

BOGE AIR. THE AIR TO WORK.



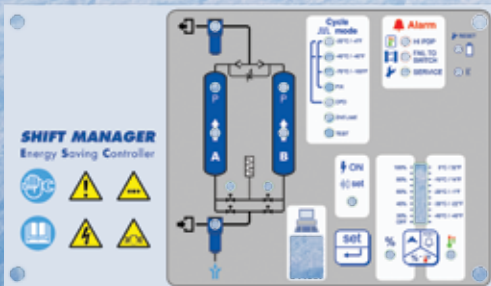
# DESICCANT DRYERS

# ON DEMAND DRYING FOR EVERY APPLICATION



## THE RIGHT SOLUTION WHATEVER THE TASK - TRUE INNOVATION IN DESSICANT DRYING

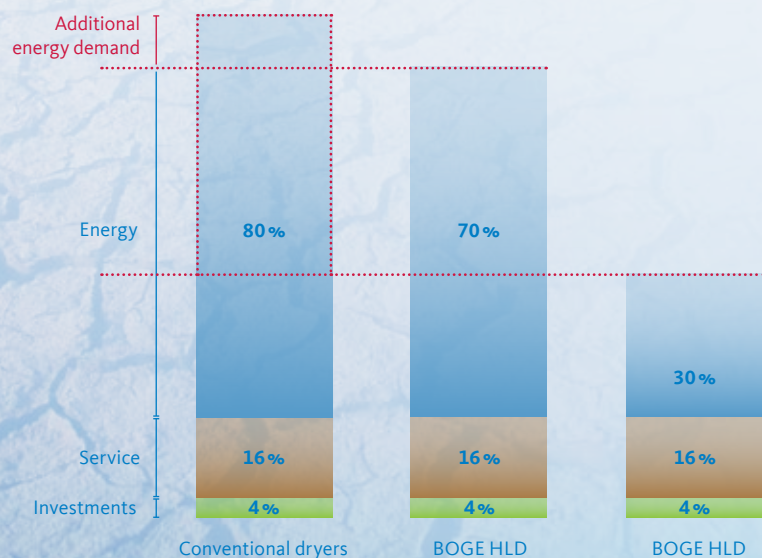
BOGE is world renowned for its innovative, solution oriented compressed air technology. Geared to the customers' needs, BOGE presents a comprehensive product portfolio, covering air treatment, condensate technology and process engineering. The compressed air dryer range meets the highest requirements. Membrane dryers, refrigeration dryers, adsorption dryers – BOGE offers highly efficient, environmentally friendly and cost effective compressed air dryers to suit any task.



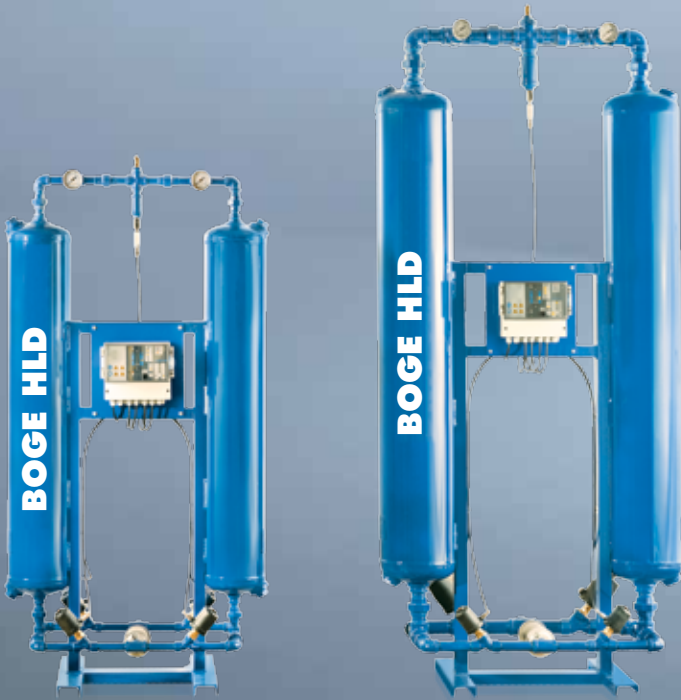
The **SHIFT MANAGER** controller with variable cycle modes and compressor synchronization

### Savings with the Shift Manager Energy Saving Controller

A plus for productivity and the environment  
(energy savings = CO<sub>2</sub> reduction)



# A FULL RANGE OF DESICCANT DRYING



Heatless desiccant air dryers, compact and full size models



Heat regenerated and blower operated desiccant air dryers

## The Complete Range

In addition to the more common dryer technologies typically employed in compressed air applications, BOGE also offers a complete range of blower operated, heated purge systems, as well as systems for high pressure applications in excess of 7,000 psig.

