

INTEGRATED VENTING SOLUTIONS FOR AUTOMOTIVE APPLICATIONS



Donaldson
FILTRATION SOLUTIONS

**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 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:

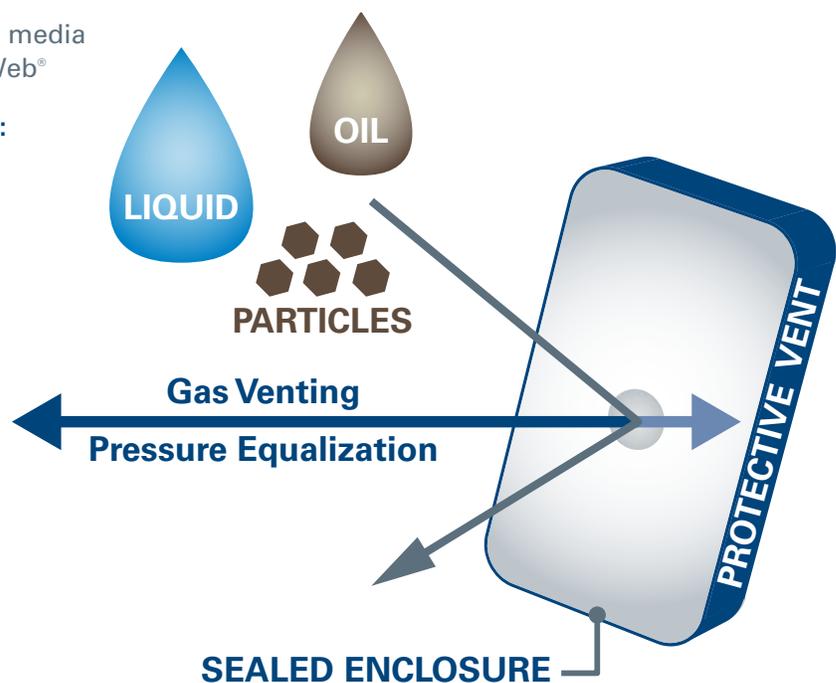
- High-efficiency
- Oleophobic
- Hydrophobic

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

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

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.



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 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 for Automotive Applications

All vehicles require enclosure protection vents and Donaldson has you covered from bumper to bumper. Donaldson develops enclosure protection venting solutions and partners with leading automotive manufacturers to protect their components through effective pressure equalization, reduced condensation and protection against oil, humidity and other contaminants.

Automotive Applications:

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



Enclosure Protection Vents for Powertrain

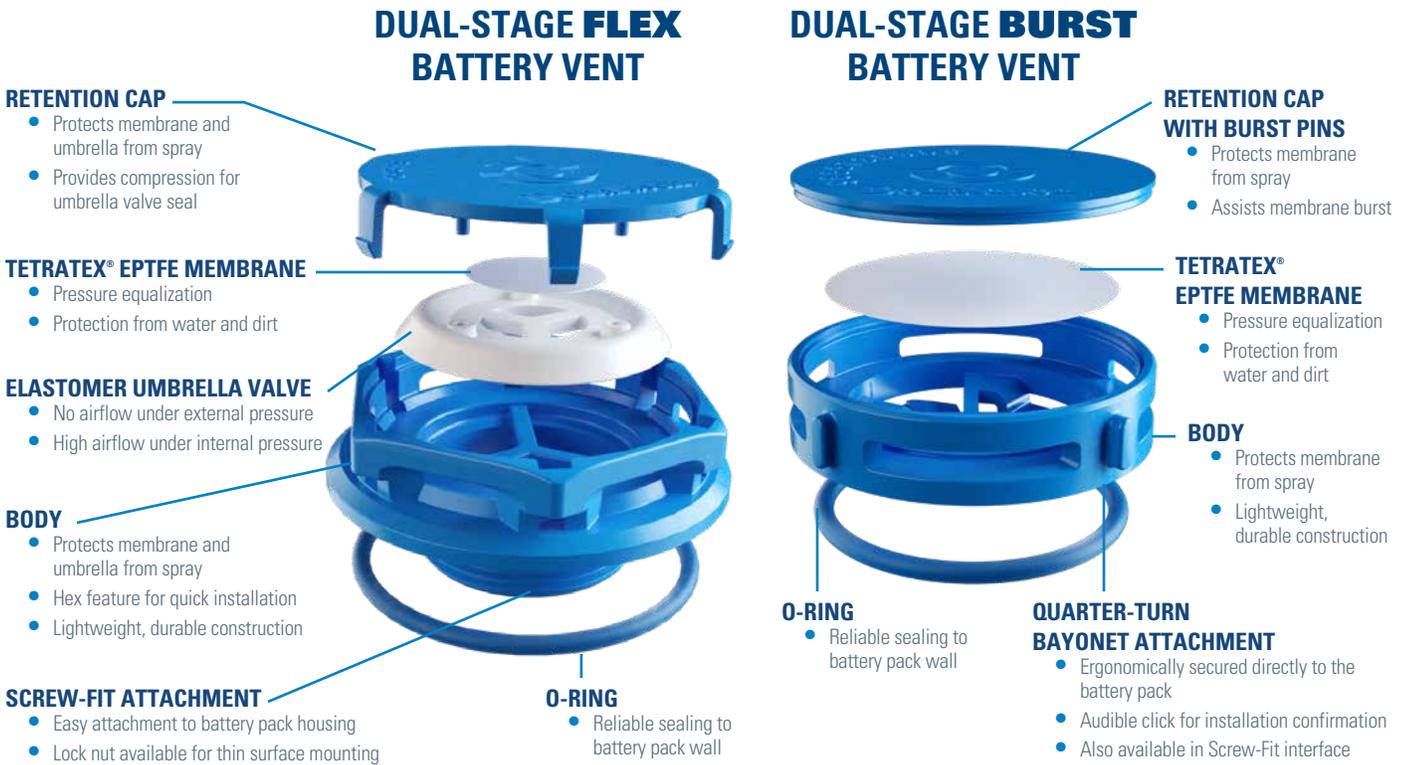
Donaldson enclosure protection vents for Powertrain combine filtration and venting technology for state-of-the-art component protection. The simple, direct attachment vents can fit directly into a drivetrain component or connect to a simplified hose configuration, reducing manufacturing costs, simplifying component design and allowing flexibility of integration.



