

Spiers New Technology

Supporting 4R test services with the ABC-150

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Dirk Spiers is a problem solver with a passion for renewable energy. As he saw the popularity of electric vehicles rise, he noticed a problem that wasn't getting a lot of attention: Used EV batteries were being cast aside, their useful lives cut short because they weren't being repaired or refurbished.

Tossing aside used batteries can cause numerous negative effects, including lost value that could have been drawn from the discarded units and environmental harm. Driven to turn this problematic theme around, Spiers founded Spiers New Technology in 2014.

Today, SNT is a leading provider of "4R services" for the advanced battery packs used in hybrid and electric vehicles. These comprise the repairing, remanufacturing, refurbishing and repurposing of advanced batteries. Using SNT's 4R services, original equipment manufacturers can manage the life cycle of their battery packs and maximize the value they get from the batteries.

SNT wanted to provide an inclusive suite of valuable services to OEMs to help them make the most of their EV batteries. They also offer root cause analysis using their ALFRED battery database, logistics support through their Battery Service Center, consulting services and manufactures small footprint Energy Storage Systems. Between the 4R services and these options, SNT is a one-stop shop for any advanced battery needs.

Though battery life management is important work, handling stored energy always carries risks. Spiers wanted to make sure that anyone testing advanced batteries would be safe while doing so.



The ABC-150 from Webasto Power Test Systems was the perfect solution for them.

SNT adopts an industry leader in Power Cycling Systems

ABC-150 has been a primary power cycling system since the beginning of the EV resurgence, having been originally developed to support the design and development of the GM Impact's drivetrain and subsystems. The Impact was GM's 1991 concept car that led to the development of EV1, the first modern electric vehicle that was mass-produced by a major automaker.



Since the early '90s, ABC-150 has become the standard for testing advanced batteries, fuel cells, capacitors and other alternative energy technologies used for automotive purposes. It has a power range from -125 to 125 kW and voltages from 8 to 445 Vdc. It also has a current range of -530 Adc to +530 Adc. Like the rest of Webasto's Power Cycling Systems' power cycling systems, the ABC-150 has a real-time clock installed onto the system's control board. This allows the operator to view Ah and kWh in real time during cycling.

It's clear that the ABC-150 is a powerful tool that has a strong legacy behind it. But these features weren't the only reasons Spiers decided to adopt this power cycling system into its business. The ABC-150 also is equipped with safety features such as an emergency shut off button and automatic shut off when there's a loss of power. These were major selling points for Spiers, as safety is one of SNT's core values.

ABC-150 implementation reveals additional benefits

SNT was confident in its decision to incorporate ABC-150 into operations, but it wouldn't discover the system's additional benefits until later. This began with the installation phase. The process was fast and simple, making for a smooth transition. There was little downtime needed for the implementation process.

Once SNT began using ABC-150, the company was able to see for itself how easy it is to incorporate the system into the business's services. ABC-150 interfaces seamlessly with SNT's in-house programs. In fact, there are seven interface options that users can choose when using any of Webasto's Power Cycling and Test Systems: Remote Operating System (ROS), Window DCOM Driver for LabView, Visual Basic, C++, Studio.NET, CAN or manual. This last option is ideal for companies like SNT that create their own unique programming to support their operations.

The versatility of ABC-150 isn't limited to its interface options. The system is also compatible with different battery chemistries, which is a critical factor for SNT, which handles many types of used EV batteries. The company usually takes