BOGE's unique approach to desiccant dryer engineering provides customers with not only the most complete product range on the market, but the most energy efficient as well. Energy efficiency is optimized across the entire product family regardless of model type and size.

By supplying application specific solutions, we can ensure that our customers receive personalized attention to their compressed air drying needs. The result is a system that will provide the most reliable, energy efficient solution possible.

All BOGE dryers are designed and tested to meet the strict quality guidelines of our company. There are no compromises to quality and reliability of any of our dryers.



High pressure desiccant air dryers

## HEATLESS DRYING SYSTEMS

The operation of compressed air systems with conventional adsorption dryers can suffer from high, system-related pressure drop. This deficiency needs to be compensated via an increase in compressor performance, thus requiring a higher energy input.

BOGE HLD and HLD *PLUS* adsorption dryers offer a convincing, economic solution to the problem: BOGE has developed an adsorption dryer design that is focused completely on reducing energy consumption. By significantly reducing pressure drops and using the most energy efficient components possible, energy savings of up to 80% can be realized when compared to conventional designs. The energy savings alone offer a complete economic payback after an average of only three years.

Your advantage:

BOGE HLD and HLD *PLUS* represents a real system solution: The inline integration of BOGE compressed air filters, combined with BEKOMAT® condensate drains represent a major safety asset.

### **+1: INNOVATIVE, RELIABLE DESIGN**

*High quality components are used in construction and combined with high level engineering*

### **+2: ENERGY SAVING TECHNOLOGY**

*Dew point demand systems are standard equipment on all BOGE HLD PLUS model sizes*

### **+3: ADVANCED CONTROLLER**

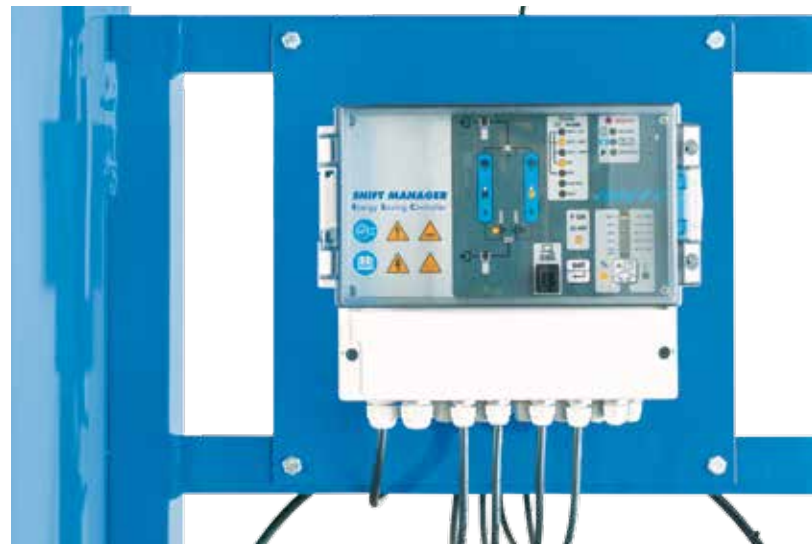
*Each dryer includes a feature rich controller so there is nothing extra to buy*

### **+4: EASE OF MAINTENANCE**

*Innovative, open frame design where all features are front-mounted, simplifies maintenance and reduces PM costs*

### **+5: WIDE STANDARD RANGE**

*From 4 to 5,000 scfm and 60 to 7,250 psig with fully customized engineered solutions available*



### Introducing the **SHIFT MANAGER** Energy Saving Controller

Features at a glance:

- Complete set of indicators for the cycle status
- Test mode operation
- Adjustable service alarm
- PC connection
- Variable cycle modes
- Secondary load mode for automatic cycle time adjustment
- Compressor synchronization
- Contact for filter differential pressure alarm
- Contact for failure to switch alarm

A standard adjustable purge valve allows users to continuously optimize the operating parameters of the specific application.

An advanced controller developed specifically for desiccant dryers to maximize the functionality of the dryer in the most energy efficient way possible with selectable cycle times.



