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USER GUIDE

UGD042-1216

Carousel Plus Dryer

W Series Models 600 through 5000 with TouchView™ Technology (Allen-Bradley)

Corporate Office: 724.584.5500 | Instant Access 24/7 (Parts and Service): 800.458.1960 | Parts and Service: 814.437.6861

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

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: UGD0042-1216

Serial Number(s):

Model Number(s):

Software Version(s):

Panelview Plus Operator Interface Terminal

Firmware Version Number:

Application File Name:

Programmable Logic Controller:

Firmware Version Number:

Application File Name:

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.

DISCLAIMER: Conair shall not be liable for errors contained in this User Guide or for incidental, consequential damages in connection with the furnishing, performance or use of this information. Conair makes no warranty of any kind with regard to this information, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.

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SECTION

1

Introduction

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.

1 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 HTC 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.

(continued)

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) or GasTrac Heater (CGT).

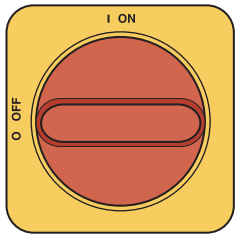
WARNING: Do not place aerosol, compressed gas or flammable materials on or near this equipment.

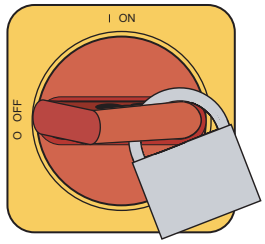
The hot temperatures associated with the drying process may cause aerosols or other flammable materials placed on the dryer or hopper to explode.

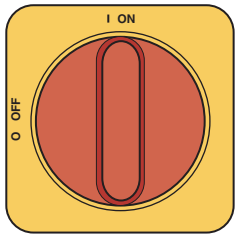
How to Use the Lockout Device

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 below.







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.

SECTION
2

Description

What is the Carousel Plus W Series Dryer?

The Carousel Plus W Series Dryer with TouchView™ produces low-dew point 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 a Hopper Temperature Controller (HTC) or GasTrac Process Air Heater (CGT)) package) on a floor stand.

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

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.

2 ResinWorks applications.

(continued)

Typical Applications (continued)

Model	Drying Temperature Range
Low temperature (with precooler)*	100° - 150°F {38° - 66°C}
Standard	150° - 240°F {66° - 116°C}
High heat (with aftercooler/intercooler)*	150° - 375°F {66° - 191°C}
Low-high (aftercooler/intercooler & precooler)*	100° - 375°F {38° - 191°C}

* See Installation section entitled, Connecting the Aftercooler/Intercooler and Optional Precooler and Appendix B

- Throughput rates of 600 to 5000 lbs {271 to 454 kg} per hour (some materials can be ran at a higher rate).
- Dew points of -40°F {-40°C}.

Use the aftercooler/intercooler 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/intercooler reduces the temperature of air returning from the drying hopper, improving the efficiency of the desiccant.

NOTE: Temperature setback is only available in conjunction with the Hopper Temperature Controller (HTC).

NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler/intercooler located before the the process blower. Carousel Plus W Series 1600-5000 uses an intercooler/intercooler 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 process heat source (HTC or GasTrac). After the air exits the process 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 (W1600 - 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 intercooler, 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 process heat source (HTC or GasTrac). After the air exits the process 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

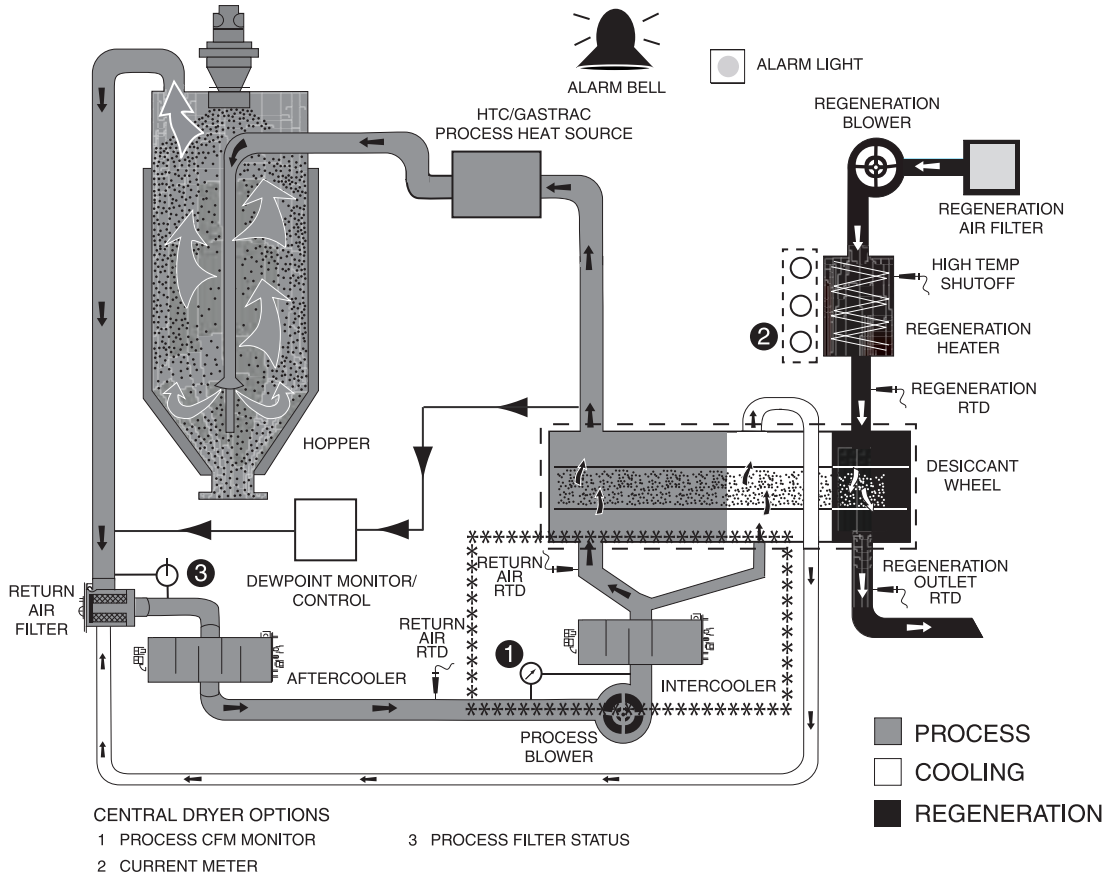
The regeneration blower pulls air through the regeneration filter into the dryer's regeneration heater. The air is heated to 350°F {177°C} before it is pushed into the "wet" section of the desiccant wheel. The hot air purges moisture from the desiccant. The moist air is blown out the moisture exhaust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

The Cooling Cycle (All models except W2400 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.

How It Works (continued)

(W600, W1000, W1600, and W3200)

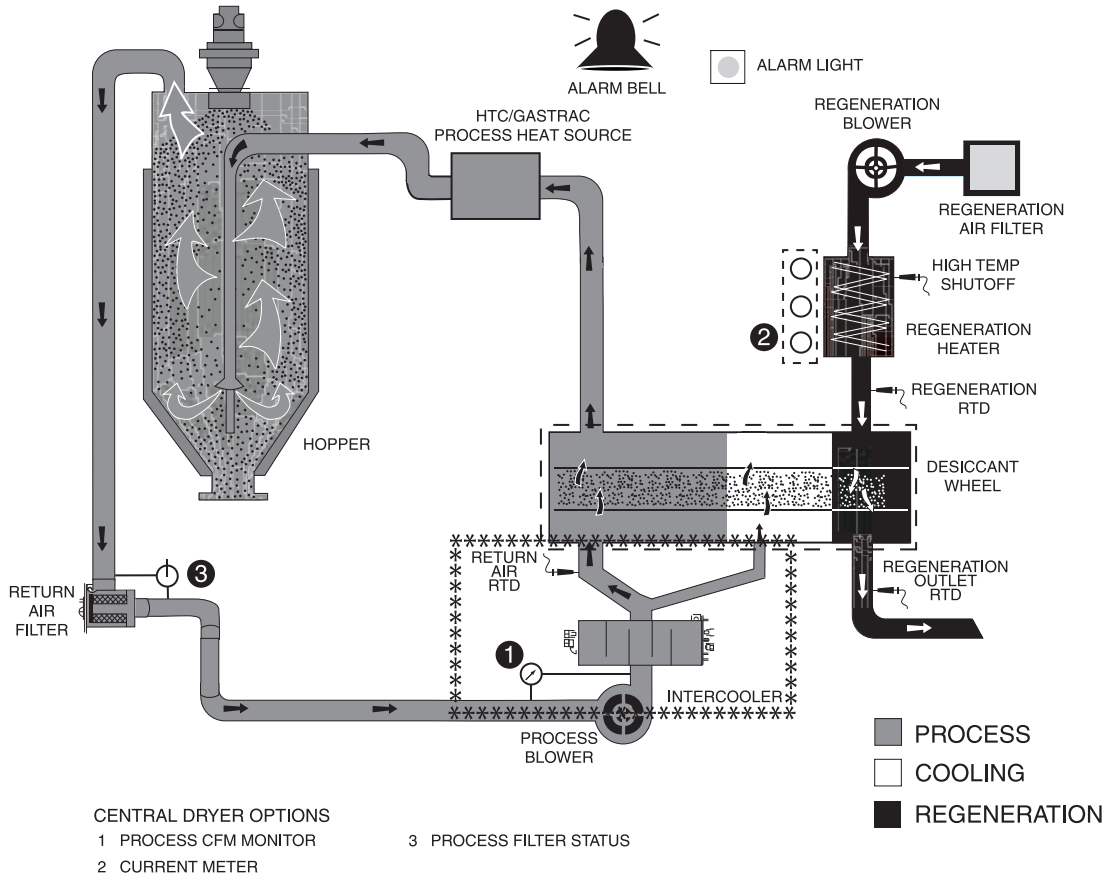


W-series 1600-5000 intercooler location only.

NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler/intercooler located before the the process blower. Carousel Plus W Series 1600-5000 dryers use an intercooler located after the process blower.

How It Works (continued)

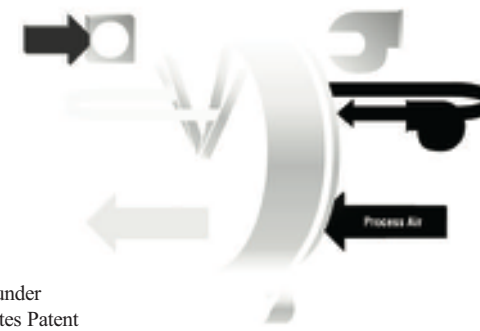
(W2400 and W5000)



Power Purge

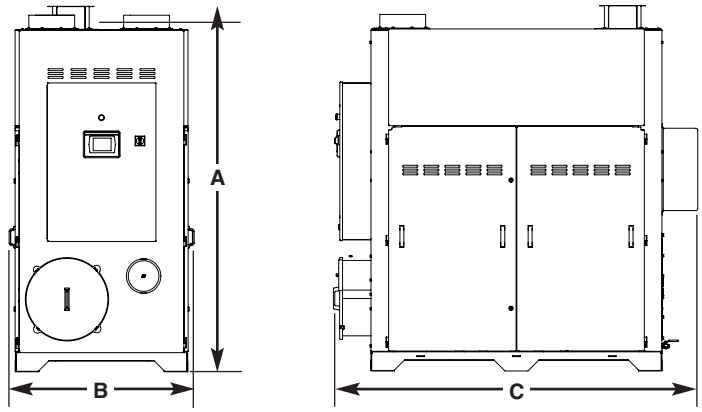
W 2400 and 5000 models have a Power Purge (cooling fan) feature integral to the desiccant wheel assembly.

NOTE: Carousel Plus W Series 600-1000 Dryers use an aftercooler located before the the process blower. Carousel Plus W Series 1600-5000 dryers use an intercooler 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 with TouchView™ Control



MODELS	W600*	W800*	W1000*	W1600*	W2400*	W3200*	W5000*
Performance characteristics (with full hopper)							
Drying temperature All models 100° - 375°F {38° - 191°C} with options							
Dew point All models -40°F {-40°C}							
Dimensions inches {cm}							
A - Height	92.6 {235.2}			95.4 {242.3}		102.8 {261.1}	
B - Width	43.3 {109.9}			48.4 {122.9}		48.9 {124.2}	
C - Depth	63.5 {161.3}			95.1 {241.6}		124.6 {316.5}	
Outlet/inlet hose diameter	8.0 {20.3}			12.0 {30.5}		12.0 {30.5}	
Approximate weight lbs {kg}							
Installed	1325 {601}	1325 {601}	1425 {646}	1660 {753}	1660 {753}	2100 {953}	2100 {953}
Shipping	1520 {689}	1540 {699}	1540 {699}	2160 {980}	2500 {1134}	3485 {1581}	3485 {1581}
Voltage - full load amps†							
400 V/3 phase/50 Hz	37.6	37.6	37.6	65.5	66.1	125.1	131.2
460 V/3 phase/60 Hz	32.3	32.3	32.3	56.8	57.3	108.7	114.0
575 V/3 phase/60 Hz	25.9	25.9	25.9	45.5	45.9	87.0	91.3
Total kilowatts‡ kW {BTU/min}	26.0 {1480}	26.0 {1480}	26.0 {1480}	45.3 {2578}	45.7 {2601}	86.5 {4924}	90.8 {5168}
Water requirements {for aftercooler/intercooler or optional precooler}§							
Recommended temperature**	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						

SPECIFICATION NOTES:

* Dryers W600-W5000 are central dryers and do not have process heaters. 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) or GasTrac Dryer (CGT) specification sheets for further technical information.

† Full load amps listed apply to dryer only, see the Hopper Temperature Control (HTC) or GasTrac (CGT) specification sheets for additional power requirements.

‡ Total kW listed at a regeneration temperature of 350°F {177°C}. The total kW listed reflects the kW of the dryer only. It does not include any external heat source, for example the Hopper Temperature Controller (HTC) or GasTrac dryer (CGT).

§ 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.

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

APPLICATION NOTES:

All dryers are supplied with an aftercooler/intercooler as standard. The aftercooler/intercooler reduces the temperature of the return air from the drying hopper, improving the efficiency of the desiccant. The aftercooler/intercooler must be connected with the proper water flow rate and temperature to attain the rated throughput.

When to use central models
Models W600 - W5000 of Carousel Plus® dryers are all configured as central dryers. Central dryers do not have process heaters. These models should be used when drying multiple materials that require different drying temperatures. Central models dehumidify the process air, which is then heated to the correct set point by a Hopper Temperature Controller (HTC) or GasTrac Dryer (CGT).

When to use additional filtration
The standard return air cartridge filter is sized for the airflow of each dryer model and is suited for most applications. You should consider adding an optional dust collector and/or volatile trap if:

- The material contains excessive fines. An additional dust collector or cyclone will extend time between filter cleaning.
- The material produces volatiles during drying which condense into a waxy or oily residue. A volatile trap will help to protect the desiccant.

TPDS029-0409

Carousel Plus Dryer Control Options

- **Visual alarms** - The visible alarm is a blinking red alarm light that alerts the user to any shut down alarm.

- **Trending screens** - The trending screens display temperature, airflow, dew point and differential pressure of the Carousel Plus Dryer System. Each can be used to graph real-time data of a running dryer system.

- **Recipe storage screen** - The recipe storage screen is used to store and instantly recall specific dryer parameters that are used with different types of material. Up to 99 dryer recipes can be saved within the control.

- **Loading control screens** - Dedicated screens control the function and activation of up to two (2) optional receivers. Loading, dump and purge times can be individually altered for each receiver.

- **Communications** - Allows the dryer to be networked to industrial control systems.

SECTION
3

Installation

Unpacking the Boxes

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

- Carousel Plus W Series Dryer
- Delivery air hose
- Return air hose
- User Guide
- Receiver(s) - optional
  (Only available when the Loading Control optional is selected.)
- Hard piping kit - optional

1. **Carefully remove the dryer and components** from their shipping containers. 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 1600-2400 Dryers will have a dry air delivery adapter. Carousel Plus W Series 3200-5000 Dryers will have a dry air delivery adapter and an overhead process air duct.)

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.

(continued)

Unpacking the Boxes (continued)

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 two mounting options:

- Dryer on the floor, single hopper (with Hopper Temperature Controller (HTC) or GasTrac Process Air Heater (CGT)) on a floor stand.

NOTE: The W600 - 5000 provides no heat to the process air. A separate heat source is required at the hopper inlet to heat the air to the required drying temperature.

Preparing for Installation

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

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

1 **Make sure the mounting area provides:**

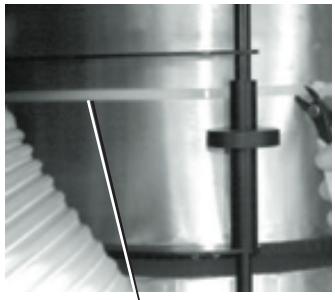
- ❒ **A grounded power source supplying the voltage and correct current** for your dryer model. Check the dryer's serial tag (on the control box) for the correct amps, voltage, phase and cycles. Field wiring should be completed by a qualified personnel to the planned location for the dryer. All electrical wiring should comply with your region's electrical codes.
- ❒ **A source of water, when using the aftercooler/intercooler and/or precooler.** The W Dryer's aftercooler/intercooler and/or precooler require tower, city, or chiller water at temperatures of 45° to 85°F {7° to 29°C}. *See Description section entitled, Specifications: Carousel Plus W Series Dehumidifying Dryers.* Piping should be ran to the planned dryer location. Use flexible hose to connect the water pipes to the aftercooler/intercooler and/or optional precooler.
- ❒ **Minimum clearance for safe operation and maintenance.** You should maintain 24 in. {61 cm} clearance on all sides of the dryer.

NOTE: The aftercooler/intercooler 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.

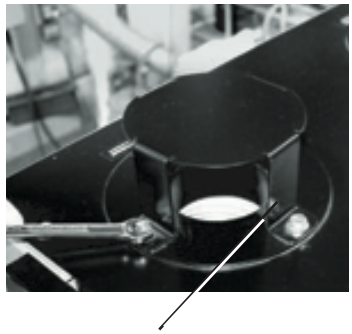


Desiccant Cable Tie

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

1 **Open the dryer side panels and remove the cable tie securing the desiccant wheel,** if it was not done while unpacking the dryer.

Installing the Regeneration Exhaust Cover



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.

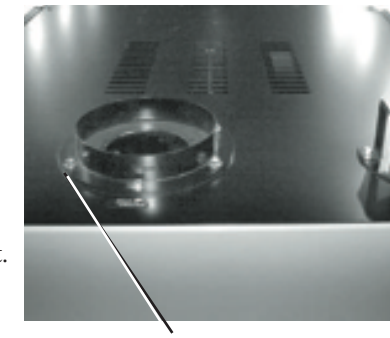
4 **Secure the regeneration exhaust cover with supplied hardware**, using an appropriately sized wrench.

Installing the Return Air Adapter

The Carousel Plus W Series Dryer's return air adapter must be installed.

To install the return air adapter:

1. **Remove the return air adapter that is attached to the dryer's shipping pallet.**
2. **Locate the bolt pattern on the top of the dryer**, on top of the return air inlet.
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 an appropriately sized wrench.



Return Air
Inlet Adapter

Installing the Return Air Inlet and Air Outlet Adapters (W1600 - 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.

Installing the Overhead Process Air Duct (W3200 - 5000)

The Carousel Plus W Series Dryer's overhead process air duct will be removed when the dryer is shipped.

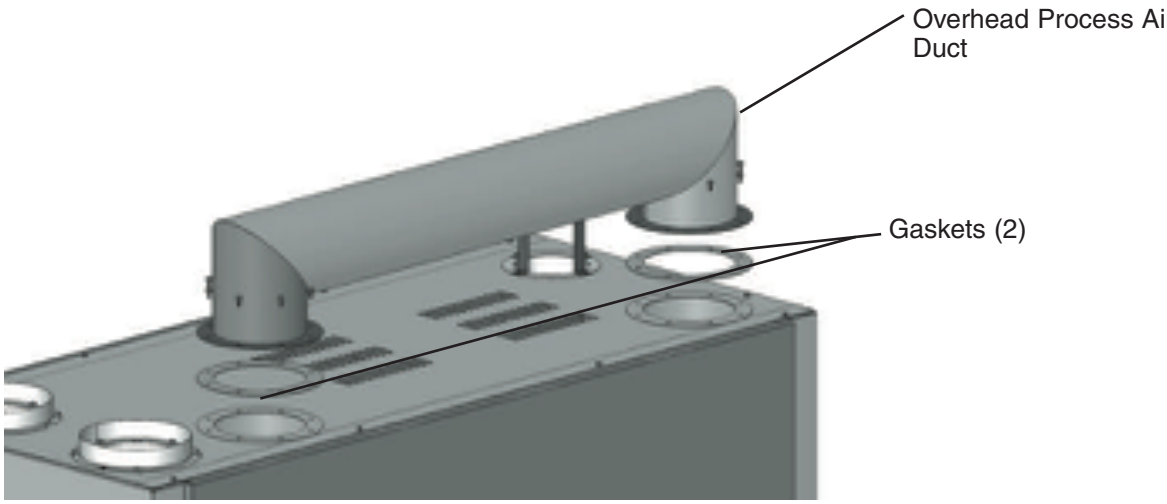
To install the overhead process air duct:

1. **Remove the overhead process air duct that is attached to the dryer's shipping pallet.** The piping will be shipped as one unit with included gaskets (2).

2. **Locate the bolt patterns on the top of the dryer**, over top of the overhead process air duct inlet and outlet.

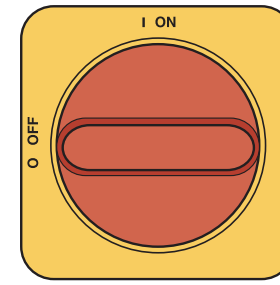
3. **Position the overhead process air duct on top of the overhead process air duct inlet and outlet making sure to place supplied gaskets between the overhead process air duct and the inlet and outlet of the dryer**, align all bolt patterns.

4. **Secure the piping with supplied hardware**, using an appropriately sized wrench.



Connecting the Main Power

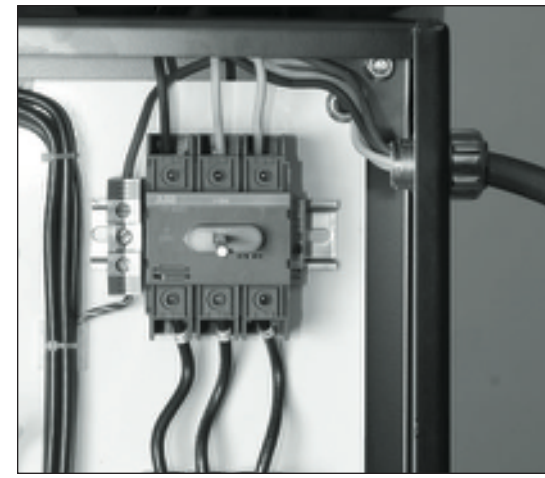
CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.



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 section entitled, How to Use the Lockout Device.* Turn the captive screw, and swing the door open.

2 **Insert the main power wire** through the knock-out in the side of the enclosure or the rear of the dryer. (The dryer's electrical wire connection location was a factory option and may be connected through the front or the rear of the dryer.) 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.

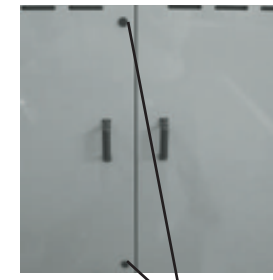
Opening the Dryer Doors

(W1600 - 5000)

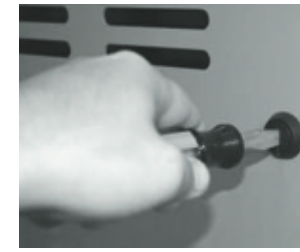
To unlock the side panel door bolts:

1 **Rotate the two (2) locking door bolts on the dryer door counterclockwise** with a regular screwdriver.

2 **Close the dryer doors and rotate the two (2) locking door bolts clockwise** to secure the dryer doors.



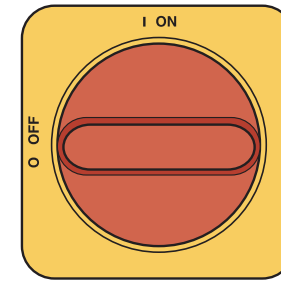
Dryer Door Locking Bolts (2) (W1600-5000)



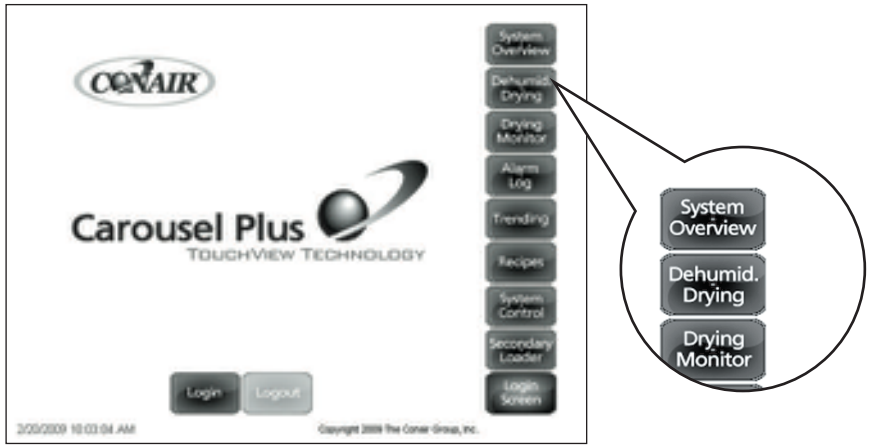
Checking for Proper Air Flow

⚠ **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.

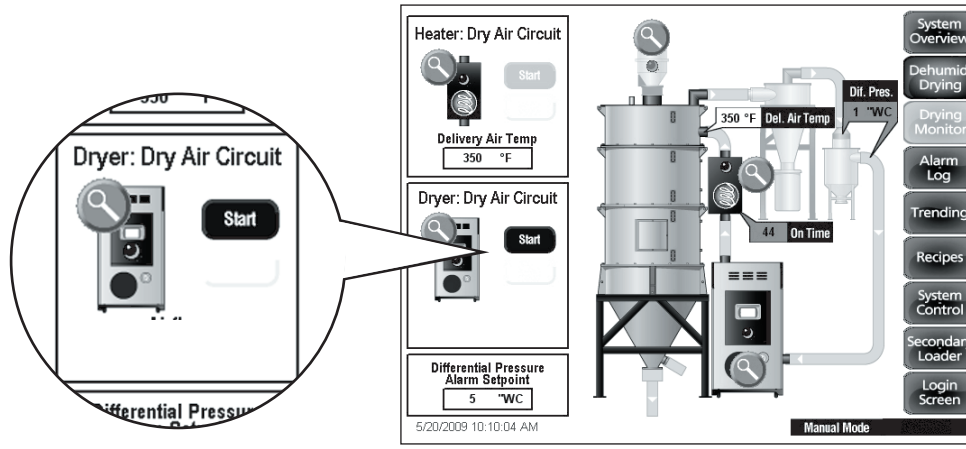


(continued)

Checking for Proper Air Flow (continued)

2 **From the Login Screen (Screen 1), press the "Dehumid Drying" button.**

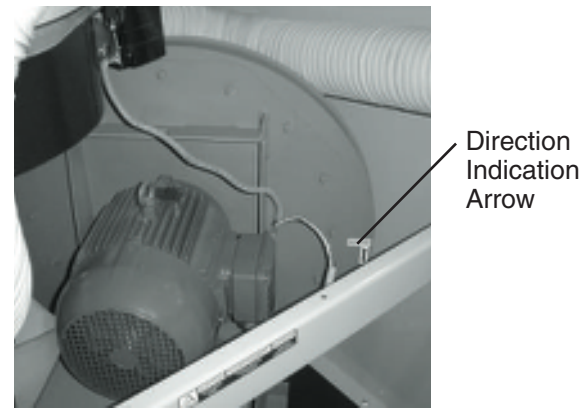
3 **Open the dryer's side panel doors.** If your dryer has locking door bolts, *see Installation section entitled, Opening the Dryer Doors.*



4 **Press the "Start" button and then the "Stop" button** located within the Dryer: Dry Air Circuit window of the Dehumidifying Drying Screen (Screen 6).

5 **Visually verify the 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 process blowers.

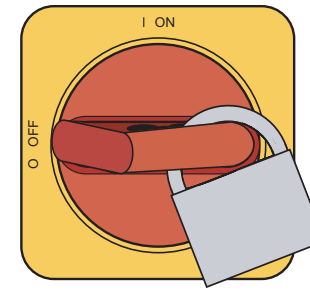
⚠ **WARNING:** All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the machine serial tag and data plate.



(continued)

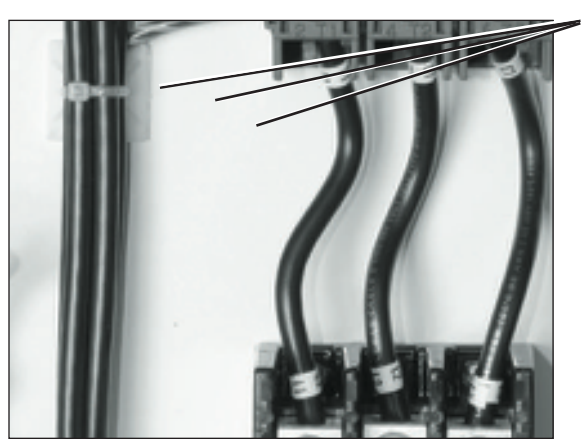
Checking for Proper Air Flow (continued)

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



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.

If the airflow is reversed, the process 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.

Connecting the Air Hoses to a Single Hopper (W600 - 1000)

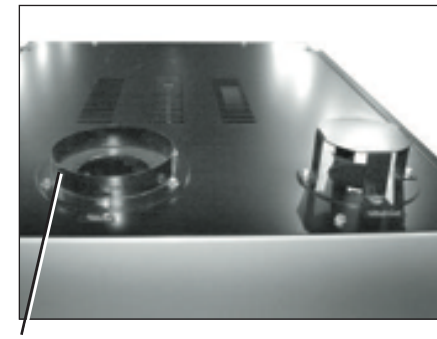
NOTE: If your dryer hose connection and your hopper HTC or GasTrac hose connection is not the same size, you will need a hose adapter. *See Installation section entitled, Connecting Air Hose Adapters.*

Using the two flexible hoses provided, connect the inlet of the HTC, GasTrac or ResinWorks and outlet of the drying hopper to the dryer. Make sure the dryer is located as close as possible to the hopper (approximately 10 ft {3.05 m}).

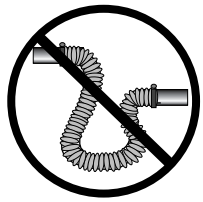
NOTE: Models W600-1000 dryer aftercooler/intercooler and dry air delivery configuration shown. Location on larger models are different. Refer to the labeling on your dryer.

NOTE: See hard piping kit installation instructions if equipped.

1 **Attach one hose from the return air inlet, located on top of the dryer,** to the outlet of the hopper.

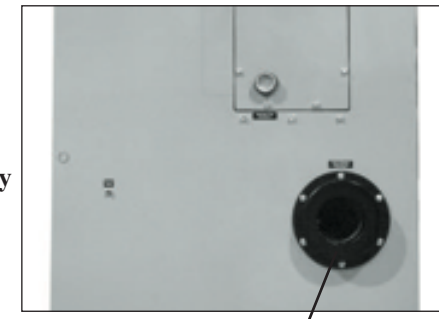


Return Air Inlet Adapter

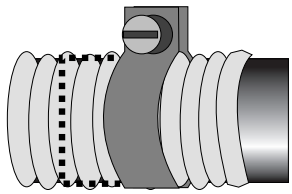


NOTE: Do not allow the flexible hoses to kink or crimp.

2 **Attach one hose from the delivery air outlet** to the inlet of the HTC, GasTrac, or ResinWorks.



Dry Delivery Air



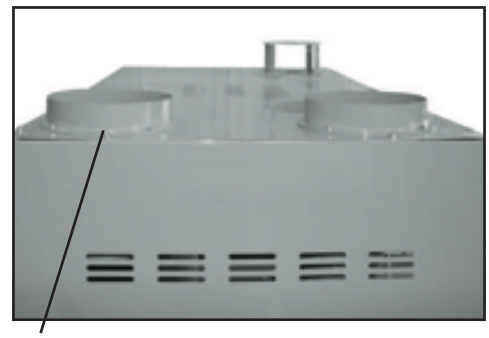
3 **Secure hoses with clamps.** The hose clamp should be secured at least 0.25 in. {6.4 mm} from the end of the inlet or outlet tube.

