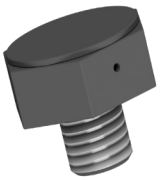
OUR PORTFOLIO FOR BATTERY VENTING SYSTEMS

The battery venting systems from KACO ensure that the required amount of air can escape quickly in the case of a battery fault. The **flow-optimized venting solutions** from the sealing expert offer an excellent balance between height and maximum possible volume flow. Our **emergency vents** are available as reversible and irreversible solutions. All designs can be fitted with additional aeration and venting elements to ensure regular pressure equalization of the battery due to pressure and temperature fluctuations in addition to protecting against faults.

FIELDS OF APPLICATION

- Battery systems
- Battery modules
- BEVs
- Hybrids
- Energy storage systems



	Irreversible BVS	Reversible BVS	Metal BVS	Pressure Balance Plug
Vent Type	Irreversible plastic version	Reversible plastic version	Reversible metallic version	Pressure Equalization
		Optional with valve circuit for humidity reduction		
Main diameter	Ø 62 mm*	Ø 50 or 60 mm*	Ø 50 or 60 mm*	26 mm*
Height	18 mm*	23 mm*	23 mm*	12 mm*
IP-Protection class	IP68, IPX9K			
Flame resistant	UL94 V0			
Temperature	-40 °C to +80 °C (wider temperture range available on request)			

*Standard sizes, custom development for specific installation space and requirements possible

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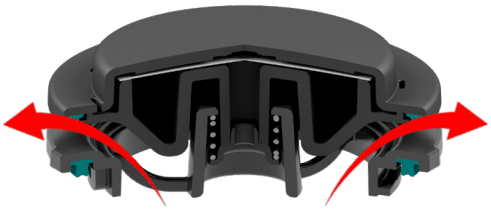
REVERSIBLE BATTERY VENTING SYSTEM

A summary of the benefits

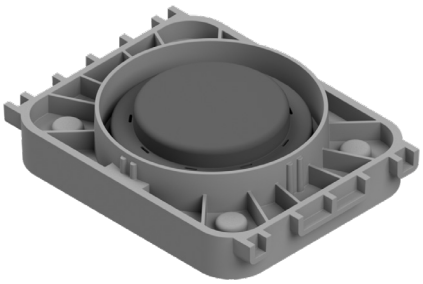
- Cost-efficient solution
- Small installation space
- Opening force can be easily adjusted to customer needs
- Testable in the EOL (End of Line) test

Material	PP GF25
Main diameter	Ø 50 or 60 mm
Height	23 mm
Assembly	• Bayonet lock • Adapter plate - more assembly options available on request
Opening pressure (adjustable) **• Emergency venting**	Set by the force of the spring, easily customizable ≥ 35 mbar
Air flow **• Venting and ventilation** **• Emergency venting**	 ≥ 500 ml/min @ 25 mbar ≥ 80 l/s @ 200 mbar
Leakage	≤ 1 ml/min @ -50 mbar
Water resistance	≥ 30 min @ 250 mbar
IP-Protection class	IP68, IPX9K
Flame resistant	UL94 V0
Temperature	-40 °C to +80 °C (wider temperture range available on request)

Emergency venting:



Different adapter plate options:



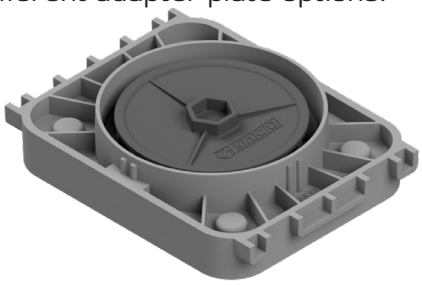
IRREVERSIBLE BATTERY VENTING SYSTEM

A summary of the benefits

- Cost-efficient solution
- Small installation space
- Variable design: Opening force, geometry and fastening can be adapted to customer needs

Material	PP GF25
Main diameter	Ø 62 mm
Height	18 mm
Assembly	• Bayonet lock • Adapter plate - more assembly options available on request
Opening pressure (adjustable) **• Emergency venting**	Set by the force of the spring, easily customizable 250 mbar ± 100 mbar
Air flow **• Venting and ventilation** **• Emergency venting**	 ≥ 500 ml/min @ 25 mbar ≥ 80 l/s @ 150 mbar
Leakage	≤ 1 ml/min @ -50 mbar
Water resistance	≥ 30 min @ 250 mbar
IP-Protection class	IP68, IPX9K (only with adapter plate)
Flame resistant	UL94 V0
Temperature	-40 °C to +80 °C (wider temperture range available on request)

Different adapter plate options:



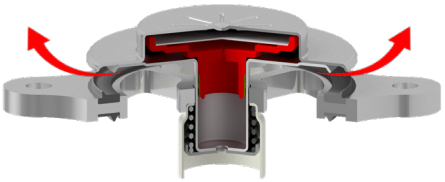
METAL
BATTERY VENTING SYSTEM

A summary of the benefits

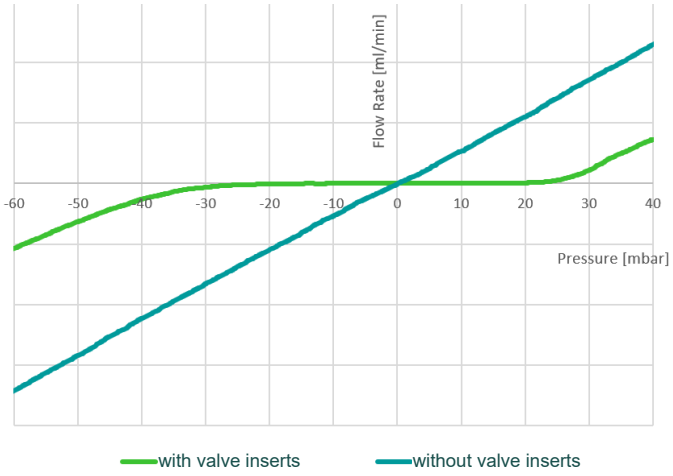
- Variable connection from outside with low installation effort
- Testable in the EOL (End of Line) test

Material	Aluminum or stainless steel
Main diameter	Ø 50 or 60 mm
Height	23 mm
Installation space **• Connection** **• Connection Dimensions**	 Screw: 2x M5 77 mm
Opening pressure **• Emergency venting**	 ≥80 mbar (adjustable)
Air flow **• Breathing** **• Emergency venting**	 ≥ 600 ml/min @ ±50 mbar ≥ 50 l/sek @ 130 mbar
Leakage	≤ 1 ml/min @ -50 mbar
Water resistance	≥ 30 min @ 250 mbar
IP-Protection class	IP68, IPX9K
Flame resistant	UL94 V0
Temperature	-40 °C to +80 °C (wider temperture range available on request)

Emergency venting:



BATTERY VENTING SYSTEM WITH VALVE CIRCUIT

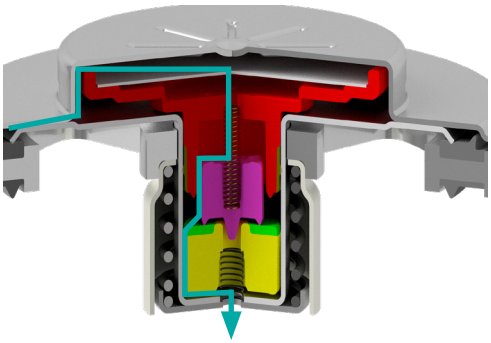


A summary of the benefits

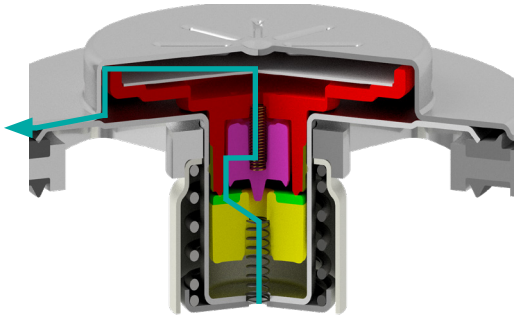
- Variable connection from outside with low installation effort
- Testable in the EOL (End of Line) test
- Reduction of humidity in the battery pack as the membrane does not permanently equalize pressure

