


PLYMVENT[®]

clean air at work



Do you control
welding fume?

**INDUSTRIAL VENTILATION AND
FILTRATION SOLUTIONS THAT
WORK**



EVER WONDER ABOUT THE VALUE OF CLEAN AIR?

We do. For more than 30 years we have made it our business to ensure clean air in your working environment. We provide high quality products to protect not only your fabricators, welders and machine operators, but also those people working nearby from being exposed to hazardous metalworking contaminants such as welding fume, grinding dust and oil mist. We offer a broad range of air extraction and filtration systems, backed by complete engineering services.

WHY PLYMOVENT

- A genuine commitment to customer needs
- Turnkey, engineered solutions
- Expertise gained over 30 years
- High quality products
- Global company with local presence

Health risks when inhaling welding fume and gases

Source: Keep Welding Fume Out of Your Body (2002)

| Fume/Dust | Possible immediate effects | Possible long-term effects |
|--|--|----------------------------------|
| Welding fume (general) | Hoarseness, sore throat, eye irritation, metal fever | Bronchitis, reprotoxic |
| Chromium (in welding fumes from stainless steel welding) | | Carcinogenic |
| Nickel (in welding fumes from stainless steel welding) | Metal fever | Carcinogenic |
| Aluminium | Irritation of respiratory organs, metal fever | |
| Manganese | Pneumonia | Damage to central nervous system |
| Zinc | Metal fever | |
| Copper | Metal fever | |
| Magnesium | Irritation of respiratory organs, metal fever | |
| Lead | Changes of blood and kidneys | Reprotoxic |
| Gases | Possible immediate effects | Possible long-term effects |
| Nitrogen oxide | Irritation of bronchial tubes and eyes, pulmonary oedema | Bronchitis |
| Carbon monoxide | Difficulty in breathing, unconsciousness | Reprotoxic |
| Ozone | Irritation of bronchial tubes and eyes, pulmonary oedema | |

WHY FUME EXTRACTION IS IMPORTANT

Welding fumes, grinding dust, cutting particulate, oil mist: the metal industry produces a multitude of contaminants. Welders and personnel working on the manufacturing floor are exposed to these different types of hazardous airborne contaminants. It is increasingly more important to create a healthy and safe working environment.⁽¹⁾ So important in fact, that strict international standards have been established to regulate these contaminants. Welding fumes, grinding dust and other metalworking contaminants must be dealt with effectively by means of industrial extraction and filtration systems, ensuring that workers feel better enabling them to perform better. The result - higher productivity and a healthier, cleaner, safer work environment.

⁽¹⁾ It is the responsibility of owners/operators to comply with local market codes and regulations e.g. OSHA and EPA.





HOW WE DO IT

Based on our experience, gained over decades working in the fume, dust and oil mist ventilation and filtration industry, Plymovent has developed a unique and totally reliable approach, which we refer to as Engineered Solutions. This approach ensures our customers are provided with a working environment that is safe from any airborne contaminants and a system that is easily operated, maintained and cost effective. Plymovent's Engineered Solutions are comprised of seven different phases ranging from analysis and design to supply, installation, commissioning and service. A value-added, total solution package.

INVESTIGATION

PLANNING

DESIGN

INSTALLATION

COMMISSION

TRAINING

SERVICE

WE INVESTIGATE

Each customer has specific requirements. To be able to meet these requirements, it is vital to conduct a thorough investigation, answering numerous questions about the metalworking or fabrication application, type of contaminants, number of stations, reach within work space, facility layout, filtration needs, local legislation and need of system control for energy efficiencies. Are there plans for future expansion? Finalizing the first phase gives an answer to what is required.

WE PLAN

Based on the information we receive from our investigation phase, a roadmap is created for achie-

ving the best possible working environment for your employees. Solutions are selected from Plymovent's broad product range to tailor a system to your requirements. Plymovent systems will provide you with a durable and optimal energy friendly solution for ensuring ease of operation and a healthy, clean and safe work environment.

WE DESIGN

In the design phase, we fine-tune the product solutions selected in the planning phase by calculating pressure drops, filter type and size, fan size, system controls, energy requirements, etc. The flexibility and modularity of Plymovent's products enable us



to optimize your system in regard to configuration, safety, ease of operation, performance and economy. The result will be an energy efficient system design which fits to your requirements today, and for future expansions.

