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## TECHNICAL NOTE 3339A

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### XB0L

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# Special features of the CLIO fitted with engine K4J 712

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**For all parts not dealt with in this Technical Note refer to  
M.R. 337 and to N.T. 3069A.**

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**77 11 292 302**

**NOVEMBER 1999**

**EDITION ANGLAISE**

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\*The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

The methods may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed.\*

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VALUES AND SETTINGS

Tyres and wheels

Type	Rim	Tyres	Cold inflation pressure (in bars) (1)	
			Front	Rear
BB0L CB0L	5.5 J 14	165/65R14T	2.4	2.1
BB0L CB0L	5.5 J 14	175/60R14T	2.4	2.1

(1) Fully laden and motorway use.

Tightening torque for wheel nuts: **9 daN.m**  
Wheel rim run-out: **1.2 mm**

# VALUES AND SETTINGS

## Brakes

07

Type	Disc thickness (in mm)		Drum diameter or Drum thickness (in mm)		Max. disc run-out (in mm)	
	Front		Rear		Front	Rear
	Normal	Min.	Normal	Max. (1)		
BB0L CB0L	20	17.7	203.2	204.4	0.07	-
BB0L* CB0L*	20.6	17.6	203.2	204.4	0.07	-

\* With ABS  
(1) Drum: maximum wear diameter

Type	Lining thicknesses (in mm) (including backing)				Brake fluid
	Front		Rear		
	Brand new	Min.	Brand new	Min.	
BB0L CB0L	17.8	5.5	4.5	2	SAE J1703 DOT 4
BB0L* CB0L*	18.2	6	3.1	2	SAE J1703 DOT 4

\* With ABS

BRAKING PRESSURE

Full fuel tank.  
Driver on board.

Type	Test pressure (1) (in bars)	
	Front	Rear
BB0L CB0L	100	56 → <sup>+0</sup> - 18

(1) The test is performed using two pressure gauges in an X arrangement.

VALUES AND SETTINGS

Underbody heights

07

Type	At the front H1 - H2 = ... mm	At the rear H4 - H5 = ... mm	Dimension X (in mm) R-H and L-H
CB0L BB0L	94	- 18	-

Tolerance: ± 7.5 mm

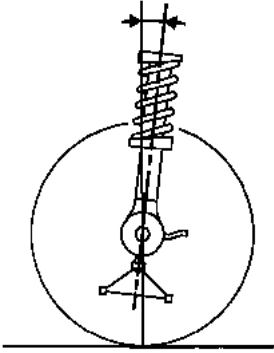
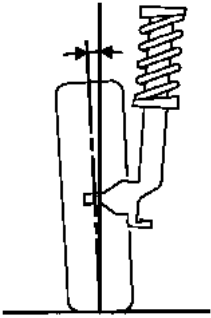
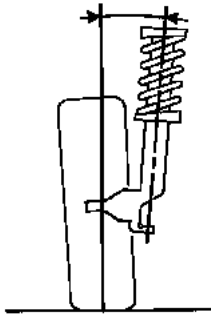
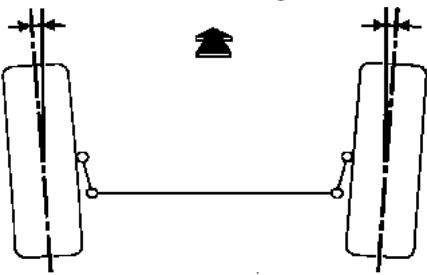
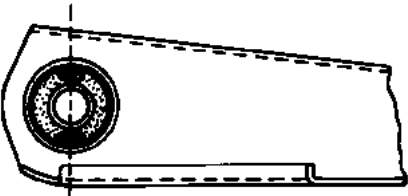
The difference between the right-hand side and the left-hand side of the same axle of a vehicle must not exceed 5 mm, the driver's side always being higher.

Any adjustment of the underbody height means that the brake limiter and the headlights must be adjusted.

# VALUES AND SETTINGS

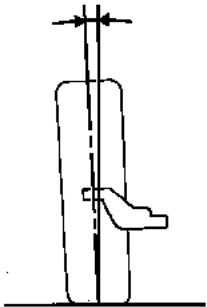
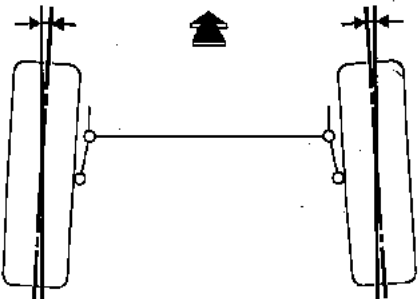
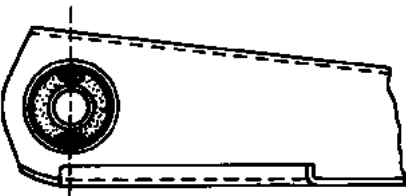
## Values for checking the front axle geometry

