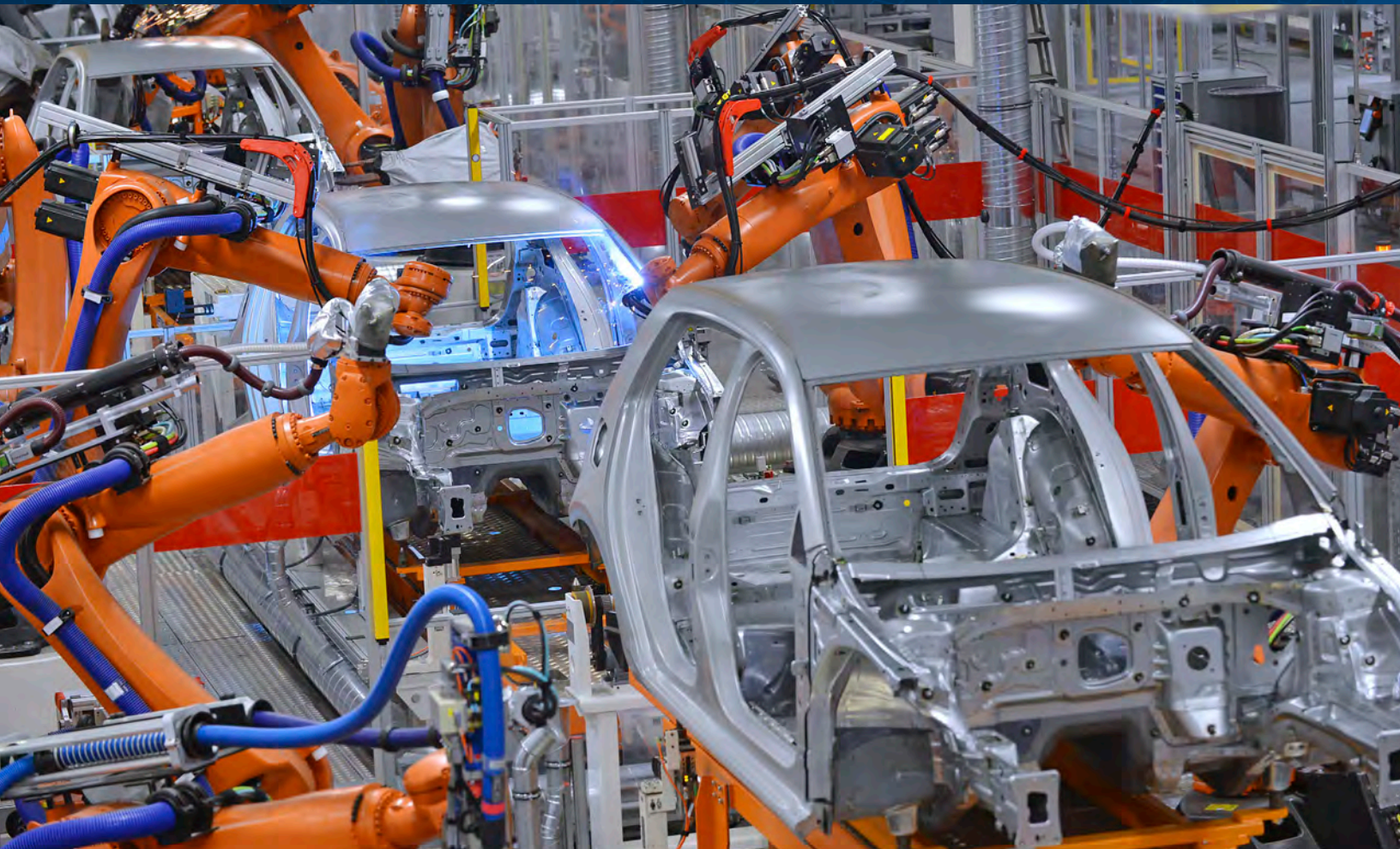


RoboVent[®]

Automotive Solutions



***Driving Clean Air Innovation
for the Automotive Industry***

Growing with the Automotive Industry

For more than 25 years, RoboVent has been driving air quality innovation for the automotive industry.

We understand the workflows, processes and challenges of automotive parts manufacturing. When you're competing in a high-pressure global industry, you need to keep productivity high and margins low. That means time is at a premium, floor space is precious and budgets are tight.

We get it. Our air quality solutions are designed to make your facilities safer, healthier and more efficient—while working within your space and budget constraints. We've put a lot of thought into details like space-saving design, integrated fire safety, and automated controls that let your fume and dust collectors practically take care of themselves. We make air quality easy, so you can focus on your core business.

Our success is driven by a simple principle: take care of customers by carefully listening to their needs. We take the time to understand your processes, and configure a system to meet your needs. And we stand behind our work with the best quality guarantee in the industry, so you can have confidence in your choices.

Our Automotive Clients

Our success has been tied to that of the automotive industry since the very beginning. We have a long history of working with companies at all points in the automotive supply chain, from automotive parts suppliers to "Big 3" automotive companies.

- | | |
|----------------------|----------------------|
| • Brose | • Lear Corporation |
| • Caterpillar | • Magna Corporation |
| • Eberspächer | • Mercedes-Benz |
| • Faurecia | • Pilkington Glass |
| • Gestamp | • Raybestos |
| • Honda | • Tenneco Automotive |
| • John Deere | • Tower |
| • Kawasaki Tennessee | • Toyota |
| • Kubota | • Volvo |

Our Affiliations



Service and Ongoing Support

RoboVent 24-Hour Hotline: 888.ROBOVENT

The RoboVent 24-hour hotline is available seven days a week. We understand your requirement for production and stand ready to help at any time.

Maintenance Contracts Available

Sophisticated air-filtration equipment represents a costly investment in your plant and the health of your employees. Proper maintenance is critical to the performance of that investment. RoboVent preventative maintenance programs provide the regularly scheduled expert maintenance needed to properly maintain your air-filtration and dust-collection systems, and greatly reduce the risk of unexpected system breakdowns and production delays.



The Rock Solid RoboVent Guarantee.

"RoboVent systems are sized correctly for excellent filter life and effective smoke capture. This isn't always easy in a high demand business like dust collection. But, we promise every RoboVent customer will be satisfied."

Built for quality

No matter what system you choose, you can rest assured that it will come with RoboVent's quality guarantee. We build safety, energy savings and efficiency into every piece of equipment we make. Our automotive solutions are designed for the needs of today's automotive suppliers and manufacturers.



Lower operating costs: We're always looking for ways to reduce energy use, such as automated systems to ensure collectors run only when they need to. Additionally, our filters and equipment have been engineered to maximize filter life and reduce operating costs.



Superior safety and risk reduction: Safety features like our Delta3 spark arrestor and the Supprex-200 fire suppression system reduce the risk of fires in your ductwork and filtration equipment to protect your plant and your employees.



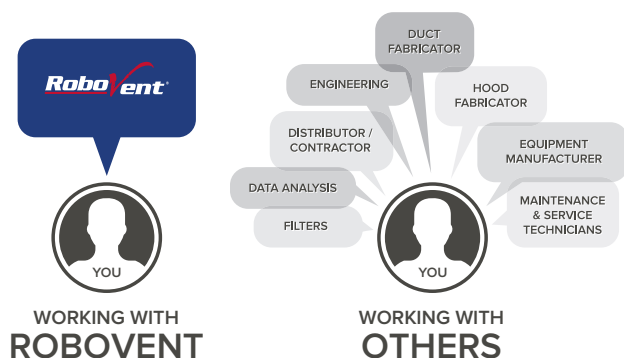
Easy maintenance: Longer lasting filters are just the start. Our equipment is built to reduce the maintenance burden on your staff. With eTell intelligent controls, you can move beyond preventative maintenance to truly predictive maintenance.



Flexible configuration: Choose from our space-saving Spire fume collector or our innovative, modular Grid ducted system. Whichever one you choose, your system will be easy to set up and easy to reconfigure as your needs change.

One Supplier— Single-Source Responsibility

At RoboVent, we believe that personalized service is just as important as the product. That's why we take total project responsibility for the systems we deliver. Through a dedicated project team, we manage every step of a design-build project from concept through commissioning. Our value as a supplier-partner is best demonstrated through the successful delivery of hundreds of systems, many with demanding, fast-track schedules. We are the total-solution air filtration company for the automotive industry.



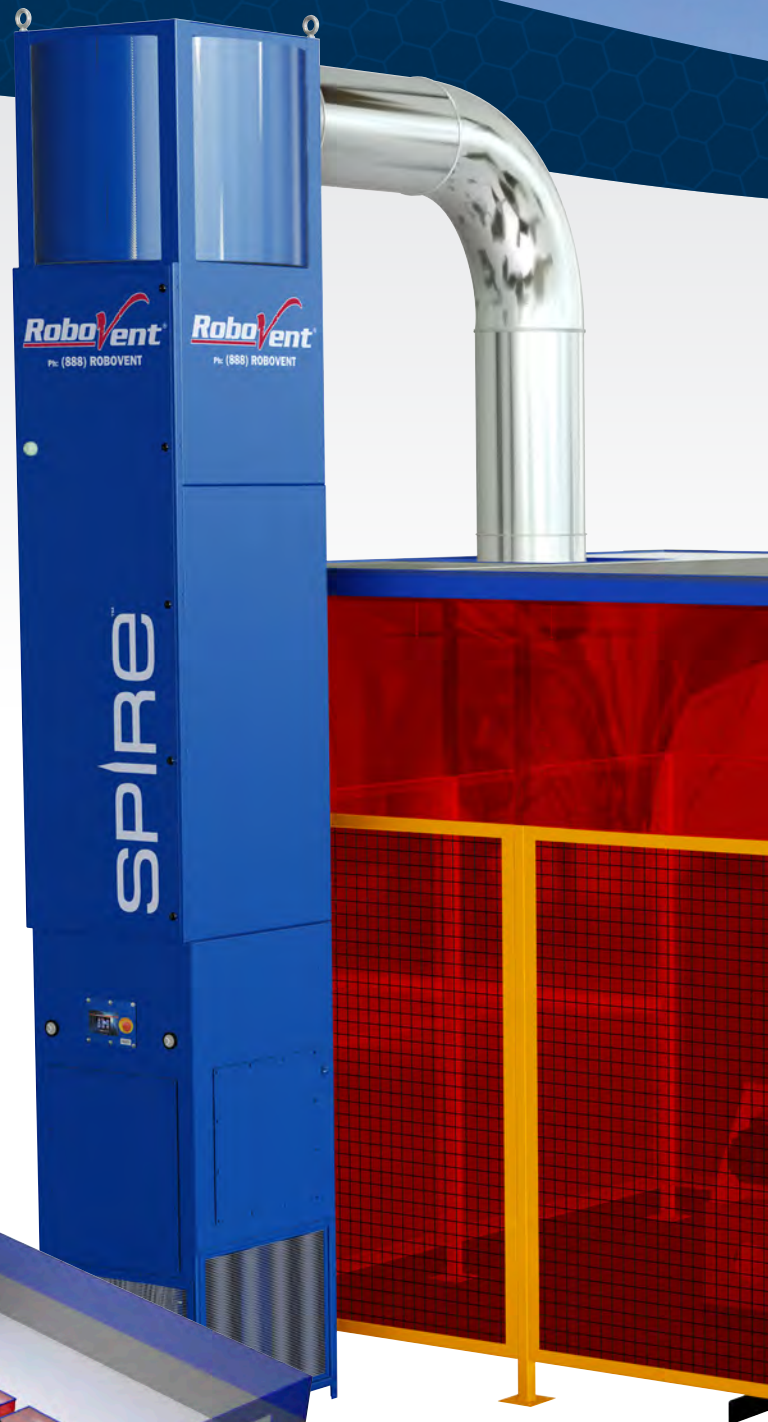
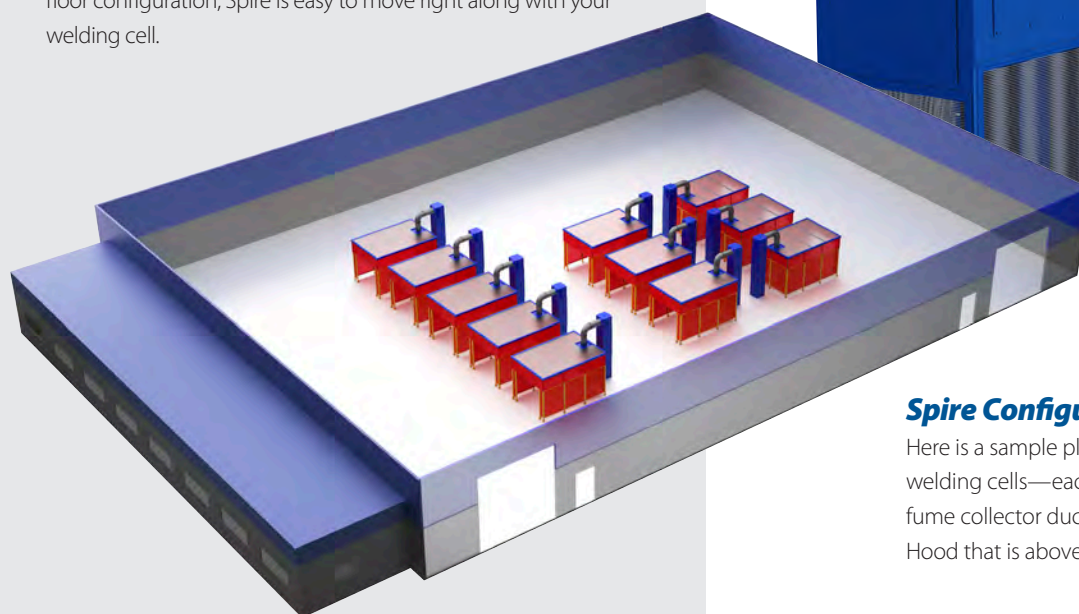
Spire: Powerful filtration with the smallest footprint in the industry.

