

PROTECTING YOUR MOST CRITICAL COMPONENTS



**INTEGRATED VENTING
SOLUTIONS**

When you need to vent, we're here for you.

Your sensitive devices and enclosures need protection from pressure fluctuations, moisture and harmful contaminants. Sometimes an off-the-shelf product will do. Other more challenging applications require a custom solution. Either way, Donaldson's wide range of advanced venting solutions and proprietary technologies can help meet your requirements. With our modular design and integration capabilities, we help deliver enhanced product quality and performance. Additionally, our comprehensive support and expertise means you can be more productive.

Advanced Venting Solutions

With hundreds of off-the-shelf products and advanced design and customization capabilities, Donaldson has the venting solutions to help your products perform at their best. And, we continue to innovate with the development of media types that can operate in almost any environment and application.

Standard media options include:

- High-efficiency
- Oleophobic
- Hydrophobic

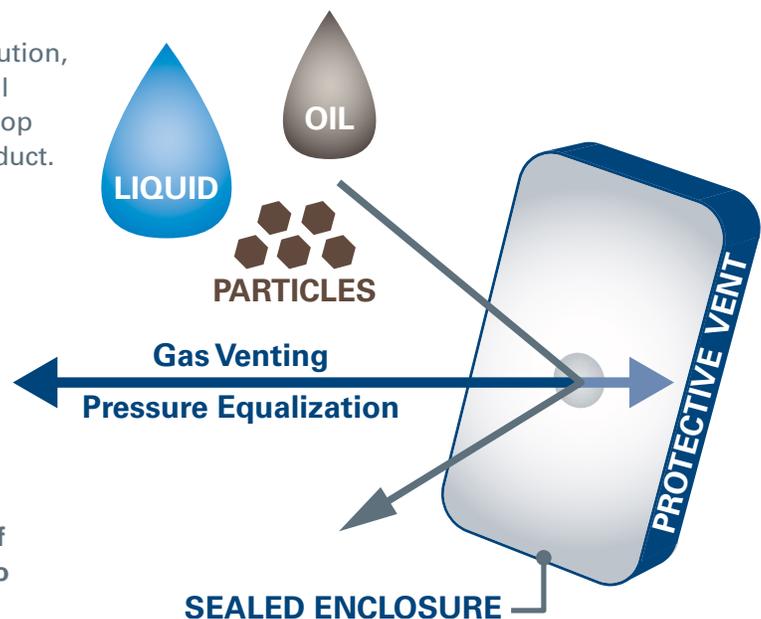
Donaldson's advanced, proprietary venting media includes Tetratex®, Synteq™ XP, and Ultra-Web®

When your product requires a unique venting solution, our experienced design and engineering team will work closely with you from start to finish to develop and manufacture the ideal assembly for your product.

Our manufacturing capabilities include:

- Injection molding
- Direct-bonding injection molding
- Over-molding
- Thermal and adhesive lamination
- Rapid prototyping
- Laser cutting
- Die-cutting, thermal, and ultrasonic welding of filtration material and/or electronic contacts to plastic parts and assemblies

Donaldson engineers will help you select the most sustainable membrane type and grade with the characteristics (e.g. airflow, water-entry pressure, etc.) to meet your project requirements.



Enhanced Product Quality

Donaldson makes venting solutions that can improve the performance and life-span of your products and systems. We do this by enabling you to skip the sometimes-challenging process of welding and bonding that can lead to product inconsistency. Instead, we offer modular solutions that seamlessly integrate into your products.

Our state-of-the-art manufacturing process, combined with our world-class quality control system, including camera inspection, ensures a consistent, final vent product that meets your high standards.

- Cleanroom levels from Class 10,000 to 100
- IATF 16949:2016 certification

Increased Manufacturing Productivity

Donaldson's comprehensive support and technical expertise helps you increase productivity. Our global sales, manufacturing, and distribution capabilities can help you realize increased product consistency and reduced time to market for your devices. Plus, our engineering team is there to support your project from start to completion. Even after the sale, our technical expertise and strong application knowledge means we're ready to help you as needed.