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ANGLES	VALUES	POSITION OF FRONT AXLE (mm)	ADJUSTMENT
<b>WHEEL CASTOR</b> 	$\left. \begin{array}{l} 2^{\circ}48' \\ 2^{\circ}18' \\ 1^{\circ}48' \\ 2^{\circ}00' \end{array} \right\} \pm 30'$ <p>Maximum right/left difference = 1°</p>	<p>H5 - H2 = 80 H5 - H2 = 100 H5 - H2 = 120 H5 - H2 = 130</p>	NOT ADJUSTABLE
<b>CAMBER</b> 	$\left. \begin{array}{l} - 0^{\circ}27' \\ - 0^{\circ}22' \\ - 0^{\circ}34' \\ - 0^{\circ}28' \end{array} \right\} \pm 30'$ <p>Maximum right/left difference = 1°</p>	<p>H1 - H2 = 94 H1 - H2 = 105 H1 - H2 = 115 H1 - H2 = 145</p>	NOT ADJUSTABLE
<b>PIVOT</b> 	$\left. \begin{array}{l} 10^{\circ}50' \\ 11^{\circ}00' \\ 11^{\circ}20' \\ 12^{\circ}50' \end{array} \right\} \pm 30'$ <p>Maximum right/left difference = 1°</p>	<p>H1 - H2 = 94 H1 - H2 = 105 H1 - H2 = 115 H1 - H2 = 145</p>	NOT ADJUSTABLE
<b>PARALLELISM</b> 	<p>(For 2 wheels)</p> <p>opening +0°10'±10' +1 mm ±1 mm</p>	UNLADEN	Adjustable by rotating track rod sleeves 1 turn = 30' (3 mm)
<b>POSITION FOR TIGHTENING RUBBER BUSHES</b> 	-	UNLADEN	-



**VALUES AND SETTINGS**  
**Values for checking the rear axle geometry**

ANGLES	VALUES	POSITION OF REAR AXLE	ADJUSTMENT
<b>CAMBER</b> 	- 1°00' ± 15'	UNLADEN	NOT ADJUSTABLE
<b>PARALLELISM</b> 	(for 2 wheels) Clamp - 15' ± 10' - 1,5 mm ± 1 mm	UNLADEN	NOT ADJUSTABLE
<b>POSITION FOR TIGHTENING RUBBER BUSHES</b> 	-	UNLADEN	-

# FUEL MIXTURE

## Specifications

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Type	Gearbox	Engine								Injection type
		Type	Suffix	Bore (mm)	Stroke (mm)	Cubic capacity (cm <sup>3</sup> )	Compression ratio	Catalytic converter	Depollution standard	
XB0L	JB1	K4J	712	79.5	70	1598	10/1	◇ C71	EU 96	Multipoint sequential Static ignition

Temperature in °C	0	20	40	80	90
Air sensor NTC type resistance in Ohms	5,290 to 6,490	2,400 to 2,600	1,070 to 1,270	-	-
Coolant sensor NTC type resistance in Ohms	-	3,060 to 4,045	1,315 to 1,600	300 to 370	210 to 270

Tests carried out at idle speed*					Fuel*** (minimum octane rating)
Idle speed (rpm)	Emissions of pollutants**				
	CO (%) (1)	CO2 (%)	HC (ppm)	Lambda (λ)	
750 ± 50	0.5 max.	14.5 min.	100 max.	0.97 < λ < 1.03	Super unleaded (IO 95)

- (1) At **2,500 rpm**, **CO** should be **0.3 max.**
- \* At a coolant temperature greater than **80 °C** and after a coolant engine speed of **2,500 rpm** for approximately **30 seconds**.
- \*\* For the legislative values, refer to the specifications for the country concerned.
- \*\*\* Compatible **IO 91** unleaded.

