PRISM CENTRAL SYSTEMS

FUME EXTRACTION

Shown: Prism 4, 8 &12 L17587-4, L17587-1, L17587-3

Efficient. Compact. Connected.

The Prism® 4 fume extraction system is a reduced-footprint fan/filtration unit combination designed with robotic welding and plasma cutting systems in mind. The 4 bank vertically positioned filter configuration can provide extraction capacity for any automated system equipped with a hood or can connect easily to plasma cutting tables. The vertical positioning enhances the effectiveness of the uniform, high-energy pulses of compressed air[1] released during the filter cleaning cycle.

Processes »
Stick, TIG, MIG, Flux-Cored, Plasma Cutting, Arc Gouging, Grinding[2]

Input »
3 PHASE 50/60 Hz

Note: 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.

[1] Customer supplied. Must be clean, dry, and oil free.

[2] Not suitable when grinding aluminum, magnesium, or other materials which may produce explosive dust.

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LINCOLN ELECTRIC

FEATURES:

» **Easy-to-Use HMI Screen for Preventative Maintenance**
- Large easy-to-read dials provide real-time status of vital functions
- Track fan speed, filter bank pressure and duct pressure to monitor filter life for filter replacement
- Proactively order filters to increase productivity with less downtime

» **Small Footprint**
- The small footprint takes up less floor space than competitive units - 45 x 45 in. (1143 x 1143 mm)

» **Automatic Filter Cleaning**
- System will automatically start pressure-based cleaning process once pre-set pressure differential is reached
- Vertical filter orientation allows for more efficient cleaning
- Particulates will be collected into the 30 gallon dust bin

» **Easy to Install and Use**
- Locate and secure base module to floor
- Fasten upper filter module with *preinstalled fan on leg base assembly and secure
- Connect power, compressed air and duct sensor for fan speed control
- Smart Connect™ technology allows for quick and seamless wire connectivity
- Position silencer and dust bin

» **Quiet and Efficient Operation**
- Silencer on exhaust fan drastically reduces airflow noise
- Intelligent fan control technology
- Variable speed drive regulates fan speed based on filter loading to maximize fume extraction
- Conserves energy and extends equipment life

» **Modular Configuration**
- Available in 4-24 bank models

**Preinstalled fans only included with AD series Prism models.*

SMALL FOOTPRINT

Prism fume extraction systems are designed not only to be efficient, but to reduce the amount of space that fume extraction systems tend to take up. Your warehouse space is valuable, and the Prism system allows the ability to have a fume extraction close to your application without taking up too much space.

Prism 4 connected to Torchmate® 5100 table

Shown: Prism 4 Connected to Fab-Pak® FHS B2B

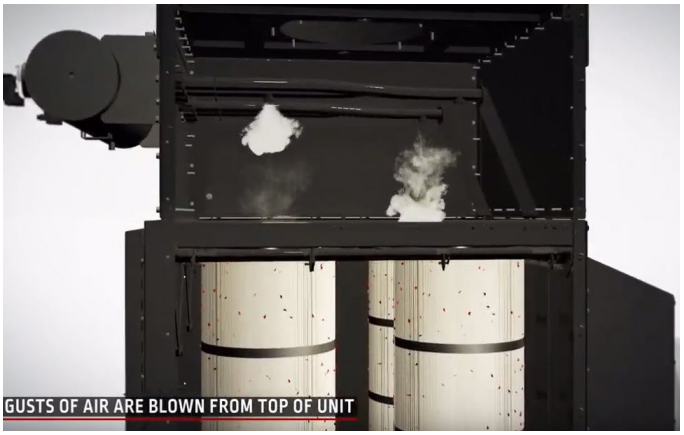
For best welding results with Lincoln Electric equipment, always use Lincoln Electric consumables. Visit www.lincolnelectric.com for more details.

Manufactured at a facility with certified ISO Quality and Environmental Management Systems.

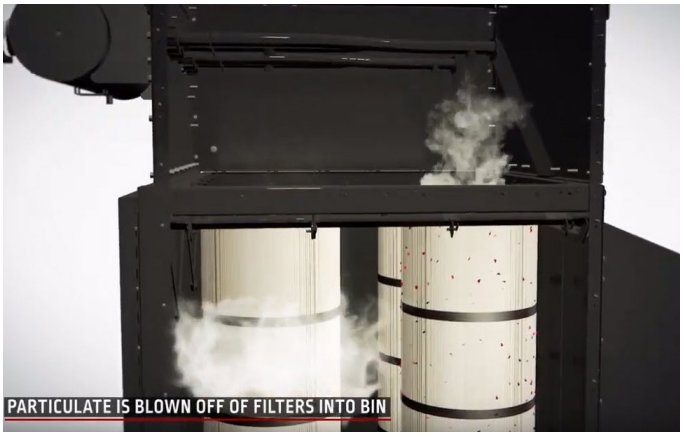
AUTOMATIC FILTER CLEANING

Prism fume extraction systems are equipped with an air pressure sensor that allows for efficient automatic filter cleaning. When the air pressure reaches a certain parameter, the automatic filter cleaning system is engaged, causing bursts of air to pass through the filters knocking particulate outwards and downwards into the extraction bin where particulate can later be disposed of. Automatic filter cleaning can also be done manually by turning off the fan and engaging the air compressor using the control panel.

