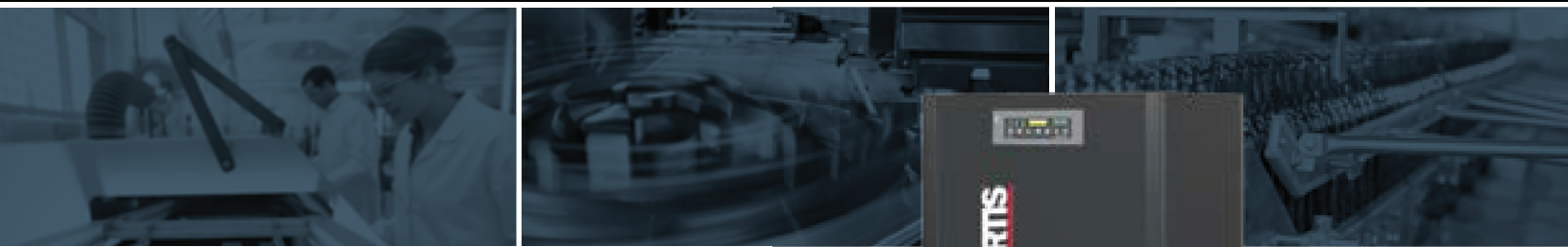




# RN SERIES

REFRIGERATED COMPRESSED AIR DRYERS



**NON-CYCLING REFRIGERATED  
COMPRESSED AIR DRYERS  
10-3000 SCFM**



**SOME COMPANIES ARE FOUNDED ON HARD WORK.  
OTHERS ARE FOUNDED ON IDEALS.**

**FS-CURTIS WAS FOUNDED ON BOTH.**

# A HISTORY OF

**1854**

Curtis & Co. –  
Empire Saw founded  
in St. Louis, MO, USA

**1857**

Earned Agricultural  
and Mechanical Fair  
award for excellence  
and quality

**1876**

Named Curtis  
and Co.  
Manufacturing

**1897**

Built first  
reciprocating  
air compressor  
that later evolved  
into the Master  
Line Series

**1914**

Supported U.S.  
Government efforts  
by producing more  
than 2 million Howitzer  
shell forgings

**1940**

Designed and  
developed  
mobile oxygen  
compressors to be  
used in Aerospace  
applications

**1955**

Merged with U.S.  
Air Compressor  
Company, Central  
Petroleum Company,  
Lewis Machine  
Company



## **REAL-WORLD PEOPLE**

When you're successful, we're successful.  
That's why FS-Curtis listens.

Trust and dependability are the foundations of our past  
and the fabric of our future, so you can count on being  
treated with the personal touch you deserve.

More than 150 years ago, the FS-Curtis way of doing business was established through two key commitments: a dedication to building quality products and a dedication to responsive customer service.

Over the decades, the company and its products have evolved through innovation and new technologies. But those commitments to quality and service remain unchanged. Today, just as in 1854, FS-Curtis customers can depend on our products for reliable, long-term service. Equally as important, they can depend on getting the same from our people.

# EXCELLENCE

**1976**

Merged with Toledo Tools as Curtis-Toledo Inc.

**1979**

Introduction of Challenge Air Series reciprocating air compressors

**1995**

Began manufacturing and assembling Rotary Screw compressors

**2005**

Expanded global market reach by joining forces with Fusheng Industrial

**2006**

U.S. Headquarters certified as ISO9001:2000 and ISO14001:2004

**2010**

Introduced next generation GSV Variable Speed Rotary Screw compressors



## REAL-WORLD PRODUCTS

Take more than a century of experience building quality compressors, add in a staff that's listening to the needs of the market, and the result is a product lineup that's built for tough working conditions. No wonder so many customers around the world depend on FS-Curtis compressors day in and day out.

# QUALITY AIR, RELIABLE PROCESS

GET IT ALL WITH FS-CURTIS DRYERS.

FS-Curtis compressors and RN Series dryers give you a complete professional compressed-air system solution, all backed by the FS-Curtis reputation for rugged dependability

The same commitment to world-class quality found in FS Curtis compressors is also the foundation of RN Series refrigerated compressed-air dryers. RN Series dryers can further extend the operating life of downstream equipment by preventing concentrations of water, lubricant aerosols and airborne particles created during the compression process that can damage equipment, corrode the system and contaminate your product or process. Manufactured to precision specifications for ideal integration with FS-Curtis compressors, RN Series dryers provide a constant dew point that meets the ISO 8573.1 standard to protect your investment, reduce wear and maintenance costs, and maintain your production quality.



