GORE® Protective Vents
Adhesive Series MV3



MITIGATE ENVIRONMENTAL THREATS, ENHANCE EQUIPMENT DURABILITY

Harsh and variable conditions, such as daily temperature swings, rainstorms, dust, and humidity, can cause seals to fail, leading to contaminants damaging sensitive electronics. Condensation, in particular, may cause short circuits, corrosion, equipment failure, and reduced service life. The GORE® Protective Vents Adhesive Series MV3 can effectively balance pressure and minimize condensation inside sealed enclosures, while preventing the ingress of solid and liquid contaminants.

Venting for protection

For more than 25 years, GORE® Protective Vents have set the standard in safeguarding sensitive electronics. The new Adhesive Series MV3, with advanced membrane technology, delivers an enhanced moisture vapor transmission rate (MVTR) leading to improved condensation performance. These vents equalize pressure and at the same time, form a robust barrier against contaminants. The result: greater reliability, improved safety, reduced risk of condensation events, and longer service life for sealed electronic devices.

Venting solution for any application

Available in a wide range of sizes, GORE® Protective Vents Adhesive Series are engineered to meet the demands of diverse applications. Their low-profile adhesive design withstands harsh environmental conditions and can be easily integrated inside or outside an enclosure through manual, semi-automated, or fully automated installation. Gore's experienced application team can help identify the optimal venting solution for your enclosure based on its materials, dimensions, operating conditions, and performance requirements.

Benefits of GORE® Protective Vents Adhesive Series MV3:

- **Higher moisture vapor transmission rate (MVTR) and more effective condensation control** through advanced membrane diffusion
- **Reliable protection** against water, salts, corrosive liquids, and particulates with hydrophobic and oleophobic GORE Membrane technology
- **Validated for compliance with industry environmental standards**, including ingress-protection (IP) ratings
- **Easy to install on** a wide range of enclosure surface materials and configurations
- **Enhanced durability** with less stress on enclosure seals and components
- **Outstanding technical expertise** from Gore's engineering team, currently supporting more than 200 million installations worldwide

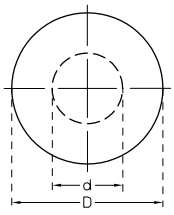
Together, improving life

Product Information

Material performance	Series MV3
Typical airflow (dp = 70 mbar)	105 ml/min/cm²

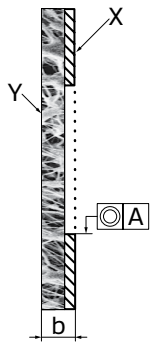
Product characteristics	Series MV3
Membrane type	ePTFE
Membrane characteristic	Oleophobic
Membrane color	White
Backing material	None
Backing material color	None
Adhesive type	Acrylic
Typical thickness (see figure below)	0.24 mm
Mounting orientation	inside or outside mount

Design and Dimensions



D/d = Outer/Inner diameter
A = Concentricity ≤ Ø0.8 mm
Y = ePTFE membrane
X = Adhesive
b = Typical thickness

Series MV3



IP Rating

IP Rating		MV3	
Particulates	Water	Interior	Exterior
6	4	✓	✓
6	5		✓
6	6		✓
6	7	✓	✓
6	8	✓	✓

Standard Parts

Part dimensions			Installation	Packaging		Series MV3		
ID (d) x OD (D) (mm)	Active Venting area (mm²)	Adhesive Ring area (mm²)	Compression Force (N / > 5 sec)	Parts across carrier	Carrier width (mm)	Part Number	Typ. airflow (ml/min - dp = 70 mbar)	Typ. MVTR[1] (mg moisture/ day)
2.0 x 5.0	3.1	16.5	4	11	83	MV30205	3	11
3.3 x 7.6	8.6	36.8	8	8	83	MV30308	9	20
5.5 x 10.2	23.8	58.0	12	13	163	MV30510	25	58
8.0 x 14.0	50.3	103.7	21	10	164	MV30814	53	107
8.9 x 19.1	62.2	224.3	45	7	151	MV30919	65	135
12.5 x 21.5	122.7	240.3	49	6	145	MV31221	129	267
20.0 x 29.0	314.2	346.4	70	5	159	MV32029	330	544

1) The moisture vapor transmission rate (MVTR) is measured according to ASTM E96.

Custom Parts

Gore engineers can assist in designing a solution that meets your specific application requirements, such as part size, custom shape, adhesive and performance characteristics. For more information on custom part design, please contact a Gore representative.