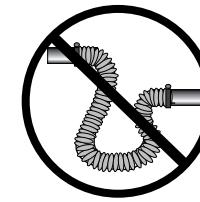
Connecting the Air Hoses to a Single Hopper (W1600 - 5000)

Using the two flexible hoses provided, connect the inlet of the HTC, GasTrac or ResinWorks 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).

NOTE: If your dryer hose connection and your hopper HTC or GasTrac hose connection is not the same size, you will need a hose adapter. *See Installation section entitled, Connecting Air Hose Adapters.*

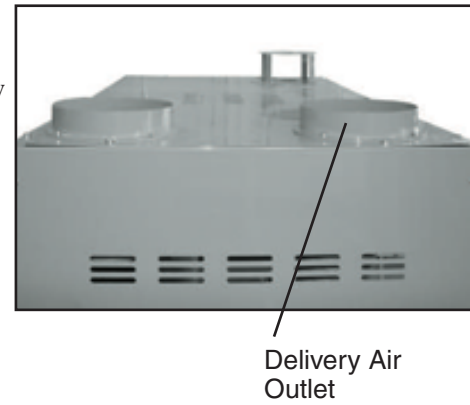
1 **Attach one hose from the return air inlet, located on top of the dryer,** to the outlet of the hopper.



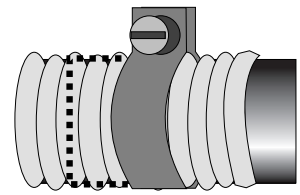


NOTE: Do not allow the flexible hoses to kink or crimp.

2 **Attach one hose from the delivery air outlet, located on top of the dryer,** to the inlet of the HTC, GasTrac or ResinWorks.



3 **Secure hoses with clamps.** The hose clamp should be secured at least 0.25 in. {6.4 mm} from the end of the inlet or outlet tube.

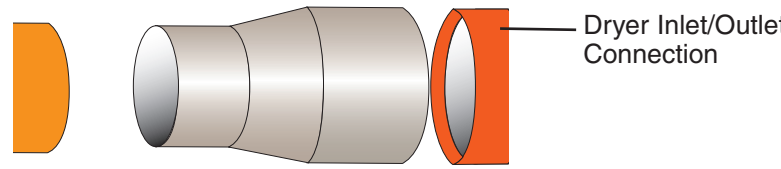


Connecting Air Hose Adapters

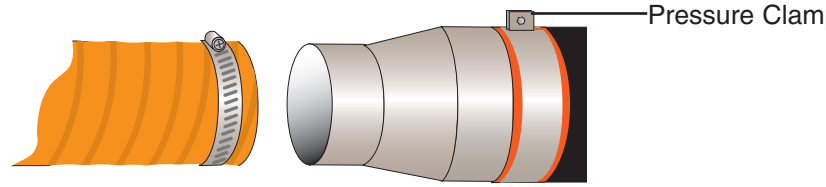
Depending on the hopper you purchased you may need to install an air hose adapter to connect the hopper to your dryer.

To connect the air hose adapter:

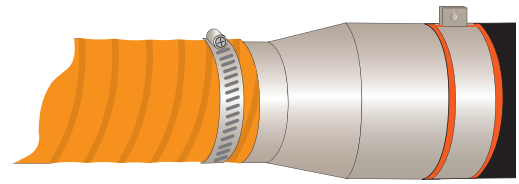
1 **Place a high temperature gasket approximately half way down from the end of the dry air delivery outlet.**



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



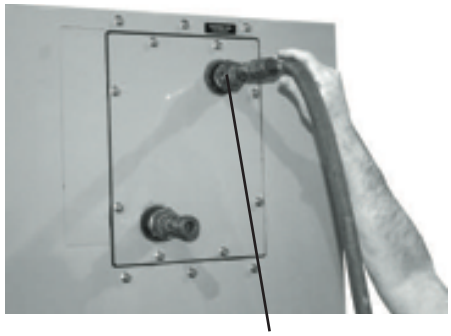
3 **Attach the hopper inlet hose over the adapter, secure with clamp.**



Connecting the Aftercooler/ Intercooler 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}.



Aftercooler/Intercooler Inlet

1 Connect the water supply line to the aftercooler/intercooler or precooler inlet. If a manual shut off valve is used, it should be mounted on the inlet line.

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/ intercooler assembly for cleaning.

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

Aftercooler/Intercooler Outlet

2 Connect the water discharge or return line with the pressure relief valve to the aftercooler/ intercooler or precooler outlet. Use the bracket supplied to secure the pressure relief valve to the back of the dryer.

NOTE: Models W600-1000 dryer aftercooler/intercooler 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}
1600	25 {94.6}
2400	25 {94.6}
3200	30 {113.6}
5000	30 {113.6}

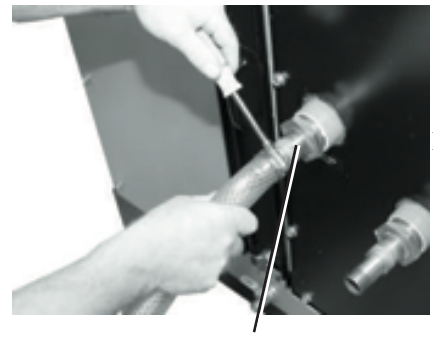
Connecting the Aftercooler/ Intercooler and Optional Precooler

(W1600 - 5000)

☛**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/intercooler assembly for cleaning.

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

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}.



Aftercooler/Intercooler Inlet

1 Connect the water supply line to the intercooler or precooler inlet. If a manual shut off valve is used, it should be mounted on the inlet line.

Aftercooler/Intercooler Outlet

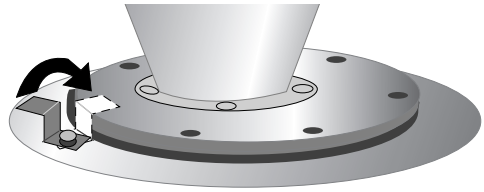
2 Connect the water discharge or return line with the pressure relief valve to the intercooler or precooler outlet. Use the bracket supplied to secure the pressure relief valve to the back of the dryer.

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}
1600	25 {94.6}
2400	25 {94.6}
3200	30 {113.6}
5000	30 {113.6}

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 Primary Receiver (optional)

NOTE: Refer to your loader manual for loader installation instructions.

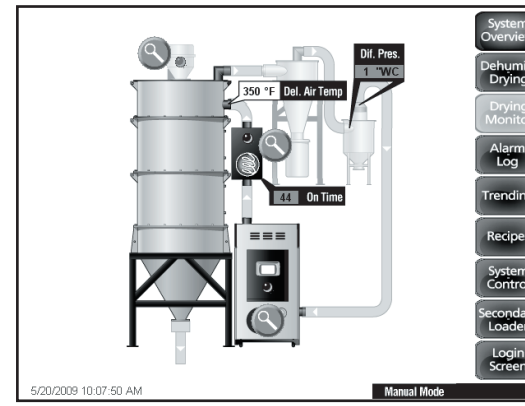
1 **Make sure there is no material in the drying hopper.**

2 **Disconnect the material inlet hose of the optional receiver(s) at the source.**

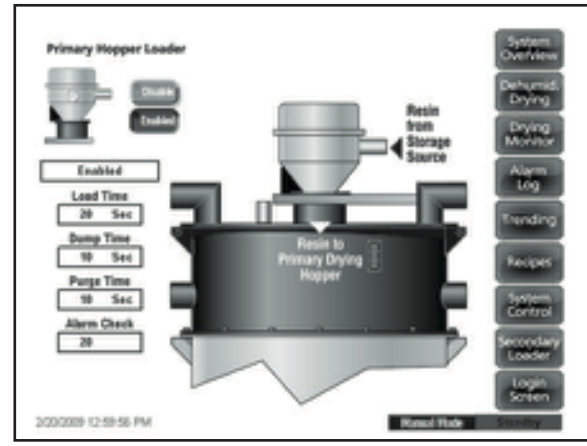
3 **Start the dryer.** Monitor the dryer during the first few minutes of operation to verify that the start-up operating sequences are correct.

4 **Login to the dryer's control under the appropriate user name and password.** *See Operation section entitled, Control Function Descriptions, Screen 1A-Login Screen.*

5 **Navigate to the System Overview Screen (Screen 6).**



6 **Press the receiver's magnifying glass icon to access the Primary Loader Screen (Screen 5).**



(continued)

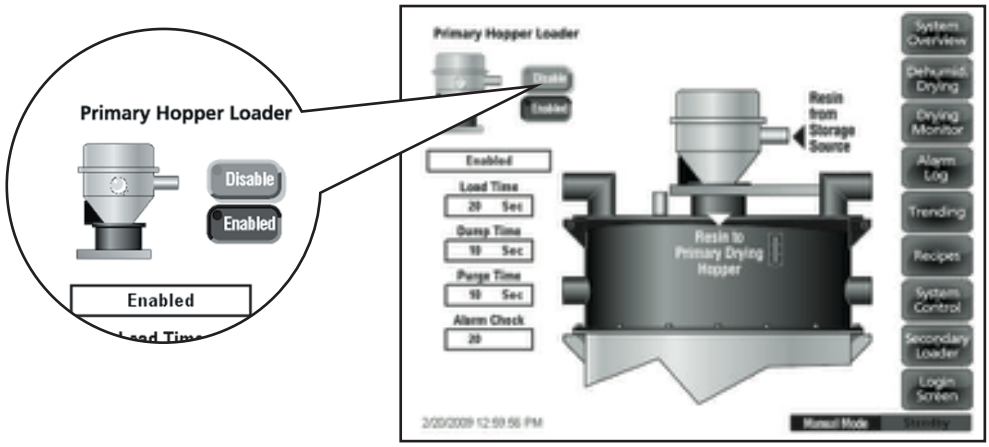
Testing the Primary Receiver (optional)

(continued)

7 **Press the "Enable" button on the Primary Hopper Loader Screen (Screen 5) to activate the primary receiver.**

If everything is installed correctly:

- The vacuum pump will turn on for the duration of the load time set at this screen.
- The flap valve of the receiver will open at the end of the load cycle time for the duration of the dump time set at this screen.
- The purge valve will purge the conveying line leaving the drying hopper (if purge is used).



8 **Press the "Disable" button on the Primary Hopper Loader Screen (Screen 5) to deactivate the primary receiver.**

If everything is installed correctly:

- The vacuum pump will turn off
- The flap valve of the receiver will close
- The purge valve will deactivate

9 After the test has been completed successfully, **properly shut down the dryer,** *see Operation section entitled, Stopping the Dryer.*

Testing the Secondary Receiver

(optional)

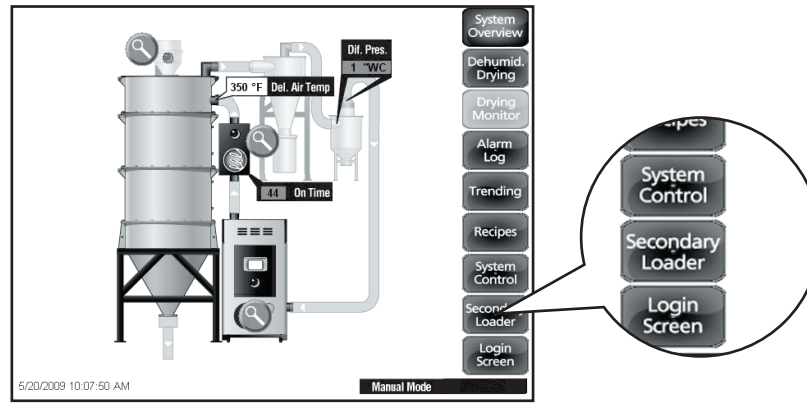
1 **Make sure there is no material in the drying hopper.**

2 **Disconnect the material inlet hose of the optional receiver(s) at the source.**

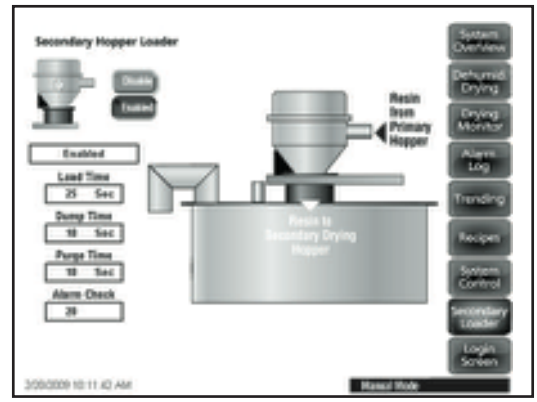
3 **Start the dryer.** Monitor the dryer during the first few minutes of operation to verify that the start-up operating sequences are correct.

4 **Login to the dryer's control under the appropriate user name and password.** *See Operation section entitled, Control Function Descriptions, Screen 1A-Login Screen.*

5 **Navigate to the System Overview Screen (Screen 6).**



6 **Press the "Secondary Loader" button to access the Secondary Loader Screen (Screen 18).**



(continued)

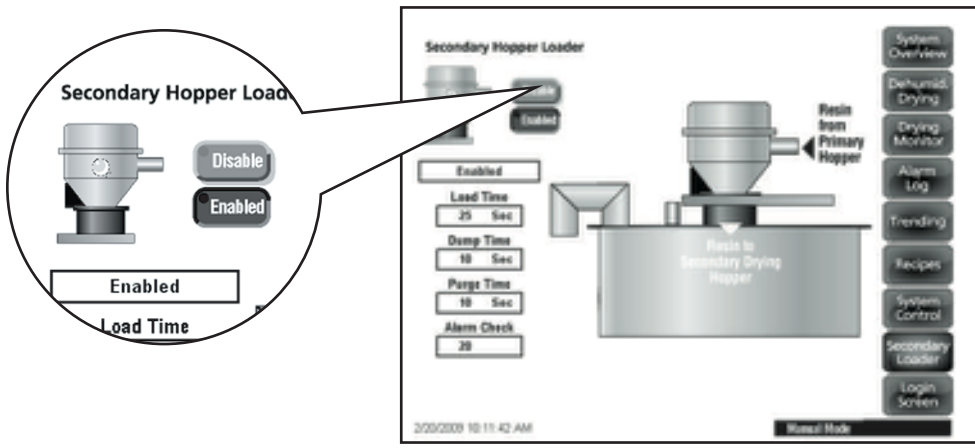
Testing the Secondary Receiver

(optional) (continued)

7 **Press the "Enable" button on the Secondary Hopper Loader Screen (Screen 18) to activate the secondary receiver.**

If everything is installed correctly:

- The vacuum pump will turn on for the duration of the load time set at this screen.
- The flap valve of the receiver will open at the end of the load cycle time for the duration of the dump time set at this screen.
- The purge valve will purge the conveying line leaving the drying hopper (if purge is used).



8 **Press the "Disable" button on the Secondary Hopper Loader Screen (Screen 18) to deactivate the secondary receiver.**

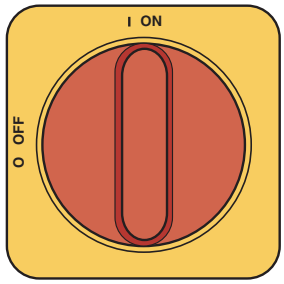
If everything is installed correctly:

- The vacuum pump will turn off
- The flap valve of the receiver will close
- The purge valve will deactivate

9 After the test has been completed successfully, **properly shut down the dryer,** *see Operation section entitled, Stopping the Dryer.*

Testing the Installation

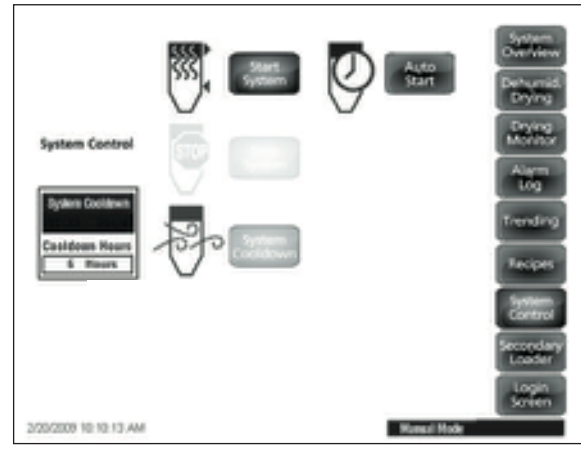
You have completed the installation. Now it's time to make sure everything works.



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.

2 **From the Login Screen (Screen 1), press the "System Control" button.**



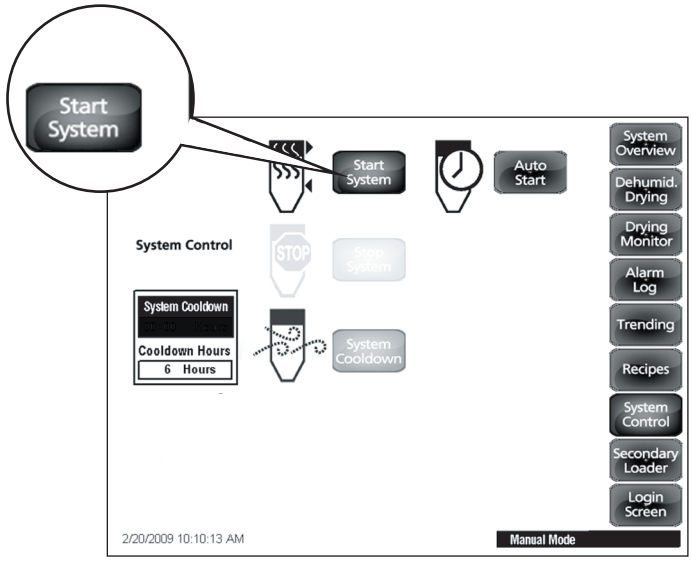
(continued)

Testing the Installation

3 From the System Control Screen (Screen 16), press the "Start System" button.

If everything is installed correctly:

- The regeneration and process blowers turn on
- The regeneration heater turns on
- The process heater will energize (HTC or GasTrac)
- The dryer's desiccant wheel starts turning. If the desiccant wheel does not turn, verify that the desiccant wheel tie has been removed



4 From the System Control Screen (Screen 16), press the "Stop System" 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})

5 The test is over. If the dryer performed the normal operating sequences as outlined, reconnect 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.

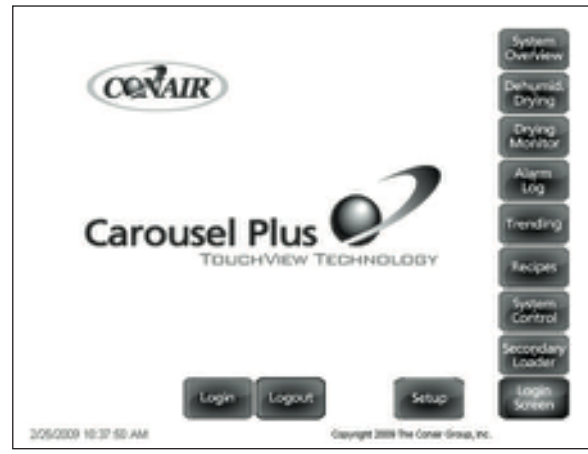
Operation

SECTION 4

Dryer System Control Panel

On power-up, the Carousel Plus Dryer control displays the initial system "Login" screen (Screen 1A).

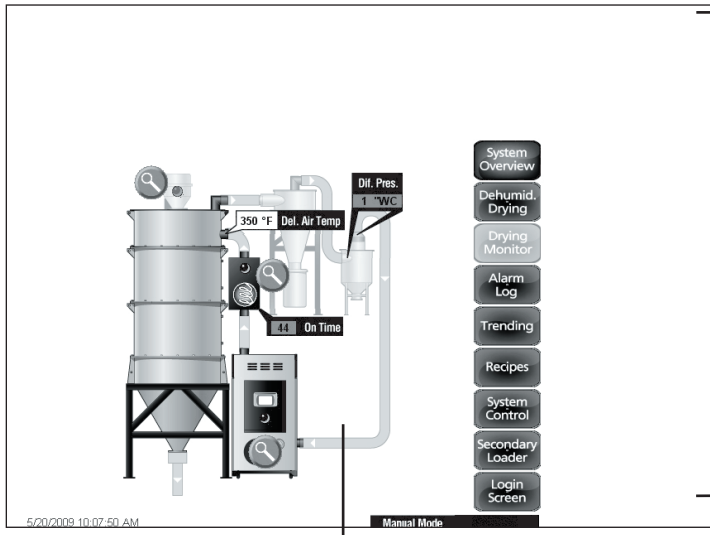
At start-up, the system security level is "Default". Once the operator enters the user name and password, access is permitted to the "Login Setup" screen (Screen 1B). From this screen the user, depending on security access level, can access the various system and setup screens for the entire Carousel Plus Dryer system.



The following two sections provide flowcharts that detail the navigation between the Carousel Plus Dryer Control screens and provide a description of the functionality of each screen.

How to Navigate the Control Screens

Navigate through the Carousel Plus Dryer control screens by touching any navigation "buttons" and/or magnifying glass icons.



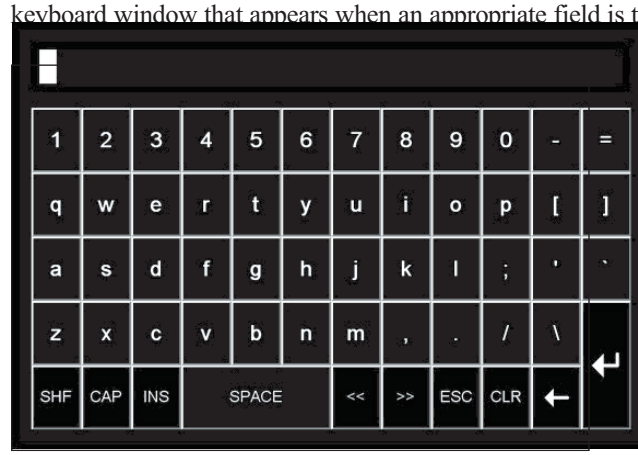
Navigation Buttons
Touching the navigation buttons will take the user to the control screen selected.

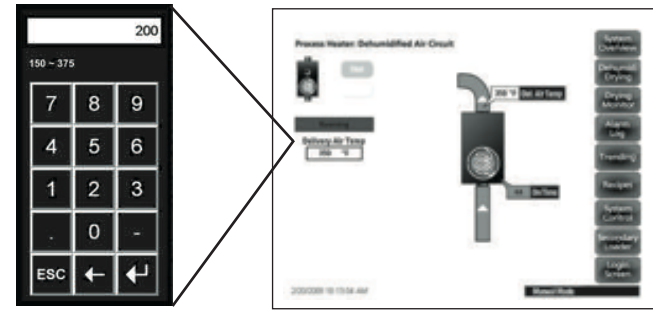
Magnifying Glass Icons
Touching the magnifying glass icons will take the user to screens that contain detailed information about the system component selected.

(continued)

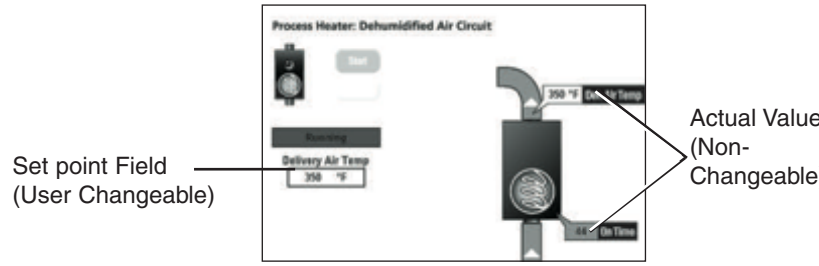
How to Navigate the Control Screens (continued)

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





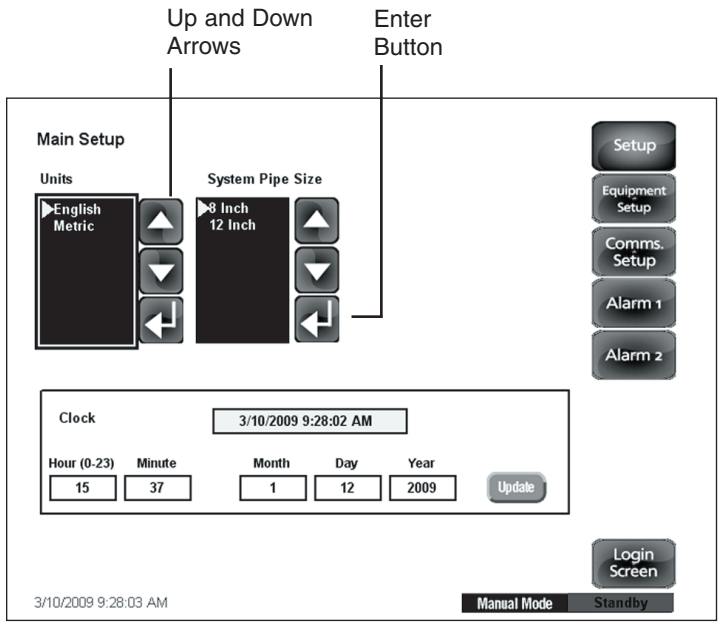
Set points can be entered within fields with a heavy black boundaries. Values shown within colored boxes are "actual" values and can not be changed.



(continued)

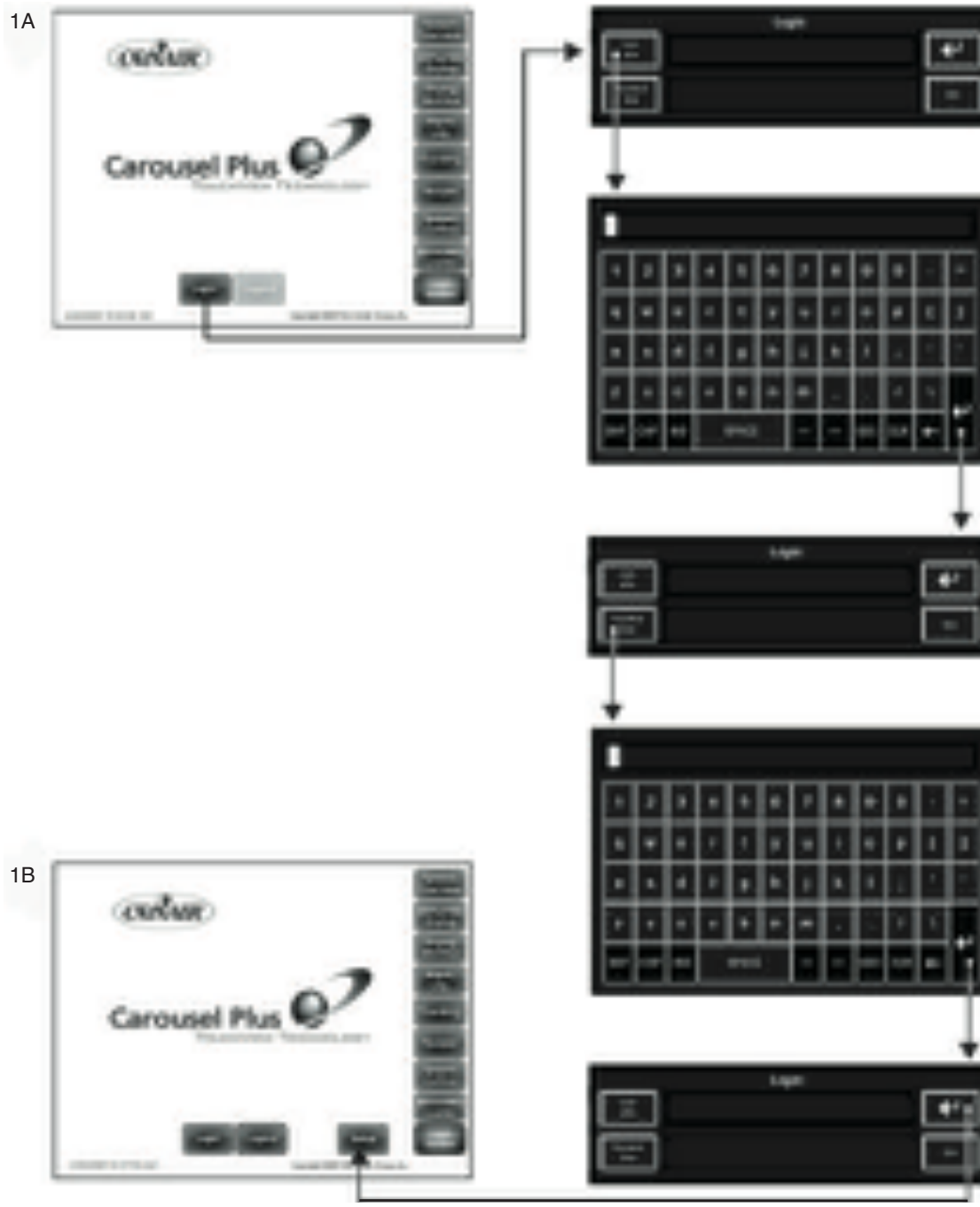
How to Navigate the Control Screens (continued)

When a system component is to be selected from a list of parameters, the "Up" and "Down" arrows can be used to highlight the selection. Press the “Enter” button to activate the selection.



