GREAT LAKES AIR

GMNF & GMNX Series Modular High Capacity Refrigeration Dryers

Why Dry Compressed Air

Compressed air is a clean, convenient and versatile energy resource ideal for many industrial, commercial and instrument applications. To optimize a compressed air system the moisture and contaminants naturally concentrated in the compression cycle must be removed to avoid costly equipment failure, product contamination, and distribution system breakdown.
In the compression cycle, ambient air is drawn into the compressor where the gas volume is reduced to increase pressure. Any solids, vapors or aerosols introduced into the compression cycle are concentrated in a direct correlation to the discharge pressure of the system. This process produces saturated compressed air with particulate contaminants and excess liquid at the compressor discharge. Filtration can remove the liquid water and contamination, but the moisture (humidity) needs to be removed with a compressed air dryer.
A compressed air dryer suppresses the Dewpoint (temperature at which liquid moisture will condense) enabling separation to remove the liquid from the system. By removing the moisture with a dryer: reliability, efficiency and productivity can be added to a compressed air system.

- ***Dry compressed air keeps lubricants from being washed away from air tools, cylinders, air motors, and valves; extending product life and reducing maintenance requirements.***
- ***Dry compressed air reduces product contamination in applications such as, mixing, conveying, agitation, cooling, or product blow down.***
- ***Dry compressed air reduces distribution system corrosion that will: increase pressure drop and operational costs, generate pipe scale, cause leaks, and require premature replacement.***

Engineered for a Green Future

The GMNF & GMNX series refrigerated compressed air dryer is designed with the most current technology and methodology for the 21st century.

- ***Enhanced High Efficiency Heat Exchangers***

The enhanced efficiency of the heat exchanger allows closer approach temperatures in both the Air-Air and Air-Refrigeration exchangers reducing the required BTU/h input of the refrigeration system required to meet or exceed ISO Class 8573 class 4 pressure dewpoints.

- ***Reduced Operating Costs & Carbon Footprint***

The reduction of required refrigeration BTU/h input correlates to smaller refrigeration requirements and reduction of operational input watts.

- ***Environmentally Friendly Refrigerants***

The use of refrigerants with low GWP (Global warming potential) in conjunction with its energy efficiency to reduce required energy input of the entire refrigeration system.

- ***Reduced Manufacturing Carbon Footprint***

The Carbon Footprint required to manufacture a refrigeration dryer has also been reduced in these series. It has a reduced material and equipment footprint which requires less materials to manufacture thus reducing it's carbon footprint.

5 - Year Product Warranty

Great Lakes Air Products has produced high quality refrigeration dryers since it's founding. In an effort to express this quality standard, as well as distinguish it's products in the marketplace, it initiated an industry leading 5-Year product warranty on standard refrigerated air dryers. The warranty requires no additional purchases or contracts and covers the entire dryer for 5-Years, and excludes only maintenance items through a simple purchase.

Great Lakes Air has supported it's 5-Year Warranty since 1983 while many other industry warranties have been implemented and revoked, others cover only select components, or prorates charges for components at the time of replacement.

With continuous improvement in engineering and quality standards, that are a product of current technology, you can be assured that Great Lakes Air Products will provide you with a quality product for years of uninterrupted service.

Detailed warranty coverage and requirements can be referenced in the GMNF & GMNX warranty publications.

Made with Pride in the USA

Great Lakes Air Products manufactures all of its compressed air dryers in southeastern Michigan which has a long and rich history in manufacturing. We offer our customers a steady stream of value driven, high quality, industrial grade products with decades of proven performance. Readily available replacement components and maintenance items are locally available through the Great Lakes distribution network. Base your equipment purchase on the quality and durability of American made products.

Non Standard Condition Capacity Correction

Inlet Temperature °F		90			100			110			120		
Ambient Temperature °F		90	100	110	90	100	110	90	100	110	90	100	110
Inlet Air Pressure	70 psig	1.10	1.01	0.86	0.81	0.74	0.63	0.60	0.55	0.47	0.45	0.42	0.35
	80 psig	1.23	1.13	0.96	0.90	0.83	0.70	0.67	0.62	0.52	0.51	0.47	0.40
	90 psig	1.35	1.24	1.06	1.00	0.91	0.78	0.74	0.68	0.58	0.56	0.51	0.44
	100 psig	1.48	1.36	1.15	1.09	**1.00**	0.85	0.81	0.75	0.63	0.61	0.56	0.48
	110 psig	1.61	1.47	1.25	1.18	1.09	0.92	0.88	0.81	0.69	0.66	0.61	0.52
	120 psig	1.73	1.59	1.35	1.09	1.17	0.99	0.95	0.87	0.74	0.72	0.66	0.56
	130 psig	1.86	1.70	1.45	1.37	1.26	1.07	1.02	0.94	0.80	0.77	0.71	0.60
	140 psig	1.98	1.82	1.55	1.46	1.34	1.14	1.09	1.00	0.85	0.82	0.75	0.64
	150 psig	2.11	1.93	1.64	1.55	1.42	1.21	1.16	1.06	0.90	0.87	0.80	0.68
	175 psig	2.40	2.20	1.87	1.80	1.65	1.41	1.37	1.25	1.07	1.05	0.96	0.82