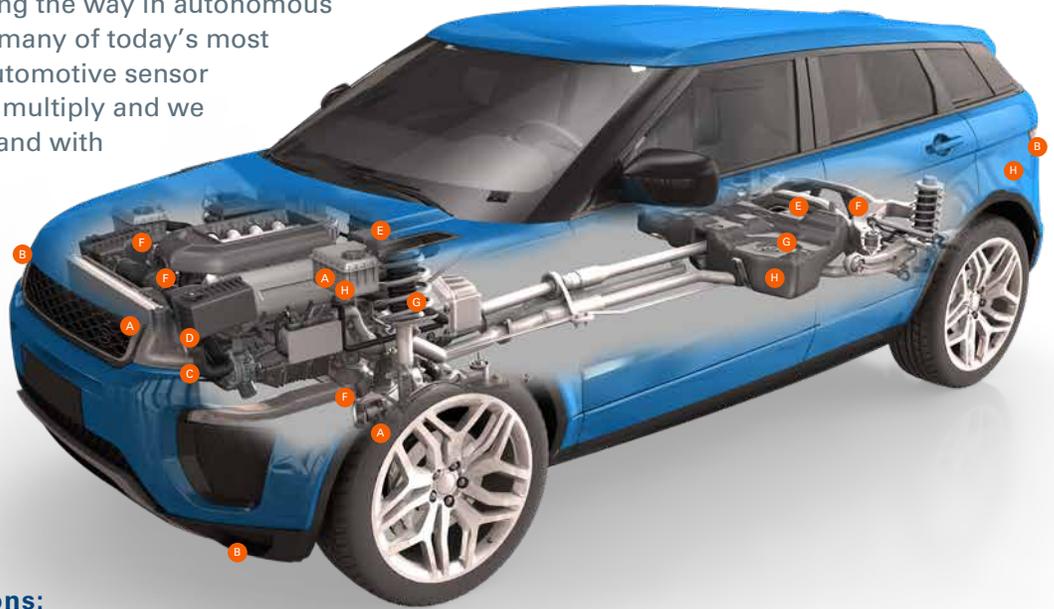


Venting Solutions Across Industries

Enclosure protection vents provide many advantages to enclosures and devices in a wide range of markets. Donaldson has supplied more than one billion vents to manufacturers of automotive systems, electronics, medical and other industries. These are just a few of the industries and applications where Donaldson venting solutions can be found.

AUTOMOTIVE SYSTEMS

Vehicles require dozens of different venting solutions and Donaldson has you covered from bumper to bumper. We are excited to be on the cutting edge of the automotive revolution, supplying custom vents to manufacturers that are leading the way in autonomous and electric vehicles, and in many of today's most advanced safety features. Automotive sensor applications will continue to multiply and we are proud to work hand-in-hand with auto manufacturers to make driving a safer, cleaner, and more enjoyable experience.



Automotive Applications:

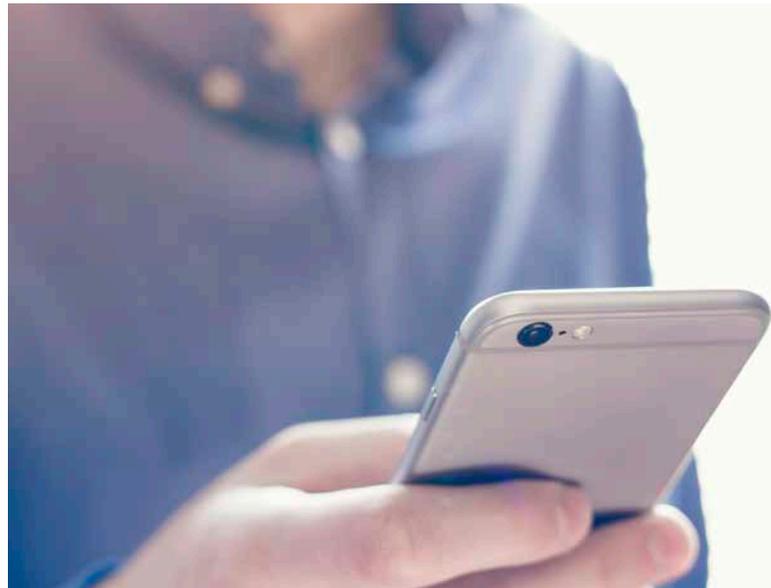
- | | | | |
|-----------------------------|----------------------|-------------------------|---------------------------|
| A Automotive sensors | C Horns | E Motors & Pumps | G Powertrain |
| B Lighting | D Electronics | F Hybrids/EV | H Fluid reservoirs |

ELECTRONICS

Today's consumer expects consistent operation from their smart phones and other portable electronic devices in any kind of environment. From smart phones and wearables to outdoor lighting electronics, we have a waterproof venting solution that will help protect and extend the life of electronic devices and equipment.

Personal Electronics

Donaldson enclosure protection vents help protect mobile devices from dust, liquids, wind, pressure fluctuations, and other environmental factors that could render them useless. Our enclosure protection vents are precision-designed to your exact specifications.



Air Quality Sensors

There is a growing reliance on sensors to measure humidity, pollution and all aspects of air quality. Donaldson vents protect sensors from the harshest environmental conditions, preserving quality and extending the life of the device.

