



**Model W1000**  
shown with DC-2 controls  
and the audible and visual  
alarm package

# THE NEXT GENERATION IN POLYMER DRYERS

Conair's Carousel dryers just got better. Dubbed the Carousel Plus - everything about this new dryer is improved to help you stay profitable in a dramatically more competitive world market. The product improvements are an extension of the legacy of the original, workhorse Carousel desiccant dryers.

Purchase this new dryer and you will find that you have more control over drying dewpoint and temperature than ever before, in a package that is simpler, smaller, lighter, more energy efficient, easier to use and maintain than any other dryer on the market today.

## LARGE CAPACITY CENTRAL OR MACHINE-SIDE DRYING

These large-sized dryers are designed to be used as a central dryer and do not have process heaters. A Hopper Temperature Controller (HTC) at the inlet to the drying hopper(s) is used for heating the process air.

The Carousel Plus dryers use molecular sieve desiccant that is bonded into a fiberglass substrate and formed into a continuously rotating wheel. The result is rock steady drying temperatures and dewpoint levels, critical for processing moisture and temperature sensitive material.

These units are capable of delivering nominal throughput rates ranging from 600 to more than 5000 lb/hour.

The thermo-formed, impact resistant ABS filter cover adds to the good looks and space-saving design of the Carousel Plus dryers.

### ■ Reduced energy costs

The desiccant wheel assembly heats and cools more easily than previous drying technology saving you up to 35% on your energy bill. Fewer parts, lighter structural mass, less to heat, therefore less wasted energy.

### ■ Maximum uptime, maximum reliability

With significantly reduced part count, easy access and less wear you can expect many years of trouble-free operation. The weight of the desiccant assembly has been reduced by 70%, the part count reduced by 90%, there are no more indexing bed plates, no more cumbersome 4-way valves and no more messy desiccant beads. Shift-after-shift this dryer will deliver the performance you need to stay up and running.

### ■ Precise, adjustable dewpoint control

An industry first! The new dewpoint control option built into the microprocessor control system allows you to select a particular dewpoint value, which the control locks onto. The control then adjusts various dryer functions to precisely hold the dewpoint selected, virtually eliminating any chance of overdrying expensive material.

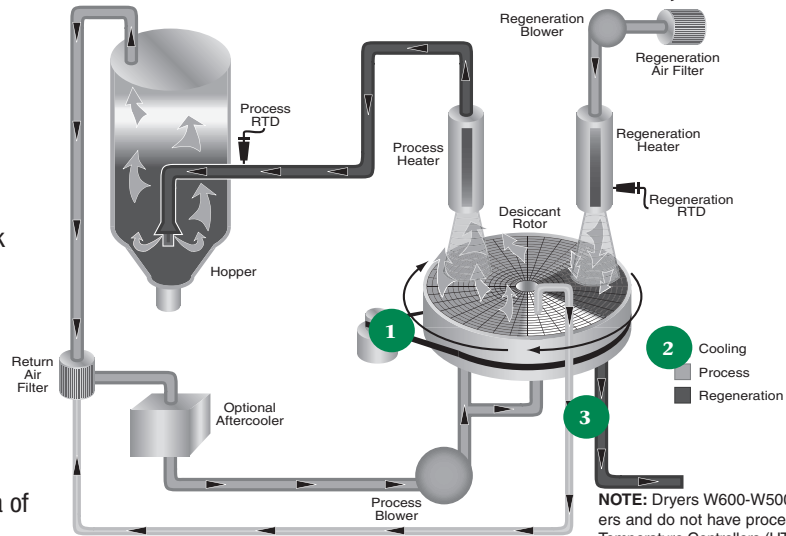
W MODELS, 600 - 5000

How it works

The core of the Carousel Plus Dryer is the Munters® unique fluted desiccant rotor, which contains molecular sieve desiccant. The molecular sieve has been grown into the rotor's porous fiberglass substrate, preventing the possibility of desiccant break down and dusting over time. The desiccant rotor revolves slowly at the rate of 12 revolutions per hour passing through three cycles with each revolution.

