Aircel

Refrigerated Air Dryers

VF Series

Non-Cycling

10 - 2,000 scfm

DHT Series

High Inlet Temperature

20 - 125 scfm

VF Series Non-Cycling

Refrigerated Air Dryer | 10 - 2,000 scfm

Since 1994, Aircel has been delivering quality, industry leading compressed air dryers and accessories for production lines and facilities all over the world.

Our precise engineering and designs provide reliable products that will protect your operations for years to come.

Based in Maryville, Tennessee, Aircel is a multi-industry manufacturing leader. Aircel's highly-specialized, engineered products and technologies are powering facilities all over the world. Our products serve industries such as textile, food and beverage, automotive, production, PET market, breathing air, pneumatic instrumentation, and more.

The **Aircel VF Series (10 - 2,000 scfm)** offers the highest efficiencies at varying flow conditions in a lightweight, compact design. No other dryer in the industry can offer the efficiency ratings achieved by the VF Series dryers in variable flow operation. VF Series dryers are built with the Variable Flow heat exchanger, which allows for desired dew point performance regardless of flow variations. Typically, other dryers with mechanical moisture separators lose performance as compressed airflow velocity increases or decreases substantially around the nominal design point.

The VF Series high efficiency heat exchanger utilizes a three-step process to thoroughly remove condensed moisture from the chilled, compressed air. This process provides **separation efficiency in excess of 99% throughout the entire flow range.** Our VF non-cycling range is focused on reliable, constant dew point performance in all flow conditions.

With its excellent heat transfer coefficients and low-pressure drop, these dryers will outperform the competition in protecting your compressed air system, machinery, and tools; and will improve your manufacturing processes.

VF Series Features

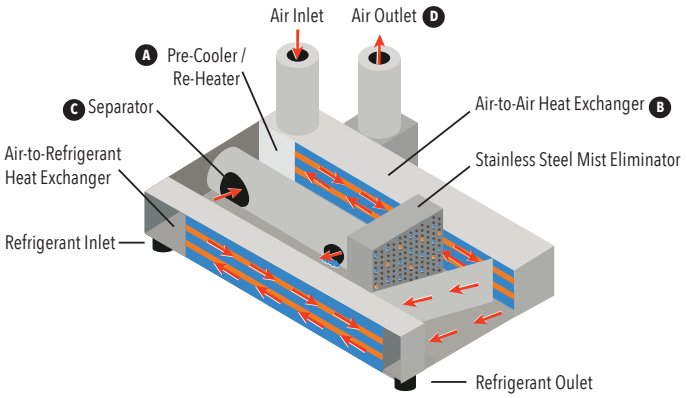
- Timer drain (VF-10 to VF-600)
- Zero air loss drain (VF-800 to VF-2,000)
- Refrigerant suction pressure gauge standard
- Discharge gauge (VF-200 to VF-2,000)
- Inlet pressure gauge (VF-400 to VF-2,000)
- Inlet temperature gauge (VF-400 to VF-2,000)
- Internal, high efficiency separator (VF-10 to VF-600)
- External, high efficiency separator (VF-800 to VF-2,000)
- R-134a refrigerant (VF-10 to VF-800)
- R-404a refrigerant (VF-1,000 to VF-2,000)
- NEMA 1 standard
- NEMA 4 standard (VF-1,6000 to VF-2,000)

VF Series Options

- Various voltage options
- Water cooled condenser
- Condenser cleaner assembly
- Low ambient temperature protection[1]
- Two valve bypass
- NEMA 4
- NEMA 4X
- Corrosion resistant package[2]

[1] Low ambient package brings ambient temperature down to 32°F
[2] Corrosion resistant package includes: NEMA 4 enclosure, e-coated condenser, isolation pads, vibration absorbers, and epoxy painted refrigeration lines

