REFRIGERATION DRYERS

Preface

Ostwind, the professional refrigerated air dryer manufacturer proudly present the technology and innovations that unified to bring solutions for customers. Refrigerated Air Dryers helps you to solve the problem of harmful moisture in compressed air system. Excess moisture in your system can harm equipment and ruin processes or product, costing your time and money. This method of drying is very popular as it produces dew points, which are adequate for most applications using well proven technologies that encounter few problems if properly sized, installed and maintained.

Ostwind has continually researched and developed series of products and resulted the heavy duty and highly qualified products, which is bulit and assemblied by reliable components quality. We provide complete range of air dryer products, starts from 0.6 m^3 up to 73.0 m^3 volume flow.
Meantime for the purpose of meeting the market needs, we have researched and developed the energy-saving series combined low dew point compressed air dryer, as well as special drying and purification devices of compressed air or other gas, which are available on request.

We committed to always aim customers' satisfaction, contribute our technology and innovation for a better solution for all.

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Innovation of Ostwind new environmental protection energy-saving refrigeration compressed air dryer

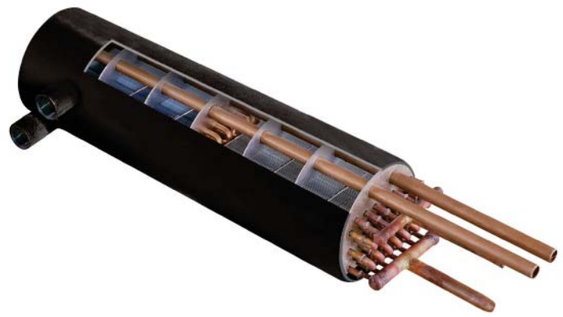
1. High design standard

On the basis of ISO7183-2007 "Compressed Air Dryers Specifications and Test Methods" and JB / T 10526 "General Refrigeration Compressed Air Dryers" standards, and in accordance with the actual working conditions of different regions and users, we have developed the enterprise standards of RS/Q03-2007 "Refrigeration Compresses Air Dryers", which strictly regulate the limited working condition to rhe satisfaction of the required performance and usage.

Over the years, users at home and abroad show that the design of high standards for limited working condition is a prerequisite for ensuring normal usage, which is also the key assurance for "Ostwind" to have a good lead over the industry of refrigeration compressed air dryers.

2. Three-in-one of all-in-one structure

We use the three-in-one structure – the combination of evaporator, precooler and water separator. In this way, not only the effectiveness of heat transfer can be improved, but also the refrigerated air loss can be reduced, namely the whole energy-loss can be reduced, what's more, the effectiveness of water removal is significantly improved. This design brings a compact entity, lightweight and easy fixing.



Its smart and compact design affords easy installation.

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3. Heat exchanger with nanometer hydrophilic film

Of this environmentally-friendly product, we utilize the materials of "High efficiency heat transfer inner grooved copper tube" + "Louvered fin with nanometer hydrophilic film" to manufacture heat exchanger, despite of the high production cost, our heat exchanger can greatly improve the effectiveness of heat transfer, and because of its unique corrosion resistance, its operating life can be 2 to 3 times prolonged.

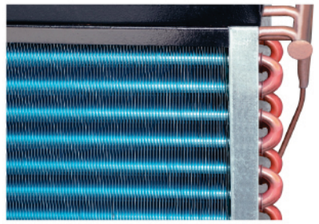
A nm-class hydrophilic film aluminum foil is an kind of material with an excellent anticorrosion and hydrophilic performance, which is prepared from being degreased, washed and dried of the raw material of aluminum foil, coated with special nm material, then dried and cooled. If being used in air condenser, the hydrophilic aluminum foil will disperse the condensed water rapidly so as not to be coagulated into dropets bridge, the result is to expand heat transfer area, increase heat exchange efficiency while avoiding making noise produced by resistance of airflow. Likewise, if being used in evaporator, it allows efficient heat transfer, with slowing frost on the surface of the fin. This nm-class hydrophilic aluminum foil heat exchanger can prolong its useful service life for 5-10 years, although it costs 3 times more than the conventional aluminum foil heat exchanger.

