nano

cycling refrigeration compressed air dryers

flow capacity: 20 - 2000 scfm (34 - 3400 Nm^3/hr)

R1

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R1

Leading edge technology and more than 200 years of **experience**...nano-purification solutions, your world-class provider of state-of-the-art compressed air and gas solutions to industry.

Our commitment at n-psi is to work alongside our **customers** and provide unique solutions with the highest quality products to solve your specific challenges.

A wealth of experience and leading edge products are only part of the equation. n-psi realize that world-class customer **service** is the most important component to any successful business.

Experience. Customer. Service...**nano**

clean and dry

Clean and dry compressed air is essential in every efficient and profitable manufacturing and process operation worldwide. Our vast experience includes food, beverage, chemical, laboratory, medical and natural gas applications.

nano understand your needs and has created the nano R^1 range of high-performance, energy-saving compressed air and gas purification products to provide clean and dry compressed air and gases at an affordable price with unrivaled reliability.

design

Our experienced team of design engineers are always looking for new and unique technologies and products to bring you the highest level of performance and lowest overall operating cost.

research & development

Our R&D team endeavor to provide solutions that go beyond developing an existing product. They are continually researching new technologies which can provide unique advantages over competitive offerings.

manufacture

The reliable and energy saving nano R^1 refrigeration air dryers are manufactured in a state of the art facility to the highest standards of build quality to ensure reliability and high levels of performance.

nano R[1] cycling refrigeration dryers

The advanced nano R[1] cycling refrigeration air dryer combines the advantages of a direct thermal exchange with thermal storage. It's two dryers in one. By combining these two powerful energy saving technologies the R[1] provides you with the lowest power consumption available in the market today. This cutting edge, patented concept not only reduces your energy bill, it also offers steady dew point performance and reliable operation to ensure you have continuous, worry free, clean and dry compressed air.

With unique digital controls that automatically manage energy consumption and energy saving condensate drains that automatically adjust to demand - the R[1] cycling dryer saves energy and eliminates seasonal adjustments. It is the ultimate solution to remove moisture from your compressed air system.

reliability is built in... and backed by our 2 year warranty

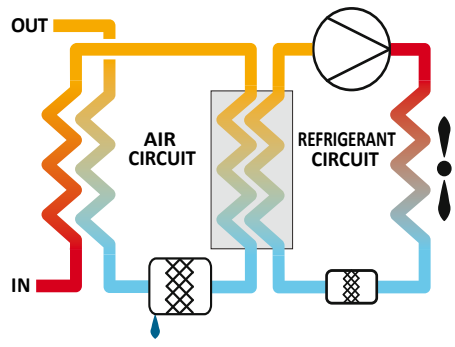
advanced microprocessor controls

At n-psi we take our control systems seriously. The nano R[1] dryers feature easy to use advanced electronic controls and digital LED displays on every model, although with standard features like automatic on/off operation and automatic self calibration, you may never get to use them.

control system		NRC 0020 to 250	NRC 0325 to 2000
type		electronic	microprocessor
user interface		5 button digital interface	6 button digital interface
display		digital LED display	digital LED display
digital readouts	outlet air dewpoint	yes (non numerical)	yes (in °F or °C)
	inlet air temperature	-	yes (in °F or °C)
	alarm codes	yes (4 alarms)	yes (14 alarms)
	alarm history	-	yes (up to 50 stored alarms)
LED indicators	energy saving mode indicator	yes	
	programmable service interval indicator	yes	
control features	programmable user alarm	yes	
	user programmable operating parameters	yes	
	two dew point settings	yes	
	remote on/off capability	yes	
	condensate drain control & test function	yes	
	volt free general alarm contacts	-	yes
	RS485 serial outlet (for connection to modbus supervisor system)	-	optional

simple field proven design

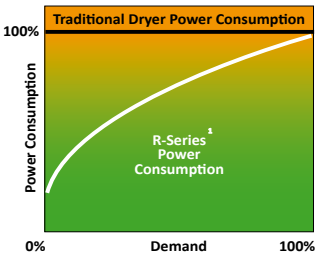
The beauty of the R[1] is its simplicity. No hot gas bypass valve. No recirculating pump. No inverter. Just a simple, reliable and efficient design backed by a two year warranty. This focus on simple reliability combined with technological advances like the patented dual transfer heat exchanger has resulted in a bullet proof design and maximum energy savings.



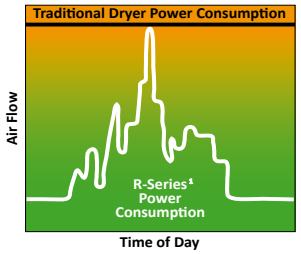
R[1] cycling - energy saving design

Refrigeration dryers must be sized to handle the worst case operating conditions they may encounter - the highest possible flow at the highest possible inlet temperature on the hottest day of the year. The power consumption needed to operate at these worst case conditions is far greater than otherwise needed. Traditional dryers operate at this higher power consumption all the time even though the actual demand on the dryer is normally much less.

