

USER GUIDE

UGD033-0311

MDCW Carousel Plus Dryer

MDCW Models 15, 25, 50, 75, and 100 with DC-1 Controls



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

It's a good idea to record 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: UGD033-0311 _____

Serial Number(s): _____

Model Number(s): _____

* Display Firmware Version: _____

* Control Firmware Version: _____



*** NOTE:** Displayed upon initialization, during power up, or on a data tag inside the door.

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Purpose of the User Guide

This User Guide describes the Conair MDCW Carousel Plus series dryers and explains step-by-step how to install, operate, maintain, and repair this equipment.

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

How the Guide is Organized

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



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



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



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



An open box marks items in a checklist.



A circle marks items in a list.



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



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

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 on this machine 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 technical personnel who are familiar with the construction, operation, and potential hazards of this type of machine.

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 machine serial tag and data plate.

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

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

ATTENTION:

Read this so no one gets hurt

We design equipment with the user's safety in mind. You can avoid the potential hazards identified on this machine 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 moisture exhaust outlet.



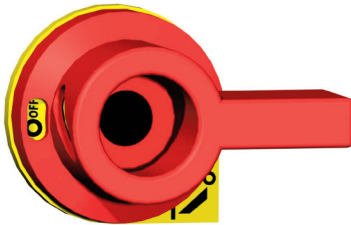
WARNING: Do not place aerosol, compressed gas or flammable materials on or near this equipment.

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 to the dryer, 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.



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What is the MDCW Carousel Plus Dryer?

The MDCW Carousel Plus Dryer is a self-contained, mobile unit designed to dry plastic resin and convey it with dehumidified air directly to a processing machine. This mobile unit contains:

- A mobile dehumidifying dryer
- Drying hopper with a material distribution box
- Conveying blower and filter*
- Direct feed machine loader with a demand sensor*
- Quick disconnect conveying hoses

*not on non-conveying models

The dryer produces hot, low dewpoint air that removes moisture from hygroscopic plastics. When the conveying function is turned on, the conveying blower conveys the dried resin to the machine loader mounted on the processing machine. The demand sensor on the machine loader viewing chamber allows you to convey just enough material to satisfy the shot size required for your process.

Typical Applications

The MDCW Carousel Plus Dryer was designed for drying and conveying beside the press. But it can also be used to pre-dry material in one location, and then transport the dried material to another location for conveying into the processing machine.



The MDCW can be used successfully in applications that require:

- A contamination-free drying environment.
- Drying temperatures of 100° to 375°F {66° to 191°C}.
- Throughput rates of 15 to 100 lbs {6.8 to 45.4 kg} per hour (some materials can be ran at a higher rate).
- Dewpoints of -40°F {-40°C}.
- Conveying material at distances up to, but not more than, 8 feet {2.4 m} vertically and 6 feet {1.8 m} horizontally. (The long haul option allows conveying material at distances up to, but not more than, 15 feet {4.6 m} vertically and 50 feet {15.2 m} horizontally.)



NOTE: Throughput rates will vary by MDCW model and type of material. See the Specification pages for recommended throughputs.

(continued)

Typical Applications (continued)

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

- A contamination-free drying environment
- Drying temperatures within the ranges shown in the following table:

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)*	150° - 375°F {66° - 191°C}
Low-high (with aftercooler & precooler)*	100° - 375°F {38° - 191°C}

*See page 3-11, Appendix B

- Throughput rates of 15 to 100 lbs {6.8 to 37.3} per hour (some materials can be ran at a higher rate).
- Dewpoints of -40°F {-40°C}.

Use the aftercooler when:

- You are drying at temperatures over 240°F {116°C}.
- Throughput rates are less than 50% of the dryer’s rated capacity.
- You are pre-drying material at temperatures over 150°F {66°C}.

How It Works

The Process (Drying) Cycle

The process blower pulls moist air from the top of the drying hopper. The air passes through the process filter and aftercooler, then into the desiccant wheel, where moisture is removed. The now dry air moves through the optional precoolers (if installed) and process heater, where it is heated to the drying temperature selected by the operator. The hot, dry air is delivered to the hopper where a spreader cone evenly distributes the air through the material.

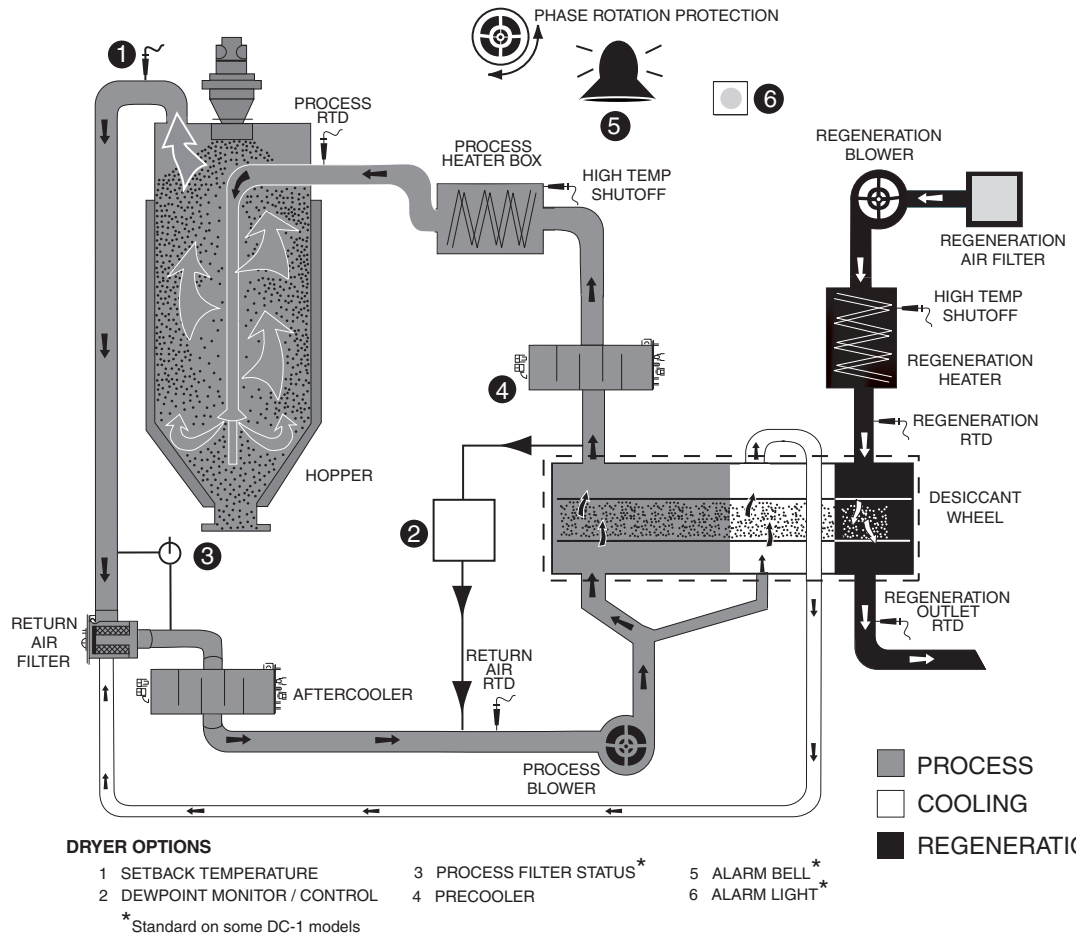
The Regeneration Cycle

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 wheel. The hot air purges moisture from the desiccant. The moist air is blown out the exhaust at the back of the dryer.

The Cooling Cycle

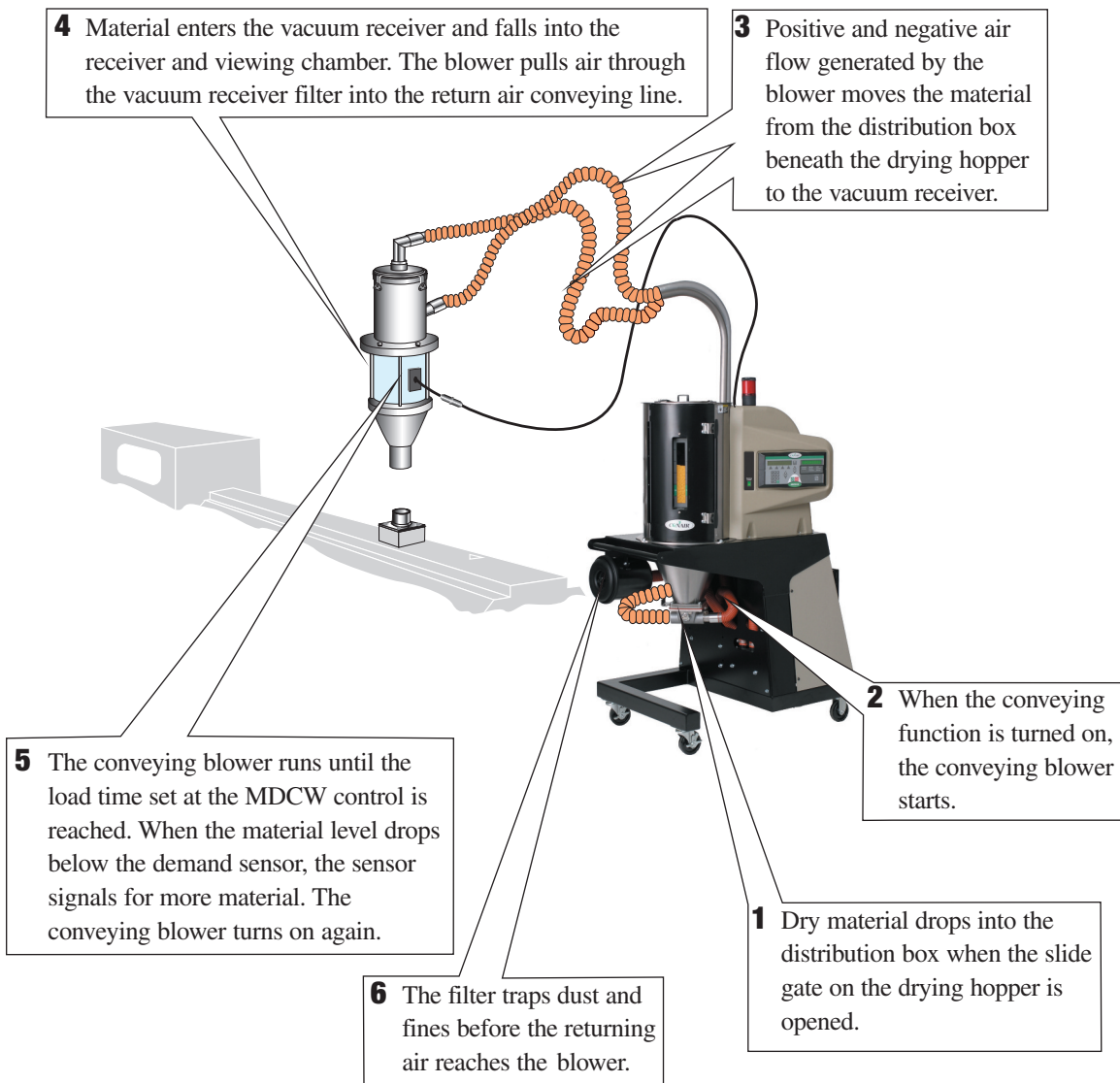
Regenerated desiccant must be cooled before it rotates back into the process cycle. The process blower pushes a small amount of air through the cooling section of the desiccant wheel. The cooling air then passes through the aftercooler and repeats the circuit.

How It Works (continued)

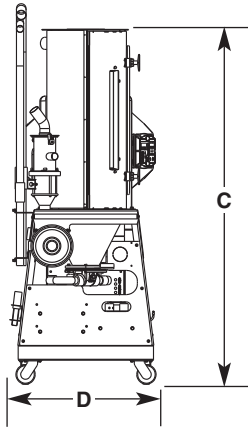
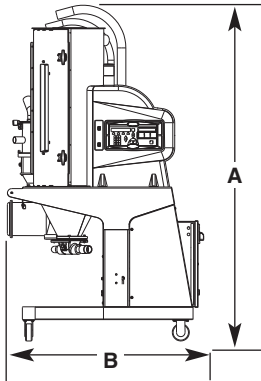


How Conveying Works

When the conveying function is turned on, the MDCW uses dry air to move material from the drying hopper to the process machine as it is needed.



