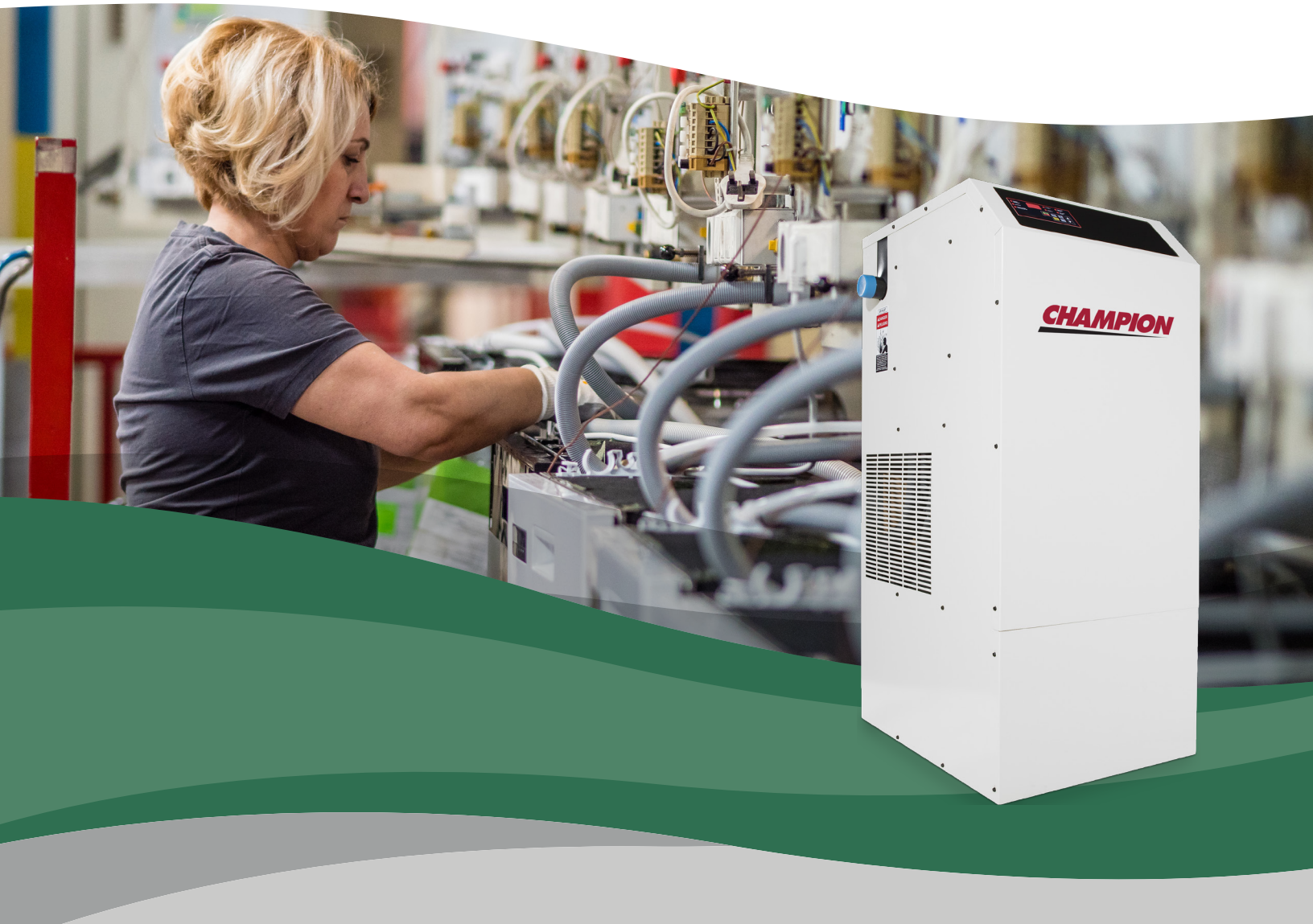
CHAMPION

CYCLING REFRIGERATED DRYER | 10–1,200 CFM

XCCY Series



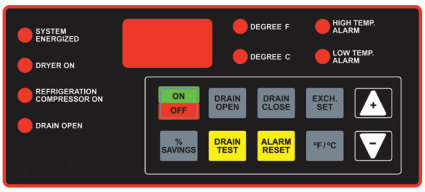
X Series: NeXt-Generation Champion Air Treatment

XCCY SERIES | CYCLING REFRIGERATED DRYERS

XCCY Series Cycling Refrigerated Dryer provides reliability like no other dryer in its class: reliability that you can count on to protect your air system day in and day out; reliability built in by design.

