



28th AUGUST 1996

ABONNEMENT GME

REF.

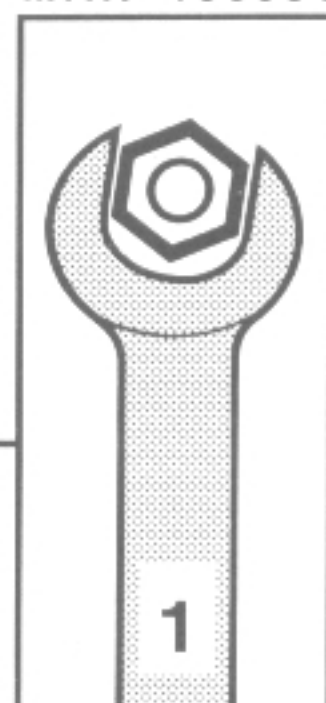
2

No XM 146-00/9a

AIR AND FUEL SUPPLY

- BOSCH VP36 MSA11 7.6 L3
Diagnosis

MAN 158931



(GB)

Addition to Bulletin ② (No XM 146-00/9)



AUTOMOBILES CITROËN
DIRECTION COMMERCE EUROPE
DOCUMENTATION APRÈS VENTE

FAULT FINDING : BOSCH VP36 MSA 11 7.6 L3 FUEL INJECTION

1 – DIAGNOSTIC TOOLS

1.1 – ELIT test unit : 4125-T

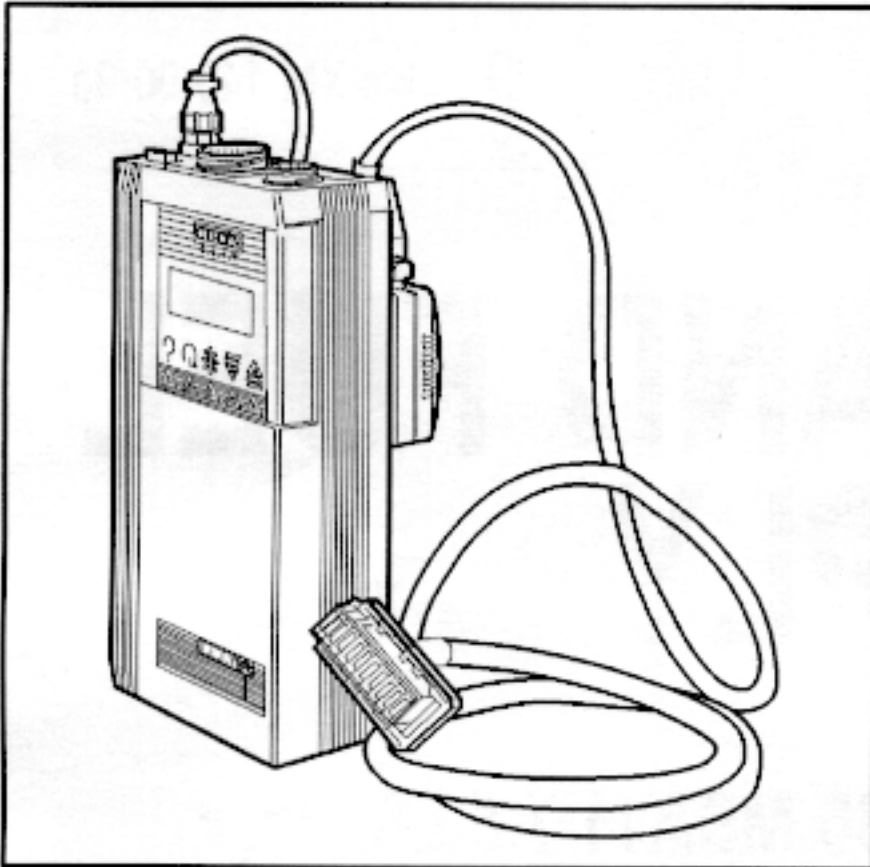


Fig : B3BP039C

The tool can be used for :

- reading the fault codes
- road testing
- operating the actuating components
- measuring the parameters