Specifications: MDCW Carousel Plus Dryers



MODEL	W15	W25	W50	W75	W100
Standard hopper models*	RWH14-2	RWH14-3	RWH18-6	RWH24-9	RWH24-12
Performance characteristics (with full hopper)					
Air flow {SCFM}**	7.5	12.5	25	37.5	50
Air flow {ACFM @ 250°F}**	10	17	34	50	67
Drying temperature	All models 150 - 375°F {66 - 191°C} with options				
Dew point	All models -40°F {-40°C}				
Standard conveying dist. ft {m}	8 {2.44} vertical; 6 {1.83} horizontal				
Long distance option ft {m}	15 {4.57} vertical; 50 {15.24} horizontal				
Dimensions inches {cm}					
A - Height top of convey pipe	78.5 {199.4}	78.5 {199.4}	87.5 {222.3}	87.5 {222.3}	87.5 {222.3}
B - Overall width	28.5 {72.4}	28.5 {72.4}	40.5 {102.9}	40.5 {102.9}	40.5 {102.9}
C - Height to top of hopper	60.5 {153.7}	73.5 {186.7}	90.5 {229.9}	82.5 {209.6}	93.5 {237.5}
D - Depth	46 {116.8}	46 {116.8}	58 {147.3}	58 {147.3}	58 {147.3}
Outlet/inlet tube OD in. {cm}	2.5 {6.35}				
Weight lbs {kg}					
Standard dryer installed	500 {226.8}	550 {249.5}	600 {272.2}	675 {306.2}	750 {340.2}
Voltage - Total Amps (standard/long conveying distance)					
208 V/3 phase/60 Hz	16.9/20.9	16.9/20.9	21.9/25.9	22.8/26.8	NA
230 V/3 phase/60 Hz	15.3/18.9	15.3/18.9	19.8/23.4	20.6/24.2	24.9/30.5
400 V/3 phase/50 Hz ‡	8.5/9.6	8.5/9.6	11/12.1	11.5/12.6	15.1/16.2
460 V/3 phase/60 Hz	7.7/9.5	7.7/9.5	9.9/11.7	10.3/12.1	13.4/15.2
575 V/3 phase/60 Hz	6.0/7.8	6.0/7.8	7.8/9.4	8.2/9.8	10.7/12.5
Total kilowatts † kw {std./long}	1.5/2.7	1.5/2.7	1.9/3.0	4.0/5.1	4.6/5.7
Water requirements {for optional aftercooler}					
Recommended temp. §	45° - 85°F {7.2 - 29.4°C}				
Water flow gal/min {liters/min}	1 {4.6}		2 {9.1}		
Water connections NPT	3/4 in. NPT				
Compressed air requirements {self-loading option only}					
Compressed air	0.5 SCFH @ 80 psi				

SPECIFICATION NOTES:

* Other hopper sizes are available.

** The term SCFM stands for Standard Cubic Feet Per Minute, referenced to a pre-specified pressure, temperature and relative humidity. In most cases, SCFM is referenced to 14.7 PSIA 68° F and 36% relative humidity. ACFM stands for Actual Cubic Feet Per Minute, and must be supplied with a temperature reference, due to the change in air density with temperature. Because dryers operate at a relatively low pressure the effects on air density are negligible.

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

† TOTAL kW listed at a process setpoint of 250°F {121.1°C} and a regeneration temperature of 350°F {176.7°C}.

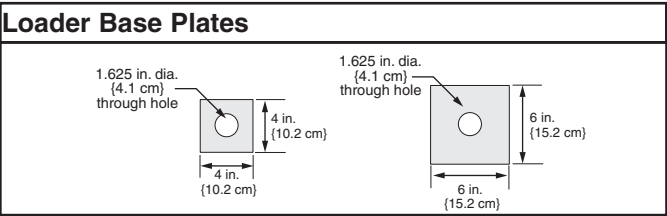
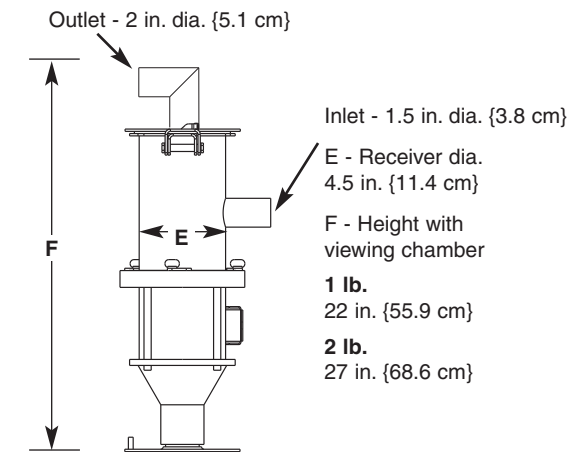
§ Temperatures above or below the recommended levels may affect dryer performance. Tower, chiller, or municipal water sources can be used.

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

(continued)

Specifications: MDCW Carousel Plus Dryers (continued)

TLR Tube Loader (machine loader)



Application Notes:

When to use high-heat models

You should select the high-heat dryer if you are drying at temperatures over 180°F {82°C}. High-heat models are equipped with high-temperature heaters and insulated process hose.

When to use the aftercooler

The aftercooler reduces the temperature of the air returning from the drying hopper, improving the efficiency of the desiccant. You should use the aftercooler if:

- You are batch drying at temperatures over 160°F {71°C}.
- Throughput rates are less than 50% of the dryer's rated capacity.

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 the time between cleaning.
- The material produces volatiles during drying which condenses into a waxy or oily residue, a volatile trap will help to protect the desiccant.

MDCW Carousel Plus Dryer Options

- **Volatile trap** (use only in conjunction with aftercooler) - The volatile trap is recommended if drying materials that produce volatile that condense into a waxy or oily residue and/or if the material contains excessive fines.
- **Precooler** - The precooler reduces the temperature of air flow after the desiccant wheel and before the process heater, enabling the dryer to control temperatures at low setpoints (100 - 150°F {38 - 66°C}).
- **Dewpoint monitor/dewpoint control** - The dewpoint monitor/dewpoint control allows the operator to monitor and control the performance of the dryer's dewpoint level.
- **Temperature setback** - The temperature setback automatically reduces the drying temperature to a lower standby mode when the machine throughput is reduced or stopped.
- **Audible/Visual alarms** - The audible and visual alarms are a combination of a blinking red alarm light and a horn that alerts the operator to a shutdown alarm.
- **Filter check** - The filter check sensor will activate a passive P10 alarm or a shutdown A29 alarm when the process filter is clogged or needs to be replaced.

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Unpacking the Boxes

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



NOTE: * Depending on the model ordered, the vertical conveying tubes may be shipped detached from the unit.

** Not included on non-conveying models

- 1 Carefully remove the dryer and components** from their shipping containers, and set upright. Note that the dryer is secured to its shipping container with two bands and blocking.
- 2 Remove all packing material,** protective paper, tape, and plastic.
- 3 Carefully inspect all components** to make sure no damage occurred during shipping, and that you have all the necessary hardware.

Unpacking the Boxes (continued)

- 4 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.
- 5 You are now ready to begin installation.** Follow the preparation steps on the following page.

Preparing for Installation

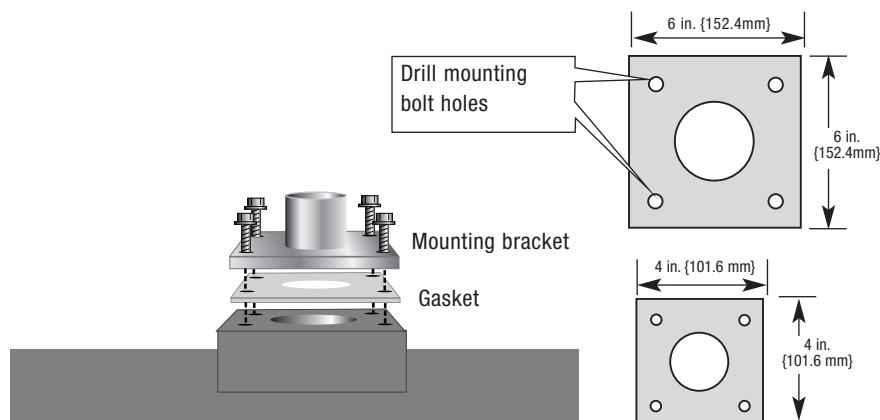
The MDCW Carousel Plus dryer has been designed for use beside the processing machine. The mobile unit also can be used for pre-drying in a remote location.

1 Make sure the location for the MDCW provides:

- ☐ **A grounded power source supplying the correct current** for your dryer model. Check the dryer's serial tag for the correct amps, voltage, phase and cycles. Field wiring should be completed by 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 or optional precooler.** The dryer's aftercooler and optional precooler requires 2 gals./min {7.6 liters/min} tower or city water at temperatures of 40° to 85°F {4° to 29°C}. Piping should be ran to the planned dryer location. Use flexible hose to connect the water pipes to the aftercooler or optional precooler.

- 2 Mount the vacuum receiver mounting bracket.** Lay out the bolt pattern of the processing machine feed throat on the blank base plate of the vacuum receiver mounting bracket and gasket. Drill holes for the mounting bolts you plan to use. Place the gasket between the feed throat and mounting bracket. Bolt the mounting bracket to the feed throat.

 **NOTE:** You will receive either a 4x4 inch {102x102 mm} or 6x6 inch {152x152 mm} mounting bracket, depending on the dryer model you have ordered. The mounting bracket is specified on your order. If you need a larger mounting bracket, call Conair Parts at 1-800-458-1960.

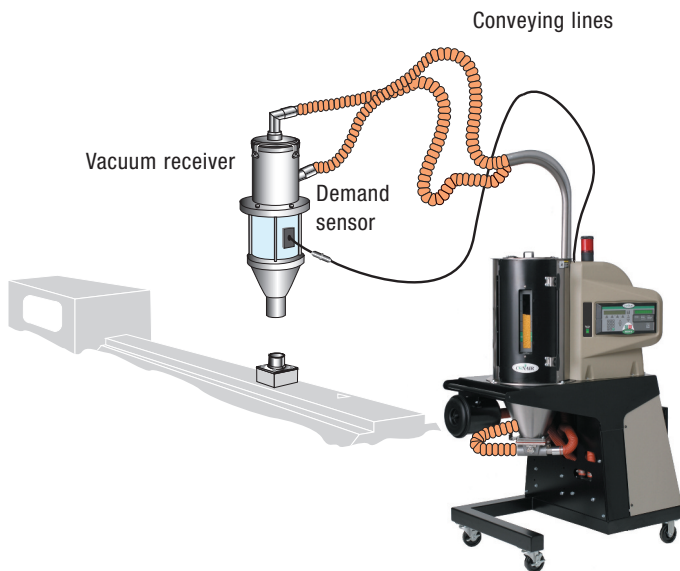


Installing the MDCW

The MDCW was designed to be mobile. When you move the MDCW, you will need to mount the vacuum receiver, connect the main power source, connect a water source for the aftercooler and/or optional precooler. Phasing of electric power should be consistent between locations. The MDCW has built in phase detection* and will not allow the unit to operate if the phasing is incorrect.

*Phase detection not standard with non-conveying models.

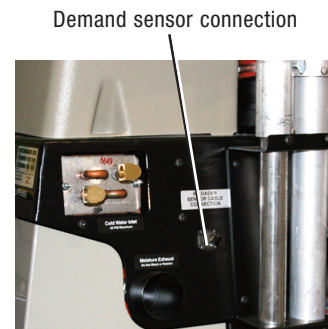
The first time you install the MDCW:



- 1 Move the MDCW to the processing area.** Lock the wheels on the drying cart.
- 2 Mount the vacuum receiver on the feed throat.** Push the vacuum receiver onto the mounting bracket.
- 3 Connect the conveying lines.**
- 4 Connect the demand sensor to the connector on the dryer frame.**
- 5 Connect the main power source.**
- 6 Connect a source of water for the aftercooler and/or optional precooler.**

Tools for installation:

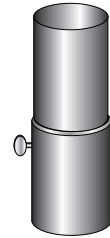
- ☐ Phillips screwdriver
- ☐ Flathead screwdriver



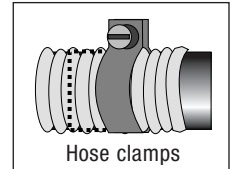
Connecting Conveying Lines

The vertical conveying tubes and flexible conveying hoses may have been removed for shipping. To assemble:

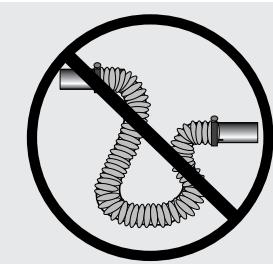
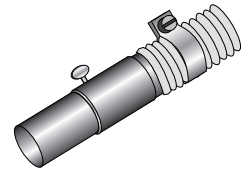
- 1 Insert each vertical conveying tube into its quick disconnect fitting on the MDCW.** Push the tube down until you feel it seat snugly inside the disconnect fitting. Tighten the thumb screws on the fittings to secure the tubes.



- 2 Secure flexible conveying hoses to the vertical tubes with hose clamps.** Insert the tube at least 1 inch {2.54 cm} into the flexible hose. Secure the hose clamp at least 1/4 inch {0.64 cm} from the end of the tube.



- 3 Attach the flexible conveying hoses to the appropriate inlet and outlet of the vacuum receiver.** Push the quick disconnect fitting on the material conveying hose over the material inlet tube. Push the quick disconnect fitting on the return air conveying hose over the conveying air outlet of the vacuum receiver. Tighten the thumb screws on the fitting.

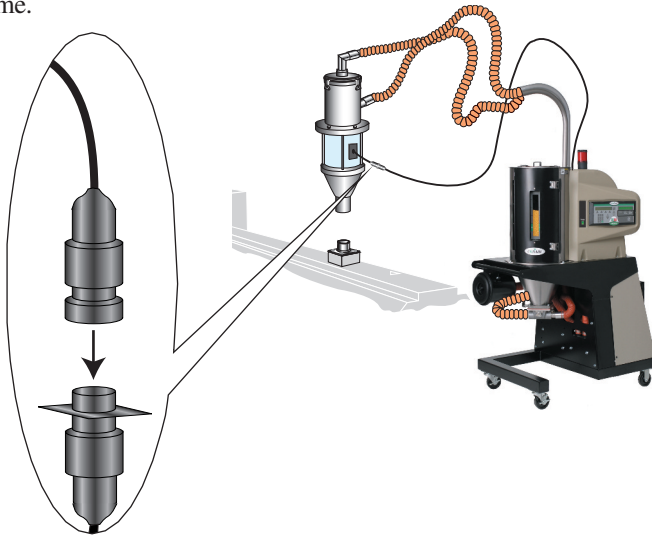


NOTE: Do not allow the flexible hoses to kink or crimp.

