CD-H Series

COMET
PLASTIC EQUIPMENT, LLC

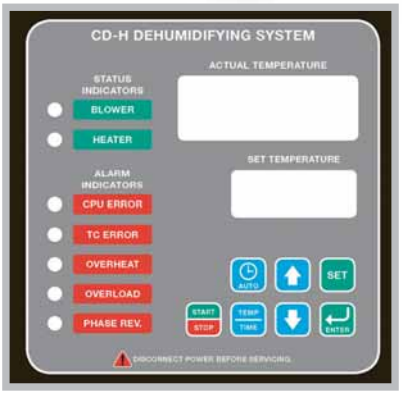
Honeycomb Dehumidifying Dryers

The CD-H Series Honeycomb Matrix dryer offers the latest in matrix rotor drying technology and is used mainly to dry hygroscopic plastics. The largest unit can provide dry air up to of 4,000 m^3/hr.

A honeycomb rotor is used to supply dehumidified, dry air with a dewpoint lower than -40°F (-40°C). The rotor is made of a ceramic fiber/organic material and is sintered under high pressure, generating a bonded, open cell structure. The honeycomb rotor provides superior strength, flow and moisture transfer characteristics while realizing energy savings of up to 35%.

This series of dryers are compact and offer easy access to all of its components. The heavy-duty powder coating, industrial-duty components and rugged design stands up to even the harshest operating conditions.

CD-40H-D



Control Panel

Standard Features

- A molecular sieve/silica gel and sintered honeycomb matrix rotor guarantees precise dehumidification.
- The honeycomb wheel continually rotates through three separate air-flow loops to achieve dehumidification, regeneration and cooling.
- Few moving parts and no valves ensure low maintenance.
- Twin cooling coils quickly and accurately cool down regenerative air and ensure a low return air temperature and dewpoint.
- Return air filter mounted inside prevents contamination to the honeycomb wheel.
- PID microprocessor temperature control system with regenerative temperature settings, real time displays, and a 7-day timer.
- Achieves energy savings of up to 35%:
  - Long lasting molecular sieve/silica gel desiccant rotor is more efficient than clay-filled desiccant beads because it does not degrade, collect dust, clog, or lose its heat transfer properties.
  - Continual cycling of the rotor through closed process loops is more efficient than bed switching valves because it saves energy, processed air and absorbs ambient air.
  - Efficient rotor design reduces the required energy to heat process and regenerative air making it more practical than desiccant/clay beads which use excessive energy.
- Compact, portable design with compact matrix rotor design can save over 50% of floor space.

Options

- Automatic PLC touch screen control to work with a drying hopper.
- Dewpoint monitor for real-time monitoring.
- Drying heater with a temperature controller works with drying hopper for material dehumidifying and drying.
- Heat-resistant air pipe, cyclone dust separator and oil filter.
- Reach dewpoints of -58°F (-50°C).

CD-H Series

What is a Honeycomb Rotor?

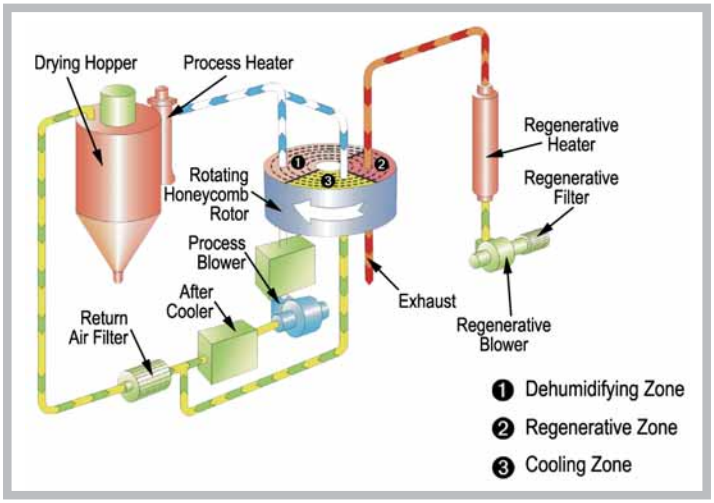
The main section of the honeycomb rotor is made of ceramic fiber and organic additives that are sintered under a high temperature with a molecular sieve and silica gel acting as the bonding material binding it to the inside of the honeycomb, thus forming the honeycomb-like structure.

