

nano

Direct Expansion Refrigerated Air Dryer

FLOW CAPACITY: 22 to 7200 Nm³/h





**We purchased a nano DXR
when our old dryer failed
and we are happy with
the installation.**

Parts manufacturer - Southeastern US





Simple Reliability

The DXR dryers are engineered for continuous operation, consistently delivering dry air.

Ambient air contains high levels of moisture, dust, hydrocarbons and other contaminants and, when left untreated, the results are corrosion, bacteria, mould 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 vapour. This vapour can condense into liquid water throughout your compressed air system as the pressure and temperature of the compressed air changes.

nano R⁴ DXR Direct Expansion Refrigerated Air Dryers

- Simple, easy installation
- Clean, dry compressed air at ISO Class 4, 5 or 6 as necessary
- Steady, guaranteed dew point
- Low pressure drop
- Zero air loss drain effectively removes water without air loss.



How it works

Direct Expansion Refrigeration

A DXR direct expansion refrigerated air dryer uses a refrigerant circuit and heat exchanger(s) to pre-cool air, refrigerate it to condense out moisture vapour, and then re-heats the air to prevent pipe sweating downstream.

A Hot, moist compressed air enters the pre-cooler section of the 3 in 1 heat exchanger where it is pre-cooled by the exiting dry air.

B Pre-cooled compressed air then enters the air to refrigerant evaporator where it reaches its coldest point and achieves its lowest dew point.

C Condensed moisture is being removed by an integrated moisture separator and zero air loss condensate drain prior to re-entering the air to air heat exchanger where incoming hot air reheats the exiting cold compressed air.

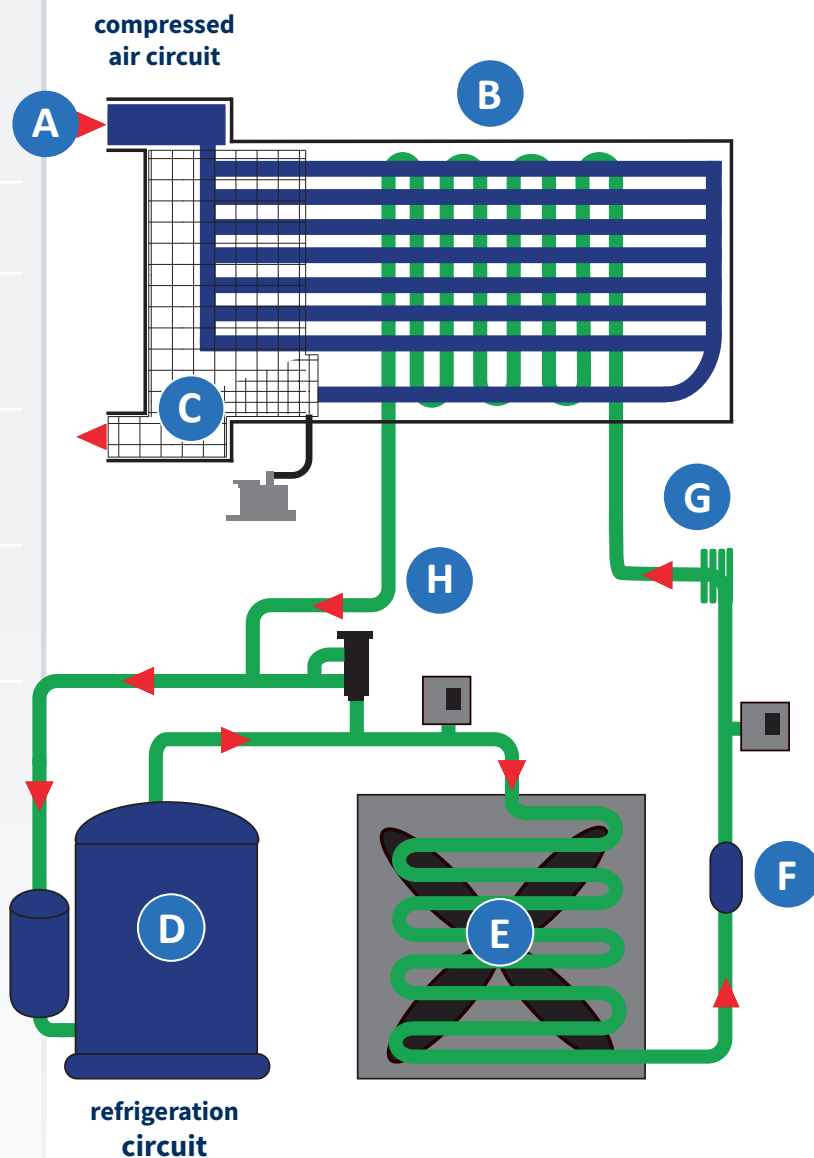
D The refrigerant compressor pressurises the returning refrigerant gas.