WE INSTALL

When the design phase is completed, we have the capability to install the system solution that has been tailored to your needs. Worldwide, Plymovent has over 30,000 installations of systems ensuring a healthy and safe working environment. Plymovent and its representatives vast experience in the delivery, project management and installation of turn-key solutions will enable you to focus on your core business.

WE COMMISSION

Once the installation phase is completed, Plymovent's representatives will calibrate the system to ensure all parameters are set correctly and are operating as per the design. Our goal for total customer satisfaction ensures that we provide you with a solution

that delivers a healthier, cleaner and safer working environment that is a trustworthy investment today and for years to come.

WE TRAIN

To gain and maintain the optimal operating performance and return-on-investment (ROI) of your Plymovent system day-in-and-day-out, we share with you our years of fume, dust and oil mist extraction and filtration knowledge and experience through hands-on training.

WE SERVICE AND MAINTAIN

Today, a healthier and safer manufacturing environment is essential in ensuring high productivity, along with retaining and attracting a skilled workforce. To consistently provide this type of environment, Plymovent and its representatives offer ongoing system service agreements. Plymovent will make sure your ventilation and filtration system is continuously performing at its optimal level, and in turn maximizing the life of your system.

DIFFERENT METHODS TO REDUCE FUMES (in order of effectiveness)

SUBSTITUTION

The first step towards attaining clean air in your working environment is making sure you are deploying metal fabrication processes that generate the least amount of fume, dust or oil mist. You may want to consider alternative or substitute processes when feasible. In addition to switching to alternative processes that will generate less fume, the material or parts should be as clean as possible, free of oil, rust inhibitors and other coatings. Unfortunately, this first step is often not enough to ensure a safe working environment, in which additional steps may be required.

AT SOURCE CAPTURE

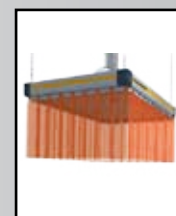
The second step to consider in cleaning your work environment's air is capturing and removing metalworking fumes, dust and oil mist at the source. Only with source capture is the welder or fabricator protected, and the accumulation of metalworking fumes in the facility prevented. At source capture products should be integrated within the workspace. Solutions such as downdraft tables, which are a combination of a workbench and fume extraction system, should be considered. Other solutions, such as extraction arms, nozzles or fume guns can be easily positioned close to the source. Plymovent has a full array of equipment and energy management control solutions and accessories to customize a filtration system that will meet your specific needs. Design parameters which we take into consideration when designing a system are ease of use, equipment positioning, flexibility, local standards and regulations, energy consumption, type of contaminants, application and noise level.

ISOLATION/SEPARATION

When capture of the fumes, dust or oil mist at the source is ineffective or not feasible, the third step to consider is isolating or separating the contaminant source from the rest of the work environment, and if possible, even from the fabricator or welder through the use of an automated system, e.g. welding robots. To isolate the contaminant at its source, fume extraction hoods with protective curtain strips enclosing the metal fabrication process can be a preferred solution in this case. The workers nearby the isolated area with the extraction hood(s) are protected; those working inside the isolated area will require additional personal protection.

VENTILATION & PERSONAL PROTECTION

If substitution, at source capture or isolation/separation solution methods do not remove all the fumes and dust generated from all the various metal fabrication applications in your facility, the final preferred step in removing metal working fume contaminants is through general air cleaning and ventilation. Through years of experience, Plymovent has general air cleaning and ventilation solutions designed specifically for effectively capturing and removing metalworking contaminants.



HOODS

Plymovent's FlexHood series offers a modular light-weight, aesthetically smart and excellent performing extraction hood suitable for various metalworking applications including robotic welding.

WHAT IS THE BEST SOLUTION FOR YOU?

Depending on your needs, Plymovent can provide a wide array of at source capture, isolation/separation or general air cleaning and ventilation solutions.

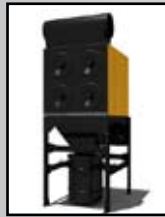
EXTRACTION ARMS

Plymovent's extraction arms are world renowned for their technical design and user friendliness. Plymovent extraction arms are available in various working reaches. They can be used on extension booms if extra reach is required, or put on a rail for virtually unlimited reach.



