

Designing The X-Tractor® Fume Control System To Fit Your Welding Environment

White Paper

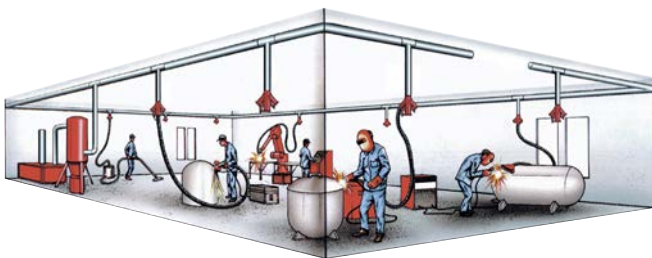
While efficiency and productivity are important in any industrial welding operation, health and safety in the workplace are an equally high priority. When it comes to safety in the welding environment, the continuous flow of filtered air is one of the highest priorities.

Lincoln Electric's self-contained X-Tractor® units are specifically designed for the removal and filtration of welding fumes. These high-vacuum systems are engineered to provide suction for multiple nozzles and fume guns, and feature an integrated automatic self-cleaning filter system. They are ideally suited for continuous use in heavy-duty welding applications.

With a little bit of research and planning, the X-Tractor system can be tailored to the specific needs of your operation. **Follow this four-step process:**

1: Calculate the total airflow in the work environment

Determining the total cubic feet of air moving through your welding operation is a matter of basic math. Determine the required airflow at each station. The sum of these figures is the total airflow within the work environment.



2: Review X-Tractor unit airflow ratings in relation to the total airflow in your environment

The X-Tractor units are rated for different air intake volumes:

X-Tractor Model	Airflow Capacity
X-Tractor 3A	165 cfm
X-Tractor 5A	285 cfm
X-Tractor 8A	475 cfm



X-Tractor 3A, 5A, and 8A models

Choose the unit – or the combination of units – whose capacity will most efficiently accommodate the total airflow of the work environment. Be sure to consider the footprint and overall dimensions of the unit or units in relation to the workspace. Is there sufficient room to accommodate all the X-Tractor units you'll need?

X-Tractor Model	Dimensions inches (mm)
X-Tractor 3A	29.1 x 16.9 x 43.3 (740 x 430 x 1100)
X-Tractor 5A	33.1 x 28.0 x 55.1 (840 x 710 x 1400)
X-Tractor 8A	43.3 x 28.0 x 55.1 (1100 x 710 x 1400)

3: Determine how many guns and/or nozzles your system will require

The X-Tractor system includes a variety of suction nozzles and extraction guns – each with different airflow ratings – to suit every welding environment. To determine the best nozzle or gun for your needs, consider what's happening at each work station. Specifically, what is the size of the welding job? Suction nozzles tend to be better suited for short welds, while integrated fume extraction guns are more appropriate for larger fixture welding.



**Automation
Solutions**

Suction nozzles



4: Connectors - putting it all together

Once you've decided on which unit or units can manage your fume extraction needs most efficiently – and the accessories best suited for each work station – everything needs to be properly connected. In addition to the X-Tractor units and accessories, Lincoln Electric provides a variety of parts to connect hoses to units and accessories to hoses.

Additional features

X-Tractor units include additional features that enable you to tailor the system to your work environment. They can be configured to operate in an automatic mode, where the extraction system will function based on the welding machine status. This provides extraction demand only when welding is taking place. The system can be configured for automatic filter cleaning or off-line filter cleaning.

The metal duct system is designed specifically for the layout of the welding facility and takes into account the number of welding stations, welding processes, physical obstacles and overall duct lengths to maintain specific airflow characteristics and provide an efficient and effective solution.

Safety and then some

Ensuring safety in any welding operation requires special attention to a variety of issues, including air quality. When properly designed and configured, the X-Tractor system will not only aid in air quality compliance, but also promote productivity and efficiency.

ABOUT LINCOLN ELECTRIC

Lincoln Electric is the world leader in the design, development and manufacture of arc welding products, robotic arc welding systems, plasma and oxyfuel cutting equipment and has a leading global position in the brazing and soldering alloys market. Headquartered in Cleveland, Ohio, Lincoln Electric has 45 manufacturing locations, including operations and joint ventures in 19 countries and a worldwide network of distributors and sales offices covering more than 160 countries. For more information about Lincoln Electric and its products and services, visit www.lincolnelectric.com.

CUSTOMER ASSISTANCE POLICY

The business of The Lincoln Electric Company is manufacturing and selling high quality welding equipment, consumables, and cutting equipment. Our challenge is to meet the needs of our customers and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or advice about their use of our products. Our employees respond to inquiries to the best of their ability based on information provided to them by the customers and the knowledge they may have concerning the application. Our employees, however, are not in a position to verify the information provided or to evaluate the engineering requirements for the particular weldment. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or advice. Moreover, the provision of such information or advice does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or advice, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose is specifically disclaimed.

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The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, maintenance of the equipment and the specific welding procedure and application involved. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits.



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