The moisture of the return air is quickly absorbed by molecular sieves when passing through the numerous holes within the honeycomb rotor. When it comes out of the rotor, it forms a low dry air dewpoint. Regenerating and dehumidifying have a similar principle and run simultaneously. The only difference is that the two process blowing actions are in opposite directions.

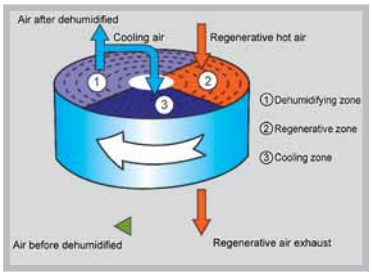
A honeycomb rotor is superior to common desiccant or rotary molecular sieves because over time, desiccant beads will produce dust in the processed air to the drying hopper and contaminate the plastic material.

The honeycomb rotor is easy to clean and has a long service life. It does not saturate like molecular sieves that require regular replacement.

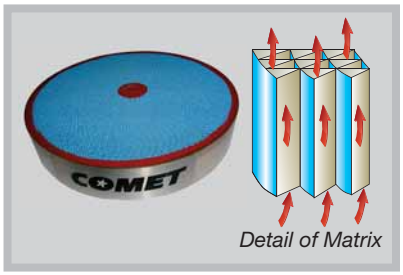
System Flow Chart



Honeycomb Principle



Honeycomb Rotor

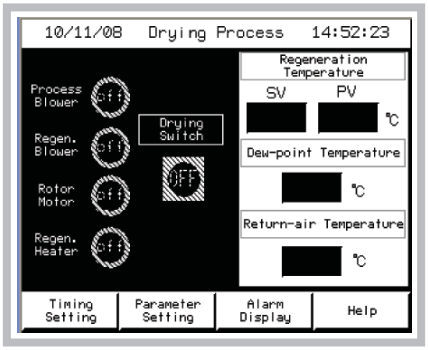


Drying Capacity

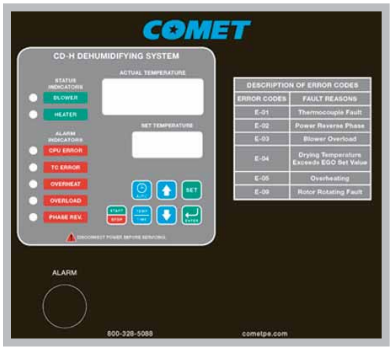
Raw Material	Drying Temp. (°C)	Drying Time (Hr.)	Specific Heat (J/kg °C)	Material Specific Gravity (kg/dm³)	Moisture Content Before Drying (%)	Moisture Content After Drying (%)	Drying Capacity (kg/hr) CD-40H	CD-80H	CD-120H	CD-200H	CD-400H	CD-700H	CD-1000H	CD-1500H	CD-2000H	CD-3000H	CD-4000H
ABS	80	2-3	0.34	0.6	0.3	0.02	16	27	35	105	210	355	425	710	1065	1500	1600
CA	75	2-3	0.5	0.5	1	0.02	12	22	30	90	180	295	355	590	885	1200	1330
CAB	75	2-3	0.5	0.5	0.8	0.02	12	22	30	90	180	295	355	590	885	1200	1330
CP	75	2-3	0.6	0.6	1	0.02	16	27	35	106	210	355	425	710	1060	1500	1600
LCP	150	4	0.6	0.6	0.04	0.02	11	20	27	80	160	265	320	530	800	1150	1200
POM	100	2	0.35	0.6	0.2	0.02	24	40	53	160	320	530	640	1060	1600	1800	2400
PMMA	80	3	0.35	0.65	0.5	0.02	17	29	38	115	230	383	460	767	1150	1530	1730
IONOMER	90	3-4	0.55	0.5	0.1	0.04	10	17	22	66	133	220	265	442	663	750	1000
