DTC Summaries

AJ16 Engine Management – 1996/97

OBD II MONITORING CONDITIONS:

When testing for DTC reoccurrence, it can be determined if the Service Drive Cycle was of sufficient length by performing a PDU "Systems Readiness Test".

Use the PDU "Scantool Application" disc to communicate with the EMS ECM.

The Systems Readiness Test occurs automatically when PDU establishes communication with the ECM. PDU will report if any portion of the Systems Readiness Test has not been completed in the following format:

The following tests have been identified as incomplete:

- Module $51 (identifies EMS ECM)
  - Catalyst
  - Evaporative purge system
  - Secondary air system
  - O_2 sensor
  - EGR system

PDU DATALOGGER ACRONYMS

ACLOAD	Air conditioning request
ADAPT	Adaptive rate
AMFR	Adaptive air mass flow rate
BATT	Battery voltage
CRANK	Engine cranking signal
DTCS	Number of DTCs flagged
ECT	Engine coolant temperature
EGRT	Exhaust gas temperature sensor
EVP	Exhaust gas recirculation valve position
FMFR	Adaptive fuel mass flow rate
FUEL	Fuel level
GEAR	Drive / Neutral
HO2S1B1	Heated oxygen sensor cyl 1 3 upstream
HO2S1B2	Heated oxygen sensor cyl 4 6 upstream
HO2S2B1	Heated oxygen sensor cyl 1 3 downstream
HO2S2B2	Heated oxygen sensor cyl 4 6 downstream
HO2S1HM	Oxygen sensor heaters upstream
HO2S2HM	Oxygen sensor heaters downstream
IAT	Intake air temperature
ISCPOS	Idle air control valve (IAC)
MAFS	Mass airflow sensor
MIL	CHECK ENGINE MIL
REFIDLE	Idle reference speed
RPM	Engine speed
TCMRET	Torque reduction request
TMS-MAFS	Mass airflow
TPS	Throttle position sensor
TPS-INT	Closed throttle adaptive position Intel processor
TPS-TMS	Closed throttle adaptive position TMS processor
VSS	Vehicle speed

DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0101	MAFS range / performance	Drive > 1500 rpm > 4 seconds	2	TPS signal voltage high, but undetected Blocked air filter Blocked exhaust system Air intake leak MAFS to ECM sensing circuit high resistance MAFS to ECM sensing circuit intermittent short circuit to ground MAFS supply circuit high resistance MAFS failure
P0102	MAFS sense circuit low voltage	Engine run > 4 seconds	2	Blocked air filter Blocked exhaust system MAFS to ECM sensing circuit high resistance or open circuit MAFS to ECM sensing circuit intermittent short circuit to ground MAFS supply circuit open circuit or short circuit to ground MAFS failure
P0103	MAFS sense circuit high voltage	Engine idle < 1000 rpm > 4 seconds	2	MAFS to ECM signal ground wire open circuit MAFS to ECM sensing circuit short circuit to B+ voltage MAFS failure
P0111	IATS range / performance	Engine at normal operating temperature, drive; idle; drive	2	IATS disconnected Engine compartment hot air leak into intake tract IATS to ECM wiring open circuit or high resistance IATS to ECM sensing circuit short circuit to B+ voltage IATS failure

* Number of consecutive trips required to activate CHECK ENGINE MIL.

DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0112	IATS sense circuit high voltage (low air temperature)	Ignition ON > 20 seconds	2	IATS disconnected IATS to ECM wiring open circuit or high resistance IATS to ECM sensing circuit short circuit to B+ voltage IATS failure
P0113	IATS sense circuit low voltage (high air temperature)	Ignition ON > 20 seconds	2	IATS to ECM wiring short circuit to ground IATS failure
P0116	ECTS range / performance	Engine at normal operating temperature; drive at highway speed	2	Low coolant level Engine thermostat stuck open ECTS to ECM sensing circuit high resistance when hot ECTS to ECM sensing circuit intermittent high resistance ECTS failure
P0117	ECTS sense circuit high voltage (low coolant temperature)	Engine run > 4 seconds	2	ECTS disconnected ECTS to ECM sensing circuit high resistance, open circuit or short circuit to B+ voltage ECTS failure
P0118	ECTS sense circuit low voltage (high coolant temperature)	Engine run > 4 seconds	2	Engine overheat condition ECTS to ECM wiring short circuit to ground ECTS failure
P0121	TPS performance	Drive at highway speed	2	Intake air or exhaust restricted Extreme high altitude operation Intermittent / incorrect , but undetected; TPS, engine speed, IATS, MAFS or IACV signals

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0123	TPS sense circuit high voltage	Drive steadily < 35% load > 25 seconds	2	TPS to ECM signal ground circuit open circuit TPS to ECM wiring (supply, sense) short circuit to each other TPS position sense circuit short circuit to B+ voltage MAFS signal voltage low, but undetected TPS failure
P0125	ECTS response	Engine coolant temperature < 68º F (20º C) Run engine to coolant temperature > 68º F (20º C) > 1 minute, 25 seconds	2	ECTS disconnected Low coolant level Engine thermostat stuck open ECTS to ECM sensing circuit high resistance, open circuit or short circuit to B+ voltage ECTS failure
P0131	HO2S sense circuit low voltage – cylinders 1, 2, 3 (A bank), upstream (1)	Engine at normal operating temperature; idle > 25 seconds	2	HO2S sense wire short circuit to ground HO2S failure HO2S heater malfunction (tip temperature too hot)
P0132	HO2S sense circuit high voltage – cylinders 1, 2, 3 (A bank), upstream (1)	Engine at normal operating temperature; idle > 25 seconds	2	HO2S disconnected HO2S signal ground wire open circuit HO2S sense wire open circuit or short circuit to B+ voltage HO2S failure HO2S heater malfunction (tip temperature too cold)
P0133	HO2S sense circuit slow response – cylinders 1, 2, 3 (A bank), upstream (1)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	HO2S contaminated HO2S wiring harness high resistance fault HO2S failure
P0137	HO2S sense circuit low voltage – cylinders 1, 2, 3 (A bank), downstream (2)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0131 possible causes
P0138	HO2S sense circuit high voltage – cylinders 1, 2, 3 (A bank), downstream (2)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0132 possible causes

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0139	HO2S sense circuit slow response – cylinders 1, 2, 3 (A bank), downstream (2)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Refer to P0133 possible causes
P0151	HO2S sense circuit low voltage – cylinders 4, 5, 6 (B bank), upstream (1)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0131 possible causes
P0152	HO2S sense circuit high voltage – cylinders 4, 5, 6 (B bank), upstream (1)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0132 possible causes
P0153	HO2S sense circuit slow response – cylinders 4, 5, 6 (B bank), upstream (1)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Refer to P0133 possible causes
P0157	HO2S sense circuit low voltage – cylinders 4, 5, 6 (B bank), downstream (2)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0131 possible causes
P0158	HO2S sense circuit high voltage: cylinders 4, 5, 6 (B bank), downstream (2)	Engine at normal operating temperature; idle > 25 seconds	2	Refer to P0132 possible causes
P0159	HO2S sense circuit slow response – cylinders 4, 5, 6 (B bank), downstream (2)	Engine at normal operating temperature; steadily at > 20 mph (32 km/h) for > 25 seconds	2	Refer to P0133 possible causes
P0171	Cylinders 1, 2, 3 (A bank) combustion too lean	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Fuel injector blockage Fuel injector wiring open circuit Engine misfire Intake manifold air leak Exhaust air leak (before catalyst)
P0172	Cylinders 1, 2, 3 (A bank) combustion too rich	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Exhaust air leak (before catalyst) Fuel injector blockage Engine misfire
P0174	Cylinders 4, 5, 6 (B bank) combustion too lean	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Refer to P0171 possible causes
P0175	Cylinders 4, 5, 6 (B bank) combustion too rich	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Refer to P0172 possible causes

