

Refrigerated Air Dryers

High Pressure Refrigerated Dryers for PET blowing

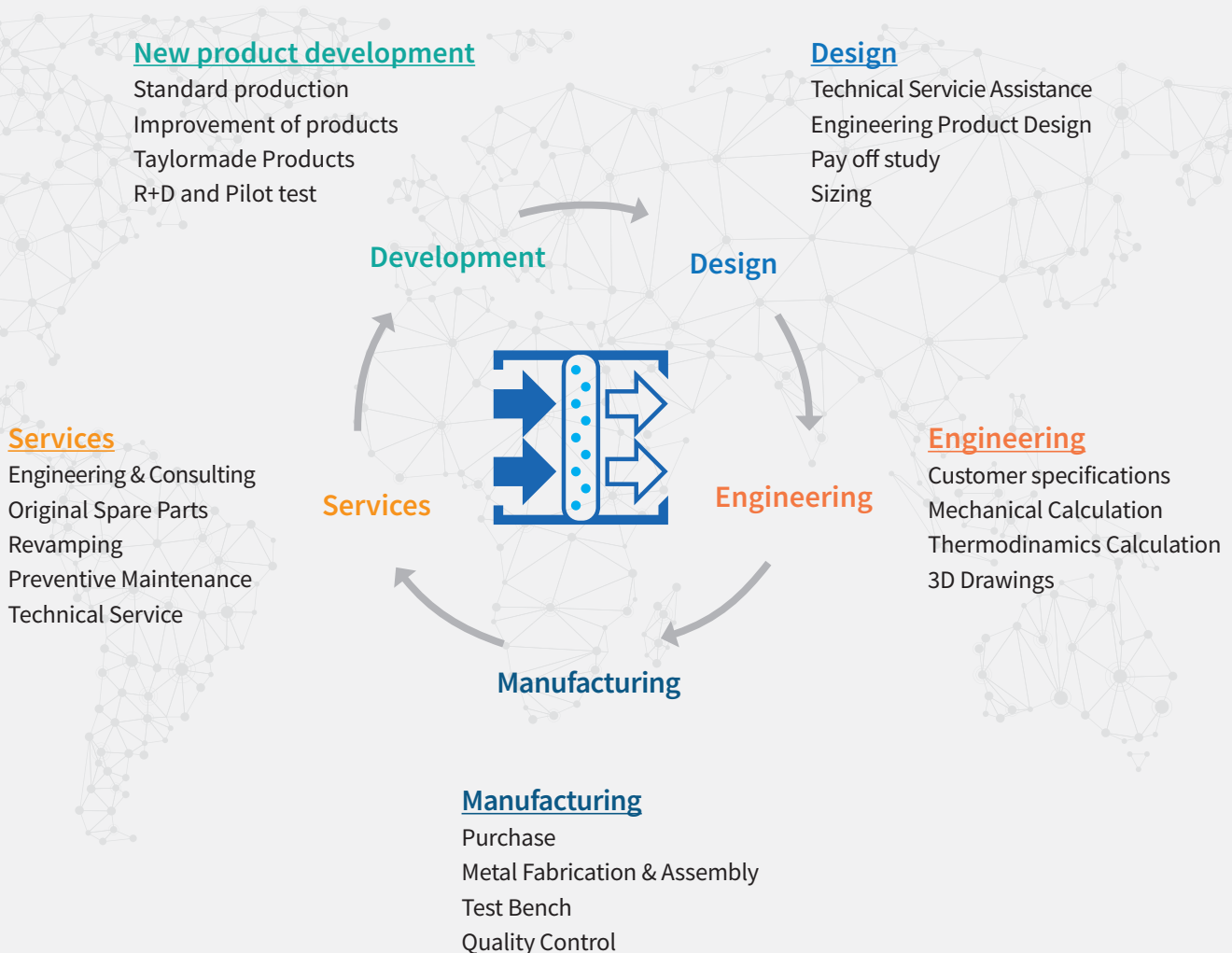


Our company

Since our foundation in 1949 we are a pioneer company in the design, engineering and manufacturing of high technical demanding of Industrial equipment for the integral treatment of air and gases, always committed to the highest standards of Safety and Quality.

In this way, AIRSEC becomes a specialized company and as the only interlocutor of the needs of Industrial and Engineering Companies in the areas of AIR and GAS treatment.

Activities



MARKET SEGMENTS

PET blowing



Food and Beverage



Natural Gas



Industrial Gases



Biogas



Refining & Petrochemical



Chemical Industry



Desalination



Membrane Protection



Metallurgical Industry



Glass Industry



Oil & Gas



Design Codes

ASME Section VIII Div I & II
AD 2000-MERKBLATT
EN-13445
PD:5500
TEMA
API
SELO

Materials

Carbon Steel
AISI 304-316-316L
Super Duplex
Rubber lining

Directive

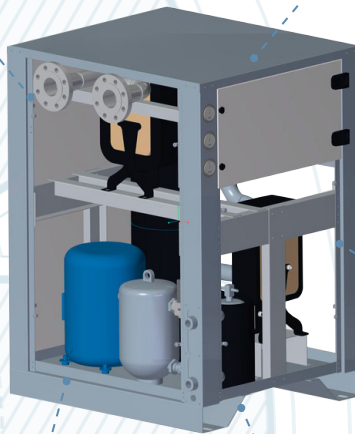
ATEX 2014/34/UE
PED 2014/68/UE
Machinery Safety Directive
2006/42/CE
Low voltage Directive
2006/95/CE
Electromagnetic Compatibility Directive 2004/108/CE

Brazed Plate Heat exchangers

Plate type heat exchangers are made of stainless steel. Their design gives them an excellent thermal performance, as well as reducing both their size and weight. In the case of the air-refrigerant exchanger (evaporator), its optimised design reduces the amount of refrigerant needed in the refrigerating circuit.

