

Corus HTD

High Inlet Temperature Compressed Air Dryer



Donaldson[®] Ultrafilter[®]

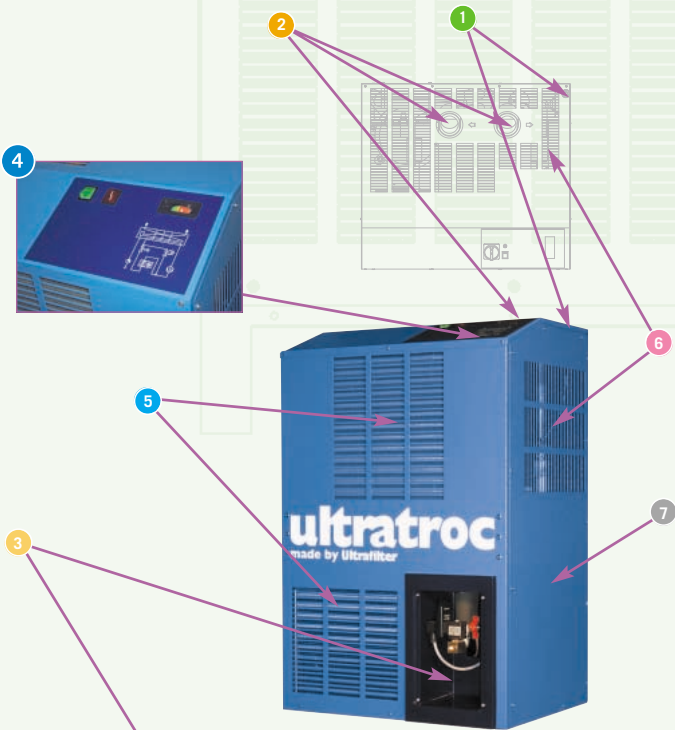
Corus HTD

High Inlet Temperature Compressed Air Dryer



Features

- All-in-one design saves time, space and money
 - a. Quicker installation
 - b. Reduced floor space
 - c. Eliminates need for compressor aftercooler
- Incorporates Ultrafilter's decades of dryer expertise
- Inlet temperatures up to 250°F
- Inlet pressures up to 250 psig
- Operates in ambient temperatures up to 120°F
- Outlet pressure dew point from +38°F to +50°F
- Fully automatic operation
- Environmentally safe R134a refrigerant
- Extended 5-year warranty with optional prefilter



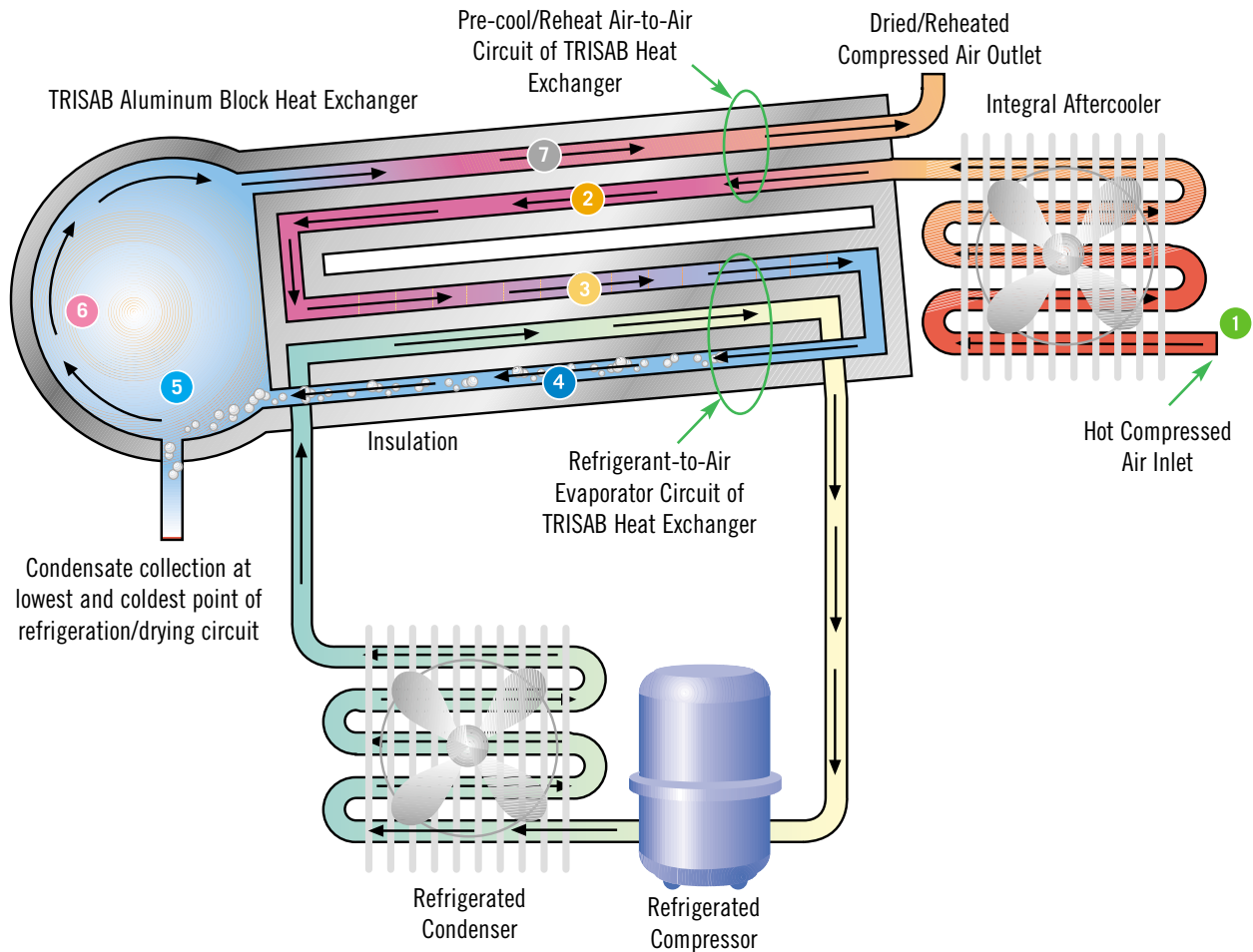
- 1 Power supply
- 2 Compressed air connection
- 3 Condensate drain
- 4 Control panel
- 5 Cooling air - inlet
- 6 Cooling air - outlet
- 7 Service access