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0201	Fuel injector circuit malfunction – cylinder 1	Engine running > 2 seconds	2	Injector disconnected Injector harness wiring open or short circuit Injector failure
P0202	Fuel injector circuit malfunction – cylinder 2	Engine running > 2 seconds	2	Refer to P0201 possible causes
P0203	Fuel injector circuit malfunction – cylinder 3	Engine running > 2 seconds	2	Refer to P0201 possible causes
P0204	Fuel injector circuit malfunction – cylinder 4	Engine running > 2 seconds	2	Refer to P0201 possible causes
P0205	Fuel injector circuit malfunction – cylinder 5	Engine running > 2 seconds	2	Refer to P0201 possible causes
P0206	Fuel injector circuit malfunction – cylinder 6	Engine running > 2 seconds	2	Refer to P0201 possible causes
P0300	Random misfire detected	Run engine steady > 2 minutes	2	Fuel contaminated Fuel injector(s) blocked or leaking Ignition secondary circuit breakdown (coils, spark plugs) Fuel pressure low Cylinder compression low Broken valve spring(s) CKPS circuit fault (CKPS DTCs also flagged) Fuel injector(s) circuit fault(s) (Injector DTCs also flagged) Ignition coil primary circuit fault(s) (Ignition coil DTCs also flagged)
P0301	Misfire detected – cylinder 1	Run engine steady > 2 minutes	2	Refer to P0300 possible causes
P0302	Misfire detected – cylinder 2	Run engine steady > 2 minutes	2	Refer to P0300 possible causes
P0303	Misfire detected – cylinder 3	Run engine steady > 2 minutes	2	Refer to P0300 possible causes
P0304	Misfire detected – cylinder 4	Run engine steady > 2 minutes	2	Refer to P0300 possible causes
P0305	Misfire detected – cylinder 5	Run engine steady > 2 minutes	2	Refer to P0300 possible causes
P0306	Misfire detected – cylinder 6	Run engine steady > 2 minutes	2	Refer to P0300 possible causes

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0326	Knock sensing circuit 1 (cylinders 1, 2, 3) at maximum correction	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	Low coolant level Poor quality fuel Knock sensor harness wiring shield condition (RFI interference) Combustion chamber deposits (pre ignition) Mechanical or background noise ECM failure
P0327	Knock sensing circuit 1 (cylinders 1, 2, 3) out of range (low voltage)	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	One or both knock sensors loose in block ECM to knock sensors wiring high resistance, open circuit or short circuit to ground Knock sensor(s) failure
P0328	Knock sensing circuit 1 (cylinders 1, 2, 3) out of range (high voltage)	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	Knock sensor harness wiring shield condition (RFI interference) Knock sensor(s) failure
P0331	Knock sensing circuit 2 (cylinders 4, 5, 6) at maximum correction	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	Low coolant level Poor quality fuel Knock sensor harness wiring shield condition (RFI interference) Combustion chamber deposits (pre ignition) Mechanical or background noise ECM failure
P0332	Knock sensing circuit 2 (cylinders 4, 5, 6) out of range (low voltage)	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	Refer to P0327 possible causes
P0333	Knock sensing circuit 2 (cylinders 4, 5, 6) out of range (high voltage)	Drive steadily @ 2000 rpm, 50% load > 15 seconds	2	Refer to P0328 possible causes
P0335	CKPS circuit malfunction	Engine idle > 10 seconds	2	CKPS mounting bracket loose CKPS / reluctor ring alignment CKPS to ECM sensing circuit; open circuit, short circuit to ground or B+ voltage CKPS failure