# THE RIGHT DRYER CHOICE FOR EVERY APPLICATION

There's an RN Series refrigerated air dryer ideal for your FS-Curtis compressor and application needs.

## RNP (10-500 SCFM)

For a stable dew point at a great value, the compact RNP dryer is an outstanding choice.

- Simple and reliable copper tube-on-tube heat exchanger for RNP10-50
- Stainless-steel brazed plate heat exchanger for RNP75-500
- Compact design and small footprint
- At-a-glance dew point indicator for quick performance verification on RNP200-500

## RNH (20-125 SCFM)

The perfect choice for reciprocating compressors, RNH dryers eliminate the need for a standalone separator and aftercooler.

- Handles high inlet temperatures up to 180°F
- Single air-treatment station is easy for installation, operation and maintenance
- Integrated 3-micron separator removes solid contaminants and oil aerosols

## RNE (100-3000 SCFM)

Robust and designed to fit industrial applications, this RNE performs to ISO 8573.1 Class 4 to 5 Dew Point Standards while offering many features and options.

- Stainless-steel brazed plate heat exchanger optimizes the thermal efficiency and saves money by reducing pressure drop
- Integrated 3-micron separator and optional 0.008 ppm oil removal filter
- Options are available to fit your applications



Trust FS-Curtis dryers for clean, dry, consistent-quality compressed air.



# COMPACT. SIMPLE. SMART.

## RNP REFRIGERATED DRYERS (10-500 SCFM)

### PREMIUM

Sometimes a simple solution is all you need. With their small design and compact footprint, RNP dryers take the basics to new heights, delivering reliable performance day in and day out you've come to expect from FS-Curtis. They remove maximum moisture to increase efficiency and help you get the most from your equipment.

The perfect blend of technology and simplicity, RNP dryers are easy to operate and maintain. Best of all, they're reliable. You can count on an ISO 8573.1 Air Quality Class 4 to Class 5 pressure dew point for efficient, effective delivery of clean, dry, consistent-quality compressed air.

- Simple and reliable copper tube-on-tube heat exchange for RNP10-50
- Stainless-steel brazed plate heat exchanger for RNP75-500
- Designed with quality components for extended service life
- At-a-glance control panel dew point indication verifies performance
- Cleanable cabinet filter for RNP100-500
- R-134a environmentally friendly refrigerant

# BUILT TO PERFORM

## RNE REFRIGERATED DRYERS (100-3000 SCFM) ELITE

The superior solution for heavy-duty air demand profiles is the RNE dryers. These dryers maintain a constant dew point and meet ISO 8573.1 Class 4 to 5 standards, and the brazed plate heat exchanger optimizes efficiency. The result is a steady flow of clean, dry air delivered to meet the demands of your application reliably and effectively.

Built-in features like an energy-management monitor help make the easy-to-use RNE dryers even easier. Plus, a wide range of options allows you to customize your RNE dryer to your needs.

- ISO 8573.1 Class 4 to 5 dew point
- Stainless-steel brazed plate heat exchanger optimizes the thermal efficiency and saves money by reducing pressure drop
- RNE100-150 use at a glance controller
- Digital microprocessor controller for RNE200 & above
- Integrated 3-micron separator to reduce work stoppages
- R-134a environmentally friendly refrigerant for RNE100-750 models, and R-404a for RNE1000-3000
- Integral cold coalescing



### OPTIONAL FEATURES

- Mounted and wired timed electric drain
- Panel-mounted gauge package consists of air inlet temperature, air outlet pressure, refrigerant suction pressure and refrigerant head pressure gauges
- NEMA 4 electronic protection
- Mounted remote bulb temperature switch with C-form contacts
- Mounted and wired IEC-style disconnect
- 3-valve air bypass piping (shipped loose)
- Standard separator
- 0.008 ppm oil removal filter



# BRING ON THE HEAT

## **RNH** (20-125 SCFM)

### HIGH TEMPERATURE REFRIGERATED COMPRESSED AIR DRYERS

For compressors with a high discharge temperature, such as reciprocating models without aftercooler, RNH dryers are ideal. They provide a single air treatment system that replaces four separate components — the aftercooler, separator, dryer and filter. You get everything you need in one unit.

The automatic refrigeration temperature control system ensures stable performance for clean, dry, consistent-quality compressed air so that your equipment can operate at peak efficiency. The fan switch helps save energy at low loads, and the cleanable cabinet air filter cuts maintenance costs.

