

S. No	Component/ System	Fault Path	Fault Type	Fault Code	Fault Class	CARB description	Monitor Strategy Description	Malfunction Criteria	Threshold Value	Secondary Parameters	Enable Conditions	Enable Cond. Value	Time Required	MIL Illum.	Mode for preparation	Demonstration Test
1	Engine coolant temperature sensor	ETS	circuit Hi/Open circuit	P 0118	1	Engine Coolant Temperature Sensor Circuit High / Open Circuit	Circuit check	Voltage of Manifold absolute pressure sensor is higher than 4.9V.	Higher than 98%	None	Key on	None	larger than 10Min	5sec. after Fault	Vehicle Soak over 5Min	The cylinder temperature sensor pin open, or short connected to 5V positive pin. Turn on the key switch and report the fault code after 20 seconds.
			circuit Lo	P 0117	1	Engine Coolant Temperature Sensor Circuit Low	Circuit check	Voltage of Manifold absolute pressure sensor is lower than 0.1V	Lower than 2%	None	Key on	None	larger than 10Min	5sec. after Fault	Vehicle Soak over 5Min	The cylinder temperature sensor signal pin signal is disconnected, and then short connected to the 5V ground pin. Turn on the key switch and pass 20S
			Performance	P 0116	2	Engine Coolant Temperature Sensor signal performance	Compared to the startup temperature when engine is fully warmed up	Signal value change is no larger than 20 degrees centigrade when engine is fully warmed up compared to the startup temperature	Lower than 20℃	Engine speed Fuel Mass	1. Vehicle soaktime 2. Engine is running 3. Accumulated Fuel mass meets the require	1. soaktime is larger than 240Min 2. Fuel Mass larger than 300g	larger than 260Min	5sec. after Fault	Vehicle Soak over 240Min	1) Sample vehicle pretreatment: the driving time of the vehicle on the rotating hub is more than 12 minutes (the engine speed is > 3500rpm during driving, and the throttle opening degree is > 5%). 2) Turn off the key switch, and hold the vehicle still for more than 4 hours 3) Disconnect the cylinder temperature sensor signal pin signal, and connect the sliding rheostat to the 5V reference voltage positive and negative electrode and the cylinder temperature signal pin. 4) Turn on the key switch and adjust the resistance value of the sliding rheostat so that the displayed cylinder temperature value is equivalent to the intake air temperature value. 5) Fix the sample car to the rotating hub, start the engine to warm up the car driving, continue to drive the vehicle until the variable AFINTF1 + AFINTF2 > 300, and then report the fault code within 20S. Fixed the prototype car to the hub, start the engine to preheat the car, continue to drive the vehicle until the variable VFUEL _ AccumulateFuel _ 1 _ m + VFUEL _ AccumulateFuel _ 2 _ m > 300, and then report the fault code within 20S

			Out of Range	P 1116	2	Engine Coolant Temperature Sensor signal out of range	compared to the startup temperature with a threshold	Startup coolant temperature is higher than 60 degrees centigrade compared to the ambient temperature	Higher than 60℃	Engine speed	1. Vehicle soaktime is larger than 240Min 2. Engine is running	soaktime is larger than 240Min	larger than 260Min	5sec. after Fault	Vehicle Soak over 240Min	<p>1) Sample vehicle pretreatment: the vehicle drives on the hub for more than 12 minutes (the engine speed is &gt; 3500rpm during driving, and the throttle opening is &gt; 5%). 2) Turn off the key switch, let the vehicle for more than 4 hours, and the ambient temperature is less than 40 degrees.</p> <p>3) Disconnect the cylinder temperature sensor signal pin and connect the sliding rheostat to the positive and negative electrode of 5V reference voltage and the cylinder temperature signal pin.</p> <p>4) Turn on the key switch and adjust the sliding rheostat resistance value to make the displayed cylinder temperature &gt; 65 degrees.</p> <p>5) Start the engine. If it is difficult to start with the throttle, report the fault code during the operation.</p>
2	Crankshaft position sensor	CASE	Device not present	P 0335	1	Crankshaft Position Sensor "A" Circuit	Circuit check	Disconnect the 23-tooth signal		None	Engine is turning	None	larger than 10S	5sec. after Fault	/	Connect to the Breakout Box, disconnect the 23 tooth signal through the Breakout Box, and start the engine fault code.