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0336	CKPS range / performance	Engine idle > 10 seconds	2	Foreign material on CKPS face Reluctor ring damaged CKPS harness wiring shield condition (RFI interference) CKPS failure
P0340	CMPS circuit malfunction	Engine idle > 10 seconds	2	CMPS alignment CMPS tooth damage CMPS harness wiring shield condition (RFI interference) CMPS failure
P0400	EGR temperature sensor circuit malfunction	Engine at normal operating temperature; drive at 35% load > 1 minutes	2	ECM to EGR temperature sensor sense wire open circuit EGR temperature sensor "coked up" EGR valve, pipework blocked (insufficient EGR flow) EGR pipework leak (insufficient EGR flow) EGR temperature sensor failure
P0411	AIR system insufficient air flow to exhaust	Engine at normal operating temperature; start; idle 30 seconds	2	AIR system pipework blocked or leaking AIR pump stuck ON or OFF AIR pump control circuit fault AIR pump supply circuit fault AIR pump failure
P0413	AIR pump relay drive (coil) circuit open circuit	Ignition ON > 1 second	2	Air injection relay removed Air injection relay (coil circuit) open circuit ECM to air injection relay (coil) wiring open circuit or short circuit to B+ voltage

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0414	AIR pump relay drive (coil) circuit short circuit	Ignition ON > 1 second	2	Air injection relay (coil circuit) short circuit ECM to air injection relay (coil) wiring short circuit to ground
P0420	Catalyst efficiency below threshold – cylinders 1, 2, 3 (A bank)	Engine at normal operating temperature; drive steadily > 20 mph (32 km/h) > 1 minute, 10 seconds	***	Exhaust leak Upstream HO2S slow response Upstream HO2S sense wire open or short circuit Intake air leak MAFS fault
P0430	Catalyst efficiency below threshold – cylinders 4, 5, 6 (B bank)	Engine at normal operating temperature; drive steadily > 20 mph (32 km/h) > 1 minute, 10 seconds	***	Refer to P0420 possible causes
P0441	EVAP system incorrect purge flow	Engine at normal operating temperature; varied driving for 15 minutes; hot idle > 1 minute	2	EVAP valve sticking EVAP valve blocked EVAP purge hose blocked or disconnected EVAP canister atmosphere vent blocked EVAP valve failure AIR pump stuck ON
P0442	EVAP system pressure leak (enhanced evaporative emissions vehicles)	Engine at normal operating temperature; fuel level between 1/4 and 3/4 full; varied driving for > 22 minutes; drive > 30 mph (48 km/h) > 10 seconds	2 **	Fuel tank, fuel filler cap or pipework pressure leak EVAP hoses / lines pressure leak EVAP valve pressure leak to engine Fuel tank pressure sensor signal high
P0443	EVAP valve circuit malfunction	Ignition ON > 1 second	2	EVAP valve disconnected ECM to EVAP valve "drive" circuit; open circuit, short circuit to ground or B+ voltage EVAP valve failure

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** Through 1996 MY: DTC does not activate the CHECK ENGINE MIL.

*** Three successive fail judgements. Diagnostic tests are performed continuously. Use the PDU "Scantool" Systems Readiness Test to determine if tests are complete.

DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0446	Canister close valve circuit malfunction	Engine at normal operating temperature; varied driving for > 22 minutes; drive > 30 mph (48 km/h) > 10 seconds	2	ECM to canister close valve open circuit, short circuit to ground or B+ voltage Canister close valve electrical failure
P0452	Fuel tank pressure sensor signal low (enhanced evaporative emissions vehicles)	Engine run	2	ECM to fuel tank pressure sensor circuit; open circuit or short circuit to ground Fuel tank pressure sensor failure
P0453	Fuel tank pressure sensor signal high (enhanced evaporative emissions vehicles)	Engine run	2	ECM to fuel tank pressure sensor circuit; open circuit, short circuit to 5V supply or B+ voltage Fuel tank pressure sensor failure
P0460	Fuel level sense circuit malfunction	Engine idle < 2 minutes	2	Instrument pack to ECM fuel level signal circuit; open circuit, short circuit to ground or B+ voltage Instrument pack fault (incorrect fuel level signal) Fuel level sensor failure
P0461	Fuel level sense signal performance	Drive > 10 mph (16 km/h) > 50 minutes	2	Instrument pack to ECM fuel level signal circuit; open circuit, short circuit to ground or B+ voltage Instrument pack fault (incorrect fuel level signal) Fuel level sensor failure
P0500	Vehicle speed sensor malfunction (signal from instrument pack)	Drive > 1900 rpm; high load > 40 seconds; 40 gear changes	2	ECM to instrument pack wiring: open circuit, short circuit or high resistance Vehicle speed signal from instrument pack incorrect TCM fault – requests torque reduction while vehicle stopped ABS / TC CM vehicle speed signal incorrect ABS wheel speed sensor fault

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P0506	Idle air control system: rpm lower than expected	Engine at normal operating temperature; idle > 10 seconds	2	IACV disconnected IACV passages blocked IACV stepper motor jammed or mounted incorrectly MAFS signal fault (steady high voltage) Engine incorrect operation – open throttle / engine still idle
P0507	Idle air control system: rpm higher than expected	Engine at normal operating temperature; idle > 10 seconds	2	IACV disconnected IACV passages blocked IACV stepper motor jammed or mounted incorrectly MAFS signal fault (steady low voltage)
P0508	IACV circuit: open circuit	Run engine; switch ignition OFF	2	IACV circuit open circuit IACV malfunction
P0509	IACV circuit: short circuit	Run engine; switch ignition OFF	2	IACV circuit short circuit to ground or B+ voltage IACV malfunction
P0605	ECM data corrupted	Ignition ON	1	ECM failure
P1137	HO2S sense circuit lack of "swing" – cylinders 1, 2, 3 (A bank), downstream (2) Sense circuit indicates lean combustion (No HO2S response)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 30 seconds	2	Downstream HO2S harness connectors (cylinders 1, 2, 3 / cylinders 4, 5, 6) reversed (Perform HO2S orientation) HO2S loose in exhaust pipe screw threads HO2S sense wire open circuit Exhaust leak before catalyst HO2S heater malfunction (tip temperature too cold) HO2S failure
P1138	HO2S sense circuit lack of "swing" – cylinders 1, 2, 3 (A bank), downstream (2) Sense circuit indicates rich combustion (No HO2S response)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 30 seconds	2	Downstream HO2S harness connectors (cylinders 1, 2, 3 / cylinders 4, 5, 6) reversed (Perform HO2S orientation) HO2S sense wire short circuit to ground HO2S heater malfunction (tip temperature too hot) HO2S failure

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1157	HO2S sense circuit lack of "swing" – cylinders 4, 5, 6 (B bank), downstream (2) Sense circuit indicates lean combustion (No HO2S response)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 30 seconds	2	Refer to P1137 possible causes
P1158	HO2S sense circuit lack of "swing" – cylinders 4, 5, 6 (B bank), downstream (2) Sense circuit indicates rich combustion (No HO2S response)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 30 seconds	2	Refer to P1138 possible causes
P1171	All cylinders combustion too lean	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Fuel filter, system blockage Fuel system leak Fuel pressure regulator failure (low fuel pressure) Low fuel pump output Fuel injectors blocked MAFS signal fault (low voltage) SC engine – Incorrect MAFS installed
P1172	All cylinders combustion too rich	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Fuel return pipe blocked Fuel pressure regulator failure (high fuel pressure) Fuel injectors leaking MAFS signal fault (high voltage) NA engine – Incorrect MAFS installed
P1176	Adaptive fuel metering trim too lean (fuel flow rate)	Engine at normal operating temperature; drive steadily at > 20 (32 km/h) mph for > 25 seconds	2	Fuel injector supply wiring short circuit to ground Fuel filter, system blockage Fuel system leak Fuel pressure regulator failure (low fuel pressure) Low fuel pump output Fuel injectors blocked MAFS signal fault (low voltage) SC engine – Incorrect MAFS installed