Enclosure Protection Vents for Automotive Battery Packs

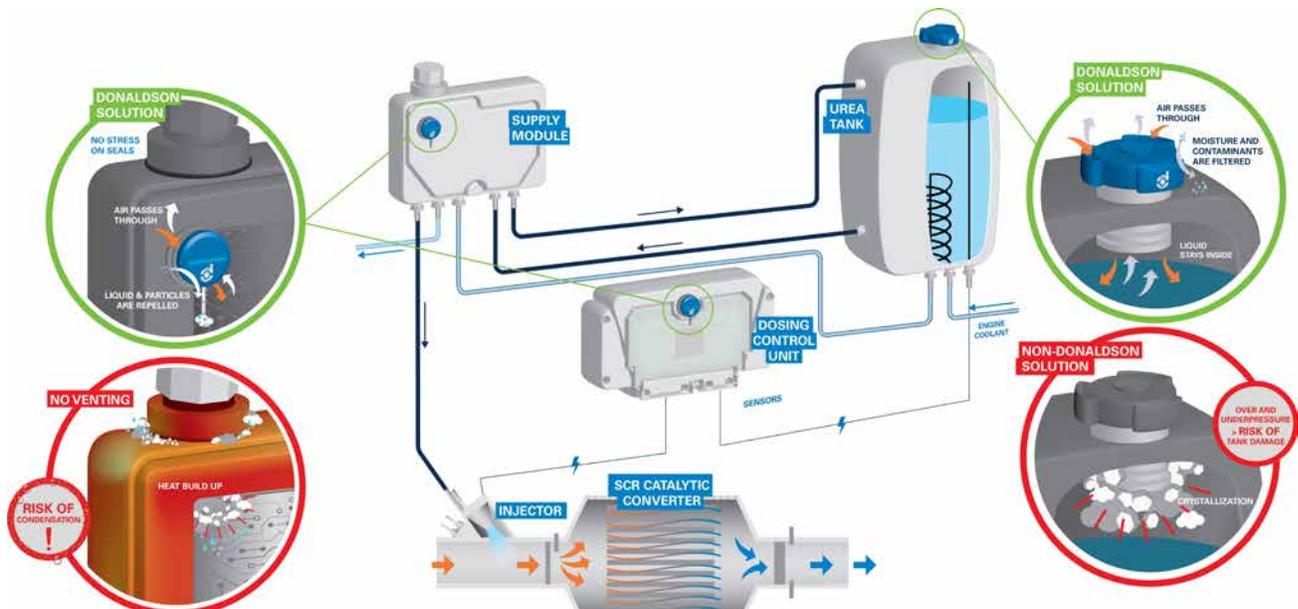
Donaldson is excited to be on the cutting edge of the automotive revolution, providing venting solutions to help improve the reliability of your batteries.

Donaldson's dual-stage vents for battery packs are extensively tested for strength and vibration and designed to support the life and reliability of your batteries. This is done through sealing and guarding, continuous pressure equalization, effective ventilation and proper mitigation in the case of a thermal runaway event.



Enclosure Protection Vents for Fluid Reservoirs

Donaldson enclosure protection vents equalize pressure within fluid reservoirs keeping seals intact while also protecting the fluid within the enclosure from dirt, debris and other liquids.



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

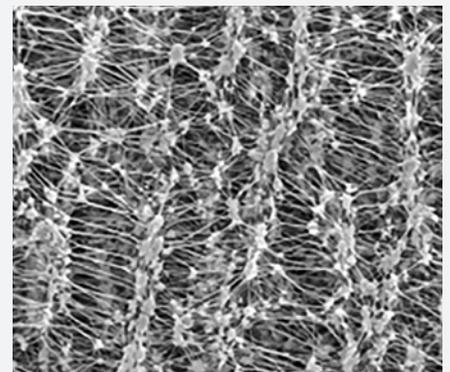
Donaldson's Press-Fit enclosure protection vents provide protection from dust, dirt, water, oils, and liquids while allowing air to pass in both directions. Comprised of a filtration membrane and a pressure-sensitive adhesive ring for securing the filter to the device, the uniquely designed adhesive 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 repellant
- 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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