# FUEL MIXTURE

## Specifications

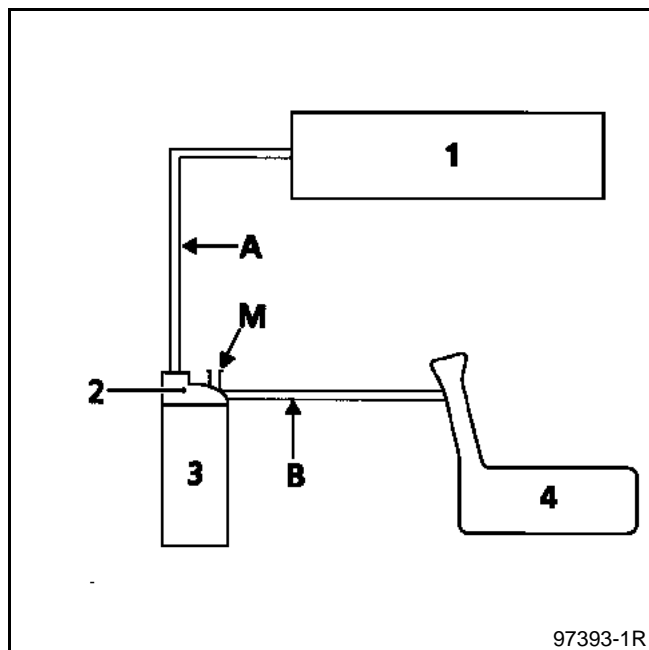
12

DESCRIPTION	MAKE/TYPE	SPECIAL NOTES		
Computer	SIEMENS "SIRIUS"	90 tracks		
Injection	-	Multipoint sequential		
Ignition	-	Static with four coils		
Stepping motor	MAGNETI MARELLI	Resistance: <b>53 ± 5 Ω</b> at ambient temperature		
Throttle potentiometer	CTS	Incorporated in the throttle housing Resistance of track: <b>1,200 ± 240 Ω</b> Resistance of cursor < <b>1,050 Ω</b>		
		Track	PL	PF
		A - B	1,250 Ω	1,250 Ω
		A - C	1,245 Ω	2,230 Ω
		B - C	2,230 Ω	1,245 Ω
Magnetic sensor (TDC and engine speed)	ELECTRIFIL or SIEMENS	Integrated connector Resistance = <b>200 to 270 Ω</b>		
Canister solenoid valve	SAGEM	Incorporated in the canister Resistance: <b>26 ± 4 Ω to 23 °C</b>		
Injector	WEBER	Resistance: <b>14.5 Ω</b> Leak flow: <b>0.7 cm<sup>3</sup>/min</b> maxi		
Air sensor	JAEGER	CTN (see table) Resistance: <b>2,500 Ω</b> at <b>20 °C</b>		
Coolant sensor	JAEGER	CTN (see table) Resistance: <b>3,500 Ω</b> at <b>20 °C</b>		
Pressure sensor	DELCO ELECTRONICS	Piezo-electric type Replace the seal each time it is removed		
Pinking sensor	SAGEM	Piezo-electric type Tightening torque: <b>2 daN.m</b>		
Upstream oxygen sensor	BOSCH	Tracks <b>80</b> (earth) and <b>45</b> (computer signal) Heater resistance R = <b>9 Ω</b> at ambient temperature Rich mixture = <b>840 mV ± 70</b> Lean mixture = <b>20 mV ± 50</b>		

FUEL MIXTURE  
Specifications

DESCRIPTION	MAKE/TYPE	SPECIAL NOTES
Ignition coils	NIPPONDENSO	Pencil coil. One per cylinder Primary resistance: <b>0.5 Ω ± 0.02</b> Secondary resistance: <b>10 kΩ ± 1</b>
Plugs	BOSCH RFC 50LZ2E	Tightening torque: <b>2.5 to 3 daN.m</b>
Inlet manifold pressure	-	At idling speed: <b>350 ± 40 mbars</b>
Exhaust counter-pressure	-	upstream of the Catalytic converter 1,500 rpm. 27 3,000 rpm 88 4,500 rpm. 198 5,500 rpm. 269
Submerged feed pump	WALBRO	Pressure: <b>3.5 bars ± 0.2</b> (regulator placed on the pump and sender unit) Minimum increased flow: <b>130 litres/hour</b>

### OPERATING DIAGRAM OF THE CIRCUIT



- 1 Inlet manifold
- 2 Integrated canister bleeding solenoid valve
- 3 Fuel vapours absorber (canister) with solenoid valve
- 4 Fuel tank
- M Breather
- A Canister pipes (inlet manifold)
- B Tank pipes/canister

### CANISTER PURGE CONDITION

The canister purge solenoid valve is controlled by track 4 of the computer:

- when the temperature is greater than **60 °C**,
- when the temperature is greater than **10 °C**,
- when the throttle threshold is reached,
- at idling speed if the coolant temperature reaches **120 °C**,
- at idling speed if the coolant temperature reaches **19 °C**.

It is possible to display the canister purge solenoid valve opening cyclic ratio using the diagnostic equipment by consulting the parameter "**RCO Canister purge solenoid valve**".

The solenoid valve is closed if the value is below or equal to **3 %** (minimum value).

### CANISTER PURGE OPERATION CHECK

A system malfunction may result in an unstable idle or stalling of the engine.

Check the conformity of the circuit (refer to the basic diagram) and the condition of the pipes to the tank (refer to **Workshop Repair Manual**).

### SPECIAL FEATURES OF THE MULTIPOINT INJECTION FITTED TO THE K4J 712 ENGINE

- **SIEMENS "SIRIUS 32"** 90-way computer controlling the injection and the ignition.
- Use of diagnostic tools (except **XR25**).
- Multipoint injection operating in sequential mode without a cylinder marking or camshaft position sensor. This means the phasing is carried out by a software program from the TDC sensor.
- Injection warning light on instrument panel not operational.
- Special precautions relating to the engine immobiliser:
  - Adoption of a 2nd generation type engine immobiliser making a special computer replacement method.
- Fuel circuit without return to the tank (the regulator is located on the pump and sender unit).
- Idle speed:
  - nominal idle speed **750 rpm.**
- Idle speeds corrected in line with:
  - air conditioning,
  - electric balance,
  - electric heated windscreen.
- Maximum speed when the temperature is
  - < 60 °C **5800 rpm.**
  - > 60 °C **6500 rpm.**
- Canister purge solenoid valve controlled by opening cyclic ratio (**RCO**) according to engine operation.
- Control of the fan assemblies and of the coolant temperature warning light on the instrument panel by the injection computer.

This vehicle is fitted with an engine immobiliser system which is controlled by a key recognition system.

### REPLACING THE INJECTION COMPUTER

The injection computers are supplied without a code but they can all be programmed with one.

When a computer is replaced, it must be programmed with the code of the vehicle and the correct operation of the engine immobiliser function must be checked.

To do this, simply switch on the ignition for a few seconds without starting the engine then switch it off. With the ignition off, the engine immobiliser function comes into operation after approximately **10 seconds** (the red engine immobiliser warning light flashes).

#### **WARNING:**

These vehicles have a specific injection computer which only functions once coded.

Consequently, it is strongly recommended that you do not carry out tests using computers borrowed from the warehouse or another vehicle to avoid coding and decoding problems which may leave the computer useless.

### DECODING PROCEDURE

If the injection computer has been programmed with a code and must be returned to the warehouse, it is imperative that you decode it before removing it. (See the Workshop Repair Manual or the engine immobiliser Technical Note).

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THE COMPRESSOR IS OF THE VARIABLE CUBIC CAPACITY TYPE

### INJECTION COMPUTER/AC COMPUTER CONNECTION

The injection computer is connected to the **AC** computer by two wires:

- one wire from the injection computer to track **10** of the **AC** computer. The compressor operation authorisation or prohibition information is sent along this wire.
- one wire from the injection computer to track **23** of the **AC** computer. This is for a power absorbed information signal.

