



Model W25

# THE NEXT GENERATION IN POLYMER DRYERS

Conair's Carousel Dryers just got better. Dubbed the Carousel Plus - everything about this 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, work-horse Carousel desiccant dryers.

Purchase this 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.

## FLOOR UNIT ON STURDY STEEL CASTERS

These small-sized dryers are small enough to be used beside the machine, yet powerful enough for central drying (models 50-100).

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 10 to more than 100 lb/hour.

The thermo-formed, impact resistant ABS cover adds to the good looks and space-saving design of the Carousel Plus Dryers. Models 15-200 are also available in Mobile Drying and Conveying (MDCW) configurations.

### ■ 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 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 15, 25, 50, 75 AND 100

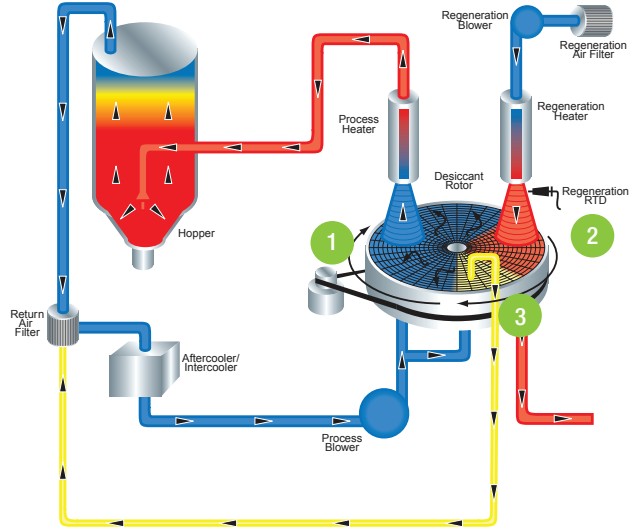
HOW IT WORKS

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 five 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.



- 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	MY	MZ	HY†
<b>FEATURES</b>				
DC-1 control	●	●	●	
DC-2 control				●
Audible and visual alarms		●	●	●
Temperature setback			●	●
Dewpoint monitor		●	●	●
Dewpoint control		●	●	●
Communications				●

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

†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 overdrying 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. Processors using resins prone to degradation due to overdrying could greatly benefit from the temperature setback feature.
- **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. This feature helps prevent overdrying of moisture sensitive materials such as Nylon. Location and season

changes can drastically change the atmospheric dewpoint of the air used for drying. Dewpoint control is used to increase or decrease the regeneration temperature from 350°F (177°C) as needed depending on atmospheric conditions. This type of control saves energy costs and increases end-product quality. The Carousel Plus is the first dryer in the plastics industry to provide precise dewpoint control.

- **Communications** - Allows the dryer to be networked to industrial control systems. When a dryer is connected to a 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. DeviceNet, SPI, Modbus and Ethernet communications are available.



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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
- Return air temperature display



DC-2 CONTROL FEATURES

- LCD (2 X 20 character) alphanumeric 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

RECOMMENDED THROUGHPUTS (60 Hz chart)\* FOR 50 Hz APPLICATION, REDUCE RATES BY 17%.

MATERIAL	DRYING TEMP / °F [°C]	DRYING TIME / HR <sup>†</sup>	INITIAL MOISTURE %	BULK DENSITY <sup>‡</sup>	MODEL THROUGHPUT RATE <sup>§</sup> / LB/HR				
					W15**	W25**	W50**	W75**	W100**
ABS	180-190 (82-88)	4	0.40	40	15	25	50	75	100
Acetal	180-230 (82-110)	4	0.60	40	13	19	37	55	75
Acrylic	170-180 (77-82)	4	0.30	40	17	29	59	86	116
Nylon	160-180 (71-82)	6	0.40	40	16	27	54	80	108
PBT	210-260 (99-127)	4	0.30	45	17	28	56	83	112
PC	250 (121)	4	0.30	40	16	26	52	77	104
PE (HD/LP) w/40% black	170 (77)	5	-	26-34	15	25	50	75	100
PET virgin bottle grade	300-350 (144-177)	6	0.30	50	15	25	50	75	100
PETG	140-150 (60-66)	6	0.30	50	16	27	54	80	108
Polysulfone	200-275 (93-135)	4	0.50	50	8	16	32	46	62
Polyurethane	180-210 (82-99)	4	0.50	40	9	17	35	51	70
SAN	160-180 (71-82)	2-4	0.30	45	20	31	63	94	125

Select the right dryer for your application

- 1 Identify the resin and throughput rate. Use the chart 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.

