www .newgatetechnologies.com

Compressed air treatment

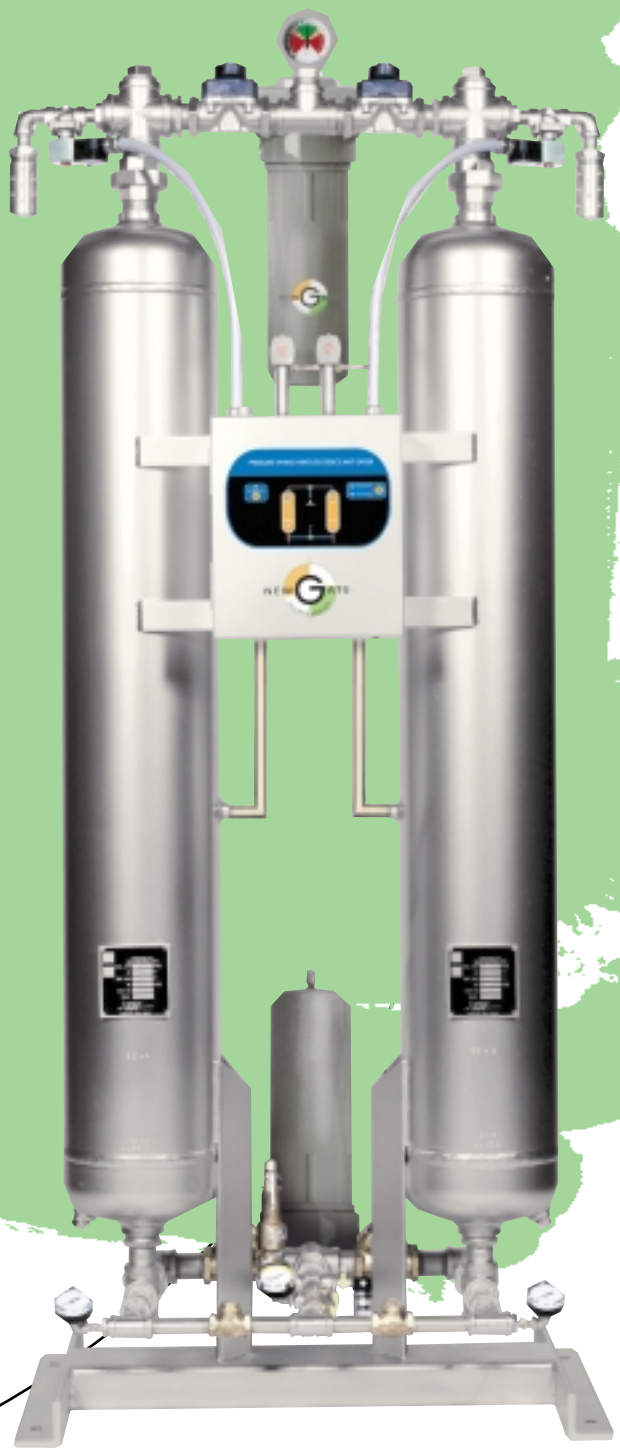
Pressure Swing

Heatless Desiccant Dryers

Quality and Affordability In a Proven Design

NewGate NPS Series Heatless Pressure Swing compressed air dryers offer the lowest initial cost and highest reliability solution for providing low dew point dry air.

These dryers are simple to install and operate, have minimal maintenance, and provide dry air with a constant, dependable, -40˚F pressure dewpoint as standard (-100˚F Optional).



NEWGATE TECHNOLOGIES

Pressure Swing Heatless Desiccant Dryers

How The NPS Dryer Works

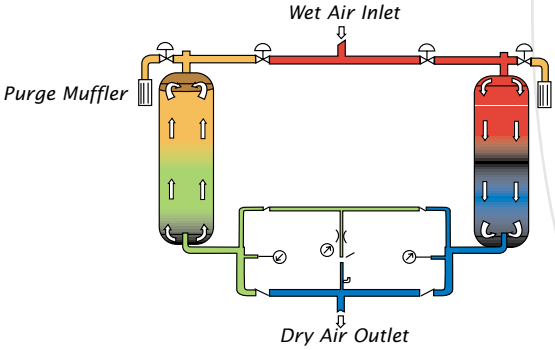
Saturated compressed air enters the system through the Prefilter, where liquid water and oil contaminants are removed. The air then enters the dryer at the top of the right chamber. Moisture is adsorbed by the desiccant as the air flows downward through the chamber. Adsorption is an exothermic (heat releasing) process, and as it progresses through the chamber, heat of adsorption is released. This heat later contributes to regeneration. Dry compressed air exits at the outlet valve, and then through an Afterfilter, where any desiccant dust being carried by the air will be removed. The clean and dry air then proceeds downstream into the plant.

