



## >Your Instructor For This Webinar

- National Trainer, ASE World Class, Master Auto, Truck, School Bus, L1, L3, CNG
- ATTP Master Instructor, New York State, CT and New Jersey
- STS (Service Technician Society) 2003 President
- TST (Technicians Service Training) Founder and President
- Author / Co Author/ Technical adviser on 25 plus books including
- OBD II and Mode 6, and Understanding and Diagnosing Hybrid Vehicles
- Published articles for multiple newsletters, and magazines
- Picked as one of the Top Instructors in the country by EPA & SAE
- Numerous Radio, TV, Internet, and SAE Video appearances
- PTEN, Motor Age and TST Webcast Instructor - Dorman Training Director
- Motor Magazine Top 20 award winner
- Provider of OBD II Training for 14 states, Ontario Canada and the US EPA
- Guest speaker at SAE Congress, IM Solutions and Clean Air Conference



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## What Will Be Covered

### Instructions For This Webinar

This webinar will be approx. 1 + hours long

- All slides that are presented are in your handout and are numbered
- Have a pen or pencil and paper for notes
- Questions can be asked at anytime

### 01 What Causes No Starts

### 02 What To Check

### 03 Examples

### 04 Your Mics are Open To Ask Questions - One At A Time Please



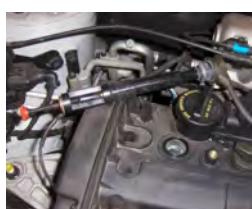
## No Start Diagnostics



Air



Fuel with propane or a Gas Analyzer



Ignition Spark

| Engine RPM            |      |       |
|-----------------------|------|-------|
| TPS Volts             | 0.56 | volts |
| Engine Coolant Temp V | 4.13 | volts |
| Engine Coolant Temp   | 52   | degF  |
| Intake Air Temp Volts | 4.07 | volts |
| Intake Air Temp       | 55   | degF  |
| Vehicle Speed Sensor  | 0    | mph   |
| Spark Advance         | 4    | deg   |
| 1/1 O2S Gas Volts     | 0.00 | volts |
| 1/1 O2S Level         | Low  |       |
| 1/1 PWM O2 Heater     | 0    | %     |
| 1/2 PWM O2 Heater     | 0    | %     |

RPM Check

HC 21885

Good enough to start

HC 00185

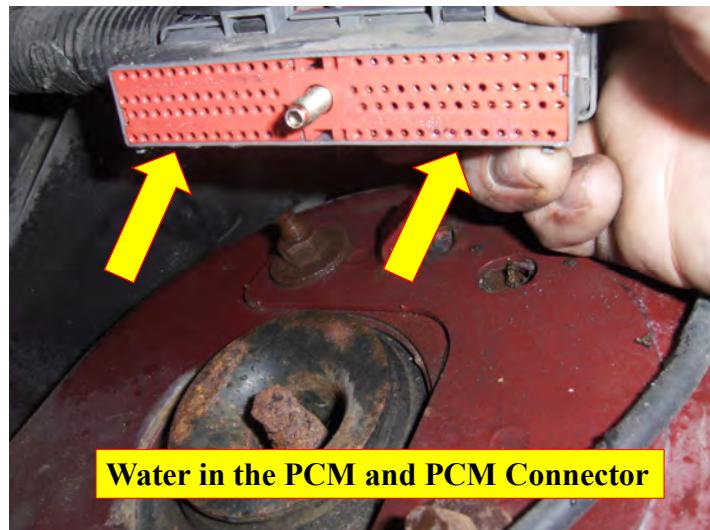
NOT enough to start



Backpressure



## PCM Connections



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## Ignition - Acura - GM - BMW



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## Immobilizer

| Name                           | Value                     | Range                     |
|--------------------------------|---------------------------|---------------------------|
| 276 Serial Number              | 3200603771<br>012201      |                           |
| 199 Immobilizer                | Not active                | Not active                |
| 196 Start enable               | Yes                       | Yes                       |
| 197 Drive authorization status | Immobilizer is activated. | Immobilizer is activated. |

The logo for Dorman Training Center. It features the word "DORMAN" in a bold, black, sans-serif font, with a registered trademark symbol (®) at the end. Above the text is a stylized graphic of a car wheel with a lightning bolt through the center. Below "DORMAN" is the word "TRAINING CENTER" in a smaller, black, sans-serif font.

## Audi No Start



**This DTC prevents an engine crank/start condition because it brings down the CAN BUS and shuts down other modules.**

The logo for DORMAN TRAINING CENTER. It features the word "DORMAN" in a large, bold, black, sans-serif font. Above the "D", there is a stylized graphic element consisting of a horizontal bar with a downward-pointing arrow on its left side and a vertical bar on its right side, creating a shape reminiscent of a car wheel or a stylized letter "D". Below "DORMAN", the words "TRAINING CENTER" are written in a smaller, black, sans-serif font. A small registered trademark symbol (®) is located at the top right of the "N" in "DORMAN".

