

TECHNICAL Feature



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Dealer Service for Collision-Repaired Vehicles

Lane departure, automatic cruise control, accident-avoidance technology, parking assistance, discriminating or “smart” airbags and occupant-classification systems are just some of the advanced features that used to be exclusive to high-end luxury vehicles that can now be found as standard equipment in most of today’s vehicles. The electronic computer-controlled systems in vehicles are very advanced and reliable, but they sometimes need updates and/or relearning (just like any computer component.) This has never been as important as it has been over the past few years. During a collision, vehicle components shake violently; in some cases, parameters and/or settings within the component become locked or frozen, which generally sets a Malfunction Indicator Lamp (MIL). When a vehicle is involved in a collision and a MIL is not set, this can lead to multiple issues if the system is not checked and a malfunction exists. If the repair facility does not scan the vehicle and look at the OEM repair information (which, in many cases, can be difficult to find), the facility may release a vehicle to the consumer that may not perform in the manner in which it was designed. Think of it this way: If you drop your laptop computer, smartphone or tablet device, it will most likely fall at about a rate of five to eight miles per hour and probably not work anymore. Conversely, the majority of vehicle collisions can occur at a much higher rate of speed, but unlike your hand-held computers, the computer components within vehicles can generally be reset.

So you may ask what you can do to prevent this from happening in your shop. Well, for one, you can set up a simple Standard Operating Procedure (SOP), which would require a scan (using a general scan tool or code reader) of each and every collision-damaged vehicle that passes through your shop. Many equipment suppliers produce scan tools that can read if any Diagnostic Trouble Codes (DTCs) are stored in the vehicle’s memory; some can even clear and/or reset the codes. If you scan each and every vehicle that passes through your shop, you will accomplish two things: You would know which systems may be inoperable or need attention during your damage analysis, and you would know what codes have been set and can prevent mistakes from occurring after the repairs are complete, thus ensuring a timely repair cycle. But even if you can scan the vehicle, you will most likely need to send the vehicle to the local dealership to have the vehicle scanned with the OEM-specific computer. This is generally required to relearn or reset system components, as most repair facilities do not own the vehicle-specific scan tools, as it would be cost prohibitive. You might be asking why a vehicle would not set a MIL? Well, in many cases, the vehicle is running but not performing properly. Some tell-tale signs (from some repair manuals) are poor idling, trouble starting the vehicle, poor fuel efficiency, inconsistent shifting, changes in steering effort and parking aid distance inconsistencies.

Because there is no single scan tool that can read and clear every single vehicle for every single DTC, collision repair facilities must understand the importance of sending the vehicle to the dealer to scan the vehicle systems to ensure they are operating properly.

Let’s look at some examples of manufacturer-required procedures after collision repairs have been completed that would require service at the dealer:

■ **Most OEMs require the passenger-occupant system to be re-weighted/reset after a collision. This system has many names, but you might see it referred to as the Occupant Classification System, Occupant Weight System, Passenger Airbag Disable System or a similar name. Basically, the dealer must use a specific set of weights and the OEM software to reset the so-called scale in the seat.**

■ **Porsche requires models with parking aids and lane departure warning systems to have the system reset if the front and/or rear bumper fascias are removed and reinstalled. This is because the sensors are mounted directly to the fascia, and the removal of the fascia now puts the sensors in a different location. The sensors have to be reset so the module knows in which direction they are pointing or looking.**

■ **Mercedes-Benz requires the air conditioning system flap door control module to be normalized after disconnection of the battery, as the system needs to be synchronized with the climate control module. If this is not done, the operator may select the defroster and the air will blow out from the bottom of the dash.**

■ **BMW requires the re-aiming of the Active Cruise Control (ACC) during the wheel alignment, if the camera was removed and reinstalled. If this is not performed and the operator sets the ACC, the vehicle may drift out of the lane without warning the driver, or the vehicle may impact the vehicle in front.**

■ **Most OEMs require the re-aiming of the back camera if the camera is replaced, or if the hatch/liftgate is removed and reinstalled. Many of us have seen the lines in the camera view; the lines shown are from data in the steering angle sensor. These lines let the operator know which way the vehicle will move when in reverse based on the angle of the front wheels.**

■ **Many times, a dealer will be required to perform the wheel alignment to a vehicle due to the above-mentioned systems, but also for air suspension systems with auto ride heights, body roll/control systems, etc., as these systems are adjusted during the wheel alignment**

and, in some cases, require the OEM software.

■ Some higher-end luxury vehicles are equipped with a pre-collision/pre-safe type system that performs some adjustments to the vehicle when a collision is imminent, for occupant protection. This system requires re-setting after a collision.

■ Some manufacturers require specific procedures just to disconnect the battery. These include leaving the vehicle ignition in the "ON" position prior to disconnecting the negative cable or using an OEM scan tool to disable certain systems prior to disconnection of the electrical system.

■ Some vehicles are equipped with adaptive headlamps that allow one or both of the lamps to turn to allow better vision for the driver during turns and require OEM software to align and reset after the lamps have been removed and reinstalled or replaced.

Collision repair professionals must understand the importance of checking the vehicle's computerized systems and memories, and understand who can reset these systems. Not knowing there was a problem or claiming there were no MILs present is not an excuse for not checking the vehicle systems. A lot of problems can be avoided by having the dealer check over the vehicle. This would also provide some liability protection to the repair facility, as the dealer checked the computer systems and gave the facility a cleared vehicle report (invoice).

We hope this article has helped the industry to understand the importance of having the vehicle's computerized systems checked, cleared and/or reset to ensure the vehicle operates and drives properly. Feel free to contact us if you have any questions.



Executive Director's Thoughts

The changing technology in today's vehicles, from any end of the spectrum, increases the need for continuing education. Everyone knows that education has costs, just as upgrading equipment does. Knowing those expenses and making them a priority can also lead to understanding your true costs of being - and staying - in business. Charging for what you do becomes paramount. - Jordan Hendler

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P&L Consultants also offers in house consulting on the following:
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