If you're using robotic welding cells, Spire may be the right system for you. We designed Spire especially for the most common types of welding applications in the automotive industry. Spire is a flexible, cost-effective alternative to centralized ducted systems.

Each Spire unit provides filtration for an individual welding cell. It's a powerful system that can keep up with the heavy demands of robotic welding in a high-production factory. Spire is also a system that is mindful of the automotive industry's need for flexibility and space savings.

Spire features:

- **Small footprint:** Our floor-saving design takes up about the same amount of space as a wire barrel.
- **Built-in spark arrestance:** Our proprietary Delta3 spark arrestance system comes standard with every unit for superior fire safety.
- **Very low maintenance:** Everything is easily accessible for fast filter changes and maintenance—no special tools required. And our proprietary eTell system makes maintenance headache-free.
- **Flexible:** Since the Spire units have a very small footprint, it's easy to find space for them. And whenever you need to change your floor configuration, Spire is easy to move right along with your welding cell.



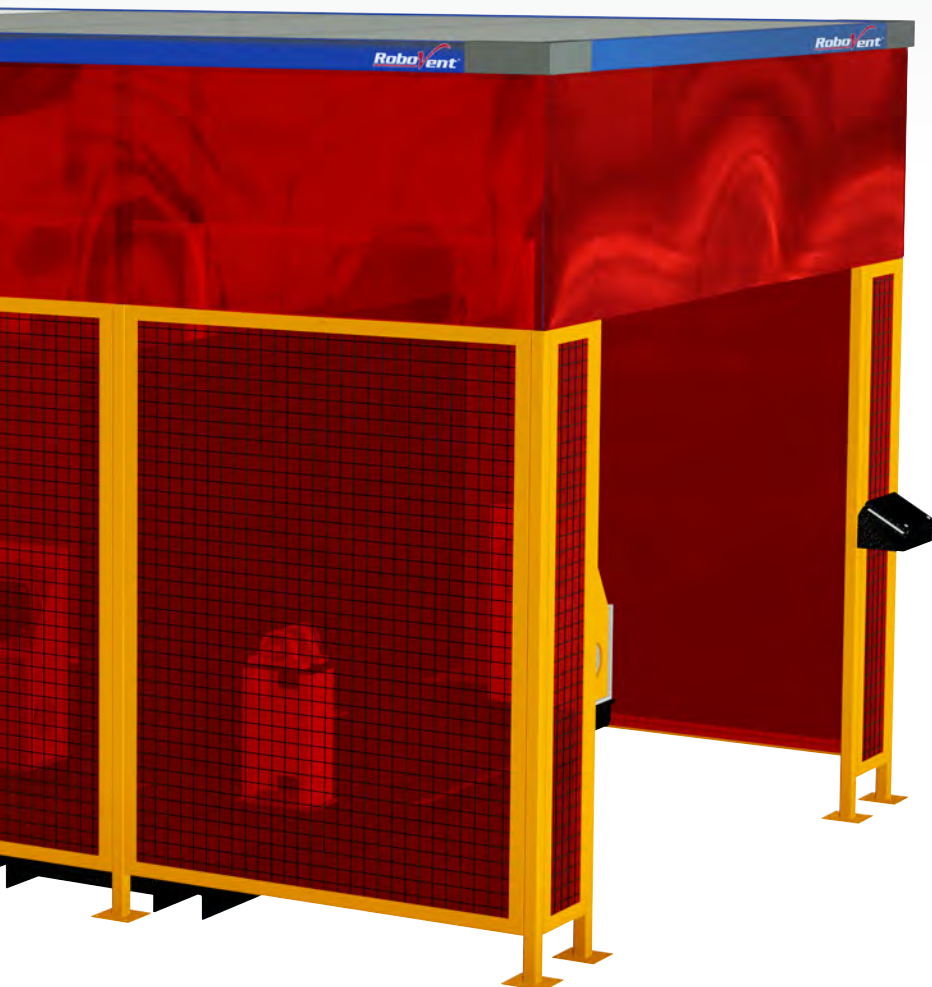
Spire Configuration

Here is a sample plant layout with 11 welding cells—each with its own Spire fume collector ducted to the Streamline Hood that is above each cell.



Spire

- **Small Footprint**
- **Built-in Spark Arrestance**
- **Very Low Maintenance**
- **Flexible**



Streamline Hood

The RoboVent Streamline Hood is a simple, streamlined solution for hooding welding applications. Our modular design makes installation and modification quick and easy. A transparent polycarbonate top lets light in from above so no additional operator lighting is needed. And everything is built with RoboVent quality for exceptional durability.



Delta3™ SparkOut

Our proprietary Delta3 spark arrestance system comes standard with every Spire air filtration unit for superior fire safety. Delta3 uses centrifugal force to eliminate sparks at the source. See page 20 for details.

eTell™ Intelligent Controls

Each Spire unit comes standard with eTell, a revolutionary control system that learns your systems and routines, makes automatic adjustments to save energy and extend filter life, and alerts you when maintenance is needed. See page 16 for details.

eDrive™ Automatic VFD (option)

The eDrive constantly monitors airflow and automatically adjusts the motor RPM to compensate for filter loading. Energy peaks and valleys are evened out and energy usage is cut by 20% to 30%, while filter life is extended by as much as 30%. See page 18 for details.

SafeSensor™ Particulate Monitoring

SafeSensor is the Spire's advanced particulate-monitoring device that can detect leaks past the filters. If one should occur, SafeSensor will shut the equipment down and trigger an alarm. See page 21 for details.

Supprex200™ Fire Suppression System (option)

This is a dual-stage system activated by smoke or heat. If smoke is detected, a fire damper closes, stopping all airflow and oxygen supply. If heat is detected, FM-200 gas is instantly deployed. See page 21 for details.

Internal Hopper

Dust is collected in easy-access dual internal hoppers. Just connect a standard shop vac to the 2" clean-out ports to remove the particulate from the internal hoppers. You could also connect these ports to a vacuum system for continuous removal of the dust.

DeltaGate™: Building a smarter ductwork system for the automotive industry.

Optimize the performance of your ducted air quality system with RoboVent DeltaGate. The DeltaGate system controls airflow to each cell individually, so you can reduce airflow and energy needs for your entire system.

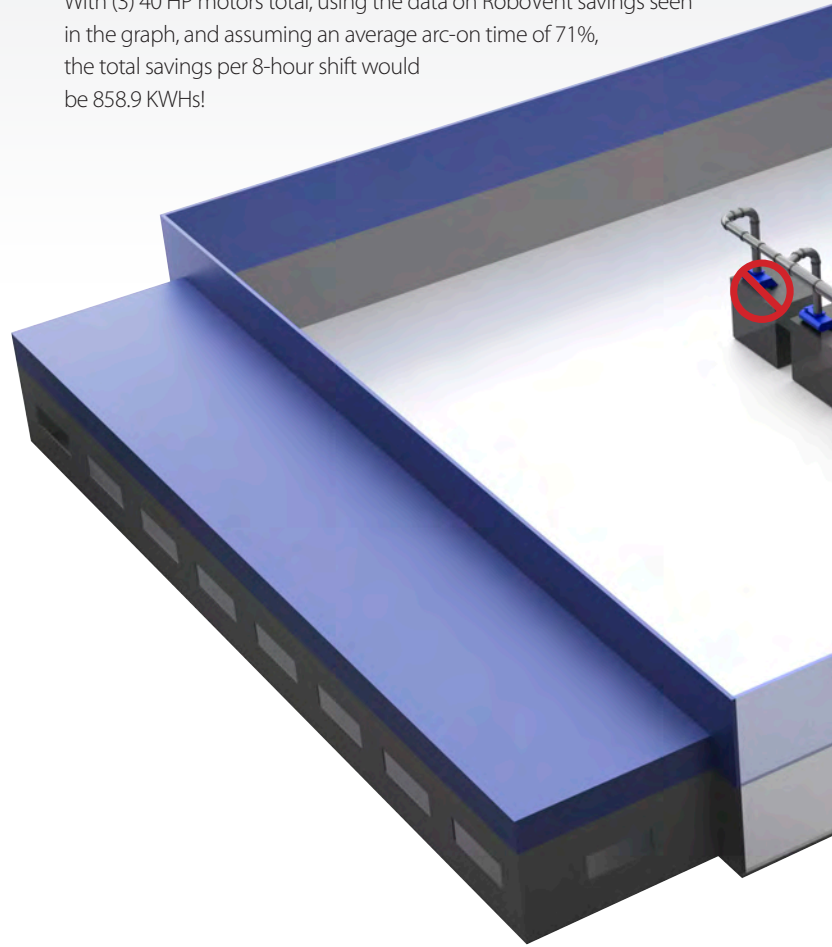
DeltaGate delivers:

- **Energy savings:** With DeltaGate, airflow for each section is modulated based on welding activity, reducing energy costs by up to 30%-60%, depending on production process cycles. (See chart on page 31 for example.)
- **Automation:** The DeltaGate opens automatically when the welding arc is on, so welders don't need to think about dust control.
- **Flexibility:** DeltaGate is part of a modular ductwork system, so each gate is easy to move if your configuration needs to change.
- **System efficiency:** With DeltaGate, you can do more with less. Because airflow needs are based on actual use rather than number of stations, you'll need fewer (or smaller) dust collectors overall.