Control Function Flow Charts

Login Flow Chart

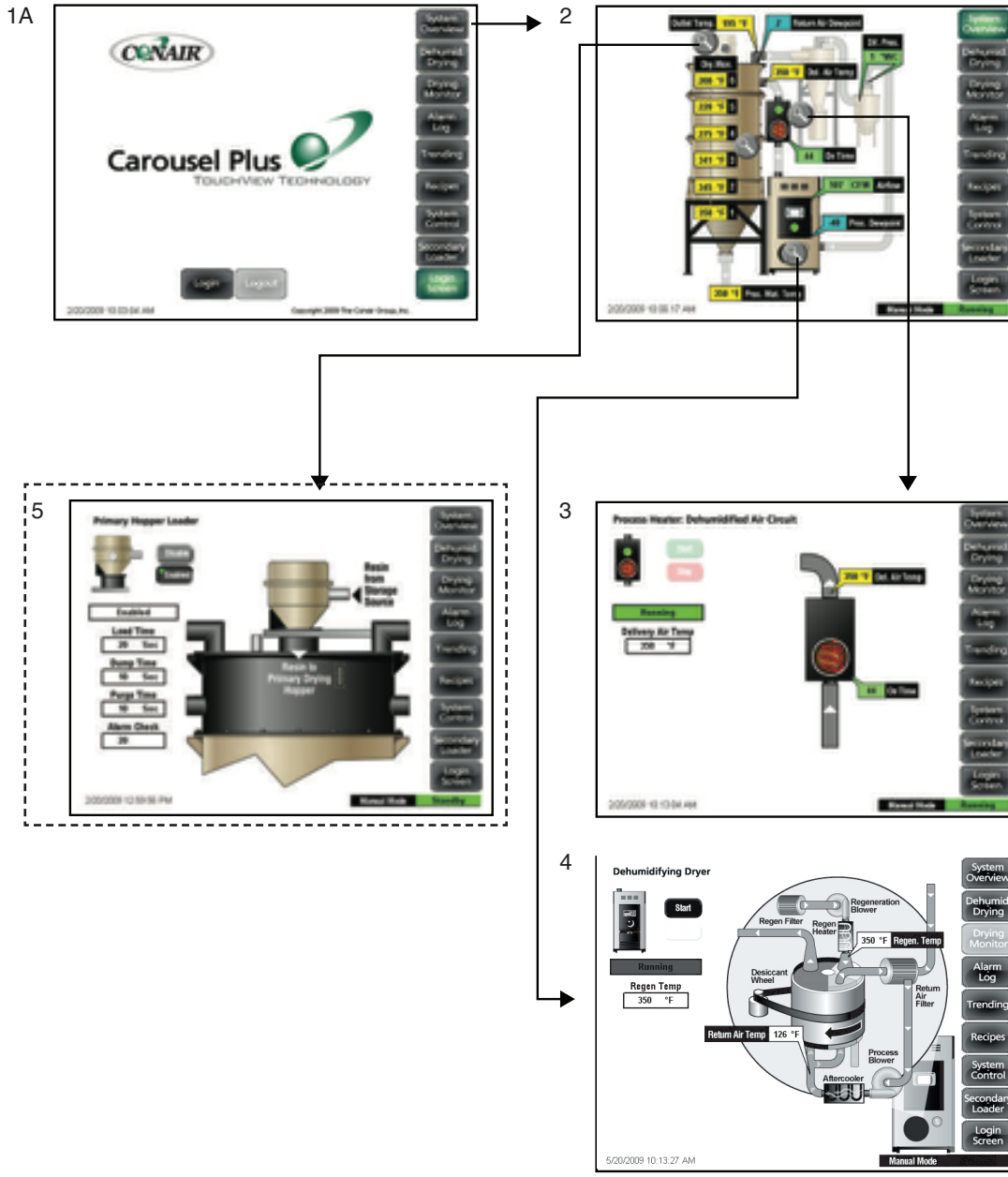


(continued)

Operation - Basic Controls

Control Function Flow Charts (continued)

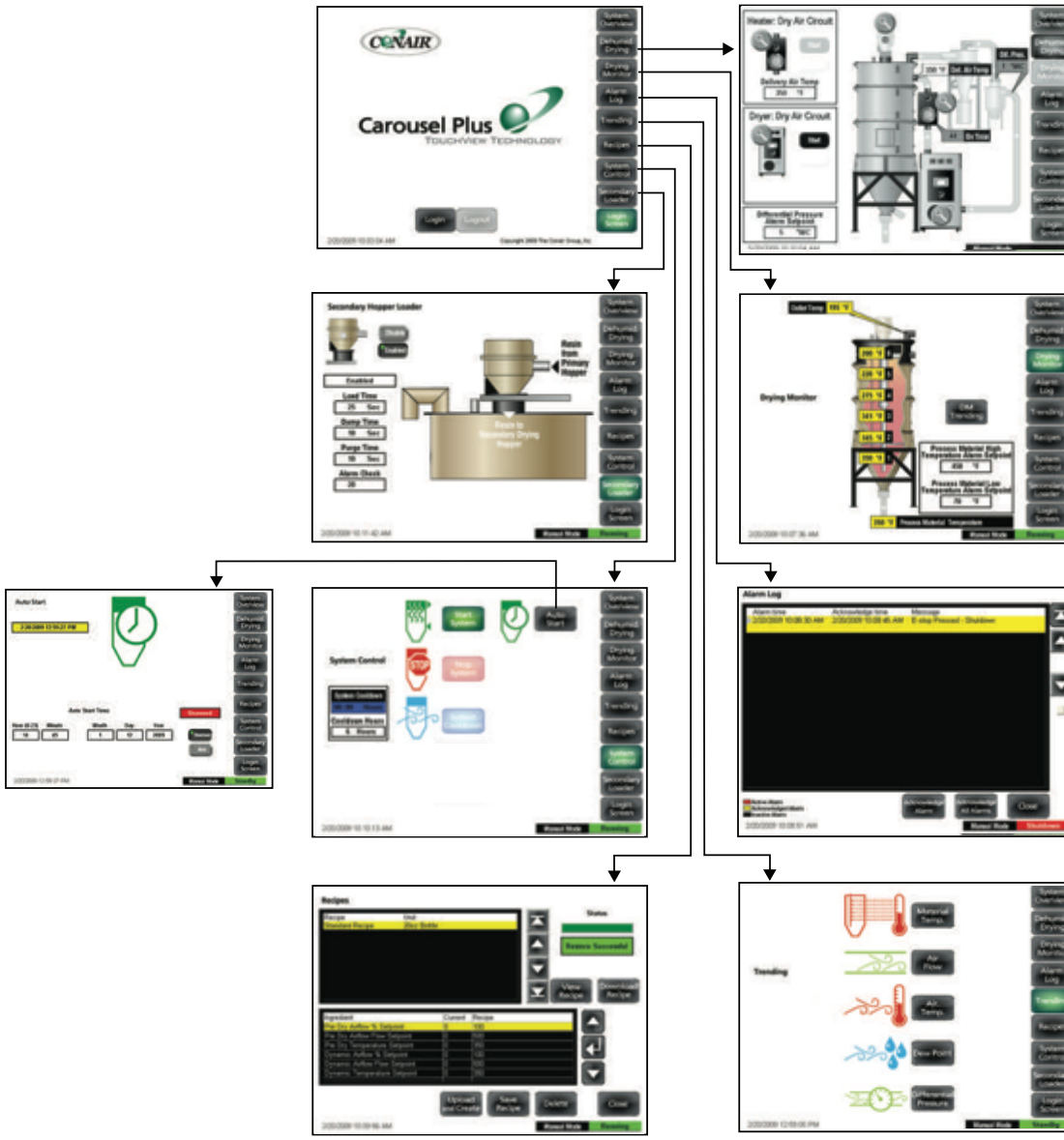
Operation Flow Chart 1



(continued)

Control Function Flow Charts (continued)

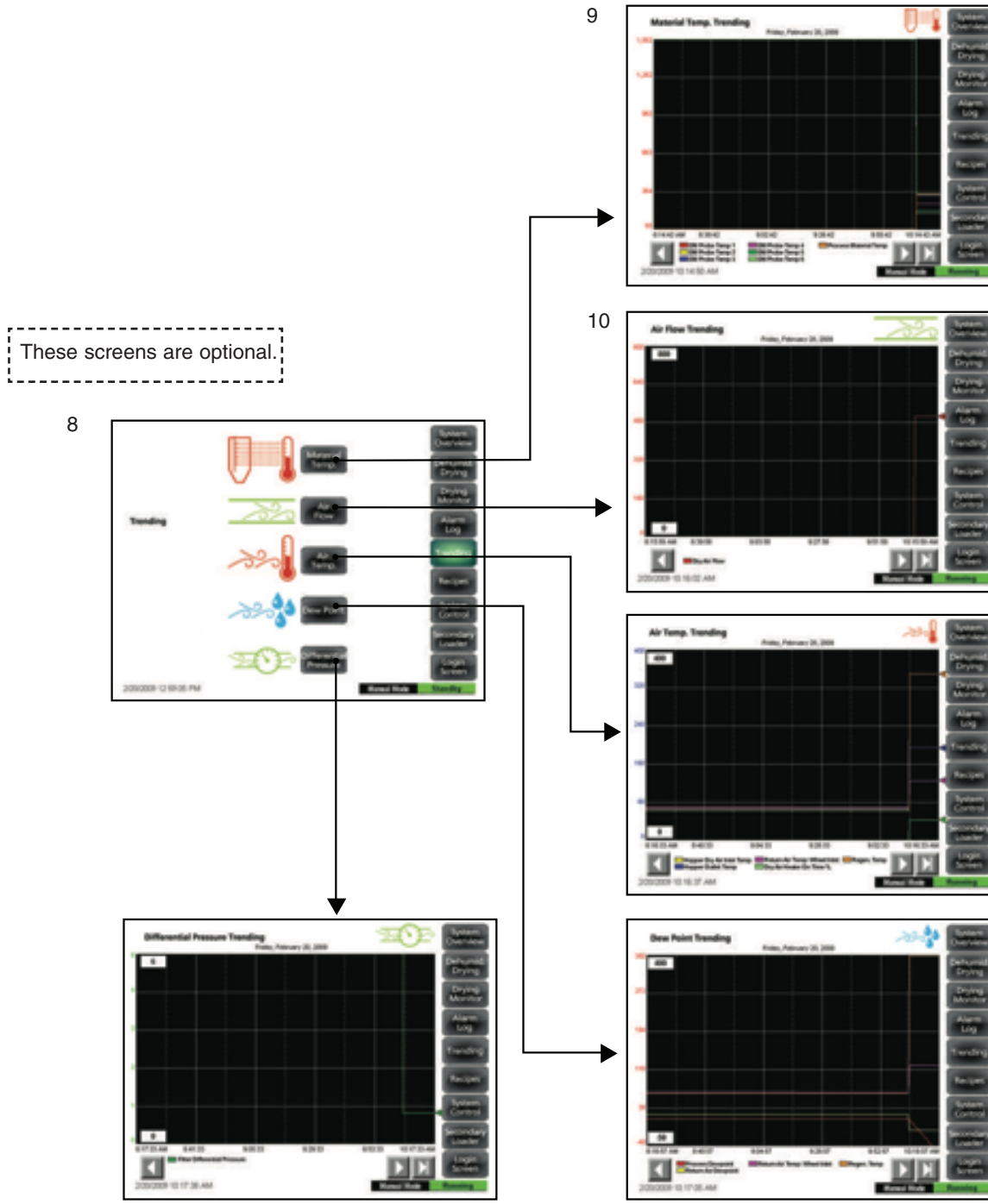
Operation Flow Chart 2



(continued)

Control Function Flow Charts (continued)

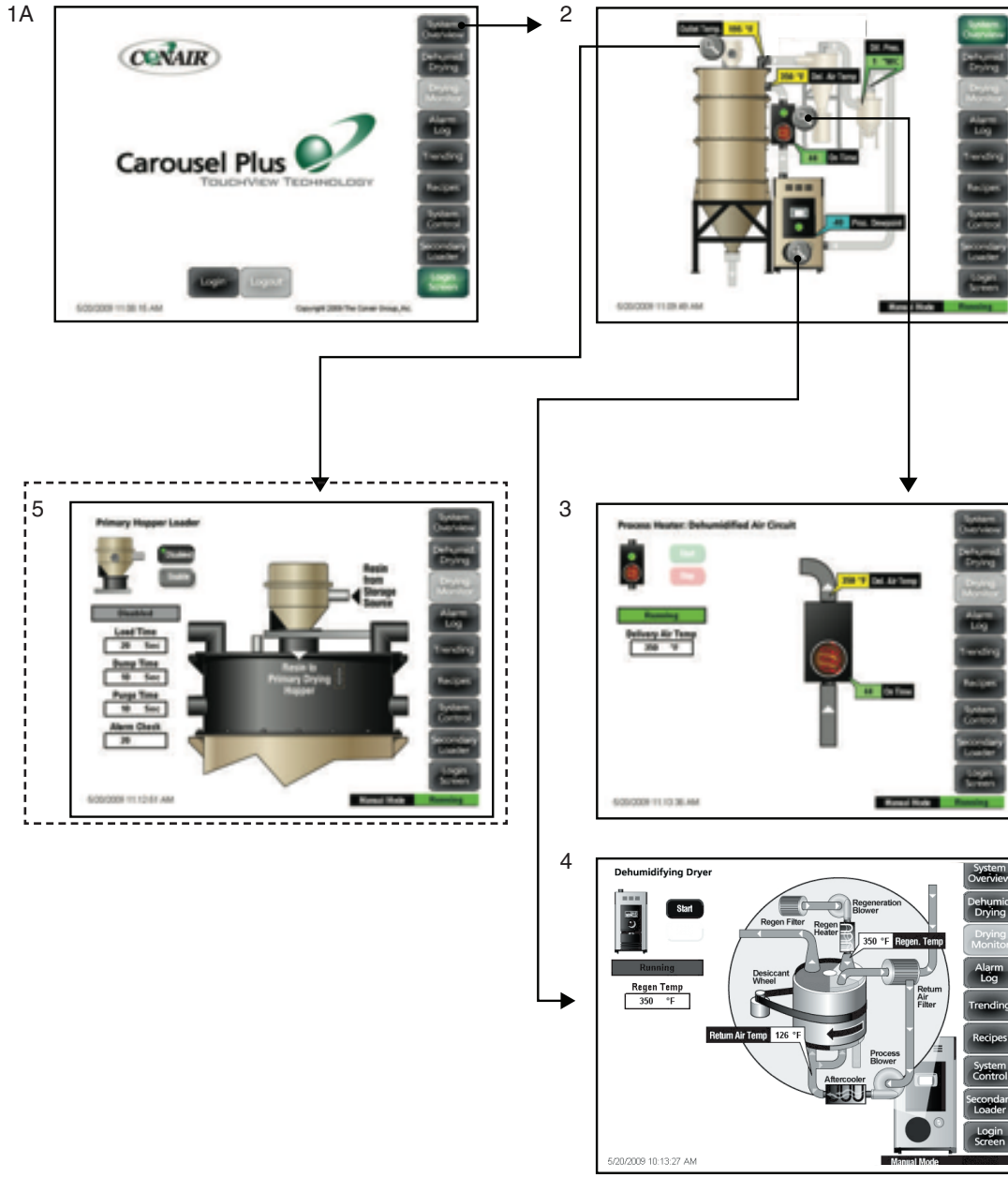
Operation Flow Chart 3



Operation - Dew Point Package Controls

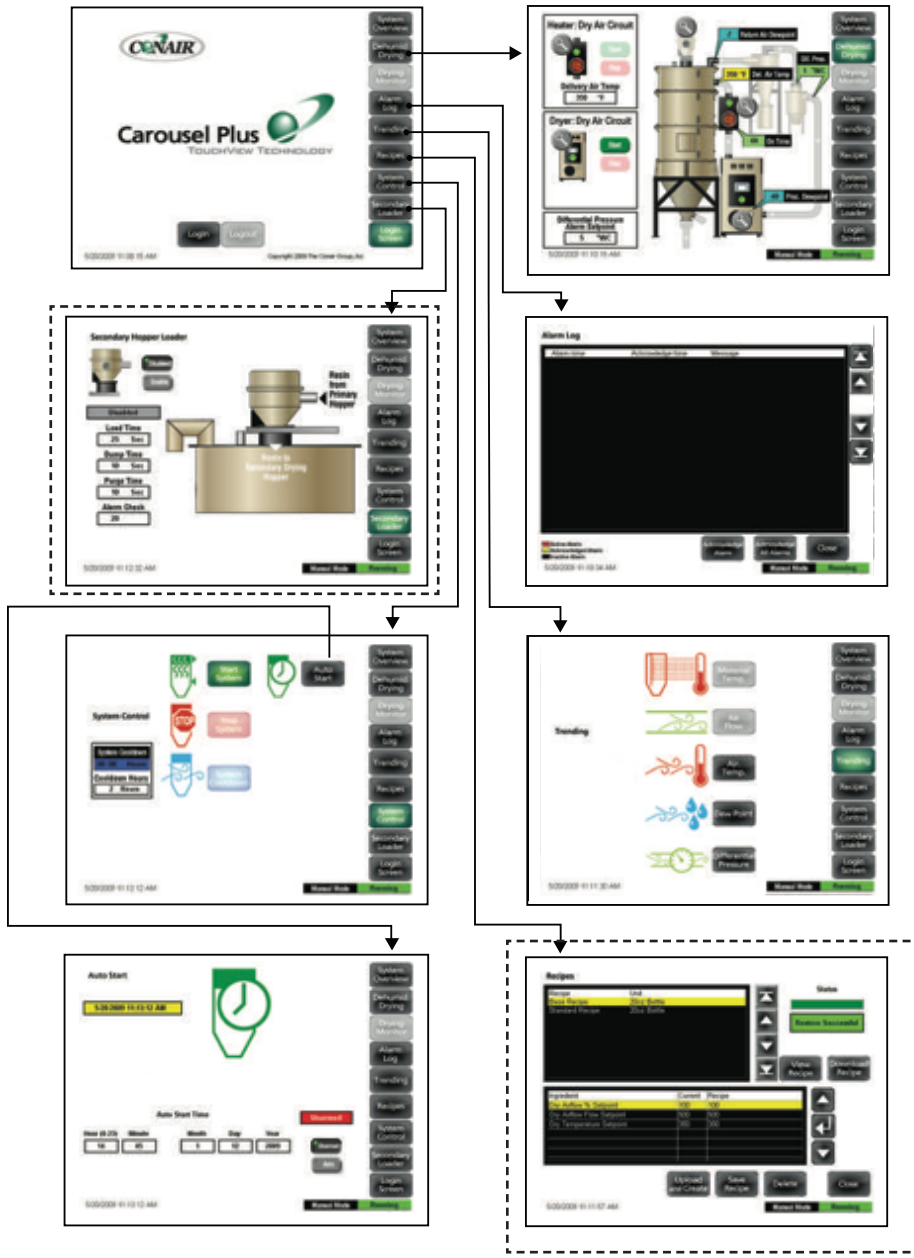
Control Function Flow Charts (continued)

Operation Flow Chart 1



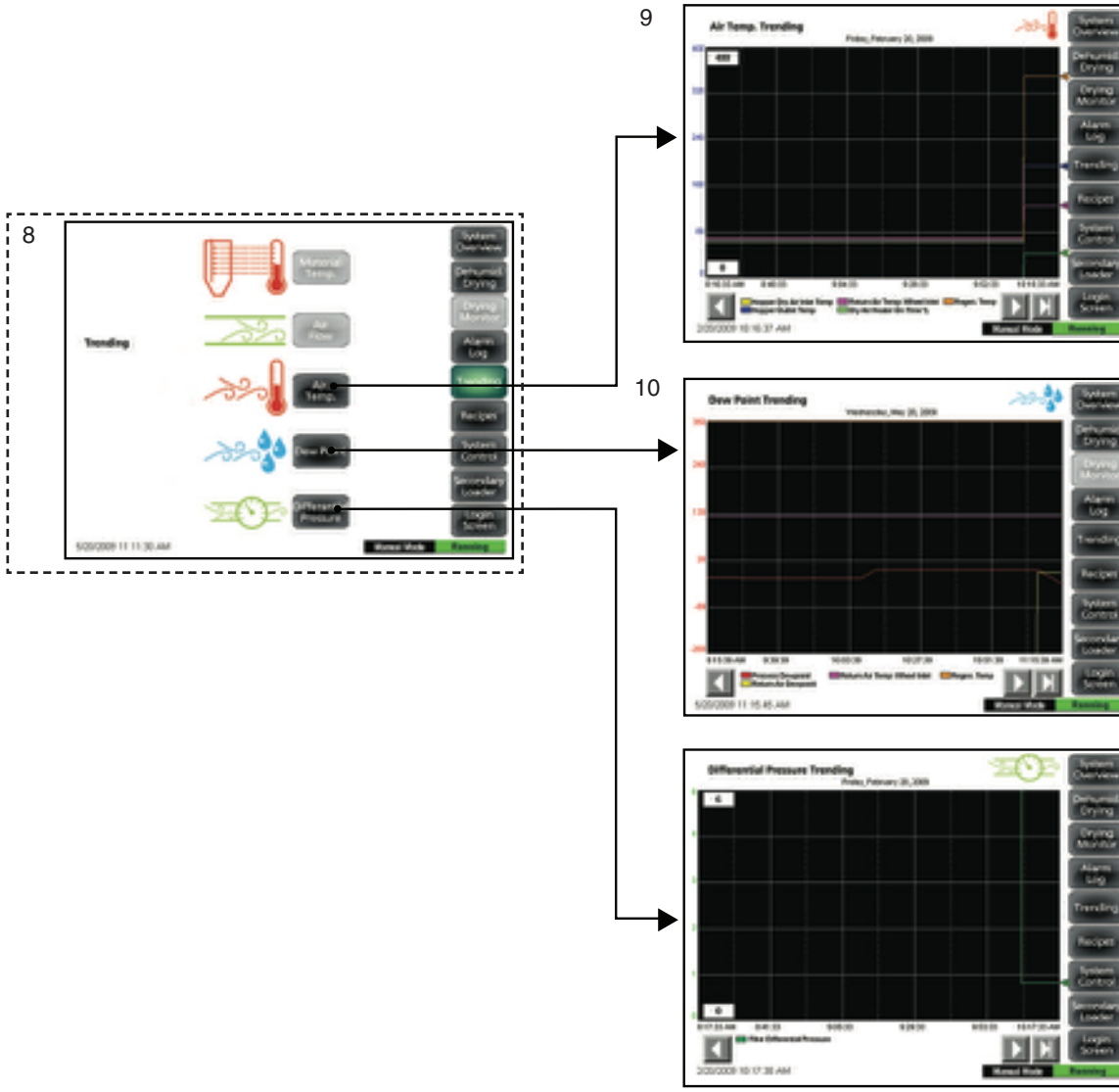
Control Function Flow Charts (continued)

Operation Flow Chart 2



Control Function Flow Charts (continued)

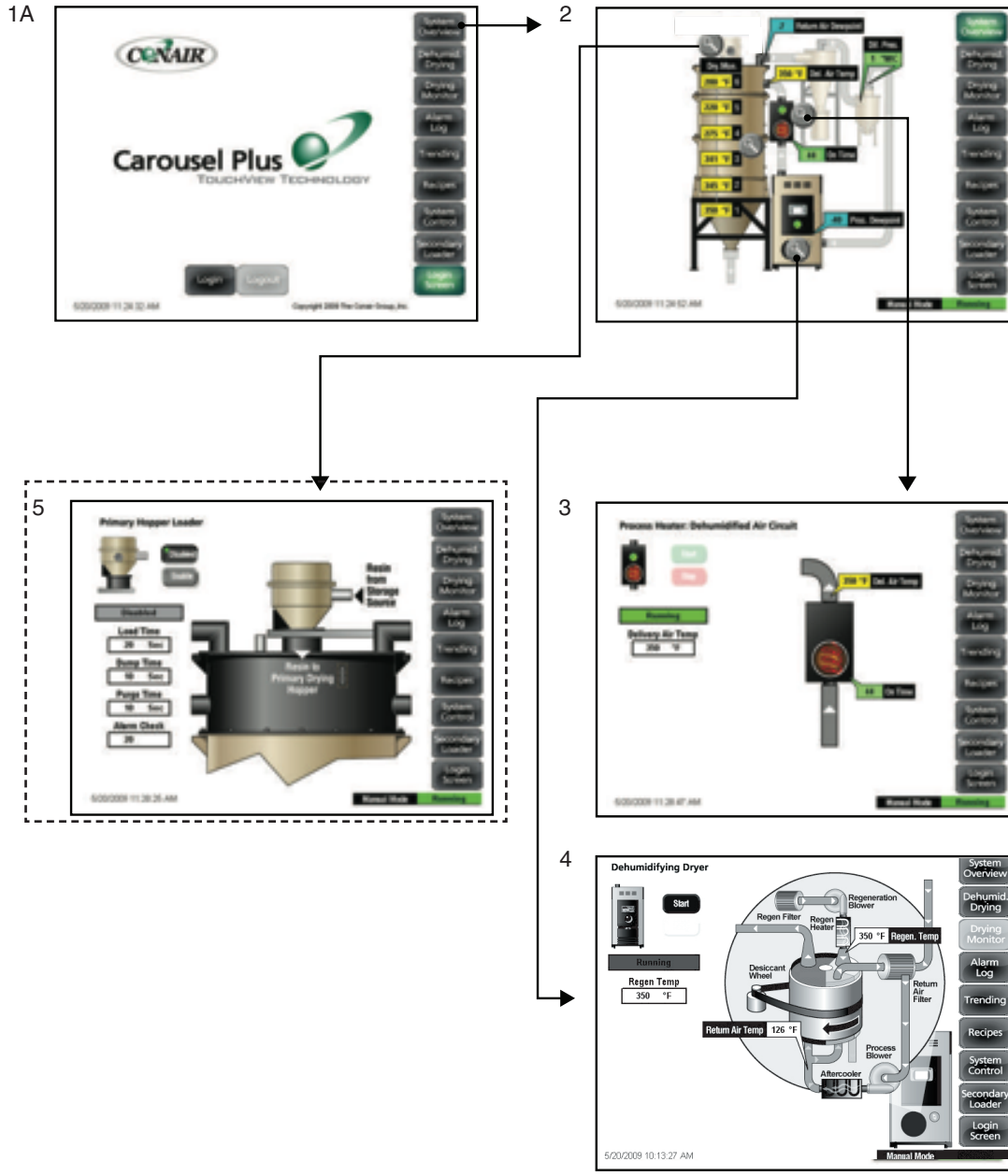
Operation Flow Chart 3



Operation - Drying Monitor Package Controls

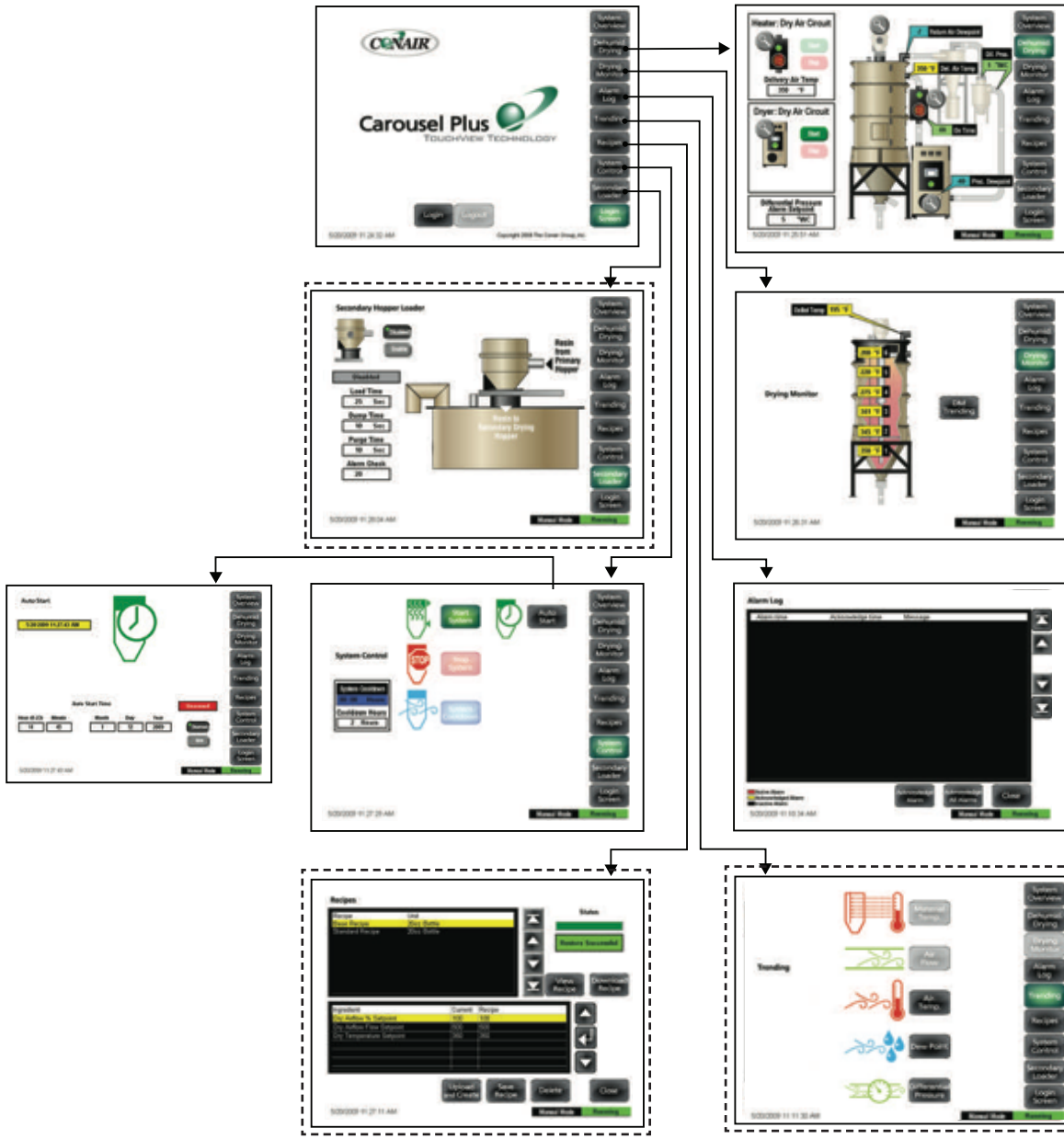
Control Function Flow Charts (continued)

Operation Flow Chart 1

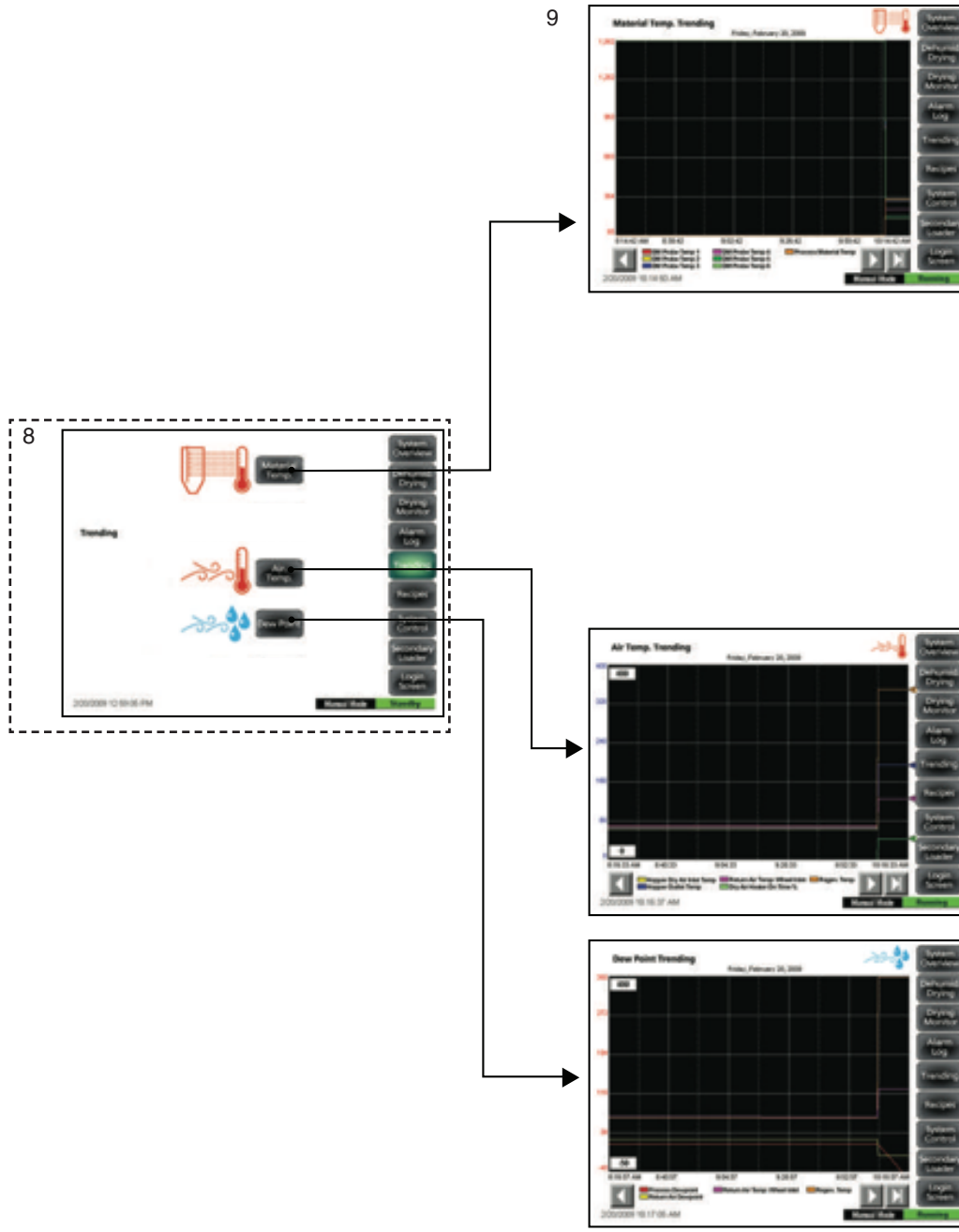


Control Function Flow Charts (continued)

Operation Flow Chart 2



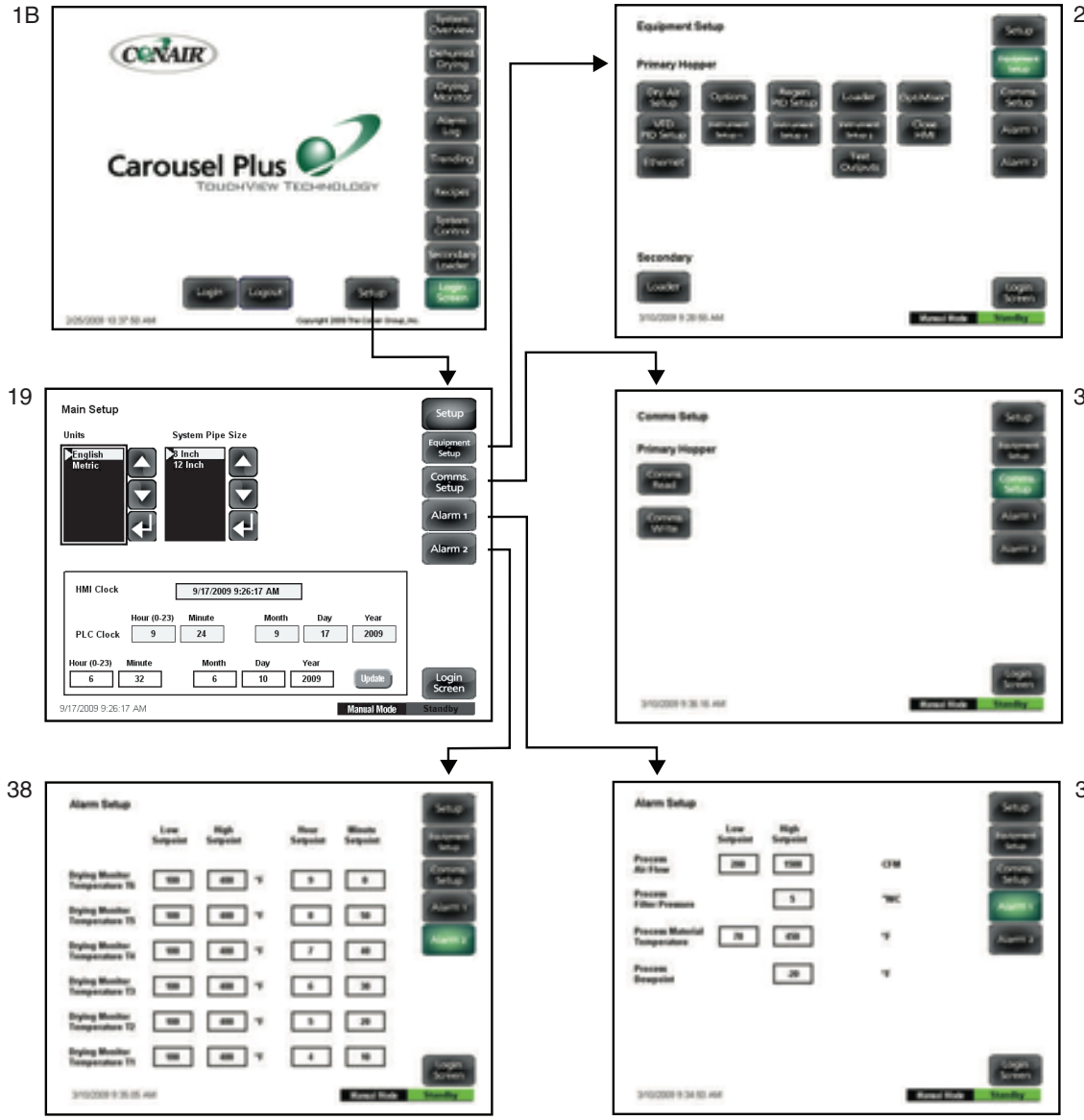
Control Function Flow Charts (continued)
Operation Flow Chart 3



Operation - Setup Control

Control Function Flow Charts (continued)

Setup Flow Chart 1



Note: Options not originally purchased can be purchased through Conair Parts and Service. Passcode is required to activate options.

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(continued)

Control Function Flow Charts (continued)

Equipment Setup Flow Chart 1

Note: Options not originally purchased can be purchased through Conair Parts and Service. Passcode is required to activate options.

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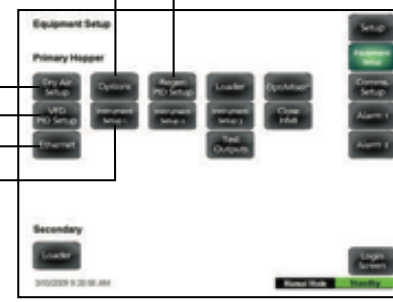
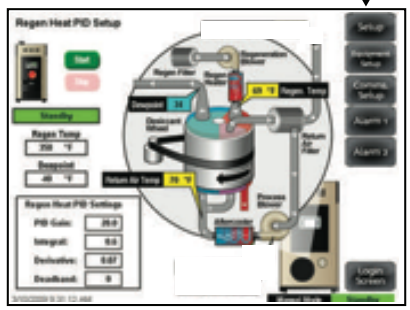
These screens are optional.

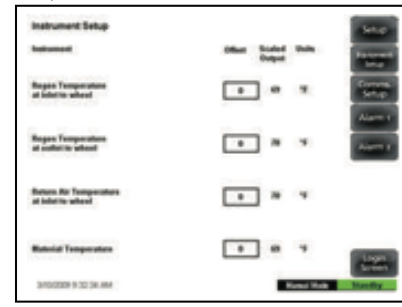
20



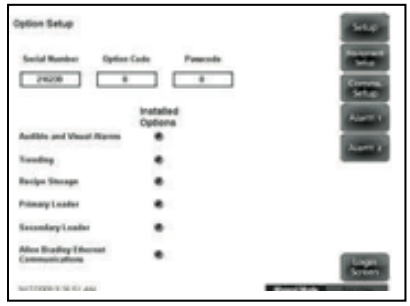
26



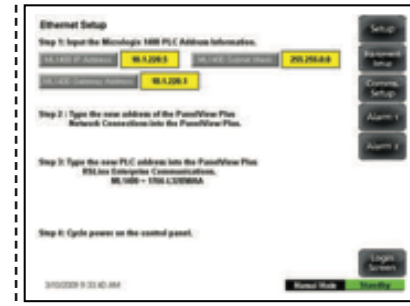
25



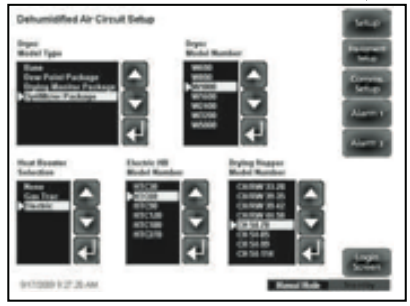
24



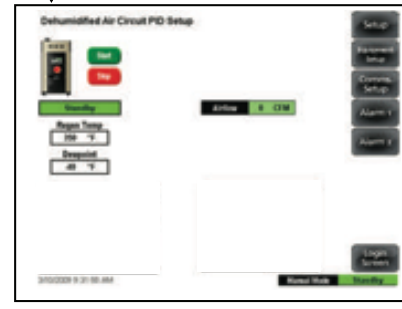
23



21



22

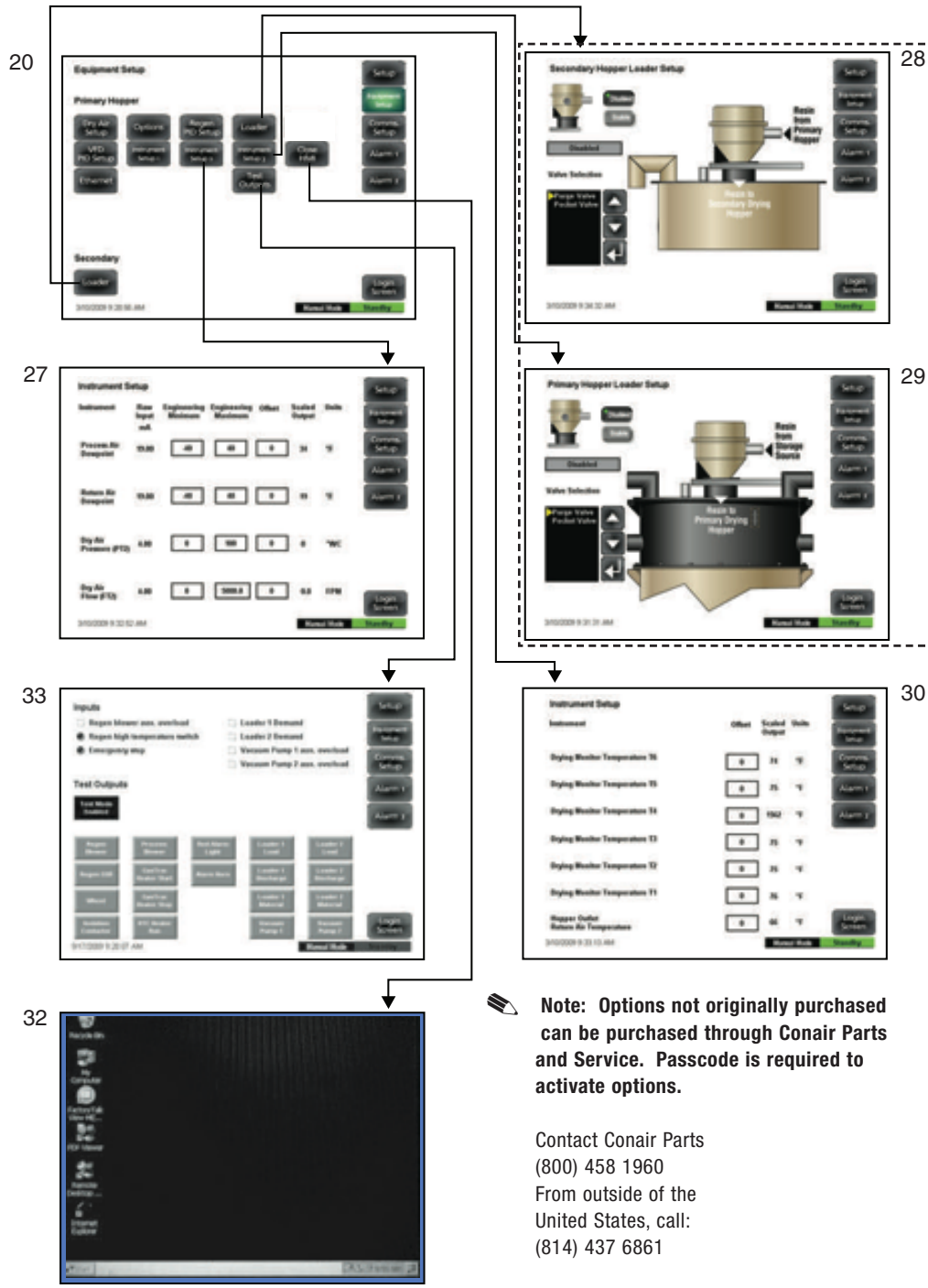


(continued)

Control Function Flow Charts (continued)

Equipment Setup Flow Chart 2

These screens are optional.



Note: Options not originally purchased can be purchased through Conair Parts and Service. Passcode is required to activate options.

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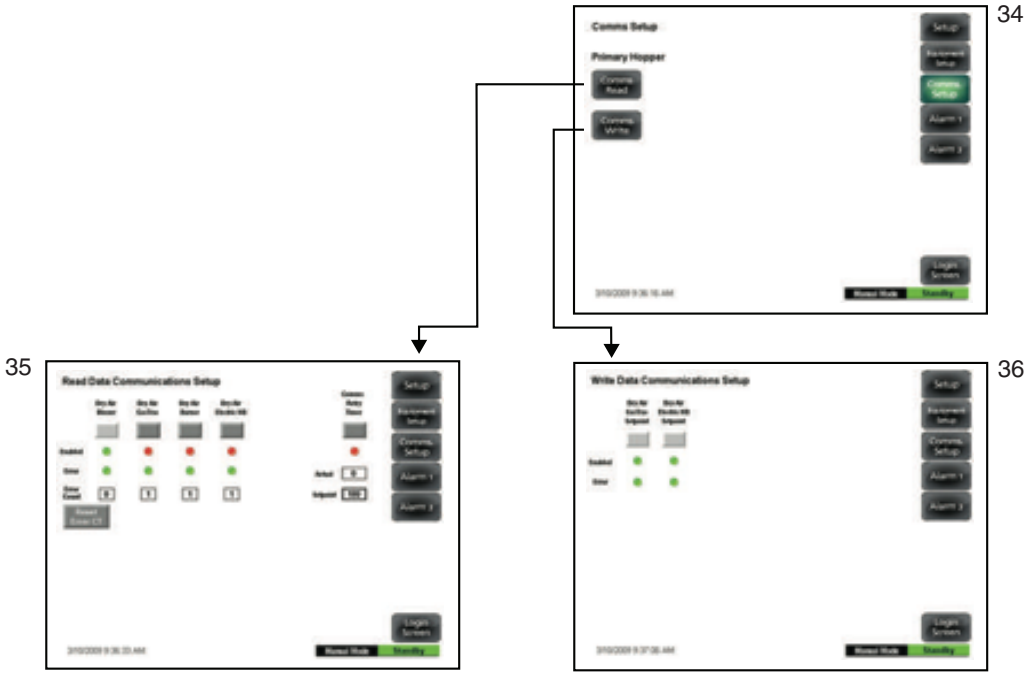
(continued)

Control Function Flow Charts (continued)

Communications Setup Flow Chart



Note: Options not originally purchased can be purchased through Conair Parts and Service. Passcode is required to activate options.

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United States, call:
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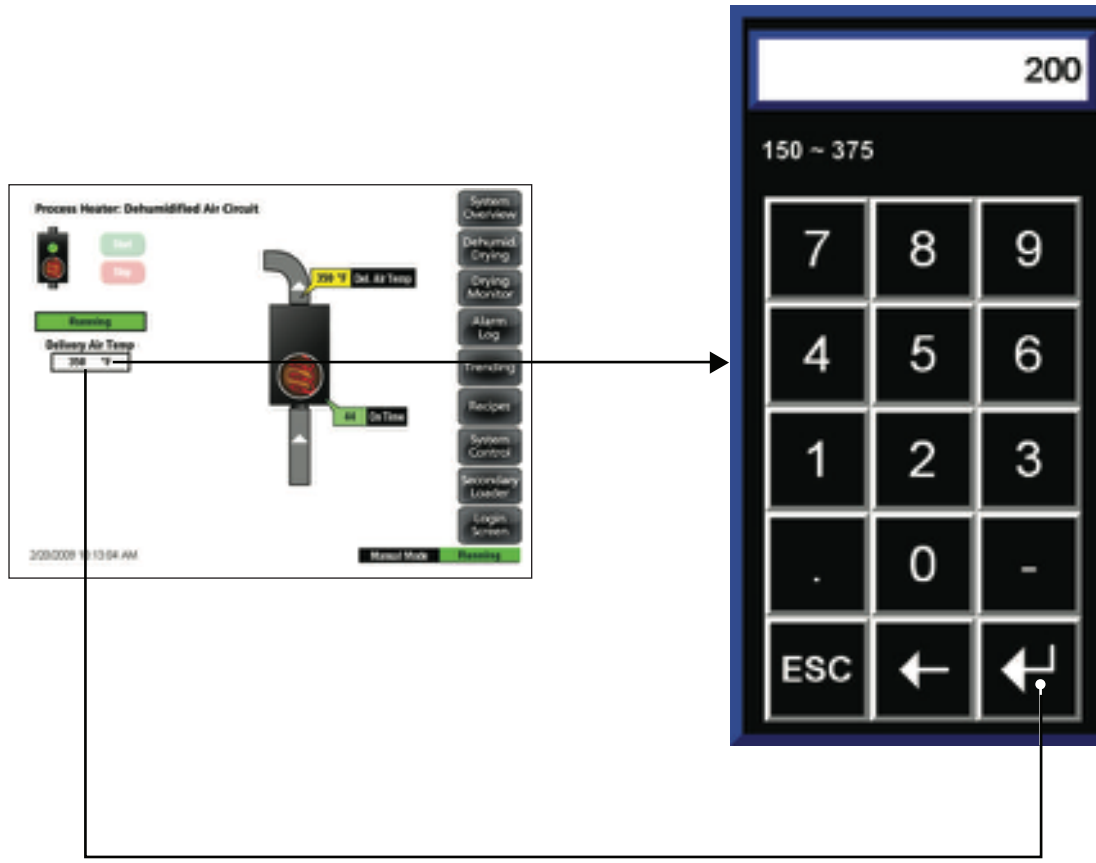
Control Function Flow Charts (continued)

Example Set Point Change



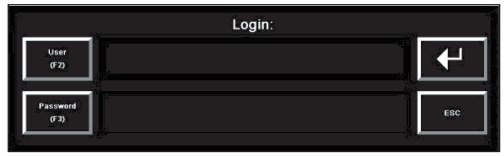
Control Function Descriptions

Screen 1A - Login Screen

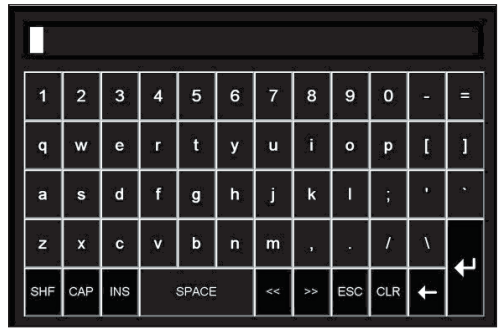
Upon start-up, the Login screen (Screen 1A) appears. This screen allows the user to login to the Carousel Plus Dryer at the appropriate security level.

To login:

1 Press the "Login" button. This provides access to the "User/Password" window.



When either the "User" or "Password" buttons are pressed, a pop-up keyboard window appears that allows the user to enter their user name or password.



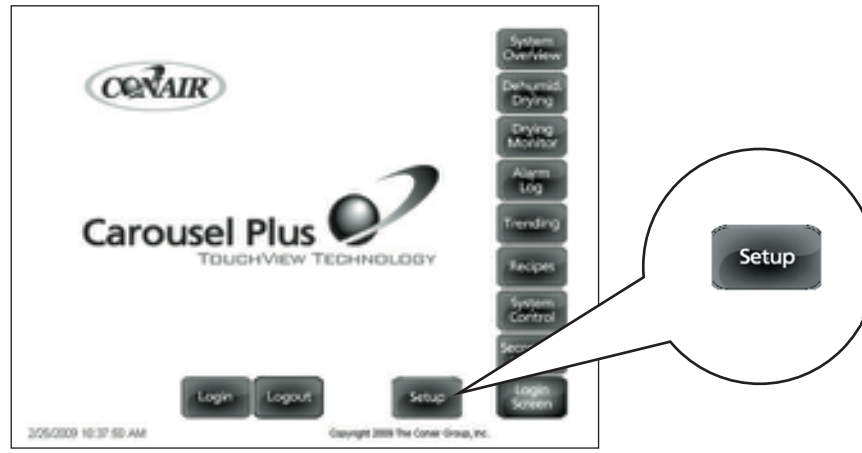
NOTE: From the "Login" screen, a user can navigate through all of the Carousel Plus Dryer Control screens without logging onto the system. However, the user will not be able to change any Set points until a correct password is used to login.

(continued)

2 **Press the "Enter" button** to return to the "User/Password" window, after the user name or password has been entered.

3 **Press the "Enter" button again** to access the "Login Setup" screen (Screen 1B).

Screen 1B - Login Setup

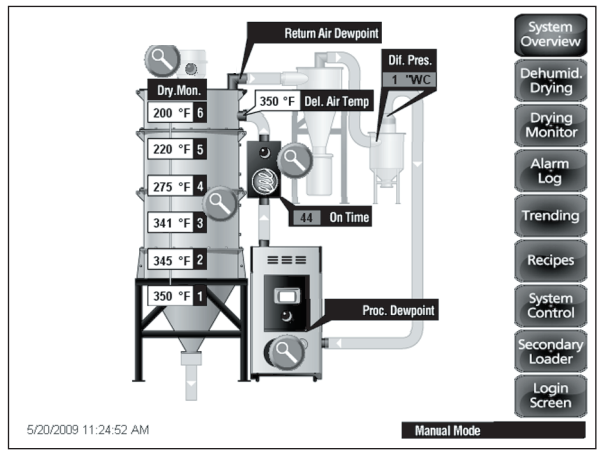


The Login Setup screen allows the user to access the system parameter screens by pressing the **"Setup"** button on the bottom, right side of the screen.

(continued)

Control Function Descriptions (continued)

Screen 2 - System Overview Screen



NOTE: When a "Magnifying Glass" icon appears on any screen within the Carousel Plus Dryer control, touching the icon will take the user to screens that contain more specific information concerning that component. These screens also allow the user to turn system components on or off and to enter set points.

To access the System Overview Screen (Screen 2):

1 **Press the "System Overview" button from the Login Screen,** after logging-in to the Carousel Plus Dryer Control.

The System Overview screen provides the user with the current information for all components within the Carousel Plus Dryer including the hopper, the Dehumidifying Drying circuit (optional cyclone separator, optional dust collector, dryer, GasTrac or HTC heater). The information provided by this screen includes the temperature at various levels within the hopper as well as temperatures, dew points, differential pressures, and airflow rates of the air circulating within the system.

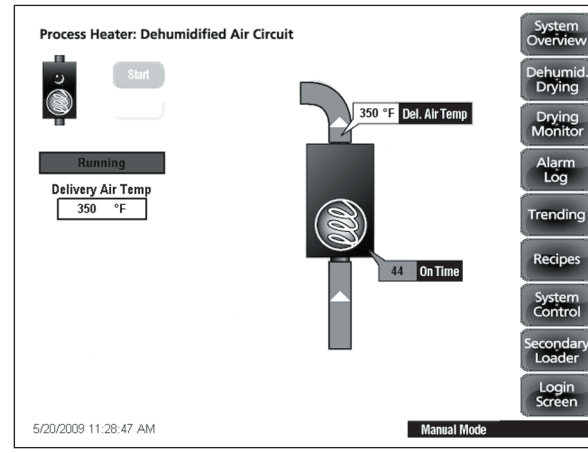
The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 3 - Process Heater: Dehumidified Air Circuit Screen

NOTE: Screen 3 shows the type of heater installed in the Dehumidifying Drying Circuit of the Carousel Plus Dryer System. If a GasTrac has been installed, the image on the screen will reflect a gas heater (flame). If an HTC has been installed, the image on the screen will reflect an electric heater (heating coil). The screen used in this example reflects an electric heater (heating coil).

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Process Heater: Dehumidified Air Circuit Screen (Screen 3):

1 **Press the Magnifying Glass icon button** associated with the heater in the dehumidifying drying circuit on Screens 2 or 6.

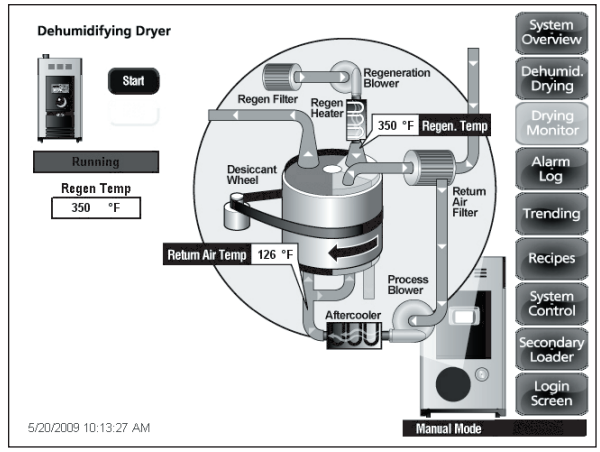
The Process Heater: Dehumidified Air Circuit screen provides the user with the current information concerning the on time %, the flame signal (gas heaters only), and the delivery air temperature. It also tells the user the current status of the heater (running or idle), the delivery air temperature set point, and allows the user to Start or Stop the heater. If the user is logged-in at the proper security level, the delivery air temperature set point can be changed on this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 4 - Dehumidifying Dryer Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Dehumidifying Dryer Screen (Screen 4):

1 **Press the Magnifying Glass icon button** associated with the dryer in the dehumidifying drying circuit on Screens 2 or 6.

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

- Regeneration Temperature (Regen. Temp)
- Return Air Temperature (Temp)
- Dew point

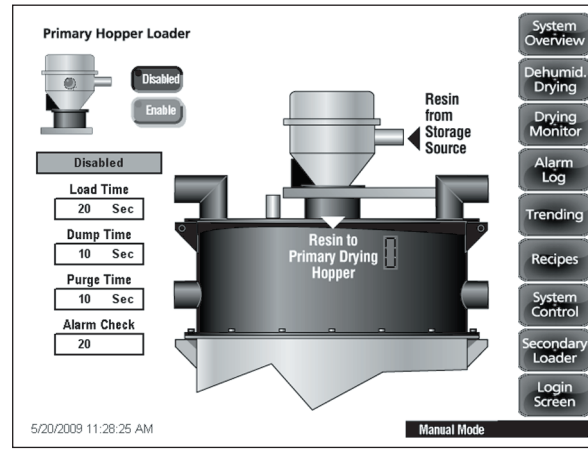
It also tells the user the current status of the dryer blower (running or idle) as well as the regeneration temperature, and dew point. If the user is logged-in at the proper security level, the regeneration temperature, dew point, and airflow.

This screen also allows the user to start or stop the dryer. The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 5 - Primary Hopper Loader Screen (optional)

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Primary Hopper Loader Screen (Screen 5):

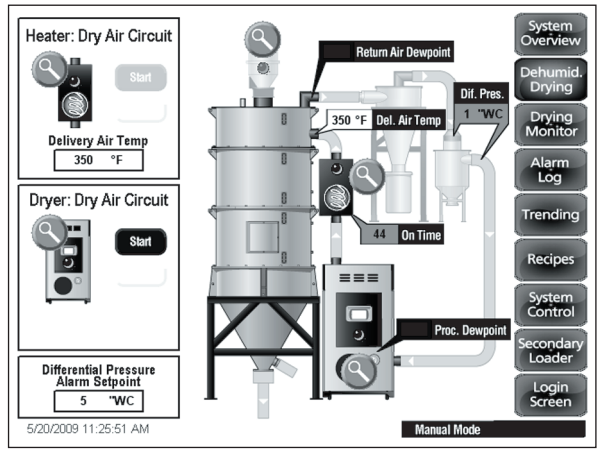
1 **Press the Magnifying Glass icon button** associated with the optional receiver in the dehumidifying drying circuit on Screens 2 or 6.

The Primary Hopper Loader screen allows the user set the load time, dump time, purge time and alarm checks of the receiver. If the user is logged-in at the proper security level, these settings can be changed from this screen. *See specific receiver's manual for correct settings of these parameters.* Once the correct times have been entered, press the "Enabled" button to activate the primary receiver. Pressing the "Disabled" button will de-activate the receiver. The receiver's current status will be displayed under the receiver's icon in the top left side of this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

Control Function Descriptions (continued)

Screen 6 - Dehumidifying Drying Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Dehumidifying Drying Screen (Screen 6):

1 Press the "Dehumid. Drying" button located on the right side of the screen.

The "Dehumid. Drying" screen provides the user with the current information for the system components within the Dehumidifying Drying Circuit of the Carousel Plus Dryer including the optional cyclone separator, optional dust collector, dryer, and GasTrac or HTC heater. The information provided on this screen includes the delivery air temperature at the hopper, the return air dew point, the process dew point (opt.) in the dryer, the "On" time at the heater and the process material temperature leaving the hopper.

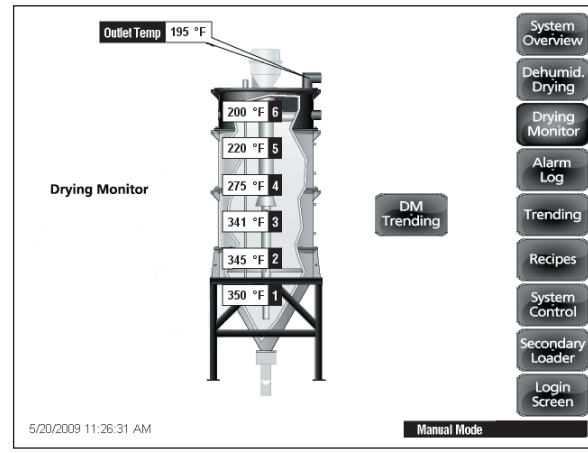
The Dehumid. Drying screen also allows the user to start or stop the heater or dryer and lists the delivery air temperature, the airflow at the dryer, and the differential pressure alarm set points. If the user is logged-in at the proper security level, the delivery air temperature, and differential pressure alarm set points can be changed from this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 7 - Drying Monitor Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Drying Monitor Screen (Screen 7):

1 Press the "Drying Monitor" button located on the right side of the screen.

The "Drying Monitor" screen provides the user with the current information for the system's hopper. The information provided on this screen includes the temperatures at various levels within the hopper.

The Drying Monitor screen also provides the user with the process material high and low temperature alarm set points.

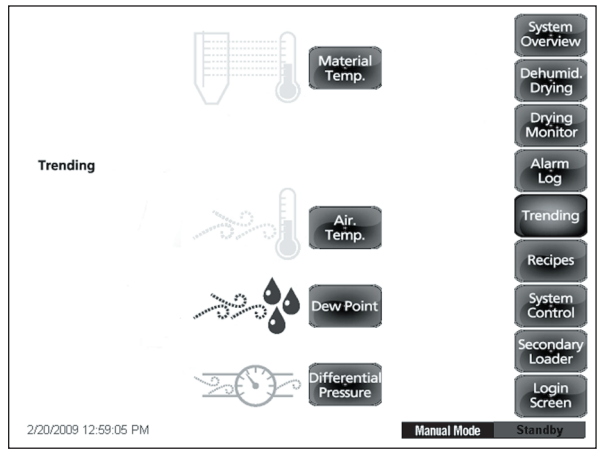
The "DM Trending" button on this screen gives the user instant access to the Material Temperature Trending screen (Screen 9).

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 8 - Trending Screen (optional)



To access the Trending Screen (Screen 8):

1 Press the "Trending" button located on the right side of the screen.

The "Trending" screen allows the user to select a specific type of trending monitor.

The choices are:

- Material Temperature (Temp.) (Screen 9)
- Air Temperature (Temp.) (Screen 11)
- Dew Point (Screen 12)

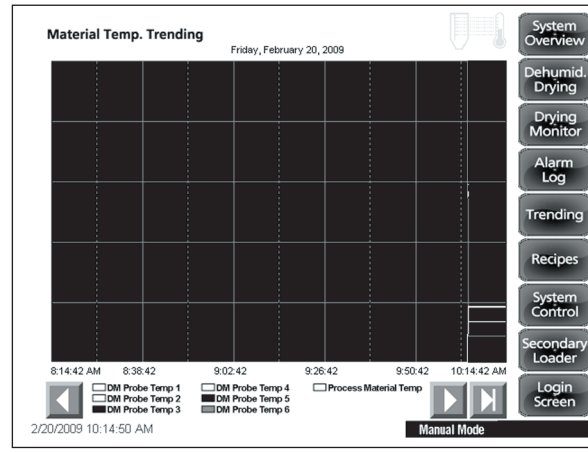
To select the specific type of trending, press the appropriate button on the Trending screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 9 - Material Temperature Trending Screen (optional)



To access the Material Temperature Trending Screen (Screen 9):

1 **Press the "Material Temp." button** located on in the center of the Trending Screen (Screen 8).

The Material Temperature Trending screen allows the user to view the material temperature trend vs. time at six (6) locations in the CH Hopper. The temperature reading locations are denoted by various colors and start at Location 6 (top of the hopper) and end with Location 1 (within the hopper cone) and Process Material Temp. (exiting the hopper). The colors associated with the locations are:

Red	=	DM Probe Temp. 1 (hopper cone)
Yellow	=	DM Probe Temp. 2
Blue	=	DM Probe Temp. 3
Purple	=	DM Probe Temp. 4
Dark Green	=	DM Probe Temp. 5
Light Green	=	DM Probe Temp. 6 (Top of hopper).

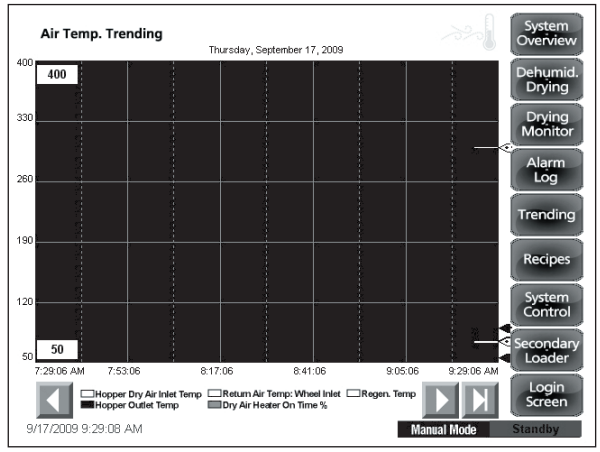
The Material Temperature Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last 37-hour period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present time from any time within the trending record.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 11 - Air Temperature Trending Screen (optional)



To access the Air Temperature Trending Screen (Screen 11):

1 **Press the "Air Temp." button** located in the center of the Trending Screen (Screen 8).

The Air Temp. Trending screen allows the user to view the air temperature (F°) trend vs. time at four (4) locations in the Carousel Plus Dryer. The air temperature reading locations are denoted by various colors. The colors associated with the locations are:

Yellow	= Hopper Dry Air Inlet Temperature
Purple	= Desiccant Wheel Inlet Temperature (within the Dryer)
Light Green	= Dry Air Heater On Time %
Orange	= Regeneration Temperature (within the Dryer)

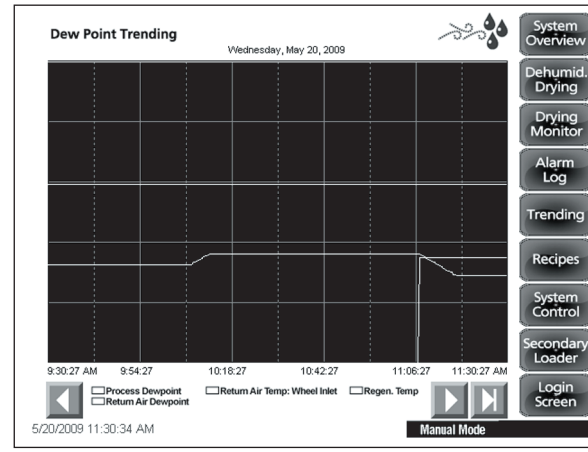
The Air Temp. Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last 37-hour period. The scroll buttons near the bottom of the screen allow the user to scroll back to an earlier time or forward to the present time, plus jump to the present time from any time within the trending record.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 12 - Dew Point Trending Screen (optional)



To access the Dew Point Trending Screen (Screen 12):

1 **Press the "Dew Point" button** located in the center of the Trending Screen (Screen 8).

The Dew Point Trending screen allows the user to view the dew point trend vs time at two (2) locations in the Carousel Plus System. The dew point reading locations are denoted by various colors. The colors associated with the locations are:

Red	= Process Dew point
Yellow	= Return Air Dew point
Purple	= Return Air Temp. - Wheel (Desiccant) Inlet
Orange	= Regeneration Temperature (within the Dryer)

The Dew Point Trending screen shows a snap shot of the last two (2) hours of operation and records and saves trending data for the last 37-hour 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 time from any time within the trending record.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen. (continued)

Control Function Descriptions (continued)

Screen 14 - Alarm Log Screen

To access the Alarm Log Screen (Screen 14):

1 **Press the "Alarm Log" button** located on the right side of the screen.

The Alarm Log screen provides the user with a list of the last 200 alarms that have been detected within the Carousel Plus Dryer. For each alarm, the alarm time, the acknowledge time (when applicable), and alarm message are listed.
The background colors are associated with the types alarms:

Red = Active Alarm
Yellow = Acknowledged Alarm
Black = Inactive Alarm

For more detailed information concerning the Carousel Plus Dryer alarms, *see Troubleshooting section.*

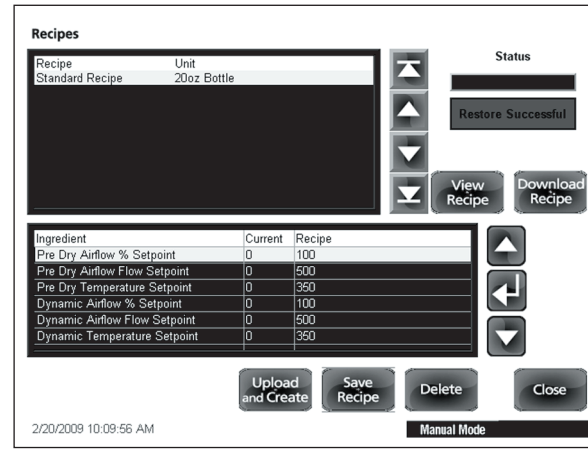
The scroll buttons on the right of the screen allow the user to scroll up or down though the alarm events or jump to the top or bottom of the alarm log. Near the bottom right of the screen are buttons that allow the user to acknowledge individual alarms, acknowledge all alarms, or close the Alarm Log screen and return to the previous screen.

Press the “Close” button to exit the Alarm Log screen and return to the previously viewed screen.

(continued)

Control Function Descriptions (continued)

Screen 15 - Recipe Screen (optional)



To access the Recipe Screen (Screen 15):

1 Press the "Recipes" button located on the right side of the screen.

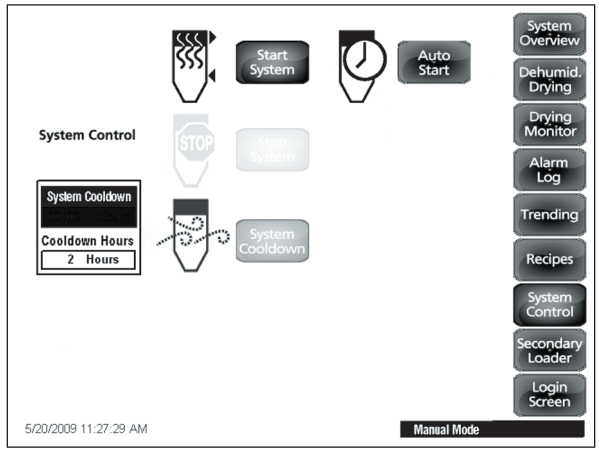
The Recipe Screen allows the user to select the specific dryer recipes for their material. Temperature set points can be configured to change an existing recipe or create a new recipe, delete a recipe and upload a recipe, depending upon the application. *See Operation section entitled, Using Dryer Recipes.*

Scroll buttons on the right side of the recipe windows allow the user to scroll through recipes and their individual parameters.

Press the “Close” button to exit the Recipe screen and return to the previously viewed screen.

Control Function Descriptions (continued)

Screen 16 - System Control Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the System Control Screen (Screen 16):

1 Press the "System Control" button located on the right side of the screen.

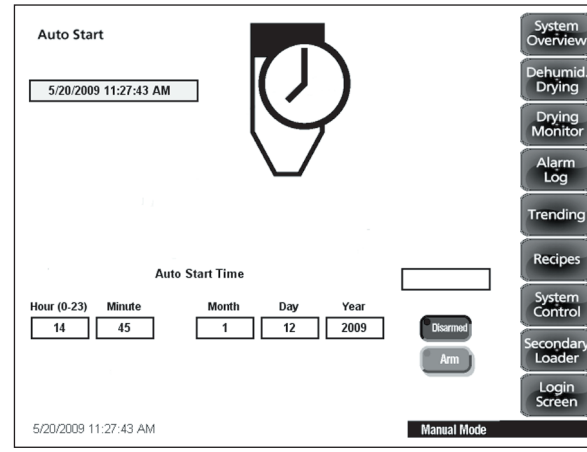
The System Control screen allows the user to start or stop the Carousel Plus Dryer System, activate the Auto Start timer, set and activate a system cool down timer.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 17 - Auto Start Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Auto Start Screen (Screen 17):

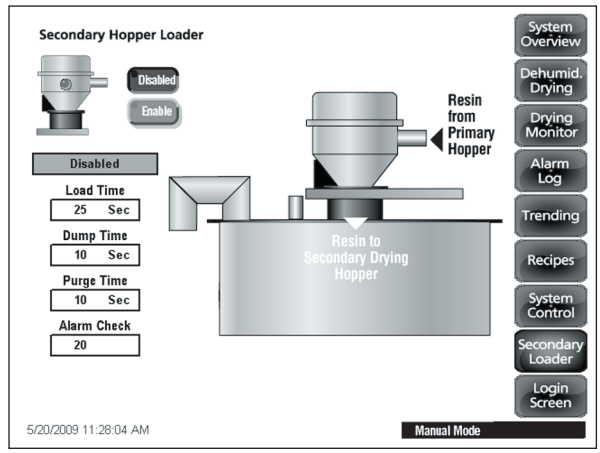
1 **Press the "Auto Start" button** located on top right side of the System Control Screen (Screen 16).

The Auto Start screen allows the user to set the start date and time of the Carousel Plus Dryer System. If the user is logged-in at the proper security level, the start time (hours and minutes) and date (month, day and year) can be changed from this screen. Once the correct start time and date has been entered, press the “Armed” button to activate the Auto Start function. Pressing the “Disarmed” button will de-activate Auto Start. The Auto Start function’s current status will be displayed on the right side of this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

Control Function Descriptions (continued)

Screen 18 -Secondary Hopper Loader Screen (optional)



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Secondary Hopper Loader Screen (Screen 18):

1 Press the "Secondary Loader" button located on the right side of the screen.

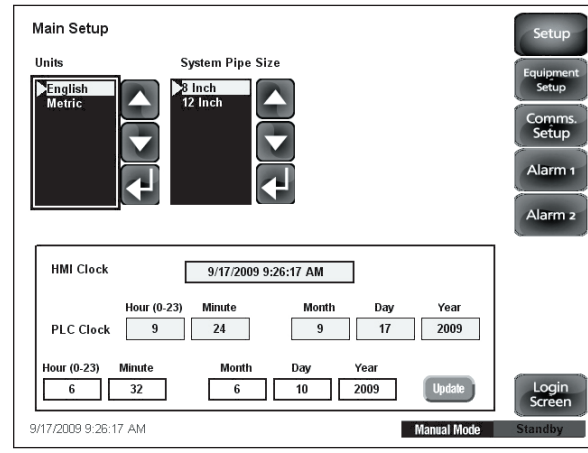
The Secondary Hopper Loader screen allows the user to set the load time, dump time, purge time and alarm checks of the optional receiver. If the user is logged-in at the proper security level, these settings can be changed from this screen. *See specific receiver's manual for correct settings of these parameters.* Once the correct times have been entered, press the "Enabled" button to activate the optional secondary receiver. Pressing the "Disabled" button will de-activate the receiver. The receiver's current status will be displayed under the receiver's icon in the top left side of this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 19 - Main Setup Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Main Setup Screen (Screen 19):

1 **Press the "Setup" button** located on the right side of Login Screen (Screen 1B), after logging in at the appropriate user level.

The Main Setup screen allows the user to change the system's measurement unit usage (English or Metric), system pipe size (8 and 12 inch {20.3 and 30.5 cm}) and the touch screen control's clock.

To set the dryer control units and system pipe size:

1 **Use the up and down arrow buttons to make the selection.** The current selection will be indicated by a yellow triangle.

2 **Press the "Enter" button to lock in the current selection.**

To update/change the dryer control's clock and date:

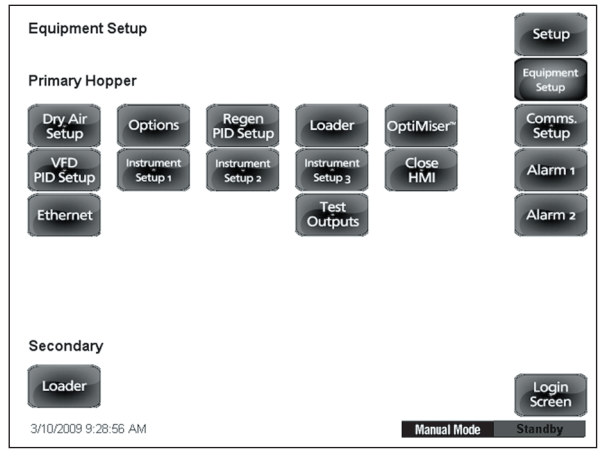
1 **Press the appropriate box under its heading. Use the pop-up keyboard window to enter the new time and press the "Enter" key to lock in the time.**

1 **Press the "Update" button to update the control's clock.**

(continued)

Control Function Descriptions (continued)

Screen 20 -Equipment Setup Screen



To access the Equipment Setup Screen (Screen 20):

1 **Press the "Equipment Setup" button** located on the right side of Main Setup Screen (Screen 19).

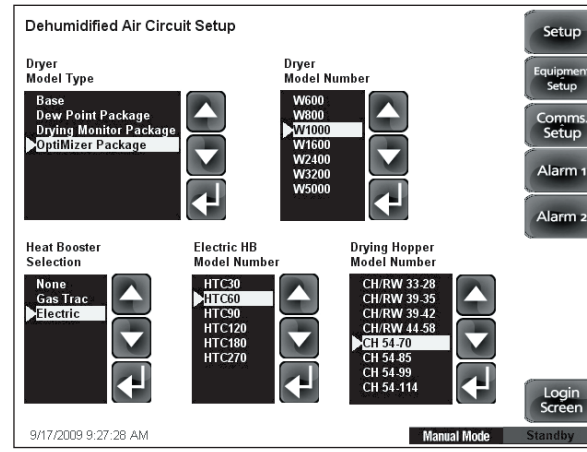
The Equipment Setup screen allows the user to access equipment setup buttons. Each button navigates the user to additional setup screens:

- Dry Air Setup
- Ethernet Setup
- Options Setup
- Instrument 1, 2 and 3 Setup
- Regen PID Setup
- Loader Setup (Primary)
- Test Outputs
- Close HMI
- Loader Setup (Secondary), if applicable

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 21 -Dehumidified Air Circuit Setup Screen



To access the Dehumidified Air Circuit Setup Screen (Screen 21):

1 **Press the "Dry Air Setup" button** located on the Equipment Setup Screen (Screen 20).

From the Dehumidified Air Circuit Setup screen, the user can select the dryer model type the control is currently configured to use, the type of heat booster used in the Carousel Plus Dryer System (none, GasTrac, or Electric), the model number of the heat booster and the dryer model number.

To configure the Carousel Plus Dryer System:

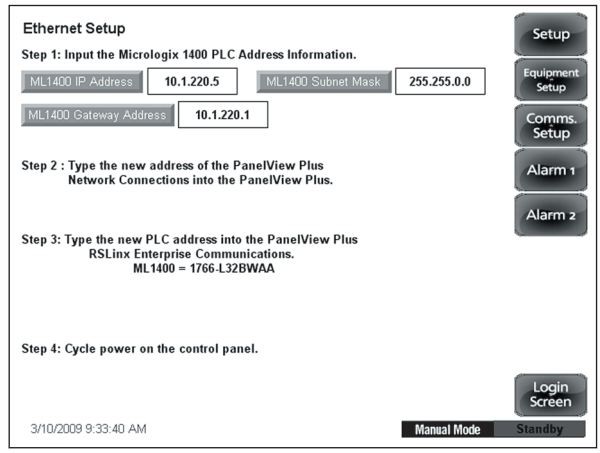
1 **Use the up and down arrow buttons to make the appropriate selection.** The current selection will be indicated by a yellow triangle.

2 **Press the "Enter" button to lock in the current selection.**

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

Control Function Descriptions (continued)

Screen 23 -Ethernet Setup Screen (optional)



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Ethernet Setup Screen (Screen 23):

1 **Press the "Ethernet" button** located on the Equipment Setup Screen (Screen 20).

The Ethernet Setup screen allows the user to configure the Carousel Plus control to communicate within their specific network.

To change any of the IP addresses above:

NOTE: Consult your IT Department for proper set-up of the Ethernet parameters.

1 **Press the grey text box for the specific parameter to be changed** (ML1400 IP Address, ML1400 Subnet Mask and ML1400 Gateway Address).

2 **Enter the new address within the pop-up keyboard window.**

3 **Press the "Enter" button to lock in the current selection.**

4 **Repeat Steps 1-3 for each address.**

5 **Cycle the dryer's power after all changes are complete.**

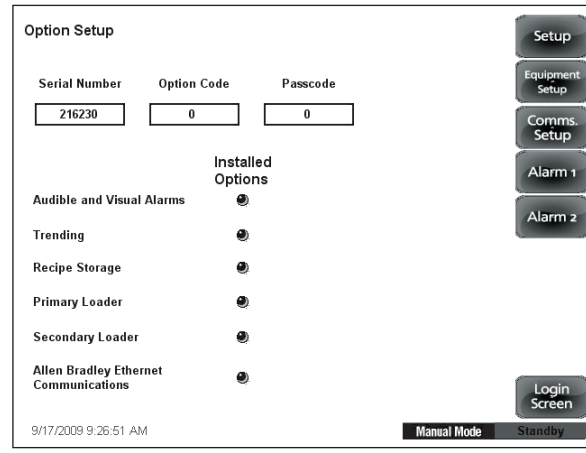
The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 24 -Option Setup Screen

Note: Options not originally purchased can be purchased through Conair Parts and Service. Passcode is required to activate options.

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



To access the Option Setup Screen (Screen 24):

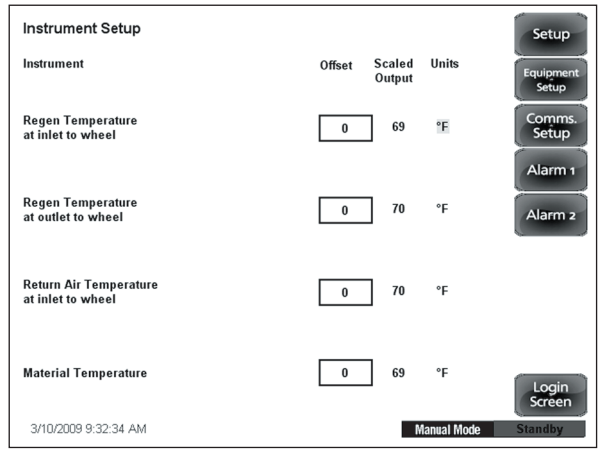
1 **Press the "Options" button** located on the Equipment Setup Screen (Screen 20).

From the Option Setup screen, the user can view status of the options currently installed. The options include visual alarms (not installed or installed), trending (not installed or installed), recipe storage (not installed or installed), Allen Bradley ethernet (not installed or installed), primary loader (not installed or installed) and secondary loader (not installed or installed).

(continued)

Control Function Descriptions (continued)

Screen 25 -Instrument Setup 1 Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Instrument Setup 1 Screen (Screen 25):

1 **Press the "Instrument 1" button** located on the Equipment Setup Screen (Screen 20).

The Instrument Setup 1 screen provides the user with a summary of the Carousel Plus Dryer instrument Set points and data for:

- Regeneration Temperature at inlet to wheel
- Regen Temperature at outlet to wheel
- Return Air Temperature at inlet to wheel

Where applicable, the settings and data contained on this screen include:

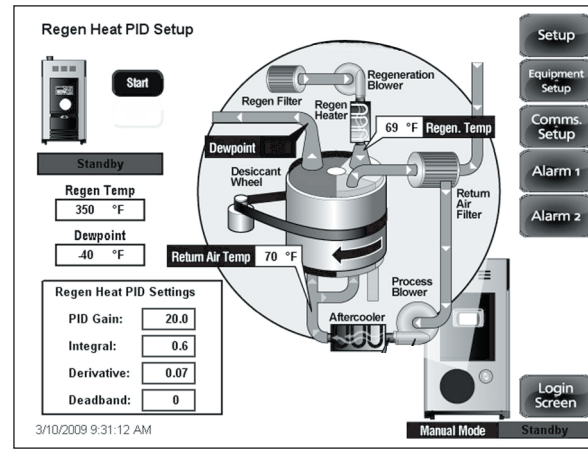
- Offset
- Scaled Output
- Units

If the user is logged-in at the proper security level, all set points contained on this screen can be changed using the pop-up keypad window.

(continued)

Screen 26 -Regeneration Heat PID Setup Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Regeneration Heat PID Setup Screen (Screen 26):

1 **Press the "Regen PID Setup" button** located on the Equipment Setup Screen (Screen 20).

The Regeneration Heat PID Setup screen allows the user to Start or Stop the dryer, indicates the dryer's status (running or idle) of the regeneration drying circuit blower and information concerning the airflow leaving the blower and its dew point. It also shows the user PID gain, integral, derivative, and the deadband set points of the regeneration circuit.

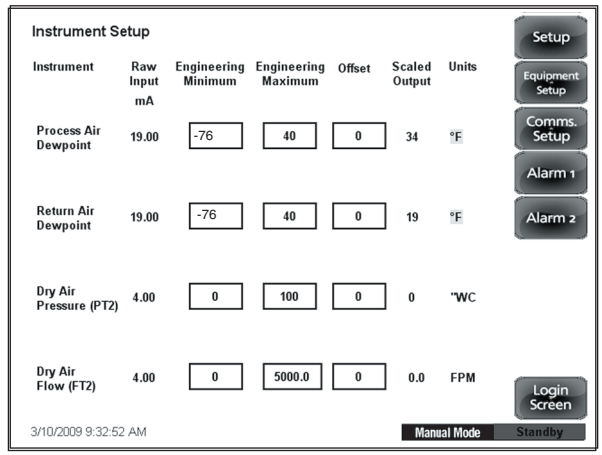
If the user is logged-in at the proper security level, all Set points contained on this screen can be changed using the pop-up keypad window.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 27 -Instrument Setup 2 Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Instrument Setup 2 Screen (Screen 27):

1 **Press the "Instrument 2" button** located on the Equipment Setup Screen (Screen 20).

The Instrument Setup 2 screen provides the user with a summary of the Carousel Plus Dryer instrument Set points and data for:

- Process Air Dew Point
- Return Air Dew Point
- Dry Air Pressure (PT2)

Where applicable, the settings and data contained on this screen include:

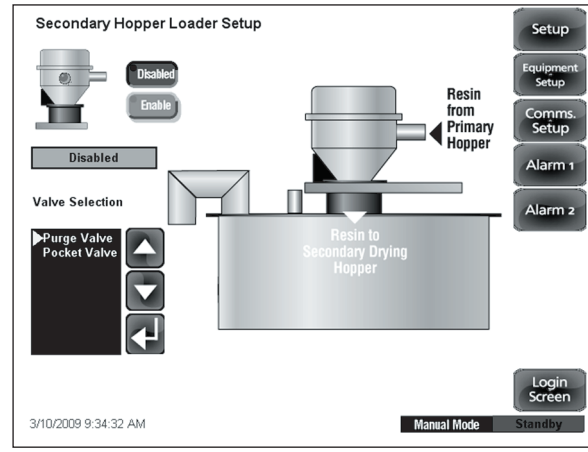
- Raw Input (mA)
- Engineering Minimum
- Engineering Maximum
- Offset
- Scaled Output
- Units

If the user is logged-in at the proper security level, all set points contained on this screen can be changed using the pop-up keypad window.

(continued)

Control Function Descriptions (continued)

Screen 28 -Secondary Hopper Loader Setup Screen (optional)



To access the Secondary Hopper Loader Setup Screen (Screen 28):

1 **Press the "Loader" button** located in the bottom left side and under the heading "Secondary" of the Equipment Setup Screen (Screen 20).

The Secondary Hopper Loader Setup screen allows the user to enable or disable the optional receiver and to choose the type of valve working with the receiver.

To select the type of valve:

1 **Use the up and down arrow buttons to make the selection.** The current selection will be indicated by a yellow triangle.

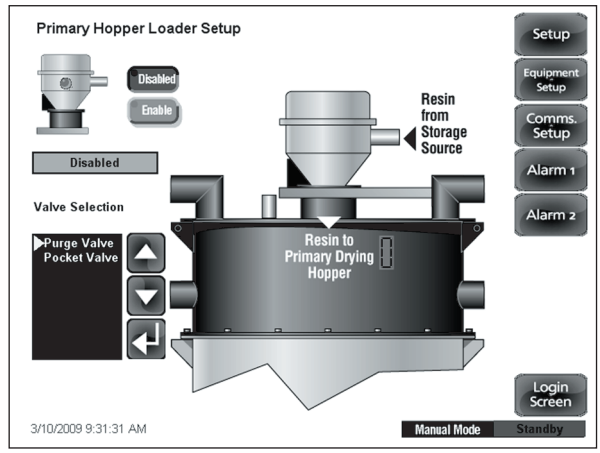
2 **Press the "Enter" button to lock in the current selection.**

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 29 - Primary Hopper Loader Setup Screen (optional)



To access the Primary Hopper Loader Setup Screen (Screen 29):

1 **Press the "Loader" button** located on the Equipment Setup Screen (Screen 20).

The Primary Hopper Loader Setup screen allows the user to enable or disable the optional receiver and to choose the type of valve working with the receiver.

To select the type of valve:

1 **Use the up and down arrow buttons to make the selection.** The current selection will be indicated by a yellow triangle.

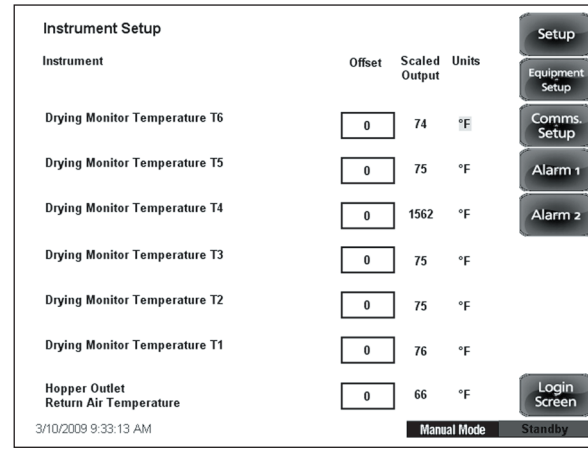
2 **Press the "Enter" button to lock in the current selection.**

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 30 -Instrument Setup 3 Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Instrument Setup 3 Screen (Screen 30):

1 **Press the "Instrument 3" button** located on the Equipment Setup Screen (Screen 20).

The Instrument Setup 3 screen provides the user with a summary of the Carousel Plus Dryer instrument set points and data for:

- Drying Monitor Temperature (T6)
- Drying Monitor Temperature (T5)
- Drying Monitor Temperature (T4)
- Drying Monitor Temperature (T3)
- Drying Monitor Temperature (T2)
- Drying Monitor Temperature (T1)

Where applicable, the settings and data contained on this screen include:

- Offset
- Scaled Output
- Units

If the user is logged-in at the proper security level, all set points contained on this screen can be changed using the pop-up keypad window.

(continued)

Control Function Descriptions (continued)

Screen 32 - Close HMI Screen

To access the Close HMI Screen (Screen 32):

1 **Press the "Close HMI" button** located on the Equipment Setup Screen (Screen 20).

Pressing the "Close HMI" button will close the Carousel Plus Dryer control software program and return the user to the initial power-up start screen.

To restart the Carousel Plus Dryer's control interface:

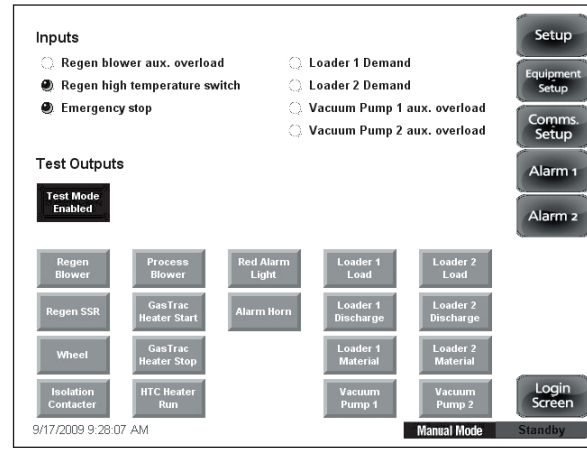
1 **Press twice on the FactoryTalkView ME Icon.**
2 **Touch the "Load Application" button.**
3 **Select the application. Typically, it is the only application listed.**
4 **Press the "Load" button.**
5 **When prompted, "Do you want to replace the terminal's current communication configuration with the application's communication", press the "No" button.**
6 **Wait for the application to load. Approximately 90 seconds.**
7 **Press the "Run Application" button.**
8 **Wait for the application to run.**

(continued)

Screen 33 - Test Outputs Screen

NOTE: The test outputs function will be disabled when the dryer system is operating normally.

WARNING: The Carousel Plus Dryer should be adjusted and serviced only by a qualified technician who is familiar with construction and operation of this type of equipment.



To access the Test Outputs Screen (Screen 33):

1 **Press the "Test Outputs" button** located on the Equipment Setup screen (Screen 20).

The Test Outputs screen allows the user to test the functionality of the following outputs:

- Regeneration blower
- Regeneration solid state relay (SSR)
- Desiccant wheel
- Isolation contactor
- Process blower
- Process heater (Start)
- Process heater (Stop)
- Alarm light (Red)
- Alarm horn
- Loader 1 (Load)
- Loader 1 (Discharge)
- Loader 1 (Material)
- Vacuum pump
- Loader 2 (Load)
- Loader 2 (Discharge)
- Loader 2 (Material)
- Vacuum pump 2

To test an output:

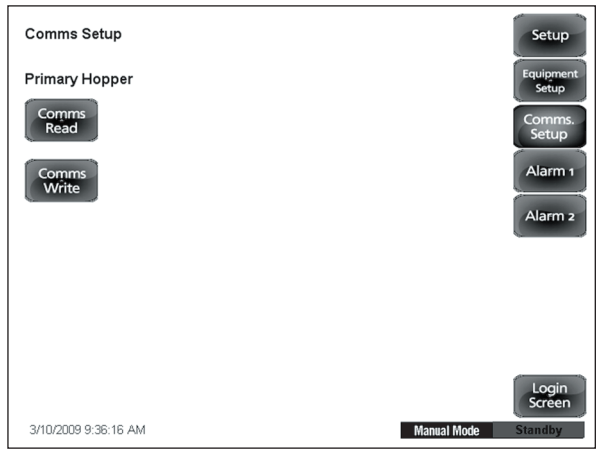
1 **Press the button of the output to be tested.** The output will turn on and remain on until the button is pressed again.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 34 - Communications Setup Screen



To access the Comms Setup Screen (Screen 34):

1 **Press the "Comms Setup" button** located on the right side of the Main Setup Screen (Screen 19).

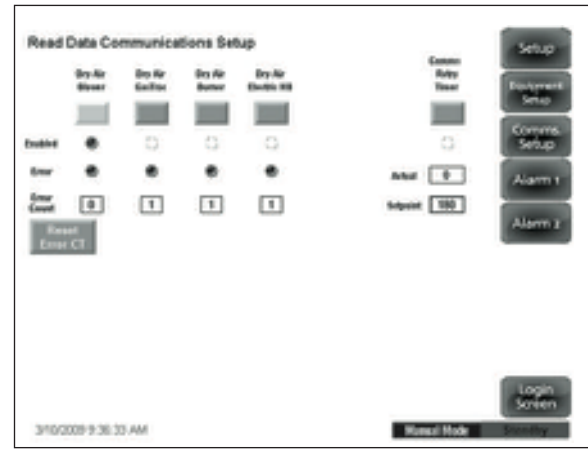
The Comms Setup screen allows the user to access the Read and Write Date Communications Setup Screens (Screens 35 and 36) by pressing the appropriate button.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 35 - Read Data Communications Setup Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Read Data Communications Setup Screen (Screen 35):

1 **Press the "Comms Read" button** located on the left side of the Comms Setup Screen (Screen 34).

The Read Data Communications Setup screen provides the user with a summary of the communications settings, status and any errors being "read" within the dehumidifying drying circuit of the Carousel Plus Dryer System. It allows the user to "Enable" the data read function (indicated by a green LED) or "Disable" the data read function (indicated by a red LED) with the following components within the Carousel Plus System by touching the applicable buttons:

- Dry Air Blower
- Dry Air GasTrac (Gas Heater Only)
- Dry Air Burner (Gas Heater Only)
- Dry Air Electric HB (HTC Only)

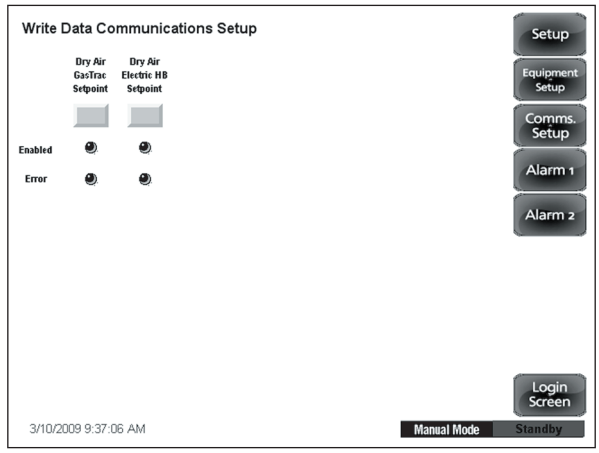
This screen also allows the user to see the error count for each communications function, the "Comms (Communications) Retry Counter" set point and to reset the error counters ("Reset Error CT" button) for the dehumidifying drying circuit. If the user is logged-in at the proper security level, the "Comms (Communications) Retry Counter" set point can be changed on this screen.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 36 - Write Data Communications Setup Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Write Data Communications Setup Screen (Screen 36):

1 **Press the "Comms Write" button** located on the left side of the Comms Setup Screen (Screen 34).

