Gillain & Co

HYGIENIC EQUIPMENT FOR FOOD & LIFE SCIENCES

Combi Dryer

Air Dryer Heat Exchangers Series



General

Providing you with Heat Exchangers and added value accessories in the compressed air market- Alfa Laval offers a complete range of Combidryers for refrigerated air dryers.

Alfa Laval is committed to optimizing the performance of your processes, with complete dedication to your business.
The Combidryer is a brazed plate heat exchanger designed specifically for compressed air dryers, consisting of both the air to air and the air to refrigerant heat exchanger.

Easy installation of the separator is accomplished through convenient connection locations.

Combidryers are designed for high thermal performance and low-pressure drop, covering a capacity range from 37-1400 Nm^3/h (22-825 scfm).

Features and advantages

- Compact size:
  - reduces the total air dryer size
  - significantly reduces the refrigerant hold-up volume
- Highly efficient thermal performance and low pressure drop minimizes power usage.
- Full compatibility with the most common refrigerants.

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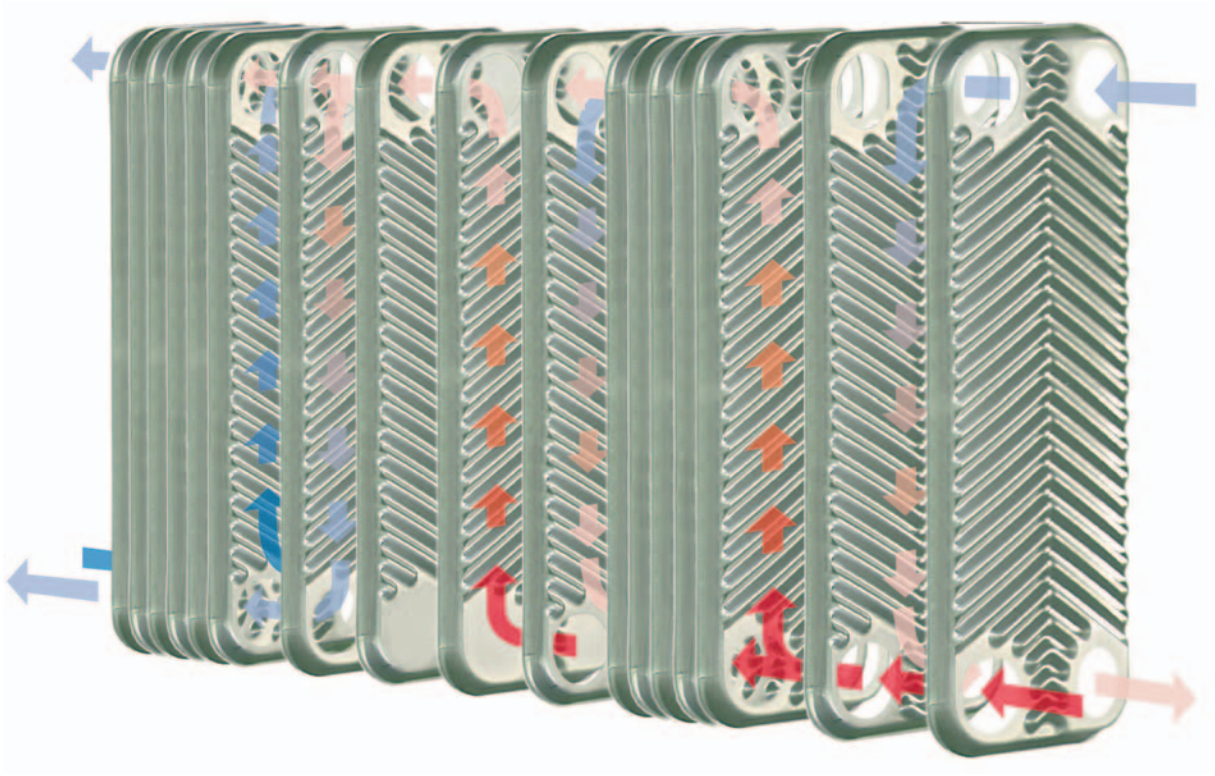


Figure 1

Figure 1. The heating surface consists of thin corrugated stainless steel plates that are compressed together to form a plate pack.
Channels are formed between the plates and the ports are arranged so the media flows through alternate channels in full counter current flow. Media is directed by a brazed seal enhanced with contact points to contain the media flow pressure.

Application refrigerated air dryer (Figure 2)

Refrigerated air dryers separate humidity from compressed air by cooling the air in an evaporator. This cooling effect comes from the evaporation of the refrigerant. As the air cools, it looses its ability to hold moisture. The condensate is then collected and removed in a separator.
A heat recovery air to air heat exchanger that reheats the air to ambient temperature is in the Combidryer for optimal efficiency.

The coldest temperature in the system determines the "dew point". "Dew point" is the temperature at which the water vapor in the air starts to condense in the water separator. This is normally maintained slightly above the freezing point of water, 2-5 °C (35-40 °F).

As you can see in the picture to the right, the humid air enters into the heat exchangers and cools down in the air to refrigerant. This humid air then moves into a separator and then dry air is preheated in the heat recovery side. The total air side pressure drop is typically 20-30 kPa (3-4 psi)

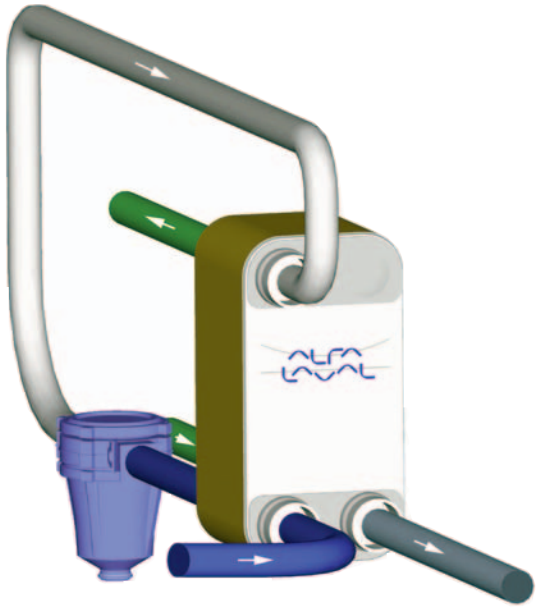


Figure 2



Our Laboratories and R&D

We are continually striving for more efficient, competitive Combidryers through extensive R & D testing in our laboratories.

This research has afforded us the opportunity to refine our expertise – resulting in equipment that achieves optimum performance and greater cost benefits to you.

Our well-equipped laboratories in Italy, Sweden and the USA systematically test Heat Exchanger characteristics to ascertain which yield the best result.



Approvals

All of our Combidryers undergo a burst-pressure sample test that is five times the maximum design pressure. Each unit is pressure tested to 1.5 times the design pressure and is helium leak tested with a helium mass spectrometer.

The Combidryer has rigorous mechanical dimensioning – based on regulations set by pressure vessel inspection offices - incorporated into its design to ensure reliability and safety. Approvals include UL, CSA, TUV and SAQ.

Quality and Materials

Alfa Laval is the world leading producer of Brazed Plate Heat Exchangers for Air Dryers - supplying units to the worlds most demanding manufacturers of compressed air equipment.

Total quality for us means more than our ISO9001 approval. We devote ourselves to providing superior product while increasing the efficiencies of our customer's design and processes.

Only the highest quality materials are used to ensure maximum lifetime and corrosion resistance. The plate material is 316 stainless steel and the brazing material is 99.9% pure Copper. Brazing takes place in a carefully controlled high vacuum environment. The connections are 316L stainless steel to facilitate easy soldering.