To obtain flow capacities at conditions other than standard (SCFM @ 100 PSIG, 100°F Inlet & 100°F Ambient), locate the multiplier at the interception of actual operating conditions. Multiply the standard rated capacity of the dryer by the selected multiplier. The result is the flow capacity of that dryer under corrected conditions. Flow rates in excess of design due to capacity correction can result in increased pressure drop.

GMNF - Features & Benefits

True Modular Design

The base design of the GMNF series allows for the addition of up to 5 interconnected modules each with a capacity of 2000 through 2700 SCFM.
As a company's compressed air demand increases modules can be added to facilitate a streamlined system expansion.

Individual Module Features

- Refrigeration Suction Gauge
- Refrigeration Discharge Gauge
- Air Outlet Pressure Gauge
- Fully Hermetic Refrigeration Compressor
- Refrigeration High/Low Pressure Shutdown
- Compressor Crankcase Heaters
- Compressor Overload Protection
- Compressor Oil Sight Glass
- Fan Cycle Control (Air Cooled)
- Water Regulator Valve (Water Cooled)
- Stainless Steel Brazed Plate Heat Exchangers
- Condensate Drain Isolation Valves
- Automatic Condensate Drains
- Components located for ease of maintenance

Pressure Switches & Fan Cycle Control

Fan Cycle pressure switch controls allow a stable and precise refrigerant operating band in various or changing ambient conditions.

High / Low pressure switches will protect the refrigeration system from out of range operation that could cause compressor failure. The high limit requires manual reset in the event of an overpressure condition which prevents the refrigeration system from short cycling in the event of condenser cooling medium loss, high ambient conditions, or dirty/clogged air cooled condensers.

Complete System Features

- Single Point Electrical Connections
- Bidirectional Headers that provide balanced air flow at minimal pressure drop.

High Quality Hermetic Compressor

Heavy duty, industrial service piston type refrigeration compressor with proven durability that is designed to handle the fluctuating loads of a compressed air refrigeration dryer. The compressor is equipped with an oil sight glass to verify lubrication levels as well as proper gas return operating conditions. Rotolock service valves allow isolation as well as access to the refrigeration system that aids in the long term service and maintenance of a refrigeration dryer.

Optional Features

Remote Condensers

Custom designed site specific remote air cooled refrigeration condensers.

Additional Instrumentation

Additional instrumentation in various formats are available to match a facilities operating or data collection system

Voltages

Non-standard available voltages
230-3-60 • 575-3-60

Custom Water Cooled Condensers

Cupronickel permits the use of seawater as a cooling source or removable heads for condenser cleaning in aggressive cooling water applications.

GMNF Modular High Capacity Dryers (Water Cooled Models)												
Model Number	Capacity	Modules	Refrigeration System				Total System kW/h	PSID	In / Out Header	Dimensions Inches		
			Compressor		Condenser							
			HP	kW/h	GPM	Conn.				H	W	D
GMNF-4000W-436	4,000	2	(2) 7.0	16.41	32	2" NPT	17.51	2.9	8" Flg	101	101	98
GMNF-5000W-436	5,000	2	(2) 9.0	17.86	38	2" NPT	18.96	3.7	8" Flg	102	101	98
GMNF-5400W-436	5,400	2	(2) 9.0	17.86	60	2" NPT	18.96	4.1	8" Flg	102	101	98
GMNF-6000W-436	6,000	3	(3) 7.0	24.61	48	2" NPT	26.26	2.9	10" Flg	102	151	98
GMNF-7500W-436	7,500	3	(3) 9.0	26.79	57	2" NPT	28.44	3.7	10" Flg	102	151	98
GMNF-8100W-436	8,100	3	(3) 9.0	31.74	90	2" NPT	33.39	4.0	10" Flg	102	151	98
GMNF-10000W-436	10,000	4	(4) 9.0	35.72	76	2½" NPT	37.92	3.4	12" Flg	104	202	98
GMNF-10800W-436	10,800	4	(4) 9.0	42.32	120	2½" NPT	44.52	4.0	12" Flg	104	202	98
GMNF-12500W-436	12,500	5	(5) 9.0	44.65	95	3" NPT	47.40	3.7	14" Flg	106	252	98
GMNF-13500W-436	13,500	5	(5) 9.0	52.90	150	3" NPT	55.65	3.9	14" Flg	106	252	98