Easy to read, front mounted gauges provide users with a clear indication of operational parameters at a quick glance.



Utilizing frame widths that are narrower than average allows users to take advantage of valuable floor space in a space saving way.

A dew point demand system is included on the BOGE HLD PLUS models as standard equipment.

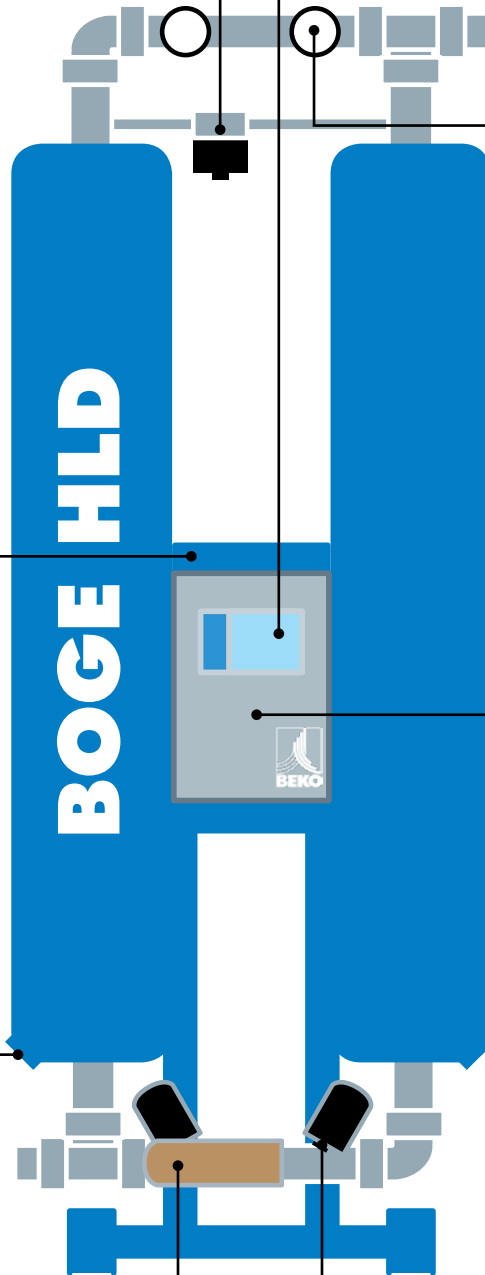


The bottom fitted, drainage port for exchanging the desiccant in the vessels adds to the convenience and ease of maintenance, and ensures that the used desiccant can be evacuated completely.



Large surface area silencers are used on all model sizes, which provide not only a long service life, but reduced back pressure.

High quality angled-seat valves are employed for the switching valve mechanism providing maximum reliability and ease of maintenance at one of the most inherently weak points of desiccant dryers. This design provides stable operation 24-7.





## HEATED DRYING SYSTEMS

BOGE offers three basic concepts that are configurable to ensure optimal operation for the application regardless of climate.

- BOGE HRD Heated Purge Series
- BOGE HBP Blower Operated Heated Purge Series
- BOGE RA + HRD or HBP Combination Dryer Series

The local conditions of the application along with economic parameters ultimately determine the project solution, yet through the modular BOGE design you are guaranteed to have the appropriate dryer for the particular situation - Engineering based on the synergy of proven technologies to achieve a higher level of quality while reducing energy consumption with the added benefit providing customers with a complete solution using this systematic approach.

Your advantage:

BOGE HRD and HBP represents a real system solution.

**+1:**

### HIGHEST QUALITY COMPONENTS

*The use of only the best materials and components available guarantee reliability and ensure a sound, long term investment*

**+2:**

### COMPLETE PACKAGE SOLUTION

*Dryers are designed as a complete solution to suit your application needs instead of the more common bit-by-bit approach*

**+3:**

### WORLDWIDE APPROVALS

*Whether produced in the U.S., Europe or Asia they are built to meet the market specific requirements*