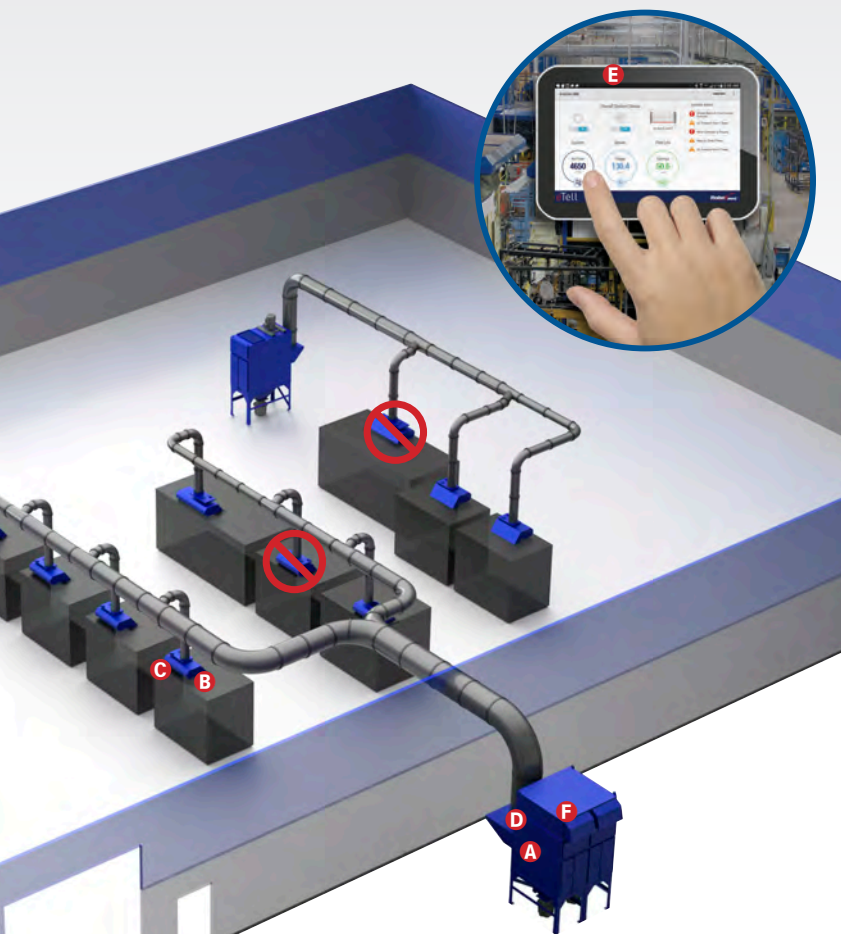
RoboVent Ducted System with DeltaGate Running with 70% of the stations welding:

The RoboVent ducted system illustrated here shows 3 of 11 stations with their DeltaGates closed. The system includes one indoor Fusion Series collector and two outdoor Fusion Series collectors in tandem. With (3) 40 HP motors total, using the data on RoboVent savings seen in the graph, and assuming an average arc-on time of 71%, the total savings per 8-hour shift would be 858.9 KWHs!



How It Works

- A AutoSaver:** Automatically modulates extraction with welding activity.
- B DeltaGate:** Gates controlled by AutoSaver seal off ductwork sections not in use, reducing airflow requirements for the entire system.
- C Delta3 Spark Arrestor** (option): The proprietary Delta3 spark arrestance system uses centrifugal force to eliminate sparks before they can enter the ductwork.



"Looking back, I'd say the ability to clean and recirculate the air and save on utility costs was the biggest, and somewhat unexpected, benefit to the new air filtration system."

— B.F., Welding Project Engineer, Lear Corp.

D eDrive: VFD (Variable Frequency Drive) controls the collector based on sensors that detect airflow requirements across the system as the DeltaGates open and close.

E eTell: The cloud-based eTell smart control system acts as a central hub to automate and optimize performance for the entire system.

F Dust collector: DeltaGate can be used with many of RoboVent's most popular dust collectors, including Spire and Fusion series collectors.

Energy Savings with RoboVent DeltaGate

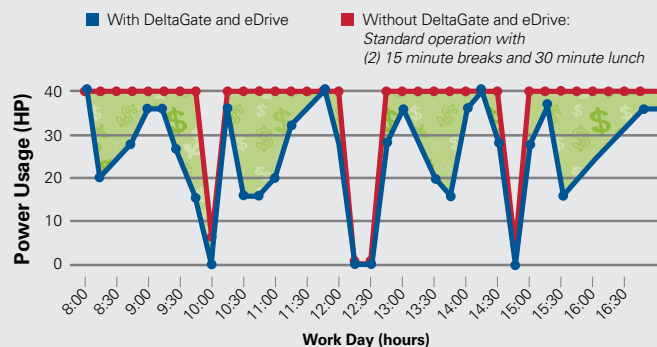
Arc-on time for most robotic welding stations is between 45% and 75%. For manual stations, arc-on time may only be between 20% and 40%. So why pay for the power to run your dust collection system 100% of the time?

With RoboVent's automated controls, your system is on when you need it, and off when you don't—delivering significant energy savings.

The DeltaGate system is tied to welding activity, but it also includes an automated airflow control that adjusts the airflow to meet what is needed for the welding stations in operation.

The proprietary eDrive Automated VFD works with the DeltaGates to control airflow and adjust the motor speed up or down based on system requirements. That means your system draws power only when it is needed—reducing overall airflow and horsepower requirement by an average of 30%.

Power Savings with DeltaGate and eDrive per Shift



Results

KWHs per Day without DeltaGate and eDrive:	984.3 KWHs
KWHs per Day with DeltaGate and eDrive:	698.0 KWHs
KWHs Saved per 8 Hour Shift:	286.3 KWHs

KWHs Saved per 8 hour Shift on (1) Fusion Collector using DeltaGate and eDrive

29% SAVINGS

Robotic Welding

(SOURCE CAPTURE)

Grid Configuration: A modular, flexible and future-proof solution

The automotive industry is always changing, and manufacturers must stay flexible. When you want the efficiency and energy savings of a centralized ducted system, but with flexibility to move components if needed, consider RoboVent's Grid Configuration.

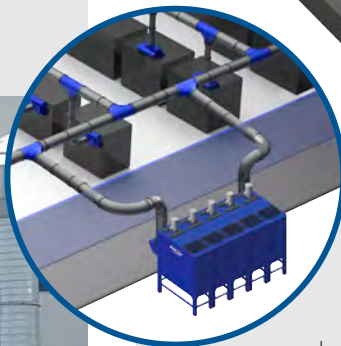
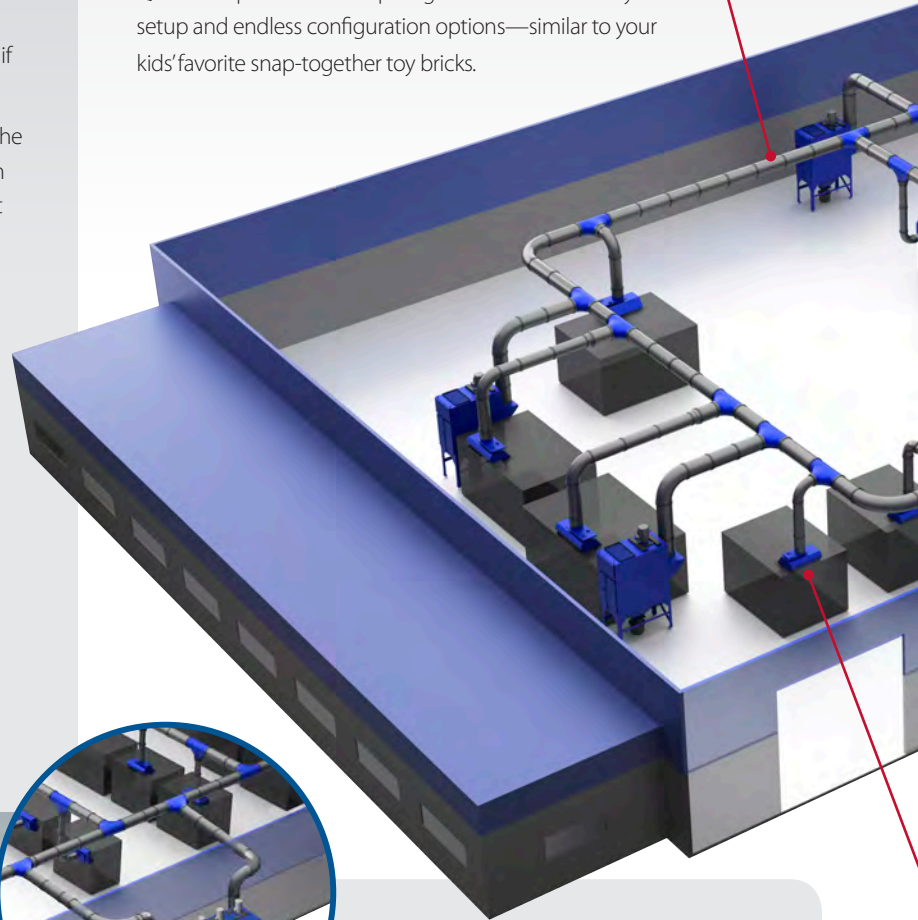
Grid gives you the flexibility of mobile source capture systems with the efficiency of a centralized ducted system. It's a whole-facility solution consisting of modular, standardized ductwork and components that can be easily reconfigured as your needs change.

The Grid system is:

- **Modular:** We use standardized, modular components to make installation of your custom system fast and easy.
- **Flexible:** Move components around, expand or reduce capacity, and adjust your system to your new requirements. Modular components and QuickClamp ductwork make it easy to change your configuration as your needs change.
- **Energy efficient:** The ducted grid system only needs 70% of the airflow used by individual units, delivering significant energy savings over time.

Primary Grid Duct System

The Grid system is designed using the same principles as a compressed air loop system for optimal efficiency. QuickClamp ductwork snaps together for fast and easy setup and endless configuration options—similar to your kids' favorite snap-together toy bricks.



