

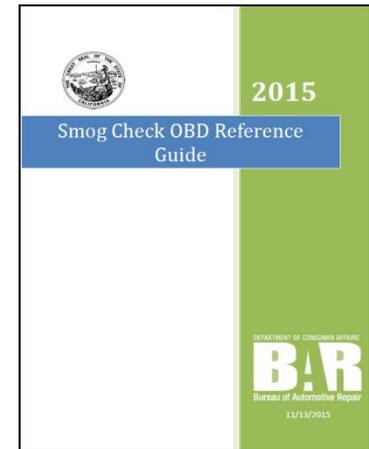
Department of Consumer Affairs  
Bureau of Automotive Repair

# Smog Check OBD Reference Guide

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# Smog Check OBD Reference Guide

- OBD test pass/fail standards
- “Vehicles of Interest” tables for vehicles requiring OIS or BAR-97 inspection
- Replaces “Smog Check OBDII Reference (Testability Issues)”, formerly called Appendix J
- Location: [www.smogcheck.ca.gov](http://www.smogcheck.ca.gov)
  - Industry tab, Resources header, Training link



# Identifying OBD Vehicles of Interest for OIS

- Source of Vehicles of Interest
  - BAR data analysis
    - vehicles with higher than average rate of failing
      - e.g., incomplete OBD readiness monitors
    - OBD data anomaly
      - Vehicle data not in proper format or inappropriate for vehicle per SAE OBD Specification
  - Escalated BAR Industry Help Desk tickets
  - Vehicles inspected at a State Referee facility

# Vehicles of Interest - OIS

- Table 4 contains OIS tested vehicles with OBD issues
- Overview of contents:
  - Issue: no communication, incomplete monitor(s), no OBDII, MIL commanded on but not lit, etc.
  - Cause: broken vehicle, vehicle design, flex fuel, non OBDII, etc.
  - Remedy: fix, recall, run drive cycle to set monitors, etc.
  - Instruction: test normally, OIS skips a portion of inspection, fix first, verify if vehicle has OBDII (label), properly follow OIS prompts, etc.

# Vehicles of Interest - OIS

- No communication example from Table 4
  - Issue: no communication between OIS (DAD) & vehicle
  - Cause: possible faulty ABS module
  - Instruction: diagnose, repair, and retest

Table 4: OIS Vehicles of Interest					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Audi	2000-2004	A4 & A6	Fail for no OBD communication	No response or Only Transmission Control Module responds to DADs requests.  Possible faulty ABS Module. Sometimes the ABS light is on. Diagnose and repair ABS if necessary.	Test normally  Likely Broken Vehicle Repair and Retest  Audi/VW is aware of this issue.

# Vehicles of Interest - OIS

- Monitor readiness example from Table 4
  - Issue: readiness monitors will not set
  - Cause: monitors disabled when vehicle runs > E30 fuel
  - Instruction: Test normally, OIS ignores all monitors

Table 4: OIS Vehicles of Interest (continued)					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Chrysler, Dodge, Plymouth	2000	Caravan, Town and Country, Voyager 3.3L V-6 (E-85)	Readiness monitors will not set on certain flex fuel models, VINs listed below.  WCRXT03.32BP (VIN 8 <sup>th</sup> digit: G)	All monitors disabled for operation >E30 and ethanol fuel content learning.	<b>Test normally</b>  All 11 readiness monitors are ignored in OIS

# Vehicles of Interest - OIS

- Monitor readiness example from Table 4
  - Issue: fail for monitor readiness
  - Cause: monitors difficult to set
  - Remedy: follow drive cycle in owner's manual
  - Instruction: Test normally

Table 4: OIS Vehicles of Interest (continued)					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Nissan	2000-2006	All models	Fail for monitor readiness	Some monitors are difficult to complete.	Follow owner's manual drive cycle to achieve readiness. Test normally.