Connecting the Demand Sensor

The capacitive demand sensor monitors the level of material in the viewing chamber of the vacuum receiver when the MDCW is conveying. The sensor signals the MDCW control to start the conveying blower whenever the level of material drops below the amount that you want to maintain at the feed throat.

- 1 Plug the sensor cable into the multi-pin connector on the side of the MDCW frame.



❖ **TIP:** Prevent damage to the demand sensor cable by attaching it to the return air conveying line with a wire tie.

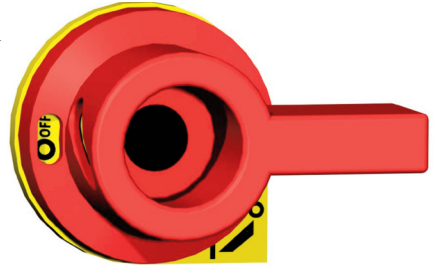
Do not tie the cable to the smaller-diameter material conveying line. Material passing through the line will generate static electricity and noise in nearby electrical cables.

Connecting the Main Power



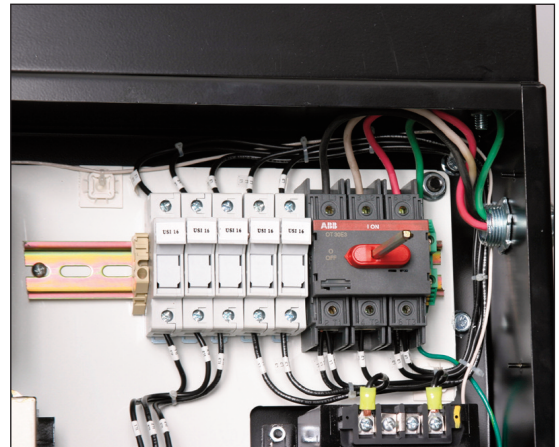
CAUTION: Always disconnect and lock out the main power sources before making electrical connections. Electrical connections should be made only by qualified personnel.

- 1 Open the dryer's electrical enclosure** by turning the disconnect dial on the dryer door to the Off or "O" position. Lock out the main power (see Page 1-6 for complete lock out information). Turn the captive screw, and swing the door open.



- 2 Insert the main power wire** through the knockout in the side of the enclosure. Secure the wire with a rubber compression fitting or strain relief.
- 3 Connect the power wires** to the three terminals at the top of the power disconnect.
- 4 Connect the ground wire** to the ground lug as shown in the photo.

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



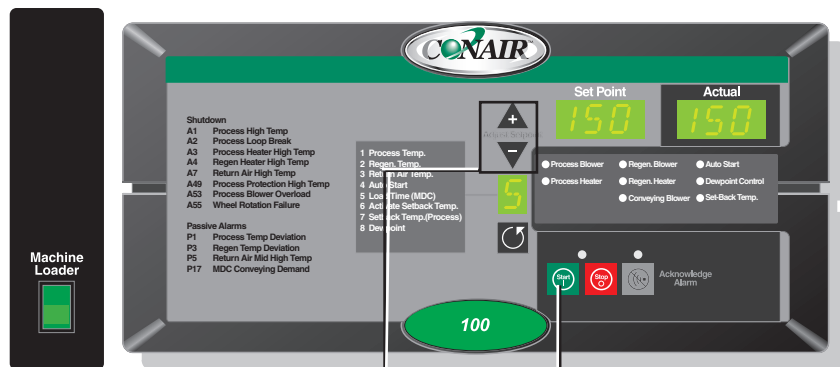
Checking for Proper Air Flow

IMPORTANT: This check is needed on non-conveying MDCW models 50, 75, and 100. This procedure is not required on the conveying MDCW 15 - 100 models because phase detection is standard.

 **CAUTION:** This step must be performed before filling the hopper with material. Performing this step after the hopper is filled with material could cause damage to the dryer if the airflow direction is incorrect due to improper phase connection. Material from the hopper can be pulled into the process heater, causing permanent damage.

- 1 Turn on the main power to the dryer.** Make sure the dryer's disconnect dial is on the ON position. This powers up the control and the display lights will illuminate.
- 2 Set the drying temperature.** Press the setpoint adjust (+) or (-) buttons to enter a low temperature (for example 150°F {66°C}).
- 3 Press the START button.**  Disconnect the process filter and feel for suction at the inlet to the filter. If the airflow is traveling in the correct direction you should feel suction.

 **CAUTION: Hot surface.** Do not place your hand directly on the delivery air outlet. The outlet and the air can get hot enough to burn your hand.



Setpoint Adjust Buttons

Start Button

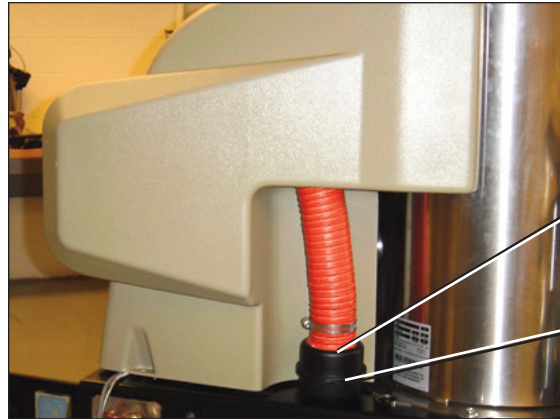
(continued)

Checking for Proper Air Flow (continued)

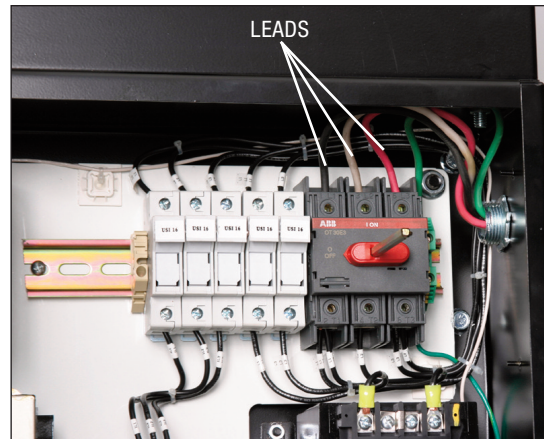
4 Press the Stop button.



Reconnect the process filter that was disconnected in Step 3.



5 If the airflow is incorrect, disconnect the power, follow the proper lockout procedure, and swap any two of the three main power wires.



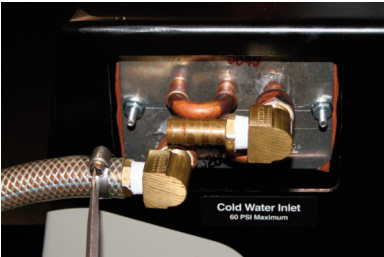
WARNING: All wiring, disconnects, and fuses should be installed by qualified electrical technicians in accordance with electrical codes in your region. Always maintain a safe ground. Do not operate the equipment at power levels other than what is specified on the the machine serial tag and data plate.

Connecting the Aftercooler

The aftercooler and optional precoolers require a source of cooling water and a discharge or return line.

To connect water hoses:

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



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

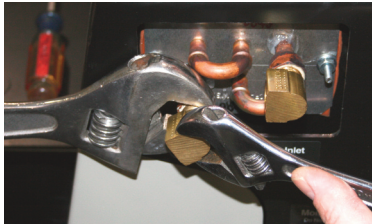


 **NOTE:** Water to aftercooler should be turned off when the dryer is not running to prevent condensation.

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

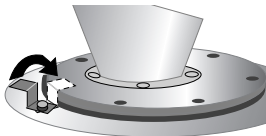
❖ **TIP:** If an optional flow control is being installed to the aftercooler, the manual shut off valve should be installed on the inlet line for the flow control.

❖ **TIP:** To ensure that the aftercooler's copper piping is not damaged or pinched while installing an adapter, use a wrench to brace the aftercooler piping.



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 receiver or loader for detailed installation instructions.

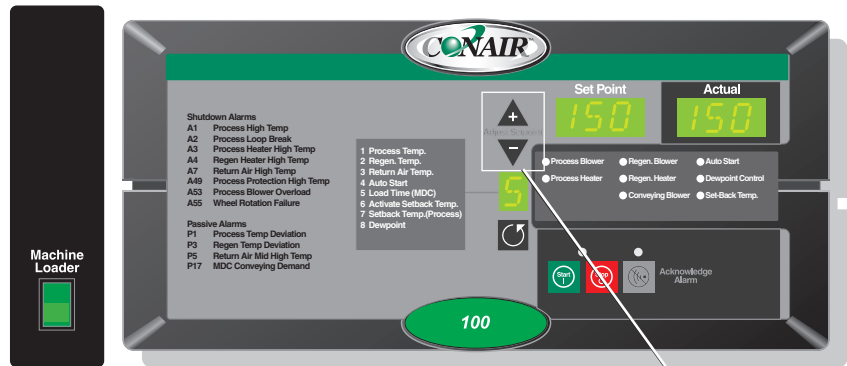


IMPORTANT: Check to ensure that all material conveying hoses are placed away from the control panel. Static electricity can damage the control circuit.

Testing the Installation

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

- 1 Make sure there is no material in the hopper.** If you have mounted a loader or vacuum receiver on the hopper, disconnect the material inlet hose at the source.
- 2 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 lights will illuminate.
- 3 Set the drying temperatures.** Press temperature select with the select category button, and then press the setpoint adjust (+) or (-) buttons to enter a low setpoint temperature (150°F {66°C}).



Setpoint Adjust Buttons

- 4 Press the START button.**



If everything is installed correctly:

- The green light on the start button will illuminate.
- The process and regeneration blowers and LEDs will turn on.
- The process and regeneration heaters and LEDs will turn on.

Testing the Installation (continued)

5 Turn On the loader switch.

- The conveying blower should turn on and the LEDs will turn off and on.

6 Turn OFF the rocker switch for the loader.

7 Press the STOP button.



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

8 The test is over.

If the dryer performed the normal operating sequences as outlined, you can load the hopper and begin operation. If it did not, refer to the *Troubleshooting section* of the User Guide.

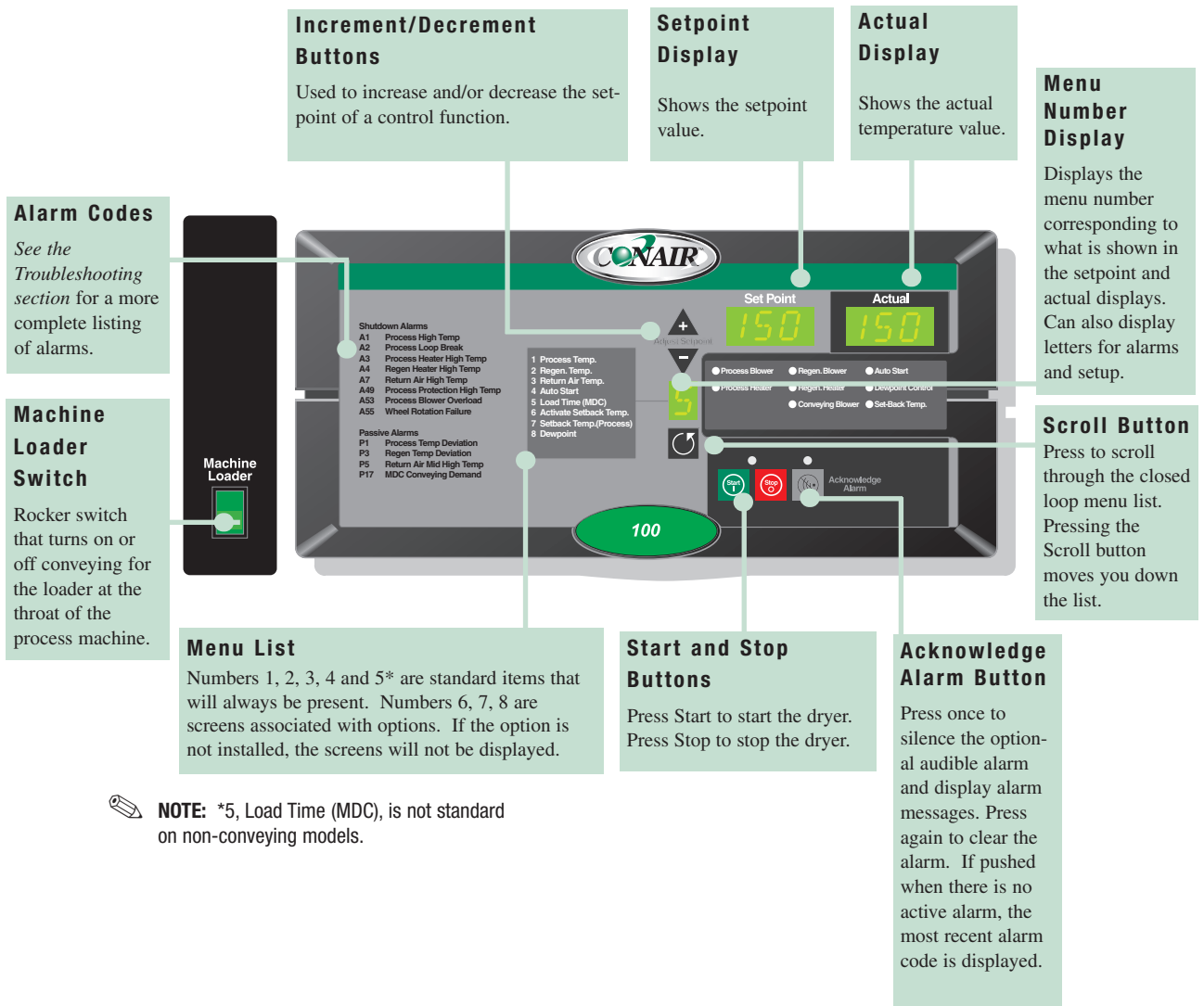
 **NOTE:** Testing loader is not applicable on non-conveying models.