Outdoor Configuration (option)

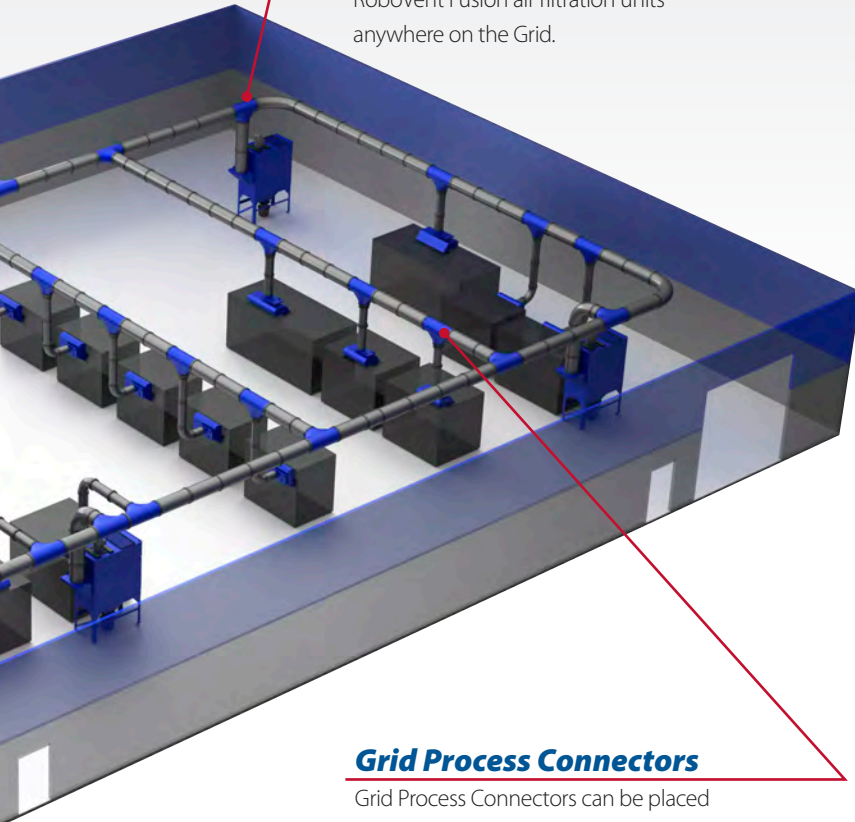
The Outdoor Grid Configuration uses the same principles as the indoor configuration; however, collectors are typically placed outside the building and are usually larger in size. Production equipment can be added and reconfigured inside based on production needs. Oftentimes, it's several collectors placed side-by-side or perhaps one larger unit that will be placed outside the facility. There are benefits to both Indoor and Outdoor configurations. While managers will like the ability to service outdoor equipment and not disturb production lines, maintenance staff will have to deal with the elements outside.





Grid Fusion Connectors

Modular Grid Fusion Connectors are the same size as the primary Grid ductwork section, so you can place RoboVent Fusion air filtration units anywhere on the Grid.



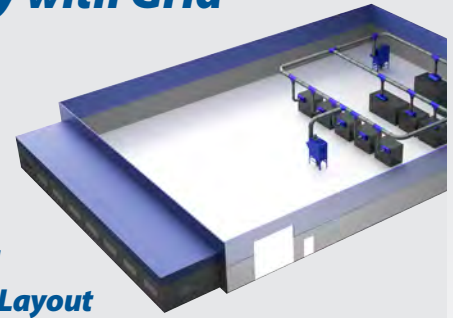
Grid Process Connectors

Grid Process Connectors can be placed anywhere on the primary grid duct system for maximum flexibility. These Process Connectors are used to connect the stations in your process to the primary grid ductwork that is connected to the dust collectors.

DeltaGate

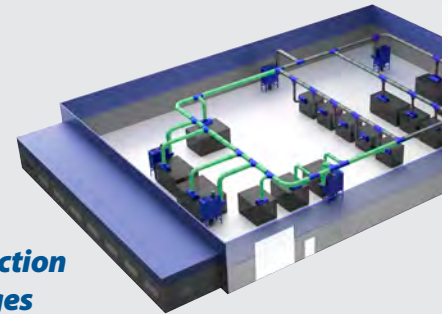
The DeltaGate is a proprietary connector for welding stations to connect to the RoboVent Grid system. We combine our proprietary Delta3 spark arrestance technology with a system of automatic gates to control airflow in and out of each cell. Airflow can be increased or decreased in specific areas as needed, and directed to clear debris out of the system. DeltaGate can be integrated into the cell prior to set up and delivery, so it's ready to go as soon as the cell is assembled on site. See page 6 for details.

Reconfiguration is Easy with Grid



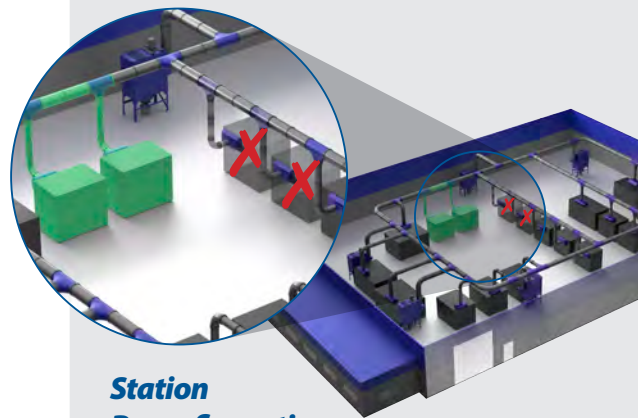
Initial Plant Layout

This image shows a plant with an initial layout and floor plan design with multiple stations and collectors. This scenario depicts what your plant layout might look like in normal working and production conditions. As production needs fluctuate and facility-specific manufacturing processes change, the system can be easily altered to accommodate needs.



Production Changes

As your needs change, the system could change right along with you. For example, consider a scenario where you add six new welding stations, as seen here. In order to accommodate the additional welding fume output, you simply add three additional collectors to your configuration.



Station Reconfiguration

Now, imagine you have moved two robotic welding stations to the other side of the plant. With the Grid system, the collectors can be easily moved to wherever they are needed. The system will automatically self balance to optimize the new configuration.

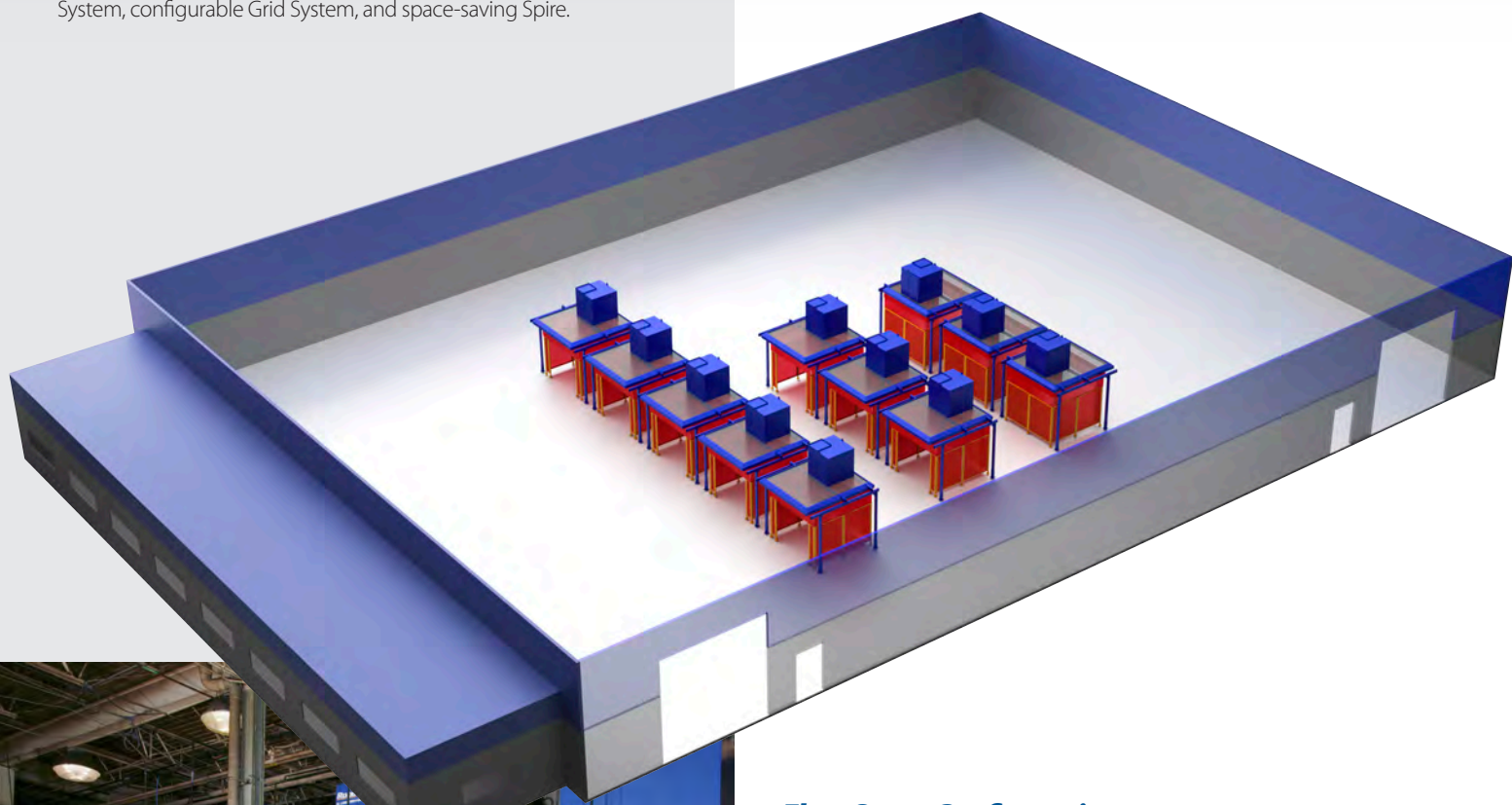
An Option for Everyone

We have decades of experience in designing and delivering air quality systems for the automotive industry. We know that no two clients are the same, and we are committed to finding the right solution to meet your needs for today... and tomorrow.

When we first began working with automotive clients in the 1990s, most of our work involved traditional ducted systems that we customized for each facility. These systems still work well for many of our clients. However, over the years we have developed new options to meet the needs we saw in the field. We've turned client feedback and our own observations into innovations like the stacked FloorSaver System, configurable Grid System, and space-saving Spire.

"This project from inception, design, integration and completion went effortlessly despite uncooperative winter weather... We chose your system for a number of reasons: quality, value, non-proprietary system design, efficiency of operation, and, bottom line, it gets the job done when others did not."

— D.H., Facilities Engineer, Gestamp Alabama, Inc.



FloorSaver Configuration:

A stacked solution for maximum floor space.

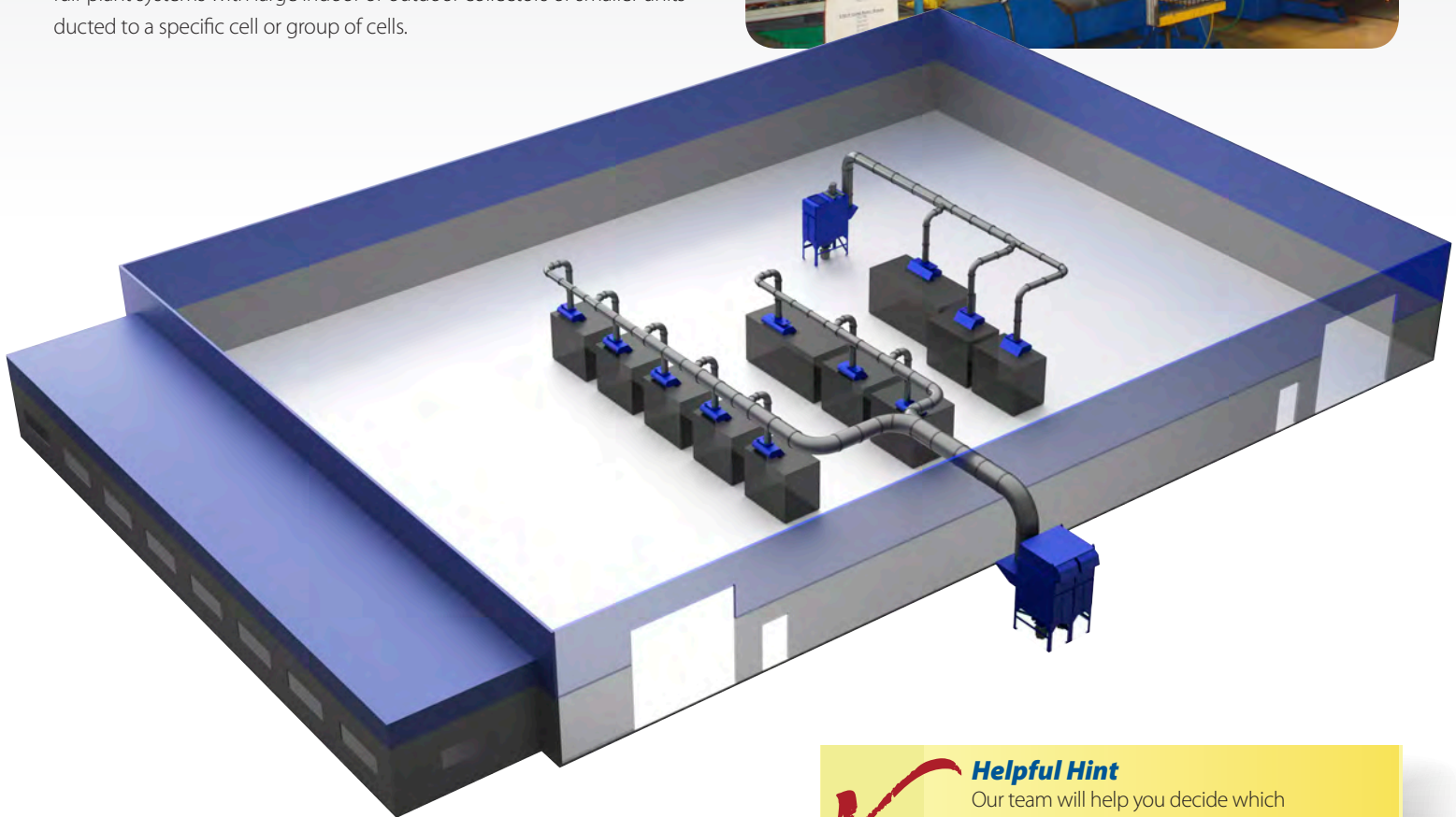
Maximize your floor space! The RoboVent FloorSaver System stacks the collector right on top of the weld cell hood. With built-in spark arrestance and powerful filtration, FloorSaver provides dedicated air filtration for each weld cell. The innovative stacked configuration frees up 20%-40% more floor space for other equipment.





Traditional Ducted Configuration: Optimal performance for today

Our traditional ducted solutions are engineered to meet your exact needs today. While less flexible than our grid system, a traditional configuration maximizes performance with ductwork sized for optimal airflow for your specific applications. Choose from a wide range of options, ranging from full-plant systems with large indoor or outdoor collectors or smaller units ducted to a specific cell or group of cells.



Helpful Hint

Our team will help you decide which configuration is best for your needs.

Configuration Comparison

	Grid	Traditional Ducted	FloorSaver	Spire
Modular/Expand	★★★★★	★	—	—
Flexible	★★★★★	★	★★★★★	★★★★★
Operating Cost	★★★★★	★★★	★★★★★	★★★★★
Energy Efficiency	★★★★★	★★★★★	★★★★★	★★★★★
Ease of Cleaning	★★★★★	★★★	★★★	★★★★★

ProCube™ and Extractor™ : Hi-Vac Filtration for Manual Welding Applications

RoboVent ProCube is the perfect companion for the RoboVent Extractor Fume Gun. In fact, the two were made to go together.

ProCube can be paired with one or two Extractor Fume Guns. Toggle between one-gun and two-gun use with the flick of a switch. The unit will automatically start when the torch is on, and stop when it is off, for easy operation and energy savings.

The ProCube's size and portability make it an excellent choice for high-mobility applications such as tractor trailers or other large components. The 30' (9.14 m) reach of the Extractor hose gives welders exceptional mobility, and the ProCube can be easily moved along with the welder.



ProCube™

When you need power, flexibility and mobility, look to the RoboVent ProCube™. The ProCube puts high-vacuum filtration power into a small, portable package that goes wherever you need it. At just 95 pounds (43.1 kg), 42" (106.1 cm) high and with a 24"x16.5" (60.7 cm x 16.5 cm) footprint, the ProCube is small enough to fit almost anywhere and light enough to move wherever it is needed. The optional wheels and handle make it easy for a single welder to move, making it the perfect choice for high-mobility welding applications using fume guns.

Dashboard

A simple easy to use, user-friendly dashboard lets you see performance and filter loading at a glance with a simple switch between single- and dual-gun extraction requirements.

Delta3™ Spark Arrestor

Our proprietary built-in Delta3 spark arrestance system comes standard with every ProCube air filtration unit for superior fire safety. Delta3 uses centrifugal force to eliminate sparks at the source. See page 20 for details.

Automatic Filter Cleaning System

Filters are automatically cleaned using compressed air to minimize maintenance and extend filter life.

eDrive™

The eDrive system constantly monitors airflow and automatically adjusts the motor RPM to compensate for filter loading, cutting energy use by 20% to 30% while extending filter life by as much as 30%. See page 18 for details.

No-Spill Throw-Away Container

Replaceable dust tubes with caps allow for clean, fast and hassle-free disposal of collected dust.



RoboVent[®]

EXTRACTOR

The RoboVent Extractor reduces the welder's exposure to welding fumes by 90-95%.*

Faster Gas Flow

Due to the design of the gas nozzle at the inside, the shielding gas comes out faster than normal. The combination of the faster gas flow with the correct extraction flow at the gas nozzle gives a perfect weld in all positions.

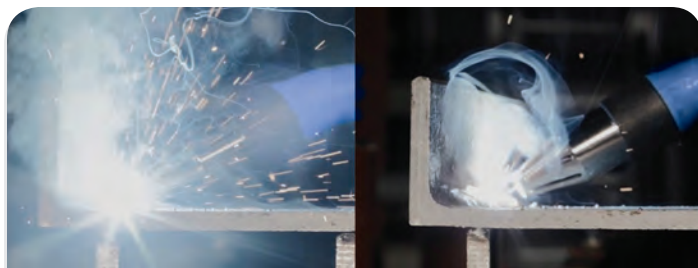
Integrated Fume Extraction

The RoboVent Extractor is a welding gun with integrated fume extraction. The gun can be connected to a central extraction system or to a stand-alone mobile extraction unit without any problems. The advantage of a mobile extraction unit with an integrated filtration system is that it can be used in different workplaces.

Flexible and Maneuverable

A ball-and-socket joint between the torch handle and the hoses offers flexibility and maneuverability. The RoboVent Extractor is a very light gun and weighs only 2.86 lbs. Due to the small size of the handle, the welder does not feel any difference between the Extractor and a standard welding gun.

Patent-Pending



The RoboVent Extractor is intended for use in MIG and GMAW welding processes that employ shielding gases. The gun will in all cases deliver an improved performance in comparison to current guns with source suction.

*This applies to (pulling) underhand welding. The reduction in (pushing) overhand welding and very swift horizontal movements may be slightly less.

Vista360™:

Powerful Filtration in a Small Package

Space is always at a premium, in automotive manufacturing. Vista360 combines the advantages of a ducted push-pull system and a standalone collector in one small but powerful package. Each unit is built for durability, safety and easy maintenance, with rugged cabinet design and built-in features for fire safety and longer filter life. Vista360 provides highly effective ambient filtration for resistance welding and other automotive applications where source capture is not practical.



Internal Hopper

Dust is collected in an easy-access internal hopper. Just hook up a central vac system or a standard shop vac to the 2-inch (5.1 cm) ports to clean out excess dust.

Dynamic Pulse™ System

This patented system takes filter cleaning to an entirely new level. Far more than just a simple blast of compressed air, it has multiple valves working together in a computer-synchronized double-pulse sequence to virtually eliminate re-entrainment while propelling the dust down into the collection area. See page 19 for details.

Delta3 Spark Arrestor (option)

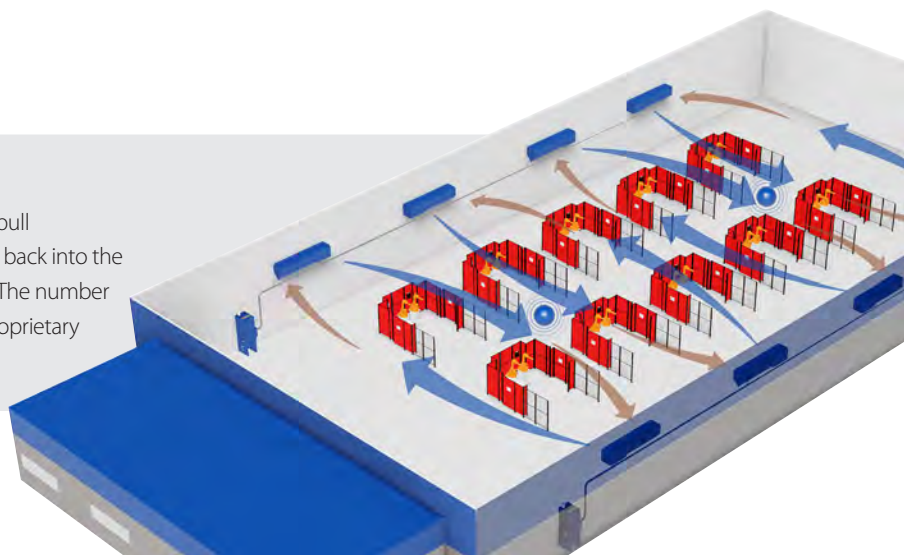
Our proprietary Delta3 spark arrestance system uses centrifugal force to eliminate sparks at the source for superior fire safety. See page 20 for details.

eDrive™ Automatic VFD (option)

The eDrive constantly monitors airflow, and automatically adjusts the motor RPM to compensate for filter loading. Energy peaks and valleys are evened out, and energy usage is cut by 20% to 30% while filter life is extended by as much as 30%. See page 18 for details.

The Vista360 Push-Pull Configuration

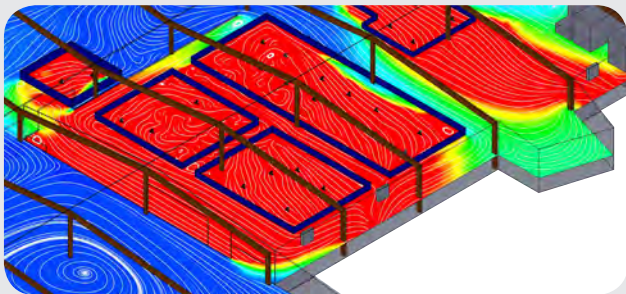
Vista360 creates circular air patterns in the facility that continually pull contaminated air into the filtration unit and push clean, filtered air back into the plant. Here, short lengths of duct are used to capture ambient air. The number and placement of Vista360 collectors are determined using our proprietary **VentMapping Engineering Services**.