The Write Data Communications Setup screen provides the user with a summary of the communications settings, status and any errors being "written" within the dehumidifying drying circuit of the Carousel Plus Dryer System. It allows the user to "Enable" the data write function (indicated by a green LED) or "Disable" the data write function (indicated by a red LED) with the following components within the Carousel Plus System by pressing the applicable buttons:

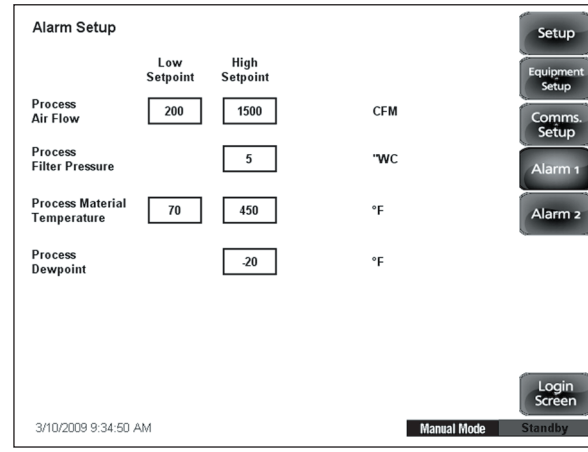
- Dry Air GasTrac set point (Gas Heater Only)
- Dry Air Electric HB set point (HTC Only)

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Screen 37 - Alarm Setup 1 Screen

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.



To access the Alarm Setup 1 Screen (Screen 37):

1 **Press the "Alarm Setup 1" button** located on the right side of the Main Setup Screen (Screen 19).

The Alarm Setup 1 screen provides the user with a summary of the low and high set point, deadbands and the units of measurement associated with each of the following alarms:

- Process Filter Pressure
- Process Dew Point

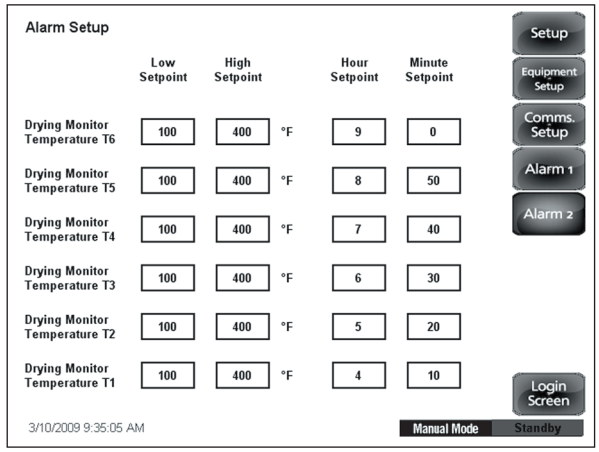
If the user is logged-in at the proper security level, all set points contained on this screen can be changed using the pop-up keypad window.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

(continued)

Control Function Descriptions (continued)

Screen 38 - Alarm Setup 2 Screen



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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

To access the Alarm Setup 2 Screen (Screen 38):

1 **Press the "Alarm Setup 2" button** located on the right side of the Main Setup Screen (Screen 19).

The Alarm Setup 2 screen provides the user with a summary of the low, high, minutes and hour set points and units of measurement associated with each of the following alarms:

- Drying Monitor Temperature (T6)
- Drying Monitor Temperature (T5)
- Drying Monitor Temperature (T4)
- Drying Monitor Temperature (T3)
- Drying Monitor Temperature (T2)
- Drying Monitor Temperature (T1)

If the user is logged-in at the proper security level, all set points contained on this screen can be changed using the pop-up keypad window.

The user can also view the other system parameters, start the system, stop the system, initiate a system cooldown or return to the "Login" screen by pressing the applicable buttons on the right of the screen.

Carousel Plus Dryer System Security Levels

There are five (5) security levels within the Carousel Plus Dryer System control. The Carousel Plus Dryer System is shipped with the password security level set at "Supervisor". For information on how to change security levels, contact you Conair Technical Service representative.

The following table and accompanying text gives an overview of the security levels and description of the functions available at each level.

Carousel Plus Drying System Security Levels					
Security Codes	**Levels**	**A**	**B**	**C**	
DEFAULT	Level A	✓			
OPER	Levels A & B	✓	✓		
SUPER	Levels A, B, & C	✓	✓	✓	

DEFAULT (Default) Level A

- Start and stop at the system level
- Start and stop individual equipment

OPER (Operator) Levels A & B

- Change date and time
- Start and stop at the system level
- Start and stop individual equipment
- Change operating set points
- Change alarm set points

(continued)

Carousel Plus Drying System Security Levels (continued)

SUPER (Supervisor) Levels A, B, & C

- Change date and time
- Start and stop at the system level
- Start and stop individual equipment
- Change operating set points
- Change alarm set points
- Go into setup menus
- Add equipment in the setup menus
- Instrument setup
- Shutdown RSView (Close HMI)
- Recipes

Carousel Plus Dryer System Modbus Communications

Data from the following Carousel Plus Dryer System components are communicated via the programmable logic controller (PLC) located in the control panel.

Carousel Plus Component	Node Address
Dry Air GasTrac Single Loop Temperature Controller (TC)	7
Dry Air GasTrac Flame Controller (FC)	8
Dry Air Electric HTC	9

(continued)

Carousel Plus Dryer System Modbus Communications (continued)

Communication Reads

Communication "Reads" are done via multiple message commands in the Allen-Bradley Micrologix 1400. The message commands are structured in the following manner.

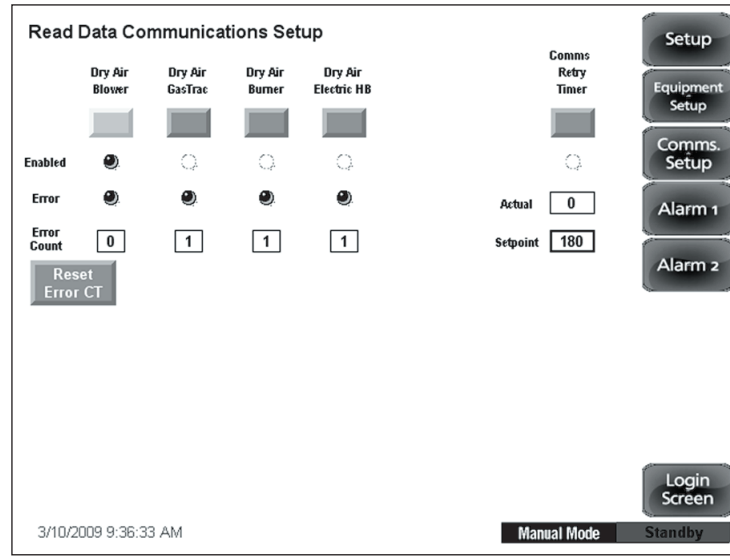
Equipment	Message Number	Number of Words	Poll Order
Dry Air GasTrac TC	Msg. 10:6	3	1
Dry Air GasTrac TC	Msg. 10:7	3	3
Dry Air GasTrac TC	Msg. 10:8	1	5
Dry Air GasTrac FC	Msg. 10:11	3	6
Dry Air GasTrac FC	Msg. 10:12	1	7
Dry Air Electric HTC	Msg. 10:16	15	1

(continued)

Carousel Plus Dryer System Modbus Communications (continued)

One message is polled every 2/10 of a second. It takes 2.2 seconds to obtain data from all Carousel Plus Dryer system components. If a component fails to respond nine (9) times when polled, it is removed from the poll list. The communication failure is indicated with an alarm message on the operator interface terminal. The component that failed is put back into the poll list when the "Alarm Acknowledge" button is pressed on the Alarm Log Screen (Screen 14), or after 300 seconds by the Communications (Comms) Retry Timer.

Each individual message command can be disabled by a Supervisor on the Read Data Communication screen (Screen 35).

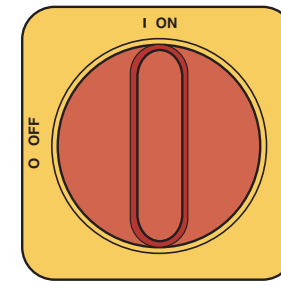


This could be necessary if there is a failure of the communications hardware on a particular component. When communications is operating properly, the error count number will not increase. When one component has a communications problem it affects the whole network. You will see the error count numbers start to increase when this occurs.

Starting the Dryer

To start the dryer:

1 **Turn on the main power to the dryer and system components.** Check to ensure that the all disconnect dials are in the "On" or "**I**" position.

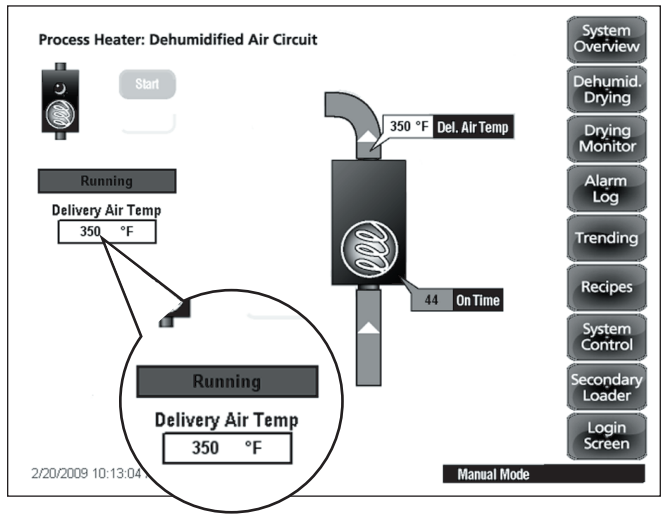


2 **Fill the drying hopper with material** by navigating the System Overview Screen (Screen 2) and pressing the optional receiver's magnifying glass icon (if applicable). Once at the Primary Loader Screen (Screen 5), set the receiver's load time, dump time and purge times and press the "Enable" button to start loading the CH Hopper.

2b **If not using the optional loading function, fill the drying hopper with material.**

3 **Navigate to the Process Heater: Dehumidified Air Circuit Screen (Screen 3) within the dryer's control.**

4 **Enter the Pre-dry Delivery Air Temperature that is to be used with your material.** Pre-drying temperatures are specific to the type of material that is processed, consult your material supplier for recommended pre-drying temperatures.



NOTE: Screen 3 shows the type of heater installed in the Dehumidifying Drying Circuit of the Carousel Plus Dryer System. If a GasTrac has been installed, the image on the screen will reflect a gas heater (flame). If an HTC has been installed, the image on the screen will reflect an electric heater (heating coil). The screen used in this example reflects an electric heater (heating coil).

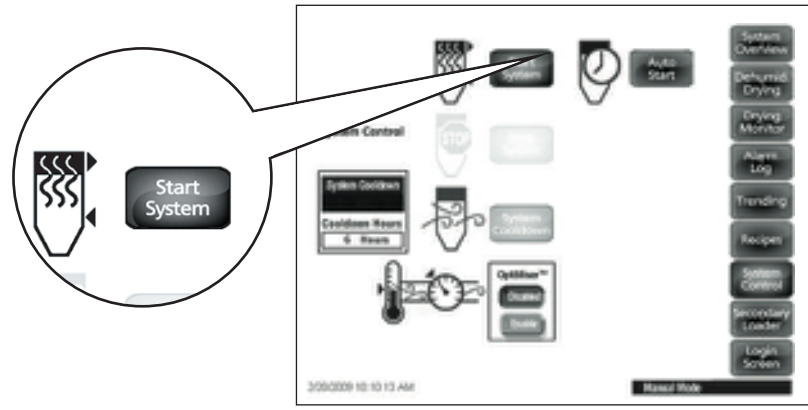
NOTE: Set points boxes are white with heavy black borders. Set points can be changed, if the user has logged in at the proper security level, by pressing the set point boxes. This will launch a pop-up keypad window that can be used to change the set point. *See Operation section entitled, Example Set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

(continued)

Starting the Dryer (continued)

5 **Navigate to the System Control Screen (Screen 8)** after all set points have be entered.

6 **Press the "Start System" button** to begin pre-drying your material.



7 **Navigate to the Material Temperature Trending Screen (Screen 9).**

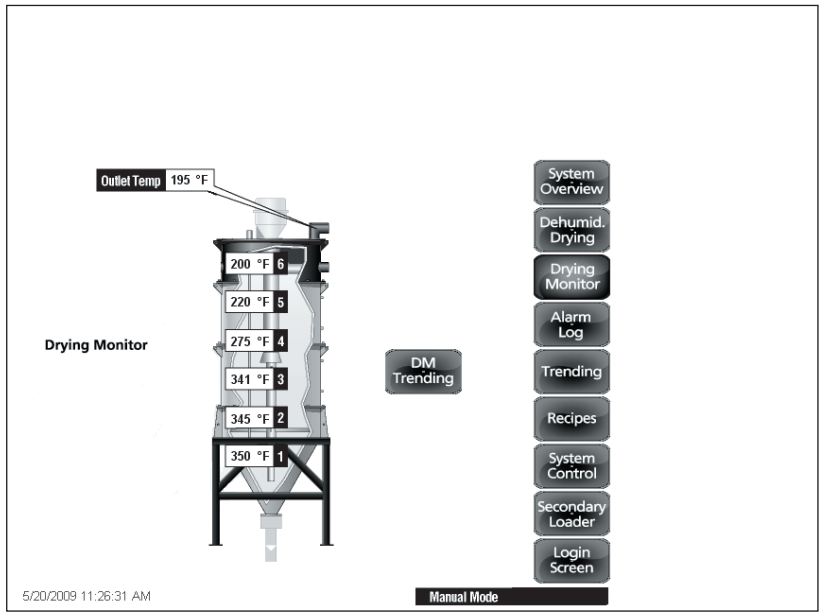
8 **Start the processing machine,** after the normal pre-dry time is complete (approximately 4 to 6 hours). The processing machine will begin taking material out of the hopper. As the system is running it will take several hours for all components to reach a steady-state running condition. Conair recommends waiting until the system is in a constant steady state before making any changes to temperature.

(continued)

Adjusting the Temperature Set Point

Any changes made to the set point temperature will affect the on time value shown. To minimize energy usage, Conair recommends using the lowest set point 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 - Winter) you will be able to run lower set point temperatures.

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



Increasing hopper outlet temperature will increase the pressure drop in the 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.

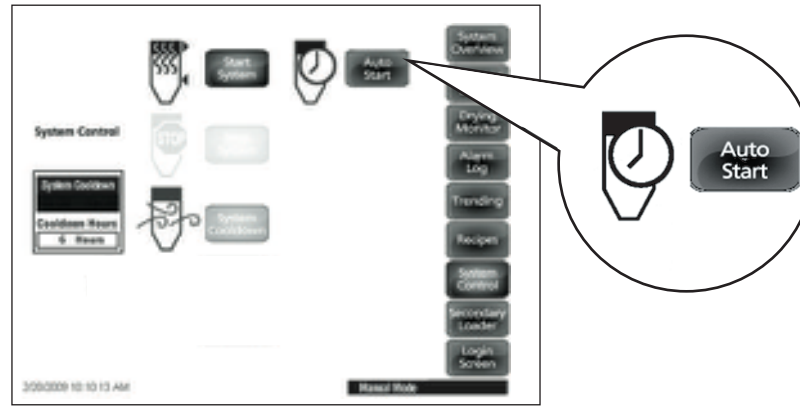
NOTE: Making too large of a change in set point will change the material throat temperature too fast for the processing machine to react. This may cause changes to barrel temperatures, back pressures, and injection pressures.

Using the Auto Start Timer

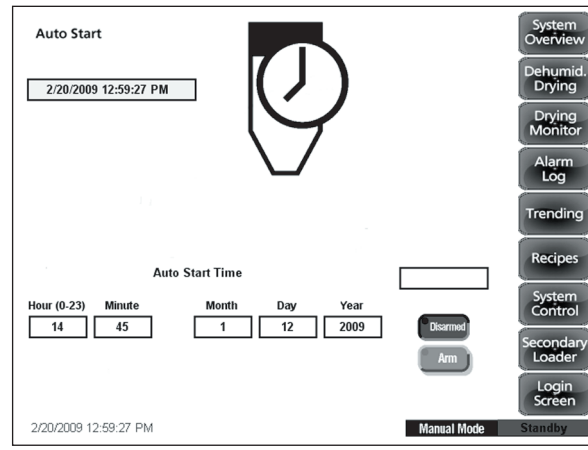
You can set the dryer to start automatically using the Auto Start function. Supervisor Password is necessary to use this function.

To use Auto Start:

1 **Navigate to the System Control screen (Screen 8), after logging in under the appropriate user level.**

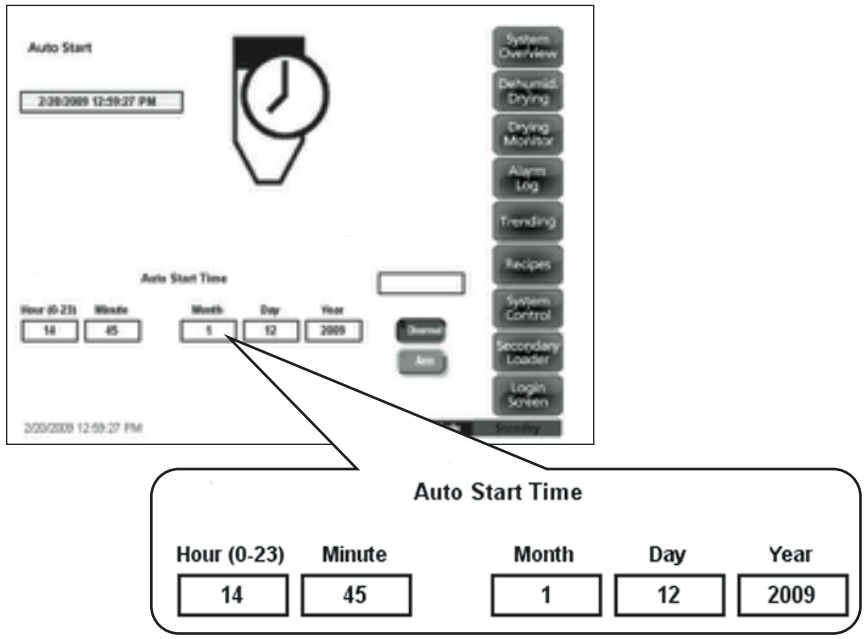


2 **Press the "Auto Start" button to navigate to the Auto Start Screen (Screen 17).**



Using the Auto Start Timer (continued)

3 **Enter the required dryer starting hour, minute, month, date and year by using the pop-up keypad window.**



4 **Press the "Arm" button after the correct dryer start parameters have been enter.** The dryer will automatically start at the set hour, minute, month, day and year that has been enter in relation to the dryers internal clock. Pressing the "Disarmed" button will cancel the auto start function.

Stopping the Carousel Plus Dryer System

CAUTION: Improper shutdown can cause damage to the Carousel Plus Dryer System and its components.

There are three (3) ways to stop the Carousel Plus Dryer with TouchView™ Technology:

- Pressing the “System Cooldown” button
- Pressing the “Stop System” button
- Pressing the Emergency Stop switch

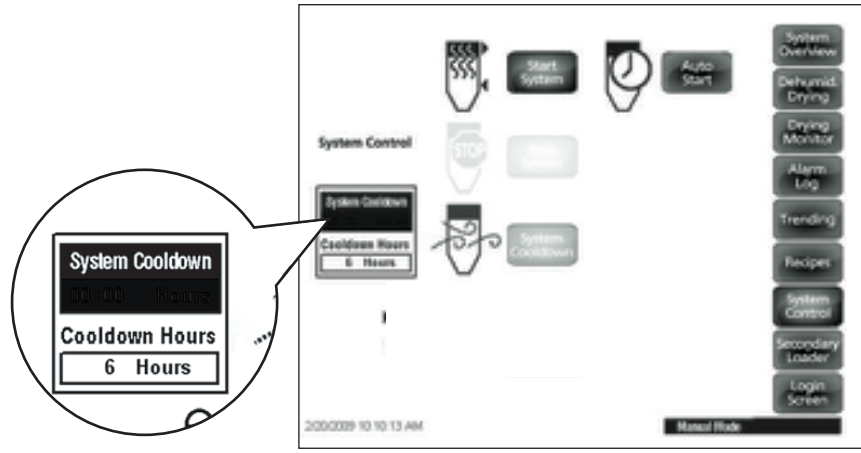
To stop the Carousel Plus Dryer System:

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, Example Set Point Change.* After the new set point value has been entered, press the **"Enter"** key to lock in the new set point.

1 **Stop the processing machine and stop taking material out of the hopper.**

2 **Navigate to the System Control Screen (Screen 8).**

3 **Press the "System Cooldown" button on the System Control Screen (Screen 8).**



When the System Cooldown function is used, the heater (HTC of GasTrac) will immediately be turned off. The blower in the dryer will continue to run for the amount of time set in the System Cooldown timer. The time can be set from 0 to 20 hours.

4 **Disconnect and lock out the main power** if you have stopped the dryer to perform maintenance or repair.

(continued)

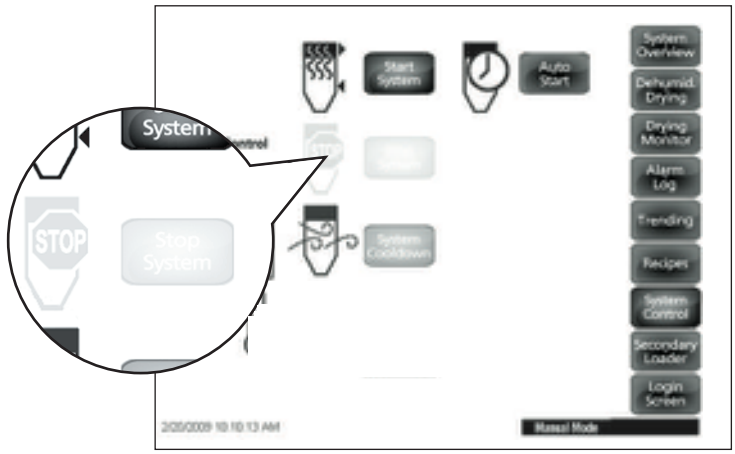
Stopping the Carousel Plus Dryer System (continued)

To stop the dryer using “Stop System”:

1 **Stop the processing machine and stop taking material out of the hopper.**

2 **Navigate to the System Control Screen (Screen 8).**

3 **Press the "System Stop" button on the System Control Screen (Screen 8).**



When the Stop System function is used, the heater (HTC or GasTrac) will immediately be turned off. The blower in the dryer will continue to run until the air entering the hopper cools to 150°F {65.6°C} or until the ten (10) minute timer has expired.

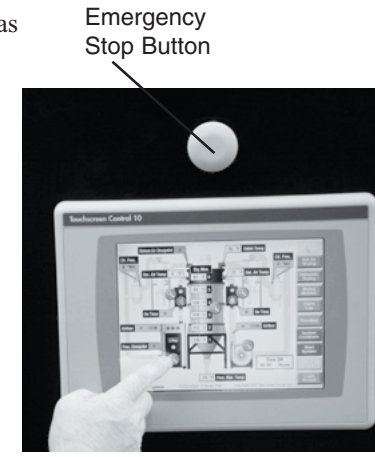
To stop the dryer using “Emergency Stop”:

1 **Press the “Emergency Stop” button** to immediately stop the dryer.

When the “Emergency Stop” button is pressed, the dryer immediately shuts down. Air **DOES NOT** continue to circulate to cool down the material in the system. **As soon as the reason for the emergency stop has been addressed, the dryer should be restarted.**

NOTE: If the operator presses the “Stop System” button and then decides use the System Cooldown Function, the “System Start” button will have to be pressed, then the “System Cooldown” button.

NOTE: If using ResinWorks, refer to the user guide that came with your equipment for proper cool down procedures.



Using the Loading Control Function

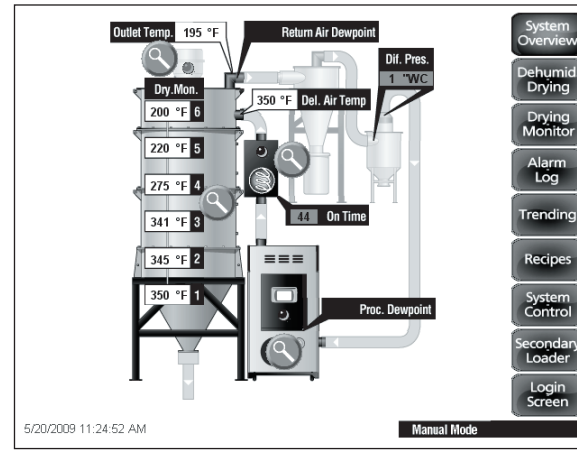
(optional)

The Carousel Plus Dryer's TouchView™ Control can operate up to two optional receivers and vacuum pumps. Load time, dump time, purge time and alarm check setting can be configured for your specific application.

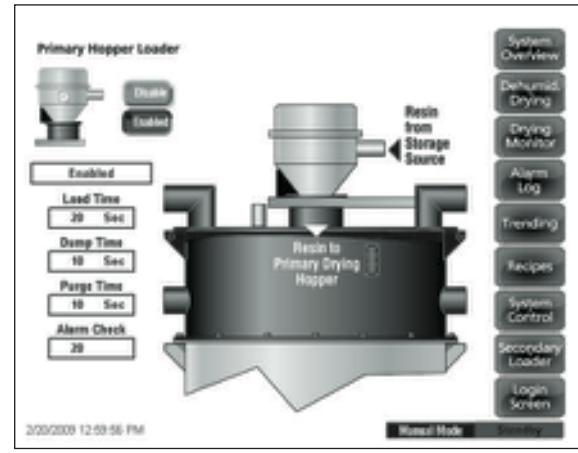
Primary Loader

To adjust the optional primary loader settings:

1 Navigate to the System Overview screen (Screen 5), after logging in under the appropriate user level.



2 Press the magnifying glass icon associated with the loader that is located on the top of the hopper.

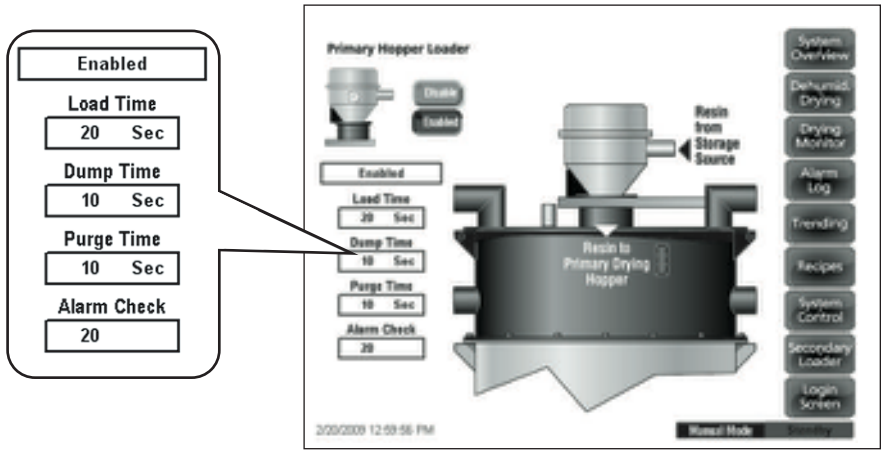


(continued)

Using the Loading Control Function

(optional) (continued)

3 **Enter the required loader's load time, dump time, purge time and alarm check settings by using the pop-up keypad window.**



4 **Press the "Enabled" button to activate the Primary Loader using the settings that have been entered, a green indicator light will identify the current selection.** Pressing the "Disabled" button will deactivate the Primary Loader.

(continued)

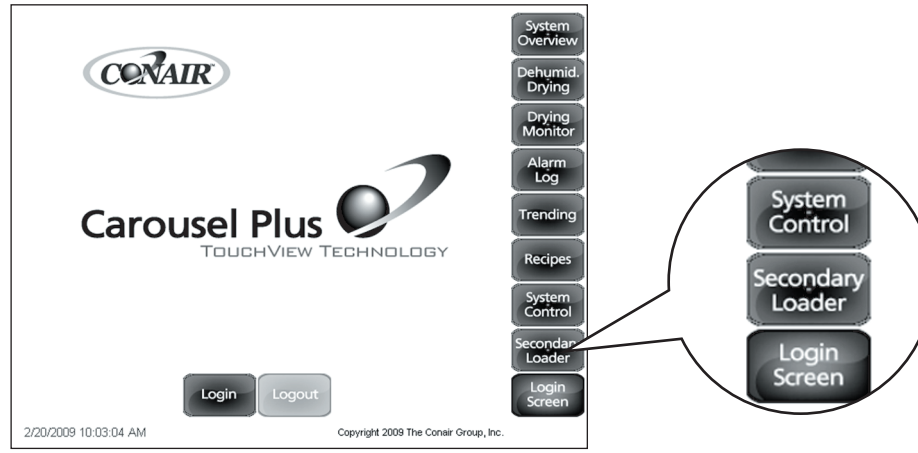
Using the Loading Control Function

(optional) (continued)

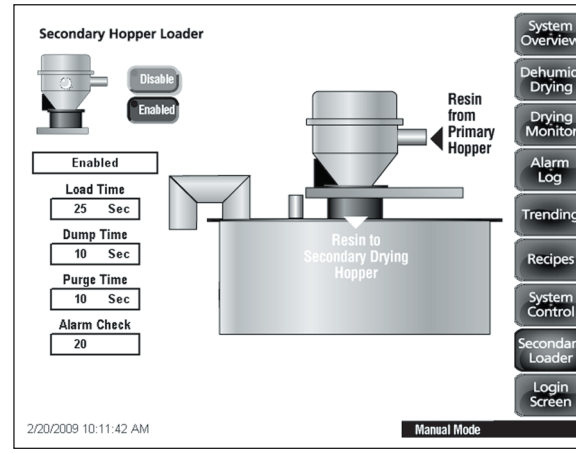
Secondary Loader

To adjust the optional secondary loader settings:

1 **Press the "Secondary Loader" button located the Login Screen (Screen 1), after logging in under the appropriate user level.**



2 **Enter the required loader's load time, dump time, purge time and alarm check settings by using the pop-up keypad window.**

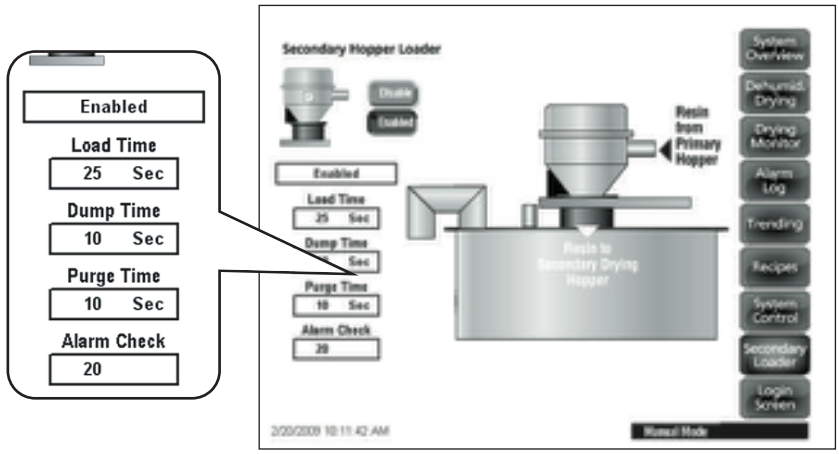


(continued)

Using the Loading Control Function

(optional) (continued)

Secondary Loader



3 **Press the "Enabled" button to activate the Secondary Loader using the settings that have been entered, a green indicator light will identify the current selection.** Pressing the "Disabled" button will deactivate the Secondary Loader.

Copying Files from the Carousel Plus Dryer System

NOTE: The Touch Screen control Logic Module compact flash card slot supports type I/II compact flash cards.

1A *If the files will be copied onto a USB flash drive.* **Plug the USB flash disk into the port in the Touchscreen control.** Make sure the flash drive is properly seated in the receptacle.

1B *If the files will be copied onto an external memory card.* **Install the memory card into the compact flash card slot located on the side of the Touchscreen control Logic Module.** Make sure the memory card is inserted until firmly seated in the slot.

