RAM DIAGNOSTIC TROUBLE CODES

A Publication of the TURBO DIESEL REGISTER

A WORD ABOUT THE TURBO DIESEL REGISTER

How did the Turbo Diesel Register get its start? First off, I'm an automotive enthusiast. An automotive enthusiast that was in search of a tow vehicle for my admittedly small collection of automobiles. As you can imagine, the search for the right tow vehicle took me in the direction of the Ram Turbo Diesel. My search was aided by the fact that my previous job was in the diesel engine profession as a Cummins distributor product support representative. Do I have a good knowledge of the Turbo Diesel engine? Well, maybe. I'll let you be the judge.

Back to the "story." As an automotive enthusiast, I am a member of a handful of car club/register type publications. In addition, I subscribe to just about every car and truck monthly publication in hopes that I can learn something more about my vehicles. The only vehicle I owned that didn't have its own club was the Turbo Diesel. The light goes on. Why not start a Turbo Diesel club? The light flickers. I know the immediate answer: not enough time, no money, and who would write the articles? Needless to say, the idea got put on the back burner. Another great idea, but…

Looking back, that was many long years ago. Prior to our first magazine (Fall '93) I took time to talk to other Turbo Diesel owners who wanted to know more about their truck and specifically the Cummins engine. At the time I knew the Turbo Diesel Register would work. I also knew it would be a lot of hard work With an up-front monetary investment and the commitment to publish the magazine.

Positive discussions With other club/register publishers and an unofficial "good luck" or two from the manufacturers, and well, I was still hesitant. Back to the all-important concerns: time, money and writing skills. Time? In the initial two-career-days it was nothing to stay up until 2:00 a.m. Money? What the heck, we took out a second mortgage. And writing skills? You've heard the saying, "if it is to be, it is up to me." Thus, we started the TDR way back in the summer of 1993.

Robert Patton
TDR Editor

PS. We hope you'll learn something from the following collection of tips and Ram technical data. Please realize this booklet is just the "tip of the iceberg." The TDR and its members provide a wealth of information. How to join? Please fill-out and mail the order form or register on-line at www.turboDieselregister.com.

Join Us Today!

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RAM DIAGNOSTIC TROUBLE CODES

How do I start this story?

Let's take a short look at our truck's 20+ year evolution. How many electrical controls were on a First Generation Turbo Diesel? Answer: none. If I'm not mistaken, we didn't see on board diagnostic (OBD) plug-in ports until the Second Generation trucks in 1996. (Or, was it 1998.5?) Regardless, today's truck owner and service technician would be lost without code-this-that-or-the-other.

How do you read these diagnostic trouble codes (DTCs)? What do all of the codes mean? How does one determine the severity of the code? How many codes does a Ram service technician have to deal With? How do you access and read the codes?

Great questions. To answer them I went to the TDR's web site and in the Member's Area I clicked on Buyer's Guide. Then, starting on page 300 and continuing for 8 pages, there is an article titled "DTCs and You." The article was authored by yours truly; the TDR's Joe Donnelly and John Holmes; and television celebrity/TDR writer/ASME mechanic/lots of other titles (ask his wife Diana) Sam Memmolo.

Close reading of "DTCs and You" (see next page) will answer all of the above questions.

Well, it will answer almost all of your questions.

I say "answer almost all of your questions" because there are questions you don't know enough, to know enough, to ask.

Did you follow that?

The point of this rambling: In late 2014 TDR writer Joe Donnelly sourced 25 additional pages of diagnostic trouble codes that are used in your Fourth Generation (2010-current) Ram truck. So, just like the evolution from zero codes in 1996 to the two pages of codes found in the Buyer's Guide article, we now have 25 pages of codes that a Ram technician can source on his diagnostic equipment.

In John Holmes' portion of the Buyer's Guide article (again, see next page) he covers the all-too-familiar "P" codes (powertrain) and he mentions "B" codes (body), "C" codes (chassis). Back then we only focused on the P codes. Joe Donnelly's 25 page update gives us P, B and C codes as well as listings for "U," which deal with diagnostics with the truck's body control module/communications center. (Think anything from stereo speakers, to curtain air bag deployment, to "Frontal Squibs.")

If in need, I hope you take full advantage of this resource. I'm thankful that we have this data available for you. Thanks, TDR members and writers!

Robert Patton
TDR Staff

DTCs and You

A Collection of Articles by the TDR Staff

You have got to love abbreviations. What is a DTC?

Better yet, what is a CEL, a SES, or an MIL?

DTC: diagnostic trouble code
CEL: check engine light
SES: service engine soon light
MIL: malfunction indicator light

All four abbreviations mean the same, there is some kind of a problem under the hood. But, how much of a concern should the glowing red light (ha, ha a GRL?) be to you? And, how do you retrieve the trouble code and determine its meaning?

As is the case with most things related to the Dodge/ Cummins Turbo Diesel truck, our membership group has "been there and done that." Therefore the following is a collection of articles that I've arranged in a sequence for the best understanding.

- Issue 51: Author Sam Memmolo gives us background information on DTCs.
- Issue 66: Author John Holmes tells us about the most common DTCs that dealership technicians encounter. This article also has a discussion about the severity, or lack thereof, of DTCs.
- Issue 55: Author Joe Donnelly discusses DTCs for '98.5 to 2007 vehicles.
- Issue 67: Editor Robert Patton gives the audience an update on DTCs for the '07.5 and newer 6.7-liter engine.

"DTCs and You," I am hopeful this collection of articles will shed some light (pun intended) on the subject. Seriously, tell your fellow Turbo Diesel owners about your new found understanding of codes and about the TDR magazine.

Robert Patton
TDR Staff

From Issue 51:
WHAT DOES THE CODE MEAN?

by Sam Memmolo

DECODING YOUR WARNING LIGHT!

Recently the TDR's editor called me and asked me to explain the trouble code quandry that many of us will face as we drive computer controlled vehicles. The call was prompted by an owner that had purchased a 2003 Dodge Shop Manual but was bewildered by the omission of the diagnostic trouble codes from the book. As a benchmark I consulted a '99 manual and was only able to see the code numbers and their meanings. A call to a Dodge contact revealed that the purchase of an additional 2003 Powertrain book (at 1300 pages) would be necessary to access the codes, their meanings, probalby cause, and action descriptives. Wow, that book would be another $40. Worth it? At 1300 pages the book offers troubleshooting tests to help the technician trace the cause of the diagnostic trouble code. This information was not available in the 10 pages of codes in the old '99 book. So the question goes back to the truck's owner, "How much do you want to know?"

I'll try and help you sort through the DTC dilemma. But, first let's take a quick trip back in time before there were electronic engine and powertrain management systems. From the automobile's beginning the internal combustion engine was fueled With a mixture of air and fuel.

With stricter environmental legislation (circa late '70s), the manufacturers realized that mechanical engine fuel and spark controls were not reliable or durable enough to maintain the optimal 14.7:1 air fuel ratio, dubbed by engineers as stoichiometric. This 14.7:1 air fuel mixture is critical for proper operation of the Catalyst in gasoline-fueled engines.

With the advances in microprocessor reliability, manufacturers decided that using electronics to control fuel distribution and spark timing would provide more efficient engine operation over a longer period of time, and thereby lower tailpipe emissions and provide better fuel economy as well as increased Performance.

While electronic ignition provided a hotter, longer duration ignition spark at the plugs, it also dramatically reduced the need for periodic maintenance. Replacing points every 12 thousand miles or so became ancient history in a matter of a few years.

The early computer systems were basic, With very little intelligence, and provided little or no diagnostic functions. In 1981, GM introduced its first fully controlled system With diagnostic trouble codes. This was the GM or Computer Command Control system.

To alert the operator and the technician to a possible malfunction, a light on the instrument panel would illuminate. The first diagnostic trouble codes (DTCs) were now in place. The light initially read "Check Engine." That

was confusing, so now many read “Service Engine Soon.” This can still be misleading, because the light can illuminate when there is a Transmission problem, a Suspension problem, and even A/C and heater malfunctions.

The trade calls these “malfunction indicator lights” (MIL). Most ‘95 and later vehicles are controlled by the second generation computer systems called “on-board diagnostics II,” or OBD-II.

There are many codes in use now as compared to just a handful in the early systems. OBD-II systems have much greater diagnostic ability, and can even track misfires down to an individual Cylinder.

With this background information out of the way, let me suggest how the diagnostic trouble codes are of benefit to the “average Joe.” First, just getting a scan tool and retrieving DTCs has never fixed a problem. Even if you have a reference manual that explains what the numerical codes mean, that is simply not enough to fix a car or truck. If it were, we would all be in much better shape.

If you experience a MIL illumination and/or a message in the Driver information panel, the first step is to perform a good visual inspection. Step two would be to retrieve the trouble code using a scan tool. Once you have the code and get the definition, you are now ready to start troubleshooting.

Let’s take this example: you are driving along and everything is normal. Then the dreaded MIL illuminates. You determine that the oil is fine, the coolant is okay, no belts or hoses broken, and no obvious signs of a major vacuum leak or any other problem.

You get the scan tool out and it tells you the code number. You look in the service manual, and the code refers to a defective exhaust gas recirculation (EGR) Circuit.

Some would think that you could just replace the EGR valve, and bingo, the problem is solved. Not so easy!

The EGR or exhaust gas recirculation system is composed of several components: The EGR valve, the vacuum or electric source that supplies the energy to open and close (modulate) the valve, and the controls that allow the electricity or vacuum to flow to the valve. Some systems even have EGR Sensors.

Not yet convinced that it is a complicated system? Add to all of the above the Circuit in the microprocessor, the wiring and connections, the physical plugging up or carboning up of the EGR gas passages, and you have a treat in store when it comes to diagnosing the problem.

In order to properly diagnose and repair a problem signaled by the MIL’s illumination, you will also need a diagnostic flow chart.

These diagnostic charts take you through a regimen of tests specific to the code. Step by step it directs you through a procedure that should bring you to a diagnosis and pinpoint the problem. Then you can effectively perform the repairs needed.

Diagnostic charts will not fix every problem, but they will teach you a tremendous amount about how that particular Circuit works, and the possibilities of component Failure.

So, the only way to accurately and professionally diagnose and repair the malfunction, without shot-gunning it With expensive components (which often cannot be returned to the parts house or the dealer), is to have a decent scan tool With the capability to interface With your particular application, and the appropriate manual With the diagnostic flow charts.

You may also need some additional equipment, such as a good digital multimeter, a hand operated vacuum pump, and even a heat gun.

From the scenario I have presented using an automotive EGR problem as an example you can see that the answer to “How much do you want to know?” is as unique as each Turbo Diesel owner. The factory manuals are available (see Issue 50, page 51, and www.techauthority.com). The code number is easy to retrieve using the on-off-on-off-on technique that was described on page 10. There are affordable, good scanners available from Auto X-Ray and Actron. These devices are suitable for the do-it-yourselfer and work well. If you understand the system, follow the charts, and use a little common sense, you should be able to keep things humming yourself, and avoid the costly trips to the dealer.

Purchasing these tools, manuals, and electronic devices is not inexpensive, but when a club or a few owners get together and pool their resources, the cost becomes manageable. If you opt for an independent repair shop, be sure to question them as to what types of equipment and information systems they have in-house that apply to your vehicle. If they are not able to make you feel warm and fuzzy, be sure to check alternative shops.

Here are a few more tips.

The emission system warranty on most new vehicles (gasoline or Diesel) is 80,000 miles. You should read your Owner’s Manual and emission warranty information to see just exactly what is covered. You will be very surprised!

The other thing to keep in mind is to either fix the problem or have the problem fixed at the first indication, before the problem becomes into a big deal. I promise you, if you drive it With the light on, you are asking for trouble.

Happy Motoring!

Sam Memmolo
TDR Writer

From Issue 66:
CODES, CAUSES AND CONCERNS

by John Holmes

I got together With Dario Scafidi, one of Carson Dodge's top Diesel technicians, to try to outline the most common codes (out of the *hundreds* of them) that he and the other techs see frequently. The next question was whether it should be of concern to the owner or if you should not worry about it. One of the interesting things I ran into, from the technicians that had worked in other states, was how the frequency and type of code varies With different parts of the country. That makes sense because there can't be much greater contrast in environments than there is between our high desert location in Nevada and our Hill Country location in Texas. Altitude, temperature swings, humidity, fuel formulas, etc., all impact the vehicle's operation.

In general, if the check engine light is blinking, shut it down and get it directly to your dealer before doing further damage. If it stays on steady, better check it out and see if there's cause for concern. If it goes out after about five restarts, that generally indicates no reason for concern. (However, the code will still be stored in the PCM/ECM.)

The codes can (sort of) be deciphered as follows: P = Powertrain; B = Body; C = Chassis. On the second digit, it's either 0 = Standard or 1 = Manufacturer specific. Generally, the third digit breaks down this way: 1 = Emissions management; 2 = Injector Circuit; 3 = Ignition; 4 = Auxiliary emissions; 5 = Vehicle speed and idle control; 6 = Computer and output Circuit; 7 = Transmission.

The ones Dario highlighted on the 6.7-liter engines are:

P1451 - Diesel Particulate Filter System Performance (emissions - re-clean needed - maybe replace DPF);

P2000 - NOx Absorber Efficiency Below Threshold - Bank 1 (emissions - O2 Sensors);

P2002 - Diesel Particulate Filter Efficiency Below Threshold (emissions);

P200C - Diesel Particulate Filter Over Temperature - Bank 1 (emissions);

P200E - Catalyst System Over Temperature - Bank 1 (emissions);

P2463 - Diesel Particulate Filter - Soot Accumulation (DPF full, possible Regeneration or replacement).

As you can see, these all pertain to the emissions system and they should be checked right away to avoid expensive repairs or replacements. The other serious 6.7-liter code often seen is: P2262 - Turbocharger Boost Pressure Not Detected - Mechanical (flash, turbo clean or replacement).

Moving backward to the '03-'07 Third Generation, 5.9-liter, common rail Diesels:

P0148 - Fuel Delivery Error (restriction - fuel Filter, Transfer pump, injectors);

P0191 - Fuel Rail Pressure Sensor Circuit Performance (flash);

P0201 through P0206 - Fuel Injector 1 through 6 Circuit/ Open (engine miss - electrical, valve cover gasket);

P0301 through P0306 - Cylinder 1 through 6 Misfire - (engine miss - mechanical);

P0606 - Internal Control Processor (PCM Failure - this one can also apply to the 6.7L);

P0341 - Camshaft Position Sensor Performance - Bank 1 Sensor 1 (Sensor, ECM, wiring or even a cam shaft).

The above items are important to get fixed, but P0514 - Battery Temperature Sensor Performance is a just a nuisance (flash). A flash will also take care of P0111 - Intake Air Temperature Sensor 1 Performance. An aftermarket Performance box can set these: P0335 and P0336 - Crankshaft Position Sensor Circuit and Performance (no fix - light will eventually go out). Some units like to set P0513 - Invalid Skim Key (vehicle runs fine). Watch out for P0628 - Low Voltage Detected at Lift Pump (generally means the pump is going out - sometimes shows up on the 24-valves too).

Again, trotting backwards to the '98.5-'02 Second Generation 24-valve engines:

P0216 - Injection Pump Timing Failure (bad news - may mean replacement - check Transfer pump VOLUME, not Pressure - fuel gauge can help prevent this);

P0234 - Turbo Boost Limit Exceeded (usually occurs With the use of a "boost elbow" on the turbo that comes With a power enhancement package - you'll have to live With it or go back to stock).

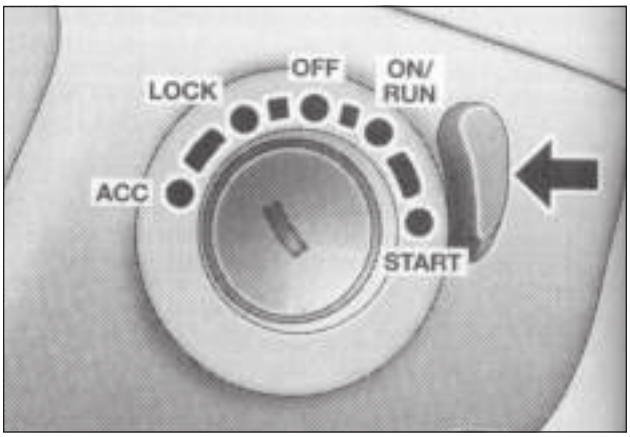
In the dealership, the technicians use a DRB III for trucks up through 2005. They use a StarScan, StarMobile or the new Witech for trucks 2006 and newer. These devices are specific Chrysler diagnostic tools and are pricey. Today the average owner can buy an aftermarket scan tool for a very reasonable price, although it won't beas sophisticated as those mentioned above. One example is the ScanGauge II that I wrote about in Issue 61, on page 88. However, that one does a whole bunch of things more than read and clear codes. Companies that make units of varying sophistication and pricing levels are: AutoXray; Actron; Equus Products, CarMD (check the Internet); and if you drop by Harbor Freight Tools you'll discover it's a good source for similar items. Any of the tool peddlers like Snap-On, Mac, Cornwell or Matco will also have similar types of scanners. Put this in your next letter to Santa.

John Holmes
TDR Writer

Editor's note: John's article on diagnostic trouble codes (DTCs) goes hand-in-hand With my article on DTCs in Issue 64, pages 46-49. In that article I listed the codes that are applicable for the 6.7-liter engine: how to retrieve the codes; how serious the code may be to you; and make it go away.

As a refresher, here is a reprint from Issue 64 on how to retrieve the DTCs.

