

Amphenol LTW

- Hydrophobic membranes type (water resistant) & oleophobic membranes type (water & oil resistant)
- Air permeability up to 10,000 ml/min at 7 kPa
- Up to IP69K
- Flammability UL 94V-0

PRESSURE RELIEF VENT

Increase Durability in Harsh Environments



M6 Plastic



M8 Plastic, Metal



M10 Metal



M12 Plastic, Metal, Stainless Steel



M14 Plastic

M24 Plastic



M32 Plastic



Snap-In, Fit-In Plastic



Over-pressure Rectangular (Piercing type)



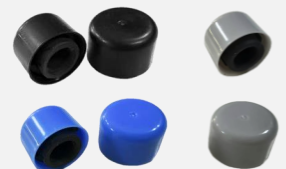
Over-pressure M4 & M5 (Spring-loaded)



Over-pressure M20 (Piercing type & Spring-loaded)



Over-pressure M40 (Piercing type & Spring-loaded)



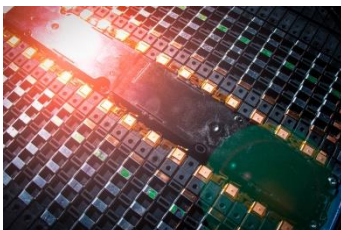
Vent Cap Black, Blue, Gray

Unrivalled InterConnects for Harsh Environments

Amphenol LTW Pressure Relief Vent Series



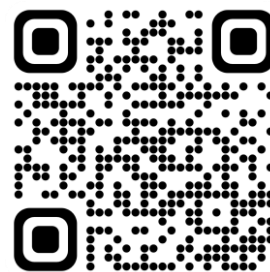
Product Overview



Amphenol LTW provides three essential solutions for effective pressure management: Breathable Vent, Relief Vent and Vent Cap. These vents play a crucial role in equalizing internal- external pressure, emphasizing both operational safety and equipment longevity, and enabling devices to thrive in challenging environments:

- ❖ Breathable Vents help control pressure release within safe operating limits, specifically designed to balance internal and external pressures. This not only prevents heat buildup in electronic components but also reduces the need for heavy-duty enclosures and seals.
- ❖ Pressure Relief Vents (spring-type and square) act as specialized safeguards in emergencies involving sudden pressure surges, mitigating the risk of potential explosions.
- ❖ Vent Caps are used in automotive headlights, offering easy installation and replacement. They effectively prevent fogging inside the headlights and extend their service life.

All three types of vent valves are equipped with hydrophobic and oleophobic membranes, effectively resisting water and oil ingress while minimizing condensation. This design ensures comprehensive protection, reliability across various industrial applications.



Know More

Breathable Vent Series

Type	M6 Plastic		M8 Plastic	
Part Number	VENT-PS2NGY-O8001 (Gray) VENT-PS2NBK-O8001 (Black)		VT-BPM08BK-NO8001	VT-BPM08GY-NO8001



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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M6x0.75	Screw M8x1.25	Screw M8x1.25
Environment Temperature	-40°C ~ +125°C	-40°C ~ +150°C	-40°C ~ +150°C
Waterproof Rating	IP66, IP68 (2 m for 1h)	IP68 (2 m for 1h)	IP68 (2 m for 1h)
Air Permeability	> 300 ml/min at 7 kPa	≥ 500 ml/min at 7 kPa	≥ 500 ml/min at 7 kPa
Salt Spray	1000h	96h	96h
Torque Value	2.0 ~ 4.0 kgf.cm	0.4 ~ 0.5 N.m	0.4 ~ 0.5 N.m
Recommended Panel Thickness	Threaded-hole: min. 4.5mm	Threaded-hole: min. 4.5mm	Threaded-hole: min. 4.5mm
Housing	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94V-0, f1)
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Gray / Black	Black	Gray
Water Entry Pressure ¹	≥ 60 kPa / 60s	≥ 60 kPa / 60s	≥ 60 kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.