How It Works

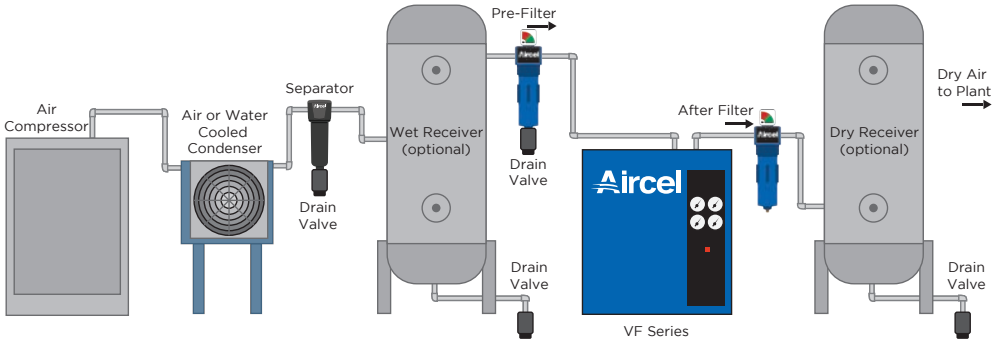


- Saturated, compressed air enters the system and moves into the pre-cooler/re-heater (A), where it is pre-cooled by the cold outgoing air.
- The air is then directed through the air-to-refrigerant heat exchanger (B), where it is cooled to 38°F by the refrigeration system.
- The cold, saturated air flows into the three-stage separator (C), where liquids are removed from the air. This separated condensate is then ejected from the system via the Aircel condensate drain (D).
- The cold, dry air is then reheated by the incoming warm air (E) before leaving the dryer.

Recommended Filtration

To protect your dryer investment, we recommend that you install a high performance pre-filter directly in front of your refrigerated air dryer. By doing this, you will prevent insulating oil and dirt build-up in the heat exchanger and ensure optimal performance and reliability of the dryer throughout its lifetime.

Recommended Installation



Specifications

Model Number	Capacity	Voltage	Connection (NPT)	Weight (lbs)	Dimensions (in.) Height	Width	Depth	Refrigerant	Air-Cooled kW (full load)	Nominal Ref HP Installed (size)	Max. Pressure	Optional Voltage Ratings
VF-10	10	115-1-60	1/2"	70	15	16	16	R-134a	0.29	0.20	232	208/230-1-60; 230-3-60; 430-3-60; 575-3-60
VF-15	15		1/2"	72	15	16	16	R-134a	0.29	0.20	232	
VF-25	25		1/2"	74	15	16	16	R-134a	0.29	0.20	232	
VF-40	40		3/4"	78	15	16	16	R-134a	0.42	0.25	232	
VF-50	50		3/4"	80	15	16	16	R-134a	0.42	0.25	232	
VF-60	60		3/4"	102	15	16	16	R-134a	0.57	0.33	232	
VF-75	75		1"	128	22	24	18	R-134a	0.83	0.50	200	
VF-100	100		1"	132	22	24	18	R-134a	0.83	0.50	200	
VF-125	125		1"	156	22	24	18	R-134a	1.05	0.75	200	
VF-150	150		1"	162	22	24	18	R-134a	1.05	0.75	200	
VF-200	200	230-1-60	1 1/2"	240	30	36	25	R-134a	1.35	1.25	200	230-3-60; 430-3-60; 575-3-60
VF-250	250	460-3-60	1 1/2"	332	30	36	25	R-134a	1.35	1.25	200	208/230-1-60; 230-3-60; 575-3-60
VF-300	300		2"	345	30	36	25	R-134a	1.99	1.50	200	
VF-400	400		2"	567	45	34	45	R-134a	1.99	2.00	200	
VF-500	500		2"	582	45	34	45	R-134a	2.53	3.50	200	
VF-600	600		3"	598	45	34	45	R-134a	4.38	3.50	200	
VF-800	800		3"	790	48	38	54	R-134a	4.38	5.00	200	
VF-1000	1000		3"	800	48	38	54	R-404a	3.81	5.00	200	
VF-1200	1200		3"	852	48	38	54	R-404a	6.25	6.00	200	
VF-1600	1600		4" FLG	1,625	83	41	58	R-404a	7.59	7.00	200	575-3-60; 208/230-3-60
VF-2000	2000		4" FLG	2,250	83	41	58	R-404a	9.19	10.00	200	