The XCCY Series is a genuine cycling dryer, incorporating innovative features that make it not only the most reliable, but the most energy efficient, dryer in its class.

The key element central to the reliability and energy efficiency of the XCCY Series is its distinct, patented heat exchanger design. Providing high heat transfer with low pressure drop because of uniquely short flow length, the XCCY Series heat exchanger presents a flow area three to five times that of an equivalent copper tubing exchanger, and it is self-cleaning, which greatly reduces the potential for fouling.



Microprocessor LED Controller up to XCCY800 features a NEMA 1 package protection standard with an optional NEMA 4 rating.

Energy-Efficient Design

An advanced cycling dryer, the XCCY Series provides significant savings because it does not waste energy costs through continuous operation of its refrigeration system, as do traditional non-cycling dryers. Each component of the XCCY Series has been designed to provide not only durability, but maximum energy efficiency. This combination of system design and individual component design adds up to the most energy efficient cycling refrigerated dryer available.

Factors contributing to the XCCY Series' energy efficiency:

- Design includes a refrigeration system combined with a thermal mass that efficiently stores cold energy.
- Refrigeration compressor cycles off during periods of reduced load, while dryer continues to remove moisture and contaminants from the compressed air.
- Unique centrifugal separator design provides effective moisture separation maintaining consistent dew point, regardless of partial load operation.

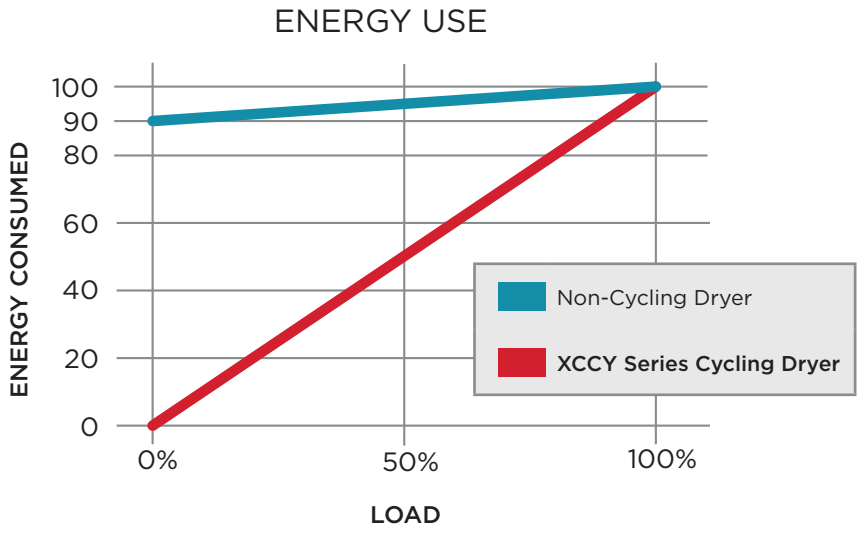
Microprocessor Controller

The easy-to-use controller automatically manages dryer operation for optimum air treatment and for maximum energy efficiency.

- Simple and easily read interface with LED indication
- Digital display of chiller temperature available at a glance to ensure optimal dryer performance
- Percent of energy savings available at the touch of a button
- Dedicated buttons enable convenient adjustment of solenoid drain timing as well as drain function test
- Automatic dryer restart in the event of a sudden loss of power
- Adjustable chiller temperature set point to further reduce energy expense
- Microprocessor control constantly monitors dryer functions including thermal mass temperature and provides alarms to minimize dryer downtime

Best in Class Design

The XCCY Series cycling dryer uses centrifugal separation to remove moisture from the chilled air. Separation occurs at the coldest point in the system by means of centrifugal acceleration, then expands into an area of low velocity containing a sump, and change of air flow direction. The result is highly-efficient moisture removal, providing exceptionally dry, clean air under all operating conditions.



