to your equipment.

After shutting down for an emergency, an thorough inspection of the dryer and drying system should be performed prior to using the dryer, checking for damage to components due to the dryer not properly shutting down.

Understanding the Control LED Lights



Your DC-T control has three LED lights that give the user information about the current state of the HMI.

The PWR LED light indicates that there is power to the display. This light should be on whenever the machine is on. At times, the touch screen will go into a “sleep” mode, the PWR indicator will remain lit to so that the user knows the display is still on.

The CF LED indicates that the HMI has a valid Compact Flash card inserted. Conair recommends that a valid Compact Flash card be in the system at all times. The Compact Flash is used to save trending data and other valuable information.

The ALM LED is an alarm indicator. A solid green light indicates that there are currently no active alarms. A flashing green light indicates that there are active alarms.



Maintenance

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Preventative Maintenance Checklist

Routine maintenance will ensure optimum operation and performance of the W Series Carousel Plus Dryer. We recommend the following maintenance schedule and tasks.

- **Whenever you change materials**

- ☐ **Drain and clean the hopper.** *See Maintenance section entitled, [Cleaning the Hopper](#).*

- **Weekly, or as often as needed**

- ☐ **Clean or replace the process and regeneration filters.**
You may need to clean filters more often than weekly. Frequency depends on how much material you process and how dusty or full of fines it is
See Maintenance sections entitled, [Cleaning the Process Filter](#) and [Cleaning the Regeneration Filter](#).
- ☐ **Inspect hoses and hose connections.**
Check for damage, kinks, or loose hose clamps. Replace any hoses that show signs of damage or wear. Reposition and tighten loose hose clamps.
See Maintenance section entitled, [Inspecting Hoses and Gaskets](#).
- ☐ **If equipped - Open volatile drain valve to remove volatiles and residue that may have accumulated.** Place a bucket or pail below the drain for the volatiles to drain into. Depending on your application, draining may need to be done more or less frequently. *See Maintenance section entitled, [Draining Volatiles](#).*

- **Monthly**

- ☐ **Clean the aftercooler and/or optional precoolers coils and the volatile trap.** You may need to clean the coils more often than monthly. Frequency will depend on the type and volume of material you process. *See Maintenance sections entitled, [Cleaning the Aftercooler Coils](#), [Cleaning the Precooler Coils](#) and [Cleaning the Volatile Trap](#).*

- **Every six months**

- ☐ **Inspect gaskets for damage or wear.**
Damaged gaskets can allow moisture to seep into the closed-loop drying system. Replace any gasket that is torn or cracked. *See Maintenance section entitled, [Inspecting Hoses and Gaskets](#).*

Preventative Maintenance Checklist

(continued)

- **Every six months** (continued)

- ☐ Verify dewpoint readout and performance with calibrated portable instrument. *See Maintenance section entitled, Checking the Dewpoint.*
- ☐ Measure current draw on all three (3) legs of heater wires for the delivery air and regen heater. This is to ensure that the heater is working properly. *See the user guide for the delivery air heater for more information.*


Checking the Dewpoint

It is a good idea to monitor the dewpoint performance of your dryer periodically with a calibrated portable dewpoint monitor, to ensure it is performing at maximum capacity. Even if your dryer has a dewpoint readout, comparing it to a portable instrument periodically will confirm that the dewpoint sensor and readout is performing properly.

To check dewpoint:

- 1 Connect your portable dewpoint meter to the dewpoint check port on the rear panel of the dryer.**
- 2 Turn on the portable instrument,** and ensure there is positive airflow through the sensor.
- 3 Monitor the readout and allow ample time for it to stabilize before disconnecting the portable dewpoint monitor.** Some dewpoint monitors require a substantial amount of time for residual moisture to be purged from the sensor.
- 4 In the event the dewpoint is not satisfactory,** *refer to the Troubleshooting section of this manual, under Delivery Air Dewpoint alarm.*



 **NOTE:** The DC-T control is averaging the dewpoint over time. Allow the system to stabilize to ensure an accurate reading.

Cleaning the Hopper



CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

The hopper, spreader cone, and discharge assembly should be cleaned thoroughly between material changes to prevent resin contamination.

If equipped with an optional drain port:

- 1 Place a container beneath the hopper's drain port** to catch the material.
- 2 Open the drain port** and allow the material to drain.
- 3 Open the hopper door and wipe out the inside** of the hopper.



CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

If NOT equipped with an optional drain port:

- 1 Drain all material from the hopper.** This can be done by conveying material out of the hopper, or by manually emptying material using a bucket or a vacuum.
- 2 Open the hopper door and wipe out the inside** of the hopper.



CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.



IMPORTANT: The area inside the hopper is a confined space. Follow any confined space procedures that apply in your company or location.

Cleaning the Process Filter

Clogged filters reduce air flow and dryer efficiency. Cleaning frequency depends on how much material you process and how dusty or full of fines it is.

Carousel Plus W-series Dryers 600-5000

- 1 Loosen the cover cap latches and remove the process filter cover.**



CAUTION: Hot surfaces.

Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.



- 2 Remove the wing nut and washer holding the filter in place, and pull the filter out.**

IMPORTANT: Clogged filters and worn filters reduce airflow, may be ineffective, and will reduce dryer efficiency. Replace filters with a new filter when necessary.

Conair's Instant Access
24/7 Parts and Service
number is
800-458-1960.
Outside the U.S., dial
814-437-6861.



NOTE: The filter can be cleaned by using an industrial vacuum for the outside and compressed air from the inside. Follow all company and local compressed air procedures. If the filter has been used and cleaned several times, it probably needs to be replaced with a new filter for optimum efficiency.



CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

Cleaning the Process Filter (continued)

Carousel Plus W-series Dryers 600-5000

3 Place the clean filter in the dryer, and use the wing nut and washer to hold the filter in place. Make sure the filter is completely seated against the back of the filter housing.



CAUTION: Hot surfaces.
Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.



4 Place cover cap, and use the latches to attach the filter cover securely.




TIP: If gasket on the process filter cap becomes loose or detached from the filter cap, reseal with high temperature silicone adhesive.




Cleaning the Regeneration Filter

Clogged filters reduce air flow and dryer efficiency. Cleaning frequency depends on the condition of your dryer's ambient air.

 **NOTE:** Dirty or clogged regeneration filters are the leading contributor of dryers not reaching desired dewpoints.

 **CAUTION: Hot surfaces.** Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

 **NOTE:** The filter can be cleaned by using an industrial vacuum for the outside and compressed air from the inside. Follow all company and local compressed air procedures. If the filter has been used and cleaned several times, it probably needs to be replaced with a new filter for optimum efficiency.

IMPORTANT: Clogged filters and worn filters reduce airflow, may be ineffective, and will reduce dryer efficiency. Replace filters with a new filter when necessary.

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24/7 Parts and Service
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800-458-1960.
Outside the U.S., dial
814-437-6861.



1 Locate the regeneration filter below the control enclosure on the front of the dryer.



2 Remove the filter wing nut and washer, then remove the filter.



3 Remove outer filter and clean it with soapy water. Let air dry.

4 Clean the filter by laying it on its side and gently tapping it on the floor. Replace damaged, worn or clogged filters.

5 Reverse the procedure to reinstall the regeneration filter. Make sure that the filter is completely seated in the filter housing.



CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

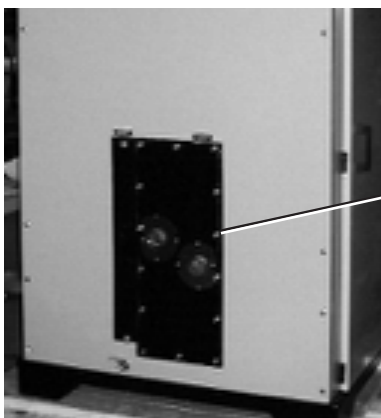
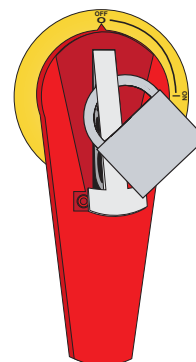
Cleaning the Aftercooler Coils

You need to clean the aftercooler coils to keep them working efficiently. Cleaning frequency depends on the type and amount of material you process.

- 1 Stop the dryer and lockout the main power.**



- 2 Turn off the water flow (close valves) to the water supply line and return line. Disconnect supply and return lines.**



W600 - 1000
Models


W1300 - 5000
Models



- 3 Remove the bolts securing the aftercooler cover. Remove the cover.**
- 4 Remove the aftercooler by pulling it out of the aftercooler housing.**

Cleaning the Aftercooler Coils (continued)

- 5 Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.

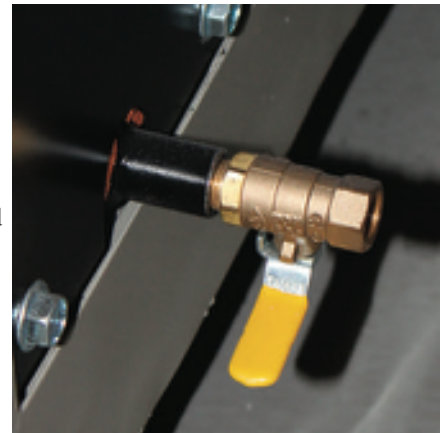
 **NOTE:** In cases of heavy volatiles, steam cleaning, pressure washing or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

- 6 Inspect the condition of the gasket.** If it is damaged, replace the gasket.
- 7 Reassemble** by repeating the steps in reverse order.
- 8 Connect the water supply line and return lines.**
- 9 Open valves to return water to the system.**

Draining the Volatile Drain

The volatile drain (if equipped) is located at the back of the dryer.

- 1 Place a bucket or container below the volatile drain valve at the back of the dryer.**
- 2 Open the volatile drain valve.** Liquid should begin to drain.
- 3 All the valve to completely drain.** This may take a few minutes.
- 4 Close the drain valve.**
- 5 Properly dispose of (in accordance with all regulations) the drained fluid.**

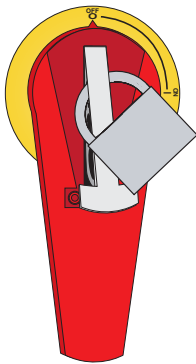


Inspecting Hoses and Gaskets

Loose or damaged hoses and gaskets can allow moisture to seep into the closed-loop drying system.

- 1** Follow the hose routing of all the hoses within the dryer and inspect all hoses, clamps, fittings, and gaskets.
- 2** Tighten any loose hose clamps or fittings.
- 3** Replace worn or damaged hoses and gaskets.





Cleaning the Precooler Coils

You need to clean the pre-cooler coils to keep them working efficiently. Cleaning frequency depends on the type and amount of material you process.

- 1 Stop the dryer and lockout the main power.**



- 2 Turn off the water flow to the water supply and return lines.** Disconnect supply and return lines.

- 3 Remove the bolts securing the pre-cooler cover.** Remove the cover.

- 4 Remove the pre-cooler by pulling it out** of the pre-cooler housing.

- 5 Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.



NOTE: In cases of heavy volatiles, steam cleaning, pressure washing or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

- 6 Inspect the condition of the gasket.** If it is damaged, replace the gasket.

- 7 Reassemble** by repeating the steps in reverse order.

- 8 Connect the water supply line and return line.**

- 9 Open the valve to return water to the system.**

Cleaning the Volatile Trap on the Demister (W600 - 1000)

- 1** Stop the dryer and lockout the main power.



- 2** Remove the thumbscrews then remove the volatile demister cover.

- 3** Remove the demister by pulling it out from the housing.



- 4** Clean the assembly using a mild soap and water. Let the assembly dry thoroughly before installation.

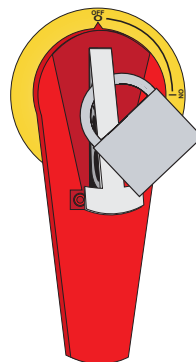


NOTE: In cases of heavy volatiles, steam cleaning, pressure washing or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

- 5** Insert the demister carefully back into the housing, making sure to completely push it towards the back of its housing.

- 6** Inspect the condition of the gasket. If it is damaged, replace the gasket.

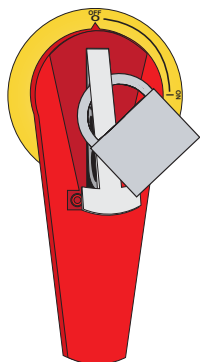
- 7** Secure the cover in place using the original thumbscrews.



NOTE: Depending on the build date and configuration of your dryer, your demister may be on the right side of the after-cooler. Removal and cleaning procedures are the same.



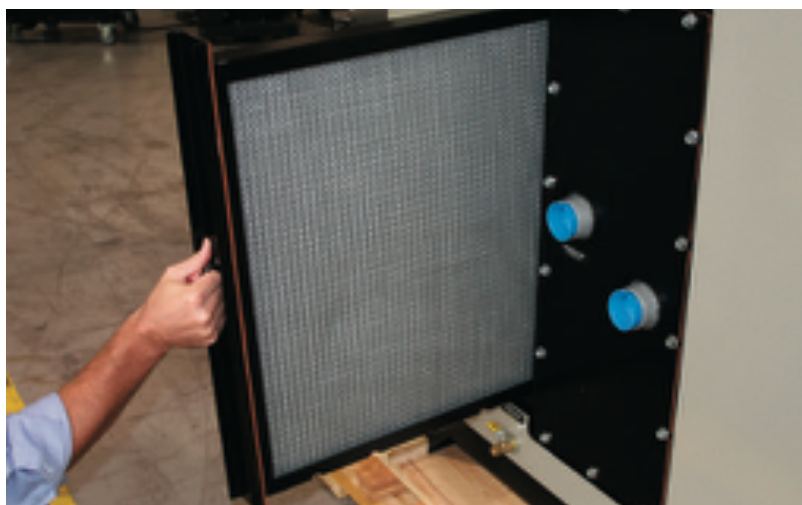
Cleaning the Volatile Trap on the Demister (W1300 -5000)



1 Stop the dryer and lockout the main power.



2 Remove the thumbscrews then remove the volatile demister carriage and demister from its housing.



3 Remove the demister screen from the demister carriage by pushing it out towards the right side of the carriage.

4 Clean the assembly using a mild soap and water. Let the assembly dry thoroughly before installation.

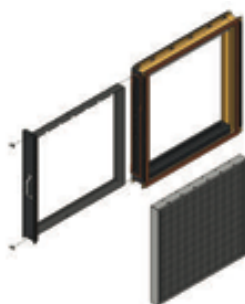


NOTE: In cases of heavy volatiles, steam cleaning, pressure washing or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

5 Insert the demister carefully back into the demister carriage and then replace the entire assembly back into the demister housing.

