

Aircel

Refrigerated Air Dryers

DHT Series

High Inlet Temperature

20 - 125 scfm



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

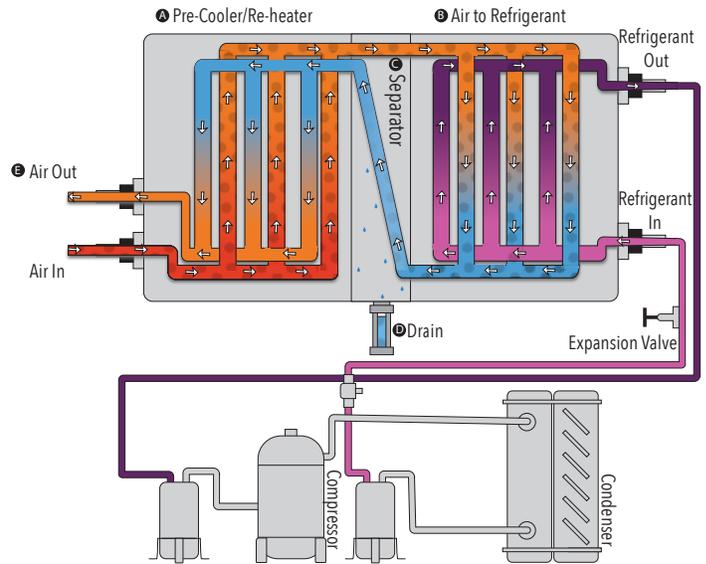
- Timer drain
- Brazed plate heat exchanger (DHT-20)
- Aluminum block heat exchanger (DHT-40 to DHT-125)
- Refrigerant suction pressure gauge
- Discharge gauge (DHT-100 to DHT-125)
- R-134a refrigerant
- NEMA 1 Standard
- Power on-light
- Maximum inlet temperature of 205°F
- Maximum inlet pressure of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

DHT Series Options

- Various voltage options
- Water cooled condenser
- Condenser cleaner assembly
- Low ambient temperature protection¹
- Two valve bypass
- NEMA 4
- NEMA 4X
- Corrosion resistant package²

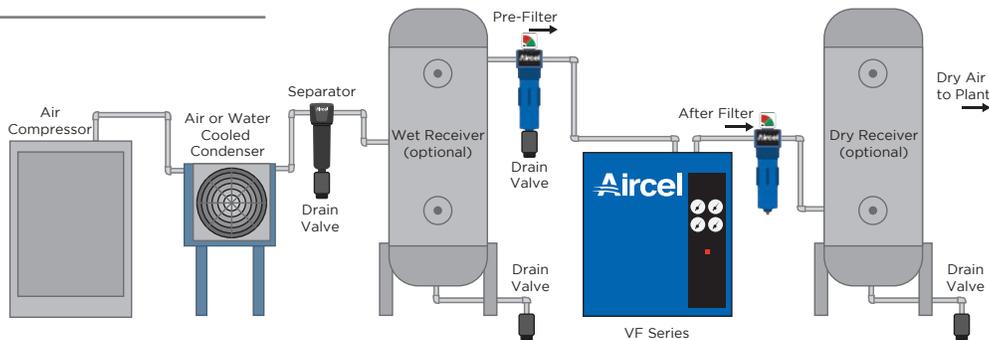
¹ Low ambient package brings ambient temperature down to 32°F
² Corrosion resistant package includes: NEMA 4 enclosure, e-coated condenser, isolation pads, vibration absorbers, and epoxy painted refrigeration lines

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

Dimensions (in.)

Model Number	Capacity	Voltage	Connection (NPT)	Weight (lbs)	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 = 1.12
 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



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Aircel, LLC. reserves the right to update or change specifications at any time without prior notice.