

DIAGNOSTIC TROUBLE CODES

Listings of the Diagnostic Trouble Codes (DTCs) for the various engine control systems covered in this manual are located in this section. When using these codes, remember that a code only points to the faulty circuit, NOT necessarily to a faulty component. Loose, damaged or corroded connections may contribute to a fault code on a circuit when the sensor or component it operating properly. Be sure that components are faulty before replacing them, especially the expensive ones.

ENGINE (Liters)	Quick Test Mode	2.5L FLD CFI	3.0L EFI	3.0L SHD SEFI	3.0L AXOD SEFI
Service Codes	FUEL SYSTEM				
11—System pass	Q/R/C	✓	✓	✓	✓
12—Rpm unable to reach upper test limit	R	✓	✓	✓	✓
13—Oil minor movement not detected	D	✓	✓	✓	✓
13—Rpm unable to achieve lower test limit	R	✓	✓	✓	✓
14—DC motor did to low caspique	C	✓	✓	✓	✓
14—PIP circuit failure	C	✓	✓	✓	✓
15—ECM reset only memory test failed	D	✓	✓	✓	✓
16—ECM reset always memory test failed	C	✓	✓	✓	✓
16—Idle rpm high with ISC off	R	✓	✓	✓	✓
18—Idle too low to perform ESO test	R	✓	✓	✓	✓
17—Idle rpm low with ISC on	R	✓	✓	✓	✓
18—SFCUT circuit open or spark angle word failure	R	✓	✓	✓	✓
18—O/M circuit failure or SPDLT circuit grounded	C	✓	✓	✓	✓
15—Failure in ECU internal voltage	D	✓	✓	✓	✓
15—C/D circuit failure	C	✓	✓	✓	✓
15—Reset disrupted because in ISC off test	R	✓	✓	✓	✓
15—Rpm for HIF test not achieved	R	✓	✓	✓	✓
21—ECT out of self-test range	Q/R	✓	✓	✓	✓
22—BF sensor out of self-test range	Q/R	✓	✓	✓	✓
27—BF or MAP out of self-test range	Q/R/C	✓	✓	✓	✓
23—TP out of self-test range	Q/R	✓	✓	✓	✓
23—TP out of self-test range	Q/R/C	✓	✓	✓	✓
24—ACT sensor out of self-test range	Q/R	✓	✓	✓	✓
25—Knock not sensed during dynamic test	T	✓	✓	✓	✓
26—WAF/MAT out of self-test range	Q/R	✓	✓	✓	✓
26—WAT out of self-test range	Q/R	✓	✓	✓	✓
29—Insufficient input from vehicle speed sensor	C	✓	✓	✓	✓
31—PHE, HVP or HPR circuit below minimum voltage	Q/R/L	✓	✓	✓	✓
32—CPT circuit voltage low (PFE)	R/C	✓	✓	✓	✓
32—EVP voltage below closed limit	Q/R/C	✓	✓	✓	✓
32—EGP not controlling	H	✓	✓	✓	✓
33—EGP valve opening not detected	R/C	✓	✓	✓	✓
33—EGP not closing fully	R	✓	✓	✓	✓
34—Hector: no PHE sensor or voltage out of range	D	✓	✓	✓	✓
34—EFT sensor voltage high (PFE)	R/C	✓	✓	✓	✓
34—EVP voltage above closed limit	Q/R/C	✓	✓	✓	✓
34—EFT opening not detected	H	✓	✓	✓	✓
35—EFT or EVP circuit above maximum voltage	Q/R/C	✓	✓	✓	✓
35—Rpm too low to perform EUP test	R	✓	✓	✓	✓
38—Idle tracking system circuit open	C	✓	✓	✓	✓
38—Idle tracking system circuit open	C	✓	✓	✓	✓
39—AXOD lock up failed	C	✓	✓	✓	✓
41—HEGO sensor circuit indicates system test	R	✓	✓	✓	✓
41—No HEGO switching observed	R	✓	✓	✓	✓
42—HEGO sensor circuit indicates system test	H	✓	✓	✓	✓
42—No HEGO switching observed—results rich	C	✓	✓	✓	✓
43—HEGO lean at wide open throttle	C	✓	✓	✓	✓
44—Throttle air system inoperative—rich stoic	R	✓	✓	✓	✓
45—Throttle air system inoperative—rich stoic	R	✓	✓	✓	✓
45—Coi 1 primary circuit failure	C	✓	✓	✓	✓
46—Throttle air not bypassed during self-test	H	✓	✓	✓	✓
46—Coi 2 primary circuit failure	C	✓	✓	✓	✓
47—Measured airflow low at 5000 rpm	H	✓	✓	✓	✓
48—Coi 3 primary circuit failure	C	✓	✓	✓	✓
48—Measured airflow high at base die	R	✓	✓	✓	✓
49—SPDLT signal detected to DPEBDC or SFCUT open	C	✓	✓	✓	✓
51—H/VAC: needs—4HP circuit open	Q/R	✓	✓	✓	✓
52—Power steering pressure switch always open or closed	D	✓	✓	✓	✓
52—Power steering pressure switch always open or closed	R	✓	✓	✓	✓