 **NOTE:** Non-conveying MDCW 50, 75 & 100 may experience an A2 alarm if phasing is backwards, because there is no phase detection on non-conveying models.

Operation

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The MDCW Dryer: Control Panel DC-1



NOTE: *5, Load Time (MDC), is not standard on non-conveying models.

MDCW Carousel Plus Dryer Control Functions

Dryer functions are values that you can set or monitor. Press the Scroll button until the function you want to set or monitor appears in the LED display.

 **NOTE:** Grey shaded screens denote optional functions. If the options were not purchased with the dryer, those screens will not appear. All options can be purchased and installed in the field.

Control Function Flow Chart

The following flow chart provides a quick summary of the control functions. For an explanation of each control function, see Control Function Descriptions (page 4-5).

 **NOTE:** Screen numbers correspond with numbers beside each block in the flow chart.



NOTE: Screens 1-4 are only displayed during initialization.



NOTE: Gray areas designate parameters associated with options.

Display Menu Number Setpoint Display Actual Display

POWER ON

screen #

1	Pr	up	5 sec
2	CPC	25	5 sec - Model Designator
3	C	v2.0	5.01 1 sec - Control Software Version
4	d	v2.0	5.02 1 sec - Display Software Version
5	1	250	250 Process Temp Default Screen
6	2	350	350 Regen Temp
7	3	100	100 Return Air Temp
8	4	16	On Auto Start
9	5	10	----- Machine Loader Load Time
10	6	150	120 Activate Setback Temp (Option)
11	7	145	250 Setback Temp Process (Option)
13	8	-40	Dewpoint Monitor
14	0	0	Password Screen

Setup Access Code 754

15	C	10	C01
16	C	375	C02
17	C	off	C03
18	C	350	C04
19	C	off	C05
20	C	10	C06
21	C	20	C07
22	C	200	C08
23	C	20	C09
24	C	off	C10
45	C	off	C11
26	C	off	C12
27	C	off	C13
46	C	off	C14
47	C	F	C15
48	C	off	C16
49	C	60	C17

Test Mode Access Code 755

28	H	off	1
29	H	off	2
30	H	off	3
31	H	off	4
32	H	off	5
33	H	off	6
34	H	off	7
35	H	off	8
36	H	off	9
37	H	off	10
38	H	off	11
39	H	off	12
40	H	off	13
41	H	off	14
42	H	off	15
43	H	off	16

Alarm History Access Code 756

44	A	1	P3
44	A	2	A1
44	A	3	A5
44	A	4	A4
44	A	5	P1
44	A	6	P5
44	A	7	A1
44	A	8	A7
44	A	9	A2
44	A	10	A6

Control Function Descriptions

Screen	Function
SCREEN 1 Pr up	Once power is turned on, this screen is displayed for 5 seconds while the control goes through self-checking.
SCREEN 2 CPC 25	Once power is turned on and screen 1 is displayed for 5 seconds, this screen is displayed for another 3 seconds. It shows the dryer model number for which the control is configured.
SCREEN 3 C v2.0 5.01	After the model number is displayed, this screen flashes for 1 second and displays the control board software version.
SCREEN 4 d v2.0 5.02	After the control versions is shown, the screen flashes again for 1 second and displays the display board software version.
SCREEN 5 (Default Screen) 1 250 250	This is the DEFAULT screen. It shows the process air temperature setpoint and actual temperature measured at the inlet to the drying hopper. The (+) or (-) buttons can be used to change the setpoint. Holding the (+) or (-) buttons in will cause the number to ramp up faster the longer the button is held. The display will return to the default screen from anyplace in the menu structure if nothing is done after 10 minutes.
SCREEN 6 2 350 350	Shows the regeneration air setpoint and actual temperature. The setpoint can not be changed from this screen; it is shown only as a reference.

Control Function Descriptions (continued)

Screen

SCREEN 7

3 **100** **100**

SCREEN 8

4 **16** **On**

SCREEN 9

5 **10** **-----**

Function

This screen shows the actual return air temperature measured at the inlet to the process blower. If the optional aftercooler flow control is installed, a setpoint will be displayed on this screen as well. The (+) or (-) buttons can be used to change the set point. Holding the (+) or (-) buttons in will allow the number to ramp up faster the longer the button is held.

This screen is used to set the dryer to auto start. The dryer must be on but not running to set auto start. The value shown is the countdown time setpoint. It is adjustable from 0.1 hours to 150 hours. Once the countdown time is set, press the **“RUN”** button. The display will show **“ON”** to tell the operator that the auto start is on and counting. The auto start LED on the display also flashes green when the auto start is armed and counting down. The LED will turn solid green when the dryer starts. The dryer will begin operating when the control has finished counting down.

This screen shows the amount of time the conveying blower will run. Based on the position of the demand sensor in the material receiver, this time may need to be adjusted. The time should be set for the time it takes to satisfy the demand sensor + 1 second. If the MDCW tries to load three consecutive times without satisfying the demand signal the dryer will display a passive alarm. The range for this time setting is 5 to 20 seconds.

Control Function Descriptions (continued)

Screen
SCREEN 10 (Setback Temperature Option)
6150120
SCREEN 11 (Setback Options)
7145250

Function
If the dryer has the setback on temperature option installed, this is the temperature setpoint for the air at the outlet of the drying hopper. When this setpoint is reached, the dryer will automatically change the process setpoint to the setpoint shown on Menu number 7, screen 11. When the temperature at the outlet of the hopper drops below the setpoint entered on this screen, (in this example 150) by the value shown under C09, screen 23, the dryer will return to the normal drying setpoint.
If the dryer has the setback on temperature option installed, this is the temperature setpoint to which the process air will revert once the air at the outlet of the hopper has reached its setpoint (screen 10, Menu number 6).

 **NOTE:** See additional info on page 4-25 for use of Setback.

Control Function Descriptions (continued)

Screen

SCREEN 13 (Dewpoint Monitor/
Dewpoint Control Option)

8

-30

-40

SCREEN 14

0

0

Screens 15-27 require access
code 754.

SCREEN 15 (Set up Screen)

C

10

C01

Function

If the dryer has the dewpoint monitor option installed, this screen will show the actual dewpoint of the process delivery air measured at the inlet of the hopper. With the dewpoint monitor option installed, there will only be an actual display (no setpoint value). Although the dryer is capable of producing dewpoints much lower than -40° F {-40° C}, the minimum sensor range is -40° F {-40° C}. The setpoint is present when the dewpoint control is enabled. The dewpoint control will automatically adjust regeneration temperature setpoint. The dewpoint control will not activate if its setpoint equals -40°F {-40° C}.

This is the password entry screen that gives the user access to the Set Up, Test Mode, and Alarm History screens. The user can get to the non-password protected control functions through this screen by pressing the scroll button and the adjust setpoint button at the same time. This works only if you are on menu number 1 (default screen). The access codes are as follows:

Set Up Screens	754
Test Mode Screens	755
Alarm History Screens	756

To exit the password section, enter 500 and press scroll or cycle the power.

This is the process deviation temperature screen. The range is 5 to 20° F {3 to 11° C}. This is the deviation temperature band around the set point. If the dryer goes outside this band, the dryer will display a passive alarm (P1).

Control Function Descriptions (continued)

Screen

Screens 15-27 require access code 754.

SCREEN 16 (Set up Screen)

C 375 C02

SCREEN 17 (Set up Screen)

C off C03

SCREEN 18 (Set up Screen)

C 350 C04

SCREEN 19 (Set up Screen)

C off C05

Function

This is the process high temperature limit screen. It limits how high the process temperature setpoint (screen 5) can be adjusted. The range is 100° - 450°F {38° - 232°C}

This is the process heater autotune screen. The autotune function can be turned on by pressing the (+) key. Once the (+) key is pressed, the screen will show On and then start the autotune process. This may take a minute or so to complete. When finished, the display will read "don". The new PID values are automatically saved. An autotune should be performed on a cold dryer. Before beginning autotune, be certain your normal drying temperature has been entered on screen 5, Menu number 1.

This is a regeneration temperature screen.

 **NOTE:** There is normally no need to change this temperature.

This is the regeneration heater autotune screen. The autotune function can be turned on by pressing the (+) key. Once the (+) key is pressed, the screen will show "On" and then start the autotune process. This may take a minute or so to complete. When finished the display will read "don". The new PID values are automatically saved. An autotune should be performed on a cold dryer. It will autotune to the value entered on screen 18.

 **NOTE:** Software may allow the Process temperature setpoint limit up to 450°F {232°C}, however Conair does not recommend a setpoint limit over 375°F {191°C} due to nuisance alarms.

 **NOTE:** Conair is not responsible for damage caused by excessively high drying setpoints that are not in accordance with your drying material recommendations.

Control Function Descriptions (continued)

Screen

Screens 15-27 require access code 754.

SCREEN 20 (Set up Screen)

C

10

C06

SCREEN 21 (Set up Screen)
Regeneration Differential
Temperature

C

20

C07

SCREEN 22 (Set up Screen)
Regeneration Outlet temperature

C

200

C08

Function

This screen shows the time delay setting for the conveying blower on the MDCW. This is the minimum time the MDCW will wait before starting another load cycle.

This screen shows the minimum differential temperature at the regeneration inlet and the outlet at the desiccant wheel. If the actual temperature is under the set value, the dryer will alarm (P31), but will still run.

This screen is the actual temperature measured at the regeneration outlet on the wheel.

Control Function Descriptions (continued)

Screen

Screens 15-27 require access code 754.

SCREEN 23 (Set up Screen)
Setback Temperature Band Option

C 20 C09

SCREEN 24 (Set up Screen
Option)
Aftercooler Flow Control Enable

C off C10

Function

This screen is the Setback Temperature Band. This temperature is the amount the return air out of the hopper has to drop below to activate setback temperature (screen 10) before the original process temperature is restored. For example, if the activate setback temperature was set at 180° F {82° C} and the dryer was in setback. The actual temperature measured at the outlet of the hopper, when there is a 20° setpoint (screen 23), would have to drop below 160°F {71° C} to restore the original process setpoint.

This screen is the Aftercooler Flow Control Enable screen. By pressing the (+) or (-) keys, the setting can be changed. With this off or disabled, the dryer will not open the flow control valve and try and control the return air temperature. There will also be no setpoint value on Menu number 3, screen 7.

Control Function Descriptions (continued)

Screen

Screens 15-27 require access code 754.

SCREEN 26 (Set up Screen)

C	off	C12
---	-----	-----

SCREEN 27 (Set up Screen)
Precooler Option

C	off	C13
---	-----	-----

Screen 28-43 require access code 755.

SCREEN 28 (Test Mode Screen)

H	off	1
---	-----	---

Function

Reserved function. This should always be off.

This screen shows how the precooler is set to operate. If it is set to "Off" the control assumes the precooler is not installed in the process line and will not control well below 150° F {66° C}. If the screen is set to "On" the control will assume the pre-cooler is connected in the process line and will only allow setpoints from 100° to 150° F {38 to 66° C}. The control will also assume that the water flow rate is set manually with a ball valve and make no attempt to control water flow. The pre-cooler option must be installed for this screen to appear.



NOTE: If this function is set to off, make sure the water to the precooler is turned off.



NOTE: More parameters for this access code screens 46 -49.

This is the Test Mode screen for the process blower. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the process blower output will be turned on for 3 seconds and then shut off automatically.

Control Function Descriptions (continued)

Screen

Screen 28-43 require access code 755.

SCREEN 29 (Test Mode Screen)

H

off

2

SCREEN 30 (Test Mode Screen)

H

off

3

SCREEN 31 (Test Mode Screen)

H

off

4

SCREEN 32 (Test Mode Screen)

H

off

5

SCREEN 33 (Test Mode Screen)

H

off

6

Function

This is the Test Mode screen for the process heater. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the process heater output will be turned on for 3 seconds and then shut off automatically.

 **NOTE:** The isolation contactor will not be engaged, therefore, no electricity will go the heater. The solid state relay contacts should close.

This is the Test Mode screen for the regeneration blower. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the regeneration blower output will be turned on for 3 seconds and then shut off automatically.

This is the Test Mode screen for the regeneration heater. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the regeneration heater output will be turned on for 3 seconds and then shut off automatically.

 **NOTE:** The isolation contactor will not be engaged, therefore, no electricity will go the heater. The solid state relay contacts should close.

This is the Test Mode screen for the wheel motor. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the wheel motor output will be turned on for three seconds and then shut off automatically.

This Test Mode screen is not used in the current program.

(continued)

Control Function Descriptions (continued)

Screen	Function
Screen 28-43 require access code 755.	
SCREEN 34 (Test Mode Screen) H off 7	This is the Test Mode screen for the isolation contactor. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the isolation contactor output will be turned on for 3 seconds and then shut off automatically.
SCREEN 35 (Test Mode Screen) H off 8	This is the Test Mode screen for the alarm output (horn and/or red light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically.  NOTE: The alarm light on the membrane switch will not come on. If the optional alarm horn or red light is not installed nothing will happen.
SCREEN 36 (Test Mode Screen) H off 9	This is the Test Mode screen for the pre-cooler flow control valve. By pressing the (+) or (-) keys the setting can be changed. When set to "On" the precool flow control valve output will be turned on for 3 seconds and then shut off automatically.  NOTE: If the optional precool flow control valve is not installed nothing will happen.
SCREEN 37 (Test Mode Screen) H off 10	This is the Test Mode screen for the after-cooler flow control valve. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the aftercooler flow control valve output will be turned on for 3 seconds and then shut off automatically.  NOTE: If the optional aftercooler flow control valve is not installed nothing will happen.
SCREEN 38 (Test Mode Screen) H off 11	This screen is not used in the current program.

