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Instant Gauges and More

Installing the New Banks iQ Flash in Project TDI

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As diesel enthusiasts, we all want as much information as we can get on the performance of our vehicles so we know when we are getting close to the danger zones, in terms of EGTs and trans temps. To that end, several domestic truck makers have started to include boost and trans temps gauges with their trucks—but no one has decided to add an EGT gauge.

You would certainly think that the German engineers at Volkswagen would be the first to expand their gauge offerings beyond the stock tach, speedo, fuel level and coolant temperature gauges. We guess that the rationale behind this, other than cost, is the typical German attitude that they make the best stuff, so you don't NEED to monitor anything else than what they give you.

While this may be fine for stock vehicles that are nothing more than daily drivers, we wanted more information on the 1.9L TDI engine in our '06 Jetta TDI, because we've modified the fuel system and are looking at other upgrades, such as a new turbo, etc. And unlike most trucks, in which A-pillar pods and traditional gauges are the norm, our VW is equipped with air bags in just about every nook and corner of the cabin, so A-pillar pods are out of the question. We have seen a few other pods that locate the gauges on the steering column or the top of the dash, but we wanted something

cleaner that would give us more information.

Thankfully, the engineers at Banks Power have developed the Banks iQ. It offers a 5-inch LCD screen to



The Banks iQ Flash comes with everything you need to install it in virtually any '96-and-newer car or truck. Note the optional sun visor, back-up camera and navigation card shown in this photo.

The display is large, bright and easy to read, allowing you to monitor vital engine stats at a glance—even in bright daylight, thanks to the sun visor.



display virtual gauges. The latest version, the iQ Flash, can be installed in virtually any '96-and-newer vehicle with an OBD II diagnostics port, thereby allowing the iQ to be added to millions of cars and trucks currently on the road. It features a slim profile with rounded corners, along with the 5-inch touch screen that is large enough to display easy-to-read vital information for the driver's use.

A mini-USB connector on the left side of the chassis is used to connect the iQ Flash to the Banks Bridge. It also has an audio/video input and a 3.5mm audio output jack that can be used to connect it to your car stereo with an auxiliary 3.5mm input jack. To make the iQ even more convenient, it has built-in Bluetooth capability that can be used for hands-free phone operation or to stream music from your smartphone.

INSTALLATION

Installing the iQ Flash is a breeze. In most cases, it will take about 15 minutes. Installing the iQ Flash in our '06 TDI Jetta took about 45 minutes, because the under-dash panel had to be modified to clear the interface cable (and not forgetting the typical slowdowns for photography). The basic installation in most vehicles will simply be to plug the interface connector into the OBD II port, route the USB cable to the top of the dash, install the windshield mount, secure the Bridge Module and any excess harness under the dash, and enjoy. It really is that easy!

Of course, if you are installing any of the peripherals, such as a tuning module or back-up camera, it will take more time. Nevertheless, these are still plug-and-play, so it will be easy for the average DIYer, too.

INFORMATION

The iQ Flash uses its 5-inch display to show the driver five selectable gauges at a time in either a digital display or analog simulation. The position, color, style and function of the gauges can be selected by the user; there is an almost unlimited number of possibilities, with up to 50 possible individual gauge parameter selections—meaning that the device has 753,984 screen configurations. The individual gauge parameter possibilities do vary by vehicle, so we won't provide a list here. But suffice it to say, you can monitor a lot more than the factory gauge cluster ever allowed.

In our VW, we initially set the gauges to analog style and adjusted the colors to a very close match with the black factory gauges with blue illumination. The needles are both red, so they



1 On our VW, the OBD II port is recessed in the panel (see arrow) under the dash. Remove the panel with a T20 torx bit or driver to remove the two screws along the edge of the dash, then lower the panel and remove the OBD port from the panel by depressing the release tabs. Then, remove the panel from the car.



2 We notched the panel (see arrow) to make room for the lead from the Banks Bridge Module to plug into the OBD II port without kinking the cable.



3 With the OBD port back in the panel, the Banks Interface Connector plugs directly in, and the notch we made lines up to allow the cable to be routed cleanly under the dash.

look very good together. We chose to display the intake manifold pressure on the largest gauge to act as a boost gauge. While it is technically not a boost gauge, it does provide the absolute manifold pressure, so by doing some quick math, you can subtract barometric pressure (about 14.7 psi at sea level) and have a boost pressure reading. The other virtual gauges we are currently running cover intake temperature, engine airflow, engine temperature and vehicle speed. We chose the latter two to verify the factory gauges, knowing that the VW speedometer reads faster than you are actually traveling. (It's nice to have a GPS-confirmed speedometer.)

•TUNING

Currently, the iQ Flash has the ability to incorporate Banks tuning for Dodge, Ford, GM and Jeep vehicles, with other manufacturers coming online in the future. Loading and selecting a tune is a simple and straightforward process because of the iQ's easy-to-follow on-screen prompts. We look forward to the engineers at Banks bringing more vehicles online for tuning.