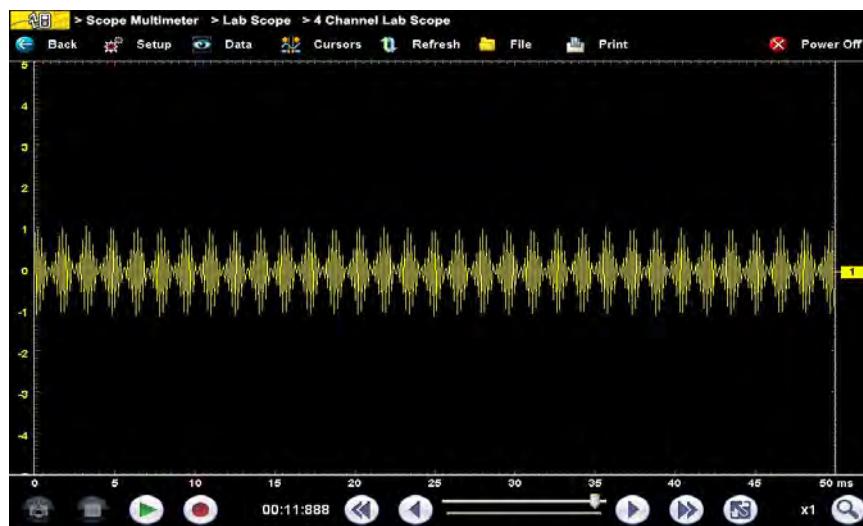
## Audi No Start

The Authorization Module is integrated with the immobilizer and steering wheel lock mechanism that is mounted to the steering column. Our experience with this issue has shown us that the module is a common problem that causes no response from the ignition key or start button. The module's job is to look for the key or transponder that manages unlocking and locking the steering wheel. It also activates the relay's terminal 15 that supplies power to the other modules in the vehicle. If an issue is detected with any of the module components such as the actuator motor, sensing micro switches, relay, or other electrical connections, the system will throw a DTC and not operate.



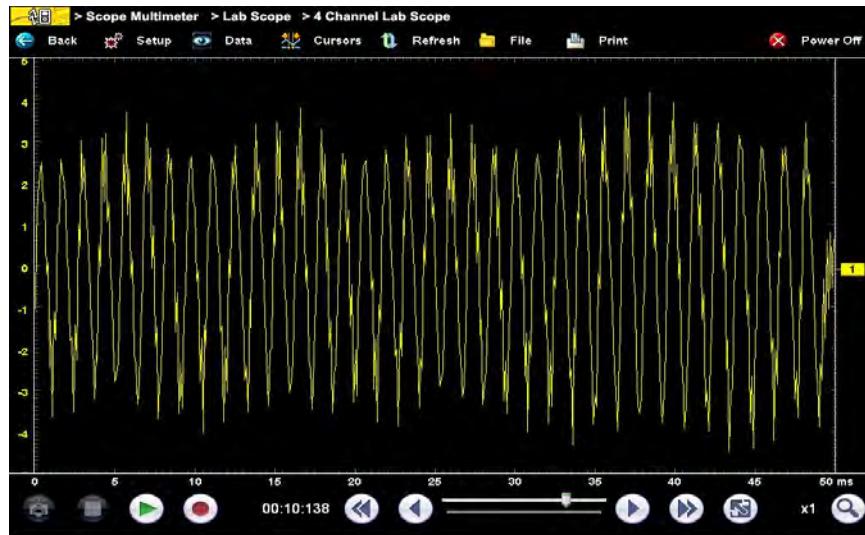
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## No Start - Before



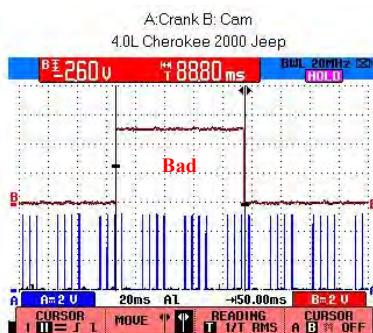
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## Start - After

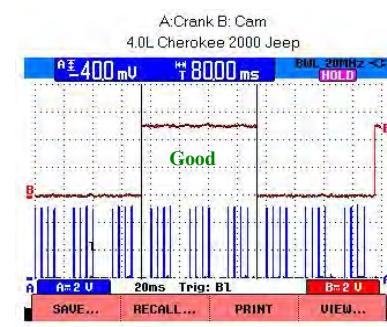


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## No Start Before - Start After Crank / Cam Sync



