

# Kangoo Clio

**N.T. 3338A**

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**XC0H - XB0S**

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## **Special notes for vehicles with the E7J engine equipped with automatic transmission DP0**

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**For special notes on injection, see Technical Note 3214A on the E7J 634 engine.**

**For the sections not described in this Technical Note, refer to MR 325 and 337.**

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**77 11 292 282**

**NOVEMBER 1999**

**EDITION ANGLAISE**

"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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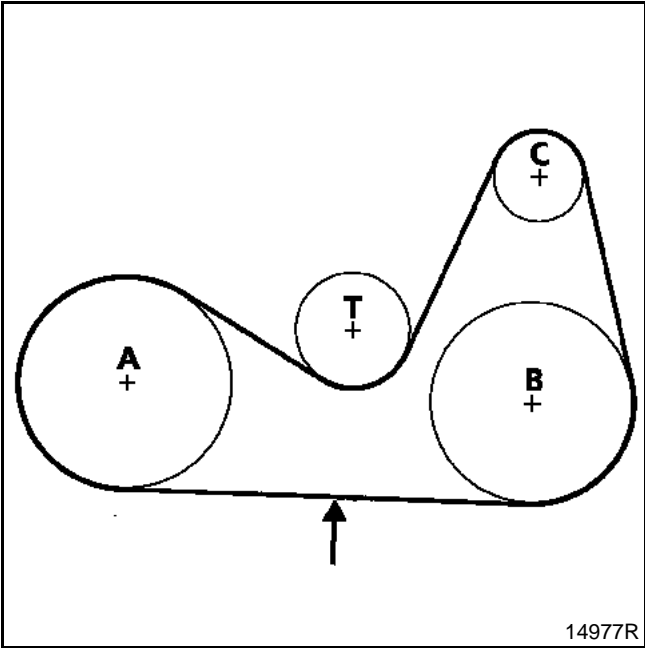
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SPECIAL TOOLING REQUIRED		
Mot.	1273	Belt tension meter
Mot	1505	Belt tension setting tool

ALTERNATOR AND POWER STEERING

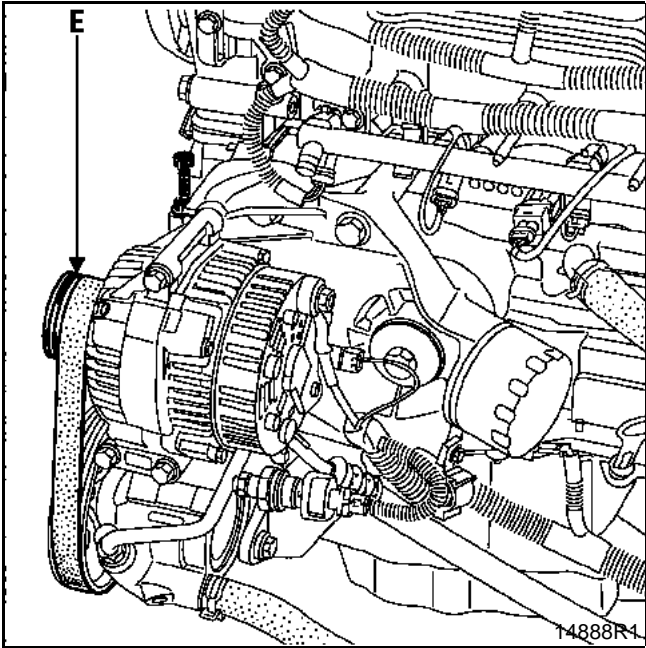


Tension	Multi-tooth power assisted steering belt	Tension (Hertz)
Fitting	108 ± 6	190 ± 10
Operating minimum	60	-

- A** Crankshaft  
**B** Power assisted steering pump  
**C** Alternator  
**T** Tension roller

→ Point for checking belt tension

**NOTE:** Refer to **Technical Note 3247A** for the procedure on how to use tool **Mot. 1505**.



**NOTE:** The accessories belt has five teeth but the pulleys for the alternator, the PAS pump and the crankshaft has six teeth; it is therefore essential to make sure that, when the belt is fitted, the tooth at the end of the pulleys (E) remains "free".

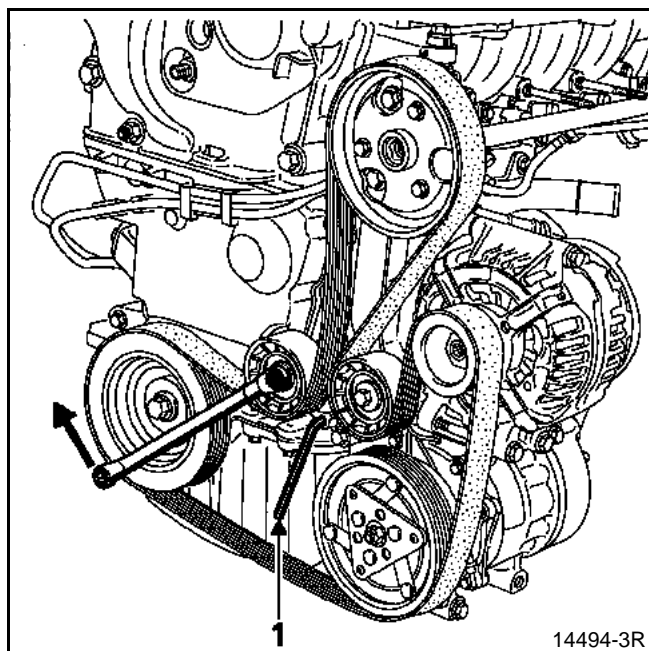
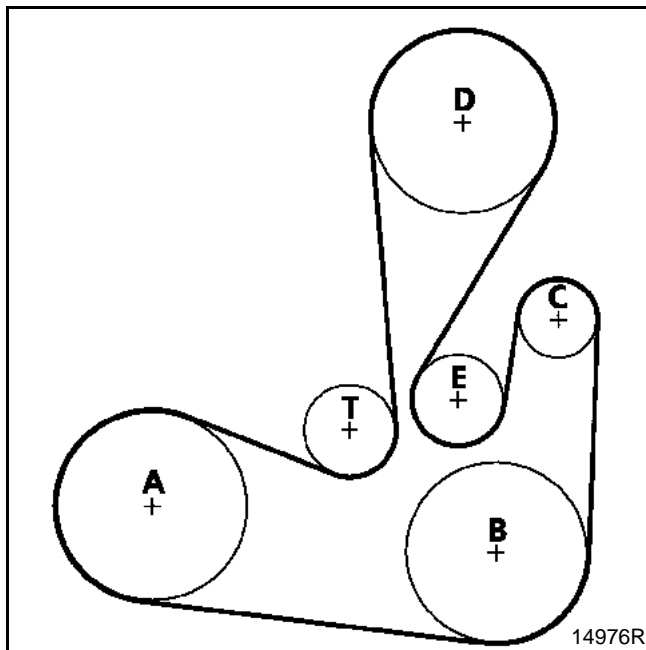
## REMOVAL

Put the vehicle on a 2 post lift.

Disconnect the battery.

Remove the wheel and the front right-hand wheel arch liner.

Swivel the automatic belt tensioner in the direction indicated below using a **ring wrench offset by 13 mm**. Flange mount the tension roller using a **6 mm hexagonal wrench (1)**.

ALTERNATOR, POWER STEERING AND AIR  
CONDITIONING

- A Crankshaft
- B Air conditioning compressor
- C Alternator
- D Power assisted steering pump
- E Belt tensioner
- T Automatic tension roller

## REFITTING

Refit in reverse order to removal.

### SPECIAL TOOLING REQUIRED

Mot.	1273	Tool for checking belt tension
Mot.	1505	Belt tension setting tool

### REMOVAL

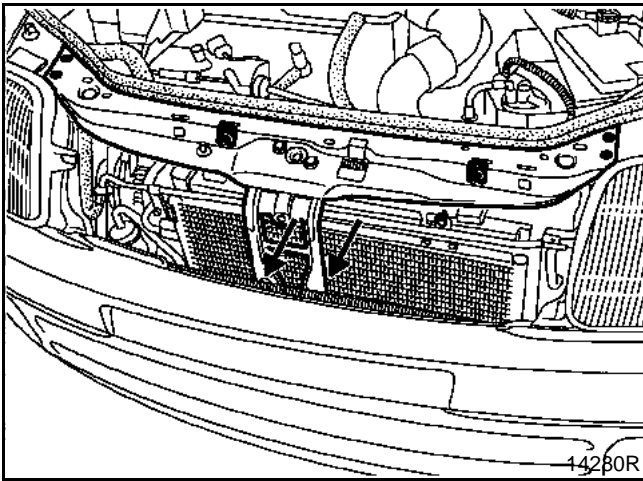
Put the vehicle on a 2 post lift.

Disconnect the battery.

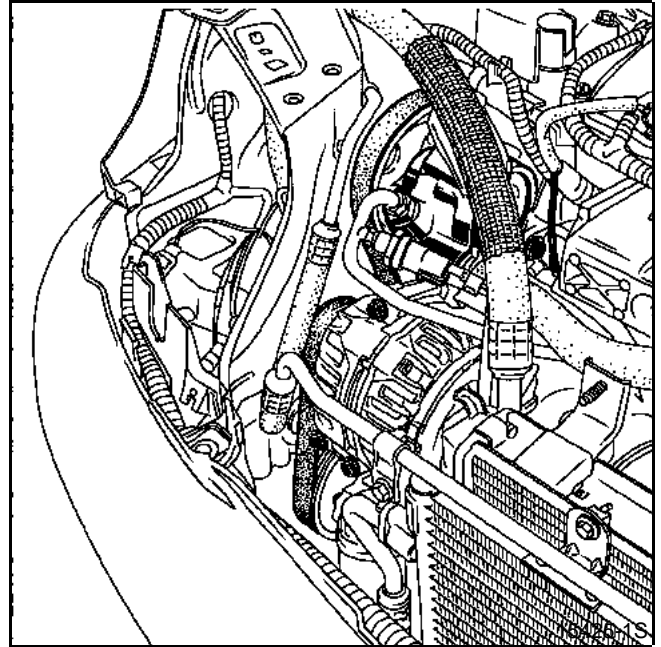
#### Special points on vehicles equipped with air conditioning

Remove:

- the front right-hand wheel and the right and left wheel arch liners,
- the bumper shield,
- the upper cross member (by unscrewing the two lower mounting bolts) and place it on the engine,



- the accessories belt (see section 07 "Accessories belt tension"),
- the **PAS** pump pulley,
- the **PAS** pump mountings on its bracket,



- the alternator by moving away the **PAS** pump.

**NOTE:** On vehicles without air conditioning only the accessories belt has to be removed.

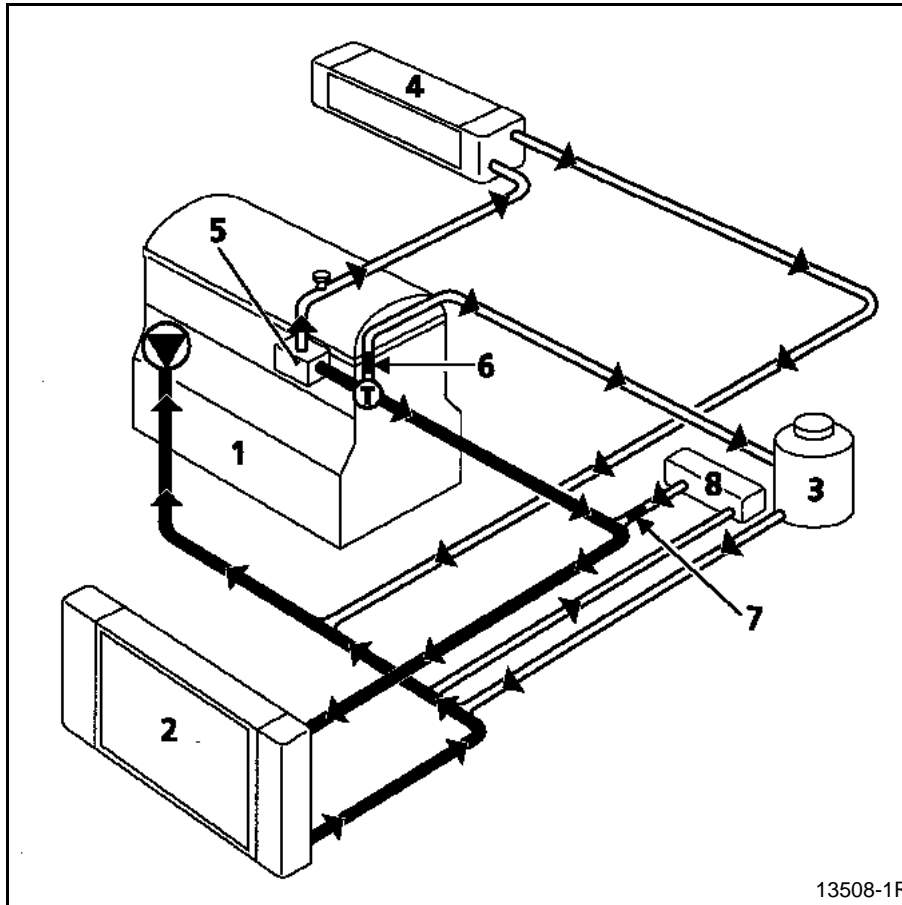
### REFITTING

Refit in reverse order to removal.

Refer to section 07 "**Accessories belt tension**" for the tensioning procedure.

# COOLING SYSTEM Diagram

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Water pump



Thermostat



Bleed screw



Temperature switch

The expansion bottle valve rating is **1.2 bar** (colour: brown).

- 1 Engine
- 2 Radiator
- 3 "Hot" bottle with permanent degassing
- 4 Heater matrix
- 5 Thermostat mounting
- 6 **3 mm** diameter restriction
- 7 **8 mm** diameter restriction
- 8 Oil heat exchanger

The fans are controlled at high speed by the injection computer if the coolant temperature is greater than **99 °C**.

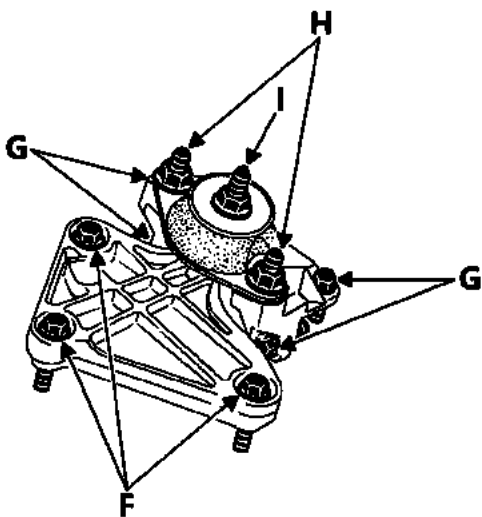
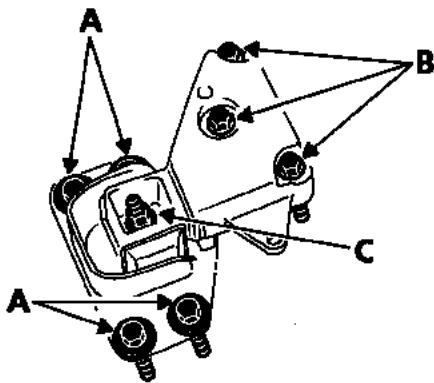
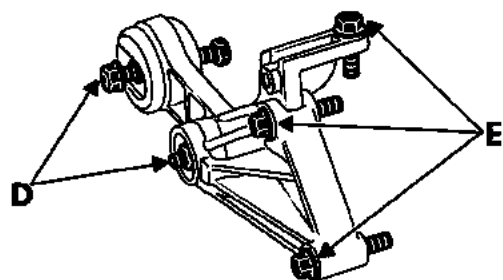
If the coolant temperature is lower than **96 °C**, the fans stop operating.

TIGHTENING TORQUE (daN.m)



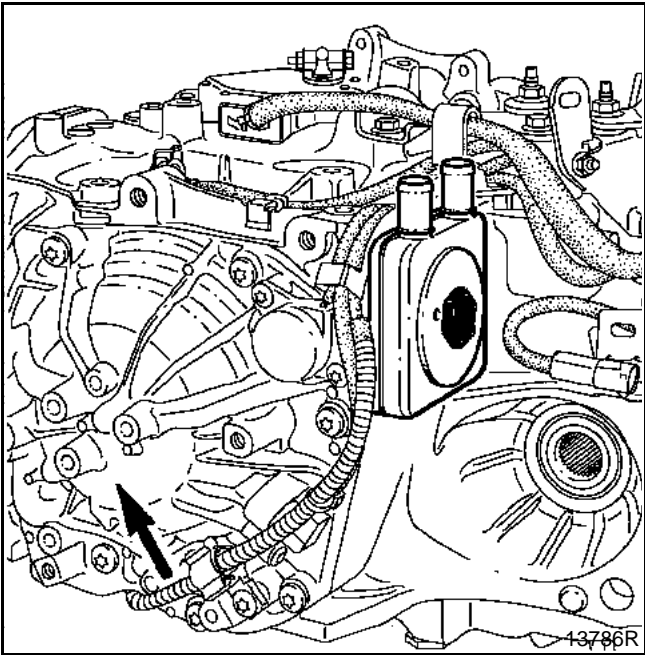
A	6.2
B	6.2
C	4.4
D	6.2

E	6.2
F	6.2
G	2.1
H	2.1
I	6.2



VEHICLE	AT TYPE	ENGINE	STEPDOWN	FINAL DRIVE
BB0S CB0S	DP0 027	E7J 635	52/67	23/70
FC0H	DP0 027	E7J 635	52/67	23/70

Automatic transmission identification.



SPECIFICATIONS

**KANGOO** and **CLIO** vehicles equipped with **DP0** automatic transmission systems known as: "**Shift Lock**" and "**Lock Up**".

"**Shift Lock**" prevents the gear selector lever being moved without the brake pedal being applied at the same time. **For breakdown procedures when the battery is faulty, refer to the driver's handbook.**

"**Lock Up**" or converter bridging connects the automatic transmission directly to the engine. This function is carried out by a "**mini clutch**" in the converter. "**Lock Up**" is controlled by the **DP0** computer.

Gear ratios (epicyclical gear train output) :

1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	Reverse
2.724	1.499	1	0.71	2.455

TOWING

In all cases, it is better that the vehicle is towed on a trailer or with the front wheels raised. However, if this is not possible, the vehicle may, in exceptional circumstances, be towed at a speed not exceeding **30 mph (50 km/h)** and over a distance of not more than **30 miles (50 km)** (lever in **N**).

TOWING LOAD

The load being towed **MUST** be less than **2856 lbs (1300 kg)** with a braked trailer (driver only).



DESCRIPTION	COMPONENT CONCERNED
MOLYKOTE BR2 grease	Converter centring device
Loctite FRENBLOC	Brake calliper mounting bolt

Parts to be systematically replaced

Parts to be replaced once they have been removed:

- self-locking nuts,
- seals,
- rubber seals.

Oil

The DP0 automatic transmission **is lubricated for life** and does not require attention.

Only the level should be topped up in the event of a slight leak.

**Oil specified:**

**ELF RENAULTMATIC D3 SYN (to be ordered from ELF) DEXRON III** standard.


**Capacity in litres**

	Mechanism
Total volume	6

# AUTOMATIC TRANSMISSION

## Draining the oil

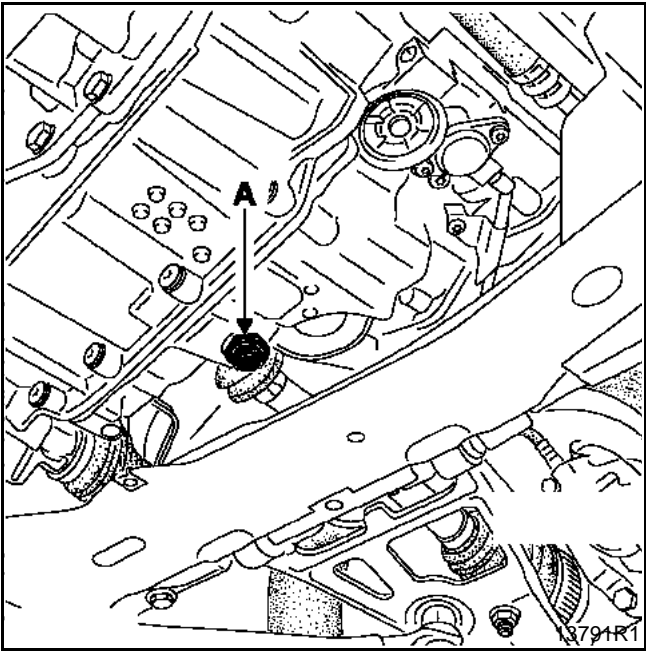
23

TIGHTENING TORQUES (in daN.m)		
Drain plug	2.5	
Topping up overflow	3.5	

### DRAINING

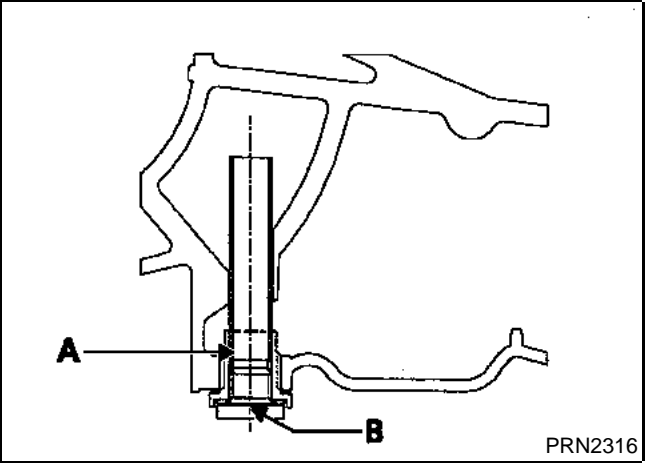
It is best to drain the automatic transmission when the oil is warm (60°C maximum), to eliminate the maximum of impurities.