When the **AC** switch is pressed, the **AC** computer requests operation of the compressor. The injection computer authorises or prohibits engagement of the compressor and imposes a modified idle speed. In this case, the engine speed may reach **850 rpm**.

### COMPRESSOR OPERATION PROGRAMMING

During certain stages of operation, the diesel injection computer stops the compressor from functioning.

#### Engine starting strategy

Compressor operation is prohibited for **10 seconds** after the engine is started.

#### Maximum speed protection strategy.

The compressor is not engaged when the engine speed is greater than **6,500 rpm**.



### Recovery of performance

The compressor is engaged for **5 seconds** when the following conditions are united:

#### *Input conditions*

- throttle position potentiometer at **full load**
- and engine speed less than **2,000 rpm.**
- and vehicle speed less than **16 km/h.**

#### *Output conditions*

- **Full load** not recognised
- or delay of **5 seconds** expired
- or engine speed greater than or equal to **2,050 rpm.**
- or vehicle speed greater than **26 km/h**

### Recovery of power at full load

When at full load the air conditioning compressor is engaged for **9 seconds** since the power absorbed by the air conditioning compressor is significant:

#### *Input conditions*

- engine speed less than **2,300 rpm.**
- and vehicle speed less than **4 km/h.**
- and the 1st or 2nd gear is engaged
- and the throttle position is greater than **45 %**
- and the power absorbed is greater than **2,500 W**

#### *Output conditions*

- delay of **9 seconds** expired
- or engine speed greater than or equal to **2,800 rpm.**
- or vehicle speed greater than **19 km/h.**

### Recovery of power at full load when moving the vehicle

The air conditioning compressor is engaged for **9 seconds** if the following conditions are met to help initial movement of the vehicle:

#### *Input conditions*

- engine speed greater than **2,000 rpm.**
- and vehicle speed less than **4 km/h.**
- and the throttle position is greater than **35 %**
- and the 1st gear is engaged

#### *Output conditions*

- delay of **9 seconds** expired
- or vehicle speed greater than **24 km/h.**
- or change of gear in the gearbox

### POWER STEERING PRESSURE SWITCH - INJECTION COMPUTER CONNECTION

The injection computer receives information from the power steering pressure switch (which can be displayed on the diagnostic equipment). This depends on the pressure in the hydraulic circuit and on the fluidity of the power steering fluid. The higher the pressure, the more energy is absorbed by the power assisted steering pump.

The injection computer keeps the engine speed at **750 rpm**.

### CORRECTION IN LINE WITH THE BATTERY VOLTAGE AND THE ELECTRICAL BALANCE

The aim of this correction is to compensate for the drop in voltage due to operation of a power consuming component when the battery is at low charge. To do this, the idle speed is increased, thus permitting the rotation of the alternator to be increased and, consequently, the battery voltage.

The lower the voltage, the greater the degree of correction. Correction of the engine speed is therefore variable. It begins when the voltage drops to below **12.7 Volts**. Correction begins at idle speed and may reach a maximum of **912 rpm**

### CORRECTION IN LINE WITH THE HEATED WINDSCREEN

When the injection computer receives information that the heated windscreen has been selected.

When the coolant temperature is less than **50 °C**, the idle speed is fixed at **842 rpm**.

**NOTE:** after starting from cold and a long period of operation at idle speed it is possible to notice a sharp drop in engine speed of approximately **250 rpm**. This drop in engine speed is due to the presence of a starter motor.

### ADAPTIVE IDLE SPEED CORRECTION

This correction only takes effect if the coolant temperature is greater than **75 °C**, **60 seconds** after starting the engine and if the nominal idle regulation phase is active.

### VALUES FOR IDLE RCO AND ADAPTIVE CORRECTION

PARAMETER	K4J 712 Engine
Nominal idle speed	X = 750 rpm
Idle RCO	6 % <= X <= 22 %
Idle RCO adaptation value	Limit: – minimum: - 4 % – maximum: 4 %

Every time the engine is switched off, the computer resets the stepper motor to its lower limit.

**IMPORTANT:** it is imperative, after erasing the computer memory, that you start the engine and then switch it off to permit the potentiometer to be reset. Start the engine again and let it run at idle so that the adaptive correction can take place.

The **K4J 712** (EURO 96) engine is fitted with a single oxygen sensor located upstream of the catalytic converter.

### HEATING THE SENSOR

The oxygen sensor is reheated by the injection computer from the time of starting the engine.

Heating of the oxygen sensor is stopped:

- when the vehicle speed is greater than **140 km/h**, (value given for information),
- in line with the load and the engine speed.

### UPSTREAM SENSOR VOLTAGE

The value read on the diagnostic equipment (except XR25) under the parameter: "**Upstream sensor voltage**" represents the voltage supplied to the computer by the oxygen sensor located upstream of the catalytic converter. It is expressed in millivolts.

For mixture regulation the voltage should fluctuate quickly between two values:

- **150 ± 100 mV** for a lean mixture,
- **750 ± 100 mV** for a rich mixture.

The smaller the gap between the upper and lower values, the poorer the information from the sensor (the gap is usually at least **500 mV**).

**NOTE:** in case of a small gap, check the heating of the sensor. It is not necessary to take note of the value read under the parameter "**Downstream sensor voltage**" as this vehicle is not fitted with a downstream sensor.

