

**CHAMPION**<sup>®</sup>

DESICCANT HEATED PURGE & HEATED BLOWER DRYERS | 150-3,000 SCFM

# XCHP & XCHB Series

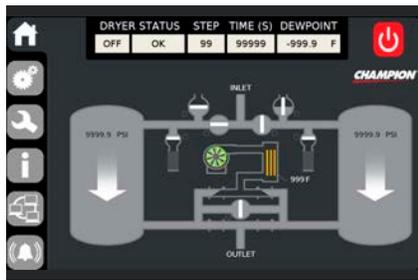
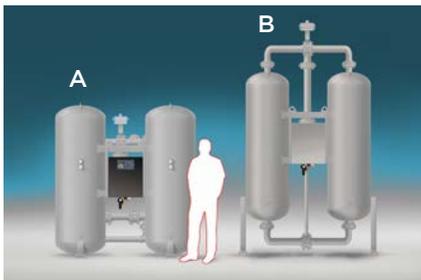


# X Series: NeXt-Generation Champion Air Treatment

## HEATED DESICCANT AIR DRYERS

### Designed for Reliability

One look tells you that these dryers are like no others—extremely low silhouette, manifolds and valves within an arm’s reach of the operator, and readily accessible fill and drain ports are just a few of the differences apparent on the outside. Both externally and internally, each model combines innovative engineering and technically advanced, highly durable components to provide easy installation, operation, maintenance, and simply the most reliable desiccant dryers available.



### Low Profile Design

Our easy access design (A) places key maintenance points at operator level for faster servicing and less downtime than competitive units (B). The low profile design also allows upright shipment and facilitates installation.

### State-of-the-Art Controller

The advanced microprocessor controller maintains dryer performance at optimum levels. It constantly monitors dryer functions and provides an alert when maintenance is required so downtime is minimal.

### Easy to Maintain High-Performance Valves

With manifolds angled toward the center at the operator level, the valves are easily accessed for maintenance.

## Benefits of Desiccant Dryers

All of our desiccant dryers are designed with energy efficiency, reliability, productivity and safety in mind:

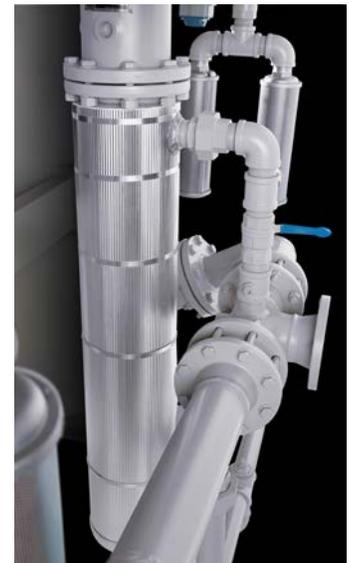
- Engineered for low pressure drop through valve selection, tower size and filter design.
- Optional Energy Management System (EMS) reduces purge consumption while maintaining a constant dew point, monitors the dew point and extends the dryer cycle to greatly reduce energy costs.
- Large sound attenuating purge mufflers minimize noise and include built-in relief valves to enhance safety.
- **Low profile (A)** places valves at operator's level and provides ready access to fill and drain ports, increasing operator safety and ease of maintenance.
- Pre-filter and **after-filter (B)** protect desiccant and downstream air from oil contamination and particulates to help improve air quality, increasing productivity.
- Easy-to-replace **stainless steel desiccant screens (C)** prevent contamination of the downstream air system and are easily removed for cleaning, keeping downtime to a minimum.
- **High-efficiency heater (D)** and/or blower controlled by outlet regeneration temperature that shuts off to save electrical power once desiccant has been thoroughly regenerated (available with EMS on heated dryers).