- Handles high inlet temperatures of up to 180° F
- ISO 8573.1 Class 6 dew point
- Stainless-steel brazed plate heat exchanger optimizes the thermal efficiency and saves money by reducing pressure drop
- Integrated 3-micron separator removes solid contaminants and 60% of oil aerosols
- Fan switch allows operation in low ambient temperatures (35° F)
- Cleanable cabinet air filter
- Small footprint design
- Environmentally friendly CFC-free refrigerant



# TRUE SELECTION

## CHOICES TO MEET YOUR EXACT NEEDS.

FS-Curtis provides a full range of durable air dryers, making it easy to find the ideal match for your compressed air system. Each type of dryer is built with the same essential objective — protecting your air-operated equipment and processes against damaging moisture. Count on FS-Curtis quality to get the job done.

	RNP	RNE	RNH	RDS	DL	DHP	DHB
<b>Air Flow (scfm)</b>	5-500	100-3000	20-125	90-12000	40-5400	300-3200	500-4300
<b>Technology</b>	Refrigerated				Dessicant		
<b>Integrated Filters</b>	None	Standard: Grade 9 Optional: Grade 5	Standard: Grade 9	Standard: Grade 9 Optional: Grade 5	Optional Dryer Package	Optional Dryer Package	Optional Dryer Package
<b>ISO 8573.1 Air Quality Class (Standard Package)</b>							
Solid	-	Class 3	Class 3	Class 3	-	-	-
Moisture	Class 4-5	Class 4-5	Class 6	Class 4-5	Class 1-4	Class 2-3	Class 2-3
Oil	-	Class 5	Class 5	Class 5	-	-	-
<b>Max. Inlet Pressure (psig)</b>	10-50: 250 75-500: 232	100-150: 250 200-3000: 232	250	90-140: 250 190-12000: 232	Standard: 150 Optional: 250	150	150
<b>Max. Inlet Temp. (°F)</b>	120	130	180	130	120	120	120
<b>Energy Saving</b>	On/Off	200-3000 Energy Management Controller	On/Off	90-675 Cycling 800-12000 Digital Scroll	15% Purge Air Used	8-10% Purge Air Used	0% Purge Air Used
<b>Example Applications</b>	Pneumatic Tools, Air Gauging & Conveying, Pneumatic Instruments & Controls, Photo Labs, Textile Looms		Body Shops, Sand Blasting, Pneumatic Tools, Spray Painting	Powder Painting, Fine Pneumatic Tools, Air Gauging & Conveying, Pneumatic Instruments & Controls, Photo Labs, Textile Looms	Air Line Exposed To Freezing, Ambient Conditions, Pharmaceutical, Chemical, Powder Paint	Food Processing, Dairies, Breweries, Air In Direct Contact With Foods, Microchips, Optics, Medicines	

## ISO 8573.1 QUALITY CLASSES

Class	Solid Particles - Maximum Numbers of Particles per m <sup>3</sup>			Humidity and Liquid Water		Oil
	Particle Size (micron)			Pressure Dew Point		Total concentration, Aerosol, Liquid, and Vapor
	0.10 - 0.5	0.5 - 1.0	1.0 - 5.0	°C	°F	mg/m <sup>3</sup>
0	As Specified			As Specified		≤ 0.01
1	100	1	0	≤ -70	≤ -94	≤ 0.1
2	100,000	1,000	10	≤ -40	≤ -40	≤ 1
3	-	10,000	500	≤ -20	≤ -4	≤ 5
4	-	-	1,000	≤ +3	≤ +38	
5	-	-	20,000	≤ +7	≤ +45	
6				≤ +10	≤ +50	

# TECHNICAL DATA

## RNP NON-CYCLING REFRIGERATED COMPRESSED AIR DRYERS

MODELS	CAPACITY <sup>1</sup> (scfm)	POWER SUPPLY	INLET/OUTLET (npt. male)	DIMENSIONS (LxWxH-in.)	WEIGHT (Lbs.)	
RNP10	10	115/1/60	3/8" OD	13 x 13 x 15	64	
RNP15	15			15 x 15 x 22	69	
RNP25	25		3/4" NPT	20 x 20 x 22	88	
RNP35	35			20 x 19 x 20	92	
RNP50	50			1" NPT	30 x 13 x 21	101
RNP75	75				30 x 13 x 21	110
RNP100	100		460/3/60	1 1/2" NPT	36 x 17 x 30	123
RNP125	125				38 x 20 x 30	133
RNP150	150	2" NPT		38 x 21 x 30	153	
RNP200	200			41 x 25 x 32	183	
RNP250	250			41 x 25 x 32	211	
RNP300	300	2" NPT		2" NPT	38 x 21 x 30	211
RNP400	400				41 x 25 x 32	232
RNP500	500		41 x 25 x 32		262	

<sup>1</sup>Rated Flow Capacity - Conditions for rating above dryers are: compressed air at dryer inlet: 100 psig and 100°F saturated; ambient temperature: 100°F; operating on 60 Hz power supply. At rated conditions, pressure drop is less than 5 psi.

