



# SAVING GREEN WHILE GOING GREEN

*How DFF Helped Hybrid Electric Buses Go from Cool to Cooler*



## **PROBLEM:**

A longtime customer, and leader in the electric propulsion ground vehicle market was experiencing a higher than desired failure rate on their thermal management system (TMS), a box that cools batteries on their line of hybrid electric buses.

## **SOLUTION:**

DFM services from DFF: a thorough review of the part revealed the reason for the failure, which DFF addressed through design and production improvements.

## **RESULTS:**

A system with a longer lifespan and significantly reduced failure rate.

We are always willing to help our customers with design improvements and possess the experience, equipment, resources and knowledge to offer sound recommendations to improve products and processes—while reducing costs. Hear how our DFA (design for assembly) services benefitted one of our longtime customers.

A longtime customer and leader in the electric propulsion ground vehicle market needed to get a bit cooler. Their thermal management system (TMS), a box that cools batteries on their line of hybrid electric buses, was experiencing a higher than desired failure rate. To find a remedy to the problem, they turned to DFF.

In addition to having successfully helped numerous customers in the transportation industry, DFF team members possess extensive experience in dealing with electrical wiring, harnesses and refrigerant—critical components of the project at hand. In reviewing the TMS, the DFF Lead Engineer on the project believed that an improper amount of refrigerant was being used in the system—a suspicion that was confirmed when running tests on an AccuFill machine.

While DFF was initially being considered for a role as a backup supplier, they soon became entrusted as the sole source for this endeavor, ultimately



working on the system that included upwards of 150 complex parts, to refine its production. At one time, team members flew out to a supplier to perform testing at their location, reaffirming their commitment to the project and demonstrating a superior level of care and customer service.

In addition to lowering the failure rate of the TMS, DFF increased the part's lifespan, through design and production refinements. Testing of the part on a custom testing unit transmits real-time data to the customer, demonstrating how transparency can strengthen a working relationship and streamline efficiencies.

If you, like the customer described here, are cool but wish to get a bit cooler, we can help. Contact our team of experts today to find out how.



## ABOUT DFF

Specializing in medium to high production of precision machined components and electro-mechanical assembly products, DFF works with customers to simplify designs, make products easier to produce and maximize the reliability and quality of the end product. Located on 23 acres in a regional industrial park at the crossroads of Western New England (Interstates 90 and 91), the DFF facility, which began in a 2,000 sq. ft. building, has grown to three buildings totaling 300,000 sq. ft. To learn more about DFF, visit [dffcorp.com](http://dffcorp.com).