1.2 – Test connector box : 4109-T

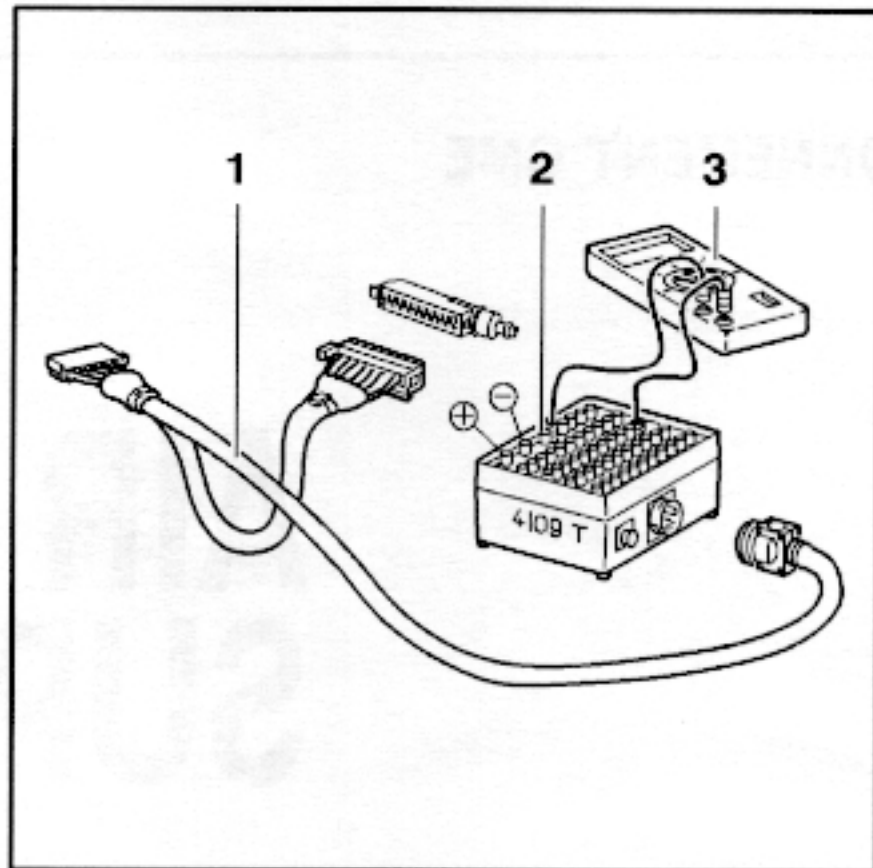


Fig : B1HP074C

(1) – 55-way wiring harness.

(2) – test connector box.

(3) – multimeter.

The box allows reading the voltages and resistances.

1.3 – 26 A diagnostic station

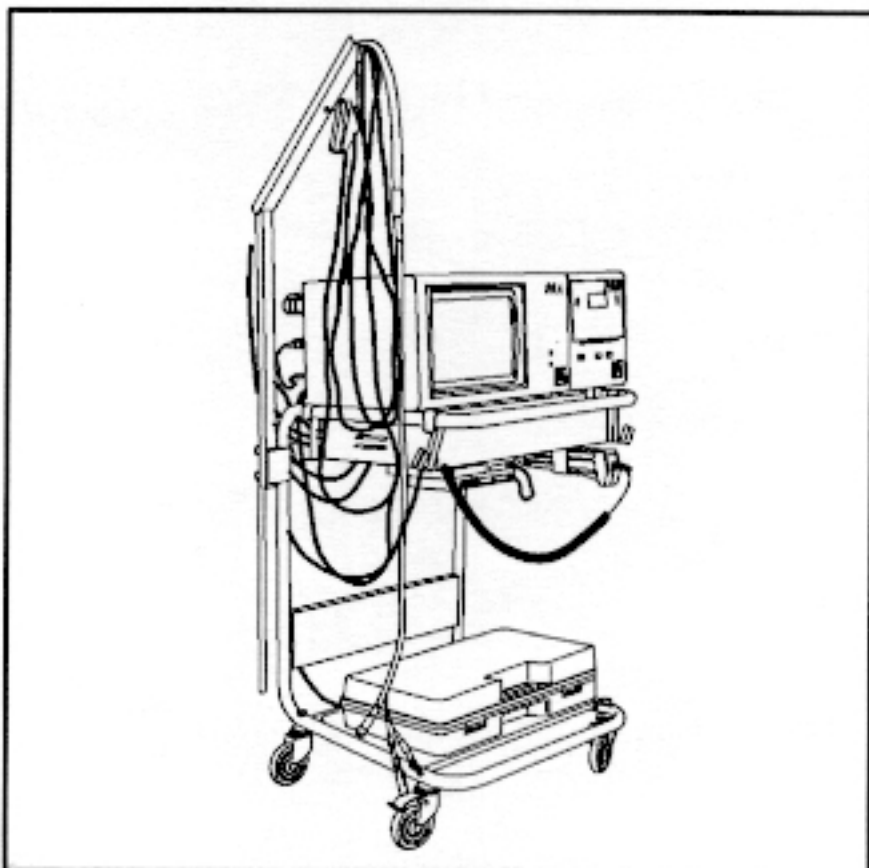


Fig : B3BP031C

The tool can be used for :

- reading the fault codes
- operating the actuating components
- checking the Diesel injection system
- checking the parameters

2 – FAULT FINDING CHART

This document deals only with the faults specific to the MSA 11 7.6 injection.