Control Function Descriptions (continued)

Screen

Screen 28-43 require access code 755.

SCREEN 39 (Test Mode Screen)

H	off	12
---	-----	----

SCREEN 40 (Test Mode Screen)

H	off	13
---	-----	----

SCREEN 41 (Test Mode Screen)

H	off	14
---	-----	----

SCREEN 42 (Test Mode Screen)

H	off	15
---	-----	----

SCREEN 43 (Test Mode Screen)

H	off	16
---	-----	----

Function

This is the Test Mode screen for the MDCW conveying blower. By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the conveying blower output will be turned on for 3 seconds and then shut off automatically.

 **NOTE:** If the dryer is a non-conveying MDCW nothing will happen.

This screen is not used in the current program.

This screen is not used in the current program.

This is the Test Mode screen for the alarm output (yellow light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically.

 **NOTE:** If the optional tricolor light is not installed nothing will happen.

This is the Test Mode screen for the alarm output (green light). By pressing the (+) or (-) keys, the setting can be changed. When set to "On", the alarm output will be turned on for 3 seconds and then shut off automatically.

 **NOTE:** If the optional tricolor light is not installed nothing will happen.

Control Function Descriptions (continued)

Screen

Access code 756 required.

SCREEN 44 (Alarm Screen)

A	1	P3
---	---	----

A	2	A1
---	---	----

A	3	A5
---	---	----

A	4	A4
---	---	----

A	5	P1
---	---	----

A	6	P5
---	---	----

A	7	A7
---	---	----

A	8	A2
---	---	----

A	9	A6
---	---	----

A	10	P2
---	----	----

Function

This is the first Alarm History screen. In this section, the last 10 alarms that have occurred are saved, starting with the most recent alarm. The number in the setpoint screen shows the list of alarms 1-10. The alarm code shows up in the actual screen. Some of the alarm codes are shown on the display label. Please refer to the *Troubleshooting section* of this manual for all alarm code definitions.

These are the additional alarm screens. See the explanation above.

Control Function Descriptions (continued)

Screen

Screen 45-49 require access code 754.

SCREEN 45 (Setback Temperature Enable Option)



SCREEN 46 (Precooler Flow Control Enable Option)



SCREEN 47 (Degree F/Degree C)



Function

This screen shows the setting of the setback option. It can be set to “Off” or “On”. “Off” turns the setback mode off, and the dryer will not change the process setpoint. “On” tells the control that the dryer should go into setback when the hopper outlet temperature reaches its setpoint (Menu number 6, Screen 10).



NOTE: When the setback option is ordered, it is shipped with this parameter “OFF”. It must be turned “ON” for the option to function.

This screen shows how the precooler flow control is set to operate. The precooler flow control option must be installed for this screen to appear. It will also assume the water flow solenoid valve is piped in the water line and the dryer control will regulate water flow to control temperature.



NOTE: If this function is set to Off, make sure the water to the precooler is turned off.

This is the temperature units screen. It is used to change the temperature display from °F to °C or °C to °F. Use the (+) or (-) keys to toggle between °C and °F.

Control Function Descriptions (continued)

Screen

Screen 45-49 require access code 754.

SCREEN 48 (Conveying Shutdown on Alarm Option)

C **off** **C16**

SCREEN 49 (MDCW Shutdown Delay Option)

H **off** **C17**

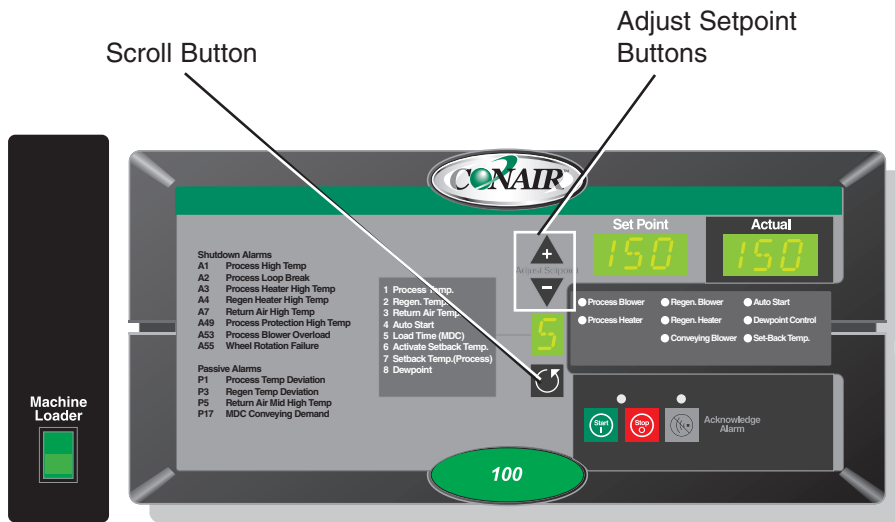
Function

This screen can be used to determine if the MDCW conveying on function will shut-down or continue to operate upon any dryer alarm. When turned off, the conveying blower will continue to cycle indefinitely if the dryer shuts off for an alarm condition.

Use this screen in the event Screen 48 is enabled to set the amount of time the conveying function will continue to operate once the dryer has alarmed. If Screen 48 is disabled, the conveying functions will continue indefinitely.

To Start Drying

- 1** Make sure there is material in the hopper.
- 2** 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 lights will illuminate.
- 3** Set the drying temperature. Use the Scroll button to get to the Process Temperature function. Press the Adjust Setpoint (+) or (-) buttons to select the temperature.



To Start Drying (continued)

4 Press the START button.



If everything is installed correctly:

- The green light on the start button will illuminate.
- The process and regeneration blowers turn on and the display LEDs will illuminate.
- The process and regeneration heaters turn on and the display LEDs will illuminate.

To Stop Drying

1 Press the STOP button. The Stop LED blinks red.



- The blowers continue running for a few minutes to cool the heaters.

2 Be sure to disconnect and lockout the main power if you have stopped the dryer to perform maintenance or repair.

IMPORTANT: Do not use the main power switch to stop the dryer. Turning off power to the control and dryer during normal operation prevents the necessary cool-down period, and can trigger the shutdown/high temperature alarm during your next drying cycle.

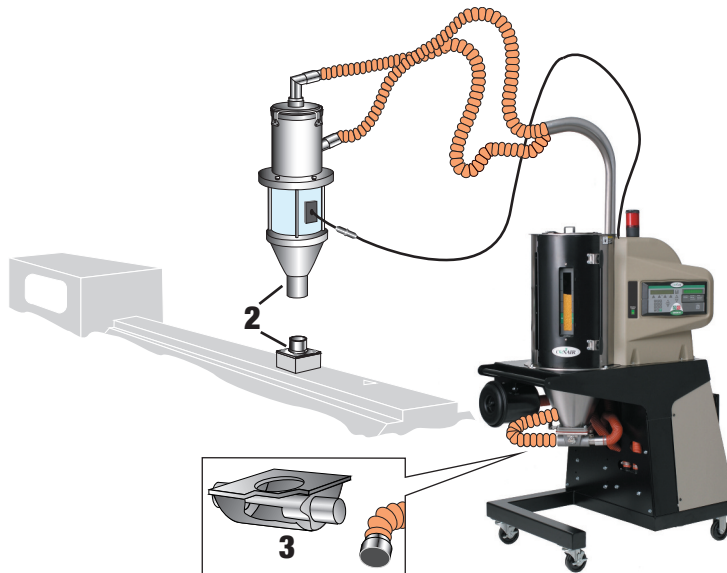


CAUTION: Improper shut down can cause damage to your dryer.

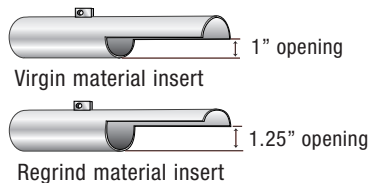


Conveying

- 1 Move the MDCW to the processing machine.** Lock the wheels and connect the main power source. Connect the water source if you an aftercooler or optional precooler.
- 2 Mount the vacuum receiver on the feed throat.** Push the vacuum receiver onto the mounting bracket.

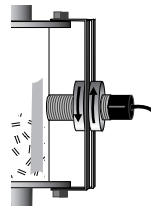


- 3 Place the appropriate material insert inside the distribution box.**



- 4 Make sure all hoses are connected securely.**

- 5 Adjust the demand sensor.** Position the sensor at the lowest level of material that you want to maintain in the viewing chamber before another load cycle begins. Make sure the sensor rests against the sight glass.



- 6 Set the load time.** See page 4-6, Screen 9
- 7 If necessary, the delay time can be adjusted.** See page 4-10, Screen 20
- 8 Start conveying.** Turn the “Machine Loader” switch ON.

Using the Auto Start Countdown Function

The countdown function allows the user to set the MDCW dryer to automatically start at a predetermined time. The countdown time can be set from 0.1 to 150.0 hours.

To set the countdown time:

- 1 Use the Scroll button to access the function (Menu 4, Screen 8).



- 2 Use the Setpoint Adjust keys to set the desired countdown time, in hours.
- 3 Press the Start button. The Auto Start LED will blink to indicate that Auto Start is armed.

How to Disable the Auto Start on the DC-1 Control

To disable auto start once armed cycle the power off and on.

Setting the High Setpoint Limits

You can protect your drying process from accidental or unauthorized settings above an acceptable level for your material.

1 Turn on the main power to the dryer.



2 While at the default screen (Screen 5)

press the scroll button and the setpoint (-) minus button simultaneously to get to Screen 14.

0		0
---	--	---

3 On screen 14 enter the password for set up screens (754) using the setpoint (+) or (-) button.

0	754	0
---	-----	---

4 Scroll to screen 16.

C	385	C02
---	-----	-----

This is your current high setpoint limit. Press (+) or (-) keys to set a new high setpoint limit.

Tip: We recommend that you set your high setpoint limit 10° higher than your maximum high temperature setpoint.

5 To lock in your new high setpoint limit and exit the password protected screens, scroll back to screen 14, then enter 500 and press scroll or cycle the power off and on.

0	754	0
---	-----	---



NOTE: Software may allow the Process temperature setpoint limit up to 450°F {232°C}; however, Conair does not recommend a setpoint limit over 375°F {191°C} due to nuisance alarms.

NOTE: Conair is not responsible for damage caused by excessively high drying setpoints that are not in accordance with your drying material recommendations.

Using Dewpoint Control

Dewpoint control is a feature that can help you to reduce energy consumption. It does this by varying the temperature of the regeneration air from its default setpoint of 350° F { 177° C}, to maintain a setpoint that you have entered on the process dewpoint screen (Screen 11).

Example:

If your material is not difficult to dry, it may dry adequately with -20° F {-29° C} dewpoint air. When -20° F {-29° C} is entered as the setpoint (Screen 11), the dryer will gradually lower the the regeneration air temperature to a point where the dryer's delivery air is controlled at -20° F {-29° C} dewpoint.

The dewpoint control is active with setpoint values of -39° F {-39.4° C} and higher. When the setpoint is -40° F {-40° C} or lower, the regeneration temperature will be maintained at the default temperature of 350° F { 177° C} and the dewpoint control is inactive.



NOTE: For more information concerning specific dewpoint control screens, see Control Function Descriptions, page 4-5.

Using the Setback Feature (Optional)

The setback function available on the Carousel Plus MDCW dryer with DC-1 control is designed to save you money on energy costs and help to keep you from over drying your material.

The optional setback feature, if installed from the factory, is disabled and will need to be enabled in access code 754 (Screen 45).

This is how setback operates when installed and turned on:

The control monitors the temperature of the air exiting the drying hopper. If that temperature reaches a customer entered setpoint (Screen 10), the delivery process air temperature will automatically setback to a customer-entered setpoint (Screen 11). Then, if the air exiting the drying hopper drops below the customer-entered temperature on Screen 10 by an amount greater than what is shown on Screen 23, the process temperature will automatically reset back to the original process temperature (Screen 5).

To turn on and setup the setback option:

- 1 Enter the access code 754 (see Screen 14). Then using the scroll buttons, scroll to menu Screen 45.**
- 2 Turn the setback function for temperature option to "On" by pressing the (+) key.**
- 3 Push the scroll button to return to access code 754, then change the code to 500.** Once the number has been entered push the scroll button or cycle the power to clear the access code.
- 4 Go to Screen 10.** This is where you will set the temperature setpoint for the air at the outlet of the drying hopper.
- 5 On Screen 11 set the temperature setpoint** to which the process air will revert to once the air at the outlet of the drying hopper has reached its setpoint.



NOTE: Screen 5 will still show normal drying temperature as setpoint when setback is active.

(continued)

Using the Setback Feature (Optional)

(continued)

- 6** Use the setback temperature band screen (Screen 23) to set the amount the return air temperature has to drop below the setpoint on Screen 10 before the original process temperature is restored. For example, if the activate setback temperature was 180°F {82°C} and the value on Screen 23 is set to 20, once the dryer moves into setback, the actual temperature measured at the outlet of the hopper would have to drop below 160°F {71°C} to restore the original process set point.
- 7** When the “Setback” Feature is active, the Setback LED will be lit, and the actual temperature on screen 5 will eventually approach the setpoint entered in screen 11.

Setback Feature Guidelines (Optional)

Careful selection of setpoint values in these functions is necessary for the setback to operate properly. The following table is only a guideline of recommended settings for these setpoints. It will be necessary for each customer to determine the best setpoints for their application based on experience.