## RNE NON-CYCLING REFRIGERATED COMPRESSED AIR DRYERS

MODELS	CAPACITY <sup>1</sup> (scfm)	POWER SUPPLY	INLET/OUTLET <sup>2</sup> (npt. male)	DIMENSIONS (LxWxH-in.)	WEIGHT (Lbs.)
RNE100	100	115/1/60 208-230/1/60	1" NPT	20 x 29 x 38	251
RNE125	125			20 x 29 x 38	273
RNE150	150			20 x 29 x 38	279
RNE200	200	460/3/60 208-230/3/60	1 1/2" NPT	32 x 34 x 39	425
RNE250	250			32 x 35 x 46	463
RNE300	300		2" NPT	32 x 35 x 46	527
RNE400	400			32 x 35 x 46	571
RNE500	500			32 x 35 x 46	684
RNE600	600	460/3/60	2 1/2" NPT	42 x 32 x 58	691
RNE750	750		3" ANSI Fig.	41 x 49 x 85	734
RNE1000	1,000			41 x 49 x 85	1,146
RNE1250	1,250		4" ANSI Fig.	51 x 49 x 85	1,521
RNE1500	1,500			51 x 49 x 85	1,547
RNE1750	1,750			6" ANSI Fig.	60 x 55 x 85
RNE2000	2,000		60 x 55 x 85		1,986
RNE2500	2,500	60 x 55 x 85	2,315		
RNE3000	3,000			2,646	

<sup>1</sup>Rated Flow Capacity - Conditions for rating above dryers are: compressed air at dryer inlet: 100 psig and 100°F saturated; ambient temperature: 100°F; operating on 60 Hz power supply.

<sup>2</sup>BSP connections and DIN flanges available.

**THE NAME TO KNOW IS FS-CURTIS.**  
 For a complete selection of top-quality,  
 reliable air compressors, dryers and  
 accessories, the only name you need  
 to remember is FS-Curtis.



**RNH HIGH-TEMPERATURE REFRIGERATED COMPRESSED AIR DRYERS**

MODELS	CAPACITY <sup>1</sup> (scfm)	POWER SUPPLY	INLET/OUTLET (npt. male)	DIMENSIONS (LxWxH-in.)	WEIGHT (Lbs.)
RNH20	23	115/1/60 220-240/1/50	1/2" NPT	13 x 10 x 28	79
RNH25	29				80
RNH35	41		3/4" NPT	17 x 17 x 37	81
RNH50	58				150
RNH75	87	230/1/60	1" NPT	17 x 17 x 46	155
RNH100	116				170
RNH125	145				175

<sup>1</sup>Rated Flow Capacity - Conditions for rating above dryers are: compressed air at dryer inlet: 175 psig and 180°F; inlet pressure dew point: 160°F; ambient temperature: 95°F; outlet pressure dew point: 50°F; operating on 60 Hz power supply. At rated conditions, pressure drop is less than 5 psi.

**CAPACITY CORRECTION FACTORS**

To adjust dryer capacity for conditions other than rated, multiply Nominal Capacity with Correction Factors from Tables 1 and 2.

**CORRECTION FACTORS FOR INLET AIR TEMPERATURE AND PRESSURE**

INLET AIR TEMP. (°F)	INLET AIR PRESSURE (psi)							
	50	80	100	125	150	175	200	250
90	1.05	1.17	1.23	1.31	1.37	1.42	1.47	1.49
100	0.84	0.95	1.00	1.07	1.13	1.18	1.22	1.24
110	0.69	0.79	0.82	0.91	0.95	0.99	1.03	1.05
120	0.56	0.66	0.70	0.74	0.80	0.84	0.89	0.91

**CORRECTION FACTORS FOR AMBIENT TEMPERATURE**

AMBIENT AIR TEMP. (°F)	CORRECTION FACTOR
80	1.12
90	1.06
100	1.00
110	0.94

Example: What is the capacity of a 2,000 scfm model when the compressed air at the inlet to the dryer is 150 psig and 100°F, and the ambient temperature is 90°F  
 Answer: 2,000 scfm (rated flow from Specifications Table) x 1.13 (correction factor for inlet temperature and pressure from Table 1) x 1.06 (correction factor for ambient temperature from Table 2) = 2,396 scfm