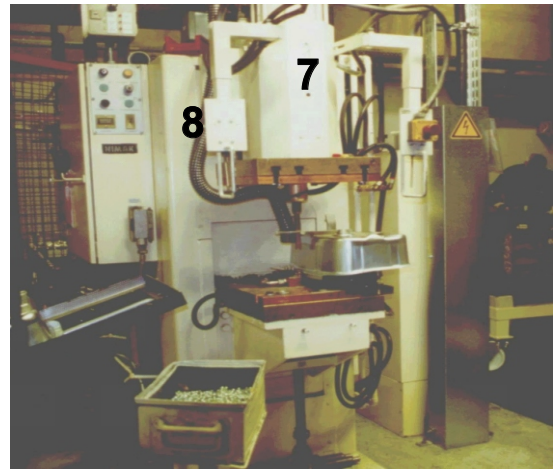
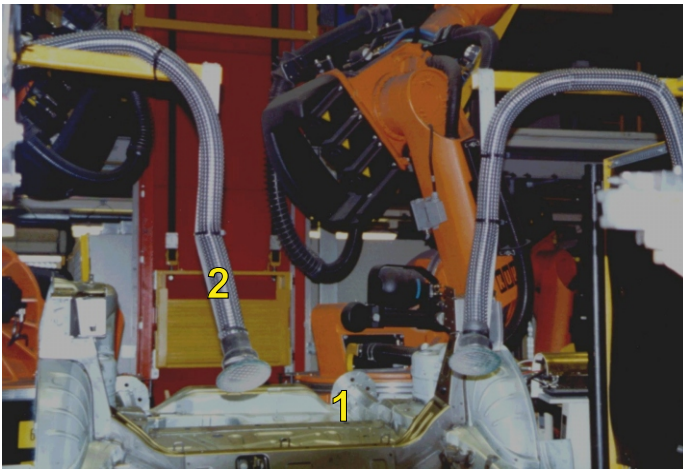


■ Process: Welding fume extraction in the automotive industry



caption see reverse

■ The Task

Within the process of manufacturing car bodies, various welding tasks have to be done.

Extraction and filtration tasks have to be applied on various spot weld robots and hand welding stations.

In order to keep the collection air flow as small as possible, smoke extraction is often implemented directly at the smoke generating source by small diameter tubes (50 to 80 mm).

Since processed coils are sometimes oily, resp. polluted with drawing grease, welding fumes are sticky and even inflammable.

Since filter units typically are installed indoors within the production facilities, both compact design (in order to save space) as well as sufficient noise reduction protection for the workers are a must.

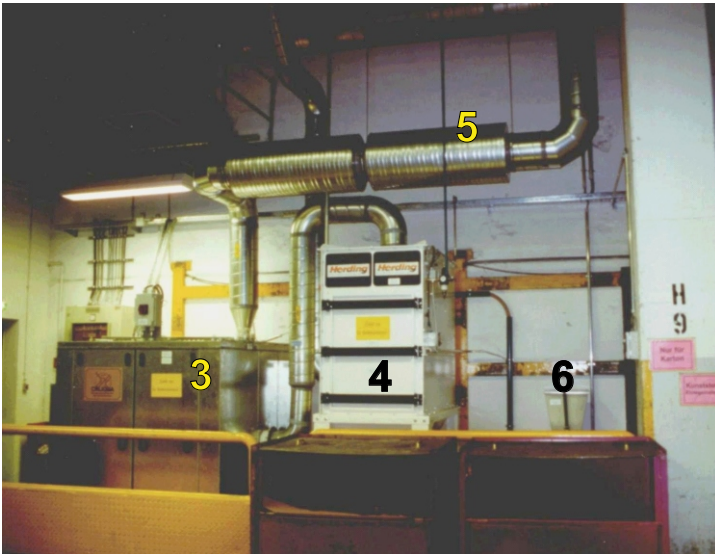
■ The Solution

Herding® filtration system with Precoating

Technical Features:

- ⇒ Air flow: up to 2,000 m³/h with floor mounted high pressure fan (pressure up to 17,000 Pa)
- ⇒ Dust discharge through dust bin
- ⇒ Consistency of < 1 mg/m³
- ⇒ Reliable and economical extraction of fumes by application of the HSL Sinter Plate Filter
- ⇒ Safe handling of sticky dust and fumes by application of automatic precoating system (AutoCoater)
- ⇒ Reduction of fire risk by insertion of non-inflammable calcium carbonate by means of the Autocoater
- ⇒ Possibility of re-routing the clean air back into production facilities: high saving in heating cost during winter period
- ⇒ Use of noise reduction enclosure to minimize noise emissions of the fan

Welding fume extraction - and the solution to the dust problem



Caption:

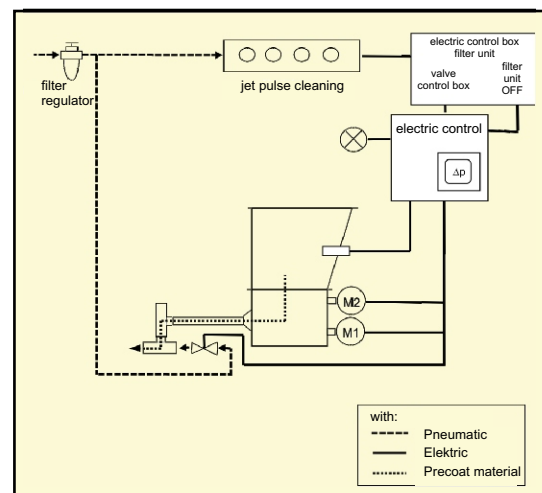
- 1 Hand welding spot with handling robot
- 2 Extraction tube with extraction hopper
- 3 Noise reduction enclosure with integrated high pressure fan
- 4 Herding Filter Unit
- 5 Silencer
- 6 Automatic precoater (AutoCoater)
- 7 Automatic spot weld machine (hand-stocked)
- 8 Fume extraction tube

Working principle AutoCoater

In order to safely remove sticky or oily dust and fumes, it is often necessary to insert a protection layer of e.g. calcium carbonate onto the filter elements. This is done by the AutoCoater which is controlled by differential pressure and operates fully automatic. Through a dosing screw and an injector, a defined amount of precoat material is blown into the filter unit. This material is homogeneously diffused across the filter element surface and protects the filters against damaging dust components.

Upon reaching a pre-set differential pressure across the filter elements, the jet-pulse cleaning system is automatically activated. The mixture of precoat material and dust drops from the filter element surface and is collected in dust bins. After that a new precoat layer is applied. The storage container of the AutoCoater is monitored by a level sensor in order to guarantee refilling in time by the operators.

Herding® AutoCoater: Schematic Drawing



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