

Great Lakes Air



Regenerative Air Dryers

Why Great Lakes Air Products?

Quality Products Inspired and Proven through Innovative Design

The utilization of Computer Assisted Design allows the engineering department at Great Lakes Air to rapidly respond to specialized equipment inquiries while maintaining the quality standards of production equipment.

The Great lakes engineering department can supply drawings in a universal DXF format for transmission to your e-mail address for instant utilization of that data.



Unparalleled Product Warranty

Great Lakes Air Products has a long tradition of offering longer warranties than other companies in our industry. Several have tried to compete by offering extended warranties as an option with a surcharge, or offering warranties on specific



components of their equipment. We can offer this extended, all-inclusive warranty; because of our confidence in the products we design and build. Our strong emphasis on quality, durability, and continuous improvement has resulted in many, satisfied Great Lakes Air Products customers.

All regenerative air dryers manufactured by Great Lakes Air Products Inc. come with a bumper to bumper 2 Year Parts and Labor Warranty and a 5 Year Part and Labor Warranty on any heating element in a regenerative air dryer. For a complete copy of our standard product warranty, contact your local Great Lakes distributor.

Other Customers of Great Lakes you just might recognize . . .

Ford Motor Company
General Motors Company
Honda Motors
Chrysler Corporation
BMW
Boeing Aircraft
Lockheed-Martin
NASA
GE Aerospace
BF Goodrich
Goodyear Tire & Rubber

Anheuser Busch Brewing
Pabast Brewing
Coors Brewing
Hostess Foods
Nestle Foods
Bill-Mar Foods
Lazy Boy Furniture
Regal Ware
Englehart Steel
Rouge Steel
US Steel Works
Mac Steel Co.

Inland Steel
CF&I Steel
Double Eagle Steel
Kaiser Aluminum
Rhone Poulenc
Amcast
Rubbermaid
The Clorox Company
Guardian Industries
Boise Cascade
Fruit of the Loom

Eveready Battery
General Electric
Mead Products
Parker Hanifin
US Navy
US Airforce
US Postal Service
US Gypsum Co.
Domtar Gypsum
EXXON
Unocal
Total Petroleum
Occidental Chemical

DuPont
Oxychem
Proctor & Gamble
Sherwin Williams
Phelps Dodge
BSAF
Bechtel Corporation
Fluor Daniels
Zurn Nepco
Black & Veatch
Pritchard

Equipment Designed for Industrial Applications

Industrial equipment with moving components requires maintenance. As a manufacturer of industrial equipment we strive to produce a product that operates as long as possible without maintenance. At Great Lakes Air we approach equipment design with a realistic approach, selecting components for both longevity and ease of maintenance. We realize you can design a product that completely performs its function and is easy to maintain when that day arises.

Air Operated Inlet & Purge Valves High Flow with Ease of Maintenance

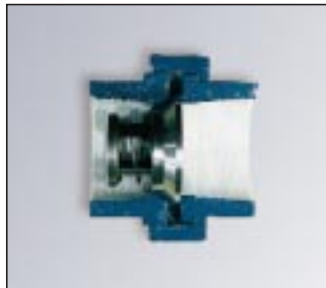


The inlet and purge valves utilized by Great Lakes Air are ideal for compressed air service on desiccant air dryers. The valve design allows for very high flow rates with

low pressure drops. The "Viton" diaphragm and "Hycar" sealing surface with the "Aflas" dynamic seals are designed specifically for use on desiccant air dryers. Average valve life is 5-7 years before a seal kit replacement is required. An additional feature is that the entire valve can be rebuilt while it is inline with a low time investment with a very cost-effective material cost.

A Check Valve Designed with the Maintenance Department in Mind

The Great Lakes Union style check valve is the newest weapon in its arsenal to combat lengthy maintenance and equipment downtime. The check



valve is designed to withstand the abrasive qualities of desiccant dust present in all desiccant dryers. The primary

sealing surface is a "Viton" o-ring mechanically bound by the secondary metal seat. If over time, the primary seal wears, the secondary metal to metal seat maintains operation preventing catastrophic failure shutting down a compressed air system. Maintenance on this valve is as simple as opening a standard pipe union. Replacement price is as attractive as the ease of maintenance. This style of valve is utilized in dryers up to 650 SCFM.

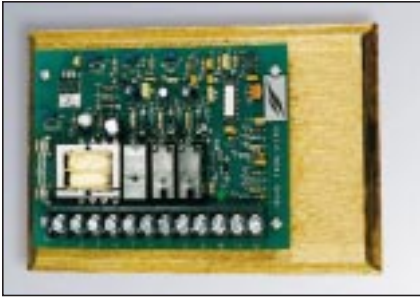
Heavy Duty High Flow Wafer Style Check Valves With Low Pressure Drops

The Great Lakes wafer style check valve utilized on systems 800 SCFM and larger sandwiches the valve between two pipe flanges.



The maintenance on this valve is as simple as loosening a bolt. The design of the valve and the long service life is the topic that should be boasted about. The valve is designed with a heavy-duty metal hinge that is relatively stable and wear is minimal. The high temperature seat is completely protected from the abrasive desiccant dust and captured in a body groove. If the seal does wear over time the valves have a secondary metal to metal seal that will maintain operation of the valve with minimal leakage.

Digital Process Controller



A digital CMOS controller operates regenerative air dryers manufactured by Great Lakes Air products. This controller is designed for flexibility, adjustable and maintenance troubleshooting. The unit can operate in standard or test time modes, and it can be manually cycle advanced. The unit can be changed from Heat type cycles to Heatless cycles by simply moving a jumper setting. The unit is designed for industrial application and is extremely durable.

All Welded Stainless Steel Desiccant Supports / Flow Diffuser

The Great Lakes removable desiccant support screen / flow diffuser is an extremely heavy-duty component. It is fabricated of heavy gauge stainless steel and is a 100% welded construction, unlike other manufacturers glued products. The perforation pattern of the stainless is carefully sized to retain the desiccant without clogging or maintaining high-pressure drops. The design of the unit offers optimum flow diffusion to utilize the entire desiccant bed and remove the possibility of channeling the desiccant bed.



Capacity Correction for Non-Standard Flows

Compressed Air Equipment, specifically Compressed Air Dryers normally specify inlet flow rates rated in SCFM (Standard Cubic Feet per Minute) @ 100 PSIG (Pounds per Square Inch Gauge) and 100°F inlet. Any deviation from this rating must be corrected. Take the SCFM rating of your system and multiply it by the multiplier of the intersection of your actual temperature and pressure conditions of your system.

