



Worthington
Creyssensac



**ADSORPTION
DRYER DB**



ADSORPTION DRYING: WHY?

Modern industries require compressed air that is increasingly filtered with low dew point and condensate.

Today, the equipment is more sophisticated as there are requirements that compressed air impurities free from the usual content.

The atmospheric air intake contains contaminants, dirt particles and humidity. This can lead to premature deterioration of your pneumatic equipment and increase the risk of the product spoilage.

MULTIPLE AIR TREATMENT SOLUTIONS

OIL AND DUST FILTRATION

Network filters: treatment of residual oil and dust particles.

Depending on the filtration level, our range of D filters capture and eliminate:

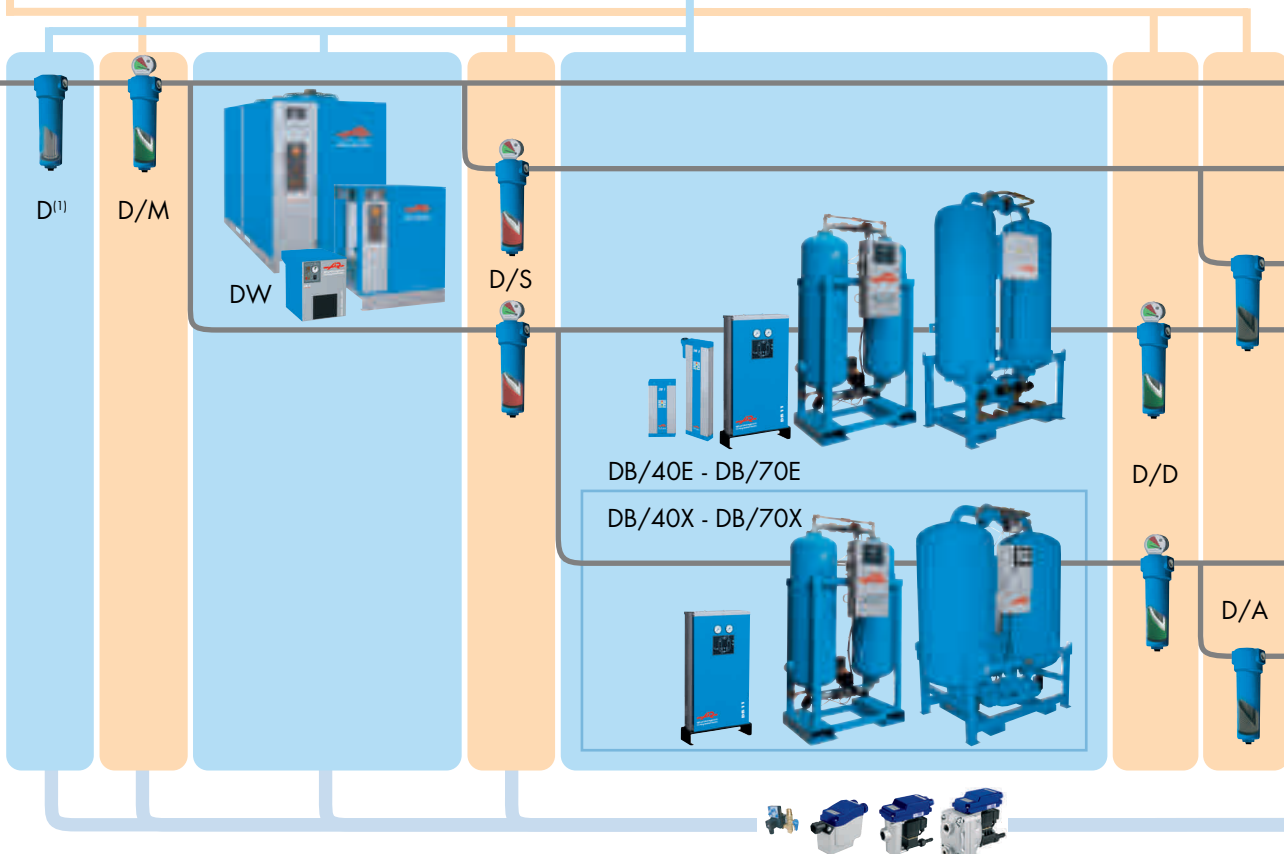
- Particles down to 0.01 micron (smoke, dusts, etc.).
- Oil concentration down to 0.05 ppm.

