

nano



twin tower desiccant compressed air dryers

flow capacity: 100 to 7750 scfm (170 to 13,000 Nm³/hr)

“We needed special options that helped guide us to make information the perfect dryer for our company”

a parts manufacturer - southwestern US

Clean, dry compressed air is essential in every efficient and profitable manufacturing operation worldwide.

Ambient air contains high levels of moisture, dust, hydrocarbons and other contaminants and, when left untreated, the results are corrosion, bacteria, mold growth and freezing within your compressed air lines. This contamination can cause damage to downstream equipment and lead to increased maintenance, downtime and product spoilage.

While compressed air filters will remove solid particulate, liquids and aerosols, they cannot remove the moisture that remains in the form of vapor. This vapor can condense into liquid water throughout your compressed air system as the pressure and temperature of the compressed air changes.

technologically
advanced

PLC controlled and the highest quality valves give the nano D⁵ range the "brain and heart of a champion" product



on our desiccant dryer. nano
formed decisions and built the
ny.”

nano D⁵ twin tower desiccant compressed air dryers

- removal of water vapor by lowering the pressure dew point of your compressed air stream to -40°F/°C (-94°F/-70°C optional on HLA range) to ensure a continuous supply of dry air
- low pressure drop and consistent dew point performance
- designed for the most demanding applications
- flexibility to build a complete compressed air solution to match the requirements of the customer



WHICH DRYER IS RIGHT FOR YOU

HLA heatless

use expanded dry purge air to regenerate desiccant beds

- lowest initial investment
- require the most purge air at 15%
- -40°F/°C dew point as standard for ISO class 2 applications
- -94°F/-70°C dew point available as option for ISO class 1 applications



EHA externally heated

use an electric heater to heat the dry purge air to regenerate the desiccant beds

- mid-priced initial investment
- excellent ROI
- use less purge air than heatless at approximately 6-8%
- -40°F/°C dew point as standard for ISO class 2 applications

BPA blower purge

use a combination of an ambient blower and heater followed by dry purge air to regenerate the desiccant beds

- higher initial investment
- fastest ROI
- further reduces (or even eliminates) purge air usage to approximately 0-2% averaged over 4-hour cycle for dry air cooling
- dry air cooling can be turned off allowing zero air loss operation
- -40°F/°C dew point as standard for ISO class 2 applications