		CASE	Device not present	P 0336	2	Crankshaft Position Sensor "A" Circuit	Circuit check	23 Tooth signal error		None	Engine is turning	None	larger than 10S	5sec. after Fault	/	
3	Ignition Coil "A" Primary Control Circuit	Coil A	circuit Lo/Open circuit	P 2300	1	Ignition Coil "A" Primary Control Circuit Low / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on/Engine is turning	None	larger than 10S	5sec. after Fault	/	The ignition coil pin is short circuit to the 12V negative electrode, or open circuit, the fault code after starting the engine.
4	Ignition Coil "B" Primary Control Circuit	Coil B	circuit Lo/Open circuit	P 2303	1	Ignition Coil "B" Primary Control Circuit Low / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on/Engine is turning	None	larger than 10S	5sec. after Fault	/	The ignition coil pin is short circuit to the 12V negative electrode, or open circuit, the fault code after starting the engine.
5	Throttle position sensor	TPS	Short Hi	P 0123	1	Throttle Position Sensor/Switch "A" Circuit High	Circuit check	Voltage of throttle position sensor is higher than 4.75V.		None	Key on	None	larger than 10S	5sec. after Fault	/	Short the TPS signal pin to 5V, open the key switch to report the fault code.
			Short Lo/Open	P 0122	1	Throttle Position Sensor/Switch "A" Circuit Low / Open Circuit	Circuit check	Voltage of throttle position sensor is lower than 0.25V.		None	Key on	None	larger than 10S	5sec. after Fault	/	Disconnect the TPS pin signal, or short connect to 5V negative, open the key switch and report the fault code.

6	Fuel Pump	FPR	circuit Hi	P 0232	1	Fuel Pump circuit short High	Circuit check	the corresponding feedback is different from the command		None	Engine is turning	None	larger than 10S	5sec. after Fault	/	The oil pump pin short circuit to the 12V positive electrode, start the engine, and report the fault code.
			circuit Lo/Open circuit	P 0231	1	Fuel Pump circuit short Low / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	Open the oil pump pin, or short circuit to the 12V negative, open the key switch and report the fault code.
7	ECM	ROM	Memory Checksum	P 0601	1	Internal Control Module Memory Checksum Error	Check the calibration CVN	CVN check		None	Key on	None	larger than 10S	5sec. after Fault	/	ECU check code error, Key on status indicates the fault code, and engine Crank cuts off the fuel injection.
8	Cylinder 1 Fuel Injector	INJ 1	circuit Hi	P 0262	1	Cylinder 1 Fuel Injector "A" Circuit High	Circuit check	the corresponding feedback is different from the command		None	Engine is turning	None	larger than 10S	5sec. after Fault	/	Fuel injector pin short circuit to the 12V positive electrode, start the engine, namely report the fault code.
			circuit Lo/Open circuit	P 0261	1	Cylinder 1 Fuel Injector "A" Circuit Low / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	The injector pin short circuit to the 12V negative, or open, open the key switch, namely report the fault code.
9	Cylinder 2 Fuel Injector	INJ 2	circuit Hi	P 0265	1	Cylinder 2 Fuel Injector "B" Circuit High	Circuit check	the corresponding feedback is different from the command		None	Engine is turning	None	larger than 10S	5sec. after Fault	无	Fuel injector pin short circuit to the 12V positive electrode, start the engine, namely report the fault code.
			circuit Lo/Open circuit	P 0264	1	Cylinder 2 Fuel Injector "B" Circuit Low/Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	The injector pin short circuit to the 12V negative, or open, open the key switch, namely report the fault code.

10	Manifold Absolute Pressure Sensor	IAP	circuit Hi	P 0108	1	Manifold Absolute Pressure Sensor Circuit High	Circuit check	Voltage of Manifold absolute pressure sensor is higher than 4.9V.	Higher than 98%	None	Key on	None	larger than 10S	5sec. after Fault	/	Shorconnect the MAP signal pin to the 5V straight pin. Turn on the key switch and report the fault code after about 20S.
			circuit Lo/Open circuit	P 0107	1	Manifold Absolute Pressure Sensor Circuit Low/Open Circuit	Circuit check	Voltage of Manifold absolute pressure sensor is lower than 0.1V	Lower than 2% 低于 2%	None	Key on	None	larger than 10S	5sec. after Fault	/	Disconnect the MAP signal pin, or short connect it to the 5V ground pin, open the key switch, and report the fault code after about 20S.
