THE TOOL COMPANY

CITROËN/PEUGEOT
FAULT CODE READER

■ STOCK No.68079 ■ PART No.FCR-CIT/PEUG

• INSTRUCTIONS •

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS TOOL.

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05/2002

GENERAL INFORMATION

This manual has been compiled by Draper Tools and is an integrated part of the product with which it is enclosed and should be kept with it for future references.

This manual describes the purpose for which the product has been designed and contains all the necessary information to ensure its correct and safe use. We recommend that this manual is read before any operation or, before performing any kind of adjustment to the product and prior to any maintenance tasks. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the tool itself.

All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product.

Whilst every effort has been made to ensure accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

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GUARANTEE

Draper Tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship for a period of 12 months from the date of purchase except where tools are hired out when the guarantee period is ninety days from the date of purchase.

Should the machine develop any fault, please return the complete tool to your nearest authorized warranty repair agent or contact Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England. Telephone: (023) 8026 6355.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accident, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the 12 month period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

Draper Tools Limited.

SPECIFICATION

The Draper Tools policy of continuous improvement determines the right to change specification without notice.

Stock No. ..... 68079 .....

Part No. FCR-CIT/PEUG .....

Vehicle
Citroën & Peugeot (petrol engines)

SUITABLE FOR:

Petrol vehicles with engine management/injection systems .....

CITROËN		PEUGEOT	
AX	1991>	106	1991>
BX	1990>	205	1988>
XM	1989>	306	1993>
XANTIA	1993>	309	1988>
ZX	1991>	405	1987>
		605	1990>

SYSTEM TYPES:

Magneti, Marelli, G5 single & multipoint, G6/G6.11/8P & AP, Fenix 1B/3B & 4, Mono-Jetronic, Mono-Motronic MA3.0, Motronic M1.3/MP3.1/MP3.2/ML4.1, MP5.1/5.1.1.

SAFETY WARNING

Please read the following instructions carefully, failure to do so could lead to personal injury or damage to the vehicle.

1. Avoid a dangerous environment. Do not expose the fault code reader to rain, ensure the work area is well lit. Always store the code reader in its case when it is not in use.
2. When using this code reader on a vehicle it may involve carrying out tests with the engine running and the following points should be followed to avoid injury.

a) Wear proper clothing - do not wear loose clothing, neckties (rings, wrist watches) which could catch in moving parts. Non slip footwear is recommended. Wear a protective hair covering to contain long hair. Roll long sleeves above the elbow.

b) Do not over-reach - keep proper footing and balance at all times.

3. Never leave the code reader unattended when switched ON in a testing mode or when the code reader is carrying out test procedures. Always switch the code reader and vehicle's ignition off.
4. Always switch the engine off before leaving the vehicle.
5. Ensure the code reader is secure before starting any testing.
6. Check that all cables are kept clear of hot/moving parts.
7. Only run the engine in a well-ventilated non confined area. Do not inhale exhaust gases, as they are dangerous and can be fatal.
8. If working on a vehicle that requires jacking up, ensure the vehicle is well supported with suitable axle stands on a level surface and that the wheels are chocked.
9. When starting the vehicle ensure it is in neutral with the handbrake applied. Automatics, ensure the gearbox is in neutral/park and the parking brake is applied.

OPERATION AND USE

INTRODUCTION:

The engine control unit (ECU) fitted to the majority of Citroën/Peugeot vehicles are Bosch type. These include Motronic versions 1.3, 3.1, 3.2, 4.1 and 5.1. Mono-Jetronic A2.2 and Mono-Motronic MA3.0. Also Fenix 1B, 3B, 4 and 4B, Magneti-Marelli G5, G6 and 8P.

NOTE: Vehicles fitted with the early versions of Motronic 1.3 and 4.1 may use an aux, air valve which is not controlled by the ECU. The Mono-Jetronic systems only regulate fuel and idle functions.

Each ECU system has a self test facility which continuously measures the signals from certain sensors and actuators around the engine. It compares the reading to a group of pre-set values, and determines if a fault is present. This fault will then remain logged in the memory, ready to be examined and corrected.

In Citroën/Peugeot systems the control module produces a 2 digit fault code for retrieval with the fault code reader.

The 2 pin self diagnosis connector is green and is located in the engine bay, on the inner wing near the battery, ECU or the expansion tank for the cooling system. With some vehicles the connector can be found inside the relay box which is located on the inner wing.

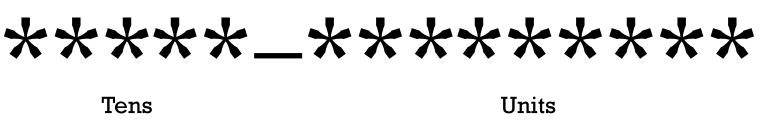
NOTE: It is possible to introduce new faults into the ECU when carrying out certain tests. Care must be taken that these do not mislead during diagnosis. Clear all codes after testing is completed.

LOS (Limited Operating Strategy):

The systems featured incorporate a function which on detection of certain faults, will revert to a set of default values allowing the vehicle to "limp home". Once the fault is cleared the ECM will revert back to the correct values.