A, B



C



D

# Desiccant Dryer Controls

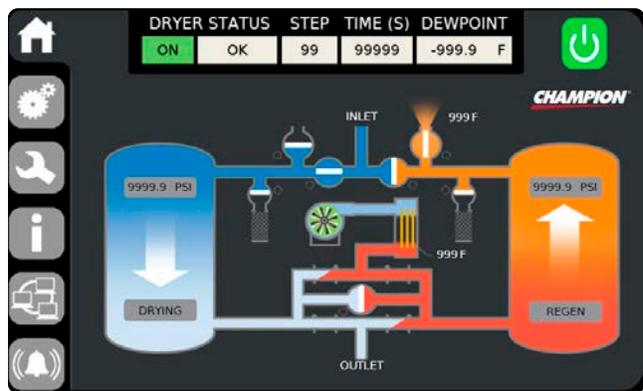
Champion desiccant dryer models XCHP and XCHB are supplied with advanced digital electronic multi-function controllers as standard equipment. This is the dryer's command center.

The advanced digital controller is programmed to execute all valve switching functions, as well as to completely monitor dryer operations. Further, it is MODBUS compatible permitting connection to MODBUS-capable networks and making some remarkable enhanced dryer operating functions.



## XCHP

- Backlit LCD display for viewing critical dryer parameters in all lighting conditions
- Integrated keypad, providing user with access to all internal functions and selectable displays
- Schematic depiction of dryer offering visual indication of current operating status
- Remote alarm contact
- Failure code storage
- Multiple displays, from "Dryer On/Off Control" to "Regeneration Sequence Status"



## XCHB

- 7" color touchscreen display for simplified viewing of critical dryer parameters
- Provides user with access to all internal functions, selectable displays and maintenance indicators
- Real-time schematic offering visual indication of current operating status
- IOT-ready with I/O expansion capability for customization
- Full alarm and shut down code storage
- Multiple displays, from "Dryer On/Off Control" to "Regeneration Sequence Status"

The **XCHP & XCHB Series** provide  
**reliable performance**  
to meet your operation demands.



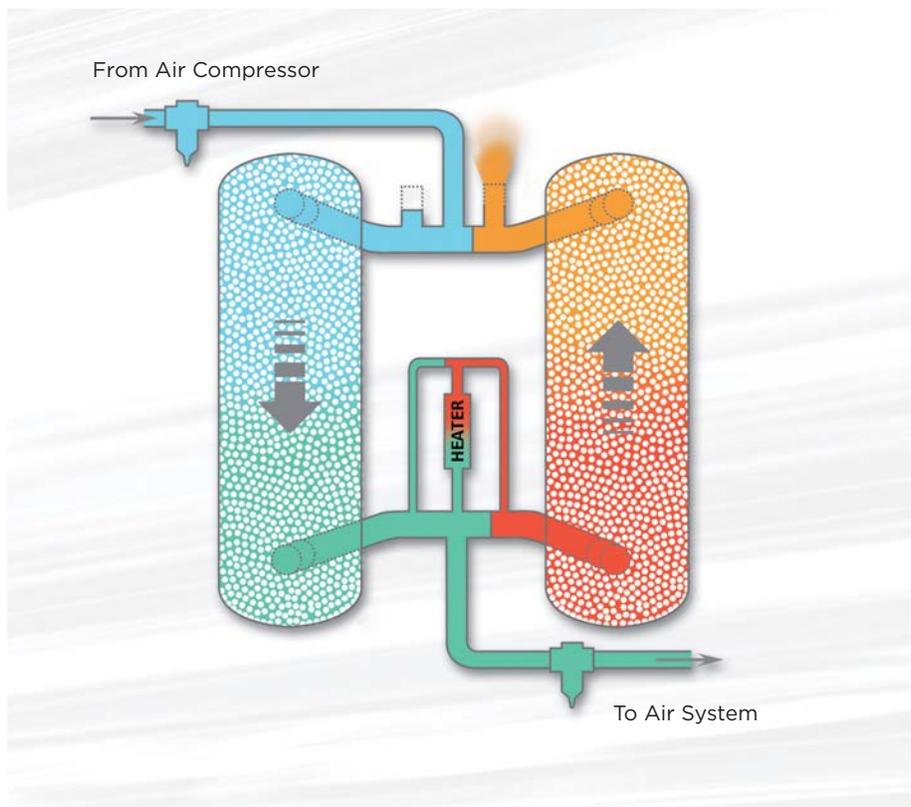
# Selecting a Desiccant Dryer

Each Champion desiccant dryer incorporates high-strength desiccant and durable, easily maintained valves for **unsurpassed reliability, performance and customer value.**