High Heat Transfer at Work

The superior performance of the XCCY Series dryer can be attributed to the effective heat transfer capabilities of the exchanger design, utilized throughout the compressed air circuit. The dryer design includes a pre-cooling system with stainless steel heat exchangers to properly condition the air for drying. A re-heater section of the dryer's air side also uses these high performance heat exchangers to prepare the dried compressed air for re-entry into the air system. This prevents pipe sweating and readies the compressed air for use in process applications.

1. **100% STAINLESS STEEL CONSTRUCTION** permits optimal heat transfer, resulting in a consistent pressure dew point.

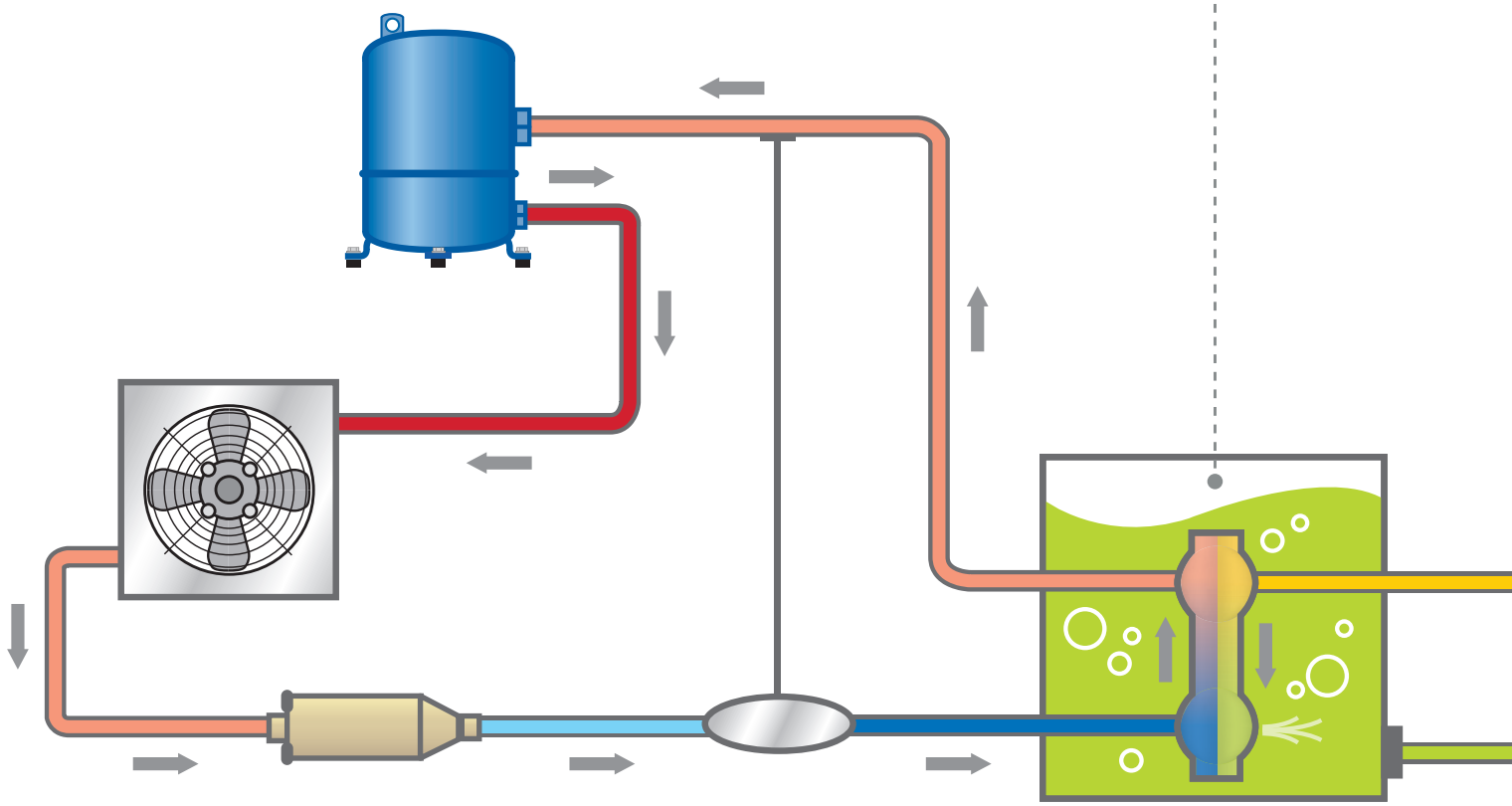
2. **XCCY SERIES DRYER'S AIR CIRCUIT HEAT EXCHANGERS** combine a high heat transfer coefficient with unmatched low pressure drop.

3. **CORROSION-RESISTANT STAINLESS STEEL** is used in all the XCCY Series dryer's air circuit heat exchangers, providing durability in environments unsuitable for copper or other metals.

4. **AN INNOVATIVE CORRUGATED & FOLDED STAINLESS STEEL PANEL** is stacked inside two stainless steel shells, then welded together to form a unitized heat exchanger. This design ensures reliability through the elimination of dissimilar metals or tube in tube chaffing, which is a common cause for heat exchanger leaks and failures.

How They Work

SUBMERGED EVAPORATOR THERMAL MASS STORAGE TANK is fully insulated to maintain a consistently cold propylene glycol-water mixture for continuous pressure dew point control. The thermal tank temperature is monitored by the controller permitting the refrigerant compressor to cycle off during low heat loads resulting in energy savings.



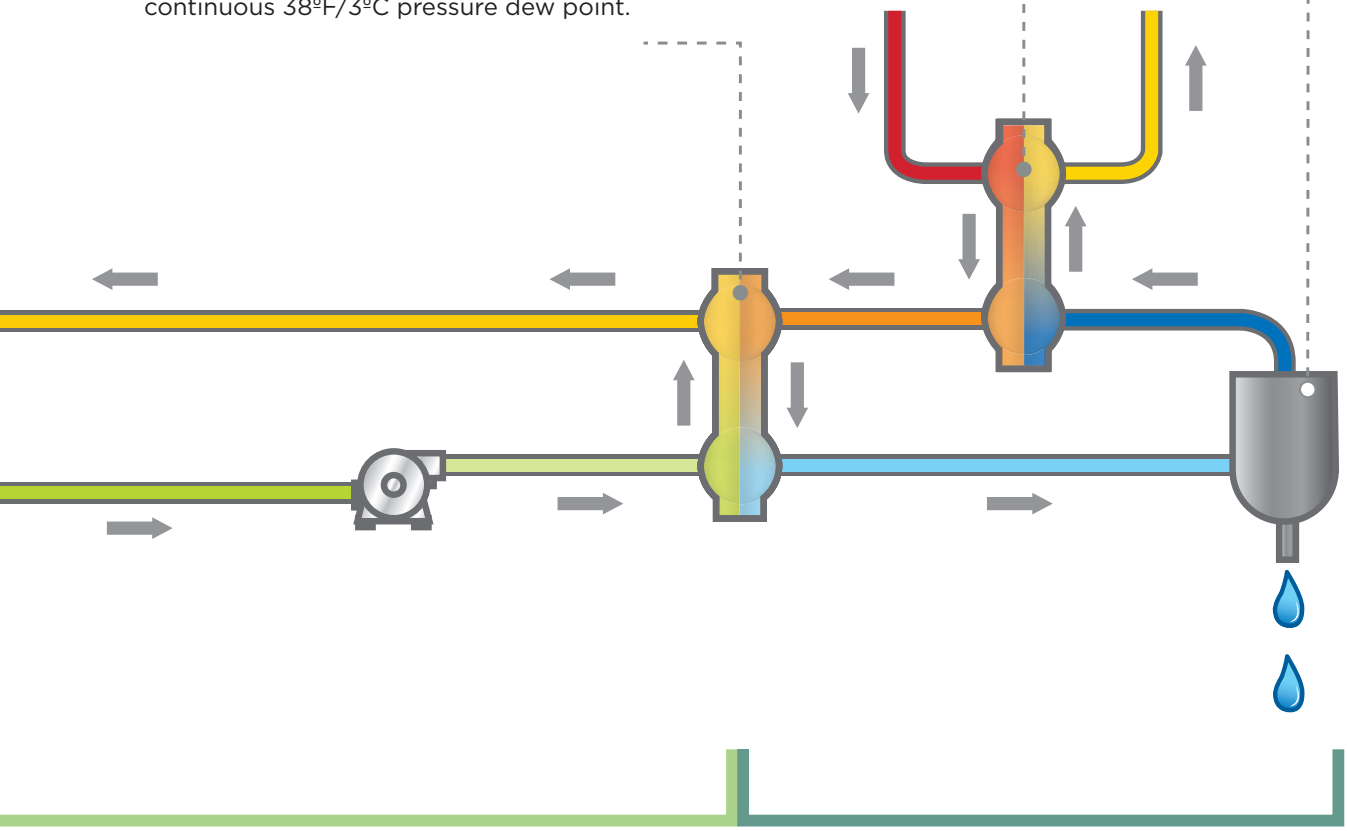
REFRIGERATION SYSTEM
employs a reliable, time-proven hermetic reciprocating compressor.