Normal Drying Temp	Setback Return Temp Screen #10	Setback Temp (Process) Screen #26
160° F {71° C}	120° F {49° C}	150° F {66° C}
240° F {116° C}	135° F {57° C}	180° F {82° C}
300° F {149° C}	160° F {71° C}	200° F {93° C}
340° F {171° C}	180° F {82° C}	220° F {104° C}

To turn off the setback option:

- 1** Enter the access code 754 (see Screen 14). Then using the scroll buttons, scroll to menu Screen 45.
- 2** Turn the setback function for temperature option to "Off" by pressing the (-) key.
- 3** Push the scroll button to return to access code 754, then change the code to 500. Once the number has been entered push the scroll button or cycle the power to clear the access code.

Setback Feature Guidelines (Optional)

(continued)

A recommended way to determine the “Setback Return Temperature” setpoint is to monitor the actual temperature of this function during pre-drying of your material at start-up, and while running at your normal maximum material throughput. The “Setback Return Temperature” setpoint should be set 10 to 20° above maximum temperature noted in these situations.

The “Setback Temperature (Process)” setpoint you select should be adequate to reduce the temperature significantly enough to prevent over-drying of your material. However, keep in mind that the cooler the temperature selected, the longer it will take for the material to heat back up to its proper drying temperature once the dryer comes out of Setback mode.

When drying at low temperatures (for example 160 - 180° F {71 - 82° C}), you are able to setback the temperature only a small amount. The “Setback Temperature (Process)” should not be set lower than 150° F {66° C}, even if the control will allow it. It is very likely the dryer will not be able to achieve low temperatures without adding additional cooling to the process air circuit. The maximum achievable setpoint is dependent on the temperature of the return air coming back to the dryer. As the return air temperature climbs, the temperature that the dryer is capable of controlling at climbs. For example, if the return air to the dryer is 110° F {43° C}, the dryer may not be able to control at a “Setback Temperature (Process)” setpoint below 150 - 155° F {66 - 68°C}.



NOTE: Selecting too low of a setpoint for Screen 26 may result in nuisance A2 Process Loop Break alarms if the dryer is not able to achieve this setpoint.

Maintenance

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Preventative Maintenance Checklist

Routine maintenance will ensure optimum operation and performance of the MDCW dryer. We recommend the following maintenance schedule and tasks.

- **Whenever you change materials**

- ☐ **Drain and clean the hopper.**

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

- ☐ **Clean or replace the process, regeneration and conveying 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.
- ☐ **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.

- **Monthly**

- ☐ **Clean the aftercooler and/or optional precool coils.**
You may need to clean the coils more often than monthly. Frequency will depend on the type and volume of material you process.

- **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.
- ☐ **Verify dewpoint readout and performance with calibrated portable instrument.**
- ☐ **Measure current draw on all 3 legs of heater wires.** This is to ensure that the heater is working properly.

Checking the Dewpoint

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

To check dewpoint on models MDCW 15-100:

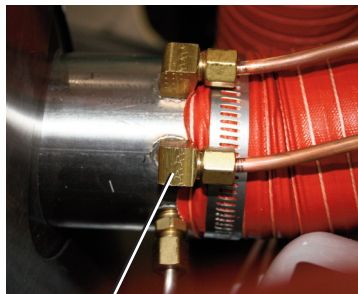
- 1** Connect your portable dewpoint meter to the dewpoint check port of the dryer.
- 2** Turn on the portable instrument, and ensure there is positive airflow through the sensor.
- 3** Monitor the readout and allow ample time for it to stabilize before disconnecting it. Some dewpoint monitors require a substantial amount of time for residual moisture to be purged from the sensor.
- 4** In the event the dewpoint is not satisfactory, refer to the *Troubleshooting* section of the manual, alarm P9.



Alternate Procedure: (for dryers with no dewpoint check port)

- 1** Stop dryer and allow it to cool.
- 2** Remove the rear cover of the dryer, and locate the hopper inlet.

- 3** At the hopper inlet remove the 1/8 inch NPT pipe plug and connect your portable dewpoint monitor at this location. If there are existing connections for the dryer's dewpoint sensor, locate a 2nd 1/8 inch NPT port, or connect your dewpoint sensor in series with the dryer sensor. Do not install a tee to split the air between the dryer's sensor and your portable instrument. This may cause one of them to be starved for adequate sample air.



NPT pipe plug

 **NOTE:** Portable dewpoint monitors purchased from Conair were provided with a male connector that plugs into the dewpoint check port. If you purchased your portable instrument elsewhere, the male connector is available through the Conair Parts

 **NOTE:** The dewpoint check port was not included on early dryers. It can be added easily. Contact the Conair Parts or follow the alternate procedure.

Replacement dewpoint monitors, male connectors and dewpoint check ports are available from Conair.

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

 **NOTE:** A minimum of 3 ft. {91.4 cm} of copper tubing should be used to make this connection.

Checking the Dewpoint (continued)

- 4 Turn on the dryer.**
- 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 dewpoint monitors require a substantial amount of time for residual moisture to be purged from the sensor.
- 7 In the event the dewpoint is not satisfactory,** refer to the *Troubleshooting section* of the manual, alarm P9.
- 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 side panels and start the dryer.**

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 Disconnect the hoses and remove the distribution box under the hopper** and drain the remaining material into a bucket.
- 3 Remove the spreader cone.** Open the hopper door. Reach into the hopper. Grasp the spreader cone tube, lift up slightly, twist and then push down to release it. Tilt the cone assembly and pull it out through the hopper door.
- 4 Clean the spreader cone and the inside of the hopper.** Make sure you also clean the return air screen at the return air outlet of the hopper.
- 5 Repeat the steps in reverse order** to reassemble the hopper before adding material.



Cleaning the Process Filter

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



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



- 1 To access the filter push down and turn the top of the filter housing in a clockwise direction to remove.**



- 2 Remove the filter cartridge from the filter housing.**



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



- 3 Clean or replace filter.**

Cleaning the Process Filter **(continued)**

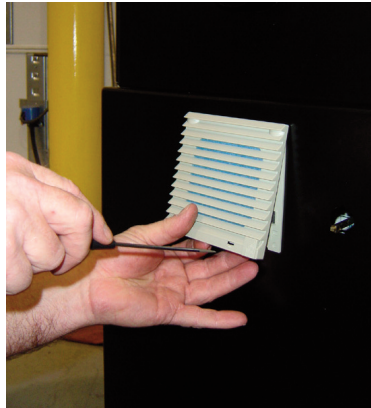
- 4** Wipe the inside of the filter housing clean, then replace the filter cartridge into the housing.
- 5** Line up the slots in the top of the filter housing, push down and turn counterclockwise until locked into place.

Cleaning the Regeneration Filter

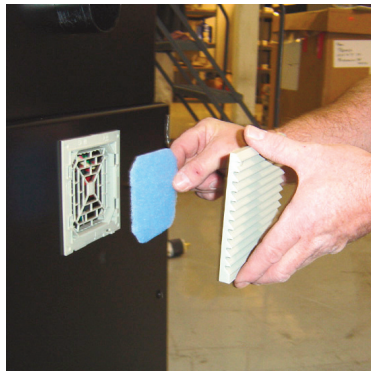
Clogged filters reduce air flow and dryer efficiency. Cleaning frequency depends on how much material you process and how dusty or full of fines it is.



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



- 1** To access the regeneration filter, use a small flat screwdriver to gently pry down on the slot in the lower right hand corner of the filter grill while pulling out on the bottom.



- 2** Remove the filter from inside the grill and clean with soap and water.
- 3** Replace the filter in the grill and snap the grill into place.



NOTE: The control cabinet must be securely closed while the dryer is in operation to ensure that regeneration air is filtered.

Cleaning the Conveying Filter

The conveying filter captures dust and fines from the air used to convey material. The filter should be cleaned regularly to maintain conveying airflow and optimum performance of the conveying blower.

1 Turn off the conveying function.

There is a conveying on/off switch located on the front of the dryer.

2 Remove the filter housing cover.

3 Remove the filter.

Clean or replace the filter as necessary.



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.



4 Replace the filter cartridge and the filter housing cover.

Cleaning the Vacuum Receiver

The vacuum receiver should be cleaned anytime you change materials. Replace the screen mesh filter if it is torn, damaged, distorted or so clogged with material that it cannot be cleaned.



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.

- 1 Turn off switch to stop conveying. Disconnect the air and material hoses from the vacuum receiver.**
- 2 Open the vacuum receiver lid. Turn the latch counterclockwise and flip the lid open.**
- 3 Remove and clean the mesh filter.** Lift the mesh filter out of the vacuum receiver. Clean or replace as necessary.
- 4 Loosen the 3 thumbscrews, slide the clips aside, and lift the vacuum receiver body** from the viewing chamber. Clean inside the vacuum receiver body with a clean rag.
- 5 Remove and clean the viewing chamber.** Lift the viewing chamber to release it from the mounting bracket. Clean inside with a clean rag.
- 6 Reassemble the vacuum receiver.** Make sure the viewing chamber and loader body seat snugly inside the O-ring couplings.

Cleaning the Aftercooler Coils

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

- 1 Stop the dryer and lockout the main power.** 
- 2 Turn off the water flow to the water supply line.** Disconnect supply and return lines.
- NOTE:** If an optional flow control was added with the aftercooler, remove the compression fitting from the aftercooler inlet. Loosen the fitting on the flow control, then swing the copper water supply tube out and away from the aftercooler inlet.
- 3 Remove the two (2) nuts securing the aftercooler** in the housing.



- TIP:** If the aftercooler (without a flow control) was installed using the recommended 24 inches {61 cm} of flexible hoses, there is no need to disconnect the hoses from the aftercooler inlet and outlet.
- 4 Remove the aftercooler assembly** from the aftercooler housing.
- 5 Clean the assembly using a mild soap and water.** Let the assembly dry thoroughly before installation.
- 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 aftercooler to the inlet of the flow control valve** using the pre-shaped copper tubing and compression fittings provided.

Cleaning the Precooler Coils



If you have the optional precooler, you need to clean the cooling coils to keep them working efficiently. See Appendix B 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.

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Before Beginning

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



NOTE: Use of test mode screens 28-43 may assist with the determining of possible cause of an alarm. Access code 756.

Before you take the covers off the dryer be sure to:

☐ Diagnose causes from the control panel.

- 1 Press  once to silence the optional audible alarm and display the alarm message.**
- 2 Address the alarm message and fix the problem.** (Refer to the alarm descriptions later in this section.)
- 3 Press  again to clear the alarm. If the alarm reappears the problem was not fixed.**



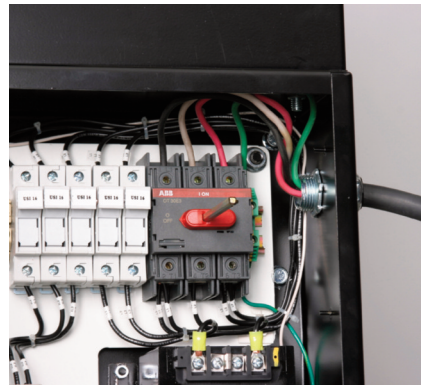
NOTE: If the alarm is a **passive alarm** you will see **P** in the screen title display. If the alarm is a **shutdown alarm** you will see **A** in the screen title display.



Before Beginning (continued)

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

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



A Few Words of Caution

The Carousel Plus W Series dryer 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 Carousel Plus 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



NOTE: Pushing the Acknowledge Alarm button when there is no active alarm will take the user directly to the Alarm History list.

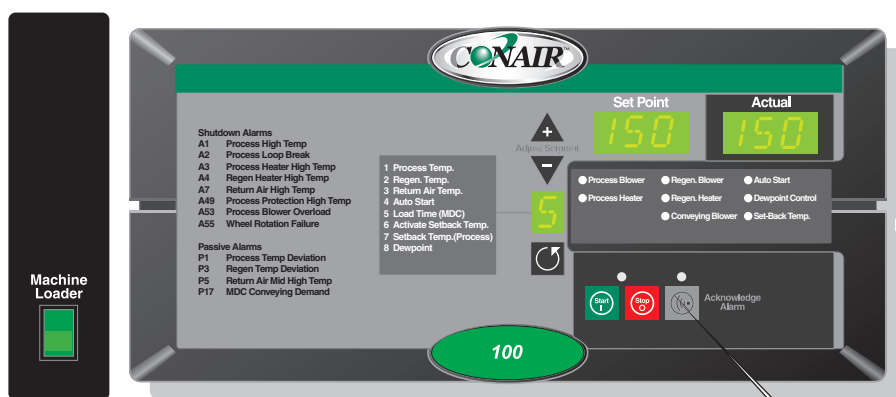


NOTE: The dryer cannot be started if a passive alarm is present on power-up.

Most dryer alarms are indicated by an illuminated Acknowledge Alarm light on the MDCW dryer control panel. Shutdown alarms will energize optional audible and visual alarm indicators.

A problem can trigger two types of alarms:

- **Shutdown:** The dryer has automatically shut down because it 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.



When the alarm light is displayed:

- 1 Press the Acknowledge Alarm button once to silence the optional audible alarm and display the alarm message.** Pressing the Acknowledge Alarm button once also changes the alarm LED from blinking to solid.
- 2 Find the error message in the diagnostics table of this *Troubleshooting* section and use the information provided to diagnose and resolve the cause of the alarm.**
- 3 Note that pressing the Acknowledge Alarm button a second time will clear the alarm** once the cause has been corrected. If the problem reappears, the cause has not been resolved.