Heated and heated blower technologies use twin desiccant towers and strategically positioned valves to dry the compressed air. Whether using a heated or heated blower dryer, the compressed air produced is thoroughly dried as it is directed through the on-line desiccant-filled tower of the dryer. As the desiccant in this tower adsorbs moisture from the air, the desiccant in the dryer's off-line tower is purged of moisture and readied for use. The basic difference in the two technologies is the manner in which the moisture is desorbed from the desiccant, also known as regeneration.

## Heated

These dryers operate similarly to heatless dryers, with a big exception. Dried air diverted from the air system is first passed through a high-efficiency external heater before entering the off-line tower to regenerate the desiccant. Since this heated air can hold considerably more moisture than unheated air, only about half the amount of dried compressed air is needed for regeneration. Although the addition of the heater and associated components raises the initial capital investment for a heated dryer, less diverted compressed air means lower operating costs.

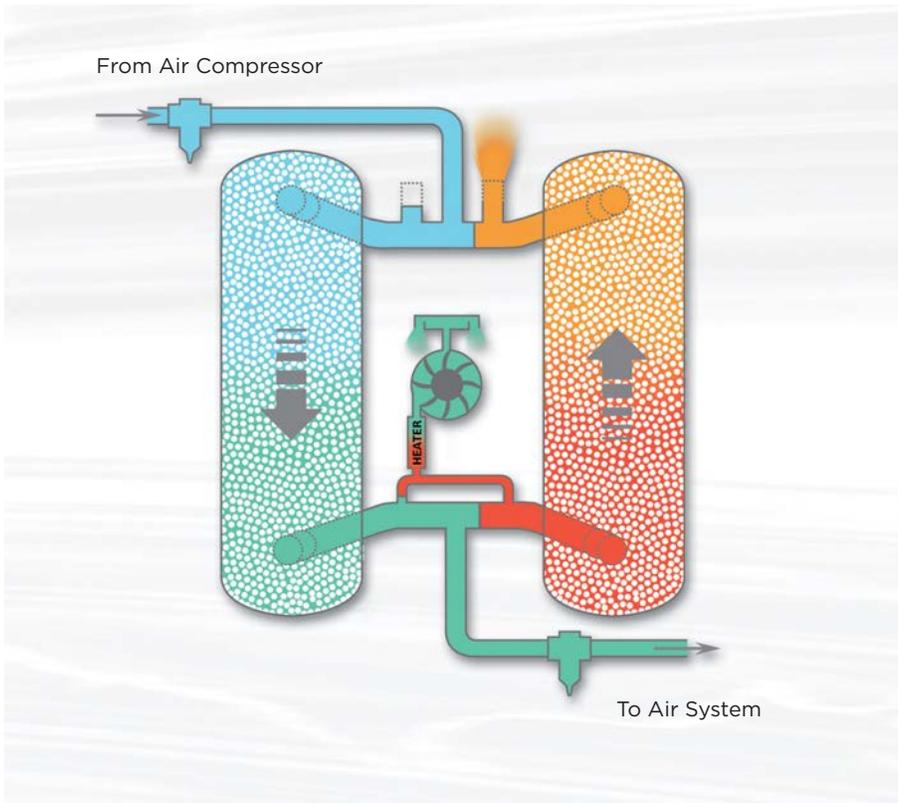


### XCHP Heated Desiccant Dryer

Heated dryers offer a compromise between operating efficiency and capital investment.

*So, how do you select the right desiccant dryer technology?*

*That depends on the variables, such as system demand, compressed air capacity, air quality requirements and applicable life cycle costs that are unique to your compressed air system.*



### Heated Blower

This type of dryer does not divert dried compressed air from the air system to remove moisture from the desiccant in the off-line tower. Rather, it employs its own high performance centrifugal blower to direct ambient air through a heater and then through the off-line tower. There, the stream of heated air regenerates the desiccant. Heated blower technology requires the highest initial capital investment, but with no or little diversion of compressed air from the system for regeneration, it offers significantly lower operating costs than the other two desiccant dryer technologies.