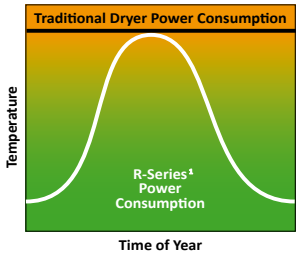
The advanced technology in the R[1] cycling dryer allows it to automatically reduce its power consumption to meet the actual demand saving you up to 80% over a traditional dryer. As a result, the R[1] energy saving cycling dryer and its energy saving zero air loss drain are eligible for rebates in many parts of the country.



Dryer demand is a function of both air flow and ambient temperature. Unless both these variables are at their maximums at the same time, there is energy savings to be had. The R[1] takes advantage of this by significantly reducing power consumption to match demand.



In most applications the air flow varies significantly throughout the day reaching peak demand only for a very short time and often can be close to zero overnight or during breaks. The R[1] matches its power consumption to the air flow demand providing optimal energy savings.



Ambient temperatures can vary significantly during the day and from season to season throughout the year. Most of the time the ambient temperature is well below mid-day summer highs. The R[1] takes advantage of the opportunity and automatically lowers its power consumption to match the decreased thermal demand.

energy saving condensate drains

The NRC 0250 to 2000 models feature an intelligent electronic zero air loss drain that automatically adjusts as condensate flow increases and decreases with ambient and operating conditions. Unlike typical condensate drains, these drains need no calibration at start up or from season to season saving you time and valuable compressed air. Because of this energy saving feature, these drains are eligible for rebates in many parts of the country.

The NRC 0020 to 0200 models feature a timed solenoid drain. The drain is integrated into the control panel allowing for specific adjustment of the open and close times.

features & benefits

energy saving design • hybrid operation uses up to 80% less energy than a traditional dryer

high ambient dew point setting • provides additional energy savings during warm weather

zero air loss condensate drains • saves you energy by saving your valuable compressed air

user friendly digital controls • LED interface comes standard on every model

quick & easy start-up • no pre-start up cooling, programming or calibration

automatic operation • automatically turns itself on and off as needed

built for the heat • keeps operating through the hottest days of summer

built for the cold • advanced design protects against winter freeze ups

built to last • compressor runs cooler and less often for a longer life

built for industry • top-mounted condenser for dusty conditions

handles the pressure • 232 psig standard with 740 psig option

easy to maintain • simple refrigeration circuit - no hot gas bypass

easy installation • 6 foot power cord with plug on all 115V dryers

programmable service warning • keeps maintenance on schedule

wide air paths • never worry about plugging up the heat exchanger

wide condensate paths • never worry about plugging up the drain

no seasonal adjustments • controls self-adjust with the seasons

guaranteed reliability • extensive factory testing for quality assurance

design approved for rebates • many utilities provide rebates for cycling dryers

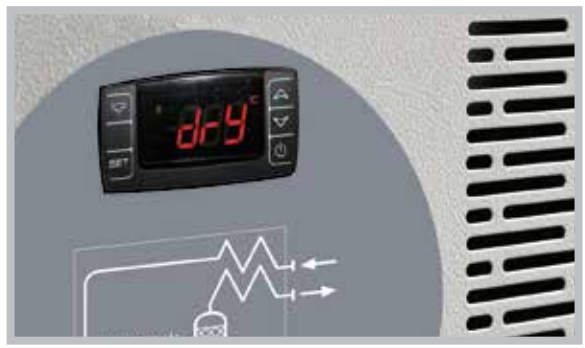
consistent cooling • thermal mass handles sudden changes in heat load

consistent separation • stainless steel demister separates efficiently at all flows

consistent dew point • is ensured by the advanced heat exchanger and separator design

environmentally friendly • built using R134a refrigerant and a non-toxic silica thermal mass