Draining is carried out by removing the plug (A).



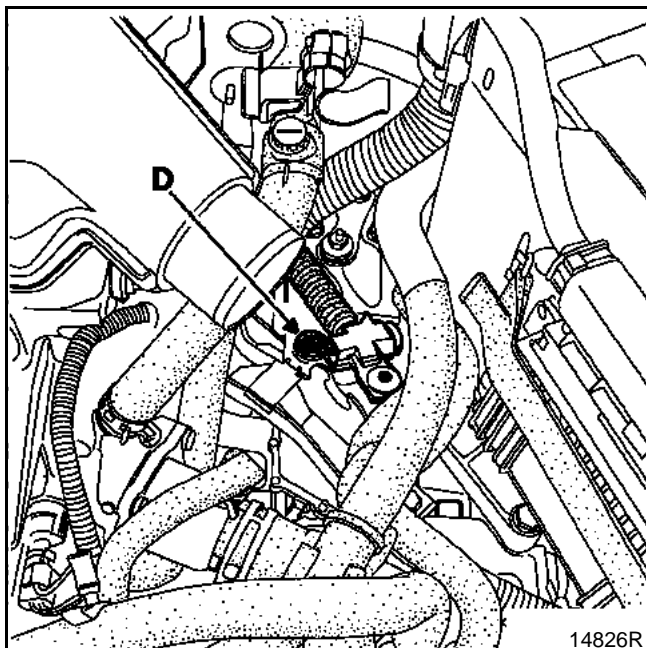
### Special notes:

- The plug has two functions:
- the oil is drained via the plug (A),
  - oil is topped up via the overflow (B).



### FILLING

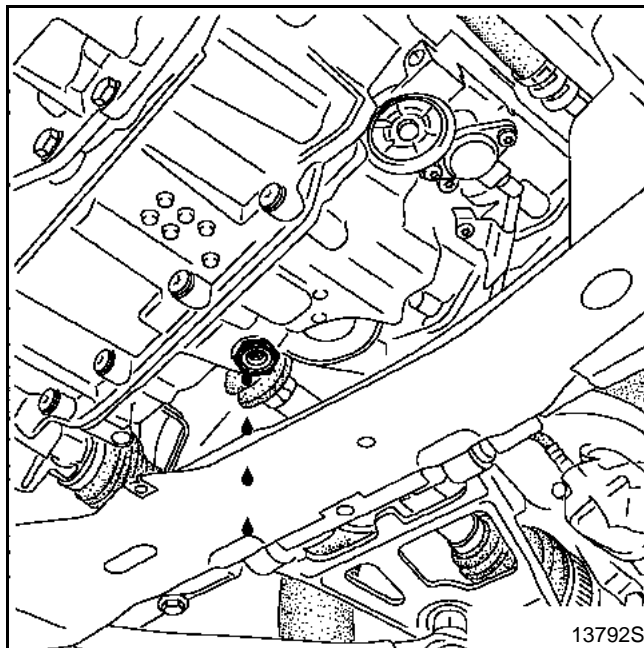
Hole (D) is used to fill up the unit with oil.



Use a funnel with a **15/100** filter to prevent impurities from entering the system.

### FILLING PROCEDURE

- 1 - Ensure that the vehicle is parked on level ground.
- 2 - Fill the automatic transmission with **3.5 litres** of new oil.
- 3 - Run the engine at idle speed.
- 4 - Connect the diagnostic equipment and make a connection with the automatic transmission computer (Enter **D14** on the **XR25**).
- 5 - Monitor the gearbox oil temperature parameter (Enter **#04** on the **XR25**).
- 6 - When a temperature of **60 °C ± 1 °C** is reached, open the oil topping up plug.
- 7 - Position a container to collect a minimum of **0.1 litre** of surplus oil and wait until the oil runs out **drop by drop**.



- 8 - Close the oil topping up plug.

### PROCEDURE FOR CHECKING THE LEVEL OUTSIDE FILLING OPERATIONS

Checking the level **MUST** be carried out in accordance with the method described below:

- 1 - Ensure that the vehicle is parked on level ground.
- 2 - Fill the automatic transmission with **0.5 litre** of new oil.
- 3 - Run the engine at idle speed. Carry out operations **4, 5** and **6** described previously.

If the oil does not run out or if the quantity collected is less than **0.1 litre**; stop the engine, add **0.5 litre**, allow the transmission to cool to **50 °C** then carry out operations **3-4-5-6** again.

**IMPORTANT:** When replacing the oil, the electronic oil aging counter must be reset to zero (inside the computer). Enter the date of the oil change using the command "Write date of last after-sales operation" (**G74\*** on the **XR25**).

# AUTOMATIC TRANSMISSION

## Checking the converter setting point

23

Place the vehicle on a two post lift.

Raise the vehicle so that the wheels are a few centimetres off the ground.

Connect the diagnostic equipment.

NXR	XR25
Make a connection with the automatic transmission computer.	Put the <b>ISO</b> selector on <b>S8</b> .  Enter the <b>DP0 transmission code D14</b> then <b>#04</b> .

Monitor the gearbox temperature parameter.

The check should be carried out when the oil temperature is between **60°C** and **80°C**.

Start the engine and put the lever in D.

Monitor the engine speed parameter:

NXR	XR25
Make a connection with the computer.	Enter <b>#06</b>

Press the accelerator with the brakes applied. The front wheels should not turn.

**IMPORTANT:** Full load should not be maintained for more than **5 seconds**. Any longer than that and there is a **serious risk of damage** to the converter or the automatic transmission.

**IMPORTANT:** Once the measurement has been taken, release the accelerator and **keep the brakes applied until the engine speed is stabilised at idle speed** (risk of damage to the automatic transmission if this is not done).

Engine speed should stabilise at:

KANGOO	CLIO
<b>2500 ± 150 rpm</b>	<b>2600 ± 150 rpm</b>

The converter must be replaced if the setting point is outside the tolerance range.

**NOTE:** A setting point which is too low may be linked to a lack of engine power.

# AUTOMATIC TRANSMISSION

## Hydraulic distributor

23

### SPECIAL TOOLING REQUIRED

B. Vi. 1462 Bolt for adjusting leaf spring lever

### TIGHTENING TORQUES (in daN.m)



Cover mounting bolt	1
Distributor mounting bolt	0.75

### REMOVAL

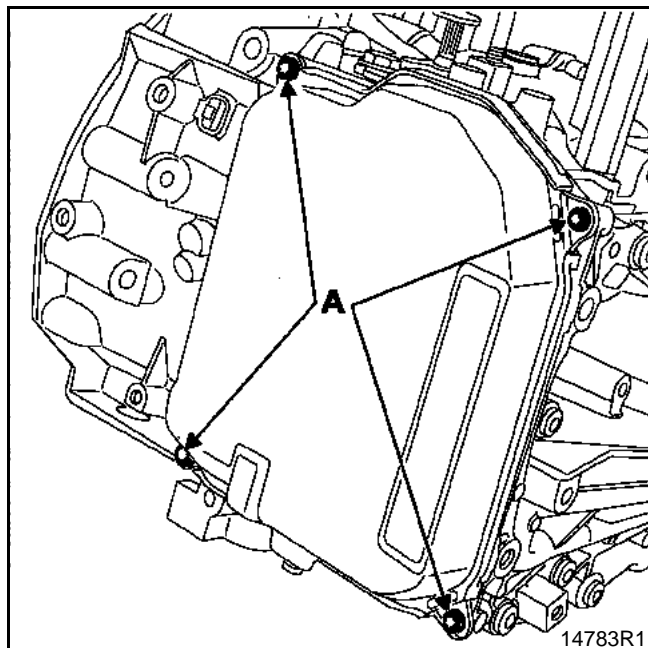
Place the vehicle on a two post lift.

Disconnect the battery.

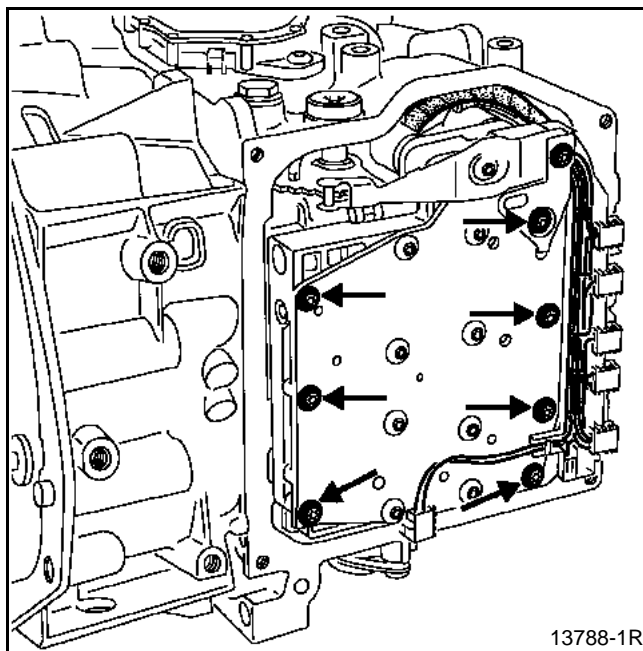
Drain the automatic transmission (see section concerned).

Remove:

- the air filter hose,
- the battery,
- the battery tray,
- the four mounting bolts (A) for the hydraulic distributor cover (be careful as oil may run out),



- the seven hydraulic distributor mounting bolts.



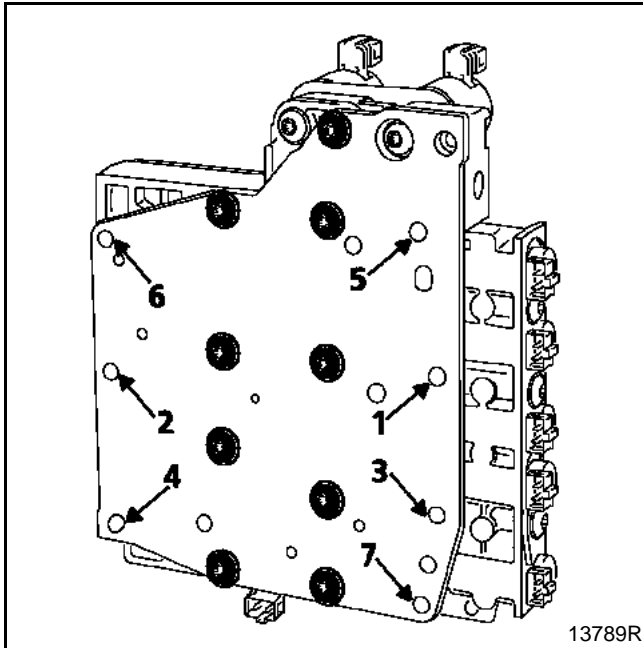
Disconnect the solenoid valve connectors and remove the hydraulic distributor.

### REFITTING

Position the hydraulic distributor and reconnect the solenoid valve connectors.