Louvered fin with nanometer hydrophilic film is reprocessed from nm-class hydrophilic film aluminum foil, which is to make the surface of aluminum foil like louvered fin, so as to expand heat transfer area while maximizing heat transfer efficiency.

Benefits of nm hydrophilic film heat exchanger:

1、Excellent anticorrosion self cleaning and hydrophilic performance.
2、Excellent shaped and non-abrasion for mould.
3、Little resistance of airflow, heat transfer rate can be increased by 10%-15%

The refrigerating effect of general refrigeration dryer will be cut down a lot after being used for one year. The main reason of which is the heat transfer efficiency is weakened by jamming heavily or corroding the surface of the condenser. While the condensers coated with nm hydrophilic film have excellent anticorrosion, self cleaning performance, can be cleaned by water directly. After being cleaned, the surface of nm hydrophilic film condensers is just as bran-new one, whose heat transfer efficiency certainly can not be affected.



4. F-free environmental friendly refrigerant

As to be friendly with our earth, we have widely adopted environmentally-friendly refrigerant R407C (R134a for individual specifications) according to different models. R407C is a kind of refrigerant with F-free fluoroalkane zeotropic mixture, the ODP is 0, and it is an environmentally-friendly refrigerant which wouldn't damage the ozone layer. This is currently the universal substitute of R22 in Occident. The usage of such refrigerant in our company, can answer for the national industrial policy, meet the requirements of green environmental protection and contribute to slowing global warming effect as well.

5. Introduced famous compressors and components.

All our environment-friendly refrigeration dryers select famous brand name compressors. And all the fan (refrigerant) pressure controllers of air-cooled dryers are from the original factory products of Danfoss to ensure the stability and reliability of the equipments running. Expansion valve, by-pass valve and other key components are also from Danfoss, Parker, Sporlan, Alco and other brand name products.

6. Easy to operate (microcomputer control)

Our refrigeration dryers are fitted with special integrated control, 5m3/min and bigger models are with electronic module control and specialized in safety, reliability and long use life; Unique on-switch protection function ensures correct operation; Control system fitted with time-drain function (standby) ensures correct drains timely; LED display and pressure gauge ensure clear reading of inlet temperature, dewpoint temperature and ambient temperature.

7. Using multiple safety protection to global conditions

Our dryers are with multiple protection:
1、Independent refrigerant HP/LP protector;
2、Electric overload protection, phase sequence;
3、Second protection for high temperature (computer configuration) ;
4、All the models below 40m^3/min are strictly passed European CE certified.
5、Designed to accommodate globally power standards.

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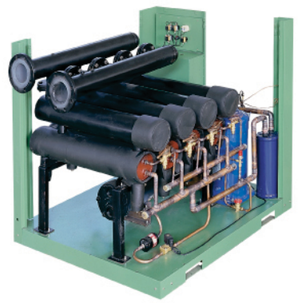
8. Modularization design to facilitate maintenance and service.