### MIXTURE CORRECTION

The value read on the diagnostic equipment under the parameter: "Mixture correction" represents the average of the richness corrections brought by the computer in line with the richness of the fuel mixture seen by the oxygen sensor located upstream of the catalytic converter.

The correction value has a mid-point of **128** and limits of **0** and **255**:

- value less than **128**: leaner mixture required,
- value greater than **128**: richer mixture required.

### ENTRY INTO MIXTURE REGULATION MODE

Entry into the mixture regulation takes effect after given starting delay if the coolant temperature is greater than **10 °C**, at no load position and if the upstream sensor is ready (sufficiently hot). This starting delay is between **16 seconds** and **4 minutes**.

Before entry into the mixture regulation phase the value of the parameter is **128**.

### Non-loop mode

When mixture regulation is taking place, the operating phases during which the computer does not take account of the voltage value supplied by the sensor are:

- at full load,
- at high acceleration,
- at no load information deceleration,
- when the oxygen sensor is faulty.

### DEFECT MODE IN THE EVENT OF AN OXYGEN SENSOR FAULT

If the voltage from the oxygen sensor is incorrect (varies only slightly or not at all) during the mixture regulation, the computer will only enter defect mode if the fault has been present for approximately **2 minutes**. In this case only, the fault will be memorised, and the "mixture correction" parameter is **128**.

If a fault in the oxygen sensor is detected and if the fault has already been memorised the system goes directly into an open loop.

PRINCIPLE

In the looping phase, the mixture regulation corrects the injection time to obtain a dosage as close as possible to mixture 1. The correction value is close to 128, with limit values of 0 and 255.

The adaptive correction makes it possible to offset the injection map to realign the mixture regulation to 128.

It is therefore necessary, following the reinitialisation of the computer (return to 128 of the adaptive corrections), to carry out a special road test.

PARAMETER	K4J 712 Engine
Mixture correction	50 <= X <= 205
Operating adaptive mixture	80 <= X <= 176
Idle adaptive mixture	80 <= X <= 176

ROAD TEST

Conditions:

- warm engine (coolant temperature > 75 °C ),
- disconnect the canister solenoid valve or plug the engine fuel vapour inlet,
- do not exceed an engine speed of 4,600 rpm.

Pressure zones which must be passed during the test

	Zone n° 1 (mbars)	Zone n° 2 (mbars)	Zone n° 3 (mbars)	Zone n° 4 (mbars)	Zone n° 5 (mbars)
K4J 712	258- — — —457- — — —	535- — — —	613- — — —	691- — — —	813
	Average 357	Average 496	Average 574	Average 652	Average 752

Following this test the corrections will be operational.

The test must be followed by normal, smooth and varied driving for a distance of 5 to 10 kilometres.

After the test, read the adaptive mixture values. Initially 128, they may have changed. If not, repeat the test ensuring that the test conditions are observed.

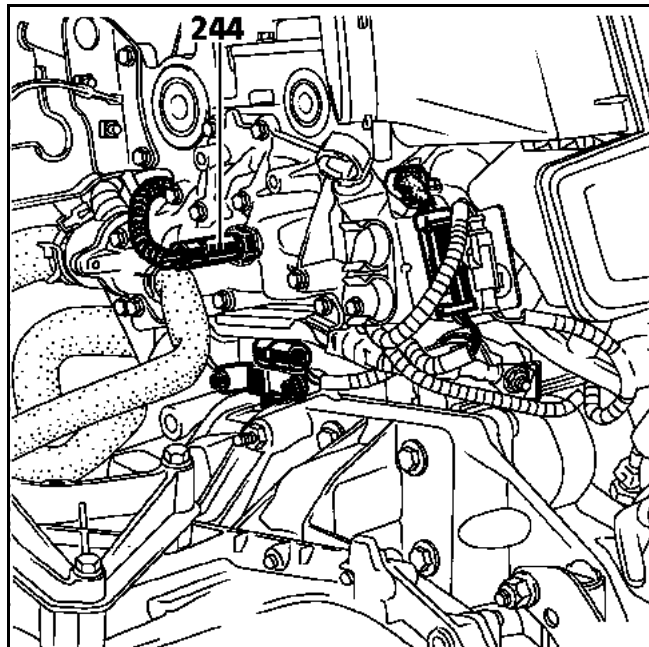
INTERPRETATION OF INFORMATION GATHERED DURING A ROAD TEST

In the case of a lack of fuel (injectors clogged, pressure and flow of fuel too low, ...), the mixture regulation increases to obtain a mixture as close as possible to 1 and the adaptive mixture correction increases until the mixture correction again fluctuates at around 128.

In the event of an excessive amount of fuel, the reasoning is reversed: the mixture regulation decreases and the adaptive mixture correction also decreases to realign the mixture correction at around 128.

### CCTM

This system is fitted with a single coolant temperature sensor which is used by the injection, the fan assembly and the temperature warning light on the instrument panel.



- 244** Three-way temperature sensor: two for the injection and one for the instrument panel display.

### ANTIPERCOLATION OPERATION

The antipercolation system is **controlled by the injection computer**.

The coolant temperature information used is from the injection system.

After switching the engine off the system enters a monitoring mode. If the coolant temperature passes the threshold of **102 °C during the 2 minutes** following stopping the engine, fan assembly is controlled at low speed.

If the coolant temperature rises above **96 °C** again, the fan assembly relay is cut. (The fan assembly cannot be controlled for more than **10 minutes**).