**+4:**

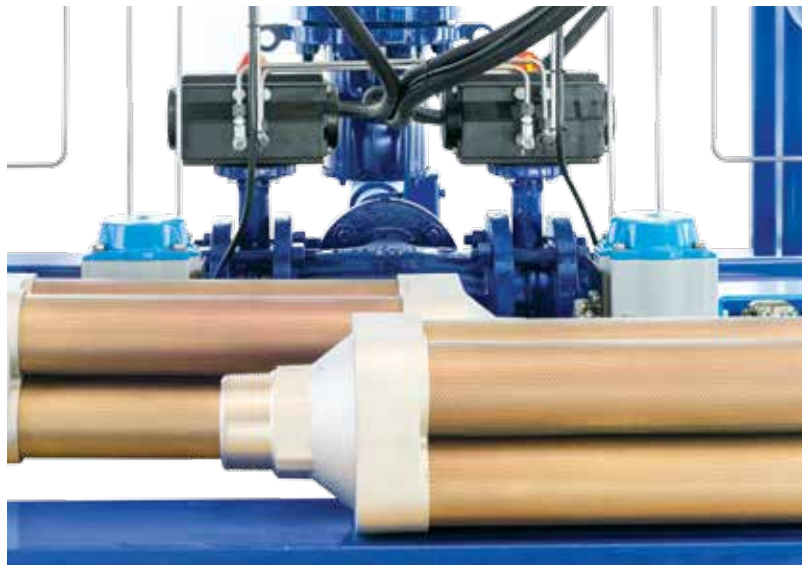
### INNOVATIVE DESIGNS

*Three basic designs that are highly configurable into a wide array of variants optimized for the customer's application*

**+5:**

### ENERGY OPTIMIZED SOLUTIONS

*Dryer technologies ranging from demand controlled zero purge, to heat of compression and combination dryer designs*



Highly efficient adsorbents guarantee that a reliable pressure dew point is maintained at all times as humidity is adsorbed.



The HRD and HBP range include an advanced PLC controller to meet the needs of any application. The controller is equipped with multiple safety and visual control features as standard. In addition, the programming of the PLC can be tailored specifically to the customer's need to suit the application.

The vessels and pipe work are designed for minimal flow resistance throughout the entire circuit. When combined with generous amounts of high end dessicant we can ensure:

- Maximum process reliability
- Super stable dew points
- Extended dessicant life cycles
- Ultra low differential pressure

The wide range of both standard and optional features secure the reliable, safe and energy efficient operation of every dryer:

- PLC controller
- Tower insulation
- Multiple valve by-pass
- Failure to switch
- Redundant safety switches
- Dew point demand control

And more...

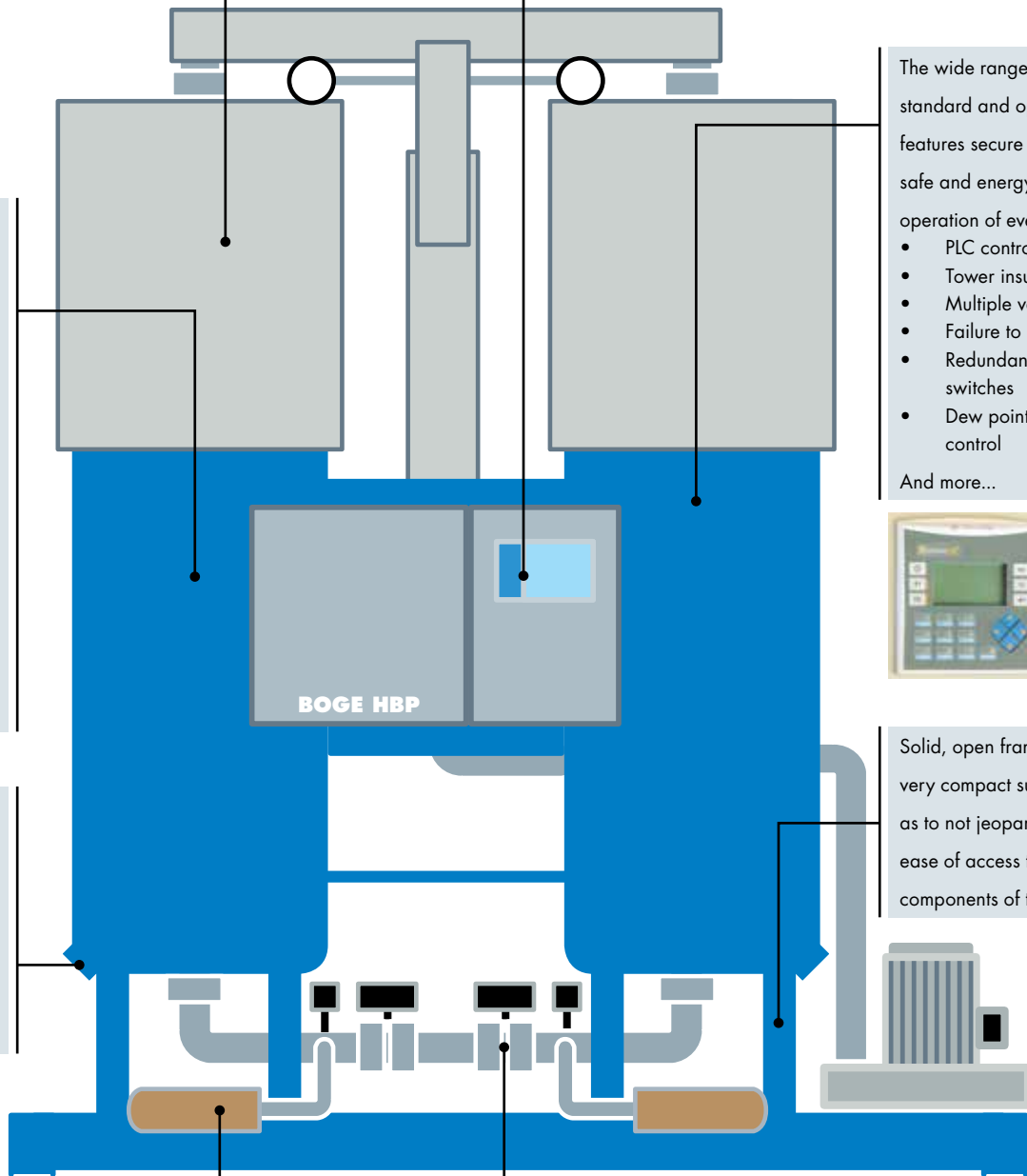


The bottom fitted, drainage port for exchanging the desiccant in the vessels adds to the convenience and ease of maintenance, and ensures that the used desiccant can be evacuated completely.

Solid, open frame, but with very compact support rails as to not jeopardize the ease of access to all of the components of the dryer.

Large surface area silencers are used on all model sizes, which provide not only a long service life, but reduced back pressure.

High quality butterfly valves were selected for the switching valve mechanism to provide maximum reliability and ease of maintenance at one of the most inherently weak points of desiccant dryers. This design provides stable operation 24-7.



# TECHNICAL DATA BOGE HLD AND HLD PLUS

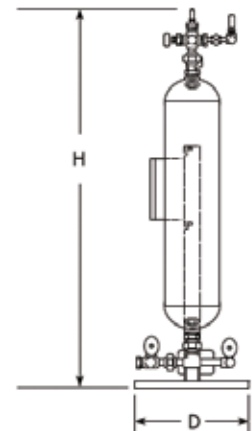
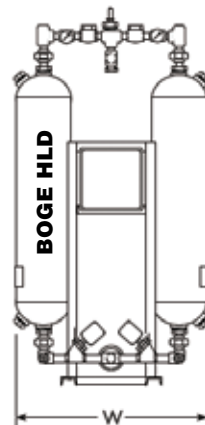
Model	Flow Rate scfm	Connection Size	Filter Model Size	Dimensions in			Weight lbs
				Height	Width	Depth	
<b>HLD / HLD PLUS 80</b>	80	¾" NPT-F	S075	70	31	20	475
<b>HLD / HLD PLUS 120</b>	120	1" NPT-F	S100	70	36	20	490
<b>HLD / HLD PLUS 160</b>	160	1" NPT-F	M010	70	36	20	560
<b>HLD / HLD PLUS 220</b>	220	1 ½" NPT-F	M015	90	40	20	650
<b>HLD / HLD PLUS 320</b>	320	1 ½" NPT-F	M018	90	52	20	780
<b>HLD / HLD PLUS 440</b>	440	1 ½" NPT-F	M019	90	54	20	950
<b>HLD / HLD PLUS 580</b>	580	2" NPT-F	M022	96	56	22	1150
<b>HLD / HLD PLUS 740</b>	740	2" NPT-F	M023	96	56	30	1500
<b>HLD / HLD PLUS 900</b>	900	2 ½" NPT-F	M025	96	65	38	1800
<b>HLD / HLD PLUS 1300</b>	1300	3" Flange	M030	96	76	42	2200
<b>HLD / HLD PLUS 1600</b>	1600	3" Flange	M030	92	88	48	3700
<b>HLD / HLD PLUS 2050</b>	2050	4" Flange	L102	108	88	48	4500
<b>HLD / HLD PLUS 2980</b>	2980	4" Flange	L150	116	100	58	6000
<b>HLD / HLD PLUS 4000</b>	4000	6" Flange	L156	118	134	52	7600
<b>HLD / HLD PLUS 5100</b>	5100	6" Flange	L156	118	140	60	9500

