DRYBERG®

Refrigeration Dryers and Adsorption Dryers

BERG®
Kompressoren


DRYBERG® RF

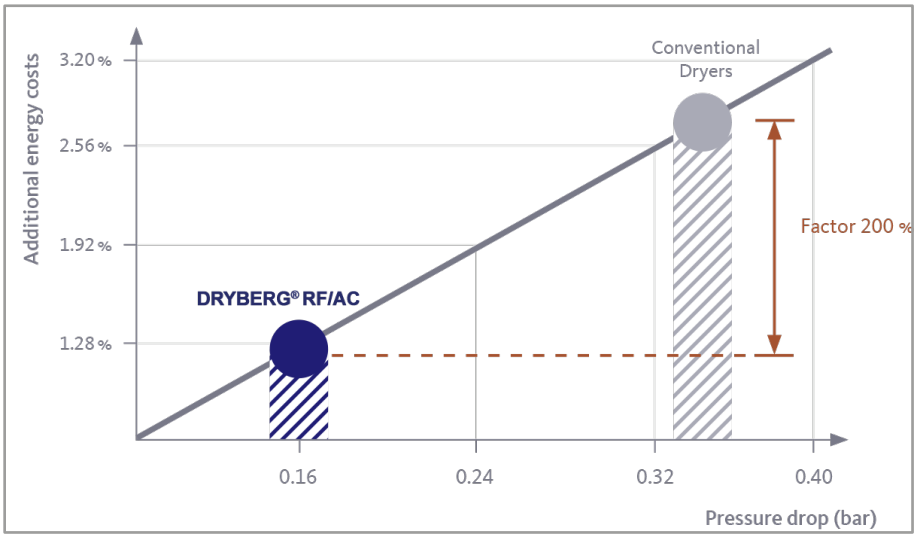
Refrigeration dryer with Energy Saving

DRYBERG® RF/AC

DRYBERG® RF/AC Refrigeration Dryer, the new generation of energy-saving Refrigeration dryers, We not only renew its product offering for the compressed air treatment but also reinterprets the concept of thermal storage operation, that made the international success of the DE Hybrid dryers. The new Impulse Technology offers important advantages in terms of energy-saving, reliability, and operating costs as the DRYBERG® RF/AC is able to adapt itself to the real needs of the compressed air system. The regulation system of the dryer controls the dryer operation granting the most energetically effective method of compressed air drying, achieving high energy saving and ensuring at the same time an excellent dew point stability also in dynamic conditions.

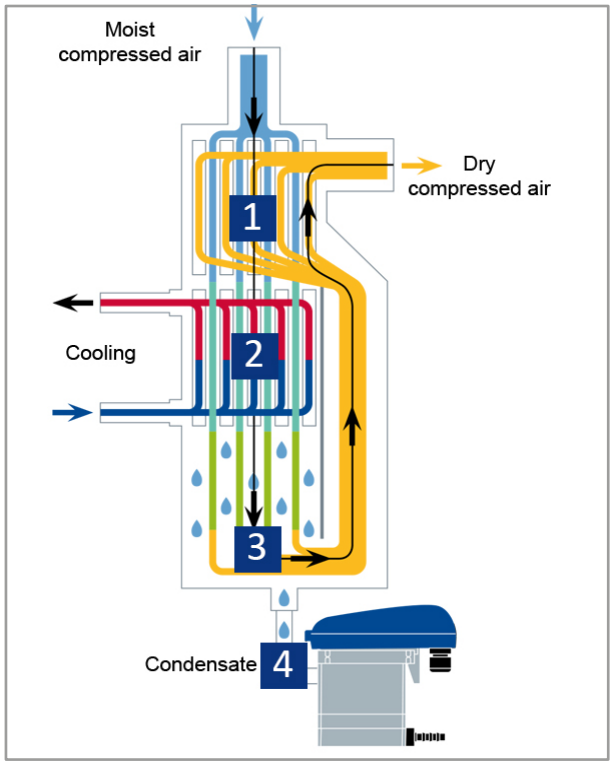
Superior efficiency with minimum pressure loss

A high pressure drop on the refrigeration dryer has to be compensated for by a higher compressor performance and therefore associated increased energy demand.
The consequences are unnecessary energy consumption and much higher operating costs.
This is why the DRYBERG® RF/AC refrigeration dryers pressure drop has been reduced to an absolute minimum. Key elements here include the flow-optimised heat exchanger, a demister for safe separation and generously dimensioned components to ensure a low pressure drop of on average 0.16 bar – in full load operation.



Refrigeration dryer with Energy Saving

Function description



In the DRYBERG® RF/AC refrigeration dryer, the air is dried via a counter-flow process with optimised heat exchange (Counter-Flow) along the entire process path, the air flows in a constant downwards aligned direction without diversions. The generously dimensioned counter-flow heat exchanger unit, which consists of an air-air and an air-refrigerant heat exchanger, among others, cools the compressed air to a temperature of around 3°C. The size and design of the heat exchangers promote effective cooling while minimising flow resistance.

Warm compressed air saturated with moisture is pre-cooled in the air-air heat exchanger when it enters the refrigeration dryer(1).

Consequently, the refrigerating capacity of the refrigerant needed in the downstream air-refrigerant heat exchanger(2) is reduced, making the system more energy-efficient. Gravity supports a very high droplet separation of nearly 99 %. The flow velocity is greatly reduced in the very large condensate collection chamber with subsequent broad return. This reliably avoids any entrainment of droplets which have already been separated(3). The condensate which is produced is drained from the DRYBERG® RF/AC through the level-controlled condensate drain BEKOMAT®(4). Before leaving the DRYBERG® RF/AC outlet, the dried, cold compressed air is re-heated in the air/air heat exchanger. This significantly lowers the relative humidity and recovers up to 60% of the refrigerating capacity used(1).