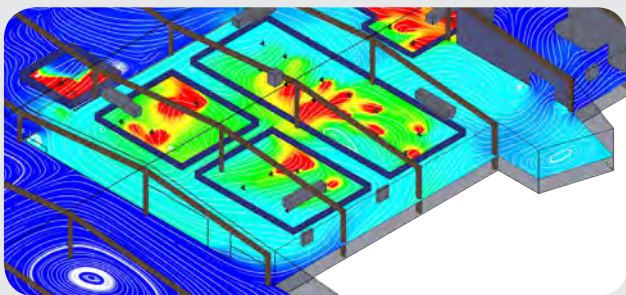


**VentMapping®
Engineering Services:**
Effective Dust and Fume Collection
Starts with Data Collection

Before: The airflow simulation shows the dirty air concentrating around equipment and the manufacturing process.



After: A second simulation shows how optimal placement of dust collectors has effectively circulated and cleaned the air.



**RoboVent eQ™
Air Quality Monitoring System**
Cut energy costs for your dust collection
equipment by up to 25%.

With the RoboVent eQ Air Quality Monitoring System, your dust collection equipment is on when you need it, and off when you don't. eQ continually monitors the air quality in your facility and automatically regulates your RoboVent system's airflow in response to particulate levels.

eQ works with the eTell control system to modulate system performance in response to real-time conditions. eQ also links with your dust collector's eDrive system and regulates airflow, ramping the volume and speed up and down as necessary—reducing energy costs, noise levels, and equipment wear and tear, and extending filter life. At the same time, air quality is always kept within defined limits to protect worker health, safety and morale.

The perfect companion for any of RoboVent's ambient air quality systems, eQ allows you to:

- Get real-time air quality alerts and control system parameters on a tablet or smart phone
- Monitor air quality levels over time and identify meaningful patterns with user-friendly reports
- Reduce energy use and maintenance costs for air quality equipment

eTell™ Intelligent Controls

Forget about your air filtration equipment.

With patent-pending eTell™ Intelligent Controls from RoboVent, your dust collectors will tell you what they need and when they need it. It's not about preventative maintenance—it's about *predictive* maintenance.

eTell eliminates costly and time-consuming maintenance routines and targets your efforts where they are truly needed. Just install the cloud-based software once, and let it tell you what needs to be done each month, or in real time. It will even tell you how to perform maintenance activities with easy-to-follow video instructions delivered right when you need them.

eTell is the *only* control system that is:

- **Predictive:** eTell can predict exactly how much life is left in your filters and when maintenance tasks should be performed based on your system use patterns.
- **Cloud-based:** Our cloud-based application gives you anywhere, anytime visibility for all of your equipment from multiple facilities on a single application.
- **Smart:** eTell learns your systems and processes and makes real-time adjustments to save energy and extend filter life.

The eTell Advantage

- Eliminate standard preventative maintenance routines and schedules.
- Cut maintenance costs by focusing only on what is actually needed.
- Access step-by-step video instructions so your team can perform maintenance activities without prior training.
- Track performance, energy use and maintenance needs for all of your dust collectors on your smart phone or tablet.
- Save money with smart software that learns your processes and adjusts energy use and self-cleaning cycles to reduce operational costs.

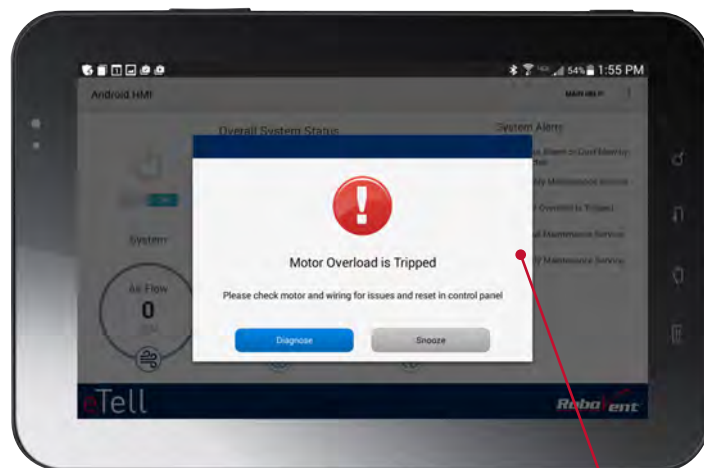


Manage Multiple Collectors

Now you can view and manage dust collectors across all of your facilities in one easy application. With eTell, you can assign collectors to zones, manage groups of collectors, and streamline all of your maintenance activities.

Predictive Analytics

eTell uses advanced machine learning to analyze your systems and processes and make smart predictions on how future activities will impact filter life and maintenance needs. It uses this information to make simple, automatic adjustments that save energy and reduce costs. Easy-to-understand reports allow you to monitor energy use, filter life and other key metrics for each machine in your network.



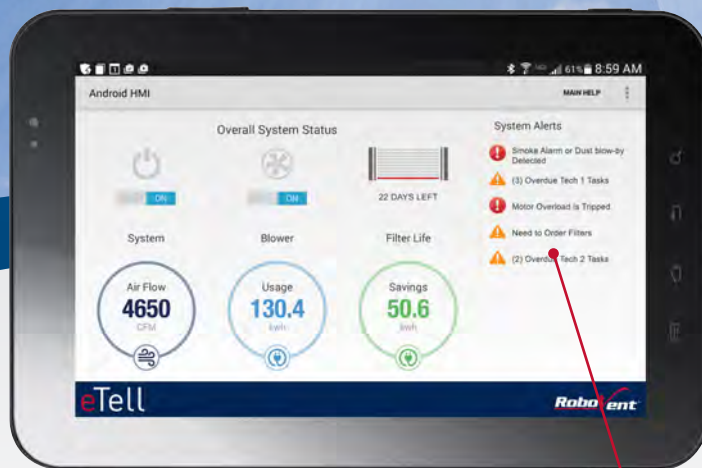
Reminders and Emergency Alerts

Get alerts and reminders right on your smartphone, tablet or computer. eTell will alert you if your dust collector needs immediate attention and send timely maintenance reminders. You can set your communication preferences so you can be reminded as often (or as seldom) as you like.



Maintenance Scheduling

Plant managers can easily monitor system performance and plan maintenance schedules based on each collector's needs. eTell lets you track updates, alerts and maintenance tasks for every collector in one place and generate a task list for each machine in your facility.



Collector Dashboard

Service technicians can pull up the eTell dashboard to get a full list of maintenance recommendations specific to each collector. The dashboard tells you exactly what needs to be done, when it should be completed and approximately how long each task should take. It even provides links to helpful video tutorials right at the point of use.

Video Tutorials and Help

The application comes pre-loaded with links to online support materials, helpful supportive materials and general video tutorials for your system, allowing you to self-diagnose and address any item.



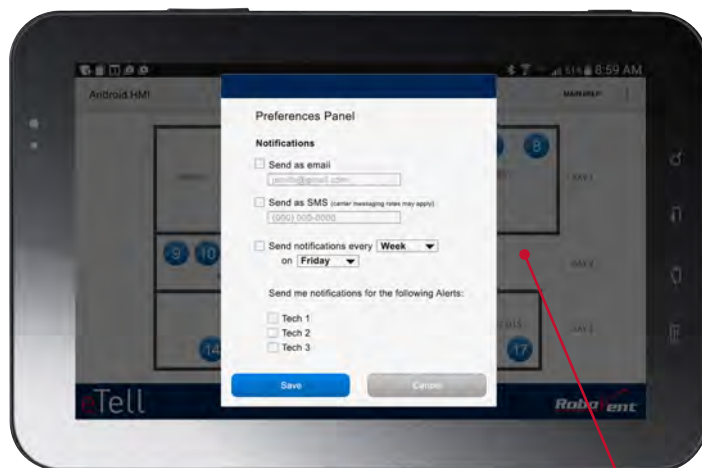
Factory Support 24/7

Our staff will be alerted if a problem is not addressed immediately, so we can help you stay on top of any issues that should arise. Rather than taking the time to fix any issues yourself, simply call RoboVent to have one of our trained technicians service your equipment on site.



eTell Premium Services (optional)

With Premium services, you'll have all of the standard eTell features plus Remote Tech Support and SMS text and email notifications for selected alarms.



Preferences

Customize your reports and alerts setting for your preferred frequency and level of detail. You can get detailed reports for in-depth performance analysis or just "set it and forget it" and let your dust collectors call you only when they need you. eTell lets you adjust system preferences for your workflow and management style.

RoboVent eTell Intelligent Controls are the standard control package on RoboVent collectors. The RoboVent eTell App is available on Android and iOS devices through the Google Play and Apple App Stores.

eDrive™ Automatic VFD

With the RoboVent eDrive, your collector's airflow is monitored and the motor's RPM is automatically adjusted to compensate for filter loading. As you can see in the graph to the right, a collector running without eDrive uses more energy in the beginning of the filter's life cycle than a collector with eDrive does.

Benefits of the RoboVent eDrive include:

- Less stress on filter media, which leads to longer filter life
- Decrease in energy usage by 20% to 40%
- Improved equipment performance
- Decreased filter costs
- Decreased maintenance costs

Using the RoboVent eDrive with your dust collector will compress and straighten energy peaks and valleys, cutting energy usage by approximately 40% and increasing filter life by as much as 30%.

The RoboVent eDrive Saves You Money by Decreasing Energy Use and Extending Filter Life

In the example on the right, this 10 HP unit would be using 7.457 KWs per hour of operation. This example shows that you would save 41% over the 18 month period. For filters in this example you have increased the filter life by 4 months or 29% Filter Life Savings.

RoboVent vs. Make-Up Air

Are You Exhausting Your Profits?

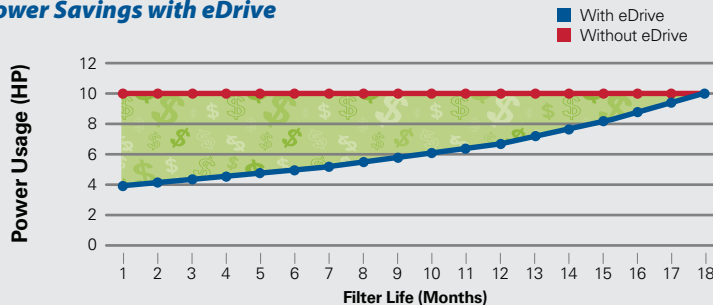
It's not every day you have the ability to reduce operating costs by 65%! We're mindful of efficiencies gained through clean air technology and we help our customers consistently achieve these savings. Heavier costs are avoided by combining multiple airflow processes into one, thus providing efficiencies during system operation. RoboVent systems simultaneously clean and re-circulate the air in your facility eliminating the need for additional sources of air or "make-up air" to be pumped into the facility. It also reduces the need for expensive exhaust systems. Our systems keep your working environment free of dust and other harmful particulates to help you run a much more efficient facility and reap the profits!



Helpful Hint

ROI on the eDrive varies from 8 to 14 months depending on energy costs.