For the other faults, refer to the document specific to the MSA 11 3.6 injection.

2.1 – List of fault codes

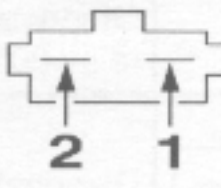
NOTE : The autodiagnostic system warning lamp will light up if the following incident codes are displayed : 37, 41, 51, 52, 54, 65.

- 13 – air temperature sensor (907).
- 14 – engine coolant temperature sensor (909).
- 17 – regulation of the exhaust gas recycling (442).
- 18 – power outlet short circuit.
- 21 – accelerator pedal sensor (773).
- 25 – brake switch (319).
- 26 – clutch switch (328).
- 27 – vehicle speed information (154).
- 33 – over pressure sensor (903).
- 36 – diesel fuel thermal sensor (922).

- 37 – stop electrovalve (429).
- 38 – cruise control.
- 41 – engine speed sensor (160).
- 43 – advance adjustment (443).
- 51 – sliding block position (166).
- 52 – flow adjustment (445).
- 53 – electronic control unit (142) (battery voltage).
- 54 – electronic control unit (142).
- 57 – atmospheric pressure sensor (142).
- 58 – pre-heating (59).
- 65 – needle lift sensor (165).
- 79 – air flow sensor (340).

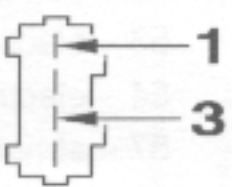
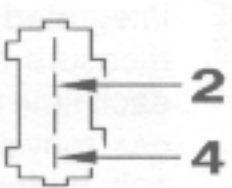
NOTE : The MSA 11 7.6 E.C.U. has not got an integrated atmospheric pressure sensor. The measure of the atmospheric pressure is readjusted each time the engine idles for 2 seconds. The exhaust gas recycling butterfly control electrovalve is tested only by the fault code 18 : power outlet short circuit. The diagnostic of the pre-heater plugs is no longer done since the 4 plugs are in parallel (2 x 2 plugs for MSA 11 3.6).

2.2 – Fault code 17 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Regulation of the exhaust gas recycling (442) on the bodyshell, near the R.H. front sphere	Connected	8 – 18		Diagnostic equipment : voltmeter Ignition switched on Check the item supply voltage : $U \approx \text{battery } U$	Yes Limitation of the pump delivery reduction of performance
	Disconnected	8 – 16	 Brown	Diagnostic equipment : ohmmeter Check the resistance of the electrovalve : $R \approx 52 \text{ ohms}$	

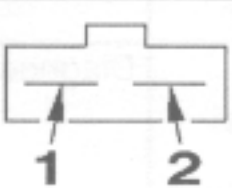
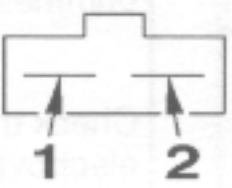
NOTE : Fault code 17 is detected only in the 2800 rpm EGR idle operation zone. At each return to idling, the E.C.U. cancels the fault code 17 and performs a new check. If the fault is still present, it is recorded. Otherwise, return to normal operation.

2.3 – Fault code 79 (minor fault)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
Air flow sensor (340)	Connected	16 – 18		Diagnostic equipment : voltmeter	Yes
		17 – 19		Ignition switched on Check the sensor supply voltage : $U \approx$ battery U	EGR cut-off
		38 – 13		With engine running ; check that the output voltage varies between 0.5 and 5 volts, according to the engine load	

NOTE : An inversion in the direction of fitting of the flowmeter will cause instability and engine misfiring.

2.4 – Fault code (without)

Location of components	E.C.U. connector	Test connector box terminals	Component connections	Test values	Emergency mode
EGR throttle butterfly electrovalve (437)	Connected	6 – 18	 Black	Diagnostic equipment : voltmeter	
		16 – 18		Ignition switched on Check the item supply voltage : $U \approx$ battery U Otherwise verify : $U \approx$ battery U Otherwise check the supply to relay 807	
	Disconnected	6 – 16	 Black	Diagnostic equipment : ohmmeter Verify : $R \approx 40$ ohms	