Easy to handle

- Clear overview of all operating statuses
- Continuous monitoring of condensate discharge
- Unique alarm alerts
- Timely maintenance and service information

Safe and reliable

- Efficient condensate separation through integrated demister
- Optimum protection of the refrigeration cycle

Energy efficient and economical

- Lowest pressure losses due to flow optimised heat exchanger design
- Lowest energy input through balanced refrigerant compressor technology
- No compressed air loss due to effective condensate drainage with BEKOMAT®

Eco advantages

- Adjustment of power consumption to amended drying requirements
- Energy saving with fluctuating volume flow
- Active contribution to sustainability

Refrigeration dryer with Energy Saving

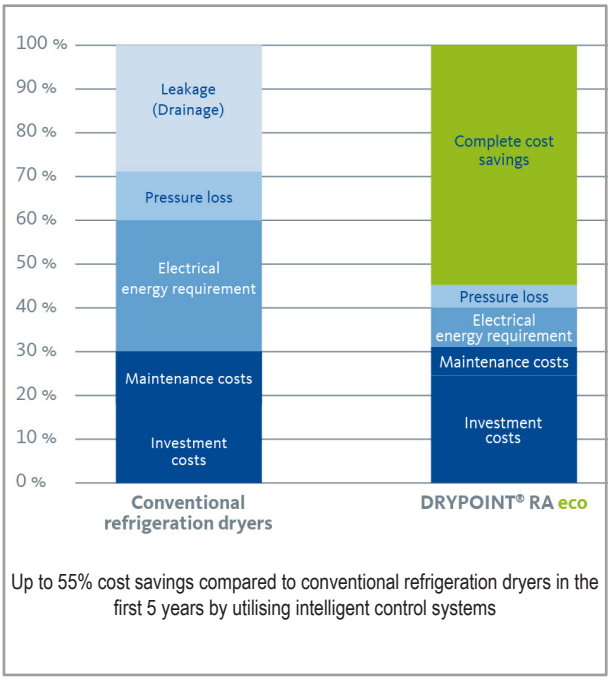
Tried and tested system, intelligently controlledexchanger design and BEKOMAT®

High energy saving potentials are created in compressed-air drying. Refrigeration dryers are always designed for the harshest conditions, that means that the benchmark is set for summer operation with high inlet and ambient temperatures.

Only in rare cases are refrigeration dryers applied with constant full load. This results in high energy-saving potential with a dryer with energy-saving control.

The DRYBERG® RF/AC refrigerated dryer series successfully implements and continues the DRYBERG® RF/AC concept with low pressure loss, optimal heat exchanger design and BEKOMAT®.

Based on that, we have implemented two new control concepts for the different installation sizes, which directly adjust the drying performance to the demand and thereby considerably reduce the energy consumption.



Up to 55% cost savings compared to conventional refrigeration dryers in the first 5 years by utilising intelligent control systems

The biggest savings are from the energy which we do not consume.

Up to 55% cost savings compared to conventional refrigeration dryers in the first 5 years by utilising the intelligent control system.

The DRYBERG RF/AC refrigeration dryer series continues on from the already successful DRYBERG® RF/AC concept with low pressure loss, optimum heat exchanger design and BEKOMAT®. Based on this, we have now developed two new regulating concepts for the different installation sizes, which directly adapt the drying performance to the requirements and thereby considerably reduce energy consumption.

Tried and tested system, intelligently regulated

The DRYBERG® RF/AC eco refrigeration dryer represents optimised resource efficiency:

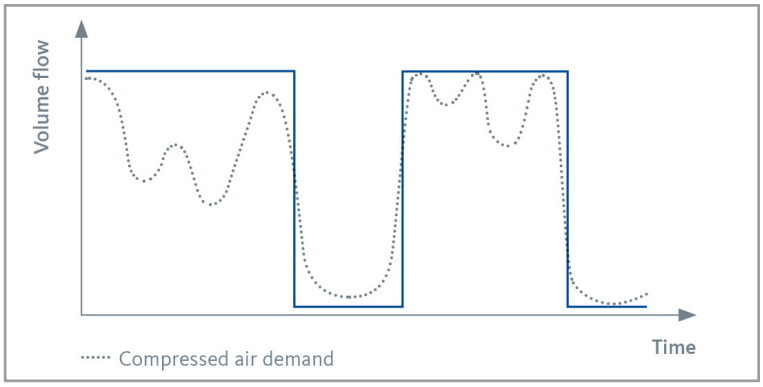
The area of application is where compressed air systems and products must be reliably protected against condensate and contamination. The drying is executed via cooling the air. The resulting condensate is efficiently discharged via the BEKOMAT® without compressed air losses.

Reheating reduces the relative humidity of the dried air to less than 30%. The absorbed amount of energy is adapted to the required dryer performance. This method not only saves energy costs but also protects the environment.

DRYBERG® RF 1-16 /AC

Energy efficiency by utilising intelligent cycling system

For volume flow rates of less than 1,000 m³/h, the DRYBERG® RF/AC operates as a cycling dryer in which the refrigerant compressor is switched off according to demand. The intelligent cycling system is executed dependent from the drying requirement and is regulated in such a way that the switching off times will be optimally extended.

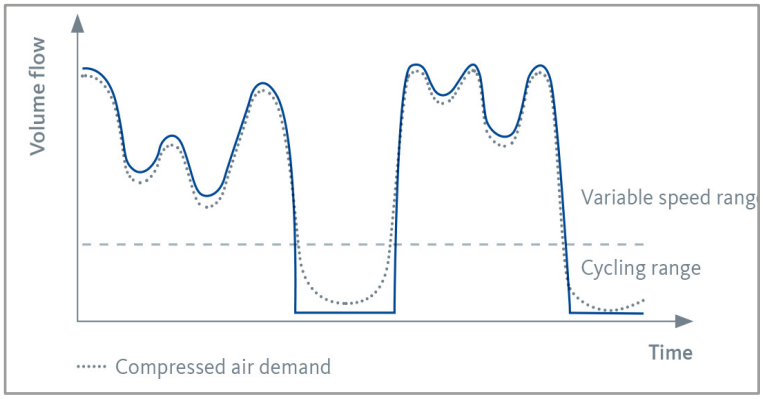


- For volume flow rates <1,000 m3/h
- Save energy costs with demand-drivenswitching for the refrigerant compressor
- Display of percentage energy savings
- Potential-free contact for transmitting alarm messages

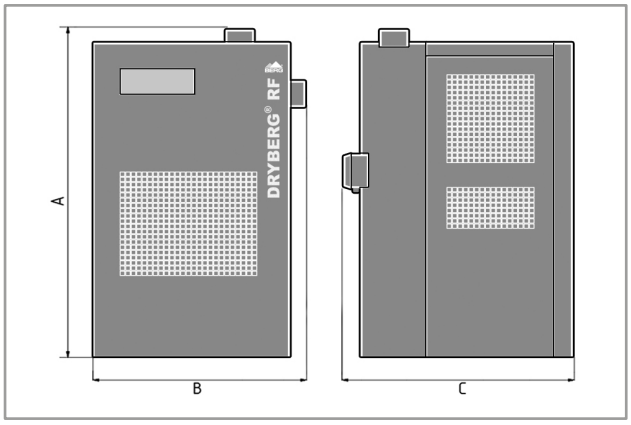
DRYBERG® RF 19-90 /AC

Optimal combination of energy saving and drying performance

For volume flows of more than 1,000 m³ / h, the DRYBERG® RF/AC controls the variable speed of the refrigerant compressor with the cycling system. At these high output rates, the fan is also frequency-controlled, resulting in optimised dryer performance combined with lowest possible energy consumption.