FILTERS

Plymovent's MultiDustBank (MDB) is a robustly designed filtration unit that will meet your metalworking applications requirements. Available in standard sizes, the MDB is also a modular filter system that can be expanded when required.



FANS

Plymovent's TEV and FUA fan series offers a wide range of high performance fans covering the most common demands in various applications.



CONTROLS

Plymovent's control equipment provides you with a 'green' industrial ventilation and filtration solution. These controls can be set to automatically control the entire system depending on amount of operator usage and more.



DOWN/BACK DRAFT

The Draftmax series of down and backdraft tables are robustly designed to ensure efficient fume extraction and filtration at the source.



PORTABLE OR STATIONARY

Plymovent offers a wide range of mobile and stationary fume extraction units to meet all your needs while working in your metal fabrication environment.





AT SOURCE CAPTURE

WHY AT SOURCE CAPTURE:

■ HEALTH REASONS

With the proper source capture solution, you effectively prevent airborne contaminants from spreading throughout your premises, where they will not only reach the operator at the process, but other personnel within the building, along with the outside environment. Investing money into a well designed system with a company that has a proven track record will lead to a healthier, cleaner and safer working environment, both indoors and outdoors, ensuring that workers feel better, enabling them to perform better. The result - higher productivity, less employee turnover, the attraction of highly skilled employees and a environmentally friendly company.

■ ENERGY MANAGEMENT REASONS

An intelligently designed "at source" fume extraction and filtration system that harnesses automated controls will lower your energy consumption. By focusing on extracting air specifically at the source, it will minimize your filter and fan requirements and in turn your operating and energy costs. The result - saving you money, while, at the same time, helping improve the environment, both inside and outside.

AT SOURCE CAPTURE

Plymovent offers various fixed and mobile solutions for at source capture of metalworking contaminants including, welding fumes and grinding dust.

Source Capture Arms: Different lengths and diameters of source capture arms can be specific to certain processes and/or applications.

That is why Plymovent's line of extraction arms are available in various working radiuses, 1.0 meter (3.3 feet) all the way up to 8.8 metres

(28.9 feet). **Down/BackDraft Tables:** Plymovent's DraftMax range of down and backdraft tables gives you another effective option in capturing and extracting metalworking fumes for those fabricators always working at a fixed working table position.

Filtration: The Plymovent filter range varies from small single filters up to large modular, self-cleaning filters which can be expanded as your business grows. **Controls:** A state-of-the-art Plymovent system will automatically monitor and adjust the air volume needed depending on how many workplace stations are in operation at any particular time. The controls in the system will allow for the system to automatically adjust to the pressure drop across the filters and maintain the optimal air volume at each fume extraction point.





ISOLATION/SEPARATION

ISOLATION/SEPARATION

Plymovent provides isolation/separation solutions tailored to your specific needs. The FlexHood modular extraction hood can be placed on legs or can be hung from the ceiling. Either option makes it easy to position the hood in your specific work area. Various options enable you to complete the FlexHood with lighting fixtures and/or welding curtain strips to provide a more productive, user friendly and isolated working environment.

Traditional extraction hoods often have centered extraction. The FlexHood offers an innovative framework with perimeter extraction, capturing the fumes at the edges of the hood. The perimeter design provides an extremely efficient way of extracting and preventing fumes from escaping at the side of the hood. The deflection plates in the hood control the airflow and reduce the risk of sparks reaching the filter. The FlexHood is easy to handle, comprised of modular parts and can be easily assembled on location. The FlexHood is designed to protect welders, personnel in other working areas, your equipment and the facility.



WHY ISOLATION/SEPARATION:

■ HEALTH REASONS

Investing money in isolation solutions such as Plymovent's FlexHood system in hazardous environments enables you to separate the airborne contaminant at their source, e.g. welding fumes, resulting in protecting your working environment and personnel.

■ ENERGY MANAGEMENT REASONS

With Plymovent's FlexHood perimeter extraction design, you will not only significantly reduce your fan and filter requirements, but also your operating and energy costs. Smaller fan requirements equals less energy consumption. In turn, less filter requirements equals less filter replacement costs, and with the ability to recirculate the filtered air versus exhausting to the outside, will reduce the amount of energy needed to replace conditioned air.



