

# Atlas Copco

## Heat Reactivated Adsorption Air Dryers



**BD 100-3000**  
100-3000 l/s / 212-6360 cfm



*Atlas Copco*



## Total capability, total responsibility

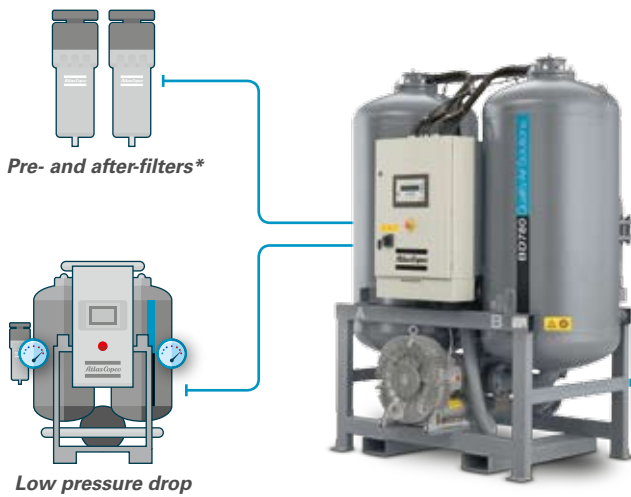
Right at the heart of your business, Atlas Copco delivers quality compressed air for superior operational capacity. From compressed air generation to point of use, you can choose from our wide range of products to create a complete compressed air system tailored to your specific needs. All Atlas Copco products are engineered to integrate seamlessly, ensuring the highest level of reliability and energy efficiency. As a result, Atlas Copco can take full responsibility for your compressed air infrastructure with a guarantee of best-in-class quality. With a global presence in over 150 countries, we can provide an unrivalled service to maintain and continually improve your compressed air system performance.

Backed by 100 years at the forefront of compressed air, Atlas Copco products offer the finest quality and efficiency. Our goal is to be First in Mind—First in Choice®. That is why Atlas Copco's pursuit of innovation never ceases, driven by the dedication to meet and exceed your demands. Always working with you, we are committed to providing the customized air solution that is the driving force behind your business.

*We are committed to your superior productivity through interaction and innovation.*

# BD, the industry benchmark for desiccant dryers

Clean and dry compressed air with a guaranteed dewpoint (down to  $-70^{\circ}\text{C}$ ): it is vital to power up your busy production environment. Containing moisture, aerosols and dirt particles, untreated compressed air poses a substantial risk as it can damage your air system and end product. Incorporating unique, patented technological innovations and extra energy-saving options, Atlas Copco's BD desiccant dryers provide you with the clean, dry air you are in need of to expand the life of your equipment and ensure the quality of your end product.



## EASY INSTALLATION, COMPLETE DESIGN, PLUG & PLAY

- Delivered complete and ready to use with all connection parts.
- Optional pre- and after-filters, factory-prepared (mounted).
- Forklift slots and lifting eyes.

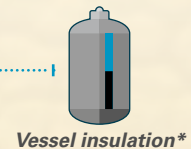
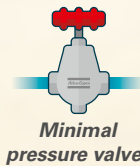
## ADVANCED CONTROL & MONITORING SOLUTIONS

- State-of-the-art packages to increase efficiency.
- Guaranteed maximum uptime and reliability.
- Monitoring through ES system.



## DRY AIR AT ANY TIME

- Long life silicagel desiccant with high adsorption capacity.
- Fully automatic operation.
- Optimal spread of air over drying bed.
- Reliable, continuous drying process.
- Full range to perfectly match your compressor installation.
- Guaranteed dewpoint of  $-40^{\circ}\text{C}/-40^{\circ}\text{F}$  or optionally  $-70^{\circ}\text{C}/-100^{\circ}\text{F}$ .



## SUPREME ENERGY EFFICIENCY

- Low pressure drop saving on compressor power.
- Regeneration cycle with thermostatic control.
- Internal heating, benefiting from heater's radiation effect (according to model), ensuring energy savings up to 15%.
- Energy-efficient desiccant.
- Optional heat insulation of drying towers.
- Optional pressure dewpoint control\*\*, based on real dewpoint measurement.