WATER SEPARATION

Air drying: elimination of water vapour that can potentially condensate in your compressed air system.

The drying solution that suits your needs best:

- The D water separator eliminates water already in a liquid state, from the compressed air.
- The DW refrigeration dryer that eliminates water down to a pressure dew point of 3°C.
- The DB adsorption dryer eliminates any risk linked to moisture due to a dew point that can reach -70°C.



- Water vapour contained in the air is corrosive and can affect your compressed air network, solenoid valves, pneumatic equipment etc.
- Dust and other contaminants can reduce the working life of your pneumatic equipment, resulting in premature breakdowns and higher maintenance costs.
- In addition, these contaminants can mix with your raw material (paint, pneumatic handling, etc.), and increase the possibility of product spoilage.

To preserve your equipment and guarantee total quality, Worthington Creyssensac offers a complete range of air treatment solutions. We can recommend superior air quality for less operating costs.

CONDENSATE TREATMENT

- Our automatic drain offers you a choice of a float drain; electronic drain or a level detection drain to ensure zero air loss.
- Our S condensate treatment range will collect and treat all your condensate.

Applications

Maintenance workshops
General use.

Industrial use, pneumatic tools, automatism
and pneumatic handling
Painting guns or painting booth.

Food applications
Odourless air for transport or mix of delicate material.

Outdoor applications
Air instrumentation
Chemical industry, electronic industry
White rooms, analysis laboratories
Air flow or air used in a refrigerated environment.

Similar applications with superior energy efficiency
(Optimized regeneration cycles through dew point control).

Pharmaceutical, food or medical industries
Hospitals
Air that can be used to supply
breathing air controls.

ROLLAIR® 40 A

335 m³/h

information on at reference conditions

Compressed air volume	m ³ /h
Collected condensate	l/h
Oil residual quantity	mg/m ³
Particles filtration	µm

Air quality class: ISO 8573-1

(1) D water separator

Condensate volume collected: 2.9 l/h

335	m ³ /h
1.0	l/h
0.1	mg/m ³
0.1	µm
1.4.2	

335
1.0
0.01
0.01
1.4.1

335	m ³ /h
1.0	l/h
<0.01	mg/m ³
0.01	µm
<1.4.1	

281	DB/40E
1.3	
0.01	
0.01	
2.2.1	

285	DB/40X
1.3	
0.01	
0.01	
2.2.1	

285	DB/40X
1.3	
<0.01	
0.01	
<2.2.1	



ADSORPTION DRYER **DB**

DB ADSORPTION DRYER: MOISTURE FREE AIR

Adsorption drying produces dry compressed air which eliminates the risk of contamination from residual water vapour contained in the compressed air. Dew points from -20°C down to -70°C , depending on the application, guarantee delivery of dry, clean air that will satisfy even the most sensitive applications.

Its compactness will make installation easy in any industrial facility, or close to a workstation that requires specific air treatment.

It's a global solution for any demanding air treatment.

Running principles

The adsorption drying principle is based on the ability of the desiccant material to adsorb water vapour in the compressed air. During the drying phase, water vapour is adsorbed into the surface of the desiccant. At the same time, the other tower is purged by a small quantity of dried air passing over the wet desiccant material. The resulting moisture is vented in to the atmosphere. After the pressurization, the unit is then ready for a new drying phase.

Coalescent filter D/M and high efficiency coalescent filter D/S remove the dirt particles and protect the desiccant material against any contamination. This giving an extends the operational life. After the DB dryer, the air is filtered through a dust filter D/D, which eliminates desiccant dust.



PRINCIPLE

Drying phase:

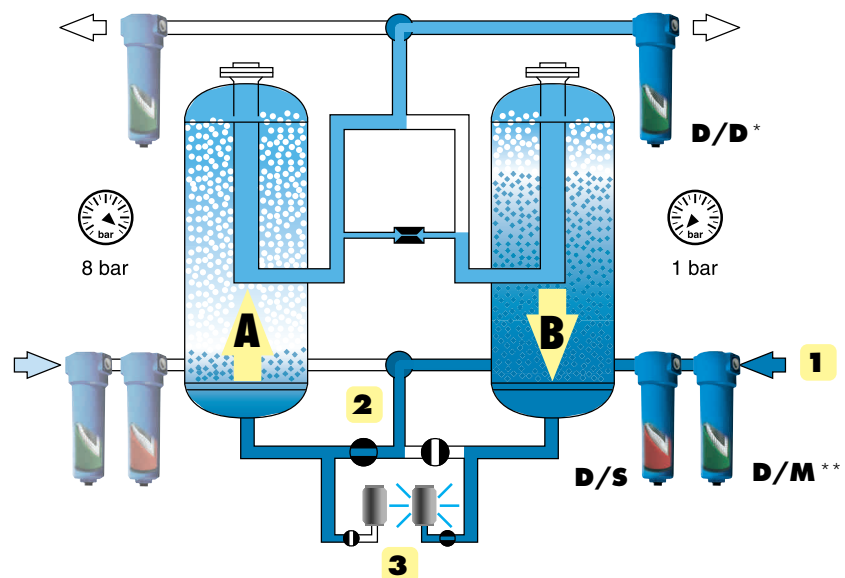
Wet air from the compressors passes through the inlet filters (1) which remove the oil and enters in to tower A. The desiccant contained in it adsorbs the water vapor molecules. After a fixed (E) or variable time (X) the 3 way valve (2) deviates the air flow from tower A to tower B and it becomes the operative tower.

Regeneration phase:

During the drying phase in the tower A, some dry air is deviated into the top of tower B, extracting the trapped water vapor from the desiccant material. During this phase, tower B is open to the atmosphere, allowing the purge air to expand. The silencers (3) on the outlet ensure quiet operation.

Pressurization phase:

Once regeneration has taken place and tower B is pressurized, the 3 way valve (2) changes the air flow again.



Notes:

* On DB05-6 the outlet filter is built inside of the desiccant cartridges.

** Recommended but not included on DB05-47.

DB 65-130 E ELECTRONIC TIMER CONTROL

DB 65-130 X DEW POINT MANAGEMENT SYSTEM



DB/E

Developed with high quality components, DB dryers guarantee a stable dew point of -40°C ., due to the use of an optimized desiccant volume. (-70°C . available as an option).
A wide vessels ensure a low air speed and a longer contact time.

Purge phases are controlled by an electronic timer on models DB/E. With a similar design to DB/E, the DB/X version is also available where the drying phase is dew point dependent and is controlled by an electronic dew point management system. This controls the dew point and can reduce the drying air consumption resulting in significant energy savings.

The two inlet coalescent filters D/M - D/S and the outlet dust filter D/D, have to be mounted on the air distribution line. The filters are included but not pre-mounted.



DB/X

① Wide vessels for optimum air speed and reliable drying.
Unit is rather low for its capacity due to flanges that are built into the vessels.

② Air outlet connection.

③ Robust frame, including fork lift slots for easy installation.

④ Pressure Dew Point sensor (DB/X).

⑤ Pressure Dew Point digital display (DB/X).

⑥ Two manometers integrated in the control panel to show pressure in the vessels A/B.

⑦ Stainless steel purge nozzle.

⑧ Galvanized piping with flanged connections.

⑨ High efficiency silencers with integrated safety valve.

⑩ Air inlet connection.

⑪ Stainless steel 3 way valve – long service interval.



DB 140-340

RELIABLE, HIGH QUALITY AIR



DB/E

The DB 140 - 340 range of dryers is designed for reliable performance and consistently high quality air for a stable and suitable pressure dew point.

Wide vessels ensure long contact time, low air speeds and low pressure drop.

Pipe sizing is optimized to ensure a low pressure drop, resulting in energy savings.



DB/X

- ① Wide dessicant vessels for optimum air speed and reliable drying.
- ② Robust frame, including fork lift slots for easy installation.
- ③ Controller with Pressure Dew Point digital display (DB/X).
- ④ High efficiency silencers with integrated safety valve.

COMPACT INSTALLATION - DIMENSION

Unique, light and compact design makes dryer handling easy. The installation of the DB dryer is simple and requires no special equipment or foundation work.



Original Parts fit the best.

Only they will guarantee the original performance of your machine.

To ensure maximum working efficiency and a long life every part must conform to specific technical standards. With the use of Original Parts you are certain about the quality, life time, utilized material and the impact on other components. All these aspects are important to make the right choice for spare parts. Only with original components can you be sure about these factors. Therefore your best choice is an Original Part.

DB 05-6 E COMPACT TO EXTEND INSTALLATION POSSIBILITIES

Compact, this module can be installed horizontally or vertically, can stand on the floor or be mounted on a wall (optional mounting kit available).

Its compact design reduces installation space and the installation costs. The inlet high efficiency coalescent filter D/S can be mounted directly on the unit, the outlet dust filter D/D is built into the cartridges. Enclosed in a canopy, all dryer components are well protected. Standard dew point is -40°C . but can be set at -70°C . by derating the FAD.



Multiport inlet and outlet; this arrangement ensures easy and fast installation



Electronic control:

- Regeneration cycle management
- Regulation status
- Default diagnosis
- Remote default report



Easy and quick maintenance due to the use of desiccant cartridges. A sub-micronic filter cartridge is included separately.

DB 11-47 E (X DEW POINT MANAGEMENT AS OPTION) RELIABLE - ROBUST - SPACE SAVING



The unit is delivered tested and ready to use.

The compact dryer can be installed on the floor (floor mounting kit) as standard. Standard dew point is -40°C and max. working pressure is 16 bar.

Options: Dew point management (X version)
 -70°C dew point with molecular sieves.

The inlet high efficiency coalescent filter D/S and the outlet dust filter D/D have to be mounted on the air distribution line. The filters are included but not pre-mounted.

- ① Base frame makes it easy to transport by fork lift.
- ② Pressure gauge – tower A.
- ③ Pressure gauge – tower B.
- ④ Stainless steel purge nozzle.
- ⑤ Air outlet connection.
- ⑥ Air inlet connection.
- ⑦ High efficiency silencers with integrated safety valve.



REGENERATION PHASE: HOW TO DECREASE YOUR CONSUMPTION?

Regeneration phases

One feature of the adsorption drying technology is the small amount of air required to eliminate water previously adsorbed by the desiccant material during the air drying phase. This process ensures a constant dew point of -40°C and this optimum air quality. For these reasons, there are two types of DB dryers available:

DB/E

Constant purge air calculated to operate in the most demanding conditions.

Purge air flow is fixed at 15% of the DB dryer max capacity.



As the air volume is fixed, the same volume is used even in case of low air demand.

DB 65 E
Regeneration phase
On/Off

DB/X

Purge airflow is variable and based on achieving a constant dew point for significant energy savings.

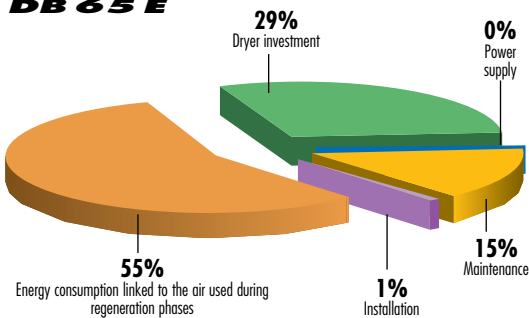
The electronic Pressure Dew Point control (X) extends the drying phase of the dryer's cycle. It is done by measuring PDP of compressed air on the dryer outlet and only switching the columns when desiccant in the active tower is saturated. The regeneration part of the cycle stays fixed. As most of the time compressor and dryer runs $< 100\%$ load, this results in significant extension of the drying time and a reduction in purge air consumption. Typically, the extra investment in Pressure Dew Point control is paid back in a few months by savings made on dryer running costs.



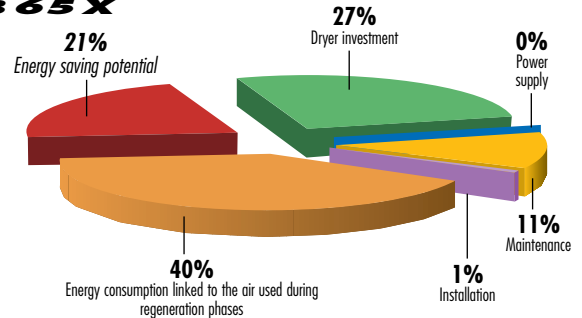
DB 65 X
Dew point control
variable regeneration

Dew point control of the regeneration air volume:
a guaranteed return on investment.