UNDERSTANDING A FAULT CODE:

The two digit fault code will be represented by two series of one second flashes, separated by a short pause. The first series indicate the tens and the second indicates the units. For example;

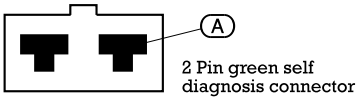


Tens Units

OPERATION AND USE

READING FAULT CODES:

1. Ensure the vehicle ignition is in the 'OFF" position. Switch the fault code reader to the 'o' position. Securely connect the fault code reader to the self diagnosis connector.
2. Insert the flat connector into (A) and attach the crocodile clip to a suitable earth or the battery negative terminal.
3. Switch ignition 'ON', but do not start the engine.



2 Pin green self diagnosis connector

4. Switch the fault code reader to the '-' position for 3 seconds and then switch it back to the 'o' position. After 5 seconds the fault code 12 will be transmitted. The 12 indicates the initiation of diagnosis and the start of the test. After approximately 5 seconds repeat the previous step for further codes. After all the fault codes have been transmitted, the code 11 will be shown to indicate the end of the test. If the sequence is 12 and then 11 it means there are no fault codes stored.
5. To finish the test, switch off the vehicles ignition and disconnect the fault code reader.
6. If any fault codes are present refer to page 6 for the diagnosis table.

ERASING THE FAULT CODES:

1. Once all the required repairs have been made, with the fault code reader disconnected from the vehicle switch the fault code reader to the '-' position for 10 seconds and then switch back to the 'o' again. Then reconnect the fault code reader to the vehicle as before.
2. Test to ensure all the codes are cleared.
3. Road test the vehicle and once again test to ensure no codes have been re-introduced.

COMPONENT ACTIVATION:

The fault code reader can perform a function test on a limited selection of components.

1. Connect the fault code reader to the 2 pin self diagnosis socket ensuring the reader is in the 'o' position. Switch the fault code reader to the '-' position for 3 seconds.
2. Switch the ignition to the 'ON' position. Do not start the engine.
3. Switch the fault code reader to the 'o' position.
4. The LED will now flash a 2 digit code to indicate which component it is activating.
   81/91 Fuel pump and relay
   82/92 Fuel injector
   83/93 Idle speed activator
   84/94 Carbon canister solenoid
   85/95 A/C compressor and relay
   86/96 Variable air intake solenoid (valve A)
   87/97 Variable air intake solenoid (valve B)
5. To activate the next component, switch the fault code reader to the '-' position and back again to the 'o' position. The next 2 digit code will be output, and so on until the first code is repeated.
6. To finish the test, switch off the vehicles ignition and disconnect the fault code reader.

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FAULT CODE TABLE

FAULT CODE READING	CODE DESCRIPTION
11	End of diagnosis
12	Initiation of diagnosis
13x	Air temperature sensor (ATS) or ATS circuit
14x	Coolant temperature sensor (CTS) or CTS circuit
15	Fuel pump relay, supply fault or fuel pump control circuit
18	Turbo coolant pump control
21x	Throttle pot sensor (TPS) or TPS circuit
21x	Throttle switch (TS), idle contactor TS circuit
22	Idle speed control valve (ISCV), supply fault
23	Idle speed control valve (ISCV) or ISCV circuit
25x	Variable induction solenoid valve (VISV) L or circuit
26x	Variable induction solenoid valve (VISV) C or circuit
27x	Vehicle speed sensor (VSS) or VSS circuit
31x	Throttle switch (TS), idle contact or TS circuit
31	Oxygen sensor (OS), mixture regulation or OS circuit (alternative code)
32	Mixture regulation, exhaust, inlet leak(s) or fuel pressure
33x	Airflow sensor (AFS) or AFS circuit
33x	Manifold absolute pressure (MAP) sensor or MAP sensor circuit (alternative code)
33x	Throttle pot sensor (TPS) or TPS circuit (alternative code, Mono-Jetronic only)
34	Carbon filter solenoid valve (CFSV) or CFSV circuit
35	Throttle switch (TS), full-load contact
36	Oxygen sensor (OS) heater control or OS circuit
41	Crank angle sensor (CAS) or CAS circuit
42	Injectors or injector circuit
43x/44x	Knock sensor (KS), knock regulation/detection
45	Ignition coil control (coil 1)
46	Turbo boost pressure solenoid valve (BPSV) or BPSV circuit
47	Turbo pressure regulation
51x	Oxygen sensor (OS) or OS circuit
52	Mixture control, supply voltage, air or exhaust leak
53x	Battery voltage, charging or battery fault
54	Electronic control module (ECM)
55x	CO pot or CO pot circuit
56	Immobiliser system
57/58/59	Ignition coil 2/Ignition coil 3/Ignition coil 4
61	Variable turbo regulation valve or circuit
62x	Knock sensor (KS) 2 or KS circuit
63x	Oxygen sensor (OS) or OS circuit
64	Mixture control B
65x	Cylinder identification (CID) or CID circuit
71	Injector No.1 control or injector circuit
72	Injector No.2 control or injector circuit
73	Injector No.3 control or injector circuit
74	Injector No.4 control or injector circuit
75	Injector No.5 control or injector circuit
76	Injector No.6 control or injector circuit
79x	Manifold absolute pressure (MAP) sensor or MAP sensor circuit

x = Faults that typically will cause the ECM to enter LOS and use a default value in place of the sensor.

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