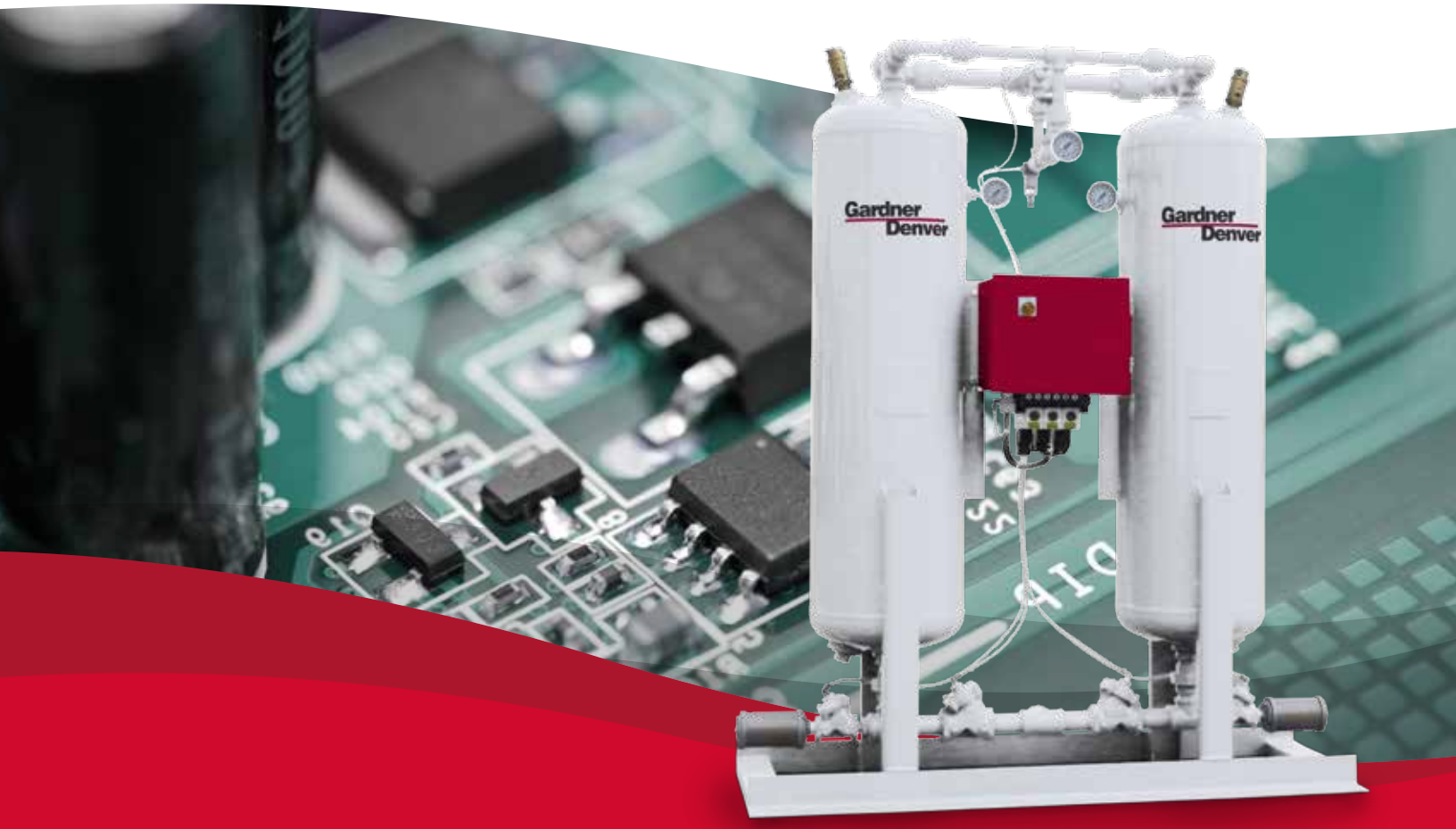
Gardner Denver

HEATLESS DESICCANT AIR DRYERS

GHLD Series



Why Dry Compressed Air?