NOTE: When the dryer detects abnormally high temperature in the process heater, the dryer immediately shuts down and an error message appears in the display window.

Alarms

A problem can trigger two types of alarms:

- **Shutdown (A#):** If the red Acknowledge Alarm LED is blinking, the alarm is a shutdown alarm. The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer. Note that once the Acknowledge Alarm button is pressed once, the blinking red LED becomes solid.
- **Passive (P#):** If the amber Acknowledge Alarm LED is blinking, the alarm is a passive alarm. 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. Note that when the Acknowledge Alarm button is pressed once, the blinking amber LED becomes solid.

Problem

A1 - Process High Temperature – If the process temperature exceeds the process high temperature setpoint, it shuts down the dryer. Defaults are set to 385°F {196°C} for 20 seconds.

Possible cause

The process high temperature setpoint is not at least 10°F {6°C} above the drying setpoint.

One of the process solid state relays has failed.

The air lines are restricted or loose.

The process setpoint is too low.

The process heater output on the control board has failed.

Solution

Reset the process high temperature setpoint at least 10°F {6°C} above the drying setpoint.

Replace the solid state relay.

Straighten any crimps in the hoses.
Tighten any loose hoses.

Set the process setpoint higher or install an optional precooler.

Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A2 - 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 setpoint at a rate greater than specified. It shuts down the dryer. Defaults are set at 3°F {2°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 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 setpoint is set too low.	Adjust to higher setting or add a precooler.
A3 - Process Heater High Temperature – The snap switch in the process heater tube opens due to excessive temperature.	Setback setpoint is set too low.	Adjust to higher setting or add a precooler.
	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. <i>See Installation section entitled, Checking for proper airflow.</i>
	The isolation contactor failed in the closed position.	Replace the isolation contactor.

(continued)

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A3 - Process Heater High Temperature (cont.) – The snap switch in the process heater tube opens due to excessive temperature.	The process heater output on the board has failed.	Replace the board.
	The heater solid state relays (SSRs) failed. The regeneration exhaust is blocked or the air hoses are loose.	Replace the failed heater solid state relays (SSRs). Locate and remove any airflow restrictions.
		Tighten any loose hoses.
A4 - Regeneration Heater High Temperature – The snap switch in the regeneration heater tube activated due to excessive temperature.	The regeneration 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. <i>See Installation section entitled, Checking for proper airflow</i>
	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.
A7 - 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 hopper does not contain enough material.	Make sure your material supply system is working properly.
	You are drying at a high drying temperature (above 240°F {116°C}) or you are running at low throughputs.	Ensure water flow to the aftercooler.
	The aftercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler coils are dirty.	Clean the aftercooler coils. <i>See Maintenance section entitled, Cleaning the aftercooler coils.</i>

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A10 & P26 - Process RTD Integrity – If the process RTD is faulty, it will shut the dryer down.	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.
A21 & P1 - 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.	Replace the failed solid state relays (SSRs).
	Process heater has failed.	Check heater fuses and resistance across each leg of the 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.
A22 & P2 - Process Low Temperature – The process temperature is less than the low temperature setpoint for the specified time. Default values are 70°F {21°C} for 20 seconds.	The air hose connections are loose.	Tighten all air hose connections.
	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.

(continued)

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A22 & P2 - Process Low Temperature (cont.) – 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.	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.
A23 & P3 - 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 in the closed position.	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 heater.	Check the heater fuses and resistance across each leg of the regeneration heater.
A25 & P5 - 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 180°F {82°C}) or running at low throughputs.	Ensure water flow to the aftercooler.
	The aftercooler does not have enough water.	Turn on the water supply, or fix any leaks or blockages.
	The aftercooler coils are dirty.	Clean the aftercooler coils.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A26 & P6 - 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. The output on the board has failed.	Replace the failed solid state relays (SSRs). Replace the board.
A27 & P7 - Regeneration Low Temperature – The regeneration temperature is less than the low temperature setpoint for the specified time. Defaults are 200°F {93°C} for 20 seconds.	The regeneration heater has failed. The output on the control board has failed or the fuse has blown. The regeneration RTD is loose or has fallen out. Defective sensor.	Check the heater fuses and resistance across each leg of the process heater. Replace the control board or the fuse. Check the regeneration RTD and tighten if needed. Replace the sensor.
A28 & P9 - Process Dewpoint – The dewpoint has not fallen below the setpoint. If the dewpoint goes below the setpoint for 180 seconds the alarm should go away.  NOTE: The alarm is not active for the first 5 minutes.	The hose or wiring connections to the sensor block are loose or have fallen off. Poor regeneration airflow. The desiccant wheel may be contaminated.	Check wiring and hose connections to the sensor, resecure if needed. Remove any air flow restrictions, dirty filters, kinked hoses, etc. Check the desiccant for contamination, replace if needed. Replace the desiccant wheel. <i>See Troubleshooting section entitled, Replacing the desiccant wheel.</i> Install plasticizer/volatile trap for severe situations.

(continued)

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A28 & P9 - Process Dewpoint (cont.) – The dewpoint has not fallen below the setpoint. If the dewpoint goes below the setpoint for 180 seconds the alarm should go away.	Desiccant wheel not turning. Leaks in the process air stream.	<i>See A55 & P31</i> Check for worn or loose hoses. Replace as necessary.
A29 & P10 - Process Filter Clogged Option – The process filter differential pressure switch is tripped.	The process air filter is clogged.	Remove and clean or replace the process air filter.
A33 & P26 - Regeneration RTD Integrity – If the regeneration RTD is faulty, it shuts down the dryer.	There is a loose connection in the wiring leading to the RTD. The connection of the RTD plug on the control board is loose. The regeneration RTD has failed. The control board has failed.	Check the RTD plug connection and tighten if needed. Check the plug connections and make necessary repairs. Replace the regeneration RTD. Replace the control board.
A34 & P28 - 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. The connection of the RTD plug on the control board is loose. The return air RTD has failed. The control board has failed.	Check the RTD plug connection and tighten if needed. Check the plug connection and tighten if needed. Replace the return air RTD. Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A35 & P8 - Regeneration Temperature Loop Break – The regeneration temperature is outside of the operator entered deviation alarm band (see Regeneration Temperature Deviation passive alarm) and the regeneration temperature is not moving towards the setpoint at a rate greater than specified. Default values are 2°F {1°C} over 40 seconds.	The regeneration heater has failed. The regeneration RTD is loose or has fallen out. The regeneration blower is not running. The output on the control board has failed or the fuse is blown.	Check the heater fuses, and resistance across each leg of the process heater. Check the regeneration RTD and tighten if needed. Correct the cause of the non-functioning blower. Replace the control board or fuse.
A36 - Control Communications Watchdog - The display board has lost communications with the control board.	Plugs on wire harness between the display and control boards are loose or not wired correctly. Display board or control boards have failed.	Make sure plugs are tight on board connections and match the wiring diagram. Replace the defective boards.
A38 - Phase Error (Phase Option, STD conveying on MDCWs) - One of the three power wires is connected wrong, or one or more phases of power is missing.	One of the three power wires are out of phase. A fuse has blown. Phase detection board has failed. Loose wire connection between the phase board and the control board.	Switch the position of two of the incoming lead power wires at the dryer. Check and replace the fuse. Replace the phase detection board. Make sure wires are correctly attached and secure.
A39 - EEPROM Write Error	Internal control board problem.	Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A41 & P30 - Setback RTD Integrity - The control can not sense the setback RTD.	The connection in the electrical enclosure for the hopper 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 setback RTD has failed.	Replace the setback RTD.
	The control board has failed.	Replace the control board.
	The setback RTD connection to the control box is loose.	Check the connection to the receptacle and tighten if needed.
A43 & P17 - Machine Loader Conveying Demand (MDCW Option) - The demand sensor located at the material receiver has not been satisfied after three consecutive attempts.	Sensor is out of position.	Raise the sensor to a higher / lower position on the bracket.
	The sensor is not adjusted properly.	Adjust the sensitivity of the sensor.
	No material is being conveyed.	Check for material in the hopper, make sure the slide gate is open.
	The conveying load time is too short or the delay time is too long.	Increase the load time setpoint or shorten the delay time.
	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.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A49* - Process Protection High Temperature – If the process protection temperature exceeds the process protection high temperature setpoint, it shuts down the dryer. Defaults are set to 600°F {316°C} for 10 seconds. *Older software versions are equipped with Process Protection RTD and this alarm may occur. However, newer versions do not have Process Protection RTD and this alarm will not be displayed. If the alarm does occur it is a indication that the software is not configured properly. Call Conair Service for assistance.	The process RTD temperature probe is not installed correctly. The process blower is not running. The air lines between the dryer and the hopper are restricted or loose. The dryer is too far from the hopper. The process hose is not insulated.	Make sure the RTD temperature probe tip is in the center of the hopper inlet tube. Correct the cause of the non-functioning blower. Straighten any crimps in the hoses. Tighten any loose hoses. Move the dryer closer to the hopper and shorten the hoses. Insulated hose is required for high drying temperatures.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A50* - Process Protection 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 the hopper are restricted or loose.	Check for air flow blockages or loose hoses between the outlet of the dryer and the inlet of the hopper. Straighten any crimps in the hoses. Tighten any loose hoses.
	The dryer is located too far away from the hopper.	The dryer and the hopper should not be located more than 10 feet {3m} 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.
A51* & P29* - Process Protection RTD Integrity – If the process protection RTD is faulty, it shuts down the dryer. *Older software versions are equipped with Process Protection RTD and this alarm may occur. However, newer versions do not have Process Protection RTD and this alarm will not be displayed. If the alarm does occur it is a indication that the software is not configured properly. Call Conair Service for assistance.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections 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 process protection RTD has failed.	Replace the process protection RTD.
	The control board has failed.	Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem

A53 - 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.



NOTE: Once the overload has tripped, you must wait 2 - 15 minutes with the power on for it to automatically reset.

Possible cause

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

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

The process blower has failed electrically.

Loss of phase of power to the motor starter.

The overload is set incorrectly.

Overload is defective.

Solution

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

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

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

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

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

Replace the overload.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem

A54 & P23 - Conveying Blower Overload – The conveying blower overload has tripped due to a mechanical or electrical problem.



NOTE: Once the overload has tripped, you must wait 2 - 15 minutes with the power on for it to automatically reset.

Possible cause

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

The conveying blower has failed electrically.

The overload is set incorrectly.

The conveying blower current draw has exceeded the full load amps of the motor.

Overload is defective.

Solution

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

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

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

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

Replace the overload.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem	Possible cause	Solution
A55 & P31 - Wheel Rotation Failure - The regeneration temperature differential has been reached.	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.
A56 & P32 - Regeneration Outlet RTD Integrity - The control can not sense the regeneration outlet RTD.	There is a loose connection in the wiring leading to the RTD.	Check the RTD plug connections 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 outlet RTD has failed.	Replace the regeneration RTD.
	The control board has failed.	Replace the control board.

Alarms

- **Shutdown (A#):** The dryer has automatically shut down because it has detected a serious problem that could damage your material or dryer.
- **Passive (P#):** 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.

Problem

P34 - Dewpoint Deviation High – Displayed when the actual dewpoint goes above the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 30 seconds.

Possible cause

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

Poor regeneration airflow.

Desiccant wheel not turning.

The desiccant wheel may be contaminated.

Leaks in the process air stream.

Solution

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

Remove the airflow restrictions, dirty filters, etc.

See A55 & P31

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.*

Check for worn or lose hoses.

Install plasticizer/volatile trap for severe situations.

P35 - Dewpoint Deviation Low – Displayed when the actual dewpoint goes below the setpoint by a specified amount of time and degrees. Defaults are set for 5°F {3°C} for 30 seconds.

The dewpoint can not control to the desired setpoint.

The dewpoint sensor has failed.

Material and/or ambient conditions may be too dry to increase the actual dewpoint. Please wait several hours to determine if the setpoint can be reached. Increase the dewpoint low deviation value.

Replace the dewpoint sensor.

Additional Alarms

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

Problem	Possible cause	Solution
CoS Er.4 or Co5 Er. 4 - Displayed when the “Start” button is pushed during any active alarm. (Passive or Shutdown)	The dryer will continue to run if there is a passive alarm, however it will not start if there is a active alarm.	Push the alarm acknowledge button to identify the alarm, and address it as necessary.
CoS Er.0 or Co5 Er.0 - Indicates there is a problem in the communication between the control board and the display board.	Loose or improperly connected wire.	Check wiring between control board and display board.
	Improper dip switch setup on control board.	Check dip switch setup on control board.
	Defective display board or control board.	Replace boards in sets to maintain software compatibility.
Err 004 - Indicates a mismatch of software between the display board and the control board.	The software revision of the display board and control board are not compatible.	In most cases, both display and control board will need to be replaced as a set.
Er. L - There is a problem in the sensor connection (RTD, dewpoint sensor, etc.) for the affected function.	Problem in the analog input section of the control.	Check that all jumpers are in their proper place.
		Check to see if the dewpoint sensor is connected properly.
		Disconnect the ribbon cable connecting any analog option boards to the main control board. If the display returns to normal for all values except those that are generated through the analog options boards, replace the option board.

Additional Alarms

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

Problem	Possible cause	Solution
Er. H - There is a problem in the analog input section of the control.	Defect in the main control board.	Replace main control board.
	RTD is not connected properly or is defective.	Check RTD connections, replace defective RTD
	Connector to all RTDs is removed.	
	The ribbon cable between an analog option board and the main control board is not connected properly.	Check connections between analog option board and the main control board.
	Problem in the analog input section of the control.	Disconnect the ribbon cable connecting any analog option boards to the main control board. If the display returns to normal for all values except those that are generated through the analog options boards, replace the option board.
	Defect in the main control board.	Replace main control board.