- For volume flows > 1,000 m³/h
- High energy savings with fluctuating drying requirements due to the unique combination of frequency and intermittent control systems
- Use of low-vibration and energy-efficient scroll compressors
- Intuitive 4.7” touch screen for easy and fast functional check - also for the integrated BEKOMAT®
- Potential-free contact for transmitting alarm messages
- RS485 interface provides the option of external control and monitoring
- Recording of alarm situations/alarm messages



Technical Data of Refrigration Dryer DRYBERG® RF / AC

Model	Nominal airflow		Dimension (A×B×C)	Power Supply	Nominal absorption power	Weight	Air connection
	[m³/min]	[m³/h]	[mm]		[kW]	[kG]	
RF 01 / AC	1.2	72	475×370×515	230/1/50	0.21	28	G ½"
RF 02 / AC	1.8	108	475×370×515	230/1/50	0.29	32	G ½"
RF 03 / AC	3.2	192	740×345×445	230/1/50	0.48	39	G 1 ¼"
RF 04 / AC	4.3	258	740×345×445	230/1/50	0.71	40	G 1 ¼"
RF 05 / AC	5.2	312	825×485×455	230/1/50	0.72	50	G 1 ¼"
RF 06 / AC	6.1	366	885×555×580	230/1/50	0.82	54	G 1 ½"
RF 08 / AC	7.5	450	885×555×580	230/1/50	0.71	56	G 1 ½"
RF 10 / AC	10.5	630	975×555×625	230/1/50	0.92	56	G 2"
RF 13 / AC	13.0	780	975×555×625	230/1/50	1.40	94	G 2"
RF 16 / AC	16.8	1008	1105×665×725	230/1/50	1.50	144	G 2 ½"
RF 19 / AC	19.0	1140	1100×645×920	400/3/50	2.10	170	G 2 ½"
RF 22 / AC	21.0	1260	1465×790×1000	400/3/50	2.55	242	DN 80-PN16
RF 25 / AC	25.0	1500	1465×790×1000	400/3/50	2.85	275	DN 80-PN16
RF 32 / AC	30.0	1800	1465×790×1000	400/3/50	3.10	276	DN 80-PN16
RF 39 / AC	36.8	2208	1465×790×1000	400/3/50	3.50	311	DN 80-PN16
RF 45 / AC	40.0	2400	1750×1135×1205	400/3/50	4.30	463	DN100-PN16
RF 52 / AC	50.0	3000	1750×1135×1205	400/3/50	4.80	538	DN100-PN16
RF 60 / AC	60.0	3600	1750×1135×1205	400/3/50	5.60	540	DN100-PN16
RF 74 / AC	73.6	4416	1750×1135×1205	400/3/50	6.40	612	DN100-PN16
RF 90 / AC	90.0	5400	1810×1300×1750	400/3/50	8.40	830	DN150-PN16
RF110 / AC	110.4	6624	1810×1300×1750	400/3/50	10.80	940	DN150-PN16

Working pressure bar [g]	4	5	6	7	8	10	12	14
Correction factor F1	0.77	0.86	0.93	1.00	1.05	1.14	1.21	1.27

Air inlet temperature [°C]	25	30	35	40	45	50	55
Correction factor F2	1.20	1.11	1.00	0.81	0.67	0.55	0.45

Ambient temperature [°C]	25	30	35	40	45
Correction factor F3	1.00	0.95	0.88	0.79	0.68


DRYBERG® AD
BERG

Heatless Adsorption Dryer

DRYBERG® AD

Permanent high compressed air quality

BERG® compressed air treatment systems provide customized solutions for specific purposes. The compact aluminum type DRYBERG® AD for volume flows up to 110 m3/h. A permanent high compressed air quality is a feature of our product DRYBERG® AD.The use of high-quality desiccants in combination with intelligent controls assures consistent compressed air and compressed gas quality and stable dew points. Non-electric change-over valves assure reliable and risk free operation. High quality blow off valves extend the operating life, minimize service times and simplify maintenance significantly.

The cost effective operation and functionality supplement the exceptional price performance ratio.The intelligent controller with flexible time settings guarantees less energy than dryers with fixed cycle time settings and saves service costs due to the lower number of load changes.

By configuring individual time intervals significant energy saving is possible.The compressor synchronizing circuit that is integrated in the controller as standard saves additional energy because the DRYBERG® AD operates only when the compressor is working. Consequently, no regeneration (purge) air is wasted during stand-by periods. Large cross sections at inlets and outlets, in internal and external pipe lines as well as valves and silencers ensure high flow capability.

High-end aluminium profile line

An extremely solid construction offers a long operating life, low failure rates and a problem free installation. All sizes of dryers can be fixed to the floor. An aluminium profile that was developed specially for this application offers optimal flow conditions in the desiccant and maintains a stable pressure dew point as a result of its good design with sufficient desiccant volume.

