

WELDING FUME **extraction**

BOMAKSAN SOLUTIONS

CATALOGUE



HEALTH RISKS

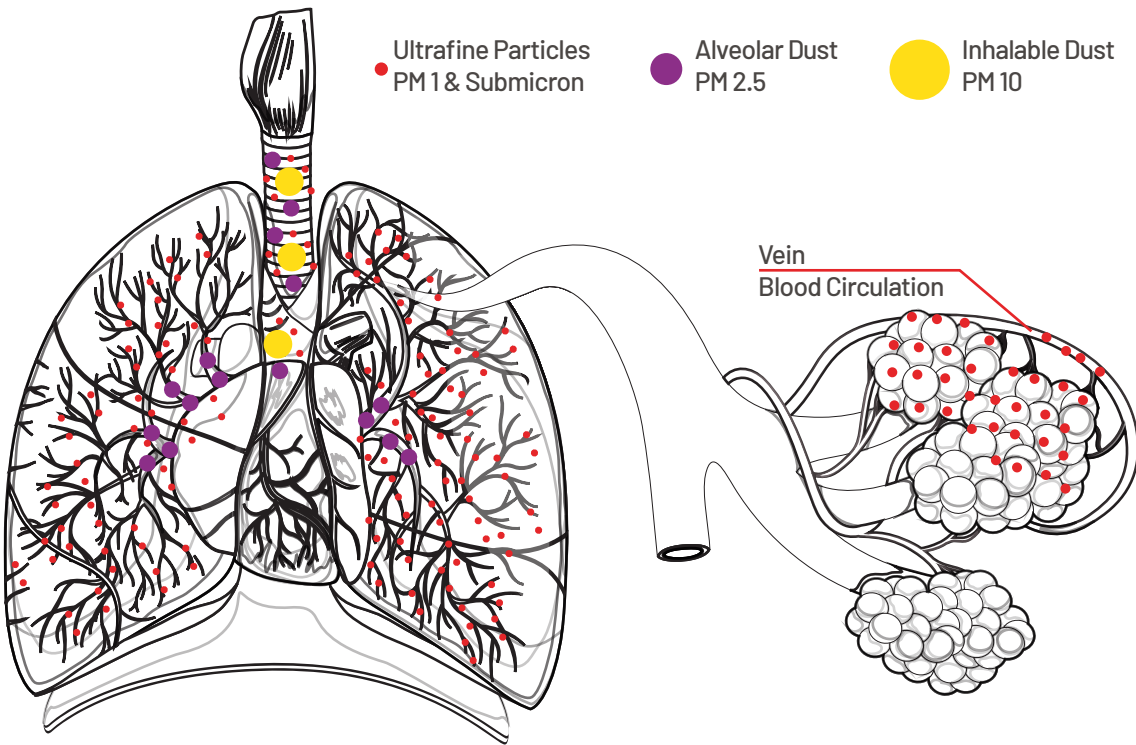
Being exposed to fumes generated by welding or thermally generated particles is a significant health and safety concern for manufacturers. The potential health hazards span from minor illnesses like a sore throat and eye irritation to more severe conditions like metal fume fever, and can even extend to long-term or fatal illnesses such as cancer. In 2019, International Agency of Research classified weld fume as a known carcinogen.

- Sore Throat
- Eye Irritation
- Metal Fume Fever
- Cancer

LOSS OF PRODUCTION

Unregulated dust and fumes also have negative effects on factories efficiency. Dust and particles arises from metalworking processes can penetrate machinery or electrical enclosures, leading to operational downtimes and reduced efficiency. Additionally, these fumes can build up on inventory, necessitating extra cleaning efforts and maintenance work. Moreover, qualified workers would like to work dust-free environments. So they make their choices accordingly.

- Unefficient Working Environment
- Increased Downtime
- Additional Clean Up Works
- Increased Malfunction in Machines



**BEWARE OF
YOUR SHOPFLOOR
AIR QUALITY**

In 2019, the International Agency for Research on Cancer (IARC) classified weld fume as a known carcinogen that can lead to lung cancer. This new findings makes welding fume extraction and filtration systems much more important for health and safety of workers.



