



NexSys[®] TPPL batteries specified for all new American Airlines[®] burden carriers

In 1996, American Airlines[®] began converting its Ground Support Equipment (GSE) from internal combustion vehicles to electric vehicles to cut expenses and emissions. Today, American's commitment to going electric includes experimentation with advanced battery technologies that can deliver better financial and environmental benefits than conventional flooded lead acid batteries.

This was the case in 2015, as American faced chronic premature battery failures in its electric burden carrier fleet. The company was using the vehicles as personnel carriers in the terminal and maintenance carts on the ramp, but the lead acid batteries powering them were failing in less than a year – often in as little as six to nine months.

A Thin Plate Pure Lead (TPPL) solution

Looking for a more robust battery solution, American looked to a technology that had proven successful in its baggage tractors – NexSys[®] TPPL batteries. As American had discovered, the Thin Plate Pure Lead (TPPL) technology in NexSys TPPL batteries delivers key benefits for GSE applications.

Their sealed design eliminates the need for watering, and with it the related maintenance hours and risk of acid spills. The batteries can also withstand shock and vibration, and can be opportunity-charged during breaks and in-between flights. But maybe most important for American's burden carrier challenge, NexSys TPPL batteries offer excellent cycle life and are warrantied to last up to three years.

A terminal cart trial for TPPL

To see how NexSys TPPL batteries would perform in its burden carriers, American worked with EnerSys[®] representative Allen Energy and burden carrier manufacturer Columbia Vehicle Group, Inc. to conduct a battery trial at North Carolina's Charlotte Douglas International AirportSM.

For the test, two Columbia burden carriers were outfitted with four NexSys TPPL 12-volt batteries. The carriers were used as carts to ferry passengers around the terminal. From May 2015 to May 2016, the batteries ran as promised, with no issues or unexpected downtime.

“All things considered, going with the NexSys[®] TPPL battery was an obvious choice.”

Joe Girting
GSE Fleet Manager
American Airlines



American was pleased that the NexSys® TPPL batteries ran past the one year mark, but operating data from the trial showed that the batteries were on track to exceed three years of life. American's GSE Fleet Manager, Joe Girting, found the TPPL performance and data so compelling that he made NexSys TPPL the airline's official battery for all new burden carriers.

"Specifying thin plate pure lead batteries for our new burden carriers made sense financially and environmentally," says Girting. "The NexSys TPPL batteries eliminate the cost of replacing batteries in a year or less and eliminate the risk of spills. Plus, the data suggested that they would last three years or more. All things considered, going with the NexSys TPPL battery was an obvious choice."

From spec to success in service

Today, Girting's decision to specify NexSys TPPL batteries looks even better. In 2018, American purchased a new fleet of more than 30 Columbia burden carriers outfitted with NexSys TPPL batteries. Based on operating data captured in April 2020, the batteries look like they will easily exceed their 36-month warranty and could achieve a service life between four and six years.

In the meantime, American Airlines intends to keep looking for GSE applications that will benefit from the TPPL technology in NexSys TPPL batteries. As Joe Girting summarizes, "Thin plate pure lead technology aligns perfectly with our corporate commitment to purchase equipment with lower emissions, and with our ongoing efforts to optimize our operations and operating costs."



Thin Plate TPPL Lead (TPPL) Design

Robust connections

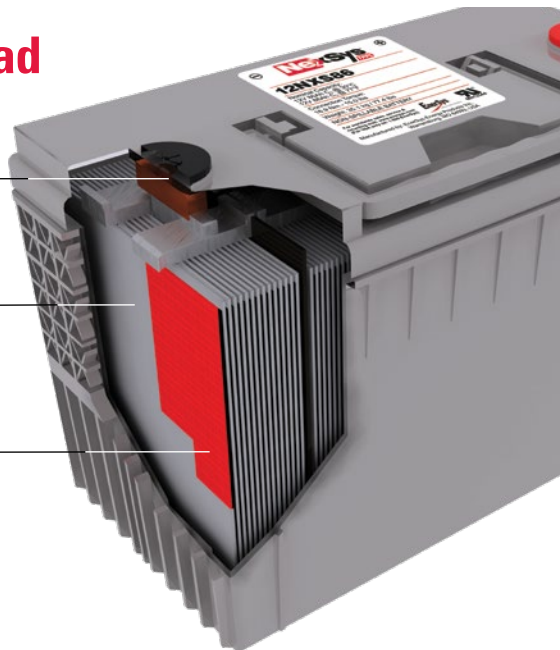
Cell connectors are casted and bonded to the plates to resist vibration.

Pure lead plates

Pure lead plates are extremely thin, so more of them fit into the battery. More plates mean more power.

Compressed AGM separators

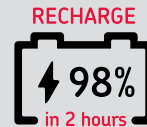
Absorbed Glass Mat (AGM) design prevents spills and delivers extreme vibration resistance.



Features and Benefits



No watering, battery cleaning or long equalize charges



RECHARGE

Fast charge in less than 2 hours; plug-in during breaks



Cell connectors are cast and bonded to the plates



Optimized cycling performance and high energy throughput



Very low internal resistance means more power when you need it most

* with appropriately sized charger

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