Refit the hydraulic distributor mounting bolts as indicated below:

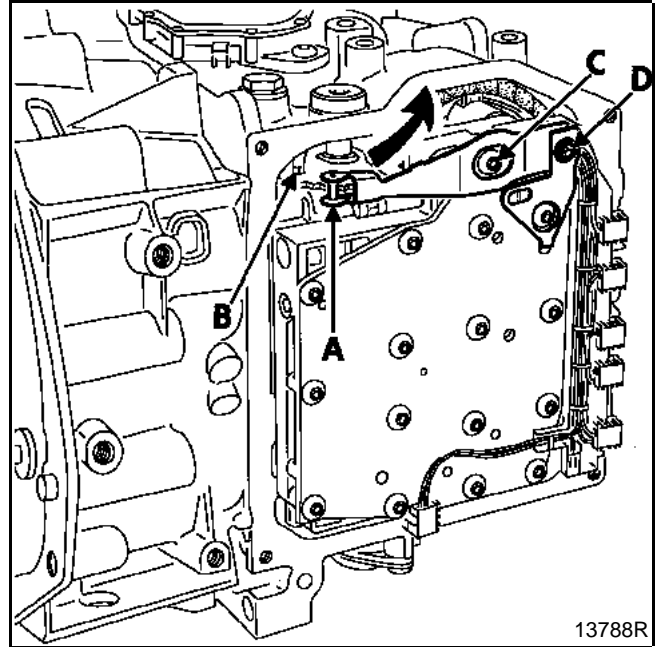
- Fit the distributor, precentring it using bolts (4) and (5).
- Fit the other bolts.
- Torque tighten the bolts to **0.75 daN.m** in the order 1 - 2 - 3 - 4 - 5 - 6 - 7.



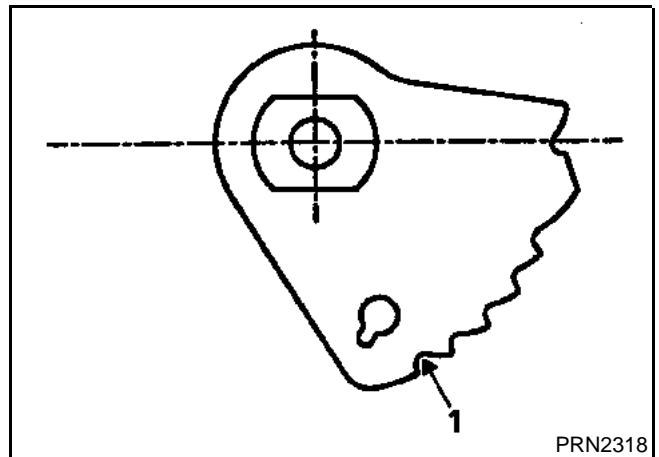
### ADJUSTING THE LEAF SPRING LEVER

Hold the **multi-function switch** lever in the extreme position (1<sup>st</sup> gear hold) using a plastic clip and a bolt in the mechanism housing.

Remove bolt (C).



Position the leaf spring lever by placing the roller (A) in the hollow of sector (B) corresponding to 1<sup>st</sup> gear hold.



Position tool **B.Vi. 1462** in place of bolt (C). Tighten the tool as far as possible, holding the leaf spring lever.

Tighten bolt (D) to the recommended torque.

Remove the tool, refit bolt (C) and tighten to the recommended torque.


If the hydraulic distributor is being replaced, set the auto-adaptive values to zero using the command **"Clear auto-adaptive values" (G80\*\* on the XR25)** and reset the oil aging counter on the automatic transmission computer to zero by entering the command **"Write date of gearbox oil change" (G74\* on the XR25)**.

# AUTOMATIC TRANSMISSION

## Automatic transmission (Removal - Refitting)

**23**

SPECIAL TOOLING REQUIRED		
Mot.	1040-01	Sub-frame mounting trolley
Mot.	1453	Engine support
T.Av.	476	Ball joint extractor
EQUIPMENT REQUIRED		
Component jack		

TIGHTENING TORQUES (in daN.m)	
Brake calliper bolts	3
Lower ball joint nut	6
Shock absorber base bolt	17
Torque reaction arm bolt	6
Bolts around gearbox and starter motor	4
Suspended mounting nut on automatic transmission	6
Wheel bolts	9
Track rod end nut	4
Converter mounting nut on starter plate	2,1
Modular connector mounting bolt	2

### SPECIAL NOTES FOR VEHICLES FITTED WITH A DRIVER'S AIRBAG

#### WARNING

In order to avoid any risk of damage to the rotary switch under the steering wheel, please comply with the following instructions:

- Before disconnecting the steering column and the steering rack, it is **ESSENTIAL** to hold the steering wheel in position with the wheels of the vehicle in straight-ahead position. A "steering wheel locking tool" must be used while this work is being carried out.
- If there is any doubt that the rotary switch is correctly centred, the steering wheel must be removed to apply the centring method described in section 88 on the "AIR BAG".

**REMINDER:** in this case, only qualified personnel who have received training may carry out the operation.

### REMOVAL

Place the vehicle on a two post lift.

Remove the front wheels.

Disconnect:

- the battery,
- the computers.

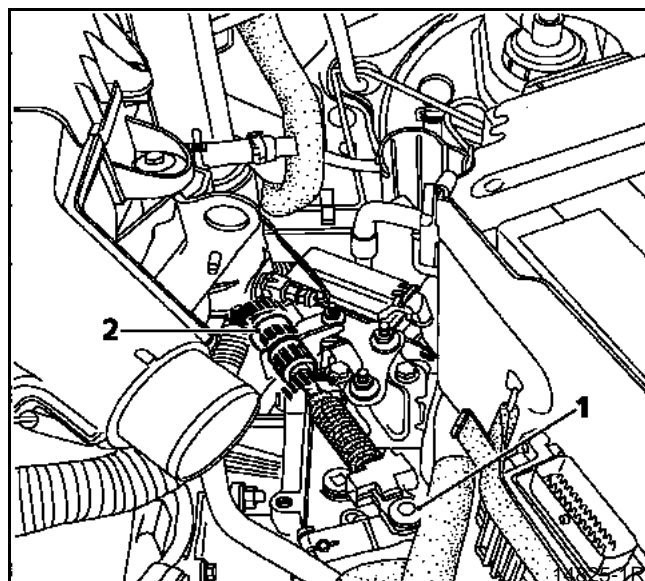
Remove:

- the air filter hose,
- the battery,
- the computers,
- the battery tray.

Disconnect:

- the ball joint (1) from the **multifunction switch** cable,
- the **multifunction switch** cable (2) by releasing the cable sleeve.

**NOTE:** Do not move the orange ring during this operation. This could break during removal or refitting. If this happens, do not replace the control cable, as the absence of this component will not affect the operation of the system.



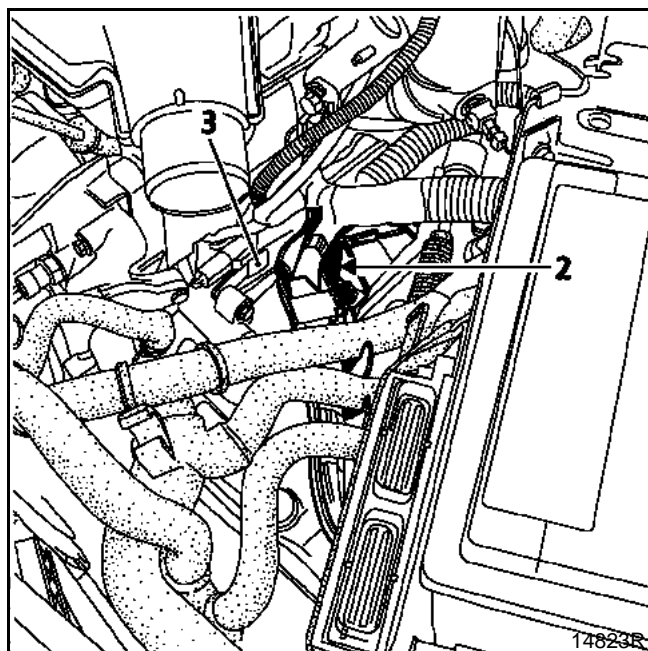
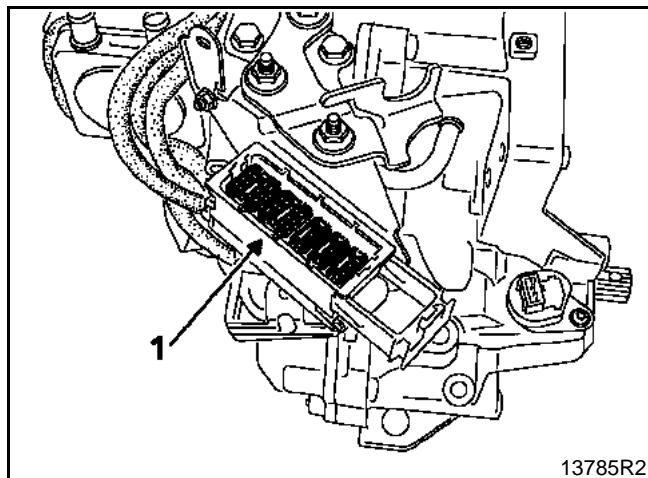
# AUTOMATIC TRANSMISSION

## Automatic transmission (Removal - Refitting)

23

Disconnect the modular connector (1) by releasing the slide valve from the connector.

**IMPORTANT:** Protect the connector by putting it into a waterproof plastic bag.



Position the hose clamps and disconnect the exchanger.

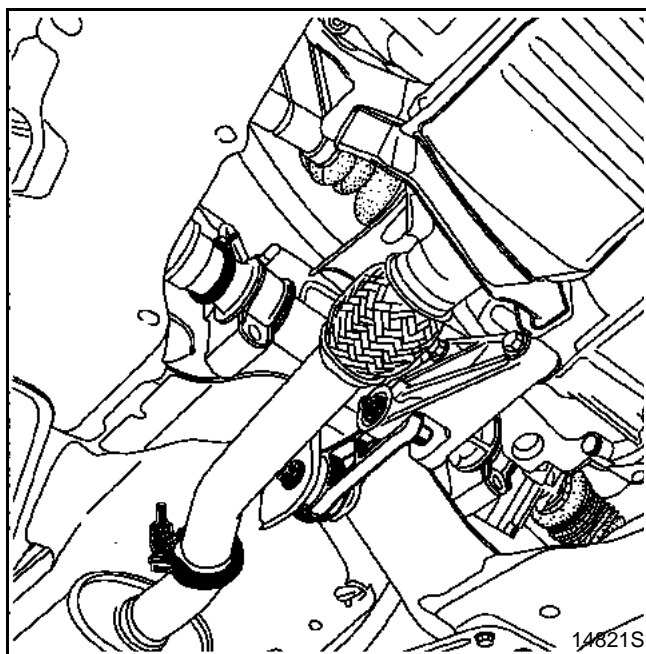
Remove:

- the engine wiring mounting bolts,
- the wiring mounting (2),
- the TDC sensor (3).