6 Inspect the condition of the gasket. If it is damaged, replace the gasket.

7 Secure the cover in place using the original thumbscrews.



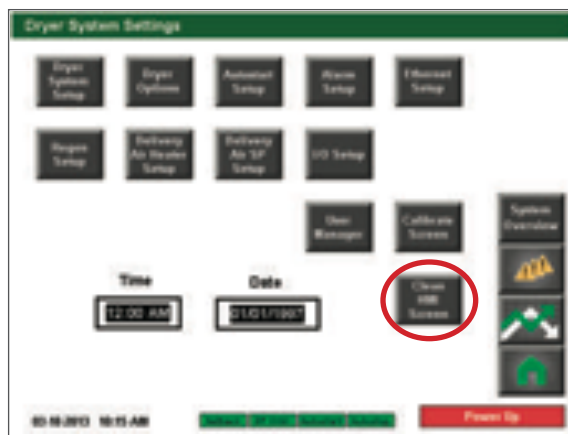
Cleaning the DC-T HMI Screen

Dirt, grease, or dust on the screen can make it difficult to see and use. Periodically clean the screen to keep dirt from accumulating on the screen.

1 Press the Setup button.



2 From the Settings screen, press the Clean HMI Screen button. The touch functionality of the screen will be disabled for 30 seconds, allowing for cleaning of the screen without accidentally changing settings or pushing buttons.



3 Using a clean, dry, soft cloth, wipe the screen gently to remove any dust or dirt. If stubborn spots remain, a gentle cleaning agent designed for use with a touch screen control may be used. Touch screen cleaners may be purchased at most electronics or office supply stores.



Troubleshooting

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Before Beginning

You can avoid most problems by following the recommended installation and maintenance procedures outlined in this User Guide. If you do have a problem, this section will help you determine what caused it and how to fix it.

Before you remove the side panels of the dryer be sure to:

- ☐ Diagnose causes from the control panel.
- 1** Navigate to the Alarm Log Screen. The alarm log lists the alarms that have been registered as well as the date and time of the alarm.



- 2** Address the alarm message and fix the problem. (Refer to the alarm descriptions later in this section.)
 - 3** Press the Alarm History button to view a history of alarms, or press the Silence and Ack All Alarms button to acknowledge the alarms. If the alarm reappears, the problem was not fixed.
- ☐ Find the wiring and equipment diagrams that were shipped with your dryer. These diagrams are the best reference for correcting a problem. The diagrams will note any custom features, such as special wiring or alarm capabilities, not covered in this User Guide. You can avoid most problems by following the recommended installation and maintenance procedures outlined in this User Guide. If you do have a problem, this section will help you determine what caused it and how to fix it.

Before Beginning (continued)

- ❑ **Find the wiring and equipment diagrams that were shipped with your dryer.** These diagrams are the best reference for correcting a problem. The diagrams also will note any custom features, such as special wiring or alarm capabilities, not covered in this User Guide.

See warnings below. Open the electrical enclosure to check fuses and heater contactors.



A Few Words of Caution

The Carousel Plus Dryer with TouchView™ Technology is equipped with numerous safety devices. Do not remove or disable them. Improper corrective action can lead to hazardous conditions and should never be attempted to sustain production.



WARNING: Only qualified service personnel should examine and correct problems that require opening the dryer's electrical enclosure or using electrical wires to diagnose the cause.



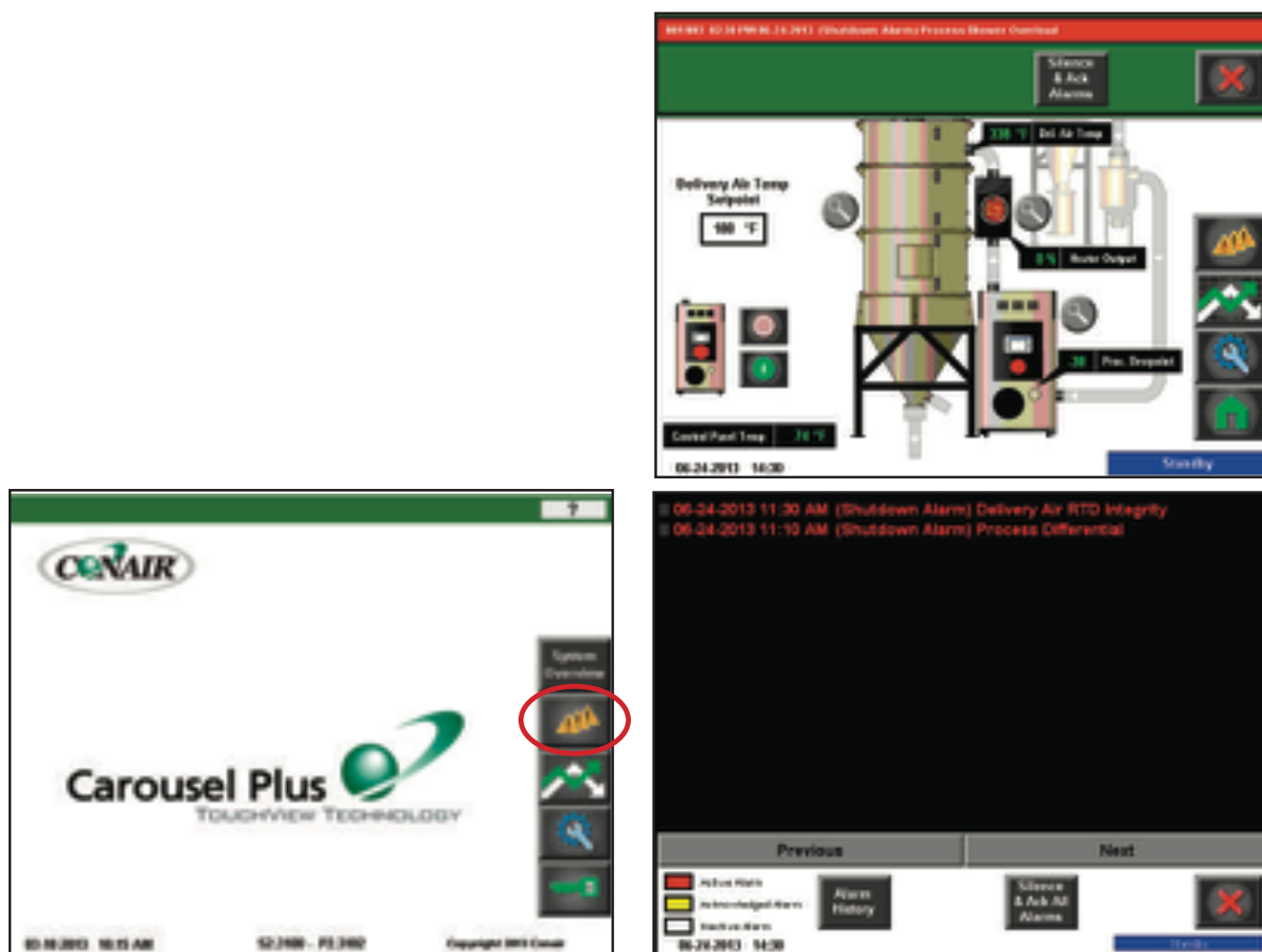
WARNING: High voltage. Always stop the dryer, disconnect and lock out the main power source before troubleshooting or performing repairs.



CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside of the dryer and hopper.

How to Identify the Cause of a Problem

Most dryer malfunctions are indicated in the pop up Alarm bar at the top of the control screen. Alarms can also be viewed by pressing the “Alarm Log” button on the Control Panel.



A malfunction within the dryer can trigger two types of alarms. Passive alarms for the Carousel Plus Dryer System or its components. Shutdown alarms for the components within the Carousel Plus Dryer System.

A problem can trigger two types of alarms:

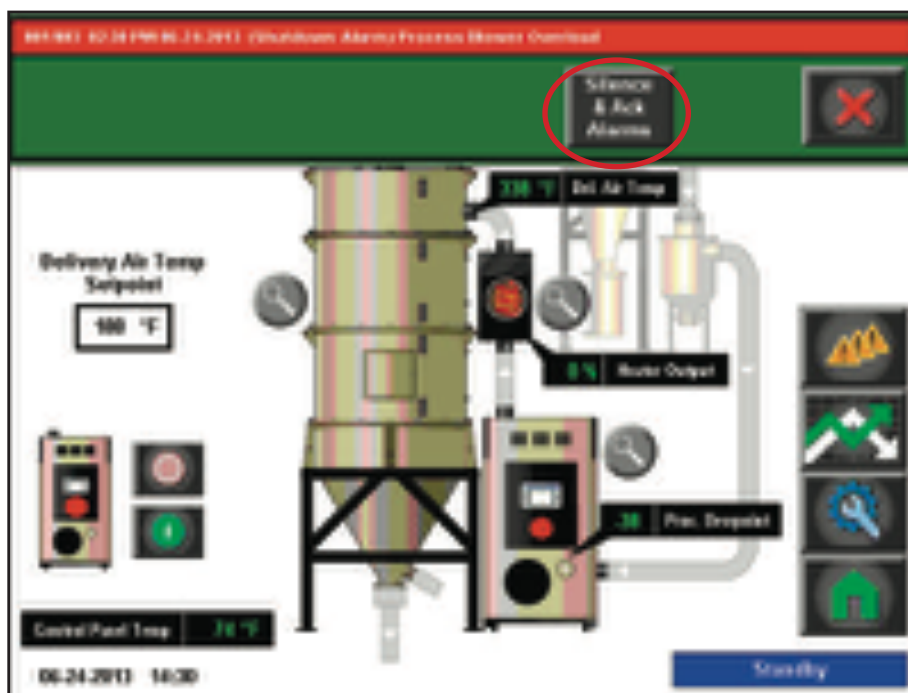
- **Shutdown:** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive:** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a condition that will shut down the dryer.

How to Identify the Cause of a Problem

(continued)

When an alarm message is displayed:

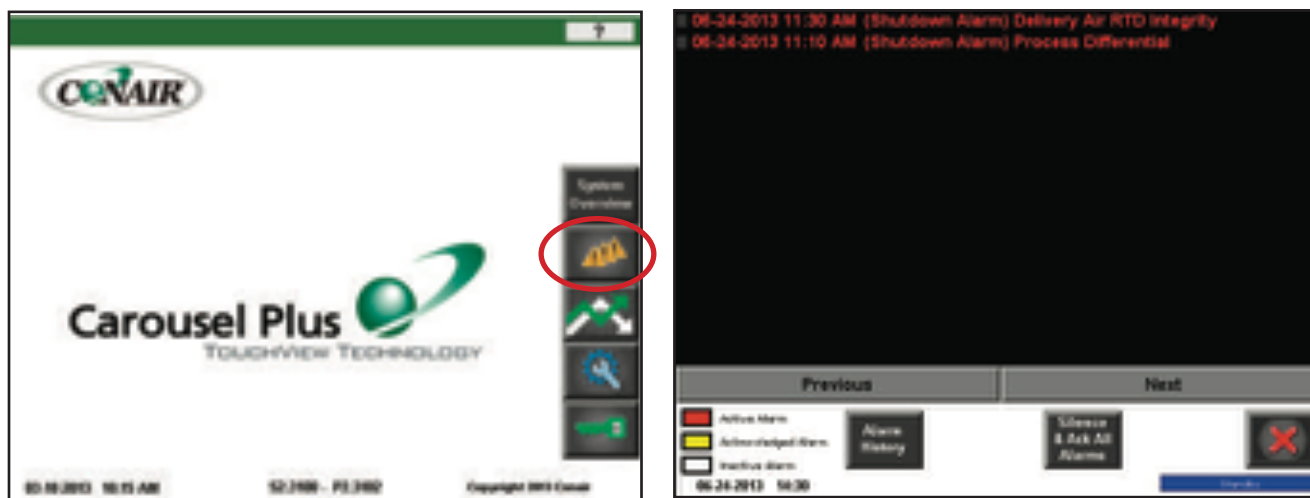
- 1 Press the “Silence and Ack Alarms” button when the alarm banner appears at the top of the screen.



- 2 Find the error message in the diagnostics table of the following troubleshooting section of this manual, or the troubleshooting section of the applicable component user manual. Take any necessary steps, as directed, to resolve the problem.

How to Identify the Cause of a Problem

(continued)




- 3** Press the “Alarm Log” button from the main screen to access the alarm history and note the newest alarm(s).
- 4** Press the “Silence & Ack All Alarms” button.
- 5** After correcting the problem, take note of the problem. If the problem was not solved, the alarm will reactivate.

There may also be a second alarm condition that occurred as a result of the first alarm.