quality components designed for industrial applications



advanced easy to use digital control system & LED display

nano R[1] sizing & specifications

model	inlet & outlet [1]	rated flow [2]		absorbed power [3]	dimensions (inches)				approx. weight	power supply (V/Ph/60Hz)				
	NPT/FLG	scfm	Nm³/h	kW	A	B	C	D	lbs	115/1	230/1	230/3	460/3	575/3 [4]
NRC 0020	½"	20	34	0.26	20.9	11.8	20.1	3.5	80	●				
NRC 0030	½"	30	51	0.26	20.9	11.8	20.1	3.5	86	●	○			
NRC 0050	½"	50	85	0.36	20.9	11.8	20.1	3.5	91	●	○			
NRC 0075	½"	75	127	0.50	25.6	14.6	29.5	3.5	143	●	○			
NRC 0100	¾"	100	170	0.64	25.6	14.6	29.5	3.5	148	●	●			
NRC 0125	1"	125	212	0.97	25.6	14.6	29.5	3.9	176	●	●			
NRC 0150	1"	150	255	0.92	30.7	14.6	33.5	3.9	209	●	●			
NRC 0175	1"	175	297	1.11	30.7	14.6	33.5	3.9	227	●	●			
NRC 0200	1 ½"	200	340	1.30	30.7	28.9	37.0	5.1	368		●	●	●	○
NRC 0250	1 ½"	250	425	1.32	30.7	28.9	37.0	5.1	388		●	●	●	○
NRC 0325	1 ½"	325	552	2.07	30.7	28.9	37.0	5.1	416		●	○	●	○
NRC 0425	2"	425	722	2.82	34.0	40.0	43.3	5.1	582			●	●	○
NRC 0520	2"	520	883	3.28	34.0	40.0	43.3	5.1	646			○	●	○
NRC 0600	2 ½"	600	1019	3.49	34.0	51.9	43.3	5.1	833			○	●	○
NRC 0700	2 ½"	700	1189	3.64	34.0	51.9	43.3	5.1	866			○	●	○
NRC 0800	2 ½"	800	1359	4.28	34.0	51.9	43.3	5.1	880			○	●	○
NRC 1000	3" [1]	1000	1699	5.09	37.9	62.6	61.7	6.0	1598			○	●	○
NRC 1220	4" [1]	1220	2073	6.48	37.9	71.3	61.7	6.0	1907			○	●	○
NRC 1600	4" [1]	1600	2718	8.55	34.1	88.0	81.7	10.2	2513			○	●	○
NRC 2000	4" [1]	2000	3400	10.75	34.1	88.0	81.7	10.2	3064			○	●	○

specifications	NRC 0020 to 0325	NRC 0425 to 1220	NRC 1600 to 2000
design operating pressure range	0 to 232 psig	0 to 232 psig	0 to 232 psig
design inlet air temperature range	41 to 158°F	41 to 158°F	41 to 149°F
design ambient temperature range	41 to 115°F	41 to 115°F	41 to 110°F
condenser cooling options	air only	air (standard) or water (optional)	air (standard) or water (optional)
refrigerant type	R134a	R134a	R134a

pressure & dew point correction factors [5]

inlet air pressure (psig)	50	75	100	120	150	232	pressure dew point (°F)	38	40	45	50
correction factor	0.77	0.90	1	1.07	1.12	1.23	correction factor	1	1.05	1.21	1.36

temperature correction factors [5]

inlet air temperature (°F)	90	100	110	120	130	158	ambient temperature (°F)	90	100	110	115
correction factor	1.23	1	0.81	0.68	0.61	0.44	correction factor	1.07	1	0.93	0.88

(1) ½" to 2½" are NPT threaded connections. 3" and 4" dryers supplied with flanged connections, NPT coupling adapters available upon request

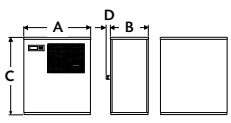
(2) in compliance with CAGI (ADF 100) / NFPA (class H): inlet temperature: 100°F, ambient temperature: 100°F, inlet pressure: 100 psig, pressure dew point: 33°F to 39°F, and pressure drop not to exceed 5 psid. For all other conditions refer to the correction factors above. For performance at other conditions, contact support@n-psi.com

(3) nominal absorbed power at rated operating conditions using 115/1/60 or 460/3/60 power supply (as applicable). For absorbed power at other voltages or conditions, contact support@n-psi.com

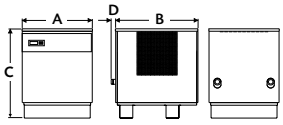
(4) includes 460 Volt to 575 Volt transformer internally mounted and wired on NRC 0200, 0250 and 0425 to 2000

(5) to be used as a rough guide only. All applications should be confirmed by n-psi sizing software. Contact support@n-psi.com for sizing assistance

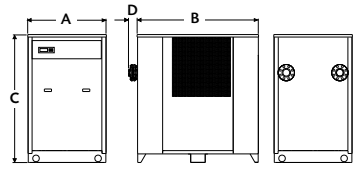
● *standard* ○ *available on request*



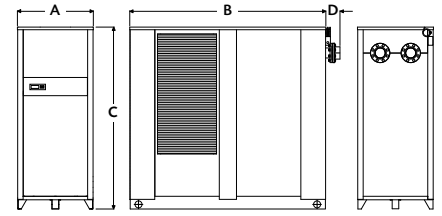
NRC 020 to 175



NRC 200 to 800



NRC 1000 to 1220



NRC 1600 to 2000

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2 YEAR WARRANTY

nano PURIFICATION SOLUTIONS