Operation cost of a
DB 65 E



Operation cost of a
DB 65 X



Product designation:

DB (FAD in m^3/h) / 10

max working pressure: B : 11 bar, C : 16 bar

Dew point under pressure ($^{\circ}\text{C}$): B 40, C 70, E X

Regeneration phase control:
E by timer/X by dew point management
(X version available from DB 11 up to 340)

Correction factors

	DB/C															
Air Inlet Pressure - bar	4	5	6	7	8	9	10	11	12	13	14	15	16			
DB05 up to DB47	0,62	0,75	0,87	1	1,12	1,25	1,37	1,5	1,62	1,75	1,87	2	2,12			

Correction factors

	DB/B											DB/C				
Air Inlet Pressure - bar	4	5	6	7	8	9	10	11	11	12,5	13	14	15	16		
DB65 up to DB340	0,47	0,68	0,84	1	1,1	1,2	1,3	1,38	0,89	1	1,04	1,11	1,19	1,24		

Correction factors

	DB/B						
Air Inlet Temperature - $^{\circ}\text{C}$.	20	25	30	35	40	45	50
DB05 up to DB6	1,07	1,06	1,04	1	0,88	0,78	0,55
DB11 up to DB340	1	1	1	1	0,84	0,71	0,55

Correction factors

	DB/C	
Pressure Dew Point - $^{\circ}\text{C}$.	-40	-70
DB05 up to DB340	1	0,7

TECHNICAL DATA

	Regulating pressure		Air treatment capacity m ³ /h		Working pressure range	Filters ③			Inlet / outlet connections	Dimensions (A x B x H)	Weight
	Dew point under pressure		bar	Prefilters		Postfilter					
	-40°C.	-70°C.		D/M 0,1 µm 0,1 mg/mc			D/S 0,01 µm 0,01 mg/mc	D/D 1 µm n.a. mg/mc			
bar			bar			"G	mm.	Kg.			
DB 05 C	7,0 9,5 12,5	7,0 9,2 11,8	5,0 6,4 8,3	4-16	n.a.	D 60 S	Integrated in the dryer	3/8"	281 x 92 x 445	13	
DB 1 C	7,0 9,5 12,5	10,0 13,1 16,9	7,0 9,2 11,8	4-16	n.a.	D 60 S		3/8"	281 x 92 x 504	14	
DB 2 C	7,0 9,5 12,5	17,0 22,3 28,6	11,9 15,6 20,1	4-16	n.a.	D 60 S		3/8"	281 x 92 x 635	17	
DB 3 C	7,0 9,5 12,5	26,0 34,1 43,8	18 24 31	4-16	n.a.	D 60 S		3/8"	281 x 92 x 815	20	
DB 4 C	7,0 9,5 12,5	42,0 55,0 70,8	29 39 50	4-16	n.a.	D 60 S		3/8"	281 x 92 x 1065	24	
DB 6 C	7,0 9,5 12,5	59,0 77,3 99,4	41 54 70	4-16	n.a.	D 60 S		3/8"	281 x 92 x 1460	31	
DB 11 C	7,0 9,5 12,5	115 151 194	81 105 136	4-16	n.a.	D 120 S	D 120 D	3/4"	550 x 177 x 998	50	
DB 14 C	7,0 9,5 12,5	144 189 243	101 132 170	4-16	n.a.	D 120 S	D 120 D	3/4"	550 x 177 x 998	50	
DB 16 C	7,0 9,5 12,5	162 212 273	113 149 191	4-16	n.a.	D 200 S	D 200 D	3/4"	550 x 177 x 1243	60	
DB 22 C	7,0 9,5 12,5	216 283 364	151 198 255	4-16	n.a.	D 200 S	D 200 D	1"	550 x 378 x 999	100	
DB 25 C	7,0 9,5 12,5	252 330 425	176 231 297	4-16	n.a.	D 340 S	D 340 D	1"	550 x 378 x 999	100	
DB 32 C	7,0 9,5 12,5	324 424 546	227 297 382	4-16	n.a.	D 340 S	D 340 D	1"	550 x 378 x 1243	120	
DB 36 C	7,0 9,5 12,5	360 472 607	252 330 425	4-16	n.a.	D 340 S	D 340 D	1 1/2"	550 x 540 x 998	150	
DB 47 C	7,0 9,5 12,5	468 613 789	328 429 552	4-16	n.a.	D 510 S	D 510 D	1 1/2"	550 x 540 x 1243	180	
DB 65 B	7,0 9,5	648 810	454 567	4-11	D 800 M	D 800 S	D 800 D	1 1/2"	960 x 754 x 1716	445	
DB 65 C	12,5	774	542	11-16							
DB 80 B	7,0 9,5	792 990	554 693	4-11	D 800 M	D 800 S	D 800 D	1 1/2"	960 x 754 x 1716	445	
DB 80 C	12,5	954	668	11-16							
DB 110 B	7,0 9,5	1080 1350	756 945	4-11	D 1000 M	D 1000 S	D 1000 D	2"	1064 x 833 x 1832	600	
DB 110 C	12,5	1296	907	11-16							
DB 130 B	7,0 9,5	1296 1620	907 1134	4-11	D 1500 M	D 1500 S	D 1500 D	2"	1118 x 859 x 1869	650	
DB 130 C	12,5	1548	1084	11-16							
DB 140 B	7,0 9,5	1404 1755	983 1229	4-11	n.a.	D 1500 S ①	D 1500 D ①	DN80	1337 x 770 x 2256	900	
DB 187 B	7,0 9,5	1872 2340	1310 1638	4-11	n.a.	D 2400 S ①	D 2400 D ①	DN80	1593 x 920 x 2300	1100	
DB 280 B	7,0 9,5	2808 3510	1966 2457	4-11	n.a.	D 3200 S ①	D 3200 D ①	DN100	1876 x 1060 x 2366	1900	
DB 340 B ②	7,0 9	3780 4536	2646 3175	4,9	n.a.	D 4700 S ①	D 4700 D ①	DN125	2250 x 1283 x 2687	2400	

