

http://www.gore.com/en_xx/products/venting/automotive/automotive_vents.html

Changing temperatures can cause damaging pressure differentials

Changing temperatures can cause pressure differentials between the inside of the housing and the external environment. A change in temperature can be caused by a variety of factors including:

- Environmental temperature variations
- Fluctuations caused by electronics and lights
- Engine heat
- Friction caused by meshing gears
- Wind
- Water spray

If these pressures are not equalized or relieved, they create stress on the housing and seals that can cause cracks, leaks and seal failures that will eventually lead to water and contaminants entering the housing and device failure.

Equalize pressure and prevent contamination by using membrane technology

Engineers have typically tried to solve this issue with breathers such as long tubes, rattle caps, tortuous paths, foam, one-way valves or hermetic sealing. GORE® Automotive Vents use a gas permeable, oleophobic membrane that allows the continuous exchange of air and gasses between the interior of the housing and the environment while completely stopping liquids, dirt and dust from entering.

This guys are the GORE-TEX people.