E An air cooled condenser removes the heat from the refrigerant and condenses it back to a liquid state.

F The refrigerant filter ensures that there is no water or particulate circulating through the system.

G The DXR uses a capillary tube for expanding the refrigerant. Having no moving parts ensures the reliability of the system.

H A hot gas bypass is used to ensure the optimal temperature is maintained in the heat exchanger preventing freezing and ice formation in the unit.





Features

User Friendly Digital Controller

- Displays outlet dew point
- Alarms contacts on models DXR 0180E to DXR 7200E
- Remote start stop on models DXR 0601E to DXR 7200E
- Automatic restart after power loss
- Service reminder alarm

Energy Efficient Aluminium Block Heat Exchanger

- Combined air-to-air and air-to-refrigerant heat exchanger design
- Fully insulated for thermal efficiency
- Integrated water separator

Zero Air Loss Drain

- Energy savings drain included on all models.
- Prevents the loss of valuable compressed air.

Hot Gas Bypass Valve

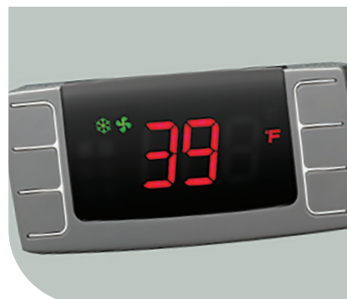
- Ensures stable pressure dew point and eliminates the possibility of condensate freezing.

Performance Validated Filtration

- Pre and after filter packages available to provide additional energy savings and improved air quality.

Robust & Reliable Refrigeration system

- Low GWP refrigerants – R513A and R410A
- Hot gas bypass valve
- Crank case heater included for DXR 2700E to DXR 7200E





Benefits

Optimum Energy Efficiency & Consistent Dew Point

- Aluminium block heat exchanger with integrated water separator and air-to-air heat exchanger ensures maximum cooling efficiency.
- Integrated water separator provides low and consistent pressure dew point.
- Zero Air loss drain effectively removes water without air loss.

Capillary Tube & Hot Gas Bypass

- Self-regulating providing reliability and low maintenance with less components than more complex ranges.

Space Saving Design

- Fully packaged into a simple compact design, DXR will fit into the smallest spaces.

Easy to Install

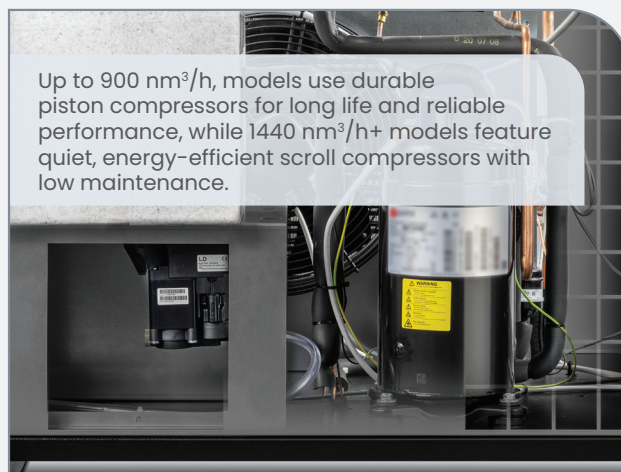
- Plug and play design concept

Robust Construction

- Powder coated galvanised steel panels are corrosion resistant.