1. Once the fan has been turned off manually, or if the airflow pressure detector determines it is time to clean off the filters, the automatic filter cleaning process can be started manually or automatically, depending on your settings and preferences.



2. The air compressor then releases bursts of air down from the top of the system into and through the middle of the filters, causing particulate to be disbursed outwards.



3. The systematic pulses of air come to a halt allowing the particulate to fall into the dust bin below the system, where particulate can sit or safely be extracted. Airflow resistance should be reduced, thus lengthening the lifetime of filter usage.

VERTICAL FILTER EFFICIENCY

The Prism fume extraction system's vertical filter alignment allows for more even dispersal of particulate, compared to horizontally-aligned filters. Where horitzonally-aligned filters tend to catch most of the particulate at the top of the filters, vertically-aligned filters result in a more even dispersal of particulate. More even dispersal of particulate means the Prism fume extraction system can be more efficient and require less frequent maintenance than typical horizontally-aligned filter systems.

Vertical Filter Alignment Benefits

- Gravity helps with even distribution of particulate
- Efficient automatic filter cleaning
- Long filter life
- Easy maintenance

PRISM SILENCER TEST RESULTS (5 HP)

	No Silencer	90° Turn Up (Vertical Silencer)	Rectangular (Horizontal Silencer)
FAN	DB	DB	DB
30 HZ	68	60	59
40 HZ	74	64	63
50 HZ	79	70	68
60 HZ	81	74	74

The Prism fume extraction system with attached silencer allows for a drastic noise reduction through the use of the variable frequency drive (VFD), which allows the customer to tailor the fan speed to specific applications while also conserving on energy. The average customer with a 5 HP fan may see between an 7-11 dB reduction in noise when using an available silencer on the Prism unit, which allows for easier communication around the unit.

PRISM SILENCER TEST RESULTS (10 HP)

	No Silencer	90° Turn Up (Vertical Silencer)	Rectangular (Horizontal Silencer)
FAN	DB	DB	DB
30 HZ	75	63	61
40 HZ	82	71	68
50 HZ	88	75	73
60 HZ	94	79	78

The average customer with a 10 HP fan sees between an 11-16 dB reduction in noise when using an available silencer on the Prism unit, which allows for easier communication around the unit.

*Sound for this testing was measured approximately 8 ft. (2.43 m) from the side of the unit and 5.5 ft. (1.67 m) off of the floor.

QUICK AND SIMPLE MAINTENANCE

Prism fume extraction systems are designed to not only extract welding fume efficiently, but also allow filter maintenance to be quick and simple.

1. Turn the system off before starting maintenance on the filters.
2. Unlock to release the filters for extraction.
3. Pull the filter straight out. Be sure to leave yourself enough room behind you to step backwards if necessary.
4. Replace filters from back-to-front.
5. Lock filters in place and close the door.
6. Turn filtration system back on.

OPTIONAL HEPA FILTRATION

For customers interested in HEPA filtration for their welding and cutting areas, HEPA filters can be added to the top of the unit, enabling HEPA H13 filter efficiency.

Features:

- HEPA H13 certified filtration
- Monitor HEPA filter pressure on easy-to-use HMI
- Zero added footprint with the top mounted kit and filter
- Easy access and filter changing with quick unlock mechanism and front access door
- Ships pre-assembled from the factory on top of the PRISM filter bank, no additional assembly required

If you are interested in getting HEPA filtration as part of your PRISM Central System design, reach out to your Lincoln Electric Environmental Sales Specialist or contact us at lincolnelectric.com/fumecontrol

APPLICATIONS

- General welding and cutting fabrication
- Heavy welding and cutting fabrication
- Robotic welding and cutting applications

WHAT'S INCLUDED

- Filtration unit
- Dust collection bin
- Exhaust fan
- Stand
- Control package
- Exhaust silencer

KEY ACCESSORIES/FILTERS

- KP4519-1: Filter, MERV 11, Prism (Black Strap)
- KP4519-2: Filter, MERV 16 NANO, Prism (White Strap)
- KP4519-3: Filter, MERV 16 PTFE, Prism (Red Strap)
- Prism MERV 11 Filter, Oil Resistant (Gray Strap) KP4519-4
- Prism MERV 16 Filter, Oil Resistant (Orange Strap, NANO) KP4519-5
- Optional Spark Guardian™

Filter Replacements:
Filter replacement is crucial to the performance and longevity of your Prism extraction unit. The correct filter can be identified by the strap color on the existing filter and matched with the part number listed above. Replacement filters can be purchased at *www.weldfumefilters.com*.

