

EVERDRY®**Purified compressed air with taste guarantee according to the requirements of EU hygiene package****EVERDRY® the Concept**

conveys ambient air to the downstream heater. There, heating to the required desorption temperature takes place. The pressure operation of the regeneration blower results in a temperature increase which has a positive effect on the power consumption of the heater.

The heated air flow from the blower vaporises the moisture taken up by the desiccant. Subsequently, this moisture is discharged into the atmosphere along with the air flow. Desorption takes place in an energetically-optimised way using a reverse-current process.

The cooling phase takes place under vacuum conditions.

To prevent temperature and dew point peaks subsequent to the switch-over, the heat accumulated in the desiccant after the desorption phase is removed along with the cool air flow from the blower.

In the cooling phase, the blower switches to suction operation, whereby the ambient air flows directly into the adsorption container to be cooled. The negative pressure, produced during the suction operation, causes a change of the „physical balance“ in the desiccant. The desorption temperature decreases as a result of the negative pressure, thus effecting after-desorption during the cooling phase. Due to the after-desorption, there is a lower residual load in the desiccant after the regeneration phase (heating and cooling). The residual load in the desiccant decisively influences the quality of the drying phase.

The consequence: The pressure/vacuum method provides better quality with an identical application of energy – or, the energy is reduced while the same quality is achieved.

The compatible system components form a clear compact unit: A CLEARPOINT prefilter with BEKOMAT 14 condensate drain. A heat-regenerated adsorption dryer of the EVERDRY FRA-V 3400 C type. A water-cooled heat exchanger for pre-reduction of the compressed air temperature. An EVERSORP EC 2600 oil vapour adsorber to safeguard against oil contamination. A CLEARPOINT after filter for the separation of particles. Finally, sterile filtration prior to entering the compressed air system. Permanent monitoring of the residual oil content in the compressed air is performed with the BEKO testing method.

**EVERDRY® FRA-V 3400 C**

BEKO SYSTEMS GMBH
Im Taubental 7
41468 Neuss
Germany
Telephone +49 (0) 2131 988-600
Fax +49 (0) 2131 988-695
E-Mail info@beko-systems.de
www.beko-systems.de

BEKO TECHNOLOGIES GMBH
Im Taubental 7
41468 Neuss
Germany
Telephone +49 (0) 2131 988-0
Fax +49 (0) 2131 988-900
E-Mail beko@beko.de
www.beko.de





The company Alfred Ritter & Co. KG, Waldenbuch, Germany is family owned in the third generation, and every family has its traditions. For almost 100 years the Ritter family has kept a sweet secret. The recipe for success is to produce good chocolate: „Square, practical, good“. Their chocolate range, Ritter Sport, is now sold in about 90 different countries around the world and loved by foodies of all generations.

| | | |
|---------------------------------|-----------------------------|-----------------------|
| Baureihe EVERDRY® FRA | 580 40.000 m³/h | Leistungs- bereich |
| DTP bis -40 °C | Gemäßigtes Klima | |
| Investitionen Betrieb | Warm regenerierend | |
| ZERO PURGE | Hohe Prozess- sicherheit | |

Food-grade Compressed Air - for the sweet Sides of Life

The solutions provided by BEKO SYSTEMS produce purified compressed air with taste guarantee according to the requirements of EU hygiene package

Optimization of the production processes in the Alfred Ritter GmbH & Co. KG, Germany required an improvement in high quality compressed air. The task setting was clearly defined: Unrestricted useable compressed air for the pneumatic conveyance of cereals, cacao powder and other primary raw materials required for the production of chocolate, all in accordance with the strict requirements of the HACCP concept. Developed in 1959 in the USA for NASA this concept is a preventive system which ensures the safety of food for consumers. Under German law the HACCP became a constituent part of the Food Hygiene Ordinance in 1998. In the EU, it came into effect in 2006, together with the new hygiene regulations package.

Innovative solutions and a competent implementation were in demand.

The safest way to prevent clumping in the conveyor pipes and microbial growth in the product can be achieved with compressed air which is processed to a pressure dew point of -40°C. An adsorption dryer was therefore going to be the central component of the system. The BEKO SYSTEMS processing and system experts convinced the customer with a system solution of fully aligned quality products.

The central component: An adsorption dryer of the **EVERDRY FRA-V 3400 C** type. The systems of the FRA-V series require no compressed air, neither for the desorption process (vaporisation of the water from the desiccant) nor for subsequent cooling of the heated desiccant (ZERO PURGE). This is ensured by the innovative pressure/vacuum method.



Depending on the requirement, the warm, dry blast air, which accrues during cooling of the heated desiccant, can be used for room-heating or discharged to the atmosphere.



During the desorption phase, the regeneration blower works under pressure conditions.

While the drying of the compressed air takes place in one of the adsorption vessels, the second adsorption vessel – which has been saturated with moisture beforehand – is regenerated. Prior to the start of regeneration, a gentle pressure relief to atmospheric pressure is implemented. The regeneration blower

Particularly clear: The arrangement of the pipes in which the raw materials for the production of the chocolate are conveyed towards the storage silos or from these towards the production processes by means of treated compressed air.