

Gunson®

FAULT CODE READER

PETROL & DIESEL – FORD 1986-97

Part No. 77032

Instructions

ii. Following the kick-down switch test, fault codes are then transmitted as follows: Codes stored at the time of the test are transmitted first. These codes are repeated once. If no faults are present, code 111 is transmitted.

Separator code 10 is transmitted. Codes stored in KAM (Keep Alive Memory) are then transmitted. These codes are repeated once. If no codes are stored in KAM, code 111 is transmitted.

iii. Once all codes have been transmitted, momentarily press the accelerator pedal fully and the following actuators (if fitted) are activated: Electronic Vacuum Regulator (EVR) Canister Purge Solenoid (CANP) Idle Speed Control Valve (ISC) Wide-open Throttle A/C cut-off (WAC) Transmission Hydraulic Switch (THS 3/4) Lock-Up Solenoid (LUS) Self Test Output (STO) Each time the accelerator pedal is pressed, these actuators are activated.

TEST PROCEDURE

Ensure ignition is OFF Connect tester to diagnostic socket Press MEM/TEST Switch ignition ON

Wait for codes to be displayed Make a note of displayed codes - Code 11 indicates that no faults are present Code 20 appears - this is just a separator code Wait for KAM codes to be displayed Make a note of displayed codes - Code 11 indicates that no faults have been stored in the last 40 starts When code 10 is displayed you are being prompted to perform the 'wiggle test'. The operator should flex all interconnections in the system and the unit LED on the left of the display will flash if intermittent connections are disturbed. If the LED flashes dismantle the connector and check that the pins/sockets are free from corrosion and dirt, and that the correct spring tension. Switch ignition OFF Press MEM/TEST

ENGINE RUNNING TEST

NOTE, BEFORE UNDERTAKING THE ENGINE RUNNING TEST: ANY FAULTS FOUND IN THE ENGINE OFF TEST SHOULD BE RECTIFIED; KEEP ALIVE MEMORY SHOULD BE CLEARED; ENGINE SHOULD BE UP TO NORMAL OPERATING TEMPERATURE.

THE FOLLOWING NOTES ARE REQUIRED AS PART OF THE TEST SEQUENCE

i. Code 20 (Zeta) or 30 (Scorpio) will be transmitted and within 10 seconds you must

start the following procedure: Press the brake pedal. Turn the steering wheel full lock one way and then back again to allow the power steering pressure switch to operate. Failure to do this will cause code 521 to be stored. For vehicles fitted with auto transmission, turn the overdrive cancel switch ON and OFF (if fitted), and turn the performance/economy switch ON and OFF (if fitted). Wait for code 10 to be transmitted.

ii. Within 10 seconds of code 10 being transmitted, press the accelerator pedal fully to rapidly increase the engine speed above 3000 RPM. Failure to do this will cause code 538 to be stored, in which case the test procedure will have to be repeated.

iii. Fault codes are now transmitted. These codes are repeated once. If no codes are present, code 111 is transmitted.

iv. After the final code is transmitted, the ECU enters the Service Adjustment Mode for 2 minutes during which time Idle Speed control is deactivated. Note: Base idle speed and ignition timing are not adjustable.

v. Once Service Adjustment Mode is terminated, Wiggle Test mode is entered, during which time the Coolant Temperature, Air Temperature, Throttle Position and Airflow sensors can be checked. Any faults will be logged in KAM.

TEST PROCEDURE

- Press MEM/TEST Code 30 may be displayed at this stage - ignore it Switch ignition on and wait for 3 seconds before starting engine
- There may now be a delay while coolant temperature rises. If any fault codes are displayed at this stage stop engine, press MEM/TEST and rectify any faults before restarting TEST 3. Engine speed will now increase. Code 10 will be displayed - blip throttle so that engine speed exceeds 3000 RPM

If Code 538 is displayed ECU has not detected rise in engine speed - stop engine, press MEM/TEST and return to start of TEST 3.

Wait for codes to be displayed Make a note of displayed codes - Code 11 indicates that no faults are present. If any fault codes are displayed at this stage stop engine, press MEM/TEST and rectify any faults before restarting TEST 3. Engine speed will now decrease. Base idle mode has been initiated.

ERASING FAULT CODES

- Ensure ignition is off and unit is connected to vehicle
- Switch ignition ON iii. Press MEM/TEST
- Whilst codes are being transmitted press MEM/TEST three times with a slight pause between presses. Following this, KAM codes should have been erased and this can be checked by repeating the Engine Off Test as detailed above.

EPIC

DIAGNOSTIC SOCKET/ECU LOCATION

The EPIC ECU and diagnostic socket are located in the glove box.

TEST OPERATION

To be confirmed

ERASING FAULT CODES

- Ensure ignition is off and unit is connected to vehicle
- Switch ignition ON
- Press MEM/TEST
- Whilst codes are being transmitted press MEM/TEST three times with a slight pause between presses. Following this, KAM codes should have been erased and this can be checked by repeating the Engine Off Test as detailed above.