Energy saving

The high energy efficiency heat exchangers, together with an optimised design of the compressed air circuit, favour the energy saving of the dryer.



Automatic Drain (zero loss)

By using an automatic drain to remove condensates as they are produced, energy savings are benefited by eliminating compressed air losses.

Hot gas bypass valve

The refrigeration system includes a hot gas bypass valve to prevent condensate freezing in the evaporator, helping to maintain a stable dew point by reducing the flow of air to be treated.

Maintenance

Reliable components are selected and the equipment is designed to minimise operating and maintenance costs throughout their useful life.

The water vapour content in any gas is limited by its temperature. The lower the temperature, the less water in the gas. Refrigerating dryers have a refrigeration system that reduces the gas temperature to +3°C.

Airsec refrigerated dryers reliably and economically remove moisture from compressed air. Manufactured with high quality components which, together with high manufacturing standards, turn them into robust and durable equipment with:

- Treatment without loss of compressed air.
- Stable dewpoint at working pressure of +3°C.
- Pressure drop under 1.5% at 40 bar.
- Efficient heat exchangers.
- Efficient condensates separator, including a demister.
- Automatic electronic drain without loss of air or pressure.
- Stainless steel treated air circuit.
- Compact and lightweight units that require minimal space.
- Low sound level.
- Attractive and customisable design.
- Mounted on a single frame.
- Comfortable access to components for easy maintenance.
- Intuitive control and supervision.
- Environmentally-friendly R-134a refrigerant.
- Refrigeration system with water or air condensation.
- Customisable voltage.
- Low operating and maintenance costs.
- Simple installation, use and maintenance.
- Compliant with PED, SELO and ASME standards.

The compressed air saturated with water vapour enters through the air-air heat exchanger (economizer) where it is pre-cooled before entering the air-refrigerant heat exchanger (evaporator) where its temperature is reduced to the required dewpoint.

As the temperature of the compressed air falls, the water vapour condenses and is taken to the condensate separator, where is accumulated until the automatic drain purges it outside.

Data Sheet

Data Sheet		FD-020BP-WH	FD-030BP-WH	FD-040BP-WH	FD-060BP-WH	FD-090BP-WH	FD-100BP-WH	FD-120BP-WH
Compressed air flow	m³/h	503	753	880	1405	1945	2415	2895
	Nm³/h	440	660	770	1230	1702	2114	2534
Compressed air pressure	barg	30 (máx 40)						
Dryer pressure drop	mbarg	< 0,45						
Compressed air temperature	°C	45						
Ambient temperature	°C	3 / 45						
Compressed air humidity	%	100						
Pressure dewpoint	°C	+3						
Cooling system	-	Water						
Cooling water temperature	°C	35						
Cooling water flow	m³/h	0,9	1,2	1,4	2,2	3,0	3,7	4,4
Refrigerating gas	-	R-134a						
Refrigerating gas load	kg	3	4	5	6	9	10	11
Evap./cond. temperature	°C	0 / 45						
Unit dimensions [LxWxH]	mm	950 x 900 x 1400				1150 x 1000 x 1550		
Unit weight (without transformer)	kg	250	265	300	330	425	430	435
Air connections	300#	1”	1.1/2”		2”		2.1/2”	
Cooling water connections	BSPT	3/4”		1”			1.1/4”	
Automatic drain	-	Included Bekomat						
Condensate drain connection	NPT	1/2"						
Power supply	-	400V-III-50Hz / 460V-III-60Hz						
Integrated transformer	-	Under request						
Absorbed power	kW 50Hz	2,2	2,8	3,1	4,4	6,0	7,1	8,8
	kW 60Hz	2,6	3,3	3,7	5,2	7,2	8,5	10,5
Electrical protection	-	IP-54						
Air circuit materials	-	Stainless steel						
Chassis materials	-	Galvanised carbon steel						
Thermal insulation	-	Included						
Special colour	-	Under request						
Sound level	dB(A)	< 70						

Volume in m³/h at 20°C and 1 absolute bar
 Volume in Nm³/h at 0°C and 1 absolute bar

According to DIN/ISO 7183

Technical specifications subject to changes without previous notice

Correction factors for working conditions others than design:

Inlet air temperature [°C]					Inlet air pressure [bar]				Cooling water temperature [°C]				Dewpoint [°C]		
35	40	45	50	55	25	30	35	40	30	35	40	45	+3	+5	+7
1,18	1,12	1	0,84	0,73	0,97	1	1,03	1,06	1,07	1	0,91	0,83	1	1,11	1,22

Altitude [m]															
0	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000
1	1,023	1,047	1,072	1,097	1,123	1,150	1,178	1,206	1,235	1,266	1,297	1,329	1,361	1,395	1,410

Note:

- An inlet 5 microns filter is recommended
- Working down +3°C could decrease the heat exchanger performance, due to presence of ice.
- Refrigerated dryers for others flows or working conditions could be supply under request.



HIGH PRESSURE REFRIGERATED AIR DRYERS



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