GENERAL VENTILATION

WHY GENERAL VENTILATION:

HEALTH REASONS

With the installation of a Plymovent Push/Pull System you will prevent fumes from spreading over your entire working environment and facility. Plymovent's Push/Pull System will reduce fumes generated from welding, grinding, cutting and other metalworking processes to acceptable Occupational Exposure Limit (OES) Levels within your facility.

ENERGY MANAGEMENT REASONS

With Plymovent's Push/Pull System design, you can significantly reduce your fan and filter requirements, along with your operating and energy costs. Smaller fan requirements equals less energy consumption. In turn, less filter requirements equals less filter replacement costs, and with the ability to recirculate the filtered air versus exhausting to the outside will reduce the amount of energy needed to replace conditioned air.

CLEANING & VENTILATION

If work pieces are too big to be covered by source capture solutions such as extraction arms, or isolation/separation solutions such as extraction hoods, or if the metal fabricator or welder constantly moves between locations, Plymovent now offers an effective fume extraction solution to address these types of metalworking environments. Plymovent's Push/Pull System is a proven technique designed specifically to capture general airborne contaminants generated within the metal fabrication environment. After thorough investigation and planning where and how to design and locate Plymovent's Push/Pull System, the blanket of contaminated air is pulled into the system, filtered and returned as clean air back into the facility, in which it is pushed in a controlled, directional manner across the facility working area. If properly designed to your facility and layout and application parameters, this closed loop pushing and pulling process will effectively clean up your fabrication environment, while occupational exposure levels are kept easily within accepted standards.

A Plymovent push-pull system consists of 4 components: the pull duct, filter unit, central fan and a push duct.





COMPLETE SYSTEMS

TOTAL SOLUTION

Plymovent has products suitable for removing all hazardous airborne contaminants generated within the industrial metal fabrication environment including welding and soldering fumes, grinding and polishing dust, cutting particulate and oil mist. The system solutions we provide using our source capture, isolation/separation and general ventilation techniques are engineered and completed with our wide range of fans, filters and control equipment.

- Fans are available from 0.37 kW (0.5 HP) up to 22 kW (20 HP). Larger units are available on request.
- System controls range from simple manual controls to fully automatic, state-of-the-art green controls.
- Plymovent filters range from small portable and stationary units to large self-cleaning modular designed units.

Our expertise gained over many years, high quality products and genuine commitment to customer requirements enable us to provide precisely the solutions you need.