		System Temperature in °F						
		80	90	100	105	110	115	120
System Pressure in PSIG	40	1.15	1.57	2.10	2.39	2.77	3.17	3.675
	60	0.84	1.15	1.53	1.74	2.02	2.31	2.68
	70	0.75	1.01	1.35	1.54	1.78	2.04	2.36
	80	0.67	0.90	1.21	1.38	1.60	1.83	2.12
	90	0.60	0.82	1.09	1.24	1.44	1.65	1.91
	95	0.58	0.79	1.05	1.20	1.39	1.59	1.84
	100	0.55	0.75	1	1.14	1.32	1.51	1.75
	105	0.53	0.72	0.96	1.09	1.27	1.45	1.68
	110	0.51	0.69	0.92	1.05	1.21	1.39	1.61
	115	0.49	0.66	0.88	1.00	1.16	1.33	1.54
	120	0.47	0.64	0.85	0.97	1.12	1.28	1.49
	125	0.45	0.61	0.82	0.93	1.08	1.24	1.43
	130	0.44	0.59	0.79	0.90	1.04	1.19	1.38
	150	0.38	0.52	0.69	0.79	0.91	1.04	1.21

Available Options to Standard Equipment

Dewpoint Demand System

MODEL # PSO-DDCD*

The Dewpoint Demand System eliminates wasted energy from a dryer system with fluctuating or low load conditions. The dewpoint system senses the discharge dewpoint of the on-line desiccant bed and determines the maximum allowable drying cycle. If a dryer was sized for continuous full load conditions the desiccant bed would reach the end of its useful cycle in 4 hours for heat type dryers, or 10 minutes for heatless dryers. That time period is precisely what is required to regenerate a completely spent desiccant bed. So if a system were completely loaded, the on-line tower would reach the end of its useful cycle just as the regeneration tower was completing its regeneration of the off-line tower. In low load conditions the Dewpoint Demand Controller holds the on-line tower in the drying position and allows the other fully regenerated tower to hold in a pressurized standby mode consuming no energy until it is required as the on-line tower reaches the end of its useful adsorption cycle.



In low load conditions heated dryer systems can continue to dry a facilities compressed air for days while expending no purge air or energy at all. This option also includes a 4-20ma output of dewpoint for a chart recorder or remote operation.

Humistat Demand System

MODEL # PSO-HDC*

The Humistat Demand control system is the cost efficient version of the Dewpoint Demand System. A humistat controller is used to monitor the outlet dewpoint of the on-line tower. The humistat controller works off relative humidity and is less accurate than the true dewpoint monitor of the Dewpoint Demand Controller. It utilizes a fixed moisture content set point and has NO display.

High Dewpoint Alarm

Model # PSO-HAD*

The High Dewpoint Alarm is only available when a unit has the Dewpoint Demand control option. This option gives an indication of dewpoint higher than a field adjustable set point. This alarm is available with dry contacts for remote indication.

High Humidity Alarm

Model # PSO-HHA*

The High Humidity Alarm gives an indication of high humidity at the dryer discharge. The option utilizes a humistat to give indication of the moisture. The set point of the alarm is NOT field adjustable. This alarm is available with dry contacts for remote indication.

Fail to Shift Alarm

Model # PSO-HHA*

The Fair to Shift Alarm gives an indication of a failure in any of the tower switching or purge exhaust valves. It senses pressure in each of the towers and is interlinked to the cycle control. If there is too much or too little pressure in one tower than there should be an alarm condition exists. This alarm is available with dry contacts for remote indication.

Mode Indicating Lights

Model # PSO-PSSEQ*

The Mode Indicating Lights option adds Left/Right Tower Drying and Left/Right Tower Purging Panel Lights.

Heating Failure Alarm

Model # PSO-PSSEQ*

This option, which is only available in heat type dryers gives an indication that the heater has reached a high limit temperature and the heating system must be reset. This alarm is available with dry contacts for remote indication.

NEMA 4 & 7 Electrical, High Pressure Systems & Low Dewpoint Systems

These available features are not options but design changes to basic dryer systems. To order these features refer to the model decoder on the corresponding product specification page.

*Refers to a missing NEMA electrical specification for the option that must match the dryer NEMA specification.

GPS Series Heatless Regenerative Dryers

Heatless Regenerative Air dryers are labeled "Heatless" because no external heat source required for regeneration. The system utilizes retained heat of adsorption generated from the previous adsorption cycle. **Great Lakes Series GPS Air Dryers** automatically deliver a standard -40F pressure dewpoint. The model series can optionally attain dewpoint's as low as -100F. The system is easily maintainable and is extremely reliable in both dewpoint suppression and mechanical reliability.

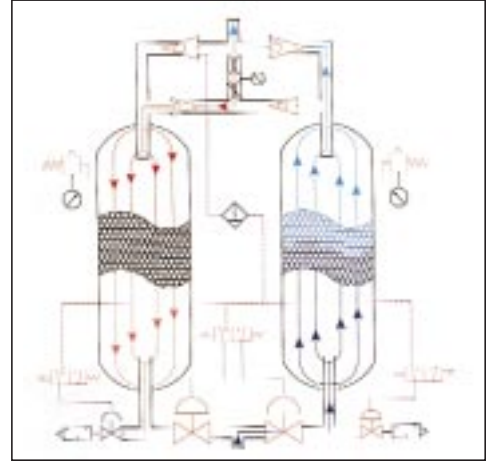


The **GPS Series** is most economical in systems with moderate air volume, because of low operating costs and original equipment purchase. Systems with high air volumes tend to have prohibitive operating costs, due to the required 14% purge rate.

Sequence of Operation

Compressed air laded with moisture vapor enters the system through the right inlet valve and proceeds to enter the desiccant bed through the stainless steel diffuser screen. The air flows up from the bottom of the tank to the top allowing separated and condensed liquid to remain at the bottom of the vessel not contaminating the rest of the desiccant. The dehydrated compressed air then exits the right vessel through the top stainless steel dif-

fuser screen, and past the outlet check-valve. A percentage of the dry air is directed and metered to the left desiccant bed for regeneration.



The adsorbent purge air enters the desiccant bed from the top and flows down collecting moisture from the desiccant. The now moisture laden purge air exits the system through the purge valve and muffler. Several seconds before the cycle nears completion the purge valve closes and allows the regeneration vessel to equalize pressure with the online tower. The cycle completes and the inlet valves invert continuing the cycle.

Standard Design Features

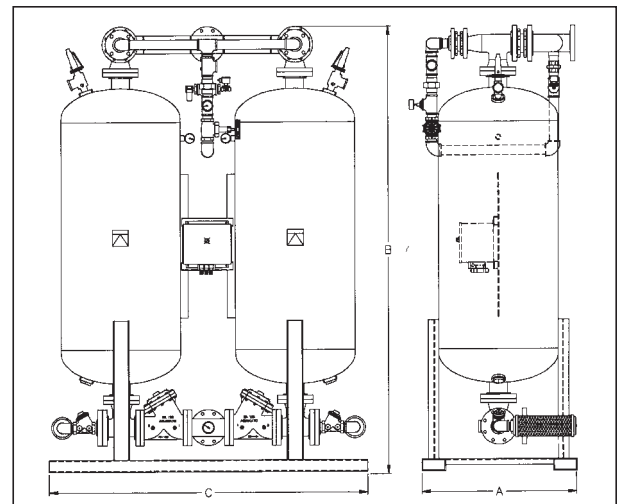
- ▶ NEMA 12 Electrical
- ▶ OSHA Approved Mufflers
- ▶ CMOS Digital Controller
- ▶ On/Off Power Switch
- ▶ "Power On" Indicator
- ▶ ASME/CRN Vessels 75 SCFM & Up
- ▶ Purge Flow Indicator
- ▶ Adjustable Purge Flow
- ▶ Tower Pressure Gauges
- ▶ Fail Safe Valving
- ▶ Automatic Depressurization
- ▶ Union or Wafer Style Check Valves
- ▶ SS Desiccant Support/Diffusers
- ▶ Manifold Type Solenoid Valves
- ▶ Non-Lubricated Valves
- ▶ Control Air Filter
- ▶ ASME Relief Valves
- ▶ Independent Desiccant Fill & Drain Ports

Specifications and Dimensions

Model Capacity SCFM (1)	Voltage	Desiccant Weight	Shipping Weight	In/Out Connections	A	B	C
GPS-25-116	120-1-60	25	217	1/2" NPT	10	31	47
GPS-35-116	120-1-60	35	223	1/2" NPT	10	31	47
GPS-50-116	120-1-60	50	353	3/4" NPT	10	49	41
GPS-75-116	120-1-60	75	509	1" NPT	12	65	48
GPS-100-116	120-1-60	100	539	1" NPT	12	65	48
GPS-125-116	120-1-60	125	565	1" NPT	12	65	48
GPS-175-116	120-1-60	175	674	1 1/2" NPT	16	67	52
GPS-250-116	120-1-60	250	724	1 1/2" NPT	17	66	53
GPS-350-116	120-1-60	350	1180	1 1/2" NPT	20	68	54
GPS-500-116	120-1-60	500	1273	2" NPT	23	79	68
GPS-650-116	120-1-60	650	1496	2" NPT	25	85	68
GPS-800-116	120-1-60	800	2410	3" NPT	29	77	68
GPS-1000-116	120-1-60	1000	2590	3" NPT	29	86	68
GPS-1250-116	120-1-60	1250	2947	3" NPT	39	80	78
GPS-1400-116	120-1-60	1400	3370	3" NPT	39	80	78
GPS-1600-116	120-1-60	1600	3970	4" FLG	39	99	90
GPS-1800-116	120-1-60	1800	4635	4" FLG	39	104	90
GPS-2000-116	120-1-60	2000	4920	4" FLG	39	111	90
GPS-2250-116	120-1-60	2250	5443	4" FLG	44	109	94
GPS-2500-116	120-1-60	2500	5810	6" FLG	51	115	120
GPS-2750-116	120-1-60	2750	6423	6" FLG	51	119	120
GPS-3000-116	120-1-60	3000	6950	6" FLG	51	124	120

Notes:

1. Model reflects capacity @ 100PSIG, 100°F & -40°F PDP. See capacity correction table for other rated capacities.
2. Dimensions and specifications are subject to change without notice.
3. All dimensions are in inches and all weights are in pounds.
4. Initial desiccant charge included. Models above 250 SCFM require field charging.
5. Shipping weight includes the initial desiccant charge and crating material.
6. Maximum operating pressure 150 PSIG as standard. Optional pressures are available.



System Design Change Model Number Breakdown

GPS-XXXX	XX		XX		XX		-XXX	
Capacity	Electrical		Pressure		Dewpoint		Voltage	
@ 100 PSIG	Blank	NEMA 12	Blank	150 PSIG	Blank	-40°F PDP	116	120-1-60
	N4	NEMA 4	P2	250 PSIG	D8	-80 PDP	216	230-1-60
	N7	NEMA 7	P5	500 PSIG	D1	-100 PDP	436	460-3-60
			P1	1000 PSIG			236	230-3-60

GEH Series Externally Heated Regenerative Dryers

External Heated Regenerative Air Dryers incorporate a low watt density, external circulation heater in the purge line to heat the purge air. Heating the air increases

its ability to carry away adsorbed moisture, reducing compressed air consumption during regeneration. **Great Lakes Series GEH Air Dryers** automatically deliver a standard -40°F pressure dewpoint. The model series can optionally attain dewpoint's as low as -100°F. The system is easily maintainable and is extremely reliable in both dewpoint suppression and mechanical reliability.

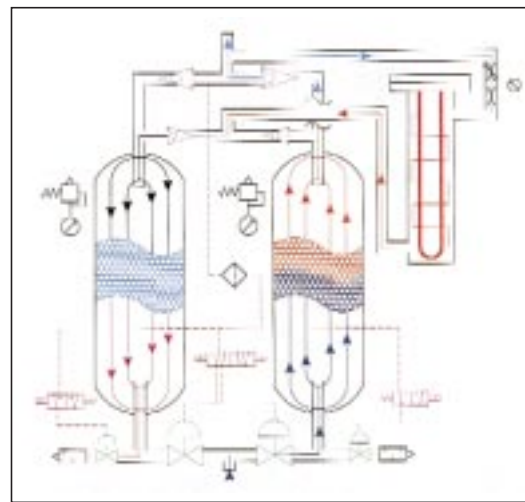
The **GEH Series** is most economical in systems with medium to high air volume, because of low operating costs and moderate original equipment purchase. The system requires only a 7% purge rate half of a Heatless dryer.