Calculate Vent Equilibrium Time: [click here](#)

Breathable Vent Series

Type	M8 Metal	M12 Stainless Steel
Part Number	VT-BMM08ME-NO8001	VENT-MS1NMS-O8001

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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M8x1.25	Screw M12x1.5
Environment Temperature	-40°C ~ +125°C	-40°C ~ +125°C
Waterproof Rating	IP68 (2 m for 1h)	IP68 (2 m for 1h), IP69K
Air Permeability	> 1200 ml/min at 7 kPa	> 1600 ml/min at 7 kPa
Salt Spray	720h	1000h
Torque Value	0.7 ± 0.1 N.m	6.0 ~ 8.0 kgf.cm
Recommended Panel Thickness	Threaded-hole: min. 4.5mm	Threaded-hole: min. 4.0mm
Housing	Aluminum Alloy, Anodizing	SUS316L
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone
Housing Color	Silver	Silver
Water Entry Pressure ¹	≥ 40 kPa / 10s	≥ 40kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.



Calculate Vent Equilibrium Time: [click here](#)

Breathable Vent Series

Oil Filtration Function

The integrated pre-filtering part of the product can protect the waterproof breathable membrane from the influence of internal oil vapor sol, improving the performance of the waterproof breathable membrane product. It can be applied to situations where there is oil and gas inside the equipment.

Type	M10 Metal	Fit-in
Part Number	VT-BMM10ME-NO8001	VT-BPQ02BK-NO8001

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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M10x1.0	Fit-in
Environment Temperature	-40℃ ~ +150℃	-40℃ ~ +150℃
Waterproof Rating	IP68 (2 m for 1h)	IP68 (2 m for 1h), IP69K
Air Permeability	> 3000 ml/min at 7 kPa	> 1067 ml/min at 7 kPa
Salt Spray	720h	48h
Torque Value	3 ~ 5 N.m	N/A
Recommended Panel Thickness	Threaded-hole: min. 3.5mm	6.0 ~ 8.0 mm
Housing	Aluminum Alloy, Anodizing	Thermoplastic (UL 94V-0, f1)
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	AEM	N/A
Housing Color	Silver	Black
Water Entry Pressure ¹	≥ 60 kPa / 30s	≥ 34.5 kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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- Suggested tube OD: 6.0-8.0mm;
- Wall thickness: 3.0mm
- Suggested tube material: rubber

¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

Breathable Vent Series

Type	M12 Metal		
Part Number	VENT-BJ005	VENT-MS1NME-O8001	VT-BMM12ME-NO8001



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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M12x1.5	Screw M12x1.5	Screw M12x1.5
Environment Temperature	-40°C ~ +125°C	-40°C ~ +125°C	-40°C ~ +125°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h) ,IP69K
Air Permeability	≥ 1760 ml/min at 7 kPa	≥ 1760 ml/min at 7 kPa	> 1000 ml/min at 7 kPa
Salt Spray	48h	48h	1000h
Torque Value	6.0 ~ 8.0 kgf.cm	6.0 ~ 8.0 kgf.cm	0.6~0.8N.m
Recommended Panel Thickness	Through-hole: 2.0 ~ 3.5mm Threaded-hole: min. 4.0mm	Through-hole: 2.0 ~ 3.5mm Threaded-hole: min. 4.0mm	Through-hole: 2.0 ~ 3.5mm Threaded-hole: min. 4.8mm
Housing	Zinc Alloy, Nickel Plated	Zinc Alloy, Nickel Plated	Aluminum Alloy, Anodizing
Membrane	ePTFE (Hydrophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Silver	Silver	Silver
Water Entry Pressure ¹	≥ 29 kPa	-	≥ 60 kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

Calculate Vent Equilibrium Time: [click here](#)

Breathable Vent Series

Type	M12 Plastic	
Part Number (* without nut / ** with nut)	VENT-PS1NBK-N8001 (Black)* VENT-PS1NBK-N8002 (Black)* VENT-PS1NGY-N8001 (Gray)* VENT-PS1NGY-N8002 (Gray)* VENT-PS1YBK-N8001 (Black)** VENT-PS1YBK-N8002 (Black)** VENT-PS1YGY-N8001 (Gray)** VENT-PS1YGY-N8002 (Gray)** VENT-PS1NCR-N8001 (White, Translucent) VENT-PS1NCR-N8002 (White, Translucent)	VENT-PS1NBK-O8001 (Black)* VENT-PS1NBK-O8002 (Black)* VENT-PS1NGY-O8001 (Gray)* VENT-PS1NGY-O8002 (Gray)* VENT-PS1YBK-O8001 (Black)** VENT-PS1YBK-O8002 (Black)** VENT-PS1YGY-O8001 (Gray)** VENT-PS1YGY-O8002 (Gray)** VENT-PS1NCR-O8001 (White, Translucent) VENT-PS1NCR-O8002 (White, Translucent)