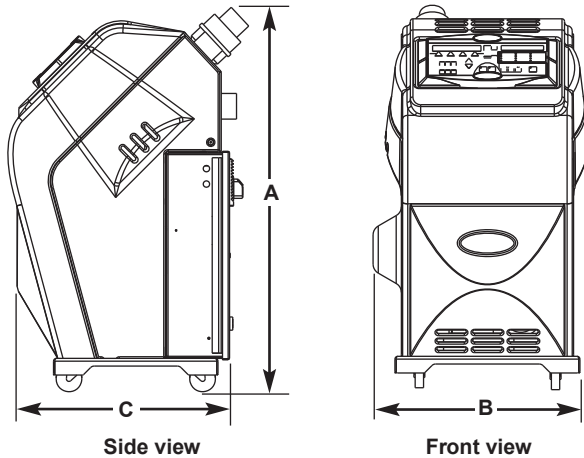
APPLICATION NOTES:

- \* Material throughputs are based on typical virgin material with initial moisture content as supplied by the material suppliers. Consult Conair if specific initial and final moisture content of your material are known for your application.
- † 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 and the drying time desired.
- § Throughputs will vary by type of material. Consult Conair concerning throughputs for materials that are not listed here.
- \*\* All Conair Dryers are equipped with an aftercooler as standard. The aftercooler reduces the temperature of the return air from the drying hopper, improving the efficiency of the desiccant. The aftercooler should be connected with the proper water flow rating and temperature to attain the listed throughput.



**W MODELS 15, 25, 50, 75 AND 100**

**SPECIFICATIONS**



MODEL	W15	W25	W50	W75	W100
<b>Performance characteristics (with full hopper)</b>					
Drying temperature	All models 150° - 375°F {66° - 191°C} with options				
Dewpoint	All models -40°F {-40°C}				
<b>Dimensions inches {cm}</b>					
A - Height	36.0 {91.5}		43.5 {110.5}		
B - Overall width	18.0 {45.7}		29.0 {73.7}		
C - Depth	21.0 {53.3}		28.5 {72.4}		
Outlet/inlet tube size OD	2.5 {63.5}				
<b>Approximate weight lbs {kg}</b>					
Standard dryer installed	180 {82}	180 {82}	220 {91}	220 {91}	220 {91}
<b>Voltage - Total amps</b>					
208 V/3 phase/60 Hz	14.7	14.7	19.7	20.6	NA
230 V/3 phase/60 Hz	13.3	13.3	17.8	18.6	24.9
400 V/3 phase/50 Hz*	7.7	7.7	10.2	10.7	14.3
460 V/3 phase/60 Hz	6.7	6.7	8.9	9.3	12.4
575 V/3 phase/60 Hz	5.3	5.3	7.1	7.5	10.0
<b>Total kilowatts† kW {BTU/min}</b>	<b>2.1 {120}</b>	<b>2.1 {120}</b>	<b>3.3 {188}</b>	<b>4.1 {233}</b>	<b>4.4 {250}</b>
<b>Water requirements {for aftercooler or optional precooler}‡</b>					
Recommended temperature§	45° - 85°F (7.2° - 29.4°C)				
Water flow gal./min. {liters/min.}	1 {4.6}		2 {9.1}		
Water connections NPT	3/8 inch NPT				

**SPECIFICATION NOTES:**

\* 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.

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

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

**APPLICATION NOTES:**

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

**When to use central models**  
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 a "pre-heater" mounted on the hopper.

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

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

