

METAL DUST EXTRACTION OPERATOR PROTECTION POLISHING WORKSTATION



ISSUE:

In a polishing workshop, operators are exposed to a large amount of dust at their workstation.

Parmentier Polissage, located in Aumale, Seine-Maritime, France, wanted to set up an efficient system to capture all the airborne dust generated by its activity: the polishing of all kinds of metal parts. It can be copper, aluminium, brass or stainless-steel dust, but also dust from polishing brushes (fabric fibres) or polishing paste.

INRS and CARSAT (French organisations) participated in this project, by helping the company in the compliance of its premises, while protecting the operators from toxic metallic dust. This type of dust also presents a significant explosion risk (ATEX).

These two organisations were able to guide Parmentier Polissage in defining specifications and the desired performance guarantees. A solution was already in place in the workshop but was not efficient enough. It therefore needed a new, high-performance dust removal installation.

NEU-JKF, specialist in air treatment in industrial environment, has been able to meet this demand and provide a solution particularly suited to this activity.



SOLUTION:

6 collection points have been installed in the workshop, as close as possible to the emission zones.

The dust generated during the polishing of the different parts can be extracted through hoods. NEU-JKF has installed adjustable hoods according to the size of the parts to be polished and the tool used, allowing the capture as close as possible to the emission area.

In addition, an exhaust swing arm was installed to allow dust from larger workpieces to be extracted. Through a network of galvanized steel ducts, the air reaches a Cyclone. It separates the larger metal particles, fabric fibres and polishing paste, from the rest of the fine dust. Dust is then directed to an ATEX pocket filter equipped with a non-return valve.

Using 2 bins, installed below the cyclone and the dust collector, the centralised collection of dust is done directly into bags reducing operator handling.

The whole installation is put under vacuum by a fan providing two functions: capture the metal dust inside the workshop, and release the clean air outside.

The layout of the polishing tools being specific, NEU-JKF adapted the proposed solution by optimising the installation; it offers better workstation ergonomics and more comfort to the operators.