PA6 / 6.6 / 6.10	75	4-6	0.4	0.65	1	0.05	9	14	19	58	115	192	230	383	575	960	1040
PA11	75	4-5	0.58	0.65	1	0.05	10	17	23	69	138	230	275	460	690	780	1150
PA12	75	4-5	0.28	0.65	1	0.05	10	17	23	69	138	230	275	460	690	780	1150
PC	120	2-3	0.28	0.7	0.3	0.01	19	31	41	124	250	413	495	826	1238	1400	1860
PU	90	2-3	0.45	0.65	0.3	0.02	17	29	38	115	230	383	460	767	1150	1530	2080
PBT	130	3-4	0.3-0.5	0.7	0.2	0.02	13	23	31	93	186	310	372	620	930	1100	1600
PE	90	1	0.55	0.6	0.01	<0.01	47	80	106	318	637	1062	1275	2125	3185	3600	4800
PEI	150	3-4	0.6	0.6	0.25	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PET	160	4-6	0.3-0.5	0.85	0.2	0.05	11	19	25	75	150	250	300	500	750	1150	1360
PETG	70	3-4	0.6	0.6	0.5	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PEN	170	5	0.85	0.85	0.1	0.05	13	23	30	90	180	300	360	600	900	1150	1360
PES	150	4	0.7	0.7	0.8	0.02	13	23	30	90	180	300	360	600	900	1050	1400
PMMA	80	3	0.65	0.65	0.5	0.02	17	29	38	115	230	385	460	765	1150	1530	1730
PPO	110	1-2	0.4	0.5	0.1	0.04	19	33	44	133	265	440	530	885	1330	1730	2660
PPS	150	3-4	0.6	0.6	0.1	0.02	11	20	27	80	160	265	320	530	800	1030	1370
PI	120	2	0.27	0.6	0.4	0.02	24	40	53	160	320	530	640	1060	1600	1800	2400
PP	90	1	0.46	0.5	0.1	0.02	39	66	88	265	530	885	1060	1770	2655	3500	4000
PS (GP)	80	1	0.28	0.5	0.1	0.02	39	66	88	265	531	885	1062	1770	2655	3500	4000
PSU	120	3-4	0.31	0.65	0.3	0.02	12	22	29	85	173	290	345	575	865	1300	1485
PVC	70	1-2	0.2	0.5	0.1	0.02	19	33	44	135	265	442	530	885	1330	1730	2660
SAN (AS)	80	1-2	0.32	0.5	0.1	0.05	19	33	44	135	265	442	530	885	1330	1730	2660
TPE	110	3	0.7	0.7	0.1	0.02	18	30	40	125	250	413	495	826	1238	1650	1860

Notes: *1. Use separated drying hopper.*
2. Moisture content lower than 0.005% after drying when in 68°F (20°C) ambient temperature and 65% relative humidity.

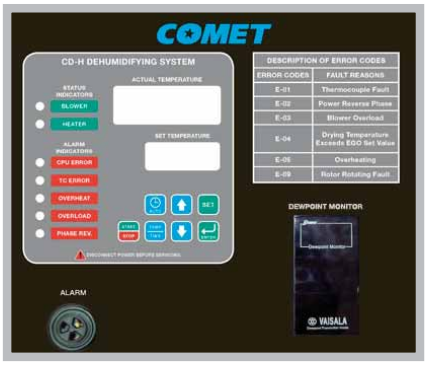
Optional Accessories



Touch Screen
(LCD with PLC Control)