Sequence of Operation

Compressed air laded with moisture vapor enters the system through the right inlet valve and proceeds to enter the desiccant bed through the stainless steel diffuser screen. The air flows up from the bottom of the tank to the top allowing separated and condensed liquid to remain at the bottom of the vessel not contaminating the rest of the desiccant. The dehydrated compressed air then exits the right vessel through the top stainless steel diffuser screen, and past the outlet check-valve. A percentage of the dry air is metered, heated and directed to the left desiccant bed for regeneration. The hot adsorbent



purge air enters the desiccant bed from the top and flows down heating the desiccant bed and collecting moisture from the desiccant. The now moisture laden purge air exits the system through the purge valve and muffler. After 2.5 hours the purge heater cycles off allowing the unheated purge air to cool the bed. Several minutes before the cycle nears completion the purge valve closes and allows the regeneration vessel to equalize pressure with the on-line tower. The cycle completes after 4 hours and the inlet valves invert continuing the cycle.

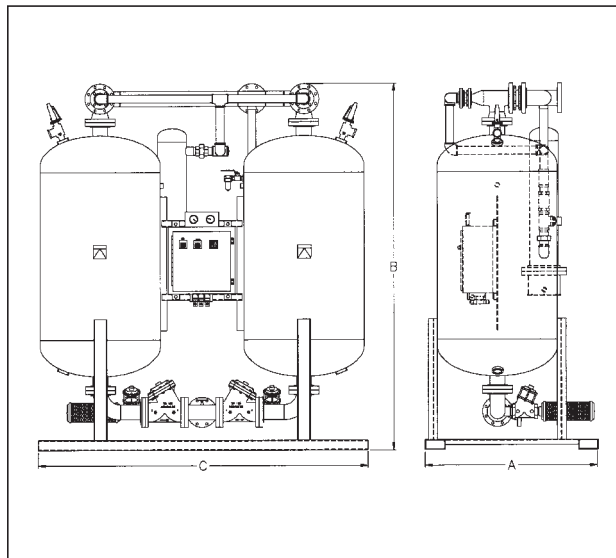


Standard Design Features

- ▶ NEMA 12 Electrical
- ▶ OSHA Approved Mufflers
- ▶ CMOS Digital Controller
- ▶ On/Off Power Switch
- ▶ "Power On" Indicator
- ▶ "Heater On" Indicator
- ▶ ASME/CRN Vessels
- ▶ Low Watt Density Incoloy Sheath Circulation Heater
- ▶ Purge Flow Indicator
- ▶ Adjustable Purge Flow
- ▶ Tower Pressure Gauges
- ▶ Fail Safe Valving
- ▶ ASME Relief Valves
- ▶ Automatic Depressurization
- ▶ Non-Lubricated Valves
- ▶ Union or Wafer Style Check Valves
- ▶ SS Desiccant Support/Diffusers
- ▶ Manifold Type Solenoid Valves
- ▶ Control Air Filter
- ▶ Adjustable Purge Temp. Control
- ▶ Heater High Limit Cutout
- ▶ Insulated Purge Piping
- ▶ Insulated Heater Housing
- ▶ Independent Desiccant Fill & Drain Ports

Specifications and Dimensions

Model Capacity SCFM (1)	Voltage @60 Cycle	Desiccant Weight	Shipping Weight	In/Out Connections	A	B	C
GEH-100-*16	460/230-1Ø	140 lbs.	840	1" NPT	15	63	61
GEH-125-*16	460/230-1Ø	175 lbs.	890	1" NPT	17	64	63
GEH-175-*16	460/230-1Ø	245 lbs.	1075	1½" NPT	19	65	67
GEH-250-*36	460/230-3Ø	350 lbs.	1325	1½" NPT	21	68	70
GEH-350-*36	460/230-3Ø	490 lbs.	1485	1½" NPT	23	73	71
GEH-500-*36	460/230-3Ø	700 lbs.	1775	2" NPT	27	85	75
GEH-650-*36	460/230-3Ø	910 lbs.	1985	2" NPT	30	75	81
GEH-800-*36	460/230-3Ø	1120 lbs.	2285	3" NPT	32	86	83
GEH-1000-*36	460/230-3Ø	1400 lbs.	2962	3" NPT	38	80	85
GEH-1250-*36	460/230-3Ø	1750 lbs.	3850	3" NPT	38	96	95
GEH-1400-*36	460/230-3Ø	1960 lbs.	4312	3" NPT	38	101	85
GEH-1600-*36	460/230-3Ø	2240 lbs.	4928	4" FLG	52	109	90
GEH-1800-*36	460/230-3Ø	2520 lbs.	5598	4" FLG	52	109	99
GEH-2000-*36	460/230-3Ø	2800 lbs.	6220	4" FLG	52	109	99
GEH-2250-*36	460/230-3Ø	3150 lbs.	6995	4" FLG	57	105	111
GEH-2500-*36	460/230-3Ø	3500 lbs.	7810	6" FLG	57	105	111
GEH-2750-*36	460/230-3Ø	3850 lbs.	8580	6" FLG	53	126	127
GEH-3000-*36	460/230-3Ø	4200 lbs.	8990	6" FLG	53	129	127
GEH-3500-*36	460/230-3Ø	3850 lbs.	10160	6" FLG	53	126	127
GEH-4000-*36	460/230-3Ø	4200 lbs.	10945	6" FLG	53	129	127



Notes:

1. Model reflects capacity @ 100PSIG, 100°F & -40°F PDP. See capacity correction table for other rated capacities.
2. Dimension and specifications are subject to change without notice.
3. All dimensions are in inches and all weights are in pounds.
4. Initial desiccant charge included. Models above 250 SCFM require field charging.
5. Shipping weight includes the initial desiccant charge and crating material.
6. Maximum operating pressure 150 PSIG as standard. Optional pressures are available.
7. Steam heated models are available as an option, consult factory for details.
8. * refers to missing voltage designation.

System Design Change Model Number Breakdown

GEH-XXXX	XX		XX		XX		-XXX	
Capacity	Electrical		Pressure		Dewpoint		Voltage	
@ 100 PSIG	Blank	NEMA 12	Blank	150 PSIG	Blank	-40°F PDP	116	120-1-60
	N4	NEMA 4	P2	250 PSIG	D8	-80 PDP	216	230-1-60
	N7	NEMA 7	P5	500 PSIG	D1	-100 PDP	436	460-3-60
			P1	1000 PSIG			236	230-3-60

GIH Series Internally Heated Regenerative Dryers

Internally Heated Regenerative Air Dryers have received a bad reputation from poor designs originally marketed by several companies in the 1970's. Heater burnout, desiccant scorching and even fires plagued the poor design. Great Lakes Series GIH Air Dryers utilize their unique tank baffle design to eliminate product shortcomings of past. 100% of the purge flow moves over every extremely low watt density heating element to eliminate burnout. Because of the baffled flow path the heating sheath never comes in contact with inlet air, it only sees clean dry purge air off the on-line tower. This removes the possibility of inlet oil carryover reaching flashpoint and eliminates the possibility of fires. This modern and proven design is the flagship of the Great Lakes regenerative product line.