8.7 TEVES ABS DIAGNOSTIC SOCKET LOCATION

The ABS diagnostic socket is located either on the LH side above the battery (Transit) or on the RH suspension tower.

TEST OPERATION

Connect unit to diagnostic connector Start engine Press MEM/TEST Wait for codes to be displayed Make a note of displayed codes - Code 11 indicates that no faults are present Press MEM/TEST Switch ignition OFF If any failure faults are repaired.

ERASING FAULT CODES

Fault codes are only erased when all faults have been fixed and the vehicle is driven faster than 18 mph.



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77032

Fault Code Reader Petrol & Diesel – Ford 1986-97

Suitable for engines on vehicles from 1986-1997 subject to correct ECU system and engine type. It includes some diesel applications and ABS systems. The unit comes complete with two DLC (Data Link Connection) cables for connecting to diagnostic port

under the bonnet and a cable (Red) for connection to the positive power supply on the battery. The DLC have either a 3pin connection or 1pin connection. Only one DLC cable is required for each vehicle.

Fiesta	1.1/1.3/1.4 Cfi	1989-96	EEC-IV Enh + KAM
	1.6 efl	1989-93	EEC-IV Enh + KAM
	1.6 Turbo	1990-93	EEC-IV Enh + KAM
	1.8 Zetec	1995-97	EEC-IV Enh 3 digit
Escort/Orion	1.1/1.3/1.4 Cfi	1989-96	EEC-IV Enh + KAM
	1.6 Efi	1997-97	EEC-IV Enh + KAM
	1.6 16v	1987-96	EEC-IV Enh + KAM
	1.8i 16v	1991-97	EEC-IV Enh + KAM
	2.0 DOHC 16V Efi	1991-96	EEC-IV Enh + KAM
	1.6 Zetec	1992-97	EEC-IV Enh 3 digit
	1.8 Zetec	1991-97	EEC-IV Enh 3 digit
	Cosworth 4x4	1992-94	Weber IAW
	Cosworth 4x4	1994-96	EEC-IV Enh + KAM
	ABS	1991-	Teves ABS
Sierra	1.6 Cfi	1989-93	EEC-IV Enh + KAM
	1.8 Cfi	1992-93	EEC-IV Enh + KAM
	2.0 DOHC Efi	1989-93	EEC-IV Enh + KAM
	2.9 V^	1989-93	EEC-IV Enh
	2.9 V6 Cat	1989-93	EEC-IV Enh + KAM
	Cosworth	1988-93	Weber IAW
Mondeo	1.8 Zetec	1995-97	EEC-IV Enh 3 digit
	2.0 Zetec	1995-97	EEC-IV Enh 3 digit
Granada/Scorpio	2.4 V6 Efi	1986-91	EEC-IV Enh
	2.4 V6 Efi	1989-94	EEC-IV Enh + KAM
	2.4 V6 Efi + Cat	1986-94	Enh + KAM
	2.8 V6 Efi	1989-94	EEC-IV Enh + KAM
	2.9 V6 Efi	1986-94	EEC-IV Enh
	2.9 V6 Efi + Cat	1986-94	EEC-IV Enh + KAM
Transit	2.9 V6 24v	1991-94	EEC-IV Enh 3 digit
	ABS	1992-	Teves ABS
	2.0 DOHC	1991-95	EEC-IV Enh + KAM
	2.9 V6 Efi	1989-91	EEC-IV Enh
	2.9 V6 Efi + Cat	1989-91	EEC-IV Enh + KAM
	2.5 Turbo Diesel	1991-94	EPIC
	ABS	1992-	Teves ABS

IMPORTANT NOTES REGARDING TEST PROCEDURES ENSURE YOU READ AND UNDERSTAND THE FOLLOWING BEFORE PROCEEDING WITH THE TEST PROCESS.

DIAGNOSTIC CONNECTOR

The approximate location of the diagnostic connector is detailed within each section. The connector will take one of two forms: Black triangular outline with a red insert and 3 terminals – this will normally have a black protected cap inserted. Or Black 5 way D outline with 3 terminals fitted – this will normally have a black rubber protective boot fitted. Similar connectors are used elsewhere within the engine bay. Ensure you connect only to the diagnostic connector – refer to other workshop manuals if at all in doubt.

TEST PROCEDURES

It is essential that test procedures are followed precisely. The procedures involve activating a test line at certain points within the ignition cycle. The completion of a test always involves deactivating the test line in the exactly reverse order e.g.

- Switch ignition on
- Activate test
- Read codes
- Deactivate test
- Switch ignition off

If the procedure is not followed it can result in leaving the vehicle in diagnostic mode which may cause it to run unreliably.

FAULT CODES

Please refer to a suitable source e.g Autodata Diagnostic Codes Manual for the codes specific to your engine type.

WEBER IAW

Diagnostic Socket Location

Diagnostic connector is either located by the vehicle battery or by the glovebox.