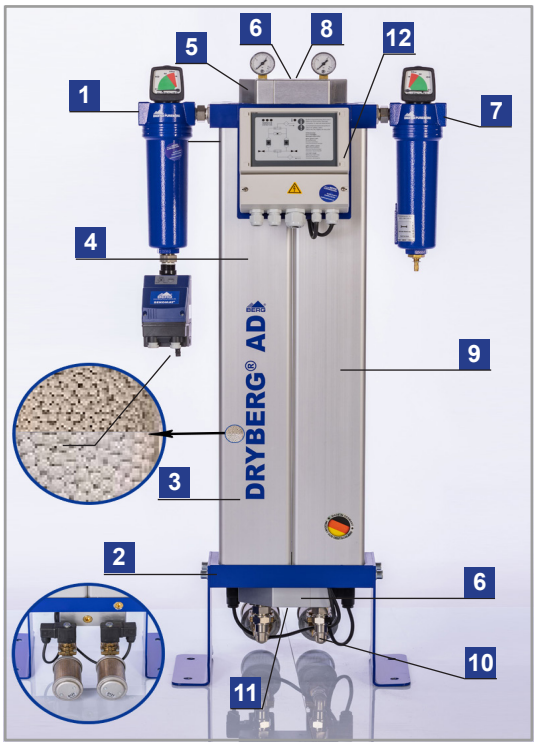
The DRYBERG® AD standard version secures a pressure dew point of -40°C. The optional AD version is available on request for a pressure dew point of -70°C.

Two large dimensioned silencers provide more reliability than other devices on the market.

PUREBERG® FSW prefilter and FDW after filter are certainly part of the scope of supply. The FSW prefilter offers best filtration of entering particles and water or oil droplets. This increases the operational reliability and service life of the AD drying unit significantly. The after filter FDW assures safe filtration of the unavoidable desiccant dust on the discharge side.

Heatless Adsorption Dryer

1 PUREBERG® FSW pre-filter
2 Inlet diffuser
3 Wet zone for pre-drying
4 Desiccant vessel (here in adsorption phase)
5 Outlet diffusor
6 Inlet shuttle valve
7 PUREBERG® FDW final filter
8 Purging air nozzle (outlet shuttle valve)
9 Desiccant vessel (here in regeneration phase)
10 Blow-off valves
11 Silencers
12 Electronic control device



Function

Pre-filtration: The PUREBERG® FSW pre-filter simply seperates all solid and liquid components from the saturated compressed air stream. Accumulated condensate is released reliably and without pressure loss by the electronic level controlled BEKOMAT®.

Adsorption: The pre-cleaned compressed air is distributed across the so-called wet-zone via the flow diffusor from the bottom of the adsorption vessel across the desiccant bed. The actual process through adsorption of the water molecules to the large internal surface of desiccant is performed.

Final-filtration: After passing through the whole desiccant bed, the flow diffusor an the outlet shuttle valve, the treated compressed air enters the final- filter PUREBERG® FDW for the final dust filtration. High purified compressed air is now available.

Regeneration / Desorption: Simultaneously to the adsorption process one vessel the desiccant in the other vessel is regenerated. A part of the already dried compressed air is directed into the regenerating vessel through a purge air orifice in counter flow direction to adsorption. By using the physical effect of pressure release to atmospheric pressure the regeneration air dries the moist desiccant highly effectively. The moisture is exhausted via a blow-off valve and a silencer.

Heatless adsorption dryer DRYBERG® AD

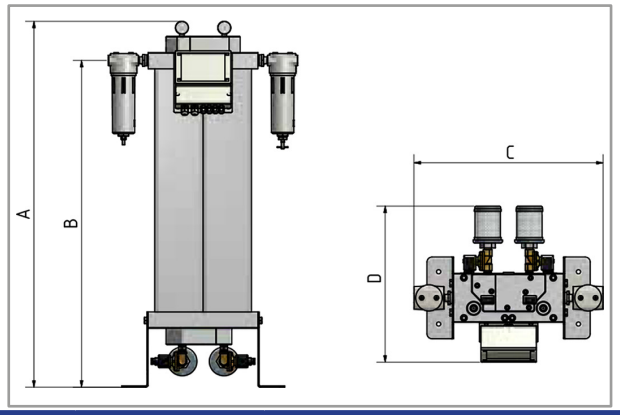
including:

- Operating control and monitoring by controller system including compressor unload stand-by
- PUREBERG® FSW prefilter with float drain (to remove oil mist, dust and condensate water droplets)
- BEKOMAT condensate drain, guarantees maximum safety and performance as a true system solution.
- PUREBERG® FDW final dust filter with manual drain

Specifications and field of application

Pressure dew point	-25 °C to -40 °C (-70 °C on request MS version)
Media	Compressed air
Min./Max. operating pressure	4 bar g / 16 bar g (PD-S0110:max. 13.5 bar g)
Inlet temperature	+20 °C up to +50 °C
Power supply	32 W, 230 V, 50-60 Hz
Protection class	IP 54
Purge air (average)	14%*
Installation site	installation inside in a non-aggressive atmosphere

* at standard inlet conditions 7 bar g and 35 °C



Technical Data of Heatless Adsorption Dryer DRYBERG® AD

Model	Nominal airflow		Dimension (A×B×C×D)	Weight	Air connection
	[m³/min]	[m³/h]	[mm]	[kG]	
AD 20	0.33	20	823×735×376×316	20	G ⅜"
AD 35	0.58	35	872×767×463×419	36	G ⅜"
AD 50	0.83	50	972×867×463×419	40	G ⅜"
AD 70	1.16	70	979×860×536×442	58	G ½"
AD 90	1.50	90	1119×1000×536×442	65	G ½"
AD 110	1.83	110	1299×1180×1180×442	73	G ½"

*calculated at 1 bar (abs.) and 20°C at 7 bar g operating pressure and 35 °C compressed air inlet temperature (saturated condition)

	Dew Point - Correction factors		
Operating temperature [°C]	-25	-40	-70
Correction factors F1	1.05	1.00	0.95

	Operating pressure [bar g] - Correction Factors F2												
	4	5	6	7	8	9	10	11	12	13	14	15	16
Inlet temp (°C) 35	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.55	1.60	1.65	1.70	1.76
40	0.55	0.66	0.77	0.88	0.99	1.10	1.21	1.32	1.43	1.54	1.65	1.70	1.76
45	0.42	0.50	0.59	0.67	0.76	0.84	0.92	1.01	1.09	1.17	1.26	1.34	1.47
50	0.35	0.41	0.48	0.55	0.62	0.69	0.76	0.83	0.90	0.96	1.03	1.10	1.17


DRYBERG® AD

Heatless Adsorption Dryer

DRYBERG® AD

Economical and service friendly

You will profit with DRYBERG® AD many times simultaneously. The DRYBERG® AD cold-regeneration adsorption dryer, combined with a PUREBERG® compressed air upstream filter and optional BEKOMAT® condensate drain off, guarantees maximum safety and performance as a true system solution. The energy-saving compressor synchronisation control system provides a considerable reduction in operating costs, as no regeneration air is utilised during the compressor downtime. In addition, energy costs are saved due to the low pressure drop of just an average of 0.35 bar, including upstream and downstream filters.