> *What is an owner to do when you get the check engine light (CEL)/aka malfunction indicator light (MIL), or electronic throttle control (ETC) illumination on your dash? Better yet, what is the used truck owner, 10 years down the road, going to do? Can you say "black electrical tape?"*
>
> *No, black electrical tape is not the answer. The answer is to find out what the dang-blasted DTC number is and look up its meaning. Then, make an informed decision about whether you will "drive thru" the diagnostic glitch or whether trouble looms on the horizon.*
>
> *First, how do you retrieve the code? Internet myth has it that the codes cannot be brought-up on the '07.5 and newer trucks (some say since '06). On the flip-Side, internet research will show you how to pull up the codes on a photobucket video.*
>
> *I'll save you the time finding the photobucket video. The technique is the same as it has been since 1994. (I think it is that long ago.) Here is a diagram from your owner's Manual so that we're using the same words.*



> *Using Dodge's vernacular, here is the method:*
>
> - *Insert key*
> - *Move it from Lock to Off, pause*
> - *Move to On/Run*
> - *Back to Off*
> - *Move to On/Run*
> - *Back to Off*
> - *Move to On/Run and stop*
>
> *The three movements from Off to On/Run should be done in less than, say, 5-seconds.*
>
> *Read the codes where the truck's odometer shows total miles (not trip miles). Make note of the code(s) and continue your research as you look up the codes and their meanings.*

The underlying question that neither John nor I have answered: "How serious is the code to the continuation of a trip to the convenience store or a cross-country journey?" The cop-out answer, "Mr. Turbo Diesel owner, it depends on the code and the nature of the problem." We do not know the answer.

My conclusion from Issue 64 remains the same…

> *What have we learned?*
>
> - *In the future DTCs will continue in greater numbers and scope.*
> - *You can retrieve DTCs using the "key trick."*
> - *You have the codes listed in this magazine. Copy and carry them With you.*
> - *You have a judgment decision to make should you encounter a DTC.*
> - *If your problem is minor and does not reoccur the MIL light will turn off (foiur drive cycles) and the code will be cleared from OBD Memory (40 drive cycles).*

Editor's Update and Final Thoughts

If you flipped to this text (as directed in the discussion about DTCs on page 53) you can see that I do not have any further updates about 5.9-liter or 6.7-liter engine derate or damage implications to share With you. Author Holmes and technician Scafidi presented a good article on what codes are most common. Collectively we're still looking for the answer(s) to how serious a code can be to the further operation of your truck. Today's conclusion is the same as it was in Issue 64: Each DTC has a unique meaning and each owner has to make a judgment call based on their situation, mechanical aptitude and tolerance for repair.

Robert Patton
TDR Staff

From Issue 66:

FUTURE ECM COMPLEXITY AND CURRENT DIAGNOSTIC TROUBLE CODES

by Robert Patton

In Issue 63's "Blowin' in the Wind" column there were quotes from the trade publication Transportation Topics that discussed future Diesel emissions regulations. Titled "Ex-EPA Official Sees No New Rules on Diesel Exhaust Emissions After 2010," the article was examined for its meaning to the TDR audience. At the end of the quoted material from Transportation Topics I concluded the following: "In trying to interpret what the 'No New Rules' headline might actually mean for the 6.7-liter engine, I called one of my contacts at Cummins. What I took away from the phone exchange is the confident declaration that the engine is 'very well Positioned.' The emissions from the 6.7-liter engine are on par With gasoline engines—and the emissions horizon for gasoline is stable. Reassuring. Nevertheless, the current notice of proposed rule (NPR) making has a deadline of 2013. The 2013 rules will have Dodge and Cummins further continuing modifications to meet on-board diagnostics (OBD) requirements. The bottomline…more Sensors and greater ECM complexity as more engine parameters are monitored, controlled and reported through OBD read-outs. No rest for the weary."

Do you need further evidence of the greater ECM complexity and more items being monitored and reported?

Well you did not have to look any further than the summary of the latest technical service bulletin (TSB) 18-013-08 Revision A which was released in December and applies to all 6.7-liter engines produced prior to November 27, 2008. The summary was in Issue 63 on pages 38 and 39.

Did you miss the correlation of further diagnostics and the implementation of modifications on the 6.7-liter engine?

I'll save you from searching through your TDR library. Here is the text:

"Owners should also note that With the revised software of TSB 18-013-08 Revision A, a number of improvements have been made to the engine diagnostics. Performing this service bulletin completely will enable these diagnostic improvements.

- Improved Fuel Level Sensor diagnostics in the ECM.
- Improvement to the single diagnostic DTC P0148 - Fuel Delivery Error. This DTC is now addressed by the following two DTC diagnostics:

  P1011 - Fuel Pump Delivery Pressure Too Low
  P1012 - Fuel Pump Delivery Pressure Too High

- Creation of three new DTC's to address the inlet air temperature Sensor separate from the ambient air temperature Sensor. The new DTC's are:

  P1191 - Inlet Air Temperature Sensor Rationality/ Performance. This DTC enhances the current DTC P0071 - Inlet air Temp Sensor Rationality/Ambient Air Temperature Sensor Performance

  P1192 - Inlet Air Temperature Sensor Too Low. This DTC enhances the current DTC P0072 - Inlet Air Temp Sensor Voltage Too Low

  P1193 - Inlet Air Temperature Sensor Too High. This DTC enhances the current DTC P0073 - Inlet Air Temp Sensor Voltage Too High

- New ECM and CCN software that together will improve the customer understanding of the exhaust aftertreatment system messages that can be displayed on the overhead Electronic Vehicle Information Center (EVIC).

- Creation of a new DTC to address VGT actuator calibration event Failures separate from other VGT actuator communication faults for P0046. The new DTC is: P003A - Turbocharger Boost Control Module Position Exceeded Learning Limit."

6.7-Liter DTC Code Retrieval

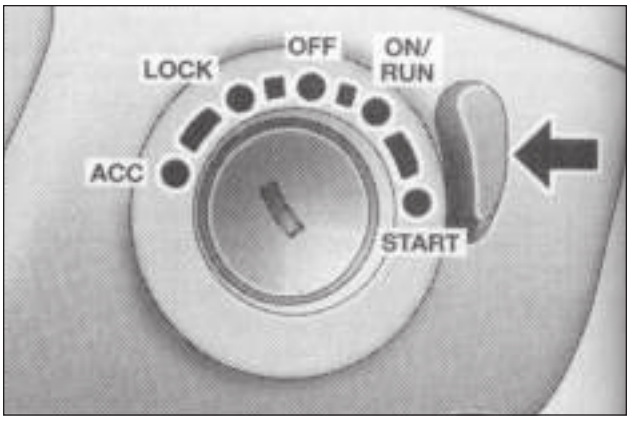
Okay, we have laid the ground work for your understanding of the engine and exhaust aftertreatment's current and future complexity.

What is an owner to do when you get the check engine light (CEL)/aka malfunction indicator light (MIL), or electronic throttle control (ETC) illumination on your dash? Better yet, what is the used truck owner, 10 years down the road, going to do? Can you say "black electrical tape?"

No, black electrical tape is not the answer. The answer is to find out what the dang-blasted DTC number is and look up its meaning. Then, make an informed decision about whether you will "drive thru" the diagnostic glitch or whether trouble looms on the horizon.

First, how do you retrieve the code? Internet myth has it that the codes cannot be brought-up on the '07.5 and newer trucks (some say since '06). On the flip-Side, internet research will show you how to pull up the codes on a photobucket video.

I'll save you the time finding the photobucket video. The technique is the same as it has been since 1994. (I think it is that long ago.) Here is a diagram from your owner's Manual so that we're using the same words.



Using Dodge's vernacular, here is the method:

- Insert key
- Move it from Lock to Off, pause
- Move to On/Run
- Back to Off
- Move to On/Run
- Back to Off
- Move to On/Run and stop

The three movements from Off to On/Run should be done in less than, say, 5-seconds.

Read the codes where the truck's odometer shows total miles (not trip miles). Make note of the code(s) and continue your research With the TDR magazine in-hand.

What Do the Codes Mean

With apologies in advance to musician Chuck Berry ("No Particular Place to Go")

Ridin' along in my Diesel truck
A code comes up, I'm outta luck.

What does it mean, well I don't know
Hoping the truck it doesn't slow.

I'll check it out when I get home
With no particular place to go.

So, now I'm home and the computer is logged on to www.tdr1.com. My thanks to "Kilo" who posted the 6.7-liter engine code numbers and descriptions last October. The table:

P0016-Crankshaft/Camshaft Timing Misalignment - Bank 1 Sensor 1

P0031-O2 Sensor 1/1 Heater Circuit Low

P0037-O2 Sensor 1/2 Heater Circuit Low

P003A-Turbocharger Boost Control Module Position Exceeded Learning Limit

P0046-Turbocharger Boost Control Circuit Performance

P0049-Turbocharger Turbine Overspeed

P006E-Turbocharger Boost Control Module Supply Voltage Circuit Low

P006F-Turbocharger Boost Control Supply Voltage Circuit High

P0071 - Inlet Air Temp Sensor Rationality - ECM

P0071 - Ambient Air Temp Sensor Performance (TIPM)

P0072 - Inlet Air Temp Sensor Voltage Too Low - ECM

P0072 - Ambient Air Temp Sensor Circuit Low (TIPM)

P0073 - Inlet Air Temp Sensor Voltage Too High - ECM

P0073 - Ambient Air Temp Sensor Circuit High (TIPM)

P007C - Charge Air Cooler Temperature Sensor Circuit Low

P007D - Charge Air Cooler Temperature Sensor Circuit High

P007E - Charge Air Cooler Temperature Sensor Circuit Intermittent/erratic

P0087 - Fuel Rail Pressure Too Low

P0088 - Fuel Rail Pressure Too High

P00AF - Turbocharger Boost Control Module Performance

P0101 - Mass Air Flow Sensor "A" Circuit Performance

P0102 - Mass Air Flow Sensor "A" Circuit Low

P0103 - Mass Air Flow Sensor "A" Circuit High

P0106 - Manifold Absolute Pressure Sensor Performance

P0107 - Manifold Absolute Pressure Sensor Circuit Low

P0108 - Manifold Absolute Pressure Sensor Circuit High

P0111 - Intake Air Temperature Sensor 1 Performance

P0112 - Intake Air Temperature Sensor Circuit Low

P0113 - Intake Air Temperature Sensor 1 Circuit High

P0116 - Engine Coolant Temperature Sensor Performance

P0117 - Engine Coolant Temperature Sensor Circuit Low

P0118 - Engine Coolant Temperature Sensor Circuit High

P0128 - Thermostat Rationality

P0131 - O2 Sensor 1/1 Circuit Low

P0135 - O2 Sensor 1/1 Heater Performance

P0137 - O2 Sensor 1/2 Circuit Low

P0141 - O2 Sensor 1/2 Heater Performance

P0148 - Fuel Delivery Error

P0169 - Water In Fuel Detected For Too Long

P0191 - Fuel Rail Pressure Sensor Circuit Performance

P0192 - Fuel Pressure Sensor Low

P0193 - Fuel Pressure Sensor High

P0201 - Fuel Injector 1 Circuit/open

P0202 - Fuel Injector 2 Circuit/open

P0203 - Fuel Injector 3 Circuit/open

P0204 - Fuel Injector 4 Circuit/open

P0205 - Fuel Injector 5 Circuit/open

P0206 - Fuel Injector 6 Circuit/open

P0217 - Coolant Temperature Too High

P0219 - Engine Overspeed

P0251 - Injection Pump Fuel Valve Feedback

P0300 - Multiple Cylinder Misfire

P0335 - Crankshaft Position Sensor Circuit

P0336 - Crankshaft Position Sensor Performance

P0340 - Camshaft Position Sensor Circuit - Bank 1 Sensor 1

P0341 - Camshaft Position Sensor Performance - Bank 1 Sensor 1

P0381 - Wait-To-Start Lamp Inoperative

P0400 - EGR System Flow Malfunction

P0401 - EGR System Performance

P0402 - EGR Flow Excessive Detected
P0403 - EGR Control Circuit/open
P0404 - EGR Position Sensor Performance Diesel
P0405 - EGR Position Sensor Circuit Low
P040B - Exhaust Gas Recirculation Temperature Sensor 1 Circuit Performance
P040C - Exhaust Gas Recirculation Temperature Sensor 1 Circuit Low
P040D - Exhaust Gas Recirculation Temperature Sensor 1 Circuit High
P0420 - Catalyst Efficiency Bank 1
P042E - Exhaust Gas Recirculation Control Stuck Open
P0461 - Fuel Level Sensor 1 Performance
P0462 - Fuel Level Sensor 1 Circuit Low
P0463 - Fuel Level Sensor 1 Circuit High
P0471 - Exhaust Pressure Sensor 1 Performance
P0472 - Exhaust Pressure Sensor 1 Low
P0473 - Exhaust Pressure Sensor 1 High
P0480 - Cooling Fan 1 Control Circuit/open
P0483 - Cooling Fan Speed
P0487 - EGR Airflow Throttle Control Circuit A Open
P0488 - EGR Airflow Throttle Control Circuit Performance
P0489 - EGR Control Circuit Low
P0501 - Vehicle Speed Sensor 1 Performance
P0505 - Engine Speed At Idle - Data Erratic, Intermittent or Incorrect
P0513 - Invalid Skim Key
P0514 - Battery Temperature Sensor Performance
P0516 - Battery Temperature Sensor Circuit Low
P0517 - Battery Temperature Sensor Circuit High
P051B - Crankcase Pressure Sensor Circuit Range/ Performance
P051C - Crankcase Pressure Sensor Circuit Low
P051D - Crankcase Pressure Sensor Circuit High
P0521 - Engine Oil Pressure Sensor Performance
P0524 - Engine Oil Pressure Too Low
P0532 - A/C Pressure Sensor Circuit Low
P0533 - A/C Pressure Sensor Circuit High
P0541 - Intake Air Heater Control Circuit 1 Low
P0542 - Intake Air Heater Control Circuit 1 High
P0545 - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 1
P0546 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 1
P0562 - Battery Voltage Low
P0563 - Battery Voltage High
P0571 - Brake Switch 1 Performance
P0572 - Brake Switch 1 Stuck On
P0573 - Brake Switch 1 Stuck Off
P0580 - Speed Control Switch 1 Circuit Low
P0581 - Speed Control Switch 1 Circuit High
P0585 - Speed Control Switch 1/2 Correlation
P0592 - Speed Control Switch 2 Circuit Low
P0593 - Speed Control Switch 2 Circuit High
P0601 - Internal Memory Checksum Invalid
P0604 - Internal Control Module Ram
P0606 - Internal Control Processor
P0607 - ECU Internal Performance
P061A - ETC Level 2 Torque Performance
P061C - ETC Level 2 Rpm Performance
P0622 - Generator Field Control Circuit/open
P0628 - Fuel Pump Control Circuit Low
P0629 - Fuel Pump Control Circuit High
P062C - ETC Level 2 Mph Performance
P0630 - VIN Not Programmed In PCM
P0633 - Skim Secret Key Not Stored In Pcm
P063C - Generator Voltage Sense Low
P063D - Generator Voltage Sense High
P0642 - Sensor Reference Voltage 1 Circuit Low
P0643 - Sensor Reference Voltage 1 Circuit High
P0646 - A/C Control Circuit Low
P0647 - A/C Control Circuit High
P0652 - Sensor Reference Voltage 2 Low
P0653 - Sensor Reference Voltage 2 High
P065S - Generator System Performance
P0698 - Sensor Reference Voltage 3 Circuit Low
P0699 - Sensor Reference Voltage 3 Circuit High
P06A4 - Sensor Reference Voltage 4 Circuit Low
P06A5 - Sensor Reference Voltage 4 Circuit High
P0700 - Transmission Control System (MIL Request)
P0850 - Park/Neutral Switch Performance
P1011 - Fuel Pump Delivery Pressure Too Low
P1012 - Fuel Pump Delivery Pressure Too High
P1191 - Inlet Air Temperature Sensor Rational/ Performance
P1192 - Inlet Air Temperature Sensor Low
P1193 - Inlet Air Temperature Sensor High
P113C - O2 Sensor Power Supply Circuit Performance
P125A - Power Enable Control Circuit Low
P125B - Power Enable Control Circuit High
P1272 - A/C Clutch Control Circuit 2 Low (TIPM)
P1273 - A/C Clutch Control Circuit 2 High (TIPM)
P1274 - A/C Clutch Control Circuit 2 Open (TIPM)
P1275 - A/C Clutch Control Circuit 2 Overcurrent (TIPM)
P1277 - Starter Control Circuit 2 Low (TIPM)
P1278 - Starter Control Circuit 2 High (TIPM)
P1279 - Starter Control Circuit 2 Open (TIPM)
P127A - Starter Control Circuit 2 Overcurrent (TIPM)
P127C - Fuel Pump Control Circuit 2 Low (TIPM)
P127D - Fuel Pump Control Circuit 2 High (TIPM)
P127E - Fuel Pump Control Circuit 2 Open (TIPM)
P127F - Fuel Pump Control Circuit 2 Overcurrent (TIPM)
P141A - Exhaust Gas Temperature Sensor 1 And 2 Signals Swapped
P144E - EGR Cooler Bypass Status Line Circuit Low
P144F - EGR Cooler Bypass Status Line Circuit High
P1451 - Diesel Particulate Filter System Performance

P1484 - Catalyst Overheat Detection
P1506 - Crankcase Depression Regulator Valve Performance
P1507 - Crankcase Filter Restriction
P1508 - Crankcase Filter Restriction - Replace Filter
P2000 - NO_X Absorber Efficiency Below Threshold - Bank 1
P2002 - Diesel Particulate Filter Efficiency Below Threshold
P200C - Diesel Particulate Filter Over Temperature - Bank 1
P200E - Catalyst System Over Temperature - Bank 1
P2032 - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 2
P2033 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 2
P2080 - Exhaust Gas Temp Sensor Circuit Performance - Bank 1 Sensor 1
P2084 - Exhaust Gas Temp Sensor Circuit Performance - Bank 1 Sensor 2
P2121 - Accelerator Pedal Position Sensor 1 Performance
P2122 - Accelerator Pedal Position Sensor 1 Circuit Low
P2123 - Accelerator Pedal Position Sensor 1 Circuit High
P2127 - Accelerator Pedal Position Sensor 2 Circuit Low
P2128 - Accelerator Pedal Position Sensor 2 Circuit High
P2141 - EGR Airflow Throttle Control Circuit Low
P2142 - EGR Airflow Throttle Control Circuit High
P2227 - Barometeric Pressure Sensor Rationality
P2228 - Barometric Pressure Circuit Low
P2229 - Barometric Pressure Circuit High
P2262 - Turbocharger Boost Pressure Not Detected - Mechanical
P2266 - Water In Fuel Sensor Circuit Low
P2267 - Water In Fuel Sensor Circuit High
P2269 - Water In Fuel Condition
P2299 - Brake Pedal Position / Accelerator Pedal Position Incompatible
P242B - Exhaust Gas Temp Sensor Circuit Performance - Bank 1 Sensor 3
P242C - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 3
P242D - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 3
P242F - Diesel Particulate Filter Restriction - Ash Accumulation
P244A - Diesel Particulate Filter Differential Pressure Too Low
P244D - Exhaust Temperature Too High For Particulate Filter Regeneration - Bank 1
P2453 - Diesel Particulate Filter Pressure Sensor A Circuit Performance
P2454 - Diesel Particulate Filter Pressure Sensor A Circuit - Low
P2455 - Diesel Particulate Filter Pressure Sensor A Circuit - High
P2457 - Exhaust Gas Recirculation Cooling System Performance
P245A - EGR Cooler Bypass Control Circuit Open
P245C - EGR Cooler Bypass Control Circuit Low
P245D - EGR Cooler Bypass Control Circuit High
P2463 - Diesel Particulate Filter - Soot Accumulation
P2503 - Charging System Output Low
P2504 - Charging System Output High
P2509 - ECM/PCM Power Input Signal Intermittent
P254C - PTO Speed Selector Sensor Circuit Low
P254D - PTO Speed Selector Sensor Circuit High
P2579 - Turbocharger Speed Sensor Circuit Performance
P2580 - Turbocharger Speed Sensor Circuit Low
P2609 - Intake Air Heater System Performance
P268C - Cylinder 1 Injector Data Incompatible
P268D - Cylinder 2 Injector Data Incompatible
P268E - Cylinder 3 Injector Data Incompatible
P268F - Cylinder 4 Injector Data Incompatible
P2690 - Cylinder 5 Injector Data Incompatible
P2691 - Cylinder 6 Injector Data Incompatible
P2a00 - O2 Sensor 1/1 Circuit Performance
P2a01 - O2 Sensor 1/2 Circuit Performance

What is Next?