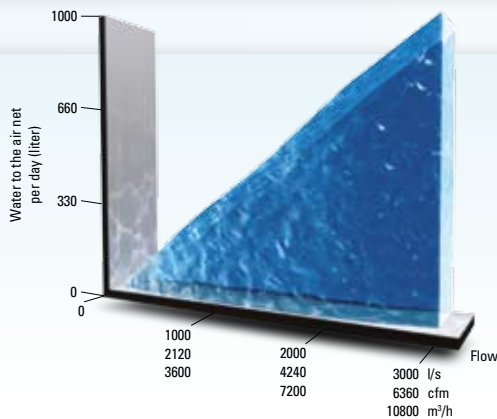
\* Optional according to model.

\*\* Standard on BD 100-300



# Constant dry air at a guaranteed dewpoint

Removing moisture from compressed air with a pressure dewpoint of down to  $-70^{\circ}\text{C}$ , Atlas Copco's BD desiccant dryers eliminate system failures, production downtime and costly repair and service works.



Water to the air net if no dryer installed

## THE RELIABLE CHOICE

Compressed air entering the air net is always 100% saturated. When cooling down, this moisture will condense, causing damage to your air system and to your finished products. Atlas Copco BD desiccant dryers eliminate the moisture completely before it can cause any damage. The BD dryers ensure a reliable process and impeccable end products by offering absolutely dry air to your compressed air system, with a pressure dewpoint of  $-40^{\circ}\text{C}$  or even  $-70^{\circ}\text{C}$ .

**Average reference conditions:**  
 Pressure: 7 bar(e)  
 Relative humidity: 60 %  
 Ambient temperature:  $25^{\circ}\text{C}$

## EFFICIENT WATER REMOVAL

- 1 TEMPERATURE SENSORS
- 2 INTERNAL HEATER\*
- 3 FULL SIZE STRAINER\*
- 4 SILENCER
- 5 HIGH QUALITY VALVES WITH PNEUMATIC ACTUATORS
- 6 BLOWER
- 7 2-LAYER DESSICANT BED

\* According to model.



### Both towers

- Two towers contain silicagel desiccant. While one adsorbs the moisture from the air, the other is reactivated.

### Left tower

- Adsorption/drying phase: wet compressed air flows upward through the silicagel desiccant beads, where the moisture is adsorbed.

### Right tower

- Reactivation phase: the blower takes in ambient air and blows it to the internal heaters. The heated air is then sent through the saturated desiccant, forcing the adsorbed moisture out.

- After regeneration, the functions of both towers are switched.

Thanks to their pioneering technology, BD dryers ensure a guaranteed dewpoint of at least -40°C and the lowest energy consumption for the highest possible efficiency – saving you time and money throughout the production process.