The **Corus HTD high inlet temperature compressed air dryer** has been designed specifically for use with smaller air compressors that typically do not incorporate an aftercooler. The **Corus HTD** dryer can accept compressed air from 140°F to 250°F and provide clean dry air at the outlet.

Although some liquid water is removed from air as it gets compressed, the resulting hot compressed air is saturated with water vapor. This air cools as it flows through the plant air system. As it cools, water vapor condenses into liquid which will corrode system components and degrade the process or product using the compressed air.

The performance and capacity of a standard compressed air dryer can be significantly reduced with rising inlet air temperatures. The **Corus HTD** high inlet temperature refrigerated air dryer addresses this problem by incorporating, into a highly compact frame, an air-cooled heat exchanger which cools the inlet air before it enters the drying circuit. In the drying circuit, the air is cooled further to condense additional vapor into liquid, reducing the pressure dew point of the outlet air to 50°F or lower. The liquid is drained and the air pre-warmed as it passes through the final stages of the dryer circuit.

Corus HTD Compressed Air Flow

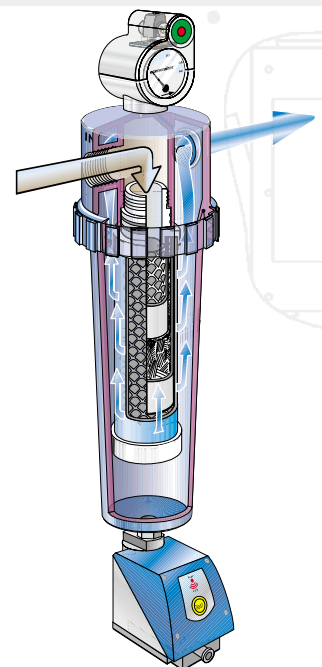


- 1 Hot compressed air, up to 250°F, enters the integral air-cooled aftercooler where it is pre-cooled before entering the drying circuit.
- 2 Additional pre-cooling occurs as the compressed air passes through the first stage of the TRISAB¹ aluminum block heat exchanger.
- 3 Final cooling of the compressed air occurs in the evaporator circuit of the TRISAB heat exchanger. As liquid refrigerant evaporates, it draws heat from the compressed air in nearby channels.
- 4 Water vapor in the compressed air condenses into liquid droplets as the air cools.
- 5 Liquid water condensate is collected and drained at the lowest and coolest point within the drying circuit.
- 6 The compressed air enters a circular chamber² where centrifugal forces help remove all of the liquid water droplets.
- 7 The cold compressed air is reheated in the final stage of the TRISAB heat exchanger as it flows countercurrent to the incoming hot compressed air.