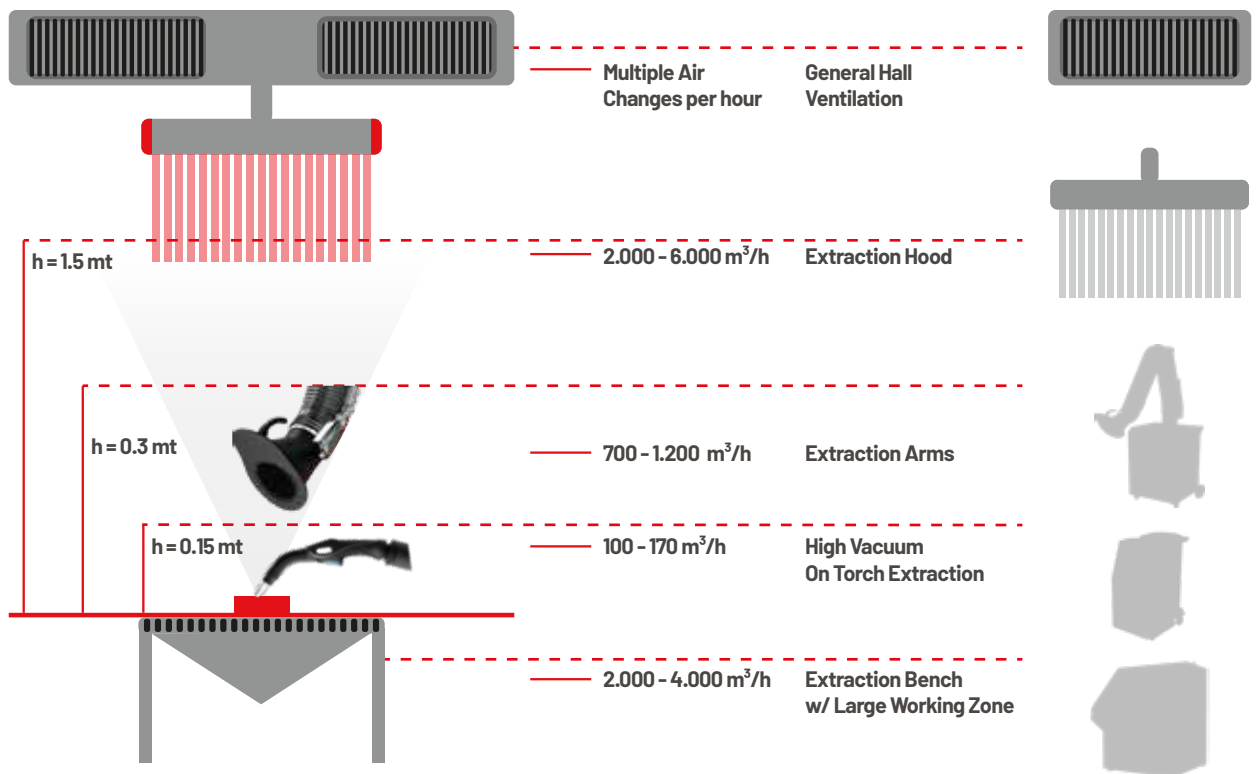
LEV SOLUTIONS

LEV refers to a system used to control and capture airborne contaminants, such as dust, fumes, vapors and gases at their source before they can disperse into the general work environment.

LOCAL EXHAUST VENTILATION

This system consists of a combination of equipment, such as hoods, ducts, fans, and filters, designed to effectively remove pollutants generated during various industrial processes, manufacturing activities, or other work tasks.

The purpose of a LEV system is to protect workers' health by minimizing their exposure to potentially harmful substances. By capturing contaminants at the source, LEV systems help maintain a safer and more comfortable working environment while also complying with occupational health and safety regulations.



MANUEL WELDING LEV SOLUTIONS

The fume and particles arises from Welding processes are classified as carcinogeric by IARC in 2019. Welding fume exposure limit is also regulated strictly by local authorities.