The benefits

- The high airflow across the surface area of the rotor produces a resin-drying low dewpoint within 5 minutes of start-up and offers multi-year media life with virtually no maintenance.
- The continuously revolving rotor provides rock steady temperature and dewpoint control.
- The rotor technology minimizes energy consumption by reducing the structural mass, less structural mass to heat means less energy wasted.



NOTE: Dryers W600-W5000 are central dryers and do not have process heaters. Hopper Temperature Controllers (HTCs) are used at the hopper for heating the process air. See the Hopper Temperature Controller (HTC) specification sheet for further technical information.

- 1 First, the dry air is dehumidified in the adsorption cycle, capturing and removing moisture from the drying air stream.
- 2 Next, the desiccant passes into the high temperature regeneration cycle where the adsorbed moisture is heated and purged out of the desiccant to the atmosphere.
- 3 The desiccant is then advanced to the post regeneration cooling cycle and cooled with closed loop dry air. All Carousel Plus dryers feature this unique closed loop cooling technology to eliminate moisture that can cause defects in parts.

Which package is right for you?

STANDARD PACKAGES*	MX	MZ	HY**
<b>FEATURES</b>			
DC-1 control	●	●	
DC-2 control			●
Audible and visual alarms		●	●
Temperature setback†			●
Dewpoint monitor		●	●
Dewpoint control		●	●
Communications (DeviceNet)			●

**NEW! \*\* Drying Monitor, DM-II option to HY Packages -**

Saves you time and money, and from the aggravation of dealing with improperly dried material. The DM-II automatically monitors the temperature profile inside your drying hopper within a pre-set temperature band to protect you from over drying or under drying your material. A warning alarm shown on the control display and light tower alerts you to improper drying conditions. This advanced notice provides time to diagnose and correct otherwise undetected problems that can lead to defects in products manufactured from hygroscopic material. This valuable option can help you uncover common drying problems that may exist, including: a failed or out-of-place process RTD; improperly sized hoppers or dryers; drying or loading equipment failures; reduced airflow caused by dirty filters; kinked hoses and other obstructions, throughput change, loss of power or overheated material. The DM-II does not alert you to the specific drying problem, however, the DC2 control will identify most dryer related faults.

FEATURE DESCRIPTIONS

- **Audible and visual alarm** A combination of a blinking red alarm light and a horn alert the operator to any shut down alarm.
- **Temperature setback** Automatically reduces the drying temperature to a lower standby mode when the machine throughput is reduced or stopped.
- **Dewpoint monitor** Allows the operator to monitor the performance of the dryer by providing a digital dewpoint readout of the drying air.
- **Dewpoint control** Allows the dryer to lock onto and track an operator-selected dewpoint level. The feature helps prevent overdrying of moisture sensitive materials such as Nylon. The Carousel Plus is the first dryer in the Plastics industry to provide precise dewpoint control.
- **Communications (DeviceNet)** Allows the dryer to be networked to industrial control systems using the DeviceNet protocol. When a dryer is connected to a DeviceNet network the controller on the network may read actual temperatures, change setpoints, read dryer status, and process and display this information at a central location.

\* Other options are available upon request. Please check with a Conair sales representative.

† Temperature setback is available on the Hopper Temperature Controller (HTC) that is used at the inlet of the drying hopper for heating the process air.



**SPECIFICATIONS**

CAROUSEL PLUS DEHUMIDIFYING DRYERS

**W MODELS, 600 - 5000**

Choose the control you need...DC-1 or DC-2



**DC-1 CONTROL FEATURES**

- Six character, seven segment LED display for high visibility of setpoint and actual operating parameters
- Full access to setup parameters and alarms through error codes
- Autostart count down timer
- Operator password protection
- English/Metric units
- Solid-state heater contactors with isolation protection
- Desiccant carousel index indication
- Return air temperature display