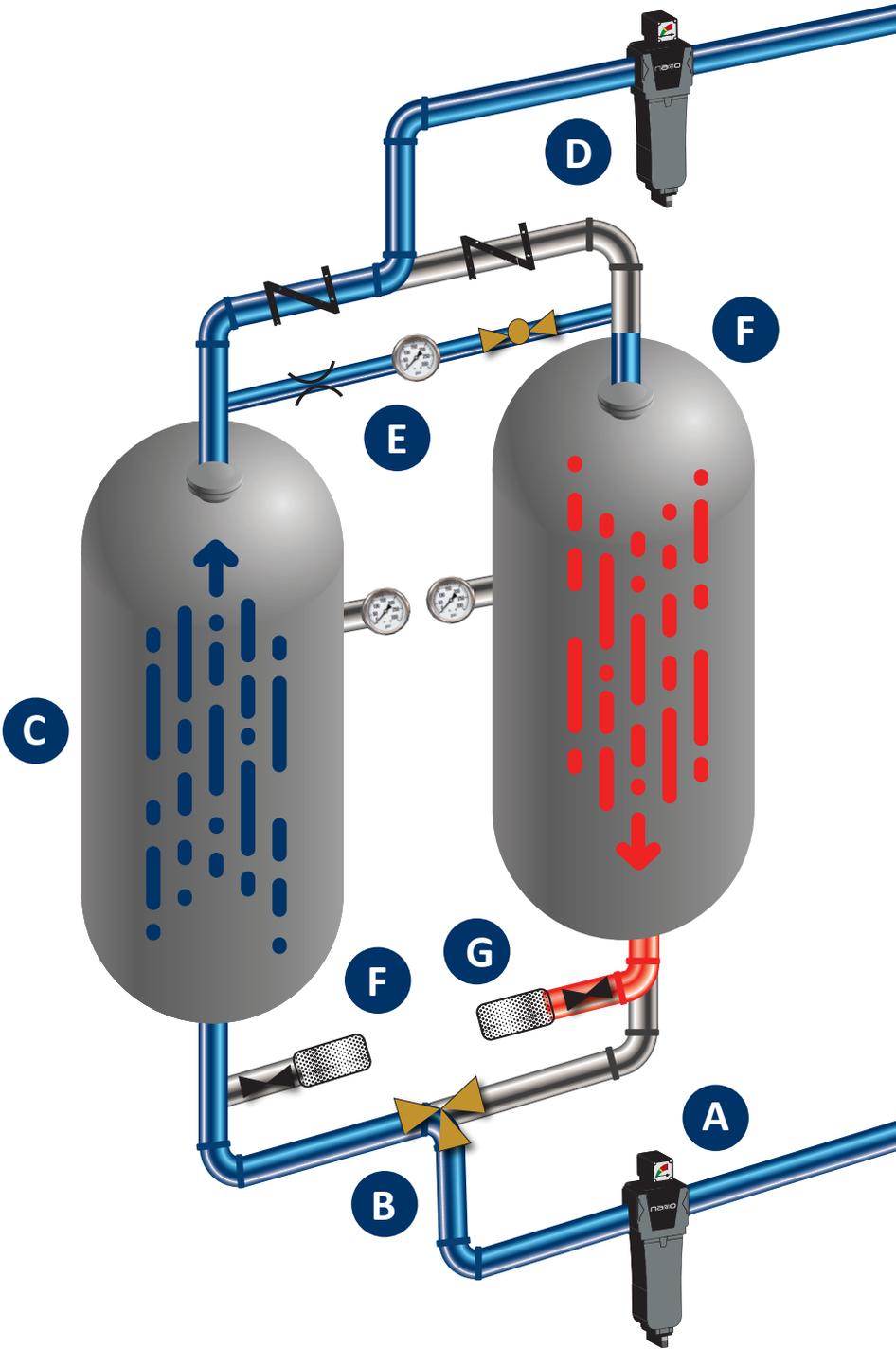


HOW IT WORKS

In a twin tower desiccant air dryer, one tower is on-line drying the compressed air while the other is off-line regenerating, which means it is eliminating the water vapor it has collected so it can be used to dry again. The two towers switch back and forth so one is always drying while the other is regenerating or in standby.

The nano D⁵ twin tower desiccant dryers remove moisture from your compressed air system in the same way and to the same exacting standards of performance and reliability. The difference is how they regenerate and the amount of compressed air and/or power required to do so.

- A** 0.01 micron pre-filter removes all particulate, liquid water and oil aerosols to 0.01 ppm
- B** clean, saturated air enters the inlet valve which directs it to one of the desiccant towers
- C** compressed air travels through tower A for 5 minutes and moisture vapor is adsorbed to -40°F/°C pdp or better
- D** a final filter removes particulate to 1.0 micron or better
- E** ~15% purge air expands through an orifice and regenerates tower B (HLA)
- F** after 3.5 minutes, the purge exhaust valve closes and tower B repressurizes and is ready for adsorption to begin
- G** at the 5-minute mark (fixed cycle), tower A exhaust valve opens to regenerate. A PLC controls all operations
- H** compressed air is expensive but nano dryers can be fitted with an energy savings device to save air and save money. By measuring actual pressure dew point, the PLC will extend the dryer cycle reducing compressor energy, wasted purge air and valve wear and tear



FEATURES

PLC controlled operation

- the dryer is operated by a robust and reliable PLC control system offering valuable features including 'power on', 'hours run' and 'service required indicators'
- memory retention built into the PLC enables the controller to pick up where it left off in the drying cycle, ensuring consistently clean and dry air downstream
- compressor synchronization is a standard energy saving feature which starts and stops the dryer with a signal from the compressor or point-of-use equipment to eliminate purge loss when drying is not required
- NEMA 4X control panel



low noise exhaust mufflers

- specifically designed to minimize the noise of depressurization and purge exhaust
- high flow design extends service life



low watt density heater (EHA & BHA models)