While the right chamber is in the drying cycle, the off stream left chamber is depressurized to atmosphere. A portion of the -40˚F PDP dry air is metered through the purge adjusting valve, expanded to atmospheric pressure (further reducing the dew point to -70˚F), and is then passed through the wet desiccant bed in an upward direction, counter-current to the drying flow. This extremely dry purge air, in conjunction with the heat of adsorption stored in the bed during the drying cycle, regenerates the desiccant bed. The purge air is then exhausted through the purge exhaust valve and then a silencer to the atmosphere. Prior to switching, the newly regenerated left chamber is repressurized by closing the purge outlet valve.

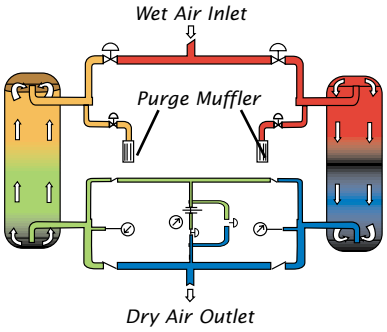
The dryer operates on a 10 minute automatic cycle, 5 minutes drying and 5 minutes regenerating.

The dryer's fail-safe design provides continued supply of dry air for hours even if the control system's power supply is lost or interrupted.

Models NPS60 to NPS600



Models NPS700 to NPS1600



Factory Installed Filter Package

NewGate NPS Series dryers include factory installed pre and after filters as standard on all models.

Oil and liquid water are the chief sources of contamination in a compressed air system. Liquid water saturates the desiccant bed and oil coats the desiccant, adversely affecting its capacity and life.

The NewGate H Series prefilter is a coalescing, high efficiency, sub-micron filter, capable of removing liquid water and oil aerosols down to 0.001 ppmW and particulate down to 0.01 microns. The prefilter is equipped with a differential pressure indicator and an automatic electronic drain.

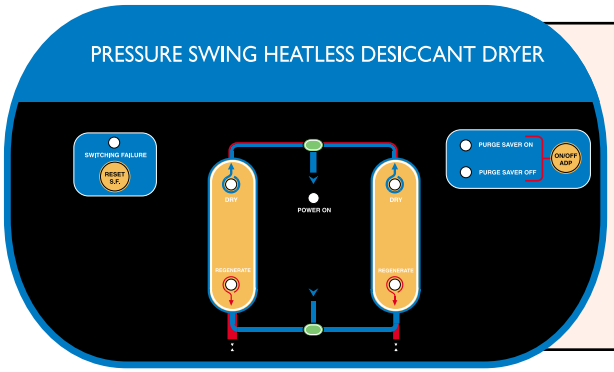
Compressed air passing through a desiccant bed will pick up fine desiccant particles (dust). The desiccant dust is highly abrasive and must be removed from the compressed air.

The NewGate U Series afterfilter is a particulate, high efficiency filter, capable of removing all particulate matter down to 1 micron.

Both filters are properly selected, sized and installed by the factory, ensuring maximum

MPC Controller

Simple, Safe & Reliable



The NewGate state-of-the art MPC (Micro Processor Controller) is an electronic controller which reliably controls and monitors all essential functions and alarm systems of the dryer. It is a standard feature on every dryer and ensures years of trouble-free operation. In contrast, most competitors offer conventional cam timers that malfunction with time due to wear and slippage problems, effecting timing and compromising dryer performance.

NewGate ADP Control

Automatic Demand Purge results in Energy Savings

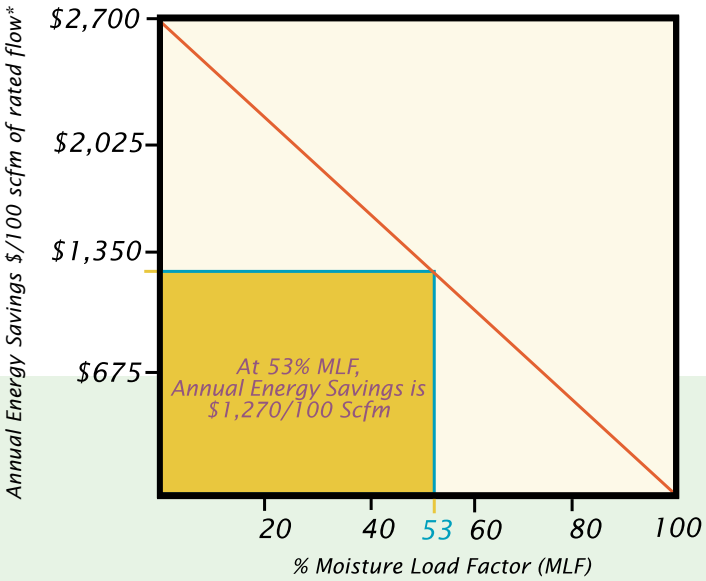
The Dynamic Air System – Moisture Load Factor

	Flow %	Pressure	Temp	RH	MLF 1	MLF 2
Design	100	100	100	100	100	100
Real World 1	100	100	85	100	100	50
Real World 2	80	100	90	100	80	50
Real World 3	80	100	95	85	80	50
Real World 4	75	110	95	100	69	50
Real World 5	60	110	100	100	55	55

MLF1 for heatless desiccant dryers, MLF2 for heated desiccant dryers.
MLF for heatless dryers is unaffected by temperature & RH.