The ongoing controlling and control system for the dryer is also impressively reliable and cost-effective.

The potential-free alarm contact of the DRYBERG® AD enables it to be connected to a control room for remote monitoring and switching off. The DRYBERG® AD impresses as particularly service friendly for regular servicing, maintenance and in case of repair works. One example is the simple, rapid and clean exchange of cartridges during service works.

Silencers and piston valves

Two large dimensioned silencers provide more reliability than other devices on the market. PUREBERG® FSW pre lter and FDW after filter are certainly part of the scope of supply. The FSW prefilter offers best filtration of entering particles and water or oil droplets. This increases the operational reliability and service life of the DRYBERG® AD unit significantly. The after filter FDW assures safe filtration of the unavoidable desiccant dust on the discharge side.

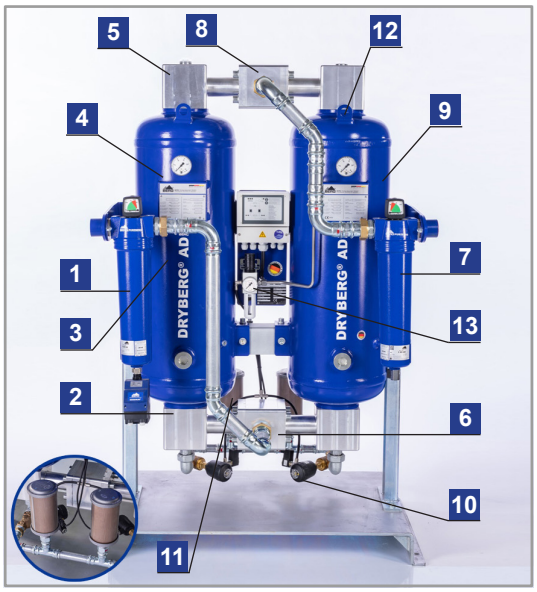
The perfect standard range

A extremely solid construction o ers a long operating life, low failure rates and a problem free installation. All sizes of dryers can be fixed to the floor. The diffusor integrated in the welded pressure vessels offers optimal flow conditions in the desiccant and maintains a stable pressure dew point as a result of its good design with sufficient desiccant volume. The DRYBERG® AD standard version secures a pressure dew point of -40°C. The optional DRYBERG® AD version is available for a pressure dew point of -70°C.

Switch-over

Once the regeneration process is done the pressure build up in the vessel is started by closing the purge valves. After reaching the operating pressure the air flow is changed from the adsorbing vessel to the freshly regenerated vessel. Adsorption now commences in the freshly regenerated vessel, while the other vessel enters its regeneration cycle.

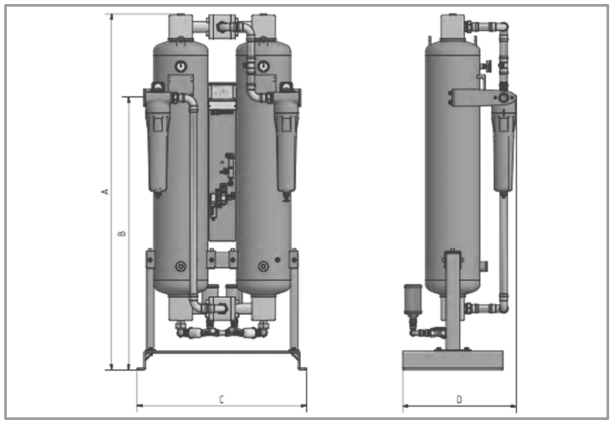
1 PUREBERG® FSW pre-filter
2 Inlet diffuser
3 Wet zone for pre-drying
4 Desiccant vessel (here in adsorption phase)
5 Outlet diffusor
6 Inlet shuttle valve
7 PUREBERG® FDW final filter
8 Purging air nozzle (outlet shuttle valve)
9 Desiccant vessel (here in regeneration phase)
10 Piston blow-off valves
11 Silencers
12 Electronic control device
13 Control pressure gauge for piston valves



High-end heatless adsorption dryer DRYBERG® AD

including:

• Operating control and monitoring by controller system including compressor unload stand-by
• PUREBERG® FSW prefilter with float drain (to remove oil mist, dust and condensate water droplets)
• BEKOMAT condensate drain, guarantees maximum safety and performance as a true system solution.
• PUREBERG® FDW final dust filter with manual drain
• Piston blow-o valves incl. control pressure gauge



Technical Data of High-end heatless adsorption dryer DRYBERG® AD

Model	Nominal airflow [m³/min]	Nominal airflow [m³/h]	Dimension (A×B×C×D) [mm]	Weight [kG]	Air connection
AD 150	2.5	150	1304×853×745×650	174	G 1”
AD 210	3.5	210	1543×853×745×650	212	G 1”
AD 340	5.7	340	1531×1008×954×715	354	G 1 ½”
AD 480	8.0	480	1630×1008×954×715	375	G 1 ½”
AD 600	10	600	2090×1008×954×715	475	G 1 ½”
AD 820	13.7	820	1898×1173×1243×900	718	G 2”
AD 1000	16.7	1000	2198×1173×1243×900	851	G 2”
AD 1200	20	1200	2298×1173×1243×900	890	G 2”
AD 1400	23.3	1400	2120×1550×900×830	830	DN 80
AD 1700	28.3	1700	2120×1660×900×1120	1120	DN 80
AD 2000	33.3	2000	2130×1780×900×1290	1290	DN 80
AD 2500	41.7	2500	2330×1830×1020×1450	1450	DN 100
AD 3000	50	3000	2340×1980×1020×1750	1750	DN 100
AD 3500	58.3	3500	2450×1980×1350×2300	2300	DN 100
AD 4000	66.7	4000	2700×1980×1550×2700	2700	DN 150

- calculated at 1 bar (abs.) and 20°C at 7 bar g operating pressure and 35 °C compressed air
- inlet temperature (saturated condition)

Voltage, Frequency	230 V, 50
Power consumption	<60 W
Protection Class	IP 65
Filter (inlet)	Super fine - 0.01 µm
Filter(outlet)	Dust filter - 1 µ
Input for stand-by	standard