Compressed air has long been described as the fourth utility after electricity, natural gas and water. It is often the perfect energy resource for many industrial, commercial and instrument applications. During the act of compressing air, moisture naturally forms. Removing this moisture is vital to avoid costly equipment failure, product contamination and distribution system breakdown.

- Keep lubricants from being washed away from downstream components extending product life.
- Reduce product contamination in applications such as mixing, conveying, cooling and product blow down.
- Reduce compressed air system corrosion which would increase pressure drop and operational costs.

What Compressed Air Quality Do I Need?

Answering the “Do I need a dryer?” question is typically easy. Pretty much every compressed air system needs a dryer. The question of “Which dryer do I need?” is more complex. The answer starts by knowing the ISO air quality classes and where in the spectrum your needs fall. The below chart lays out the acceptable contamination levels at the different classes. Your needs will be determined by your equipment and processes that utilize compressed air.

STANDARDS PER ISO 8573.1

QUALITY CLASSES	SOLID CONTAMINANTS (MAXIMUM PARTICLE SIZE IN MICRONS)	MAXIMUM PRESSURE DEW POINTS		MAXIMUM OIL CONTENT (DROPLETS, AEROSOLS, & VAPOR PPM)	
		° F	° C	W/W	MG/M³
0	as specified	as specified		as specified	
1	0.1	-94	-70	0.008	0,01
2	1	-40	-40	0.08	0,1
3	5	-4	-20	0.8	1
4	15	38	3	4	5
5	40	45	7	21	25
6	–	50	10	–	–

Superior Reliability & Total Energy Efficiency

Why Design Simplicity?

Mark Twain once said “I didn’t have time to write a short letter, so I wrote a long one instead.” That same line of thought also rings true when it comes to desiccant air dryers. It’s easy to source a bunch of low-quality components and place them somewhere inside a box and call it a dryer. It takes time, effort and an attention to detail to make a simplified desiccant dryer.

Time, effort and attention to detail is exactly what went into the design of the Gardner Denver GHLD. The GHLD design has its components laid out in a way that minimizes the footprint of the dryer as well as the interconnecting tubing. When implemented into your compressed air system, the benefits of a simplified design are increased reliability and better efficiency.

Simple to Make Complex. Complex to Make Simple.

Only the highest quality desiccant is used to help ensure the lowest possible pressure dewpoints.

Every Component in a GHLD Dryer is Carefully Selected

Why the Best Componentry?

Quality dryers start with quality components. Through years of research and experience, Gardner Denver knows what it takes to build the best dryers on the market. Every component of the GHLD dryer has been tested and proven to be worthy of being associated with the Gardner Denver name.

Design Simplicity Means Total Performance

Simple Reliability

The GHLD design has a long history of performing above and beyond expectations. If you put a GHLD unit into your compressed air system, you will experience the reliability that thousands of customers have experienced prior to you. It doesn't get any simpler than that.

American Made

Every GHLD unit is American Made in southeast Michigan. In addition to guaranteeing a quality product, this location ensures a quick turnaround for any non-stocked dryer orders. The GHLD is also supported out of American locations. Therefore, wherever you are located in North America, you will have superior availability for maintenance and replacement items.

2-Year Package Warranty to Match the Reliability

We don't just say that the GHLD is a quality machine, we back up the claim with a two-year standard warranty. Unlike competitive warranties that only cover certain components or pro-rate the warranty coverage as the dryer ages, this warranty covers the entire dryer for the entire two years. There is no registration process and no ongoing maintenance requirements to ensure warranty coverage.

See warranty statement for details.

Simple Energy Efficiency

Simply put, the less money you spend operating your business, the better. The design and componentry used in the GHLD equates to less energy consumed by your dryer, which equates to a lower spend on electricity. The next two pages break down the quality components of the GHLD and how they help reduce energy consumption. Before we dive into the components, let's take a look at purge air and pressure drop.