Fixed Cycle Dryer will Waste Energy

A typical compressed air system is dynamic in nature with varying flow, temperature and pressure. The actual moisture load is therefore seldom at the maximum design conditions, with most systems operating at about 40 to 60% of design load. A dryer operating on a fixed cycle is insensitive to such varying loads. By switching every five minutes and purging the off-line chamber, such a dryer will waste tremendous amounts of energy. Frequent purging also contributes to desiccant attrition and lower desiccant life.



ADP Control - An Excellent Investment

*NewGate ADP Control automatically senses the moisture load in the "On Line" desiccant bed and adjusts the dryer operation to compensate for this changing moisture load. A state of the art resistance probe continuously monitors the moisture content of the "On Line" desiccant bed. If, at the end of the standard time cycle, the maximum moisture load in the bed has not reached a pre-determined level (due to less than 100% MLF), the regeneration cycle will not be initiated. This will prevent the bed from depressurizing and regenerating, saving valuable purge air and minimizing desiccant attrition due to frequent flow reversals. On a 500 Scfm air system with a MLF of 53%, annual energy savings could be in excess of $6,000!**

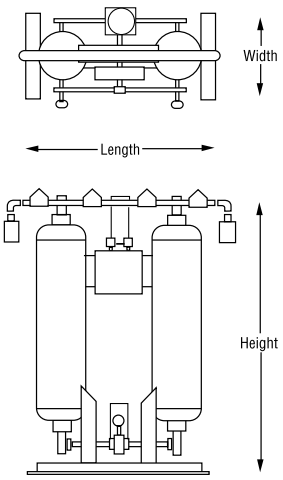
** Based on 365 days of continuous dryer operation, 15% purge and compressed air cost of $0.35/1000 Scf.*

Pressure Swing Dryer Information

Pressure Swing Heatless Desiccant Dryers

Performance and Dimensions

Model	Capacity SCFM	Line Size	Dimensions, Inches			Weight
		Inches	L	W	H	est. lbs
NPS 40	40	½	35	27	84	300
NPS 65	65	½	35	28	84	400
NPS 100	100	1	37	28	89	500
NPS 175	175	1 ½	42	32	93	675
NPS 260	260	1 ½	42	32	93	800
NPS 375	375	1 ½	44	34	93	1100
NPS 460	460	1 ½	52	35	103	1300
NPS 600	600	2	54	36	108	1500
NPS 900	900	2 ½	64	36	114	2400
NPS 1100	1100	3	68	36	117	3000
NPS 1350	1350	3	70	40	119	3200
NPS 1600	1600	3	72	40	122	4000



Models NPS40 to NPS 1600

Features & Benefits

Fully Automatic, fail safe operation
Simple operation, very low maintenance costs

Unmatched performance
Dependable -40˚F PDP standard & guaranteed

Downflow design
Eliminates fluidization, longer desiccant life

Specially formulated desiccant
Low attrition, low pressure drop, lowest energy use

ASME Vessel design
Quality construction, maximum safety assured

Competitively Priced
Low initial cost, affordability

Factory installed filter package
Correctly sized and quality filtration is assured, critical to dryer performance and longest life

ADP (Automatic Demand Purge) Control
Lowers operating costs during periods of low demand

NewGate Technologies also offers a full range of heated dryers, contact us at our website.

Standard Features

- *Non-lubricated switching valves*
- *MPC (Micro Processor Controller) panel*
- *10 Minute NEMA cycle*
- *ASME code pressure vessels*
- *Chamber and purge pressure gauges*
- *Control air filter*
- *Specially formulated Activated Alumina desiccant*
- *Downflow drying*
- *Removable SS inlet and outlet desiccant screens*
- *Factory installed Pre and After filters*

Optional Features

- *Automatic Demand Purge "ADP" Control*
- *Failure-to-switch Alarm*
- *Hi-Humidity Alarm*
- *NEMA 4 Electricals*
- *Inlet, Outlet & ΔP Gauges*

Complimentary air purification products from NewGate Technologies, Inc.

Integrated Refrigerated Dryers

High Temperature Refrigerated Dryers

Electronic Drain Valves

Compressed Air Filters

Air-Cooled Aftercoolers

NEWGATE TECHNOLOGIES

NEWGATE TECHNOLOGIES, INC.

WWW.NEWGATETECHNOLOGIES.COM

1137 SW 7TH ROAD • OCALA, FLORIDA 34474

TEL: [352] 351-9992 • FAX: [352] 351-9979