



**NIFCO**

**Protecting Occupants from Harmful Gas During Thermal Runaway**

**NIFCO**

## Equalization Shutoff Valve



Harmful Gas Expelled Through Pressure Relief Valves  
Equalization Membranes

### Regulations

In the near future, electric vehicles will be required to ensure occupants have enough escape time during a thermal event



**CHINA**

**GB 38031-2020**

5 minutes for occupants to escape vehicle

**USA**

Major OEM targets: 20 minute escape time

**NIFCO SOLUTION**

**PATENT PENDING**



### Normal Operation

Watertight membrane allows air to circulate in the pack; replaces current industry standard equalization membrane

Easy twist-on assembly reduces takt time and number of components

High-flow membrane reduces number of parts on the pack (reduced chance of leaks)



ESV prevents harmful gas from expelling through membrane

### Thermal Runaway

Allows OEM to redirect gas to a safe area & extends escape time