EXTRACTION BENCHES

Bomaksan Welding and Grinding benches offer the perfect answer for manual welding and grinding of small metal components. Welding and Grinding Benches can be connected to a centralised extraction and filtration systems.

If you are looking for stand alone bench with integrated fan and filter, TOFILbench series is the right choice. Powerful extraction performance and high efficient filtration makes TOFILbench units perfect solution.

READY FOR
EXTRACTION

EXPANDABLE
WORKING ZONE

DURABLE
STEEL BODY

PLUG&PLAY
SYSTEM*

*Only TOFILbench units are Plug & Play featured.

PRODUCT OFFERINGS



BKM



BTM



TOFILbench



ON TORCH EXTRACTION

Bomaksan branded Mikrofil series high vacuum units are a cutting-edge solution in on-torch welding fume extraction. This series optionally equipped with an automatic Jet-Pulse cleaning feature, high efficient cartridge filters, powerful brushless turbo blower and control panel. Mikrofil series high vacuum units are perfect choice for welding operations. It's brushless motor, high filtration area and optional jet-pulse cleaning system ensures as the lowest maintenance requirement as possible.

AUTO JET-PULSE
CLEANING

BRUSHLESS
MOTOR

HIGH EXTRACTION
PERFORMANCE

HIGH FILTRATION
AREA

PRODUCT OFFERINGS



MIKROFIL_midi



MIKROFIL_mini



HV.HOSE



EXT.GUN



EXT. ARM w/ MOBILE FILTERS

Bomaksan's range of mobile filter units serves as a reliable solution for effective welding fume extraction. Depending on the model, these units are adaptable for both occasional and continuous usage.

Their exceptional mobility, offering a full 360-degree operating radius, coupled with disposable filters or cleanable filters as needed, makes them remarkably versatile. Bomaksan ensures an optimal answer for dynamic work environments.

The right mobile filter unit selection for your specific need might be a little bit complicated. Please advise Bomaksan sales representatives or Bomaksan partners for right mobile filter selection for your challenge. They will decide which unit is the best suit for your application depending on welding consumable consumption, welding frequency, welding type and your workshop constraints.

TRUE JET-PULSE CLEANING*

W3 COMPLIANT

HIGH EXTRACTION PERFORMANCE

HIGH FILTER AREA

SUITABLE FOR STAINLESS STEEL

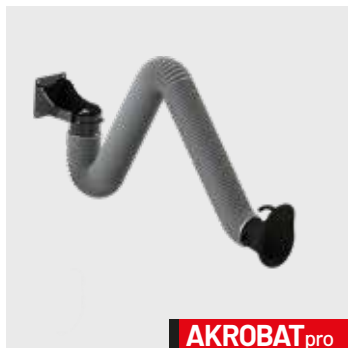
EASY TO MAINTAIN

*Only TOFILpulse units are equipped with TRUE JET-PULSE.

PRODUCT OFFERINGS



PRODUCT OFFERINGS



SPECIAL DESIGN EXTRACTION HOOD

HIGH QUALITY FLEXIBLE HOSE

EASY & SMOOTH MOVEMENT



EXTRACTION ARMS

Bomaksan-branded extraction arms are the perfect solution for extracting fumes, dust, and gases from their source. State-of-the-art extraction hoods, high-quality and durable flexible hoses, and a smooth structure make them the perfect match for welding fume extraction.

Bomaksan's extraction arms offer versatile installation options, including pairing with various brackets, extension arms, exhaust rails, or fixed/portable filter systems. The unit comes with a built-in hood damper as a standard feature. Available in lengths ranging from 2 to 4 meters, the welding fume extraction arm can be effortlessly mounted on ceilings, walls, benches, or extension brackets.

Bomaksan-branded BAK series extension consoles increase the reach length where longer distances from bracket installations are needed. Also, the BAF series radial fans designed for extraction arms can be equipped with Bomaksan Akrobat Series extraction arms.