#### **XCHB Heated Blower Desiccant Dryer**

Heated blower dryers offer the lowest operating cost.

# XCHP & XCHB

## Heated Desiccant Dryers

The Champion XCHP and XCHB dryers use high-performance ball or butterfly valves for switching and purge operations. These non-lubricated valves are designed specifically for high temperature applications and feature stainless steel internals as well as filled PTFE seats and include double-acting pneumatic actuators.

Both XCHP heated and XCHB heated blower models provide the reliability and safety features of heatless dryers, with increased energy efficiency. These features include heatless back-up mode in the event of a heater or blower malfunction and an innovative solid-state relay heater control to extend valve and heater life. NEMA 4 electrical enclosures are standard and include an advanced multi-function digital controller.



### **XCHP HEATED DESICCANT DRYERS**

incorporate an external heater to heat dry purge air. This allows XCHP dryers to divert significantly less dry air from the air system for regenerating desiccant than is required by heatless dryers.

Available in sizes ranging from 150 scfm (4.2  $\text{m}^3/\text{min.}$ ) to 3,000 scfm (84.9  $\text{m}^3/\text{min.}$ ), XCHP dryers deliver  $-40^\circ\text{F}$  ( $-40^\circ\text{C}$ ) pressure dew point air for critical applications.



### **XCHB HEATED BLOWER DESICCANT DRYERS**

are equipped with dedicated durable centrifugal blowers to provide purge air for regeneration, eliminating the need to divert dry compressed air from the air system. Instead, the blower directs ambient air through an external heater and then through the off-line tower to regenerate the desiccant. This means more compressed air is available for critical downstream applications.

Available in sizes from 150 scfm (4.2  $\text{m}^3/\text{min.}$ ) to 3,000 scfm (84.9  $\text{m}^3/\text{min.}$ ), XCHB dryers deliver  $-40^\circ\text{C}$  ( $-40^\circ\text{F}$ ) pressure dew point air.

# Specifications

## XCHP 150–3,000 SCFM

MODEL	CAPACITY -40°C DEW POINT		HEATER KW	IN/OUT CONNEC- TION IN	DIMENSIONS H × W × D		WEIGHT	
	SCFM	NM <sup>3</sup> /MIN			INCHES	MM	LB	KG
XCHP150	150	4.2	2.0	1 NPT	66.0 × 44.5 × 32.0	1,676 × 1,130 × 813	758	344
XCHP200	200	5.7	3.0	1½ NPT	67.0 × 48.5 × 32.0	1,702 × 1,232 × 813	913	414
XCHP250	250	7.1	3.0	1½ NPT	68.0 × 52.5 × 35.0	1,727 × 1,334 × 889	1,119	508
XCHP300	300	8.5	3.0	1½ NPT	68.0 × 52.5 × 35.0	1,727 × 1,334 × 889	1,191	540
XCHP400	400	11.3	4.5	2 NPT	82.0 × 56.5 × 34.0	2,083 × 1,435 × 864	1,539	698
XCHP500	500	14.2	4.5	2 NPT	82.0 × 56.5 × 34.0	2,083 × 1,435 × 864	1,707	774
XCHP600	600	17.0	6.0	3 NPT	86.0 × 64.0 × 47.0	2,184 × 1,626 × 1,194	2,369	1,075
XCHP800	800	22.7	9.0	3 NPT	86.0 × 64.0 × 47.0	2,184 × 1,626 × 1,194	2,681	1,216
XCHP1000	1,000	28.3	9.0	3 NPT	80.0 × 78.5 × 48.0	2,032 × 1,994 × 1,219	3,043	1,380
XCHP1200	1,200	34.0	12.0	3 NPT	80.0 × 78.5 × 48.0	2,032 × 1,994 × 1,219	3,285	1,490
XCHP1500	1,500	42.5	15.0	3 NPT	92.0 × 84.0 × 55.0	2,337 × 2,134 × 1,397	4,480	2,032
XCHP1800	1,800	51.0	18.0	4 FLG	92.0 × 84.0 × 60.0	2,337 × 2,134 × 1,524	4,956	2,248
XCHP2100	2,100	59.5	18.0	4 FLG	92.0 × 84.0 × 60.0	2,337 × 2,134 × 1,524	5,350	2,427
XCHP3000	3,000	84.9	30.0	4 FLG	100.0 × 96.0 × 73.0	2,540 × 2,438 × 1,854	7,750	3,515

