

## Reliable Large Volume Drying

### Low Energy Heat Pump Based Condensation Drying

**FYSAM Auto Decorative GmbH, a specialist surface finisher of aluminium parts for the automotive industry, has commissioned a new facility by Driesch GmbH and guarantees best workmanship through a condensation dryer by Harter GmbH.**

FYSAM Auto Decorative GmbH is specialized in aluminium products for the automotive industry. Their major products are roof rail systems and decorative trimming. The company offers a comprehensive set of services ranging from design to machining, anodizing and final assembly. FYSAM, formerly SAM Automotive Group, has long maintained a good business relationship with facility manufacturer Driesch GmbH of Menden, Germany, who, in turn, has long done successful business with Stiefenhofen, Southern Germany, based drying system manufacturer Harter. Back in 2012, they installed a Driesch plating line at FYSAM's Steinheim site – including three Harter rack dryers. FYSAM did not only want their processing line to work properly in general, their focus was also on reliable and gentle drying of their delicate anodized aluminium parts and on having their specified cycle times met. Reliable and stain-free drying is particularly important to FYSAM considering the fact that most of their parts have a transparent, silicate-based coating of only 1.5 µm thickness applied after anodizing for corrosion protection. The Harter dryers did not only fulfil the specified requirements but also proved to be energy efficient owing

to the heat pump technology integrated.

#### Saving Energy with Low Temperatures

The situation after the fire in the plating shop at the Boehmenkirch site in 2018 required investment in a completely new facility. The company, which had meanwhile been acquired by the Chinese automotive supplier Fuyao, placed the order covering the facility with their established facility manufacturer Driesch who, in turn, brought in Harter again. This cleared the way for installing at the Boehmenkirch site an environment that had already demonstrated to produce good quality at the Steinheim site. Three large rack dryers were integrated in the line installed. Their inner dimensions are 700 m long (in direction of motion), 3,500 mm wide and 3,400 mm high. Each dryer features 10 special fans with a rated power of 0.7 kW each. The total fan power rating is thus 7.0 kW. Each dryer has an in-built hot water heating battery to boost heating for a short period at the initial stage of the drying process. The automatic lid system, which opens for loading and unloading the product carriers, ensures that the precious heat is retained inside the dryer. This is an additional contribution to the energy efficiency of the drying process.



**Engineer doing some welding work inside the impressively large new PP rack dryer**  
(Photo: Harter GmbH)

The dryer is connected to one Airgenex® dehumidification module that provides the required process air to all of the three dryers. The rated power of the module is 15.9 kW. The rated power of the complete drying system in production operation is about 37 kW. The heat pump technology employed in every system ensures energy efficiency. The anodized aluminium parts are processed at



**Insulated ducting connects the dryers with the Airgenex® dehumidification module which conditions the required process air.**  
(Photo: Harter GmbH)



**Carriage loading a rack into the dryer**  
(Photo: Harter GmbH)

# SURFACES

low temperatures to obtain complete and stain-free dryness within 11 minutes.

## Closed Air Circuit

The dehumidification module and the dryers are interconnected by insulated air ducts. Extremely dry air is passed through these ducts to flow over the aluminium parts to be dried. By physical reaction, the air quickly absorbs any humidity present on the parts. Back in the dehumidification module, the air is cooled and condenses to form water. The air is then reheated and

returned to the dryers. Harter dryers are the only dryers on the market to operate in a completely closed air system so that no humidity may escape into the production area. Humans and material are unaffected by such exposition as encountered with exhaust air systems.

Another drying system was supplied to FYSAM some weeks ago to be used in a cataphoretic immersion painting facility. The system includes two dryers with a common dehumidification module. So, the success story continues.

## Government Sponsoring

Condensation drying systems with integrated heat pump avoid carbon emission to a very high extent so that operators may meanwhile obtain government subsidy for investing in this technology.

## Contacts

Harter GmbH, D-88167 Stiefenhofen  
➤ [www.harter-gmbh.de](http://www.harter-gmbh.de)

FYSAM Auto Decorative GmbH, Markus Kreitmeier, Entwicklung Oberflächentechnik, Robert-Bosch-Straße 13, D-89555 Steinheim am Albuch  
➤ [www.fysam-auto.com](http://www.fysam-auto.com)

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