Notes:
1. Capacity reflects SCFM at 100 PSIG, 100°F Inlet conditions & 100°F ambient
2. Inlet/Outlet connections are 150# ANSI RF Flanges
3. Watts specified assume 35°F evaporator and 100°F Ambient at full load conditions
4. Dimensions are in inches, complete drawings available at www.glair.com
5. Dimensions and specifications are subject to change without notice
6. Condenser flow requirements are based on 85°F water

GMNF Modular High Capacity Dryers (Air Cooled Models)												
Model Number	Capacity	Modules	Refrigeration System				Total System kW/h	PSID	In / Out Header	Dimensions Inches		
			Compressor		Condenser							
			HP	kW/h	CFM	kW/h				H	W	D
GMNF-4000A-436	4,000	2	(2) 9.0	19.55	22800	5.26	25.91	2.9	8" Flg	126	101	98
GMNF-5000A-436	5,000	2	(2) 10.0	25.70	22800	5.26	32.06	3.7	8" Flg	126	101	98
GMNF-5400A-436	5,400	2	(2) 10.0	25.70	22800	5.26	32.06	4.1	8" Flg	126	101	98
GMNF-6000A-436	6,000	3	(3) 9.0	29.32	34200	7.89	38.86	2.9	10" Flg	126	151	98
GMNF-7500A-436	7,500	3	(3) 10.0	38.55	34200	7.89	48.09	3.7	10" Flg	126	151	98
GMNF-8100A-436	8,100	3	(3) 10.0	38.55	34200	7.89	48.09	4.0	10" Flg	126	151	98
GMNF-10000A-436	10,000	4	(4) 10.0	51.40	45600	10.5	64.12	3.4	12" Flg	126	202	98
GMNF-10800A-436	10,800	4	(4) 10.0	51.40	45600	10.5	64.12	4.0	12" Flg	126	202	98
GMNF-12500A-436	12,500	5	(5) 10.0	62.25	57000	13.5	80.50	3.7	14" Flg	126	252	98
GMNF-13500A-436	13,500	5	(5) 10.0	62.25	57000	13.5	80.50	3.9	14" Flg	126	252	98

Notes:
1. Capacity reflects SCFM at 100 PSIG, 100°F Inlet conditions & 100°F ambient
2. Inlet/Outlet connections are 150# ANSI RF Flanges
3. Watts specified assume 35°F evaporator and 100°F Ambient at full load conditions
4. Dimensions are in inches, complete drawings available at www.glair.com
5. Dimensions and specifications are subject to change without notice

GMNX - Features & Benefits

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Fan Cycle pressure switch controls allow a stable and precise refrigerant operating band in various or changing ambient conditions.

High / Low pressure switches will protect the refrigeration system from out of range operation that could cause compressor failure. The high limit requires manual reset in the event of an overpressure condition which prevents the refrigeration system from short cycling in the event of condenser cooling medium loss, high ambient conditions, or dirty/clogged air cooled condensers.

High Quality Hermetic Compressor

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True Modular Design

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Individual Module Features

- Refrigeration Suction Gauge
- Refrigeration Discharge Gauge
- Fluid Pressure Gauge
- Fully Hermetic Refrigeration Compressor
- Refrigeration High/Low Pressure Shutdown
- Compressor Crankcase Heaters
- Compressor Overload Protection
- Refrigeration Liquid Line Solenoid
- Compressor Oil Sight Glass
- Fan Cycle Control (Air Cooled)
- Water Regulator Valve (Water Cooled)
- Stainless Steel Brazed Plate Heat Exchangers
- Condensate Drain Isolation Valves
- Zero-Loss Condensate Drains
- Digital Temperature Control
- Stainless Steel Circulation Pump
- Components Located for ease of maintenance

Complete System Features

- Single Point Electrical Connections
- Single Point Power Connection
- Bidirectional Headers that provide balanced air flow at minimal pressure drop.

Optional Features

Remote Condensers

Custom designed site specific remote air cooled refrigeration condensers.

Additional Instrumentation

Additional instrumentation in various formats are available to match a facilities operating or data collection system

Voltages

Non-standard available voltages
230-3-60 • 575-3-60

Custom Water Cooled Condensers

Cupronickel permits the use of seawater as a cooling source or removable heads for condenser cleaning in aggressive cooling water applications.

