PLAYING WITH FIRE

Maintaining the... Computer?

by Jon Rodriguez

Welcome to a new era of vehicle maintenance. Computer flashing can not only help and sometimes cure driveability issues; it can also prevent future problems from occurring. Routine checks for the latest computer calibrations can bring in extra income and show your customers that your shop is up to date.

Now is your chance to get involved with computer programming. This can not only provide an extra service to your shop but also give you an edge against the competition. The added value of offering a reflash with every rebuild is something that will separate your business from the rest.

Just because you don't have the equipment to perform flashes doesn't mean that you can't sell them as a service. Many general automotive shops are equipped with flashing technology, because most updates have to do with emissions and engine driveability issues. There may even be a mobile "flasher" in your area who'll come to you and perform the update right in your shop. If those options aren't available, check with your local dealer; they'll probably do it for you at a wholesale price.

"My car runs fine! Why do I need to have the computer reprogrammed?" That's a common question you might get from a customer when trying to sell a flash. The easiest way to sell this type of service is to relate it to the Windows computer operating system. Most people today are familiar with computers and the constant need to keep the latest software updates current for optimum performance. The same goes for your car: To keep your car in tiptop performance, the computer's software calibrations must be kept up to date.

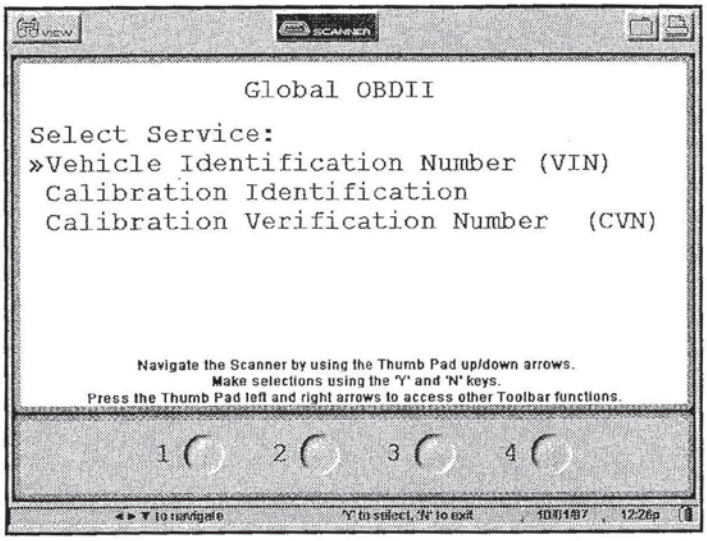

Figure 1

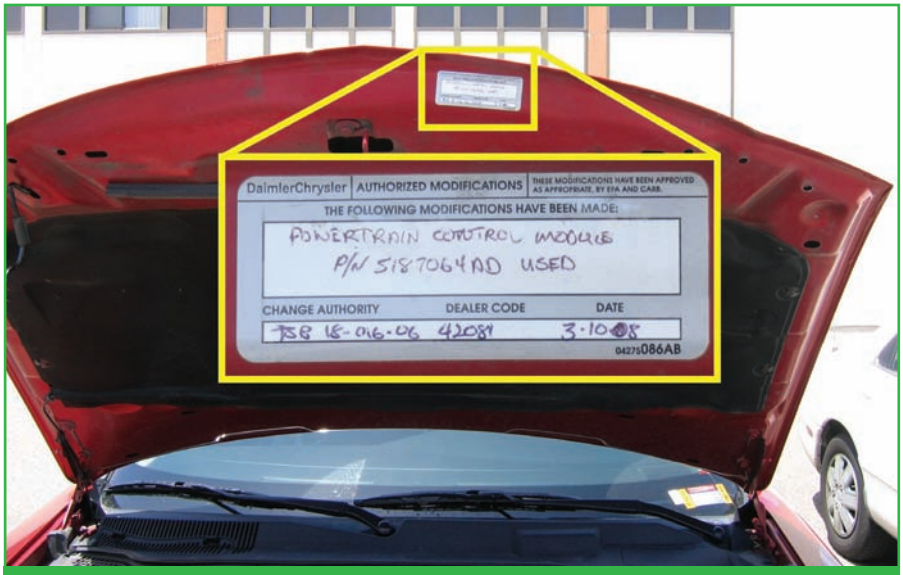

Figure 2

"Is there a maintenance timeline for when the flash should be performed?" No. What we're going to talk about is how to look for a calibration using the free access web sites that just about every manufacturer has available.

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With some basic information from the vehicle, and basic internet access, you can see in a matter of minutes whether there's an update available. For the sake of not taking up the whole magazine with step-by-step instructions for every manufacturer, we're going to focus on the Big Three.

Chrysler

Access the *Vehicle ID* information using your scan tool's global OBD-II feature (figure 1). This allows you to make sure you have the right computer in the vehicle, and it hasn't been swapped with a different vehicle's computer.

This is a valuable tool when diagnosing a problem that may be caused by a mismatched computer. An example would be a P0730 in 4T60E and 4T65E transaxles. If the PCM was swapped with a vehicle that was calibrated for a different final drive ratio, the code would set just like if you were to install a wrong ratio differential in the transaxle. Using this feature of your scan tool is the only way to accurately diagnose this situation.

After you've established communication with the computer, choose the *Read Vehicle Identification* option. Standard OBD-II documentation calls this function "Mode $09", but most scan tools don't use this term.

You'll see three options:

1. Vehicle Identification Number (VIN)
2. Calibration Identification
3. Calibration Verification Number

First check the vehicle's VIN. Make sure the vehicle's VIN matches the one provided by your scan tool. If not, the computer's been replaced with another unit (most likely from a junkyard), and will need to be replaced with the correct computer. This information is available on 99% of the OBD-II vehicles and is very useful for determining whether the correct computer is in the vehicle.

If the VINs match, the next step is to access the ten-digit part number from the *Calibration Identification* option. This Cal ID will have eight numbers followed by two letters. Write it down and log onto the internet.

After flashing the computer, the

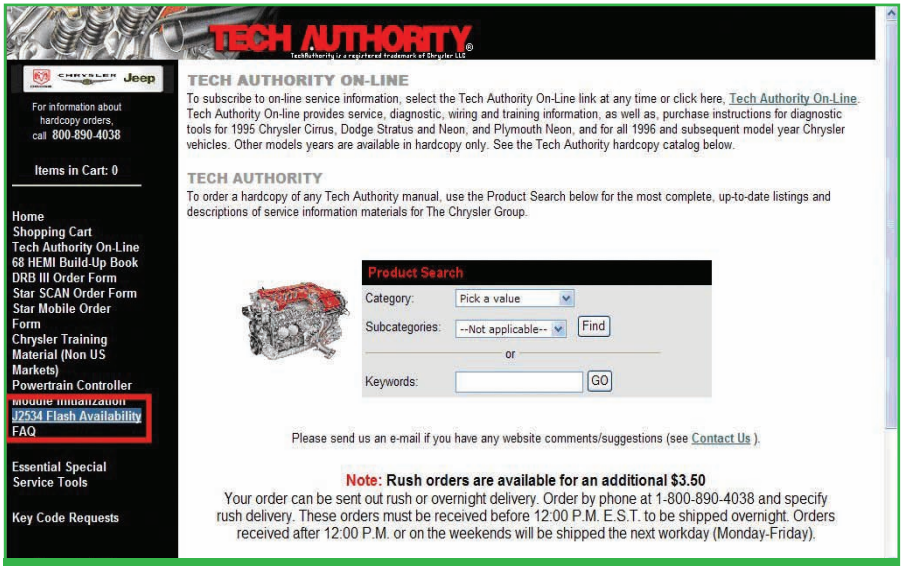
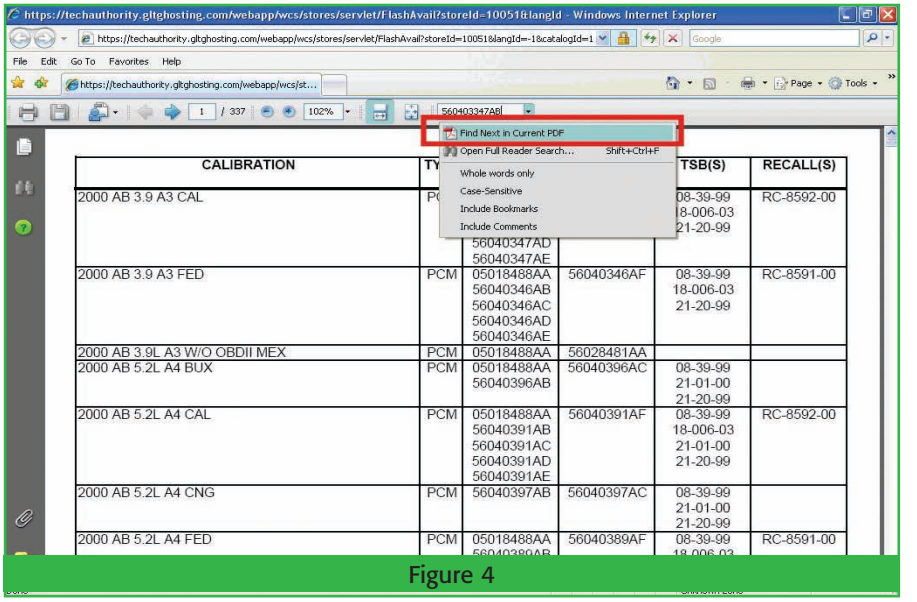


Figure 3



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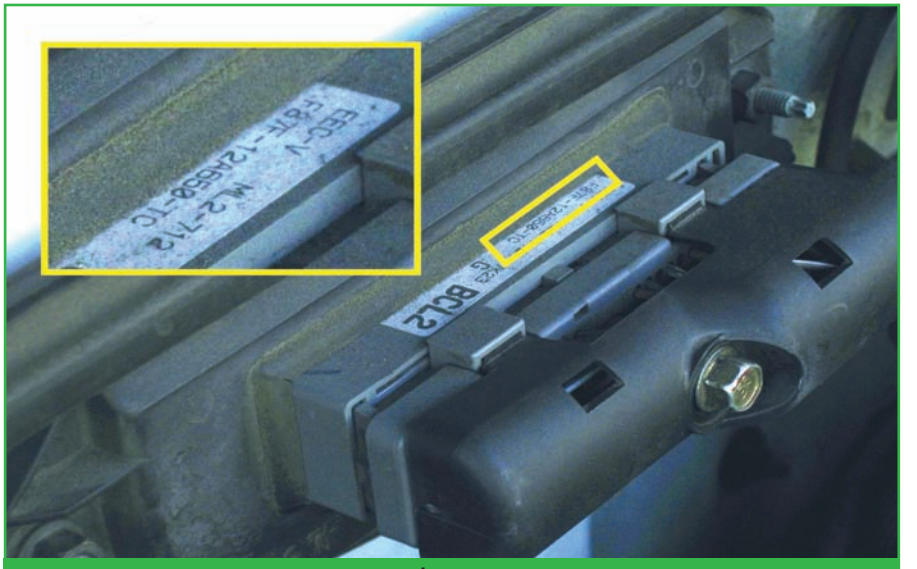
Figure 5

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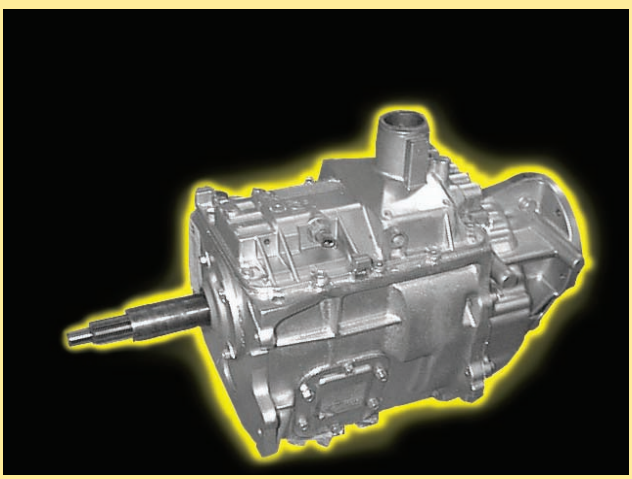

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- Chains

Whatever It Takes

technician should've marked the latest Cal ID number on a sticker somewhere in the engine compartment. On this vehicle it was located on the hood (figure 2).

Go to http://techauthority.gltghosting.com. Notice there's no www before the address. At the left of the screen you'll see *J2534 Flash Availability* (figure 3). Clicking that link will load a 337-page file full of vehicle applications, part numbers, Technical Service Bulletins (TSB), and recalls.

Type your part number in the *find* box at the top of the PDF file page, click on the scroll arrow next to the box, and click on *Find Next in Current PDF* (figure 4). Your part number will show up in one of two areas. If you find it in the Old Part Numbers section, the computer needs an update. If the part number shows up in the New Part Numbers section, no flash is needed. No matter what section it shows up in, there will be a list of TSBs that apply to that vehicle and maybe even some recalls.

All of this should have taken you less than 15 minutes, and it provides you with a printed copy listing information about the vehicle that you can't get anywhere else.

Ford

Access the *Vehicle ID* using the global OBD-II function with your scan tool, to make sure the computer is correct for the vehicle. After you've matched the vehicle's VIN, access the computer and record the seven-digit part number from the computer. The part number will be an alphanumeric code with four digits, a dash, and then three more digits (figure 5). Take this information, along with the year and engine size, and log onto the internet.

Go to http://www.motorcraftservice.com. At the left of the screen, look for *Quick Guides* (figure 6). Clicking on the Quick Guides link will take you to a screen with 13 different options (figure 7). The seventh option will be *Latest Calibration Information*.

Clicking on Latest Calibration Information will take you to a screen with some basic instructions. Go to the bottom of that page and click on *Search*

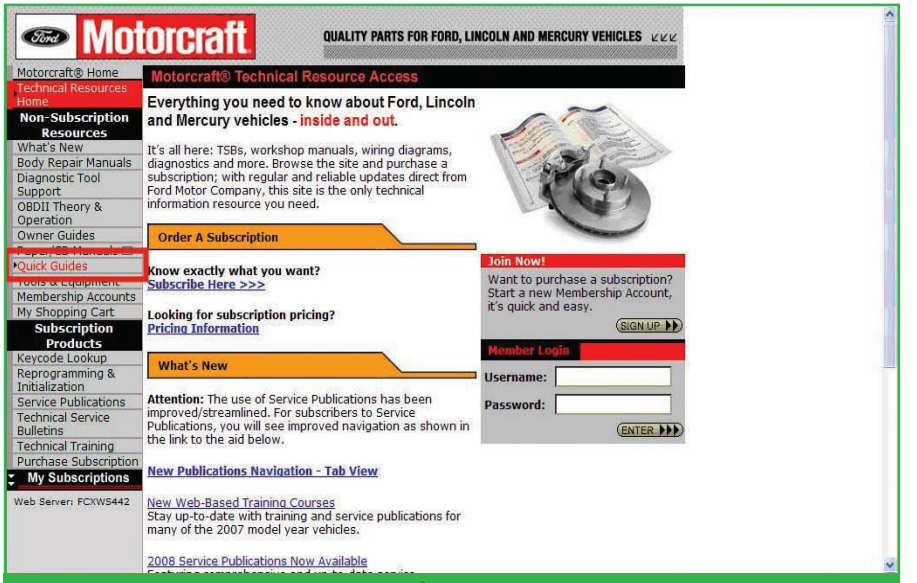

Figure 6

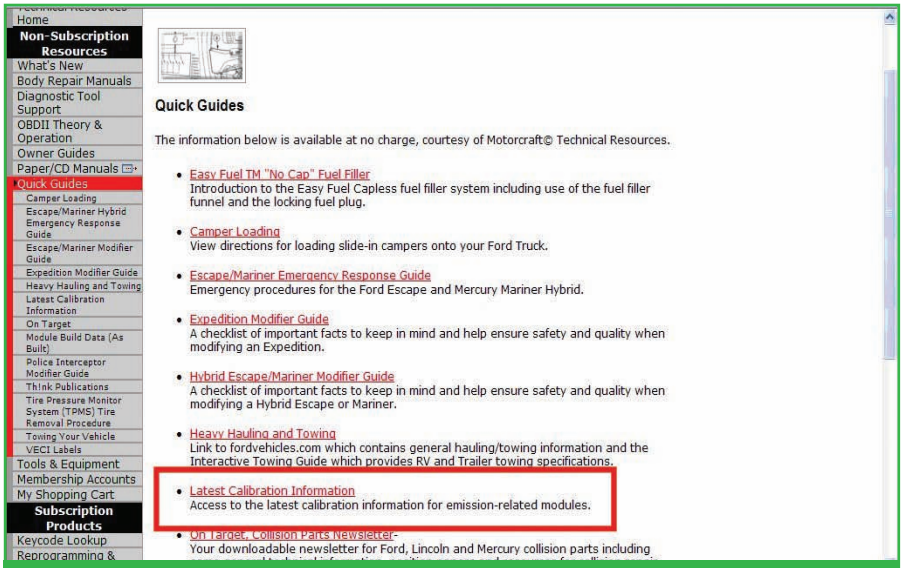

Figure 7

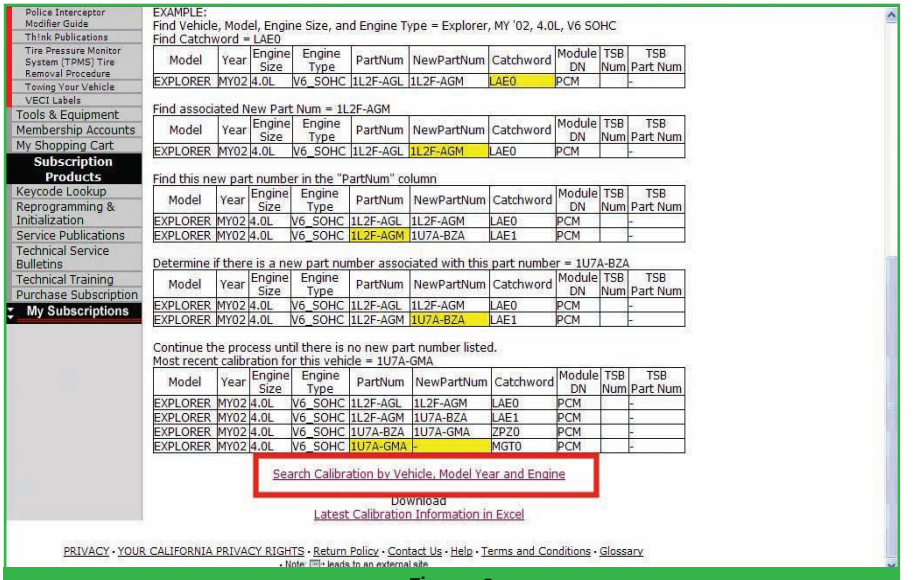

Figure 8

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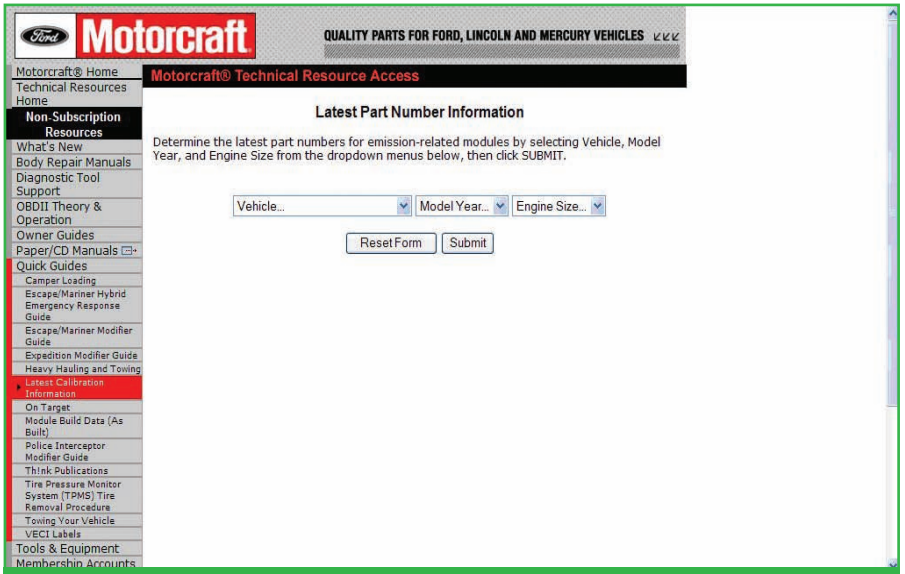

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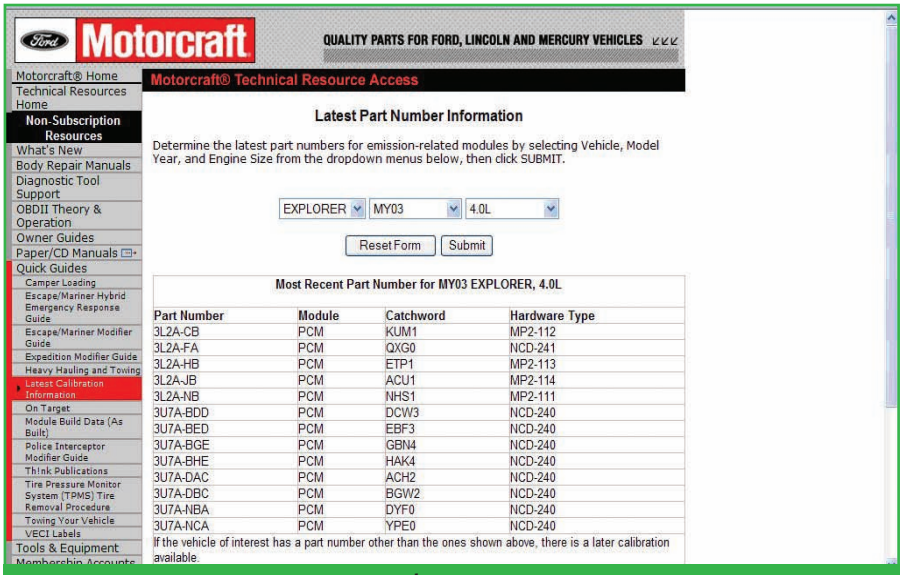


Figure 10

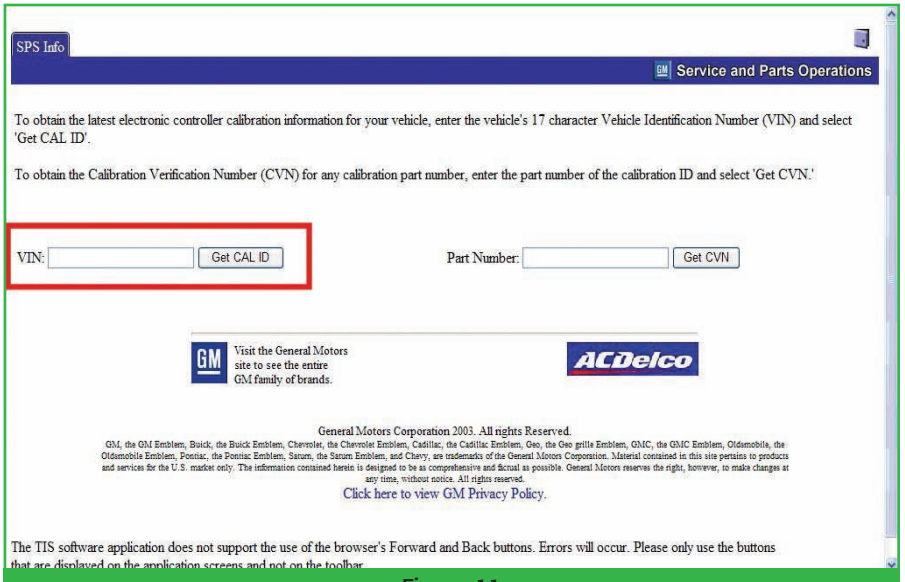


Figure 11

The advantage of General Motors' and Chrysler's system is the new calibration shows up on your scan tool in Mode $09.

Calibration by Vehicle, Model Year and Engine (figure 8). That will take you to a screen asking for the vehicle, model year, and engine size. After filling in the necessary info, click *Submit* (figure 9).

If you entered all the vehicle information properly, you'll see a list containing part numbers, module IDs, catchwords, and hardware types. If your vehicle's computer part number *isn't* on the list, there's an update available (figure 10).

General Motors

Use the *Calibration Identification* and *Calibration Verification* numbers located in the global OBD-II (Mode $09) area of the scan tool. Access the screen that shows the VIN, match the VIN to the vehicle, and record the Calibration ID and Calibration Verification numbers. Then access the computer and record the eight digit part number. Take this information and log onto the internet.

Go to http://tis2web.service.gm.com. Notice there's no www before the address. This will take you to the home page where you will see two options: Enter a VIN and *Get CAL ID,* or enter a part number and *Get CVN* (figure 11). We're concerned with the CAL ID, so enter the VIN and click on *Get CAL ID*.

If you entered the VIN correctly, you'll be taken to a page with five different options. Choose *PCM/VCM Powertrain/Vehicle Control Module* and click *Next* at the lower right of the page (figure 12).

You'll now be at a page with several different computer part numbers. Click on the *Complete History* button at the lower left of the page (figure 13). This will provide all the calibration information available for the vehicle, including the description of the faults that the software update will address. Use the PCM part number, Calibration ID, and Calibration

Verification Number (CVN) to find the update pertaining to your vehicle (figure 14).

If you can't find the Calibration ID and CVN for the vehicle's computer, it *doesn't* need a software update. If the Calibration ID and the CVN are listed, a description of the updates will be next to the numbers.

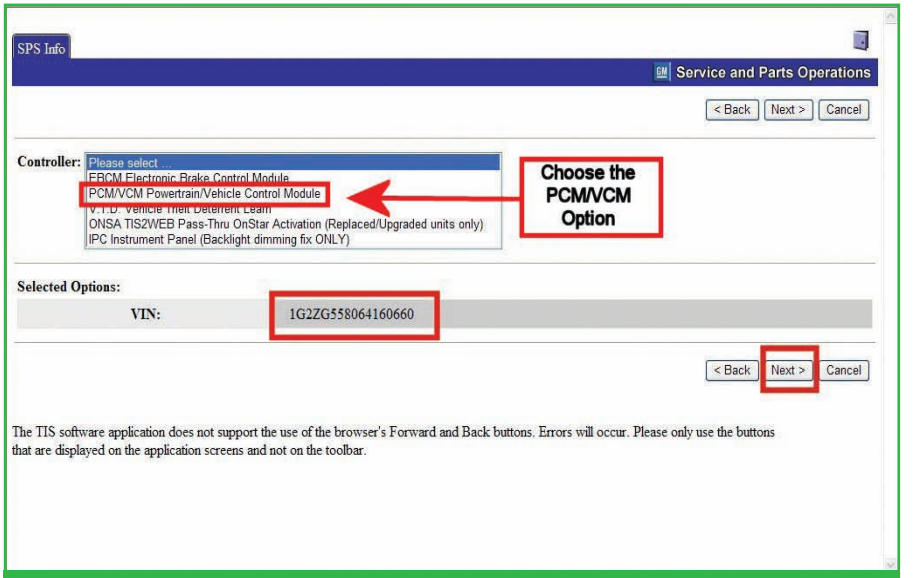
The advantage of General Motors' and Chrysler's system is the new calibration shows up on your scan tool in Mode $09. In Ford, if a technician didn't install the updated information on the PCM or radiator support, the updates may have already been performed, even though they don't appear on your scan tool.

Remember, you can't flash the computer if there are any codes in memory. If you come across a hard code that you've diagnosed as a computer problem, a flash won't fix it. Hard faults in the computer are hardware-related; you'll need to replace the computer.

Sometimes a flash will address an intermittent code by widening the parameters that the computer uses to flag a code. In that case, you'll need to clear the code, and then perform the update. For those situations there'll usually be a TSB detailing the code flash part number.

Keep in mind that the web sites are always changing their formats, so the steps we covered here could change, but the information will always be available to you. If your shop isn't reprogramming, I hope this article will take you a step closer to implementing this very useful and profitable program… one that will someday be as common as a scan tool is to shops today. And you can still use this information even if you don't have the flashing equipment, to determine whether a flash will be useful to the customer.

For more information on reprogramming, be sure to attend Bill Brayton's seminar titled, "Computer Reprogramming: Earning Good Money without Getting Your Hands Dirty" at this year's EXPO in Las Vegas.



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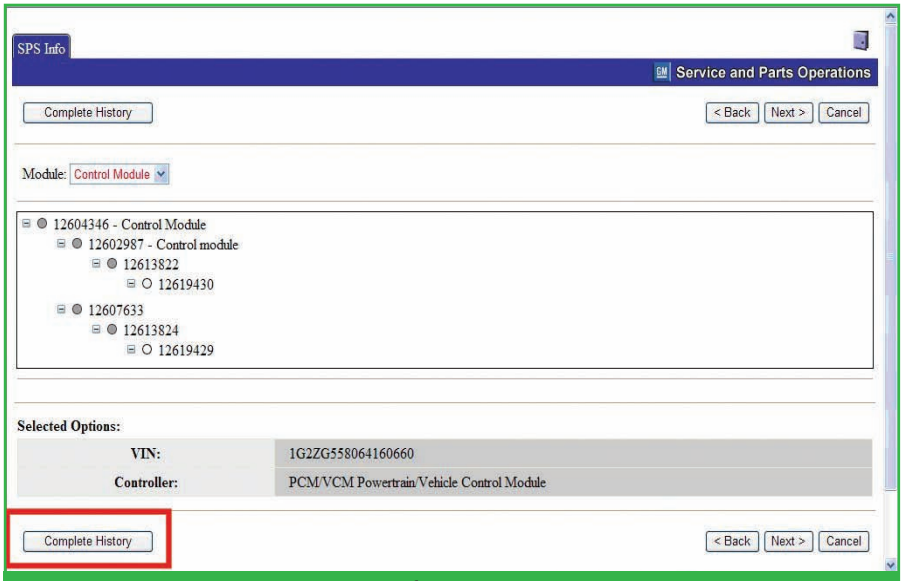

Figure 13

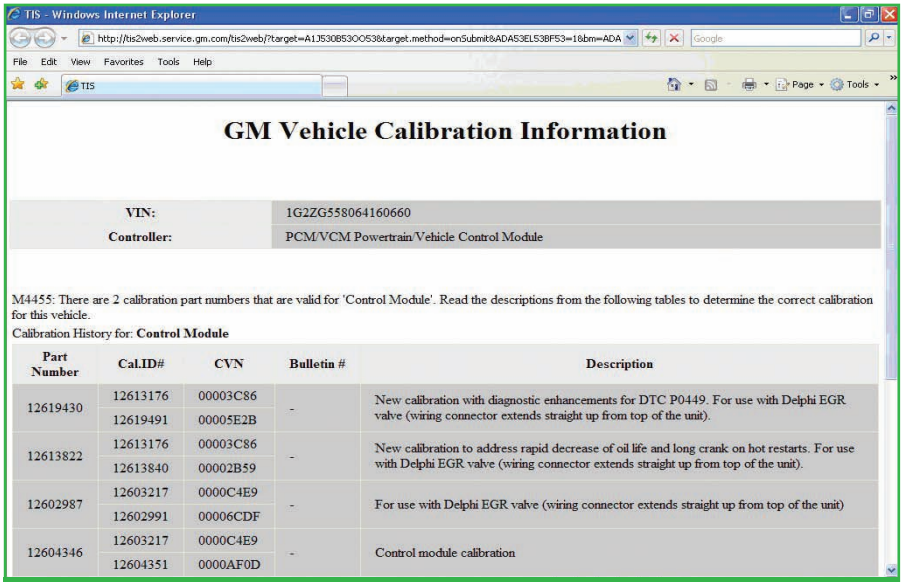

Figure 14