- regeneration circuit is fully insulated for maximum efficiency
- specifically designed for a long and dependable operating life in harsh industrial environments

secondary heater contactor (EHA & BPA models)

- provides protection against overheating in the event of a primary contactor failure

regenerative blower (BPA models)

- field proven high efficiency blower combines reliable performance and a long operating life in all operating conditions
- regenerative design on models up to 3000 scfm (shown to right) and centrifugal design on models 4000 scfm and larger



FEATURES

pneumatically operated 3-way valves

- three-way valves with stainless steel internals and Teflon® seats ensure reliable field proven performance
- used for inlet valves on models HLA 100 to HLA 800

high performance butterfly valves

- pneumatic actuators ensure precise proportional control and a bubble tight seal; no soft seals
- rugged stainless steel disk, made in the USA construction and Teflon® seats combined with a low pressure drop design
- used for inlet valves on models 1000 scfm and larger

stainless steel spring check valves

- metal on metal seats for reliable operation, even high temperature operation
- provide worry-free operation and minimal maintenance

precision purge control valve

- with visual setting indication, purge flow is field adjustable
- allows operator to easily adjust the purge flow to match the operating conditions for optimal energy savings
- pressure gauge and ball valve included

high quality construction

- ASME coded pressure vessels
- UL/cUL compliant
- activated alumina desiccant made in the USA
- lifting lugs and/or fork lift pockets on all products



UPGRADE

energy saving dew point control option

- with this option, a dew point sensor is incorporated into the dryer providing the ultimate in energy and power savings
- outlet dew point is constantly monitored allowing the cycle time to be adjusted depending on the actual moisture load saving valuable purge air on all styles of dryers
- saves additional energy on heated dryers by reducing heater on-time and blower run-time
- easily field retrofit; includes dew point display
- the -ES option reduces valve actuation, increases service life and includes an extended 5-year valve warranty



validated compressed air filter packages

- nano F¹ pre and after filtration packages
- nano F² flanged filters are floor mounted or skid mounted on models above 1500 scfm
- 3-valve and 7-valve bypasses available for single pre- and after-filter packages
- 9-valve bypasses available for dual pre- and after-filter packages



other options include

- low ambient kits for outdoor environments
- special paint finishes
- enhanced corrosion allowances for harsh ambient conditions
- NEMA 7 explosion-proof designs
- rental packages with air driven controls and after cooler available
- custom designs to comply with specifications welcome



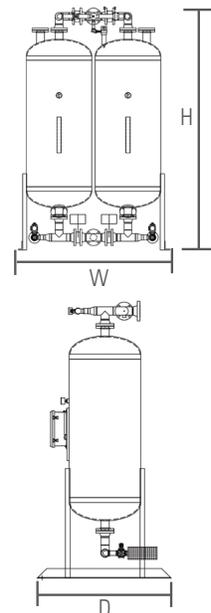
HLA HEATLESS SPECIFICATIONS

dryer model	inlet & outlet ⁽¹⁾		rated flow ⁽²⁾		dimensions (inches)			approx. weight ⁽³⁾	recommended filtration ⁽⁴⁾	
	NPT (F) / Flg	scfm	Nm ³ /h	W	D	H	lbs		pre filter	after filter
HLA 100	1"	100	170	38	31	88	300	GF0105M01	GF0105M1	
HLA 150	1"	150	255	40	32	89	415	GF0175M01	GF0175M1	
HLA 200	1 ½"	200	340	41	31	90	540	GF0325M01	GF0325M1	
HLA 250	1 ½"	250	425	43	32	87	590	GF0325M01	GF0325M1	
HLA 350	1 ½"	350	595	45	33	88	735	GF0450M01	GF0450M1	
HLA 500	2"	500	850	47	41	89	1100	GF0700M01	GF0700M1	
HLA 650	2"	650	1150	51	43	89	1600	GF0700M01	GF0700M1	
HLA 800	2 ½"	800	1359	51	43	89	2000	GF0850M01	GF0850M1	
HLA 1000	3"	1000	1699	74	53	97	2650	GF1250M01	GF1250M1	
HLA 1250	3"	1250	2124	74	56	112	3000	GF1250M01	GF1250M1	
HLA 1500	3"	1500	2549	83	74	112	3500	GF1500M01	GF1500M1	
HLA 2000	4"	2000	3398	111	78	112	4600	NFZ2500M01	NFZ2500M1	
HLA 2500	4"	2500	4247	123	81	112	5100	NFZ2500M01	NFZ2500M1	
HLA 3000	4"	3000	5097	129	90	112	6500	NFZ3500M01	NFZ3500M1	