			Performan ce	P 3106	2	Manifold Absolute Pressure Sensor rationality at low TPS	Compare the Map value to low limits	MAP Signal value is lower than some threshold during stable Running situation	Lower than 30KPA	Engine Speed	Engine is running	None	larger than 10S	5sec. after Fault	/	1) Disconnect the MAP signal pin signal, connect the sliding rheostat to the positive or negative 5V power supply of break out Box, and the MAP signal pin. Adjust the resistance value between the MAP rheostat pin and the 5V power supply pin to about 95 kΩ. 2) Turn on the key switch and adjust the resistance value NVIOS _ PA _ p update value between 85 and 101 kpa. 3) On the whole vehicle hub, start the engine, and the vehicle steady-state driving (engine speed fluctuation is <300rpm, throttle opening fluctuation is <3%). 4) Adjust the sliding rheostat to make the access resistance value and observe until the corresponding VVIOS _ IAP _ CorrToNormPA _ p <25 KPA. 5) Drive about 50S at steady state, and report the fault code after returning to the oil.
			Signal Stuck	P 0105	2	Manifold Absolute Pressure Sensor signal stuck	Compare the Map delta value to limits	MAP Signal change is lower than 10kpa during Crank to Run and Running situation	Delta Change lower than 10KPA	None	Engine is running	None	larger than 10S	5sec. after Fault	Vehicle Soak over 5Min	1) Disconnect the MAP sensor pin signal, connect the sliding rheostat to the power supply of break out Box, and the MAP signal pin. Adjust the resistance value between the MAP signal pin of the sliding rheostat connection and the 5V power supply ground pin to about 95 kΩ. 2) Turn on the key switch and adjust the resistance value to update the value of NVIOS _ PA _ p between 85 and 101 kpa. 3) Keep the key switch open, the vehicle standing time is more than 3 minutes , turn off the key switch, system fully power down. 4) Turn on the key switch, start

																the engine (if the speed is unstable, you can pull the accelerator properly), run about 50S, and the system reports the fault code.
11	Intake Air Temperature Sensor	IAT	circuit Hi/Open circuit	P 0113	1	Intake Air Temperature Sensor Circuit High / Open Circuit	Circuit check	Voltage of Manifold absolute pressure sensor is higher than 4.9V.	Higher than 98%	None	Key on	None	larger than 10S	5sec. after Fault	/	The intake temperature IAT pin is open or short to the 5V straight pin. Turn on the key switch and report the fault code after about 20S.
			circuit Lo	P 0112	1	Intake Air Temperature Sensor Circuit Low	Circuit check	Voltage of Manifold absolute pressure sensor is lower than 0.1V	Lower than 2%	None	Key on	None	larger than 10S	5sec. after Fault	/	The intake temperature IAT pin is shorted to the 5V ground pin. Turn on the key switch and report the fault code after about 20S.
			Signal Stuck	P 0111	2	Intake Air Temperature Sensor signal stuck	Compare the IAT delta value to limits when engine is warmed up	Intake Air Temperature value change is no larger than 2 degrees centigrade when engine is fully warmed up compared to the startup temperature	Lower than 2℃	Engine speed Air Mass	Engine is running Air Mass	Air Mass larger than 2000g	larger than 260Min	5sec. after Fault	Vehicle Soak over 240Min	1) Sample vehicle pretreatment: the vehicle drives on the hub for more than 12 minutes (the engine speed is > 3500rpm during driving, and the throttle opening is > 5%). 2) Turn off the key switch, and hold the vehicle still for more than 4 hours 3) Disconnect the inlet temperature IAT pin signal, connect the sliding rheostat to the positive and negative 5V reference voltage and the IAT signal pin, open the key switch, adjust the resistance of the sliding rheostat so that the displayed inlet temperature VIAT is near the temperature value of the cylinder temperature sensor. 4) Fix the prototype car to the rotating hub, start the engine to preheat the car for driving, and continuously drive the vehicle until the variable AFINTA1 + AFINTA2 > 2000. Attach the prototype vehicle to the hub, start the engine for preheating the vehicle driving, and continuously drive the vehicle until the variable VAFMM - AccumlateAirGram _ 1 _ m + VAFMM - AccumlateAirGram _ 2 _ m > 2000. 5) Continuous driving of the vehicle 30S --> Idle speed 10S --> Continue driving the 30S --> Report the fault code after the idle speed is 10S.