Test Point: PCM  
Test Cond: At Idle BAD sync  
Symptom: Running BAD  
Test Leads: No Data



Test Point: PCM  
Test Cond: At Idle to set up sync  
Symptom: now running  
Test Leads: No Data

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## Exhaust Backpressure



Good Exhaust  
Backpressure  
at idle should be 0 psi



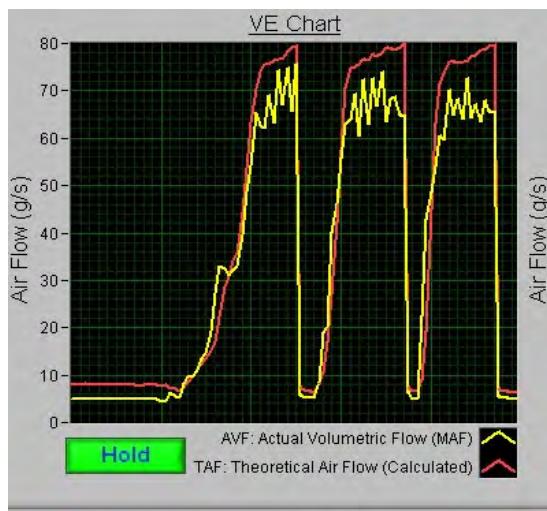
More than  $\frac{1}{2}$   
psi at idle =  
BAD



More than 1½  
psi at 2500 =  
BAD

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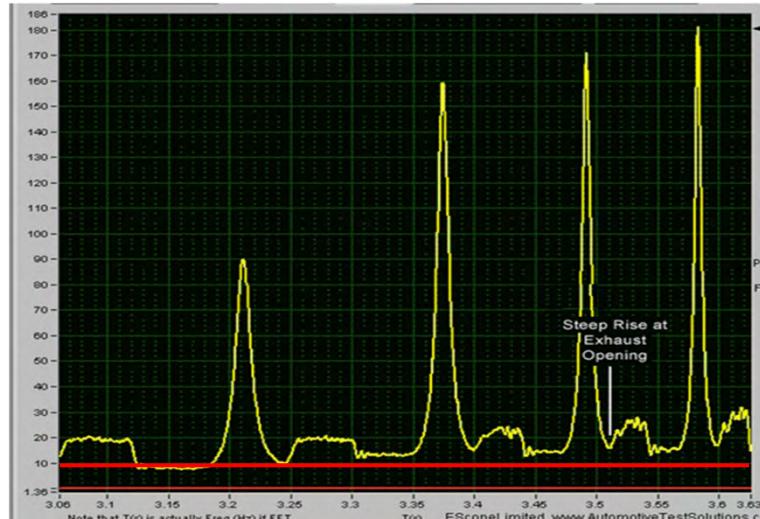
## Back Pressure - 5 PSI



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## Confirming Exhaust Backpressure

Take a look at the step rise in the exhaust valve opening that confirms a backpressure problem. This is all done without removing an O2, AF sensor or EGR valve.



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## No Start - Sucking - Blowing

It is always best to begin with the tools God gave you: the brain, eyes, ears, nose, and hands. Always check DTCs and TSBs before doing anything.

Do not forget to check the basics. Here we are making sure that the engine is turning the right way by observing that the exhaust is blowing instead of sucking. Some starters may spin the wrong way and cause major confusion in your shop. The tail pipe will be sucking rather than blowing. Always check the rotation of the engine.



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## Things That Can Cause No Starts



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## Prius DTCs No Start

**DTC P3101 ENGINE SYSTEM MALFUNCTION**

**CIRCUIT DESCRIPTION**

The HV ECU performs the fail safe control, when the **ECM** detects an error, which will affect this control.

**HINT:**

- When using an OBD II scan tool other than TOYOTA hand held tester, check all the steps.
- When using TOYOTA hand held tester, confirm the information code and check it.

**Image: Detecting Condition**

**DTC P3101 - Information code 204, 205**

**INSPECTION PROCEDURE**

If any of the above information codes is output, after confirming the DTC of the **ECM** check and repair the applicable DTC. Prior to repairing it, record the DTC of the HV ECU, freeze frame data and history data. After repairing the DTC, turn the system on and off more time after starting the system again ("READY" light ON).

**CIRCUIT DESCRIPTION**

The HV ECU detects the seizure of the engine or transmission gear and performs the fail safe control.

