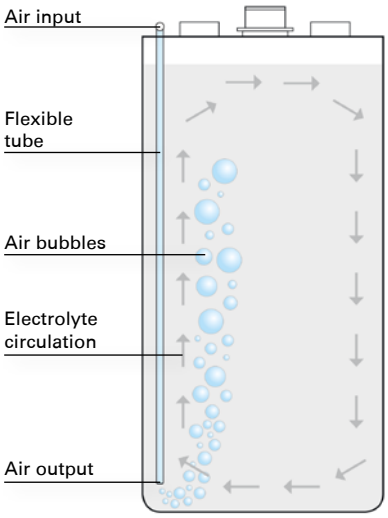
TRIATHLON® Tubular Flex Aire

In very simple terms, lead-acid batteries contain electrolyte which is a mixture water and sulfuric acid of with varying concentrations. During discharge the sulfuric acid is absorbed into the plates. During the charge process of lead-acid batteries, sulfuric acid is driven out of the plates and back into the electrolyte solution. Since sulfuric acid is heavier than water, when driven out of the plates it falls to the bottom of the cell. The concentration of sulfuric acid becomes extremely high toward the bottom of the cell and more diluted towards the top of the cell. The differing sulfuric acid densities from bottom to top is called acid STRATIFICATION. Stratification accelerates the corrosion rate at the bottom/lower end of the plates and can lead to shorter service life if not properly mixed. It also causes deep discharges at the bottom of the plates during the discharge process, while the upper ends of the plates have less capacity due to the lack of acid.

Acid stratification is resolved during the charge process. When a battery is properly charged, the voltages of the battery reach a gassing voltage (2.4VPC) at which point hydrogen gasses bubble from the plates. These gas bubbles mix the electrolyte and eliminate stratification. The negative side effects of this method are high energy and water consumption coupled with increased battery temperature. If the gassing point is not reached due to short charge times or frequent opportunity charging, acid stratification occurs and will cause sustained and unavoidable damage over the life of the battery.

Batteries equipped with a Triathlon® Tubular Flex Aire agitation system and the TriCOM® charger prevent acid stratification by using air bubbles to mix the electrolyte throughout the charging process. Triathlon® Tubular Flex Aire allows less overcharge, which reduces energy demand, minimizes water loss and reduces battery temperature increases.

Tubular Flex Accu Aire	System and Functionality	Benefits
	▶ TriCOM® chargers have an optional integrated air pump option to circulate air into each of the batteries cells. ▶ Triathlon® Tubular Flex Aire batteries are equipped with a plastic air tube that is built into each cell. ▶ Air is supplied from the pump via the Euro connector to a tubing system on top of the battery that is connected to each individual cell. ▶ Clear tubing connects the pumped air to each cell for "air agitation". ▶ On the inside bottom of the cell, the air bubbles come out which circulates the electrolyte, mixing the acid and eliminating stratification.	▶ Reduces energy and water consumption – the charge factor goes from up to 1.20 to 1.05 - 1.07. ▶ Extends service life by reducing chemical stress and temperature increases during charge ▶ Enhances battery performance in opportunity charge applications when the gassing point is not reached on each charge. ▶ Speeds up the charging process.

Required additional equipment

TRIATHLON® Tubular Flex Aire Battery:
Each cell has an air supply tube, as well as the appropriate tubing and coupling system.

TriCOM® charger with air option:
An air pump with pressure monitoring is integrated into the charger.

TRIATHLON® INTELLIGENT BATTERIES

Triathlon Battery Solutions, Inc.
2025 Midway Road, Suite 200
Lewisville, TX 75056

Tel: +1 469.301.2128
E-Mail: info@triathlon-batteries.com
Internet: www.triathlon-batteries.com