## Correction Factors

Operating Pressure psig	60	70	80	90	100	110	120	130	140	150
Correction Factor	0.65	0.73	0.82	0.91	1.00	1.09	1.18	1.27	1.35	1.44

Inlet Temperature °F	80	85	90	95	100	105	110	115	120	130
Correction Factor	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95

Standard outlet pressure dew point	-40 °F
Optional outlet pressure dew point	-100 °F (on request)
Min./max. operating pressure	60 psig / 150 psig
Min./max. air inlet temperature	40 °F / 130 °F
Min./max. ambient air temperature	40 °F / 120 °F
Power Supply (standard)	115 VAC / 1 Phase / 60 Hz
Inlet filter	0.01 µm coalescing filter
Outlet filter	1.0 µm dust filter





# TECHNICAL DATA BOGE HRD

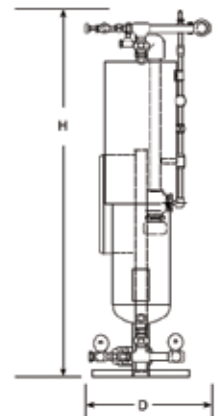
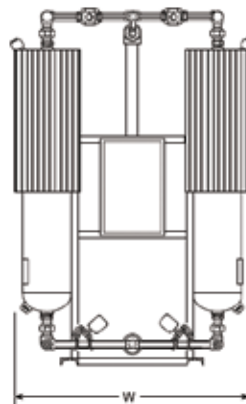
Model	Flow Rate scfm	Connection Size	Dimensions in			Weight lbs
			Height	Width	Depth	
HRD 70	70	¾" NPT-F	70	31	20	135
HRD 130	130	1" NPT-F	70	36	20	240
HRD 180	180	1" NPT-F	70	36	20	335
HRD 260	260	1 ½" NPT-F	72	50	22	475
HRD 355	355	1 ½" NPT-F	72	54	24	490
HRD 460	460	2" NPT-F	90	54	24	560
HRD 575	575	2" NPT-F	92	58	24	650
HRD 720	720	2 ½" NPT-F	92	62	26	780
HRD 1010	1010	3" Flange	96	66	30	950
HRD 1300	1300	3" Flange	96	72	30	1150
HRD 1725	1725	4" Flange	96	68	38	1500
HRD 2350	2350	4" Flange	96	80	42	1800
HRD 3250	3250	6" Flange	96	92	48	2200
HRD 4050	4050	6" Flange	108	92	48	3700

## Correction Factors

Operating Pressure psig	60	70	80	90	100	110	120	130	140	150
Correction Factor	0.65	0.73	0.82	0.91	1.00	1.09	1.18	1.27	1.35	1.44

Inlet Temperature °F	80	85	90	95	100	105	110	115	120	130
Correction Factor	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95

Standard outlet pressure dew point	-40 °F
Optional outlet pressure dew point	-100 °F (on request)
Min./max. operating pressure	60 psig / 150 psig
Min./max. air inlet temperature	40 °F / 130 °F
Min./max. ambient air temperature	40 °F / 120 °F
Power Supply	460 VAC / 3 Phase / 60 Hz
Inlet filter	0.01 µm coalescing filter
Outlet filter	1.0 µm dust filter