Notes:

① Optional

② Maximum operating pressure of DB340 is 9 bar.

③ Filters are delivered loose with the dryer. Filters are not included for the DB140-340 range.

DB05 up to 6: the filters can be directly fixed on the dryer .

DB11 up to 130: the filters have to be mounted on the air distribution line.

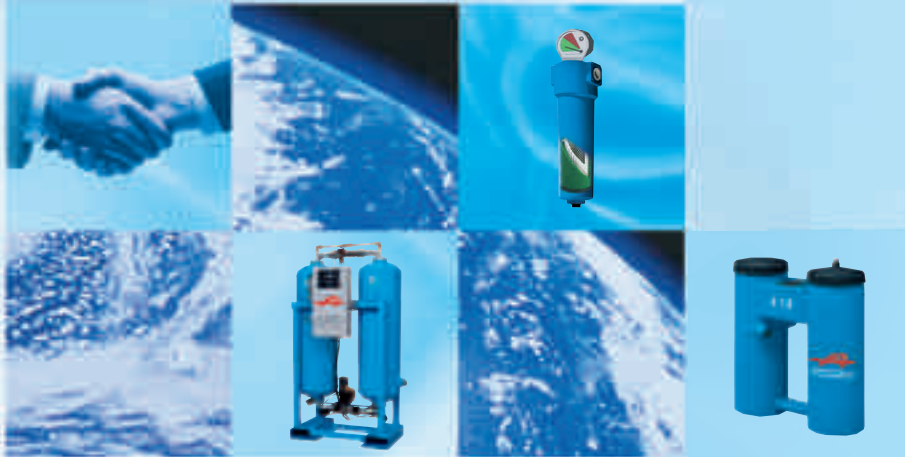
Data measured at reference conditions: Air inlet temperature = 35°C, relative humidity = 100%, air inlet pressure (see the correction factors table).

DB/B: maximum authorized pressure of 11 bar.

DB/C: maximum authorized pressure of 16 bar.



SHARING OUR VALUES



PARTNERSHIP

Close working relationships form the foundation of our corporate culture. This has grown through developing long term partnerships with our distributors, who provide a total compressed air service, tailored specifically to our customers' requirements. Our business approach has earned us a reputation of trust and loyalty by achieving success through our partnership.

COMPETENCE

Personnel skill development is a vital part of our success: using a continuous improvement process, we improve the ability of our distributors to maintain and improve the service to our customers.

We carry this process through to our partner distributors, to ensure that we create a motivated and enthusiastic team, working together for the benefit of our customers.

EVOLUTION

Our strategy in product and service development is based on the continuous improvement of our products and services, in order to meet the requirements of the market and our customers. Continued investment in the design of new products and the use of innovating technologies, keeps our compressed air solutions among the most competitive in the industry. Our mission is to ensure customer satisfaction and trust.

YOUR DISTRIBUTOR



www.airwco.com