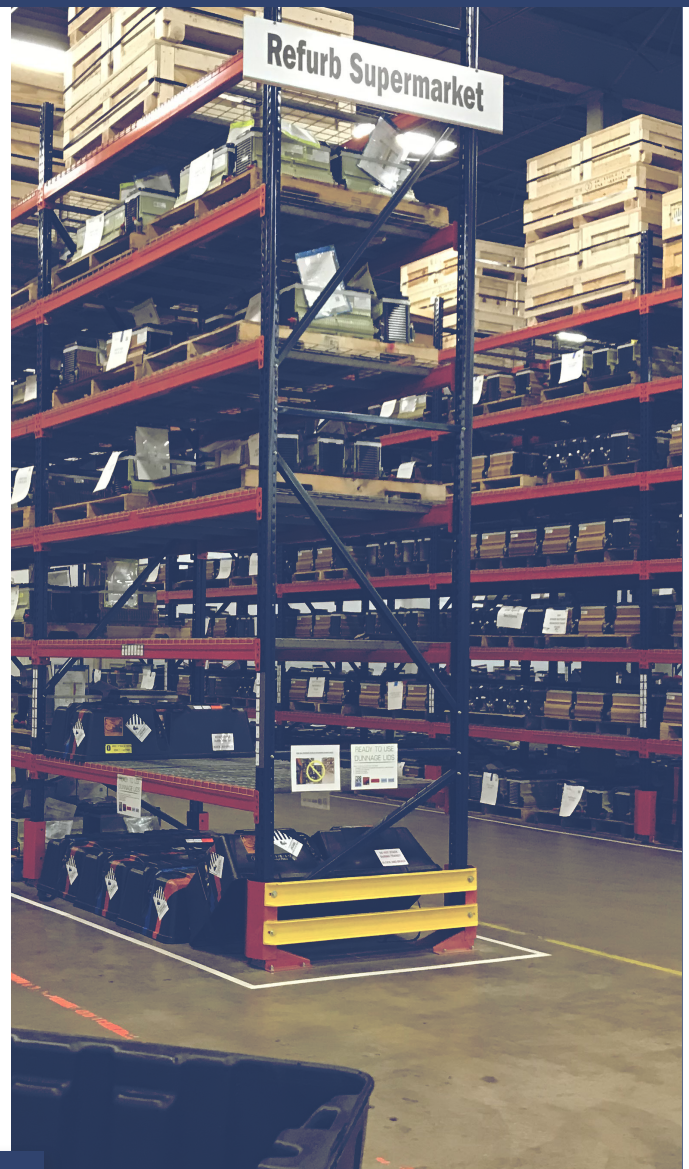
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in about 10,000 battery modules on a weekly basis, and they come from a wide variety of hybrid and electric vehicles. Working with a versatile and reliable test system is key.

SNT sees continued value in Webasto's Power Cycling Systems

Now, ABC-150 is an essential component of SNT's 4R system, and assists in root cause analysis. Since adopting ABC-150, SNT has also begun to use ABC-170 in its production line as well. This power processing system is designed to support systems that need additional sinking power. It can provide power from -170 kW to 125 kW, voltages from 8 to 445 Vdc and currents from +530ADC to -640ADC.

Moving forward, SNT knows that ABC-150 has capabilities that it hasn't tapped into yet. The company's Energy Storage Solutions department is growing, and plans to use ABC-150 to increase its testing and development. ESS is a part of SNT's Second Life initiative, and provides support for peak shaving, EV charging, solar and high power short duration energy boosts.



SNT provides a unique, valuable service to the EV industry.

By giving automakers the opportunity to maximize the value of advanced batteries, SNT can help them save money and make their business more efficient. Though the company is young, it has left an impression on EV manufacturers and continues to grow. Spiers has goals of expanding SNT's services to reach European and Chinese markets in the future. Having access to reliable equipment and technologies such as Webasto's Charging Solutions' Power Cycling and Test Systems is an influential aspect of SNT's advancement and success.



SOURCES

<https://www.digitaltrends.com/cars/how-does-gms-fabled-ev1-stack-up-against-the-current-crop-of-electrics/>

ABC-150 Spec Sheet

ABC-170 / 170 CE Spec Sheet

https://www.tulsaworld.com/business/technology/local-battery-life-cycle-firm-spiers-new-technologies-a-strong/article_8772cd0f-b957-5e0b-94ef-0cf4d6b7055a.html