RoHS Information

Product Stewardship RoHS Status: W. L. Gore & Associates declares that we do not intentionally add substances listed in RoHS Directive 2011/65/EU in its current valid version including all valid amendments to GORE® Protective Vents.

Recommendation for storage

Gore recommend to store products in cool dry conditions (20–25 °C / 30–50% RH) and out of direct sun light, preferably in the original packaging.

Recommendation for shelf life

Adhesive vents are most easily removed from the production carrier within one year of delivery date.

HANDLING AND INSTALLATION GUIDELINES

General Guidelines

These general factors play a significant role when installing adhesive vents to enclosures.

1. Enclosure surface finish
2. Cleanliness of the enclosure's mounting surface
3. Surface profile of the enclosure's mounting surface
4. Surface energy of the enclosure's mounting surface
5. Dwell time during application and cure time after application

Storage Recommendations

- Adhesive vents should be used within one year of delivery date
- Gore recommends to store products in cool dry conditions (20–25 °C with 30–50% RH)
- Store in the original packaging in a clean environment
- Keep out of direct sunlight and away from heat sources

Handling Guidelines

- Operators should wear latex (or synthetic) rubber and powder-free gloves or finger cots when handling adhesive vents
- Avoid direct contact with the active venting area (Figure 1) or adhesive ring
- Keep all sharp or jagged items away from the ePTFE membrane

Dispensing Guidelines

- The carrier roll has an inner diameter of 76.2 mm
- Vents can be dispensed manually or with automated equipment
- To prevent damage, do not pry the parts off the carrier roll
- For manual dispensing, roll the liner under the vent, slowly over an edge, until the vent extends beyond the liner and becomes accessible
- For guidance on automated installation, please contact your Gore representative
- Blunt-edged tweezers may be used to remove the vent gently from the liner (Figure 2)

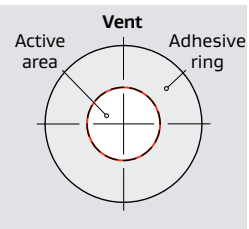


Figure 1: Active area of an Adhesive Vent

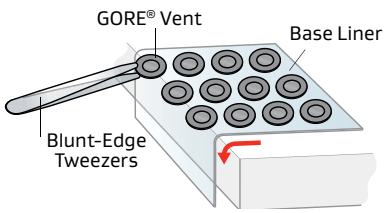


Figure 2: Manually dispensing an Adhesive Vent

Installation Guidelines

Preparation

- Ensure that the vent and housing temperature should be 10–25 °C
- Ensure that the enclosure's mounting surfaces are smooth, clean and free from oils, particles or other contaminants; free from jagged or rough edges that could damage the vent
- Isopropyl alcohol can be used to clean the enclosure's mounting surface
- Ensure that the enclosure's mounting surface is dry prior to vent installation
- Typically recommend to use minimum of 1 mm hole size
- Multiple 1 mm holes may be used for larger vent diameters (Figure 3)

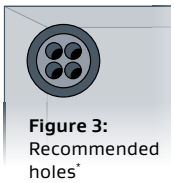


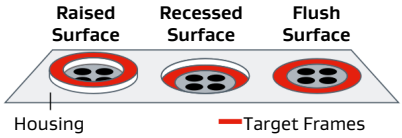
Figure 3: Recommended holes*

Positioning

- Series MV3 can be installed on internal or external surfaces
- Orient the part on a flat, vertical surface where water or other contaminants won't pool
- The accuracy of the vent placement can be improved by making or establishing a "target area" on the vent housing (Figure 4)
- Using the target frame as a guide, place the vent inside the frame

NOTE: A raised ridge target area around the circumference of the vent mounting location may help to prevent damage to the vent edge in aggressive environments.

Figure 4: Target ring used to identify correct position of an Adhesive Vent



The following target area dimensions can be used as guidelines	
Target Area Wall Height	0.5 mm minimum
Target Area Wall Inner Diameter	Vent O.D. +1.5 mm
Target Wall Thickness	as required by mold/housing design

* Please consult with a Gore Representative to verify the hole size dimensions align with your specific adhesive vent and application requirements.

Compression — Manual Installation

- Ensure the entire adhesive ring is pressed against the surface
- Apply firm finger force at least twice in a circular motion directly to the adhesive ring area to seal the vent to the housing, being careful not to touch center of the vent area (Figure 5)
- Allow 24 hour cure time before using or testing
- These steps are critical to ensure that the vent adheres to the housing



Figure 5: Sealing the Vent to the Housing

Compression — Semi-Automated and Automated Installation

Follow these general recommendations for achieving an optimal compression head design and applied pressure:

- The compression head should be made of soft rubber (durometer of 35–60 Shore A) with a uniform thickness of at least 5.0 mm
- The compression head should be perpendicular to the enclosure's mounting surface and located so that it can apply pressure inside the target/protective ring
- A compression force as indicated in the *Adhesive Vents Data Sheet "Standard Parts" table*, should be uniformly applied to the adhesive area of the vent. The compression head surface should be relieved to prevent compression of the breathable area of the vent
- The compression head dwell time should be > 5 seconds
- Allow 24 hour cure time before using or testing
- These steps are critical to ensure that the vent adheres to the housing

Final Inspection

- If a target ring is used, the vent should be fully inside the target frame and not riding up on the wall
- Once installed, vents should not be repositioned
- Vents will be damaged when they are removed from the mounting surface

NOTE: W. L. Gore & Associates Quality Assurance Procedure dictates removal of some vents from the liner prior to shipment. Sufficient extra length of liner and vents is provided to make a full product count. This procedure assures that all parts are handled minimally to avoid contamination and/or damage.

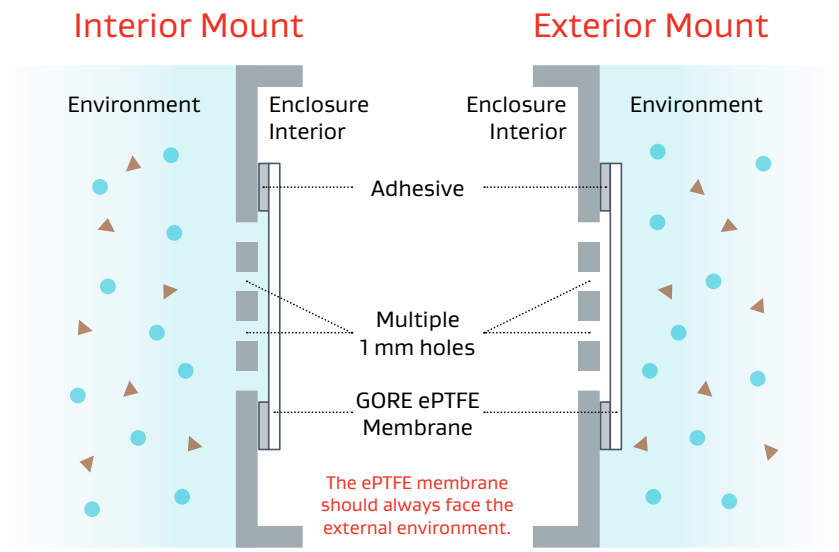


Figure 6: Interior or exterior mounting is recommended for Parts Series MV3

For additional questions about handling and installation, please contact a Gore representative.

Environmental Performance

GORE® Protective Vents Adhesive Series have been tested by laboratories and meet these performance standards.
All certificates are available upon request.

Ingress Protection Testing

Vent protection against ingress of particulates and water
IP ratings are housing design, part size and mounting location (interior & exterior) dependent

- **IEC 60529**
- **IP68** was tested for extended immersion:
  2 meters for 1 hour

IP Rating		MV3	
Particulates	**Water**	**Interior**	**Exterior**
6	4	✓	✓
6	5		✓
6	6		✓
6	7	✓	✓
6	8	✓	✓

Flammability Testing

ePTFE membrane resistant to flames

METHODS:
- **UL 94 VTM0**

Corrosive Gas Testing

Vent durability in corrosive gas environment
(e.g., NO_x, SO_x, H_2S, Cl_x)

METHOD:
- **GR-3108-CORE**

Temperature Testing

Vent durability in a range of temperatures

METHODS:
- **IEC 60068-2-1**: (low temperature of –40 °C)
- **IEC 60068-2-2**: (high temperature of 100 °C)
- **IEC 60068-2-14**: (cycling temperatures between –40 °C and 100 °C)

Salt Fog Testing

Vent resistance to salty environments

METHODS:
- **IEC 60068-2-11**
  (salt fog)
- **IEC 60068-2-52**
  (cyclic salt fog)

Humidity Testing

Vent durability in hot, humid environments

METHOD:
- **IEC 60068-2-78**

TEST CONDITIONS:
- 85 °C
- 85% relative humidity
- 1000 hours

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