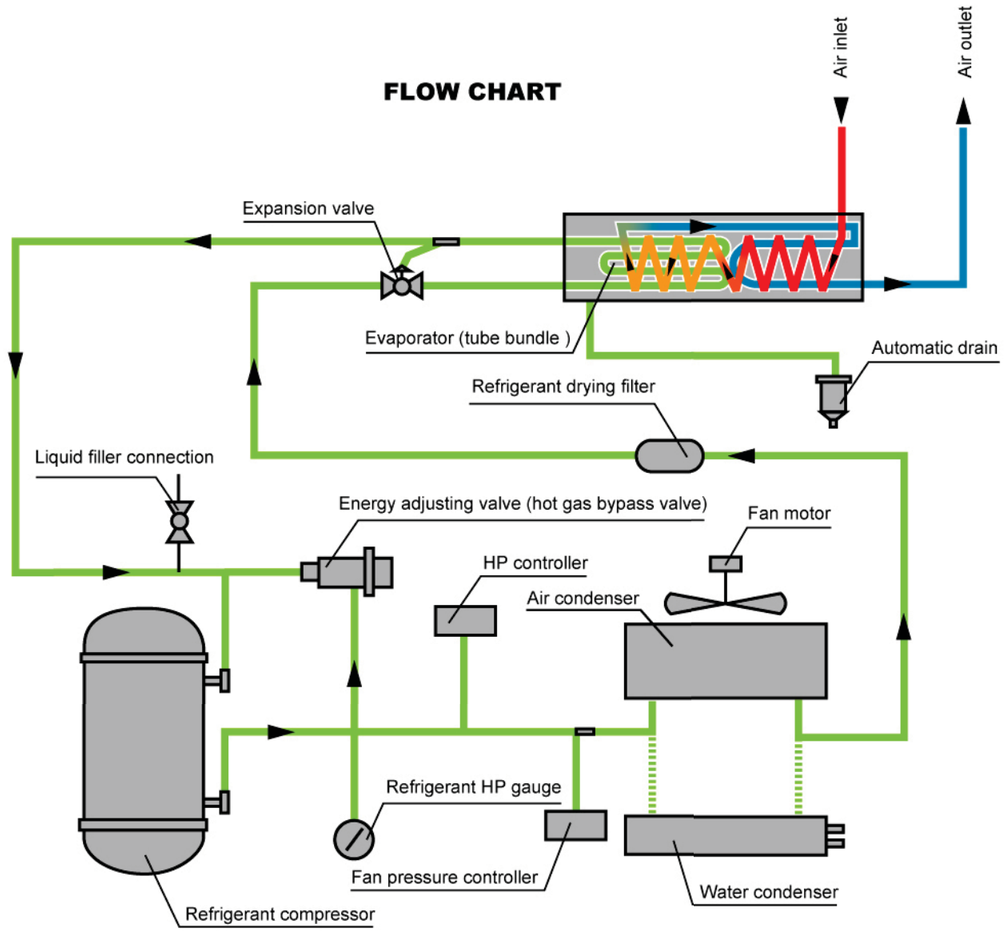


9. The strict test before shipping ensures running stability and reliability of the equipments.

Vibration-testing Platform

Performance testing room

FLOW CHART



Parameter comparison table of standard air cooled type of Refrigeration Compressed Air Dryer

Main performance index	"JB/T10526-2005" standard condition B	Industry design standard	Design standard of Ostwind GEDF products
Rated inlet temp.	38℃	38℃	38℃
Max. allowable inlet temp.	± 1℃	⩽ 45℃	⩽ 60℃
Rated ambient temp.	38℃	38℃	38℃
Max. allowable ambient temp.	± 3℃	⩽ 40℃	⩽ 45℃

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Technical Specification of GEDF-05~GEDF-700 Series Air Cooled Dryers