Outdoor Lighting Enclosures

Outdoor lighting enclosures are continually subjected to challenging environmental conditions such as dust, dirt, and temperature, water, and moisture fluctuations.

Telecommunications and Outdoor Electronics

Our enclosure protection vents will help protect outdoor electronics and complex telecommunications systems from harsh conditions that can compromise equipment reliability.



MEDICAL

Donaldson enclosure protection vents offer advanced technological solutions for devices with a major impact in wellness and life quality. Donaldson's team of experts combines experience with superior technical capabilities to find the best solutions in the most challenging applications. Our solutions offer protection against liquids and particulates while delivering maximum performance where it matters the most.

Ostomy Bags

Our enclosure protection vents allow ostomy bags to vent air and other gases without allowing passage of liquids or particulates through the vent. Our adsorbent venting solutions diminish unwanted odors improving wearer comfort.

Hearing Aids

Designed to help protect hearing devices from malfunctions due to oils, water and/or dust ingress, Donaldson enclosure protection vents are made to meet your needs.



Venting Products

Donaldson offers a complete line of off-the-shelf venting solutions to protect your critical components.

WELD-FIT

ENCLOSURE PROTECTION VENTS

Donaldson's Weld-Fit enclosure protection vents combine various component solutions into an Integrated Venting Solution that will ensure your application's performance, no matter what the environment. Weld-Fit solutions may include the ePTFE media paired with the correct welding process applied to a configurable plastic housing. Donaldson engineers will work with you to identify the proper media treatments (e.g. oleophobic, hydrophobic) and welding method to guarantee your integrated venting solution is the perfect one.



SNAP-FIT

ENCLOSURE PROTECTION VENTS

Donaldson's Snap-Fit enclosure protection vents provide protection from dust, dirt, water, oils, and liquids while allowing pressure equalization. The durable vent is available in two sizes – standard and low profile – and is easily integrated into existing equipment. Snap-Fit vents can be used in a variety of automotive applications such as sensors, ECUs, and lighting as well as protective cases, outdoor lighting enclosures, appliances and general enclosures.



SCREW-FIT

ENCLOSURE PROTECTION VENTS

Donaldson's Screw-Fit enclosure protection vents provide protection from contaminants while allowing pressure equalization in enclosures. This durable, threaded vent is easily integrated into existing equipment and can be used in a variety of applications. Screw-Fit vents are ideal for protecting your enclosure in demanding environments.



PRESS-FIT

ENCLOSURE PROTECTION VENTS

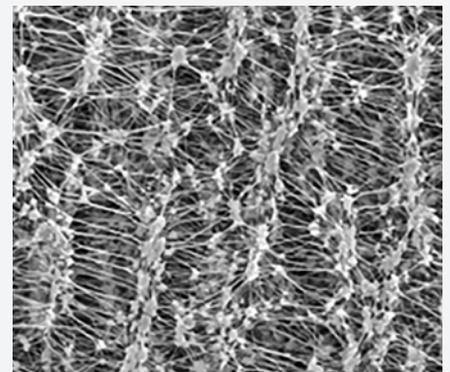
Donaldson's Press-Fit enclosure protection vents provide protection from dust, dirt, water, oils, and liquids while allowing air to pass in both directions. Comprised of a filtration membrane and a pressure-sensitive adhesive ring for securing the filter to the device, the uniquely designed adhesive vent integrates easily into existing equipment and can be customized to accommodate a variety of applications.



TETRATEX® EPTFE MEDIA

Tetratex expanded polytetrafluoroethylene (ePTFE) membrane offers outstanding protection from temperature and pressure fluctuations, moisture and other harmful contaminants. Its unique microporous structure is naturally hydrophobic and one of the most effective venting media solutions in the industry. Benefits include:

- High particulate capture rate
- Exceptional flow rates
- Pressure equalization
- Water and oil repellent
- Regulates moisture
- Minimizing condensation



DONALDSON INTEGRATED VENTING SOLUTIONS

COMPREHENSIVE TECHNICAL CAPABILITIES

- Extensive product portfolio
- Advanced filter media technology for optimal performance
- Engineering and design support
- Customization capabilities

UNRIVALED SUPPORT

- Testing, validating, and reporting
- Comprehensive warranty
- Global design engineers available to partner and collaborate

EXTENSIVE GLOBAL REACH

- 140 sales, manufacturing, and distribution locations globally
- Localized support for faster service and delivery
- Logistical and regulatory expertise

Important Notice

Many factors beyond the control of Donaldson can affect the use and performance of Donaldson products in a particular application, including the conditions under which the product is used. Since these factors are uniquely within the user's knowledge and control, it is essential the user evaluate the products to determine whether the product is fit for the particular purpose and suitable for the user's application. All products, product specifications, availability and data are subject to change without notice, and may vary by region or country.



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