TEST PROCEDURE

The Weber IAW system is only capable of outputting fault codes present at the time of test. Ensure ignition is switched OFF Connect tester to diagnostic socket

- Press MEM/TEST
- Switch ignition ON
- Wait for codes to be displayed
- Make a note of displayed codes – Code 11 indicates that no faults are present
- Switch Ignition off
- Press MEM/TEST

ERASING FAULT CODES

As this system is not fitted with KAM, fault codes are lost when the ignition is switched off.

EEC-IV ENHANCED

DIAGNOSTIC SOCKET LOCATION

The diagnostic socket is located near the battery.

TEST OPERATION

Before testing ensure that:

- Air conditioning is switched off
- Octane and idle adjust wires are disconnected
- The adjust wires are located near the ignition coil

- Early vehicles have Lucar type connectors and later models a combined socket.
- Ensure that all are disconnected before test, but note the original state so that the vehicle can be reassembled after the test is completed.

TEST PROCEDURE

Three distinct tests are available as described below. These should be performed in numerical order so that faults are corrected in the right sequence. 1.

- Key on, engine off test
- Ensure ignition is OFF
- Connect tester to diagnostic socket
- Press MEM/TEST
- Switch ignition ON
- Wait for codes to be displayed
- Make a note of displayed codes – Code 11 indicates that no faults are present
- Code 20 appears – this is just a separator code
- Wait for codes to be displayed
- Make a note of displayed codes – Code 11 indicates that no faults have been stored in the last 40 starts
- When code 10 is displayed you are being prompted to perform the 'wiggle test'. The operator should flex all interconnections in the system and the unit LED on the left of the display will flash if intermittent connections are disturbed.
- If the LED flashes dismantle the connector and check that the pins/sockets are free from corrosion and dirt, and that the correct spring tension.
- Switch ignition OFF
- Press MEM/TEST

REPEAT TEST 1.

If any failure codes are produced during this test it is imperative that faults are repaired. The test must be repeated with no faults, before proceeding to test 2.

2. ENGINE IDLE RUNNING TEST

This test should only be performed if test 1, "Key on, engine off", has been passed satisfactorily.

- Start Engine
- Wait 4 seconds then press MEM/TEST
- Wait for codes to be displayed
- Make a note of displayed codes – Code 11 indicates that no faults are present
- Press MEM/TEST
- Switch ignition OFF
- If any failure codes are produced during this test it is imperative that faults are repaired. The test must be repeated with no faults, before proceeding to test 3

3. ENGINE RUI/DYNAMIC TEST

This test should only be performed if test 1, "Key on, engine off" and test 2, "Engine idle running", have been passed satisfactorily.

- The engine MUST be at the normal operating temperature no codes will be produced with the engine cold.
- When operator is prompted to start the engine - they must proceed PROMPTLY to ensure that unit reads the next code.
- When unit reads code 10 it will prompt the operator to blip the throttle. This action

must be performed quickly or code 44 – Blip test not performed – will be displayed. The engine must then be switched off and test 3 restarted. When unit reads code 60 it will prompt the operator to check/adjust the ignition timing using a strobe light. This base timing condition will be maintained for up to ten minutes depending on the ECU type, after which code 70 will be displayed. Timing adjustments MUST NOT be made once code 70 is received. The ECU will now revert to automatic timing control. If engine stalls when Code 60 is displayed adjust throttle linkage and repeat TEST 3.

- If any failure codes are produced during this test it is imperative that faults are repaired. The test must be repeated with no faults before ending the test.
- Press MEM/TEST
- Code 30 may be displayed at this stage – ignore it
- Switch ignition on and wait for 3 seconds before starting engine
- Code 50 should be displayed to indicate a European ECU. If code 50 is not produced then check the ECU part number, located below the passenger glove box.
- There may now be a delay while coolant temperature rises.
- If any fault codes are displayed at this stage stop engine, press MEM/TEST and rectify any faults before restarting

TEST 3.

- Engine speed will now increase.
- Code 10 will be displayed – blip throttle so that engine speed exceeds 2500RPM
- If Code 44 is displayed ECU has not detected rise in engine speed – stop engine, press MEM/TEST and return to start of TEST 3.
- Wait for codes to be displayed Make a note of displayed codes – Code 11 indicates that no faults are present.
- If any fault codes are displayed at this stage stop engine, press MEM/TEST and rectify any faults before restarting TEST 3.
- Engine speed will now decrease. Code 60 is displayed indicating base idle speed mode
- When adjustments are complete or Code 70 is displayed - stop engine and press MEM/TEST

8.4.5 ERASING FAULT CODES

Fault codes are erased from KAM automatically by successfully conducting the Engine off test above (TEST1).

EC-IV ENHANCED 3 DIGIT CODES

DIAGNOSTIC SOCKET LOCATION

The diagnostic socket is located near the LH suspension strut (zetec engines) or adjacent to the vehicle battery (Scorpio).

TEST OPERATION

ENSURE HANDBRAKE IS ON AND NEUTRAL/PARK SELECTED. ENGINE OFF TEST
Please read the following notes:

- If Code 10 appears, you must press the accelerator pedal fully within 10 seconds to activate the kick-down switch. Failure to do so will cause Code 576 to be stored for later retrieval.