specifications	standard	optional
maximum particle size (ISO class) ⁽⁵⁾	class 2 (1 micron)	class 1 (0.01 micron)
maximum water content (ISO class) ⁽⁵⁾	class 2 (-40°F pdp)	class 1 (-94°F pdp)
minimum/ design /maximum operating pressure range ⁽⁶⁾	80 psig / 100 psig / 150 psig	-
minimum / design/ maximum ambient temperature	38°F / 100°F / 120°F	-
minimum / design / maximum inlet temperature	38°F / 100°F / 120°F	-
power supply requirements	115V/1Ph/60Hz	230V/1Ph/60Hz & 12 VDC

pressure correction factors ⁽⁷⁾									
operating pressure (psig)	60	70	80	90	100	110	130	140	150
correction factor	0.65	0.74	0.83	0.91	1.00	1.04	1.12	1.16	1.20

temperature correction factors ⁽⁷⁾									
inlet temperature (°F)	70	80	90	100	105	110	115	120	
correction factor	1.12	1.10	1.06	1.00	0.93	0.86	0.80	0.75	



- (1) 3" and below are NPT(F) threaded. 4" and above are flanged. All units with 3" piping and above will be ANSI welded pipe
- (2) in compliance with ADF 100 specifications for compressed air dryers: Inlet temperature: 100°F, ambient temperature: 100°F, inlet pressure dew point: -40°F. For all other conditions refer to the correction factors or contact support@n-psi.com
- (3) approx. weight for all models does not include desiccant installed
- (4) recommended for all applications and includes NPT pre and after filters mounted on the dryers. For flanged, consult factory (add -F2 suffix)
- (5) per ISO 8573.1:2010
- (6) maximum working pressure for all models is 150 psig. For higher pressures, contact support@n-psi.com
- (7) be used as a rough guide only. All applications should be confirmed by nano. Contact nano for sizing assistance
- (8) all models are UL/cUL compliant
- (9) all models have ASME coded pressure vessels. For other approvals, consult support@n-psi.com
- (10) for sizes above 3000 scfm and pressure below 60 psig, please contact support@n-psi.com
- (11) technical specifications subject to change without notice. Direct inquiries to support@n-psi.com or contact 704.897.2182