Capacity rated in accordance with CAGI ADF 100 @ 100 psig, 100°F inlet, 100°F ambient and a PDP of 38°F

Operating pressure: 40 to 200 psig | **Ambient air temperature:** 40°F to 120°F (32°F with ambient low temperature option) | **Inlet air temperature:** 40°F to 120°F

For larger capacities and custom dryer options, please contact an Aircel factory representative

Capacity Correction Factors

To Size the Dryer Capacity for Actual Conditions

Adjusted Capacity = scfm x (C1 x C2 x C3 x C4)

Example:

Dryer Model: **VF-100**

Standard Capacity: **100 scfm**

Actual Operating Conditions:

90°F ambient: C1 = 1.05

125 psig system pressure: C2 = 1.07

100°F inlet: C3 = 1

38°F required dew point: C4 = 1

Adjusted Capacity: 100 scfm x (1.05 x 1 x 1.07 x 1) = 112.4 scfm

To Size the Dryer Model for Actual Conditions

Adjusted Capacity = scfm / (C1 / C2 / C3 / C4)

Example:

Given Flow: **75 scfm**

Actual Operating Conditions:

80°F ambient: C1 = 1.07

100 psig system pressure: C2 = 1

90°F inlet: C3 = 1.21

38°F required dew point: C4 =1

Adjusted Capacity: 75 scfm / (1.07 / 1.21 / 1 / 1) = 57.9 scfm

Selected Dryer Model: VF-60

Correction Factors for Differing Ambient Temperature (C1)

Ambient Temperature (°F)	70	80	90	**100**	110	115	120
Correction Factor	1.1	1.07	1.05	**1**	0.94	0.85	0.65

Correction Factors for Differing System Air Pressure (C2)

System Pressure (psig)	50	75	**100**	125	150	175	200	225
Correction Factor	0.85	0.95	**1**	1.07	1.13	1.18	1.2	1.22

Correction Factors for Differing Inlet Air Temperature (C3)

Inlet Temperature (°F)	80	90	**100**	110	120
Correction Factor	1.5	1.21	**1**	0.82	0.75

Correction Factors for Differing Pressure Dew Point Requirements (C4)

Dew Point (°F)	**38**	41	45	50
Correction Factor	**1**	1.12	1.17	1.22

DHT Series High Inlet Temperature

Refrigerated Air Dryer | 20 - 125 scfm

The Aircel **DHT Series (20 - 125 scfm)** high inlet temperature refrigerated air dryers are designed for air-cooled, reciprocating type air compressors. This compressed air dryer combines an oversized refrigerated circuit, high-efficiency heat exchangers, and separator into a single compact unit. Also includes single point air in/out, drain, and electrical connections.

These dryers can accept compressed air up to 205°F and provide clean, dry air at the outlet. Our high inlet temperature refrigerated dryers have been **designed specifically for use with smaller reciprocating air compressors that typically do not incorporate an aftercooler.**

DHT Series dryers are perfect for auto body and service shops, as well as anywhere utilizing 5 to 30 HP compressors. With excellent heat transfer coefficients and low pressure drop, these dryers will outperform the competition in protecting your compressed air system, machinery, and tools.

