



# DESIGN AND INSTALLATION GUIDELINES

For GORE® PMF100570

**GORE® Protective Vents for Gearboxes are reliably venting and protecting components from water, dirt and dust ingress in a broad range off highway, including e-drivetrains, transfer cases, axles and drive units.**

To achieve and maintain the successful performance of Gore product number PMF100570 in these oil-filled components, it is critical to observe the following guidelines for component design, vent positioning and transit to assembly.

Of course, OEMs and Tiers are required to independently qualify and validate this product under the conditions that are specific to their application.

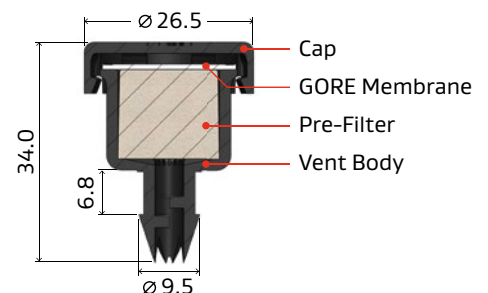


GORE® Protective Vents for Gearboxes, part number PMF100570. Get your [product datasheet](#)

## 1. Critical Design Considerations

The vent's pre-filter is not designed for direct lubricant exposure. Direct lubricant exposure will prevent the vent from functioning properly. Therefore, do not mount the vent:

- Over an un-baffled hole
- In direct gear-spray
- In inverted position
- In any location with potential lubricant exposure
- In proximity to high-temperature components (e.g.: exhausts, turbochargers)



## 2. Observed Failure Modes

We have observed specific failure modes that occurred during OEM/Tier design and qualification processes.

The recommendations in this document are intended to help you avoid such errors in your own processes.

And, Gore can further support your qualification and validation process: our Vent Tear-Down Analysis Service can provide an early indication of whether your component will directly expose our vent to lubricants. To learn more about this service, speak with your Gore Application Engineer.

The conditions listed below have been proven to prevent this vent product from working as designed.

- Liquid oil exposure due to:
  - improper baffling
  - high oil level in component
  - mishandling (e.g.: component flip or rotation during installation)
  - vent location (e.g.: axle tube vs. carrier housing)
- High aerosol load due to component type and/or design
- Oil vapor caused by high internal temperatures
- Proximity to high-temperature components

## 3. Vent Mounting Recommendations

PMF100570 is designed as a tube-mounted venting solution that connects securely with common vent tubes. Optimal venting performance is achieved by following these guidelines:

### Tubing

- To maximize connection strength, the barb should be fully inserted until the tube end is seated against the body.
- Unsupported tubing length should be minimized, but this is highly dependent upon the tubing material and orientation.

### Tube Recommendations

Inside Diameter Range	6.0–8.0 mm
Minimum Length	20 mm plus component barb height
Minimum Wall Thickness	3.0 mm
Durometer/Hardness	70 Shore A
Vent Tube Clamp	Not Required
Material Example	NBR tube with CSM cover

### Vent Orientation

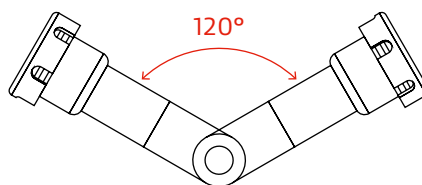
- Typical vent orientation is vertical, but any orientation within  $\pm 60^\circ$  of vertical is appropriate.
- This vent can NOT be mounted in an inverted position, which would make it vulnerable to lubricant exposure.

### Temperature Considerations

- PMF100570 is rated for continuous temperature exposure within a range of  $-40^\circ\text{C}$  to  $+125^\circ\text{C}$ .
- Due to the tube-mount design, the temperature at the vent is typically lower than the temperature inside the component.

### Protective Measures

- The vent's pre-filter must be protected from direct lubricant exposure, which would impair the vent's operation. Proper baffling around the vent installation site is required if the potential for lubricant exposure exists.
- Additional recommendations to protect vents during shipping/handling/assembly are in section 4.

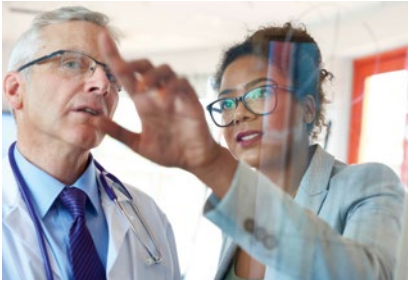


Vertical mounting, or within  $\pm 60^\circ$  of vertical, is recommended.

## 4. Vent Shipping, Component Installation and Vehicle Assembly

Typically PMF100570 is attached at final assembly, after the component has been installed on the vehicle.

- Alternative methods are possible: for example, ship the component dry with the vent installed, and fill with fluid after installing component on vehicle.
- After installing PMF100570, do not allow liquid lubricant (from inside the component) to contact the vent during shipping, handling, component installation or vehicle assembly.



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