

CITROËN C8 2002

«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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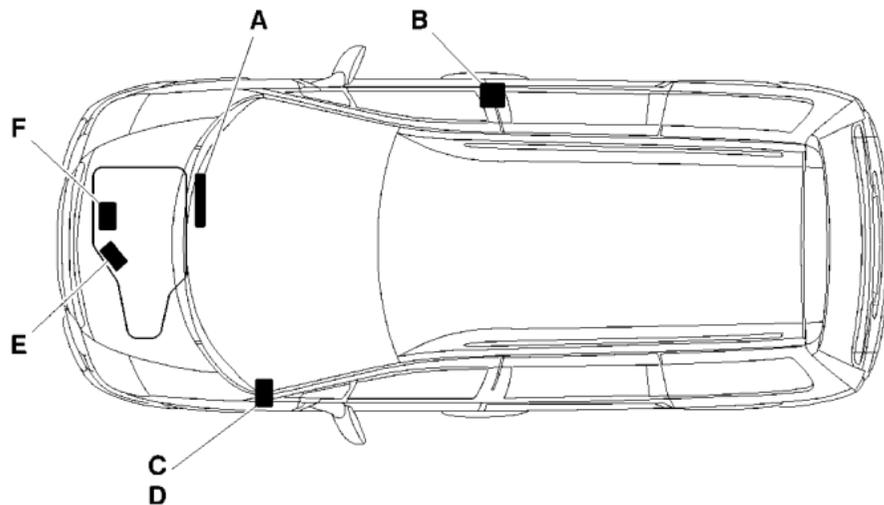
PRESENTATION

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.

E1AP0A2D

GENERAL

IDENTIFICATION OF VEHICLES

	Petrol				
	2.0i 16V			2.2i 16V	
	Manual		Automatic		Manual
	X - SX		SX Captain Chair	X – SX Exclusive	SX Captain Chair Exclusive Captain Chair
Emission standard	IFL5				
Type code	EB RFNC/IF		EB RFNF/IF	EA RFNF/IF	EA 3FZC/IF
Engine type	RFN			3FZ	
Cubic capacity (cc)	1998			2230	
Fiscal rating (hp)	9			11	
Gearbox type	BE4/5		AL4		ML5C
Gearbox ident. plate	20 DL 27 (1)	20 DL 26 (2)	20 TP 74		20 LM 09

(1) = Right hand drive

(2) = Left hand drive.

GENERAL

IDENTIFICATION OF VEHICLES

	Petrol	
	3.0i V6 S24	
	Automatic	
	Exclusive	Exclusive Captain Chair
Emission standard	IFL5	
Type code	SEB XFWF/IF	EA XFWF/IF
Engine type	XFW	
Cubic capacity (cc)	2946	
Fiscal rating (hp)	14	
Gearbox type	4 HP 20	
Gearbox ident. plate	20 HZ 27	

GENERAL

IDENTIFICATION OF VEHICLES

	Diesel					
	2.0 HDi (*)			2.0 HDi (**)		
	Manual	Automatic		Manual	Automatic	
	X – SX – Exclusive	SX Captain Chair		X – SX – Exclusive	SX Captain Chair	
Emission standard	L4					
Type code	EB RHTB	EB RHTE	EA RHTE	EB RHWB	EB RHWE	EA RHWE
Engine type	RHT			RHW		
Cubic capacity (cc)	1997					
Fiscal rating (hp)	7					
Gearbox type	ML5C	AL4		ML5C	AL4	
Gearbox ident. plate	20 LM 05	20 TS 04		20 LM 05	20 TS 04	

(*) = With particle filter.

(**) = Without particle filter.

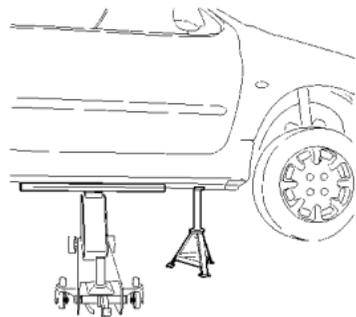
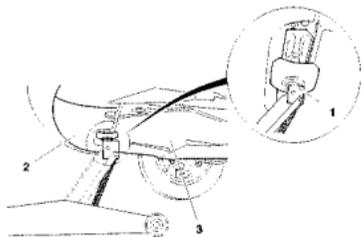
IDENTIFICATION OF VEHICLES

	Diesel	
	2.2 HDi (*)	
	Manual	
	SX Captain Chair	SX Captain Chair Exclusive Captain Chair
Emission standard	L4	
Type code	EB 4HWB	EA 4HWB
Engine type	4HW	
Cubic capacity (cc)	2179	
Fiscal rating (hp)	8	
Gearbox type	ML5C	
Gearbox ident. plate	20 LM 01	

(*) = With particle filter.

GENERAL

GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE



Tooling.

[1] Crossbeam

: (-). 0010.

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.