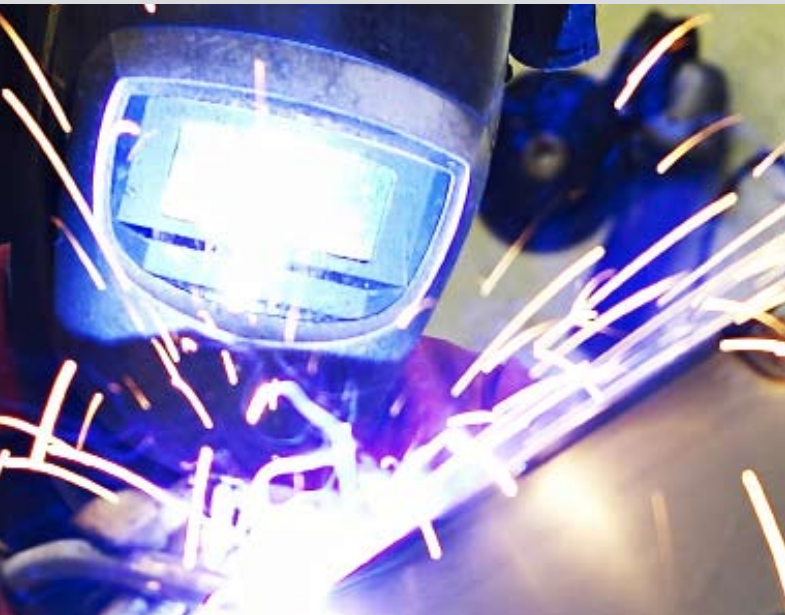
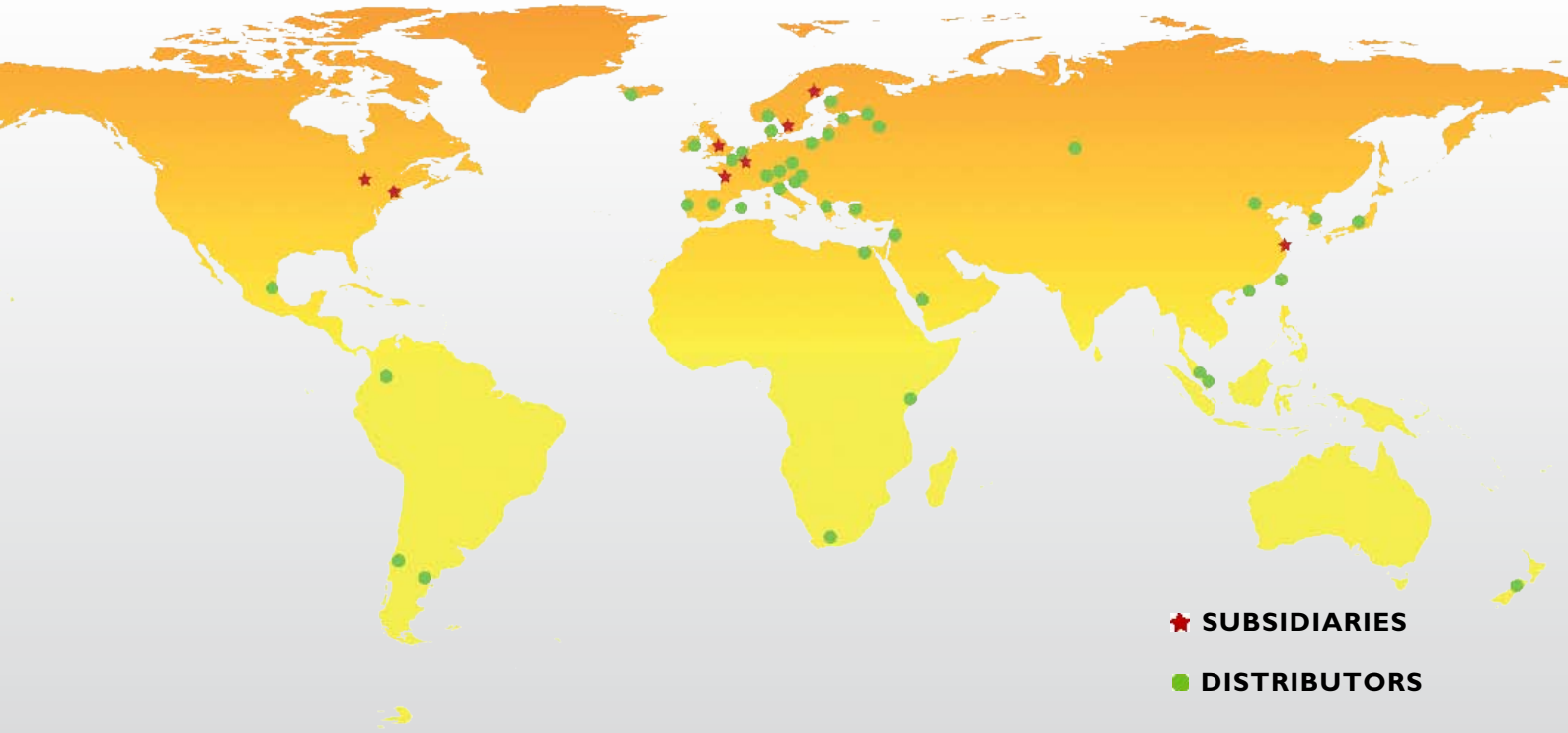
Investing in a Plymovent solution is investing in the environment and in your competitive future.

WHY CONTROL EQUIPMENT:

■ ENERGY MANAGEMENT REASONS

A fully automatic system will enable you to substantially reduce your costs on electricity and overall energy consumption and therefore give a shorter ROI (return on investment).





For over 30 years Plymovent has cared about the air you breathe. We deliver products, systems and services worldwide which ensure clean air in the workplace.

Our expertise gained over many years, high quality products and genuine commitment to customer requirements enable us to provide precisely the solutions you need.

Plymovent is ISO 9001:2000 Certified



Your authorized Plymovent distributor: