SBS®
STORAGE BATTERY SYSTEMS, LLC

Bi-Directional Recombination Vent Plug

For Stationary Flooded/Vented Batteries

Significantly reduces/eliminates watering intervals and increases safety in poorly-ventilated areas

Principle of Operation

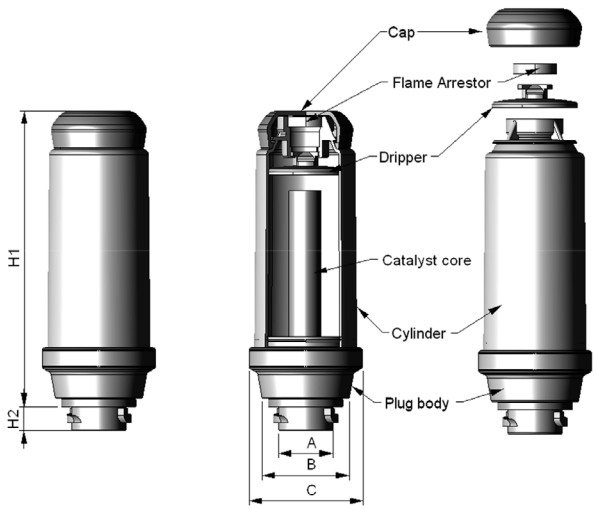
Operation of lead acid batteries results in the electrolysis of water. Electrolysis reduces the amount of water in the electrolyte, which in turn requires the battery to be watered more frequently, increasing maintenance requirements. Hydrogen and oxygen are also naturally created as part of this process and these gases can accumulate and become explosive.

The SBS recombination vent caps help to prevent the gases generated through electrolysis from escaping. Inside the cap is a catalyst (rare earth element) which reacts with hydrogen and oxygen and converts the gases into water vapor. This is an exothermic process and heat is generated during this recombination process.

As the battery stops gassing and the cap cools, water vapor condenses on the walls of the plug and will flow back into the battery, thus 98% of the hydrogen/oxygen gas mixture generated during charging will be recombined and converted back to water. This process effectively eliminates the flow of gases from the battery into the atmosphere.

SBS recombination vent caps significantly improve safety, preventing (under normal conditions) the flow of gas into the immediate surroundings and eliminating the risk of ignition, as well as reducing the need for water refilling.

The system is economical from both an installation and maintenance perspective.



Features

- Reduces the frequency of water refilling (12–15 years topping-up interval)
- Reduction of maintenance and service costs
- Increases safety since explosive gases are not released from cell under normal operation
- Protects against flashback
- Lifetime of more than 20 years

Bi-Directional Valve

In order to achieve the most effective gas recombination plug, a special catalyst system using a bi-directional valve is integrated to automatically regulate the pressure inside the plug.

In order to maintain the safe operation of the system, a flame arrestor is mounted over the valve in the plug in the form of a ceramic flame screen. With this design the vent plug gas emissions are minimal and safe for the surrounding environment.

The design of the recombination plug increases the safety of the battery in areas with limited ventilation while maintaining the level of gas recombination at the highest possible level.

Construction and Technical Data

Part No.	Cell Capacity (Ah)	Max Charging Voltage (V/cell)	Dimensions				
			Diameter in Inches (mm)			Height in Inches (mm)	
			A	B	C	H1	H2
RECOM-BD-500AH	up to 500*	2.4 ± 1%	0.98 (25)	1.57 (40)	2.09 (53)	5.20 (132)	0.43 (11)
RECOM-BD-3000AH	above 501*	2.4 ± 1%	0.98 (25)	1.57 (40)	2.09 (53)	5.20 (132)	0.43 (11)

*Will not fit on STT12V50 or STT12V100 batteries

RECOMBINATION VENT PLUG