Shutdown Alarms

When an alarm condition appears on the control screen, it may be a shutdown or a passive alarm. If the alarm is a shutdown alarm, the dryer will shutdown automatically to prevent damage to the equipment or personnel. Note that the bottom of the control will display a green alarm LED until the condition is resolved.

 **NOTE:** Some alarms can be set for shutdown or passive. These alarms may be listed in both sections.

Problem	Possible cause	Solution
Regeneration Heater High Temperature – The snap switch in the regeneration heater tube activated due to excessive temperature.	The regeneration exhaust is blocked or the air hoses are loose.	Locate and remove any airflow restrictions. Tighten any loose hoses.
	The regeneration blower is not running or running in the wrong direction.	Correct the cause of the non-running blower (fuse, etc.) or reverse the rotation of the blower.
	The isolation contactor failed in the closed position.	Replace the isolation contactor.
	The heater solid state relays (SSRs) failed.	Replace the failed heater solid state relays (SSRs).
	The regeneration heater output on the board has failed.	Replace the board.
Return Air High Temperature – If the return air temperature at the inlet to the blower is greater than 180°F {82°C}, it shuts down the dryer. (The return air temperature on W1300-5000 dryers is measured at the inlet to the desiccant wheel.)	The hopper does not contain enough material.	Make sure your material supply system is working properly.
	You are drying at a high drying temperature above 180°F {82°C} or you are running at low throughputs.	Ensure water flow to the aftercooler.
	The aftercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler coils are dirty.	Clean the aftercooler coils. <i>See Maintenance section entitled, Cleaning the aftercooler coils.</i>



Central

When supplied for central drying applications, these shutdown alarms are not available.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Delivery High Temperature – If the delivery air temperature exceeds the delivery air high temperature setpoint, it shuts down the dryer. Defaults are set to 385°F {196°C} for 20 seconds.	The delivery high temperature setpoint is not at least 10°F {6°C} above the drying setpoint. One of the delivery (process) solid state relays has failed. The air lines are restricted or loose. The delivery setpoint is too low. The delivery heater output on the control board has failed.	Reset the delivery high temperature setpoint at least 10°F {6°C} above the drying setpoint. Replace the solid state relay. Straighten any crimps in the hoses. Tighten any loose hoses. Set the delivery setpoint higher or install an optional precooler. Replace the control board.
Delivery Temperature Loop Break – If the delivery temperature is outside of the operator entered deviation, alarm band (see Delivery High Temperature Deviation passive alarm) and the delivery temperature is not moving towards the setpoint at a rate greater than specified. It shuts down the dryer. Defaults are set at 3°F {3°C} over 20 seconds.	Delivery RTD is loose or has fallen out. The delivery heater has failed. The air lines are restricted or loose. The delivery blower is not running or is running in the wrong direction. The delivery heater output on the board has failed or the output fuse has failed. Delivery setpoint is too low. Setback setpoint is too low.	Check the delivery RTD and tighten if needed. Check the heater fuses, and resistance across each leg of the delivery heater. Straighten any crimps in the hoses. Tighten any loose hoses. Correct the cause of the non-running blower (blown fuse, etc.) or reverse the rotation of the blower. Replace the board or the fuse for the output. Adjust the setpoint or add a precooler. Adjust the setpoint or add a precooler.



Central

When supplied for central drying applications, these shutdown alarms are not available.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Delivery Heater High Temperature – The snap switch in the delivery heater tube opens due to excessive temperature.	There is an airflow blockage or loose hoses.	Locate and remove any airflow restrictions. Tighten any loose hoses.
	The delivery blower is not running or running in the wrong direction.	Correct the cause of the non-running blower (blown fuse, etc.) or reverse the rotation of the blower.
	The isolation contactor failed in the closed position.	Replace the isolation contactor.
	The delivery heater output on the board has failed.	Replace the board.
	The heater solid state relays (SSRs) failed.	Replace the failed heater solid state relays (SSRs).
Delivery RTD Integrity – If the delivery RTD is faulty, it shuts down the dryer.	The delivery RTD connection to the control box is loose.	Check the connection to the receptacle and tighten if needed.
	The connection in the electrical enclosure for the delivery RTD is loose.	Check the RTD plug connection and tighten if needed.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The delivery RTD has failed.	Replace the delivery RTD.
	The control board has failed.	Replace the control board.



Central

When supplied for central drying applications, these shutdown alarms are not available.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Process Protection High Temperature – If the process protection temperature exceeds the process protection high temperature setpoint, it shuts down the dryer. Defaults are set to 600°F {316°C} for 10 seconds.	The delivery RTD temperature probe is not installed correctly.	Make sure the RTD temperature probe tip is in the center of the hopper inlet tube.
	The delivery air blower is not running.	Correct the cause of the non-functioning blower.
	The air lines between the dryer and hopper are restricted or loose.	Straighten any crimps in the hoses. Tighten any loose hoses.
	The dryer is too far from the hopper.	Move the dryer closer to the hopper and shorten the hoses.
Process Protection RTD Integrity – If the process protection RTD is faulty, it shuts down the dryer.	The delivery air hose is not insulated.	Insulated hose is required for high drying temperatures.
	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections and make any necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The process protection RTD has failed.	Replace the process protection RTD.
	The control board has failed.	Replace the control board.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem

Process Protection Differential - If the difference between the delivery temperature exiting the delivery air heater and the temperature of the air entering the hopper is greater than 175°F {97°C} for longer than 180 seconds it shuts down the dryer.

Possible cause

The air lines between the dryer and hopper are restricted or loose.

The dryer is located too far away from the hopper.

The delivery RTD is loose or has fallen out.

The delivery air blower is not running.

The delivery air hose is not insulated.

Solution

Check for air flow blockages or loose hoses between the outlet of the dryer and the inlet of the hopper. Straighten any crimps in the hoses. Tighten any loose hoses.

The dryer and the hopper should not be located more than 10 feet {3 m} apart.

Check the delivery RTD and tighten if needed.

Correct the cause of the non-functioning blower.

Insulated hose is required for high drying temperatures.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Regeneration RTD Integrity – If the regeneration RTD is faulty, it shuts down the dryer.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connection and make necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The regeneration RTD has failed.	Replace the regeneration RTD.
	The control board has failed.	Replace the control board.
Control Communications Watchdog - The display board has lost communications with the control board.	Plugs on wire harness between the display and control boards are loose or not wired correctly.	Make sure plugs are tight on board connections and match the wiring diagram.
	Display board or communications boards have failed.	Replace the defective boards.
Phase Error (if equipped) - One of the three power wires is connected wrong or one or more phases of power is missing.	One of the three power wires are out of phase.	Switch the position of two of the incoming lead power wires at the dryer.
	A fuse has blown.	Check and replace the fuse.
	Phase detection board has failed.	Replace the phase detection board.
EEPROM Write Error	Internal control board problem.	Replace the control board.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem

Delivery Air Blower overload - If the delivery air blower exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down.

Possible cause

The delivery air blower current draw has exceeded the full load amps rating of the motor.

The delivery air blower has mechanically failed or is unable to rotate freely.

The delivery air blower has failed electrically.

Loss of phase of power to the motor starter.

The overload is set incorrectly.

The overload is defective.

Solution

Press alarm acknowledge and allow the overload to reset then try to restart the dryer. If the alarm condition occurs again have a qualified electrician check the current draw to the motor.

Disconnect and lock out main power. Check the delivery air blower for mechanical failure and free rotation. Replace if necessary. Allow the overload to reset then try to restart the dryer.

Disconnect and lock out main power. Check the delivery air blower for electrical shorts or open circuits. Replace if necessary. Allow the overload to reset then try to restart the dryer.


Check for a blown fuse in the dryer or main power supply. Allow the overload to reset then try to restart the dryer.

Disconnect and lock out main power. Check the overload settings and confirm that the settings match the full load amps listed on the delivery air blower motor. Allow the overload to reset then try to restart the dryer.

Replace the overload.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer’s touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
<p>Regeneration Blower overload - If the regeneration blower exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down. The default setting for this alarm is passive but it can be changed to shutdown.</p> <p> NOTE: This alarm shuts down only the regeneration portion of the dryer. The delivery air blower will continue to run.</p>	The regeneration blower current draw has exceeded the full load amps rating of the motor.	Press alarm acknowledge and allow the overload to reset then try to restart the dryer. If the alarm condition occurs again have a qualified electrician check the current draw to the motor.
	The regeneration blower has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the regeneration blower for mechanical failure and free rotation. Replace if necessary. Allow the overload to reset then try to restart the dryer.
	The regeneration blower has failed electrically.	Disconnect and lock out main power. Check the regeneration blower for electrical shorts or open circuits. Replace if necessary. Allow the overload to reset then try to restart the dryer.
	Loss of phase of power to the motor starter.	Check for a blown fuse in the dryer or main power supply. Allow the overload to reset then try to restart the dryer.
	The overload is set incorrectly.	Disconnect and lock out main power. Check the overload settings and confirm that the settings match the full load amps listed on the blower motor. Allow the overload to reset then try to restart the dryer.
	The overload is defective.	Replace the overload.

Shutdown Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer will shut down automatically to prevent damage to the equipment or personnel. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Regeneration High Temperature – If the regeneration temperature exceeds the high temperature limit for the specified time. Default values are 385°F {196°C} for 20 seconds.	One of the solid state relays (SSRs) failed in the closed position. The output on the board has failed.	Replace the failed solid state relays (SSRs). Replace the board.
Regeneration Temperature Loop Break – The regeneration temperature is outside of the operator entered deviation alarm band (see Regeneration Temperature Deviation passive alarm) and the regeneration temperature is not moving towards the setpoint at a rate greater than specified. Default values are 2°F {1°C} over 40 seconds.	The regeneration heater has failed. The regeneration RTD is loose or has fallen out. The regeneration blower is not running. The output on the control board has failed or the fuse is blown.	Check the heater fuses, and resistance across each leg of the process heater. Check the regeneration RTD and tighten if needed. Check wiring or replace regeneration blower. Replace the control board or fuse.





Central

When supplied for central drying applications, these shutdown alarms are not available.

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.


Problem	Possible cause	Solution
<p>Regeneration Temperature Deviation – The regeneration temperature exceeds the deviation band for the specified time. Default values are 10°F {6°C} for 5 seconds.</p> <p> NOTE: This alarm is factory defaulted to OFF.</p>	<p>One of the solid state relays (SSRs) failed.</p> <p>The regeneration RTD is loose or has fallen out.</p> <p>The air hose connections are loose.</p> <p>The output on the board has failed.</p> <p>Defective regeneration heater.</p>	<p>Replace the failed solid state relays (SSRs).</p> <p>Check the regeneration RTD and tighten if needed.</p> <p>Tighten all air hose connections.</p> <p>Replace the board.</p> <p>Check the heater fuses and resistance across each leg of the regeneration heater.</p>
<p>Return Air Mid-High Temperature – If the return air temperature is between 150 and 180°F {66 and 82°C}. (The return air temperature on W Series Dryers is measured at the inlet to the desiccant wheel.)</p>	<p>The hopper does not contain enough material.</p> <p>You are drying at a high drying temperature above 120°F {49°C} or running at low throughputs.</p> <p>The aftercooler does not have enough water.</p> <p>The aftercooler coils are dirty.</p>	<p>Make sure your material supply system is working properly.</p> <p>Ensure water flow to the aftercooler/aftercooler.</p> <p>Turn on the water supply, or fix any leaks or blockages.</p> <p>Clean the aftercooler coils. <i>See Maintenance section entitled, Cleaning the aftercooler coils.</i></p>
<p>Regeneration Low Temperature – The regeneration temperature is less than the low temperature setpoint for the specified time. Defaults are 200°F {93°C} for 20 seconds.</p> <p> NOTE: This alarm is factory defaulted to OFF.</p>	<p>The regeneration heater has failed.</p> <p>The output on the control board has failed or the fuse has blown.</p> <p>The regeneration RTD is loose or has fallen out.</p>	<p>Check the heater fuses, and resistance across each leg of the process heater.</p> <p>Replace the control board or the fuse.</p> <p>Check the regeneration RTD and tighten if needed.</p>

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem

Delivery Air Dewpoint – The dewpoint has not fallen below the setpoint. If the dewpoint goes below the setpoint for 600 seconds the alarm should go away.

 **NOTE:** The alarm is not active for the first 5 minutes.

Possible cause

Defective dewpoint sensor.

The hose or wiring connections to the sensor block are loose or have fallen off.

Poor regeneration air flow.

The desiccant wheel may be contaminated.

Desiccant wheel not turning.

Leaks in the process air stream.

Power Purge blower not running.

Solution

Replace the sensor.

Check wiring and hose connections to the sensor, resecure if needed.

Remove the air flow restrictions, dirty filters, etc.

Check the desiccant for contamination, replace if needed. Install plasticizer / volatile trap for severe situations.

Replace the desiccant wheel. *See Troubleshooting section entitled, Replacing the desiccant wheel.*


See Troubleshooting section entitled, Passive alarms, Wheel rotation alarm.

Check for worn or loose hoses.

Check fuses, wiring or replace blower.

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Process Filter Clogged (Option) – The process filter differential pressure switch is tripped.	The process air filter is clogged.	Remove and clean or replace the process air filter.
Return Air Temperature RTD Integrity – The dryer continues to run with a passive alarm. (The return air temperature on W Series Dryers is measured at the inlet to the desiccant wheel.)	There is a loose connection in the wiring leading to the RTD. The connection of the RTD plug on the control board is loose. The return air RTD has failed. The control board has failed.	Check the RTD plug connections and make any necessary repairs. Check the plug connection and tighten if needed. Replace the return air RTD. Replace the control board.
Wheel Rotation Failure - The regeneration temperature differential has been reached. The default differential is 20°F / 10 seconds.  NOTE: This alarm is factory defaulted to OFF.	The wheel motor is not turning. The belt tensioner is loose or the belt is slipping. The regeneration heater is not working.	Check the motor, plugs, and fuses. Change the tensioner spring or replace the belt. Check the heater fuses and heater.