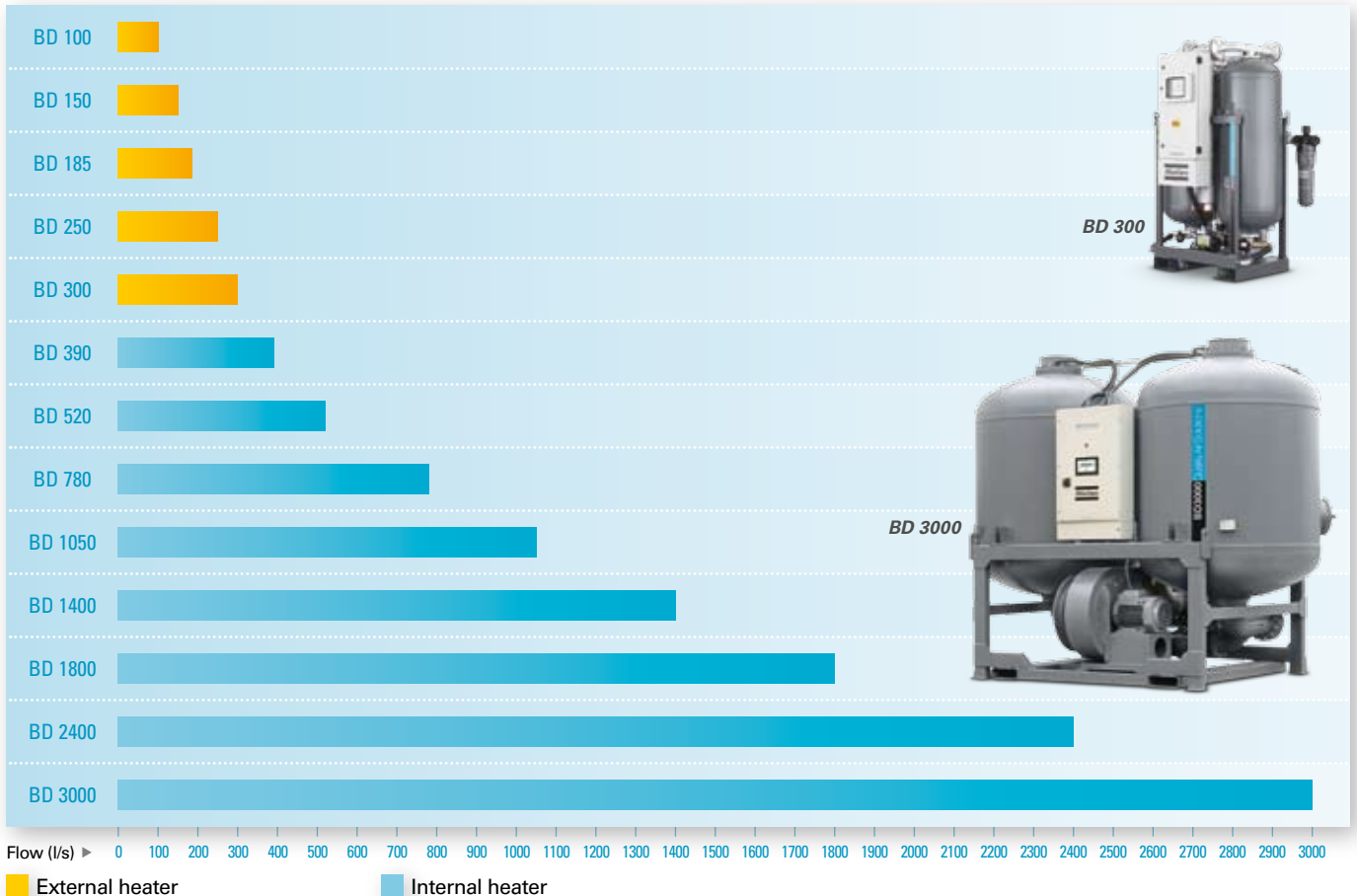
### PROVEN PEACE OF MIND

Building on Atlas Copco's know-how and years of experience with regards to compressed air solutions, the BD desiccant dryer range is tested using the most stringent methods in the industry. You can rest assured at all times. In order to obtain ISO 9001 and 14001 certification, Atlas Copco thoroughly tests its dryers during design reviews. As a result of the synergy with the compressor production facility, Atlas Copco is able to test the entire dryer range to all flows. To further reduce any type of contamination within your process and protect your equipment, Atlas Copco presents a complete range of compressed air filters when needed. A total quality air solution for every application.