# Vehicles of Interest - OIS

- Example of non-OBDII vehicles from Table 4
  - Issue: OIS prompts “unable to confirm vehicle’s OBDII requirements...”
  - Cause: vehicle reports not OBDII (Mode \$01, PID \$1C)
  - Remedy: Federal vehicle may not have OBDII
  - Instruction: correctly enter certification type from vehicle label (CA or Federal), if not OBDII - OIS may require a BAR-97 inspection

Table 4: OIS Vehicles of Interest (continued)

Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Chevrolet	2000- 2005	Suburban, Silverado, Express, Avalanche (gasoline)	Message appears during OIS OBD II test stating, “Unable to confirm this Vehicle’s OBD II requirements. Does this vehicle have OBD II?”	Federally certified vehicle may not be certified to OBD II standards.	<b>Check under-hood emission label to determine OBD certification status.</b> Enter correct result into OIS and follow OIS prompts. OIS may state a BAR-97 test is required on vehicles without OBDII.

# Vehicles of Interest - OIS

- Example of non-OBDII diesel vehicles from Table 4
  - Issue: Vehicle not equipped with OBDII
  - Cause: vehicle design (Federal)
  - Instruction: follow OIS prompts (correctly enter certification type), OIS will skip the OBD functional test

Table 4: OIS Vehicles of Interest (continued)

Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Isuzu  Sample pic	1998 - 2005	NPR [GVWR 10,001 - 14,000] (diesel) [federal certification]	Vehicle is not equipped with OBD II	Vehicle design	<b>Follow OIS prompts.</b>  OIS programmed to skip the OBD functional test

# Vehicles of Interest - OIS

- Example of California vs. Federal from Table 4
  - Issue: certain monitor(s) will not run
  - Cause: vehicle design
  - Instruction: enter correct certification type, OIS ignores certain monitors, advise motorist of free reflash on CA models

Table 4: OIS Vehicles of Interest (continued)

Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Dodge	2004-2005 built after 12/7/2003	Ram Truck 5.9L (Cummins diesel) [California certified]	Comprehensive component monitor will not complete.	Vehicle design anomaly  Re-flash available per TSB 18-030-10 with lifetime warranty per TSB 18-003-11	<b>Test normally</b>  OIS ignores comprehensive component monitor readiness.  Advise motorist of fix with lifetime warranty per TSB 18-003-11
Dodge	2005	Ram Truck 5.9L (Cummins diesel) [Federal certified]	Misfire and Comprehensive Components monitors will not complete.	Vehicle design anomaly	<b>Test normally</b>  OIS ignores misfire and comprehensive component monitor readiness.

# How to ID Federal or California?

Engine No. 57322123	Ref. No. 53040529AD	MODEL ISB 325	Fuel Rate at adv. HP	132 <sup>mm<sup>3</sup></sup> stroke	CPL 8421
Idle Speed (rpm) 750	Advertised HP 325 at 2900 rpm	Family 5CEX10359BAD	FEL	EPA	CARB
Firing Order 1 5 3 6 2 4	Timing - T.D.C. ELECTRONIC	Catalyst No. 03840	NOx+NMHC	2.5	
Valve lash cold 0.010 Int. 0.020 Exh.	C.I.D./L 359 /5.9	E.C.S.	PM	0.10	

IMPORTANT ENGINE INFORMATION: This engine conforms to US EPA Regulations applicable to 2005 model yr. new heavy duty engines. This engine is certified to operate on diesel fuel. This engine has a primary intended service application as a medium heavy duty engine. This engine is not certified for use in an urban bus as defined at 40 CFR 86.093-2. Sales of this engine for use in an urban bus is a violation of Federal Law under the Clean Air Act.

Federally Certified Dodge (Cummins engine label)

 MANUFACTURED BY CUMMINS INC. FOR DAIMLERCHRYSLER Assembled in the USA		Engine No. 57128264	Ref. No. 53040204AJ	MODEL ISB 235	Fuel Rate at adv. HP	86 <sup>mm<sup>3</sup></sup> stroke	CPL 8410
Date of Mfg: 12-04-03	WARNING: injury may result and warranty is voided if fuel rate, rpm or altitudes exceed published maximum values for this model and application.	Idle Speed (rpm) 750	Advertised HP 235 at 2700 rpm	Family 3CEX10359BAF	FEL	EPA	CARB
		Firing Order 1 5 3 6 2 4	Timing - T.D.C. ELECTRONIC	Catalyst No. 26233	NOx		
		Valve lash cold 0.010 Int. 0.020 Exh.	C.I.D./L 359 /5.9	E.C.S. CC	PM		

IMPORTANT ENGINE INFORMATION: This engine conforms to California Regulations applicable to 2003 model year medium duty vehicles. This engine is certified to operate on diesel fuel. OBDII certified.