Diagnostic Trouble Codes

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Service Codes	ENGINE (Liters)	Quick Test Mode	2.5L	3.0L	3.0L	3.0L
	FUEL SYSTEM		FLC CFI	CFI	3HO SEFI	AXD0 SEFI
53-TP circuit below minimum voltage		R/C	✓	✓	✓	✓
54-ACT sensor circuit open		D/C	✓	✓	✓	✓
55-Keydown circuit open		R	✓	✓	✓	✓
56-WAF or MAF circuit above maximum voltage		D/C	✓	✓	✓	✓
56-MAF circuit above maximum voltage		D/C	✓	✓	✓	✓
57-Idle air adjust service air circuit		D/C	✓	✓	✓	✓
57-AXD0 neutral pressure switch circuit failed open		O	✓	✓	✓	✓
58-Idle tracking switch circuit open		O	✓	✓	✓	✓
58-Idle tracking switch closed/circuit grounded		R	✓	✓	✓	✓
58-WAF reads 40°F or circuit open		D/C	✓	✓	✓	✓
58-Idle adjust service air circuit		O	✓	✓	✓	✓
58-AXD0 4/2 pressure switch circuit failed open		O	✓	✓	✓	✓
58-High speed fuel pump circuit open-Battery to ECM		D/C	✓	✓	✓	✓
58-AXD0 4/2 pressure switch failed closed		O	✓	✓	✓	✓
59-WAF reads 254°F or circuit grounded		D/C	✓	✓	✓	✓
59-AXD0 4/3 or 3/2 pressure switch circuit grounded		O	✓	✓	✓	✓
59-TP circuit below minimum voltage		D/C	✓	✓	✓	✓
64-ACT sensor input below test minimum or grounded		D/C	✓	✓	✓	✓
65-Never went to user logic control		C	✓	✓	✓	✓
66-MAF sensor input below minimum voltage		C	✓	✓	✓	✓
66-WAF sensor below minimum voltage		O/C	✓	✓	✓	✓
66-MAF circuit below minimum voltage		R/C	✓	✓	✓	✓
67-Neutral/drive switch open or A/C on		D	✓	✓	✓	✓
67-Clutch sensor circuit failure		R	✓	✓	✓	✓
67-Neutral/drive switch open or A/C on		O/R	✓	✓	✓	✓
68-Idle tracking switch closed or circuit grounded		O	✓	✓	✓	✓
68-Idle tracking switch circuit open		R	✓	✓	✓	✓
68-AXD0 transmission temperature switch failed open		O/R/C	✓	✓	✓	✓
68-WAF reads 254°F or circuit grounded		C/R	✓	✓	✓	✓
68-AXD0 4/2 pressure switch circuit failed closed		O	✓	✓	✓	✓
69-AXD0 3/4 pressure switch circuit failed open		O	✓	✓	✓	✓
70-ECM DATA bus main battery link circuit failure		D	✓	✓	✓	✓
71-Software reinitialization detected		C	✓	✓	✓	✓
71-Idle tracking switch attached to ground		C	✓	✓	✓	✓
71-Clutch control assembly circuit failed		C	✓	✓	✓	✓
71-Insufficient MAF/MAF change during dynamic test		I	✓	✓	✓	✓
72-Power input to reinitialization detection		C	✓	✓	✓	✓
72-Message to PCM control assembly circuit failed		C	✓	✓	✓	✓
73-Insufficient throttle position change		D	✓	✓	✓	✓
73-Insufficient I/P change during dynamic test		F	✓	✓	✓	✓
74-Brake control solenoid failure or not actuated		P	✓	✓	✓	✓
75-Brake control solenoid circuit closed or ECM input open		R	✓	✓	✓	✓
76-Insufficient WAF change during dynamic test		R	✓	✓	✓	✓
77-40WOT seen in self-test or user data error		H	✓	✓	✓	✓
79-AVC or detest during self-test		D	✓	✓	✓	✓