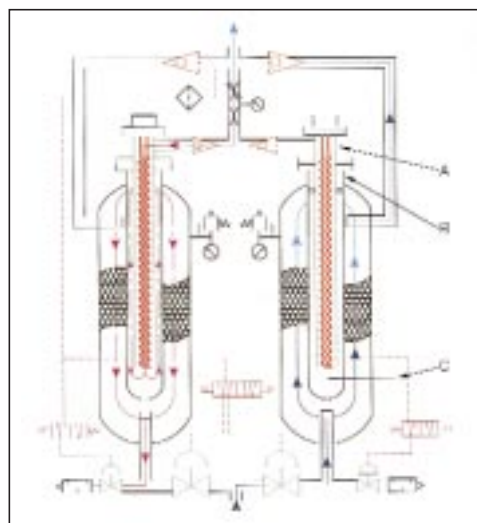
The **GIH Series** is the most economical regenerative dryer system to operate. The system requires only a 3-4% purge rate, half of an Externally Heated dryer.



Sequence of Operation

Compressed air laded with moisture vapor enters the system through the right inlet valve and proceeds to enter the desiccant bed through the stainless steel diffuser screen. The air flows up from the bottom of the tank to the top allowing separated and condensed liquid to remain at the bottom of the vessel not contaminating the rest of the desiccant. The dehydrated compressed air then exits the right vessel through the top stainless steel diffuser screen, and past the outlet check-valve. A percentage of the dry air is

metered, and directed to the left desiccant bed for regeneration. The adsorbent purge air enters the vessel in the primary heater tube flowing down while it reaches regeneration temperature. It



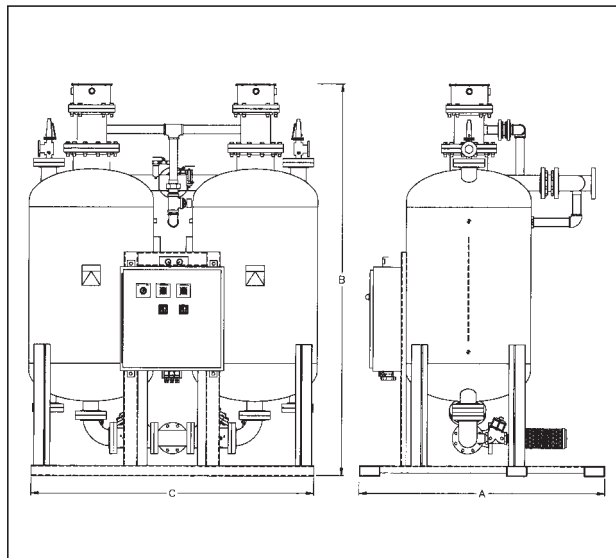
then enters the secondary heater tube where the purge flow returns to the top of the desiccant bed and flows down heating the desiccant bed and collecting moisture from the desiccant. The now moisture laden purge air exits the system through the purge valve and muffler. After 2.5 hours the purge heater cycles off allowing the unheated purge air to cool the bed. Several minutes before the cycle nears completion the purge valve closes and allows the regeneration vessel to equalize pressure with the on-line tower. The cycle completes after 4 hours and the inlet valves invert continuing the cycle.

Standard Design Features

- ▶ NEMA 12 Electrical
- ▶ OSHA Approved Mufflers
- ▶ CMOS Digital Controller
- ▶ On/Off Power Switch
- ▶ "Power On" Indicator
- ▶ "Heater On" Indicator
- ▶ 12-13 Watt / IN² Incoloy Sheath Heaters
- ▶ Purge Flow Indicator
- ▶ Adjustable Purge Flow
- ▶ Tower Pressure Gauges
- ▶ Fail Safe Valving
- ▶ ASME Relief Valves
- ▶ Control Air Filter
- ▶ Non-Lubricated Valves
- ▶ Union or Wafer Style Check Valves
- ▶ SS Desiccant Support/Diffusers
- ▶ Manifold Type Solenoid Valves
- ▶ Automatic Repressurization
- ▶ Adjustable Purge Temp. Controls
- ▶ Heater High Limit Cutouts
- ▶ Insulated Purge Piping
- ▶ Independent Desiccant Fill & Drain Ports

Specifications and Dimensions

Model Capacity SCFM (1)	Voltage @60 Cycle	Desiccant Weight	Shipping Weight	In/Out Connections	A	B	C
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GIH-125-*16	460/230-1Ø	175 lbs.	1000	1" NPT	17	64	63
GIH-175-*16	460/230-1Ø	245 lbs.	1270	1½" NPT	19	65	67
GIH-250-*36	460/230-3Ø	350 lbs.	1510	1½" NPT	21	68	70
GIH-350-*36	460/230-3Ø	490 lbs.	1720	1½" NPT	23	73	71
GIH-500-*36	460/230-3Ø	700 lbs.	2455	2" NPT	27	85	75
GIH-650-*36	460/230-3Ø	910 lbs.	3191	2" NPT	30	75	81
GIH-800-*36	460/230-3Ø	1120 lbs.	3728	3" NPT	32	86	83
GIH-1000-*36	460/230-3Ø	1400 lbs.	4380	3" NPT	38	80	85
GIH-1250-*36	460/230-3Ø	1750 lbs.	4845	3" NPT	38	96	95
GIH-1400-*36	460/230-3Ø	1960 lbs.	5485	3" NPT	38	101	85
GIH-1600-*36	460/230-3Ø	2240 lbs.	6690	4" FLG	52	109	90
GIH-1800-*36	460/230-3Ø	2520 lbs.	7265	4" FLG	52	109	99
GIH-2000-*36	460/230-3Ø	2800 lbs.	6950	4" FLG	52	109	99
GIH-2250-*36	460/230-3Ø	3150 lbs.	7700	4" FLG	57	105	111
GIH-2500-*36	460/230-3Ø	3500 lbs.	8935	6" FLG	57	105	111
GIH-2750-*36	460/230-3Ø	3850 lbs.	10050	6" FLG	53	126	127
GIH-3000-*36	460/230-3Ø	4200 lbs.	10980	6" FLG	53	129	127
GIH-3500-*36	460/230-3Ø	3850 lbs.	12110	6" FLG	53	126	127
GIH-4000-*36	460/230-3Ø	4200 lbs.	14370	6" FLG	53	129	127



Notes:

1. Model reflects capacity @ 100PSIG, 100°F & -40°F PDP. See capacity correction table for other rated capacities.
2. Dimensions and specifications are subject to change without notice.
3. All dimensions are in inches and all weights are in pounds.
4. Initial desiccant charge included. Models above 250 SCFM require field charging.
5. Shipping weight includes the initial desiccant charge and crating material.
6. Maximum operating pressure 150 PSIG as standard. Optional pressures are available.
7. Steam heated models are available as an option, consult factory for details.
8. * refers to missing voltage designation.