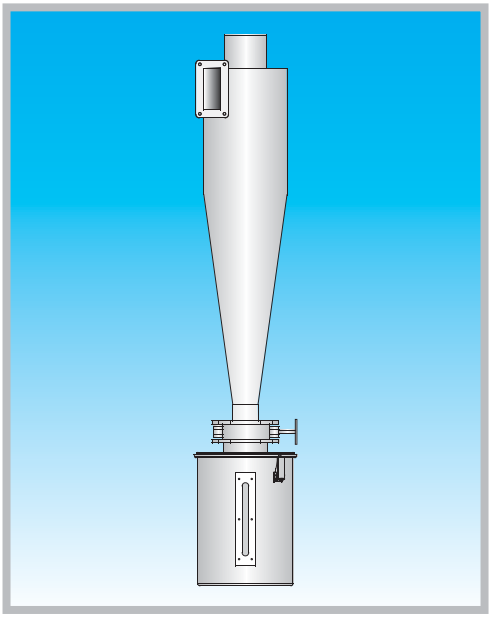


Process Heater Control



Dewpoint Monitor
(Built-In, installed on the machine)

Dewpoint Transducer
(Portable)



Cyclone Dust Collector ACF

Cyclone Dust Collector

(Use when material contains too much dust)

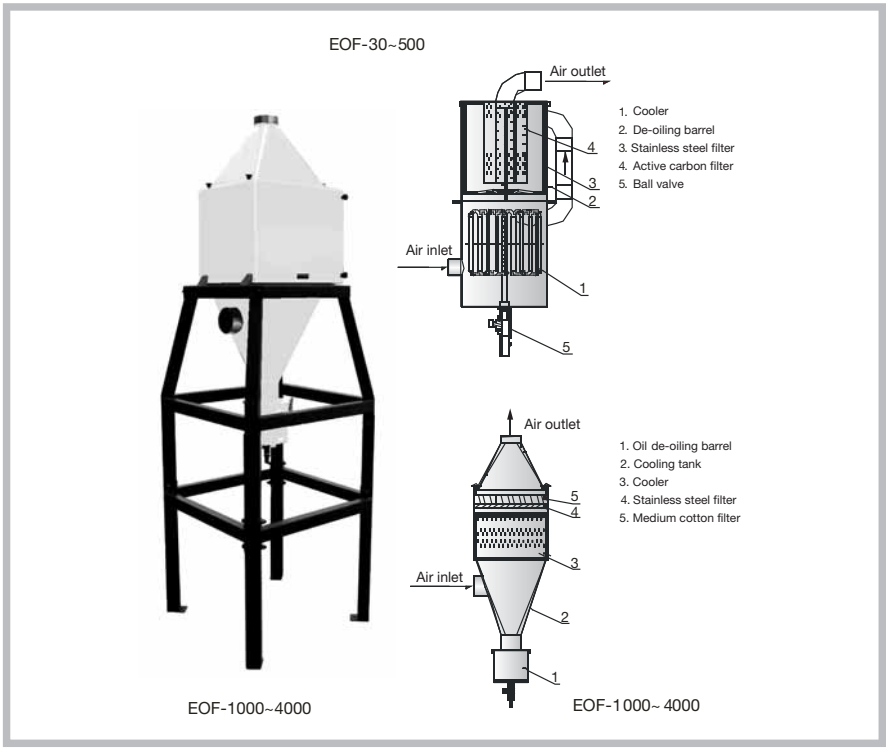
Model	Applicable Model
ACF-3″	CD-300H / 400H
ACF-4″	CD-700H
ACF-5″	CD-1000H
ACF-6″	CD-1500H
ACF-8″	CD-2000H / 3000H
ACF-12″	CD-4000H

Oil Filter

(Use when material contains a plasticizing agent)

Model	Applicable Model
EOF-30	CD-40H / 120H
EOF-150	CD-150H / 200H
EOF-300	CD-300H / 400H
EOF-500	CD-700H
EOF-1000	CD-1000H
EOF-1500	CD-1500H
EOF-2000	CD-2000H
E0F-3000	CD-3000H
E0F-4000	CD-4000H