### ENGINE FAN ASSEMBLY OPERATION

The fan assembly is controlled:

- at low speed if the coolant temperature exceeds **99 °C** and stops when the temperature falls below **96 °C**,
- at high speed if the coolant temperature exceeds **102 °C** and stops when the temperature falls below **100 °C**,
- at low speed if the air conditioning is selected on the instrument panel.

### COOLANT TEMPERATURE WARNING LIGHT

The coolant temperature warning light is lit up if the coolant temperature exceeds **121 °C** and goes out when the temperature falls below **118 °C**.

### ALLOCATION OF INJECTION COMPUTER INPUTS AND OUTPUTS

1	→	IGNITION COIL 2-3 CONTROL
3	---	POWER EARTH
4	→	CANISTER PURGE CONTROL
8	→	FAN ASSEMBLY 1 CCTM CONTROL
9	→	COOLANT TEMPERATURE WARNING LIGHT
10	→	AC COMPRESSOR CONTROL
11	→	FUEL CONSUMPTION INFORMATION
12	→	IDLE REGULATOR CONTROL (TRACK B)
13	←	COOLANT TEMPERATURE SENSOR INPUT
15	---	PRESSURE SENSOR EARTH
16	←	PRESSURE COLLECTOR SENSOR SIGNAL INPUT
19	---	PINKING SENSOR SCREENING
20	←	PINKING SENSOR SIGNAL INPUT
23	←	AIR CONDITIONING SIGNAL (ABSORBED POWER)
24	←	ENGINE SPEED SENSOR SIGNAL INPUT
26	---	DIAGNOSTICS
28	---	POWER EARTH
29	---	+ AFTER IGNITION FEED
30	---	+ BEFORE IGNITION FEED
32	→	IGNITION COIL 1-4 CONTROL
33	---	POWER EARTH
34	→	OBD WARNING LIGHT CONTROL (OBD VERSION)
38	→	FAN ASSEMBLY RELAY 2 CCTM CONTROL
39	→	ACTUATOR RELAY CONTROL
41	→	IDLE REGULATOR CONTROL (TRACK A)
42	→	IDLE REGULATOR CONTROL (TRACK C)
43	←	THROTTLE POTENTIOMETER SIGNAL
44	←	DOWNSTREAM OXYGEN SENSOR SIGNAL INPUT (OBD VERSION)
45	←	UPSTREAM OXYGEN SENSOR SIGNAL INPUT
49	←	AIR TEMPERATURE SENSOR INPUT
53	←	VEHICLE SPEED INPUT
54	←	ENGINE SPEED SENSOR SIGNAL INPUT
56	---	DIAGNOSTICS
58	←	IMMOBILISER SYSTEM
59	→	INJECTOR 1 CONTROL
60	→	INJECTOR 3 CONTROL
63	→	UPSTREAM OXYGEN SENSOR HEATING CONTROL
65	→	DOWNSTREAM OXYGEN SENSOR HEATING CONTROL (OBD VERSION)
66	---	+ AFTER IGNITION FEED
68	→	FUEL PUMP RELAY CONTROL
70	→	ENGINE SPEED INFORMATION
72	→	IDLE REGULATOR CONTROL (TRACK D)
73	---	COOLANT TEMPERATURE SENSOR EARTH
74	---	THROTTLE POTENTIOMETER SUPPLY
75	---	THROTTLE POTENTIOMETER EARTH
76	---	DOWNSTREAM OXYGEN SENSOR HEATING EARTH (OBD)
77	---	AIR TEMPERATURE SENSOR EARTH
78	---	PRESSURE SENSOR SUPPLY
79	---	PINKING SENSOR EARTH
80	---	OXYGEN SENSOR EARTH
85	←	POWER ASSISTED STEERING PRESSURE SWITCH
88	←	ELECTRIC HEATED WINDSCREEN INFORMATION (DEPENDING ON VEHICLE)
89	→	INJECTOR 4 CONTROL
90	→	INJECTOR 2 CONTROL

### PARTS LIST

107	Battery
118	ABS electronic control unit
120	Injection computer
146	Pinking sensor
147	Air temperature sensor
193, 194, 195, 196	Injectors
199	Fuel gauge
222	Throttle potentiometer
224	Power assisted steering pressostat
225	Diagnostic socket
234	High speed fan assembly relay
236	Fuel pump relay
238	Injection locking relay
242	Oxygen sensor
244	Coolant temperature sensor
247	Instrument panel
250	Speed sensor
272	Air temperature sensor
273	Speed threshold sensor
371	Canister solenoid valve
419	AC control box
565	Throttle body (idle regulation)
597	Engine and relay fuse box
645	Passenger compartment electronic control unit
700	Low speed fan assembly relay
777	Power fuse board
791, 792, 793, 794	Ignition coils
927	Impact switch

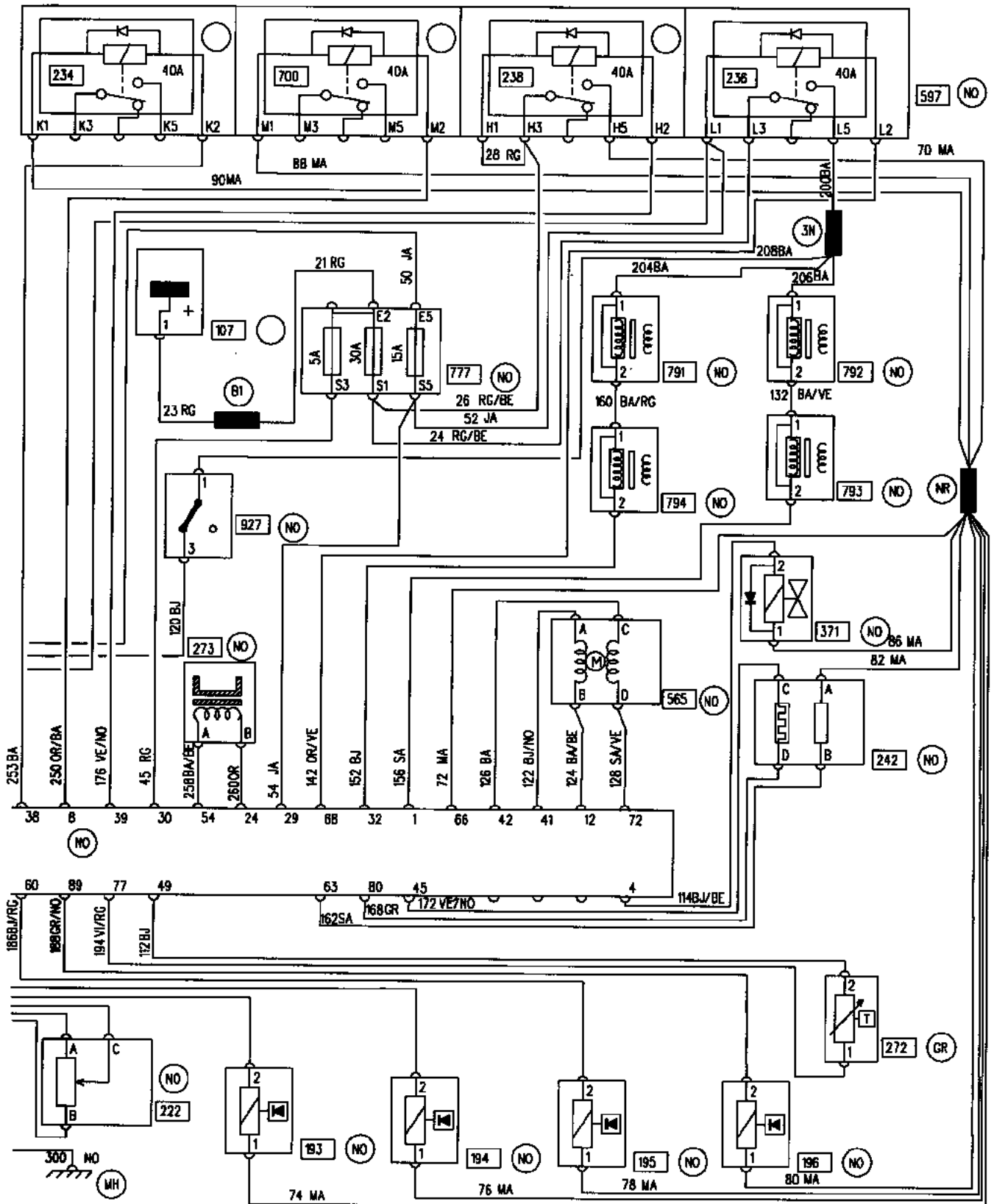




# INJECTION

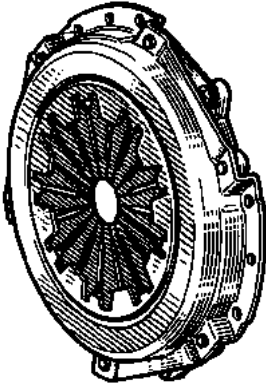
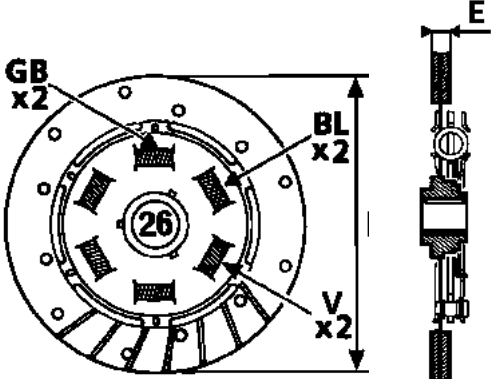
## Wiring diagram

17



CLUTCH  
Cover - Disc

20

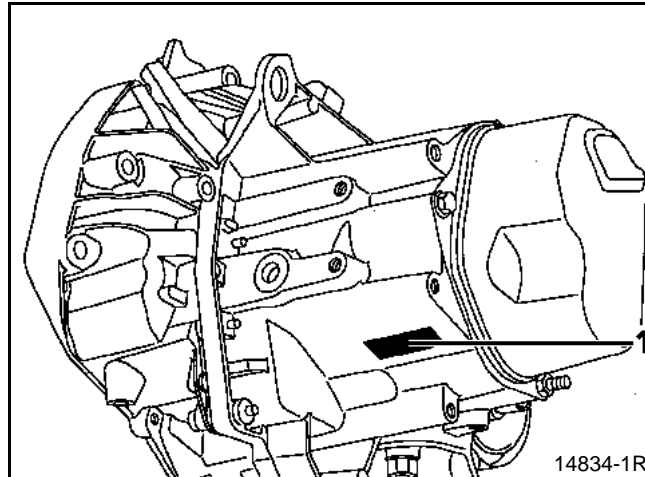
VEHICLE TYPE	ENGINE TYPE	COVER	DISC
CB0L BB0L	K4J	  200 CPO 3500	<p><b>26 splines</b> D = 200 mm E = 6.8 mm</p> <p>GB: Grey Blue BL: Light Blue V: Green</p> 

Cable-controlled dry-operating single disc clutch.