# TECHNICAL DATA BOGE HBP

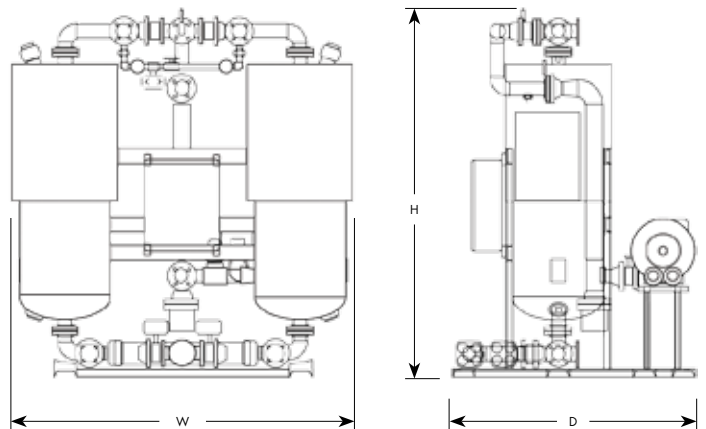
Model	Flow Rate scfm	Connection Size	Dimensions in			Weight lbs
			Height	Width	Depth	
<b>HBP 260</b>	260	1 ½" NPT-F	72	50	33	475
<b>HBP 355</b>	355	1 ½" NPT-F	72	54	36	490
<b>HBP 460</b>	460	2" NPT-F	90	54	36	700
<b>HBP 575</b>	575	2" NPT-F	92	58	36	850
<b>HBP 720</b>	720	2 ½" NPT-F	92	62	39	1000
<b>HBP 1010</b>	1010	3" Flange	96	66	45	1250
<b>HBP 1300</b>	1300	3" Flange	96	72	45	1600
<b>HBP 1725</b>	1725	4" Flange	96	68	57	1800
<b>HBP 2350</b>	2350	4" Flange	96	80	63	2300
<b>HBP 3250</b>	3250	6" Flange	96	92	72	3800
<b>HBP 4050</b>	4050	6" Flange	108	92	72	4600

## Correction Factors

Operating Pressure psig	60	70	80	90	100	110	120	130	140	150
Correction Factor	0.65	0.73	0.82	0.91	1.00	1.09	1.18	1.27	1.35	1.44

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Min./max. ambient air temperature	40 °F / 120 °F
Power Supply	460 VAC / 3 Phase / 60 Hz
Inlet filter	0.01 µm coalescing filter
Outlet filter	1.0 µm dust filter



# CUSTOM MADE SOLUTIONS BEYOND THE NORM



BOGE has the in-house ability to design, engineer and manufacture adsorption dryers to suit any application imaginable. From the initial concept to final implementation in the compressed air system, we offer our customers world-class, cutting edge solutions with an economic payback that is unsurpassed in the industry. Furthermore, this differentiates BOGE from its competition allowing us to approach applications where adsorption drying techniques may be the optimum solution, but were originally deemed cost prohibitive. Our custom solutions are up to the challenge.

## CONCEPTS OF CUSTOMIZED BOGE

### RELIABILITY

### QUALITY

### CREATIVITY

### SUSTAINABILITY

### FLEXIBILITY

Custom systems are the center point of competence concerning heat regenerated adsorption dryers within BOGE. Our team of experts have been forming the market for decades with innovative concepts in the area of compressed air and technical gas treatment solutions.

**Our Passion:** Dryer installations that are based on innovative synergies of proven technology to achieve a higher quality final product while reducing overall energy consumption.

**Our Claim:** We provide complete, working, total system solutions as opposed to just components.

The wide range of services available to the customer from BOGE, when considering complex compressed air purification applications, is unparalleled. When it comes to the task of purifying compressed air or technical gases this provides the customer with the ability to obtain the total solution from one source company.

Long term, interactive relationships with our customers and business partners is where we place our values. For every application question asked, there is a corresponding solution to which BOGE will become your most reliable source. As no problem should go unresolved, no challenge not taken on, and no question unanswered - we are here to help you achieve your goals, practically and economically.



We have definitive solutions to solve even the largest drying applications in the world! Pictured above is a complete system solution employed at a massive chemical industry park in Germany. The dryer is operated by Currenta GmbH & Co. OHG and provides BOGE drying technology and compressed air treatment to over 38,000 scfm of compressed air for all instruments, control and process, and factory air for the entire chemical park.

For four generations, customers from mechanical engineering, industry and trade have relied on BOGE know-how when it comes to planning, developing and manufacturing compressed air systems. They are fully aware of the fact that BOGE AIR is more than just ordinary compressed air: utmost safety, outstanding efficiency, excellent quality, maximized flexibility along with dependable service are the ingredients to transform BOGE AIR into air to work with – in Germany, in Europe and in more than 120 countries around the world.

**Our ranges of services include the following:**

- Energy efficient systems development
- Plant design and engineering
- System control and visualization
- Oil injected screw compressors
- Compressed air treatment
- Compressed air distribution and storage
- Compressed air accessories
- Compressed air service
- Oil free piston compressors
- Piston booster compressors
- Oil free rotary screw compressors



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