

Patented Pulse Technology

Today's vehicles and equipment are more technologically advanced, yet they still rely on basically the same lead-acid battery technology developed almost 100 years ago.

There is actually enough reactive material in lead-acid batteries to keep them operating reliably for eight to 10 years or more, but they don't. The average life of a battery, depending on usage, is 6 to 48 months but, according to a recent study, only 30% of all batteries actually reach the 48-month point.

The primary reason for battery failure is a series of problems caused by sulfation buildup on the battery plates.

Our patented high-frequency pulse technology works to actually reduce the buildup of sulfation on the battery plates resulting in the battery working at peak efficiency.

For over a decade the U. S. military has been using our patented pulse products on their vehicles and equipment all over the world!



← Before

Sulfation buildup occurs when chemicals in the battery acid discharge to the point where they crystallize and coat the battery's lead plates. The more the plates are coated, the less energy they will accept and release. Before long they become so coated that battery efficiency is reduced and, finally, the battery fails.

This buildup is the main reason for over 80% of all battery failures. Sulfation buildup and the related problems are natural by-products of battery operation.

White crystallized lead sulfate can be easily seen on this battery plate. The plate was deeply discharged. Discharge time was just over 13 minutes

Our patented pulse technology was applied for 18 days. The plates were completely clean and the battery lasted over 33 minutes. The discharge capacity of the battery increased by over 250% and the discharge time increased to 33 minutes.



→ After

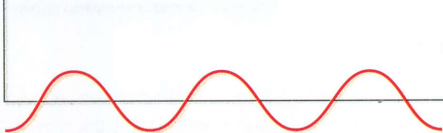
Using this patented pulse technology, our products emit a pulsing dc current into the battery. This very high-energy pulsing reenergizes the sulfates, removes them from the plates and returns them to the battery acid as active material. When used regularly or installed permanently, our products will keep the damaging crystals from forming again.

Pulse Waveforms

Compare Typical Competitors' "Pulse" Waves

Other chargers using *pulsing* technology traditionally use one of 3 pulses: Sine, Square and Negative Pulse waves. There are significant problems associated with each type of wave:

Sine Pulse Wave



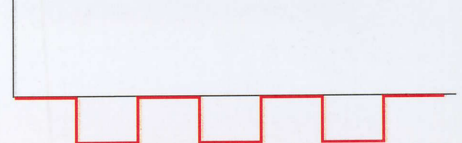
This wave fluctuates gradually between positive and negative charge. The main problem with this pulse is it is too "soft" to affect the crystal growth. In addition, the upper voltage limit must be carefully controlled to prevent overcharging and gassing the battery.

Square Pulse Wave



The square pulse has a relatively long dwell time at max voltage and is limited in effect because the top of the wave must be voltage limited to provide the safety required during charging.

Negative Pulse Wave



This wave has similar limitations to the square wave pulse plus the added concern that the charge is restricted during the down cycle of the pulse. This has a negative impact on charging.

PulseTech's True Patented Pulse Waveform



With the proper training and use, our test, charge and maintenance products have consistently achieved a 70-80% reduction in battery consumption. PulseTech's True Patented Technology is simply the most effective method for the removal of damaging battery sulfation and for performance-enhancing battery conditioning available in the world today!

Our *patented*, high-frequency pulse waveform is precisely controlled by microprocessors and is of a specific amplitude and frequency. It rapidly rises in less than one microsecond to its maximum amplitude and gradually returns to zero. There is no abrupt stop and no battery drain. Make no mistake – our patented conditioning process is NOT pulse charging or a burst or high voltage pulse provided within the charging regimen! Instead, the low-voltage, high-frequency conditioning pulse is introduced into the battery via a separate circuit independent of the charging circuit. This precisely-controlled waveform has proven to be the best at removing sulfation from the battery plates and returning it back to the electrolyte solution.