Purge Air Savings

Desiccant dryers consume energy through the process of using purge air to prepare the "off-line" desiccant tower for its next cycle of operation by a process called regeneration. By incorporating the highest quality components, that withstand the harshest of environments, the equipment operates at peak efficiency without the deterioration of typically worn out parts that cause the consumption of additional compressed air. In other words, Gardner Denver minimizes the amount of compressed air that is used in the regeneration process.

Low Pressure Drops

Pressure drop in a compressed air system can significantly increase the power consumption of the system and increase your operating costs. Every 2 PSI of realized pressure drop equates to a 1% increase in horsepower consumed. Through component selection and the inclusion of quality filters, the GHLD desiccant dryer realizes one of the lowest pressure drops in the market. Low pressure drop is a feature that will continue to benefit your operation over the life of the dryer.

Savings Example

Let's walk through some examples. Let's assume your operation uses a 50 HP compressor, runs 8,000 hours per year and realizes an electricity cost of $0.08 per kW/hr. This chart shows the cost impact of a 4, 8 and 12 PSI pressure drop.

PRESSURE DROP	INCREASED POWER CONSUMPTION	INCREASED ENERGY COSTS
4 PSI	2.0%	$477
8 PSI	4.0%	$954
12 PSI	6.0%	$1,432

Quality Components
Make the Difference

When it comes to building world-class equipment, quality components are a must. Before being built into our dryers every component of our GHLD has been tested and proven to be superior.

Stainless Steel Desiccant Support Screens

Within a desiccant dryer, support screens are used to retain the desiccant bed while allowing small particles to pass. Allowing small particles to pass prevents particles from building up and, therefore, reducing pressure drop. In addition to being fabricated from heavy stainless steel, the support screens used in the GHLD feature 100% welded construction. Many alternative desiccant dryers use epoxy bonding on their support screens, which may be prone to failure over time.

Ceramic-Type Solenoid Control Valves

One of the quickest wearing items in a desiccant dryer is the control valve. By utilizing a set of sliding ceramic plates, the GHLD solenoid control valves form a nearly indestructible seal with no gap that could allow dirt and oil to accumulate. The ceramic plates shrug off contaminants that would destroy ordinary valves. Even under the most adverse industrial conditions, these solenoid control valves have experienced typical life over 150 million cycles.

Stainless Steel Process Check Valves

On all process lines between ½″ and 1½″, the GHLD desiccant dryer features all stainless steel poppet-type check valves. In addition to being a high-flow design for low pressure drop, these check valves are constructed to produce a superior service life.

For all process lines 2″ and larger, a wafer-type check valve is utilized. With all stainless steel internals and a sealing seat on the trailing edge of the process flow which protects it from desiccant dust, the wafer-type check valves of the GHLD are designed to last. Additionally, the soft medium in these valves is not utilized as a hinge or sealing surface. The primary sealing surface is metal to metal, removing the probability of a catastrophic failure.

Digital Sequence Controller

The digital sequence controller was designed with flexibility, adjustability, maintenance and troubleshooting in mind. To assist with troubleshooting needs, the timing sequences of the controller can be adjusted. The digital sequence controller features multiple modes that can be switched between heat-type and heatless control cycles.

Quality Components
Are a Must

Quality Made Simple

GHLD Heatless Desiccant Dryer

The simple design and quality components of the GHLD Series has resulted in a long history of satisfied customers. Low initial purchase cost and low ongoing maintenance costs make the GHLD Series dryer the right choice for many compressed air systems.

- Flows from 25 to 2,250 CFM
- NEMA12 standard with NEMA 4 (watertight), NEMA 4X (stainless steel watertight) and NEMA 7 (class 1, division 1) options available
- All-pneumatic control package available—no electricity required
- Pressure, dewpoint, instrumentation, alarm and many more options available
- 2-year standard warranty