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1177	Adaptive fuel metering trim too rich (fuel flow rate)	Engine at normal operating temperature; drive steadily at > 20 mph (32 km/h) for > 25 seconds	2	Fuel return pipe blocked Fuel pressure regulator failure (high fuel pressure) Fuel injectors leaking MAFS signal fault (high voltage) NA engine – Incorrect MAFS installed SC engine – Intake air leak
P1178	Adaptive fuel metering trim too lean (air flow rate)	Engine at normal operating temperature; idle > 3 minutes; drive steadily at > 20 mph (32 km/h) for > 3 minutes; idle > 3 minutes	2	Air intake leak Low fuel pressure at idle Blocked injector MAFS signal fault (low voltage)
P1179	Adaptive fuel metering trim too rich (air flow rate)	Engine at normal operating temperature; idle > 3 minutes; drive steadily at > 20 mph (32 km/h) for > 3 minutes; idle > 3 minutes	2	High fuel pressure at idle MAFS signal fault (high voltage) NA engine – Incorrect MAFS installed
P1185	HO2S heater circuit open circuit – both upstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	HO2S heater circuits high resistance HO2S heater harness wiring high resistance, open circuit or short circuit to ground
P1186	HO2S heater circuit short circuit – both upstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	HO2S heater circuits short circuit to sensor HO2S heater harness wiring short circuit to B+ voltage
P1187	HO2S heater circuit open circuit – both upstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	HO2S heater circuits high resistance HO2S heater harness wiring high resistance HO2S heater harness wiring open circuit MAFS signal fault Ignition fault (ignition retard causing high exhaust gas temperature)

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1188	HO2S heater circuit high resistance – both upstream sensors	Engine idle > 25 seconds	2	ECM to HO2S heater wiring open circuit (or intermittent open circuit) ECM to HO2S heater wiring short circuit to ground HO2S heater circuits high resistance or open circuit HO2S heaters failure
P1189	HO2S heater circuit low resistance – both upstream sensors	Engine idle > 25 seconds	2	HO2S loose HO2S heater circuit; short circuit to ground or B+ voltage HO2S heater circuits; high resistance or open circuit HO2S heaters failure
P1190	HO2S heater circuit low resistance – both upstream sensors	Engine idle > 25 seconds	2	High battery voltage (>17v) producing excess heater current ECM to HO2S heater wiring; short circuit to B+ voltage HO2S heater circuits; short circuit to ground Both HO2S heaters failure
P1191	HO2S heater circuit open circuit – both downstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	Refer to P1185 possible causes
P1192	HO2S heater circuit short circuit – both downstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	Refer to P1186 possible causes
P1193	HO2S heater circuit open circuit – both downstream sensors	Engine idle < 1000 rpm > 3 minutes, 20 seconds	2	Refer to P1187 possible causes
P1194	HO2S heater circuit high resistance – both downstream sensors	Engine idle > 25 seconds	2	Refer to P1188 possible causes
P1195	HO2S heater circuit low resistance – both downstream sensors	Engine idle > 25 seconds	2	Refer to P1189 possible causes