	Dew Point - Correction factors		
Operating temperature [°C]	-25	-40	-70
Correction factors F1	1.1	1.00	0.7

Guidance for determinating the dryer size:

Inlet volume flow V_{eff} : 40m³/h — $V_{corr} = V_{eff} / F1 = 40m^3/h / 0,77$

Operating pressure: 6 bar | g — $V_{corr} = 52\ m^3/h$

Inlet temperature: 40°C

Correction factor K1: 0,77 — selected dryer size: AD60


DRYBERG® AD
DRYBERG® AD

Adsorption dryers heatless oil free

DRYBERG® AD - CT

After compressed air is cooled and condensate is removed, it leaves the compressor in a moisture-saturated condition.
As the compressed air cools down further in the downstream pipework, additional condensate is usually formed.
This leads to negative side effects such as corrosion, icing, and high maintenance costs for the compressed air system.
Drying compressed air is therefore a mandatory requirement of any compressed air purification system. If lower pressure dew points are required, adsorption dryers are applied.

DESCRIPTION

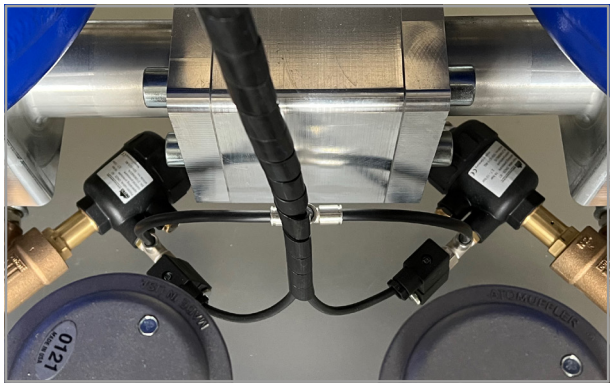
From the filled adsorbent material, (desiccant in this case), moisture is stored in the large, open pores of the adsorbent material, thus reducing the moisture content in the compressed air.
Through the joining pipe and possible pre-treatment, the compressed air is fed via the inlet into the diffuser (flow distributor and sieve). The compressed air is hereby distributed over the whole vessel cross-section for optimum efficiency. Based on the laws of physics and a calculated and required contact time, the abovementioned moisture content is stored in the open pores of the desiccant. The cleaned compressed air then exits the vessel again through a sieve on the outlet.
As the temperatures rise, the performance of the desiccant is reduced since the so-called adsorption heat builds up in the desiccant as the amount of moisture increases and as temperatures exceed 55 °C, the stored moisture is then released again from the agent, i.e. no more moisture is stored.

The moisture stored in the desiccant gradually saturates the material. During the course of the defined adsorption phase, the desiccant bed is optimally used. After a predetermined time, the desiccant is then desiccated again following the counter-flow principle using the dried compressed air, which is removed from the dry output flow through a nozzle. This process constantly switches between the two vessels. With the appropriate compressed air quality at the inlet, it is possible for the service life of the desiccant to exceed well over 10,000 hours. Over the piping the air then is lead to the oil vapour adsorber.

Heatless oil free DRYBERG®

Solenoid valves

The solenoid valves are supplied fully assembled and should also be installed as such. These valves are subject to a mechanical load.



Silencers

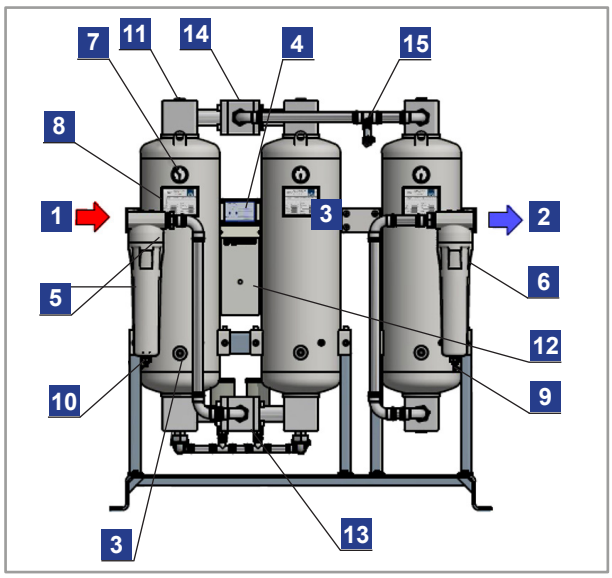
The silencers lessen the noise generation of the regeneration process. In these silencers, proportionate desiccant abrasion in the form of dust is retained.

Autodrain Bekomats

The DRYBERG® AD - CT heatless oil free adsorption dryer, combined with pre filter PUREBERG® F FW, F SW with BEKOMAT® 20 drain, guarantees maximum safety and performance as a true system solution.

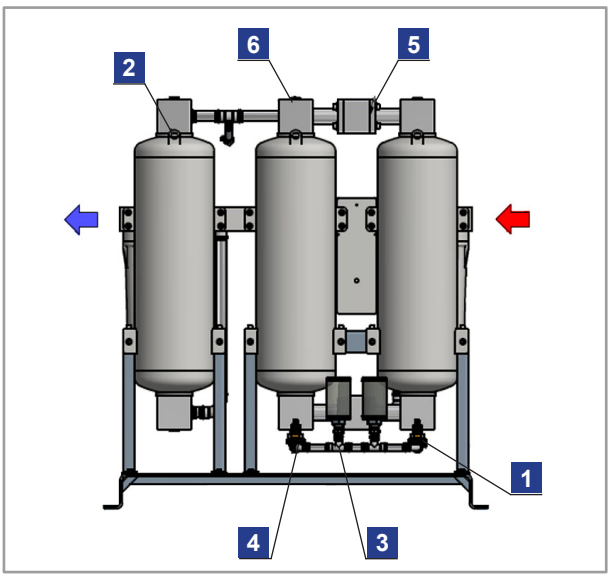
including:

- DRYBERG® AD heatless adsorption dryer with pressure gauges
- Operating control and monitoring equipped with compressor unload stand-by
- Double stage pre FILTER PUREBERG® F FW, F SW with BEKOMAT® 20 drain (to remove oil-dust and condensate water droplets)
- BEKOMAT® condensate drain, guarantees maximum safety and performance as a true system solution.
- OILFREE CT activated carbon tower incl. pressure gauges
- PUREBERG® F DW final dust filter with manual drain
- Oil test indicator



