"The technical information contained in this document is intended for the exclusive use of the trained personnel of the motor vehicle repair trade. In some instances, this information could concern the security and safety of the vehicle. The information is to be used by the professional vehicle repairers for whom it is intended and they alone would assume full responsibility to the exclusion of that of the manufacturer."

"The technical information appearing in this brochure is subject to updating as the characteristics of each model in the range evolve. Motor vehicle repairers are invited to contact the CITROËN network periodically for further information and to obtain any possible updates."

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CITROËN C8 2002

PRIVATE CARS

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CITROËN AC/QCAV/MTD Méthodes Techniques Documentation

2002 CAR 050013
PRESENTATION

THIS HANDBOOK summarises the specifications, adjustments, checks and special features of the CITROEN C8.

The handbook is divided into the following sections representing the main functions:

GENERAL - ENGINE - INJECTION - IGNITION - CLUTCH - GEARBOX - DRIVESHAFTS - AXLES - SUSPENSION - STEERING - BRAKES - HYDRAULICS - ELECTRICAL - AIR CONDITIONING.
IDENTIFICATION OF VEHICLES

(A) Chassis stamp (cold stamp on bodywork).

(B) Manufacturer’s data plate (under RH centre pillar).

(C) A-S / RP No. and RP paint code
(label on front pillar).

(D) Inflation pressures and tyre references.
(label on front pillar)

(E) Gearbox reference – Factory serial no.

(F) Engine legislation type – Factory serial no.
<table>
<thead>
<tr>
<th>IDENTITY OF VEHICLES</th>
<th>Petrol</th>
<th>2.0i 16V</th>
<th>2.2i 16V</th>
</tr>
</thead>
<tbody>
<tr>
<td>X - SX</td>
<td>SX</td>
<td>Captain Chair</td>
<td>X - SX</td>
</tr>
<tr>
<td></td>
<td>SX</td>
<td>Captain Chair</td>
<td>SX</td>
</tr>
<tr>
<td></td>
<td>Captain Chair</td>
<td>Exclusive</td>
<td>Captain Chair</td>
</tr>
<tr>
<td></td>
<td>Captain Chair</td>
<td>Exclusive</td>
<td>Captain Chair</td>
</tr>
<tr>
<td></td>
<td>Manual</td>
<td>Automatic</td>
<td></td>
</tr>
<tr>
<td>Emission standard</td>
<td>IFL5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type code</td>
<td>EB RFNC/IF</td>
<td>EB RFNF/IF</td>
<td>EA RFNF/IF</td>
</tr>
<tr>
<td>Engine type</td>
<td>RFN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cubic capacity (cc)</td>
<td>1998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal rating (hp)</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gearbox type</td>
<td>BE4/5</td>
<td></td>
<td>AL4</td>
</tr>
<tr>
<td>Gearbox ident. plate</td>
<td>20 DL 27 (1)</td>
<td>20 DL 26 (2)</td>
<td>20 TP 74</td>
</tr>
</tbody>
</table>

(1) = Right hand drive
(2) = Left hand drive.
<table>
<thead>
<tr>
<th><strong>IDENTIFICATION OF VEHICLES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Petrol</strong></td>
</tr>
<tr>
<td>3.0i V6 S24</td>
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<tr>
<td><strong>Automatic</strong></td>
</tr>
<tr>
<td><strong>Exclusive</strong></td>
</tr>
<tr>
<td><strong>Exclusive Captain Chair</strong></td>
</tr>
<tr>
<td><strong>Emission standard</strong></td>
</tr>
<tr>
<td>IFL5</td>
</tr>
<tr>
<td><strong>Type code</strong></td>
</tr>
<tr>
<td>SEB XFWF/IF</td>
</tr>
<tr>
<td>EA XFWF/IF</td>
</tr>
<tr>
<td><strong>Engine type</strong></td>
</tr>
<tr>
<td>XFW</td>
</tr>
<tr>
<td><strong>Cubic capacity (cc)</strong></td>
</tr>
<tr>
<td>2946</td>
</tr>
<tr>
<td><strong>Fiscal rating (hp)</strong></td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td><strong>Gearbox type</strong></td>
</tr>
<tr>
<td>4 HP 20</td>
</tr>
<tr>
<td><strong>Gearbox ident. plate</strong></td>
</tr>
<tr>
<td>20 HZ 27</td>
</tr>
<tr>
<td>General</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Type code</td>
</tr>
<tr>
<td>Engine type</td>
</tr>
<tr>
<td>Cubic capacity (cc)</td>
</tr>
<tr>
<td>Fiscal rating (hp)</td>
</tr>
<tr>
<td>Gearbox type</td>
</tr>
<tr>
<td>Gearbox ident. plate</td>
</tr>
</tbody>
</table>

(*) = With particle filter.
(**) = Without particle filter.
### IDENTIFICATION OF VEHICLES

<table>
<thead>
<tr>
<th></th>
<th>Diesel</th>
<th>Manual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.2 HDi (*)</td>
<td>SX</td>
</tr>
<tr>
<td>Engine</td>
<td></td>
<td>SX</td>
</tr>
<tr>
<td>Emission</td>
<td>SX Captain Chair</td>
<td>Captain Chair</td>
</tr>
<tr>
<td>Standard</td>
<td>SX Captain Chair</td>
<td>Exclusive</td>
</tr>
<tr>
<td>L4</td>
<td>SX Captain Chair</td>
<td>Captain Chair</td>
</tr>
<tr>
<td>Type code</td>
<td>EB 4HWB</td>
<td>EA 4HWB</td>
</tr>
<tr>
<td>Engine type</td>
<td>4HW</td>
<td></td>
</tr>
<tr>
<td>Cubic capacity (cc)</td>
<td>2179</td>
<td></td>
</tr>
<tr>
<td>Fiscal rating (hp)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Gearbox type</td>
<td>ML5C</td>
<td></td>
</tr>
<tr>
<td>Gearbox ident. plate</td>
<td>20 LM 01</td>
<td></td>
</tr>
</tbody>
</table>

(*) = With particle filter.
GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE

Tooling.


Front lifting on one side.
Position the jack (4) at the strongpoints provided for this purpose on each side of the front crossmember between the bumper (2) and the engine (3).

Front central lifting.
Using a jack equipped with a crossbeam (sufficiently rigid) take the weight at the two strongpoints on the front crossmember.

Side lifting.
At the front and at the rear
Take the weight at the sill, by means of the crossbeam [1], as close as possible to the jacking point.
Position a stand at the jacking point provided for the purpose of lifting the vehicle with the jack.

WARNING : Avoid the battery tray on the right hand side.

Side lifting at both front and rear
Take the weight at the sill, by means of the crossbeam [1].
Position stands at the jacking points provided for the purpose of lifting the vehicle with the jack.

WARNING : Lifting at the rear of the vehicle using the crossbeam is STRICTLY PROHIBITED.
GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE

Lifting by means of a two-column workshop lift

**WARNING:** The removing of components such as the engine/gearbox, rear sub-frame etc, can cause a displacement of the centre of gravity: Use a lift equipped with retaining devices to keep the body stable on the lift.

**Without body clamps.**
Place the lift’s guide pads at each jacking point.

**WARNING:** To prevent any risk of the vehicle toppling, it is prohibited to remove mechanical components.

**With body clamps**

**WARNING:** These clamps are fitted only on FOG lifts.
Position the clamps at the sill in the jacking points provided, screw heads oriented towards the outside of the vehicle. Tighten the clamps using the gudgeon pin and, after tightening, engage the pin in the hole (A).

**Towing (front).**
Lift the blank with the aid of the flat part of the towing eye (1) and then screw the eye home.

**NOTE:** The towing eye is to be found on the front panel inside the engine compartment.

**Towing (rear).**
Lift the blank (1) and screw the towing eye home.
# CAPACITIES (in litres)

<table>
<thead>
<tr>
<th></th>
<th>Petrol</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.0i 16V Auto.</td>
<td>2.2i 16V Auto.</td>
<td>3.0i 24V Auto.</td>
<td>2.0 HDi Auto.</td>
<td>2.2 HDi Auto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine type</td>
<td>RFN</td>
<td>3FZ</td>
<td>XFW</td>
<td>RHT - RHW</td>
<td>4HW</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine angle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engine with filter change</td>
<td>4.25</td>
<td>5.25</td>
<td>4.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Min. and Max.</td>
<td>1.7</td>
<td>2</td>
<td>1.9</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-speed gearbox</td>
<td>1.8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic gearbox</td>
<td>6</td>
<td>8.3</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After oil change</td>
<td>3</td>
<td>5.3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic or brake circuit</td>
<td>0.66</td>
<td></td>
<td></td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling system</td>
<td>7</td>
<td>7.2</td>
<td>10.5</td>
<td>10</td>
<td>10.2</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Fuel tank capacity</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ENGINE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Engine type</th>
<th>RFN</th>
<th>3FZ</th>
<th>XFW</th>
<th>RHT - RHW</th>
<th>4HW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cubic capacity (cc)</td>
<td>1997</td>
<td>2230</td>
<td>2946</td>
<td>1997</td>
<td>2179</td>
</tr>
<tr>
<td>Bore / Stroke</td>
<td>85/88</td>
<td>86/96</td>
<td>87/82.6</td>
<td>85/88</td>
<td>85/96</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>10.8/1</td>
<td>10.9/1</td>
<td>17.3/1</td>
<td>17.6/1</td>
<td></td>
</tr>
<tr>
<td>Power ISO or EEC KW - rpm</td>
<td>100-6000</td>
<td>116-5650</td>
<td>150-6000</td>
<td>79-4000</td>
<td>94-4000</td>
</tr>
<tr>
<td>Power DIN (HP - rpm)</td>
<td>138-6000</td>
<td>160-5650</td>
<td>204-6000</td>
<td>109-4000</td>
<td>130-4000</td>
</tr>
<tr>
<td>Torque ISO or EEC (m.daN - rpm)</td>
<td>19-4100</td>
<td>21.7-3900</td>
<td>28.5-3750</td>
<td>27-1750</td>
<td>31.4-2000</td>
</tr>
</tbody>
</table>
(1) Compulsory engine plate:

(A) Engine legislation type.

(B) Component reference.

(C) Factory serial no.
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engines : RFN – 3FZ

<table>
<thead>
<tr>
<th>Description</th>
<th>M11</th>
<th>M6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-tightening</td>
<td>1 ± 0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Slackening</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Re-tightening</td>
<td>1 ± 0.1 puis 2 ± 0.2</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>Angular tightening</td>
<td>70° ± 5°</td>
<td></td>
</tr>
</tbody>
</table>

Crankshaft bearing cap cover (15)

<table>
<thead>
<tr>
<th>Description</th>
<th>(16) Con-rod caps</th>
<th>(17) Flywheel/ crankshaft fixing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-tightening</td>
<td>1 ± 0.1</td>
<td>2.5 ± 0.2</td>
</tr>
<tr>
<td>Slackening</td>
<td>Yes</td>
<td>18°± 1°</td>
</tr>
<tr>
<td>Re-tightening</td>
<td>2.5 ± 0.2</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>Angular tightening</td>
<td>46° ± 5°</td>
<td>22° ± 2°</td>
</tr>
</tbody>
</table>
### SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

**Equipment on cylinder head**

<table>
<thead>
<tr>
<th>Description</th>
<th>(18) Camshaft bearing cap covers</th>
<th>(19) Valve covers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-tightening</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Tightening</td>
<td>1 ± 0.1</td>
<td>1.5 ± 0.1</td>
</tr>
<tr>
<td>Description</td>
<td>(20) Inlet manifold</td>
<td>(21) Exhaust manifold</td>
</tr>
<tr>
<td>Tightening</td>
<td>1 ± 0.1</td>
<td>3.5 ± 0.3</td>
</tr>
</tbody>
</table>

- **Engine: RFN**
- **Engine: 3FZ**
### SPECIAL FEATURES: POWER UNIT SUSPENSION

**Upper RH engine support**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>RFN</th>
<th>AL4</th>
<th>ML5C</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Rod/body fixing screw..</td>
<td>5 ± 0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>Engine support/torque reaction rod flexible stop pin</td>
<td>4.5 ± 0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td>Upper support/intermediate support fixing screw.</td>
<td>6.5 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4)</td>
<td>Upper support/body fixing screw</td>
<td>3 ± 0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5)</td>
<td>Upper support/flexible support fixing nut.</td>
<td>4.5 ± 0.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intermediate engine support**

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>RFN</th>
<th>AL4</th>
<th>ML5C</th>
</tr>
</thead>
<tbody>
<tr>
<td>(6)</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7)</td>
<td>LH flexible support/LH engine support fixing nut.</td>
<td>6.5 ± 0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8)</td>
<td>LH flexible support/body fixing screw.</td>
<td>3 ± 0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9)</td>
<td>Intermediate engine support/gearbox casing fixing screw.</td>
<td>4.5 ± 0.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>LH intermediate support/gearbox fixing screw.</td>
<td>6 ± 0.6</td>
<td>4.5 ± 0.4</td>
<td></td>
</tr>
<tr>
<td>(11)</td>
<td>Flexible support pin.</td>
<td>5 ± 0.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SPECIAL FEATURES: POWER UNIT SUSPENSION

### Intermediate engine support

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
<th>RFN</th>
<th>3FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Gearbox type</strong></td>
<td>BE4/5</td>
<td>AL4</td>
</tr>
<tr>
<td>(12)</td>
<td>Lower RH rod/subframe fixing screw.</td>
<td>9 ± 0.9</td>
<td></td>
</tr>
<tr>
<td>(13)</td>
<td>Lower RH engine support/cylinder block fixing screw.</td>
<td>4.5 ± 0.4</td>
<td></td>
</tr>
<tr>
<td>(14)</td>
<td>Lower rod/lower RH engine support fixing screw</td>
<td>6.5 ± 0.6</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of Intermediate engine support](image)
# CYLINDER HEAD

Engines: RFN – 3FZ

### Cylinder head gasket identification

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Cylinder head gasket thickness (mm)</th>
<th>RFN</th>
<th>3FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1B) : Nominal dimension</td>
<td>E – H = 0.8</td>
<td>E – G = 0.8</td>
<td></td>
</tr>
<tr>
<td>(1C) : Repair dimension</td>
<td>E – F – H = 0.99</td>
<td>E – F – G sans</td>
<td></td>
</tr>
</tbody>
</table>

### Cylinder head tightening (m.daN)

- **Pre-tightening**: 1/ : 1.5
- **Slackening**: 2/ : 5
- **Tightening**: 360°
- **Angular tightening**: 285° / 270°

### Cylinder head bolts

<table>
<thead>
<tr>
<th>Ref.</th>
<th>RFN</th>
<th>3FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1BK24QD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1DK001C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1DB002C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Multi-layer metallic gasket.

- Thickness: 0.99 mm
- Ref.: RFN 3FZ
- Parts: E – F – H, E – F – G

### Repair dimension

- Ref.: RFN 3FZ
- Parts: B1BK24QD, B1DK001C, B1DB002C

---

**X = MAXI re-usable**

<table>
<thead>
<tr>
<th></th>
<th>RFN</th>
<th>3FZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>144.5 mm</td>
<td></td>
<td>127.5 mm</td>
</tr>
</tbody>
</table>

---

*Manufacturer identification.*
SPECIAL FEATURES: VALVE TIMING

Engines: RFN - 3FZ

The camshafts are referenced following two methods.
- (1) Marking position
- (2) Paint rings.
- (3) Marking position
- (4) Marking at end of shaft.
- (5) Target for camshaft position sensor.

Marking position:
3. Inlet D1309 : Exhaust D1348.

Timing belt:
- Width : 25.4 mm
- Number of teeth : 153
- Material : HSN

Valve clearances when cold
- Inlet (A) : NON adjustable
- Exhaust (E) : NON adjustable
ENGINE SPECIFICATIONS

Engine: XFW

(A) Component reference.

(B) Engine legislation type.

(C) Factory serial no.

B1BK1JWD
**SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)**

**Engine: XFW**

### Power unit suspension

<table>
<thead>
<tr>
<th>RH engine support (Suspension)</th>
<th>Gearbox suspension</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Link rod fixing</td>
<td>5 ± 0.5</td>
</tr>
<tr>
<td>(3) Link rod fixing</td>
<td>4.5 ± 0.4</td>
</tr>
<tr>
<td>(4) Fixing of upper RH engine support on intermediate engine support flexible mounting</td>
<td>6 ± 0.6</td>
</tr>
<tr>
<td>(5) Fixing of RH engine support on flexible mounting</td>
<td>4.5 ± 0.4</td>
</tr>
<tr>
<td>(6) Fixing of flexible mounting</td>
<td>3 ± 0.3</td>
</tr>
<tr>
<td>(7) Fixing of RH intermediate engine support on cylinder block</td>
<td>6 ± 0.6</td>
</tr>
<tr>
<td>(8) Fixing of gearbox support on LH flexible mounting</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>(9) Shaft</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>(10) Fixing of flexible mounting on support</td>
<td>3 ± 0.3</td>
</tr>
<tr>
<td>(11) Fixing of flexible mounting support on body</td>
<td>2.5 ± 0.2</td>
</tr>
<tr>
<td>(12) Fixing of flexible mounting support on body</td>
<td>2.5 ± 0.2</td>
</tr>
</tbody>
</table>

**B1BK24RD**

**B1BK24SD**
**SPECIAL FEATURES : TIGHTENING TORQUES (m daN)**

**Engine : XFW**

<table>
<thead>
<tr>
<th>Power unit suspension – Engine support (Lower)</th>
<th>Crankshaft</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Diagram" /></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Torque (m daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(13) Torque reaction link rod fixing</td>
<td>9 ± 0.9</td>
</tr>
<tr>
<td>(14) Fixing of link rod on torque reaction flexible mounting</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>(15) Fixing of torque reaction flexible mounting</td>
<td>4.5 ± 0.4</td>
</tr>
<tr>
<td>(16) Fixing of heat shield on torque reaction flexible mounting</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>(17) Bearing cap Tightening</td>
<td>2 ± 0.2</td>
</tr>
<tr>
<td>(18) Timing pinion Tightening</td>
<td>4 ± 0.4</td>
</tr>
<tr>
<td>(19) Fixing of starter gear support flange, plus crankshaft converter support Tightening</td>
<td>2 ± 0.2</td>
</tr>
<tr>
<td>(20) Accessory pulley on timing pinion</td>
<td>2.5 ± 0.2</td>
</tr>
</tbody>
</table>
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder block

Bearing cap cover

Respect the sequence of stages and the order of tightening

<table>
<thead>
<tr>
<th>Reference/description</th>
<th>M11 Bolts from 1 to 8</th>
<th>M8 Bolts from 9 to 16</th>
<th>M6</th>
</tr>
</thead>
<tbody>
<tr>
<td>(21) Fixings of bearings/cap covers or bearings/caps</td>
<td>Stage 1 3 ± 0.3</td>
<td>Stage 2 1 ± 0.1</td>
<td>Stage 3 1 ± 0.1</td>
</tr>
<tr>
<td>21) Fixings of bearings/cap covers or bearings/caps (Slacken to zero torque.)</td>
<td>Stage 4 YES</td>
<td>Stage 4 YES</td>
<td>NO</td>
</tr>
<tr>
<td>(21) Fixings of bearing cap cover or bearing caps (Tighten bolt by bolt) Tightening + Angular tightening</td>
<td>Stage 5 3 ± 0.3 180°</td>
<td>Stage 6 1 ± 0.1 180°</td>
<td></td>
</tr>
</tbody>
</table>
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Lubrication circuit

<table>
<thead>
<tr>
<th>Lubrication circuit</th>
<th>Oil sump</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Lubrication Diagram" /></td>
<td><img src="image2.png" alt="Oil Sump Diagram" /></td>
</tr>
</tbody>
</table>

(22) Oil separator : 0.8
(23) Strainer : 0.8
(24) Induction pipe : 0.8
(25) Drain plug : 3 ± 0.3
(26) Oil filter sleeve (with coolant/oil exchanger) : 0.5
Oil filter : 0.2

Stage 1 : Do up bolts 13,15 and 17.
Stage 2 : Tighten bolts 13,15 and 17 to : 0.2
Stage 3 : Do up the 17 remaining bolts.
Stage 4 : Tighten the remaining bolts to : 0.5
Stage 5 : Tighten all the bolts : 0.8
Stage 6 : Repeat the tightening a few times in the same order to obtain a tightening torque of 0.8 m.daN on all the bolts.

Respect the sequence of stages and the order of tightening.
# SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

**Engine**: XFW

<table>
<thead>
<tr>
<th>Lubrication circuit</th>
<th>Cooling circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oil pump</strong></td>
<td><strong>Coolant pump</strong></td>
</tr>
</tbody>
</table>

Respect the sequence of stages and the order of tightening:

- **Stage 1**: Position the screws and do them up by hand.
- **Stage 2**: Pre-tighten the screws: 0.5
- **Stage 3**: Tighten the screws: 0.8
- **Stage 4**: Repeat the tightening a few times in the same order to obtain a tightening torque of **0.8 m.daN** on all the screws.
### SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

**Engine : XFW**

<table>
<thead>
<tr>
<th>Lubrication circuit</th>
<th>Cylinder head equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolant manifold</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(27) Screws</th>
<th>: 2.5 ± 0.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(28) Screws</td>
<td>: 0.8</td>
</tr>
<tr>
<td>(29) Screws</td>
<td>: 0.8</td>
</tr>
</tbody>
</table>
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder head equipment

Camshaft bearing cap cover (right hand side)

Camshaft bearing cap cover (left hand side)

Respect the sequence of stages and the order of tightening

(30) Camshaft bearing cap cover or camshaft bearing:

Pre-tighten to : 0.2
Tighten to : 1
<table>
<thead>
<tr>
<th>Valve covers (right hand side)</th>
<th>Valve covers (left hand side)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

Respect the sequence of stages and the order of tightening

(31) Valve cover:
- Pre-tighten to: 0.5
- Tighten to: 0.8
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder head equipment

Inlet manifold

Respect the sequence of stages and the order of tightening

(32) Inlet manifold:

Pre-tighten to : 0.4
Tighten to : 0.8
SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: XFW

Cylinder head equipment

Exhaust manifold (right hand side) | Exhaust manifold (left hand side)

9 5 2 3 6 10
8 4 7

Respect the sequence of stages and the order of tightening

(33) Exhaust manifold:

Pre-tighten to: 1
Tighten to: 3 ± 0.3
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder head equipment

Inlet distributor

(34) Inlet distributor:

Pre-tighten to : 0.4
Tighten to : 0.8
Identification of cylinder head gaskets

The RH and LH cylinder head gaskets are specific, of multilayer metallic type.

Cylinder head gasket thicknesses

(1A) : Engine ref : G-H
(1B) : Nominal dimension: Without marking = 0.75 mm
(1C) : Repair dimension : E (1st repair dimension R1) = 0.95 mm
(1C) : Repair dimension: E-F (2nd repair dimension R2) = 1.15 mm

(a) : RH cylinder head gasket.
(b) : LH cylinder head gasket.
V : Engine flywheel side.

Respect the sequence of stages and the order of tightening

<table>
<thead>
<tr>
<th>Cylinder head gasket thicknesses</th>
<th>Respect the sequence of stages and the order of tightening</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1A) : Engine ref : G-H</td>
<td>(a) : RH cylinder head gasket.</td>
</tr>
<tr>
<td>(1B) : Nominal dimension: Without marking = 0.75 mm</td>
<td>(b) : LH cylinder head gasket.</td>
</tr>
<tr>
<td>(1C) : Repair dimension : E (1st repair dimension R1) = 0.95 mm</td>
<td>V : Engine flywheel side.</td>
</tr>
<tr>
<td>(1C) : Repair dimension: E-F (2nd repair dimension R2) = 1.15 mm</td>
<td></td>
</tr>
</tbody>
</table>
**CYLINDER HEAD**

Engine: XFW

<table>
<thead>
<tr>
<th>Cylinder head tightening (m.daN)</th>
<th>Cylinder head bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-tightening</td>
<td>2</td>
</tr>
<tr>
<td>Slackening</td>
<td>YES</td>
</tr>
<tr>
<td>Tightening</td>
<td>1.5</td>
</tr>
<tr>
<td>Angular tightening</td>
<td>225°</td>
</tr>
</tbody>
</table>

**NOTE:** Grease the bolts on the threads and under the heads, using engine oil or Molykote G plus.)
### Identification of camshafts

The camshafts are identified by the following references:

- **A** = Inlet camshaft
- **E** = Exhaust camshaft

<table>
<thead>
<tr>
<th>Number</th>
<th>Reference</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>E388</td>
<td>AExhaust camshaft</td>
<td>Rear</td>
</tr>
<tr>
<td>2</td>
<td>A422</td>
<td>AInlet camshaft</td>
<td>Rear</td>
</tr>
<tr>
<td>3</td>
<td>E389</td>
<td>Exhaust camshaft</td>
<td>Front</td>
</tr>
<tr>
<td>4</td>
<td>A423</td>
<td>AInlet camshaft</td>
<td>Front</td>
</tr>
</tbody>
</table>

### Timing belt

- **Width**: 32 mm
- **Number of teeth**: 259
### Cylinder Head

**Engines:** RHT – RHW - 4HW

#### Identification of Cylinder Head Gasket

- Cylinder head tightening (m.daN)
- Cylinder head bolts

#### Pre-tightening:

1. **2/6**

#### Slackening:

- 360°

#### Tightening:

1. **2/6**

#### Angular Tightening:

- 220°

**NOTE:** Grease the bolts on the threads and under the heads, using engine oil or Molykote G plus).

**ENGINE**

**NOTE:** Grease the bolts on the threads and under the heads, using engine oil or Molykote G plus).

<table>
<thead>
<tr>
<th>Piston stand-proud (mm)</th>
<th>Thickness (mm)</th>
<th>Hole at F</th>
<th>Hole at G</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55 to 0.60</td>
<td>1.25 ± 0.04</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0.61 to 0.65</td>
<td>1.30 ± 0.04</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0.66 to 0.70</td>
<td>1.35 ± 0.04</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>0.71 to 0.75</td>
<td>1.40 ± 0.04</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**Tighten in the order indicated**

- Pre-tightening: 1/2
- Slackening: 360°
- Tightening: 1/2
- Angular tightening: 220°

**X = MAX. re-usable**

- RHT - RHW
- 4HW

<table>
<thead>
<tr>
<th>Hole</th>
<th>RHT</th>
<th>RHW</th>
<th>4HW</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>9</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Holes at G:**

- **RHT:** 134 mm
- **RHW:** 134.5 mm
- **4HW:**

<table>
<thead>
<tr>
<th>Piston stand-proud (mm)</th>
<th>Thickness (mm)</th>
<th>Hole at G</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55 to 0.60</td>
<td>1.25 ± 0.04</td>
<td>1</td>
</tr>
<tr>
<td>0.61 to 0.65</td>
<td>1.30 ± 0.04</td>
<td>2</td>
</tr>
<tr>
<td>0.66 to 0.70</td>
<td>1.35 ± 0.04</td>
<td>3</td>
</tr>
<tr>
<td>0.71 to 0.75</td>
<td>1.40 ± 0.04</td>
<td>4</td>
</tr>
</tbody>
</table>

**NOTE:** Grease the bolts on the threads and under the heads, using engine oil or Molykote G plus).
AUXILIARY EQUIPMENT DRIVE BELT

Engines : RFN-3FZ

Tools

[1] Peg for dynamic tensioner roller (-).0189-E

Removing.