EHA EXTERNALLY HEATED SPECIFICATIONS

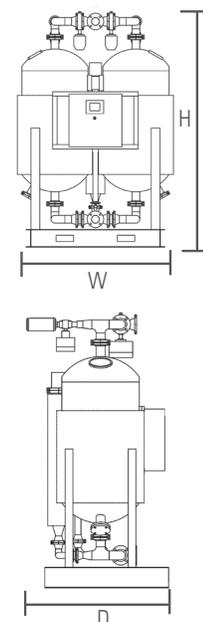
dryer model	inlet & outlet ⁽¹⁾		rated flow ⁽²⁾		heater		dimensions (inches)		approx. weight ⁽³⁾	recommended filtration ⁽⁴⁾	
	NPT (F) / Flg	scfm	Nm ³ /h	kW	W	D	H	lbs	pre filter	after filter	
EHA 100	1"	100	161	1.5	42	36	88	800	GF 0105 M01	NHT 0150 M1	
EHA 175	1 ½"	175	282	3	46	38	89	1000	GF 0325 M01	NHT 0300 M1	
EHA 250	1 ½"	250	403	3	48	39	87	1100	GF 0325 M01	NHT 0300 M1	
EHA 350	2"	350	564	6	50	41	88	1200	GF 0450 M01	NHT 0450 M1	
EHA 500	2"	500	805	6	58	45	88	1400	GF 0700 M01	NHT 0650 M1	
EHA 700	2"	700	1127	9	58	47	88	1800	GF 0700 M01	NHT 1000 M1	
EHA 850	2"	850	1369	9	61	51	94	1800	GF 0850 M01	NHT 1000 M1	
EHA 1000	3"	1000	1610	12.5	67	63	110	2300	GF 1250 M01	NHT 1000 M1	
EHA 1350	3"	1350	2174	12.5	93	77	112	4400	GF 1500 M01	NHT 1600 M1	
EHA 1700	3"	1700	2737	18	117	81	112	4800	NFZ 2500 M01	NFZ 2500 M1HT	
EHA 2100	4"	2100	3381	25	129	81	112	5000	NFZ 2500 M01	NFZ 2500 M1HT	
EHA 2400	4"	2400	3864	25	135	82	112	5200	NFZ 2500 M01	NFZ 2500 M1HT	
EHA 3100	4"	3100	4991	30	139	84	112	5450	NFZ 3500 M01	NFZ 3500 M1HT	
EHA 3800	6"	3800	6118	40	159	101	112	7750	NFZ 4000 M01	NFZ 4000 M1HT	
EHA 4300	6"	4300	6923	50	169	106	112	7950	NFZ 5000 M01	NHT 5000 M1HT	
EHA 5000	6"	5000	8050	50	179	109	112	9200	NFZ 5000 M01	NHT 5000 M1HT	

specifications	standard	optional
maximum particle size (ISO class) ⁽⁵⁾	class 2 (1 micron)	class 1 (0.01 micron)
maximum water content (ISO class) ⁽⁵⁾	class 2 (-40°F pdp)	-
minimum / design / maximum operating pressure range ⁽⁶⁾	80 psig / 100 psig / 150 psig	58 to 250 psig
minimum / design / maximum ambient temperature	38°F / 100°F / 120°F	-
minimum / design / maximum inlet temperature	38°F / 100°F / 120°F	-
power supply requirements	460VAC/60Hz	575V/60Hz or 380 VAC/50Hz

pressure correction factors ⁽⁷⁾										
operating pressure (psig)	60	70	80	90	100	110	130	140	150	
correction factor	0.65	0.74	0.83	0.91	1.00	1.04	1.12	1.16	1.20	

temperature correction factors ⁽⁷⁾										
inlet temperature (°F)	70	80	90	100	105	110	115	120		
correction factor	1.12	1.10	1.06	1.00	0.93	0.86	0.80	0.75		

- (1) 3" and below are NPT(F) threaded. 4" and above are flanged. All units with 3" piping and above will be ANSI welded pipe
- (2) in compliance with ADF 100 specifications for compressed air dryers: Inlet temperature: 100°F, ambient temperature: 100°F, inlet pressure dew point: -40°F. For all other conditions refer to the correction factors or contact support@n-psi.com
- (3) approx. weight for all models does not include desiccant installed
- (4) recommended for all applications and includes NPT pre and after filters mounted on the dryers. For flanged, consult factory (add -F2 suffix)
- (5) per ISO 8573.1:2010
- (6) maximum working pressure for all models is 150 psig. For higher pressures, contact support@n-psi.com
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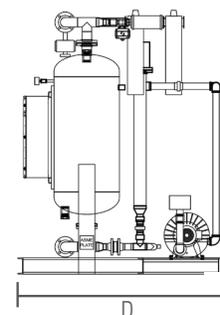
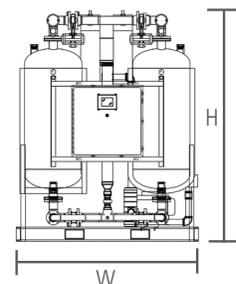
BPA BLOWER PURGE SPECIFICATIONS

