



Manual Integrated Motor Assist modification for the Honda Insight

User Collaborative Development Project to improve the Human/Hybrid Interface and Ultimate Fuel Efficiency

Background Information

Hybrid automobile technology is not new. The first known gasoline-electric hybrid was the Pieper "Voiturette" built in Belgium in 1900.

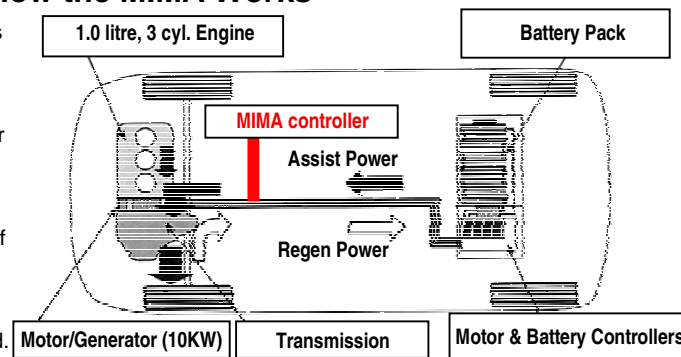
Electric powered vehicles pre-date the internal combustion engine, but have never been widely popular as a means of transportation.

Two major Japanese automakers concluded that gas-electric hybrid technology could significantly improve fuel efficiency and reduce emissions. In 1997, the Toyota Prius was first offered in Japan. In 1999, the Honda Insight was first available in the USA.

Although at this time there are at least seven different hybrid vehicles available in North America, the esoteric Honda Insight continues to provide the highest fuel efficiency. Through internet based innovation and collaboration, loyal and enthusiastic Insight owners have developed modifications and driving techniques that enable remarkable fuel efficiencies, in some cases over 90 miles per gallon.

How the MIMA Works

The MIMA system modifies the signals from the main engine controller to the electric motor controller, enabling the driver to either manually control the level of assist and regeneration power by a joystick, or to define the characteristics of assist and regeneration power as functions of accelerator pedal movement and engine load.



The MIMA controller may be switched on or off by the driver. When off, the Insight operates exactly as it would without the modification. When activated, the safety, emission control, and fuel conserving features of the Insight remain operational.

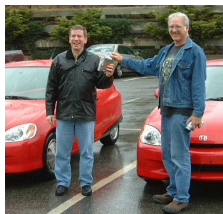
MIMA Development History

Insight owners have long considered and discussed the potential benefits of enabling manual control over the level of assist and regeneration power to and from the electric motor in the drive train. In the stock Insight, these levels are coordinated by the control computers to provide a driving experience that is nearly identical to that of traditional cars.

In early 2005, with advice and encouragement of other Insight owners, the MIMA pioneers, Yves Morissette (Laval, Quebec) and Mike Dabrowski (Thompson, Connecticut) began the research leading to Yves' first successful experiments in April. Subsequently, Mike (GenesisOne) has pursued a rapid development of the MIMA concept, initially as a logic based prototype circuit, and currently, as a microprocessor based system with evolving software. The MIMA modification has enabled award winning fuel efficiency performance in competition, and this international project has since engaged additional collaborators in North America, as well as continuing input and encouragement from other Insight owners throughout the world.



The MIMA project pioneers



Benefits of the MIMA

While the primary incentive of conscientious Insight owners is fuel economy, most will attest to an impressive driving experience. The MIMA modification enables the user to experiment and define assist/regen modes that can potentially improve the performance and fuel economy of the Honda Insight.

Since the MIMA modification system is currently in continuing development, the ultimate benefits of its use can only be estimated at this time. However, many enthusiastic Insight owners anticipate potential fuel efficiency improvements of > 20%. As with the unmodified Insight, the actual results will depend upon terrain, climate, and weather conditions, as well as the driver's ability and technique.

On a test run, a Honda Insight equipped with a logic based prototype MIMA system achieved 118.6 MPG fuel economy on a 15.2 mile round trip over moderately hilly terrain.



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For more information: <http://pages.cthome.net/genesisone/MIMA.htm>

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