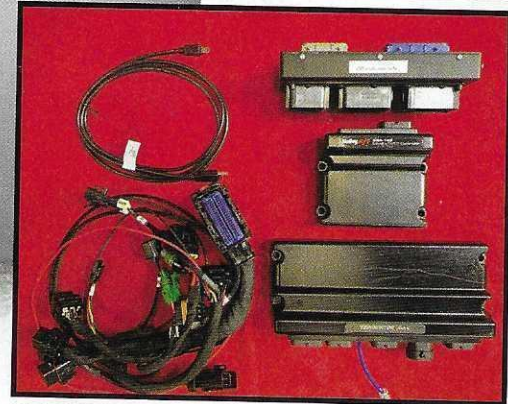
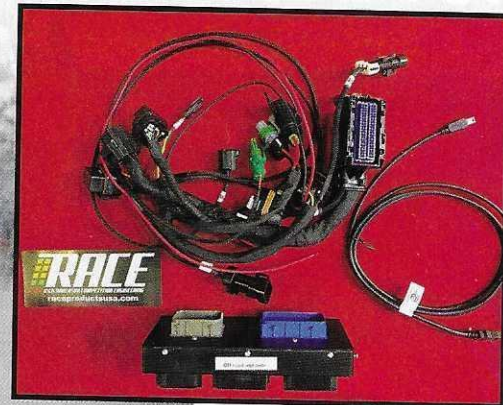


PATH TO POWER

The RACE Gate-Way allows plug-and-play Holley EFI in modern muscle machines

Redline Motorsports served as the initial beta-tester of the Gate-Way and has successfully used this arrangement on Mustangs and Camaros.



WRITTEN BY **STEVE TURNER**

PHOTOGRAPHY COURTESY OF RICK ANDERSON COMPETITION ENGINEERING

From their humble origins, aftermarket EFI systems grew into powerhouse setups that unlock the incredible levels of performance we now expect on the racetrack. For dedicated race cars, wiring these control modules and their supporting sensors is an art form. For street cars, there has long been a barrier of entry to adding a completely adjustable fuel-injection system – until recently.

"A lot of people asked me if there was a way to put Holley EFI on the newer Mustangs, but not lose the dash functions and the functions of the car," Rick Anderson of Rick Anderson Competition Engineering explained. "...Everybody wanted to go to Holley EFI because it's easier to tune, smarter, and quicker – but they didn't want to have to completely redo the dash and wiring."

Fortunately, Anderson had an ace up his sleeve. In the past, he co-developed the Programmable Management System for '86-'94 Mustangs during his days at Anderson Ford Motorsport. The PMS is a piggyback controller that intercepted the factory signals and allowed users to easily modify them for improved performance. Providing the technical savvy to create that device was Doug Wallis of EFI Systems.

To document and test the Gate-Way arrangement, Rick Anderson used his wife's 2011 Mustang GT as a test vehicle. She drove it 4,000 miles in the cold and heat and it performed like a champ in every environment.

Rick Anderson Competition Engineering offers Gate-Way kits for the 2010-2014 Camaro SS and 2011-2014 Mustang GT, as well as an optional harness for those Mustangs equipped with the 6R80 six-speed automatic transmission. RACE only offers its products and focuses on selling them through retailers, like Redline Motorsports, which offers complete packages with the Gate-Way and a Holley EFI system of your choice.



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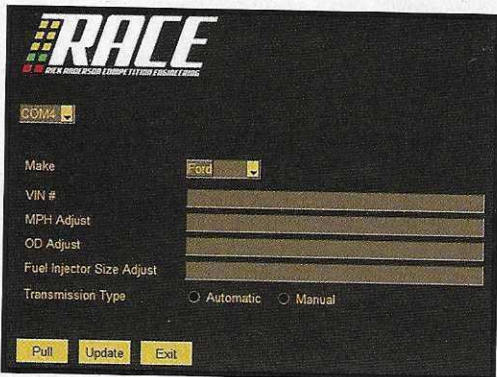
One day the two were chatting on the phone and Anderson bemoaned the roadblock to easily adding a Holley EFI system to a modern vehicle – access to the CAN bus. Wallis said he could unlock that door. He just needed access to a car for a few days. And with that, the Gate-Way was born. It is a product designed to offer a plug-and-play interface between a Holley Terminator X Max or Dominator EFI system and the wiring harnesses for the '10-'14 Camaro SS and the '11-'14 Mustang GT.