2 **Navigate via the Touch Screen to the "System Login" screen (Screen 1A).** Log into the Carousel Plus System as a "Supervisor" *See Operation section entitled, How to Navigate the Control Screens.*

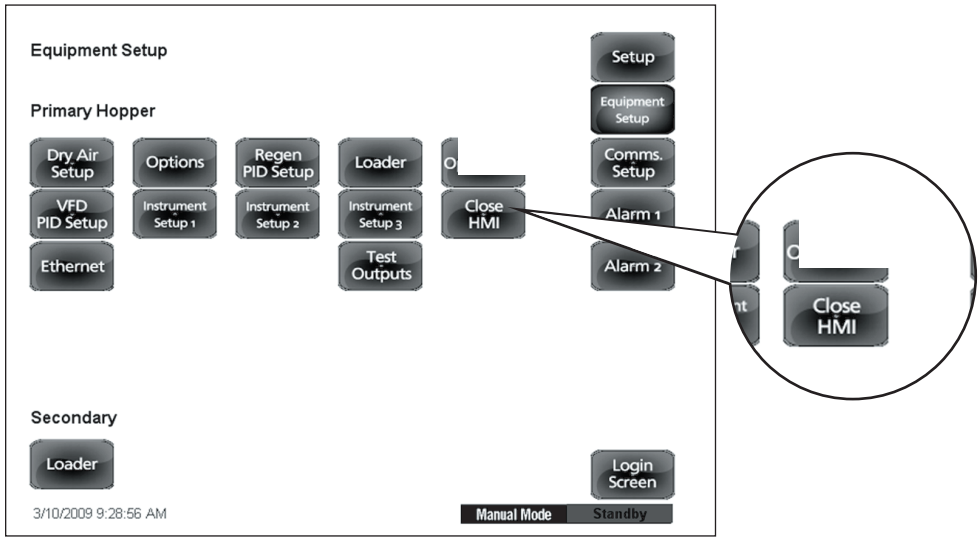
3 **Once you have logged in as a "Supervisor",** navigate to the "System Setup" screen (Screen 20).

4 **Select the "Close HMI" button.** This will stop the application and take you to the desktop.

NOTE: Trending Data is not collected when the application is stopped.

(continued)

Copying Files from the Carousel Plus Dryer System (continued)



5 **Double-click the "My Computer" icon.**

6 **Browse to the following directory:**

\Storage Card\Rockwell Software/RSViewME\Logs\ES1_TS_Dryer_C\DigLog\Data_Log1

You will see two files in this directory: "DataLog1.log" and "DataLog1.tag".

7 **Copy these two files to the clipboard.** First select the two files. This can be done by selecting "Edit" and then "Select All". Then select "Edit" and "Copy".

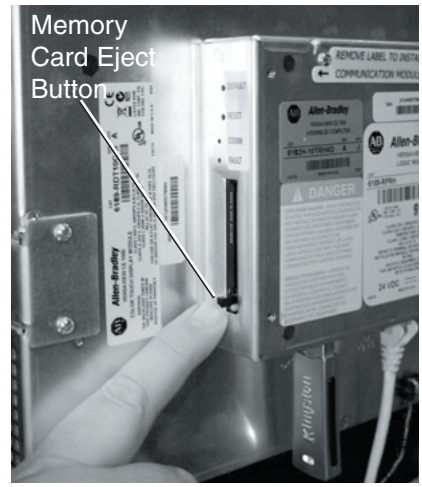
8A *If using an USB flash drive installed in Step 1.* **Browse to the following directory:** \USB Storage

8B *If using an external memory card installed in Step 1.* **Browse to the following directory:** \Storage Card2

(continued)

Copying Files from the Carousel Plus Dryer System (continued)

9 Once you have browsed to the directory "\USB Storage" or "\Storage Card2", **select "Edit" and "Paste".** The files will be copied onto the flash drive or memory card.



10 **Remove the USB flash disk from the touchscreen control or press the eject button above the memory card slot to remove the memory card.**

11A *If using a USB flash disk.* **Plug the SB flash disk into the USB port in your computer.**

11B *If using a memory card.* **Install the memory card in an appropriate memory card adapter and plug the adapter into your computer.**

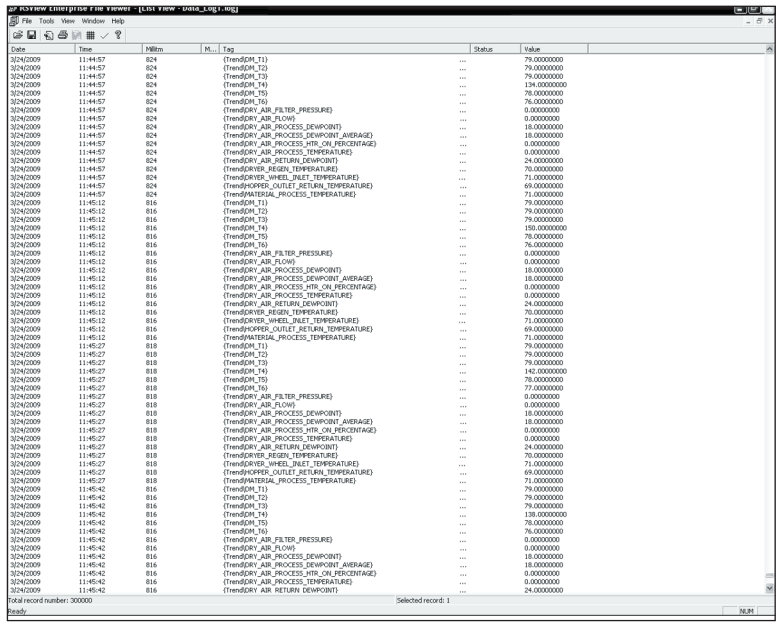
12 **Copy the files from the USB flash disk or memory card to a directory on your computer.**

13 **Run the application "RSView Enterprise File Viewer.exe".** Contact Conair if you need to obtain a copy of the software.

(continued)

Copying Files from the Carousel Plus Dryer System (continued)

14 Open the "DataLog1.log" file in the RSView Enterprise File Viewer. Be sure to select the same time zone as that in which the files were logged. The file will be converted to a Dbase file and opened so you can view the records.



15 Save the file as a database file. Select "Save As" and change to a Dbase file by selecting "dbf" in the drop down box. Click the save button when prompted.

16 The database file can now be opened in Microsoft Access® or other database application software.

SECTION

5

Maintenance

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.*

• Monthly

❒ **Clean the aftercooler/intercooler and/or optional precooler 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/ Intercooler 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.*

(continued)

Preventative Maintenance Checklist (continued)

- **Every six months (continued)**

❒**Inspect the overhead process air duct connections.**
(W3200-5000) Ensure that all connections are tighten properly and have no air leaks.

❒**Verify dew point readout and performance with calibrated portable instrument.** *See Maintenance section entitled, Checking the Dew Point.*

❒**Measure current draw on all 3 legs of heater wires.**
This is to ensure that the heater is working properly. *See the Hopper Temperature Controller (HTC) manual.*

Checking the Dew Point

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

To check dew point:

1. **Connect your portable dew point meter to the dew point check port 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 dew point monitor.** Some dew point monitors require a substantial amount of time for residual moisture to be purged from the sensor.

4. **In the event the dew point in not satisfactory,** refer to the *Troubleshooting section* of the manual, under Process Dew point alarm for DC2.

Alternate Procedure: (for dryers with no dew point check port)

1. **Stop dryer and allow it to cool.**

2. **Swing open or remove the left side panel.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*

3. **Remove the 1/8 inch NPT pipe plug at the process air outlet** on the bottom manifold of the desiccant wheel assembly.

4. **Connect a portable dew point meter** to the hole from which the plug was just removed.

Checking the Dew Point (continued)

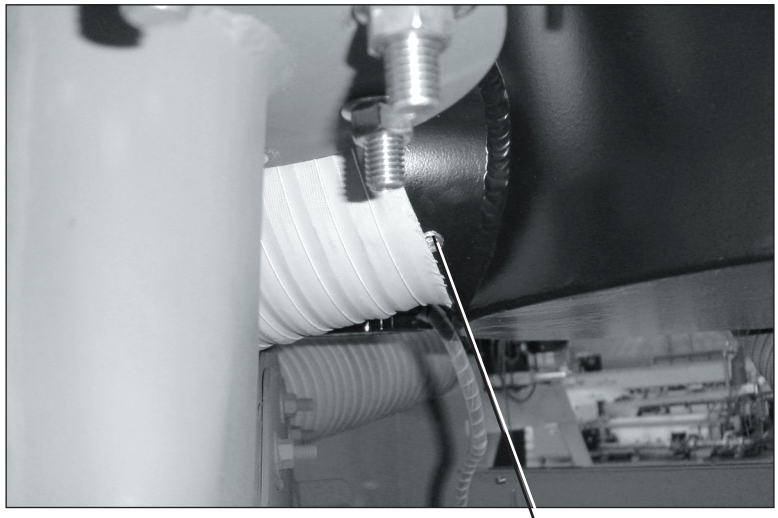
5 **Turn on the portable instrument,** and ensure there is positive airflow through the sensor.

6 **Monitor the readout and allow ample time for it to stabilize before disconnecting the portable instrument.** Some dew point monitors require a substantial amount of time for residual moisture to be purged from the sensor.

7 **In the event the dew point is not satisfactory,** refer to the *Troubleshooting section* of the manual.

8 **Stop the dryer, and allow it to cool down.** Then disconnect your portable instrument and replace any pipe plugs that may have been removed.

9 **Close or replace the side panel.**



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.

1 **Close the hopper slide gate.**

2 **Place a container beneath the hopper's drain port** to catch the material.

3 **Open the drain port** and allow the material to drain.

4 **Open the hopper door and wipe out the inside** of the hopper.

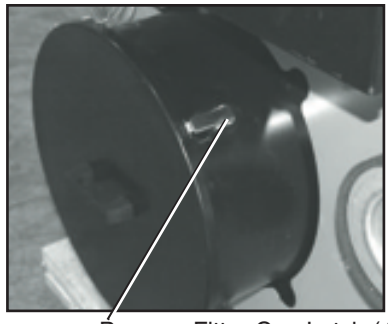
5 **Clean the return air screen** at the return air outlet of the hopper.

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.

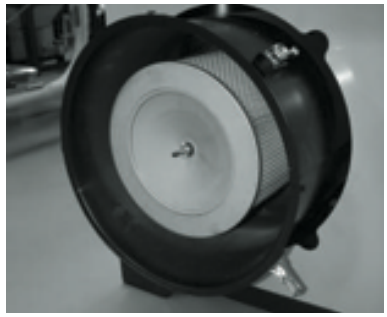
6 **Remove the container from beneath the hopper and replace the drain port cover** before filling the hopper with material.

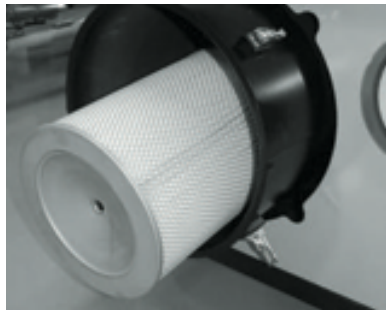
Cleaning the Process Filter

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



Process Fitter Cap Latch (4)





1. **Remove the four (4) filter cap cover latches**, then pull the filter cap off.

2. **Remove the filter wing nut,** then remove the filter.

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

4. **Reverse the procedure to rein stall the process filter.** Ensure that the gasket on filter cap is in place and in good condition.

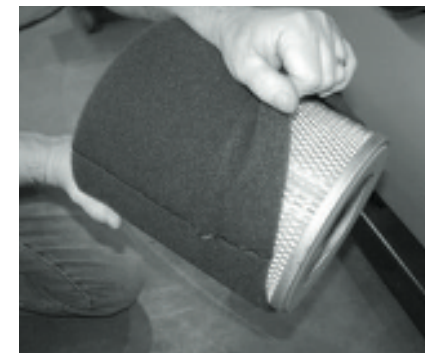
CAUTION: Wear eye protection. If you use compressed air to clean the equipment, **you must wear eye protection** and observe all OSHA and other safety regulations pertaining to the use of compressed air.

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

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

Cleaning the Regeneration Filter

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

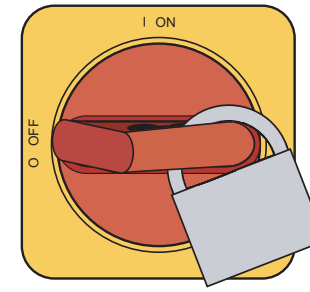


1. **Remove the filter wing nut,** then remove the filter.
2. **Remove the foam outer filter** and clean it with soapy water. Let air dry.
3. **Clean the filter by laying it on its side and gently tapping it on the floor.** Replace damaged, worn, or clogged filters.
4. **Reverse the procedure to reinstall the regeneration filter.**

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

Cleaning the Aftercooler/ Intercooler Coils

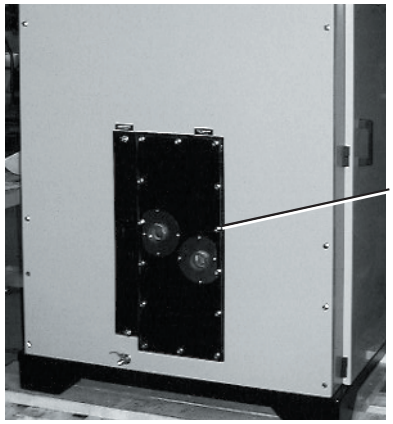


You need to clean the aftercooler/intercooler coils to keep them working efficiently. Cleaning frequency depends on the type and amount of material you process.

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

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

NOTE: If an optional flow control was added with the aftercooler/intercooler, remove the compression fitting from the aftercooler/intercooler inlet. Loosen the fitting on the flow control, then swing the copper water supply tube out and away from the aftercooler/intercooler inlet.



3 **Remove the bolts securing the aftercooler/intercooler cover.** Remove the cover.

4 **Remove the aftercooler/intercooler by pulling it out** of the aftercooler/intercooler housing.

Cleaning the Precooler Coils 

You need to clean the precooler cooling coils to keep them working efficiently. See Appendix B for details.

Cleaning the Volatile Trap on the Demister 

If you have the optional volatile trap, you need to clean the trap to keep it working efficiently. See Appendix C for details.

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.**

SECTION

6

Troubleshooting

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 open the side panels of the dryer be sure to:

❑ **Diagnose causes from the control panel.**

1 **Navigate to the Alarm Log Screen (13).** 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 "Acknowledge Alarm" button to acknowledge the highlighted alarm or the "Acknowledge All Alarms" button to acknowledge all alarms registered on the system.** 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 also 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.

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.

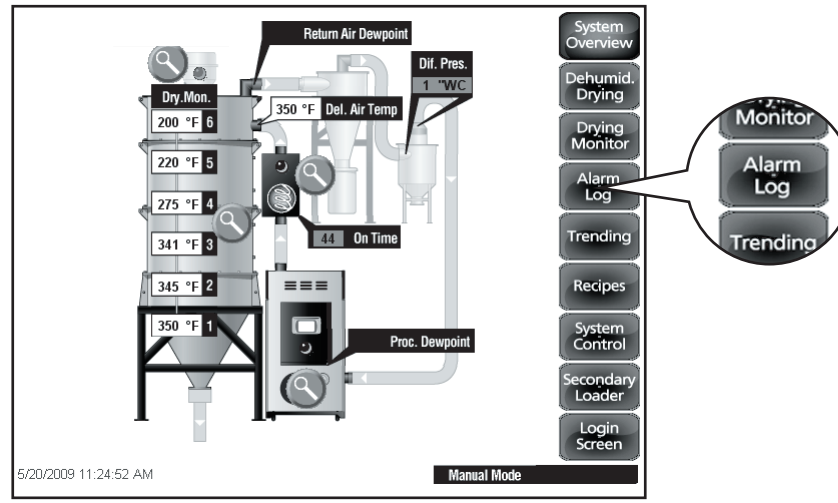
WARNING: Only qualified service personnel should examine and correct problems that require opening the dryer's electrical enclosure or using electrical wires to diagnose the cause.

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 Status Box on the Control Panel screens. Alarms can also be viewed by pressing the “Alarm Log” button on the Control Panel. The Alarm Log tracks the last 200 alarms registered.



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:

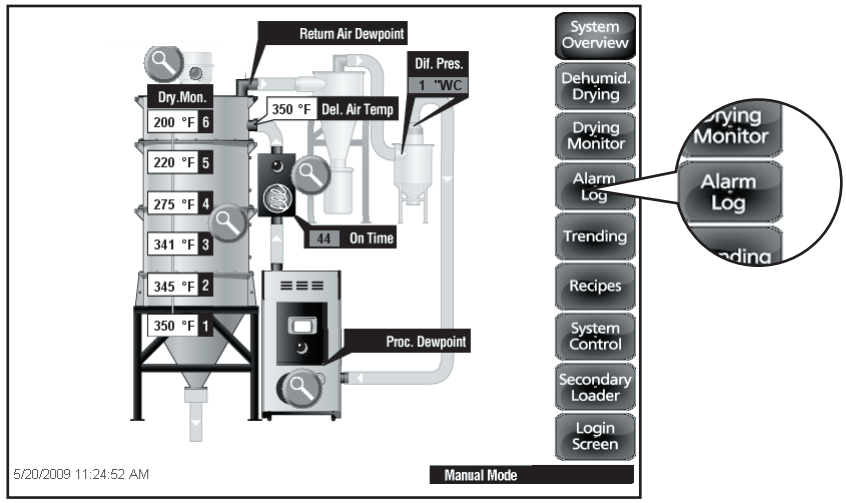
- **Shutdown:** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive:** The dryer continues to operate, but warns of a problem that could prevent correct drying of your material. If ignored, this problem could lead to a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

(continued)

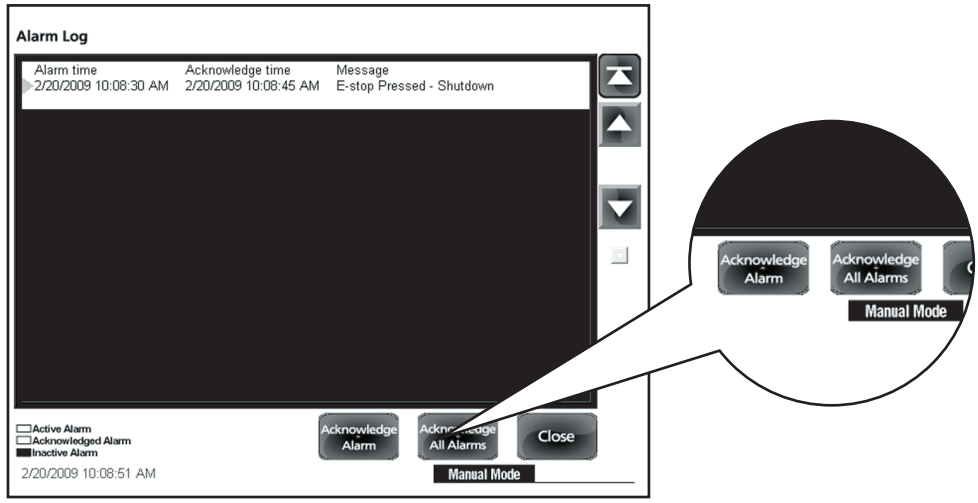
How to Identify the Cause of a Problem (continued)

When an alarm message is displayed:

1 **Press the "Alarm Log" button** to access the alarm history and note the newest alarm(s).



2 **Press either the "Acknowledge Alarm" or "Acknowledge All Alarms" button.**



How to Identify the Cause of a Problem (continued)

3 **Find the error message in the diagnostics table of the following troubleshooting section** or the troubleshooting section of the applicable component User Manual. Take any necessary steps, as directed, to resolve the problem.

4 **Note that, after correcting the problem, if the problem was not solved, the alarm will become reactivate.**

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

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 Heater Box 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 W1600-5000 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/intercooler.
	The aftercooler/intercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler/intercooler coils are dirty.	Clean the aftercooler/intercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*

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 Temperature 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.
Process Blower Overload - If the process 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 process 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 process blower has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the process blower for mechanical failure and free rotation. Replace if necessary. Allow the overload to reset then try to restart the dryer.
	The process blower has failed electrically.	Disconnect and lock out main power. Check the process 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 process 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 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.	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 process 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
E-Stop Press	E-Stop button has been pressed in.	Release E-Stop.
Process High Temperature – If the process temperature exceeds the process high temperature set point, it shuts down the dryer. Defaults are set to 385°F {196°C} for 20 seconds.	The process high temperature set point is not at least 10°F {6°C} above the drying set point.	Reset the process high temperature set point at least 10°F {6°C} above the drying set point.
	One of the process solid state relays has failed.	Replace the solid state relay.
	The air lines are restricted or loose.	Straighten any crimps in the hoses. Tighten any loose hoses.
	The process set point is too low.	Set the process set point higher or install an optional precooler.
	The process heater output on the control board has failed.	Replace the control board.
Process Temperature Loop Break – If the process temperature is outside of the operator entered deviation, alarm band (see Process High Temperature Deviation passive alarm) and the process temperature is not moving towards the set point at a rate greater than specified. It shuts down the dryer. Defaults are set at 3°F {3°C} over 20 seconds.	Process RTD is loose or has fallen out.	Check the process RTD and tighten if needed.
	The process heater has failed.	Check the heater fuses, and resistance across each leg of the process heater.
	The air lines are restricted or loose.	Straighten any crimps in the hoses. Tighten any loose hoses.
	The process blower is not running or is running in the wrong direction.	Correct the cause of the non-running blower (blown fuse, etc.) or reverse the rotation of the blower.
	The process heater output on the board has failed or the output fuse has failed.	Replace the board or the fuse for the output.
	Process set point is too low.	Adjust the set point or add a precooler.
	Setback set point is too low.	Adjust the set point or add a precooler.

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 Heater Box High Temperature – The snap switch in the process 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 process 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 process 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).
Heat Booster RTD Integrity – If the process RTD is faulty, it shuts down the dryer.	The process 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 process 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 process RTD has failed.	Replace the process 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	Possible cause	Solution
Process Protection High Temperature – If the process protection temperature exceeds the process protection high temperature set point, it shuts down the dryer. Defaults are set to 600°F {316°C} for 10 seconds.	The process RTD temperature probe is not installed correctly.	Make sure the RTD temperature probe tip is in the center of the hopper inlet tube.
	The process 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.
	The process hose is not insulated.	Insulated hose is required for high drying temperatures.
Process Protection Temperature Differential - If the difference between the process temperature exiting the process 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.	The air lines between the dryer and hopper are restricted or loose.	Check for airflow 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 is located too far away from the hopper.	The dryer and the hopper should not be located more than 10 feet {3 m} apart.
	The process RTD is loose or has fallen out.	Check the process RTD and tighten if needed.
	The process blower is not running.	Correct the cause of the non-functioning blower.
	The process hose is not insulated.	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
Process Protection RTD Integrity – If the process protection RTD is faulty, it shuts down the dryer.	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.
Regeneration High Temperature – If the regeneration temperature exceeds the high temperature limit for the specified time. Default values are 400°F {204°C} for 20 seconds.	One of the solid state relays (SSRs) failed in the closed position.	Replace the failed solid state relays (SSRs).
	The output on the board has failed.	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 set point at a rate greater than specified. Default values are 2°F {1°C} over 40 seconds.	The regeneration heater has failed.	Check the heater fuses, and resistance across each leg of the process heater.
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.
	The regeneration blower is not running.	Check wiring or replace regeneration blower.
	The output on the control board has failed or the fuse is blown.	Replace the control board or fuse.
Wheel Rotation Failure - The regeneration temperature differential has been reached. The default differential is 20ºF / 10 seconds.	The wheel motor is not turning.	Check the motor, plugs, and fuses.
	The belt tensioner is loose or the belt is slipping.	Change the tensioner spring or replace the belt.
	The regeneration heater is not working.	Check the heater fuses and 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	Possible cause	Solution
Process Temperature Deviation – The process temperature exceeds the deviation band as entered for the specified time. Default values are 10°F {6°C} for 5 seconds.	One of the solid state relays (SSRs) failed in the closed position.	Replace the failed solid state relays (SSRs).
	Defective process heater.	Check the heater fuses and resistance across each leg of the process heater.
	The output on the board has failed.	Replace the board.
	The process RTD is loose or has fallen out.	Check the process RTD and tighten if needed.
	The air hose connections are loose.	Tighten all air hose connections.
Process Low Temperature – The process temperature is less than the low temperature set point for the specified time. Default values are 70°F {21°C} for 20 seconds.	Precooler water is too cold, or the water flow rate is too high.	Check water temperature and flow settings. Adjust as necessary.
	The output on the board has failed.	Replace the board.
	Flow control solenoid is stuck open.	Replace the valve.
	The process RTD is loose or has fallen out.	Check the process RTD and tighten if needed.
	Process heater has failed.	Check the heater fuses and resistance across each leg of the process 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	Possible cause	Solution
Process dew point – The dew point has not fallen below the set point. If the dew point goes below the set point for 180 seconds the alarm should go away. **NOTE:** The alarm is not active for the first 5 minutes.	Defective dew point sensor.	Replace the sensor.
	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 airflow.	Remove the airflow restrictions, dirty filters, etc.
	The desiccant wheel may be contaminated.	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.*
	Desiccant wheel not turning.	*See Troubleshooting section entitled, Passive alarms, Wheel rotation alarm.*
	Leaks in the process air stream.	Check for worn or loose hoses.
	Power Purge blower not running.	Check fuses, wiring or replace blower.
DC Filter Clogged – The optional dust collector's differential pressure switch is tripped.	The optional dust collector's filter is clogged.	Remove and clean or replace the process air filter.

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 Temperature Deviation – The regeneration temperature exceeds the deviation band for the specified time. Default values are 10°F {6°C} for 5 seconds.	One of the solid state relays (SSRs) failed.	Replace the failed solid state relays (SSRs).
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.
	The air hose connections are loose.	Tighten all air hose connections.
	The output on the board has failed.	Replace the board.
	Defective regeneration heater.	Check the heater fuses and resistance across each leg of the regeneration heater.
Regeneration Outlet After the Wheel 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.
Return Air Mid-High Temperature – If the return air temperature is between 150 and 180°F {66 and 82°C}.	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 120°F {49°C} or running at low throughputs.	Ensure water flow to the aftercooler/intercooler.
	The aftercooler/intercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler/intercooler coils are dirty.	Clean the aftercooler/intercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*

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 Low Temperature – The regeneration temperature is less than the low temperature set point for the specified time. Defaults are 200°F {93°C} for 20 seconds.	The regeneration heater has failed.	Check the heater fuses, and resistance across each leg of the process heater.
	The output on the control board has failed or the fuse has blown.	Replace the control board or the fuse.
	The regeneration RTD is loose or has fallen out.	Check the regeneration RTD and tighten if needed.
Return Air Temperature RTD Integrity – The dryer continues to run with a passive alarm.	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 return air RTD has failed.	Replace the return air RTD.
	The control board has failed.	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
System Start Failed	A component(s) within the Carousel Plus Dryer system has failed to start after a system start.	Determine which component(s) within the Carousel Plus Dryer system did not start and troubleshoot the component(s).
System Stop Failed	A component(s) within the Carousel Plus Dryer system has failed to stop after a system stop.	Determine which component(s) within the Carousel Plus Dryer system did not stop and troubleshoot the component(s).
System Cool Down Done	The Carousel Plus Dryer system has properly cooled down before shutting down.	This is a normal operating condition.

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
Dry Air GasTrac TC Comms Read Error	The GasTrac Heater has been turned off.	Turn on the GasTrac Heater.
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
	Device did not accept the command.	Check the baud rate, data bits, parity and stop bits (9600, 8, N, 1).
	Incorrect Modbus address.	Correct the Modbus address. *See Operation section entitled, Carousel Plus Dryer System Modbus Communications.*
Dry Air GasTrac Burner Control Comms Read Error	The GasTrac's Honeywell Burner control is has been turned off.	Turn on the burner control.
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
	Device did not accept the command.	Check the baud rate, data bits, parity and stop bits (9600, 8, N, 1).
	Incorrect Modbus address.	Correct the Modbus address. *See Operation section entitled, Carousel Plus Dryer System Modbus Communications.*

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
Dry Air Heat Booster Comms Error on Read	The Hopper Temperature Controller (HTC) has been turned off.	Turn on the Hopper Temperature Controller (HTC).
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
	Device did not accept the command.	Check the baud rate, data bits, parity and stop bits (9600, 8, N, 1).
	Incorrect Modbus address.	Correct the Modbus address. *See Operation section entitled, Carousel Plus Dryer System Modbus Communications.*
Dry Air GasTrac TC Set Point Write Error	The GasTrac's temperature controller is turned off.	Turn on the GasTrac's temperature controller.
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
	Device did not accept the command.	Check the baud rate, data bits, parity and stop bits (9600, 8, N, 1).
	Incorrect Modbus address.	Correct the Modbus address. *See Operation section entitled, Carousel Plus Dryer System Modbus Communications.*

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
Dry Air Heat Booster Set Point Write Error	The Hopper Temperature Controller (HTC) has been turned off.	Turn on the Hopper Temperature Controller (HTC).
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
	Device did not accept the command.	Check the baud rate, data bits, parity and stop bits (9600, 8, N, 1).
	Incorrect Modbus address.	Correct the Modbus address. *See Operation section entitled, Carousel Plus Dryer System Modbus Communications.*

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
Primary Vacuum Pump Overload - If the primary vacuum pump exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down.	The vacuum pump 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 vacuum has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the vacuum pump for mechanical failure and free rotation. Replace if necessary. Allow the overload to reset then try to restart the dryer.
	The vacuum pump has failed electrically.	Disconnect and lock out main power. Check the vacuum pump 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 vacuum pump motor. Allow the overload to reset then try to restart the dryer.
	The overload is defective.	Replace the overload.

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
Secondary Vacuum Pump Overload - If the secondary vacuum pump exceeds its full load amp rating or the overload has tripped due to a mechanical or electrical problem the dryer will shut down.	The vacuum pump 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 vacuum has mechanically failed or is unable to rotate freely.	Disconnect and lock out main power. Check the vacuum pump for mechanical failure and free rotation. Replace if necessary. Allow the overload to reset then try to restart the dryer.
	The vacuum pump has failed electrically.	Disconnect and lock out main power. Check the vacuum pump 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 vacuum pump motor. Allow the overload to reset then try to restart the dryer.
	The overload is defective.	Replace the overload.

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
Primary Loader No Material Alarm - The demand sensor located at the optional material receiver has not been satisfied after three (3) attempts.	The sensor is not adjusted properly.	Adjust the sensor as needed.
	No material is being conveyed.	Check material supply.
	The conveying load time is too short.	Increase the load time set point.
	Conveying blower is not coming on.	Check the blower fuses in the control and the overload settings.
	The conveying filter is clogged.	Clean or replace the conveying filter.
	Hoses have come off or are loose in the conveying loop.	Check for loose hoses and make sure all hose clamps are secure.
	The air operated valves are not operating.	Make sure compressed air is connected and that the solenoid valves are operating properly.

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
Dry Air GasTrac General Alarm	The GasTrac is not operating properly.	*Refer to the GasTrac's manual for troubleshooting.*
Dry Air Electrical Heat Booster General Alarm	The Hopper Temperature Controller (HTC) is not operating properly.	*Refer to the Hopper Temperature Controller's (HTC's) manual for troubleshooting.*

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
Drying Monitor High Temperature (T1-T6) - One or more RTD probes located at positions T1 through T6 on the drying monitor are above the maximum temperature set point.	Material throughput is too low.	Ensure the material usage is within the rated capacity of the dryer and hopper in the system.
	Material level in the hopper is above the selected High Temperature Alarm RTD.	Check your material supply system for receiver problems, material availability, etc.
	Process air is not at the proper drying temperature.	Reduce the process air temperature entering the hopper.
	The process temperature set point and the DM-II set points are not the same.	Determine which set point is incorrect and adjust as needed.
	Too much airflow to the hopper.	Reduce the amount of airflow into the hopper.

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
Dry Air Process Pressure Sensor Alarm	The pressure sensor is damaged or not functioning properly.	Replace the pressure sensor.
	Faulty wiring.	Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.
Return Air Dew Point Sensor Alarm	The dew point sensor is damaged of not functioning properly.	Replace the dew point sensor.
		Diagnose and correct wiring problems. Refer to the wiring diagrams supplied with the Carousel Plus Drying System.

Dew Point Troubleshooting

Under normal operating conditions, the dryer will produce Dew points 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 dew point.	Low regeneration airflow.	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/intercooler 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 dew point readings with a calibrated portable dew point 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.

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

A majority of customer questions to Conair are related to dew point. It is important to realize that dew point 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. **Air flow** during the process drying circuit must be adequate to carry and distribute the heat throughout the entire bed of material inside the hopper.
4. **Dew point** 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.

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 GasTrac 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 set point	Refer to the drying specifications for your material and adjust the set point to the recommended set point. 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 set point.	Replace any defective process heater, contactors, fuses, etc. Ensure the selected drying temperature is within the design specifications of your dryer.
	Inaccurate process temperature readout.	Ensure the Process 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.