Central

When supplied for central drying applications, these passive alarms are not available.

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Delivery Air Temperature Deviation – The delivery air temperature exceeds the deviation band as entered for the specified time. Default values are 10°F {6°C} for 5 seconds.  NOTE: This alarm is factory defaulted to OFF.	One of the solid state relays (SSRs) failed in the closed position. Defective delivery air heater. The output on the board has failed. The process RTD is loose or has fallen out. The air hose connections are loose.	Replace the failed solid state relays (SSRs). Check the heater fuses and resistance across each leg of the delivery air heater. Replace the board. Check the process RTD and tighten if needed. Tighten all air hose connections.
Delivery Air Low Temperature – The delivery air temperature is less than the low temperature setpoint for the specified time. Default values are 70°F {21°C} for 20 seconds.  NOTE: This alarm is factory defaulted to OFF.	Precooler water is too cold, or the water flow rate is too high. The output on the board has failed. Flow control solenoid is stuck open. The process RTD is loose or has fallen out. Delivery air heater has failed.	Check water temperature and flow settings. Adjust as necessary. Replace the board. Replace the valve. Check the process RTD and tighten if needed. Check the heater fuses and resistance across each leg of the delivery air heater.

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem

Setback RTD Integrity - The control can not sense the setback RTD.



NOTE: This alarm is optional. For more information on updating your dryer to utilize this and other features, contact Conair.

Conair's Instant
Access 24/7 Parts and
Service number is
800-458-1960.
Outside the U.S., dial
814-437-6861.

Possible cause

The connection in the electrical enclosure for the hopper RTD is loose.

The connection of the RTD plug on the control board is loose.

The setback RTD has failed.

The control board has failed.

Solution

Check the RTD plug connection and tighten if needed.


Check the plug connection and tighten if needed.

Replace the setback RTD.

Replace the control board.

Passive Alarms

If an alarm occurs, a red dialog box is displayed on the dryer's touch screen control. The dryer continues to operate, but this problem could prevent correct drying of your material. The dialog box will indicate whether the alarm is a shut down alarm or a passive alarm.

Problem	Possible cause	Solution
Regeneration Outlet RTD Integrity - The control can not sense the regeneration outlet RTD.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connection and make any necessary repairs.
	The connection of the RTD plug on the control board is loose.	Check the plug connection and tighten if needed.
	The regeneration outlet RTD has failed.	Replace the regeneration outlet RTD.
	The control board has failed.	Replace the control board.
Dewpoint Deviation High - Displayed when the actual dewpoint goes above the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 60 seconds.	Desiccant wheel not turning.	<i>See Troubleshooting section entitled, Passive alarms, Wheel rotation alarm.</i>
	The hose or wiring connections to the sensor block are loose or have fallen off.	Check wiring and hose connections to the sensor, resecure if needed.
	Poor regeneration air flow.	Remove the air flow restrictions, dirty filters, etc.
	The desiccant wheel may be contaminated.	Check the desiccant wheel for contamination, replace if needed. <i>See Troubleshooting section entitled, Replacing the desiccant wheel assembly.</i>
	Leaks in the process air stream.	Check for worn or loose hoses.
Dewpoint Deviation Low - Displayed when the actual dewpoint goes below the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 60 seconds.  NOTE: This alarm is factory defaulted to OFF.	The dewpoint can not control to the desired setpoint.	Install plasticizer/volatile trap for severe situations. Material and/or ambient condition may be too dry to increase the actual dewpoint. Please wait several hours to determine if the setpoint can be reached. Increase the dewpoint low deviation value.
	The dewpoint sensor has failed.	Replace the dewpoint sensor.

Additional Alarms

Along with the alarm indicators, you may encounter additional messages that indicate a problem within the control.

Problem	Possible cause	Solution
Control Not Ready, Please Check Alarm - Displayed when the “Start” button is pushed during any active alarm. (Passive or Shutdown)	The dryer will continue to run if there is a passive alarm, however it will not start if there is a active alarm.	Push the acknowledgement button to identify the alarm, and address it as necessary.
Lost Comm w/ Ctrl Bd - Indicates there is a problem in the communication between the control board and the display board.	Loose or improperly connected wire.	Check wiring between control board and display board.
	Improper dip switch setup on control board.	Check dip switch setup on control board.
	Defective display or control board.	Replace boards as a set.
Control displays ----- where parameters should be seen.	A sensor is disconnected or malfunctioning.	Check and verify that all sensors are connected correctly.
Start / Stop buttons are not active.	The dryer is currently in a stage where stopping or starting the dryer is not available.	Wait for dryer to complete the process, and buttons will become active.
Alarm horn and light are active, but no alarm displays on the HMI.	Loose connection or wiring is not correct.	Verify that wiring is correct and that connections are good.
	Dryer board failure.	Cycle power to the dryer control board. Call Conair Service. Conair’s Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.
There is no software revision value at the bottom of the home screen.	Loose connection or wiring is not correct.	Verify that wiring is correct and that connections are good.
	Dryer board failure.	Cycle power to the dryer control board. Call Conair Service. Conair’s Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.


Additional Alarms

Along with the alarm indicators, you may encounter additional messages that indicate a problem within the control.

Problem	Possible cause	Solution
+BIG - There is a problem in the sensor connection (RTD, Dewpoint sensor, etc.) for the effected function.	Problem in the analog input section of the control.	<p>Check that all jumpers are in their proper place.</p> <p>Check to see if the dewpoint sensor and other sensors are connected properly.</p> <p>Disconnect the ribbon cable connecting any analog option boards to the main control board. If the display returns to normal for all values except those that are generated through the analog options boards, replace the option board.</p>
	Defect in the main control board.	<p>Replace main control board.</p> <p>Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.</p>

Dewpoint Troubleshooting

Under normal operating conditions, the dryer will produce dewpoints in the range of -40 to -20° F {-40 to -29° C}. However, you may experience situations that produce undesirable results.

Problem	Possible cause	Solution
Dryer not producing desired dewpoint.	Low regeneration air flow.	Check regeneration filter and clean and/or replace as necessary.
	Return air temperature exceeds 125°F {52°C}.	Reduce the temperature of the cooling water or increase the flow. Connect water to the aftercooler if not already connected. Check for adequate water temperature. Water temperature should be approximately 85°F {29°C}.
	Regeneration temperature is below normal setting.	Check amperage of regeneration heaters. Replace heaters if necessary.  WARNING: Any electrical checks should be performed by a qualified electrician.
	Leaks in process lines.	Check all hoses, gaskets, doors, loaders or other potential areas where leakage may occur. Replace any defective hoses or gaskets.
	Contaminated desiccant due to off-gassing, too long of a residence time or drying temperature is too high for the grade of material being processed.	Verify proper drying temperatures and residence times. If off-gassing is a condition of the material being processed, contact Conair Parts at (800) 458 1960 for the addition of a volatile trap.
	Analog option board/sensor malfunction	Verify dryer dewpoint readings with a calibrated portable dewpoint meter. Replace analog option board or sensor.

Poor Material Drying Troubleshooting

Occasionally, processing problems that are suspected of being caused by poor drying are eventually determined to be the result of other issues in the process setup. The intent of the information provided here is to assist you in determining if your drying system is performing properly. However, the only way to know definitely if your material is properly dried is to perform moisture analysis of small samples as it leaves the bottom of the hopper, or just as it enters the process. Conair does not sell moisture-analyzing equipment, but there are many brands of this equipment available on the market.

You should also be aware that some processing problems may actually be the result of over-drying material. Most materials will degrade to some extent if they are exposed to their specified drying temperature for a time significantly longer than the residence time specified by the supplier. If you want to maintain its dryness, it is recommended that you reduce the process air temperature. If your Conair dryer is equipped with the Setback feature, you should familiarize yourself with it, and make use of it. If not, you may want to contact Conair to determine if it can be added to your dryer.

A majority of customer questions to Conair are related to dewpoint. It is important to realize that dewpoint is one of **four** requirements that need to be satisfied.

There are four requirements, listed in order of importance, necessary to properly dry hygroscopic plastic resins:

- 1** **Drying temperature** of the air entering the hopper must be at the proper drying temperature for your material, as specified by your material supplier.
- 2** **Residence time** is the time, determined by your material supplier, that the material in use must be heated to achieve proper drying temperature.
- 3** **Airflow** during the process drying circuit must be adequate to carry and distribute the heat throughout the entire bed of material inside the hopper.
- 4** **Dewpoint** of the process air must be low so it can efficiently collect the moisture as it is released from the heated material and carry it to the dryer to be removed in the desiccant.



NOTE: Concerns with drying temperature may require review of HTC or Resin-Works controls.

Poor Material Drying Troubleshooting (continued)

Once it is determined which of the four requirements that is not being satisfied, refer to the following list of possible causes and solutions.



NOTE: Concerns with drying temperature may require review of HTC or ResinWorks controls.

Temperature - The temperature of the air entering the hopper must be at the proper drying temperature for your material, as specified by your supplier.

Problem	Possible cause	Solution
The temperature of the air entering the hopper is not at proper drying temperature.	Incorrect setpoint	Refer to the drying specifications for your material and adjust the setpoint to the recommended setpoint. If your dryer has the Setback option, make sure it is not active unless you have specifically activated it. If necessary, refer to the Operation section of this manual for assistance in using the Setback function.
	Not able to achieve setpoint.	Replace any defective delivery air heater, contactors, fuses, etc. Ensure the selected drying temperature is within the design specifications of your dryer.
	Inaccurate delivery air temperature read-out.	Ensure the delivery air RTD is properly positioned in the air stream. Determine if there is a problem in the temperature control circuit and repair or replace any defective components such as RTD, temperature control, circuit boards, etc.
	Heater Pack failure.	Verify that Heater Pack is connected properly and receiving power from the dryer. Refer to the Heater Pack User Guide for more information.



Poor Material Drying Troubleshooting (continued)

Residence Time - The time your material supplier has determined that the material in use must be heated to its drying temperature to achieve proper drying.

Problem	Possible cause	Solution
Material residence time is too long or short.	Material level in hopper is too low.	<p>Make sure there is an adequate supply of material to feed the loader on top of the drying hopper.</p> <p>Correct any problems with the conveying system that may be preventing your loader from filling the hopper.</p> <p>If your hopper has a level sensor for maintaining a material level less than completely full, be sure this sensor is adjusted properly.</p>
	Material throughput is too high.	Take any necessary steps, such as slowing down the process, to ensure the material usage is within design specifications of the dryer and hopper.
	Funnel flow/ preferential flow “Rat hole”	Replace dislodged diffuser inside the drying hopper.

Poor Material Drying Troubleshooting (continued)

Airflow - The airflow in the process drying circuit must be adequate to carry and distribute the heat throughout the entire bed of material inside the hopper. If the airflow is too low, the material in the center of the hopper may get heated fully to the drying temperature, but the material against the sidewalls will not. In most cases, the material 2/3 to 3/4 of the way toward the top of the hopper should be heated to the proper drying temperature.

Problem	Possible cause	Solution
<p>Too much or too little air-flow.</p> <p> NOTE: If there is too much airflow, the material may fluidize inside the hopper, resulting in inconsistent material flow through the hopper, which can negatively impact residence time.</p>	Dirty process air filter.	Clean or replace the process filter.
	Collapsed hoses or holes/leaks in the hoses and hose connection.	Replace any worn or damaged hoses. Tighten all hose clamps to eliminate leaks.
	Airflow restrictions.	Remove any obstructions in the process air circuit.
	Process blower running backwards or performing poorly.	Verify the process blower is running in the correct direction. If backwards, reverse direction by switching any 2 legs of high voltage to the motor.
		<div> WARNING: Any electrical checks should be performed by a qualified electrician.</div>
	Material level in the hopper too low.	Repair or replace motor. Other than running out of material to complete a job, the material level inside the hopper must be a minimum of 50% full. If the hopper is not at least half full, the material in the cone section will not get adequate airflow to dry properly.

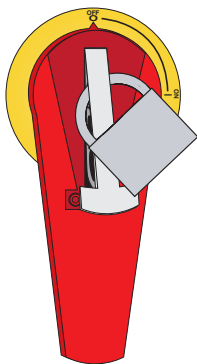
Replacement dewpoint monitors are available from Conair.

Contact Conair Parts
(800) 458 1960
From outside of the United States, call:
(814) 437 6861

Poor Material Drying Troubleshooting (continued)

Dewpoint - The process air must be at a low dewpoint so it can efficiently collect the moisture as it is released from the heated material and carry it to the dryer to be removed in the desiccant. In most cases, the dryer will dry your material satisfactory if the dewpoint of the air is -20 to -40° F {-29 to -40° C}. If your dryer does not have a dewpoint readout, you can check the dewpoint with a portable dewpoint instrument. Conair sells a variety of portable dewpoint meters. Contact Conair Parts.