			Performance	P0114	2	Intake Air Temperature Sensor Circuit Intermittent	Compare the erratic change rate to limits	Intake Air temperature Sensor signal erratic change rate is larger than 3.2degrees centigrade	Delta Change Higher than 2℃	None	Key on	None	3Min	5sec. after Fault	/	<p>1) Disconnect the inlet temperature IAT pin signal, connect the sliding rheostat to the positive or negative 5V power supply of break out Box, and the inlet temperature IAT signal pin.</p> <p>2) Turn on the key switch and adjust the sliding rheostat knob so that the intake temperature value is close to the cylinder temperature temperature value of the post.</p> <p>3) Fast rotation rheostat in the forward and reverse direction, and the rotation frequency is above 2Hz, which makes the fluctuation deviation of the intake temperature IAT&gt; 5℃.</p> <p>4) Continuous operation for more than 1 minute to report the fault code.</p>
12	O2 sensor 1 cylinder	OXYD	circuit Hi	P0132	1	O2 Sensor Circuit High Voltage Bank 1 Sensor 1	Circuit check	O2 voltage Higher than 1000mv	Higher than 1000mv	Engine speed, engine temperature	Engine is running	None	larger than 2Min	5sec. after Fault	/	Oxygen sensor signal pin open circuit, or short circuit to 5V positive, start the engine, the cylinder temperature is greater than 60℃, wait for above 260S, namely the fault code
			circuit Lo/Open circuit	P0131	1	O2 Sensor Circuit Low Voltage Bank 1 Sensor 1 / Open Circuit	Circuit check	O2 voltage Lower than 30mv	Lower than 30mv	Engine speed, engine temperature	Engine is running	None	larger than 6Min	5sec. after Fault	/	The oxygen sensor signal pin short circuit to 5V, start the engine, after entering the fuel closed loop control, wait for above 260S, then report the fault code.
			Out of Range	P2195	2	O2 Sensor Signal Lean at PE Bank 1 Sensor 1	Compare the o2 voltage to low limits	O2 signal is constantly lower than 400mv when PE mode is enabled	Lower than 400mv	Engine speed, TPS	1. Engine is running 2. PE mode is enabled	None	3Min	5sec. after Fault	/	With the aid of Break out Box, the front oxygen sensor signal is connected to the V02 signal generator and the V02 signal generatorSet the positive / negative deviation mode, fix the test vehicle to the vehicle hub, and make the vehicle run in high speed PE mode, adjust the V02 signal generator, hold the V02 signal below 400 mv for more than 3 minutes, and then return to the throttle, namely the fault code.

			Performan ce	P 014D	3	O2 Sensor Slow Response – Lean to Rich Bank 1 Sensor 1	Compare the o2 voltage response rate time to high limts	O2 signal switching from lean state to rich state response rate time is longer than some calibrated value	Higher than 500ms	Engine speed, engine temperatu re	1. Engine is running 2. fuel closeloop control is enabled	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
			Performan ce	P 014C	3	O2 Sensor Slow Response – Rich to Lean Bank 1 Sensor 1	Compare the o2 voltage response rate time to high limts	O2 signal switching from Rich state to Lean state response rate time is longer than some calibrated value	Higher than 500ms	Engine speed, engine temperatu re	1. Engine is running 2. fuel closeloop control is enabled	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
	O2 sensor Heater 1 cylinder	Heat	circuit Hi	P 0032	1	O2 Sensor Heater Control Circuit High Bank 1 Sensor 1	Circuit check	the corresponding feedback is different from the command		Engine speed	Engine is running	None	larger than 10S	5sec. after Fault	/	Short circuit the oxygen heating pin to the positive electrode of the battery, start the engine, about 20 seconds, namely the fault code
			circuit Lo/Open circuit	P 0031	1	O2 Sensor Heater Control Circuit Low Bank 1 Sensor 1 / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	If the vehicle is in Keyon, disconnect the oxygen heating pin circuit or short circuit it to the negative battery. For about 20 seconds, report fault code
			performan ce	P 00D1	2	O2 Sensor Heater current low Bank 1 Sensor 1	Compare the O2 sensor residence valueto high limts	O2 sensor residence value is larger than a limts when engine is fully warmed up	1400 Ω	Engine speed	Engine is running	None	larger than	5sec. after Fault	/	Oxygen heating into a 100 ohm resistance (sliding rheostat simulation), start the engine, V02R _ IMP _ Estimate _ Impedance _ R measurement internal resistance value above 1400 Ω, engine running time> 260S, namely P 00D1 fault code.