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1196	HO2S heater circuit low resistance – both downstream sensors	Engine idle > 25 seconds	2	Refer to P1190 possible causes
P1201	Fuel injector circuit open or short circuit – cylinder 1	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1202	Fuel injector circuit open or short circuit – cylinder 2	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1203	Fuel injector circuit open or short circuit – cylinder 3	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1204	Fuel injector circuit open or short circuit – cylinder 4	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1205	Fuel injector circuit open or short circuit – cylinder 5	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1206	Fuel injector circuit open or short circuit – cylinder 6	Run engine; ignition OFF > 2 seconds	2	Refer to P0201 possible causes
P1313	Catalyst damage misfire detected – cylinders 1, 2, 3 (A bank)	Run engine steady > 2 minutes	1 **	Refer to P0300 possible causes
P1314	Catalyst damage misfire detected – cylinders 4, 5, 6 (B bank)	Run engine steady > 2 minutes	1 **	Refer to P0300 possible causes
P1315	Persistent misfire (one cylinder identified and injector switched off)	Run engine steady > 2 minutes	1	Refer to P0300 possible causes
P1316	Misfire excess emission	Run engine steady > 2 minutes	2 **	Refer to P0300 possible causes
P1361	Ignition coil primary circuit malfunction – cylinder 1	Engine running > 1 second	2	ECM to ignition coil primary circuit high resistance, open circuit or short circuit to ground CKPS malfunction (refer to P0335, P0336) Ignition coil failure

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** Through 1996 MY: DTC does not activate CHECK ENGINE MIL. If DTCs P1313, P1314 or P1316 are flagged, one or more of the cylinder identification DTCs will also be flagged (random misfire P0300 or individual cylinder P0301 – P0306). If DTC P1315 is flagged, one or more of the individual cylinder identification DTCs (P0301 – P0306) will also be flagged.

DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1362	Ignition coil primary circuit malfunction – cylinder 2	Engine running > 1 second	2	Refer to P1361 possible causes
P1363	Ignition coil primary circuit malfunction – cylinder 3	Engine running > 1 second	2	Refer to P1361 possible causes
P1364	Ignition coil primary circuit malfunction – cylinder 4	Engine running > 1 second	2	Refer to P1361 possible causes
P1365	Ignition coil primary circuit malfunction – cylinder 5	Engine running > 1 second	2	Refer to P1361 possible causes
P1366	Ignition coil primary circuit malfunction – cylinder 6	Engine running > 1 second	2	Refer to P1361 possible causes
P1371	Ignition coil primary circuit: incorrect spark timing – cylinder 1	Engine running > 1 second	2	ECM to ignition coil primary circuit short circuit Ignition coil failure
P1372	Ignition coil primary circuit: incorrect spark timing – cylinder 2	Engine running > 1 second	2	Refer to P1371 possible causes
P1373	Ignition coil primary circuit: incorrect spark timing – cylinder 3	Engine running > 1 second	2	Refer to P1371 possible causes
P1374	Ignition coil primary circuit: incorrect spark timing – cylinder 4	Engine running > 1 second	2	Refer to P1371 possible causes
P1375	Ignition coil primary circuit: incorrect spark timing – cylinder 5	Engine running > 1 second	2	Refer to P1371 possible causes
P1376	Ignition coil primary circuit: incorrect spark timing – cylinder 6	Engine running > 1 second	2	Refer to P1371 possible causes
P1400	EGR valve position malfunction	Ignition ON > 1 second	2	EGR valve sticky, dirty or seized ECM to EGR valve position signal wire short or open circuit

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1401	EGR position circuit out of range (low or high voltage)	Ignition ON > 1 second	2	ECM to EGR valve position signal wire open circuit, short circuit to ground or B+ voltage EGR valve position sensor supply wire short or open circuit EGR valve position sensor ground wire short circuit to supply wire or open circuit EGR valve position sensor failure (EGR valve assembly)
P1408	EGR temperature sensor circuit out of range (high voltage)	Ignition ON > 1 second	2	ECM to EGR temperature sensor sense wire short circuit to ground ECM to EGR temperature sensor sense wire short circuit to supply wire EGR temperature sensor failure
P1409	EGR valve drive circuit malfunction	Ignition ON > 1 second	2	ECM to EGR valve drive wire open circuit ECM to EGR valve drive wire short circuit to ground EGR valve failure
P1440	EVAP valve incorrect flow (enhanced evaporative emissions vehicles)	Engine at normal operating temperature; fuel level between 1/4 and 3/4 full; varied driving for > 22 minutes; drive > 30 mph (48 km/h) > 10 seconds	2	EVAP valve stuck open Fuel tank pressure sensor low output (but in range) Fuel tank filled with engine running
P1447	Canister close valve low flow (enhanced evaporative emissions vehicles)	Engine at normal operating temperature; varied driving for 15 minutes; hot idle > 1 minute	2 **	Canister close valve blocked or stuck closed
P1448	Enhanced evaporative emissions system performance fault 2 (vacuum test OK but no feedback change)	Engine at normal operating temperature; fuel level between 1/4 and 3/4 full; varied driving for > 22 minutes; drive > 30 mph (48 km/h) > 10 seconds	2 **	Fuel tank, fuel filler cap or pipework pressure leak EVAP hoses / lines pressure leak EVAP valve leaking pressure to engine Canister close valve stuck open