Remove:
The front RH wheel.
The front RH splash-shield.
Detension the auxiliary drive belt by actioning the screw (1).
Peg the dynamic tensioner roller (2), using tool [1].
Remove the auxiliary drive belt.

ESSENTIAL : Check that the rollers (3) and (4) turn freely (no tight spot).

Refitting.

Refit the auxiliary drive belt.
Check that the auxiliary drive belt is correctly positioned in the grooves of the various pulleys.
Remove tool [1].
Continue the refitting operations in reverse order to removal.
AUXILIARY EQUIPMENT DRIVE BELT

Engine : XFW

Tools

[1] Ratchet spanner FACOM (1/2" square).

Removing.

Move aside the power steering oil low pressure pipe flange. Pivot the support (1) of the tensioner roller clockwise, as far as it will go, using tools [1] and [2]. Remove the auxiliary drive belt.

IMPERATIVE : Check the operation of the rollers (no play, no tight spot).

Refitting.

Position the auxiliary drive belt. Commence with the crankshaft pulley (2). Finish with the tensioner roller (3). Free the support (1) of the tensioner roller, pivoting it anti-clockwise, using tools [1] and [2].

ESSENTIAL : Check that the belt is correctly positioned in the grooves of the various pulleys.

Continue the refitting operations in reverse order to removal.
AUXILIARY EQUIPMENT DRIVE BELT

Engine: RHT - RHW

Tools.


(A) Pegging hole.
(B) Belt wear check mark (fixed on engine).
(C) Zero wear mark.
(D) Maximum wear mark.

This marking system permits checking of the belt wear; if the marks (D) and (B) coincide, it implies that the belt requires replacing.
Tighten the screw (1) to 4.5 ± 0.4 m.daN.

Removing

Remove:
- The front RH wheel.
- The front RH splash-shield.
- The under-engine shield.

IMPERATIVE: Mark the direction of rotation of the belt if to be re-used.
### AUXILIARY EQUIPMENT DRIVE BELT

**Engine:** RHT - RHW

#### Removing (continued)

- Slacken the fixing (2).
- Action the roller (3), using tool [1], until the tool [2] is positioned in the pegging hole (A).
- Bring the roller (3) back towards the rear.
- Gently tighten the screw (2).
- Remove the belt.

**ESSENTIAL:** Check that the rollers (3) and (4) turn freely (no play, no tight spot).

#### Refitting

**IMPERATIVE:** If re-using the belt, refit it respecting the direction of rotation marked on removal.

- Refit the belt, finishing with the tensioner roller (4).
- Action the roller (3), using tool [1] (clockwise) to free the tool [2].
- Tighten the fixing (2) to **4.5 ± 0.5 m.daN**, without altering the position of the roller.

**ESSENTIAL:** Check that the belt is correctly positioned in the grooves of the various pulleys.

- Remove the tool [1].
- Rotate the engine four times.
- Check that the marks (B) and (C) coincide.
- Tool [3] should be able to engage freely, if not, repeat the adjustment.
- Complete the refitting.
Tools.

[1] Peg for dynamic roller : (-) 0188-Q1

(A) Pegging hole.
(B) Belt wear check mark (fixed on engine).
(C) Zero wear mark.
(D) Maximum wear mark.

This marking system permits checking of the belt wear; if the marks (D) and (B) coincide, it implies that the belt requires replacing.

Tighten the screw (1) to 4.5 ± 0.4 m.daN.

Removing.

Remove:
- The front RH wheel.
- The front RH splash-shield.
- The under-engine shield.

IMPERATIVE : Mark the direction of rotation of the belt if to be re-used.
Removing (continued).

Action the roller (3), using tool [2], until the tool [1] is positioned in the pegging hole (A). Remove the belt.

**ESSENTIAL** : Check that the rollers (3) and (4) turn freely (no play, no tight spot).

Refitting.

**IMPERATIVE**: If re-using the belt, refit it respecting the direction of rotation marked on removal.

Refit the belt, finishing with the tensioner roller (3).

**ESSENTIAL** : Check that the belt is correctly positioned in the grooves of the various pulleys.

Rotate the engine **four times**.

Complete the refitting.
| Type | daN | 5  | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S    |     | 18 | 28 | 36 | 44 | 51 | 58 | 64 | 70 | 76 | 82 | 88 | 94 | 100|106|112|     |
| P    | E5  | 18 | 23 | 27 | 31 | 34 | 37 | 40 | 43 | 46 | 49 | 52 | 54 | 56 | 58 | 60 | 62 | 64 | 66 | 68 |  |
|      |     | 18 | 28 | 36 | 44 | 51 | 58 | 64 | 70 | 76 | 82 | 88 | 94 | 100|106|112|     |
| P    | E6  | 25 | 32 | 39 | 45 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 | 81 | 84 | 86 | 89 | 90 | 91 |   |    |
|      |     | 27 | 36 | 43 | 49 | 55 | 61 | 66 | 71 | 76 | 80 | 84 |    |    |    |    |    |    |    |    |    | |
| P    | E6  | 25 | 32 | 39 | 45 | 50 | 54 | 58 | 62 | 66 | 70 | 74 | 78 | 81 | 84 | 86 | 89 | 90 | 91 |  |   |
|      |     | 26 | 35 | 42 | 48 | 53 | 58 | 63 | 68 | 73 | 78 | 82 |    |    |    |    |    |    |    |    |    |    |
| P    | E7  | 45 | 55 | 65 | 74 | 83 | 89 | 95 | 101|107|113|119|    |    |    |    |    |    |    |    |    |    |    |
|      |     | 36 | 49 | 52 | 64 | 73 | 80 | 86 | 92 | 98 |104|110|    |    |    |    |    |    |    |    |    |    |    |
| T    | E7  | 28 | 34 | 39 | 44 | 48 | 52 | 56 | 60 | 64 | 68 | 71 |    |    |    |    |    |    |    |    |    |    |    |
|      |     | 34 | 41 | 48 | 55 | 62 | 69 | 76 | 83 | 89 | 96 |102|    |    |    |    |    |    |    |    |    |    |    |
| T    | E8  | 32 | 39 | 45 | 51 | 56 | 61 | 66 | 71 | 76 | 79 | 81 |    |    |    |    |    |    |    |    |    |    |    |
|      |     | 37 | 43 | 51 | 59 | 66 | 73 | 80 | 86 | 92 | 96 |104|    |    |    |    |    |    |    |    |    |    |    |
| T    | E9  | 52 | 60 | 67 | 74 | 81 | 88 | 94 | 100|106|110|114|    |    |    |    |    |    |    |    |    |    |    |
|      |     | 49 | 57 | 63 | 69 | 75 | 81 | 87 | 93 | 99 |105|111|    |    |    |    |    |    |    |    |    |    |    |

B1EP135D
# AUXILIARY EQUIPMENT DRIVE BELT

## Engines: All Types Petrol and Diesel

### TOOLS

Belt tension measuring instrument: **4122 - T** *(C.TRONIC 105.5)*

**WARNING:** If using tool **4099-T** *(C.TRONIC 105)*, refer to the correspondence table on page 39.

### ESSENTIAL:

Before refitting the auxiliary equipment drive belt, check that:

- **1 /** The roller(s) rotate freely (no play or stiffness)

- **2 /** The belt is correctly engaged in the grooves of the various pulleys.
CHECKING AND SETTING THE VALVE TIMING

Engine : RFN

Tools.
[1] Crankshaft setting peg : (-).0189-B

Removing.
Disconnect the battery.
Remove:
- The under-engine shield.
- The auxiliary drive belt (see corresponding operation).
Move aside:
- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.
Remove:
- The screws (1) and (2).
- The torque reaction rod (3).
- The screws (4), plus the auxiliary drive pulley.
- The timing covers (5) and (6).

WARNING : Do not slacken the fixing screws (A).
CHECKING AND SETTING THE VALVE TIMING

**Engine**: RFN

### Removing (continued)

**Peg**:

- The camshafts, using tool [2].
- The crankshaft, using tool [1].

Slacken the screw (7) while holding tool [4].

Using the hexagonal recess (C), turn the eccentric hub (8) of the tensioner roller (9) (clockwise), to detension the belt. The cursor (10) moves against the tool [4].

Remove the timing belt.
CHECKING AND SETTING THE VALVE TIMING

Refitting.

Systematically replace the timing belt.

**IMPERATIVE**: Check that the rollers (9) and (11), as well as the coolant pump (12) turn freely (no tight spot).

When replacing the belt (11), tighten the fixing to 3.5 ± 0.3 m daN.

Position the belt on the crankshaft pinion (13), respecting its direction of fitting.

Immobilise the belt, using tool [3].

Refit the timing belt, well-tensioned, in the following sequence:
- Guide roller (11).
- Pinions (14) and (15).
- Coolant pump (12).
- Tensioner roller (9).
Tensioning the timing belt.
Remove tool [3].

(D) : Max. position.

(E) : Nominal tension position.

Using the hexagonal recess (C), turn the roller hub (anti-clockwise), to bring the index (10) to position (D) to tension the belt to the maximum.

Turn the eccentric hub (8) of the roller (9) (clockwise), to bring the cursor (10) into light contact with the peg [4].

**IMPERATIVE** : Never make a complete rotation of the eccentric hub (8) when tool [4] is in position.

NOTE : This operation places the index (10) in the nominal position (E).

Tighten the screw (7) to 2 ± 0.2 m.daN while holding the roller by means of the hexagonal recess (C).

Remove the pegs [1], [2] and [4].

**Checks.**

Make two rotations of the crankshaft (direction of rotation of the engine).

**IMPERATIVE** : Never turn the crankshaft backwards.

Make sure that the timing is correctly set, by refitting the pegs [1] and [2].

Remove the pegs [1] and [2].

Make ten rotations of the crankshaft (direction of rotation of the engine).

Check the position of the index (10).

If the tensioner index is not in its adjustment position (E), recommence the operations to tension the timing belt.
Positioning the crankshaft.

NOTE: This operation positions all the pegs in their respective pegging points.

Peg:
- The camshaft pulleys, using tool [2].
- The crankshaft, using tool [1].
If this is not possible, reposition the flange (17).

IMPERATIVE: This operation guarantees the setting of the timing for subsequent operations.

Slacken the screw (16) so as to free the crankshaft pinion (17).
Bring the flange (17) to the pegging point, using tool [5].
Position tool [1].
Tightening of screw (16) (Tool FACOM D360).
   Tighten to : 4 ± 0.4 m.daN
   Angular tighten to : 53° ± 5°.
Remove tools [1], [2] and [5].

IMPERATIVE: When tightening screw (16), hold the pulley (17) in position, using tool [5].
CHECKING AND SETTING THE VALVE TIMING

Refitting (continued).

Refit:

- The timing cover (6).

- The auxiliary drive pulley.

- The screws (4), tighten to $2.1 \pm 0.2$ m.daN.

- The timing cover (5).

- The torque reaction rod (3).

- The screws (1) and (2), tighten to $4.5 \pm 0.4$ m.daN.

Refit the auxiliary drive belt (see corresponding operation).

Continue the refitting operations in reverse order to removal.
CHECKING AND SETTING THE VALVE TIMING

Engine: 3FZ

Tools.
[1] Crankshaft setting peg: (-).0189-B
[3] Inlet camshaft setting peg: (-).0189-L
[7] Engine support crossmember: 4090-T

Removing.
Disconnect the battery.
Remove:
- The under-engine shield.
- The auxiliary drive belt (see corresponding operation).
Uncouple the exhaust line (to avoid damaging the flexible pipe).
Position the tool [7].
Move aside:
- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.
CHECKING AND SETTING THE VALVE TIMING

Engine: 3FZ

Remove:
- The screws (1) and (2).
- The torque reaction rod (3).
- The nut (4).
- The 3 screws (5).
- The RH engine support (6).
- The screws (7), plus the auxiliary drive pulley.
- The timing covers (8) and (9).

WARNING: Do not slacken the fixing screws (A).

IMPERATIVE: Do not slacken the fixing screws (B).

Peg:
- The exhaust camshaft, using tool [2].
- The inlet camshaft, using tool [3].
- The crankshaft, using tool [1].
CHECKING AND SETTING THE VALVE TIMING

Position tool [4].
Slacken the screw (10) while holding tool [4].

Using the hexagonal recess (D), turn the eccentric hub (11) of the tensioner roller (12) (clockwise), to detension the belt. The cursor (13) moves against the tool [4].
Remove the timing belt.

Refitting.

Systematically replace the timing belt.

IMPERATIVE : Check that the rollers (12) and (14), as well as the coolant pump (15) turn freely (No play, no tight spot).

When replacing the belt (14), tighten the fixing to $3.5 \pm 0.3$ m.daN.
Position the belt on the crankshaft pinion (16), respecting its direction of fitting.
Immobilise the belt, using tool [6].
Refit the timing belt, well-tensioned, in the following sequence:
- Guide roller (14).
- Pinion (17).
- Pinion (18).
- Coolant pump (15).
- Tensioner roller (12).
CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ

Tensioning the timing belt.
Remove tool [6].