Model GEDF	Nominal Volume Flow (m^3/min)	Electrical Supply V/Ph/Hz	Nominal Power kw	Air Connections mm	Drain Connections mm	Dimensions in mm			Approx Weight kg	Filter Allocation	Filter Diameter
						L	W	H			
GEDF-05/R134a	0.6	220/1/50	0.3	Rc1/2"	Φ10	550	350	500	40	RSG - * - 0017G	Rc1/2"
GEDF-10/R134a	1.2	220/1/50	0.4	Rc1/2"	Φ10	550	350	500	40	RSG - * - 0017G	Rc1/2"
GEDF-20/R134a	2.4	220/1/50	0.5	Rc3/4"	Φ10	650	350	600	50	RSG - * - 0058G	Rc3/4"
GEDF-30/R407C	3.6	220/1/50	0.7	Rc1"	Φ10	750	360	740	80	RSG - * - 0058G	Rc3/4"
GEDF-40/R407C	4.6	220/1/50	1.1	Rc1"	Φ10	750	360	740	80	RSG - * - 0080G	Rc1"
GEDF-50/R407C	5.0	220/1/50	1.6	Rc1 -1/2"	Φ10	900	380	870	110	RSG - * - 0145G	Rc 1 1/2"
GEDF-60/R407C	6.5	220/1/50	1.8	Rc1 1/2"	Φ10	900	380	870	110	RSG - * - 0145G	Rc 1 1/2"
GEDF-80/R407C	8.8	220/1/50	2.1	Rc1 1/2"	Φ10	900	380	870	120	RSG - * - 0145G	Rc 1 1/2"
GEDF-100/R407C	11.0	220/1/50	2.6	Rc2"	Φ10	1050	380	870	140	RSG - * - 0220G	Rc 2"
GEDF-120/R407C	13.0	220/1/50	3.0	Rc2"	Φ10	1150	450	1200	150	RSG - * - 0220G	Rc 2"
GEDF-150/R407C	17.0	380/3/50	3.8	Rc2"	Φ10	1150	450	1200	170	RSG - * - 0330G	Rc 2"
GEDF-200/R407C	22.0	380/3/50	4.5	Rc2- 1/2"	Φ10	1350	470	1200	200	RSG - * - 0405G	Rc 2-1/2"
GEDF-250/R407C	27.0	380/3/50	4.6	DN80	Φ10	1250	880	1400	400	RSG - * - 0430G	Rc 3"
GEDF-300/R407C	33.0	380/3/50	6.0	DN80	Φ10	1250	880	1400	450	RSG - * - 0620G	Rc 3"
GEDF-350/R407C	37.0	380/3/50	7.6	DN80	Φ10	1400	880	1400	500	RSG - * - 0620G	Rc 3"
GEDF-400/R407C	45.0	380/3/50	8.7	DN100	Φ10	1250	1130	1450	600	RSG - * - 0620G	Rc 3"
GEDF-500/R407C	55.0	380/3/50	11.0	DN100	Φ10	1400	1130	1500	700	RSG - * - 1000F	DN100
GEDF-600/R407C	65.0	380/3/50	12.5	DN100	Φ10	1250	1400	1500	800	RSG - * - 1000F	DN100
GEDF-700/R407C	73.0	380/3/50	13.0	DN125	Φ10	1400	1400	1500	850	RSG - * - 1300F	DN125

Notes : "*" refers to filtration grade. Any change of design won't be informed

Air inlet conditions and technical specifications of standard air-cooled dryers

Nominal pressure dewpoint:2℃~10℃(under rated conditions)

Rated operating pressure: 0.7MPa

Operating pressure range:0.6MPa~1.2MPa(g)(LP&HP is optional)

Rated inlet temp.: 38℃(⩽80℃ is optional)

Max. allowable inlet temp.: ⩽60℃

Rated ambient temp: 2℃~38℃(only for air-cooled type)

Max. allowable ambient temp: ⩽45℃

Cooling water temp:2℃~35℃ (only for water-cooled type)

Pressure drop: ⩽0.02 MPa (Rated operating pressure is under 0.7 MPa)

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Flow correction factors

To obtain dryer capacity at new conditions, multiply capacity x C1 x C2 x C3

Ambient Temperature (C1) air-cooled only

F	90	95	100	105	110	120
C	32	35	38	40	43	49
Factor	1.05	1.08	1.00	0.95	0.90	CF

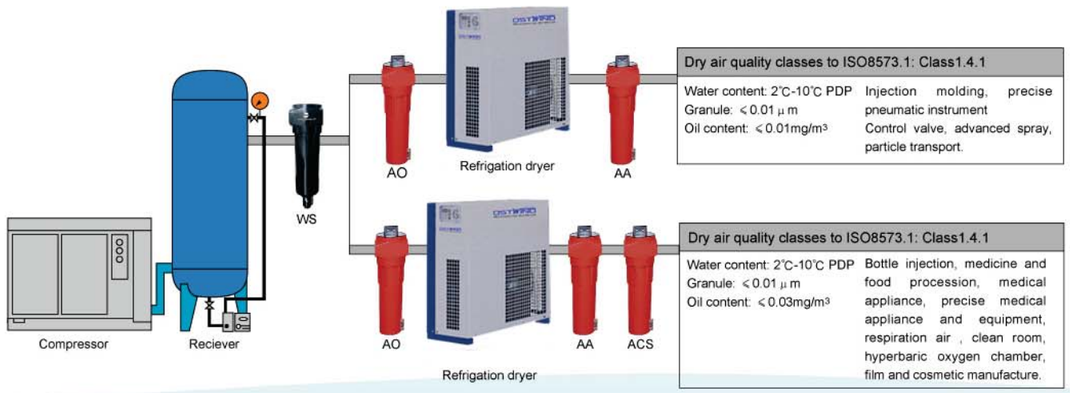
Inlet Temperature (C2)