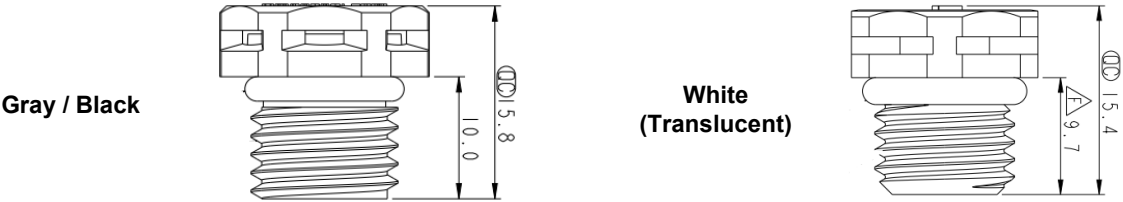


Product Performance Characteristics:

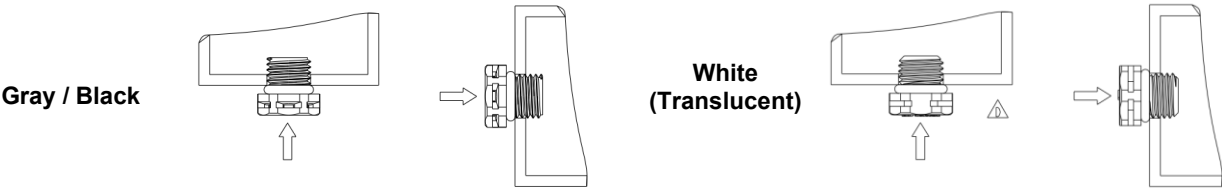
Assemble Type / Screw Size	Screw M12x1.5	Screw M12x1.5
Environment Temperature	-40°C ~ +125°C	-40°C ~ +125°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K
Air Permeability	001: > 1000 ml/min at 7 kPa 002: > 3000 ml/min at 7 kPa	001: > 550 ml/min at 7 kPa 002: > 1000 ml/min at 7 kPa
Salt Spray	1000h	1000h
Torque Value	6.0 ~ 8.0 kgf.cm	6.0 ~ 8.0 kgf.cm
Recommended Panel Thickness	Through-hole: 2.0 ~ 3.5mm Threaded-hole: min. 4.0mm	Through-hole: 2.0 ~ 3.5mm Threaded-hole: min. 4.0mm
Housing	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94V-0, f1)
Membrane	ePTFE (Hydrophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone
Housing Color	Gray / Black / White (Translucent)	Gray / Black / White (Translucent)
Water Entry Pressure ¹	≥ 60 kPa / 60s	≥ 60 kPa / 60s

Dimensions:

(unit: mm)



Recommended Installation:



¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

Breathable Vent Series

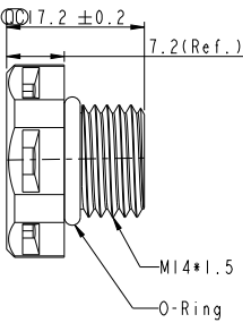
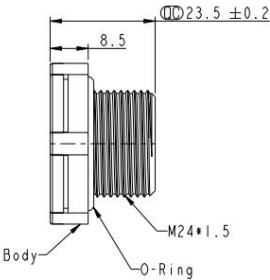
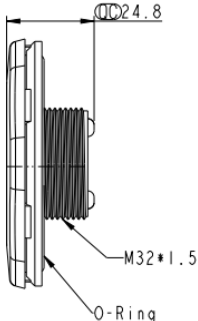
Type	M14 Plastic	M24 Plastic	M32 Plastic
Part Number	VT-BPM14GY-NO7001 (Black)	VT-BPM24BK-NO8001 (Black)	VT-BPM32GY-NO8001 (Black)



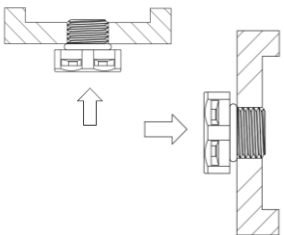
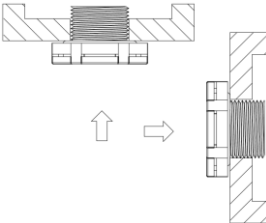
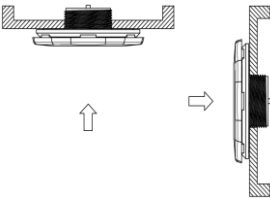
Product Performance Characteristics:

Assemble Type / Screw Size	Screw M14x1.5	Screw M24x1.5	Screw M32x1.5
Environment Temperature	-40°C ~ +150°C	-40°C ~ +125°C	-40°C ~ +125°C
Waterproof Rating	IP67	IP68 (2 m for 1h)	IP68 (2 m for 1 h)
Air Permeability	> 6000 ml/min at 7 kPa	6~12 L/min at 7 kPa	> 16 L/min at 1.2 kPa
Salt Spray	1000h	96h	96h
Torque Value	0.5 ~ 0.88 N.m	18 ~ 22 kgf.cm	5 N.m
Recommended Panel Thickness	Threaded-hole: min. 5.0mm	Through-hole: 1.0 ~ 8.0mm Threaded-hole: min. 3.5mm	Threaded-hole: min. 4.0mm
Housing	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94V-0, f1)	PC (UL 94V-0, f1)
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Gray	Black	Gray
Water Entry Pressure ¹	≥ 20kPa / 60s	≥ 40kPa / 60s	≥ 40kPa / 60s

Dimensions:

(unit: mm)			
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Recommended Installation:

		
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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.



Calculate Vent Equilibrium Time: [click here](#)

Breathable Vent Series

Type	Snap-In Plastic		
Part Number	VENT-PQ1NBK-N8001 (Black) VENT-PQ1NBK-N8002 (Black) VENT-PQ1NGY-N8001 (Gray) VENT-PQ1NGY-N8002 (Gray)	VENT-PQ1NBK-O8001 (Black) VENT-PQ1NGY-O8001 (Gray) VENT-PQ1NBK-O8002 (Black) VENT-PQ1NGY-O8002 (Gray)	VT-BPQ01BK-NO8001



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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M12x1.5	Screw M6x0.75	Snap-in
Environment Temperature	-40°C ~ +125°C	-40°C ~ +125°C	-40°C ~ +150°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h),IP69K
Air Permeability	001: ≥ 1000 ml/min at 7 kPa 002: ≥ 3000 ml/min at 7 kPa	001: ≥ 550 ml/min at 7 kPa 002: ≥ 1000 ml/min at 7 kPa	> 250 ml/min at 7 kPa
Salt Spray	1000h	1000h	360h
Torque Value	N/A	N/A	N/A
Recommended Panel Thickness	3.85 ~ 4.15 mm	3.85 ~ 4.15 mm	3.5 ± 0.1 mm
Housing	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94V-0, f1)	Thermoplastic (UL 94-HB, f1)
Membrane	ePTFE (Hydrophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Gray / Black	Gray / Black	Black
Water Entry Pressure ¹	-	-	≥ 60 kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.