	13	O2 sensor 2 cylinder	circuit Hi	P 0138	1	O2 Sensor Circuit High Voltage Bank 2 Sensor 1	Circuit check	O2 voltage Higher than 1000mv	Higher than 1000mv 高于 1000mv	Engine speed, engine temperatu re	Engine is running	None	larger than 2Min	5sec. after Fault	/	Oxygen sensor signal pin open circuit, or short circuit to 5V positive, start the engine, the cylinder temperature is greater than 60℃, wait for above 260S, namely the fault code
			circuit Lo/Open circuit	P 0137	1	O2 Sensor Circuit Low Voltage Bank 2 Sensor 1 / Open Circuit	Circuit check	O2 voltage Lower than 30mv	Lower than 30mv	Engine speed, engine temperatu re	Engine is running	None	larger than 6Min	5sec. after Fault	/	The oxygen sensor signal pin short circuit to 5V, start the engine, after entering the fuel closed loop control, wait for above 260S, then report the fault code.

			Out of Range	P 2197	2	O2 Sensor Signal Lean at PE Bank 2 Sensor 1	Compare the o2 voltage to low limits	O2 signal is constantly lower than 400mv when PE mode is enabled	Lower than 400mv	Engine speed, TPS	1. Engine is running 2. PE mode is enabled	None	3Min	5sec. after Fault	/	With the aid of Break out Box, the front oxygen sensor signal is connected to the V02 signal generator and the V02 signal generatorSet the positive / negative deviation mode, fix the test vehicle to the vehicle hub, and make the vehicle run in high speed PE mode, adjust the V02 signal generator, hold the V02 signal below 400 mv for more than 3 minutes, and then return to the throttle, namely the fault code.
			Performance	P 014F	3	O2 Sensor Slow Response - Lean to Rich Bank 2 Sensor 1	Compare the o2 voltage response rate time to high limits	O2 signal switching from lean state to rich state response rate time is longer than some calibrated value	Higher than 500ms	Engine speed, engine temperature	1. Engine is running 2. fuel close loop control is enabled	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
			Performance	P 014E	3	O2 Sensor Slow Response - Rich to Lean Bank 2 Sensor 1	Compare the o2 voltage response rate time to high limits	O2 signal switching from Rich state to Lean state response rate time is longer than some calibrated value	Higher than 500ms	Engine speed, engine temperature	1. Engine is running 2. fuel close loop control is enabled	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
	O2 sensor Heater 2 cylinder	Heat	circuit Hi	P 0038	1	O2 Sensor Heater Control Circuit High Bank 2 Sensor 1	Circuit check	the corresponding feedback is different from the command		Engine speed	Engine is running	None	larger than 10S	5sec. after Fault	/	Short circuit the oxygen heating pin to the positive electrode of the battery, start the engine, about 20 seconds, namely the fault code
			circuit Lo/Open circuit	P 0037	1	O2 Sensor Heater Control Circuit Low Bank 2 Sensor 1 / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	If the vehicle is in Keyon, disconnect the oxygen heating pin circuit or short circuit it to the negative battery. For about 20 seconds, report fault code
			performance	P 00D3	2	O2 Sensor Heater current low Bank 2 Sensor 1	Compare the O2 sensor residence value to high limits	O2 sensor residence value is larger than a limits when engine is fully warmed up	1400Ω	Engine speed	Engine is running	None	larger than 4Min	5sec. after Fault	/	Oxygen heating into a 100 ohm resistance (sliding rheostat simulation), start the engine, V02R _ IMP _ Estimate _ Impedance _ R measurement internal resistance value above 1400 Ω, engine running time> 260S, namely P 00D3 fault code.