(E) : Max. position.

(F) : Nominal tension position.

Using the hexagonal recess (D), turn the roller hub (anti-clockwise), to bring the index (13) to position (E) to tension the belt to the maximum.

Turn the eccentric hub (11) of the roller (12) (clockwise), to bring the cursor (13) into light contact with the tool [4].

IMPERATIVE : Never make a complete rotation of the eccentric hub (11) when tool [4] is in tension.

NOTE : This operation places the index (13) in the nominal position (F).

Tighten the screw (10) to 2 ± 0.2 m.daN while holding the roller by means of the hexagonal recess (D).

Remove the tools [1], [2], [3], and [4].

Checks.

Make two rotations of the crankshaft (direction of rotation of the engine).

IMPERATIVE : Never turn the crankshaft backwards.

Make sure that the timing is correctly set, by refitting the camshaft and crankshaft setting pegs.

Remove the pegs.

Make ten rotations of the crankshaft (direction of rotation of the engine).

Check the position of the index (13).

If the tensioner index is not in its adjustment position (F), recommence the operations to tension the timing belt.
CHECKING AND SETTING THE VALVE TIMING

Positioning the crankshaft.

NOTE: This operation positions all the pegs in their respective pegging points.

Peg:
- The inlet camshaft pulley, using tool [3].
- The crankshaft, using tool [1].
If this is not possible, reposition the flange (20).

IMPERATIVE: This operation guarantees the setting of the timing for subsequent operations.

Immobilise the crankshaft, using tool [5].
Slacken the screw (19) so as to free the crankshaft pinion (16).
Bring the flange (20) to the pegging point, using tool [5].
Position tool [1].
Tightening of screw (19) (Tool FACOM D360).
Tighten to: $4 \pm 0.4$ m.daN
Angular tighten to: $53^\circ \pm 5^\circ$.
Remove tools [1], [3] and [5].
CHECKING AND SETTING THE VALVE TIMING

Refitting (continued).

Refit:
- The timing cover (9).
- The auxiliary drive pulley.
- The screws (7), tighten to $2.1 \pm 0.2 \text{ m.daN}$.
- The timing cover (8).
- The RH engine support (6).
- The torque reaction rod (3).

Tighten:
- Screws (5) to $6 \pm 0.6 \text{ m.daN}$
- Nut (4) to $4.5 \pm 0.4 \text{ m.daN}$
- Screws (1) and (2) to $4.5 \pm 0.4 \text{ m.daN}$

Refit the auxiliary drive belt (see corresponding operation).

Continue the refitting operations in reverse order to removal.
CHECKING AND SETTING THE VALVE TIMING

Engine: XFW

Tools.
[1] Camshaft setting pegs: (-).0187-B
[2] Crankshaft setting peg: (-).0187-A
[7] Instrument for measuring belt tension: (-).0192

Removing.
Remove:
The front RH wheel
The RH wheelarch.
The front RH tie-bar.
The auxiliary drive belt (see corresponding operation).
The tensioner roller assembly (1).
The crankshaft pulley (2).

Support the engine using a stand.
Remove:
The upper RH torque reaction rod.
The RH engine support.
CHECKING AND SETTING THE VALVE TIMING

Engine : XFW

Removing (continued).

Remove:

The twelve screws (3) (6 mm external hexagonal adaptor).
The seven screws (4) (7 mm external hexagonal adaptor).
The two covers (5).
The fixings screws of the power steering pump, then suspend the latter.
The support (7).

NOTE : The camshaft pegging operation can be performed without slackening the pinion screws or rotating the camshafts (using tools [5] and [6]; lightly oil the pegs [1] and [2] prior to fitting.

Peg in the sequence:

Camshafts, using tool [1].
Crankshaft, using tool [2].
CHECKING AND SETTING THE VALVE TIMING

Engine: XFW

Removing (continued).

Remove screw (8).
Slacken screws (9) and (10) and nut (11).
Pivot the tensioner roller eccentric (clockwise), using tool FACOM R 161 at «B».
Remove the guide roller (12).
Remove the timing belt, commencing with the tensioner roller and the coolant pump.

Refitting.

Make sure that the camshafts, as well as the crankshaft, are correctly pegged.
Check that the rollers (13) and (14), as well as the coolant pump (15) turn freely (no tight spots).
If replacing the belt, tighten the rollers (13) and (14) to 8 ± 0.8 m.daN.
Slacken screws (16) by a 1/4 turn.
Ensure that the camshaft pinions rotate freely on their hubs.
Turn the four camshaft pinions (clockwise), to end of slots.
Engage the timing belt on the crankshaft pinion.
Immobilise the belt, using tool [4].
Refitting (continued).

Position the belt on the guide roller (13), belt at (C) well tensioned.

**NOTE**: Carefully turn the camshaft pinion in the opposite direction to the rotation of the engine in order to engage the belt on the pinion.

Engage the belt on the LH exhaust camshaft pinion (17).

**IMPERATIVE**: The angular displacement value of the pinion relative to the timing belt should not be greater than the width of one tooth.

Engage the belt on the LH inlet camshaft pinion (18), as before. Refit the roller (12), tighten to 8 ± 0.8 m.daN.
Refitting (continued).

Engage the belt on:
The roller (13).
The camshaft pinions, inlet (19) then RH exhaust (20), as before for the camshafts.
Simultaneously engage the belt on:
The roller (21).
The pump (15).
The roller (14).
Using tool FACOM S.161, at «A», pivot the plate to be able to engage the screw (8).
Tighten screws (8), (9) and (10) to 2.5 ± 0.2 m.daN.
Pivot the tensioner roller to tension the belt to the maximum (anti-clockwise), using tool FACOM R.161 at «B»:
- SEEM CTI 901-1: 440 ± 15 SEEM units,
- SEEM CTG 105.5: 83 ± 2 SEEM units,
- SEEM CTG 105.6: 86 ± 2 SEEM units.
Tighten the nut (11) of the tensioner roller to 1 ± 0.1 m.daN.

IMPERATIVE: Check that the camshaft pinions are not at end of slots (by removing a screw).
If they are, repeat the operation to refit the belt.
CHECKING AND SETTING THE VALVE TIMING

Refitting (continued).

Tighten at least two screws (16) per hub to 1 ± 0.1 m.daN, in the order indicated (17), (18), (19) and (20).
Remove tools [4], [7], [1] and [2].
Effect two rotations of the crankshaft (direction of rotation of the engine).

WARNING : Never rotate the engine backwards.

Peg the crankshaft, using tool [2].
Slacken the nut (11) a 1/4 turn.
Align the marks (D) and (E) of the tensioner roller, using tool FACOM R.161.
Tighten the nut (11) to 2.5 ± 0.2 m.daN, without altering the position of the roller.
Remove the crankshaft setting peg [2].
Effect two rotations of the crankshaft.

WARNING : Never rotate the engine backwards.

Peg the crankshaft, using tool [2].
Check the position of the tensioner roller.
If the marks are not aligned, recommence the alignment of the marks (D) and (E) of the tensioner roller.
CHECKING AND SETTING THE VALVE TIMING

Engine : XFW

Refitting (continued).

Peg the camshaft hubs, starting with LH exhaust (17) then (18), (19) and (20), using tool [1], proceeding in the following way:
- The peg goes in: slacken by 45° the fixing screws of the pinion on the camshaft hub,
- The peg does not go in: slacken by 45° the fixing screws of the pinion on the camshaft hub until the peg will go in.

ESSENTIAL : Check that the camshaft pinions are not at end of slots (by removing a screw).
If they are, repeat the operation to refit the belt.
Tighten the pinions in the sequence below:
Pinions (17), (18), (19), (20) tighten to 1 ± 0.1 m.daN.

Remove tools [1] and [2]

Checking the setting of the timing.

Effect two rotations (Normal direction of rotation of the engine).

IMPERATIVE : Never turn the engine backwards.

Refit the crankshaft peg [2].
Check that the peg for checking the camshaft settings [4] engages freely in the cylinder heads (J), as far as the camshaft pinions.
Checking and Setting the Valve Timing

Checking the setting of the timing (continued).

Should this not be the case, repeat the operation to refit the belt.
Remove the crankshaft peg [2].

Refitting (continued).

Refit:
The power steering pump.
The support (7).
The tensioner roller assembly (1).
Tighten:
Screw (22) to 2.5 m.daN + LOCTITE FRNETANCH.
Screw (23) to 4.0 m.daN + LOCTITE FRNETANCH.
Screw (24) to 2.5 m.daN + LOCTITE FRNETANCH.
Screw (25) to 6.0 m.daN + LOCTITE FRNETANCH.
Tighten the crankshaft pulley screws to 2.5 ± 0.2 m.daN.
Refit the auxiliary drive belt (see corresponding operation).
Complete the refitting operations in the opposite order to removal.
CHECKING AND SETTING THE VALVE TIMING

**Tools:**

1. Instrument for measuring belt tension SEEM C.TRONIC: (-).0192
2. Crankshaft setting peg (engine DW12TED4): (-).0188-X
3. Camshaft peg: (-).0188-M
4. Belt retaining pin: (-).0188-K
5. Engine flywheel stop: (-).0188-F
6. Tensioning lever: (-).0188-J2
7. Pulley extractor: (-).0188-P
8. Crankshaft setting peg (engine DW10ATED4): (-).0188-Y
9. Crossmember: 4090-T
10. Tie-bar support: 4176-T
11. Retaining support: (-).0911-J
12. Support with adjustable screw: (-).0911-H
13. Set of plugs: (-).0188-T

**Removing.**

Remove:
- The front RH splashshield.
- The under-engine shield.
- The auxiliary drive belt (see corresponding operation).
CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW

Removing.

Remove:
- The closing panel of the clutch casing (block the engine flywheel, tool [5]).
- The auxiliary drive pulley screw.

Refit the screw without the washer.

Remove:
- The auxiliary drive pulley, using tool [8].
- The tool [5].

Turn the crankshaft.

Peg:
CHECKING AND SETTING THE VALVE TIMING

Engines: RHT-4HW

Removing (continued).
Disconnect the battery.
Move aside the header tank.
Position the tools for supporting the engine [10], [11], [12] and [13].
Remove:
- The scuttle panel grille.
- The torque reaction rod (1).
- The fuel unions (2).

IMPERATIVE: Plug the apertures using tool [13].

Protect the radiator harness with strong cardboard cut out to the dimensions of the radiator.
Remove:
- The RH engine support (4).
- The timing covers (3).
- The lower timing cover.
Peg the camshaft pulley, using tool [3].
Slacken the tensioner roller fixing (5).
Retighten the fixing to the position of maximum de-tension. (Tighten to 0.1 m.daN).
Remove the timing belt.
CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW

Refitting.
IMPERATIVE : Check that the rollers (5) and (6) as well as the coolant pump (7) turn freely (no play, no tight spot), check also that these rollers are not noisy and/or that they are not throwing out grease.
In the event of replacement, tighten the roller (6) to 4.3 ± 0.4 m.daN.
Slacken the screws (8).
Check that the pulley (9) turns freely on its hub.
Tighten the screws (8) by hand.
Slacken the screws (8) by a 1/6 turn.
Turn the pulley (9) (clockwise), to end of slots.
Refit the timing belt, well tensioned, in the following order:
- Crankshaft (immobilise the belt, using tool [4]).
- Guide roller (6).
Engage the timing belt on the pulley (10).
Carefully turn the camshaft pinion in the opposite direction to the rotation of the engine in order to engage the belt on the pinion.
WARNING : The angular displacement «a» of the pulley relative to the belt should not be greater than the width of one tooth.
Engage the belt on the tensioner roller (5) and on the coolant pump pinion (7).
Turn the tensioner roller (5) (anti-clockwise), so as to put the tensioner roller (5) in contact with the belt.
Pre-tighten the fixing screw of the tensioner roller to 0.1 m.daN.
Remove the tool [4].
### CHECKING AND SETTING THE VALVE TIMING

**Engines : RHT-4HW**

#### Pre-tensioning the timing belt.

Position the tool [1].

**NOTE** : Check that the tool is not in contact with anything else around it.

Turn the roller (5) (anti-clockwise), using tool [7] to obtain a tension of:

\[98 \pm 2 \text{ SEEM units.}\]

Tighten the screw (11) to \(2.3 \pm 0.2 \text{ m.daN} \) (without modifying the position of the roller). Remove the tool [1].

**IMPERATIVE** : By removing one of the screws (8) on the pulley (9), make sure that these screws (8) are not at end of slots. (If they are, repeat the operation to refit the timing belt).

Bring the screws (8) into contact with the pulleys.

Tighten the screws (8) to \(2 \pm 0.2 \text{ m.daN} \).

Remove the setting pegs [3] and [2].

Effect eight turns of the engine in the normal direction of rotation.

**IMPERATIVE** : Never turn the crankshaft backwards.
CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW

Tensioning the timing belt.

Refit the pegs [2] and [3].
Slacken the screws (8).
Tighten the screws (8), by hand.
Slacken the screws (8) by a 1/6 turn.
Slacken screw (11).
Place tool [1] on the belt at (A).
Turn the roller (anti-clockwise), using tool [7] to obtain a tension of:

\[51 \pm 2 \text{ SEEM units.}\]

Tighten screw (11) to \[2.3 \pm 0.2 \text{ m.daN} \]. (without modifying the position of the roller).
Tighten the screws (8) to \[2 \pm 0.2 \text{ m.daN}.\]
Remove tool [1] to release the internal forces.
Refit the tool [1].
The tension value should be between 48 and 55 SEEM units.