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** Through 1996 MY: DTC does not activate the CHECK ENGINE MIL.

DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1496	Enhanced evaporative emissions system performance fault 1 (vacuum test failed and no feedback change)	Engine at normal operating temperature; fuel level between 1/4 and 3/4 full; varied driving for > 22 minutes; drive > 30 mph (48 km/h) > 10 seconds	2 **	Fuel tank filled with engine running Fuel tank, fuel filler cap or pipework pressure leak EVAP hoses / lines pressure leak EVAP valve stuck closed Canister close valve stuck open Fuel tank pressure sensor signal circuit resistance Fuel tank pressure sensor malfunction
P1508	IACV circuit open circuit	Ignition ON > 15 seconds; ignition OFF	2	IACV disconnected IACV harness wiring open circuit IACV stepper motor failure (open circuit)
P1509	IACV circuit short circuit	Ignition ON > 15 seconds; ignition OFF	2	IACV harness wiring short circuit IACV stepper motor failure (short circuit)
P1514	High load NEUTRAL / DRIVE malfunction	Drive at > 90% load	2	MAFS signal voltage high, but undetected NEUTRAL / PARK wiring (decoder to ECM) short circuit to ground BPM fault (NEUTRAL / PARK parallel circuit)
P1516	Gear change NEUTRAL / DRIVE malfunction	Drive > 30 gear changes	2	NEUTRAL / PARK wiring (decoder to ECM) short circuit to ground BPM low resistance fault (NEUTRAL / PARK parallel circuit) TCM to ECM torque reduction request fault Vehicle speed signal fault, but undetected
P1517	Engine cranking NEUTRAL / DRIVE malfunction	Start engine	2	BPM cranking inhibit fault BPM high resistance fault (NEUTRAL / PARK parallel circuit) NEUTRAL / PARK wiring (decoder to ECM) open circuit or short circuit to B+ voltage

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DTC	FAULT DESCRIPTION	OBD II MONITORING CONDITIONS (see page 1)	TRIPS*	POSSIBLE CAUSES
P1607	CHECK ENGINE MIL circuit malfunction	Ignition ON	2	ECM to instrument pack / BPM wiring open circuit, short circuit or high resistance BPM fault (CHECK ENGINE) Instrument pack fault (CHECK ENGINE)
P1775	TCM CHECK ENGINE MIL request	Ignition ON	1	Possible transmission fault – check for flagged TCM DTCs
P1776	Torque reduction request signal duration fault	Drive vehicle to initiate automatic gear changes	1	Driver placing rapid repeated shift demands on the transmission requiring torque reduction – torque reduction may not be possible Possible TCM fault (request too long)
P1777	Torque reduction circuit malfunction	Engine running; normal operating temperature	2	Torque reduction signal wire open circuit, short circuit to ground or B+ voltage Possible TCM fault (invalid signal)
P1794	ECM B+ supply voltage low (below 10.5 V)	Run engine > 1600 rpm	2	Generator drive belt loose ECM B+ supply circuit; high resistance, open circuit or short circuit to ground Battery malfunction Charging system malfunction

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