System Design Change Model Number Breakdown

GIH-XXXX	XX		XX		XX		-XXX	
Capacity	Electrical		Pressure		Dewpoint		Voltage	
@ 100 PSIG	Blank	NEMA 12	Blank	150 PSIG	Blank	-40°F PDP	116	120-1-60
	N4	NEMA 4	P2	250 PSIG	D8	-80 PDP	216	230-1-60
	N7	NEMA 7	P5	500 PSIG	D1	-100 PDP	436	460-3-60
			P1	1000 PSIG			236	230-3-60

GBS Series Blower Purge Regenerative Dryers

Great Lakes Series GBS Air Dryers

use regenerative type blowers to supply the purge air for desiccant regeneration.

Atmospheric air is drawn in to the blower through an intake filter silencer. During the heating portion of the regeneration cycle, the air is heated with an external circulation heater similar to the externally heated models. Because the design uses wet atmospheric air to regenerate and cool the desiccant bed, the dewpoint of this system will fluctuate with ambient conditions. An average dewpoint rating of this system is -20° to $+20^{\circ}$ F pressure dewpoint.

The **GBS Series** is an economical blower purge regenerative dryer system. The system has low operating costs and requires no compressed air **purge**. The system does produce fluctuating dewpoints with varying ambient conditions.

Sequence of Operation

Compressed air laded with moisture vapor enters the system through the right inlet valve and proceeds to enter the desiccant bed through the stainless steel diffuser screen. The air flows up from the bottom of the tank to the top allowing separated and condensed liquid to remain at the bottom of the vessel not contaminating the rest of the desiccant. The dehydrated compressed air then exits the right vessel through the top stainless steel diffuser screen, and past the outlet check-valve. A Regenerative blower moves atmospheric air in to the cir-

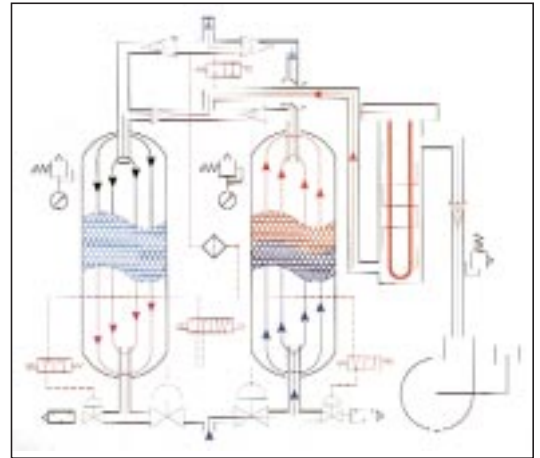


ulation heater where it is heated and directed to the left desiccant bed for regeneration. The hot adsorbent purge air enters the desiccant bed from the top and flows down heating the desiccant bed and collecting moisture from the desiccant. The now moisture laden purge air exits the system through the purge valve and muffler. After 2.5 hours, the purge heater cycles off allowing the un-heated atmospheric

purge air to cool the bed. Several minutes before the cycle

completion the purge valve closes and a solenoid

repressurization valve opens allowing the regeneration vessel to equalize pressure with the on-line tower. The cycle completes after 4 hours and the inlet valves invert continuing the cycle.



Standard Design Features

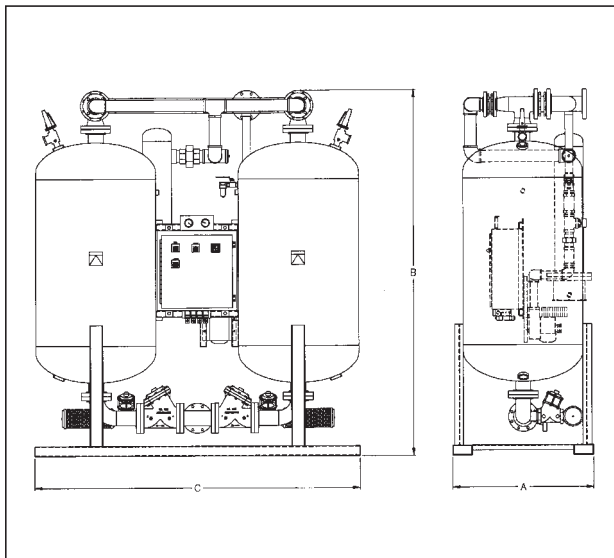
- ▶ NEMA 12 Electrical
- ▶ OSHA Approved Mufflers
- ▶ CMOS Digital Controller
- ▶ On/Off Power Switch
- ▶ "Power On" Indicator
- ▶ "Heater On" Indicator
- ▶ "Blower On" Indicator
- ▶ 18 Watt/IN² Incoloy Sheath Heater
- ▶ ASME/CRN Vessels
- ▶ Blower Relief Valve
- ▶ Tower Pressure Gauges
- ▶ Fail Safe Valving
- ▶ ASME Relief Valves
- ▶ Control Air Filter
- ▶ Non-Lubricated Valves
- ▶ Union or Wafer Style Check Valves
- ▶ SS Desiccant Support/Diffusers
- ▶ Manifold Type Solenoid Valves
- ▶ Automatic Repressurization
- ▶ Adjustable Purge Temp. Controls
- ▶ Heater High Limit Cutout
- ▶ Insulated Purge Piping
- ▶ Insulated Heater Housing
- ▶ Independent Desiccant Fill & Drain Ports