**DC-2 CONTROL FEATURES**

- LCD (2 X 20 character) alpha-numeric display with access to set-up parameters, full diagnostics, alarm/event log and numerous options
- Eight character, fourteen segment LED display for high visibility of selected parameter status
- Keypad for easy operator access
- Real time clock
- Temperature setback
- Operator password protection
- Date format selection
- English/Metric units
- Return air temperature display
- Solid-state heater contactors with isolation protection
- Desiccant carousel index indication

Select the right dryer for your application

- 1 Identify the resin and throughput rate.** Use the chart below to quickly select the correct dryer model for your throughput rate.
- 2 Multiply the suggested drying time by your throughput rate to determine the hopper size.** Refer to Conair drying hopper specifications, or contact a Conair representative to determine the correct hopper for your application.
- 3 Select the dryer model and options to suit your application.** Carousel Plus models can be used for individual station or central drying applications. A dryer with an aftercooler and insulated hose is recommended for applications requiring drying temperatures above 240°F {116°C}.

RECOMMENDED THROUGHPUTS										
MATERIAL	DRYING TEMP / °F {°C}*	DRYING TIME / HR*	BULK DENSITY†	THROUGHPUT RATE‡ - LB/HR						
				W600	W800	W1000	W1600	W2400	W3200	W5000
ABS	180-190 {82-88}	2-4	40	750	1150	1610	2300	3680	4600	7100
Acetal	180-230 {82-110}	2-4	40	810	1240	1840	2480	3965	4955	7700
Acrylic	170-180 {77-82}	2-4	40	780	1195	1840	2390	3830	4785	7400
Nylon	160-180 {71-82}	2-4	40	660	1010	1425	2020	3240	4050	6300
PBT§	210-260 {99-127}	3-4	45	450	690	1060	1435	2300	2875	4475
PC§	250 {121}	3-4	40	600	920	1410	1840	2940	3675	5700
PET§	300-350 {144-177}	4-6	50	450	690	1060	1435	2300	2875	4475
PETG	140-150 {60-66}	4-6	50	600	920	1410	1435	2300	2875	4475
Polysulfone§	200-275 {93-125}	2-4	50	600	920	1410	1840	2940	3675	5700
Polyurethane	180-210 {82-99}	2-4	40	600	920	1410	1840	2940	3675	5700
PPO	190-230 {82-110}	2-4	50	600	920	1410	1840	2940	3675	5700
PPS§	270-300 {132-144}	2-4	50	600	920	1410	1840	2940	3675	5700
SAN	160-180 {71-82}	2-4	45	810	1240	1840	2480	3965	4955	7700

**APPLICATION NOTES:**

\* The parameters of drying temperature and time may vary depending upon the type, grade and manufacturer of the material being processed. Consult your material supplier for their precise recommendations.

† Unit of measurement for bulk density is lb/ft<sup>3</sup>. Bulk density listed is the nominal weight for typical pellets. The bulk density may vary somewhat depending upon the size and shape of the pellets. The bulk density of regrind may vary widely depending upon the size and the shape of the flake. Be sure to consider the bulk density of the material when selecting the capacity of the drying hopper and the drying time desired.

‡ Throughputs will vary by type of material. Consult Conair about throughput for materials that are not listed here.