EXTRACTION FROM MULTIPLE SOURCES

If there is 3 or more welding stations, than designing a central extraction systems makes more sense. Bomaksan engineers and solution partners can help you design correct welding fume extraction systems with the most efficient operation and excellent performance.



CENTRAL EXTRACTION FILTERS

Bomaksan offers a wide range of central extraction systems, spanning from plug-and-play compact filter units to modular filter units. Bomaksan covers the different advantages of various dust collector technologies: horizontal round cartridges, vertical round cartridges, and pleated flat panel filters. These different technologies have specific advantages in various projects, which is why we offer all types in our product range.

Designing a jet-pulse collector is not an easy job. Designers must consider factors such as filtration velocity, can velocity, valve angles, valve sizes, header tank sizes, etc. This requires excellent expertise to produce high-quality dust collectors. With over 35 years of experience, Bomaksan provides perfect jet-pulse cartridge filters with superior performance to its clients.

PRODUCT OFFERINGS



**EASY
INSTALLATION**



**AUTOMATIC
CLEANING**



**HIGH EFFICIENT
FILTRATION**



**EXCELLENT
PERFORMANCE**



**PLUG & PLAY
OPTIONS**



**MODULAR
OPTIONS**





ROBOTIC WELDING LEV SOLUTIONS

Robotic welding becomes a widely adopted and standard solution across diverse industrial fields. While offering notable advantages, this technology also presents various challenges, and among these challenges, managing fume extraction is one of the biggest.

LEV SOL. FOR ROBOTIC WELDING

Robotic welding can generate significant amounts of welding fumes, which, if not controlled, can disperse throughout the workspace. Efficient fume extraction is crucial to prevent these airborne contaminants from affecting the health of workers and polluting the environment.

Easiest way to apply LEV system for robotic welding application is to install a High Vacuum On Torch Filter Unit - Mikrofil MIDI. However it is not always applicable to use such products because of process requirement. In this case, a professional LEV design or General Hall Ventilation (GHV) or combination of both LEV and GHV is required.

Designing an LEV system for robotic welding applications could be challenging. Designers need to consider robot movement, positioner movement, bridge movement and material flow (supply and deliver). This type of design requires great experience and know-how. Bomaksan engineers, project designers and solution partners can help you along the way.