### BUILT FOR ENDURANCE

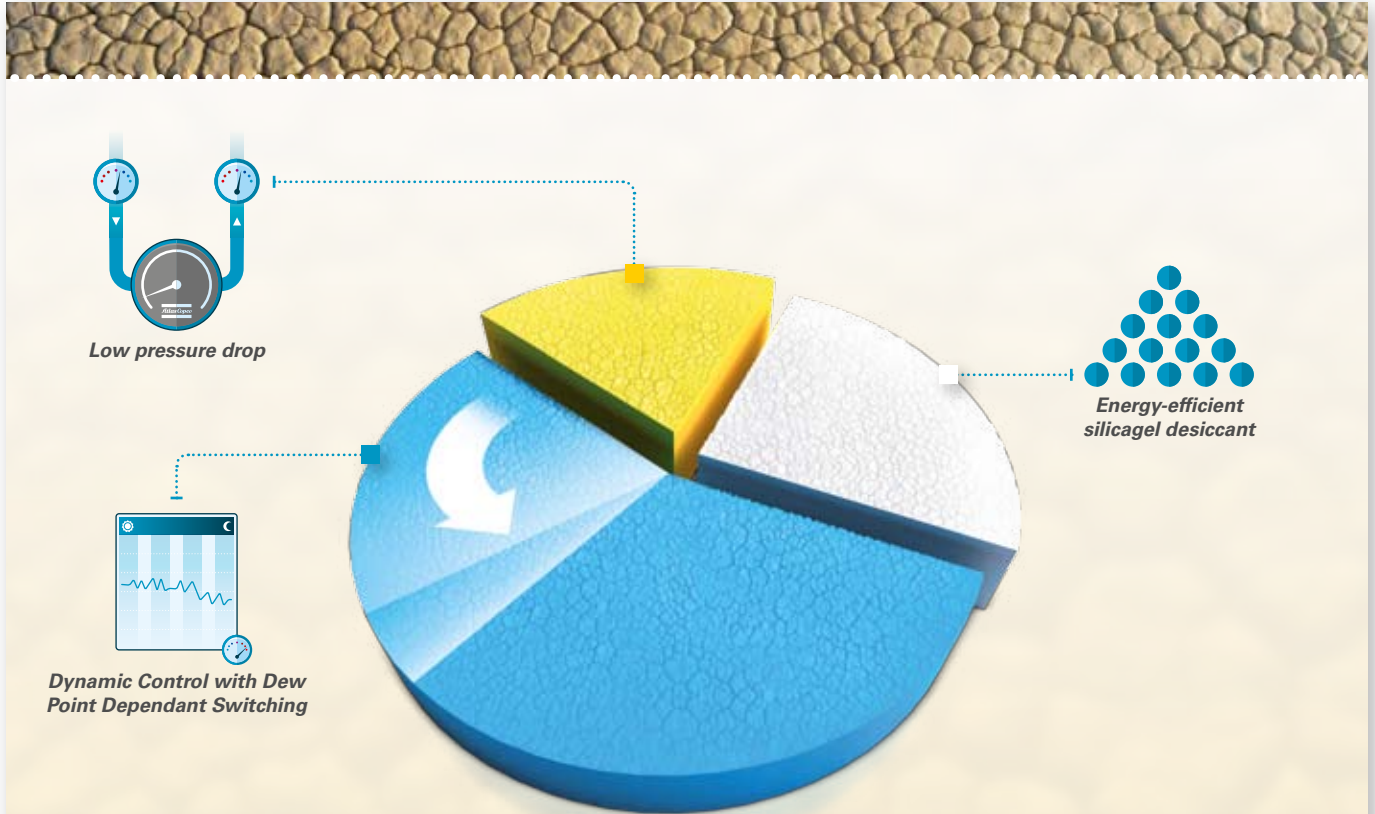
- Designed using state-of-the-art tools and facilities.
- Based on years of extensive research and continuous development.
- Manufactured using the most advanced production line and methods in the industry.



# Supreme energy and cost savings

Keeping a firm grip on costs is one of your main concerns. Atlas Copco's desiccant dryers stand for important energy savings all day, every day, year in, year out.

Taking technology to a whole new level, the BD dryers achieve maximum cost savings, allowing you to conduct a truly efficient energy reduction strategy.

