CASE **STUDY**

EFFICIENT EXTRACTION OF OILY WELDING FUMES

PRODUCT

Product:	Gold Series X-Flo dust collector
Model:	2 x GSX08P
Air Volume:	24.000 m³/h
Options:	Control cabinet incl. differential pressure measurement & flow control, automatic fire detection system
Application:	Robot welding - extraction of oily welding fumes
Installation Date:	2021

PROCESS OVERVIEW

Welding is a widely used fabrication process in metalworking, but it is also associated with the generation of harmful welding fumes. These emissions can have a significant impact on the environment and workers‘ health. These harmful emissions include gases such as nitrogen oxides and carbon monoxide, as well as particles such as particulate matter and heavy metals. These substances cannot only affect the air quality in the production hall, but also pose serious risks to the operator´s health. In order to minimise these risks, an efficient extraction solution is necessary. To capture and eliminate emissions directly at the source before they can spread into the ambient air, the right capture solution combined with a dust & fume collector is needed. A proper designed system helps to minimise air pollution in the workplace, reduce exposure to hazardous substances and ensure compliance with local occupational health and safety regulations.

INITIAL SITUATION

A global company for steel-based technology and industrial goods turned to Camfil because they were not satisfied with the performance of their existing extraction system. At its location in Austria, the company is specialised in metalworking of pipes, profiles and ready-to-install components as well as complex welded assemblies. Welding robots are used to produce components for conveyor technology. Until now, the extraction of the harmful oily welding fumes was carried out by a competitor‘s system, including a precoating device. The filter elements often became clogged, resulting in production downtime for maintenance and filter replacement. In addition, production was to be expanded to include additional welding robots, so that the dust & fume collection system had to extract a higher volume of process exhaust air together with additional contaminants.

CASE **STUDY**

CHALLENGES

The customer was looking for a solution that would reliably separate the oily welding fumes without the need for additional precoating equipment but also to reduce downtime for maintenance work. Furthermore, the extraction system should provide an appropriate clean gas value so that the cleaned process exhaust air could be returned to the production environment.

SOLUTION

Several factors were decisive for the customer to choose the Camfil solution. Due to the modular design and small footprint of the Gold Series X-Flo dust collection system, the customer did not lose any valuable space on the shop floor. The filter cartridges with Dura-Pleat filter media provide oleophobic properties which guarantee a significantly longer service life and the previously necessary precoating equipment became superfluous. The customer was also impressed by the low sound pressure level of the extraction system (<70 dB(A)), which is mainly achieved by various silencers and extremely quiet fans. The turnkey solution also included an integrated fire protection system, a control system carried out according to the customer‘s factory standards, the construction of the ductwork, and the installation and commissioning of the entire extraction system. Camfil´s proposed solution convinced the customer in that way, that he not only used the extraction solution to expand his machine park, but also replaced the two existing competitor‘s extraction systems in his production line. The initial quotation was one Gold Series GSX04 dust collector but became two redundant GSX08 dust extraction systems, which now reliably ensure greater safety in 24/7 shift operation.

CUSTOMER BENEFITS

The installed system provides the customer with a reliable extraction solution for their production around the clock. It has been confirmed that the installed dust extraction system performs in a highly reliable and efficient way, also on 24/7 operation. The used filter media with oleophobic properties are ideal for filtering oily welding fumes and provide a longer service life. This in turn, reduces the cost of filter replacement and maintenance on customer´s side. In addition, the customer is able to reduce his energy costs by returning the cleaned process exhaust air into the production. The customer can thus reduce his total cost of ownership and also make a contribution to the environment.

THE HIGH EFFICIENCY OF PLEATED FILTER MEDIA AND THE VERSATILITY OF SYNTHETIC MATERIALS

Camfil´s Dura-Pleat filter media is made of 100% spunbonded polyester in a pleated design that combines the best of both worlds: the high efficiency of pleated media and the versatility of synthetic materials. The base polyester media is treated to provide various properties such as anti-static, oil & water repellent or to handle sticky dusts.

DURA pleat
The MOST Durable Filter Media.

For detailed information about this project please contact:
europe.apc@camfil.com or find your local contact on
www.camfil.com/en/support-and-services/support/contact-locator.

camfil

camfil.com/apc