GHLD SPECIFICATIONS

MODEL	FLOW SCFM @ 100 PSIG	MAXIMUM PRESSURE PSIG	AVAILABLE VOLTAGES	IN/OUT CONNECTIONS NPT	PURGE RATE	DIMENSIONS INCHES HEIGHT	WIDTH	DEPTH	WEIGHT LBS	REPLACEMENT DESICCANT LBS
GHLD25	25	150		1/2"	3.8	33	40	10	217	25
GHLD35	35	150		1/2"	5.3	33	40	10	223	35
GHLD50	50	150		3/4"	7.5	49	42	10	353	50
GHLD75	75	150		1"	11	65	52	12	509	75
GHLD100	100	150		1"	15	65	52	12	539	100
GHLD125	125	150		1"	19	65	52	12	565	125
GHLD175	175	150		1 1/2"	26	67	55	16	674	175
GHLD250	250	150	120/1/60 (standard)	1 1/2"	38	67	57	17	760	250
GHLD350	350	150		1 1/2"	53	68	59	20	1180	350
GHLD500	500	150	12Volt 24Volt All Pneumatic	2"	75	77	62	22	1273	500
GHLD650	650	150		2"	97	85	69	27	1496	650
GHLD800	800	150		3"	120	79	72	32	2410	800
GHLD1000	1000	150		3"	150	88	77	32	2590	1000
GHLD1250	1250	150		3"	188	82	79	40	2947	1250
GHLD1400	1400	150		3"	210	82	79	40	3370	1400
GHLD1600	1600	150		4" Flange	240	98	87	43	3970	1600
GHLD1800	1800	150		4" Flange	270	100	92	43	4635	1800
GHLD2000	2000	150		4" Flange	300	112	95	48	4920	2000
GHLD2250	2250	150		4" Flange	337	114	95	48	5443	2250

Capacity = SCFM @ 100°F inlet, 100°F ambient and 100 PSIG. Purge rates reflect 100% loaded systems and/or systems with Dewpoint Demand Control.
Dimensions and specifications are subject to change without notice.

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	1.00	0.92	0.84	0.8	0.73	0.67	0.66	0.6	0.55	0.5	0.45	0.41
	80 psig	1.12	1.03	0.94	0.9	0.82	0.75	0.73	0.67	0.61	0.55	0.51	0.46
	90 psig	1.24	1.14	1.04	0.99	0.91	0.83	0.81	0.75	0.68	0.61	0.56	0.51
	100 psig	1.36	1.25	1.13	1.09	1.00	0.91	0.89	0.82	0.74	0.67	0.62	0.56
	110 psig	1.48	1.36	1.23	1.18	1.08	0.99	0.97	0.89	0.81	0.73	0.67	0.61
	120 psig	1.6	1.46	1.33	1.28	1.17	1.06	1.04	0.96	0.87	0.79	0.72	0.66
	130 psig	1.72	1.57	1.43	1.37	1.26	1.14	1.12	1.03	0.94	0.85	0.78	0.71
	140 psig	1.83	1.68	1.53	1.47	1.35	1.22	1.2	1.10	1.00	0.91	0.83	0.76
	150 psig	1.95	1.79	1.63	1.56	1.43	1.3	1.28	1.17	1.07	0.97	0.89	0.81

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

The Options You Need

In addition to the main voltage and flow options, GHLD desiccant dryers have a wide-range of available options. Below is a sampling of these options. If your operation demands an option that isn't included in this list, please contact your local Gardner Denver distributor. If you need it, we can supply it.

- High pressure options up to 1,000 PSIG
- Multiple NEMA options to meet your needs
- Stainless steel and corrosion resistant tubing
- Dew points down to -100°F
- Additional controller, alarm and instrumentation options
- Many more. Just ask.

Optional Dew Point Demand Controller

In a fluctuating or low-load situation, a dew point demand controller is recommended. By measuring the discharge dew point of the on-line desiccant bed and determining the maximum allowable drying cycle, the dew point demand controller can quickly pay for itself in energy savings. If the controller senses an adequate dew point in the on-line tower, it keeps that tower in the drying position and allows the other fully regenerated tower to stay in standby mode. In low load conditions, heated desiccant dryer systems can continue to dry your operation's compressed air for days without utilizing purge air or any other energy.

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