

## ■ Application report

### BENTELER Aluminium Systems optimizes the compressed air installation

Industry:	Automotive
Customer/Location/Year:	Benteler, Louviers (France), 2018
Use of compressed air:	Process air
Installed products:	EVERDRY

In cooperation with Team 2D Pneumatic and BEKO TECHNOLOGIES, BENTELER Aluminium Systems optimizes its compressed air installation.



*How can you increase your compressed air production and at the same time not increase your bill for energy consumption, but even reduce it?*

As autumn takes on the charm of the Indian summer that morning on the banks of the Seine, a delicious smell tickles the nose of those who cross the Incarville industrial park in Louviers. A smell that regular guests, like BENTELER employees, know well and to which they - almost - no longer pay any attention. "It smells like chocolate," confirms Laurent Louis, General Services Manager of BENTELER. "We are only a few dozen meters away from one of the sites of the world's leading chocolate manufacturer."

BENTELER doesn't make chocolate, they make aluminum cross beams. In combination with crash boxes, these cross members, which are attached to the front and rear of the vehicles, absorb energy in the event of an impact. The originally German automotive supplier supplies a large number of manufacturers such as PSA, Renault, Fiat, BMW and Ford. The Louviers site employs 180 people, operates 24 hours a day, seven days a week and complies with the ISO-50001 standard, which aims to improve energy efficiency.

#### The customer requirements: Energy saving with maximum compressed air quality

Optimizing the compressed air system and saving energy were the objectives of BENTELER when the system was due for replacement: a 17-year-old unit that was outdated in terms of both production quality and energy consumption. "We carried out an internal audit," explains Laurent Louis, "and then carried out an energy assessment of the site, which identified areas for improvement, in-

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cluding the modification of the compressed air production system." It used to be provided by compressors installed in two separate buildings and linked to very energy-intensive blower-adsorption dryers.

BENTELER has therefore consulted three specialists for compressed air generation for its new plant, including two local distributors and a French manufacturer. BENTELER finally chose 2D Pneumatic, a company of the AIRMAX group, which entered into a partnership with BEKO TECHNOLOGIES to offer a particularly reliable, tailor-made and efficient solution. This solution was ordered at the beginning of 2017 and implemented within a few weeks.



*The heat regenerating adsorption dryer EVERDRY type FRA-V is the heart of the compressed air treatment.*

After a thorough analysis of the existing plant and in order to meet the requirements formulated by BENTELER, 2D Pneumatic and BEKO TECHNOLOGIES decided on a tailor-made compressed air treatment system consisting of perfectly matched standard components, including

- A compressor provided by 2D Pneumatic
- The compressed air treatment system supplied by BEKO TECHNOLOGIES includes the following components:
  - A CLEARPOINT filtration unit consisting of a water separator, an oil separator and a dust filter to remove water, liquid oil and solid contaminants such as dust.
  - A heat regenerating adsorption dryer EVERDRY type FRA-V "Zero Purge", which allows to reach a very low dew point, and all this without any consumption of compressed air.
  - Several BEKOMAT condensate drains for draining condensate from the compressed air network
  - An ÖWAMAT condensate treatment unit.

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*Partial view of the  
warm regenerating  
Adsorption dryer  
EVERDRY type FRA-V*

### The dryers from BEKO TECHNOLOGIES make the difference

Since April and the commissioning of the new plant, compressed air production has been ensured by two continuously operating compressors, one with 55 kW and one with 90 kW. As is often the case, the two old compressors are still operational in case of a problem. The two new compressors are housed in a special room that takes into account a number of parameters, including exposure. They are coupled with an EVERDRY type FRA-V heat regenerating adsorption dryer designed for a throughput of 1,300 m<sup>3</sup>/h at a pressure of 7 bar and an inlet temperature in the dryer of 40 °C maximum. This dryer makes it possible to reach a very low dew point without any consumption of compressed air.

### Full customer satisfaction

After more than one year of operation of the new plant, Flarent Louis draws a very satisfactory balance and emphasizes the savings achieved. The solution proposed by 2D Pneumatic, a subsidiary of the AIRMAX group, in collaboration with BEKO TECHNOLOGIES, consisting of a compressor, a compressed air treatment system and a condensate treatment unit, is proving to be profitable. Since the plant was commissioned, at the beginning of 2017, BENTELER has achieved energy savings of around 169,000 kW per year, despite a considerable increase in the volume flow and the number of operating hours due to the expansion of the machine park.

This is fully sufficient to meet the criteria of ISO 50001 standard, which is entirely focused on improving energy performance in order to reduce consumption and thus costs. "In the past, compressed air accounted for 8% of the site's energy consumption," explains Flarent Louis. "Today, when demand is higher, it is much lower and far below what ovens or washing machines consume".

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*The installed ÖWAMAT oil-water separator collects and treats the disperse condensate from the customer's compressed air system, independently of the compressor oil.*



*Discussion between Christophe Gosse, Regional Director West of BEKO TECHNOLOGIES, Flarent Louis, General Services Manager at BENTELER and Jérémy HUBERT, Planning and Business Manager at 2D Pneumatic, a subsidiary of the AIRMAX group, about the functioning of the EVERDRY dryer type FRA-V and about the different data that can be read with the multifunctional control panel (touch screen).*

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