PRODUCT OFFERINGS



LINE seri



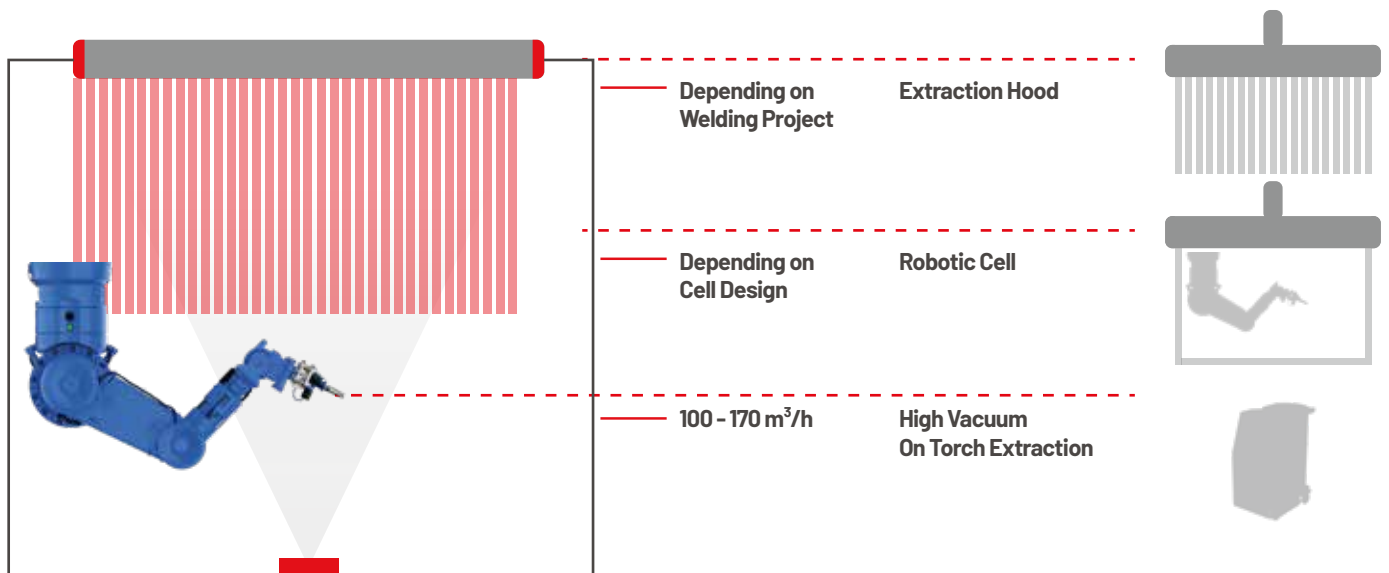
VERTY seri



MIKROFIL_midi



ECOG seri



GENERAL HALL VENTILATION

Hall ventilation systems contribute to enhancing the indoor environment by maintaining a continuous airflow, resulting in potential savings of up to 70 percent on heating expenses.



GENERAL HALL VENT. (GHV)

In the context of welding fume extraction systems, General Hall Ventilation (GHV) refers to the overall air movement and air quality management within a welding workshop or facility. Welding processes can produce hazardous fumes and particulates that need to be effectively controlled to ensure the safety and health of workers in the vicinity.

Incorporating general hall ventilation as part of a welding fume extraction system involves designing the facility's HVAC (Heating, Ventilation, and Air Conditioning) system to ensure a continuous flow of fresh air circulates throughout the workspace. This helps dilute and disperse any potentially harmful welding fumes that might be generated, thereby reducing the concentration of airborne contaminants in the area.



INDOOR AIR
QUALITY



LAYERED
VENTILATION



ENERGY
SAVINGS



SAFE
WORKPLACE



LESS
DOWNTIME

WHEN TO APPLY GHV SYSTEMS

- Supplement LEV systems for difficult applications.
- Fabricating large weldments or welding on large work pieces.
- The welder needs to shift positions frequently.
- Shops utilizing robotic welding and hard automation.
- Welding locations within a facility are variable.
- Personal protective equipment is used to control the welder's potential exposure.

SAVE ENERGY COSTS WITH GHV Systems

Bomaksan designed General Hall Ventilation Systems operate based on the endorsed principle of layered ventilation, as advised by industry associations. In this systems contaminated air that rises is collected through inlet pipes (or filter unit inlet in Air Towers) positioned at heights ranging from four to six meters. Filtered air is then reintroduced into the room through source outlet pipes (or filter unit clean air outlets in Air Towers) located closer to the floor, moving at a low speed. This filtered air displaces the welding smoke and aids in its thermal movement. The network of ducting systems is linked to the central extraction and filtering system. The comprehensive recirculation of the cleaned air results in substantial savings of up to 70% on heating expenses during colder seasons for businesses.



Heating Cost
REDUCTION

PUSH-PULL SYSTEM

The push-pull ventilation system works by having ducts placed across from each other about four to six meters high. These ducts are used for both pushing the clean air and pulling the dirty air. They are connected to a central filter unit.



PUSH-PULL SYSTEMS

Bomaksan has developed two distinct methods for extracting air from halls - mixed ventilation and upstream layered ventilation. In both scenarios, a central extraction unit is utilized, such as the Bomaksan ECOG or LINE setup. This unit can be installed indoors or outdoors and is connected through extraction and intake air pipelines.

The push-pull mixing ventilation is preferable when the hall height is lower than 7,5 mt and/or the welding wire consumption is lower than 10 tons per year. If the hall height is higher than 7,5 mt and/or welding wire consumption is higher than 10 tons per year, upstream layered ventilation should be applied.

In both systems, Bomaksan engineers, project designers and solution partners ready to implement highly energy-efficient tailor made design. With high quality Bomaksan filter units, minimise the pollutant loads for employees and comply with the local exposure regulations. Bomaksan's modular units also allows for future expansion without re-investing on total filtration systems.