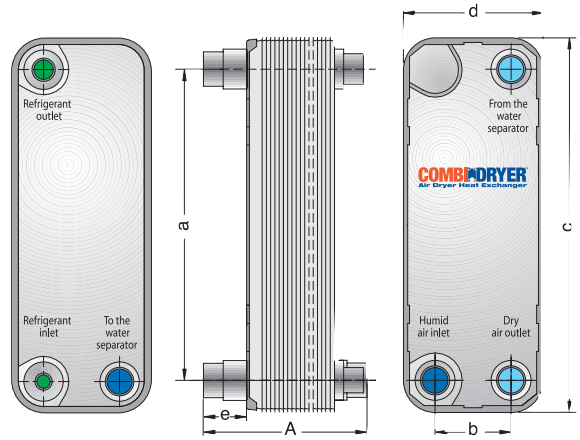
Alfa Laval is a leading global provider of specialized products and engineering solutions. Our equipment, solutions and services are dedicated to assisting customers in optimizing the performance of their processes. Time and time again.

We help you heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuff, starch and pharmaceuticals.

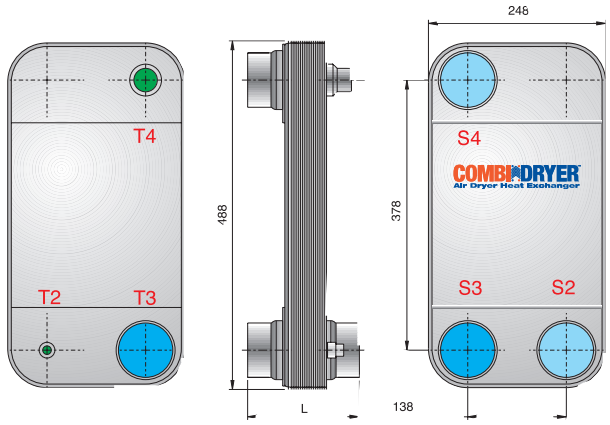
Our worldwide organization works closely with customers in almost 100 countries to ensure that you remain at the height of technology.

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CD100 / CD200



CD300



Type	Dimensions (mm)						Weight
	a	b	c	d	e	A	kg
CD100	172	42	208	78	24	48+2,35xn	0,7+0,06xn
CD200	250	50	310	112	24	50+2,4xn	1,2+0,13xn
CD300	378	138	488	248	49	105,6+2,85xn	4,0+0,35xn

Flow		Unit		Freon Connections	Air Connections
Nm^3/h	scfm	Model	n° of plates		
37	22	CD117	17	3/8"/3/8"	1/2"
55	32	CD125	25	3/8"/1/2"	5/8"
72	42	CD133	33	3/8"/1/2"	5/8"
96	56	CD145	45	3/8"/1/2"	5/8"
111	65	CD226	26	1/2"/5/8"	1 1/8"
147	86	CD234	34	1/2"/5/8"	1 1/8"
182	107	CD242	42	1/2"/5/8"	1 1/8"
213	125	CD250	50	1/2"/5/8"	1 1/8"
244	143	CD258	58	1/2"/5/8"	1 1/8"
284	167	CD270	70	1/2"/5/8"	1 3/8"
325	190	CD281	81	1/2"/5/8"	1 3/8"
400	235	CD2113	113	1/2"/5/8"	1 3/8"
425	250	CD326	26	1/2"/1 3/8"	2 1/2"
500	300	CD334	34	1/2"/1 3/8"	2 1/2"
700	400	CD346	46	1/2"/1 3/8"	2 1/2"
850	500	CD358	58	1/2"/1 3/8"	2 1/2"
1000	600	CD370	70	1/2"/1 3/8"	2 1/2"
1200	700	CD386	86	1/2"/1 3/8"	2 1/2"
1400	825	CD3102	102	1/2"/1 3/8"	2 1/2"

Technical Data	CD100	CD200	CD300
Min working temp	-160°C (-256°F)	-160°C (-256°F)	-160°C (-256°F)
Max working temp	225°C (437°F)	225°C (437°F)	225°C (437°F)
Design pressure	16 bar (232 psig)	30/28 bar (435/406 psig) **(1)**	16 bar (232 psig)
Test pressure	24 bar (348 psig)	39/36 bar (565/522 psig)	21 bar (304 psig)

(1) 50 bar (725 psig) for CD200 HP Series

Based on inlet air conditions of 100 °F sat., 100 psig and an outlet PDP of 38 °F with less than 3 psi pressure drop.

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How to contact Alfa Laval
Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com