Environmentally Friendly

- R513A or R410A refrigerant





Product Specifications

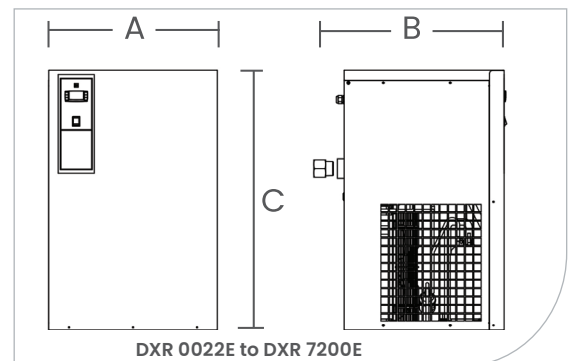
MODEL	INLET & OUTLET	RATED FLOW FLOW ⁽¹⁾	ABSORBED POWER ⁽²⁾	DIMENSIONS (mm)			APPROX. WEIGHT	POWER SUPPLY (V/PH/50HZ) ⁽³⁾		REFRIGERANT
				A	B	C		230/1/50	400/3/50	
DXR 0022E	G ¾" (M)	22	0.13	350	493	450	19	X		R513A
DXR 0036E	G ¾" (M)	36	0.16	350	493	450	19	X		R513A
DXR 0050E	G ¾" (M)	50	0.19	350	493	450	20	X		R513A
DXR 0072E	G ¾" (M)	72	0.27	350	493	450	25	X		R513A
DXR 0108E	G ¾" (M)	108	0.28	350	493	450	27	X		R513A
DXR 0140E	G 1" (F)	140	0.67	370	497	764	44	X		R513A
DXR 0180E	G 1" (F)	180	0.72	370	497	764	44	X		R513A
DXR 0216E	G 1 ½" (F)	216	0.63	460	557	789	62	X		R410A
DXR 0245E	G 1 ½" (F)	245	0.71	460	557	789	60	X		R410A
DXR 0313E	G 1 ½" (F)	313	0.91	460	557	789	62	X		R410A
DXR 0389E	G 1 ½" (F)	389	0.97	580	557	899	82	X		R410A
DXR 0461E	G 1 ½" (F)	461	1.12	580	557	899	82	X		R410A
DXR 0601E	G 2" (F)	601	1.54	805	1040	962	145		X	R410A
DXR 0720E	G 2" (F)	720	1.98	805	1070	962	158		X	R410A
DXR 0900E	G 2 ½" (F)	900	2.01	805	1070	962	165		X	R410A
DXR 1080E	G 2" (F)	1080	2.77	805	1070	962	164		X	R410A
DXR 1440E	R 3" (M)	1440	3.50	1132	1005	1399	230		X	R410A
DXR 1800E	R 3" (M)	1800	3.69	1121	1005	1596	325		X	R410A
DXR 2099E	R 3" (M)	2099	4.55	1121	1005	1596	338		X	R410A
DXR 2700E	DNI00-PNI6	2700	6.10	1121	1005	1826	390		X	R410A
DXR 2999E	DNI00-PNI6	2999	6.54	1531	1005	1826	462		X	R410A
DXR 3744E	DNI00-PNI6	3744	7.10	1531	1005	1826	508		X	R410A
DXR 4198E	DNI00-PNI6	4198	7.29	1531	1005	1826	508		X	R410A
DXR 5040E	DNI50-PNI6	5040	8.26	1979	1455	1826	810		X	R410A
DXR 5940E	DNI50-PNI6	5940	10.20	1979	1455	1826	815		X	R410A
DXR 7200E	DNI50-PNI6	7200	12.18	1979	1455	1833	900		X	R410A

SPECIFICATIONS	DXR 0022E to DXR 0072E	DXR 0180E to DXR 0461E	DXR 0601E to DXR 7200E
Design operating pressure range (barg)	4.1 to 16	4.1 to 14	4.1 to 14
Maximum inlet air temperature (°C)	55	55	60
Maximum ambient temperature (°C)	5 to 46	5 to 46	5 to 46

PRESSURE CORRECTION FACTORS ⁽⁵⁾					
Operating pressure (barg)	6	7	8	10	13
Correction factor	0.97	1.00	1.03	1.07	1.12

INLET TEMPERATURE CORRECTION FACTORS ⁽⁵⁾					
Inlet air temperature (°C)	25	30	35	40	45
Correction factor	1.10	1.06	1.02	1.00	0.93

AMBIENT TEMPERATURE CORRECTION FACTORS ⁽⁵⁾						
Inlet temperature (barg)	25	30	35	40	43	46
Correction factor	1.00	0.91	0.81	0.72	0.67	0.62



- (1) Rated flow capacity: conditions for rating dryers are in accordance with ISO7183. Compressed air at dryer inlet: 7 bar and 35°C; ambient air temperature: 35°C.
- (2) Nominal absorbed power at rated operating conditions using 230/1/50 or 400/3/50 power supply (as applicable).
- (3) Standard voltages. Consult factory for 115/1/60, 230/1/60, 380/3/60, 460/3/60 and 575/3/60 options
- (4) To be used as a rough guide only. All applications should be confirmed by nano sizing software. Contact sales@n-psi.co.uk for sizing assistance.
- (5) Technical specifications subject to change without notice.

*2 year warranty with pre-filtration and non-corrosive piping system installed.

Experience.
Customer.
Service.



nano-purification solutions
www.nano-purification.com

Headquarters

United States
Charlotte, North Carolina
Phone: +1 704 897 2182
E-mail: support@airandgassolutions.com

United States
Maryville, Tennessee
Phone: +1 704 897 2182
E-mail: support@airandgassolutions.com

Canada
St. Catharines, Ontario
Phone: +1 905 684 6266
E-mail: canadasupport@airandgassolutions.com

Singapore
Singapore
Phone: +65 6748 7988
E-mail: support.asia@nano-purification.com

United Kingdom
Gateshead, Tyne and Wear
Phone: +44 (0) 191 497 7700
E-mail: sales_uk@nano-purification.com