Okay, it is decision time. Let's say you've noted a "P0116 - Engine Coolant Temperature Sensor Performance," or P0071 - Inlet Air Temp Sensor Rationality - ECM." Are you going to "drive thru" the diagnostic glitch and feel comfortable that you'll not be stranded in Boondocks, New Mexico?

Were it my truck I would check the temperature of the engine for the P0116, and check for an air restriction to address P0071. Likely I would continue onward. But, as you can see by the different code definitions, there are some that will require your immediate attention. For that matter, the above P0116 and P0071 example that I would drive-thru may cause you too much alarm. If left unattended I've no doubt that the malfunction(s) will have other cause/effect consequences. But, driving thru a DTC and the malfunction indicator light (MIL) or electronic throttle control (ETC) is not something that has an easy yes or no answer. Ultimately it is your judgment call.

For help With that judgment call I looked up both the MIL and ETC meanings in my Owner's Manual. Unfortunately, the text is just as vague as my judgment call response.

"If this light comes on and remains on while driving, it suggests a potential engine control problem and the need for system service.

"Although your vehicle will usually be drivable and not need towing, see your dealer for service as soon as possible.

"CAUTION!
"Prolonged driving With the MIL on could cause damage to the engine control system. It also could affect fuel economy and drivability."

The Seriousity of the EVIC

Say what? Yes, "seriousity," I have made up a new entry in the Webster Dictionary. And EVIC was defined earlier as an acronym for the overhead electronic vehicle information center (EVIC).

If you will look back at Issue 63, pages 38-39, you will find TSB 18-013-08 Revision A dated 12/04/08 which describes a reflash for '07-'09 DH/D1 (that's Dodge-speak for 2500/3500 pickup) trucks.

If you will look at our summary of TSB 18-001-09 you will see that there is another reflash program for the 6.7-liter engine that is used in '07 - '09 DC/DM (Dodge-speak for 3500/4500/5500 Cab and Chassis) trucks.

These two TSB revisions use the overhead EVIC to warn the owner of "Do Not Pass Go/Do Not Collect $200" messages that will disable the engine due to emissions related problems. For examples of these messages, see the Sidebar that we are reprinting from Issue 62.

All vehicles built after March 2008, or those fully updated per TSBs 18-013-08 and 18-001-09, have the software for the new messages that will appear on the EVIC should there be emissions problems.

The EVIC display of an impending engine problem is serious news and owners should take *immediate* corrective action at a Dodge dealership.

Make It Go Away

Will your DTC simply go away? Sure, that's what black electrical tape is used for. Seriously, look back at TDR Issue 61, page 88, and John Holmes' write-up on an inexpensive scan tool/monitor system. Purchase the Scan Gauge and clear the fault. It will work on automobiles too. Go to your local mechanic and clear the fault. Go to the auto parts store and clear the fault… Clear the fault, but does it reappear? Time for a trip to the Dodge dealership?

Will the DTC go away on its own? Perhaps. A look at the industry-wide guidelines for on board diagnostics (OBD) reveals that it takes four drive cycles of non-malfunction to turn off the MIL light, 40 cycles and the code is cleared from the OBD Memory.

Did it go away?

Conclusion

What have we learned?

- In the future DTCs will continue in greater numbers and scope.
- You can retrieve DTCs using the "key trick."
- You have the codes listed in this magazine. Copy and carry them with you.
- You have a judgment decision to make should you encounter a DTC.
- If your problem is minor and does not reoccur the MIL light will turn off and the code will be cleared from OBD Memory.

Robert Patton
TDR Staff

Notes on exhaust system Regeneration:

The ECM continuously monitors the level of particulates (soot) and other substances in the exhaust aftertreatment system. As needed, the ECM triggers a Regeneration to remove them. This is completely transparent to the Driver. There are no indicators on the instrument cluster or EVIC, and there is no difference in sound or feel of the engine. In other words, when things are operating as normal, as they do for the majority of owners, you will not know that a Regeneration is needed or in-process.

In rare cases, typically due to difficult drive cycles, a Regeneration may not be possible. In those cases, you may see a message on the overhead console (EVIC) regarding the aftertreatment system, stating either 'Catalyst FULL' or 'EXHAUST SYSTEM Regeneration REQUIRED NOW', depending on the level of software. As long as the percent-full message is less than 100%, the system can complete a Regeneration if you change your drive cycle to allow it to happen. The most effective drive cycle for Regeneration is highway cruise. Some trucks, depending on the level of software, will display 'Regeneration IN PROCESS' if your drive cycle has changed such that Regeneration has been started. Note that this message will occur only after the system has gotten full enough to display the 'EXHAUST SYSTEM Regeneration REQUIRED NOW', meaning you will not see it on every Regeneration.

A visit to your dealer is necessary only if a message regarding the exhaust aftertreatment system reading 'SEE DEALER' or 'SERVICE REQD' is displayed on the EVIC. In that case, getting the truck to the dealer sooner, rather than later, may prevent further damage to the system.

OBD-II DIAGNOSTIC TROUBLE CODES FOR 1998-UP TURBO DIESELS

by Joe Donnelly

As the editor mentioned, in the years since '98.5 we've covered a lot of ground in the evolution of diagnostic trouble codes. Who knows what the next 15 years will bring. Self-driving cars, anyone? I digress.

For 2014 here are the commonly used On-Board Diagnostic II Trouble Codes. They can be accessed on electronic odometers by cycling the key on-off-on-off-on.

P0112 - Intake Air Temperature Sensor Voltage Low
P0113 - Intake Air Temperature Sensor Voltage High
P0117 - ECT Sensor Voltage Too Low
P0118 - ECT Sensor Voltage Too High
P0121 - Accelerator Pedal Position Sensor Signal Volts Do Not Agree w/Idle Validation Signal
P0122 - Accelerator Pedal Position Sensor Signal Voltage Too Low
P0123 - Accelerator Pedal Position Sensor Signal Voltage Too High
P0125 - Engine Is Cold Too Long
P0168 - Decreased Engine Performance Due To High Injection Pump Fuel Temperature
P0177 - Water In Fuel Sensor Voltage Too Low
P0181 - Fuel Injection Pump Failure
P0215 - Fuel Injection Pump Control Circuit
P0216 - Fuel Injection Pump Timing Failure
P0217 - Decreased Engine Performance Due To Engine Overheating Condition
P0219 - Camshaft Position Sensor Overspeed Signal
P0222 - Idle Validation Signals Both Low
P0223 - Idle Validation Signals Both High (Above 5 Volts)
P0230 - Transfer pump Circuit Out Of Range
P0232 - Fuel Shut-Off Voltage Too High
P0234 - Turbo Boost Limit Exceeded
P0236 - MAP Sensor Too High Too Long
P0237 - MAP Sensor Voltage Too Low
P0238 - MAP Sensor Voltage Too High
P0251 - Fuel Injection Pump Mechanical Failure Fuel Valve Feedback Circuit
P0253 - Fuel Injection Pump Fuel Valve Open Circuit
P0254 - Fuel Injection Pump Fuel Valve Current Too High
P0300 - Multiple Cylinder Misfire
P0301 - Misfire Detected, Cylinder No. 1
P0302 - Misfire Detected, Cylinder No. 2
P0303 - Misfire Detected, Cylinder No. 3
P0304 - Misfire Detected, Cylinder No. 4
P0305 - Misfire Detected, Cylinder No. 5
P0306 - Misfire Detected, Cylinder No. 6
P0320 - No RPM Signal To PCM
P0336 - Crankshaft Position Sensor Signal
P0341 - Camshaft Position Sensor Signal
P0370 - Fuel Injection Pump Speed/Position Sensor Signal Lost
P0380 - Intake Air Heater Relay No. 1 Control Circuit
P0381 - Wait To Start Lamp Inoperative
P0382 - Intake Air Heater Relay No. 2 Control Circuit
P0387 - Crankshaft Position Sensor Supply Voltage Too Low
P0388 - Crankshaft Position Sensor Supply Voltage Too High
P0400 - Exhaust Gas Recirculation (EGR) Flow Malfunction
P0460 - Fuel Level Unit No Change Over Miles
P0462 - Fuel Level Sending Unit Volts Too Low
P0463 - Fuel Level Sending Unit Volts Too High
P0500 - No Vehicle Speed Sensor Signal
P0522 - Oil Pressure Voltage Too Low
P0523 - Oil Pressure Voltage Too High
P0524 - Oil Pressure Too Low
P0545 - A/C Clutch Relay Circuit
P0562 - Charging System Voltage Too Low
P0563 - Charging System Voltage Too Low
P0601 - PCM Internal Controller Failure
P0622 - Alternator Field Improper Switching
P0712 - Trans Temp Sensor Voltage Too Low
P0713 - Trans Temp Sensor Voltage Too High
P0720 - Low Output Speed Sensor RPM Above 15 MPH
P0743 - TCC Solenoid/Trans Relay Circuits
P0748 - Governor Pressure SOL/Control Trans Relay Circuits
P0751 - OD Switch Pressed (Lo) For More Than 5 Minutes
P0753 - Trans 3–4 Shift SOL/Trans Relay Circuits
P1283 - Idle Select Signal Invalid
P1284 - Fuel Injection Pump Battery Voltage Out Of Range
P1285 - Fuel Injection Pump Controller Always On
P1286 - Accelerator Pedal Position Sensor Supply Voltage Too High
P1287 - Fuel Injection Pump Controller Supply Voltage Low
P1291 - No Temperature Rise Seen From Intake Air Heaters
P1295 - Accelerator Pedal Position Sensor Supply Voltage Too Low
P1388 - Auto Shutdown (ASD) Relay Control Circuit
P1389 - No Auto Shutdown (ASD) Relay Output Voltage at PCM
P1475 - Aux. 5 Volt Output Too High
P1488 - Aux. 5 Volt Output Too Low
P1492 - Battery Temperature Sensor Voltage Too High
P1493 - Battery Temperature Sensor Voltage Too Low
P1594 - Charging System Voltage Too High
P1595 - Speed Control Solenoid Circuits
P1597 - Speed Control Switch Always Low
P1682 - Charging System Voltage Too Low
P1683 - Speed Control Power Relay Or Speed Control 12 Volt Driver Circuit
P1688 - Internal Fuel Injection Pump Controller Failure
P1689 - No Communication Between ECM & Injection Pump Module
P1690 - Fuel injection pump CKP Sensor Does Not Agree With ECM CKP Sensor
P1691 - Fuel Injection Pump Controller Calibration Failure
P1693 - DTC Detected In ECM Or PCM
P1694 - No CCD Messages Received From ECM
P1698 - No CCD Messages Received From PCM
P1740 - TCC Or OD Solenoid Performance
P1756 - Governor Pressure Not Equal To Target At 15-20 PSI
P1757 - Governor Pressure Above 3 PSI When Request is 0 PSI
P1762 - Governor Pressure Sensor Offset Improper Voltage
P1763 - Governor Pressure Sensor Voltage Too High
P1764 - Governor Pressure Sensor Voltage Too Low
P1765 - Trans 12 Volt Supply Relay Control Circuit
P1899 - PNP Switch Failure

Amplifier (AMP), Base Diagnosis and Testing

B1460-11 - Channel 1 Audio Speaker Output - Circuit Short-to-Ground

B1460-12 - Channel 1 Audio Speaker Output - Circuit Short-to-Battery

B1460-13 - Channel 1 Audio Speaker Output - Circuit Open

B1460-92 - Channel 1 Audio Speaker Output - Performance or Incorrect Operation

B1464-00 - Channel 1 Audio Speaker Output - Circuit Shorted Together

B1465-11 - Channel 2 Audio Speaker Output - Circuit Short-to-Ground

B1465-12 - Channel 2 Audio Speaker Output - Circuit Short-to-Battery

B1465-13 - Channel 2 Audio Speaker Output - Circuit Open

B1465-92 - Channel 2 Audio Speaker Output - Performance or Incorrect Operation

B1469-00 - Channel 2 Audio Speaker Output - Circuit Shorted Together

B146A-11 - Channel 3 Audio Speaker Output - Circuit Short-to-Ground

B146A-12 - Channel 3 Audio Speaker Output - Circuit Short-to-Battery

B146A-13 - Channel 3 Audio Speaker Output - Circuit Open

B146A-92 - Channel 3 Audio Speaker Output - Performance or Incorrect Operation

B146E-00 - Channel 3 Audio Speaker Output - Circuit Shorted Together

B146F-11 - Channel 4 Audio Speaker Output - Circuit Short-to-Ground

B146F-12 - Channel 4 Audio Speaker Output - Circuit Short-to-Battery

B146F-13 - Channel 4 Audio Speaker Output - Circuit Open

B146F-92 - Channel 4 Audio Speaker Output - Performance or Incorrect Operation

B1473-00 - Channel 4 Audio Speaker Output - Circuit Shorted Together

B1474-11 - Channel 5 Audio Speaker Output - Circuit Short-to-Ground

B1474-12 - Channel 5 Audio Speaker Output - Circuit Short-to-Battery

B1474-13 - Channel 5 Audio Speaker Output - Circuit Open

B1474-92 - Channel 5 Audio Speaker Output - Performance or Incorrect Operation

B1478-00 - Channel 5 Audio Speaker Output - Circuit Shorted Together

B1479-11 - Channel 6 Audio Speaker Output - Circuit Short-to-Ground

B1479-12 - Channel 6 Audio Speaker Output - Circuit Short-to-Battery

B1479-13 - Channel 6 Audio Speaker Output - Circuit Open

B1479-92 - Channel 6 Audio Speaker Output - Performance or Incorrect Operation

B147D-00 - Channel 6 Audio Speaker Output - Circuit Shorted Together

B147E-11 - Channel 7 Audio Speaker Output - Circuit Short-to-Ground

B147E-12 - Channel 7 Audio Speaker Output - Circuit Short-to-Battery

B147E-13 - Channel 7 Audio Speaker Output - Circuit Open

B147E-92 - Channel 7 Audio Speaker Output - Performance or Incorrect Operation

B1482-00 - Channel 7 Audio Speaker Output - Circuit Shorted Together

B1483-11 - Channel 8 Audio Speaker Output - Circuit Short-to-Ground

B1483-12 - Channel 8 Audio Speaker Output - Circuit Short-to-Battery

B1483-13 - Channel 8 Audio Speaker Output - Circuit Open

B1483-92 - Channel 8 Audio Speaker Output - Performance or Incorrect Operation

B1487-00 - Channel 8 Audio Speaker Output - Circuit Shorted Together

B1488-00 - Cabin EQ Mismatch Performance

B14B9-11 - Channel 9 Audio Speaker Output - Circuit Short-to-Ground

B14B9-12 - Channel 9 Audio Speaker Output - Circuit Short-to-Battery

B14B9-13 - Channel 9 Audio Speaker Output - Circuit Open

B14B9-2B - Channel 9 Audio Speaker Output - Wires Shorted Together

B14B9-92 - Channel 9 Audio Speaker Output - Performance or Incorrect Operation

B14BE-11 - Channel 10 Audio Speaker Output - Circuit Short-to-Ground

B14BE-12 - Channel 10 Audio Speaker Output - Circuit Short-to-Battery

B14BE-13 - Channel 10 Audio Speaker Output - Circuit Open

B14BE-2B - Channel 10 Audio Speaker Output - Wires Shorted Together

B14BE-92 - Channel 10 Audio Speaker Output - Performance or Incorrect Operation

B14C3-11 - Channel 11 Audio Speaker Output - Circuit Short-to-Ground

B14C3-12 - Channel 11 Audio Speaker Output - Circuit Short-to-Battery

B14C3-13 - Channel 11 Audio Speaker Output - Circuit Open

B14C3-2B - Channel 11 Audio Speaker Output - Wires Shorted Together

B14C3-92 - Channel 11 Audio Speaker Output - Performance or Incorrect Operation

B21DD-84 - System Voltage - Signal Below Allowable Range

B21DD-85 - System Voltage - Signal Above Allowable Range

B221F-00 - Amplifier Internal

U0010-00 - CAN Interior Bus

U0011-00 - CAN Interior BUS Off Performance

U0140-00 - Lost Communication With Body Control Module

U0184-00 - Lost Communication With Radio Cluster, Instrument

Diagnosis and Testing

B1612-00 - Panel Illumination Control

B21DD-84 - System Voltage-Signal Below Allowable Range

B21DD-85 - System Voltage - Signal Voltage Above Allowable Range

B275B-00 - Airbag Telltale

U0001-00 - CAN C BUS

U0002-00 - CAN C BUS Off Performance

U0100-00 - Lost Communication With ECM/PCM

U0101-00 - Lost Communication With TCM

U0114-00 - Lost Communication With Final Drive Control Module

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0127-00 - Lost Communication With Tire Pressure Monitor Module