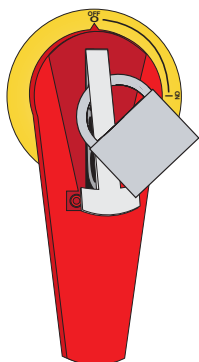
Problem	Possible cause	Solution
Dryer dewpoint is not reaching proper setpoint.	Low regeneration temperature.	Replace or check defective heaters, fuses etc.
	Poor regeneration airflow.	Clean or replace the regeneration filter. Ensure the regeneration blower is operating properly and rotating in the correct direction. <i>See Installation section entitled, Checking for proper airflow.</i> Remove obstructions in the air stream, such as crimped hoses, etc.
	High dewpoint, ambient air leaking into the closed loop drying circuit.	Replace damaged hoses and seal any leaks in the process air circuit. If using a vacuum loader on the hopper, ensure that the loader shroud is installed in the hopper and that the hopper is completely filled with material. If partially filling your hopper, ensure that the hopper loader is sealed against ambient air. Install a gasket between the loader and the top of the hopper.
	Return air temperature to the dryer is too high. (The return air temperature on W1300-5000 dryers is measured at the inlet to the desiccant wheel. W1300-5000 dryers designed prior to August 2007, the return air temperature is measured at the inlet to the process blower.)	Clean the aftercooler coils. <i>See Maintenance section entitled, Cleaning the aftercooler coils.</i> <i>See Troubleshooting section entitled, Replacing the desiccant wheel assembly.</i>
	Poor desiccant performance.	




IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.



IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.



Replacing Fuses

- 1 Disconnect and lockout the main power supply.** 
- 2 Open the electrical enclosure door.**
- 3 Check the fuse with an ohmmeter.** If necessary, pull the fuse out and replace it with a fuse of the same type and rating.



Fuse Blocks

To locate the appropriate fuse and replacement part, refer to the wiring diagrams that came with your dryer.


Checking or Replacing Temperature Sensors

The Carousel Plus W Series Dryer uses RTD sensors to monitor the temperatures of the return air, the regeneration outlet, and the regeneration inlet. Your dryer may have (optional) a sensor for delivery air, process protection, and/or setback.

To check or replace an RTD sensors:

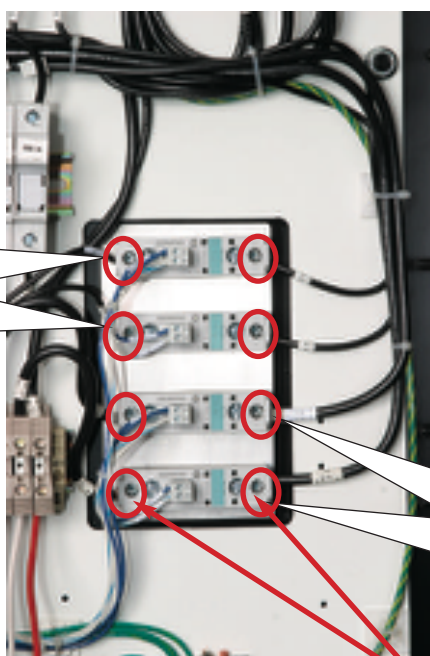
- 1 Disconnect and lockout the main power supply.**
- 2 Remove dryer panels, as necessary.**
- 3 Locate the RTD sensors.**
- 4 Check the sensor positions and conditions.** Temperature readings will be incorrect if the sensors are touching the wall of an air hose or pipe or if the sensor or wiring is damaged. The tip of the sensor should be centered within the air hose or pipe. Sensor wires should be attached to the appropriate connection points on the dryer's electrical enclosure or microprocessor board.
- 5 To check with ohm meter,** measure the resistance across the RTDs. The resistance should be approximately 110 ohm at room temperature.
- 6 Replace the sensor, if necessary.**

Checking Heater Solid State Relays

 **CAUTION:** Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.


- 1 Disconnect and lockout the main power supply.
- 2 Open the electrical enclosure.
- 3 Locate the regeneration solid state relays. Refer to the wiring diagrams that came with your dryer.

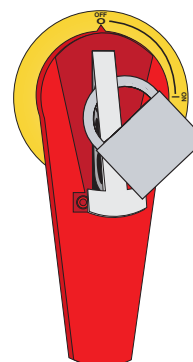
Regeneration heater solid state relays



Process heater solid state relays

- 4 Turn power on to the machine.
- 5 Start the dryer.
- 6 Measure voltage across the high voltage connections using a voltmeter. When relay is energized, as indicated by the LED (green) voltage should be read 0 (zero). When relay is de-energized, LED off, full voltage should be measured across the relay. When relay is off, if voltage reads zero, relay is bad and needs replaced. Repeat this procedure for each relay.

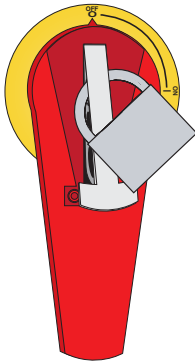
 **NOTE:** Measure voltage using a voltmeter across the two high voltage connections of each relay. (Shown here circled in red.)



IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

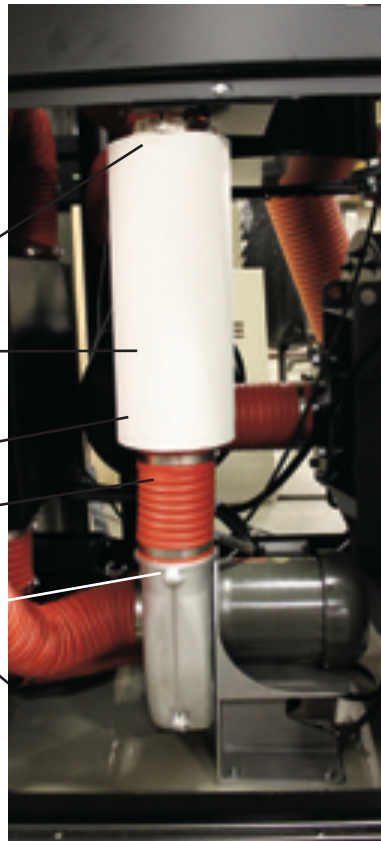


IMPORTANT: Only qualified personnel should take measurements on energized equipment. Follow all local, regional, and company guidelines regarding safe electrical testing procedures.





IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

Clamp
Regeneration Heater
Insulation
Clamp
Clamp



Replacing the Regeneration Heater

(W600 - 1000)

- 1** Stop the dryer, disconnect the power, and follow proper lockout procedures. 
- 2** Remove the right side panel(s) of the dryer, as viewed from the front of the dryer, to gain access to the regeneration heater. 
- 3** Disconnect the regeneration heater power wires from the terminal block in the control cabinet. Feed the regeneration power cable out of the control cabinet.

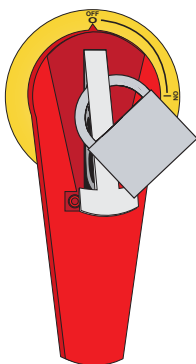
- 4** Unplug the quick disconnect for the high temperature switch cable at the switch.
- 5** Loosen the hose clamps then remove the hoses from the top and bottom of the regeneration heater tube. Remove and check the bottom heater hose for loose debris or fragments, these fragments can damage the newly installed heater if not removed.
- 6** While supporting the heater tube, loosen the hose clamp supporting the regeneration tube to the mounting bracket, then remove the heater tube from the dryer.
- 7** Slide the insulation off the heater tube, or make a cut the entire length of the insulation sleeve to aid removal.

Replacing the Regeneration Heater

(W600 - 1000) (continued)

- 8** Compare the markings on the outside of the regeneration heater tube to ensure the new one has the same voltage and kW ratings as the original heater tube. This information is on the end nearest the wires.
- 9** Slide the original insulation over the new heater or, if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with duct tape.
- 10** Make sure the cable end of the heater tube is to the bottom then secure the new heater tube to the mounting bracket with a hose clamp.
- 11** Connect the hoses to the top and bottom of the heater tube and secure them with hose clamps.
- 12** Connect the high temperature switch wires to the quick disconnects near the heater tube.
- 13** Route the heater power cable into the control cabinet and connect the leads to the original locations on the terminal block. Refer to the wiring diagram for specific connection information.
- 14** Replace the side panel(s) of the dryer.
- 15** Measure the resistance from each leg of the heater tube to the others and from each leg to ground. There should be +/- 5% resistance variation between all 3 legs, and high resistance from each leg to ground.
- 16** Connect the dryer to power and turn it on. Verify that the regeneration temperature achieves the setpoint.





IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

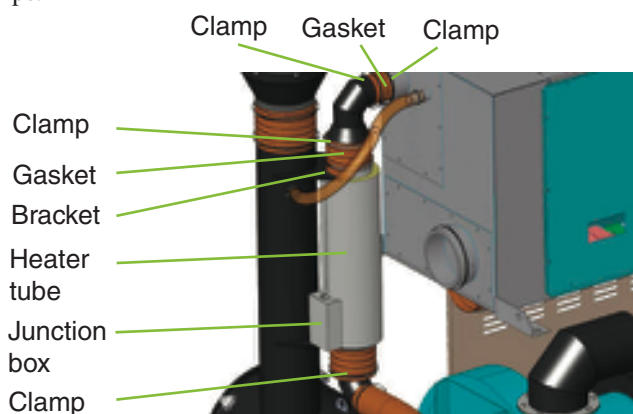
Replacing the Regeneration Heater

(W1300 - 2400)

- 1** Stop the dryer, disconnect and lockout the main power.



- 2** **Locate the heater.** Open the side panels of the dryer locating the heater which is secured to the inlet of the desiccant wheel assembly by hard piping, brackets and clamps.

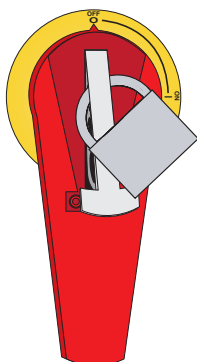


- 3** Disconnect the main power leads at the junction box on the heater tube of the dryer.
- 4** Disconnect the high temperature switch cable at the quick disconnect.
- 5** To remove the defective regeneration heater tube, loosen the pressure clamps at the top and bottom of the heater tube connection and slide the clamp and its silicon gasket back away from the heater tube. W1600-2400 model dryers lower clamp is attached to a bracket that is mounted to the desiccant wheel assembly, loosen clamp to remove it from the bracket. Remove and check the bottom heater hose for loose debris or fragments, these fragments can damage the newly installed heater if not removed.
- 6** Slide the insulation off the heater tube, or make a cut down the entire length of the insulation sleeve to aid removal.
- 7** Compare the markings on the outside of the regeneration heater tube to ensure the new one has the same voltage and kW ratings as the original heater tube. This information is on the end nearest the wires.

Replacing the Regeneration Heater



(W1300 - 2400) (continued)

- 8** Slide the original insulation over the new heater, or if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with heat tape.
- 9** Make sure the cable end of the new heater tube is to the bottom, then connect the hoses to the top and bottom of the heater tube and resecure with pressure clamps and the lower heater tube bracket that was removed in Step 5.
- 10** Connect the high temperature switch cable to the quick disconnect.
- 11** Route the heater power wires into the junction box, and connect them to the supply leads from the control box. Refer to the wiring diagram for specific connection information.
- 12** To ensure all connections are correct, measure the resistance as in Step 3. You should measure the readings as noted for a good heater.
- 13** Close the side panel of the dryer.
- 14** Connect the dryer to power and turn it on. Verify the regeneration temperature achieves the setpoint.



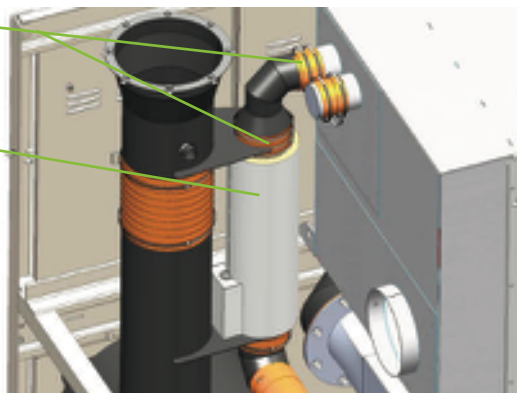
IMPORTANT: Always refer to the wiring diagrams that came with your dryer to locate specific electrical components. Illustrations in the User Guide are intended to be representative only.

Replacing the Regeneration Heater (W3200 - 5000)

- 1 Stop the dryer, disconnect and lockout the main power.** 
- 2 Locate the heater.** Open the side panels of the dryer locating the heater which is secured to the inlet of the desiccant wheel assembly by brackets and clamps. 

Clamps and
Gaskets

Heater
tube



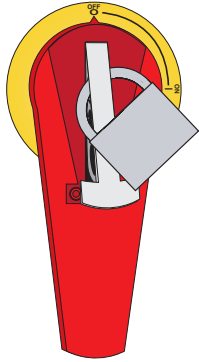
- 3 Disconnect the main power leads at the junction box inside the frame of the dryer.** In units with two heaters (W3200 and W5000), it may be necessary to measure resistance across the power leads of the heater tube to determine if the heater needs to be replaced. In a good element, the resistance across all three legs should be +/- 5% resistance variation when measured leg-to-leg, and high resistance from each leg to ground. Readings other than this indicate a defective heater.
- 4 Disconnect the high temperature switch cables at the quick disconnects.**
- 5 Loosen the pressure clamps at the top and bottom of the heater tube connection and slide the clamp and its silicon gasket back and away from the heater tube to remove the defective regeneration heater tube. W3200-5000 model dryers heater clamp(s) are secured to the dryer with metal brackets, loosen the clamp that secures the heater tube to the bracket to remove it from the dryer.**



Replacing the Regeneration Heater

(W3200 - 5000) (continued)

- 6** Loosen the lower clamps that secure the tubing to the dryer bracket. Remove the regeneration manifold and the tubing that is attached to the bottom. Then remove the tubing from the regeneration blower outlet and check for loose particles within the tubing, clean as necessary. Reverse this procedure to reinstall the tubing.
- 7** Slide the insulation off the heater tube(s), or make a cut down the entire length of the insulation sleeve to aid removal.
- 8** Compare the markings on the outside of the regeneration heater tube to ensure the new one has the same voltage and kW ratings as the original heater tube. This information is on the end nearest the wires.
- 9** Slide the original insulation over the new heater, or if the insulation was cut for removal, wrap the cut insulation sleeve around the new heater tube and secure it with heat tape.
- 10** Make sure the cable end of the new heater tube is to the bottom, then reconnect the hoses to the top and bottom of the heater tube and resecure with pressure clamps that were removed in Step 5.
- 11** Connect the high temperature switch cable to the quick disconnect.
- 12** Route the heater power wires into the junction box and connect them to the supply leads from the control box. Refer to the wiring diagram for specific connection information.
- 13** To ensure all connections are correct, measure the resistance as in Step 3. You should measure the readings as noted for a good heater.
- 14** Close the side panel of the dryer.
- 15** Connect the dryer to power and turn it on. Verify the regeneration temperature achieves the setpoint.