Constant pressure clutch thrust bearing.

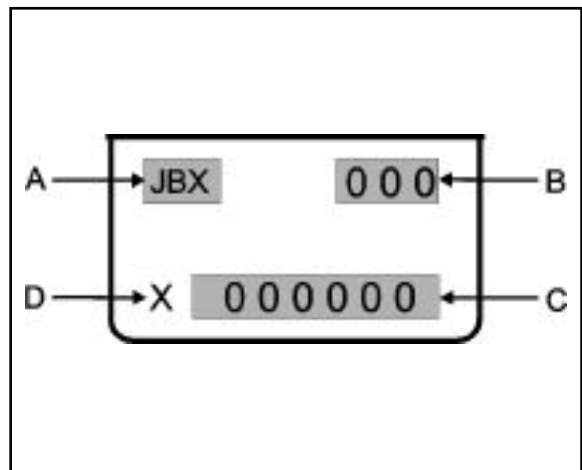
"CLIO" vehicles with **K4J** engines are fitted with **JB1** manual gearboxes.

Workshop Repair Manual "**B.V. JB-JC**" deals with the complete repair of this component.



A mark (1), located on the gearbox casing, indicates:

- A** Type of gearbox
- B** Gearbox index
- C** Manufacturing number
- D** Factory of manufacture



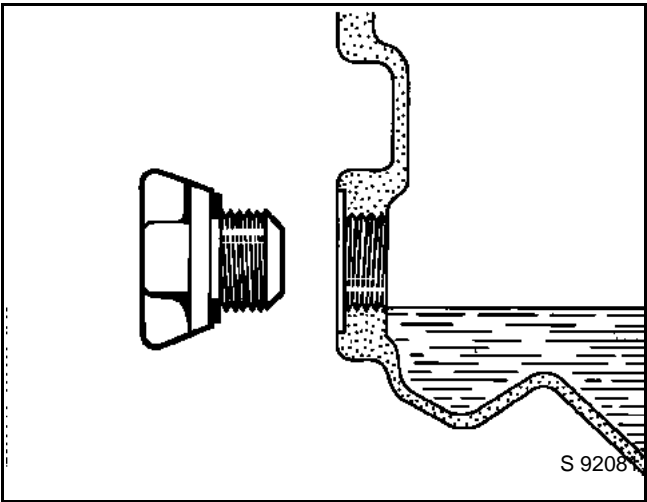
JB1									
Suffix	Type	Differential ratio	Speedometer gear	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	Reverse
928	CB0L BB0L	15	21	11	22	28	34	39	11
		--	--	--	--	--	--	--	--
		61	19	37	41	37	35	31	39

CAPACITY (in litres)

5 gear box	
JB1	3.4

Viscosity grade
TRX 75W 80W

**CHECKING THE LEVEL**



Filling is by overflow

### CONSUMABLES

- Compressor oil:  
**SANDEN SP 10: 135 cm<sup>3</sup>**
- Refrigerant:  
**R134a: 660 ± 35 g**
- Compressor:  
**SANDEN SD 6V12**

Disconnect the battery.

Drain the **R134a** cooling circuit using the filling equipment (refer to the procedure described in the "**Air conditioning**" manual).

### NEW HIGH PRESSURE COMPRESSOR - CONDENSER PIPES

#### REMOVAL

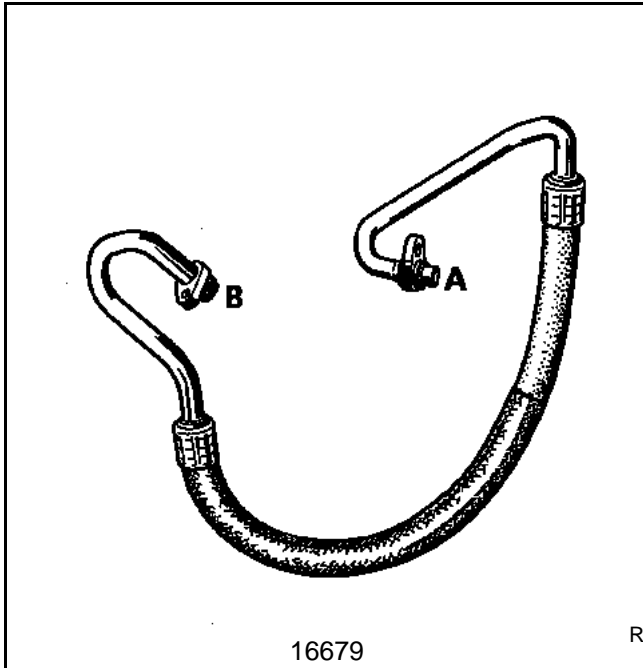
Remove the mounting bolt on the compressor.

Fit plugs to the compressor and the pipe.

Remove the mounting bolt on the condenser.

Remove the pipe.

Fit plugs to the condenser and the pipe.



- A Condenser outlet
- B Compressor outlet

#### REFITTING

Refitting is the reverse of removal.

**NOTE:** when refitting the connecting pipes on the compressor, it is imperative that you fit all the bolts, then bring them into contact before torque tightening them. The aim is to ensure that the pipe is positioned correctly so that it is not damaged at the cut off (1).

Check the condition of the seals and lubricate them with **P.A.G. SP 10** oil.

When changing a pipe, add **10 ml** of **SP 10** oil or when a pipe bursts (rapid leak), add **100 ml**.