U0132-00 - Lost Communication With Suspension Control Module

U0137-00 - Lost Communication With Trailer Brake Control Module

U0140-00 - Lost Communication With Body Control Module

U0151-00 - Lost Communication With Occupant Restraint Controller (ORC)

U0159-00 - Lost Communication With Parking Assist Control Module (PAM)

U0212-00 - Lost Communication With SCM

U11B9-00 - Lost Communication With RF HUB

U11E8-00 - Lost Communication With EPS Steering Torque Message

U1403-00 - Implausible Fuel Level Signal Received

U1491-00 - Implausible Fuel Level 2 Signal Receive Controller, Occupant Restraint (ORC) Diagnosis and Testing

B0001-11 - Driver Frontal Squib 1 Control-Circuit Short to Ground

B0001-12 - Driver Frontal Squib 1 Control - Circuit Short-to-Battery

B0001-13 - Driver Frontal Squib 1 Control-Circuit Open

B0001-2B - Driver Frontal Squib 1 Control-Wires Shorted Together

B0002-11 - Driver Frontal Squib 2 Control-Circuit Short to Ground

B0002-12 - Driver Frontal Squib 2 Control- Circuit Short-to-Battery

B0002-13 - Driver Frontal Squib 2 Control-Circuit Open

B0002-2B - Driver Frontal Squib 2 Control-Wires Shorted Together

B0010-11 - Passenger Frontal Squib 1 Control-Circuit Short-to-Ground

B0010-12 - Passenger Frontal Squib 1 Control-Circuit Short-to-Battery

B0010-13 - Passenger Frontal Squib 1 Control- Circuit Open

B0010-2B - Passenger Frontal Squib 1 Control-Wires Shorted Together

B0011-11 - Passenger Frontal Squib 2 Control-Circuit Short-to-Ground

B0011-12 - Passenger Frontal Squib 2 Control-Circuit Short-to-Battery

B0011-13 - Passenger Frontal Squib 2 Control-Circuit Open

B0011-2B - Passenger Frontal Squib 2 Control-Circuit Wires Shorted Together

B0020-11 - Left-Side-Seat-Deployment-Squib-Short-to-Ground

B0020-12 - Left-Side-Seat-Deployment-Squib-Short-to-Battery

B0020-13 - Left-Side-Seat-Deployment-Squib-Circuit-Open

B0020-2B - Left-Side-Seat-Deployment-Squib-Circuits-Short-Together

B0021-11 - Left Curtain Deployment Squib1-Circuit Short-to-Ground

B0021-12 - Left Curtain Deployment Squib1-Circuit Short-to-Battery

B0021-13 - Left Curtain Deployment Squib 1-Circuit Open

B0021-2B - Left Curtain Deployment Squib 1-Wires Shorted Together

B0028-11 - Right-Side-Seat-Deployment-Squib-Short-to-Ground

B0028-12 - Right-Side-Seat-Deployment-Squib-Short-to-Battery

B0028-13 - Right-Side-Seat-Deployment-Squib-Open-Circuit

B0028-2B - Right-Side-Seat-Deployment-Squib-Short-Together

B0029-11 - Right Curtain Deployment Squib 1-Circuit Short to Ground

B0029-12 - Right Curtain Deployment Squib 1-Circuit Short-to-Battery

B0029-13 - Right Curtain Deployment Squib 1-Circuit Open

B0029-2B - Right Curtain Deployment Squib 1-Wires Shorted Together

B0050-11 - Driver Seatbelt Sensor-Circuit Short-to-Ground

B0050-12 - Driver Seatbelt Sensor-Circuit Short to Battery

B0050-13 - Driver Seatbelt Sensor-Circuit Open

B0050-2B - Driver Seatbelt Sensor - Wires Shorted Together

B0052-11 - Passenger Seatbelt Sensor - Circuit Short-to-Ground

B0052-12 - Passenger Seatbelt Sensor - Circuit Short-to-Battery

B0052-13 - Passenger Seatbelt Sensor - Circuit Open

B0052-2B - Passenger Seatbelt Sensor - Circuits Shorted Together

B007E-11 - Driver Seatbelt Retractor Pretensioner Deployment Control - Circuit Short-to-Ground

B007E-12 - Driver Seatbelt Retractor Pretensioner Deployment Control - Circuit Short-to-Battery

B007E-13 - Driver Seatbelt Retractor Pretensioner Deployment Control - Circuit Open

B007E-2B - Driver Seatbelt Retractor Pretensioner Deployment Control - Circuits Shorted Together

B007F-11 - Passenger Seatbelt Retractor Pretensioner Deployment Control - Circuit Short-to-Ground

B007F-12 - Passenger Seatbelt Retractor Pretensioner Deployment Control - Circuit Short-to-Battery

B007F-13 - Passenger Seatbelt Retractor Pretensioner Deployment Control - Circuit Open

B007F-2B - Passenger Seatbelt Retractor Pretensioner Deployment Control - Wires Shorted Together

B0090-11 - Left Frontal Acceleration Sensor - Circuit Short-to-Ground

B0090-12 - Left Frontal Acceleration Sensor - Circuit Short-to-Battery

B0090-49 - Left Frontal Acceleration Sensor - Internal Electronic Failure

B0090-87 - Left Frontal Acceleration Sensor -Missing Message

B0095-11 - Right Frontal Acceleration Sensor - Circuit Short-to-Ground

B0095-12 - Right Frontal Acceleration Sensor - Circuit Short-to-Battery

B0095-49 - Right Frontal Acceleration Sensor - Internal Electronic Failure

B0095-87 - Right Frontal Acceleration Sensor -Missing Message

B0099-96 - Roll Over Sensor - Component Internal Failure

B212C-13 - Ignition RUN/START Input - Circuit Open

B212C-16 - Ignition RUN/START Input - Circuit Voltage Below Threshold

B212C-17 - Ignition RUN/START Input - Circuit Voltage Above Threshold

B212D-13 - Ignition-Run-Only-Input-Circuit

B212D-16 - Ignition Run-Only Input - Circuit Voltage Below Threshold

B212D-17 - Ignition Run-Only Input - Circuit Voltage Above Threshold

B21DD-16 - System Voltage - Circuit Voltage Below Threshold

B21DD-17 - System Voltage - Circuit Voltage Above Threshold

B2207-00 - Occupant Restraint Controller Internal 1

B2208-00 - Occupant Restraint Controller Internal 2

B220B-00 - Occupant Restraint Controller Firing Stored Energy

B222A-00 - Vehicle Line Mismatch

B223B-00 - Vehicle Configuration Mismatch

B2255 - Occupant Restraint Controller Roll Over Feature Disabled

B2722-00 - ORC Unlocked - All Deployment Disabled

B2734-12 - Passenger Occupant Detection Sensor-Short-to-Battery

B2734-13 - Passenger Occupant Detection Sensor - Circuit Open

B274C-11 - Driver Side Seat Thorax Squib 1 Control - Circuit Short-to-Ground

B274C-12 - Driver Side Seat Thorax Squib 1 Control - Circuit Short-to-Battery

B274C-13 - Driver Side Seat Thorax Squib 1 Control - Circuit Open

B274C-2B - Driver Side Seat Thorax Squib 1 Control - Wires Shorted Together

B274D-11 - Passenger Side Seat Thorax Squib 1 Control - Circuit Short-to-Ground

B274D-12 - Passenger Side Seat Thorax Squib 1 Control - Circuit Short-to-Battery

B274D-13 - Passenger Side Seat Thorax Squib 1 Control - Circuit Open

B274D-2B - Passenger Side Seat Thorax Squib 1 Control - Wires Shorted Together

B2761-11 - Left B-Pillar Impact Acceleration Sensor - Circuit Short-to-Ground

B2761-12 - Left B-Pillar Impact Acceleration Sensor - Circuit Short-to-Battery

B2761-49 - Left B-Pillar Impact Acceleration Sensor - Internal Electronic Failure

B2761-87 - Left B-Pillar Impact Acceleration Sensor - Missing Message

B2762-11 - Left C-Pillar Impact Acceleration Sensor - Circuit Short-to-Ground

B2762-12 - Left C-Pillar Impact Acceleration Sensor - Circuit Short-to-Battery

B2762-49 - Left C-Pillar Impact Acceleration Sensor - Internal Electronic Failure

B2762-87 - Left C-Pillar Impact Acceleration Sensor - Missing Message

B2764-11 - Right B-Pillar Impact Acceleration Sensor - Circuit Short-to-Ground

B2764-12 - Right B-Pillar Impact Acceleration Sensor - Circuit Short-to-Battery

B2764-49 - Right B-Pillar Impact Acceleration Sensor - Internal Electronic Failure

B2764-87 - Right B-Pillar Impact Acceleration Sensor - Missing Message

B2765-11 - Right C-Pillar Impact Acceleration Sensor - Circuit Short-to-Ground

B2765-12 - Right C-Pillar Impact Acceleration Sensor - Circuit Short-to-Battery

B2765-49 - Right C-Pillar Impact Acceleration Sensor - Internal Electronic Failure

B2765-87 - Right C-Pillar Impact Acceleration Sensor - Missing Message

B2767-11 - Left Impact Pressure Sensor - Circuit Short-to-Ground

B2767-12 - Left Impact Pressure Sensor - Circuit Short-to-Battery

B2767-49 - Left Impact Pressure Sensor - Internal Electronic Failure

B2767-87 - Left Impact Pressure Sensor - Missing Message

B2768-11 - Right Impact Pressure Sensor - Circuit Short-to-Ground

B2768-12 - Right Impact Pressure Sensor - Circuit Short-to-Battery

B2768-49 - Right Impact Pressure Sensor - Internal Electronic Failure

B2768-87 - Right Impact Pressure Sensor - Missing Message

C10CC-00 - ESC Sensors

U0002-00 - CAN C BUS Off Performance

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0140-00 - Lost Communication With Body Control Module

U142A-00 - Implausible PRNDL Signal Received

U1110-00 - Lost Vehicle Speed Message

U1415-00 - Implausible/Missing Vehicle Configuration

Data Standard Procedure
HVAC Diagnosis and Testing

B1030-11 - Evaporator Temperature Sensor - Circuit Short-to-Ground

B1030-12 - Evaporator Temperature Sensor - Circuit Short-to-Battery

B1058-11 - Recirculation Door Control Circuit - Short-to-Ground

B1058-12 - Recirculation Door Control Circuit-Short-to-Battery

B1058-13 - Recirculation Door Control Circuit-Open

B1058-92 - Recirculation Door Control Performance or Incorrect Operation

B105C-00 - Recirculation Door Travel Range Too Small

B105D-00 - Recirculation Door Travel Range Too Large

B10B2-00 - A/C Cooldown Test Performance

B10EB-12 - Blower Motor Control Circuit-Short-to-Battery

B10EB-14 - Blower Motor Control Circuit-Short-to-Ground or Open

B1107-11 - Cabin Temperature Sensor 1 - Circuit Short-to-Ground

B1107–12 - Cabin Temperature Sensor 1 Circuit-Short-to-Battery

B11C2-11 - Front Mode Door-1 Control Circuit-Short-to-Ground

B11C2-12 - Front Mode Door-1 Control Circuit-Short-to-Battery

B11C2-13 - Front Mode Door-1 Control Circuit-Open

B11C2-92 - Front Mode Door-1 Control Performance or Incorrect Operation

B11C3-00 - Front Mode Door 1 Travel Range Too Small

B11C4-00 - Front Mode Door 1 Travel Range Too Large

B11C5-11 - Front Mode Door-2 Control Circuit-Short-to-Ground

B11C5-12 - Front Mode Door-2 Control Circuit-Short-to-Battery

B11C5-13 - Front Mode Door-2 Control Circuit-Open

B11C5-92 - Front Mode Door-2 Control-Performance or Incorrect Operation

B11C6-00 - Front Mode Door-2 Travel Range Too Small

B11C7-00 - Front Mode Door-2 Travel Range Too Large

B11C8-11 - Right Temperature Door Control Circuit-Short-to-Ground

B11C8-12 - Right Temperature Door Control Circuit-Short-to-Battery

B11C8-13 - Right Temperature Door Control Circuit-Open

B11C8-92 - Right Temperature Door Control Performance Incorrect Operation

B11C9-00 - Right Temperature Door Travel Too Small

B11CA-00 - Right Temperature Door Travel Too Large

B11CB-11 - Main/Left Temperature Door Control Circuit-Short-to-Ground

B11CB-12 - Main/Left Temperature Door Control Circuit-Short-to-Battery

B11CB-13 - Main/Left Temperature Door Control Circuit-Open

B11CB-92 - Main/Left Temperature Door Control Performance or Incorrect Operation

B11CC-00 - Main/Left Temperature Door Travel Too Small

B11CD-00 - Main/Left Temperature Door Travel Too Large

B11D3-00 - A/C Cooldown Test Performance - Compressor Not Engaged

B11D5-00 - A/C Cooldown Test Performance - Evap Temp Sensor Error

B11FC-11 - Blend Air Sensor Circuit-Short-to-Ground

B11FC-12 - Blend Air Sensor Short-to-Battery

B11FE-11 - Variable A/C Compressor Control - Circuit Short-to-Ground

B11FE-12 - Variable A/C Compressor Control - Circuit Short-to-Battery

B11FE-13 - Variable A/C Compressor Control - Circuit Open

B1600–11 - Left Solar Sensor Circuit - Short-to-Ground

B1600-12 - Left Solar Sensor - Circuit Short-to-Battery

B1600–92 - Left Solar Sensor-Performance or Incorrect Operation

B1603-11 - Right Solar Sensor - Circuit Short-to-Ground

B1603-12 - Right Solar Sensor - Circuit Short-to-Battery

B1603-92 - Right Solar Sensor-Performance or Incorrect Operation

B160F-11 - Twilight/Ambient Light Sensor Input - Circuit Short-to-Ground

B160F-12 - Twilight/Ambient Light Sensor - Circuit Short-to-Battery

B160F-92 - Twilight/Ambient Light Sensor Input-Performance or Incorrect Operation

B210A-84 - System Voltage Low - Signal Below Allowable Range

B210B-85 - System Voltage High - Signal Above Allowable Range

B210D-84 - Battery Voltage Low - Signal Below Allowable Range

B210E-85 - Battery Voltage High-Signal Above Allowable Range

B222A-00 - Vehicle Line Mismatch

U0140-00 - Lost Communication With Body Control Module

U0184-00 - Lost Communication With Radio

U11B8-00 - Lost Communication With Integrated Center Stack (ICS)

Standard Procedure
Module, Antilock Brake (ABS)
Diagnosis and Testing

B1783-01 - Stop Lamp Control - General Electrical Failure
C0020-01 - ABS Pump Motor Control - General Electrical Failure
C0020-16 - ABS Pump Motor Control - Circuit Voltage Below Threshold
C0020-1C - ABS Pump Motor Control - Circuit Voltage Out of Range
C0031-1D - Left Front Wheel Speed Sensor - Circuit Current Out of Range
C0031-2F - Left Front Wheel Speed Sensor - Signal Erratic
C0031-62 - Left Front Wheel Speed Sensor - Signal Compare Failure
C0034-1D - Right Front Wheel Speed Sensor - Circuit Current Out of Range
C0034-2F - Right Front Wheel Speed Sensor - Signal Erratic
C0034-62 - Right Front Wheel Speed Sensor - Signal Compare Failure
C0037-1D - Left Rear Wheel Speed Sensor - Current Out of Range
C0037-2F - Left Rear Wheel Speed Sensor - Signal Erratic
C0037-62 - Left Rear Wheel Speed Sensor - Signal Compare Failure
C003A-1D - Right Rear Wheel Speed Sensor - Circuit Current Out of Range
C003A-2F - Right Rear Wheel Speed Sensor - Signal Erratic
C003A-62 - Right Rear Wheel Speed Sensor - Signal Compare Failure
C0042-11 - Brake Pedal Position Sensor - Circuit Short-to-Ground
C0042-12 - Brake Pedal Position Sensor - Circuit Short-to-Battery
C0042-28 - Brake Pedal Position Sensor - Signal Bias Level Out of Range / Zero Adjustment Failure
C0042-2F - Brake Pedal Position Sensor - Signal Erratic
C0042-54 - Brake Pedal Position Sensor - Missing Calibration
C0042-62 - Brake Pedal Position Sensor - Signal Compare Failure
C0044-01 - Brake Pressure Sensor 1 - General Electrical Failure
C0044-1F - Brake Pressure Sensor 1 - Circuit Intermittent
C0044-28 - Brake Pressure Sensor 1 - Signal Bias Level Out of Range / Zero Adjustment Failure
C0044-62 - Brake Pressure Sensor 1 - Signal Compare Failure
C0044-64 - Brake Pressure Sensor 1 - Signal Plausibility Failure
C0049-7B - Brake Fluid - Low Fluid Level
C0051-22 - Steering Wheel Position Sensor - Signal Amplitude > Maximum
C0051-2F - Steering Wheel Position Sensor - Signal Erratic
C0051-28 - Steering Wheel Position Sensor - Signal Bias Level Out of Range / Zero Adjustment Failure
C0051-49 - Steering Wheel Position Sensor - Internal Electronic Failure
C0051-62 - Steering Wheel Position Sensor - Signal Compare Failure
C006A-28 - Multi-Axis Acceleration Sensor - Signal Bias Level Out of Range / Zero Adjustment Failure
C006A-2F - Multi-Axis Acceleration Sensor - Signal Erratic
C006A-49 - Multi-Axis Acceleration Sensor - Internal Electronic Failure
C006A-54 - Multi-Axis Acceleration Sensor - Missing Calibration
C006A-62 - Multi-Axis Acceleration Sensor - Signal Compare Failure
C006C-9A - Stability System - Component or System Operating Conditions
C0078-86 - Tire Diameter - Signal Invalid
C107B-62 - Wheel Speed Comparative Performance - Signal Comapre Failure
C1086-4B - ABS System Control Too Long-Over Temperature
C121C-00 - Torque Request Signal Denied
C1223-01 - Brake Pedal Travel Sensor Supply - General Electrical Failure
C1239-00 - Emission Rolls TestActive
C123B-4B - ESP System Control Too Long - Over Temperature
C2100-16 - Battery Voltage Low - Circuit Voltage Below Threshold
C2101-17 - Battery Voltage High - Circuit Voltage Above Threshold
C211B-92 - Ignition RUN/START Input Circuit - Performance or Incorrect Operation
C212A-16 - System Voltage Low - Circuit Voltage Below Threshold
C212A-17 - System Voltage High - Circuit Voltage Above Threshold
C2200-41 - Anti-Lock Brake Module Internal - General Checksum Failure
C2200-44 - Anti-Lock Brake Module Internal - Data Memory Failure
C2200-45 - Anti-Lock Brake Module Internal - Program Memory Failure
C2200-47 - Anti-Lock Brake Module Internal - Watchdog / Safety AuC Failure
C2200-48 - Anti-Lock Brake Module Internal - Supervision Software Failure
C2200-49 - Anti-Lock Brake Module Internal - Internal Electronic Failure
C2202-00 - Original VIN Mismatch / Missing
C2206-00 - Vehicle Configuration Mismatch
U0002-88 - CAN C BUS Off Performance - BUS Off
U0100-00 - Lost Communication With ECM/PCM
U0101-00 - Lost Communication With TCM
U0102-00 - Lost Communication With Transfer Case Control Module / AWD