Diagnostic Trouble Codes

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Service Codes	ENGINE (Liters)	Quick Test Mode	2.5L	3.0L	3.0L	3.0L
	FUEL SYSTEM		FLC CFI	CFI	3HO SEFI	AXD0 SEFI
81-IMS circuit failure		O	✓	✓	✓	✓
81-Air management 2 circuit failure		D	✓	✓	✓	✓
82-Air management 1 circuit failure		O	✓	✓	✓	✓
82-Supercharger bypass circuit failure		C	✓	✓	✓	✓
82-High speed electric valve circuit failure		O	✓	✓	✓	✓
83-Low speed fuel pump circuit failure		D/C	✓	✓	✓	✓
84-PRR vacuum solenoid circuit failure		O	✓	✓	✓	✓
84-EGR vacuum regulator circuit failure		O/R	✓	✓	✓	✓
85-Carburetor purge circuit failure		O/R	✓	✓	✓	✓
85-Carburetor purge solenoid circuit failure		D	✓	✓	✓	✓
85-Adaptive fuel trim limit reached		C	✓	✓	✓	✓
86-3-1 shift solenoid circuit failure		O	✓	✓	✓	✓
86-Adaptive fuel trim limit reached		C	✓	✓	✓	✓
87-Fuel pump primary circuit failure		O/C	✓	✓	✓	✓
87-Fuel pump primary circuit failure		O/C/R	✓	✓	✓	✓
87-Fuel pump primary circuit failure		O	✓	✓	✓	✓
88-Electric drive fan circuit failure		O	✓	✓	✓	✓
88-Converter clutch overvoltage circuit failure		O	✓	✓	✓	✓
88-Long run solenoid circuit failure		O	✓	✓	✓	✓
89-H2O2 sensor indicates system lean		I	✓	✓	✓	✓
89-No H2O2 switching detected		C	✓	✓	✓	✓
89-H2O2 sensor indicates system rich		I	✓	✓	✓	✓
89-TP sensor input away from maximum motor travel		O	✓	✓	✓	✓
89-Throttle air system inoperative-left idle		H	✓	✓	✓	✓
89-Fuel pump secondary circuit failure-ECM to ground		D/C	✓	✓	✓	✓
89-Fuel pump secondary circuit failure-Battery to ECM		O/C	✓	✓	✓	✓
89-High speed fuel pump circuit open		D/C	✓	✓	✓	✓
89-Idle fuel pressure		R	✓	✓	✓	✓
89-EEC has not learned to control idle; ignore codes P2013		R	✓	✓	✓	✓

