

VentPlus 2.0

Expanded venting units for high-voltage batteries



MANN+HUMMEL VentPlus 2.0

Expanded Venting Unit Portfolio for High-Voltage Batteries

Facts and figures

- Expansion of existing portfolio with customized solutions and as well as a multi-customer approach
- VentPlus 2.0 focusing on alternative fixation methods (housing with bayonet, straight bushings or thread) and additional venting techniques

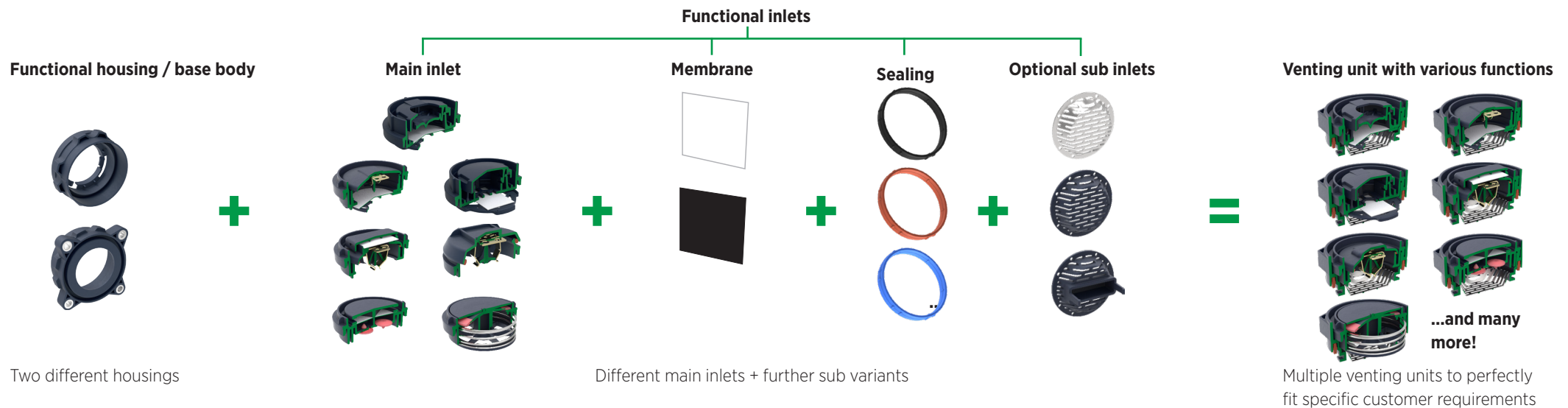
Concept advantages

- Large variety of fixation methods and functionalities to fit diverse requirements and applications
- Proven technical concepts and global series production footprint of multiple high-class automotive products based on experience for more than a decade

Function of venting units

- Protection of the high voltage battery system in all operating conditions through Permanent pressure compensation, water and dust tightness, emergency degassing
- Hot gas particle filter for enhanced system safety and many more options

Principle of modularity

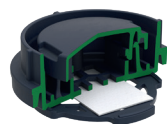


Every base body can be combined with every functional main inlet and can be even further expanded by additional / optional sub inlets

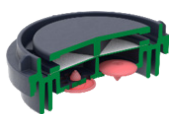
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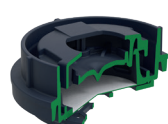
Main inlets



**Small
membrane**



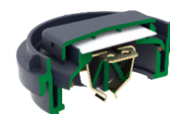
**Two valves and
membranes**



**Membranes and
spike**



**Membrane, spike
and flying cover**



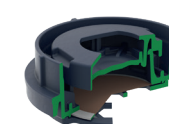
**Flying cover w.
top-mount
membrane**



**Spring-operated
valve**



Flying cover



**Non-permeable
foil**

Description

Function								
Breathing only	✓	✓	-	-	-	-	-	-
Breathing and degassing	-	-	✓	✓	✓	✓	-	-
Degassing only	-	-	-	-	-	-	✓	✓
Optimized for pressure equalization	✓	✓	-	-	✓	✓	-	-
Adjustable opening behavior	-	✓	-	-	-	✓	-	-
Optimized for high degassing flow rates	-	-	-	✓	✓	-	✓	✓
Recloseable system	-	-	-	-	-	✓	-	-
Limitation of humidity ingress	(✓)	✓	-	-	(✓)	✓	✓	✓
Tightness / Access								
Gas-tight (normal operating conditions)	-	-	-	-	-	✓	✓	✓
IPX6/X7	✓	✓	✓	✓	✓	✓	✓	✓
IPX9K	✓	✓	✓	✓	✓	✓	✓	✓
IP6KX	✓	✓	✓	✓	✓	✓	✓	✓
IPXXB / IPXXD	✓	✓	✓	✓	✓	✓	✓	✓



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Open the website for more information
about products for electrified powertrains
from MANN+HUMMEL.



Watch the video of the venting
units for high-voltage
battery systems.



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