U0104-00 - Lost Communication With Cruise Control Module

U0125-00 - Lost Communication With Dynamics Sensor

U0126-00 - Lost Communication With Steering Angle Sensor

U0132-00 - Lost Communication With Suspension Control Module

U0140-00 - Lost Communication With Body Control Module

U0151-00 - Lost Communication With Occupant Restraint Controller (ORC)

U0401-00 - Implausible Data Received From ECM/PCM

U0402-00 - Implausible Data Received From TCM

U0403-00 - Implausible Data Received From T-Case

U0422-00 - Implausible Data Received From Body Control Module

U0429-00 - Implausible Data Received From SCM

U0432-00 - Invalid Data Received From Multi-Axis Acceleration Sensor Module

U1003-88 - ESP CAN C BUS Performance - BUS Off

U140E-00 - Implausible Vehicle Configuration Data Received

Standard Procedure
Module, Body Control (BCM)
Diagnosis and Testing

B1208-11 - Anti-Theft Indicator - Circuit Short-to-Ground

B1208-15 - Anti-Theft Indicator - Circuit Short-to-Battery or Open

B1609-11 - Panel Dimmer Input - Circuit Short-to-Ground

B1609-15 - Panel Dimmer Input - Circuit Short-to-Battery or Open

B161E-11 - Reading Lamp Control - Circuit Short-to-Ground

B1626-11 - Cargo Lamp Control - Circuit Short-to-Ground

B162A-11 - Left Low Beam Control - Circuit Short-to-Ground - Base

B162A-11 - Left Low Beam Control - Circuit Short-to-Ground - Premium

B162A-15 - Left Low Beam Control - Circuit Short-to-Battery or Open - Base

B162A-15 - Left Low Beam Control - Circuit Short-to-Battery or Open - Premium

B162E-11 - Right Low Beam Control - Circuit Short-to-Ground - Base

B162E-11 - Right Low Beam Control - Circuit Short-to-Ground - Premium

B162E-15 - Right Low Beam Control - Circuit Short-to-Battery or Open - Base

B162E-15 - Right Low Beam Control - Circuit Short-to-Battery or Open - Premium

B1632-11 - Left High Beam Control - Circuit Short-to-Ground - Base

B1632-11 - Left High Beam Control - Circuit Short-to-Ground - Premium

B1632-15 - Left High Beam Control - Circuit Short-to-Battery or Open - Base

B1632-15 - Left High Beam Control - Circuit Short-to-Battery or Open - Premium

B1636-11 - Right High Beam Control - Circuit Short-to-Ground - Base

B1636-11 - Right High Beam Control - Circuit Short-to-Ground - Premium

B1636-15 - Right High Beam Control - Circuit Short-to-Battery or Open - Base

B1636-15 - Right High Beam Control - Circuit Short-to-Battery or Open - Premium

B163A-11 - Front Left Turn Lamp Control - Circuit Short-to-Ground - Base

B163A-11 - Front Left Turn Lamp Control - Circuit Short-to-Ground - Premium

B163A-15 - Front Left Turn Lamp Control - Circuit Short-to-Battery or Open - Base

B163A-15 - Front Left Turn Lamp Control - Circuit Short-to-Battery or Open - Premium

B163E-11 - Front Right Turn Lamp Control - Circuit Short-to-Ground - Base

B163E-11 - Front Right Turn Lamp Control - Circuit Short-to-Ground - Premium

B163E-15 - Front Right Turn Lamp Control - Circuit Short-to-Battery or Open - Base

B163E-15 - Front Right Turn Lamp Control - Circuit Short-to-Battery or Open - Premium

B1642-11 - Rear Left Turn Lamp Control - Circuit Short-to-Ground

B1642-15– Rear Left Turn Lamp Control - Circuit Short-to-Battery or Open

B1646-11 - Rear Right Turn Lamp Control - Circuit Short-to-Ground

B1646-15 - Rear Right Turn Lamp Control - Circuit Short-to-Battery or Open

B168E-2A - Front Fog Lamp Switch - Stuck

B169B-2A - Cargo Lamp Switch - Stuck

B16AB-11 - Trunk Lamp Control - Circuit Short-to-Ground

B16AB-15 - Trunk Lamp Control - Circuit Short-to-Battery or Open

B16AF-11 - Left Stop Lamp Control - Circuit Short-to-Ground - Base

B16AF-11 - Left Stop Lamp Control - Circuit Short-to-Ground - Premium

B16AF-15 - Left Stop Lamp Control - Circuit Short-to-Battery or Open - Base

B16AF-15 - Left Stop Lamp Control - Circuit Short-to-Battery or Open - Premium

B16B3-11 - Right Stop Lamp Control - Circuit Short-to-Ground - Base

B16B3-11 - Right Stop Lamp Control - Circuit Short-to-Ground - Premium

B16B3-15 - Right Stop Lamp Control - Circuit Short-to-Battery or Open - Base

B16B3-15 - Right Stop Lamp Control - Circuit Short-to-Battery or Open - Premium

B16B7-11 - Center Stop Lamp Control - Circuit Short-to-Ground

B16B7-15 - Center Stop Lamp Control - Circuit Short-to-Battery or Open

B16BF-11 - Front Left Sidemarker Lamp Control - Circuit Short-to-Ground

B16BF-15 - Front Left Sidemarker Lamp Control - Circuit Short-to-Battery or Open

B16C3-11 - Front Right Sidemarker Lamp Control - Circuit Short-to-Ground

B16C3-15 - Front Right Sidemarker Lamp Control - Circuit Short-to-Battery or Open

B16CF-11 - Left DRL Lamp Control - Circuit Short-to-Ground

B16CF-15 - Left DRL Lamp Control - Circuit Short to Battery or Open

B16D3-11 - Right DRL Lamp Control - Circuit Short-to-Ground

B16D3-15 - Right DRL Lamp Control - Circuit Short-to-Battery or Open

B16D7-11 - Left Taillamp 1 Control - Circuit Short-to-Ground - Base

B16D7-11 - Left Taillamp 1 Control - Circuit Short-to-Ground - Premium

B16D7-15 - Left Taillamp 1 Control - Circuit Short to Battery or Open - Base

B16D7-15 - Left Taillamp 1 Control - Circuit Short to Battery or Open - Premium

B16DF-11 - Right Taillamp 1 Control - Circuit Short-to-Ground - Base

B16DF-11 - Right Taillamp 1 Control - Circuit Short-to-Ground - Premium

B16DF-15 - Right Taillamp 1 Control - Circuit Short-to-Battery or Open - Base

B16DF-15 - Right Taillamp 1 Control - Circuit Short-to-Battery or Open - Premium

B16E7-11 - License Plate Lamp Control - Circuit Short-to-Ground

B16E7-15 - License Plate Lamp Control - Circuit Short-to-Battery or Open

B16F7-11 - Front Left Fog Lamp Control - Circuit Short-to-Ground

B16F7-15 - Front Left Fog Lamp Control - Circuit Short-to-Battery or Open

B16FB-11 - Front Right Fog Lamp Control - Circuit Short-to-Ground

B16FB-15 - Front Right Fog Lamp Control - Circuit Short-to-Battery or Open

B1707-11 - Left Reverse Lamp Control - Circuit Short-to-Ground - Base

B1707-11 - Left Reverse Lamp Control - Circuit Short-to-Ground - Premium

B1707-15 - Left Reverse Lamp Control - Circuit Short-to-Battery or Open - Base

B1707-15 - Left Reverse Lamp Control - Circuit Short-to-Battery or Open - Premium

B170B-11 - Right Reverse Lamp Control - Circuit Short-to-Ground - Base

B170B-11 - Right Reverse Lamp Control - Circuit Short-to-Ground - Premium

B170B-15 - Right Reverse Lamp Control - Circuit Short-to-Battery or Open - Base

B170B-15 - Right Reverse Lamp Control - Circuit Short-to-Battery or Open - Premium

B1751-11 - Courtesy Lamp Control - Circuit Short-to-Ground

B177A-11 - Left Front Lamp Diagnostic Line - Circuit Short-to-Ground

B177B-11 - Right Front Lamp Diagnostic Line - Circuit Short-to-Ground

B178E-11 - HeadLamp Switch Input - Circuit Short-to-Ground

B178E-15 - HeadLamp Switch Input - Circuit Short-to-Battery or Open

B1792-11 - Left Rear Lamp Diagnostic Line - Circuit Short-to-Ground

B1793-11 - Right Rear Lamp Diagnostic Line - Circuit Short-to-Ground

B17A5-11 - HALO Lamps Control - Circuit Short-to-Ground

B17AD-12 - Rear Left Trailer Turn Lamp Control - Circuit Short-to-Battery

B17B1-12 - Rear Right Trailer Turn Lamp Control - Circuit Short-to-Battery

B17C5-12 - Trailer ToW Reverse Lamp Control - Circuit Short-to-Battery

B17F3-00 - Auto High Beam System Aim

B17F6-12 - Trailer Taillamp Control - Circuit Short-to-Battery

B17FB-00 - Auto High Beam Camera View Blocked

B1800-11 - Driver Door Lock/Unlock Switch-Circuit Short-to-Ground

B1800-2A - Driver Door Lock/Unlock Switch - Stuck

B1805-11 - Passenger Door Lock/Unlock Switch-Circuit Short-to-Ground

B1805-2A - Passenger Door Lock/Unlock Switch-Stuck

B181E-13 - Hood Ajar Input - Circuit Open

B182C-11 - All Door Lock Control - Circuit Short-to-Ground

B182C-12 - All Door Lock Control - Circuit Short-to-Battery

B182C-13 - All Door Lock Control - Circuit Open

B1830-11 - All Doors Unlock Control - Circuit Short-to-Ground

B1830-12 - All Doors Unlock Control - Circuit Short-to-Battery

B1830-13 - All Doors Unlock Control - Circuit Open

B1D4E-11 - Adjustable Pedal Inhibit - Circuit Short-to-Ground

B1D4E-15 - Adjustable Pedal Inhibit - Circuit Short-to-Battery or Open

B1E72-11 - Power Inverter EnableE Control - Circuit Short-to-Ground

B1F07-00 - Auxiliary Switch Bank Module Internal

B1F08-00 - Terrain Switch Bank Module Internal

B2103-11 - Ignition RUN/START 1 Control - Circuit Short-to-Ground

B2103-15 - Ignition RUN/START 1 Control - Circuit Short-to-Battery or Open

B2119-11 - Ignition RUN/ACC/SPAD Control - Circuit Short-to-Ground

B2119-15 - Ignition RUN/ACC/SPAD Control - Circuit Short-to-Battery or Open

B2121-11 - Ignition RUN Control 1 - Circuit Short-to-Ground

B2121-15 - Ignition RUN Control 1 - Circuit Short To Battery or Open

B212E-11 - Ignition RUN/ACC Control - Circuit Short-to-Ground

B212E-15 - Ignition RUN/ACC Control - Circuit Short-to-Battery or Open

B2183-11 - Ignition Unlock RUN/START Control - Circuit Short-to-Ground

B2193-00 - Intelligent Battery Sensor Internal

B2199-16 - Battery Voltage - Circuit Voltage Below Threshold

B2199-17 - Battery Voltage - Circuit Voltage Above Threshold

B21F7-11 - Electronic Shifter Power Supply - Circuit Short-to-Ground

B21F8-13 - Exterior Lighting Power Supply Input 1 - Circuit Open

B21F9-13 - Exterior Lighting Power Supply Input 2 - Circuit Open

B2206-00 - Current VIN Missing / Mismatch

B2211-00 - Light Rain Sensor Module Initializatioin Performance

B2216-00 - Central Gateway Internal

B221D-00 - Rain Sensor Module (RSM) Internal

B222C-00 - Vehicle Configuation Not Programmed

B223A-00 - Auto High Beam ECU Internal

B225C-00 - Compass Module Internal

B2298-00 - Rain Sensor Over Temperature

B2299-00 - Rear Camera Module Internal

B2303-11 - Wiper Park Switch Input - Circuit Short-to-Ground

B2303-13 - Wiper Park Switch Input - Circuit Open

B2312-11 - Wiper ON/OFF Control - Circuit Short-to-Ground

B2312-15 - Wiper ON/OFF Control - Circuit Short-to-Battery or Open

B2316-11 - Wiper High/Low Control - Circuit Short-to-Ground

B2316-15 - Wiper High/Low Control - Circuit Short-to-Battery or Open

B2335-11 - Horn Control - Circuit Short-to-Ground

B2335-15 - Horn Control - Circuit Short-to-Battery or Open

B233D-11 - Front/Rear Washer Motor (+) Control - Circuit Short-to-Ground

B23AA-00 - Implausible Data Received From Rain Sensor

B23B6-13 - Autostick/ERS Switch - Circuit Open

B23B6-1C - Autostick/ERS Switch - Circuit Voltage Out of Range

B23B6-2A - Autostick/ERS Switch - Stuck

B23B8-2A - Brake Pedal Switch - Stuck

B2854-00 - Implausible Data Received From AHBM

B286D-11 - Left Front Snowplow Turn Lamp - Circuit Short-to-Ground

B286E-11 - Right Front Snowplow Turn Lamp - Circuit Short-to-Ground

B287D-12 - Snowplow Park Lamp Control - Circuit Short-to-Battery

B2885-11 - Truck Bed Topper Stop Lamp - Circuit Short-to-Ground

C1006-13 - Brake Fluid Level Input - Circuit Open

C1403-11 - Transfer Case Range Position Sensor-Circuit Short-to-Ground

C1403-13 - Transfer Case Range Position Sensor-Circuit Open

P0070-11 - Ambient Air Temperature Sensor Circuit - Circuit Short-to-Ground

P0070-15 - Ambient Air Temperature Sensor Circuit - Circuit Short-to-Battery or Open

P0460-11 - Fuel Level Sensor 1 - Circuit Short-to-Ground

P0460-15 - Fuel Level Sensor 1 - Circuit Short-to-Battery or Open

P0853-00 - Overdrive-Tow Switch Input Circuit Stuck

P0928-11 - BTSI Control - Circuit Short-to-Ground

P1276-11 - Starter Control 2 - Circuit Short-to-Ground

P1276-15 - Starter Control 2 - Circuit Short-to-Battery or Open

P2688-00 - Fuel Supply Heater Control Circuit Low

P2689-00 - Fuel Supply Heater Control Circuit High

U0002-00 - CAN C BUS Off Performance

U0010-00 - CAN Interior BUS

U0011-00 - CAN Interior BUS Off Performance

U0100-00 - Lost Communication With ECM/PCM

U0101-00 - Lost Communication With TCM

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0137-00 - Lost Communication With Trailer Brake Control Module

U0143-00 - Lost Communication With Multi-Purpose Module

U0151-00 - Lost Communication With Occupant Restraint Controller (ORC)

U0155-00 - Lost Communication With Cluster/CCN

U0161-00 - Lost Communication With Compass Module

U0164-00 - Lost Communication With HVAC Control Module

U0199-00 - Lost Communication With Driver Door Module

U0200-00 - Lost Communication With Passenger Door Module

U0212-00 - Lost Communication With SCM

U0231-00 - Lost Communication With Light Rain Sensing Module

U0241-00 - Lost Communication With AutoHigh Beam Headlamp Control Module

U0264-00 - Lost Communication With Camera Module - Rear

U1008-00 - LIN 1 BUS

U1009-00 - LIN 2 BUS

U112C-00 - Lost Communication With Transfer Case Switch Bank Module

U112D-00 - Lost Communication With EVIC Steering Wheel SwitchES

U113B-00 - Lost Communication With Switch Bank Module

U113E-00 - Lost Communication With Intelligent Battery Sensor

U11B9-00 - Lost Communication With RF Hub

U1207-00 - Lost Communication With TERRAIN Switch Bank Module

U1433-23 - Implausible Ignition Switch Status Message Received - Signal Stuck Low

U1433-24 - Implausible Ignition Switch Status Message Received - Signal Stuck High

Standard Procedure
Module, Driver Door (DDM), (DMFL/R)
Diagnosis and Testing

B173D-11 - Mirror Signal Lamp Control - Circuit Short-to-Ground

B173D-12 - Mirror Signal Lamp Control - Circuit Short-to-Battery

B173D-13 - Mirror Signal Lamp Control - Circuit Open

B18B5-00 - Master Switch - Front Left Window Switch - Stuck

B18B6-00 - Master Switch - Front Right Window Switch - Stuck

B18B7-00 - Master Switch - Rear Left Window Switch - Stuck

B18B8-00 - Master Switch - Rear Right Window Switch - Stuck

B18BA-11 - Window Control - Circuit Short-to-Ground

B18BA-12 - Window Control - Circuit Short-to-Battery

B18BA-13 - Window Control - Circuit Open

B18BA-4B - Window Control - Over Temperature

B1D00-2A - Mirror Fold Switch Input - Stuck

B1D04-2A - Mirror Adjust Switch Input - Stuck

B1D4A-2A - Memory Switch Input - Stuck

B1DD0-11 - Mirror Heater Control - Circuit Short-to-Ground

B1DD0-15 - Mirror Heater Control - Circuit Short-to-Battery or Open

B1E64-00 - Left Mirror Select Switch - Stuck

B1E65-00 - Right Mirror Select Switch - Stuck

B1F02-11 - Mirror Vertical Motor Control - Circuit Short-to-Ground

B1F02-12 - Mirror Vertical Motor Control - Circuit Short-to-Battery

B1F02-13 - Mirror Vertical Motor Control - Circuit Open

B1F03-11 - Mirror Horizontal Motor Control - Circuit Short-to-Ground

B1F03-12 - Mirror Horizontal Motor Control - Circuit Short-to-Battery

B1F03-13 - Mirror Horizontal Motor Control - Circuit Open

B1F04-11 - Mirror Fold Control - Circuit Short-to-Ground

B1F04-15 - Mirror Fold Control - Circuit Short-to-Battery or Open

B1F05-11 - Electrochromatic Mirror Control Circuit-Circuit Short-to-Ground

B1F05-12 - Electrochromatic Mirror Control Circuit-Circuit Short-to-Battery

B1F05-13 - Electrochromatic Mirror Control Circuit-Circuit Open

B1F06-12 - Mirror Control Sensor Position Circuit - Circuit Short-to-Battery

B1F06-14 - Mirror Control Sensor Position Circuit - Circuit Short-to-Ground or Open

B210C-16 - Battery Voltage Input - Circuit Voltage Below Threshold

B210C-17 - Battery Voltage Input - Circuit Voltage Above Threshold

B21DD-84 - System Voltage - Signal Below Allowable Range

B21DD-85 - System Voltage - Signal Voltage Above Allowable Range

B224F-54 - Door Module Internal - Missing Calibration

B224F-96 - Door Module Internal - Component Internal Failure

B25AF-2A - Door Lock/Unlock Switch - Stuck

B25B0-31 - Window Position Sensor - No Signal

B25B1-11 - Window Position Sensor Power Supply - Circuit Short-to-Ground

B2860-11 - Door Ambient Light Control - Circuit Short-to-Ground

B2860-15 - Door Ambient Light Control - Circuit Short-to-Battery or Open

B2861-11 - Mirror Approach Light Control - Circuit Short-to-Ground

B2861-15 - Mirror Approach Light Control - Circuit Short-to-Battery or Open

U0010-00 - CAN Interior BUS

U0018-00 - CAN Interior BUS (-) Shorted-to-BUS (+)

U0037-11 - LIN BUS - Circuit Short-to-Ground

U0140-00 - Lost Communication With Body Control Module

U0164-00 - Lost Communication With HVAC Control Module

U113D-00 - Lost Communication With Master Power Window Switch

U0232-00 - Lost Communication With Blind Spot Detection Module

Module, Drivetrain Control (DTCM)
Diagnosis and Testing

C1078 - Tire Revolutions Range Performance

C1404 - Transfer Case Range Position Sensor Circuit Low

C1405 - Transfer Case Range Position Sensor Circuit High

C1407 - Transfer Case Brake Control Circuit Low

C1408 - Transfer Case Brake Control Circuit High

C140A - Transfer Case Motor Performance

C140D - Transfer Case Motor Control Circuit Open

C140E - Transfer Case Motor Blocked

C1415 - Transfer Case Motor Current Performance

C1444 - Transfer Case Motor Overuse

C1456 - AWD Clutch Power Control Circuit Low

C1457 - AWD Clutch Power Control Circuit High

C145D - AWD Clutch Power /Return Control Circuit Open
C1464 - Front Axle Disconnect Control Circuit Low
C1465 - Front Axle Disconnect Control Circuit High
C1472 - Transfer Case Clutch Control Circuit Performance
C1477 - Transfer Case Clutch Over Temperature
C147B - Front Axle Disconnect Sensor Circuit Performance
C147C - Front Axle Disconnect Power Circuit Low
C147D - Front Axle Disconnect Power Supply Circuit High
C1480 - Transfer Case Range Digital Position Sensor Performance
C2100 - Battery Voltage Low
C2101 - Battery Voltage High
C2111 - Sensor Supply 1 Voltage Circuit Low
C2112 - Sensor Supply 1 Voltage Circuit High
C2201 - FDCM/DTCM Internal
U0001 - CAN C BUS
U0100 - Lost Communication With ECM/PCM
U0101 - Lost Communication With TCM
U0121 - Lost Communication With Anti-Lock Brake Module
U0140 - Lost Communication With Body Control Module
U0401 - Implausible Data Received From ECM/PCM
U0402 - Implausible Data Received From TCM
U0415 - Implausible Data Received From ABS
U0422 - Implausible Data Received From Body Control Module
U0429 - Implausible Data Received From SCM (SAS)

Standard Procedure
Module, External Disc
Module, Heated Seat (HSM)
Diagnosis and Testing

B10C4-11 - Heated Steering Wheel Control - Circuit Short-to-Ground
B10C4-12 - Heated Steering Wheel Control - Circuit Short-to-Battery
B10C4-13 - Heated Steering Wheel Control - Circuit Open
B1148-2A - Left Rear Heated Seat Switch - Stuck
B114D-2A - Right Rear Heated Seat Switch - Stuck
B11C1-13 - Steering Wheel Heater Power Supply - Circuit Open
B11DC-13 - Rear Heated Seats Power Supply - Circuit Open
B1E99-11 - Front Left Heater Control Circuit - Circuit Short-to-Ground
B1E99-12 - Front Left Heater Control Circuit - Circuit Short-to-Battery
B1E99-13 - Front Left Heater Control Circuit - Circuit Open
B1E99-1E - Front Left Heater Control Circuit - Circuit Resistance Out of Range
B1E9A-11 - Front Right Heater Control Circuit - Circuit Short-to-Ground
B1E9A-12 - Front Right Heater Control Circuit - Circuit Short-to-Battery
B1E9A-13 - Front Right Heater Control Circuit - Circuit Open
B1E9A-1E - Front Right Heater Control Circuit - Circuit Resistance Out of Range
B1E9B-11 - Rear Left Heater Control Circuit - Circuit Short-to-Ground
B1E9B-12 - Rear Left Heater Control Circuit - Circuit Short-to-Battery
B1E9B-13 - Rear Left Heater Control Circuit - Circuit Open
B1E9B-1E - Rear Left Heater Control Circuit - Circuit Resistance Out of Range
B1E9C-11 - Rear Right Heater Control Circuit - Circuit Short-to-Ground
B1E9C-12 - Rear Right Heater Control Circuit - Circuit Short-to-Battery
B1E9C-13 - Rear Right Heater Control Circuit - Circuit Open
B1E9C-1E - Rear Right Heater Control Circuit - Circuit Resistance Out of Range
B1E9D-11 - Front Left Vent Control Circuit - Circuit Short-to-Ground
B1E9D-12 - Front Left Vent Control Circuit - Circuit Short-to-Battery
B1E9D-13 - Front Left Vent Control Circuit - Circuit Open
B1E9E-11 - Front Right Vent Control Circuit - Circuit Short-to-Ground
B1E9E-12 - Front Right Vent Control Circuit - Circuit Short-to-Battery
B1E9E-13 - Front Right Vent Control Circuit - Circuit Open
B1EB1-1A - Front Left Seat Heater Sensor - Circuit Resistance Below Threshold
B1EB1-1B - Front Left Seat Heater Sensor - Circuit Resistance Above Threshold
B1EB2-1A - Front Right Seat Heater Sensor - Circuit Resistance Below Threshold
B1EB2-1B - Front Right Seat Heater Sensor - Circuit Resistance Above Threshold
B1EB3-1A - Rear Left Seat Heater Sensor - Circuit Resistance Below Threshold
B1EB3-1B - Rear Left Seat Heater Sensor - Circuit Resistance Above Threshold
B1EB4-1A - Rear Right Seat Heater Sensor - Circuit Resistance Below Threshold
B1EB4-1B - Rear Right Seat Heater Sensor - Circuit Resistance Above Threshold
B210C-17 - Battery Voltage Input - Circuit Voltage Above Threshold
B210C-18 - Battery Voltage Input - Under Current
B21DD-84 - System Voltage - Signal Below Allowable Range
B21DD-85 - System Voltage - Signal Above Allowable Range
B221A-00 - (HSM) Heated Seat Module Internal
U0011-00 - CAN Interior BUS Off Performance
U0140-00 - Lost Communication With Body Control Module
U1446-00 - Implausible Heated Steering Wheel Temperature Message Received

Module, Integrated Center Stack/Screen
Diagnosis and Testing

B156E-96 - Intergrated Center Stack (ICS)-Component Internal Failure

B157F-2A - Intergrated Center Stack Button - Stuck

B210D-16 - Battery Voltage Low - Circuit Below Threshold

B210E-17 - Battery Voltage High - Circuit Voltage Above Threshold

U0010-00 - CAN Interior BUS

U0011-00 - CAN Interior BUS OFF Performance

U0140-00 - Lost Communication With Body Control Module

U0164 - Lost Communication With HVAC Control

U0184-00 - Lost Communication With Radio

Module, Integrated Trailer Brake (ITBM)
Diagnosis and Testing

C10C5-92 - Electronic Trailer Brake Accelerometer - Performance or Incorrect Operation

C10C6-92 - Electronic Trailer Brake Manual Lever – Performance or Incorrect Operation

C10C7-00 - Electronic Trailer Brake Control Output

C10C7-11 - Electronic Trailer Brake Control Output - Circuit Short-to-Ground

C10C7-12 - Electronic Trailer Brake Control Output - Circuit Short-to-Battery

C10C7-19 - Electronic Trailer Brake Control Output - Overcurrent

C10C9-00 - Electronic Trailer Brake Manual Lever Failsafe Circuit

C10CA-2A - ITBM Adjustment Switch - Stuck

C2129-16 - Battery Voltage - Circuit Voltage Below Threshold

C2129-17 - Battery Voltage - Circuit Voltage Above Threshold

C2213-00 - Trailer Brake Module Internal

C2213-42 - Trailer Brake Module Internal-General Memory Failure

C2214-00 - ITBM not Calibrated

U0001-00 - CAN C BUS

U0100-00 - Lost Communication With ECM/PCM

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0140-00 - Lost Communication With Body Control Module

U0155-00 - Lost Communication With Cluster/CCN

U0401-00 - Implausible Data Received From ECM/PCM

U0415-00 - Implausible Data Received From ABS

U0422-00 - Implausible Data Received From Body Control Module

U0423-00 - Implausible Data Received From Cluster/CCN

U11B9-00 - Lost Communication With RF HUB

U1601-00 - ECU Application Software Code 1 Missing or Corrupted

Standard Procedure
Module, Memory Seat (MSMD)
Diagnosis and Testing

B1D5B-00 - Adjustable Pedal Switch Circuit Performance

B1D5C-23 - Adjustable Pedal Switch Circuit Stuck Forward - Signal Stuck Low

B1D5D-23 - Adjustable Pedal Switch Circuit Stuck Rearward - Signal Stuck Low

B1D5E-13 - Power Seat Switch - Circuit Open

B1D62-2A - Power Seat Switch Stuck

B1D67-00 - Adjustable Pedal Control Circuit Performance

B1D6B-11 - Seat Horizontal Position Sensor - Circuit Short-to-Ground

B1D6B-12 - Seat Horizontal Position Sensor - Circuit Short-to-Battery

B1D6F-11 - Seat Front Vertical Position Sensor - Circuit Short-to-Ground

B1D6F-12 - Seat Front Vertical Position Sensor - Circuit Short-to-Battery

B1D73-11 - Seat Rear Vertical Position Sensor - Circuit Short-to-Ground

B1D73-12 - Seat Rear Vertical Position Sensor - Circuit Short-to-Battery

B1D77-11 - Seat Recliner Position Sensor - Circuit Short-to-Ground

B1D77-12 - Seat Recliner Position Sensor - Circuit Short-to-Battery

B1D7B-00 - Seat Horizontal Motor Control Circuit Performance

B1D7F-00 - Seat Front Vertical Motor Control Circuit Performance

B1D83-00 - Seat Rear Vertical Motor Control Circuit Performance

B1D87-00 - Seat Backrest Motor Control - Circuit Performance

B1D9B-54 - Seat Horizontal Front Stop Not Learned-Missing Calibration

B1ED1-11 - Adjustable Pedal Sensor - Circuit Short-to-Ground

B1ED1-12 - Adjustable Pedal Sensor-Circuit Short-to-Battery

B210A-84 - System Voltage Low - Signal Below Allowable Range

B210B-85 - System Voltage High - Signal Above Allowable Range

B210D-21 - Battery Voltage Low - Signal Amplitude < Minimum

B210E-22 - Battery Voltage High - Signal Amplitude > Maximum

B221C-42 - (MSM) Memory Seat Module Internal-General Memory Failure

U0011-00 - CAN Interior BUS Off Performance

U0013-00 - CAN Interior BUS (+) Circuit Low

U0014-00 - CAN Interior BUS (+) Circuit High

U0016-00 - CAN Interior BUS (-) Circuit Low

U0017-00 - CAN Interior BUS (-) Circuit High

U0140-00 - Lost Communication With Body Control Module

U0199-00 - Lost Communication With Driver Door Module

Standard Procedure
Module, Park Assist (PTS/PAM)
Diagnosis and Testing

B1295-11 - PTS Sensor 8 - Circuit Short-to-Ground
B1295-12 - PTS Sensor 8 - Circuit Short-to-Battery
B1295-25 - PTS Sensor 8 - Signal Shape / Waveform Failure
B1295-92 - PTS Sensor 8 - Performance or Incorrect Operation
B1296-11 - PTS Sensor 9 - Circuit Short-to-Ground
B1296-12 - PTS Sensor 9 - Circuit Short-to-Battery
B1296-25 - PTS Sensor 9 - Signal Shape / Waveform Failure
B1296-92 - PTS Sensor 9 - Performance or Incorrect Operation
B1297-11 - PTS Sensor 10 - Circuit Short-to-Ground
B1297-12 - PTS Sensor 10 - Circuit Short-to-Battery
B1297-25 - PTS Sensor 10 - Signal Shape / Waveform Failure
B1297-92 - PTS Sensor 10 - Performance or Incorrect Operation
B1298-11 - PTS Sensor 11 - Circuit Short-to-Ground
B1298-12 - PTS Sensor 11 - Circuit Short-to-Battery
B1298-25 - PTS Sensor 11 - Signal Shape / Waveform Failure
B1298-92 - PTS Sensor 11 - Performance or Incorrect Operation
B210C-16 - Battery Voltage Input-Circuit Voltage Below Threshold
B210C-17 - Battery Voltage Input-Circuit Voltage Above Threshold
B2128-16 - Sensor Supply Voltage-Circuit Voltage Below Threshold
B2128-17 - Sensor Supply Voltage-Circuit Voltage Above Threshold
B21DD-16 - System Voltage - Circuit Voltage Below Threshold
B21DD-17 - System Voltage - Circuit Voltage Above Threshold
B222A-00 - Vehicle Line Mismatch
B2232-00 - (PTS) Parktronics Internal
U0001-00 - CAN C BUS
U0100-00 - Lost Communication With ECM/PCM
U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module
U0140-00 - Lost Communication With Body Control Module
U0155-00 - Lost Communication With Cluster/CCN
U0401-00 - Implausible Data Received From ECM/PCM
U0418-00 - Implausible Data Received From Brake System Control Module
U0422-00 - Implausible Data Received From Body Control Module
U0423-00 - Implausible Data Received From Cluster/CCN

Module, Passenger Door (PDM), (DMFL/R)
Diagnosis and Testing

B173D-11 - Mirror Signal Lamp Control - Circuit Short-to-Ground
B173D-12 - Mirror Signal Lamp Control - Circuit Short-to-Battery
B173D-13 - Mirror Signal Lamp Control - Circuit Open
B18BA-11 - Window Control - Circuit Short-to-Ground
B18BA-12 - Window Control - Circuit Short-to-Battery
B18BA-13 - Window Control - Circuit Open
B18BA-4B - Window Control - Over Temperature
B18E6-2A - Window Switch - Stuck
B1DD0-11 - Mirror Heater Control - Circuit Short-to-Ground
B1DD0-15 - Mirror Heater Control - Circuit Short-to-Battery or Open
B1F02-11 - Mirror Vertical Motor Control - Circuit Short to-Ground
B1F02-12 - Mirror Vertical Motor Control - Circuit Short to Battery
B1F02-13 - Mirror Vertical Motor Control - Circuit Open
B1F03-11 - Mirror Horizontal Motor Control - Circuit Short-to-Ground
B1F03-12 - Mirror Horizontal Motor Control - Circuit Short-to-Battery
B1F03-13 - Mirror Horizontal Motor Control - Circuit Open
B1F04-11 - Mirror Fold Control - Circuit Short-to-Ground
B1F04-15 - Mirror Fold Control - Circuit Short-to-Battery or Open
B1F05-11 - Electrochromatic Mirror Control Circuit-Circuit Short-to-Ground
B1F05-12 - Electrochromatic Mirror Control Circuit-Circuit Short-to-Battery
B1F05-13 - Electrochromatic Mirror Control Circuit-Circuit Open
B1F06-12 - Mirror Control Sensor Position Circuit - Circuit Short-to-Battery
B1F06-14 - Mirror Control Sensor Position Circuit - Circuit Short-to-Ground or Open
B210C-16 - Battery Voltage Input - Circuit Voltage Below Threshold
B210C-17 - Battery Voltage Input - Circuit Voltage Above Threshold
B21DD-84 - System Voltage - Signal Below Allowable Range
B21DD-85 - System Voltage - Signal Above Allowable Range
B224F-54 - Door Module Internal - Missing Calibration
B224F-96 - Door Module Internal - Component Internal Failure
B25AF-2A - Door Lock/Unlock Switch - Stuck
B25B0-31 - Window Position Sensor - No Signal
B25B1-11 - Window Position Sensor Power Supply - Circuit Short-to-Ground
B285E-11 - Window Switch Backlighting - Circuit Short to Ground
B2860-11 - Door Ambient Light Control - Circuit Short to Ground

B2860-15 - Door Ambient Light Control - Circuit Short to Battery or Open

B2861-11 - Mirror Approach Light Control - Circuit Short-to-Ground

B2861-15 - Mirror Approach Light Control - Circuit Short-to-Battery or Open

U0010-00 - CAN Interior BUS

U0018-00 - CAN Interior BUS (-) Shorted-to-BUS (+)

U0140-00 - Lost Communication With Body Control Module

U0164-00 - Lost Communication With HVAC Control Module

U0199-00 - Lost Communication With Driver Door Module

U0232-00 - Lost Communication With Blind Spot Detection Module

Module, Powertrain Control (PCM), 68RFE Diagnosis and Testing

P0218 - Transmission High Temperature Operation Activated

P0562 - Battery/System Voltage Low

P0602 - Control Module Programming Error/Not Programmed

P0604 - Internal Control Module RAM

P0613 - Internal TCM

P0706 - Transmission Range Sensor Rationality

P0711 - Transmission Temperature Sensor Performance

P0712 - Transmission Temperature Sensor Low

P0713 - Transmission Temperature Sensor High

P0714 - Transmission Temperature Sensor Intermittent

P0716 - Input Speed Sensor 1 Circuit Performance

P0721 - Output Speed Sensor Circuit Performance

P0729 - Gear Ratio Error In 6th

P0731 - Gear Ratio Error In 1st

P0732 - Gear Ratio Error In 2nd

P0733 - Gear Ratio Error In 3rd

P0734 - Gear Ratio Error In 4th

P0735 - Gear Ratio Error In 5th

P0736 - Gear Ratio Error In Reverse

P0740 - TCC Out of Range

P0750 - LR Solenoid Circuit

P0755 - 2C Solenoid Circuit

P0765 - UD Solenoid Circuit

P0770 - 4C Solenoid Circuit

P0841 - LR Pressure Switch Rationality

P0845 - 2C Hydraulic Pressure Test

P0846 - 2C Pressure Switch Rationality

P0868 - Line Pressure Low

P0869 - Line Pressure High

P0870 - OD Hydraulic Pressure Test

P0871 - OD Pressure Switch Rationality

P0875 - UD Hydraulic Pressure Test

P0876 - UD Pressure Switch Rationality

P0882 - TCM Power Input Low

P0883 - TCM Power Input High

P0884 - Power UP AT Speed

P0890 - Switched Battery

P0933 - Hydraulic Pressure Sensor Range/Performance

P0934 - Line Pressure Sensor Circuit Low

P0935 - Line Pressure Sensor Circuit High

P0944 - Loss of Hydraulic Pump Prime

P0987 - 4C Hydraulic Pressure Test

P0988 - 4C Pressure Switch Rationality

P1715 - Restricted Manual Valve In T3 Range

P1775 - Solenoid Switch Valve Latched In TCC Position

P1776 - Solenoid Switch Valve Latched In LR Position

P1794 - Speed Sensor Ground Error

P2700 - Inadequate Element Volume LR

P2701 - Inadequate Element Volume 2C

P2702 - Inadequate Element Volume OD

P2703 - Inadequate Element Volume UD

P2704 - Inadequate Element Volume 4C

P2706 - MS Solenoid Circuit

U0002-00 CAN C BUS Off Performance

U0100-00 - Lost Communication With ECM/PCM

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0140-00 - Lost Communication With Body Control Module

U1449 - Implausible ERS Message Received

Standard Procedure
Module, Powertrain Control (PCM), 6.7L Diesel Diagnosis and Testing

P0008 - Engine Position System Performance

P000F - Fuel System Over Pressure Relief Valve Activated

P0016 - Crankshaft/Camshaft Timing Misalignment - Bank 1 Sensor 1

P003A - Turbocharger Boost Control Module Position Exceeded Learning Limit

P0046 - Turbocharger Boost Control Circuit Performance

P0049 - Turbocharger Turbine Overspeed

P006E - Turbocharger Boost Control Supply Voltage Circuit Low

P006F - Turbocharger Boost Control Supply Voltage Circuit High

P0071 - Ambient Air Temperature Sensor Performance

P0072 - Ambient Air Temperature Sensor Circuit Low

P0073 - Ambient Air Temperature Sensor Circuit High

P007B - Charge Air Cooler Temperature Sensor Circuit Performance

P007C - Charge Air Cooler Temperature Sensor Circuit Low

P007D - Charge Air Cooler Temperature Sensor Circuit High

P0087 - Fuel Rail Pressure Too Low

P0088 - Fuel Rail Pressure Too High - Bank 1

P008A - Low Pressure Fuel System Pressure - Too Low

P0093 - Fuel System Leak Detected - Large Leak

P00AF - Turbocharger Boost Control Module Performance
P0101 - Mass Air Flow Sensor “A” Circuit Performance
P0102 - Mass Air Flow Sensor “A” Circuit Low
P0103 - Mass Air Flow Sensor “A” Circuit High
P0106 - Manifold Absolute Pressure Sensor Performance
P0107 - Manifold Absolute Pressure Sensor Circuit Low
P0108 - Manifold Absolute Pressure Sensor Circuit High
P0111 - Intake Air Temperature Sensor 1 Performance
P0112 - Intake Air Temperature Sensor 1 Circuit Low
P0113 - Intake Air Temperature Sensor 1 Circuit High
P0116 - Engine Coolant Temperature Sensor Performance
P0117 - Engine Coolant Temperature Sensor Circuit Low
P0118 - Engine Coolant Temperature Sensor 1 Circuit High
P0128 - Thermostat Rationality
P0169 - Water-in-Fuel Detected For Too Long
P0191 - Fuel Rail Pressure Sensor Circuit Performance
P0192 - Fuel Pressure Sensor Low
P0193 - Fuel Pressure Sensor High
P0201 - Fuel Injector 1 Circuit/Open
P0202 - Fuel Injector 2 Circuit/Open
P0203 - Fuel Injector 3 Circuit/Open
P0204 - Fuel Injector 4 Circuit/Open
P0205 - Fuel Injector 5 Circuit/Open
P0206 - Fuel Injector 6 Circuit/Open
P020A - Fuel Injector 1 Performance
P020B - Fuel Injector 2 Performance
P020C - Fuel Injector 3 Performance
P020D - Fuel Injector 4 Performance
P020E - Fuel Injector 5 Performance
P020F - Fuel Injector 6 Performance
P0217 - Coolant Temperature Too High
P0219 - Engine Overspeed
P0234 - Turbocharger Overboost Condition
P0253 - Injection Pump Fuel Control Circuit Low
P0254 - Injection Pump Fuel Control Circuit High
P0255 - Injection Pump Fuel Control Circuit Performance
P026A - Charge Air Cooler Efficiency Below Threshold
P026B - Injection Timing Performance
P0299 - Manifold Pressure Sensor Out of Range Low
P02E1 - Diesel Intake Air Flow Control Performance
P02E2 - Diesel Intake Air Flow Control Circuit Low
P02E3 - Diesel Intake Air Flow Control Circuit High
P02E7 - Diesel Intake Air Flow Position Sensor Performance
P02E8 - Diesel Intake Air Flow Position Sensor Circuit Low
P02E9 - Diesel Intake Air Flow Position Sensor Circuit High
P0300 - Multiple Cylinder Misfire
P0301 - Cylinder 1 Misfire
P0302 - Cylinder 2 Misfire
P0303 - Cylinder 3 Misfire
P0304 - Cylinder 4 Misfire
P0305 - Cylinder 5 Misfire
P0306 - Cylinder 6 Misfire
P0335 - Crankshaft Position Sensor Circuit
P0336 - Crankshaft Position Sensor Performance
P0340 - Camshaft Position Sensor Circuit - Bank 1 Sensor 1
P0341 - Camshaft Position Sensor Performance - Bank 1 Sensor 1
P0401 - EGR System Performance
P0402 - EGR Flow Excessive Detected
P0403 - EGR Control Circuit/Open
P0404 - EGR Control Circuit Performance
P0405 - EGR Position Sensor Circuit Low
P040B - Exhaust Gas Recirculation Temperature Sensor “A” Circuit Performance
P040C - Exhaust Gas Recirculation Temperature Sensor “A” Circuit Low
P040D - Exhaust Gas Recirculation Temperature Sensor “A” Circuit High
P0420 - Catalyst Efficiency Below Threshold
P0422 - Main Catalyst Efficiency Below Threshold Bank 1
P0461 - Fuel Level Sensor 1 Performance
P0462 - Fuel Level Sensor 1 Circuit Low
P0463 - Fuel Level Sensor 1 Circuit High
P046C - EGR Position Sensor Circuit Performance
P0471 - Exhaust Pressure Sensor 1 Performance
P0472 - Exhaust Pressure Sensor 1 Low
P0473 - Exhaust Pressure Sensor 1 High
P0489 - EGR Control Circuit Low
P049D - EGR Control Position Exceeded Learning Limit
P04DB - Crankcase Ventilation System Disconnected
P04E2 - Crankcase Ventilation Hose Connection Sensor Circuit Low
P04E3 - Crankcase Ventilation Hose Connection Sensor Circuit High
P04E4 - Crankcase Ventilation Hose Connection Sensor Circuit Intermittent/Erratic
P0501 - Vehicle Speed Sensor 1 Performance
P0506 - Idle Control System RPM - Lower Than Expected
P0507 - Idle Control System RPM - Higher Than Expected
P050E - Cold Start Engine Exhaust Temperature Too Low
P0513 - Invalid Skim Key
P051B– Crankcase Pressure Sensor Circuit Range/ Performance
P051C - Crankcase Pressure Sensor Circuit Low
P051D - Crankcase Pressure Sensor Circuit High
P0521 - Engine Oil Pressure Sensor Performance
P0524 - Engine Oil Pressure Sensor Circuit Low
P0532 - A/C Pressure Sensor Circuit Low
P0533 - A/C Pressure Sensor Circuit High
P0541 - Intake Air Heater Control Circuit 1 Low

P0542 - Intake Air Heater Control Circuit 1 High
P0544 - Exhaust Gas Temperature Sensor Circuit - Bank 1 Sensor 1
P0545 - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 1
P0546 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 1
P054E - Idle Control System - Fuel Quantity Lower Than Expected
P054F - Idle Control System - Fuel Quantity Higher Than Expected
P0562 - Battery/System Voltage Low
P0563 - Battery/System Voltage High
P0571 - Brake Switch 1 Performance
P0572 - Brake Switch 1 Stuck On
P0573 - Brake Switch 1 Stuck Off
P0601 - Internal Memory Checksum Error
P0604 - Internal Control Module RAM Error
P0606 - Internal Control Processor
P0607 - ECU Internal Performance
P061A - Level 2 Torque Performance
P061C - ETC Level 2 RPM Performance
P0625 - Generator Field Control Circuit Low
P0626 - Generator Field Control Circuit High
P0628 - Fuel Pump Control Circuit Low
P0629 - Fuel Pump Control Circuit High
P062C - ETC Level 2 MPH Performance
P0630 - VIN Not Programmed in PCM
P0633 - Skim Secret Key Not Stored in PCM
P063C - Generator Voltage Sense Low
P063D - Generator Voltage Sense High
P0642 - Sensor Reference Voltage 1 Circuit Low
P0643 - Sensor Reference Voltage 1 Circuit High
P0646 - A/C Control Circuit Low
P0647 - A/C Control Circuit High
P064F - Unauthorized Software/Calibration Detected
P0652 - Sensor Reference Voltage 2 Low
P0653 - Sensor Reference Voltage 2 High
P065A - Generator Performance
P0658 - Control Supply Voltage Circuit Low
P0686 - ECM Main Control Circuit Low
P0687 - ECM Main Control Circuit High
P0691 - Cooling Fan 1 Control Circuit Low
P0692 - Cooling Fan 1 Control Circuit High
P0698 - Sensor Reference Voltage 3 Circuit Low
P0699 - Sensor Reference Voltage 3 Circuit High
P06A4 - Sensor Reference Voltage 4 Circuit Low
P06A5 - Sensor Reference Voltage 4 Circuit High
P06D3 - Sensor Reference Voltage 5 Circuit Low
P06D4 - Sensor Reference Voltage 5 Circuit High
P06D7 - Sensor Reference Voltage 6 Circuit Low
P06D8 - Sensor Reference Voltage 6 Circuit High
P0850 - Park/Neutral Switch Performance
P1123 - PTO System Performance
P1191 - Inlet Air Temperature Sensor Rational/ Performance
P1192 - Inlet Air Temperature Sensor Circuit Low
P1193 - Inlet Air Temperature Sensor Circuit High
P1207 - Generator 2 Control Circuit Open
P1208 - Generator 2 Control Circuit Short-to-Ground
P1209 - Generator 2 Control Circuit Short-to-Battery
P1211 - Generator 2 Control Circuit Erratic
P1240 - Generator 2 Voltage Sensor Circuit Short-to-Ground
P1241 - Generator 2 Voltage Sensor Circuit Short -to-Battery
P1242 - Generator 2 System Performance
P125A - Power Enable Control Circuit Low
P1451 - Diesel Particulate Filter System Performance
P1473 - Intake Air Diverter Valve Circuit Shorted-to-Ground
P1474 - Intake Air Diverter Valve Circuit Shorted-to-Battery
P1475 - Intake Air Diverter Valve Out of Calibration/ Missing Calibration
P1477 - Intake Air Diverter Valve Position Sensor Circuit Shorted-to-Ground
P1478 - Intake Air Diverter Valve Position Sensor Circuit Shorted-to-Battery
P1484 - Catalyst Overheat Detection
P1507 - Crankcase Filter Restriction
P1644 - Incorrect Variant Configuration
P1C54 - SCR NOx Catalyst Missing
P1C55 - NOx Sensor Intermittent - Bank 1 Sensor 1
P1C70 - SCR Error Detected - Engine Disabled
P1CEF - Cold Climate Turbo Protection Engine De-Rate Mode
P1E1C - Reductant System Wake Up Circuit High
P2002 - Diesel Particulate Filter Efficiency Below Threshold
P200C - Diesel Particulate Filter Over Temperature - Bank 1
P200E - Catalyst System Over Temperature (Bank 1)
P202B - Reductant Tank Heater Control Circuit Low
P202C - Reductant Tank Heater Control Circuit High
P202E - (Diesel Exhaust Fluid) Reductant Injector Performance
P2031 - Exhaust Gas Temperature Sensor Circuit - Bank 1 Sensor 2
P2032 - Exhaust Gas Temperature Sensor Circuit Low-Bank 1 Sensor 2
P2033 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 2
P203B - Reductant Level Sensor 1 Circuit Performance
P203C - (Diesel Exhaust Fluid) Reductant Level Sensor Circuit Low
P203D - (Diesel Exhaust Fluid) Reductant Level Sensor Circuit High
P203F - (Diesel Exhaust Fluid) Reductant Level Too Low
P2048 - (Diesel Exhaust Fluid) Reductant Injector Circuit Low

P204A - (Diesel Exhaust Fluid) Reductant Pressure Sensor Circuit

P204C - (Diesel Exhaust Fluid) Reductant Pressure Sensor Circuit Low

P204D - (Diesel Exhaust Fluid) Reductant Pressure Sensor Circuit High

P204F - Reductant System Performance Bank 1

P205C - (Diesel Exhaust Fluid) Reductant Tank Temperature Sensor Circuit Low

P205D - (Diesel Exhaust Fluid) Reductant Tank Temperature Sensor Circuit High

P205E - (Diesel Exhaust Fluid) Reductant Tank Temperature Sensor Circuit Intermittent

P207F - Reductant Quality Performance

P2080 - Exhaust Gas Temp Sensor Circuit Performance - Bank 1 Sensor 1

P208A - (Diesel Exhaust Fluid) Reductant Pump Control Circuit Open

P208C - (Diesel Exhaust Fluid) Reductant Pump Control Circuit Low

P208D - (Diesel Exhaust Fluid) Reductant Pump Control Circuit High

P209F - (Diesel Exhaust Fluid) Reductant Tank Heater Control Circuit Performance

P20B7 - (Diesel Exhaust Fluid) Reductant Pump Heater Control Circuit Low

P20B8 - (Diesel Exhaust Fluid) Reductant Pump Heater Control Circuit High

P20B9 - Reductant Heater “A” Control Circuit/Open

P20BB - Reductant Heater “A” Control Circuit Low

P20BC - Reductant Heater “A” Control Circuit High

P20E8 - (Diesel Exhaust Fluid) Reductant Pressure Too Low

P20E9 - (Diesel Exhaust Fluid) Reductant Pressure Too High

P20EE - SCR NOx Catalyst Efficiency Below Threshold - Bank 1

P2121 - Accelerator Pedal Position Sensor 1 Performance

P2122 - Accelerator Pedal Position Sensor 1 Circuit Low

P2123 - Accelerator Pedal Position Sensor 1 Circuit High

P2127 - Accelerator Pedal Position Sensor 2 Circuit Low

P2128 - Accelerator Pedal Position Sensor 2 Circuit High

P214A - SCR NOx Catalyst Inlet Temperature Too High

P214B - SCR NOx Catalyst Inlet Temperature Too High During Particulate Filter RegeneRation

P214C - SCR NOx Catalyst Outlet Temperature Too High

P214D - SCR NOx Catalyst Outlet Temperature Too High During Particulate Filter RegeneRation

P21C4 - (Diesel Exhaust Fluid) Reductant Line Heater Relay Control Circuit High

P21CB - Reductant Control Module Supply Voltage Low

P21CC - Reductant Control Module Suipply Voltage High

P2201 - Aftertreatment NOx Sensor Circuit Performance - Bank 1 Sensor 1

P2202 - NOx Sensor 1 Circuit Low

P2209 - NOx Sensor 1 Heater Sense Circuit Performance

P220A - NOx-Sensor-Supply-Circuit-Performance-Bank- 1 Sensor 1

P220B - NOx Sensor Supply Circuit Performance - Bank 1 Sensor 2

P2227 - Barometric Pressure Circuit Performance

P2228 - Barometric Pressure Circuit Low

P2229 - Barometric Pressure Circuit High

P2262 - Turbocharger Boost Pressure Not Detected - Mechanical

P2263 - Turbo Boost System Performance

P2266 - Water-in-Fuel Sensor Circuit Low

P2267 - Water-in-Fuel Sensor Circuit High

P2269 - Water-in-Fuel Condition

P226B - Turbocharger Boost Pressure Not Responding

P226C - Turbocharger Boost Control “A” Slow Response

P2280 - Air Flow Restriction / Leak Between Air Cleaner and MAF

P2281 - Leak Between MAF and Throttle Body

P2299 - Brake Pedal Position / Accelerator Pedal Position Incompatible

P229E - NOx Sensor Circuit - Bank 1 Sensor 2

P229F - Aftertreatment NOx Sensor Circuit Performance - Bank 1 Sensor 2

P22A7 - NOx Sensor Heater Circuit Performance - Bank 1 Sensor 2

P242B - Exhaust Gas Temp Sensor Circuit Performance - Bank 1 Sensor 3

P242C - Exhaust Gas Temperature Sensor Circuit Low- Bank 1 Sensor 3

P242D - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 3

P242F - Diesel Particulate Filter Restriction - Ash Accumulation

P244A - Diesel Particulate Filter Differential Pressure Too Low

P244D - Exhaust Temperature Too High For Particulate Filter RegeneRation

P2453 - Diesel Particulate Filter Pressure Sensor A Circuit Performance

P2454 - Diesel Particulate Filter Pressure Sensor A Circuit Low

P2455 - Diesel Particulate Filter Pressure Sensor A Circuit High

P2456 - Diesel Particulate Filter Pressure Sensor 1 Circuit Intermittent/Erratic

P2457 - Exhaust Gas Recirculation Cooling System Performance

P2459 - Diesel Particulate Filter Regeneration Too Frequent

P245A - EGR Cooler Bypass Control Circuit/Open

P245C - EGR Cooler Bypass Control Circuit Low

P245D - EGR Cooler Bypass Control Circuit High

P2463 - Diesel Particulate Filter - Soot Accumulation

P2470 - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 4

P2471 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 4

P2472 - Exhaust Gas Temperature Sensor Circuit Intermittent/Erratic - Bank 1 Sensor 4

P2481 - Exhaust Gas Temperature Sensor Circuit Low - Bank 1 Sensor 5

P2482 - Exhaust Gas Temperature Sensor Circuit High - Bank 1 Sensor 5

P2483 - Exhaust Gas Temperature Sensor Circuit Performance - Bank 1 Sensor 5

P2493 - EGR Cooler Bypass Bank 1 Position Sensor Circuit Performance

P2494 - EGR Cooler Bypass Bank 1 Position Sensor Circuit Low

P2495 - EGR Cooler Bypass Bank 1 Position Sensor Circuit High

P249E - Closed Loop SCR Reductant Injection Control at Limit - Flow Too High

P24A0 - Closed Loop DPF Regeneration Control at Limit - Temperature Too Low

P24A2–Diesel Particulate Filter RegeneRation Incomplete - Bank 1

P24A5 - EGR Cooler Bypass Bank 1 Control Stuck

P24E1 - Ammonia Sensor Circuit

P24E2 - Ammonia Sensor Circuit Performance

P24E7 - Ammonia Sensor Heater Circuit Low

P24E8 - Ammonia Sensor Heater Circuit High

P24E9 - Ammonia Sensor Heater Circuit Performance

P24EA - Ammonia Sensor Supply Voltage Circuit

P24ED - Ammonia Sensor Calibration Memory

P24EE - Ammonia Sensor Processor Performance

P2503 - Charging System Output Low

P2504 - Charging System Output High

P2509 - PCM/PCM Power Input Signal Intermittent

P2560 - Engine Coolant Level Low

P2563 - Turbocharger Boost Control Position Sensor Performance

P2579 - Turbocharger Speed Sensor Circuit Performance

P2580 - Turbocharger Speed Sensor Circuit Low

P2609 - Intake Air Heater System Performance

P262D - Sensor Reference Voltage 7 Circuit Low

P262E - Sensor Reference Voltage 7 Circuit High

P2BA7 - NOx Exceedence - Empty Reagent Tank

P2BAC - NOx Exceedence - Deactivation of EGR

U0001 - CAN C BUS

U0101 - Lost Communication With TCM

U0102 - Lost Communication With Transfer Case Control Module / AWD

U010C - Lost Communication With Turbocharger/Super-charger Control Module

U010E - Lost Communication With Diesel Exhaust Fluid Control Unit

U0121 - Lost Communication With Anti-Lock Brake Module

U0140 - Lost Communication With Body Control Module

U0141 - Lost Communication With IPM (FCM/TIPM)

U0151 - Lost Communication With Occupant Restraint Controller (ORC)

U0155-00-Lost Communication With Cluster/CCN

U0212 - Lost Communication With SCM

U029D - Lost Communication With NOx Sensor A

U029E - Lost Communication With NOx Sensor B

U040F - Invalid Data Received From Reductant Control Module

U059E - Invalid Data Received From NOx Sensor A

U059F - Invalid Data Received From NOx Sensor B

U05A5 - Implausible Data Received From Ammonia Sensor

U110E - Lost Ambient Temperature Message

U113E - Lost Communication With Intelligent Battery Sensor

U11B9 - Lost Communication With RF Hub

U11C1 - Reductant Control Module Received Implausible Data From ECM/PCM

U12A4 - Lost Communication With Ammonia Sensor

U1403 - Implausible Fuel Level Signal Received

U1412 - Implausible Vehicle Speed Signal Received

U1421 - Implausible Ignition Key Off Time Received

U1601 - ECU Application Software Code 1 Missing or Corrupted

U3017 - Control Module Timer/Clock Performance

Standard Procedure Module, Radio Frequency (RF Hub) Diagnosis and Testing Standard Procedure Module, Steering Control (SCM) Module, Tire Pressure (TPM) Module, Transmission Control (TCM), AS69RC Diagnosis and Testing

C1400-00 - Transfer Case Range Select Switch

P0602-00 - Control Module Programming Error - Not Programmed

P0607-00 - ECU Internal Performance

P0702-00 - Transmission Control System Electrical

P0706-00 - Transmission Range Sensor Performance

P0708-00 - Transmission Range Sensor A Circuit High

P0711-00 - Transmission Fluid Temperature Sensor A Circuit Range-Performance

P0712-00 - Transmission Fluid Temperature Sensor A Circuit Low

P0713-00 - Transmission Fluid Temperature Sensor A Circuit High

P0716-00 - Input Shaft Speed Sensor 1 Performance

P0717-00 - Input Shaft Speed Sensor 1 Circuit No Signal

P0721-00 - Output Shaft Speed Sensor Circuit Performance

P0722-00 - Output Shaft Speed Sensor Circuit No Signal

P0729-00 - Gear 6 Shift Incorrect Ratio

P0731-00 - Gear 1 Shift Incorrect Ratio

P0732-00 - Gear 2 Shift Incorrect Ratio

P0733-00 - Gear 3 Shift Incorrect Ratio

P0734-00 - Gear 4 Shift Incorrect Ratio

P0735-00 - Gear 5 Shift Incorrect Ratio

P0736-00 - Gear Ratio Error In Reverse

P0777-00 - Pressure Control Solenoid B Stuck On

P077C-00 - Output Shaft Speed Sensor Circuit Low

P077D-00 - Output Shaft Speed Sensor Circuit High

P07BF-00 - Input-Turbine Shaft Speed Sensor 1 Circuit Low

P07C0-00 - Input-Turbine Shaft Speed Sensor 1 Circuit High

P0868-00 - Transmission Fluid Pressure Low

P0869-00 - Transmission Fluid Pressure High

P0919-00 - Gear Shift Position Control Error

P0961-00 - Pressure Control Solenoid 1 Control Circuit Performance

P0962-00 - Pressure Control Solenoid 1 Control Circuit Low

P0963-00 - Pressure Control Solenoid 1 Control Circuit High

P0965-00 - Pressure Control Solenoid 2 Control Circuit Range-Performance

P0966-00 - Pressure Control Solenoid 2 Control Circuit Low

P0967-00 - Pressure Control Solenoid 2 Control Circuit High

P0969-00 - Pressure Control Solenoid 3 Control Circuit Performance

P0970-00 - Pressure Control Solenoid 3 Control Circuit Low

P0971-00 - Pressure Control Solenoid 3 Control Circuit High

P0973-00 - Shift Solenoid 1 Control Circuit Low

P0974-00 - Shift Solenoid 1 Control Circuit High

P1679-00 - Calibration Not Learned

P1720-00 - Output Speed Sensor-Wheel Speed Rationality

P1731-00 - Incorrect Gear Engaged

P253D-00 - PTO Sense Circuit High

P2719-00 - Pressure Control Solenoid 4 Control Circuit Range-Performance

P2720-00 - Pressure Control Solenoid 4 Control Circuit Low

P2721-00 - Pressure Control Solenoid 4 Control Circuit High

P2728-00 - Pressure Control Solenoid 5 Control Circuit Performance

P2729-00 - Pressure Control Solenoid 5 Control Circuit Low

P2730-00 - Pressure Control Solenoid 5 Control Circuit High

P2737-00 - Pressure Control Solenoid 6 Control Circuit Performance

P2738-00 - Pressure Control Solenoid 6 Control Circuit Low

P2739-00 - Pressure Control Solenoid 6 Control Circuit High

P2741-00 - Transmission Fluid Temperature Sensor 2 Performance

P2742-00 - Transmission Fluid Temperature Sensor 2 Circuit Low

P2743-00 - Transmission Fluid Temperature Sensor 2 Circuit High

P2757-00 - TCC Pressure Control Solenoid Control Circuit Performance

P2762-00 - Torque Converter Clutch Pressure Control Solenoid Control Circuit Range-Performance

P2763-00 - Torque Converter Clutch Pressure Control Solenoid Control Circuit High

P2764-00 - Torque Converter Clutch Pressure Control Solenoid Control Circuit Low

P2803-00 - Transmission Range Sensor B Circuit High

U0001-00 - CAN C BUS

U0100-00 - Lost Communication With ECM/PCM

U0102-00 - Lost Communication With Transfer Case Control Module / AWD

U0121-00 - Lost Communication With Anti-Lock Brake System (ABS) Control Module

U0140-00 - Lost Communication With Body Control Module

U0155-00 - Lost Communication With Cluster/CCN

U0401-00 - Implausible Data Received From ECM-PCM

U0415-00 - Implausible Data Received From ABS

U0465-00 - Implausible Data Received From PTO

U1111-00 - Lost Odometer Message

U1400-00 - Implausible TPS Signal Received

U1401-00 - Implausible Engine Speed Signal Received

U1402-00 - Implausible Engine Temperature Signal Received

U1407-00 - Implausible Engine Torque Request Signal Received

U1408-00 - Implausible Brake Signal Received

U140D-00 - Implausible Wheel Speed SignalS Received

U1415-00 - Implausible-Missing Vehicle Configuration Data

U1420-00 - Implausible Electronic Gear Select Signal Received

U1424-00 - Implausible Engine Torque Signal Received

U1439-00 - Implausible-Missing Programmed Axle Ratio

U1440-00 - Implausible Transfer Case Ratio High Received

U1441-00 - Implausible Transfer Case Ratio Low Received

Module, Vehicle System Interface (VSIM) Diagnosis and Testing

B1693 - Accessory Dimming Control Circuit Low

B1694 - Accessory Dimming Control Circuit High

B17CF - Emergency Flashing Lamp Request 1 Circuit High

B17D2 - Emergency Flashing Lamp Request 2 Circuit High

B1A5B - Panic Alarm Mute Request Circuit High

B1A5D - Panic Alarm Activation Status Output Circuit Low

B1A5E - Panic Alarm Activation Status Output Circuit High

B1CC1 - Deployment Notification Output Circuit Low

B1CC2 - Deployment Notification Output Circuit High

B210D - Battery Voltage Low

B210E - Battery Voltage High

B237F - Horn Mute Request Circuit High

B2384 - Horn Switch Output Circuit Low
B2385 - Horn Switch Output Circuit High
B271F - Frontal Impact Output Circuit Low
B2720 - Frontal Impact Output Circuit High
P1462 - Fuel Level Output Circuit Low
P1463 - Fuel Level Output Circuit High
P164A - MIL Output Circuit Low
P164B - MIL Output Circuit High
P170C - Engine RPM Output Circuit Low
P170D - Engine RPM Output Circuit High
U0140 - Lost Communication With Body Control Module
U0155 - Lost Communication With Cluster/CCN
U0164 - Lost Communication With HVAC Control Module
U0199 - Lost Communication With Driver Door Module
U0200 - Lost Communication With Passenger Door Module
U0208 - Lost Communication With Heated Seat Control Module
U0209 - Lost Communication With Memory Seat Control Module

Radio Diagnosis and Testing

B1400-11 - Front Left Audio Speaker Output - Circuit Short-to-Ground - Base
B1400-11 - Front Left Audio Speaker Output - Circuit Short-to-Ground - Premium
B1400-12 - Front Left Audio Speaker Output - Circuit Short-to-Battery - Base
B1400-12 - Front Left Audio Speaker Output - Circuit Short-to-Battery - Premium
B1400-13 - Front Left Audio Speaker Output - Circuit Open - Base
B1400-13 - Front Left Audio Speaker Output - Circuit Open - Premium
B1400-1A - Front Left Audio Speaker Output - Circuit Resistance Below Threshold - Base
B1400-1A - Front Left Audio Speaker Output - Circuit Resistance Below Threshold - Premium
B1400-92 - Front Left Audio Speaker Output - Performance or Incorrect Operation
B1404-11 - Front Right Audio Speaker Output - Circuit Short-to-Ground - Base
B1404-11 - Front Right Audio Speaker Output - Circuit Short-to-Ground - Premium
B1404-12 - Front Right Audio Speaker Output - Circuit Short-to-Battery - Base
B1404-12 - Front Right Audio Speaker Output - Circuit Short-to-Battery - Premium
B1404-13 - Front Right Audio Speaker Output - Circuit Open - Base
B1404-13 - Front Right Audio Speaker Output - Circuit Open - Premium
B1404-1A - Front Right Audio Speaker Output - Circuit Resistance Below Threshold - Base
B1404-1A - Front Right Audio Speaker Output - Circuit Resistance Below Threshold - Premium
B1404-92 - Front Right Audio Speaker Output - Performance or Incorrect Operation
B1408-11 - Rear Left Audio Speaker Output - Circuit Short-to-Ground - Base
B1408-11 - Rear Left Audio Speaker Output - Circuit Short-to-Ground - Premium
B1408-12 - Rear Left Audio Speaker Output - Circuit Short-to-Battery- Base
B1408-12 - Rear Left Audio Speaker Output - Circuit Short-to-Battery- Premium
B1408-13 - Rear Left Audio Speaker Output - Circuit Open- Base
B1408-13 - Rear Left Audio Speaker Output - Circuit Open - Premium
B1408-1A - Rear Left Audio Speaker Output - Circuit Resistance Below Threshold- Base
B1408-1A - Rear Left Audio Speaker Output - Circuit Resistance Below Threshold - Premium
B1408-92 - Rear Left Audio Speaker Output - Performance or Incorrect Operation
B140C-11 - Rear Right Audio Speaker Output - Circuit Short-to-Ground- Base
B140C-11 - Rear Right Audio Speaker Output - Circuit Short-to-Ground - Premium
B140C-12 - Rear Right Audio Speaker Output - Circuit Short-to-Battery- Base
B140C-12 - Rear Right Audio Speaker Output - Circuit Short-to-Battery - Premium
B140C-13 - Rear Right Audio Speaker Output - Circuit Open - Base
B140C-13 - Rear Right Audio Speaker Output - Circuit Open - Premium
B140C-1A - Rear Right Audio Speaker Output - Circuit Resistance Below Threshold - Base
B140C-1A - Rear Right Audio Speaker Output - Circuit Resistance Below Threshold - Premium
B140C-92 - Rear Right Audio Speaker Output - Performance or Incorrect Operation
B142A-4B - Radio Unit High Temperature - Over Temperature
B143A-11 - Microphone 1 - Circuit Short-to-Ground
B143A-12 - Microphone 1 - Circuit Short-to-Battery
B143A-13 - Microphone 1 - Circuit Open
B143A-1A - Microphone 1 - Circuit Resistance Below Threshold
B143D-11 - Microphone 2 - Circuit Short-to-Ground
B143D-12 - Microphone 2 - Circuit Short-to-Battery
B143D-13 - Microphone 2 - Circuit Open
B143D-1A - Microphone 2 - Circuit Resistance Below Threshold
B1488-00 - Cabin EQ Mismatch Performance
B14DA-2A - Head Unit Button - Stuck
B1560-11 - Cellular Antenna 1 - Circuit Short-to-Ground
B1560-13 - Cellular Antenna 1 - Circuit Open
B1562-11 - GPS Antenna - Circuit Short-to-Ground
B1562-12 - GPS Antenna-Circuit Short-to-Battery
B1562-13 - GPS Antenna - Circuit Open
B1562-1A - GPS Antenna-Circuit Resistance Below Threshold
B156B-13 - Satellite Radio Antenna - Circuit Open

B156B-1A - Satellite Radio Antenna - Circuit Resistance Below Threshold

B1570-19 - USB Communication - Overcurrent

B1577-13 - Universal Consumer Interface (UCI) - Circuit Open

B1578-13 - Audio Antenna - Circuit Open

B1578-1A - Audio Antenna - Circuit Resistance Below Threshold

B210A-16 - System Voltage Low - Circuit Voltage Below Threshold

B210B-17 - System Voltage High - Circuit Voltage Above Threshold

B221E-00 - Radio Internal

B222C-00 - Vehicle Configuration Not Programmed

B223B-00 - Vehicle Configuration Mismatch

B2206-00 - Current VIN Missing / Mismatch

U0002-00 - CAN C BUS Off Performance

U0010-00 - CAN Interior BUS

U0011-00 - CAN Interior BUS Off Performance

U0100 - Lost Communication With ECM/PCM

U0101 - Lost Communication With TCM

U0121 - Lost Communication With Anti-Lock Brake Module

U0140-00 - Lost Communication With Body Control Module

U0143-00 - Lost Communication With Multi-Purpose Module

U0151-00 - Lost Communication With Occupant Restraint Controller (ORC)

U0155-00 - Lost Communication With Cluster/CCN

U0186-00 - Lost Communication With Audio Amplifier

U0199-00 - Lost Communication With Driver Door Module

U0200-00 - Lost Communication With Passenger Door Module

U0208-00 - Lost Communication With Heated Seat Control Module

U0209-00 - Lost Communication With Memory Seat Control Module

U0232-00 - Lost Communication With Blind Spot Detection Module