Specifications and Dimensions

Model Capacity SCFM (1)	Voltage @60 Cycle	Desiccant Weight	Heater kW	Blower HP	Shipping Weight	In/Out Connections	A	B	C
GBS-100-*16	460/230-1Ø	140 lbs.	5	2.3	855	1" NPT	15	63	61
GBS-125-*16	460/230-1Ø	175 lbs.	5	2.3	905	1" NPT	17	64	63
GBS-175-*16	460/230-1Ø	245 lbs.	5	2.3	1100	1½" NPT	19	65	67
GBS-250-*36	460/230-3Ø	350 lbs.	10	3.5	1425	1½" NPT	21	68	70
GBS-350-*36	460/230-3Ø	490 lbs.	10	3.5	1530	1½" NPT	23	73	71
GBS-500-*36	460/230-3Ø	700 lbs.	15	5.1	1840	2" NPT	27	85	75
GBS-650-*36	460/230-3Ø	910 lbs.	15	6.2	2065	2" NPT	30	75	81
GBS-800-*36	460/230-3Ø	1120 lbs.	19	8.1	2400	3" NPT	32	86	83
GBS-1000-*36	460/230-3Ø	1400 lbs.	26	8.1	3175	3" NPT	38	80	85
GBS-1250-*36	460/230-3Ø	1750 lbs.	31	10.2	4080	3" NPT	38	96	95
GBS-1400-*36	460/230-3Ø	1960 lbs.	38	10.2	4500	3" NPT	38	101	85
GBS-1600-*36	460/230-3Ø	2240 lbs.	38	13.6	5145	4" FLG	52	109	90
GBS-1800-*36	460/230-3Ø	2520 lbs.	43	13.6	5810	4" FLG	52	109	99
GBS-2000-*36	460/230-3Ø	2800 lbs.	43	17.0	6470	4" FLG	52	109	99
GBS-2250-*36	460/230-3Ø	3150 lbs.	52	17.0	7250	4" FLG	57	105	111
GBS-2500-*36	460/230-3Ø	3500 lbs.	58	19.2	8100	6" FLG	57	105	111
GBS-2750-*36	460/230-3Ø	3850 lbs.	70	19.2	8825	6" FLG	53	126	127
GBS-3000-*36	460/230-3Ø	4200 lbs.	70	21.6	9340	6" FLG	53	129	127
GBS-3500-*36	460/230-3Ø	3850 lbs.	95	21.6	10420	6" FLG	53	126	127
GBS-4000-*36	460/230-3Ø	4200 lbs.	95	26.4	11200	6" FLG	53	129	127

Notes:

1. Model reflects capacity @ 100PSIG, 100°F & -40°F PDP. See capacity correction table for other rated capacities.
2. Dimensions and specifications are subject to change without notice.
3. All dimensions are in inches and all weights are in pounds.
4. Initial desiccant charge included. Models above 250 SCFM require field charging.
5. Shipping weight includes the initial desiccant charge and crating material.
6. Maximum operating pressure 150 PSIG as standard. Optional pressures are available.
7. Steam heated models are available as an option, consult factory for details.
8. * refers to missing voltage designation.



System Design Change Model Number Breakdown

GBS-XXXX	XX		XX		XX		-XXX	
Capacity	Electrical		Pressure		Dewpoint		Voltage	
@ 100 PSIG	Blank	NEMA 12	Blank	150 PSIG	Blank	-40°F PDP	116	120-1-60
	N4	NEMA 4	P2	250 PSIG	D8	-80 PDP	216	230-1-60
	N7	NEMA 7	P5	500 PSIG	D1	-100 PDP	436	460-3-60
			P1	1000 PSIG			236	230-3-60

GEHB Series Blower Purge Regenerative Dryers

Great Lakes Series GEHB Air Dryers use a positive displacement type blower to supply the purge air for desiccant regeneration. Atmospheric air is drawn in to the blower through an intake filter silencer. During the heating portion of the regeneration cycle, the air is heated with an external circulation heater similar to the externally heated models.

Because wet gas regenerative dryers produce unstable dewpoints, this series provides a standard mode selector valve to stabilize outlet dewpoints. The modes are field selectable; **Blower Purge, Blower**



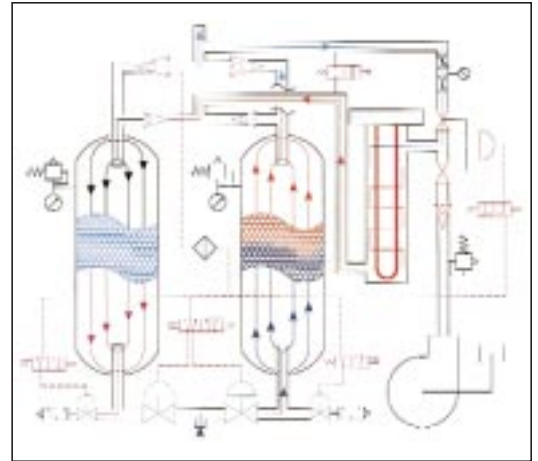
Polishing, or Externally Heated. In the Blower Polishing mode stable low dewpoints can be maintained by using a small purge percentage of 2.5% of inlet. The GEHB Series is a heavy duty, high quality, blower purge regenerative dryer system. The system has low operating costs and requires no compressed air **purge in the Blower only Mode.** Water-cooled blower Aftercooler is available as an option to improve performance in the blower only mode.

Sequence of Operation

Compressed air laded with moisture vapor enters the system through the right inlet valve and proceeds to enter the desiccant bed through the stainless steel diffuser screen. The air flows up from the bottom of the tank to the top allowing separated and condensed liquid to remain at the bottom of the vessel not contaminating the rest of the desiccant. The dehydrated compressed air then exits the right vessel through the top stainless steel diffuser screen, and past the outlet check-valve. A positive displacement blower moves atmospheric air in the circula-

tion heater where it is heated and directed to the left desiccant bed for regeneration. The hot adsorbent purge air enters the desiccant bed from the top and flows down heating the desiccant bed and collecting moisture from the desiccant.

The now moisture laden purge air exits the system through the purge valve and muffler. After 2.5 hours, the purge heater cycles off allowing the unheated atmospheric purge air to cool the bed. If the system is operating in the polishing mode the blower shuts down and the system draws dry compressed purge air for the cooling cycle. Several minutes before the cycle nears completion the purge valve closes and a solenoid repressurization valve opens allowing the regeneration vessel to equalize pressure with the on-line tower. The cycle completes after 4 hours and the inlet valve invert continuing the cycle.