**IMPERATIVE** : Value noted outside the tolerance: detension the belt and recommence the operation.

Remove tools [1], [2] and [3].
CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW

Checking the timing setting.

Effect two turns of the engine in the normal direction of rotation, without turning the engine backwards.
Refit the peg [2].

IMPERATIVE : Check visually that the offset between the hole in the camshaft hubs and the corresponding pegging hole is not more than 1 mm.

Remove the peg [2].
Refit:
- The lower timing cover.
- The elements (3) of the timing cover.
- The engine support (4).
- The screws (13), tighten to 6.1 ± 0.6 m.daN.
- The nut (12), tighten to 4.5 ± 0.4 m.daN.

IMPERATIVE : Apply an opposite torque at (A).

Refit:
- The torque reaction rod (1).
- Screw (14), tighten to 5 ± 0.5 m.daN.
- Screw (15), tighten to 5 ± 0.5 m.daN.
CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW

Refit:
- The tool [5].
- The auxiliary drive pulley

Clean the threads of the pulley screw going into the crankshaft, (Tap M16x150). Brush the screw threads.

Nettoyer le taraudage de la screws de poulie dans le vilebrequin. (Taraud M16x150). Brosser le filetage de la screws.

Tightening torque for the screw:
- Tighten to : 7 ± 0.7 m.daN (+ LOCTITE FRENETANCH)
- Angular tighten : 60° ± 6° (Outil FACOM D360).

Check the tightening: 26 ± 2.6 m.daN

Refit the auxiliary drive belt (see corresponding operation).

Remove tool [5].
Refit the closing plate, tighten to 0.7 m.daN.
Tighten the wheel bolts to 10 m.daN.
Complete the refitting in reverse order to removal.
Initialise the various ECUs.
## COOLING SYSTEM SPECIFICATIONS

### Vehicle with air conditioning

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Circuit capacity</th>
<th>Radiator surface</th>
<th>Pressurisation</th>
<th>Opening of thermostatic regulator</th>
<th>Cooling fan</th>
<th>1st speed</th>
<th>2nd speed</th>
<th>3rd speed</th>
<th>Aircon cut-out</th>
<th>Warning</th>
<th>Post-cooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFN 2.0i 16V</td>
<td>7 litres</td>
<td>25 dm³</td>
<td>1.4 Bar</td>
<td>89°C</td>
<td>1x350W (**)</td>
<td>97°C or 10 Bars in aircon circuit</td>
<td>101°C or 17 Bars in aircon</td>
<td>105°C or 22 Bars in aircon circuit</td>
<td>115°C</td>
<td>118°C</td>
<td>No</td>
</tr>
<tr>
<td>3FZ 2.2i 16V</td>
<td>7.2 litres</td>
<td></td>
<td></td>
<td>78°C</td>
<td>1x350W</td>
<td>97°C or 10 Bars in aircon circuit</td>
<td>97°C or 10 Bars in aircon circuit</td>
<td></td>
<td>112°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XFW 3.0i 24V</td>
<td>10.5 litres</td>
<td></td>
<td></td>
<td>89°C</td>
<td>1x350W +1x300W (**)</td>
<td>101°C or 17 Bars in aircon</td>
<td>101°C or 17 Bars in aircon circuit</td>
<td></td>
<td>115°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHT - RHW 2.0 HDi</td>
<td>10 litres (*)</td>
<td></td>
<td></td>
<td></td>
<td>1x400W +1x300W (**)</td>
<td>101°C or 17 Bars in aircon</td>
<td>105°C or 22 Bars in aircon circuit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4HW 2.2 HDi</td>
<td>11.3 litres</td>
<td></td>
<td></td>
<td></td>
<td>1x460 + 1x300W</td>
<td>97°C or 10 Bars in aircon circuit</td>
<td></td>
<td></td>
<td>115°C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) = (*) = With automatic gearbox : 10.2 litres ; (**) = With automatic gearbox = 1x460W ; (***) = With automatic gearbox = 1x350W +1x300W
EXHAUST SPECIFICATIONS

Petrol engines all types

Repair

Respect the precautions to be taken when operating on a vehicle. The flexible pipe must not come into contact with corrosive products. Do not distort the flexible pipe by more than $20^\circ$ angular (X), $20\text{ mm}$ axial, $25\text{ mm}$ shear (Y) (flexible pipe not fitted).

Do not distort the flexible pipe by more than $3^\circ$ angular (X), $0\text{ mm}$ axial, $3\text{ mm}$ shear (Y) (flexible pipe in place).

WARNING: Non-respect for these precautions will result in a reduction in the lifetime of the flexible pipe. It is thus essential to disconnect or remove the exhaust line in any operation necessitating the lifting of the power unit.
EXHAUST SPECIFICATIONS
Engines: RFN-3FZ

Tightening torques (m.daN)

(1) Bicone collar Ø 74.5 mm
Fixing of catalytic converter/manifold pipework : 2.5 ± 0.4

(2) Flexible metallic pipe

(3) Lambda probes take-off : 4.7 ± 0.7

(4) Catalytic converter

(5) Intermediate silencer

(6) Rear silencer

A and A' : After sales cutting zones.
Connecting sleeve Ø 55 mm : 5.2 ± 0.7
# EXHAUST SPECIFICATIONS

**Engine**: XFW

<table>
<thead>
<tr>
<th>Tightening torques (m.daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Front precatalyser</td>
</tr>
<tr>
<td>(2) Flexible metallic pipe</td>
</tr>
<tr>
<td>(3) Bicone collar Ø 66 mm</td>
</tr>
<tr>
<td>(front/rear precatalyser assembly)</td>
</tr>
<tr>
<td>(4) Rear precatalyser</td>
</tr>
<tr>
<td>(5) Flexible metallic pipe</td>
</tr>
<tr>
<td>(6) Catalytic converters</td>
</tr>
<tr>
<td>(7) Intermediate silencer</td>
</tr>
<tr>
<td>(8) Rear silencer</td>
</tr>
<tr>
<td>(9) Upstream lambda probe take-off</td>
</tr>
<tr>
<td>(10) Downstream lambda probe take-off</td>
</tr>
</tbody>
</table>

A and A' After sales cutting zones.

Connecting sleeve Ø 55 mm : 5.2 ± 0.7
EXHAUST SPECIFICATIONS

Engines: RHT-4HW

With particle filter

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque (m.daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Ball-joint front fixing bracket</td>
<td>4.5 ± 0.7</td>
</tr>
<tr>
<td>(2) Precatalyser</td>
<td></td>
</tr>
<tr>
<td>(3) Catalytic converter</td>
<td></td>
</tr>
<tr>
<td>(4) Particle filter</td>
<td></td>
</tr>
<tr>
<td>(5) Bicone collar Ø 74.5 mm</td>
<td>2.5 ± 0.4</td>
</tr>
<tr>
<td>(6) Rear silencer</td>
<td></td>
</tr>
<tr>
<td>(7) Catalytic converter bracket (P. filter)</td>
<td>3.3 ± 0.5</td>
</tr>
<tr>
<td>(8) C. converter and p. filter pressure take-off</td>
<td>1.7 ± 0.1</td>
</tr>
</tbody>
</table>
EXHAUST SPECIFICATIONS
Engine : RHW

Without particle filter

Tightening torques (m.daN)

(1) Ball-joint front fixing bracket : 4.5 ± 0.7
(2) Precatalyser
(3) Catalytic converter
(4) Intermediate silencer
(5) Rear silencer

A and A' After sales cutting zones.
Connecting sleeve Ø 55 mm : 5.2 ± 0.7
## CHECKING THE OIL PRESSURE

### Petrol engines

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Temperature (°C)</th>
<th>Pressure (Bars)</th>
<th>Rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0i 16V</td>
<td>80°C</td>
<td>1.5 5 3.4 6.3 6.9 1.2</td>
<td>1000 3000 1000 2000 4000 650</td>
</tr>
<tr>
<td>2.2i 16V</td>
<td>80°C</td>
<td>2.2i HDi 3.0i 24V</td>
<td>2.2i HDi 3.0i 24V</td>
</tr>
<tr>
<td>3.0i 24V</td>
<td>80°C</td>
<td>4HW</td>
<td>4HW</td>
</tr>
</tbody>
</table>

### Diesel engines

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Temperature (°C)</th>
<th>Pressure (Bars)</th>
<th>Rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 HDi</td>
<td>80°C</td>
<td>2.0 4.0 2.0 4.0</td>
<td>1000 2000 1000 2000</td>
</tr>
<tr>
<td>2.2 HDi</td>
<td>80°C</td>
<td>4.0</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Tools (Toolkit 4103-T).

- [1] Pressure gauge
- [2] Flexible pipe
- [3] Union 4202-T

**ESSENTIAL**: Respect the safety and cleanliness recommendations.

**WARNING**: Checking the oil pressure should be done when the engine is hot, after having checked the oil level.
# OIL FILTERS

<table>
<thead>
<tr>
<th>PURFLUX</th>
<th>LS 880</th>
<th>LS 923</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0i 16V – 2.2i 16V</td>
<td>X</td>
<td>X</td>
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<tr>
<td>3.0i 24V</td>
<td>X</td>
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</tr>
<tr>
<td>2.0 HDi – 2.2 HDi</td>
<td>X</td>
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</table>

To be read together with the Petrol and Diesel correspondence tables

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Ø (mm)</th>
<th>Height (mm)</th>
</tr>
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<tbody>
<tr>
<td>LS 880</td>
<td>86</td>
<td>140</td>
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<tr>
<td>LS 923</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feature</td>
<td>Petrol</td>
<td>Diesel</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Supplier</td>
<td>VALEO</td>
<td>LUK</td>
</tr>
<tr>
<td>Mechanism / type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clutch disc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of splines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ø of lining. Ext/Int</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of lining</td>
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</table>

<table>
<thead>
<tr>
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<th>2.0i 16V</th>
<th>2.2i 16V</th>
<th>2.0 HDi</th>
<th>2.2 HDi</th>
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<tbody>
<tr>
<td>Gearbox type</td>
<td>BE4/5</td>
<td>ML5C</td>
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<td></td>
</tr>
<tr>
<td>«Push» clutch</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>«Pull» clutch</td>
<td></td>
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<table>
<thead>
<tr>
<th>Supplier</th>
<th>VALEO</th>
<th>LUK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanism / type</td>
<td>230 DNG 4700</td>
<td>230 DNG 5100</td>
</tr>
<tr>
<td>Clutch disc</td>
<td>11 R 14 X</td>
<td>Clutch with double damping flywheel (DVA)</td>
</tr>
<tr>
<td>Ø of lining. Ext/Int</td>
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<td>225/150</td>
</tr>
<tr>
<td>Quality of lining</td>
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<table>
<thead>
<tr>
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<th>VALEO</th>
<th>LUK</th>
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<tr>
<td>Mechanism / type</td>
<td>230 DNG 4700</td>
<td>230 DNG 5100</td>
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<tr>
<td>Clutch disc</td>
<td>11 R 14 X</td>
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<tr>
<td>Ø of lining. Ext/Int</td>
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<td>225/150</td>
</tr>
<tr>
<td>Quality of lining</td>
<td>F 808</td>
<td></td>
</tr>
</tbody>
</table>
CLUTCH SPECIFICATION
Engines: RFN – 3FZ – RHT – RHW – 4HW

(1) Clutch disc.

(2) Clutch plate.

(3) Clutch bearing.
### Bleeding the hydraulic clutch control.

**Composition of the hydraulic circuit.**
- Brake fluid reservoir located on the master cylinder.
- Hydraulic control sender located in the passenger compartment and fixed on the pedal gear.
- Clutch pedal.
- Hydraulic control receiver fixed on or inside the clutch housing, depending on gearbox type.

### Bleed.

**IMPERATIVE:** Use only new, clear brake fluid, avoid entry of any foreign bodies or impurities into the hydraulic circuit.

Use only hydraulic fluid that is approved and recommended: **DOT4**.

**IMPERATIVE:** Do not use any automatic bleed apparatus (risk of the fluid emulsifying in the reservoir).

Remove:
- The pollen filter and its support (see corresponding operation in chapter on aircon).
- The air filter and its union.
- The under-engine sound-deadening.

Refill the brake fluid reservoir to the maximum of its capacity.
HYDRAULIC CLUTCH CONTROL SPECIFICATION

Engines : RFN-3FZ-RHT-RHW-4HW

Bleeding the hydraulic clutch control.

Couple a transparent pipe onto the bleed screw (1). Submerge the end of the pipe in a receptacle containing brake fluid, situated lower than the clutch slave cylinder (2). Create a syphon at «A» above the clutch slave cylinder, using the transparent pipe.

Open the bleed screw (1). Action the clutch pedal (3) manually through all its travel, with seven rapid down-up movements. On the final movement, hold the clutch pedal (3) at the end of its travel. Reclose the bleed screw (1). Allow the clutch pedal (3) to rise back up again. Fill the brake fluid reservoir to the maximum of its capacity.

NOTE : For new bleed operations: open the bleed screw (1).

If necessary, repeat the operation.
HYDRAULIC CLUTCH CONTROL SPECIFICATION

| Engines : RFN-3FZ-RHT-RHW-4HW |

---

**Bleeding the hydraulic clutch control (continued).**

Top up the brake fluid level to the **MAXIMUM** of the brake fluid reservoir capacity.