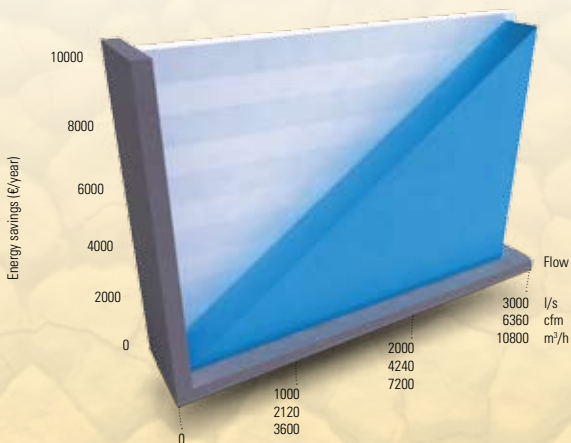


## DYNAMIC CONTROL WITH DEWPOINT DEPENDANT SWITCHING

Only when the dewpoint reaches a preset point, the dryer will automatically switch towers. This results in an extension of the drying time and considerable energy savings when the dryer is not operating at maximum capacity. The dewpoint

is continuously monitored and indicated on the dryer's display. The time needed for regeneration – based on the regeneration air temperature profile end of the drying cycle – is precisely determined. Energy waste is eliminated.

## Energy savings when using silicagel desiccant



Regeneration temperatures: Silicagel: 140°C, Activated alumina: 175°C

## ENERGY-EFFICIENT IN EVERY ASPECT

The BD dryer has been designed for high drying efficiency at the lowest energy cost. The high adsorption silicagel desiccant needs less reactivation energy than other drying agents. The heating is internal to optimally use the radiation effect, which saves up to 15% more energy compared to traditional heaters, while the thermostat control saves additional energy. The air flow is evenly distributed over the desiccant bed and compressed air is used for cooling, again reducing the power consumption. The counter current regeneration saves up to 50% in required regeneration energy compared to co-current regeneration and guarantees dewpoint performance.



# Technical specifications & options

BD dryer type	Inlet capacity FAD 7 bar(g) 100 psig		Average power consumption		Pressure drop (excluding filters)		Included filtration			Inlet/outlet connections	Dimensions						Weight	
							Pre-filters		After-filter		L	W	H	L	W	H		
							1 µm 0.1 ppm	0.01 µm 0.01 ppm	1 µm		50 Hz: G/PN16 60 Hz: NPT/DN	mm	mm	mm	inch	inch	inch	kg
BD 100	100	212	2.2	2.97	0.20	2.9	DD120	PD120	DDp120	1½"	1250	770	1720	49.2"	30.3"	67.7"	640	1421
BD 150	150	318	3.3	4.4	0.20	2.9	DD150	PD150	DDp150	1½"	1300	870	1770	51.2"	34.3"	69.7"	680	1510
BD 185	185	392	3.5	4.7	0.20	2.9	DD175	PD175	DDp175	1½"	1300	870	1770	51.2"	34.3"	69.7"	710	1576
BD 250	250	530	4.8	6.5	0.20	2.9	DD280	PD280	DDp280	2"	1345	955	1816	53.0"	37.6"	71.5"	775	1721
BD 300	300	636	5.7	7.6	0.20	2.9	DD280	PD280	DDp280	2"	1425	1010	1853	56.1"	39.8"	73.0"	820	1820
BD 390	390	827	9.9	13.2	0.17	2.5	-	PD390 <sup>(1)</sup>	DDp390 <sup>(1)</sup>	80	1340	1175	2145	52.8"	46.3"	84.4"	1200	2664
BD 520	520	1102	11.3	15.1	0.14	2.0	-	PD520 <sup>(1)</sup>	DDp520 <sup>(1)</sup>	100	1600	1380	2205	63.0"	54.3"	86.8"	1800	3996
BD 780	780	1654	15	20.1	0.16	2.3	-	PD780 <sup>(1)</sup>	DDp780 <sup>(1)</sup>	100	1880	1490	2360	74.0"	58.7"	92.9"	2350	5217
BD 1050	1050	2226	21	28.1	0.12	1.7	-	PD1050 <sup>(1)</sup>	DDp1050 <sup>(1)</sup>	125	2250	1727	2445	88.6"	68.0"	96.3"	3250	7215
BD 1400	1400	2968	32.5	43.5	0.10	1.5	-	PD1400 <sup>(1)</sup>	DDp1400 <sup>(1)</sup>	150	2540	1770	2645	100.0"	69.7"	104.1"	4300	9546
BD 1800	1800	3816	36	48.2	0.12	1.7	-	PD1800 <sup>(1)</sup>	DDp1800 <sup>(1)</sup>	150	2740	1858	2750	107.9"	73.1"	108.3"	4800	10656
BD 2400	2400	5088	48	64.3	0.13	1.9	-	PD2700 <sup>(1)</sup>	DDp2700 <sup>(1)</sup>	150	3090	2043	2925	121.7"	80.4"	115.2"	7500	16650
BD 3000	3000	6360	69	92.4	0.13	1.9	-	PD3150 <sup>(1)</sup>	DDp3150 <sup>(1)</sup>	200	3470	2344	2976	136.6"	92.3"	117.2"	10000	22200

