# Aircel air dryers show their full potential with ADWIS

With 100,000 units sold at the beginning of 2015, SWEP's range ADWIS (Air Dryer With Integrated Separator) is now quickly becoming the market standard within several industrial applications. A successful combination of research and thorough knowledge of market demands, this solution solves a common problem without compromising compactness or efficiency.



## Moisture in compressed air

Refrigerated air dryer systems are commonly used to remove moisture from compressed air. This is necessary to prevent condensation in the subsequent process, leading to costly corrosion. Ambient air (temperature 20°C, relative humidity 60%) contains 10.4 g/m3 moisture. To supply a compressor, intake 100 m3/h, with suitable air requires the removal of 1040 g/h of moisture. This issue must be solved without increasing the size of the systems, a challenge that SWEP has accepted and met.

### Research with an open mind

Engineers at SWEP have worked in close corporation with industry specialists and academics to set new standards in compactness and performance. The result is a complete product range: ADWIS. A truly compact solution, it combines an integrated separator with a circulation system that increases efficiency by exploiting the temperature difference between two plate packages. The engineering that goes into ADWIS is as rational as the concept is simple. For example, all connections for the refrigerant cycle are on one side, and all air connections on the other. There is no need for piping to an external separator, and you can save further costs and space by fitting the unit very closely to the system frame. It covers the 35-400 Nm3/h capacity range with 11 models in just two envelopes. Extensive field-testing has now proved the concept's effectiveness.

### Key advantages of ADWIS

The compactness and simplicity of ADWIS is truly ground-breaking. Thanks to the efficient plate design, ADWIS has a small footprint. Furthermore, the crucial height dimension is the smallest currently available on the market, at only 189 mm for the ADWIS 35-100 Nm<sup>3</sup>/h envelope and 289 mm for the ADWIS 120-400 Nm<sup>3</sup>/h envelope. This makes it easy to integrate ADWIS into almost any system.

ADWIS' components are stainless steel, for strength and resistance to corrosion, with copper-brazed exchanger plates. Both envelopes are rated to 16 bar on both the air and refrigerant sides. The high-capacity ADWIS 120-400 products have a maximum working pressure of 31 bar on the refrigerant side. SWEP's own cycle and thermal fatigue tests have confirmed the strength of the units.

The safety aspect has also been taken into consideration. The quality of SWEP's products in general is assured by the company's ISO 9001 certification. In addition to SWEP's own rigorous quality control, including cycle and thermal fatigue tests, ADWIS has also undergone third-party testing. PED approval has already been obtained, and other approvals are pending or available on request. ADWIS operates safely at up to



30% above nominal capacity to cope with short-term demands for higher capacity.

Compact and robust, ADWIS is a financially attractive solution as well. The separator is sandwiched between two heat exchangers in a highly efficient unit. In fact, simplicity is the key: separated water drains from the intuitively obvious place, the unit's lowest point. Free from voids and piping, the uncomplicated envelope is easy to mount and connect and allows for standardized insulation. The simplicity of the design saves money during installation, production and maintenance.

### A rational solution responding to market needs

A truly successful product range has to take engineering demands and environmental issues into consideration. However, it also has to meet the demands of the market. A company that has benefitted from ADWIS is the USbased Aircel, LLC, which designs and manufactures a complete line of compressed air systems. The product line consists of heated/heatless desiccant air dryers, and cycling/non-cycling refrigerated air dryers; from small point-of-use dryers, to large, custom engineered compressed air dryers for the most exacting industrial applications.

Aircel, LLC utilizes the SWEP series of ADWIS heat exchangers on its line of compact series non-cycling refrigerated air dryers." The ADWIS multipurpose heat exchanger allows for highly efficiency condensate removal in the most effective footprint. The quality of the heat exchangers, as well as the practical design enables seamless integration into AIRCEL dryers", says John Jester, Design Engineer at Aircel, LLC. "SWEP's innovative products combined with unmatched engineering support permits truly custom designs. The partnership between AIRCEL and SWEP is critical to providing products that meet or exceed industry standards in a cost competitive and prompt manner. "