Declutch and clutch rapidly **40 times**.

Start the engine.

Apply the handbrake.

Engage a gear.

Check that the clutch starts to engage at a dimension (X) greater than or equal to **35 mm** (Dimension (X) is given as a guide).

**NOTE** : If incorrect, repeat the bleed operations.

Tighten the bleed screw (1) to **0.75.m.daN**.
# GEARBOX AND TYRE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Tyres-Rolling circumference</th>
<th>Gearbox type</th>
<th>Gearbox ident. plate</th>
<th>Reduction box torque</th>
<th>Speedometer ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Petrol</strong></td>
<td>205/65 R 15 – 1.973 m</td>
<td>RFN</td>
<td>20 DL 26 (*)</td>
<td>14x62</td>
<td>18x14</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>20 DL 27 (**)</td>
<td>21 x 73</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0i 16V</td>
<td>20 TP 74</td>
<td>14x65</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20 LM 09</td>
<td>19 x 73</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3FZ</td>
<td>20 HZ 27</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2i 16V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>XFW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Diesel</strong></td>
<td>215/65 R15-2.016 m</td>
<td>BE4/5</td>
<td>20 LM 05</td>
<td>15x67</td>
<td>27x21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AL4</td>
<td>20 TP 74</td>
<td>21 x 73</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ML5C</td>
<td>20 LM 01</td>
<td>16x69</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 HP 20</td>
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</tr>
<tr>
<td></td>
<td>215/60 R16-2.025 m</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Engine type</strong></td>
<td>2.0i 16V</td>
<td>2.0 HDi</td>
<td>Auto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tyres-Rolling circumference</strong></td>
<td>215/65 R 15 - 2.016 M</td>
<td>2.2i 16V</td>
<td>Auto.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gearbox type</strong></td>
<td>ML5C</td>
<td>RHT</td>
<td>RHT</td>
<td>4HW</td>
<td></td>
</tr>
<tr>
<td><strong>Gearbox ident. plate</strong></td>
<td>20 LM 05</td>
<td>3.0i 24V</td>
<td>ML5C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reduction box torque</strong></td>
<td>15x67</td>
<td>2.0i 16V</td>
<td>20 TP 74</td>
<td>16x69</td>
<td></td>
</tr>
<tr>
<td><strong>Speedometer ratio</strong></td>
<td>27x21</td>
<td>2.0i 16V</td>
<td>20 LM 01</td>
<td>27x21</td>
<td></td>
</tr>
</tbody>
</table>
BE4/5 GEARBOX SPECIFICATION

Engine : RFN

(A) Marking zone including:

- Component reference.
- Factory serial no.
BE4/5 GEARBOX SPECIFICATION

Engine: RFN

Tightening torques m.daN.

1. Gearbox rear casing: 1.5 ± 0.1
2. Gearbox casing / clutch casing fixings: 1.5 ± 0.1
3. Reverse gear rocker shaft fixing nut: 4.5 ± 0.4
4. Breather pipe: 1.5 ± 0.1
5. Reverse gear switch: 2.5 ± 0.2
6. Drain plug: 3.5 ± 0.2
7. Top-up plug: 2 ± 0.2
8. Speedo drive support: 1.5 ± 0.1
9. Differential housing fixings (M7): 1.5 ± 0.1
10. Differential housing fixings (M10): 5 ± 0.5
11. Clutch bearing guide fixing screw: 1.5 ± 0.1
12. Differential extension fixing: 1.5 ± 0.1
### BE4/5 GEARBOX SPECIFICATION

**Engine: RFN**

<table>
<thead>
<tr>
<th>Number</th>
<th>Component</th>
<th>Torque (m.daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Primary shaft nut</td>
<td>7.5 ± 0.7</td>
</tr>
<tr>
<td>14</td>
<td>Secondary shaft nut</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>15</td>
<td>Bearing retaining screw</td>
<td>1.5 ± 0.1</td>
</tr>
<tr>
<td>16</td>
<td>Differential gearwheel screw</td>
<td>6 ± 0.6</td>
</tr>
<tr>
<td>17</td>
<td>Gear control support screw</td>
<td>1.5 ± 0.1</td>
</tr>
</tbody>
</table>

**Diagram:**

- Component 13: Primary shaft nut
- Component 14: Secondary shaft nut
- Component 15: Bearing retaining screw
- Component 16: Differential gearwheel screw
- Component 17: Gear control support screw
ML5C GEARBOX SPECIFICATION

Engines : 3FZ – RHT – RHW – 4HW

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A)</td>
<td>Label.</td>
</tr>
<tr>
<td>(B)</td>
<td>Gearbox reference.</td>
</tr>
<tr>
<td>(C)</td>
<td>Sequence no.</td>
</tr>
<tr>
<td>(D)</td>
<td>Bar code.</td>
</tr>
<tr>
<td>(E)</td>
<td>Marking zone:</td>
</tr>
</tbody>
</table>

- Gearbox reference.  
- Sequence no.
ML5C GEARBOX SPECIFICATION

Engines: 3FZ – RHT – RHW – 4HW

Gearbox lubrication.

Oil type: ESSO 75W80 EZL 848 or TOTAL 75W 80W H 6965
Oil capacity: 2.1 litres.

Lubricated for life.

NOTE: If the gearbox is drained, refilling of the gearbox is via the venting hole.

Tightening torques m.daN.

1) Differential housing fixing (M8 L45) : 1,8 ± 0,1
2) Differential housing fixing (M8 L70) : 1,8 ± 0,1
3) Differential housing fixing (M10 L70) : 4 ± 0,4
4) Differential housing fixing (M10 L50) : 4 ± 0,4
5) Differential housing fixing (M10 L85) : 4 ± 0,4
6) Drain plug : 3 ± 0,3
7) Speedo control support : 1 ± 0,1

WARNING: Do not use the plug on the differential housing, this does not allow the gearbox oil level to be checked.
ML5C GEARBOX SPECIFICATION

Engines: 3FZ – RHT – RHW – 4HW

Tightening torques m.daN.

(8) Fixing of gearbox cover on gearbox casing: 2 ± 0,2
(9) Bearing stop plate: 2 ± 0,2
(10) Vent hole.
(11) Reverse gear switch: 2,5 ± 0,2
(12) Fixing of gearbox casing on clutch casing: 2 ± 0,2
ML5C GEARBOX SPECIFICATION

Engines: 3FZ – RHT – RHW – 4HW

Tightening torques m.daN..

- (13) Flange fixing screws: 2 ± 0,2
- (14) Secondary shaft nut: 17 ± 1,7
- (15) Gear control support screw: 1,5 ± 0,1
- (16) Differential gearwheel screw: 7.7 ± 0.7
The automatic gearbox is identified by a self-adhesive label (A) or, failing that, by a marking (B).

(1) Component reference.

(2) Serial no.
<table>
<thead>
<tr>
<th>Component</th>
<th>Tightening torques m.daN.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Converter:</td>
<td></td>
</tr>
<tr>
<td>Pre-tightening</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>Tightening</td>
<td>3 ± 0.3</td>
</tr>
<tr>
<td>(2) Fixing of gearbox on cylinder block</td>
<td>5.2 ± 0.5</td>
</tr>
<tr>
<td>(3) Speedometer drive</td>
<td>0.8</td>
</tr>
<tr>
<td>(4) Electrovalve and/or regulators on hydraulic block</td>
<td>0.9</td>
</tr>
<tr>
<td>(5) Hydraulic block</td>
<td>0.8</td>
</tr>
<tr>
<td>(6) Hydraulic block casing</td>
<td>0.8</td>
</tr>
<tr>
<td>(7) Automatic gearbox input speed sensor</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>(8) Automatic gearbox input speed sensor</td>
<td>1 ± 0.1</td>
</tr>
<tr>
<td>(9) Line pressure sensor</td>
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</tr>
</tbody>
</table>
AL4 AUTOMATIC GEARBOX SPECIFICATION

Engines: RFN - RHT

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque (m.daN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10) Electrovalve controlling flow into the exchanger</td>
<td>1 ± 0,1</td>
</tr>
<tr>
<td>(11) Multifunction switch</td>
<td>1,5 ± 0,1</td>
</tr>
<tr>
<td>(12) Sleeve stop</td>
<td>1,5 ± 0,1</td>
</tr>
<tr>
<td>(13) Automatic gearbox heat exchanger</td>
<td>5 ± 0,5</td>
</tr>
<tr>
<td>(14) Filler cap</td>
<td>2,4 ± 0,2</td>
</tr>
<tr>
<td>(15) Top-up plug</td>
<td>2,4 ± 0,2</td>
</tr>
<tr>
<td>(16) Gearbox drain plug</td>
<td>4 ± 0,4</td>
</tr>
<tr>
<td>(17) Gearbox support</td>
<td>4,5 ± 0,4</td>
</tr>
</tbody>
</table>

Driveshaft nut (M24x150): 32,5 ± 3
Preliminary conditions:
Checks there are no faults, using the diagnostic tool.
Place the vehicle on a lift, keep vehicle horizontal.
Gear lever in position «P», without applying the handbrake.
Heavy electrical consumers disconnected.
Connect the diagnostic tool.
Select the parameter measures function.
Make starting this operation, make sure that the oil temperature is well below 55°C; if it is not, allow the oil to cool.
Press the brake pedal.
Start the engine and allow it to run at idling speed, engage all the gears using the gear selector. Return to «P».

Tools.

[1a] Filling cylinder : (-).0341-A
[1b] 4 HP 20 adaptor without gauge : (-).0341-B

NOTE :
- The 4 HP 20 automatic gearbox is lubricated for life.
- Check the level every 20 000 miles.

Checks

IMPERATIVE : Use only ESSO LT 71141.
Checks (continued)

With the engine running at the temperature 55° ± 1°C, open the top-up plug (3). Wait for the temperature to reach 60° ± 1°C.

1st possibility :
- Oil flows out, the level is correct.
- Refit the top-up plug (3), tighten to 2,5 ± 0,2 m.daN.

2nd possibility :
- Oil does not flow out.
- Refit the top-up plug (3).
- **Add 0,5 litres of oil.** (Refer to the chapter on refilling).

Repeat the procedure of checking the oil level.
Refit the metallic part of the vent plug (2), using an **18mm** dia. punch and a mallet.
Clip the plastic part of the vent plug (2).
DRAIN / REFILL / TOP-UP : 4 HP 20 GEARBOX

Engine : XFW

Draining.

Preliminary conditions:
- Draining should be carried out with the engine hot, to eliminate impurities in suspension in the oil.
- The draining is partial since the converter cannot be totally emptied.
- In draining, approx. 3 litres is removed.
- Tighten the cap (1) to 4,5 ± 0,4 m.daN.

Filling.

IMPERATIVE : Use only ESSO LT 71141.

Place the vehicle on a lift.
Move aside the air filter assembly.

ESSENTIAL : Leave the air temperature sensor connected.

Remove the air vent assembly (2).
Raise the vehicle.
Remove the top-up plug (3).
Using tool [1], pour new oil through the air vent aperture, until oil flows out via the top-up hole.
Start the engine and allow it to run at idling speed (applying the brake pedal) and engage all the gears using the gear selector. Return to «P».
Add oil until it flows out via the top-up hole.
Reclose the top-up hole.
Stop the engine.

IMPERATIVE : Check the oil level.
## DRIVESHAFTS - GEARBOX

<table>
<thead>
<tr>
<th>Vehicles</th>
<th>Gearbox</th>
<th>Engines</th>
<th>Driveshaft bearing</th>
<th>Driveshaft nut</th>
<th>Right</th>
<th>Left</th>
<th>Tool kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>C8</td>
<td>BE4/5</td>
<td>RFN</td>
<td></td>
<td>1.0</td>
<td>10 + 60°</td>
<td></td>
<td>7114-T.X</td>
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<tr>
<td></td>
<td></td>
<td>3FZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ML5C</td>
<td>RHT - RHW</td>
<td>4HW</td>
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<td></td>
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<td>9017-T.C</td>
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<tr>
<td></td>
<td>AL4</td>
<td>RFN</td>
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<td>(-).0338.J1</td>
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<tr>
<td></td>
<td></td>
<td>RHT</td>
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<td>(-).0338.H1</td>
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<tr>
<td></td>
<td>4 HP 20</td>
<td>XFW</td>
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<td></td>
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<td>(-).8010-T.D</td>
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</table>

**Gearbox oil seal mandrels**

<table>
<thead>
<tr>
<th>Right</th>
<th>Left</th>
<th>Tool kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>7114-T.X</td>
<td>7114-T.W</td>
<td>7116-T</td>
</tr>
<tr>
<td>9017-T.C</td>
<td>5701-T.A</td>
<td>9017-T</td>
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<tr>
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<td>(-).0338.J3</td>
<td>(-).0338</td>
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<tr>
<td>(-).0338.H1</td>
<td>(-).0338.H2</td>
<td>(-).0338</td>
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<tr>
<td>(-).8010-T.D</td>
<td>(-).8010-T.K1</td>
<td>(-).8010-T.K2</td>
</tr>
</tbody>
</table>

**Tightening torques (m.daN) for the wheel bolts**

<table>
<thead>
<tr>
<th>CITROËN C8</th>
<th>Steel</th>
<th>Light alloy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 ± 0.5</td>
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</tr>
</tbody>
</table>
### WHEELS AND TYRES

<table>
<thead>
<tr>
<th>Engine type</th>
<th>2.0i 16V</th>
<th>2.2i 16V</th>
<th>3.0i 24S</th>
<th>2.0 HDi</th>
<th>2.2 HDi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tyre circumference</td>
<td>S</td>
<td>MICHELIN XH1 205x65 R 15 94 H 1.973 m</td>
<td>MICHELIN PRIMACY 215x65 R 15 96 H 2.016 m</td>
<td>MICHELIN HX MXM 215x60 R16 99H 2.025 m</td>
<td>MICHELIN XH1 205x65 R 15 94 H 1.973 m</td>
</tr>
<tr>
<td>Wheel</td>
<td>T</td>
<td>6.5 J 15-5-27</td>
<td>Non</td>
<td>6.5 J 15-5-27</td>
<td></td>
</tr>
<tr>
<td>Pressure (Bars)</td>
<td>Front/ Rear (1)</td>
<td>2.5/2.5</td>
<td>2.4/2.4</td>
<td>2/2</td>
<td>2.4/2.4</td>
</tr>
<tr>
<td></td>
<td>Front/ Rear (2)</td>
<td>2.5/3.2</td>
<td>2.4/3</td>
<td>2/3</td>
<td>2.4/3</td>
</tr>
<tr>
<td>Spare wheel circumference</td>
<td>S</td>
<td>MICHELIN PRIMACY 215x65 R 15 96 H 2.016 m</td>
<td>MICHELIN HX MXM 215x60 R16 99H 2.025 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheel</td>
<td>A</td>
<td>CHARMES 6.5J15-5-27 (*)</td>
<td>DOUGLAS 7J16-5-27</td>
<td>CHARMES 6.5J15-5-27 (*)</td>
<td></td>
</tr>
<tr>
<td>Pressure (Bars)</td>
<td>Front/ Rear</td>
<td>3.2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This tyre is the same size as the tyres fitted on the wheels.