No Codes: Cannot begin self-test procedure
 For DTC Codes:
 Codes will be set if they occur in any of the following conditions:
 Key-on or clutchless
 Key-on or clutchless
 D-Idle mode
 2-4th H2O2
 3-4th H2O2
 3-4th H2O2
 3-4th H2O2

Diagnostic Trouble Codes

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Service Codes	ENGINE (Liters) FUEL SYSTEM	Quick Test Mode	2.5L	3.0L	3.0L	3.9L
			AUXDIE SEFI	EPI	AUXDIE RFFI	AUXDIE SEFI
111—System pass		D/F/C	✓	✓	✓	✓
112—AC1 sensor circuit grounded or shorts 24V+		O/C	✓	✓	✓	✓
113—AC1 sensor circuit grounded		D/R	✓	✓	✓	✓
114—ACT sensor circuit open		O/R	✓	✓	✓	✓
115—ACT sensor circuit opens or reads < -40°F		O/C	✓	✓	✓	✓
116—ACT outside test limits during KCEB or KCEA tests		O/R	✓	✓	✓	✓
116—ECT accurate test limits during KHEF or KHEB tests		O/F	✓	✓	✓	✓
117—ECT sensor circuit grounded		O/C	✓	✓	✓	✓
118—ECT sensor circuit above maximum voltage or reads > 40°F		O/C	✓	✓	✓	✓
119—ECT sensor circuit open		O/C	✓	✓	✓	✓
121—Closed throttle voltage higher or lower than expected		D/R/C	✓	✓	✓	✓
122—TP sensor circuit below minimum voltage		O/C	✓	✓	✓	✓
123—TP sensor above maximum voltage		O/C	✓	✓	✓	✓
124—TP sensor voltage higher than expected, in range		C	✓	✓	✓	✓
125—TP sensor voltage lower than expected, in range		C	✓	✓	✓	✓
125—RP or MAP sensor higher or lower than expected		O/F/C	✓	✓	✓	✓
126—Insufficient MAF change during Dynamic Response test		R	✓	✓	✓	✓
130—HEGO shows system always lean (front)		R	✓	✓	✓	✓
130—HEGO shows system always lean (left)		R	✓	✓	✓	✓
131—HEGO shows system always rich (left)		R	✓	✓	✓	✓
132—HEGO shows system always rich (right)		R	✓	✓	✓	✓
132—No HEGO switching (front)		C	✓	✓	✓	✓
133—No HEGO switching (left)		C	✓	✓	✓	✓
134—No HEGO switching (right)		C	✓	✓	✓	✓
134—No HEGO switching (right)		C	✓	✓	✓	✓
144—No HEGO switching detected		C	✓	✓	✓	✓
157—MAF sensor circuit below minimum voltage		C	✓	✓	✓	✓
150—MAF sensor circuit above maximum voltage		O/C	✓	✓	✓	✓
150—MAF sensor circuit above maximum voltage		D/R/C	✓	✓	✓	✓
151—MAF higher or lower than expected during KCEB and KCEA test		O/R	✓	✓	✓	✓
167—Insufficient TP change during Dynamic Response test		R	✓	✓	✓	✓
171—Fuel system at adaptive limit, FIDC unable to switch		C	✓	✓	✓	✓
171—Fuel system at adaptive limit, FIDC unable to switch (right)		C	✓	✓	✓	✓
171—No HEGO switching; system at adaptive limit (rear)		C	✓	✓	✓	✓
172—HEGO shows system always lean (rear)		R/C	✓	✓	✓	✓
172—No HEGO switching seen; indicates lean		R/C	✓	✓	✓	✓
172—No HEGO switching seen; indicates rich (right)		R/C	✓	✓	✓	✓
173—HEGO shows system always rich (rear)		R/C	✓	✓	✓	✓
173—No HEGO switching seen; indicates rich		R/C	✓	✓	✓	✓
173—No HEGO switching seen; indicates rich (right)		R/C	✓	✓	✓	✓
174—HEGO switching time is slow (right)		C	✓	✓	✓	✓
175—No HEGO switching; system at adaptive limit (front)		C	✓	✓	✓	✓
175—No HEGO switching; system at adaptive limit (left)		C	✓	✓	✓	✓
175—Fuel shows system always lean (front)		C	✓	✓	✓	✓
175—HEGO shows system always lean (left)		C	✓	✓	✓	✓
175—HEGO shows system always rich (front)		C	✓	✓	✓	✓
175—HEGO shows system always rich (left)		C	✓	✓	✓	✓
176—HEGO switching time is slow (left)		C	✓	✓	✓	✓
179—Fuel lean adaptive limit at part throttle; system rich		C	✓	✓	✓	✓
179—System at lean adaptive limit at part throttle; system rich (rear)		C	✓	✓	✓	✓
179—System at lean adaptive limit at part throttle; system rich (right)		C	✓	✓	✓	✓

Diagnostic Trouble Codes

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DIAGNOSTIC TROUBLE CODES	DEFINITIONS
P001	System Fault
P011	Inlet Air Temp (IAT) sensor circuit below minimum voltage: 254°F indicated
P012	Inlet Air Temp (IAT) sensor circuit above maximum voltage: -43°F indicated
P013	Inlet Air Temp (IAT) sensor circuit voltage higher or lower than expected
P014	Engine Coolant Temp (ECT) sensor circuit voltage higher or lower than expected
P015	Engine Coolant Temp (ECT) sensor circuit below minimum voltage: 254°F indicated
P016	Engine Coolant Temp (ECT) sensor circuit above maximum voltage: -40°F indicated
P017	Throttle Position (TP) sensor circuit below minimum voltage
P018	Throttle Position (TP) sensor circuit above maximum voltage
P019	Throttle Position (TP) sensor voltage higher than expected
P020	Throttle Position (TP) sensor voltage lower than expected
P021	MAP/BARO sensor circuit voltage higher or lower than expected
P022	MAP sensor vacuum hose damaged / disconnected
P023	Insufficient MAP - Mass Air Flow (MAF) change during dynamic response test KOEP
P024	Lack of Heated Oxygen Sensor (HO2S-2) switch during KOEP - indicates lean (Bank #2)
P025	Lack of Heated Oxygen Sensor (HO2S-2) switch during KOEP - indicates rich (Bank #2)
P026	No Heated Oxygen Sensor (HO2S-2) switches detected (Bank #2)
P027	Fuel system at lean adaptive limit
P028	No Heated Oxygen Sensor (HO2S-1) switches detected (Bank #1)
P029	Mass Air Flow (MAF) sensor circuit below minimum voltage
P030	Mass Air Flow (MAF) sensor circuit above maximum voltage
P031	Mass Air Flow (MAF) sensor circuit voltage higher or lower than expected
P032	Inactive throttle position change during dynamic response test KOEP
P033	Fuel system at adaptive limit: Heated Oxygen Sensor (HO2S-1) unable to switch (Bank #1)
P034	Lack of Heated Oxygen Sensor (HO2S-1) switches, indicates lean (Bank #1)
P035	Lack of Heated Oxygen Sensor (HO2S-1) switches, indicates rich (Bank #1)
P036	Fuel system at adaptive limit: Heated Oxygen Sensor (HO2S-2) unable to switch (Bank #2)
P037	Lack of Heated Oxygen Sensor (HO2S-2) switches, indicates lean (Bank #2)
P038	Lack of Heated Oxygen Sensor (HO2S-2) switches, indicates rich (Bank #2)
P039	Fuel system at lean adaptive limit at part throttle, system rich (Bank #1)
P040	Fuel system at rich adaptive limit at part throttle, system lean (Bank #1)
P041	Mass Air Flow (MAF) sensor voltage higher than expected
P042	Mass Air Flow (MAF) sensor voltage lower than expected
P043	Injector pulsewidth higher than expected (with BARO sensor)
P044	Injector pulsewidth higher than expected (with MAP sensor)
P045	Injector pulsewidth lower than expected (with BARO sensor)
P046	Injector pulsewidth lower than expected (with MAP sensor)
P047	Fuel system at lean adaptive limit at part throttle, system rich (Bank #2)
P048	Fuel system at rich adaptive limit at part throttle, system lean (Bank #2)
P049	Flexible Fuel (FF) sensor circuit failure

Diagnostic Trouble Codes

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Series Codes	FUEL SYSTEM	2.5L AODE SEFI	3.0L EFI	3.0L AODE SEFI	3.0L AODE SEFI
519	Power steering pressure switch did not charge a/c	H			
522	Vehicle not in Park or Neutral during KOER test	C			
525	Vehicle in gear or A/C on during self-test	C			
528	Clutch switch circuit failure	C			
53E	Brake on/OFF circuit failure/not actuated during KOER test	K/C			
538	Insufficient rpm change during KOER Dynamic Response test	H			
539	A/C on or Defroster on during KOER test	C			
542	Fuel pump secondary circuit failure, ECU to ground	O/C			
543	Fuel pump secondary circuit failure, Batti to ECU	O/C			
552	Air management 1 circuit failure	D			
556	Fuel pump primary circuit failure	O/C			
564	EGR vacuum regulator circuit failure	O			
565	High speed electro-drive fan circuit failure	O			
564	Body-drive fan circuit failure	O			
565	Converter purge circuit failure	O			
528	3-A solenoid circuit failure	O			
621	Shift solenoid 1 circuit failure	O			
622	Shift solenoid 2 circuit failure	O			
624	EPC solenoid or driver circuit failure	O/C			
625	EPC driver open in ECU	O			
628	Lock-up solenoid failure, excessive clutch slippage	O			
629	Converter clutch solenoid circuit failure	O			
629	Lock-up solenoid failure	O			
634	MAP sensor voltage out of self-test range	O			
638	TOT sensor voltage out of self-test range	O/H			
637	TOT sensor circuit above maximum voltage	O/C			
638	ICI sensor circuit below minimum voltage	O/C			
639	Input/Output loop for line speed sensor	R/H			
641	Shift solenoid 3 circuit failure	O			
645	Incorrect gear ratio obtained for 1st gear	O			
646	Incorrect gear ratio obtained for 2nd gear	O			
647	Incorrect gear ratio obtained for 3rd gear	O			
648	Incorrect gear ratio obtained for 4th gear	O			
649	EPC range failure	O			
651	EPC circuit failure	O			
656	Hard fault present	H			

Codes Not Used - In vehicles to which they do not apply.
 H Code - Cannot high road or correct trouble codes.
 O - Open, engine off.
 H - High, engine running.
 C - Code not present.