Capacity Flow Suggestion

Air Compressor Size (HP)	Dryer Model	Flow Capacity (scfm)
5	DHT 20	20
7.5	DHT 40	40
10	DHT 40	40
15	DHT 50	50
20	DHT 75	75
25	DHT 100	100
30	DHT 125	125

DHT Series Features

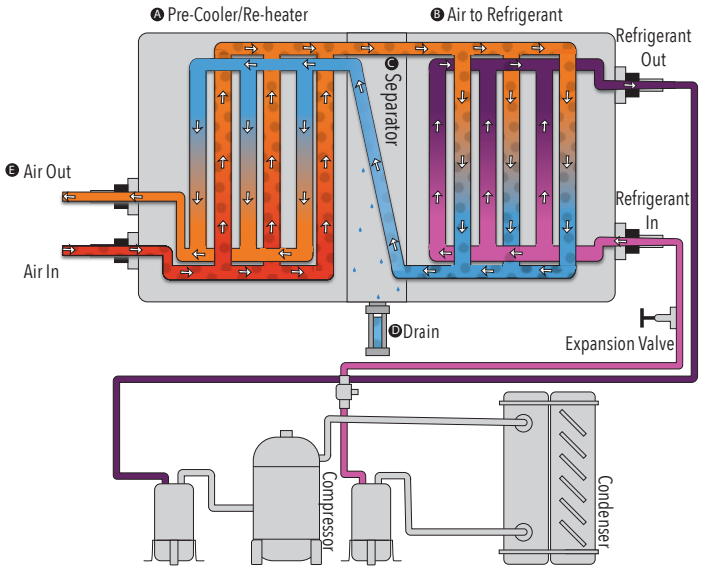
- Timer drain
- Brazed plate heat exchanger (DHT-20)
- Aluminum block heat exchanger (DHT-40 to DHT-125)
- Refrigerant suction pressure gauge
- Discharge gauge (DHT-100 to DHT-125)
- R-134a refrigerant
- NEMA 1 Standard
- Power on-light
- Maximum inlet temperature of 205°F
- Maximum inlet pressure of 200 psig
- Environmentally friendly R-134a refrigerant

DHT Series Options

- Various voltage options
- Water cooled condenser
- Condenser cleaner assembly
- Low ambient temperature protection[1]
- Two valve bypass
- NEMA 4
- NEMA 4X
- Corrosion resistant package[2]

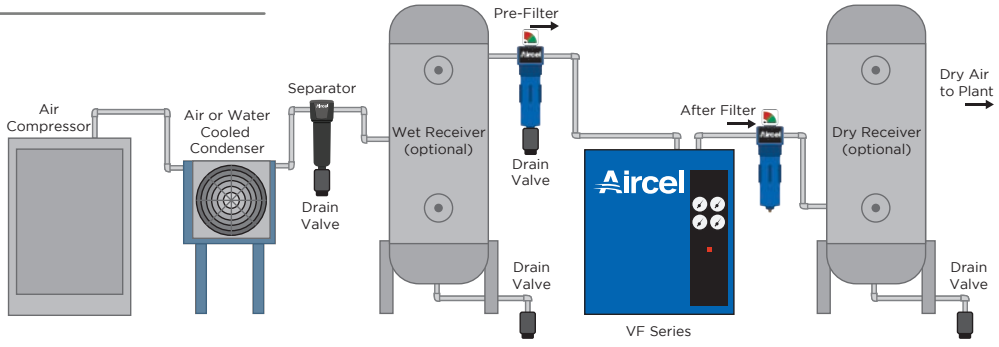
[1] Low ambient package brings ambient temperature down to 32°F
[2] Corrosion resistant package includes: NEMA 4 enclosure, e-coated condenser, isolation pads, vibration absorbers, and epoxy painted refrigeration lines

How It Works



- Hot compressed air (up to 205°F) enters the system and moves into the pre-cooler/re-heater (A), where it is cooled by the cold, dry outgoing air.
- The air is then directed through the air-to-refrigerant heat exchanger (B), where it is cooled to its final dew point by the refrigeration system.
- The cold, saturated air flows into the three stage stainless steel mist eliminator (C), where liquids and contaminants are removed from the air. This separated condensate is then ejected from the system via the Aircel programmable timer drain (D).
- The cold, dry air is then reheated by the incoming warm air (E) before leaving the dryer.