Equipment overview, front view

1 Compressed air inlet
2 Compressed air outlet
3 Draining nozzle desiccant
4 Controller
5 Prefilter (two stages)
6 After-filter
7 Pressure gauge
8 Vessel type plate
9 Manual drain after-filter
10 Condensate drain prefilter
11 Lifting lugs
12 Oil test indicator
13 Changeover valve inlet
14 Changeover valve outlet
15 Dewpoint sensor (optional)



Equipment overview, rear view

1 Removable screw connection, bottom
2 Lifting lugs
3 Silencer
4 Solenoid valve
5 Purge air jet (internal)
6 Flanged pipe bridge with diffusor

Technical Data of Adsorption Dryer heatless oil free DRYBERG® AD - CT

Model	Nominal airflow		Dimension (A×B×C×D)	Power supply	Weight	Air connection
	[m³/min]	[m³/h]	[mm]		[kG]	
AD 150 CT	2.5	150	1305×853×1220×650	230/1/50	251	G 1”
AD 180 CT	3.0	180	1420×853×1220×650	230/1/50	285	G 1”
AD 210 CT	3.5	210	1544×853×1220×650	230/1/50	305	G 1”
AD 340 CT	5.6	340	1531×1008×1653×716	230/1/50	552	G 1 ½”
AD 480 CT	8.0	480	1630×1008×1653×716	230/1/50	579	G 1 ½”
AD 600 CT	10	600	2090×1008×1653×716	230/1/50	779	G 1 ½”
AD 820 CT	13.6	820	1898×1173×2053×900	230/1/50	900	G 2”
AD 1000 CT	16.6	1000	2198×1173×2053×900	230/1/50	1299	G 2”
AD 1200 CT	20	1200	2298×1173×2053×900	230/1/50	1366	G 2”

- calculated at 1 bar (abs.) and 20°C at 7 bar g operating pressure and 35 °C compressed air
- inlet temperature (saturated condition)


DRYBERG® ADP
AD1
AD2

Heat Regenerating Adsorption Dryer

DRYBERG® ADP

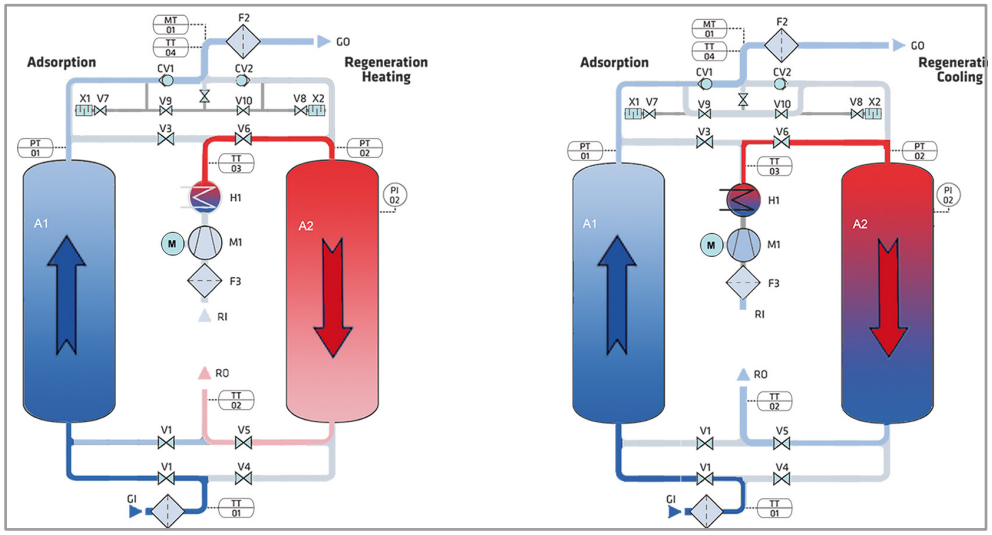
DRYBERG® ADP in the easiest way The heat regenerated adsorption dryers in the ADP series are uniquely innovative, highly e cient, and remarkably reliable. They can also be individually adapted to any requirements and conditions. Premium quality, made in Germany. Using the state-of-the-art control systems and continuously optimized drying processes guarantee the technical advantage for these novel system solutions, which will once again define the market for adsorption dryers. Products from leading German and European manufacturers that demonstrably meet high quality standards for several decades are used exclusively.

The result is an extremely high operational safety, unique reliability, and very low energy costs: an added value for any compressed air station With the modular design concept, standardized systems can be individually adapted to customer-specific requirements or local conditions, such as environmental factors. An elaborated concept and optimized production procedures sustainably reduce the production complexity and associated manufacturingcosts, so that a customized system solution from DRYBERG® ADP regularly has lower investment costs than a comparable of the shelf adsorption dryer available in the market.

DESCRIPTION

ADP adsorption dryers are designed for continuous separation of moisture from compressed air.

DRYBERG® ADP dryers have two columns that operate alternately. Adsorption takes place under pressure in the first column while the second column regenerates ADP type of dryer is suitable for applications where low PDP is required at hotter and more humid ambient conditions and where compressed air can be utilized for cooling. A dryer consists of two columns, filled with desiccant beads, a blower, heater, controller with an LCD display, valves, manometers, and a support construction. A proven and robust design enables efficient and reliable operation, fast installation and simple maintenance.

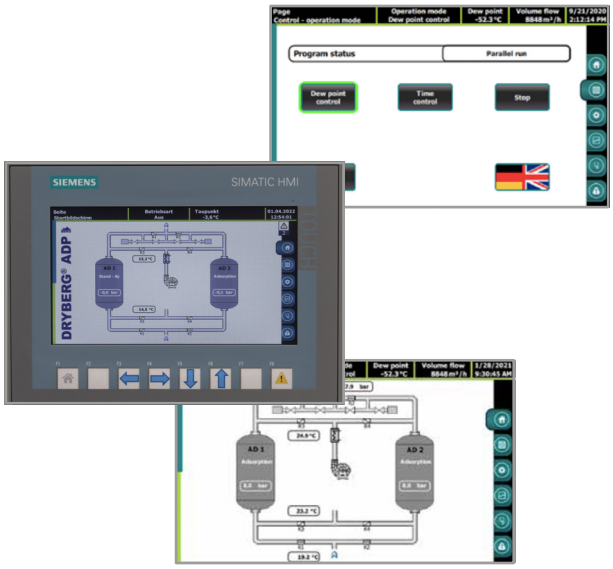


Heat Regenerating Adsorption Dryer

Control panel

All the ADP Group DRYBERG® are equipped with a PLC type Siemens SIMATIC S7 1200 with 7” touch panel, providing easy access to status, settings, alarm messages, and diagnosis information of the drying system. The access to the touch panel is characterized by advanced user-friendly menu guidance. The panel shows the current operating status with all relevant operating parameters, such as operating pressure in each vessel, operating temperatures in the regeneration process, and pressure dew point at the outlet of the system.