KP4519-1 *KP4519-2* *KP4519-3* *KP4519-4* *KP4519-5* *KP5729-1*

Part Number	KP4519-1	KP4519-2	KP4519-3	KP4519-4	KP4519-5	KP5729-1
Efficiency	MERV 11	MERV 16	MERV 16 PTFE	MERV 11	MERV 16	HEPA H13
Recommended Applications	MERV 11 Filter used with Guardian Limestone Feeders	Primary MERV 16 Filter, Recommend for Welding Steel, Stainless Steel and Galvanized	MERV 16 filter for Cutting Applications	Oil Resistsant Filter, MERV 11 Filter with Pre-Coat	Oil Resistsant Filter, MERV 16 Filter with Pre-Coat	High Efficiency Filtration

PRODUCT SPECIFICATIONS

Product Name	Product Number	Input Power Voltage/Phase/Hertz	Motor Horsepower HP	Input Current (Amps)	Number of Filters	Airflow (CFM)	Inlet Diameter in (mm)	Clearance Needed	Filter Cleaning Control	H x W X D in (mm)	Weight lb (kg)
Prism 4 5 HP	AD1326-17	380-480V/3~/50-60Hz 575V option[1]	5	7.5	4	2750 @ 7 in. WG	1 on back at 16 (406)	3.5 ft (min.) for front 3 ft (min.) for control panel	Pressure-based	163 x 45 x 45 (4140 x 1143 x 1143)	1475 (669)
Prism 4 10 HP	AD1326-19					4000 @ 7 in. WG				169 x 45 x 45 (4293 x 1143 x 1143)	1588 (720)
Prism 4 15 HP	L17587-4		15	21		6600 @ 7 in. WG				169 x 45 x 45 (4293 x 1143 x 1143) no fan	1171 (531) no fan
Prism 8 20 & 30HP (2 Wide)	L17587-1		20	27	8	8800 @ 7 in. WG	20 (508) round			169 x 87 x 45 (4293 x 2210 x 1143) no fan	2142 (972) no fan
			30	40		11600 @ 7 in. WG					
Prism 8 20 & 30HP (2 Deep)	L17587-2		20	27		8800 @ 7 in. WG	20 (508) round			169 x 45 x 87 (4293 x 1143 x 2210) no fan	2112 (958) no fan
			30	40		11600 @ 7 in. WG					
Prism 12 40HP	L17587-3		40	52	12	19400 @ 7 in. WG	24 (610) round			169 x 129 x 75 (4293 x 3277 x 1905) no fan	3113 (1412) no fan
Prism 12 30HP	L17587-10		30	40		11600 @ 7 in. WG					

[1] Optional frequency drive for 575V applications
Contact your Lincoln Electric sales representative for complete dimensions.

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Lincoln Electric Product Claim - Weld fume control products manufactured by The Lincoln Electric Company are designed to be utilized as an engineering safety control to aide in achieving adequate ventilation while conducting welding or it's allied processes. The operation of welding fume control equipment is affected by various factors including proper use and positioning of the equipment, and the specific welding procedure and application involved. When the equipment is used as designed - and when properly installed, operated and maintained - it can be a valuable and effective tool to help employers maintain adequate ventilation in the workplace. Lincoln Electric defines adequate ventilation as that which is required to maintain occupational exposure levels below the applicable exposure limits when sound work practices are utilized. Worker exposure level should be checked upon installation and periodically thereafter to be certain it is within applicable OSHA PEL and ACGIH TLV limits. Welding operations may produce hazardous gases such as carbon monoxide, oxides of nitrogen, and ozone. This equipment is designed to remove welding fume particulate, not gases. Ensure that adequate make-up air ventilation is provided to the workspace to prevent potential overexposure to these gases (see AWS Fact Sheet No. 36).

Lincoln Electric weld fume control products are highly effective at decreasing the occurrence level of thermal events, however, thermal events can still happen even if the system is operating as designed.

CUSTOMER ASSISTANCE POLICY

The business of Lincoln Electric is manufacturing and selling high quality welding equipment, automated welding systems, consumables, cutting equipment and EV charging systems. Our challenge is to meet the needs of our customers, who are experts in their fields, and to exceed their expectations. On occasion, purchasers may ask Lincoln Electric for information or technical information about their use of our products. Our employees respond to inquiries to the best of their ability based on information and specifications 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, or to provide engineering advice in relation to a specific situation or application. Accordingly, Lincoln Electric does not warrant or guarantee or assume any liability with respect to such information or communications. Moreover, the provision of such information or technical information does not create, expand, or alter any warranty on our products. Any express or implied warranty that might arise from the information or technical information, including any implied warranty of merchantability or any warranty of fitness for any customers' particular purpose or any other equivalent or similar warranty is specifically disclaimed.

Lincoln Electric is a responsive manufacturer, but the definition of specifications, and the selection and use of specific products sold by Lincoln Electric is solely within the control of, and remains the sole responsibility of the customer. Many variables beyond the control of Lincoln Electric affect the results obtained in applying these types of fabrication methods and service requirements.

Subject to Change – This information is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.com for any updated information.

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