Material	PP GF25 / Aluminum / stainless steel
Main diameter	Ø 50 or 60 mm
Height	23 mm
Installation space **• Connection Dimensions** **• Connection**	 77 mm (from inside or outside the battery pack possible) Screw: 2x M5
Opening pressure **• Ventilation** **• Venting** **• Emergency venting**	 ≤ -30 mbar (adjustable) ≥15 mbar (adjustable) ≥80 mbar (adjustable)
Air flow **• No breathing** **• Breathing** **• Emergency venting**	 Adjustable pressure range (e.g.±20 mbar) ≥ 400 ml/min @ ±50 mbar ≥ 50 l/sek @ 130 mbar
Leakage	≤ 1 ml/min @ -10 mbar ≤ p ≤ +5 mbar
Water resistance	≥ 30 min @ 250 mbar
IP-Protection class	IP68, IPX9K
Flame resistant	UL94 V0
Temperature	-40 °C to +80 °C (wider temperture range available on request)

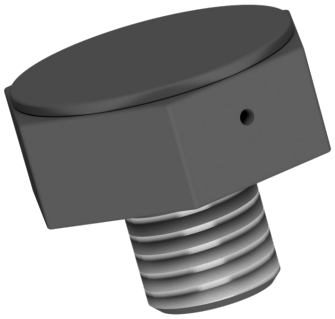
Ventilation:



Venting:



PRESSURE BALANCE PLUG



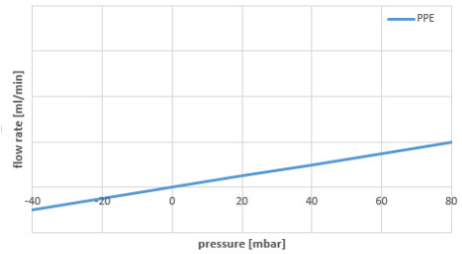
A summary of the benefits

- Small installation space
- Additional valve circuit for humidity reduction can be added
- Bypass valve for faster venting can be integrated into the part

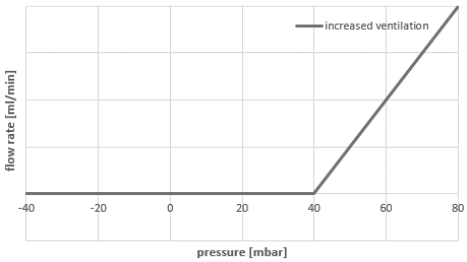
Material	PP FR / EPDM / PTFE
Main diameter	Key width 26 mm
Height	12 mm
Installation space • **Connection** • **Hole**	 • Thread (M12) with nut • 12,5 mm
Static tightness	≤ 1 ml/min @ -50 mbar
Water resistance	≥ 30 min @ 250 mbar
IP-Protection class	IP67, IP68, IPX9K
Flame resistant	UL94 V0
Temperature	-40 °C to +80 °C

Available in 4 different functions

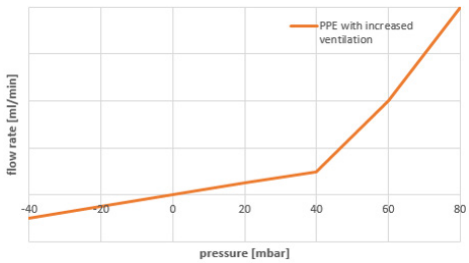
Permanent pressure equalization (PPE):



Increased ventilation:



PPE with increased ventilation:



PPE with valve circuit: