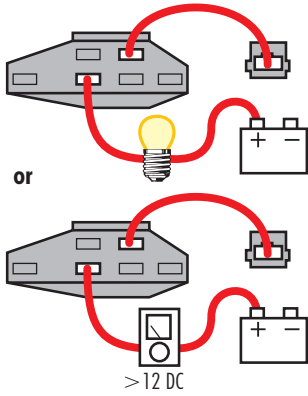




Check Engine



With non-functioning Check Engine light:



Key On Engine Off (KOEO) test

1. Make sure the vehicle is safe (transmission in PARK or NEUTRAL, parking brake, block the wheels, etc.) and turn off electrical loads (radio, A/C, heater, etc.)
2. Turn off engine, and wait 10 seconds.
3. Run a wire from the Self Test Input (STI) to a ground or battery neg. Or attach the test light/volt meter as in diagram.
4. Turn the key to the "on" (engine not running).
5. You will hear relays and fuel pump prime then go off. Then you might see a flicker of the Check Engine light. This will indicate that the test has begun.
6. After a short time the Check Engine light will start flashing. Record these codes.
7. After you've gotten all the codes turn the engine off, and remove STI ground wire and test light/volt meter.

Key On Engine Running (KOER) test

1. Bring the engine up to normal temp. It must be at least 180°F (82°C) to pass.
2. Turn off engine, and wait 10 seconds. Make sure the vehicle is safe (transmission in PARK or NEUTRAL, parking brake, block the wheels, etc.) and turn off electrical loads (radio, A/C, heater, etc.)
3. Ground the Self Test Input (STI) just like the KOEO test or attach the test light/volt meter.
4. Start the engine.
5. You will see 4 flashes. This is the Engine ID code, a code used to indicate that the test has begun. They equal half the number of cylinders: 4 flashes=8 cyl.
6. After the engine ID code you need to test a few items for the computer. You're Bronco might not have any or all of these items to test:
 - a. Brake On/Off (BOO) circuit, the brake pedal MUST be depressed for 1 second and released.
 - b. Power Steering Pressure (PSP) switch, quickly jerk the steering wheel one-half turn and released. (found on 4.9 and 5.0l 1987-90 & 1993 5.0l with E4OD)
 - c. If you have a E4OD or 4R70W press the O/D off button 2 times (turning it ON then OFF.)
7. The computer will begin to test many components; you will hear the idle change watch the check engine light closely.
8. After many tests the computer will flash once, indicating a Dynamic Response test. This single flash is prompting you briefly push the gas pedal all the way down (do not over rev the engine).
9. After a short time the check engine light will start flashing codes.
10. After you've gotten all the codes turn the engine off, and remove STI ground wire/test light.

Two Digit Codes (pre 1992 Broncos)

10	Cylinder 1 low during cylinder balance test	39	AXOD converter bypass clutch not applying properly.	74	Brake On/Off (BOO) open
11	System pass	40	Cylinder 4 low during cylinder balance test	75	Brake On/Off (BOO) closed
12	Cannot control RPM during high RPM test	41	EGO sensor lean	76	Insufficient VAF change during Dynamic Response Check
13	Cannot control RPM during low RPM test	42	EGO sensor rich	77	Operator error during Dynamic Response Check or Cylinder balance test
14	Profile Ignition Pick-up (PIP) failure	44	Thermactor Air System failure	80	Cylinder 8 low during cylinder balance test
15	PCM ROM/KAM failure	45	Thermactor Air upstream during self test	81	Air management 2 circuit failure
16	No ignition diagnostic monitor signal/RPM too low for HEGO test/A/F mix not within self test range	46	Thermactor Air not bypassed during self test	82	Air management 1 circuit failure
17	RPM below Self-Test limit with Idle Air Control off	50	Cylinder 5 low during cylinder balance test	83	EEGR Control solenoid circuit failure, or High speed electro-drive fan circuit failure, or low speed fuel pump relay circuit open.
18	SPOUT (Spark Out) circuit open/No Tach. input to ECA/SPOUT (Spark Out) grounded	51	ECT sensor open	84	EGR failure
19	Failure in EEC internal voltage. Cylinder Identification CID circuit failure, or RPM erratic, dropped too low during test.	52	PSPS open	85	Canister Purge failure
20	Cylinder 2 low during cylinder balance test	53	Throttle Position Sensor (TPS) open/high voltage	87	Temperature Compensated Pump fault/Fuel pump failure
21	ECT out of range during self test	54	ACT sensor signal is greater than the self-test maximum of 4.6 volts	88	Idle speed out of self test range
22	MAP/BP out of range during self test	55	Key circuit low voltage	89	Torque Converter clutch solenoid circuit failure
23	Throttle Position Sensor (TPS) out of range during self test	56	MAF circuit above maximum voltage of 4.5 volts or TOT sensor output is greater than self test maximum value of 4.8 volts	90	Cylinder balance test pass
24	Air Charge Temperature (ACT) out of range during self test	57	Octane adjust service pin in use/circuit grounded or AXOD Neutral pressure switch circuit failed open.	91	Shift solenoid 1 circuit failure (E4OD) or No HEGO switching detected always lean (left side)
25	Knock Sensor not detected during Dynamic Response Test KOER	58	VAT indicated -40°F / circuit open	92	Shift solenoid 2 circuit failure (E4OD) or No HEGO switching detected always rich (left side)
26	VAF out of range during self test	59	Low speed fuel pump circuit failure or 2-3 shift error (E4OD)	93	Coast clutch solenoid circuit failure (E4OD)
27	Servo leak during Integrated Vehicle Speed Control (IVSC) Test/Low VSS signal	60	Cylinder 6 low during cylinder balance test	94	Thermactor system not operative (left side)
28	Intake Air Temperature (IAT) at VAF sensor out of range during self test	61	ECT grounded	95	The EEC senses infinite resistance to ground from the fuel pump on the Fuel Pump Monitor circuit
30	Cylinder 3 low during cylinder balance test	62	Automatic transaxle 3-2 or 4-3 grounded	96	The EEC did not sense battery voltage on the Fuel Pump Monitor circuit
31	PFE/EPT/EVP low/EVP out of range voltage during self test	63	Throttle Position Sensor (TPS) low voltage	97	Overdrive cancel indicator light circuit failure (E4OD)
32	EVP circuit has intermittently failed below minimum voltage of 0.24 volts	64	Air Charge Temperature (ACT) grounded	98	Electronic pressure control driver open in EEC (E4OD) or Hard fault present
33	EGR valve opening not detected	65	Key circuit low voltage	99	Electronic pressure control circuit failure (E4OD) or EEC system hasn't learned to control idle
34	PFE or EVP circuit has intermittently failed above the closed limit of 0.67 volts	66	Low input voltage VAF sensor		
35	PFE or EVP circuit has intermittently failed above the maximum limit of 4.81 volts	67	Neutral safety circuit failure or A/C circuit was on during KOER Self-Test		
		68	RPM out of range during self test		
		69	3-4 shift error		
		70	Cylinder 7 low during cylinder balance test		
		72	Insufficient MAP change during Dynamic Response Check		
		73	Insufficient Throttle Position Sensor change during Dynamic Response Check		

Three Digit Codes (1992-96 Broncos)

111	System pass	312	Secondary Air Injection (AIR) misdirected during KOER	558	EGR Vacuum Regulator (EVR) circuit failure
112	Intake Air Temp (IAT) sensor circuit low voltage/ 254°F indicated	313	Secondary Air Injection (AIR) not bypassed during KOER	565	EVAP Canister Purge circuit failure KOEO
113	Intake Air Temp (IAT) sensor circuit high voltage/ -40°F indicated	327	EGR (EVP) circuit low voltage	569	Auxiliary EVAP Canister Purge circuit failure
114	Intake Air Temp (IAT) sensor circuit voltage high or low	328	EGR (EVP) closed valve voltage lower than expected	617	1-2 shift error
116	Engine Coolant Temp (ECT) sensor circuit voltage high or low	332	Insufficient EGR flow detected	618	2-3 shift error
117	Engine Coolant Temp (ECT) sensor circuit low voltage/254°F indicated	334	EGR (EVP) closed valve voltage higher than expected	619	3-4 shift error
118	Engine Coolant Temp (ECT) sensor circuit high voltage/-40°F indicated	337	EGR (EVP) circuit high voltage	621	Shift Solenoid 1 (SS1) circuit failure KOEO
121	Closed throttle voltage high or low	411	Cannot control RPM during KOER low RPM check	622	Shift Solenoid 2 (SS2) circuit failure KOEO
122	Throttle Position (TP) sensor circuit low voltage	412	Cannot control RPM during KOER high RPM check	624	Electronic Pressure Control circuit failure
123	Throttle Position (TP) sensor circuit high voltage	452	Insufficient input from Vehicle Speed Sensor (VSS) to PCM	625	Electronic Pressure Control (EPC) driver open in PCM
126	MAP sensor circuit voltage high or low	511	PCM Read Only Memory (ROM) test failure	626	Coast Clutch Solenoid (CCS) circuit failure KOEO
128	MAP sensor vacuum hose damaged/disconnected	512	PCM Keep Alive Memory (KAM) test failure	628	Excessive converter clutch slippage
129	Insufficient MAP change during dynamic response test KOER	513	PCM internal voltage failure (KOEO)	629	Torque Converter Clutch (TCC) solenoid circuit failure
167	Insufficient throttle position change during dynamic response test KOER	522	Vehicle not in PARK or NEUTRAL during KOEO	631	Transmission Control Indicator Lamp (TCIL) circuit failure KOEO
171	Fuel system at adaptive limits	536	Brake On/Off (BOO) circuit failure/not actuated during KOER	632	Transmission Control Switch (TCS) circuit did not change states during KOER
172	System indicates lean	538	Insufficient RPM change during KOER dynamic response test	633	4x4L (Low) switch closed during KOEO
173	System indicates rich	539	A/C or Defrost on during KOEO	634	Transmission Range (TR) voltage high or low
179	Fuel system at lean adaptive limit at part throttle, system rich	542	Fuel pump circuit open; PCM to motor ground	636	Transmission Fluid Temp (TFT) high or low
181	Fuel system at rich adaptive limit at part throttle, system lean	543	Fuel pump circuit open; battery to Powertrain Control Module (PCM)	637	Transmission Fluid Temp (TFT) sensor circuit high voltage/-40°F indicated
211	Profile Ignition Pickup (PIP) circuit failure	552	Secondary Air Injection Bypass (AIRB) circuit failure KOEO	638	Transmission Fluid Temp (TFT) sensor circuit low voltage/290°F indicated
212	Loss of Ignition Diagnostic Monitor (IDM) input to PCM/SPOUT circuit grounded	553	Secondary Air Injection Diverter (AIRD) circuit failure KOEO	654	Transmission Range (TR) sensor indicating not in PARK during Self -Test
213	SPOUT circuit open	556	Fuel pump relay primary circuit failure	691	4x4 Low Circuit Failure
				998	Hard fault present FMEAM MODE