dryer model	inlet & outlet ⁽¹⁾		rated flow ⁽²⁾		heater	blower	dimensions (inches)			approx. weight ⁽³⁾	recommended filtration ⁽⁴⁾	
	NPT (F) / Flg	scfm	Nm ³ /h	kW	hp	W	D	H	lbs	pre filter	after filter	
BPA 250	1 1/2"	200	322	6	1	58	41	87	1300	GF 0325 M01	NHT 0300 M1	
BPA 350	2"	250	403	6	1.5	61	40	87	1300	GF 0450 M01	NHT 0450 M1	
BPA 500	2"	350	564	9	1.5	63	43	88	1400	GF 0700 M01	NHT 0650 M1	
BPA 700	2"	500	805	12.5	3	70	51	89	1550	GF 0700 M01	NHT 1000 M1	
BPA 850	2"	700	1127	12.5	5.5	71	51	89	1600	GF 0850 M01	NHT 1000 M1	
BPA 1000	3"	850	1369	15	5.5	82	55	95	2000	GF 1250 M01	NHT 1000 M1	
BPA 1350	3"	1000	1610	18	5.5	84	57	110	3300	GF 1500 M01	NHT 1600 M1	
BPA 1700	4"	1350	2174	25	7.5	109	80	113	4600	NFZ 2500 M01	NFZ 2500 M1HT	
BPA 2100	4"	1700	2737	30	10	140	81	112	5000	NFZ 2500 M01	NFZ 2500 M1HT	
BPA 2400	4"	2100	3381	38	15	140	76	112	5200	NFZ 2500 M01	NFZ 2500 M1HT	
BPA 3100	6"	2400	3864	50	15	148	84	112	5400	NFZ 3500 M01	NFZ 3500 M1HT	
BPA 3800	6"	3100	4991	60	15	155	86	112	5650	NFZ 4000 M01	NFZ 4000 M1HT	
BPA 4300	6"	3800	6118	85	15	165	101	112	7950	NFZ 5000 M01	NFZ 5000 M1HT	
BPA 5000	6"	4300	6923	85	15	175	106	112	8150	NFZ 5000 M01	NFZ 5000 M1HT	
BPA 6250	8"	5000	8050	100	20	185	109	112	9400	NFZ 7500 M01	NFZ 7500 M1HT	
BPA 7750	8"	6250	10063	120	20	205	112	112	11500	NFZ 8500 M01	NFZ 8500 M1HT	

specifications	standard	optional
maximum particle size (ISO class) ⁽⁵⁾	class 2 (1 micron)	class 1 (0.01 micron)
maximum water content (ISO class) ⁽⁵⁾	class 2 (-40°F pdp)	-
minimum / design / maximum operating pressure range ⁽⁶⁾	80 psig / 100 psig / 150 psig	58 to 250 psig
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minimum / design / maximum inlet temperature	38°F / 100°F / 120°F	-
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inlet temperature (°F)	70	80	90	100	105	110	115	120	
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EXPERIENCE. CUSTOMER. SERVICE.

Leading edge technology and hundreds of years of *experience*...nano-purification solutions, your world-class manufacturer of state-of-the-art compressed air and gas solutions to industry.

Our commitment at nano is to work alongside our *customers* and provide unique solutions with the highest quality products to solve your specific challenges.

A wealth of experience and leading edge products are only part of the equation. nano recognize that world-class customer *service* is the most important component to any successful business.



DESIGN

Our experienced team of design engineers are always looking for new and unique technologies and products to bring you the highest level of performance and lowest overall operating cost.

RESEARCH & DEVELOPMENT

Our R&D team endeavor to provide solutions that go beyond developing an existing product. They are continually researching new technologies which can provide unique advantages over competitive offerings.



MANUFACTURE

The reliable and energy saving nano D⁵ range of twin tower desiccant air dryers are manufactured to the highest standards of build quality to ensure equipment reliability and high levels of performance.

ENVIRONMENTALLY FRIENDLY

Through both product development and manufacturing, we strive to produce high quality products compliant to both local and global environmental legislation. Reduction of carbon footprint through energy saving products and use of environmentally friendly components are our commitment to you.



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