Dewpoint Troubleshooting

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

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

Poor Material Drying Troubleshooting

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

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

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

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

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

Poor Material Drying Troubleshooting (continued)

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

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

Problem	Possible cause	Solution
The temperature of the air entering the hopper is not at proper drying temperature.	Incorrect setpoint	Refer to the drying specifications for your material and adjust the setpoint to the recommended setpoint. If your dryer has the Setback option, make sure it is not active unless you have specifically activated it. If necessary, refer to the Operation section of this manual for assistance in using the Setback function.
	Not able to achieve setpoint.	Replace any defective 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)

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

Problem

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.

Possible cause

Dirty process air filter.

Collapsed hoses or holes/leaks in the hoses and hose connection.

Airflow restrictions.

Process blower running backwards or performing poorly.

Material level in the hopper too low.

Solution

Clean or replace the process filter.

Replace any worn or damaged hoses. Tighten all hose clamps to eliminate leaks.

Remove any obstructions in the process air circuit.

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.

Other than running out of material to complete a job, the material level inside the hopper must be a minimum of 50% full. If the hopper is not at least half full, the material in the cone section will not get adequate airflow to dry properly.

Replacement dewpoint monitors are available from Conair.

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

Poor Material Drying

Troubleshooting (continued)

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

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



Replacing Fuses

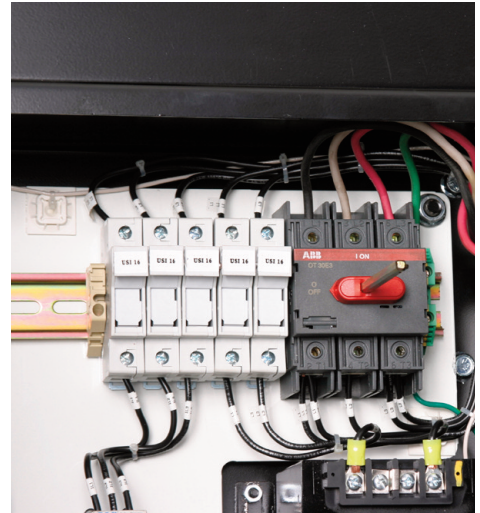
- 1 Disconnect and lockout the main power supply.** 
- 2 Open the electrical enclosure door.**
- 3 Check the fuse.** If necessary, pull the fuse out and replace it with a fuse of the same type and rating.



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.

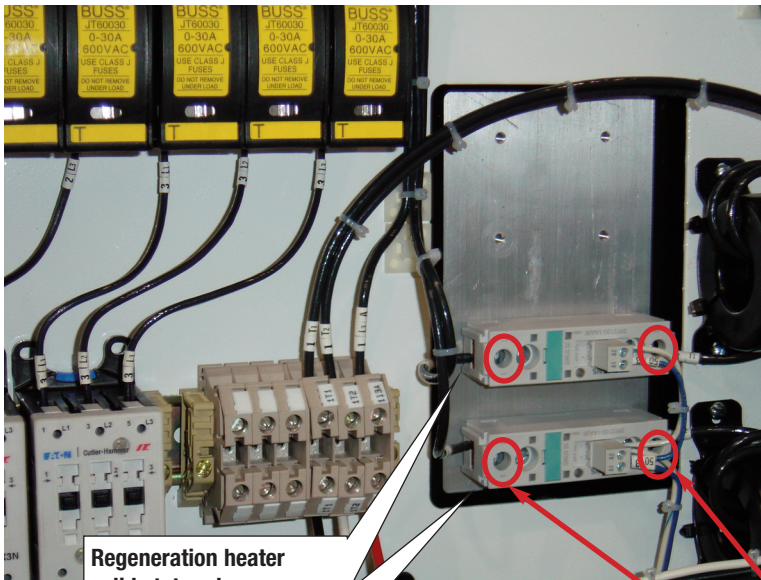
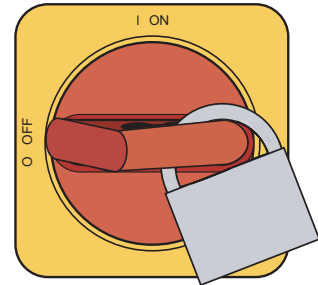


Checking Heater Solid State Relays



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.



Regeneration heater solid state relays



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.



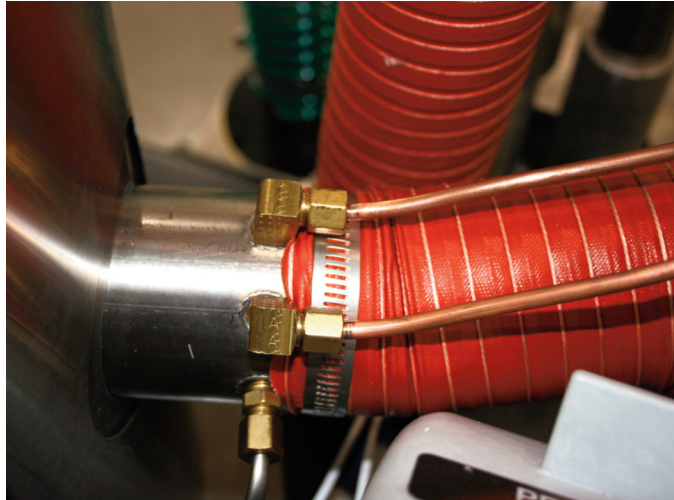
NOTE: Measure voltage using a voltmeter across the two high voltage connections of each relay. (Shown here circled in red.)

Checking or Replacing Temperature Sensors

The MDCW dryer uses RTD sensors to monitor the temperatures of the drying air, the return air, the regeneration outlet, and the regeneration protection and setback at the outlet heater of the hopper.



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.



Location of the Process RTD at the Hopper inlet.



To check or replace RTD sensors:

1 Disconnect and lockout the main power supply.



2 Remove rear plastic cover, as necessary.

3 Locate the RTD sensors.

4 Check the sensor positions and conditions. Temperature readings will be incorrect, if the sensors are touching the wall of an air hose or pipe or if the sensor or wiring is damaged. The tip of the sensor should be centered within the air hose or pipe. Sensor wires should be attached to the appropriate connection points on the dryer's electrical enclosure or microprocessor board.

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

6 Replace the sensor, if necessary.

Replacing the Heaters

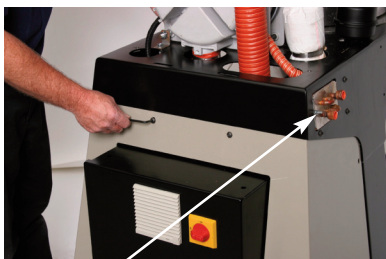
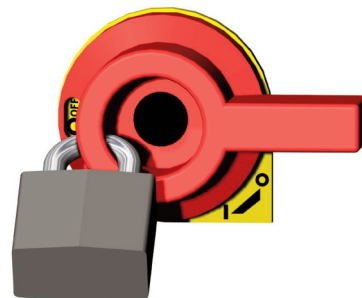
Regeneration Heater Tube

 **NOTE:** It is not necessary to remove the plastic cover to perform this procedure.

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



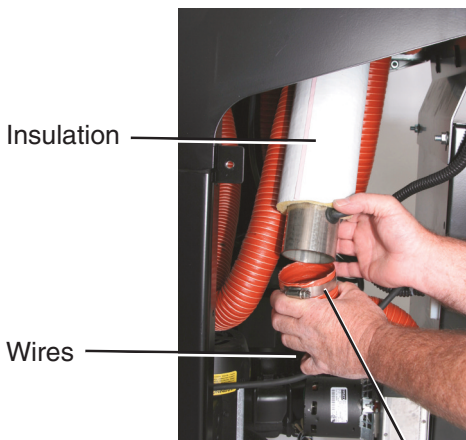
2 Remove the hardware securing the metal cover that surrounds the control cabinet. Remove the control cabinet cover.



Aftercooler knockout location



Control Cabinet Cover



Insulation

Wires

Clamp

3 Working from the front of the machine, locate the regeneration heater tube.

4 Disconnect the heater wiring harnesses at the quick disconnects.

5 Loosen the hose clamps at the top and bottom of the heater tube and remove the heater tube from the dryer.

(continued)

Replacing the Heaters

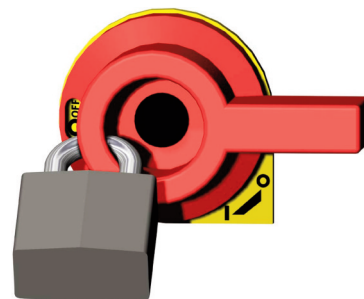
Regeneration Heater Tube (continued)

- 6** Slide the insulation off or make a straight cut in the insulation, and remove it from the defective heater tube.
- 7** Check the ID mark on the side of the heater tube for kW rating and voltage. The ID mark is on the outside of the tube near the end with the lead wires.
- 8** Place the insulation on the new heater tube. Make sure to duct tape the seam that was cut during removal, if necessary.
- 9** Install the new heater tube and secure it in place with hose clamps at the top and bottom. Be sure the end of the heater tube with the cables is oriented toward the bottom.
- 10** Connect the heater tube cables to the quick disconnect of the control box wiring harnesses.
- 11** Reinstall the metal control cabinet cover using the original hardware.
- 12** Make sure the regeneration heater fuses are not blown before applying power to the new heater.
- 13** Connect the power and start the dryer.

Replacing the Heaters

Process Heater Tube

- 1** Stop the dryer, disconnect the power, and follow proper lockout procedures.
- 2** Disconnect the hose from the process filter, then remove the plastic cover from the back of the dryer.
- 3** Remove the hardware securing the metal cover that surrounds the control cabinet. Remove the control cabinet cover.



Control Cabinet Cover

Process Heater



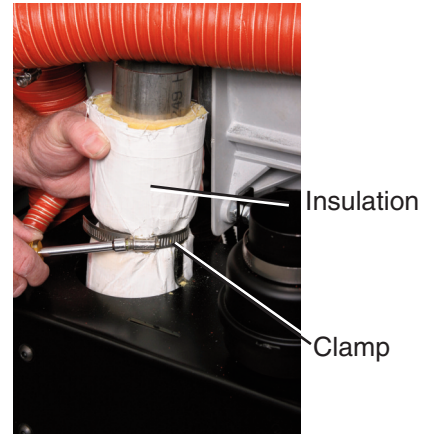
- 4** Locate the process heater tube that extends through the frame, at the back of the machine.
- 5** Disconnect the heater wiring harnesses at the quick disconnects.
- 6** Loosen the hose clamps at the top and bottom of the heater tube.

(continued)

Replacing the Heaters

Process Heater Tube (continued)

- 7** Loosen the hose clamp securing the heater tube in place and remove the tube from the unit.
- 8** Slide the insulation off, or make a straight cut in the insulation and remove it from the defective heater tube.
- 9** Check the ID mark on the side of the heater tube for the kW rating and voltage and replace with a new heater tube with the same ratings. The ID mark is on the outside of the tube near the end with the lead wires.



- 10** Place the insulation on the new heater tube. Make sure to duct tape the seam that was cut during removal, if necessary.
- 11** Secure the new heater to the support tab with a hose clamp. Be sure the end of the heater tube with the cables is oriented toward the bottom.
- 12** Connect the hoses to the top and bottom of the heater tube, and secure with hose clamps. Be sure that the insulation of the top hose is in place and in good condition.
- 13** Connect the heater tube cables to the quick disconnects of the control box wiring harness.
- 14** Replace the metal control cabinet and plastic rear covers.
- 14** Make sure the process heater fuses are not blown before applying power to the new heater.
- 15** Connect the power and start the dryer.

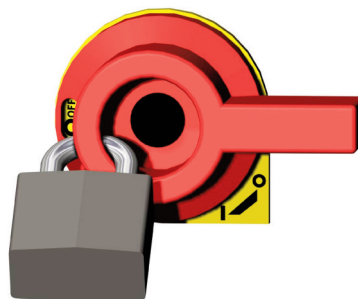
Replacing the Desiccant Wheel Assembly

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 plastic cover from the back of the dryer.



3 Disconnect wiring from the display board and loader switches, then remove the front plastic cover.

4 Remove the hardware securing the metal cover that surrounds the control cabinet. Remove the control cabinet cover.



Control Cabinet Cover

5 Disconnect all the hoses and RTDs from the wheel assembly. Be sure to note the positions of each.

6 Disconnect wires to the wheel motor.

(continued)

Replacing the Desiccant Wheel Assembly (continued)

- 7** Remove four (4) bolts securing the wheel assembly to the frame, then remove the desiccant wheel assembly from the dryer.
- 8** Position the new wheel assembly on the frame, with the motor to the right, as viewed from the front.
- 9** Bolt the wheel assembly to the frame.
- 10** Reconnect the motor wires.
- 11** Reconnect the hoses and RTDs to their original positions.
- 12** Reinstall the metal control cabinet cover using the original hardware.
- 13** Bolt the front plastic cover in place, and reconnect the wires to the display board and loader switch(es).
- 14** Bolt the rear plastic cover in place.

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.
- ☐ Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

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

Performance Warranty

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

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

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

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

Warranty Limitations

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

Cleaning the Precooler Coils

If you have the optional precooler, you need to clean the 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 two (2) nuts securing the precooler in the housing.

❖ **TIP:** If the precooler (without a flow control) was installed using the recommended 24 inch {61 cm} of flexible hoses, there is no need to disconnect the hoses from the precooler inlet and outlet.

4 Remove the precooler assembly from the precooler housing.

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

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.