Power Savings with eDrive



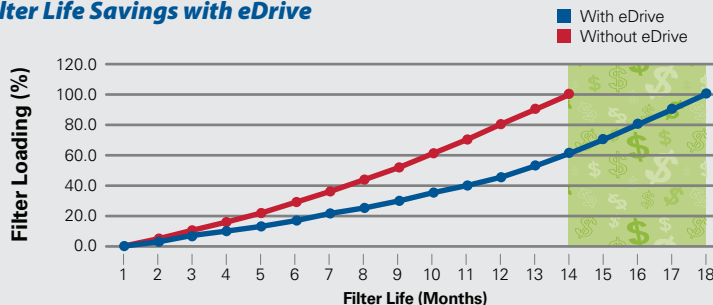
Results

Total KWHs without eDrive: 44,742 KWHs
Total KWHs with eDrive: 26,396 KWHs
Total KWH's Saved: 18,346 KWHs

Power Savings with RoboVent eDrive

41% SAVINGS

Filter Life Savings with eDrive



Results

Filter Life without eDrive: 14 Months
Filter Life with eDrive: 18 Months
Filter Life Saved: 4 Months

Filter Life Savings with RoboVent eDrive

29% SAVINGS

\$105,600
\$102,800

Annual Energy Cost Comparison (50,000 CFM)

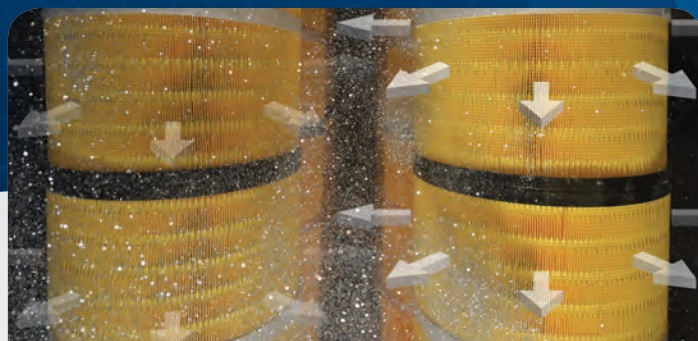
\$36,500

RoboVent
Operating Cost

Northern Climate Exhaust + Make-Up
Operating Cost (Heat)

Southern Climate Exhaust + Make-Up
Operating Cost (A/C)

Filters and Upkeep
Gas
Electric



Dynamic Pulse System

Extend Filter Life with Dynamic Pulse

Proprietary, computerized and efficient, the RoboVent Dynamic Pulse System uses a rapid-fire technique. The synchronized action of the pulsing mechanism virtually eliminates any re-entrainment of dust going from one filter to the next; instead, it causes the dust to fall into the containment tray or drum. The patent-pending Dynamic Pulse System ensures your filters are used to maximum capacity!

Saving filter life by shedding particulate effectively and eliminating re-entrainment, the synchronized Dynamic Pulse System has proven to be 1.5 times more effective than typical pulsing systems. As you can see in the charts below, we tested this system thoroughly. With the Dynamic Pulse System, 30% more dust was removed from the filters than with a typical pulsing system! Also, it had 82% effectiveness vs. 57% effectiveness with the standard pulsing system!

RoboVent Dynamic Pulse System Testing

Particulate In

6.0
GALLONS
(22.7 L)

82%
EFFECTIVE

Particulate Out

4.9
GALLONS
(18.5 L)

Standard Pulse System Testing

Particulate In

6.0
GALLONS
(22.7 L)

57%
EFFECTIVE

Particulate Out

3.4
GALLONS
(12.9 L)

Controlled Variables			Dynamic Pulse System Recovered Volume	Standard Pulse System Recovered Volume
Test	Particulate Volume	Number of Cycles		
Test 1	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.76	3.42
Test 2	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.90	2.88
Test 3	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.88	3.36
Test 4	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	5.06	3.56
Test 5	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.90	3.76
Test 6	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.76	3.68
Test 7	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	5.08	3.22
Test 8	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.92	3.62
Test 9	6 Gal. (22.7 L)	(1) Cycle; 12 Cartridges	4.98	3.28
Average Recovered Volumes:			4.92	3.42

**Perfectly
Synchronized
Pulsing Virtually
Eliminates
Re-entrainment of Dust.**

See the RoboVent Dynamic
Pulse System in action by visiting
www.robovent.com/videos

Delta3™: Stop fires before they start.

Sparks are a natural byproduct of welding, grinding and metal cutting—but if they are left uncontrolled, the resulting fires can have devastating consequences. Now you can protect your workers, equipment and facilities with the most advanced and efficient spark arrestance system available on the market today.

Delta3 is built on groundbreaking technology that uses centrifugal force to kill sparks before they have a chance to grow. By stopping fires right at the source, Delta3 creates a safer work environment and vastly reduces the risk of avoidable work accidents. And our innovative design will help you keep productivity high, operating costs low and maintenance costs to a minimum.

How? Our Delta3 units are self cleaning to minimize maintenance costs and system downtime. They also provide superior air flow compared to traditional spark arrestance systems, which lowers energy costs and maximizes the life of your filters. Delta3 delivers:

- Excellent spark control
- Self-cleaning operation
- Low pressure drop



Helpful Hint

Under extensive lab testing, the Delta3 proved to be more effective than leading competitors at preventing sparks from entering the filter cabinet. Visit www.robovent.com/videos for a video demonstration.

Delta3 vs. The Competition:

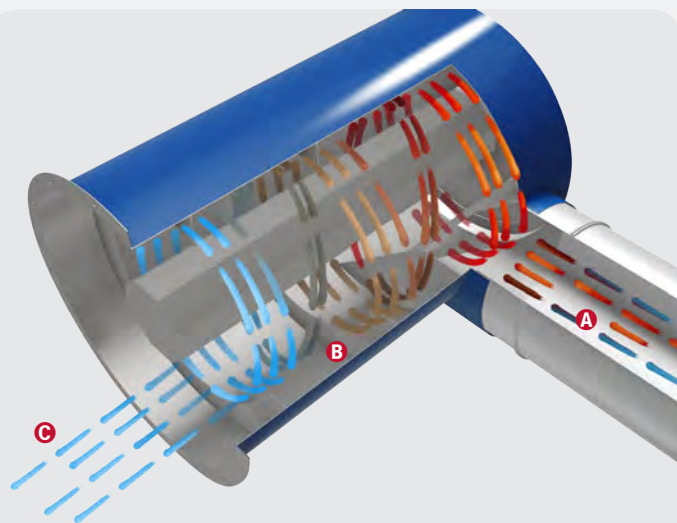
Delta3 stamped out the competition in comparative tests. It's the only technology in our comparative testing that extinguished 99.9% of sparks for welding, grinding and plasma cutting applications.

Sparks per Minute

Application	RoboVent DELTA3 SPARKOUT	Competitor 1	Competitor 2	Competitor 3
Welding	0	4	150	1
Plasma Cutting	0	45	1050	5
Grinding	0	180	4760	300



Delta3 can be in-line duct mounted or collector mounted, depending on your configuration.



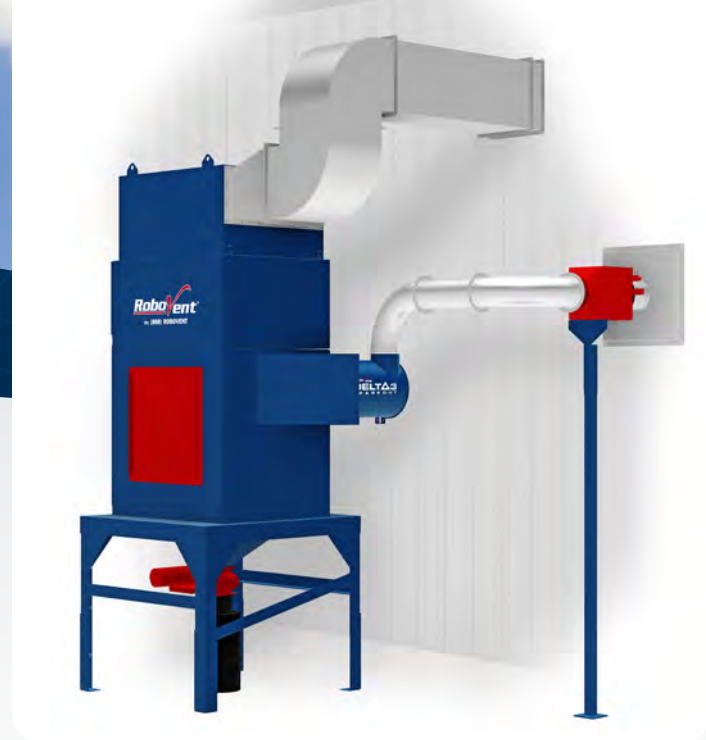
A Breakthrough in Engineering

Delta3 is based on an advanced patent-pending technology that represents a major breakthrough in spark arrestance. RoboVent Engineers used Computational Fluid Dynamics (CFD) to accurately model how embers would respond to different spark arrestor designs. We simulated hundreds of design iterations and put the best ones to test in real-world comparison studies against existing competitive systems.

The result?

Delta3 was the only unit that provided complete, reliable spark arrestance in comparative studies, controlling 99.9% of sparks.

- A** Centrifugal action drives sparks and embers against the outer wall of the device, stripping off the thermal envelope that surrounds them so that they are rapidly cooled and extinguished.
- B** High air velocities are maintained on the surfaces inside the device, eliminating particulate deposits so the unit is constantly cleaning itself.
- C** Internal air turbulence is minimal, which lowers the restriction to airflow. This reduces the energy required for operation and improves filter life.



Deflagration System

Reducing Fire and Explosion Risks from Combustible Dusts

Automotive manufacturers work with many substances that produce combustible dust, from plastics to aluminum. Many RoboVent dust collectors, including Fusion and Plaser, can be easily configured with a deflagration system to reduce the risks associated with combustible dusts. Each component of the deflagration system is designed to minimize potential damage in case of a fire or explosion inside the collector and prevent flames from spreading back into the facility. They include:

- **Delta3™ Spark Arrestance System** – Our proprietary spark arrestance system prevents sparks from entering the dust collector where they could ignite filter media or combustible dusts.
- **Isolation Valve** – The isolation valve acts like a “check valve” to prevent the deflagration (pressure wave) from propagating through the ductwork back into the facility.
- **Explosion Vent** – If an explosion occurs inside the collector, the explosion vent will rupture to release excess pressure. This allows the energy from the explosion to be safely directed away from the building to minimize structural damage and injuries.
- **Rotary Airlock** – The purpose of the rotary airlock is to prevent the deflagration (pressure wave) from propagating out the hopper in the event of an explosion, protecting personnel and property.

When designing a Deflagration System, RoboVent’s engineering team takes into careful consideration all aspects needed for NFPA combustible dust compliance. Our engineering process includes:

- Explosive testing in accordance with ASTM standards to determine if your dust is combustible.
- PHA (Process Hazard Analysis) risk assessment is conducted for any dust with a KST value of greater than 200 bar-m/sec.
- RoboVent includes explosion relief panels and other devices into our dust control systems to help you comply with the latest NFPA standards.

Supprex-200 System: Is Your Welding Operation A Fire Hazard?