**Image: Detecting Condition**

**DTC P3101 - Information code 228**

**INSPECTION PROCEDURE**

If the above information code is output, investigate what has caused the greater:

- Check the engine lubrication system and transaxle
- Check the engine coolant and transaxle coolant
- Check for any breakdowns in engine itself and transaxle itself

Report #9 1992-2008 Q1-10

92 Toyota Prius 2.4-L 4 (1NZ-FXE) (Hybrid)

**P3101... This DTC can be caused by too much oil.**

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❑ No Start - 5 volts



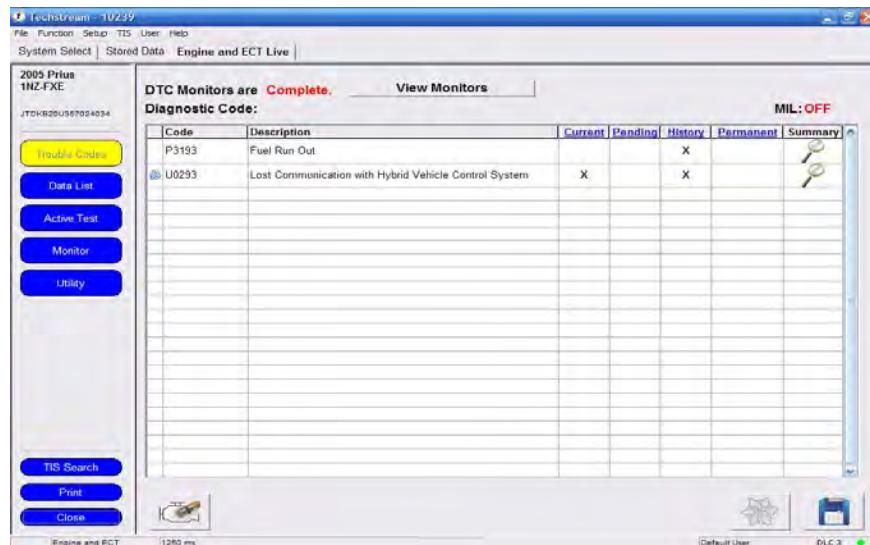
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❑ Fuel Sample - Volume / Pressure - Module



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## Prius Out Of Fuel Problem



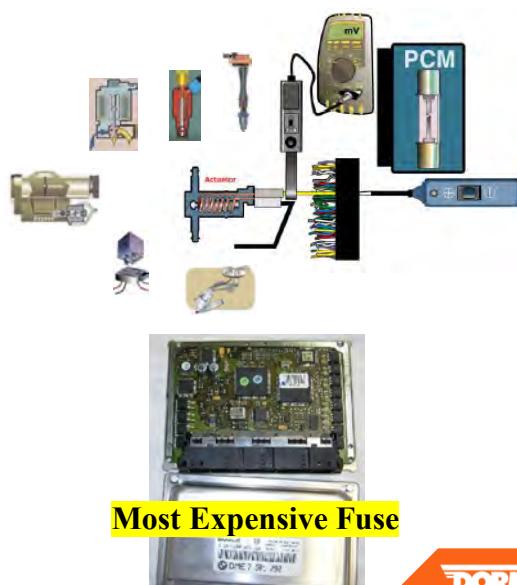
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## The Big Guy

Use **CAUTION** when replacing PCMs, they just don't happen to burn out. The sensitive circuits inside the PCM are easily damaged by actuators that have shorted out. Use proper diagnostic procedures to test all solenoids before replacing a PCM.

Damage to PCMs are commonly caused by shorted solenoids.

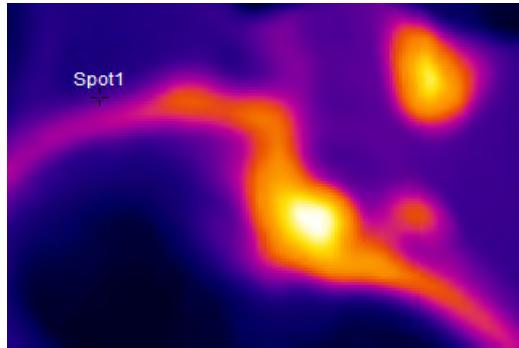
Low Resistance = High Amperage



Most Expensive Fuse

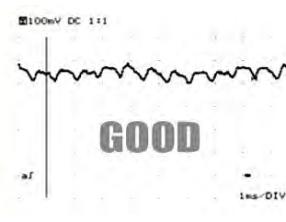
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## Converter



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## Fuel Pump - Relay



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**Happy Hanukkah**  
**Happy Festivus**  
**Merry Christmas**  
**Happy Kwanzaa**  
*Happy Holidays*

**Healthy Happy New Year**

# *Questions?*



# *Thank You !*

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Webinar Survey



Facebook Group



Newsletters