F	80	85	90	95	100	105	110	115	120	130	140
C	27	30	32	35	38	40	43	46	49	54	60
Factor	1.5	1.36	1.22	1.11	1.00	0.92	0.83	0.76	0.69	0.56	0.46

Inlet Pressure (C3)

psi g	50	60	70	80	90	100	110	120	130	140	150
bar g	3.45	4.14	4.83	5.52	6.21	6.9	7.59	8.28	8.97	9.66	10.4
Factor	0.80	0.84	0.88	0.92	0.96	1.00	1.01	1.02	1.03	1.04	1.05

Appropriate allocation of compressed air purification and drying system:



Dry air quality classes to ISO8573.1: Class1.4.1	
Water content: 2℃-10℃ PDP Granule: ⩽0.01 μm Oil content: ⩽0.01mg/m³	Injection molding, precise pneumatic instrument Control valve, advanced spray, particle transport.

Dry air quality classes to ISO8573.1: Class1.4.1	
Water content: 2℃-10℃ PDP Granule: ⩽0.01 μm Oil content: ⩽0.03mg/m³	Bottle injection, medicine and food procession, medical appliance, precise medical appliance and equipment, respiration air , clean room, hyperbaric oxygen chamber, film and cosmetic manufacture.

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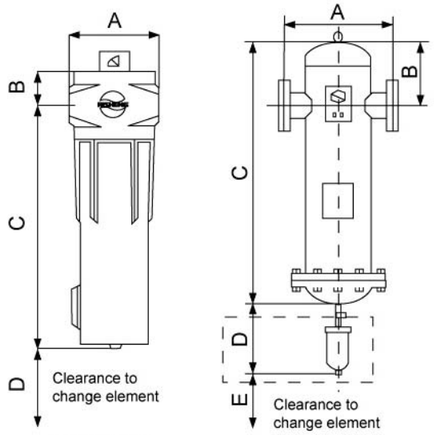
Suitable RSG compressed air filters

All compressed air without purification contains oil, dirt and water etc, these pollutants are resistance for the modern industry to enhance product quality and improve labor efficiency.

RSG Series Compressed Air Filter is a kind of fiber filter (coalescing filter); the filter element is made of import high-quality glass fiber, which can effectively remove the pollutants in the air.



Specification table of RSG compressed air filters (0017G~0620G、1000F~1300F)

Model	Air connection	Flow capacity (m^3/min)	Dimension（mm）					wt (kg)	Element model	qty
			A	B	C	D	E			
RSG - ＊ - 0017G	G 1/2"	1.02	89	42	160	95	-	1.1	L017＊	1
RSG - ＊ - 0030G	G I/2"	1.80	89	42	193	130	-	1.5	L030＊	1
RSG - ＊ - 0058G	G 3/4"	3.48	120	58	252	172	-	2.5	L058＊	1
RSG - ＊ - 0080G	G 1"	4.80	120	58	352	272	-	3.2	L145＊	1
RSG - ＊ - 0145G	G1 -1/2"	8.70	120	58	352	272	-	3.2	L145＊	1
RSG - ＊ - 0220G	G 2"	13.20	162	66.5	509.6	320	-	6.6	L220＊	1
RSG - ＊ - 0330G	G 2"	19.80	162	66.5	816	625	-	10.9	L330＊	1
RSG - ＊ - 0405G	G2 -1/2"	24	200	79	602	400	-	12.9	L430＊	1
RSG - ＊ - 0430G	G 3"	25.8	200	79	602	400	-	12.9	L430＊	1
RSG - ＊ - 0620G	G 3"	40.0	200	79	844	625	-	17.5	L620＊	1
RSG - ＊ -1000F	DN100	60.0	450	201	1140	335	650	115	L330＊	3
RSG - ＊ -1300F	DN125	80.0	500	230	1220	335	650	150	L330＊	4

Notes: " ＊ " refers to filtration grade.
any change of design won't be informed.