EOF Working Principle



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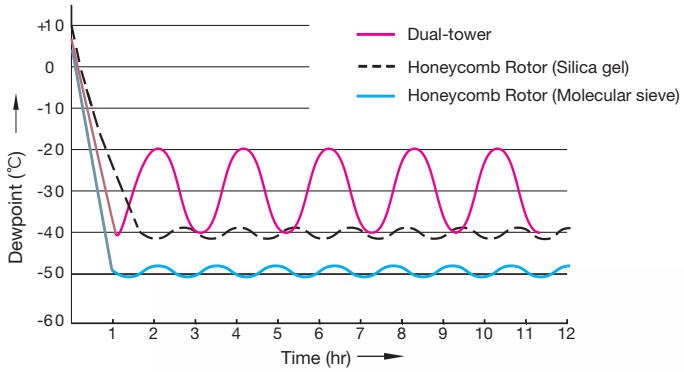
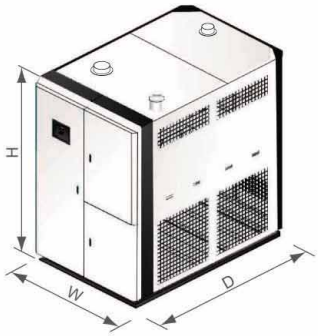
Dewpoint Curves

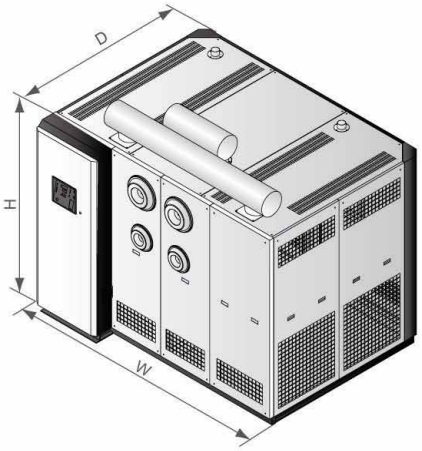


Outline Drawings

CD-40H ~ 700H



CD-1000H ~ 2000H



CD-3000H ~ 4000H

Specifications

Model	CD-40H	CD-80H	CD-120H	CD-200H	CD-400H	CD-700H	CD-1000H	CD-1500H	CD-2000H	CD-3000H	CD-4000H
Regen. Heater (kW)	4	3	3	4	7.2	10	15	28	28	32	56
Regen. Heater (kW, 50/60Hz)	0.2 / 0.3	0.2 / 0.3	0.2 / 0.3	0.4 / 0.5	0.75 / 0.9	1.5 / 1.8	2.4 / 3.0	5.5 / 6.3	5.5 / 6.3	9.0 / 11.0	5.5 x 2 / 6.3 x 2
Process Heater* (kW)	4	6	6	12	18	24	32	58	80	96	128
Process Blower (kW, 50/60Hz)	0.12 / 0.12	0.75 / 0.9	0.75 / 0.9	1.5 / 1.8	3.75 / 4.5	5.5 / 6.3	9.0 / 11.0	9 x 2 / 11 x 2	13 x 2 / 15 x 2	13 x 3 / 15 x 3	13 x 4 / 15 x 4
Dry Air Capacity (m^3/hr, 50/60Hz)	40/45	80/95	120/130	200/220	400/450	700/780	1000/1150	1500/1750	2000/2300	3000/3400	4000/4500
Pipe Dia. (inch)	2	2	2	2.5	3	4	5	6	8	8	12
Cool Water Quantity (L/min)	5	10	15	30	50	80	120	180	240	360	480
Dimensions											
H (mm)	1260	1360	1360	1560	1745	1935	2145	2060	2060	2240	2060
W (mm)	510	530	530	660	700	900	1300	1410	1410	2035	2750
D (mm)	860	820	820	1050	1255	1380	1550	2150	2150	2160	2250
Weight (kg)	145	170	170	265	330	480	700	1010	1300	1600	2200

Note: *1. * Drying heater is optional*
2. Power: 3Ø, 230/400/460/575VAC, 50/60Hz

We reserve the right to change specifications without prior notice.

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