

# Love Your Gas Car But Hate Emissions? Time for an EV Conversion

By Analiese Mione

But I love my car. I have heard that refrain so many times when speaking to everyday people about driving electric. Now you can keep the car you love and nix the emissions and costly maintenance with an ICE to EV conversion.

## ICE to EV Conversions



Appearing right to left are Jonathan Untied, co-founder, President and Chief Software Engineer; co-founder, Lead Electrical Engineer Dennis Manning, and co-founder, Lead

Mechanical Engineer Joe Monasky.

This is neither a simple nor inexpensive operation, at least not yet. A visit to [Inductive Autoworks](#) in Tolland, CT to attend a VIP tour of their new EV conversion facility provided a wide eyed, in depth look at what's involved. Dive into the video below for a quick overview and read more below about how Inductive Autoworks is bringing EV technology into the mainstream.

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## **Strip Out the Engine**

Step 1 is to remove the gas engine, gas tank and clutch, if it has one. Inductive Autoworks' triumvirate of founding engineers said this is the easy part and their shop does it fairly quickly.

## **Put in a Motor, Battery and other EV Conversion Components**



Electric motor and controller/inverter on cart



Inductive Autoworks Exploded Electric Vehicle display



Niro EV Battery Pack at Inductive Autoworks

Step 2, better yet phase 2, is to add all the EV components and connect them. EV conversions are custom engineered, take

time and cost more than you'd think. Think of all the parts of an EV that don't exist in an ICE vehicle. All these need to be added including an electric motor, battery to charge the motor, on board charger, charging port, and battery management system. Learn more about batteries and other EV conversion components, and how to get them talking to one another, in the photos above and videos below.

Want to take a deeper dive into all the critical EV parts and how the Inductive Autoworks team collaborates to design, create and install them so you can drive your favorite car as an EV? Watch the beginning of the video below from fellow EV Club of CT member Paul Braren who attended their pm open house. Watch the whole video to visit each display station including the CNC and converted EV.

But for the classic car lover in particular, conversions are THE solution to keeping the car running in an environmentally friendly way. For the ROI types among us, factor into your spreadsheet the cost savings from not maintaining a combustion engine (who loves ordering rare and expensive parts from Germany?), switching to electric vs gas (50%+savings), and the priceless improvement in performance. We do want to see your analysis! For now, there is no word on whether CHEAPR incentives will apply to conversions.

## **Building an EV Conversion Brain Trust**

Wondering about car insurance for a conversion? We are too, so more on that coming soon, but rest assured Inductive has registered and insured converted vehicles like the Mazda RX-8 below. Each time Inductive does a custom conversion for a particular ICE make and model, like the Mazda RX-8, the design and fabrication specs gets stored in a module they can reuse to convert another vehicle at a much lower cost.



Mazda RX-8 Custom EV Conversion by Inductive Autoworks

# Custom Machined Parts

Custom parts are designed on a computer and fabricated in house on the CNC (Computer Numerical Control) machine, thereby ensuring accuracy and consistency while ruling out human inefficiency and error. The next time they have to machine the same part, they call up the design and reuse it at marginal expense to the customer.



The CNC machine at Inductive Autoworks used to design and machine parts for custom EV conversions.





Inductive Autoworks created a custom adapter (prototype shown) to allow them to mount an electric motor to an OEM transfer case.

Watch the video below to learn about their prototyping, testing at the test bench, get a closeup of the Mazda RX-8 conversion and test Leaf used to evaluate how they can swap out spent batteries for new ones. The tricky part is getting the car to accept the new part, and that's a software problem. Good thing they have a software engineer on the team.

## **Driving the Evolution to EVs**

The team is also working towards offering kit conversions for DIYers, but this is an evolution. If you're looking to get a new battery for your spent 2012 Nissan Leaf for example, reach out because battery replacements are part of the evolving EV ecosystem they're building. And yes, old batteries will be

used for stationary storage.

Interested in an EV conversion or other EV services? Reach out to Inductive Autoworks at [inquiry@inductiveauto.com](mailto:inquiry@inductiveauto.com) or +1 860-222-0915 and let them know the EV Club of CT sent you.