Recommended Installation



DHT Specifications

Model Number	Capacity	Voltage	Connection (NPT)	Weight (lbs)	Dimensions (in.) Height	Width	Depth	Refrigerant	Air Cooled kW	Nominal HP	Max Pressure	Optional Pressure Ratings
DHT-20	20	115-1-60	1/2”	95	15	16	16	R-134a	0.57	0.33	232	208/230-1-60; 230-3-60; 430-3-60; 575-3-60
DHT-40	40		1”	125	22	24	18	R-134a	0.83	0.50	200	
DHT-50	50		1”	140	22	24	18	R-134a	0.83	0.50	200	
DHT-75	75		1”	240	22	24	18	R-134a	1.05	0.75	200	
DHT-100	100		1-1/2”	330	30	36	25	R-134a	1.05	0.75	200	
DHT-125	125	208/230-1-60	1-1/2”	360	30	36	25	R-134a	1.35	1.25	200	230-3-60; 430-3-60; 575-3-60

Capacity rated in accordance with CAGI @ 175 psig, 180°F inlet, 100°F ambient and a PDP of 50°F
Operating pressure: 40 to 200 psig | **Ambient air temperature:** 40°F to 120°F (32°F with ambient low temperature option) | **Inlet air temperature:** 40°F to 205°F
For larger capacities and custom dryer options, please contact an Aircel factory representative

Recommended Filtration

To protect your dryer investment, we recommend that you install a high performance pre-filter directly in front of your refrigerated air dryer. By doing this, you will prevent insulating oil and dirt build-up in the heat exchanger and ensure optimal performance and reliability of the dryer throughout its lifetime.

By protecting your equipment and keeping the dryer efficiency at its best, these filters will literally pay back their cost and more in savings on your monthly energy bill.

To simplify the selection process, Aircel has matched the AF Series to the refrigerated dryer offering in connection size and flow rate.

Capacity Correction Factors

To Size the Dryer Capacity for Actual Conditions

Adjusted Capacity = scfm x (C1 x C2 x C3 x C4)
Example:
Dryer Model: **DHT-100**
Standard Capacity: **100 scfm**
Actual Operating Conditions:
95°F ambient: C1 = 1.03
160 psig system pressure: C2 = 0.96
150°F inlet: C3 = 0.96
50°F required dew point: C4 = 1

Adjusted Capacity: 100 scfm x 1.03 x 0.96 x 0.96 x 1 = 104.8 scfm

To Size the Dryer Model for Actual Conditions

Adjusted Capacity = scfm / (C1 / C2 / C3 / C4)
Example:
Given Flow: **80 scfm**
Actual Operating Conditions:
75°F ambient: C1 = 1.1
200 psig system pressure: C2 = 1.12
150°F inlet: C3 = 1.06
50°F required dew point: C4 =1

Adjusted Capacity: 80 scfm / (1.1 / 1.12 / 1.06 / 1) = 57.9 scfm
Selected Dryer Model: DHT-75

Correction Factors for Differing Ambient Temperature (C1)

Ambient Temperature (°F)	75	85	95	**100**	105	115	120
Correction Factor	1.1	1.07	1.03	**1**	0.96	0.82	0.55

Correction Factors for Differing System Air Pressure (C2)

System Pressure (psig)	30	45	60	75	90	100	115	130	145	160	**175**	190	200
Correction Factor	0.3	0.5	0.7	0.75	0.8	0.83	0.86	0.9	0.93	0.96	**1**	1.1	1.12

Correction Factors for Differing Inlet Air Temperature (C3)

Inlet Temperature (°F)	90	100	150	**180**	200	205
Correction Factor	1.3	1.27	1.06	**1**	0.98	0.90

Correction Factors for Differing Pressure Dew Point Requirements (C4)

Dew Point (°F)	38	41	45	**50**	55	60
Correction Factor	0.65	0.73	0.8	**1**	1.1	1.22

Aircel

MADE IN THE USA

1100 NW Loop 410 #764 · San Antonio, TX 78213 | Phone: +1 (210) 632-6320 | support@airtec.global

Please visit us at: airtec.global