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.	Make sure there is an adequate supply of material to feed the loader on top of the drying hopper. Correct any problems with the conveying system that may be preventing your loader from filling the hopper. If your hopper has a level sensor for maintaining a material level less than completely full, be sure this sensor is adjusted properly.
	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.

Poor Material Drying Troubleshooting (continued)

Air flow - 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
Too much or too little airflow. **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.	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. **WARNING:** Any electrical checks should be performed by a qualified electrician. Repair or replace motor.
	Material level in the hopper too low.	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.

Poor Material Drying Troubleshooting (continued)

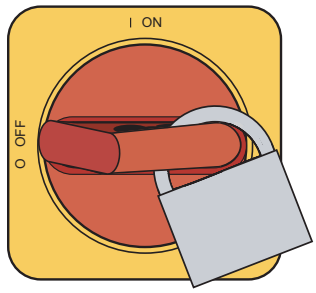
Replacement dew point monitors are available from Conair.

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

Dew point - The process air must be at a low dew point 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 dew point of the air is -20 to -40° F {-29 to -40° C}. If your dryer does not have a dew point readout, you can check the dew point with a portable dew point instrument. Conair sells a variety of portable dew point meters. Contact Conair

Problem	Possible cause	Solution
Dryer dew point is not reaching proper set point.	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. *See Installation section entitled, Checking for proper airflow.*
		Remove obstructions in the air stream, such as crimped hoses, etc.
	High dew point, 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 W1600-5000 dryers is measured at the inlet to the desiccant wheel.)	Clean the aftercooler/intercooler coils. *See Maintenance section entitled, Cleaning the aftercooler/intercooler coils.*
	Poor desiccant performance.	*See Troubleshooting section entitled, Replacing the desiccant wheel assembly.*

Replacing Fuses



1 **Disconnect and lockout the main power supply.**

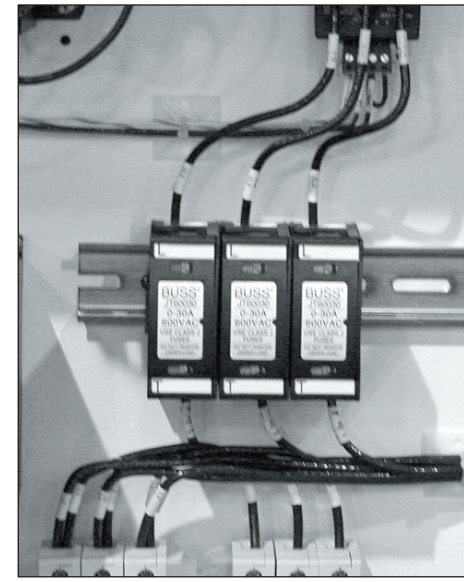
2 **Open the electrical enclosure door.**

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.

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.

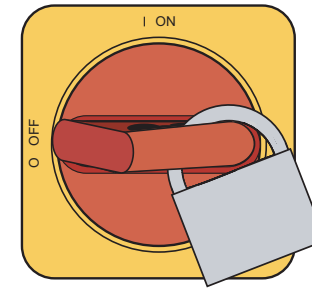
Fuse Blocks

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



Checking Heater Solid State Relays

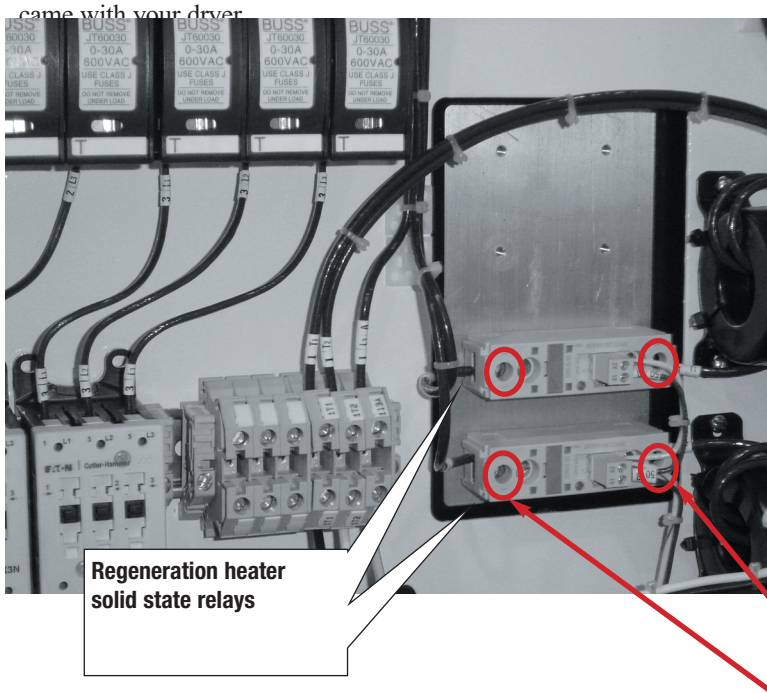
CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.



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.



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.

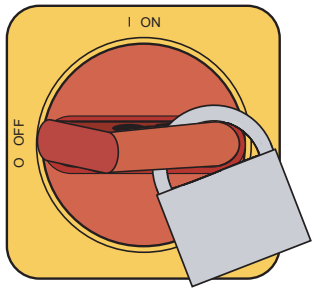
4 **Turn power on to the machine.**

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.



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.

To check or replace an RTD sensors:

1 **Disconnect and lockout the main power supply.**

2 **Remove dryer panels, as necessary.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*

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.**

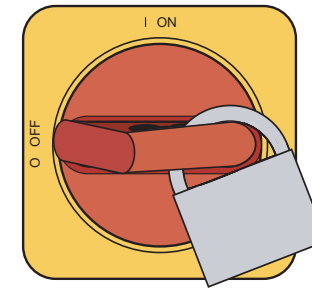
Replacing the Regeneration Heater

(W600 - 1000)

1 **Stop the dryer, disconnect the power, and follow proper lockout procedures.**

2 **Remove the right side panel 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.



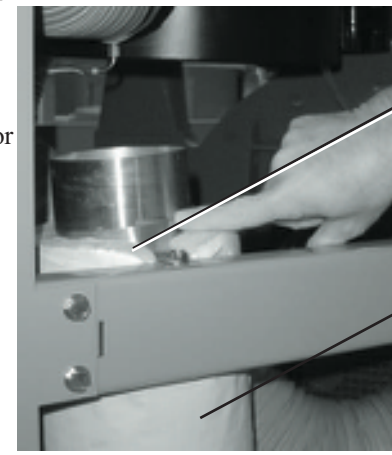
4 **Unplug the quick disconnect for the high temperature switch cable** at the switch.

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.

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.

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 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.

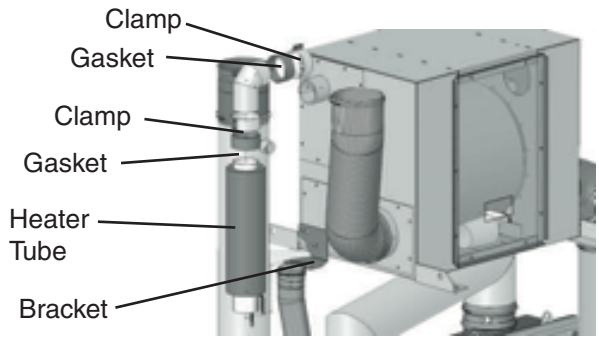
16 Connect the dryer to power and turn it on. **Verify that the regeneration temperature achieves the setpoint.**

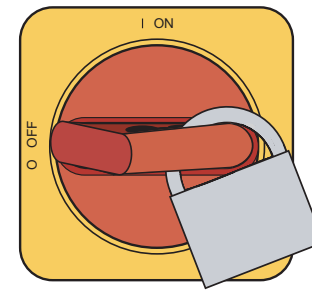
Replacing the Regeneration Heater

(W1600 - 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. *See Installation section entitled, Opening the dryer doors (W1600-5000).*





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.

3 **Disconnect the main power leads at the junction box inside the frame 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.

(continued)

Replacing the Regeneration Heater

(W1600 - 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.

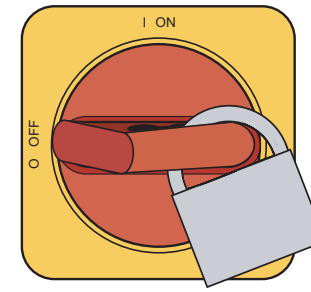
12 **To ensure all connections are correct, measure the resistance as in Step 3.** You should measure the readings as noted for a good heater.

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.

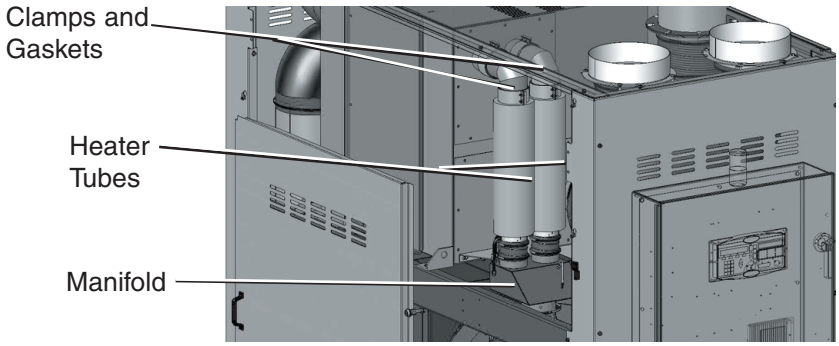
Replacing the Regeneration Heater

(W3200 - 5000)



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

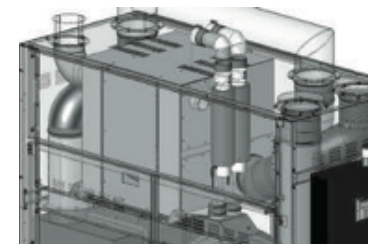
2 **Locate the heater(s).** Open the side panels of the dryer locating the heaters which are secured to the inlet of the desiccant wheel assembly by hard piping, a heater tube manifold, brackets and clamps. *See Installation section entitled, Opening the dryer doors (W1600-5000).*



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.

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 each heater tube to determine which 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(s). W3200-5000 model dryers lower heater clamp(s) are attached to a manifold that is secured to the desiccant wheel assembly with a bracket, loosen the clamp that secures the heater tube to the manifold to remove it from the dryer.**

(continued)

Replacing the Regeneration Heater

(W3200 - 5000) (continued)

6 **Loosen the two (2) lower clamps that secure the regeneration manifold and tubing to the desiccant wheel bracket.** Remove the regeneration manifold and the tubing that is attached to the bottom of the manifold. 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 regeneration manifold and 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.

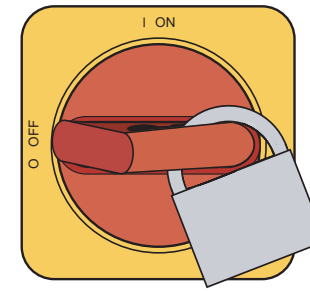
13 **To ensure all connections are correct, measure the resistance as in Step 3.** You should measure the readings as noted for a good heater.

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 the power, and follow proper lockout procedures.**
2. **Remove the upper and lower side panels from both sides of the dryer**.
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 bolts securing the aftercooler assembly to the desiccant wheel assembly.**
7. **Remove the bolts securing the desiccant wheel assembly in the dryer frame.**
8. **If the dryer aftercooler is being used, slide the desiccant wheel assembly towards the front of the dryer, being careful not to let it fall off the dryer frame.** Unbolt the aftercooler assembly from the back panel of the dryer and remove it.
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 If the dryer aftercooler is being used, **slide the desiccant wheel assembly towards the front of the dryer, being careful to not let it slip off one side of the dryer frame.** Position the aftercooler assembly into the dryer frame and bolt it to the rear panel.

12 **Position the desiccant wheel assembly and bolt it in place.**

13 **Bolt the aftercooler to the desiccant wheel assembly.**

14 **If the aftercooler is being used, reconnect the water lines.**

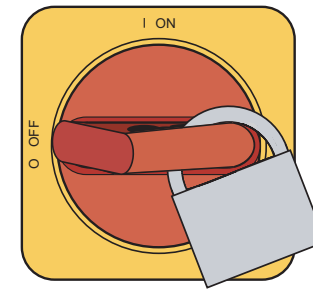
15 **Reconnect or reinstall all hoses, RTDs, and wiring connections.**

16 **Bolt the top cover in place.**

17 **Connect the power to the dryer and start it.** Ensure that the desiccant wheel assembly rotates in the correct direction.

18 **Replace all upper and lower side panels.**

Replacing the Desiccant Wheel Motor (W600 - 1000)



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

2 **Remove both 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.**

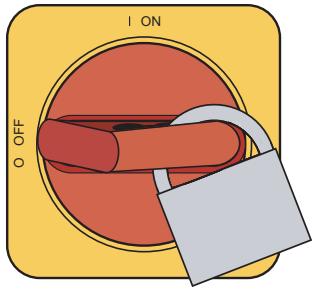
8 **Install the pulley on the new motor,** and position the belt on the pulley.

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.**



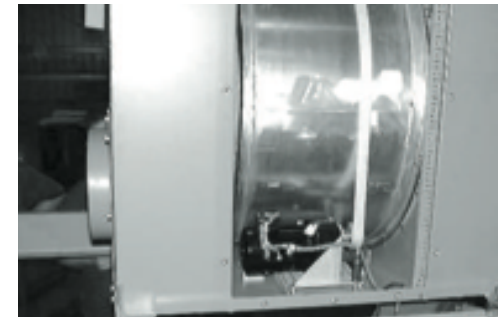
Replacing the Desiccant Wheel Motor (W1600 - 5000)

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.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*

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

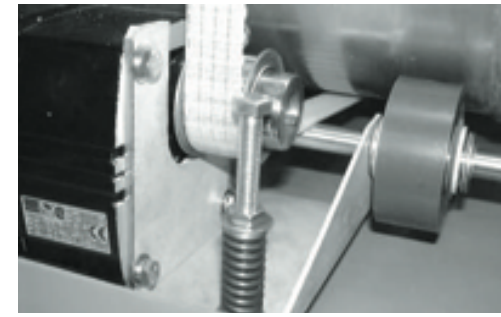
4 **Disconnect the wiring connection to the motor.**



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.

(continued)

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.

To check or replace an RTD sensors:

1 **Disconnect and lockout the main power supply.**

2 **Remove dryer panels, as necessary.** *See Installation section entitled, Opening the dryer doors (W1600-5000).*

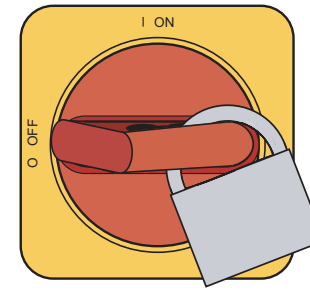
3 **Locate the RTD sensors.**

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.

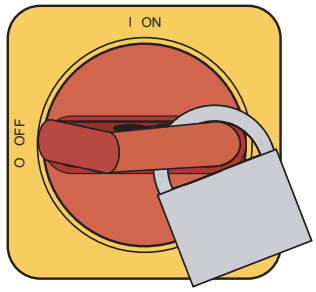
5 **To check with ohm meter,** measure the resistance across the RTDs. The resistance should be approximately 110 ohm at room temperature.

6 **Replace the sensor, if necessary.**

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 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 the power, and follow proper lockout procedures.**

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

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 bolts securing the aftercooler assembly to the desiccant wheel assembly.**

7. **Remove the bolts securing the desiccant wheel assembly in the dryer frame.**

8. **If the dryer aftercooler is being used, slide the desiccant wheel assembly towards the front of the dryer, being careful not to let it fall off the dryer frame.** Unbolt the aftercooler assembly from the back panel of the dryer and remove it.

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 If the dryer aftercooler is being used, **slide the desiccant wheel assembly towards the front of the dryer, being careful to not let it slip off one side of the dryer frame.** Position the aftercooler assembly into the dryer frame and bolt it to the rear panel.

12 **Position the desiccant wheel assembly and bolt it in place.**

13 **Bolt the aftercooler to the desiccant wheel assembly.**

14 **If the aftercooler is being used, reconnect the water lines.**

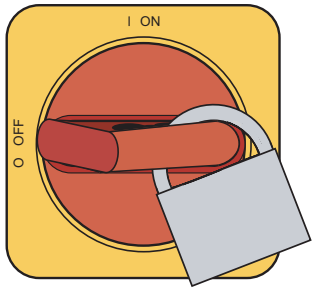
15 **Reconnect or reinstall all hoses, RTDs, and wiring connections.**

16 **Bolt the top cover in place.**

17 **Connect the power to the dryer and start it.** Ensure that the desiccant wheel assembly rotates in the correct direction.

18 **Replace all upper and lower side panels.**

Replacing the Desiccant Wheel Motor (W600 - 1000)



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

2 **Remove both 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.

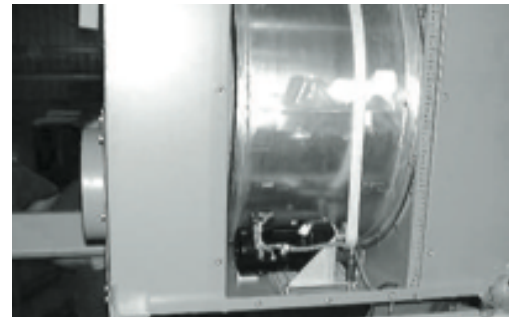
12 **Replace the side panels.**

Replacing the Desiccant Wheel Motor (W1600 - 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.**
See Installation section entitled, Opening the dryer doors (W1600-5000).

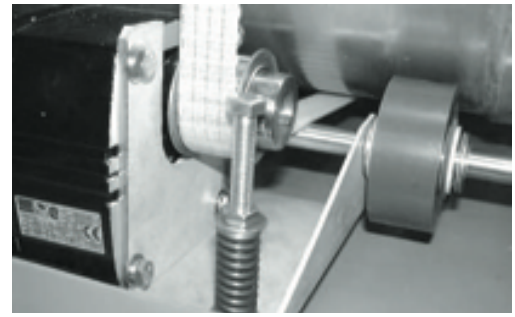
3 **Unbolt and remove the access panel on the side of the desiccant wheel assembly.**



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.

(continued)

Replacing the Desiccant Wheel Motor (W1600 - 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.

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department.

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 and serial numbers 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.

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.

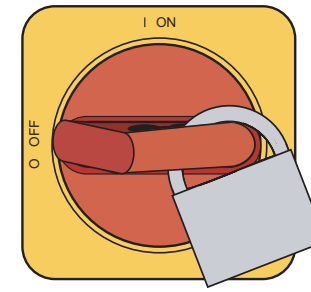
Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

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.

Cleaning the Precooler Coils

You need to clean the precooler 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 line.** Disconnect supply and return lines.

NOTE: If an optional flow control was added with the precooler, remove the compression fitting from the precooler inlet. Loosen the fitting on the flow control, then swing the copper water supply tube out and away from the precooler inlet.

3 **Remove the bolts securing the precooler cover.** Remove the cover.

4 **Remove the precooler by pulling it out** of the precooler 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 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 to the inlet.** If a manual shut off valve is used, it should be mounted on the inlet line as well.

9 **Connect the outlet of the precooler to the inlet of the flow control valve** using the pre-shaped copper tubing and compression fittings provided.

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.

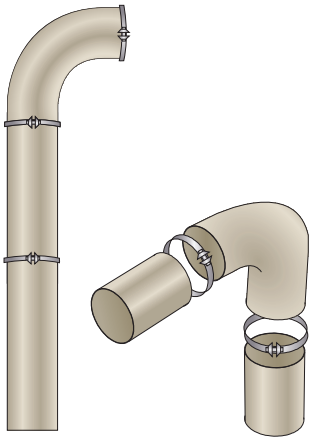
For more information about adding a Conair Hard Pipe Kit to your drying system, contact Conair.

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

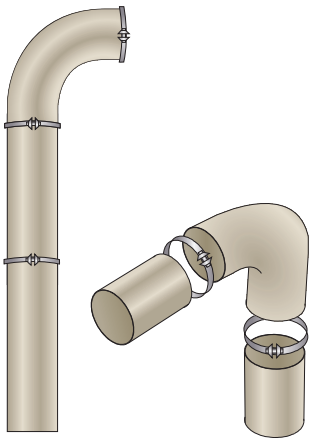
Conair's Instant Access
24/7 Parts and Service number is 800-458-1960.
Outside the U.S., dial 814-437-6861.

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 wiz lock cap screw (PN 21202504)
❒ Forty-eight (48) 516-18 hex head wiz 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 wiz lock cap screw (PN 21202504)
❒ Sixty-four (64) 516-18 hex head wiz 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)

(Continued)

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 insullation 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.**

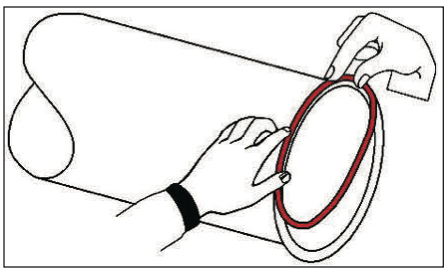
CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

(Continued)

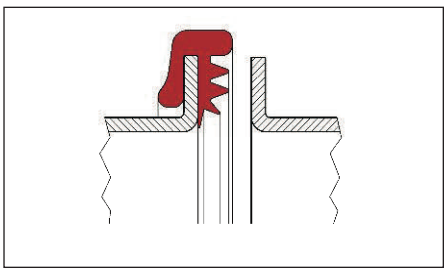
Using Pull Ring Connections

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.

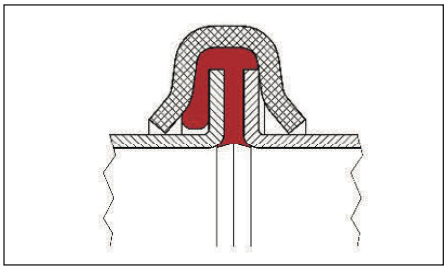
1 **Pull the U-shaped seal around one of the pipe flanges.** The seal can be stretched to fit, but avoid overstretching.



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



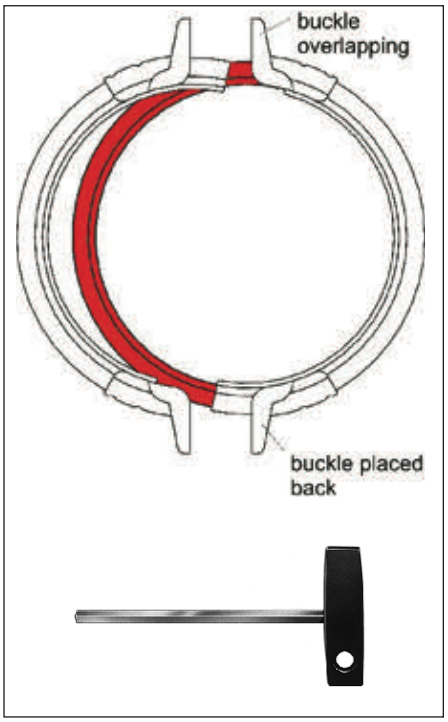
3 **Place the next section (counter-pipe) into position and push one half of the clamping ring onto the pipe flange.** Make sure that the pipes are aligned squarely and that the seals are not displaced.



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 alligned 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

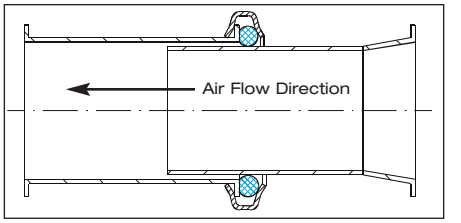
Slip tubes can be used to achieve specific lengths of pipe without having to cut, weld, or flange additional piping.

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.

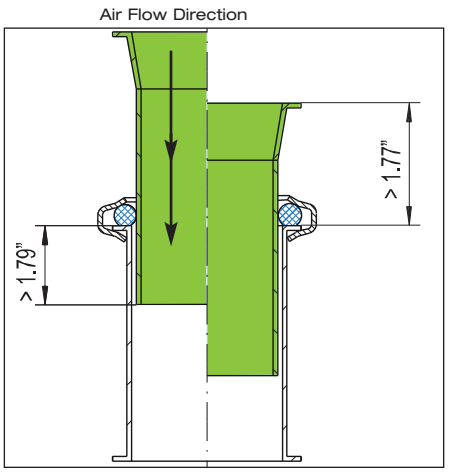
To order a slip tube or other parts for your hard pipe kit, Conair's Instant Access 24/7 Parts and Service number is 800-458-1960. Outside the U.S., dial 814-437-6861.

1 Roll the ring seal onto the slip tube.

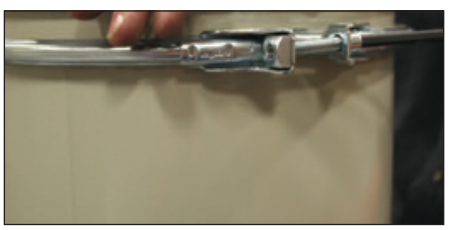


2 Slide the standard tube into the slip tube to the desired length.

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

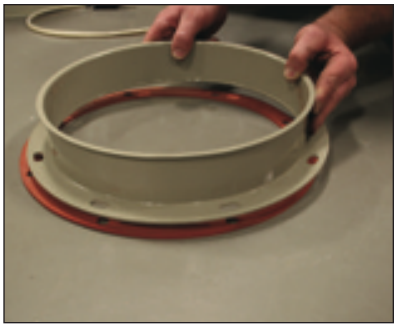
CAUTION: Hot surfaces. Always protect yourself from hot surfaces inside and outside the dryer and drying hopper.

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.

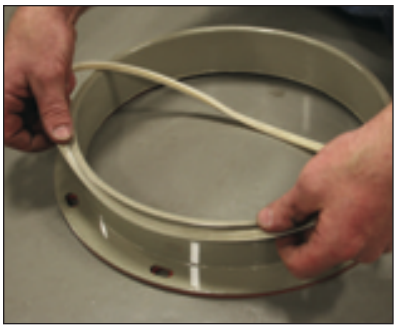
1 If adding the hard pipe kit to an existing drying system, **remove the flexible hose from the dryer inlet and outlet.** Make sure that the dryer inlet and outlet are clean and ready for installation of the flange adapter(s).

2 **Locate the Conair flange adapter and hard pipe gasket.**

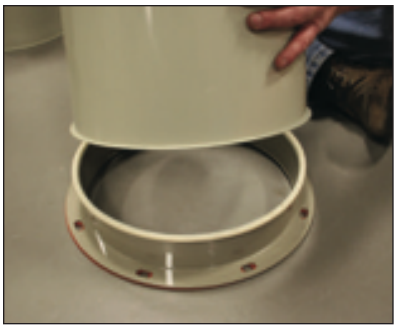


3 **Using the included hardware, attach the Conair flange adapter to the dryer outlet.**

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.**


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.

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

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

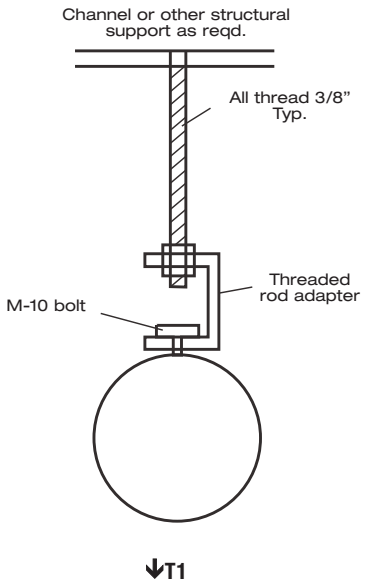
5 **Tighten the bolted pull ring bolt to a maximum torque of 25 Nm.** Be sure to alternate tightening bolts from one side to another so that the pull ring clamps securely and evenly around the pipe flange.

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 airflow, 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.

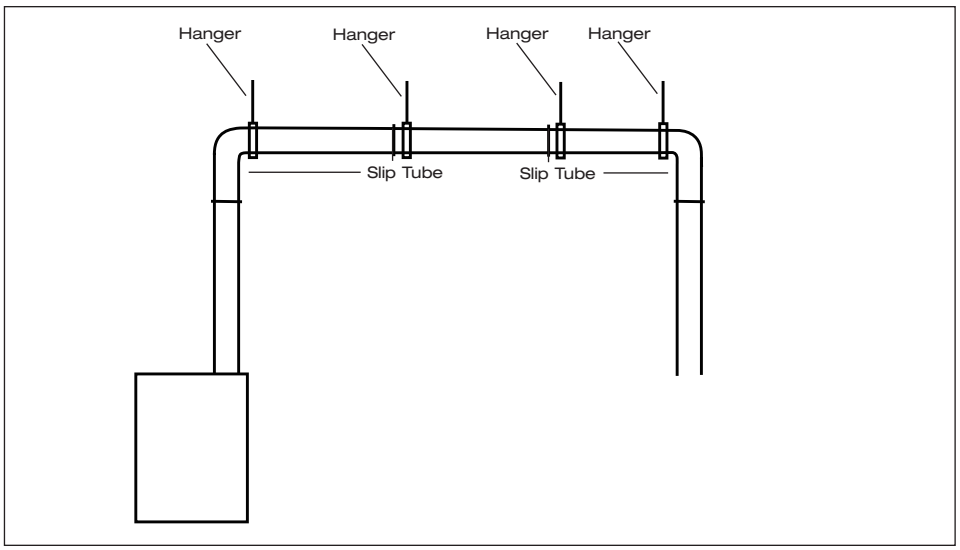
Proper Location and use of Hanger, Clamp, and All-thread



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:

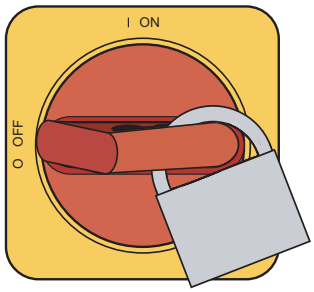
- Ceiling mount clamp with rubber insert
- Threaded rod adapter
- M-10 bolt
- Proper length of all-thread - 3/8" tip and proper connection to approved load carrying structure



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.



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.

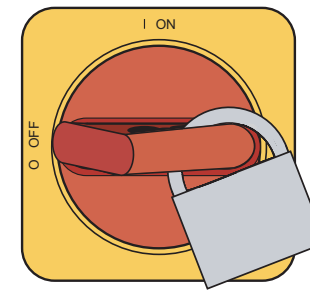
NOTE: In cases of heavy volatiles, steam cleaning or the use of solvents, such as acetone, may be necessary. Be sure to test a small area with the solvent you have selected to be sure there is no adverse reaction.

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.

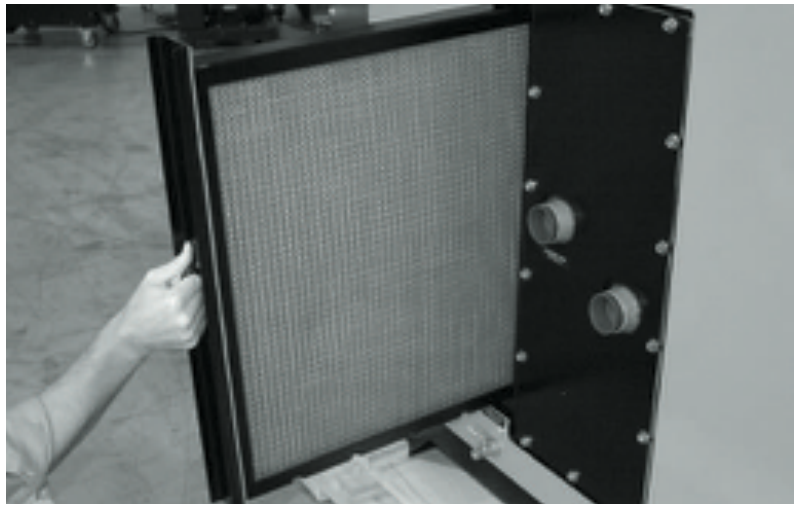
7 **Secure the cover in place using the original thumbscrews.** Make sure the cable is not pinched between the housing and the cover.

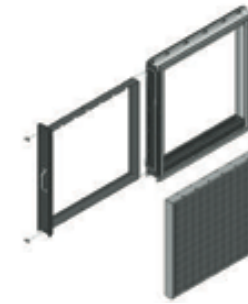
Cleaning the Volatile Trap on the Demister (W1600 - 5000)



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 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 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.**