PRODUCT OFFERINGS



LINE Series filter units are great solutions up to 15.000 m³/h applications. LINE series filter units are equipped with extraction fan, high efficient filters and control panels in one body.



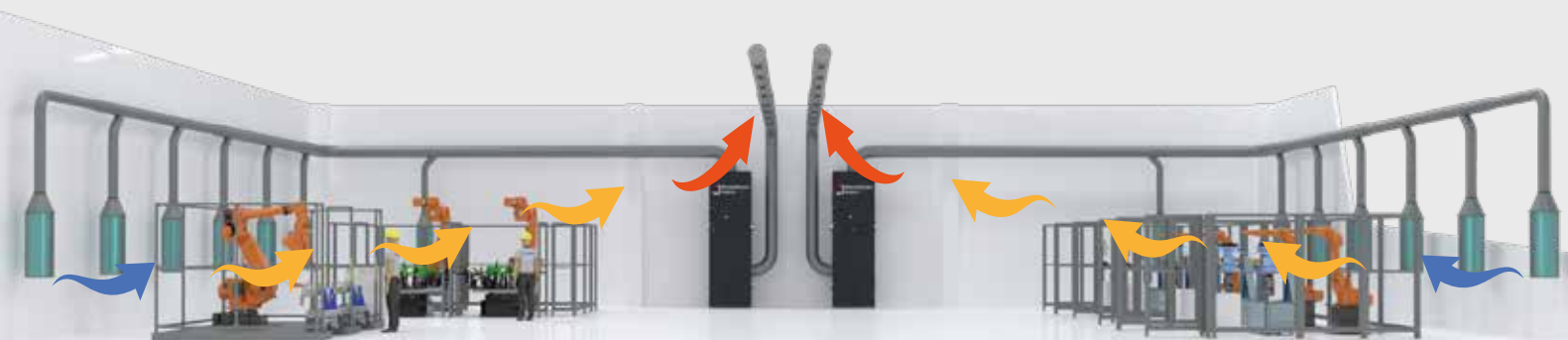
ECOG Series filter units are economical solutions up to 12.000 m³/h applications. ECOG series filter units are equipped with extraction fan, high efficient filters and control panels in one body.



VERTY Series filter units can be configured either compact or modular systems. VERTY series can be upgradable thanks to it's modular structure. The air flow capacity can go up to 100.000 m³/h.