THERMAL MASS COOLING SYSTEM
circulates the thermal mass fluid to provide a continuous cold medium for heat transfer.

CENTRIFUGAL AIR/MOISTURE SEPARATOR
efficiently and effectively removes moisture for all applications even under partial load conditions.

STAINLESS STEEL PRE-COOLER/RE-HEATER
assures that compressed air is properly conditioned for cooling while simultaneously reducing the energy costs of removing the initial heat load. Clean, dry air leaving the dryer is reheated to maintain low relative humidity in the process air, further protecting the compressed air system.

AIR CHILLER uses stainless steel corrugated heat exchangers to provide efficient heat transfer between the compressed air and the dryer's cooling thermal mass, assuring a consistent and continuous 38ºF/3ºC pressure dew point.



COMPRESSED AIR SIDE SYSTEM
pre-cools the inlet air, chills the air to 38°F/3°C, removes moisture through the centrifugal separator and is re-heated for process use.

International Air Quality Class Standards

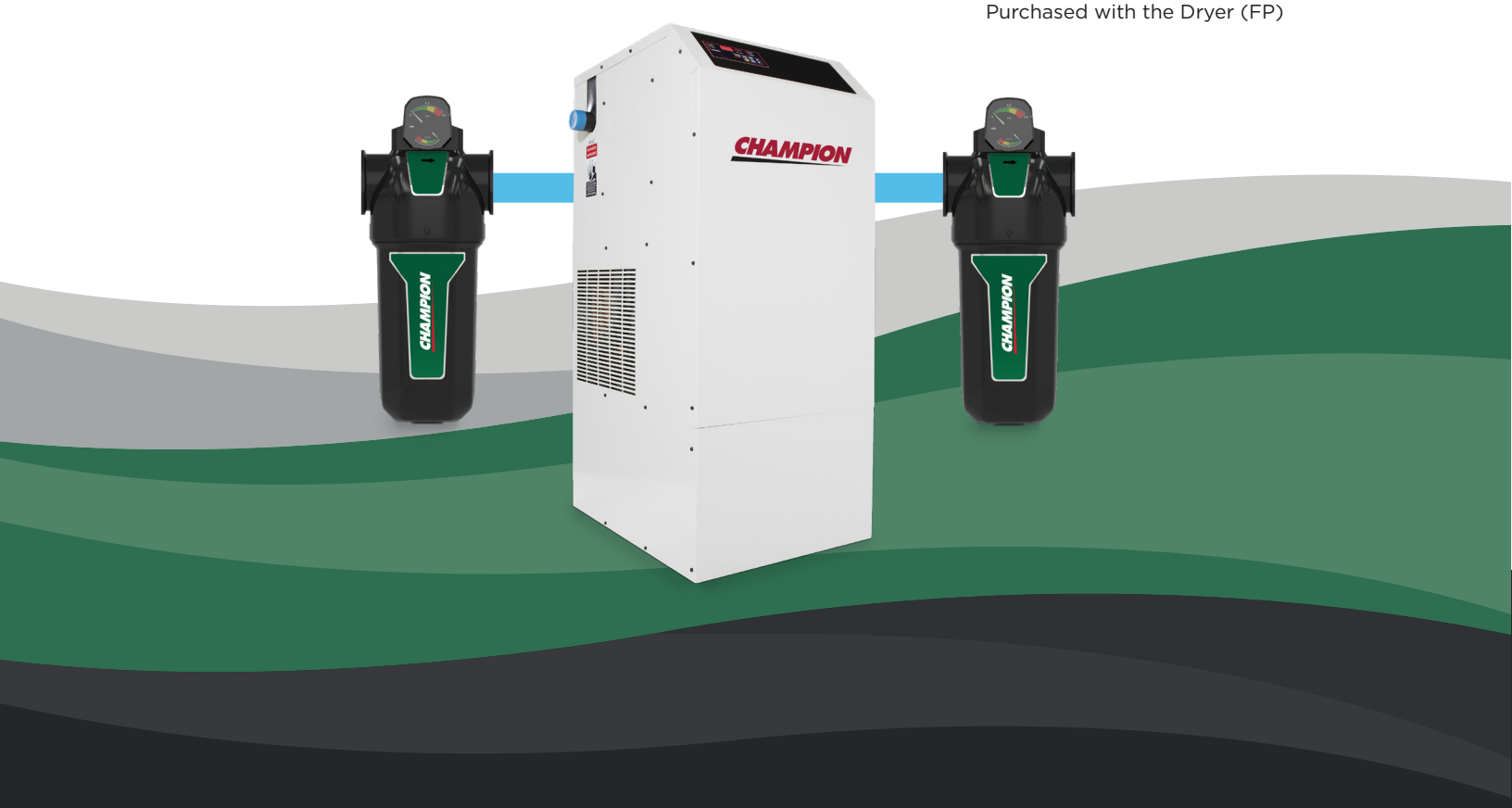
ISO 8573-1 Air Quality Standard

ISO 8573-1, the international standard for compressed air quality, defines the amount of contamination permissible in compressed air.

The ISO standard identifies three primary forms of contamination in compressed air systems: solid particles, water and oil. These contaminants are classified and assigned a quality class, ranging from Class 0, the highest purity level, to Class 6, the most relaxed.

XCCY Series refrigerated air dryers offer the perfect balance between technology and simplicity to dry compressed air systems to ISO 8573-1 Air Quality Class 4-5 pressure dew points.

Note: Bundle Filtration Option when Purchased with the Dryer (FP)



Option Pre-Filtration

XC Series GP grade filtration removes solid and oil contaminants from the air stream before entering the dryer.

ISO Air Quality Class:

- Solids – Class 2
- Remaining oil – Class 2
- Removes solids 1.0 micron and larger
- Remaining oil content < 1.0 mg/m^3

Option After-Filtration

XC Series HE grade filtration provides high efficiency oil removal protecting downstream equipment.