Standard Design Features

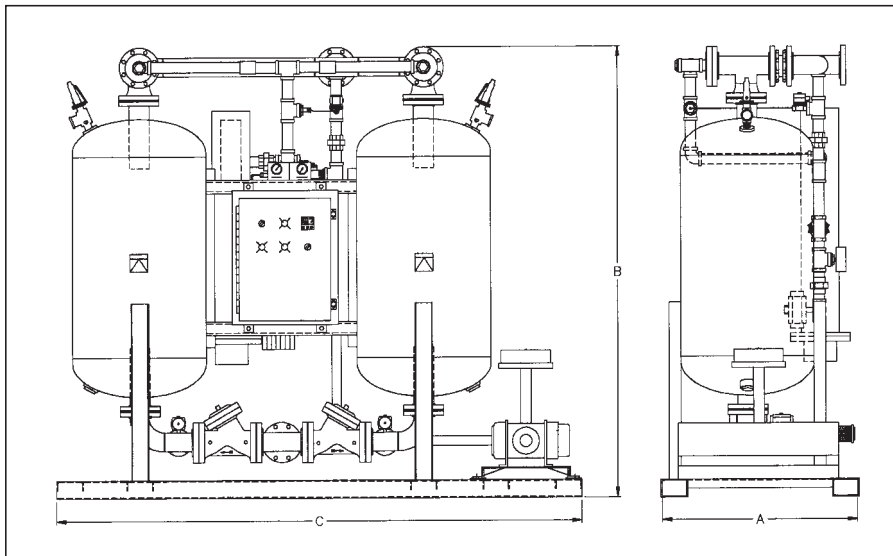
- ▶ NEMA 12 Electrical
- ▶ OSHA Approved Mufflers
- ▶ CMOS Digital Controller
- ▶ On/Off Power Switch
- ▶ "Power On" Indicator
- ▶ "Heater On" Indicator
- ▶ "Blower On" Indicator
- ▶ 18 Watt/IN² Incoloy Sheath Heater
- ▶ Purge Flow Indicator
- ▶ Adjustable Purge Flow
- ▶ Tower Pressure Gauges
- ▶ Fail Safe Valving
- ▶ ASME Relief Valves
- ▶ Control Air Filter
- ▶ Non-Lubricated Valves
- ▶ Union or Wafer Style Check Valves
- ▶ SS Desiccant Support/Diffusers
- ▶ Manifold Type Solenoid Valves
- ▶ Automatic Repressurization
- ▶ Adjustable Purge Temp. Controls
- ▶ Heater High Limit Cutout
- ▶ Insulated Purge Piping
- ▶ Insulated Heater Housing
- ▶ Independent Desiccant Fill & Drain Ports

Specifications and Dimensions

Model Capacity SCFM (1)	Voltage @60 Cycle	Desiccant Weight	Heater kW	Blower HP	Shipping Weight	In/Out Connections	A	B	C
GEHB-100-*16	460/230-1Ø	140 lbs.	5	2	970	1" NPT	35	71	74
GEHB-125-*16	460/230-1Ø	175 lbs.	5	2	1020	1" NPT	35	71	74
GEHB-175-*16	460/230-1Ø	245 lbs.	5	2	1215	1½" NPT	37	71	74
GEHB-250-*36	460/230-3Ø	350 lbs.	10	3	1540	1½" NPT	37	71	74
GEHB-350-*36	460/230-3Ø	490 lbs.	10	3	1645	1½" NPT	37	71	77
GEHB-500-*36	460/230-3Ø	700 lbs.	15	5	1964	2" NPT	37	85	83
GEHB-650-*36	460/230-3Ø	910 lbs.	15	5	2189	2" NPT	39	75	95
GEHB-800-*36	460/230-3Ø	1120 lbs.	19	7.5	2529	3" NPT	42	86	106
GEHB-1000-*36	460/230-3Ø	1400 lbs.	26	7.5	3304	3" NPT	45	80	110
GEHB-1250-*36	460/230-3Ø	1750 lbs.	31	10	4209	3" NPT	48	96	110
GEHB-1400-*36	460/230-3Ø	1960 lbs.	38	10	4629	3" NPT	48	101	110
GEHB-1600-*36	460/230-3Ø	2240 lbs.	38	10	5280	4" FLG	55	109	116
GEHB-1800-*36	460/230-3Ø	2520 lbs.	43	15	5945	4" FLG	57	111	119
GEHB-2000-*36	460/230-3Ø	2800 lbs.	43	15	6875	4" FLG	57	111	119
GEHB-2250-*36	460/230-3Ø	3150 lbs.	52	15	7385	4" FLG	60	107	135
GEHB-2500-*36	460/230-3Ø	3500 lbs.	58	20	8252	6" FLG	65	107	145
GEHB-2750-*36	460/230-3Ø	3850 lbs.	70	20	8977	6" FLG	65	116	145
GEHB-3000-*36	460/230-3Ø	4200 lbs.	70	20	9492	6" FLG	65	116	145
GEHB-3500-*36	460/230-3Ø	3850 lbs.	95	20	10570	6" FLG	72	151	153
GEHB-4000-*36	460/230-3Ø	4200 lbs.	95	25	11352	6" FLG	72	151	153

Notes:

1. Model reflects capacity @ 100PSIG, 100°F & -40°F PDP. See capacity correction table for other rated capacities.
2. Dimensions and specifications are subject to change without notice.
3. All dimensions are in inches and all weights are in pounds.
4. Initial desiccant charge included. Models above 250 SCFM require field charging.
5. Shipping weight includes the initial desiccant charge and crating material.
6. Maximum operating pressure 150 PSIG as standard. Optional pressures are available.
7. Steam heated models are available as an option, consult factory for details.
8. * refers to missing voltage designation.



System Design Change Model Number Breakdown

GEHB-XXXX	XX		XX		XX		-XXX	
Capacity	Electrical		Pressure		Dewpoint		Voltage	
@ 100 PSIG	Blank	NEMA 12	Blank	150 PSIG	Blank	-40°F PDP	116	120-1-60
	N4	NEMA 4	P2	250 PSIG	D8	-80 PDP	216	230-1-60
	N7	NEMA 7	P5	500 PSIG	D1	-100 PDP	436	460-3-60
			P1	1000 PSIG			236	230-3-60



Other Great Lakes Air Products



EDR Series
High Temperature Refrigeration Dryers



GRF Series
Large Refrigeration Dryers



High Quality
Refrigeration Dryers



ZLD Series
Zero Air Loss Condensate Drains



LTS Series



T-Type 1/4" - 3" NPT
Filtration System



ASME T & F Type
Filtration System



Conversion Elements to
Fit Competitors' Housing



LM Series



LIM Series

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