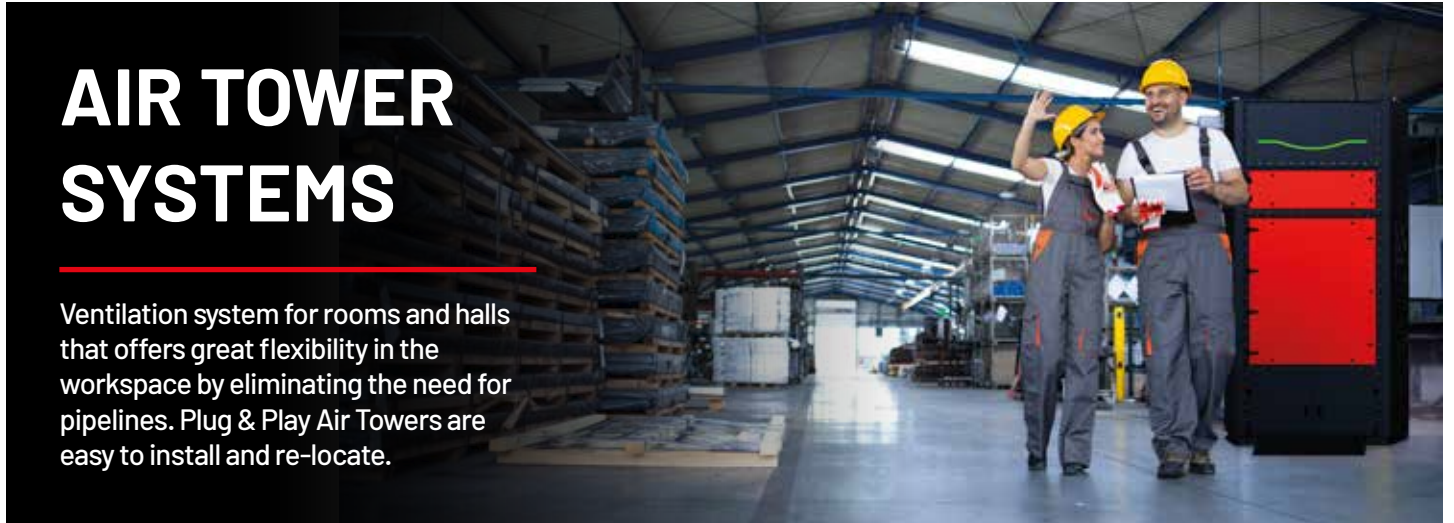
UPSTREAM LAYERED VENTILATION

In the context of layered- or displacement ventilation, fresh air is introduced into the designated area through vents located near the floor. This helps facilitate the upward movement of welding fumes by assisting in the thermal updraft.



AIR TOWER SYSTEMS

Ventilation system for rooms and halls that offers great flexibility in the workspace by eliminating the need for pipelines. Plug & Play Air Towers are easy to install and re-locate.



AIR TOWER SYSTEMS

The plug & play setups designed for the Air Towers come into play when local extraction of fumes and dust is not enough, or when directly capturing these elements becomes impractical due to the size or complexity of the workpieces. They are easy to install and re-locate if required.

In ALVERpro Air Towers, layered ventilation approach is applied. This approach is also **recommended by the trade association** in order to decrease the energy consumption. Layered ventilation system uses the natural movement of the heated air (which is upward) and make capturing the pollutant more easy and effectively.

PRODUCT OFFERINGS



ALVERpro Series air tower units are specially designed air towers which apply layered ventilation system by sucking the dirty air from the top and releasing the clean air with low velocity from the bottom. ALVERpro smart cleaning technology ensures superb filter cleaning efficiency and extend the filter life time. VFD driven fans allows users to regulate the air speed upon their need.

SMART JET-PULSE CLEANING

ENERGY EFFICIENT

SUITABLE FOR STAINLESS STEEL WELD

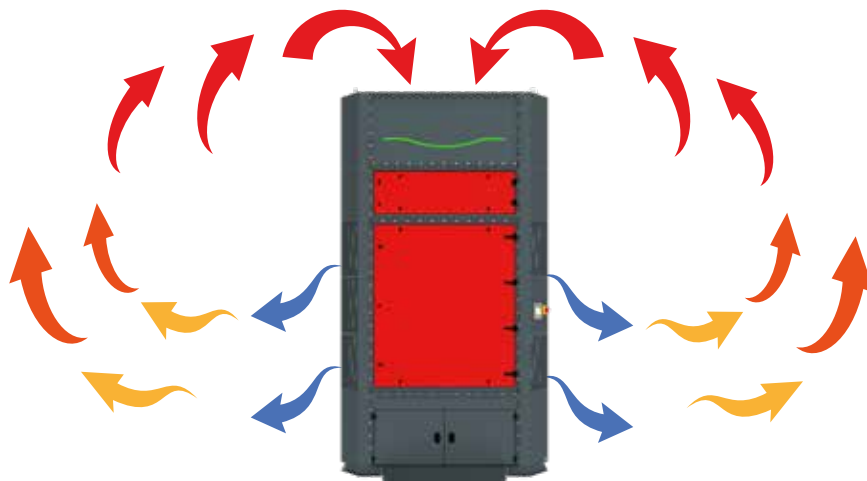
EASY TO MAINTAIN

HIGH EXTRACTION PERFORMANCE

HIGH FILTER AREA

EASY CONTROL LCD TOUCH PANEL

DURABLE STEEL BODY





ROBOTIC WELDING GHV SOLUTIONS

Robotic welding becomes a widely adopted and standard solution across diverse industrial fields. While offering notable advantages, this technology also presents various challenges, and among these challenges, managing fume extraction is one of the biggest.