Diagnostic Trouble Codes

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DIAGNOSTIC TROUBLE CODES	DEFINITIONS
211	Positive Ignition Lockup (PIL) circuit failure
212	Loss of Ignition Diagnostic Monitor (IDM) input to PCM - SPOLT circuit grounded
213	SPOLT circuit open
214	Cylinder Identification (CID) circuit failure
215	PCM detected coil 1 primary circuit failure (EI)
216	PCM detected coil 2 primary circuit failure (EI)
217	PCM detected coil 3 primary circuit failure (EI)
218	Loss of Ignition Diagnostic Monitor (IDM) input - air choke level plug (EI)
219	Spark timing delayed to 10 degrees - SPOLT circuit open (EI)
221	Spark timing error (EI)
222	Loss of Ignition Diagnostic Monitor (IDM) engine - high side (short to GND) (EI)
223	Loss of Ignition Diagnostic Monitor (IDM) engine - low side (short to GND) (EI)
224	PCM detected coil 1, 2, 3 or 4 primary circuit failure (short to GND) (EI)
225	Knock not sensed during dynamic response test KOER
226	Ignition Diagnostic Monitor (IDM) signal not received (EI)
238	PCM detected coil 1, 2, 3 or 4 primary circuit failure (EI)
239	PCM detected coil 4 primary circuit failure (EI)
241	PCM to PCM IDM pulse width regulation error (EI)
244	CID input fault present when cylinder balance test requested
311	AIR system inoperative during KOER (Bank #1 or dual HO2S)
312	AIR disconnected during KOER
313	AIR not bypassed during KOER
314	AIR system inoperative during KOER (Bank #2 or dual HO2S)
320	EGR (PFE / DPFE) circuit voltage lower than expected
327	EGR (EVP / EVP / PFE / DPFE) circuit below minimum voltage
328	EGR (EVP) closed valve voltage lower than expected
329	Intentional EGR flow detected (EGRP / EUP / PFE / DPFE)
334	EGR (EVP) closed valve voltage higher than expected
336	EGR (PFE / DPFE) sensor voltage higher or lower than expected during KOER
338	Exhaust pressure high; EGR (PFE / DPFE) circuit voltage higher than expected
337	EGR (EGRP / EVP / PFE / DPFE) circuit above maximum voltage
338	Engine Coolant Temperature (ECT) lower than expected (thermostat test)
339	Engine Coolant Temperature (ECT) higher than expected (thermostat test)
341	On-air request solenoid pin open
351	Frequent A/C clutch cycling
411	Control Solenoid RPM during KOER low RPM check
412	Control Solenoid RPM during KOER high RPM check
415	Idle Air Control (IAC) system at minimum inductive lower limit
418	Idle Air Control (IAC) system at upper inductive upper limit
452	Insufficient input from Vehicle Speed Sensor (VSS) to PCM
453	Servo locking down (KOER IVSC test)
454	Servo locking up (KOER IVSC test)
455	Insufficient RPM increase (KOER IVSC test)
456	Insufficient RPM decrease (KOER IVSC test)

Diagnostic Trouble Codes

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DIAGNOSTIC TROUBLE CODES	DEFINITIONS
457	Speed control command switch(s) circuit not functioning (KOEO/NSC test)
458	Speed control command switch(s) touch circuit grounded (KOEO/NSC test)
459	Speed control ground circuit open (KOEO/NSC test)
511	PCM Read Only Memory (ROM) test failure KOEO
512	PCM Keep Alive Memory (KAM) test failure
513	PCM Internal Voltage Failure (KOEO)
519	Power Steering Pressure (PSP) sensor circuit open KOEO
519	Power Steering Pressure (PSP) sensor circuit open
521	Power Steering Pressure (PSP) switch circuit did not change states KOEP
521	Power Steering Pressure (PSP) sensor circuit did not change states KOEP
522	Vehicle not in PARK or KEEL TRAIL during KOEO/PSP switch circuit open
524	Low speed fuel pump circuit open - battery to PCM
525	Indicator with delay when A/C on
527	Park/Neutral Position (PNP) switch circuit open - A/C on KOEO
528	Catch Pegal Position (C/P) switch circuit failure
529	Data Communication Link (DLC) J-1939 circuit failure
535	Cluster Control Assembly (CCA) circuit failure
538	Data Communication Line (DCL) or Electronic Parameter Classifier (EPC) circuit failure
538	Brake On/Off (BOO) circuit failure not actuated during KOEP
538	Insufficient RPM change during KOEP dynamic response test
538	Imbalance cylinder balance test due to throttle movement during test (SFI only)
538	Imbalance cylinder balance test due to GD circuit failure
538	A/C not/ delayed on during test test
549	Fuel pump secondary circuit failure
549	Fuel pump secondary circuit failure
551	Idle Air Control (IAC) circuit failure KOEO
552	Secondary Air Injection Bypass (AIRB) circuit failure KOEO
553	Secondary Air Injection Filter (SAIF) circuit failure KOEO
554	Fuel Pressure Regulator Control (FPRC) circuit failure
556	Fuel pump relay primary circuit failure
557	Low speed fuel pump circuitry circuit failure
558	EGR Vacuum Regulator (EVR) circuit failure KOEO
660	Air Conditioning On/ACOM relay circuit failure KOEO
662	High Pressure Control (HPC) circuit failure KOEO
684	Fan Control (FC) circuit failure KOEO
685	Condenser Furg (CANF) circuit failure KOEO
686	3.4 ohm solenoid circuit failure KOEO (A4UC)
687	Speed Control Valve (SCVNT) circuit failure (KOEO/NSC test)
688	Speed Control Vacuum (SCVAC) circuit failure (KOEO/IV3G test)
689	Assistive Fueling Pump (AAMP2) circuit failure KOEO
671	EGRV solenoid circuit failure KOEP
672	EGRV solenoid circuit failure KOEO
676	A/C pressure sensor circuit shorted
678	Instantaneous A/C pressure change