Calculate Vent Equilibrium Time: [click here](#)

Pressure Relief Vent Series

Type	Over-pressure Rectangular (Piercing type)	Over-pressure M4 (Spring-loaded)	Over-pressure M5 (Spring-loaded)
Part Number	VENT-PR1NBK-O8001	VT-RMH01ME-NO8001	VT-RMH02ME-NO8001

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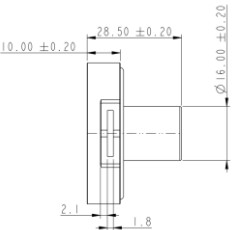
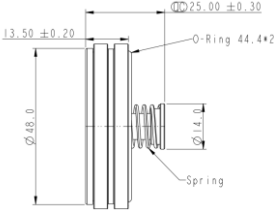
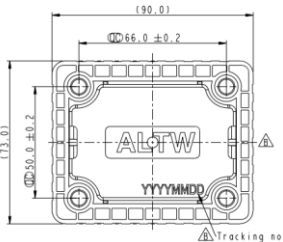


Product Performance Characteristics:

Assemble Type / Screw Size	4xM6	Screw Type	Screw Type
Environment Temperature	-40°C ~ +120°C	-40°C ~ +150°C	-40°C ~ +150°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K
Air Permeability	≥ 10,000 ml/min at 7 kPa	> 650 ml/min at 1.5 kPa	> 500 ml/min at 1.5 kPa
Salt Spray	96h	1000h	720h
Torque Value	2.0 ~ 3.0 kgf.cm	1.0 ~ 2.0 N.m	6.0 ± 0.5 N.m
Wrench Size	Rectangular Type	Location Hole Type	Location Hole Type
Housing	Thermoplastic (UL 94V-0, f1)	Aluminum Alloy	Aluminum Alloy
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Black	Silver	Silver
Opening Pressure	30 ± 5 kPa	3 ± 1 kPa	4 ± 1 kPa
Water Entry Pressure ¹	≥ 80 kPa / 60s	≥ 60 kPa / 60s	≥ 60 kPa / 60s

Dimensions:

(unit: mm)



Recommended Installation:

	N/A		
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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

Calculate Vent Equilibrium Time: [click here](#)

Pressure Relief Vent Series

Type	Over-pressure M16 (Spring-loaded)	Over-pressure M20 (Piercing type)	Over-pressure M20 (Spring-loaded)
Part Number	VT-RMM16ME-NO8001	VENT-MS4NME-O8001	VENT-MS4NME-O8002

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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M16x0.8	Screw M20x1.5	Screw M20x1.5
Environment Temperature	-40°C ~ +150°C	-40°C ~ +150°C	-40°C ~ +150°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 60mins), IP69K	IP68 (2 m for 60mins), IP69K
Air Permeability	> 230 ml/min at 2.5 kPa	> 2000 ml/min at 7 kPa	≥ 1400 ml/min at 7 kPa
Salt Spray	1000h	48h	48h
Torque Value	6 ± 0.6 N.m	3.0 ~ 5.0 kgf.cm	3.0 ~ 5.0 kgf.cm
Wrench Size	22.8 mm (specific)	26.0mm	28.0 mm
Housing	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Silver	Silver	Silver
Opening Pressure	6 ± 2 kPa	40 ± 5 kPa	12 ± 2 kPa
Water Entry Pressure ¹	≥ 60 kPa / 60s	≥ 60 kPa / 60s	≥ 60 kPa / 60s

Dimensions:

(unit: mm)			
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

Calculate Vent Equilibrium Time: [click here](#)

Pressure Relief Vent Series

Type	Over-pressure M20 (Spring-loaded)		Over-pressure M32 (Spring-loaded)
Part Number	VT-RMM20ME-NO8001	VT-RMM20ME-NO8002	VT-RMM32ME-NO7001

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Product Performance Characteristics:

Assemble Type / Screw Size	Screw M20x1.5	Screw M20x1.5	Screw M32x1.5
Environment Temperature	-40°C ~ +150°C	-40°C ~ +150°C	-40°C ~ +150°C
Waterproof Rating	IP68 (2 m for 1h)	IP68 (2 m for 24h), IP69K	IP67
Air Permeability	> 500 ml/min at 1.5 kPa	> 500 ml/min at 4kPa	> 500 ml/min at 1.5kPa
Salt Spray	1000h	1000h	1000h
Torque Value	4.0 ~ 5.0N.m	5.0 ~ 8.0 N.m	6.0 ~ 8.0 N.m
Wrench Size	28.0 mm	35.0 mm	42.0 mm
Housing	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone	Silicone
Housing Color	Silver	Silver	Silver
Opening Pressure	6 ± 1.5 kPa	30 ± 2 kPa	4 ± 1 kPa
Water Entry Pressure ¹	≥ 60 kPa / 60s	≥ 60 kPa / 60s	≥ 60 kPa / 60s