Replacing the Desiccant Wheel Assembly (W600 - 1000)

When desiccant becomes clogged or contaminated, you should replace the desiccant wheel to ensure optimum performance.

- 1 Stop the dryer, disconnect and lockout the main power.**



- 2 Remove the upper and lower side panels from both sides of the dryer.**




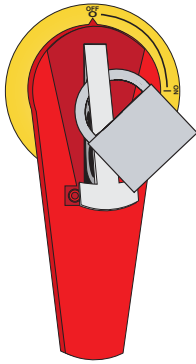
NOTE: If your dryer is configured with a hard pipe kit, disconnect the hard piping from the top of the dryer at this time.

- 3 Remove the top cover from the dryer** by removing the securing bolts.
- 4 Note the position of all the hoses, RTDs, and wiring connections then remove or disconnect** these from the desiccant wheel assembly.
- 5 If the dryer aftercooler is being used, turn off the water supply to the aftercooler and disconnect the water lines** from the aftercooler.
- 6 Remove the four bolts securing the aftercooler assembly to the cabinet frame.**
- 7 Using an overhead crane or similar appropriate lifting device, use the lifting points provided and carefully lift the aftercooler off of the frame and remove it from the dryer.**
- 8 Remove the four bolts securing the desiccant wheel assembly to the dryer frame.**
- 9 Note the orientation of the desiccant wheel assembly. Using an overhead crane or similar device, use the lifting rings provided and lift the desiccant wheel assembly out of the dryer.**

(continued)




Replacing the Desiccant Wheel Assembly (W600 - 1000) (continued)

- 10 Lift the new desiccant wheel into the dryer frame, being sure it is oriented properly.** To verify the correct orientation, ensure that the regeneration air inlet is positioned closest to the regeneration heater tube. **DO NOT** bolt into place at this time.
- 11 Lift the aftercooler assembly into the dryer frame and bolt it to the frame using the four bolts you removed earlier.**
- 12 Verify position of the desiccant wheel assembly and bolt it in place.**
- 13 If the aftercooler is being used, reconnect the water lines.**
- 14 Reconnect or reinstall all hoses, RTDs, and wiring connections.**
- 15 Bolt the top cover in place.**
-  **NOTE:** If your dryer is configured with a hard pipe kit, re-connect the hard piping to the top of the dryer at this time.
- 16 Connect the power to the dryer and start it.** Ensure that the desiccant wheel assembly rotates in the correct direction.
- 17 Replace all upper and lower side panels.**



Replacing the Desiccant Wheel Assembly (W1300 - 5000)

If you need to service the desiccant wheel assembly (wheel, motor, belts, etc.), use the following procedure to remove the entire assembly from the dryer.

- 1 Stop the dryer, disconnect and lockout the main power.** 
- 2 Remove the upper and lower side panels from both sides of the dryer.** 
 **NOTE:** If your dryer is configured with a hard pipe kit, disconnect the hard piping from the top of the dryer at this time.
- 3 Remove the top cover from the dryer** by removing the securing bolts.
- 4 Note the position of all the hoses, RTDs, and wiring connections then remove or disconnect** these from the desiccant wheel assembly.
- 5 Remove the bolts securing the desiccant wheel assembly to the dryer frame.**
- 6 Note the orientation of the desiccant wheel assembly. Using an overhead crane or similar device, use the lifting rings provided and lift the desiccant wheel assembly out of the dryer.**

To replace the wheel assembly, reverse the procedure above.

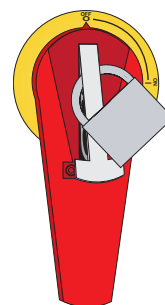
Replacing the Desiccant Wheel (W1300 - 5000)

When desiccant becomes clogged or contaminated, you should replace the desiccant wheel to ensure optimum performance.

- 1** Stop the dryer, disconnect and lockout the main power.
- 2** Remove the upper side panels from both sides of the dryer.



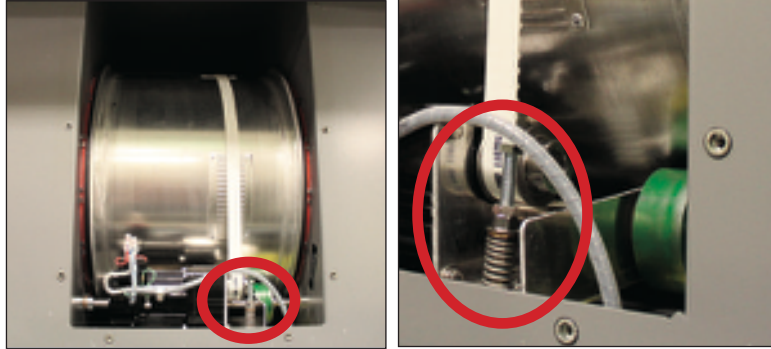
- 3** Remove the side panels from both sides of the desiccant wheel assembly housing by removing the securing bolts.



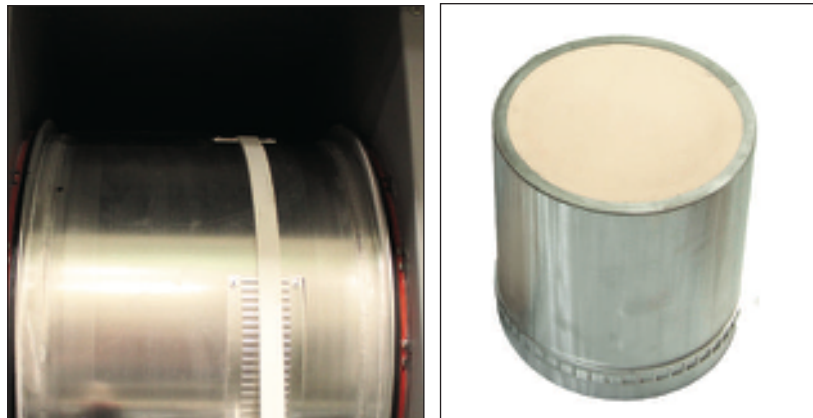
Replacing the Desiccant Wheel

(W1300 - 5000) (continued)

- 4** On the motor side of the wheel assembly, **while noting the number of turns, relieve the tension on the drive belt by loosening the nut above the tension spring** until the belt can be slipped off the motor sprocket.

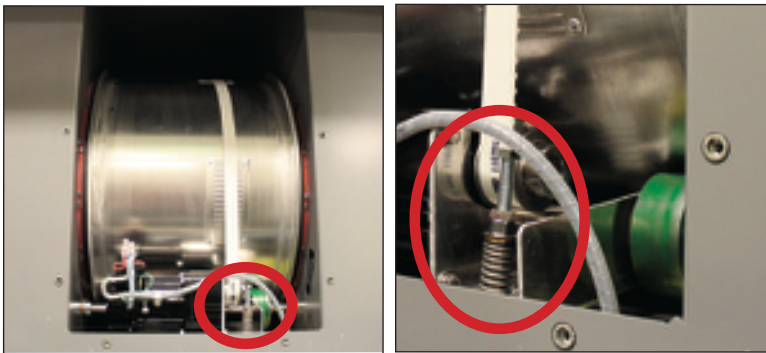


- 5** Remove the belt from the motor sprocket.
- 6** Move to the other side of the wheel assembly housing (the side without the motor). **Using the belt to pull, pull straight out on the wheel until it is free from the housing.**

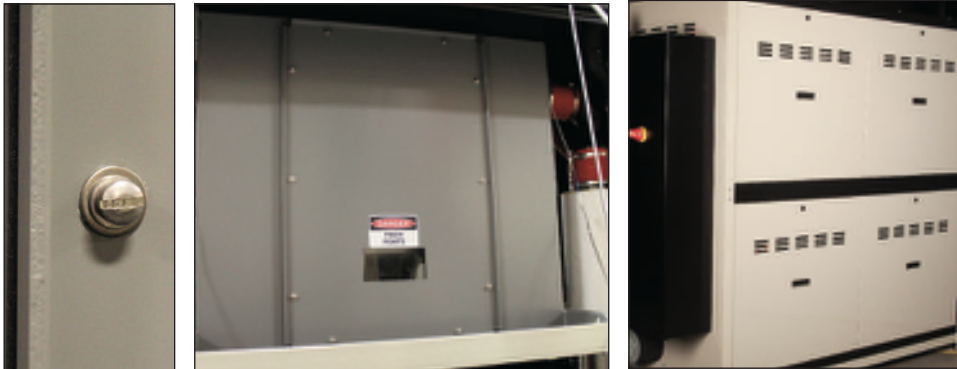


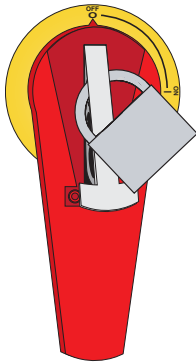
Replacing the Desiccant Wheel (W1300 - 5000) (continued)

- 7** Place the belt on your new wheel unless you are replacing the belt at the same time, in which case you should put the new belt on the new wheel.
- 8** Place a sheet of cardboard inside the housing on each side to protect the gaskets before you insert the new wheel.
- 9** Place the new wheel into the housing, and then pull the pieces of cardboard out from between the wheel and the gaskets.
- 10** Place the belt back around the motor, and adjust the tension as necessary.



- 11** Replace the wheel assembly housing sides, and the dryer side panels.





Replacing the Desiccant Wheel Motor

(W600 - 1000)

- 1** Stop the dryer, disconnect and lockout the main power. 



- 2** Remove side panels.

- 3** Disconnect wiring to the motor.



- 4** Remove the pivot bolt securing the belt tensioner to the motor bracket. Be sure to retain the flat washers located between the tensioner and bracket. Disconnect the spring and remove the tensioner.



- 5** Remove the belt from the motor pulley, then remove the pulley from the motor.
- 6** Remove the screws securing the motor to the upper and lower bracket, and remove the motor.
- 7** Secure the new motor to the bracket.
- 8** Install the pulley on the new motor, and position the belt on the pulley.
- 9** Connect the spring to the tensioner, then secure the tensioner to the motor bracket. Be sure to install flat washers between the motor bracket and the tensioner.
- 10** Connect the wires to the motor.
- 11** Connect the power to the dryer. Turn the dryer on and ensure that the desiccant wheel is rotating in the correct direction.
- 12** Replace the side panels.

Replacing the Desiccant Wheel Motor

(W 1300 - 5000)

- 1** Stop the dryer, disconnect and lockout the main power. 
- 2** Open the right side panel(s), as viewed from the front of the dryer. 

- 3** Unbolt and remove the access panel on the side of the desiccant wheel assembly.

- 4** Disconnect the wiring connection to the motor.



- 5** While noting the number of turns, relieve the tension on the drive bolt by loosening the nut above the tension spring until the belt can be slipped off the motor sprocket.

- 6** Unbolt the motor and remove it from its mounting bracket.

- 7** Remove the sprocket from the old motor, and install it onto the new motor.

- 8** Bolt the new motor in place. Be sure to remove the plastic plug in the vent hole of the gearbox.



Replacing the Desiccant Wheel Motor

(W1300 - 5000) (continued)

- 9** Slip the belt onto the sprocket, and adjust the tension spring nut to its original position.
- 10** Connect the wires to the new motor.
- 11** With the access panel still removed, connect the power to the dryer and start it. Ensure the wheel turns in the correct direction. If the belt appears to be slipping, it may be necessary to increase the tension on the drive belt slightly. Do not increase this tension any more than necessary to allow the wheel to rotate without slipping.
- 12** Bolt the access panel in place and close the side panel(s) on the dryer.

We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

Additional manuals and prints for your Conair equipment may be ordered through the Customer Service or Parts Department for a nominal fee. Most manuals can be downloaded free of charge from the product section of the Conair website.
www.conairgroup.com

How to Contact Customer Service

To contact Customer Service personnel, call:



NOTE: Normal operating hours are 8:00 am - 5:00 pm (EST). After hours emergency service is available at the same phone number.

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- ☐ Make sure you have all model, control type from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- ☐ Make sure power is supplied to the equipment.
- ☐ Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- ☐ Check the troubleshooting guide of this manual for a solution.
- ☐ Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- ☐ Check that the equipment has been operated as described in this manual.
- ☐ Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.

What is the Conair Hard Piping Kit?

Conair's Hard Piping Kit is for use with your drying system. Conair recommends the hard pipe kit for line sizes of eight inches and larger. This kit is an upgrade over the standard flex hose.

Hard pipe kits are recommended because they:

- eliminate the possibility of sag or collapse, especially around corners where those are common issues with flex hose.
- eliminate the possibility of restricted air flow due to hose damage (collapse, puncture, leaking, moisture infiltration).
- minimize maintenance needs.
- create a more permanent finished appearance.
- reduce air flow drag due to the smooth interior surface.

For more information about adding a Conair Hard Pipe Kit to your drying system, contact Conair.

Conair's sales number is 724-584-5500.

Conair's Instant Access

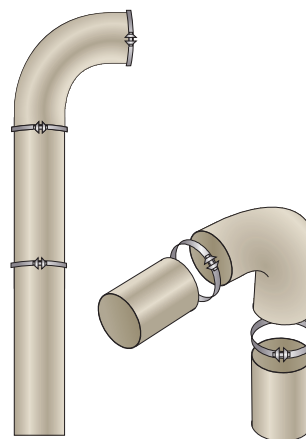
24/7 Parts and Service number is 800-458-1960.

Outside the U.S., dial 814-437-6861.



How Does it Work?

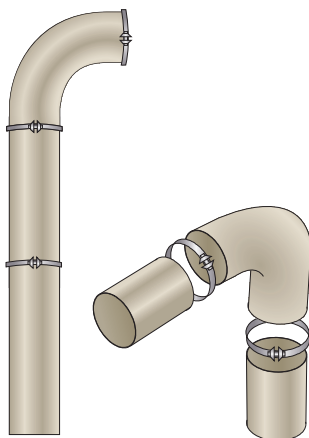
Conair's Hard Piping Kit is a complete modular system. Each component utilizes a flanged end that is precision engineered to a perfect 90° angle to produce an accurate seal every time. The system utilizes simple to use clamp rings to quickly connect the components. This extremely strong and reliable connection system has been tested and approved for up to three bar shock explosion resistance.



Unpacking the boxes

Your hard piping kit components will vary depending on which kit you ordered. Kits are often customized for each customer.

If your hard pipe kit was ordered as one of the standard kits, below is what you should expect to find when you unpack the boxes.



Conair Part #18090001: 8 inch Hard Pipe Basic Kit

- ☐ Seven (7) 8 inch 1D 90, 16 GA, coated CS (PN 2671310201)
- ☐ Two (2) welded tube, 8 inch x 78 inch, coated CS, 19 GA (PN 2671291001)
- ☐ Five (5) welded tube, 8 inch x 39 inch, coated CS, 19 GA (PN 2671290901)
- ☐ Five (5) welded tube, 8 inch x 20 inch, coated CS, 19 GA (PN 2671290801)
- ☐ Four (4) welded slip tube, 8 inch x 20 inch, coated CS, 19 GA (PN 2671330501)
- ☐ Two (2) welded slip tube, 8 inch x 8 inch, coated CS, 19 GA (PN 2671330401)
- ☐ Six (6) 8 inch slip tube ring seal (PN 26713202)
- ☐ Six (6) Conair flange adaptors (PN 18477901)
- ☐ Twenty-six (26) 8 inch bolted pull ring, galvanized (PN 2671350201)
- ☐ Twenty (20) 8 inch U-shaped gasket, 19 GA (PN 2671360201)
- ☐ Six (6) 8 inch Conair hard pipe gasket (PN 185107930)
- ☐ Six (6) 8 inch ceiling mount clamp, Galvanized, high-temp. (PN 2671390201)
- ☐ Forty-eight (48) 5/16-18NC x 1 inch hex head w/ lock cap screw (PN 21202504)
- ☐ Forty-eight (48) 5/16-18 hex head w/ lock nut (PN 22300804)
- ☐ Six (6) threaded rod, 3/8-16 x 10 feet long (60 feet total length) (PN 2190091004)
- ☐ Six (6) threaded rod adapter (PN 18598074)
- ☐ Six (6) hex head bolt, M10 x 1.5 x 15MM, plated (PN 21247302)
- ☐ Eighteen (18) washer, flat, 3/8 inch, plated (PN 22500302)

Conair Part #18090002: 12 inch Hard Pipe Basic Kit

- ☐ Two (2) 8 inch Conair hard pipe gasket (PN 185107930)
- ☐ Two (2) 8 inch hard pipe flange x 12 inch tubing adaptor (PN 18477910)
- ☐ Seven (7) 12 inch 1D 90, 16 GA, coated CS
- ☐ Three (3) welded tube, 12 inch x 78 inch, coated CS, 19 GA (PN 2671291501)
- ☐ Six (6) welded tube, 12 inch x 39 inch, coated CS, 19 GA (PN 2671291401)
- ☐ Six (6) welded tube, 12 inch x 20 inch, coated CS, 19 GA (PN 2671291301)
- ☐ Four (4) welded slip tube, 12 inch x 20 inch, coated CS, 19 GA (PN 2671330901)
- ☐ Two (2) welded slip tube, 12 inch x 8 inch, coated CS, 19 GA (PN 2561330701)
- ☐ Six (6) 12 inch slip tube ring seal (PN 26713203)
- ☐ Six (6) 12 inch Conair flange to 12 inch adapter (PN 18477902)
- ☐ Twenty-nine (29) 12 inch bolted pull ring, galvanized (PN 2671350301)
- ☐ Twenty-three (23) 12 inch U-shaped gasket, 19 GA (PN 2671360301)
- ☐ Six (6) 12 inch Conair hard pipe gasket (PN 185107916)
- ☐ Six (6) 12 inch ceiling mount clamp, galvanized, high-temp (PN 2671390301)
- ☐ Sixty-four (64) 5/16-18NC x 1 inch hex head w/ lock cap screw (PN 21202504)
- ☐ Sixty-four (64) 5/16-18 hex head w/ lock nut (PN 22300804)
- ☐ Six (6) threaded rod, 3/8-16 x 10 feet long (60 feet total length) (PN 2190091004)
- ☐ Six (6) threaded rod adapter (PN 18598074)
- ☐ Six (6) hex head bolt, M10 x 1.5 x 15MM, plated (PN 21247302)
- ☐ Eighteen (18) washer, flat, 3/8 inch, plated (PN 22500302)

Unpacking the boxes (continued)

Conair Part #18090003: 8 inch Hard Pipe GT Kit

- ☐ Two (2) 8 inch 1D 90, 16 GA, coated CS (PN 2671310201)
- ☐ One (1) welded tube, 8 inch x 78 inch, coated CS, 19 GA (PN 2671291001)
- ☐ One (1) welded tube, 8 inch x 39 inch, coated CS, 19 GA (PN 2671290901)
- ☐ One (1) welded tube, 8 inch x 20 inch, coated CS, 19 GA (PN 2671290801)
- ☐ One (1) welded slip tube, 8 inch x 39 inch, coated CS, 19 GA (PN 2671330601)
- ☐ One (1) welded slip tube, 8 inch x 20 inch, coated CS, 19 GA (PN 2671330501)
- ☐ One (1) welded slip tube, 8 inch x 8 inch, coated CS, 19 GA (PN 2671330401)
- ☐ Three (3) 8 inch slip tube ring seal (PN 26713202)
- ☐ One (1) Conair flange adaptors (PN 18477901)
- ☐ Nine (9) 8 inch bolted pull ring, galvanized (PN 2671350201)
- ☐ Six (6) 8 inch U-shaped gasket, 19 GA (PN 2671360201)
- ☐ Two (2) 8 inch hose, high temp (PN 2400071002)
- ☐ One (1) 8 inch Conair hard pipe gasket (PN 185107930)
- ☐ Four (4) 8 inch hose clamps (PN 24900124)
- ☐ Six (6) 8 inch insulation (PN 25902417)
- ☐ One (1) 8 inch 90° insulation (PN 18195701)
- ☐ Eight (8) 5/16-18NC x 1 inch hex head wiz lock cap screw (PN 21202504)
- ☐ Eight (8) 516-18 hex head wiz lock nut (PN 22300804)
- ☐ Twenty-five (25) feet of 3 inch ASJ SSL insulation tape (PN 25910404) (insulation)

For more information about adding a Conair Hard Pipe Kit to your drying system, contact Conair.

Conair's sales number is 724-584-5500.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Conair Part #18090004: 12 inch Hard Pipe GT Kit

- ☐ Two (2) 8 inch hose connection, coated CS, 19 GA (PN 2671400201)
- ☐ Two (2) 8 inch hose, high temp (PN 2400071002)
- ☐ Two (2) 8 inch Conair hard pipe gasket (PN 185107930)
- ☐ Two (2) 8 inch hard pipe flange x 12 inch tubing adaptor (PN 18477910)
- ☐ Four (4) 8 inch hose clamps (PN 24900124)
- ☐ Two (2) 12 inch 1D 90, 16 GA, coated CS
- ☐ One (1) welded tube, 12 inch x 78 inch, coated CS, 19 GA (PN 2671291501)
- ☐ One (1) welded tube, 12 inch x 39 inch, coated CS, 19 GA (PN 2671291401)
- ☐ One (1) welded tube, 12 inch x 20 inch, coated CS, 19 GA (PN 2671291301)
- ☐ One (1) welded slip tube, 12 inch x 20 inch, coated CS, 19 GA (PN 2671330901)
- ☐ One (1) welded slip tube, 12 inch x 39 inch, Coated CS, 19 GA (PN 2671331001)
- ☐ One (1) welded slip tube, 12 inch x 8 inch, coated CS, 19 GA (PN 2561330701)
- ☐ Three (3) 12 inch slip tube ring seal (PN 26713203)
- ☐ One (1) 12 inch Conair flange to 12 inch adapter (PN 18477902)
- ☐ Nine (9) 12 inch bolted pull ring, galvanized (PN 2671350301)
- ☐ Six (6) 12 inch U-shaped gasket, 19 GA (PN 2671360301)
- ☐ Two (2) 12 inch hose connection, coated CS, 19 GA (PN 2671400301)
- ☐ One (1) 12 inch Conair hard pipe gasket (PN 185107916)
- ☐ Six (6) 12 inch insulation (PN 25902418)
- ☐ Two (2) 12 inch hose, high temp (PN 2400071102)
- ☐ Four (4) 12 inch hose clamps (PN 24900126)
- ☐ One (1) 12 inch 90° insulation (PN 18195702)
- ☐ Twenty-four (24) 5/16-18NC x 1 inch hex head wiz lock cap screw (PN 21202504)
- ☐ Twenty-four (24) 516-18 hex head wiz lock nut (PN 22300804)
- ☐ Twenty-five (25) feet of 3 inch ASJ SSL insulation tape (PN 25910404)
- ☐ One (1) 8 inch hard pipe flange x 12 inch tubing adapter (PN 1847791001)

Preparing for installation

Your plant layout and drying system component positioning will determine the organization of pieces necessary to complete the piping between the dryer and hopper. Each application will vary. Conair recommends that you take the following steps before starting installation.

For more information about adding a Conair Hard Pipe Kit to your drying system, contact Conair.

Conair's sales number is 724-584-5500.

Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

1 Organize all like pieces.

Place all clamps together, all straight sections together, all elbows together, etc.

2 Start by laying the pieces out between the dryer and the hopper.

If you ordered your hard pipe kit as part of a Conair system, a system drawing may have been included that will indicate pipe position and suggested layout.



3 Visually inspect to make sure that the pieces you have will meet the needs of your system.

If it looks like you will need additional pieces to complete your system, contact Conair Parts and Service. You can order individual pieces as necessary to complete your system.



4 If your drying system has been in use, wait until all components have cooled prior to attempting any installation steps.

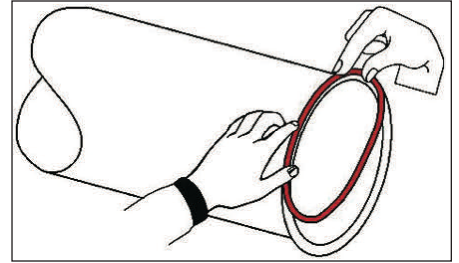


CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

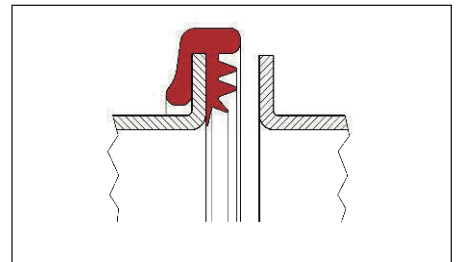
Using Pull Ring Connections

The following are general usage instructions for pull-ring connections with U-shaped seals. This is the primary style of connection used with Conair hard pipe kits.

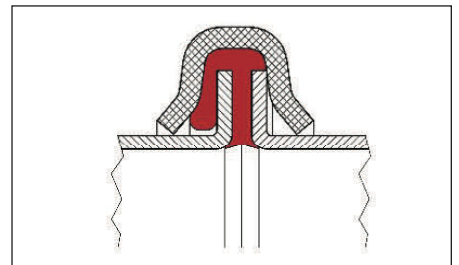
- 1 Pull the U-shaped seal around one of the pipe flanges.** The seal can be stretched to fit, but avoid overstretching.



- 2 Make sure that the “tooth” side of the U-shaped seal will face the pipe section that will be connected to this one.**

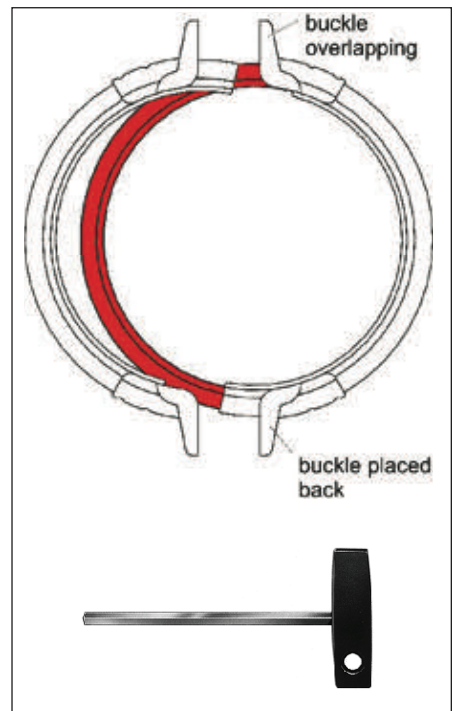


- 3 Place the next section (counter-pipe) into position and push one half of the clamping ring onto the pipe flange.** Make sure that the pipes are aligned squarely and that the seals are not displaced.



- 4 Completely separate the two sections of the pull ring to be used.**

- 5 Connect the two sections of the pull ring around the flange, loosely tighten using the bolts using your fingers.** Make sure that the pull ring is aligned around the entire flange. Make sure that the u-shaped seal is aligned and not protruding from the pull ring in any location.



- 6 Tighten, alternating from one bolt to the other, the bolts to clamp the pull ring around the flange.** Use a 6 mm hexagon screwdriver and tighten the bolt to a maximum torque of 25 Nm.

Using Slip Tubes

Slip tubes can be used to achieve specific lengths of pipe without having to cut, weld, or flange additional piping.



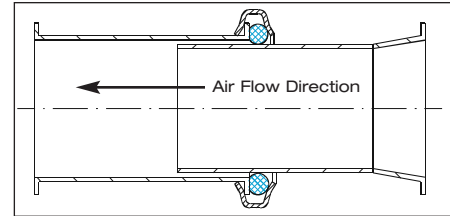
NOTE: Slip tube connections must be secured against displacement. For horizontally installed tubing, tubes must be supported in the area of the slip connection to prevent sagging. The weight of the vertical runs should also be supported at the first available horizontal location, to keep joints from displacing in vertical runs.



IMPORTANT: Slip tubes are not meant to be used as telescoping tubes. They are not designed to be adjusted during operation.

To order a slip tube or other parts for your hard pipe kit, Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

1 Roll the ring seal onto the slip tube.

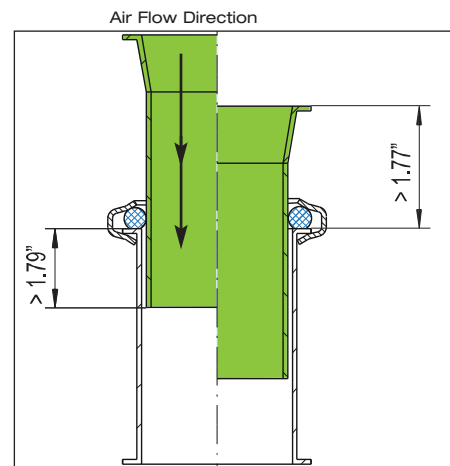


2 Slide the standard tube into the slip tube to the desired length.



NOTE: The slip tube overlap must be at least 1.79 inches {45.5 mm} and at least 1.77 inches {45.0 mm} of the tube must be above the flange for proper operation. If ordering a slip tube to fit into your hard pipe kit, be sure to order a length that accommodates these allowances. For example: do not order an 8 inch slip tube for a 7 inch gap, because the overlap will not be great enough.

3 Roll the ring seal back to the flange and secure with a pull ring.



4 Tighten, alternating from one bolt (side) to the other, the bolts to clamp the pull ring around the flange. Use a 6 mm hexagon screwdriver and tighten the bolt to a maximum torque of 25 Nm.



Attaching flange to top of dryer



CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

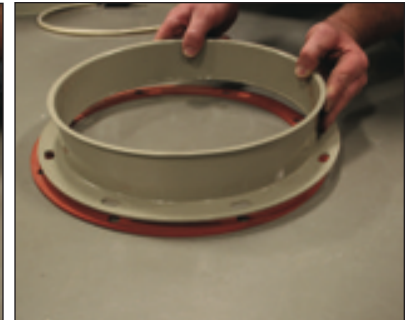


NOTE: Depending on your dryer model and the hard pipe kit that you ordered, this flange may already have been attached to your dryer.

Your hard pipe kit a Conair flange adapter. This adapter must be attached to the dryer prior to assembling the rest of the hard pipe system.

1 If adding the hard pipe kit to an existing drying system, **remove the flexible hose from the dryer inlet and outlet.** Make sure that the dryer inlet and outlet are clean and ready for installation of the flange adapter(s).

2 Locate the Conair flange adapter and hard pipe gasket.

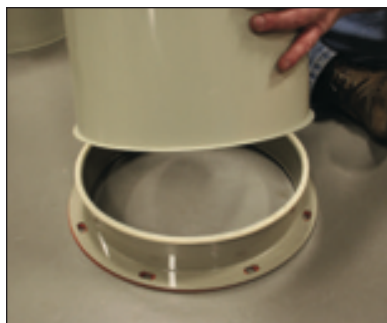


3 Using the included hardware, attach the Conair flange adapter to the dryer outlet.

4 Place the “U” seal on the top of the flange adapter.



5 Place the next pipe section on the top of the flange adapter.



6 Use the bolted pull ring to connect the pipe section to the flange adapter.

7 Tighten the bolted pull ring bolt to a maximum torque of 25 Nm.

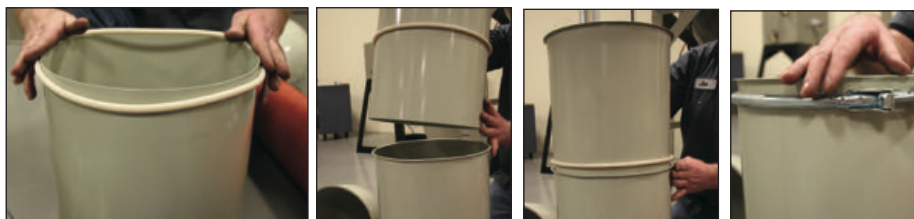


Adding Turns/Bends

To order a slip tube or other parts for your hard pipe kit, Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

Once you have assembled your verticle section above the dryer, you will need to add the 90° bend to continue horizontally. A slip tube may need to be used as part of the last section before the turn to horizontal to fit your plant/system layout. *Refer to Using Slip Tubes earlier in these instructions* for more information about using slip tubes for more flexibility with your hard pipe kit.

- 1 Verify that when you add your bend or turn, you will be at your desired height for the horizontal run of your hard piping.** It may be necessary to utilize a slip tube to complete your vertical pipe section at the correct height.



- 2 Place the u-shaped gasket seal on the top of the pipe end.**



- 3 Place the bend on top of the pipe end.**

- 4 Use the bolted ring to connect the bend to the pipe.**

- 5 Tighten the bolted pull ring bolt to a maximum torque of 25 Nm.** Be sure to alternate tightening bolts from one side to another so that the pull ring clamps securely and evenly around the pipe flange.



NOTE: Slip tube connections must be secured against displacement. For horizontally installed tubing, tubes must be supported in the area of the slip connection to prevent sagging.

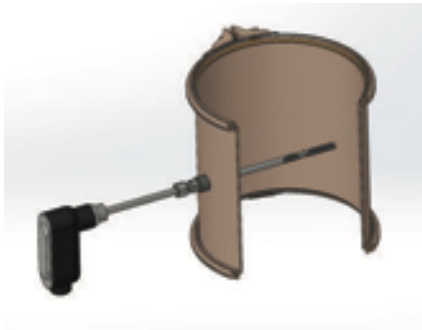


IMPORTANT: Slip tubes are not meant to be used as telescoping tubes. They are not designed to be adjusted during operation.

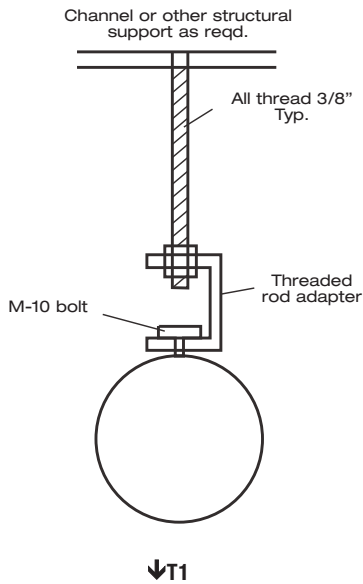
Optional VFD Velocity Meter tubing (required for VFD operation)

The velocity meter requires a special section of hard pipe, with a tapped fitting location for the velocity meter installation. The compression fitting allows the velocity sensor to be oriented such that the hole (noted by a mark on the sensor) can be positioned to face the air-flow, and adjusted such that the depth of sensor hole is located in the center of the air flow in the piping.

The section of tubing with the velocity meter tap should be located about 10x the tube diameter (80 inches for 8-inch tubing) of straight pipe (after a bend) on the return line before the dryer. Due to velocity meter cable length and tubing runs, the best location is typically as close to the “Return air” inlet of the dryer on the return air tubing as possible. This typically gives the maximum straight run of tubing prior to the velocity meter location.



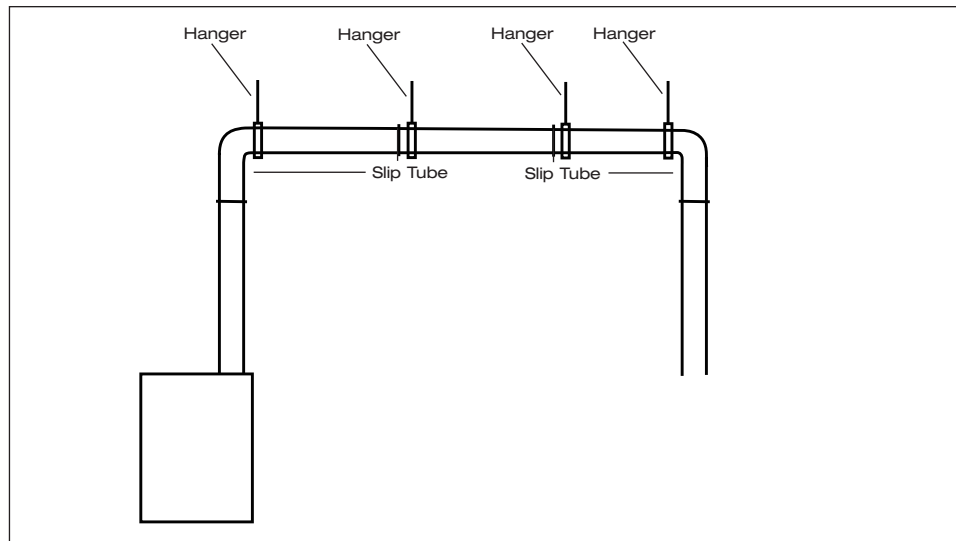
Proper Location and use of Hanger, Clamp, and All-thread



Your Conair Hard Pipe Kit comes with a quantity of tubing hangers (varies depending on which kit you order) for supporting the weight of the horizontal and vertical spans, specifically spans that use slip tube sections. A hanger should be placed on either side of any location where a slip tube was used. This includes supporting a vertical section where a slip tube was used by utilizing a hanger at the closest horizontal location to support the vertical section.

Proper hanging method uses:

- Ceiling mount clamp with rubber insert
- Threaded rod adapter
- M-10 bolt
- Proper length of all-thread - 3/8" tip and proper connection to approved load carrying structure



NOTE: T1 ✕ 440 lbs. {195.58 kg} at 0.2 in. {5.08 mm} deflection.

NOTE: Always follow all local and regional building codes when installing.

NOTE: Conair recommends the use of hangers at 10 ft. {3.05 m} intervals at minimum for appropriate support.



Electrical Cable and Conduit Sizing Chart for W Series Dryers with Process Heat

Dryer	Voltage	Size of AWG	Conduit Size	Conduit QTY
W600	400 VAC	6	1.5	1
W600	460 VAC	6	1.5	1
W600	575 VAC	8	1.5	1
W800	380 VAC	6	1.5	1
W800	400 VAC	6	1.5	1
W800	460 VAC	6	1.5	1
W800	575 VAC	8	1.5	1
W1000	380 VAC	4	1.5	1
W1000	400 VAC	4	1.5	1
W1000	460 VAC	6	1.5	1
W1000	575 VAC	8	1.5	1
W1300	380 VAC	4	1.5	1
W1300	400 VAC	4	1.5	1
W1300	460 VAC	6	1.5	1
W1300	574 VAC	8	1.5	1
W1600	380 VAC	4	1.5	1
W1600	400 VAC	4	1.5	1
W1600	460 VAC	6	1.5	1
W1600	575 VAC	8	1.5	1
W2000	380 VAC	6	1.5	2
W2000	400 VAC	6	1.5	2
W2000	460 VAC	6	1.5	2
W2000	575 VAC	8	1.5	2
W2400	380 VAC	6	1.5	2
W2400	400 VAC	6	1.5	2
W2400	460 VAC	6	1.5	2
W2400	575 VAC	8	1.5	2
W3200	380 VAC	4	1.5	2
W3200	400 VAC	4	1.5	2
W3200	460 VAC	6	1.5	2
W3200	575 VAC	8	1.5	2
W4000	380 VAC	4	1.5	2
W4000	400 VAC	4	1.5	2
W4000	460 VAC	6	1.5	2
W4000	575 VAC	8	1.5	2
W5000	380 VAC	4	1.5	2
W5000	400 VAC	4	1.5	2
W5000	460 VAC	6	1.5	2
W5000	575 VAC	8	1.5	2

Electrical Requirements and Process Heater Information for W-Series Dryers with Process Heat

	Process Motor (HP)	Regen Motor (HP)	Process Heater (kW)	Regen Heater (kw)
Refer to drawing #188674				
W600	7.5	0.5	38	15
W800	7.5	0.5	38, 19	15
W1000	7.5	0.5	38, 19	15
W1300	10	0.5	38, 38	19
W1600	15	0.5	38, 38	19
W2000	20	0.5	38, 38, 19	19
W2400	20	0.5	38, 38, 38	19
W3200	25	1	38, 38, 38, 19	38
W4000	30	1	38, 38, 38, 38, 38	38
W5000	30	1	38, 38, 38, 38, 38	38