GMNX Modular Cycling High Capacity Dryers (Water Cooled Models)												
Model Number	Capacity	Modules	Refrigeration System				Total System kW/h	PSID	In / Out Header	Dimensions Inches		
			Compressor		Condenser							
			HP	kW/h	GPM	Conn.				H	W	D
GMNX-4000W-436	4,000	2	(2) 9.0	16.90	30	2" NPT	18.01	2.9	8" Flg	102	101	98
GMNX-5000W-436	5,000	2	(2) 10.0	21.16	40	2" NPT	22.26	3.7	8" Flg	102	101	98
GMNX-5400W-436	5,400	2	(2) 10.0	21.16	66	2" NPT	22.26	4.1	8" Flg	102	101	98
GMNX-6000W-436	6,000	3	(3) 9.0	25.36	45	2" NPT	27.01	2.9	10" Flg	102	151	98
GMNX-7500W-436	7,500	3	(3) 10.0	32.82	60	2" NPT	34.47	3.7	10" Flg	102	151	98
GMNX-8100W-436	8,100	3	(3) 10.0	31.74	99	2" NPT	33.39	4.0	10" Flg	104	151	98
GMNX-10000W-436	10,000	4	(4) 10.0	43.76	80	2½" NPT	45.96	3.4	12" Flg	105	202	98
GMNX-10800W-436	10,800	4	(4) 10.0	42.32	132	2½" NPT	44.52	4.0	12" Flg	105	202	98
GMNX-12500W-436	12,500	5	(5) 10.0	54.70	100	3" NPT	57.45	3.7	14" Flg	106	252	98
GMNX-13500W-436	13,500	5	(5) 10.0	52.90	165	3" NPT	55.65	3.9	14" Flg	106	252	98

Notes:
1. Capacity reflects SCFM at 100 PSIG, 100°F Inlet conditions & 100°F ambient
2. Inlet/Outlet connections are 150# ANSI RF Flanges
3. Watts specified assume 35°F evaporator and 100°F Ambient at full load conditions
4. Dimensions are in inches, complete drawings available at www.glair.com
5. Dimensions and specifications are subject to change without notice
6. Condenser flow requirements are based on 85°F water

GMNX Modular Cycling High Capacity Dryers (Air Cooled Models)												
Model Number	Capacity	Modules	Refrigeration System				Total System kW/h	PSID	In / Out Header	Dimensions Inches		
			Compressor		Condenser							
			HP	kW/h	CFM	kW/h				H	W	D
GMNX-4000A-436	4,000	2	(2) 10.0	23.78	22800	5.26	30.14	2.9	8" Flg	126	101	98
GMNX-5000A-436	5,000	2	(2) 12.0	27.20	22800	5.26	33.56	3.7	8" Flg	126	101	98
GMNX-5400A-436	5,400	2	(2) 13.5	31.33	22800	5.26	37.38	4.1	8" Flg	126	101	98
GMNX-6000A-436	6,000	3	(3) 10.0	35.67	34200	7.89	50.34	2.9	10" Flg	126	151	98
GMNX-7500A-436	7,500	3	(3) 12.0	40.80	34200	7.89	56.07	3.7	10" Flg	126	151	98
GMNX-8100A-436	8,100	3	(3) 13.5	46.53	34200	7.89	67.12	4.0	10" Flg	126	202	98
GMNX-10000A-436	10,000	4	(4) 12.0	54.40	45600	10.52	74.76	3.4	12" Flg	126	202	98
GMNX-10800A-436	10,800	4	(4) 13.5	62.04	45600	10.52	84.25	4.0	12" Flg	126	202	98
GMNX-12500A-436	12,500	5	(5) 12.0	68.00	57000	13.50	79.34	3.7	14" Flg	126	252	98
GMNX-13500A-436	13,500	5	(5) 13.5	77.55	57000	13.50	89.68	3.9	14" Flg	126	252	98

Notes:
1. Capacity reflects SCFM at 100 PSIG, 100°F Inlet conditions & 100°F ambient
2. Inlet/Outlet connections are 150# ANSI RF Flanges
3. Watts specified assume 35°F evaporator and 100°F Ambient at full load conditions
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5. Dimensions and specifications are subject to change without notice

Other Products from Great Lakes Air Products

GNX Series Cycling Air Dryer

GRN Series Refrigeration Air Dryer

Regenerative Desiccant Air Dryers

Compressed Air Filtration

Condensate Drain Systems

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