Disconnect the oxygen sensor.

Remove:

- the left-hand drive shaft,
- the right-hand drive shaft,
- the steering box mountings (attach it so that it does not obstruct anything else, without damaging the power assisted steering pipes).





# AUTOMATIC TRANSMISSION

## Automatic transmission (Removal - Refitting)

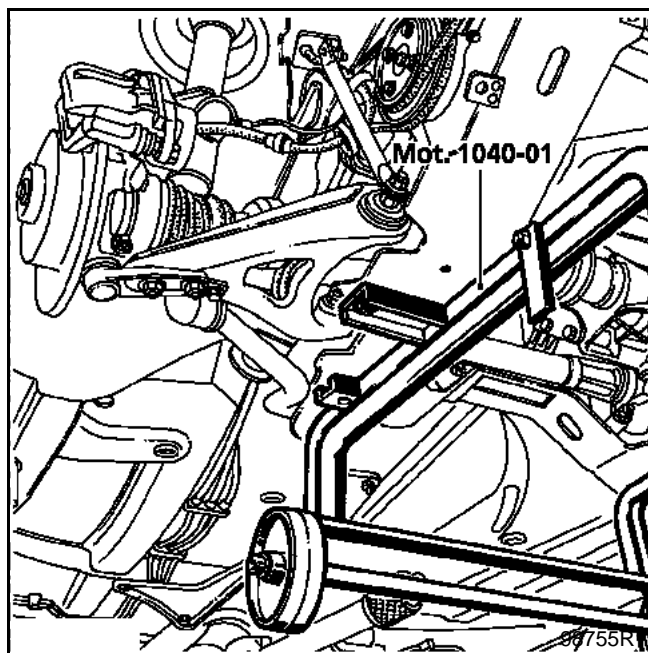
23

Disconnect the speed sensor connector.

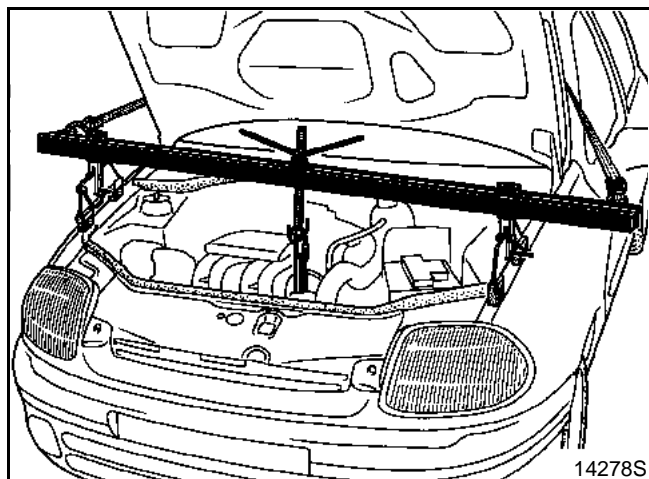
Remove:

- the lower engine/manifold bracket,
- the starter motor,
- the torque reaction arm,
- the exhaust downpipe.

Fit the sub-frame mounting trolley (**Mot. 1410-01**).



Fit the engine mounting tool.



Attach the cooling assembly and remove the engine subframe.

Turn the crankshaft clockwise to gain access to the three starter plate/converter connecting nuts and remove them.

Remove:

- the gearbox mounting,
- the earth strap on the gearbox.

Tilt the engine/automatic transmission assembly as far as possible downwards.

**IMPORTANT:** Be careful not to damage the air conditioning compressor.

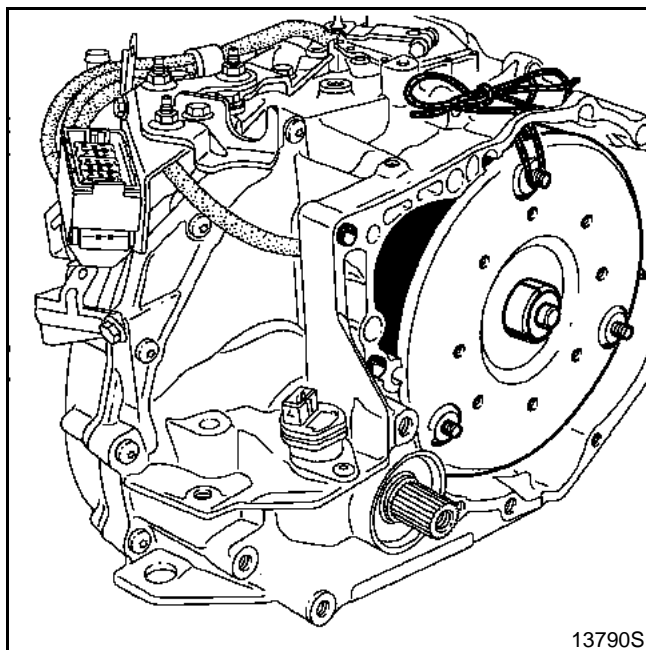
Remove the bolts and upper studs around the edge of the gearbox.

Fit the component jack.

Remove the bolts and lower studs at the edge of the gearbox.

Detach the automatic transmission from the engine taking care not to dislodge the converter.

Attach the converter with a piece of string to stop it being knocked out of place.



### REFITTING

Refitting presents no difficulties and is the reverse of removal.

**CHECK FOR THE PRESENCE OF THE CENTRING PINS.**

**DO NOT RE-USE THE CONVERTER MOUNTING NUTS. ALWAYS REFIT NEW NUTS.**

Replace the gasket on the exhaust downpipe.

Top up the oil level (see section concerned).


If the oil is changed, use the "**Clear auto-adaptive values**" command (**G80\*\*** on the **XR25**) to reset the auto-adaptive values to zero and "**Write date of last after-sales operation**" (**G74\*** on the **XR25**) to reset the oil aging counter of the automatic transmission computer to zero.

# AUTOMATIC TRANSMISSION

## Differential output seal

23

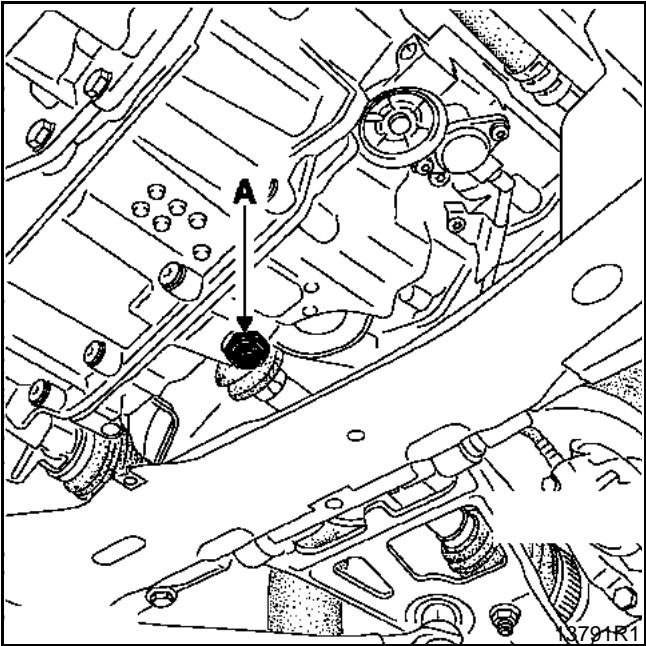
SPECIAL TOOLING REQUIRED	
B. Vi. 1459	Tool for fitting right-hand drive shaft seal.
B. Vi. 1460	Tool for fitting left-hand drive-shaft seal.

TIGHTENING TORQUES (in daN.m)		
Brake calliper bolts	4	
Lower ball joint nut	5.5	
Shock absorber base bolt	18	
Wheel bolts	9	
Track rod end nut	4	
Drain plug	2.5	

To replace the differential output seal, the corresponding drive shaft must be removed.

### REMOVAL

- Place the vehicle on a two post lift.
- Disconnect the battery.
- Drain the automatic transmission via plug (A).



Remove the faulty differential output seal using a screwdriver or a hook taking care not to scratch the surfaces.

Be careful not to drop the seal spring into the automatic transmission.

### REFITTING

The seal is refitted using tool **B. Vi. 1459** or **B. Vi. 1460**.

Guide the assembly until the tool touches the automatic transmission housing.

Refitting is the reverse of removal.

### TIGHTEN ALL NUTS AND BOLTS TO THE RECOMMENDED TORQUES.

Fill the automatic transmission and check the level (see section concerned.)

SPECIAL TOOLING REQUIRED		
<b>B. Vi.</b>	<b>1457</b>	<b>Tool for fitting converter seal</b>
<b>Mot.</b>	<b>587</b>	<b>Seal extractor</b>

The converter seal should only be removed after the automatic transmission and the converter are removed (see section concerned).

**REMOVAL**

Remove the converter, taking it out as straight as possible.

Be careful as the converter contains a large quantity of oil which may run out when it is removed.

Using **Mot. 587**, remove the seal taking care not to scratch the surfaces.

**REFITTING**

This operation must be carried out very carefully. Lubricate all the contact surfaces.

Refit the new seal (**lubricated**) so it is secure, using tool **B.Vi. 1457**.

Check that the converter is correctly fitted.

### TIGHTENING TORQUES (in daN.m)



Multifunction switch mounting bolt	1
Lever mounting nut	1

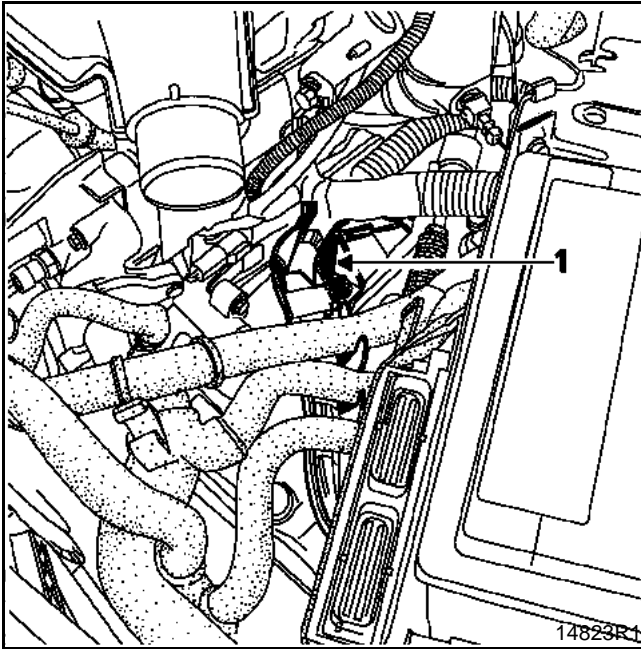
### REMOVAL

Put in position **D**.

Remove:

- the air filter hose,
- the engine wiring mounting (1).

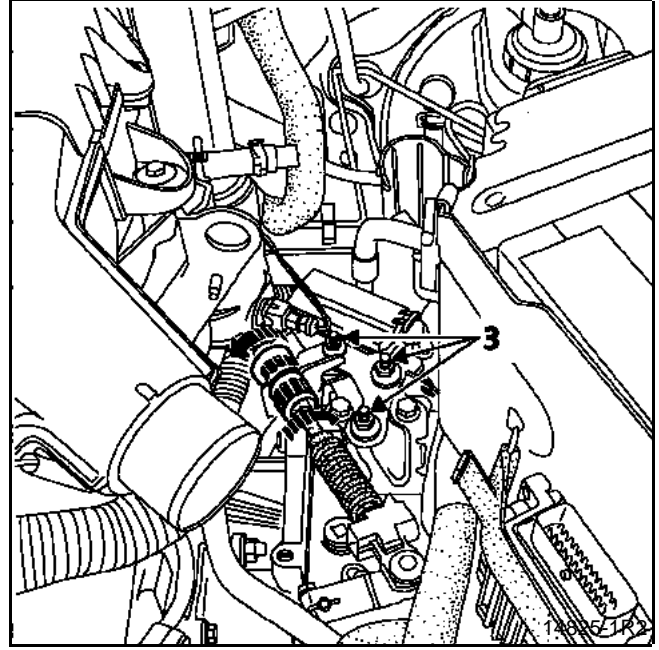
Release the expansion bottle.



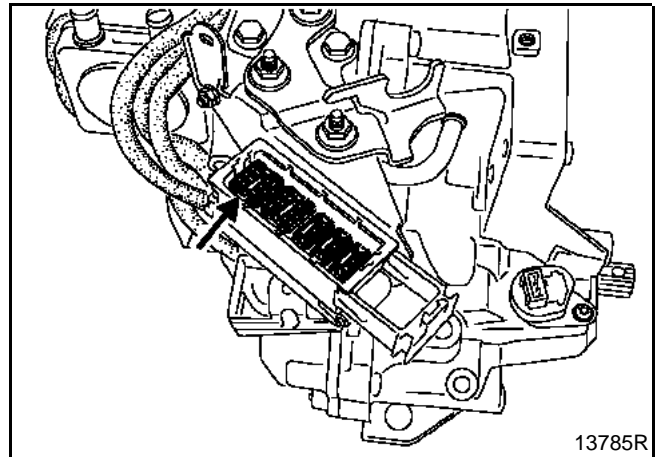
Disconnect the ball joint for the gear selection cable from the multifunction switch.

Remove:

- the lever and the two multifunction switch mounting bolts,
- the three mounting bolts (3) for the modular connector support plate,



- the mounting bolts for the modular connector plate then take out the multifunction switch connector (12 tracks).



### REFITTING

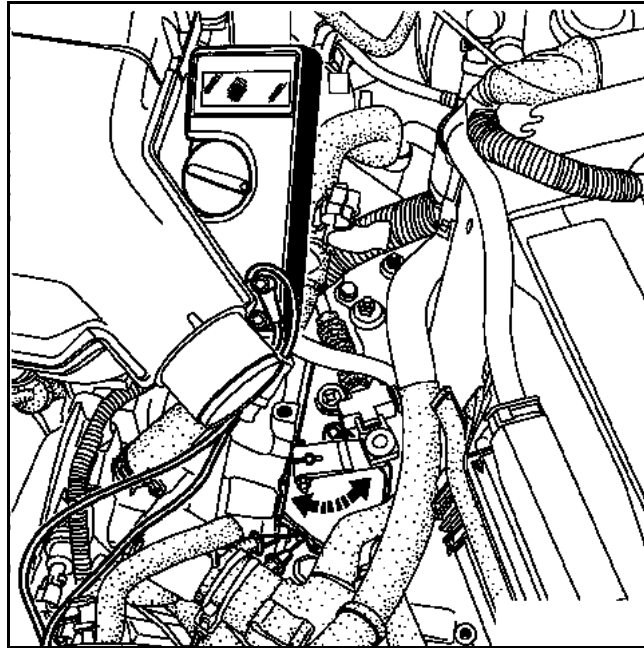
Place the multifunction switch in position **D**.

Reconnect the multifunction switch connector .

### ADJUSTMENT

Put the control shaft in **NEUTRAL**:

Place two electrical terminals on the position selector tabs.




Manually turn the multifunction switch until the electrical adjusting switch closes (**resistance at the switch terminals = 0  $\Omega$** ).

Tighten the bolts to a torque of **1 daNm**.

**AFTER TIGHTENING, THE SWITCH MUST BE CLOSED.**

**TIGHTEN ALL NUTS, BOLTS AND STUDS TO THE RECOMMENDED TORQUE.**

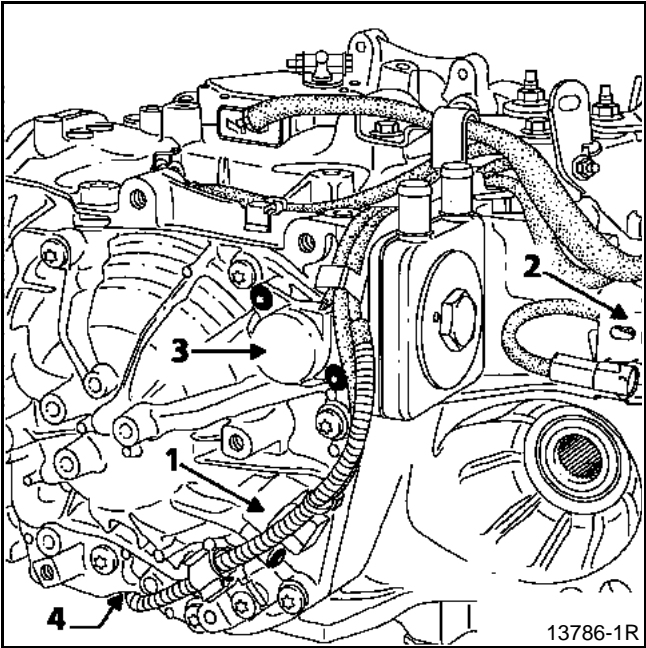
Check that the gears operate and change correctly.

TIGHTENING TORQUES (in daN.m)		
Input speed sensor mounting bolt	1	
Output speed sensor mounting bolt	1	
Exchanger flow control solenoid valve bolt	1	
Line pressure sensor bolt	0,8	

Removal of:

- the speed sensors,
- the line pressure sensor,
- the exchanger flow control solenoid valve,

is carried out **without draining or removing** the automatic transmission.



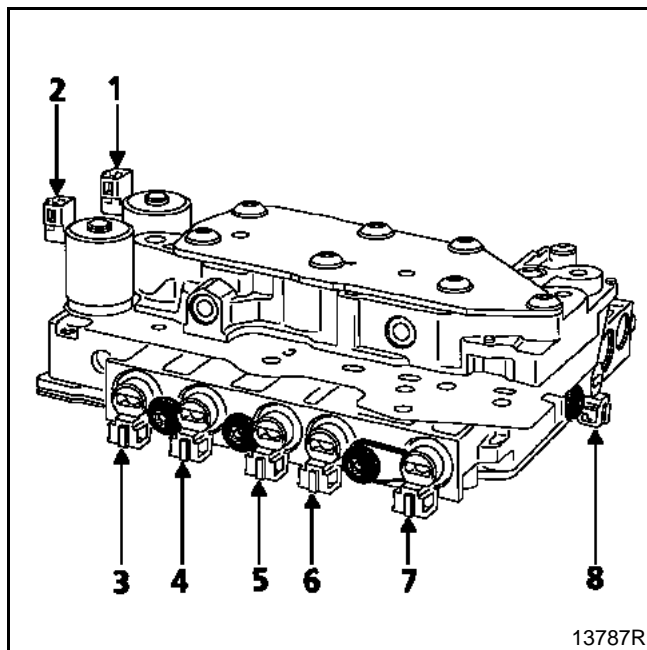
- 1 Input speed sensor
- 2 Output speed sensor
- 3 Exchanger flow control solenoid valve
- 4 Line pressure sensor

Special notes for REMOVAL:

When replacing a sensor, always remove the modular connector (see section on "**Removal - Refitting automatic transmission**").

**IMPORTANT:** Protect the connector by putting it into a waterproof plastic bag.

The solenoid valves are taken out after the hydraulic distributor has been removed (see section concerned).



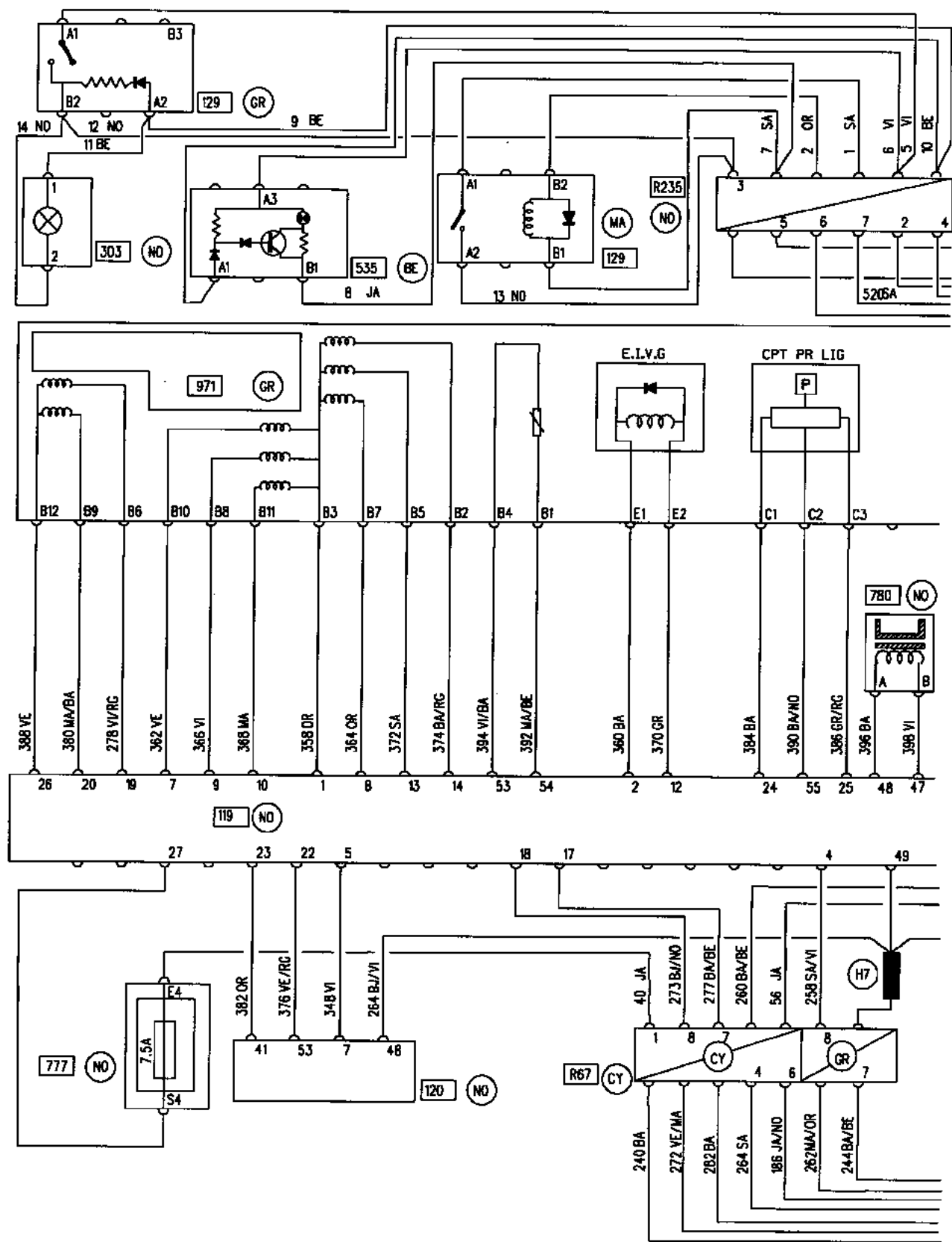
- |   |      |   |
|---|------|---|
| 1 | EVM  | Modulating solenoid valve                   |
| 2 | EVLU | LOCK UP solenoid valve (converter bridging) |
| 3 | EVS4 | Sequence solenoid valve                     |
| 4 | EVS3 | Sequence solenoid valve                     |
| 5 | EVS1 | Sequence solenoid valve                     |
| 6 | EVS2 | Sequence solenoid valve                     |
| 7 | EVS6 | Sequence solenoid valve                     |
| 8 | EVS5 | Sequence solenoid valve                     |



# AUTOMATIC TRANSMISSION

## Wiring diagram

23





# AUTOMATIC TRANSMISSION

## Wiring diagram

23

### KEY

No. unit or component	Description
104	Ignition switch
119	Automatic transmission computer
120	Injection computer
129	ECO/PERF switch
160	Brake switch
172	Right-hand tail light
173	Left-hand tail light
209	Horn and lights switch
225	Diagnostic socket
247	Instrument panel
303	Automatic transmission selector light
319	Air conditioning control panel
419	Air conditioning computer
535	ECO/PERF switch warning light
597	Engine fuse board
645	Passenger compartment connection unit
755	Low adherence control
777	Power feed fuse rack
780	Vehicle/turbine speed sensor
781	Line pressure sensor
969	Solenoid for locking gear selector lever and 3 <sup>rd</sup> gear hold selector
971	DP0 automatic transmission module
R1	Dashboard / RH rear
R2	Dashboard / LH rear
R67	Front / engine
R107	Dashboard / front
R235	Dashboard / automatic transmission

### REPLACEMENT

#### Procedure for programming the full load and no load accelerator pedal positions

When replacing the automatic transmission computer, the full load and no load accelerator pedal positions must be programmed in using the following procedure:

Place the selector lever in **P** or **N** position and keep the vehicle stationary.

#### NXR

- Make a connection to the automatic transmission computer.
- Program the full load position.
- Program the no load position.

#### XR25

- Type in code **G20\***.
- The display will indicate "**PF**" (full load) flashing.
- Press the accelerator pedal.
- The display will indicate "**bon**" and then "**PL**" (no load) flashing.
- Release the accelerator pedal.
- The display will indicate "**bon**", "**Fin**" and then "**1.n63**".
- Switch off the ignition.
- Make sure that bargraph **2 right-hand side** is extinguished.

#### Procedure for transferring the aging data for the AT oil

When the automatic transmission computer is replaced, the aging data for the **AT** oil in the memory of the computer to be replaced must be transferred to the new computer. Apply the following procedure:

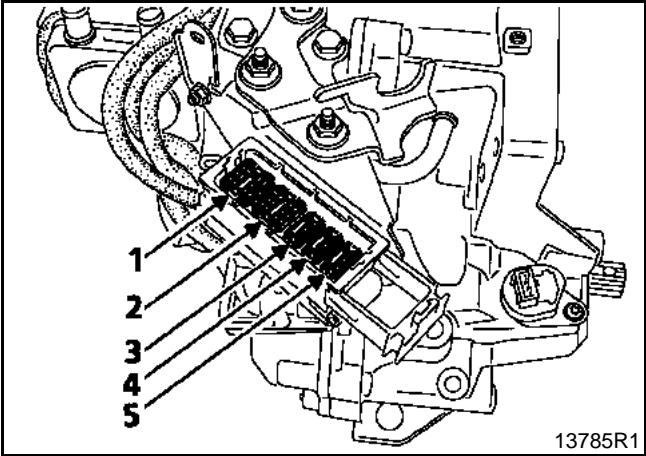
#### NXR

- Read the oil aging value in the memory of the computer to be replaced using the command "**Read oil counter**".
- Replace the computer.
- Enter the oil aging value into the memory of the new computer using the command "**Write oil counter**".
- Check the input using the command "**Read oil counter**".

#### XR25

- Read the oil aging value in the computer to be replaced using command **G83\***. Note the value as **ten digits** displayed twice by the **XR25** (example **02 1245 3213**).
- Replace the computer. Enter the oil aging value in the memory of the new computer using command **G82\***. The entry is made digit by digit starting with the **10<sup>th</sup>** (**0** in the example above), validating it with the asterisk. The **XR25** will then ask for the **9<sup>th</sup>**, **8<sup>th</sup>**, etc.

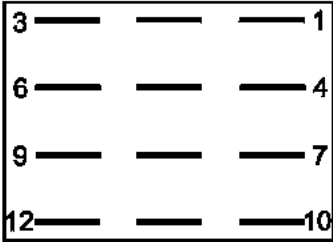
After the **1<sup>st</sup>** figure has been validated, the **XR25** will display all **ten digits** of the value entered in this way.



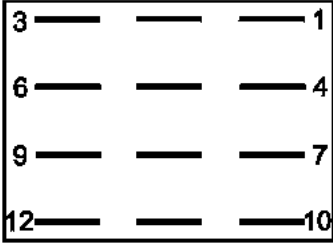
- 1 - GREEN connector (multifunction switch)
- 2 - YELLOW connector (Electronic Hydraulic interface)
- 3 - Green connector (line pressure).
- 4 - YELLOW connector (turbine speed)
- 5 - BLUE connector (vehicle speed)

TRACK NUMBERING

1



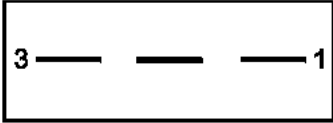
2



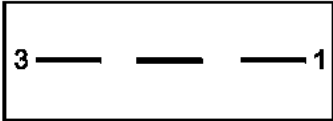
3

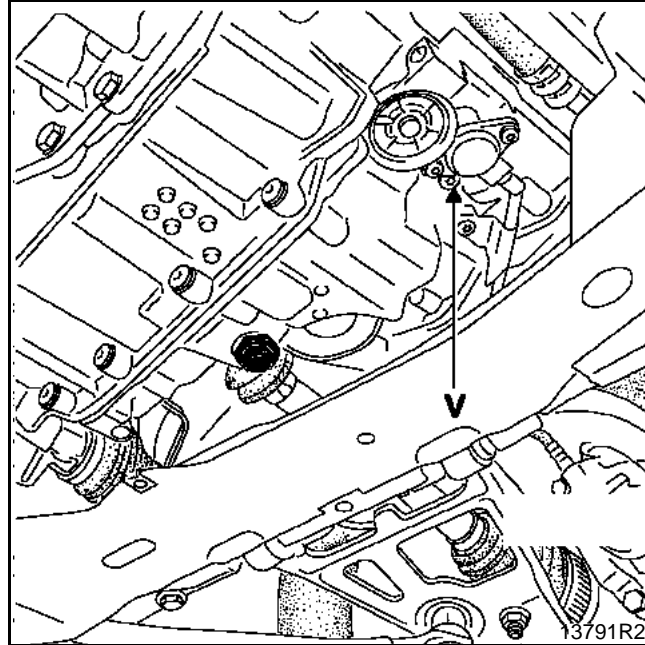


4



5





The oil pressure socket is next to the pressure sensor.

Remove bolt (V) and fit tool **B.Vi. 466.06**.

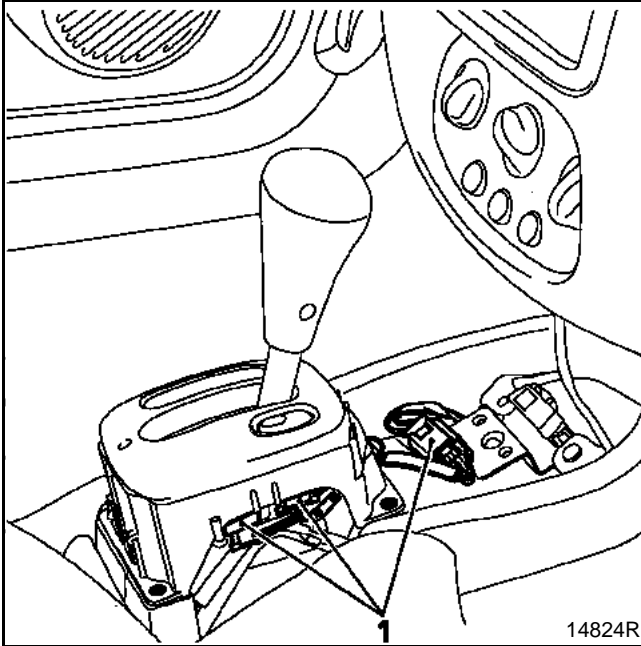
### REMOVING THE GEAR SELECTOR LEVER

Place the vehicle on a lift.

Disconnect the battery.

Inside the vehicle, remove the central console.

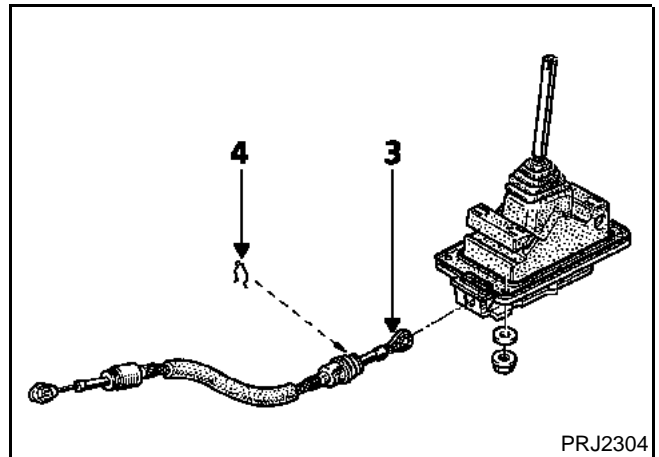
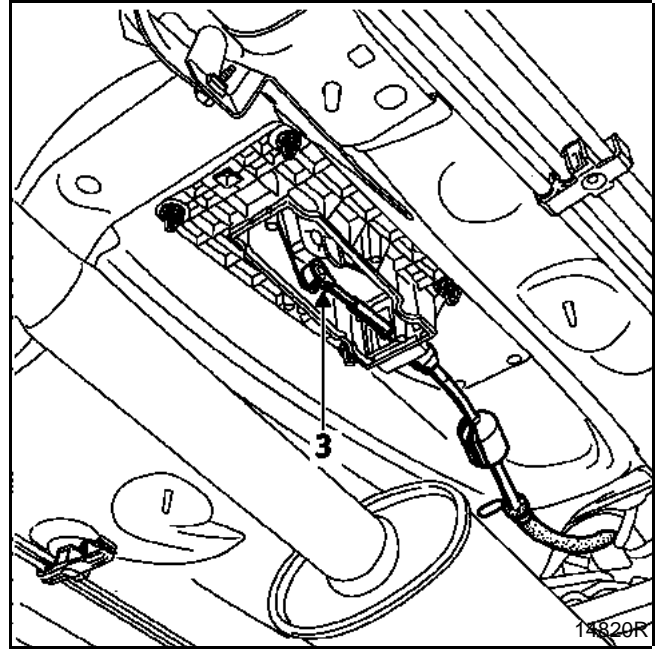
Disconnect the connectors (1).



From beneath the vehicle, remove:

- the exhaust downpipe mounting clamp,
- the heat shields,
- plate protecting the lever,
- the four lever mounting bolts,
- the control cable (3) from its ball joint.

Remove the lever, taking off the control cable sleeve mounting clip (4) at the same time.



### REFITTING THE GEAR SELECTOR LEVER

To remove, proceed in the reverse order.

Adjust the gear selector cable at the multifunction switch (see method on the earlier page).

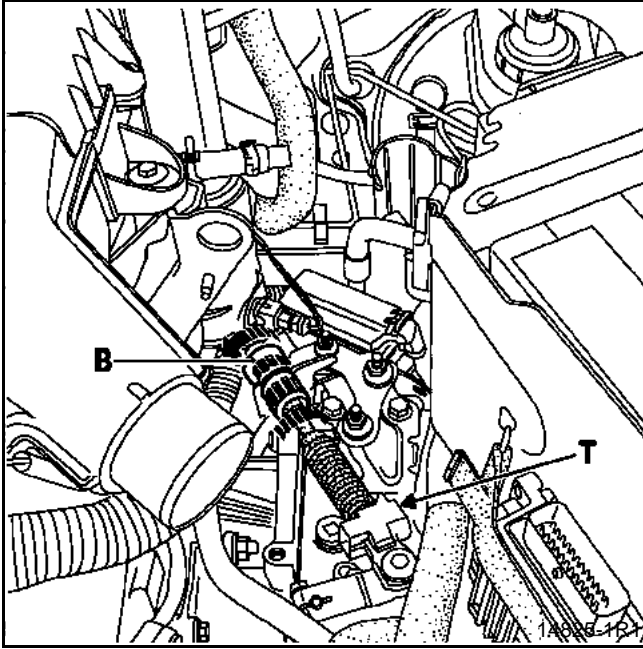
Refit the heat shields correctly.

### REMOVING THE CONTROL CABLE

Place the vehicle on a lift.

Turn the ring (B) to remove the cable from the cable sleeve stop.

**DO NOT MOVE THE ORANGE RING DURING THIS OPERATION.**



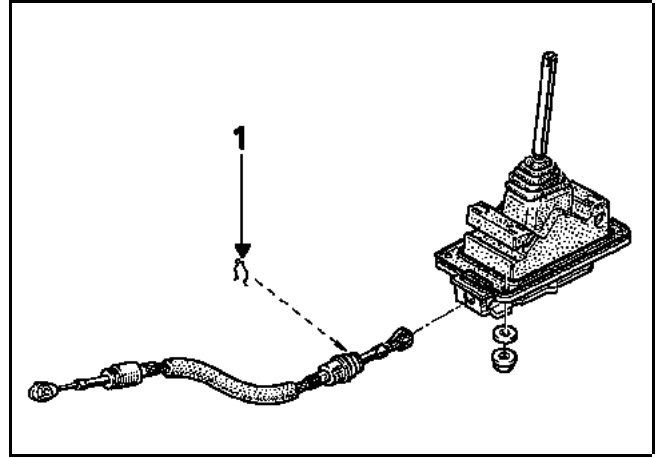
From beneath the vehicle remove

- the exhaust downpipe clamp,
- the heat shields,
- the four control lever mounting bolts.

Remove clip (1).

Refit the lever with a bolt so as not to damage it.

Remove the gear control cable.



### REFITTING THE CONTROL CABLE

Refit in the reverse order to removal.

The gear selector cable has a precise setting.

Press on the slide valve (T), then lock it in position using the clip.

Refit the cable to the multifunction switch ball joint in position **D** of the gear selector and the multifunction switch.

Move the clip to lock it in position. The adjustment is made.

**NOTE: The orange ring may be broken during removal or refitting. If this happens, DO NOT REPLACE THE CONTROL CABLE, as its absence will not affect the operation of the system.**

Refit the heat shields correctly.



**REMOVING THE GEAR SELECTOR LEVER KNOB**

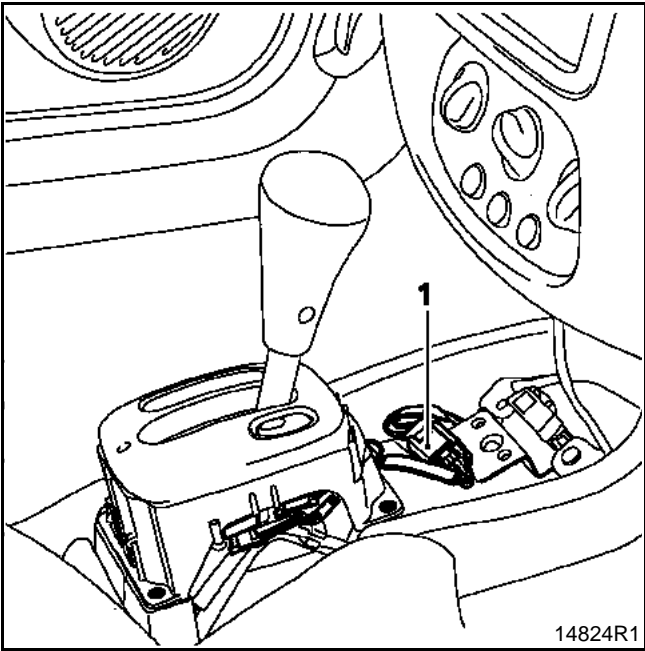
Place the vehicle on a lift.

Disconnect the battery.

The knob should only be replaced after the selector lever is removed (see previous page).

Remove the knob mounting bolt.

Mark the position of the wires and remove them from the connector (1).



Cut the wires level with the terminals and remove them from the cable sleeve.

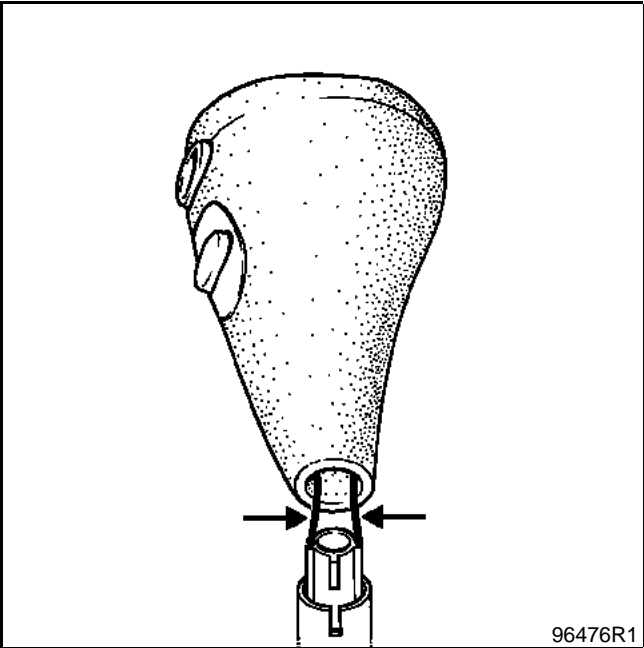
Remove the knob from the control lever.

**ALLOCATION OF THE CONNECTOR TRACKS (1)**

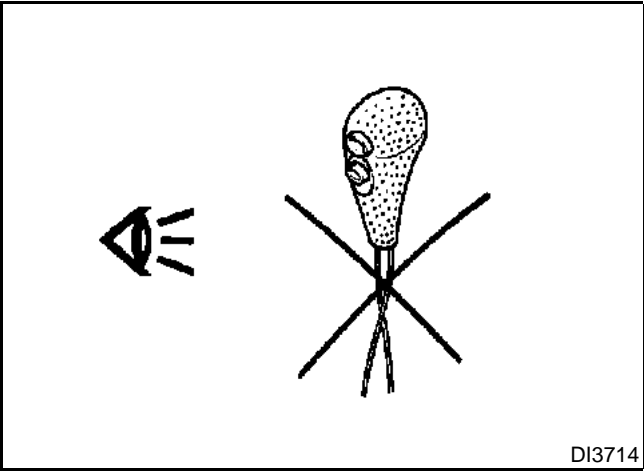
Track	Colour
A1	Black
A2	Black
B1	White
B2	Light brown

**REFITTING THE GEAR SELECTOR LEVER KNOB**

Refit the gear lever knob and the mounting bolt.



**IMPORTANT:** Do not cross the wires.



Insert the wires into the protective sleeve.

Crimp the new terminals.

Replace these into the connector observing their position.

The gear selector lever is fitted in reverse order to removal.

For fault finding on the DP0 automatic transmission refer to Technical Note 2998A for Clio II with the K7M engine.

### SPECIAL NOTES

Information on engine speed, torque, load and engine coolant temperature supplied via wire links for the petrol engine computer will from now on be output on a multiplex line (CAN bus on **tracks 38** and **39** of the automatic transmission computer).

Two new faults are managed by the automatic transmission computer:

- **11** injection → automatic transmission links (CAN)
- **12** engine speeds (output by injection)

These faults cannot be accessed on the XR25, although general fault finding will be available.

### HANDLING THESE NEW FAULTS

- **11 Right** Injection → automatic transmission link (CAN)

Check the continuity and insulation of the following connections:

- between **track 38** of the AT computer connector and **track 27** of the injection computer connector,
- between **track 39** of the AT computer connector and **track 57** of the injection computer connector.

Check the insulation between these two links.

Check the connections for the injection and AT computer connectors.

- **12 Right** engine speed (output by injection)

This fault indicates that the AT computer has received a specific code output by the engine control computer indicating that the engine speed sensor is faulty. Rectify the fault as instructed in the injection fault finding database.

### CHANGES IN HOW KNOWN FAULTS ARE PROCESSED

- **4 Right** Coolant temperature sensor circuit
- **6 Right** Invalid torque information
- **7 Left** Load potentiometer circuit (seen by injection)
- **19 Right** Engine speed sensor circuit

These four faults correspond to the incorrect values received via CAN links from the injection computer.

The setting point is:

KANGOO	CLIO
2500 ± 150 rpm	2600 ± 150 rpm

### CONSUMABLES

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