•NAVIGATION

Using navigation software and mapping from Navteq Maps (a third-party vendor), the engineering team at Banks Power was able to integrate navigation capabilities into the iQ Flash through its onboard GPS receiver. The optional Banks Navigation is sold on a micro SD card that must be inserted into the micro SD slot on the iQ to enable the functionality. It works great and features voice prompts and turn-by-turn directions to your inputted destination. The software features 7 million points of interest (with phone numbers) throughout the United States and Canada.

A dedicated compass screen is also included for adventurous



4 To route the mini USB interface cable up to the top side of the dash, you will need to remove the fuse access cover and side panel trim next to the dash.



6 Use caution when removing the A-pillar cover—there is an airbag hidden below it. Remove the airbag logo in the upper part of the pillar to reveal the torx screw securing the cover and carefully and gently pull the cover away from the pillar. It is further secured with three plastic panel retainers, as well as two clips at the bottom of the cover.



7 With the panels removed, the USB connector can be snaked through from under the dash and up to the windshield area, where the Banks iQ Flash will be mounted.

types who like the challenge of navigating on their own. In addition to the large compass display, four selectable digital readouts can display one of 10 various measurements, such as GPS speed, elevation, longitude and latitude.

•ECONOMY

A dedicated economy screen can be used as a tool to help coach you to better fuel economy while driving. It shows bar graphs for average and instant fuel economy in mpg, with three other selectable digital gauges. Having the fuel economy data readily available helps you maintain fuel-efficient driving habits—and who's gonna complain about getting more miles from each expensive gallon of fuel we purchase? The internal processing can also be used to measure operational cost per day or per trip and even inform you of fuel used and range or distance to empty, making it a valuable tool for road trips and vacations.

•PERFORMANCE

Using the internal sensors, combined with GPS signals and data received from the vehicle, the iQ Flash can be used as a



Now that we have enough slack to locate the iQ where we want, the panels can be reinstalled in the reverse order—using caution with the panel retainers and around the airbag.



Banks Power supplies a very nice suction cup windshield mount for the iQ Flash. After cleaning the windshield with the alcohol prep pad included with the kit, position the mount and flip the lever to attach it firmly to the windshield. Then orient the screen in the position that will make it easiest to read and the least obstructive to the driver's view. Tighten the adjustment knobs.



With the lower dash panel reinstalled, the Banks Interface Connector almost disappears, and the notch we cut lines up perfectly to route the cable without kinking.



The iQ will greet you with the wakeup screen upon start-up after you complete the installation and turn the key on.



The Economy screen will prove invaluable, especially for TDIers yearning to squeeze the most efficiency out of every gallon of fuel. We managed to average 42 mpg after a few hours of driving around (mostly city driving) with the iQ in the Jetta.

performance monitor. You can measure and recall 0-60 mph, 1/8- and 1/4-mile runs, allowing you to practice and evaluate performance upgrades you make on your vehicle.

We didn't have room to safely make 1/8- or 1/4-mile passes with our TDI, but we did make a 0-60 run that took slightly more than 10 seconds and a bit fewer than 550 feet. Looking at the frame-by-frame recall, we could see the speed, distance, rpm, engine load and time—all graphed at roughly 1/10-second intervals. This is a fun feature that could actually help you out at the track. We like it.

•DIAGNOSTICS

Not only can the iQ monitor its own internal functions and connection to the Banks Bridge, it can also monitor the vehicle's function



Even with navigation in nearly 50 percent of people's pockets with smart phones, it is nice to have a dedicated navigation system that will work—regardless of cellular coverage.



We were able to use the color adjustments built into the iQ to match the illumination on our VW gauges nearly perfectly.

and check and clear diagnostic trouble codes (DTCs) when that pesky check engine light pops up. This feature can help you pinpoint problems when repairs are needed. You can also set on-screen alerts to warn you of potential danger before problems crop up.

•ENTERTAINMENT, AD-ONS AND MORE

The Banks iQ Flash is about the size of a small tablet computer and offers similar functionality: the 4GB internal memory and support for 8GB-plus through the micro SD slot permits you to store a lot on the iQ. It also sports an internal lithium-ion battery so that you can take it with you and use it outside your car or truck as a music player, movie player or e-book reader. It even has a few built-in games.

Since the iQ runs on the Microsoft Windows CE version 6.0 operating system, it is natural to have a productivity zone in which PowerPoint, Word, Excel and PDF files can be viewed, along with WordPad, calculator, image viewer and desktop software, making the iQ Flash a powerful tool.

The engineers at Banks Power aren't finished with the iQ family yet; they are hard at work, putting the finishing touches on expansion modules such as a turbo timer, water-methanol injection control, boost controller, pyrometer and intake density meter (to name just a few). Currently, the navigation system, back-up camera, travel case with speakers and sun visor are available from Banks to work with your iQ. We look forward to reviewing the expansion modules as they become available.

The Banks iQ Flash is a great way to add more gauges to your car or truck, but it is also so much more than a monitor. It can be the heart of your ride. As we have used it, we find more and more features that we love, and we're sure you will, too.

It is certainly a clean and easy way to monitor the TDI engine under the hood of our little Jetta. **DW**

Sources

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 546 Duggan Avenue
 Azusa, CA 91702
 800.510.5046
www.bankspower.com/iq5