California Certified Dodge (Cummins engine label)

# Vehicles of Interest - OIS

- Example of vehicle repair required from Table 4
  - Issue: vehicle fails to set certain monitors
  - Remedy: wiring modification / computer reflash
  - Instruction: test normally if only O<sub>2</sub> heater unset / repair vehicle

Table 4: OIS Vehicles of Interest (continued)					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Jeep	2005-2006	Wrangler	O <sub>2</sub> sensor, O <sub>2</sub> heater, catalyst readiness monitors may indicate not ready.	Vehicle design anomaly. TSB #25-005-13 Rev. A contains wiring modification to make vehicle ready.	<b>Test normally if only O<sub>2</sub> heater monitor not set, otherwise repair vehicle.</b>  OIS allows incomplete O <sub>2</sub> heater monitor.
Jeep	2010-2011 built pre- 9/02/10	Wrangler 3.8	Fail for monitor readiness. Downstream oxygen sensor monitor may not set to ready.	Reflash per TSB #18-027-10	<b>Repair Vehicle</b>

# Vehicles of Interest - OIS

- Example of MIL on during inspection from Table 4
  - Issue: MIL lights during OIS inspection
  - Cause: vehicle sensitive to OBD scan tool connect / disconnect
  - Remedy: see service bulletin to clear light and codes if occurs
  - Instruction: only connect / disconnect DAD when prompted by OIS

Table 4: OIS Vehicles of Interest (continued)					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
Mazda	2003-2005	2003-2004 Mazda 6  2005 Mazda 6 with 2.3 only	Some vehicles may have a false MIL illumination during inspection with multiple U-code DTCs during OBDII test. The following OBD Codes may be set. (U1900-ABS, U2516-ABS, U1900-FF-IC, U2516-FF-IC, U0073-FF-PCM, U0073-FF-TCM, U0100-FF-TCM)	PCM sensitive to OBD tool connect or disconnect to DLC with ignition in the "On" position, or when the engine is running.  See Mazda Service Bulletin 01-002/05 Dated 01/13/2005. Erase trouble codes, disconnect tool when ignition switch off. Reset monitors.	<b>Follow OIS prompts - connect/disconnect DAD to vehicle only when key off.</b>

# Other Information in the OBD Reference Guide

- OBD Test Pass/Fail Standards
  - Table 1: number of incomplete OBD monitors allowed
    - Exceptions listed in Vehicles of Interest Tables 4 & 5
  - Table 2: Malfunction Indicator Lamp (MIL) standards
    - MIL bulb check / MIL illuminated when engine running
  - Table 3: Communication with vehicle's OBD system
    - OIS currently requires minimal communication with vehicle
    - BAR preparing OIS to validate core data is retrieved from vehicle; if not, inspector prompted to retry

# Next Version of OBD Reference Guide

- Adding EIS Vehicles of Interest via Table 5
  - Contents updated to match current BAR-97 EIS Vehicle Lookup Table

Table 5: EIS Vehicles of Interest (OBD)					
Make	Year	Model Engine(L) Fuel Type	Issue	Cause and Possible Remedy	Instruction to Inspector
BMW	1996	7-Series, 8-Series 5.0L, 5.4L	Monitors difficult to complete.		EIS ignores readiness status.
Chrysler	1996	Cirrus, Concord, LHS Sebring Convertible	All monitors reset to incomplete upon every ignition key-off.	Recall campaign #678 applies to California certified vehicles originally sold in California.  TSB #18-005-01 (with lifetime warranty) applies to federal certified and California certified originally sold in northeast states.	Comply with recall, then test as normal.

# Questions and Comments

Submit additional questions and/or comments to:

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