### Electronic under-inflation detection

Vehicles equipped with the under-inflation detection system are identifiable by the presence of aluminium valves. The under-inflation detection option can only be fitted on vehicles equipped with light alloy wheels.

### Symbols and abbreviations used:

- **S** = Standard fitting
- **T** = Alu-steel wheel
- **A** = Alloy wheel
- (*) = Option fitting

(1) = Normal operating pressure
(Max. 4 persons and 40 kg in the boot).

(2) = Pressure under load
(More than 4 persons and «MAX» load in the boot).

Winter fitting: **NOTE**: All the above tyres can take chains on the front wheels. (**Snow chain for 205/65/15 = KOenIG Ref : 9410.26**).
WHEELS AND TYRES

Inflation pressures

The label giving the recommended inflation pressures is affixed to one of the front door pillars.

a: Type of tyre.
b: Tyre specifications.
c: Recommended tyre inflation pressures (unladen and laden).
d: Recommended tyre inflation pressures for the spare wheel.

Tightening torque: 10 m.daN.
<table>
<thead>
<tr>
<th>Wheel bolts.</th>
<th>Spare wheel</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Bolt for steel wheel.</td>
<td>Anti-theft securing of the spare wheel.</td>
</tr>
<tr>
<td>(2) Bolt for light alloy wheel.</td>
<td>(5) Winch.</td>
</tr>
<tr>
<td>(3) Anti-theft bolt for light alloy wheel.</td>
<td>(e) Winch control.</td>
</tr>
<tr>
<td>(4) Anti-theft socket.</td>
<td>The wheel is retained at the centre by a cable linking its hub to the floor of the boot.</td>
</tr>
</tbody>
</table>

Post-equipment for alloy wheels: fit the correct type of wheel bolt.

Anti-theft bolts for light alloy wheels: light alloy wheels are equipped as standard with anti-theft bolts which are protected by chrome caps.

The cable cannot be accessed from under the vehicle.
## Special features

**Under-inflation detection device.**

(6) High frequency transmitter module.

(7) Seal.

(8) Valve.

(9) Nut.

### Composition:

- Four HF transmitter modules (6) incorporated in the wheels in place of the valves, each including a lithium battery.

- A HF receiver incorporated in the switching module under the steering wheel.

- The tightening torque for the nut (9) is $0.6 \pm 0.1 \text{ m.daN}$.

### WARNING:

- Each time a tyre is replaced, the valve (8) must be replaced.

- Each time a rim is replaced, the seal (7) must be replaced.

- Each time a valve is replaced, it is necessary to have the transmitter recognised by the BSI, with the aid of a diagnostic tool.
### AXLE GEOMETRY

#### Front axle

<table>
<thead>
<tr>
<th>Engines</th>
<th>Specification</th>
<th>H1</th>
<th>Wheel tracking</th>
<th>Camber</th>
<th>Castor</th>
<th>King pin inclination</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFN</td>
<td>205/65 R15</td>
<td>170</td>
<td>+2 ± 1</td>
<td>0° ± 30’</td>
<td>3° 30’ ± 30’</td>
<td>12°24’ ± 40’</td>
</tr>
<tr>
<td>3FZ</td>
<td>215/65 R15</td>
<td>174</td>
<td>+0°18’ ± 0° 9’</td>
<td>0° ± 30’</td>
<td>3° 30’ ± 30’</td>
<td></td>
</tr>
<tr>
<td>RHT</td>
<td>215/60 R16</td>
<td>178</td>
<td>+0°18’ ± 0° 9’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4HW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XFW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**

- **A < B** = Positive figure : + = TOE-IN
- **A > B** = Negative figure : − = TOE-OUT

**AXLES**

**SUSPENSION**

**STEERING**

---

![Axle geometry diagram](image-url)
## AXLE GEOMETRY

### Front axle

<table>
<thead>
<tr>
<th>Engines</th>
<th>Specification</th>
<th>H1</th>
<th>Wheel tracking (mm)</th>
<th>Camber (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFN</td>
<td>205/65 R15</td>
<td>390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3FZ</td>
<td>215/65 R15</td>
<td>394</td>
<td>5 ± 1</td>
<td>0°46' ± 0°8'</td>
</tr>
<tr>
<td>RHT</td>
<td>215/65 R15</td>
<td>394</td>
<td></td>
<td>1 ± 30'</td>
</tr>
<tr>
<td>RHW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4HW</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XFW</td>
<td>215/60 R16</td>
<td>398</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tools.
[1] Set of two suspension compressors : 9511-T.A

The front tracking can be checked and adjusted in running order (Systematic use of two tyres).
To check all the angles, it is necessary to set the vehicle at reference height (Castor, camber, tracking).

Setting at reference height.
Requirements prior to setting at reference height.

WARNING : The checks of the front and rear axle geometry values, as well as the adjusting of the front suspension should be carried out at precise positions of suspension compression (reference height) on a suspension test bed.

Make sure that :
- Tyres are in conformity and at the correct inflation pressures.
- The front wheels are straight ahead.

Remove wheel trims.
**AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)**

**At the front (H1).**

Engage the straps [4] with their shackles [2] on the subframe. Position the suspension compressor [1], selecting the separation (A) most suited to pull the straps as far upwards as possible.

Compress the suspension so as to obtain, on the RH and LH sides, the bodyshell height H1 (reference height), to be measured between the lowermost edge (B) and the ground.

**WARNING:** take account of pivoting surfaces when measuring the reference height H1.

**NOTE:** Only the tracking is adjustable.

**WARNING:** The tracking value varies as a function of the vehicle height.
AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)

At the rear (H2).


Position the suspension compressor [1] selecting the separation (A) most suited to pull the straps as far upwards as possible.

Compress the suspension so as to obtain, on the RH and LH sides, the bodyshell height H2 (reference height), to be measured between the lowermost edge (C) and the ground.

WARNING : take account of pivoting surfaces when measuring the reference height H2.

Check that the height H1, measured already at the front, has not changed.

WARNING : The rear axle angles are not adjustable.
Adjusting the rolling axles.

**NOTE:** Only the tracking is adjustable (at the front).

If the value is incorrect, adjust the track rods (1).

- One turn of the rod = \(2 \text{ mm approx.}\)

Tighten the nuts (2), tighten to \(4 \pm 0.4 \text{ m.daN.}\)
### FRONT AXLE

#### Identification

1. Crossmember
2. Tie-rods
3. Springs
4. Front suspension leg
5. Anti-roll bar
6. Subframe

#### Engines

<table>
<thead>
<tr>
<th>Engines</th>
<th>Anti-roll bar Diameter (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFN-3FZ-RHT-RHW-4HW</td>
<td>21.5</td>
</tr>
<tr>
<td>XFW</td>
<td>22</td>
</tr>
</tbody>
</table>
Vehicle in running order

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque (m.daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixing of subframe on body</td>
<td>10.5 ± 1</td>
</tr>
<tr>
<td>Fixing on tie-rod on body</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>Fixing of crossmember on body</td>
<td>8 ± 0.8</td>
</tr>
<tr>
<td>Fixing of tie-rod on subframe</td>
<td>6.5 ± 0.6</td>
</tr>
<tr>
<td>Fixing of damper on pivot</td>
<td>9 ± 0.9</td>
</tr>
<tr>
<td>Fixing of damper rod on upper cup</td>
<td>9 ± 0.9</td>
</tr>
<tr>
<td>Fixing of upper cup on body</td>
<td>3.5 ± 0.3</td>
</tr>
<tr>
<td>Fixing of anti-roll bar on subframe</td>
<td>10.5 ± 1</td>
</tr>
<tr>
<td>Driveshaft nut</td>
<td>10 ± 1</td>
</tr>
<tr>
<td>Fixing of wishbone on subframe</td>
<td>7 ± 0.7</td>
</tr>
<tr>
<td>Fixing of ball-joint on pivot</td>
<td>7 ± 0.7</td>
</tr>
<tr>
<td>Fixing of steering track rod on pivot</td>
<td>4 ± 0.4</td>
</tr>
<tr>
<td>Fixing of track rod on damper body</td>
<td>5.5 ± 0.5</td>
</tr>
<tr>
<td>Fixation biellette sur barre antidévers</td>
<td>5.5 ± 0.5</td>
</tr>
</tbody>
</table>

(H) Height between the ground and the jacking point.
(P) Wheel tracking.
(I) Tolerance ± 0.5 mm.
REAR AXLE

Identification

(1) Damper.
(2) Spring.
(3) Stabiliser bar.
### Tightening torques (m.daN)

1. Fixing of rear axle on body: 8 ± 0.8
2. Fixing of stabiliser bar on rear axle: 8 ± 0.8
3. Fixing of stabiliser bar on body: 6 ± 0.6
4. Hub nut: 38 ± 3.8
5. Fixing of damper on body: 9 ± 0.9
6. Fixing of damper on rear axle: 9 ± 0.9
REAR AXLE

Engines: RFN – 3FZ – XFW – RHT – RHW – 4HW

Identification

(X) Pre-adjustment.
(1) Steering mechanism.
(2) Distributor valve.
(3) Power steering reservoir.
(4) Power steering pump.
(5) High pressure union.
(6) Low pressure union.
(7) Steering oil radiator fitted on the front panel.
   (according to equipment)
**SPECIFICATIONS OF POWER-ASSISTED STEERING**

Engines: RFN – 3FZ – XFW – RHT – RHW – 4HW

<table>
<thead>
<tr>
<th>Engine type</th>
<th>RFN</th>
<th>3FZ</th>
<th>XFW</th>
<th>RHT - RHW</th>
<th>4HW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Features</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travel (mm)</td>
<td>166</td>
<td>156</td>
<td>162</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle of lock for inside wheel</td>
<td>40°48’</td>
<td>37°18’</td>
<td>39°24’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angle of lock for outside wheel</td>
<td>34°36’</td>
<td>32°24’</td>
<td>33°42’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump pressure (bars)</td>
<td>100</td>
<td></td>
<td>110</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circuit capacity (litres)</td>
<td></td>
<td></td>
<td>1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of steering wheel rotations</td>
<td>3.25</td>
<td>3.05</td>
<td></td>
<td>3.17</td>
<td></td>
</tr>
<tr>
<td>Number of teeth on drive pinion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Number</td>
<td>Description</td>
<td>Torque (m.daN)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
<td>----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8)</td>
<td>Steering wheel fixing nut</td>
<td>2 ± 0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9)</td>
<td>Fixing of steering column to support</td>
<td>2 ± 0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10)</td>
<td>Fixing of upper and lower shafts to steering column</td>
<td>2,5 ± 0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11)</td>
<td>Fixing of ram valve supply unions</td>
<td>1 ± 0,1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12)</td>
<td>Fixing of steering mechanism</td>
<td>14,5 ± 1,4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(13)</td>
<td>Fixing of pump/valve supply unions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pump</td>
<td>2 ± 0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valve</td>
<td>2,5 ± 0,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14)</td>
<td>Fixing of ball-joint housing on steering rack</td>
<td>9 ± 0,9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(15)</td>
<td>Steering rod locking nut</td>
<td>6 ± 0,6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(16)</td>
<td>Steering ball-joint nut</td>
<td>4 ± 0,4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## BRAKE SPECIFICATIONS

<table>
<thead>
<tr>
<th>Engine type</th>
<th>2.0i 16V</th>
<th>2.2i 16V</th>
<th>3.0i 24S</th>
<th>2.0 HDi</th>
<th>2.2 HDi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master cylinder</td>
<td>22.2 (valve type)</td>
<td>23.8 (valve type)</td>
<td>22.2 (valve type)</td>
<td>203.2 + 228.6</td>
<td>254</td>
</tr>
<tr>
<td>Master-vac</td>
<td>254</td>
<td>BREMBO LUCAS</td>
<td>BREMBO LUCAS</td>
<td>254</td>
<td></td>
</tr>
<tr>
<td>Caliper/piston makes</td>
<td>LUCAS</td>
<td>60</td>
<td>BREMBO LUCAS</td>
<td>40 + 44</td>
<td>60</td>
</tr>
<tr>
<td>Disc</td>
<td>Ventilated</td>
<td>285</td>
<td>310</td>
<td>285</td>
<td></td>
</tr>
<tr>
<td>Disc thickness/min. thickness</td>
<td>28/26</td>
<td>32/30</td>
<td>28/26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake pad grade</td>
<td>GALFER 3366 (8)</td>
<td>LUCAS C38HR</td>
<td>FERODO 782 (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FT

<table>
<thead>
<tr>
<th>Ø mm</th>
<th>Master cylinder</th>
<th>22.2 (valve type)</th>
<th>23.8 (valve type)</th>
<th>22.2 (valve type)</th>
<th>203.2 + 228.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caliper/piston makes</td>
<td>LUCAS</td>
<td>60</td>
<td>BREMBO LUCAS</td>
<td>40 + 44</td>
<td>60</td>
</tr>
<tr>
<td>Disc</td>
<td>Ventilated</td>
<td>285</td>
<td>310</td>
<td>285</td>
<td></td>
</tr>
<tr>
<td>Disc thickness/min. thickness</td>
<td>28/26</td>
<td>32/30</td>
<td>28/26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake pad grade</td>
<td>GALFER 3366 (8)</td>
<td>LUCAS C38HR</td>
<td>FERODO 782 (2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### RR

<table>
<thead>
<tr>
<th>Ø mm</th>
<th>Caliper/piston makes</th>
<th>LUCAS C38HR</th>
<th>38</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc</td>
<td>Ventilated</td>
<td>272</td>
<td></td>
</tr>
<tr>
<td>Disc thickness/min. thickness</td>
<td>12/10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make</td>
<td>TEXTAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brake pad grade</td>
<td>T 4131</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### BRAKE TIGHTENING TORQUES (m.daN)

<table>
<thead>
<tr>
<th>Operation</th>
<th>Torque (m.daN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixing of disc on hub</td>
<td>1.5 ± 0.1</td>
</tr>
<tr>
<td>Fixing of front brake caliper on support</td>
<td>3.5 ± 0.3</td>
</tr>
<tr>
<td>Fixing of front brake caliper support on pivot</td>
<td>16 ± 1.6</td>
</tr>
<tr>
<td>Fixing of brake pipe unions</td>
<td>1.5 ± 0.1</td>
</tr>
<tr>
<td>Fixing of rear brake caliper on support</td>
<td>3.5 ± 0.3</td>
</tr>
<tr>
<td>Fixing of rear brake caliper support on pivot</td>
<td>9.5 ± 0.9</td>
</tr>
<tr>
<td>Fixing of brake servo on pedal gear</td>
<td>2 ± 0.2</td>
</tr>
<tr>
<td>Fixing of master-cylinder on servo</td>
<td>2 ± 0.2</td>
</tr>
<tr>
<td>Fixing of handbrake lever on body</td>
<td>4 ± 0.4</td>
</tr>
</tbody>
</table>
ADJUSTING THE Handbrake

Identification

(A) Zone for fixing on floor.

(B) Clips for retaining on bodyshell.
ADJUSTING THE HANDBRAKE

Adjustment

Raise and support the vehicle, wheels hanging.

WARNING : Bleed the braking circuit.

Detension the secondary brake cables by slackening the nut (1).
With the engine running and the handbrake released, press 40 times on the brake pedal.
Carefully tighten the nut (1), until the brake cables begin to come under tension.
Pull the handbrake lever about ten times in a normal fashion.
Engage the handbrake lever at the 2nd notch of its travel relative to its position of rest.
Turn the nut (1) until the brake pads start touching.
Check that:
- The normal travel of the handbrake lever does not exceed 6 notches.
- The two secondary brake cables on the slide are moving together.
With the handbrake slackened, make sure that the road wheels turn freely when moved by hand.
Check that the handbrake warning lamp lights up from the 1st notch of the lever's total travel.
DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM

Tools.

[1] Generic bleeding apparatus : «LURO» or similar

Draining.
Remove the pollen filter (See corresponding operation).
Take out the filter from the brake fluid reservoir.
Drain the brake fluid reservoir with the aid of a clean syringe.
Refit the filter in the brake fluid reservoir.

Filling.

IMPERATIVE : Use only new, clear brake fluid, avoiding any ingress of impurities into the hydraulic circuit.

WARNING : Use only hydraulic fluid(s) that are approved and recommended.
Renew the brake fluid in the calipers, bleeding the circuit until clean fluid flows out.

WARNING : During the bleed operations, take care to maintain the level of brake fluid in the reservoir, topping up if necessary.
# DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM

**Pre-conditions** for bleeding a braking circuit:
After a repair on the master cylinder or ABS block, bleed in the following order:

- Front LH wheel.
- Front RH wheel.
- Rear LH wheel.
- Rear RH wheel.

After a repair on a caliper or on a wheel cylinder, bleed in this order (caliper or wheel cylinder removed):

- Front LH wheel.
- Front RH wheel.
- Rear LH wheel.
- Rear RH wheel.

**NOTE:** If removing/refitting the master cylinder, it is advised to complete the automatic bleed with a manual bleed.

**ABS:**
The hydraulic valve blocks are delivered pre-filled; it is thus possible to perform:
- a manual bleed (using the pedal),
- an automatic bleed.

Should the bleed of the circuit prove unsatisfactory, it is possible to bleed the ABS block using a diagnostic tool (See Tools), following the instructions given by the diagnostic tool.

**Use of the diagnostic tool** will be necessary in cases where the following conditions all come together simultaneously:
- Air in the circuit.
- Regulation block active.
- Action on the brake pedal.

**Bleeding.**

**IMPERATIVE:** Start the engine.

**WARNING:** Respect the order of opening of the bleed screws.

**Automatic bleed:**
Bleed the circuit, referring to the user instructions provided with the apparatus.

**Manual bleed (using the pedal):**
Two operators are necessary.
Connect a transparent pipe on the bleed screw.
Press slowly on the brake pedal.
Open the bleed screw.
Keep the pedal pressed fully down.
Close the bleed screw.
Allow the brake pedal to rise gradually.
Repeat the operation until the brake fluid flows out clean and free of air bubbles.
Proceed in an identical fashion in the case of all the other wheels.
<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Engines</th>
<th>Date</th>
<th>Refrigerant refill (± 25 gr)</th>
<th>Compressor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RFN</td>
<td>13/06/02</td>
<td>SD 7 V 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3FZ</td>
<td></td>
<td>135 ± 15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XFW</td>
<td></td>
<td>SP10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RHT - RHW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4HW</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134A)

#### Tightening torques (m.daN).

<table>
<thead>
<tr>
<th>Pipe diameters</th>
<th>Unions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>M 06</td>
<td>Steel / Steel</td>
<td>1.7 ± 3</td>
</tr>
<tr>
<td></td>
<td>Aluminium / Steel</td>
<td>1.3 ± 3</td>
</tr>
<tr>
<td>M 08</td>
<td>Steel / Steel</td>
<td>3.8 ± 3</td>
</tr>
<tr>
<td></td>
<td>Aluminium / Steel</td>
<td>2 ± 2</td>
</tr>
<tr>
<td>M 10</td>
<td>Steel / Steel</td>
<td>4 ± 3</td>
</tr>
<tr>
<td></td>
<td>Aluminium / Steel</td>
<td>2.5 ± 3</td>
</tr>
</tbody>
</table>

**NOTE:** Tighten the unions to the recommended torques using a retaining spanner whenever possible.

**NOTE:** For operations concerning draining, drying (empty), checking and refilling of a system: refer to **BRE 0290**.

**WARNING:** For R 134A quantities: see table on page: **120**.
SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)

NOTE:
The pollen filter is located under the bonnet on the LH side.

Removing.
Remove the handle (1).
Uncouple the evacuation pipe (2).
Release at (3), on the RH and LH sides.
Slacken the screws (4) on the RH and LH sides by a quarter turn.
Pull the assembly (6) outwards.
Remove the pollen filter (5).

Refitting.
Proceed in reverse order.
SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)

Removing-refitting the drying cartridge

**Removing.**

Depressurise the air conditioning circuit.

Remove the hose (1).

Disconnect the connector (2).

Remove the air filter (3).

Turn the plastic pins (4) by a quarter turn.

Move aside the condenser (5).

Clean the area around the skirt (6) of the reservoir (7).

Remove the screw (8) of the fixing (9).
Unscrew the reservoir (7) (Adaptor: TORX 70 FACOM).

Unscrew the reservoir (7), and the protection skirt (6).

**WARNING**: This operation should remain clean before the fitting of the new reservoir.

Cap the base (10).

**WARNING**: Do not allow more than 5 minutes to elapse between unwrapping the cartridge (reservoir (7)) and fitting it.
Refitting.
Note: Check, before you refit the reservoir (7), that the base (10) is clean.
(If it is not, clean in and around the base with a paper towel (10)).

Preparing the new drying reservoir
Remove the protection cap from the neck of the reservoir (7).
Leave in place the protection at the other end of the neck of the reservoir (7), before fitting.
- Grease the threads of the reservoir (7) (sachet of grease in the kit).
- Oil the reservoir’s two O-ring seals (7) (sachet of oil in the kit).
Remove:
- The protection cap fitted at the time of removal, from the base (10).
- The protection at the other end of the reservoir (7).
Engage the reservoir (7) equipped with its skirt (6) on the threads of the base (10).
Manually screw on the reservoir (7), until the reservoir (7) is touching the foot of the base (10).
NOTE : Check that the bottom edge of the skirt (6) covers the base (10) all around it.
Tighten the reservoir (7) (TORX 70 FACOM).
Tighten to $1.4 \pm 0.1 \text{m.daN}$.
Fit the plastic clip (9) and the screw (8) (new, in exchange kit).
Complete the fitting in reverse order to the removing.
Proceed to:
- Recharge the circuit. (See corresponding operation).
- Check that the air conditioning system functions correctly. (See corresponding operation).
SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134A)

Compressor lubricant.

ESSENTIAL: The compressor lubricant is extremely hygroscopic; always use FRESH oil.

Checking the compressor oil level.

There are three specific cases:
- 1/ Repairs to a system without leaks.
- 2/ Slow leak.
- 3/ Fast leak.

1/ Repairing a system without leaks.

a) - Using draining/recovery equipment not fitted with an oil decanter.
- Drain the system as slowly as possible via the LOW PRESSURE valve, so as not to lose any oil.
- No more oil should be added when filling the system with R 134A fluid.

b) - Using draining/filling equipment fitted with an oil decanter.
- Drain the R 134A fluid from the system in accordance with the instructions in the equipment handbook.
- Measure the amount of oil recovered.
- Add the same amount of NEW oil when filling the system with R 134A fluid.

c) - Replacing a compressor.
- Remove the old compressor, drain it and measure the oil quantity.
- Drain the new compressor (supplied full), so that the same amount of NEW oil is left in the compressor as was in the old compressor.
- No more oil should be added when filling the system with R 134A fluid.
2/ Slow leak.
- Slow leaks do not lead to oil loss, therefore the same procedure should be followed as if there was no leak at all.

3/ Fast leak.
This type of leak causes both oil loss as well as allowing air to enter the system.
It is therefore necessary to :
- Replace the dryer.
- Drain as much oil as possible (when replacing the faulty component).

Either before or during filling of the system with R 13A fluid, introduce 80 cc of NEW oil into the system.
# Checking the Efficiency of the Air Conditioning System

## Checking Pressures

<table>
<thead>
<tr>
<th>Low pressure too low</th>
<th>Low pressure normal</th>
<th>Low pressure too high</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Insufficient fluid charge.</td>
<td>- Cooling fan speed unsuitable.</td>
<td>- Faulty pressure control valve.</td>
</tr>
<tr>
<td>- Constriction of the HP system.</td>
<td>- Faulty compressor.</td>
<td>- Faulty compressor.</td>
</tr>
<tr>
<td>- Dirty pressure control valve.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High pressure too low</th>
<th>High pressure normal</th>
<th>High pressure too high</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Faulty compressor.</td>
<td>- Circuit normal.</td>
<td>- Excessive fluid charge.</td>
</tr>
<tr>
<td>- Dirty evaporator.</td>
<td></td>
<td>- Dirty condenser.</td>
</tr>
</tbody>
</table>

Checking the pressure at temperatures between 15°C and 35°C for information only.

In general, the pressure should be approximately:
- for **R134A** fluid, less than **2 Bars** (Low pressure), and between **13** and **24 Bars** (High pressure).
1 Drying cartridge.
2 Clickfit union.
3 Buffer capacity.
4 Clickfit union.
5 High pressure valve
6 Low pressure valve
1 High pressure valve
2 Low pressure valve
3 Buffer capacity.
4 Drying cartridge.
5 Pressostat
6 Clickfit union. (Tool 8005-T.C)

**Tightening torques (m.daN).**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>0.8</td>
</tr>
<tr>
<td>b</td>
<td>1.4</td>
</tr>
<tr>
<td>c</td>
<td></td>
</tr>
<tr>
<td>d</td>
<td></td>
</tr>
<tr>
<td>e</td>
<td>0.8</td>
</tr>
</tbody>
</table>
AIR CONDITIONING SYSTEM R 134A

Engines : RHT-4HW

1. Drying cartridge.
2. Clickfit union.
4. Clickfit union.
5. High pressure valve (Tool 8005-T.C)
6. Low pressure valve (Tool 8005-T.A)