According to the latest research conducted by the National Fire Protection Association, welding and cutting operations are responsible for nearly 6% of the fires that occur in manufacturing facilities. It’s no surprise: Sparks and flames are an inherent part of cutting and welding operations. Every company involved in these processes must take important precautions to increase safety and minimize the risk of fire. With this potential for fire in mind, RoboVent has developed its advanced SparkOut technology to help prevent fires that can occur in dust-collection systems. RoboVent’s focus has always been to stop the fire before it starts.

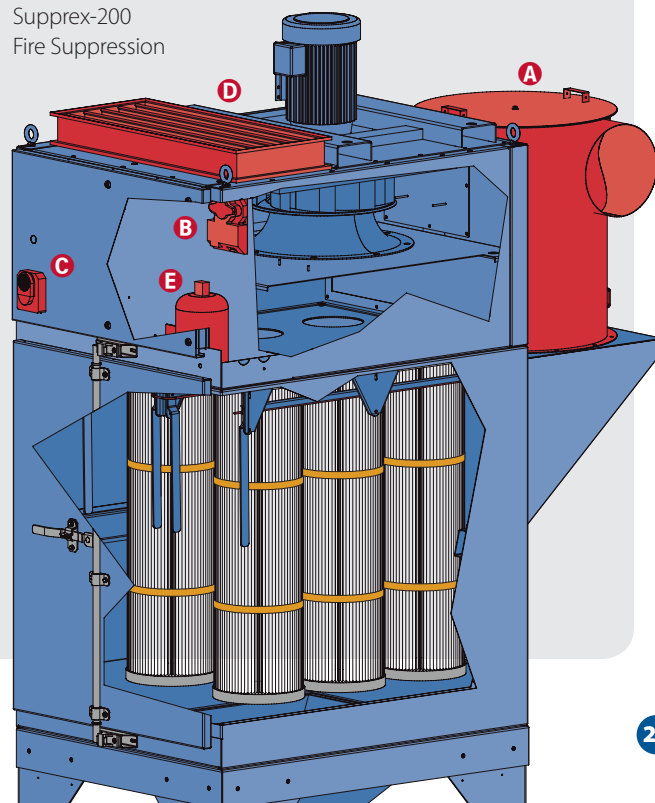
STEP 1: Delta3 — The Delta3 **A** quickly extinguishes sparks created through metal cutting processes. The proprietary design represents many years of extensive field testing and performance under heavy manufacturing conditions.

STEP 2: SafeSensor™ — The SafeSensor **B** particulate-monitoring device detects smoke or dust leaks past your filters. If a leak occurs, the system shuts the equipment down and sets off an alarm **C**.

STEP 3: Supprex-200 Damper™ — The Supprex-200 Damper System **D** closes when smoke is detected, stopping the oxygen from feeding the fire. If a fire is present, it is typically contained to one filter and the Supprex-200 does not disperse.

STEP 4: Supprex-200 Fire Suppression™ — If and when heat is detected, FM-200 gas is released at the location of the fire. There is little or minimal cleanup after a fire with the Supprex-200 System **E**.

- A** Delta3 SparkOut
- B** SafeSensor Monitor
- C** SafeSensor Horn Alarm & Strobe Light
- D** Supprex-200 Damper
- E** Supprex-200 Fire Suppression



RoboVent Endurex™ Premium Cartridge Filters

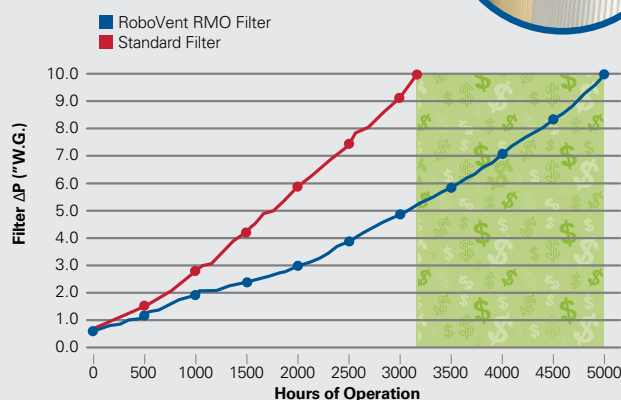
Whether you have an ultra-fine dust, metal cutting fumes or an aggressive abrasive particulate, RoboVent has you covered.

RoboVent's premium Endurex filter cartridges have been engineered to provide the automotive industry with the very best filtration protection for your plant and employees. Durable and proven, our filter media has been designed for outstanding performance in filtering fumes, smoke, dust, oil haze and other particulates/pollutants created during virtually any automotive manufacturing process.

It's No Longer About Media Quantity. It's About Media Optimization.

Endurex RMO is truly the future in efficient filtration. By widening the pleat spacing in our proprietary filter media and ensuring that the pleats remain apart, we maximize the surface area of media available to dust and fume particles while maintaining the highest level of filtration efficiency. The result is a reduction in static pressure and a superior release of particulate. In short: longer filter life, using less media.

Extended Filter Life with Endurex™ RMO Filters

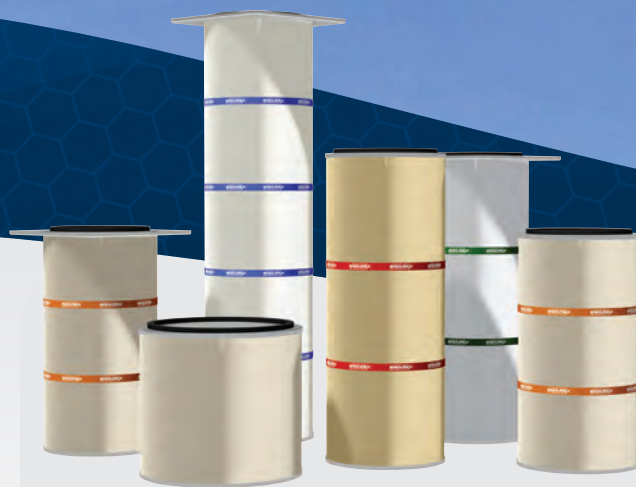


Results

Filter Life of Standard Filter: 3200 Hours
 Filter Life of Endurex RMO Filter: 5000 Hours
Filter Life Extended: 1800 Hours

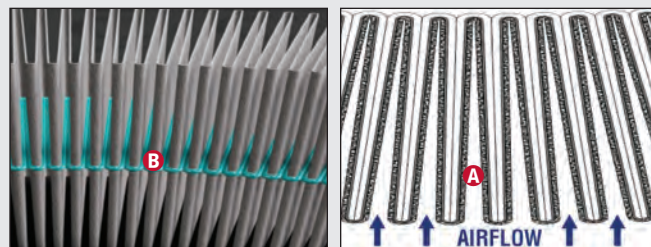
Extended Filter Life with Endurex RMO Filters

**56%
LONGER**



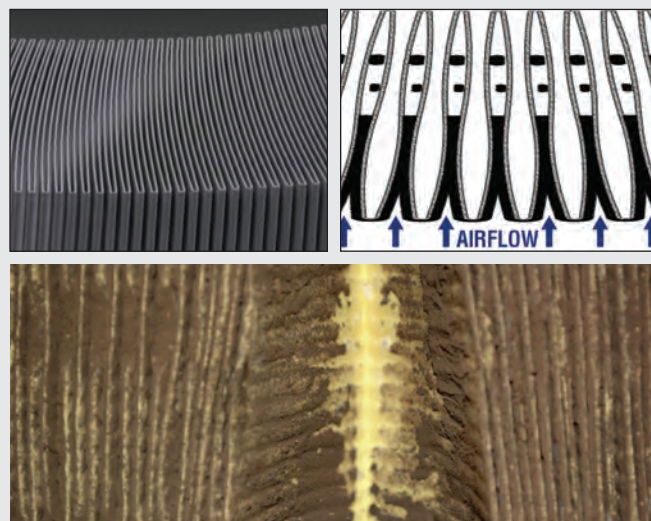
Endurex™ RMO: The Next Generation of Filters

Re-engineered to maximize efficiency while reducing static pressure, patent-pending Endurex Reinforced Media Optimization (RMO) brings filter technology into the 21st Century.



- A** RMO support keeps the filter pleats at optimum spacing, allowing for maximum loading on the media, and more effective pulse cleaning.
- B** RMO Support ribs (shown in blue above) are continuous for the full length of the pleats ensuring no pleat collapse. RMO structures ensure media surface area is maximized, and the entire filter is used to its full potential.

Traditional Filter Design



In traditional filter design, the pleats are often pinched closed. The clean area seen on the inside of these pleats indicates that the dirty air never reached this media, resulting in less effective loading and ineffective pulse cleaning — and as a result, short filter life.



ClientCare

At RoboVent, we are committed to helping you maintain a clean, comfortable and safe environment for your workers. We appreciate the trust you have placed in us by purchasing RoboVent products. We back our equipment with the best service offerings in the industry to help you maintain your air quality standards and balance your budget, year after year.

ClientCare™ services from RoboVent will maximize the life of your equipment, protect the health and safety of your employees and significantly reduce maintenance and repair costs over time.

We offer three great options, for every need and budget:

CompleteCare™ Maintenance Program

With the CompleteCare™ Maintenance Program, you can leave everything to us. Depending on your equipment needs and usage, our technicians will come in monthly, bi-monthly or quarterly to change filters, conduct routine maintenance and troubleshoot emerging issues. CompleteCare is a comprehensive maintenance package designed to give you peace of mind, extend the life of your equipment and reduce the maintenance burden on your staff.



Helpful Hint

Sign up for the RoboVent CompleteCare program, and get a full lifetime warranty on your RoboVent equipment for as long as the program is in place!

Equipment Certification Program

Our Equipment Certification Program, offered on a quarterly, bi-annual or annual basis, will help you extend the life of your equipment and protect the safety of your workers with regular inspections by certified RoboVent technicians. We'll identify any emerging issues and make proactive maintenance or repair recommendations to prevent unexpected downtime and ensure that your equipment is running at top efficiency.

ClientCare Service Quality Check Program

If you would rather conduct your preventative maintenance in-house, our ClientCare Service Quality Check Program will ensure that your maintenance team is performing world-class PM Service that meets all RoboVent standards. Our technicians can come in monthly, quarterly or bi-annually to review service records and make recommendations for your maintenance staff. We'll make sure that your maintenance staff is conducting the right services on the right schedule to maintain your equipment in top condition and help them troubleshoot any emerging issues they have identified.

Three Levels of Service

Choose the level of service that's right for you.

	CompleteCare™ Maintenance Program	Equipment Certification Program	ClientCare Service Quality Check Program
Service/Inspection Report	★	★	★
Service Recommendations	★	★	★
50-Point System Check	★	★	—
Client Review Meeting	★	★	—
Full Warranty	★	—	—
Change Filters	★	—	—
Perform Preventative Maintenance	★	—	—
Review of Service Records	★	—	—
Troubleshooting	★	—	—
RoboVent Takes Full Responsibility	★	—	—

*Manual
Welding Fume
Extraction*



*Integrated
Cooling
Equipment*



*Robotic
Welding Fume
Collection*



*Maintenance
Programs*



*Oil Mist
Extraction*



*Full-Plant /
Ambient Air
Cleaning Systems*

*Dust Collection
Systems*



*Mobile Dust
Collectors*



*Laser & Plasma
Cutting Fume
Collection*

*Aftermarket
Replacement
Filters*



RoboVent®

Improving Lives through Clean Air™

**ROBOVENT.COM • 888.ROBOVENT
INFO@ROBOVENT.COM**