Diagnostic Trouble Codes

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DIAGNOSTIC TROUBLE CODES	DEFINITIONS
P01	Power to Fan circuit over current
P02	Fan circuit open
P03	Power to Fuel pump over current
P04	ECM Power ground circuit open (ECM Pin 1)
P05	Power to A/C clutch over current
P06	A/C clutch circuit open
P07	Variable Control Valve Manifold (VCM) communication failure
P08	Heated Oxygen Sensor Heater (HOS/HFO) circuit failure
P17	1-2 shift error
P18	2-3 shift error
P19	3-4 shift error
P21	5th Solenoid 1 (SS1) circuit failure KOEO
P22	5th Solenoid 2 (SS2) circuit failure KOEO
P23	Transmission Control Indicator Lamp (TCL) circuit failure
P24	Electronic Pressure Control (EPC) circuit failure
P25	Electronic Pressure Control (EPC) driver open in PCM
P26	Coast Clutch Solenoid (CCS) circuit failure KOEO
P27	Torque Converter Clutch (TCC) solenoid circuit failure
P28	Excessive converter clutch slip error
P29	Torque Converter Clutch (TCC) solenoid circuit failure
P31	Transmission Control Indicator Lamp (TCL) circuit failure KOEO
P32	Transmission Control Switch (TCS) circuit did not change states during KOER
P33	4x4L switch closed during KOEO
P34	Transmission Range (TR) voltage higher or lower than expected
P35	Transmission Fluid Temperature (TFT) higher or lower than expected
P37	Transmission Fluid Temperature (TFT) sensor circuit above maximum voltage: +40° (-40° C) indicated; circuit open
P38	Transmission Fluid Temperature (TFT) sensor circuit below minimum voltage: +200°F (-148°C) indicated; circuit shorted
P39	Insufficient input from Turbine Shaft Speed Sensor (TSS)
P41	5th Solenoid 3 (SS3) circuit failure
P43	Torque Converter Clutch (TCC) circuit failure
P45	Incorrect gear ratio obtained for first gear
P46	Incorrect gear ratio obtained for second gear
P47	Incorrect gear ratio obtained for third gear
P48	Incorrect gear ratio obtained for fourth gear
P49	Electronic Pressure Control (EPC) higher or lower than expected
P51	Electronic Pressure Control (EPC) circuit failure
P52	Torque Converter Clutch (TCC) solenoid circuit failure
P53	Transmission Control Switch (TCS) did not change states during KOER
P54	Transmission Range (TR) sensor not in correct PARK during KOEO
P55	Torque Converter Clutch continuous slip error
P57	Transmission overtemperature condition occurred
P59	High vehicle speed in park indicated

Diagnostic Trouble Codes

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DIAGNOSTIC TROUBLE CODES	DEFINITIONS
P87	Transmission Range sensor circuit voltage below minimum voltage
P88	Transmission Range sensor circuit voltage above maximum voltage
P89	Transmission Range sensor circuit voltage out of range
P90	Hard shift present — EWEEM MODE

Diagnostic Trouble Codes

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