Plugging directly into the factory wiring connectors, the RACE Gate-Way and harness then connects directly to the Holley EFI controller as well as the Holley TiVCT controller that allows adjustment of the cam timing of a Coyote engine. The arrangement doesn't require any custom wiring and the only non-factory wire provides power for the Holley controllers.

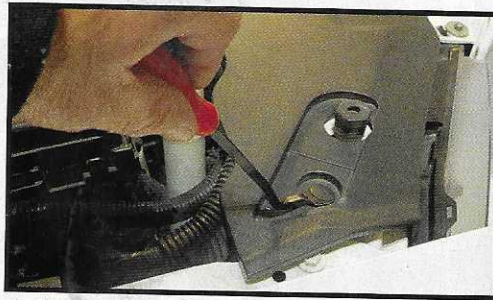
The unit only requires a brief setup via laptop before it can be installed. After that, the installation is straightforward and can be undone in about 15 minutes should you want to only deploy full Holley control at the racetrack and return to the stock controller as you head home on the street.

"Both of these units have to be programmed. The neatest thing about the Gate-Way is it powers up by the USB, so you don't have to have them in the car to program them," Anderson explained. "You can hook it right up to your laptop with Holley EFI software. Your laptop has to have the software in it because we use one of the drivers of the Holley race software, but you can plug that right in, do all your programming everything before installing it."

When running a Holley EFI Dominator system, you gain 32 different inputs and outputs as well as the ability to run low- or high-impedance fuel injectors. Swapping injectors would require



Before installing the RACE Gate-Way, a brief setup is required. Since the unit powers up via its USB port, you can simply plug it into your laptop and customize the Gate-Way for your vehicle.



Anderson starts by removing the plastic radiator cover.



While unplugging the factory wiring connector at the engine control module, he marks the center plug with a permanent marker to ensure that the connectors don't get mixed up when plugging them into the Gate-Way.



From there, he removes the factory ECU from its underhood bracket.

CAMARO COMPATIBILITY

While the Mustang unit was the first Gate-Way product, the version for the 2010-2014 Camaro has seen strong demand from customers as well. The Holley unit pops in right in place of the factory engine controller on these cars, making swapping between the two systems pretty simple. Since Camaros have MAP sensors but don't run a wideband oxygen sensor from the factory, the Gate-Way truly opens up higher levels of performance, especially in power-adder applications.



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more effort, but if you wanted to get creative and fabricate a way to run dual injectors to make swapping back to the stock controller easier, the Dominator would support that.

"You don't have to hook up the inputs and outputs if you don't need them," Anderson said. "The only thing you have to do on the Mustang is hook up is a MAP sensor, because now this is speed-density with wideband control, so your mass air is still plugged in but it's not doing anything anymore."

If you leave the Gateway setup in place, you do lose factory cruise control/traction control and one-touch start-up. This arrangement also nixes miles per gallon, miles to empty, and inlet air temp readouts in the dash, but you can quickly swap between the Holley and factory ECU if you want to regain those features. Everything else, however, works like a charm – from the low-tire-pressure warning to the factory gauges to the electric windows.

"My wife's got a 2011 Mustang GT that she drives everywhere. So that's the best guinea pig I can have," Anderson said. "If something will go wrong, it will go wrong on your wife's car. She's got 3,000, maybe 4,000 miles on it. It's a fun car. We drove it to St. Louis. We drive it all over in the heat and in the winter."

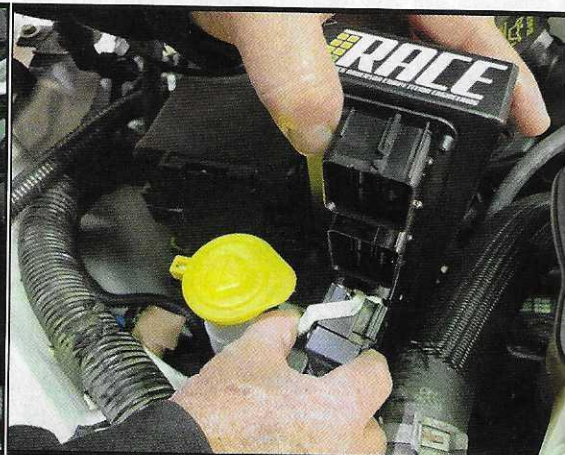
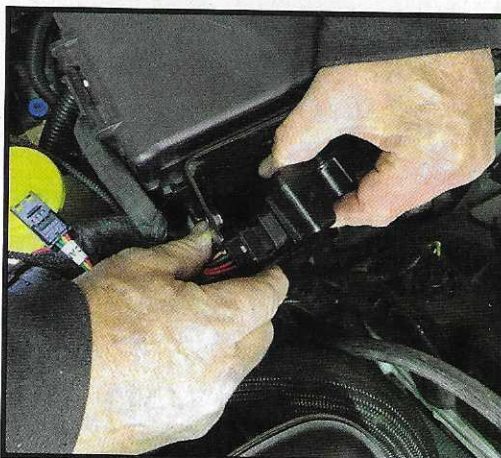
It is functional and battle-tested, but the real benefit of plugging in the Holley EFI system is its programmability. Not only will it learn from a base tune on its own, but it can be easily calibrated to deliver the performance and driveability from any combination. Plus, depending on the application, it adds additional functionality via a MAP sensor and wideband oxygen sensor.



The Holley Terminator X Max will work with the factory wideband oxygen sensors, but the Holley Dominator needs a companion wideband sensor (PN 554-100 NTK). The sensors plug in via this harness.



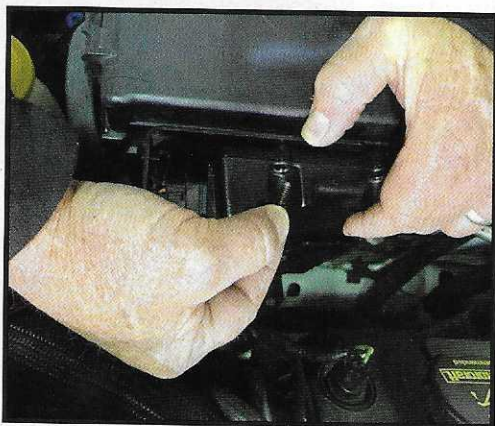
Enabling control of Ford's Twin Independent Variable Cam Timing, Holley offers an add-on TIVCT controller box that plugs into its EFI system. Anderson plugs this unit into the harness and slips it under the fuse box.



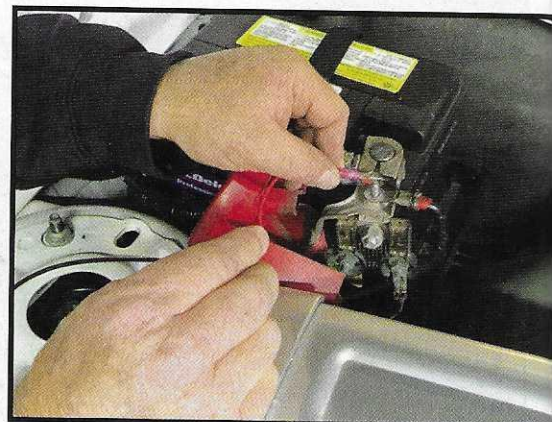
Here is the magic of the Gate-Way. Simply plug one side of the harness into the Holley EFI system and the other side into the factory harness.



The Holley EFI controller is not a direct replacement for the factory controller, it will fit on the same bracket. All that is necessary is drilling a small hole in the bracket.



With the wiring complete, mount the Holley controller to the factory bracket using the newly added mounting hole.



While you can wire up several optional external sensors and switches to the Holley unit, the one extra wire that is required is a power wire attached to the battery.

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"So on the Mustang you will be able to control the timing more precisely using the MAP sensor," Anderson said. "On the Camaro, you will now have control of the air/fuel closer utilizing Holley EFI wideband. So performance-wise, all the way around, it's better and the average guy can understand and work with the Holley software."

The initial development and testing of the Gate-Way took place at Redline Motorsports. The crew there had success with the setup on both Camaro and Mustang applications. Recently Carl Messenger of Competition Auto installed the system on Billy Henderson's 2014 Boss 302, headed for Street Car Takeover at Rockingham Dragway. There the car ran its quickest elapsed time to date on its maiden voyage with the Gate-Way underhood.

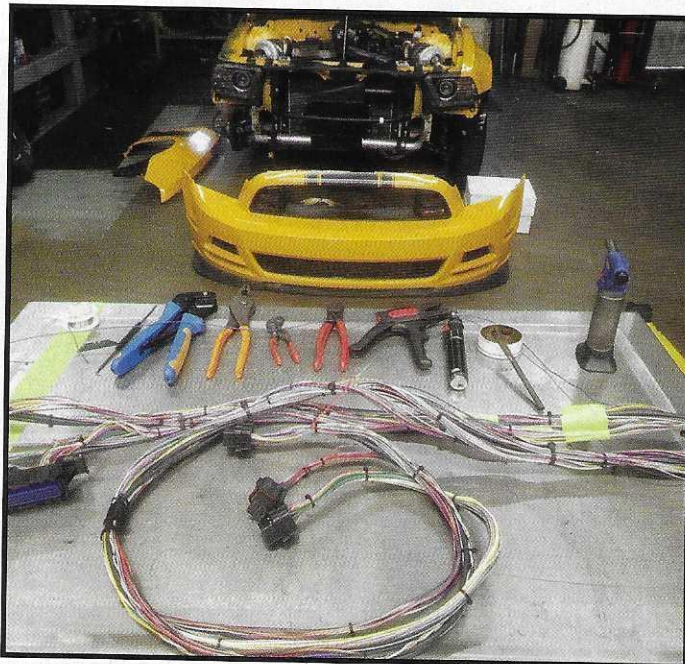
This setup works well, and Anderson is planning on expanding the list of vehicle applications for the Gate-Way beyond these first two. Until then, let's check out just how easy it is to plug a Holley EFI system into a modern muscle car with the RACE Gate-Way. **FSC**

For Mustangs equipped with a 6R80 six-speed automatic transmission, RACE offers this harness to add a transmission controller into the mix.

Customers using the Gate-Way are impressed by how transparent the installation operates. Just plug things in and they have the full control that they were seeking. Case in point, Carl Messenger of Competition Auto installed one on Billy Henderson's turbocharged 2014 Boss 302 and promptly ran his quickest elapsed time yet at the Street Car Takeover event in North Carolina with the Holley EFI-tuned combo. Competition Auto developed its own, custom harness for the Gate-Way to fit in the crowded confines of an engine compartment with turbos.



It is necessary to tap into the factory air path to install a MAP sensor, but it is easy enough to do so. With the Holley EFI installed, the system will rely on this sensor and the wideband oxygen sensor and leave the mass air sensor out of the picture.



With the installation complete, the Holley EFI controller looks right at home under the hood of a Mustang.



The aforementioned harness is compatible with US Shift's Quick Shift standalone transmission controller for 2011+ Ford 6R80 automatic transmissions. This controller allows adjustment of shift points, shift firmness, torque converter engagement, and more.

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Rick Anderson Competition Engineering

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