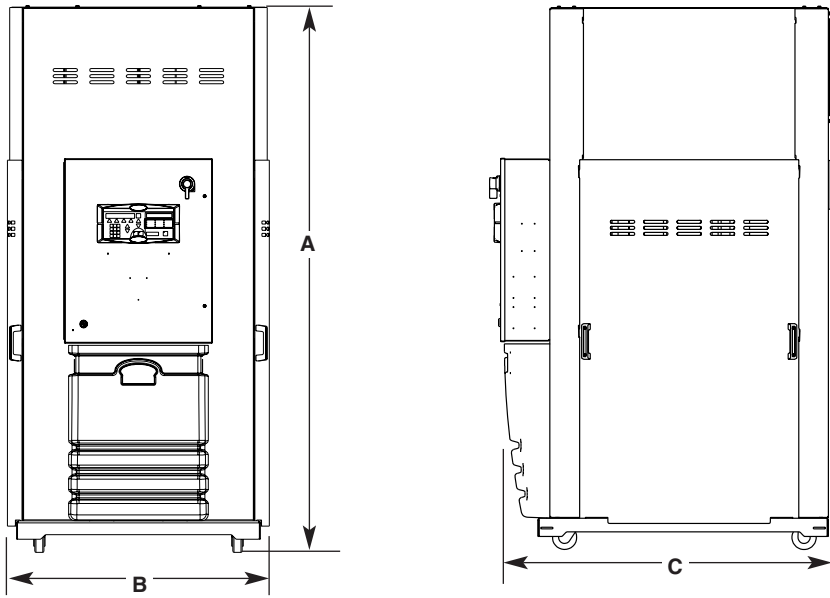
§ A dryer with an aftercooler and insulated hose is recommended for applications requiring drying temperatures above 240°F {116°C}.



**SPECIFICATIONS**

**CAROUSEL PLUS DEHUMIDIFYING DRYERS**

**W MODELS, 600 - 5000**



MODEL	W600*	W800*	W1000*	W1600*	W2400*	W3200*	W5000*
<b>Performance characteristics (with full hopper)</b>							
Drying temperature	All models 100 - 375°F (38 - 191°C) with options						
Dewpoint	All models -40°F (-40°C)						
<b>Dimensions inches (cm)</b>							
A - Height	89.7 {227.8}		89.7 {227.8}		89.7 {227.8}		
B - Width	43 {109.2}		52.5 {133.4}		52.5 {133.4}		
C - Depth	57.5 {146.1}		83 {210.8}		100 {254.0}		
Outlet/inlet hose diameter	8 {20.3}		12 {30.5}		12 {30.5}		
<b>Weight lbs (kg)</b>							
Standard dryer installed	1300 {590}	1300 {590}	1400 {636}	1600 {726}	1600 {726}	2000 {907}	2000 {907}
<b>Voltage - Total amps</b>							
400 V/3 phase/50 Hz†	32.8	32.8	35.9	64.7	64.7	122.3	128.0
460 V/3 phase/60 Hz	28.5	28.5	31.2	56.3	56.3	106.6	35.9
575 V/3 phase/60 Hz	22.8	22.8	25.0	45.0	45.0	85.3	89.1
<b>Total kilowatts kW (BTU/min)‡</b>	15.9 {905}	15.9 {905}	17.4 {990}	31.3 {1782}	31.3 {1782}	59.3 {3375}	62 {3529}
<b>Water requirements {for optional aftercooler or precooler}§</b>							
Recommended temperature**	45° - 85°F {7- 29}						
Water flow gal./min. (liters/min.)	6-25 {22.7-94.6}		12-40 {45.4-151.4}			15-50 {56.8-189.3}	
Water connections NPT	1 1/2 in. NPT						

**APPLICATION NOTES:**

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

- You are drying at temperatures above 240° F {116° C}.
- 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 central models**  
 Models W600 - W5000 of Carousel Plus dryers are all configured as central dryers. Central dryers do not have process heaters. These models should be used when drying multiple materials that require different drying temperatures. Central models dehumidify the process air, which is then heated to the correct setpoint by a hopper temperature controller (HTC) or "pre-heaters" mounted on the hopper.

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

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

**SPECIFICATION NOTES:**

- \* Dryers W600-W5000 are central dryers and do not have process heaters. Hopper Temperature Controllers (HTC's) are used at the hopper for heating the process air. See the Hopper Temperature Controller (HTC) specification sheet for further technical information.
  - † 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°C} and a regeneration temperature of 350°F {177°C}.
  - § When drying below 150°F {66°C} a precooler is required. When drying above 240°F {116°C} an aftercooler and insulated drying hose is required.
  - \*\* Temperatures above or below the recommended levels may affect dryer performance. Tower, chiller or municipal water sources can be used.
- Specifications may change without notice. Consult a Conair representative for the most current information.