## XCHB 150–3,000 SCFM

MODEL	CAPACITY -40°C DEW POINT		HEATER KW	BLOWER		IN/OUT CONNEC- TION IN	DIMENSIONS H × W × D		WEIGHT	
	SCFM	NM <sup>3</sup> /MIN		HP	KW		INCHES	MM	LB	KG
XCHB150	150	4.2	3.0	1.0	0.75	1 NPTF	66.0 × 45.0 × 33.0	1,676 × 1,143 × 840	874	396
XCHB200	200	5.7	4.5	1.5	1.10	1½ NPTF	67.0 × 49.0 × 37.0	1,702 × 1,245 × 940	1,136	515
XCHB250	250	7.1	6.0	1.5	1.1	1½ NPTF	68.0 × 53.0 × 38.0	1,727 × 1,350 × 970	1,379	626
XCHB300	300	8.5	6.0	1.5	1.1	1½ NPTF	68.0 × 53.0 × 38.0	1,727 × 1,350 × 970	1,477	670
XCHB400	400	11.3	9.0	2.1	1.6	2 NPTF	83.0 × 57.0 × 48.0	2,108 × 1,450 × 1,220	1,897	860
XCHB500	500	14.2	12.0	2.1	1.6	2 NPTF	83.0 × 57.0 × 48.0	2,108 × 1,450 × 1,220	2,111	958
XCHB600	600	17.0	12.0	2.7	2.0	3 NPTF	88.0 × 64.0 × 59.0	2,235 × 1,620 × 1,500	2,804	1,272
XCHB800	800	22.7	18.0	5.4	4.0	3 NPTF	88.0 × 64.0 × 59.0	2,235 × 1,620 × 1,500	3,198	1,451
XCHB1000	1,000	28.3	24.0	9.8	7.3	3 NPTF	80.0 × 78.0 × 59.0	2,032 × 1,980 × 1,500	3,767	1,709
XCHB1200	1,200	34.0	24.0	9.8	7.3	3 NPTF	80.0 × 78.0 × 59.0	2,032 × 1,980 × 1,500	4,091	1,856
XCHB1500	1,500	42.5	30.0	13.3	9.9	3 NPTF	92.0 × 98.0 × 65.0	2,337 × 2,490 × 1,650	5,515	2,502
XCHB1800	1,800	51.0	36.0	13.3	9.9	4 FLG	92.0 × 98.0 × 68.0	2,337 × 2,490 × 1,730	6,113	2,773
XCHB2100	2,100	59.5	45.0	15.0	11.2	4 FLG	92.0 × 98.0 × 67.0	2,337 × 2,490 × 1,700	6,911	3,135
XCHB2700	2,700	76.5	55.0	15.0	11.2	6 FLG	100.0 × 120.0 × 78.0	2,540 × 3,050 × 1,980	5,017	2,276
XCHB3000	3,000	84.9	60.0	20.0	14.9	6 FLG	100.0 × 120.0 × 78.0	2,540 × 3,050 × 1,980	5,504	2,496

Performance data per ISO 7183: Compressed Air Dryers—Specifications and Testing Maximum working pressure is 10.3 bar g (150 psig).

Desiccant is factory installed on all models except XCHP 3000 and XCHB 2700–3000. Dimensions and weights are approximate.

\*Dryer weight shown does not include desiccant on XCHP 3000 and XCHB 2700–3000, desiccant shipped separately.

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