For protection of both the Corus HTD dryer and downstream equipment, Ultrafilter recommends the use of AG Standard or AG Superplus pre- and afterfilters. Depending on element selection, the retention rate of 0.01 µm particles can be as high as 99.99999% and residual oil content can be less than 0.01 ppm. Superplus housings are equipped with Economizer differential pressure gauges for optimum element change-out notification, and with the UFM-T Ultramat zero-loss condensate drain valve. Use of Ultrafilter prefilters extends the warranty of Corus HTD heat exchangers to five years.

¹ Used on models HTD 0040-60 through HTD 0080-60.

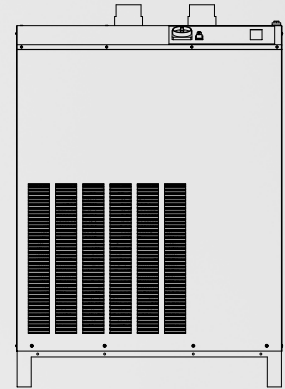
² TRISAB-equipped models only. Others use demister separator.



Corus HTD High Inlet Temperature Compressed Air Dryers

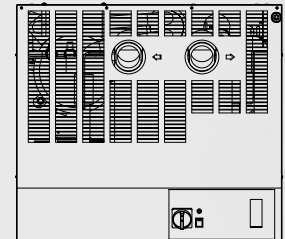
Model	Capacity at 100 psig *	Capacity at 175 psig *	Connection	Dimensions (in.)			Weight (lb)	Power (kW)	Recommended Pre-filter	Recommended After-filter
				Height	Width	Depth				
HTD 0005-60	5	5.6	3/8"	27	14	14	73	0.30	FF/SB0004	FF0004
HTD 0010-60	10	11.2	3/8"	27	14	14	77	0.34	FF/SB0004	FF0004
HTD 0015-60	15	16.8	1/2"	27	14	14	84	0.40	FF/SB0009	FF0009
HTD 0020-60	20	22.4	1/2"	27	14	14	86	0.47	FF/SB0009	FF0009
HTD 0030-60	30	33.6	3/4"	32	18	18	132	0.48	FF/SB0018	FF0018
HTD 0040-60	40	44.8	3/4"	32	18	18	136	0.54	FF/SB0018	FF0018
HTD 0050-60	50	56	3/4"	32	18	18	145	0.58	FF/SB0018	FF0018
HTD 0060-60	60	67.2	1"	37	24	18	158	0.66	FF/SB0027	FF0027
HTD 0080-60	80	78.4	1"	37	24	18	165	0.72	FF/SB0027	FF0027

*Capacity (scfm) related to air-intake of the compressor (68°F, 14.5 psia), compressed air inlet temperature 180°F, ambient temperature 100°F and +50°F pressure dew point.



Capacity relating to differing inlet air temperatures

Model	Inlet Temperature						
	140°F	160°F	180°F	195°F	210°F	230°F	250°F
HTD 0005-60	6	6	5	5	4	4	3
HTD 0010-60	13	11	10	9	8	7	7
HTD 0015-60	19	17	15	14	12	11	10
HTD 0020-60	25	22	20	18	16	15	13
HTD 0030-60	38	34	30	27	25	22	20
HTD 0040-60	50	45	40	36	33	30	27
HTD 0050-60	63	56	50	45	41	37	34
HTD 0060-60	75	67	60	54	49	44	40
HTD 0080-60	88	78	80	63	57	52	47



Capacity correction factors for differing inlet air pressure

Inlet Pressure (psig)	30	45	60	75	90	100	115	130	150	160	175	190	200	220	250
Correction Factor	0.6	0.7	0.8	0.88	0.94	1	1.04	1.06	1.09	1.1	1.12	1.14	1.15	1.16	1.17

Capacity correction factors for differing pressure dew point requirements

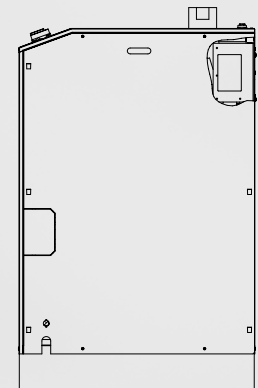
Dew Point (°F)	38	41	45	48	50	53	59
Correction Factor	0.32	0.52	0.75	0.93	1.00	1.13	1.29

Capacity correction factors for differing ambient air temperatures

Temperature (°F)	75	85	95	100	105	115	120
Correction Factor	1.1	1.07	1.03	1.00	0.96	0.82	0.55

Operating Parameters

Inlet Pressure	30 psig min.	250 psig max.
Inlet Temperature	-	250°F max.
Ambient Temperature	35°F min.	120°F max.
Power Supply	115V/1/60HZ	—



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