Operating parameters can be adapted by authorized sta after entering a key to access the service menu. Several additional functions can be activated without the requirement for Modi cation of the PLC program. Also, trend curves of temperatures and dew points are available for the previous time period up to 24 hours.



APPLICATIONS

- Breathable and medical air
- Chip production and instrument air
- Bottling plants
- Glass manufacture
- Packaging machines
- Sprinkler systems
- Pneumatic control systems
- Optical measuring machines
- Measuring containers
- Painting plants
- Food industry, bagging of hygroscopic food

A1-2	pressure vessel
F1	inlet filter (super fine coalescing)
F2	outlet filter (dust)
V1-6	ball valve with pneumatic actuator
V7-10	angle seated valve with pneumatic actuator
GI	air inlet
GO	air outlet
RI	regeneration air inlet
H1	heater
R0	regeneraton air outlet
ES1-2	ekspansion silencer
CV1-2	check valve
TT1-4	tempreture transducer
PI1-2	pressure indicator
PT1-2	pressure transduter
DT1	dew point transduter
M1	blower
F3	regeneration air filter

Options

- Dew point control system
- Insulation
- PLC SIMATIC S7-300
- Switch over control for other valves
- Profibus
- Modbus

Protection Class	IP 65
Filter (inlet)	Super fine - 0.01 µm
Filter(outlet)	Dust filter - 1 µ
Column insulation	Optional
Blower suction condition	Max 50 °C, 35% RH

including:

- PLC SIMATIC S7-1200 incl. touch panel KTP700
- Switch over control (proximity switches for valves K1 and K2)

Specifications and field of application

Capacity volume flow	up to 9500 m^3/h
Pressure dew point	40 °C
Media	compressed air, gases of fluid group 2
min. operating pressure	4 bar g
Max. operating pressure	11 bar g (size ADP1400 - ADP5000) - 10 bar g (size ADP6000 - ADP9500)

Technical Data of Heat Regenerated High-End Adsorption Dryer DRYBERG® ADP

Model	Nominal airflow [Nm^3/h]	Dimension (A×B×C) [mm]	Blower Power [kW]	Heater power [kW]	Weight [kG]	Air connection
ADP 400	400	1750×1030×2260	1.3	3.5	1200	DN 50
ADP 700	700	1860×1180×2310	1.6	7	1400	DN 50
ADP 1000	1000	1920×1280×2390	1.6	8	1500	DN 80
ADP 1400	1400	1920×1320×2420	1.6	10	1900	DN 80
ADP 1700	1700	2120×1450×2480	4	14	2300	DN 80
ADP 2000	2000	2180×1480×2550	4	17	2800	DN 80
ADP 2500	2500	2400×1520×2640	7.5	22	3400	DN 100
ADP 3000	3000	2400×1540×2630	8.5	26	3600	DN 100
ADP 3500	3500	2750×1900×2790	8.5	32	4000	DN 100
ADP 4000	4000	2800×1990×2890	8.5	35	4800	DN 150
ADP 5000	5000	2910×2040×2870	15	45	5600	DN 150
ADP 6000	6000	3400×2350×3000	15	56	6300	DN 150
ADP 7000	7000	3500×2280×3000	-	-	7200	DN 150
ADP 8200	8200	3600×2500×3100	-	-	8000	DN 150
ADP 9500	9500	3800×2600×3300	-	-	9000	DN 200

Working pressure bar [g]	4	5	6	7	8	9	10	11
Correction factor F1	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50

Ambient temperature [°C]	25	30	35	40	42	45
Correction factor K2	1.00	1.00	0.97	0.87	0.80	0.64

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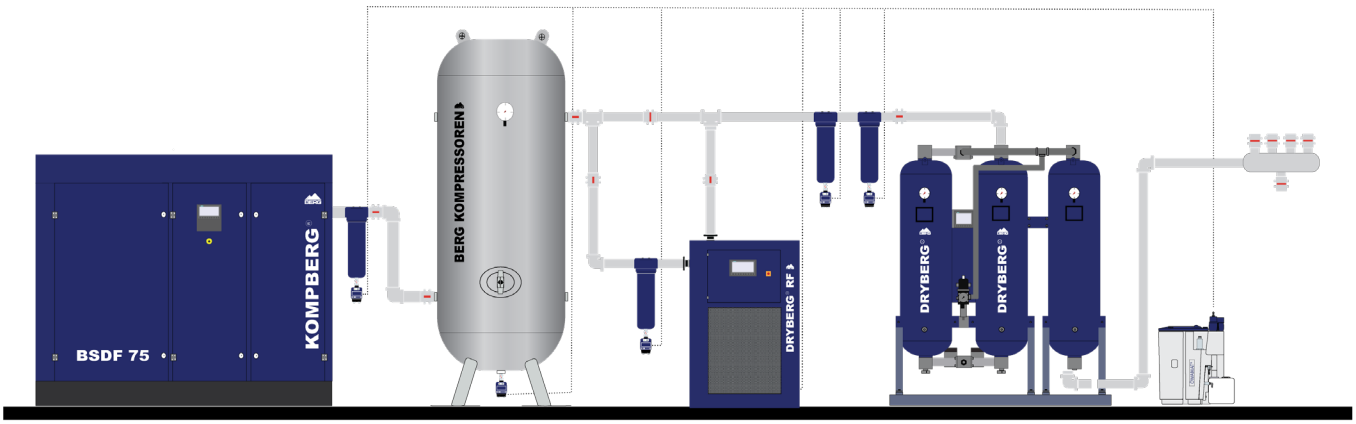
Compressed Air Technology | Air Separation



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