ISO Air Quality Class:

- Solids – Class 1
- Remaining oil – Class 1
- Removes 99.999+% of solids ≥ 0.01 micron
- Remaining oil content < 0.01 mg/m^3

Specifications

XCCY SERIES | CYCLING REFRIGERATED DRYER

MODEL	INLET FLOW SCFM	INLET FLOW NM^3/H	PRESSURE DROP PSI	VOLTAGE	IN/OUT CONNEC-TIONS	POWER CONSUMP-TION KW	REFRIG-ERANT	DIMENSIONS H × W × D INCHES	DIMENSIONS H × W × D MM	WEIGHT LBS	WEIGHT KG
XCCY10	10	17	0.46	115/1/60	½″ FNPT	0.35	R-134A	26.5 × 15.2 × 19.7	673 × 386 × 500	85	39
XCCY18	18	31	0.8	115/1/60	½″ FNPT	0.43	R-134A	26.5 × 15.2 × 19.7	673 × 386 × 500	85	39
XCCY24	24	41	1.22	115/1/60	½″ FNPT	0.45	R-134A	26.5 × 15.2 × 19.7	673 × 386 × 500	90	41
XCCY35	35	60	2.1	115/1/60	½″ FNPT	0.53	R-134A	26.5 × 15.2 × 19.7	673 × 386 × 500	95	43
XCCY50	50	85	0.77	115/1/60	¾″ FNPT	0.68	R-134A	26.5 × 15.2 × 19.7	673 × 386 × 500	105	48
XCCY75	75	128	1.38	115/1/60	1″ FNPT	0.94	R-134A	30.4 × 16.6 × 22.4	772 × 422 × 569	150	68
XCCY100	100	170	2.36	115/1/60	1″ FNPT	0.98	R-134A	30.4 × 16.6 × 22.4	772 × 422 × 569	155	70
XCCY125	125	213	3.56	115/1/60	1″ FNPT	1.1	R-134A	30.4 × 16.6 × 22.4	772 × 422 × 569	160	73
XCCY150	150	255	1.8	115/1/60	1½″ FNPT	1.25	R-134A	37.5 × 19.66 × 30.25	953 × 499 × 768	263	119
XCCY200	200	340	1.6	460/3/60	1½″ MNPT	2.1	R-404A	57.75 × 28.09 × 32.62	1467 × 713 × 829	620	281
XCCY300	300	510	2.9	460/3/60	2″ MNPT	2.8	R-404A	57.75 × 28.09 × 32.62	1467 × 713 × 829	735	333
XCCY400	400	680	2.9	460/3/60	2″ MNPT	3.3	R-404A	57.75 × 28.09 × 32.62	1467 × 713 × 829	745	338
XCCY500	500	850	2.9	460/3/60	3″ MNPT	5	R-404A	61.5 × 42.62 × 40.25	1562 × 1083 × 1022	1105	501
XCCY600	600	1020	3	460/3/60	3″ MNPT	5	R-404A	61.5 × 42.62 × 40.25	1562 × 1083 × 1022	1275	578
XCCY700	700	1190	2.7	460/3/60	3″ MNPT	6.1	R-404A	61.5 × 42.62 × 40.25	1562 × 1083 × 1022	1320	599
XCCY800	800	1360	2.9	460/3/60	3″ MNPT	6.7	R-404A	61.5 × 42.62 × 40.25	1562 × 1083 × 1022	1415	642
XCCY1000	1000	1700	2.5	460/3/60	4″ CLS 150 FLN	8.9	R-404A	69 × 32.44 × 76.25	1753 × 824 × 1937	2315	1050
XCCY1200	1200	2040	3.1	460/3/60	4″ CLS 150 FLN	10.5	R-404A	69 × 32.44 × 76.25	1753 × 824 × 1937	2435	1104

Performance data presented in accordance with ISO 7183 (Option A2) conditions: 100°F inlet temperature, 100°F ambient temperature and 100 psig conditions.
Overall dimensions include base, threaded conn., elec enclosure protrusions.

*Premium Warranty**

1 Year—Standard

4 Years—Extended

5 Years—Total

*Parts and labor included.
Contact your local distributor for more details.

Champion is committed to delivering superior products built with the exceptional standards you expect.

CHAMPION®

1301 North Euclid Avenue
Princeton, Illinois 61356 USA
www.ChampionPneumatic.com

©2020 Gardner Denver, Inc. Printed in U.S.A.
CA-XCCY 1st Ed. 11/20

Product specifications and materials are subject to change without notice.

Please recycle after use.