Dimensions:

(unit: mm)			
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Recommended Installation:

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¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

 Calculate Vent Equilibrium Time: [click here](#)

Pressure Relief Vent Series

Type	Over-pressure M40 (Piercing type)	Over-pressure M40 (Spring-loaded)
Part Number	VENT-MS5NME-O8001 (Silver) VENT-MS5NBK-O8001 (Black)	VENT-MS5NME-O8002



Product Performance Characteristics:

Assemble Type / Screw Size	Screw M40x1.5	Screw M40x1.5
Environment Temperature	-40°C ~ +150°C	-40°C ~ +150°C
Waterproof Rating	IP68 (2 m for 60mins), IP69K	IP68 (2 m for 60mins), IP69K
Air Permeability	> 4500 ml/min at 7 kPa	≥ 3000 ml/min at 7 kPa
Salt Spray	48h	48h
Torque Value	3.5 ~ 5.5 kgf.cm	3.5 ~ 5.5 kgf.cm
Wrench Size	50.0 mm	50.0 mm
Housing	Aluminum Alloy	Aluminum Alloy
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)
O-Ring	Silicone	Silicone
Housing Color	Silver / Black	Silver
Opening Pressure	40 ± 5 kPa	6 ± 2 kPa
Water Entry Pressure ¹	≥ 60 kPa / 60s	≥ 60kPa / 60s

Dimensions:

(unit: mm)		
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Recommended Installation:

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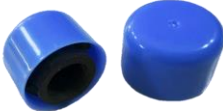
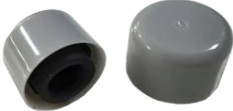
¹ Water Entry Pressure: minimum water pressure resistance at standard temperature and pressure.

 Calculate Vent Equilibrium Time: [click here](#)

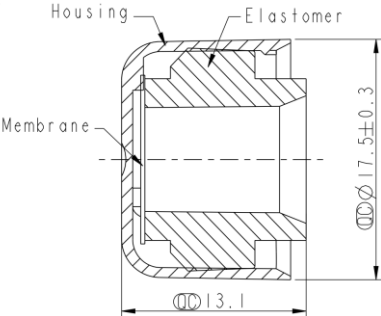
Vent Cap



The exhaust cap is used for the headlights of a car and is easy to install and replace. They effectively prevent fogging inside the headlights and ensure the lighting effect of the vehicle lights.

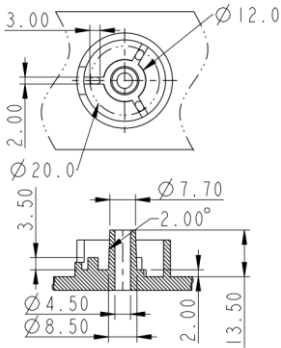
Part Number	VT-CPC01BK-NO8001 (Black)	VT-CPC01BL-NO8001 (Blue)	VT-CPC01GY-NN7001 (Gray)
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Product Performance Characteristics:			
Assemble Type / Screw Size	Snap-in	Snap-in	Snap-in
Environment Temperature	-40°C ~ +120°C	-40°C ~ +120°C	-40°C ~ +120°C
Waterproof Rating	IP68 (2 m for 1h), IP69K	IP68 (2 m for 1h), IP69K	IP67
Air Permeability	> 50 ml/min at 1KPa	> 50 ml/min at 1KPa	> 1500 ml/min at 1KPa
Salt Spray	96h	96h	96h
Installation Pressure	15 N	15 N	15 N
Housing	Thermoplastic	Thermoplastic	Thermoplastic
Membrane	ePTFE (Oleophobic)	ePTFE (Oleophobic)	ePTFE (Oleophobic)
Housing Color	Black	Blue	Gray

Dimensions:
(unit: mm)



Recommended Installation:

The Vent Cap is equipped with an elastic body inside, and the product can be conveniently installed on the cylindrical shell. To achieve the IP69K waterproof rating and prevent the product from being unlocked due to impact during use.



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