



VF-10 - VF-1200

The **Aircel VF Series (10 - 1,200 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 patented 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 98% throughout the dryer's 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

- Precooling and reheating of compressed air for high efficiency & low energy consumption.
- Stainless steel plate heat exchanger (VF-10 to VF-60).
- Aluminum block heat exchanger with integrated high efficiency separator (VF-75 to VF-1200).
- Environmentally friendly R-134a (VF-10 to VF-800) and R-404a (VF-1000 to VF-1200) refrigerant.
- Refrigerant suction pressure gauge.
- Refrigerant discharge pressure gauge (VF-200 +).
- Inlet pressure and temperature gauge (VF-400 +).
- Advanced scroll technology (VF-500 and up).
- External moisture separator & zero-air loss drain (VF-800 +).
- Heavy-duty industrial powder coated cabinet w/ access panel.
- NEMA 1 Standard.

VF Series Benefits

- Environmentally friendly R-134a & R-404a refrigerant.
- Highly efficient moisture separation.
- Zero-air loss drains standard.
- Precise dew point at any load.
- Reduced power and energy consumption.
- Lightweight & compact.

Sustainable Energy Savings

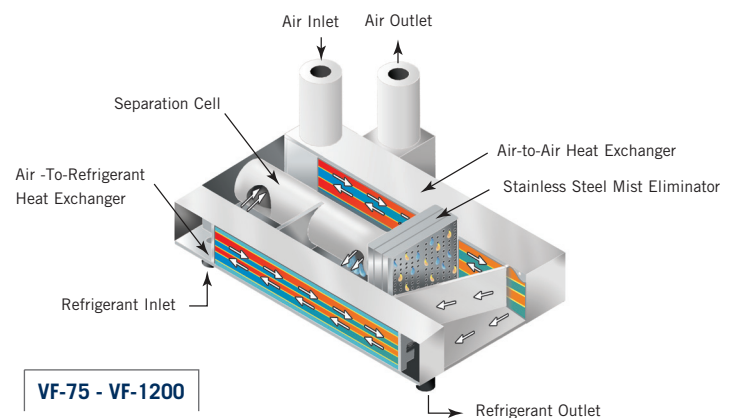
VF Series

Proven Performance from 0-100% Load

VF SERIES How it Works

Hot, saturated compressed air is first pre-cooled by exiting cold air in the air-to-air heat exchanger. The pre-cooled air then enters the evaporator where it is cooled to its final dew point. The mixture of cold air and condensation flows into the three-

stage separator/mist eliminator where liquids and contaminants are reliably removed and ejected from the system via a programmable timer drain valve. The cold air is then reheated by the incoming hot air before leaving the dryer.



VF-75 - VF-1200

VF SERIES TECHNICAL SPECIFICATIONS



VF SERIES Model Comparison

VF COMPACT SERIES	Model	Capacity @ CAGI ¹ (scfm)	Connection (inches NPT)	Nominal Ref HP Installed (size)	Air-Cooled kW (full load)	Full Load Amps	Voltage (Standard)	Dimensions (inches)			Pressure max. (psig)	Weight (lbs)	Refrigerant
								Height	Width	Depth			
	VF-10	10	1/2	1/5	0.15	6	115-1-60	15	16	16	200	71	R-134a
	VF-15	15	1/2	1/5	0.15	6	115-1-60	15	16	16	200	74	R-134a
	VF-25	25	1/2	1/5	0.15	6	115-1-60	15	16	16	200	76	R-134a
	VF-40	40	3/4	1/4	0.24	7	115-1-60	15	16	16	200	78	R-134a
	VF-50	50	3/4	1/4	0.60	7	115-1-60	15	16	16	200	80	R-134a
	VF-60	60	3/4	1/3	0.86	11	115-1-60	15	16	16	200	102	R-134a
	VF-75	75	1	1/3	0.86	11	115-1-60	22	24	18	200	124	R-134a
	VF-100	100	1	1/2	1.33	16	115-1-60	22	24	18	200	138	R-134a
	VF-125	125	1	3/4	1.72	21	115-1-60	22	24	18	200	156	R-134a
	VF-150	150	1	3/4	1.72	21	115-1-60	22	24	18	200	162	R-134a
	VF-200	200	1-1/2	1	1.98	12	230-1-60	30	36	25	200	240	R-134a
	VF-250	250	1-1/2	1-1/2	3.10	5	460-3-60	30	36	25	200	332	R-134a
	VF-300	300	2	1-1/2	3.58	6	460-3-60	30	36	25	200	345	R-134a
	VF-400	400	2	2	4.85	9	460-3-60	45	34	45	175	567	R-134a
	VF-500	500	2	3-1/2	6.53	12	460-3-60	45	34	45	175	582	R-134a
	VF-600	600	3	3-1/2	6.76	13	460-3-60	45	34	45	175	598	R-134a
	VF-800	800	3	5	6.61	15	460-3-60	48	38	54	175	790	R-134a
	VF-1000	1000	3	5	6.84	17	460-3-60	48	38	54	175	800	R-404a
	VF-1200	1200	3	6	10.98	20	460-3-60	48	38	54	175	852	R-404a

¹ Capacity rated in accordance with CAGI ADF 100 @ 100 psig, 100°F inlet, 100°F ambient, and a PDP of 38°F. Ambient air temp.: 35°-120°F, inlet air temp.: 140°F max., operating pressure: 175-200 psig max. Due to a continuous program of product improvement, specification and dimensions are subject to change without notice.

VF SERIES Capacity Correction Factors

To Size the Dryer Capacity for Actual Conditions

$$\text{Adjusted Capacity} = \text{scfm} \times C1 \times C2 \times C3 \times C4$$

To calculate the capacity of a given dryer based on non-standard operating conditions, multiply the standard capacity by the appropriate correction factor(s).

EXAMPLE: Dryer Model: VF-100
Standard Capacity: 100 scfm
Actual Operating Conditions: 90°F ambient temperature: C1 = 1.05
100°F inlet temperature: C2 = 1.0
125 psig system pressure: C3 = 1.07
38°F required dew point: C4 = 1.0

$$\text{Adjusted Capacity} = 100 \text{ scfm} \times 1.05 \times 1.0 \times 1.07 \times 1.0 = 112.4 \text{ scfm}$$

To Select the Dryer Model for Actual Conditions

$$\text{Adjusted Capacity} = \text{scfm} / C1 / C2 / C3 / C4$$

To choose a dryer based on a given flow at non-standard operating conditions, divide the given flow by the appropriate correction factor(s).

EXAMPLE: Given Flow: 75 scfm
Actual Operating Conditions: 80°F ambient temperature: C1 = 1.07
90°F inlet temperature: C2 = 1.21
100 psig system pressure: C3 = 1.0
Required dew point: 38°F pdp: C4 = 1.0

$$\text{Adjusted Capacity} = 75 \text{ scfm} / 1.07 / 1.21 / 1.0 / 1.0 = 57.9 \text{ scfm}$$

Selected Dryer Model: **VF-60**

The Compressed Air and Gas Institute (CAGI) has developed standards to protect users of compressed air & gas equipment. ADF100 the current standard for refrigerated compressed air dryers, specifies the dryers performance to be rated at 100°F inlet temperature, 100°F ambient temperature, and 100 psig system

pressure. To adjust the dryer capacity from these "CAGI conditions" to your specific application, please use the correction factors below for differing ambient air temperatures (C1), inlet air temperatures (C2), system pressures (C3), and varying dew point requirements (C4).

Capacity correction factors for differing ambient air temperature (C1)

Ambient Temperature (°F)	70	80	90	100	110	115	120
Correction Factor	1.10	1.07	1.05	1	0.94	0.85	0.65

Capacity correction factors for differing inlet air temperature (C2)

Inlet Temperature (°F)	80	90	100	110	120	140
Correction Factor	1.50	1.21	1	0.82	0.72	0.61

Capacity correction factors for differing system air pressure (C3)

System Pressure (psig)	50	75	100	125	150	175	200	225	250
Correction Factor	0.85	0.95	1	1.07	1.13	1.18	1.20	1.22	1.24

Capacity 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