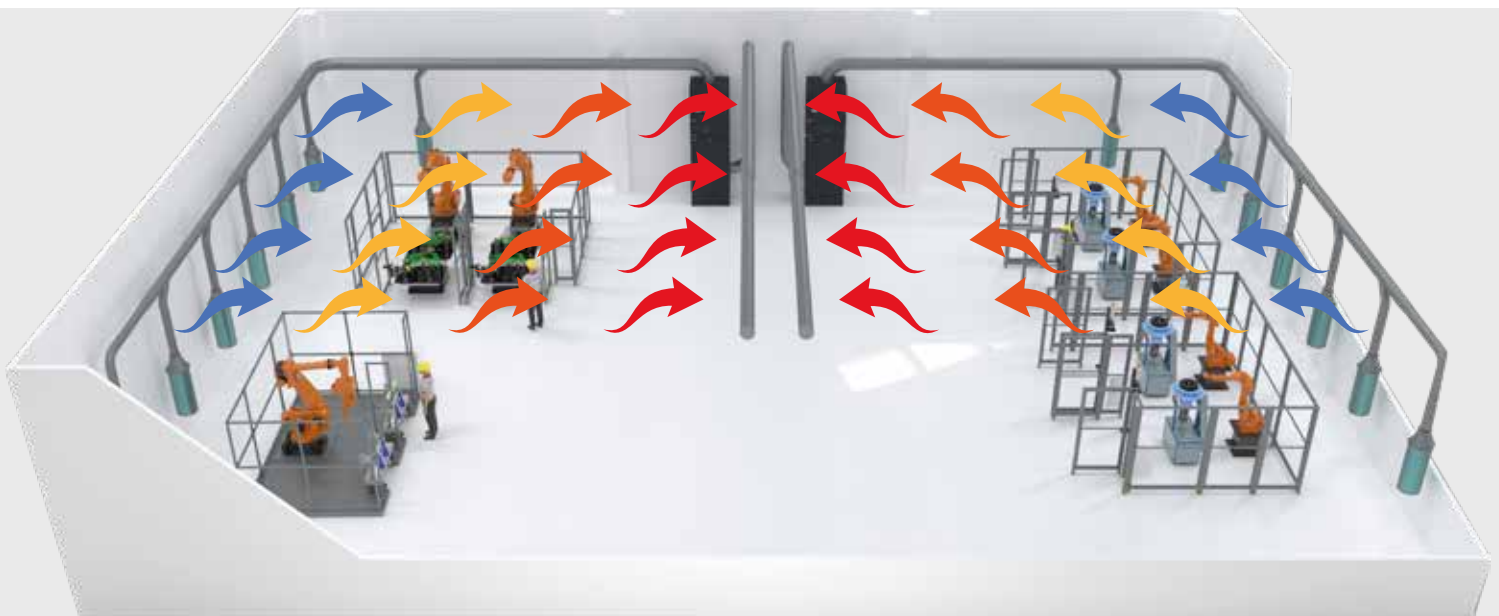
GHV SOL. FOR ROBOTIC WELDING

Robotic welding can generate significant amounts of welding fumes, which, if not controlled, can disperse throughout the workspace. Efficient fume extraction is crucial to prevent these airborne contaminants from affecting the health of workers and polluting the environment.

General Hall Ventilation (GHV) solutions can be applied when LEV solution is not applicable or is not enough to capture all the pollutants. If exposure limit is exceeded even with the LEV system, which is possible even with a good designed LEV system depending on the number of source, GHV solutions are required.

Designing the right GHV system depends on the layout of the workshop, purpose, robot type and welding type. Sometimes it is not so easy to choose and design the right GHV system. In this case experienced Bomaksan engineers, project designers and solution partners can help you along the way.

PRODUCT OFFERINGS





Due to improvement on products, Bomaksan reserves the right to change or modify all information taking place in this brochure at any time without any prior notice

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