14	Rear O2 sensor 1 cylinder	OX YD	circuit Hi	P 1138	1	O2S Heater Control Circuit Low Bank 1 Sensor 2	Circuit check	O2 voltage Higher than 1000mv	Higher than 1000mv	Engine speed, engine temperature	Engine is running	None	larger than 2Min	5sec. after Fault	/	Idle



			circuit Lo/Open circuit	P 1137	1	O2S Heater Control Circuit High Bank 1 Sensor 2	Circuit check	O2 voltage Lower than 30mv	Lower than 30mv	Engine speed, engine temperature	Engine is running	None	larger than 6Min	5sec. after Fault	/	Idle
			Performance	P 2A01	2	O2 Sensor Circuit Range/Performance Bank 1 Sensor 2	compare rear O2 response time to High limits	the average response time of the rear O2 reaches a maximum limit during DFCO	Higher than 0.7S	Engine speed, TPS	1. Engine is running 2. DFCO mode is enabled	None	3Min	5sec. after Fault	/	Driving cycle
			Performance	P 013B	2	O2 Sensor Slow Response - Lean to Rich Bank 1 Sensor 2	compare rear O2 response time to High limits	the Rear O2 Sensor' s response From Lean to Rich to a Power Enrichment event	Higher than 3.0S	Engine speed, engine temperature	1. Engine is running 2. PE mode is enabled	None	larger than 15Min	5sec. after Fault	/	Driving cycle
	Rear O2 sensor Heater 1 cylinder	Heat	circuit Hi	P 1037	1	O2S Heater Control Circuit High Bank 1 Sensor 2	Circuit check	the corresponding feedback is different from the command		Engine speed	Engine is running	None	larger than 10S	5sec. after Fault	/	Key ON
			circuit Lo/Open circuit	P 1038	1	O2S Heater Control Circuit Low Bank 1 Sensor 2	Circuit check	the corresponding feedback is different from the command		None	Key on	None	larger than 10S	5sec. after Fault	/	Idle
			performance	P 00D2	2	HO2S Heater Control Circuit Range/Performance Bank 1 Sensor 2	Compare the O2 sensor residence value to high limits	O2 sensor residence value is larger than a limits when engine is fully warmed up	1400 Ω	Engine speed	Engine is running	None	larger than 4Min 大于 4 分钟	5sec. after Fault 确认故障后 5 秒	无	Idle
15	Misfire detection	Misf	performance	P 0300	3	Random/Multiple Cylinder Misfire Detected	calculate the misfire event time and compare to high limits	Misfire incident creation	Misfire ratio determined by Emission	Engine speed, TPS	Engine is running	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
			performance	P 0301	3	Cylinder 1 Misfire Detected	calculate the misfire event time and compare to high limits	Misfire incident creation	Misfire ratio determined by Emission	Engine speed, TPS	Engine is running	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test

			performance	P 0302	3	Cylinder 2 Misfire Detected	calculate the misfire event time and compare to high limits	Misfire incident creation	Misfire ratio determined by Emission	Engine speed, TPS	Engine is running	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
16	Vehicle Speed Sensor detection	VSS	performance	P 0500	2	Vehicle Speed Sensor "A" Circuit	Circuit check	Vehicle speed plus signal input		Engine speed	Engine is running	None	2 Min	(2 driving cycle)	/	Driving cycle
17	Catalyst Efficiency detection	Cylinder Catalyst	performance	P 0420	3	Catalyst System Efficiency Below Threshold Bank 1	Calculate oxygen storage capacity time and compare to low limits	oxygen storage capacity	0.5S	Engine speedTPS	Engine is running	None	larger than 15Min	5sec. after Fault	2 WMTC Stage 3 test	WMTC Stage 3 test
18	Evaporative emission system purge control valve	EVAP	circuit Hi	P 0459	1	Evaporative emission system purge control valve "A" Circuit High	Circuit check	the corresponding feedback is different from the command		Engine speed, TPS, engine temperature	Engine is running		larger than 60S	(1 driving cycle)	/	1) The carbon tank solenoid valve pin short circuit to the 12V positive electrode, start the engine, and the vehicle rides on the hub.2) Observe the parameter variable of the carbon tank solenoid valve CCPDC> 0, and then keep running about 20S to report the fault code.
			circuit Lo/Open circuit	P 0458	1	Evaporative emission system purge control valve "A" Circuit Low / Open Circuit	Circuit check	the corresponding feedback is different from the command		None	Key on		larger than 10S	(1 driving cycle)	/	Carbon tank solenoid valve pin open circuit, or short circuit to 12V negative electrode, open the key switch, namely report the fault code.
19	Idle air control system	IdleCt	performance	P 0505	2	Idle air control system error	Compare the engine speed to the target value	Engine Speed higher than 500rpm comparing to the target warmed up engine speed	Idle speed higher than 500rpm to the target	Engine speed	Engine is running in idle mode	None	larger than 6Min	5sec. after Fault	/	1) Confirm that if the engine starting speed is greater than the engine heat engine idle + 500 RPM, the stepper motor is not necessary, unplug the stepper motor in engine stalling or key off state, or use Breakout Box to disconnect the corresponding stepper motor pin signal by Breakout Box, and then execute 4).2) The steps of the slestepping motor after the engine heat engine to stabilize the idle speed at the engine heat engine + 500 RPM.3) Keep the number of Slew steps unchanged, turn off the vehicle, and then unplug the stepper motor, or use Breakout Box, disconnect the corresponding stepper motor pin signal, and then cancel the slew.4) Start the engine and wait for more than 5 minutes to report the fault code.