(1): Filters optional extra.

External heater.

Internal heater.

## Reference conditions\*

Compressed air inlet pressure after filtration  
Maximum allowed inlet pressure BD 100-300  
Maximum allowed inlet pressure BD 390-3000  
Compressed air inlet temperature  
Inlet relative humidity  
Nominal pressure dewpoint

7 bar(g) / 100 psig  
14.5 bar(g) / 210 psig  
11 bar(g) / 160 psig  
35°C / 100°F  
100%  
-40°C / -40°F

\* For conditions other than reference conditions, please consult Atlas Copco.

## BD 3000

L: 3470 mm, 136.6"  
W: 2344 mm, 92.3"  
H: 2976 mm, 117.2"



## STANDARD/OPTIONAL

Features & options	BD 100-300	BD 390-3000
Remote start stop	standard	standard
Display status and alarms	standard	standard
Volt free alarm contact	standard	standard
Pneumatic controlled valves	standard	standard
Elektronikon® control	standard	standard
Alarms for low inlet pressure	standard	standard
Limit switches with fail to shift alarm	standard	standard
Electronic dewpoint control and switching with alarm contact	standard	optional
-70°C / -100°F pressure dewpoint	optional	optional
Filter pack for pure process air (inlet and outlet filtration)	standard	optional
Drying towers insulation (included in -70°C/-100°F option)	optional	optional
Minimum pressure valve	standard	optional
Sonic nozzle	-	optional

## -70 °C PRESSURE DEWPOINT (OPTIONAL)

An extremely low dewpoint throughout the complete cycle is obtained by three measures: the upper filling of desiccant type molecular sieves, vessel insulation and three-stage regeneration. The latter optimizes the efficiency by using both ambient air and compressed air for regeneration, which keeps the energy consumption to a minimum. The insulated vessels further contribute to the energy savings.

## FILTER PACK FOR PURE PROCESS AIR (STANDARD ON BD 100-300)

The DD/PD pre-filter type removes liquid water and oil aerosol to 0.01 mg/m<sup>3</sup> (0.01 ppm) and particles down to 0.01 micron. The DDp after-filter type removes particles down to 1 micron (3-stage filtration standard on BD 100-300). Filters and piping are all included, with several inlet and outlet configuration possibilities. This simplifies installation and reduces floor space. The pre-assembled PD and DDp filters come with differential pressure alarm connections, indicating element replacement.

## SONIC NOZZLE (OPTIONAL ON BD 390-3000)

When integrating a desiccant dryer into a large air net, it is recommended to protect the dryer and the drying medium against excessive volumetric flow through the desiccant. This is particularly advisable for some critical applications and compressor installations. The smart solution is to install a sonic nozzle to avoid damage to the desiccant or poor dryer performance.

## MINIMUM PRESSURE VALVE (STANDARD ON BD 100-300)

Protects the dryer from an excessively high flow when the air demand is too high. An overly high air speed can significantly reduce the desiccant's life time or even damage it. The minimum pressure valve is an extra protection of the dryer's performance and desiccant.



In order to be First in Mind—First in Choice® for all your compressed air needs, Atlas Copco delivers the products and services that help increase your business' efficiency and profitability.

Atlas Copco's pursuit of innovation never ceases, driven by your need for reliability and efficiency. Always working with you, we are committed to providing you the customized quality air solution that is the driving force behind your business.



**Never use compressed air as breathing air without prior purification in accordance with local legislation and standards.**