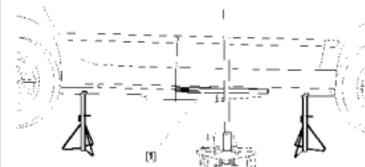
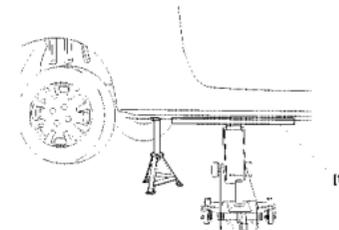
WARNING : Avoid the battery tray on the right hand side.

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.



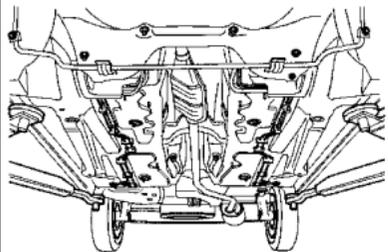
E2AK02ZD

E2AF006C

E2AK030D

E2AK031D

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)**.

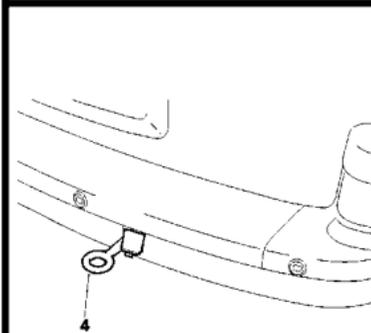
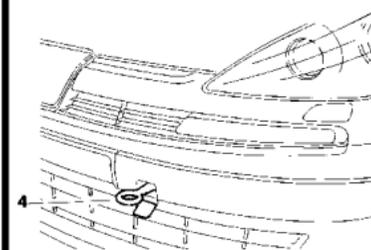
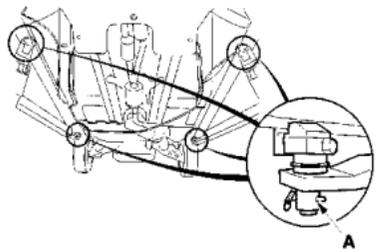
Towing (front).

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.



E2AF004D

E5AF022D

E2AK02YD

E2AK02XD

GENERAL

CAPACITIES (in litres)

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

GENERAL

ENGINE SPECIFICATIONS

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

Petrol

Diesel

All Types

2.0i 16V

2.2i 16V

3.0i 24V

2.0 HDi

2.2 HDi

Engine type

RFN

3FZ

XFW

RHT- RHW

4HW

Cubic capacity (cc)

1997

2230

2946

1997

2179

Bore / Stroke

85/88

86/96

87/82.6

85/88

85/96

Compression ratio

10.8/1

10.9/1

17.3/1

17.6/1

Power ISO or EEC KW - rpm

100-6000

116-5650

150-6000

79-4000

94-4000

Power DIN (HP - rpm)

138-6000

160-5650

204-6000

109-4000

130-4000

Torque ISO or EEC (m.daN - rpm)

19-4100

21.7-3900

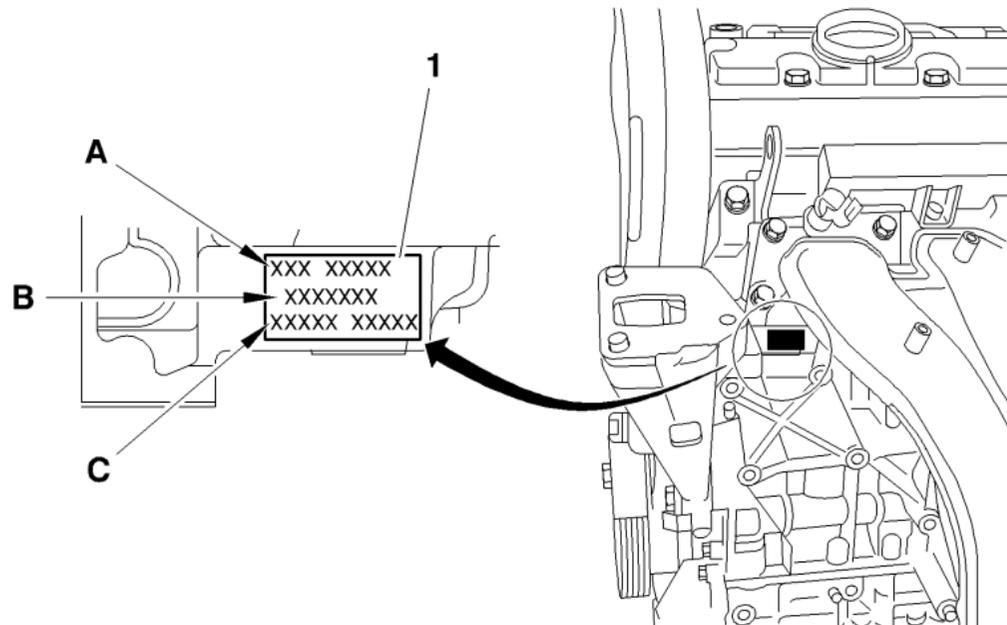
28.5-3750

27-1750

31.4-2000

ENGINE SPECIFICATIONS

Engines : RFN – 3FZ



(1) Compulsory engine plate :

(A) Engine legislation type.

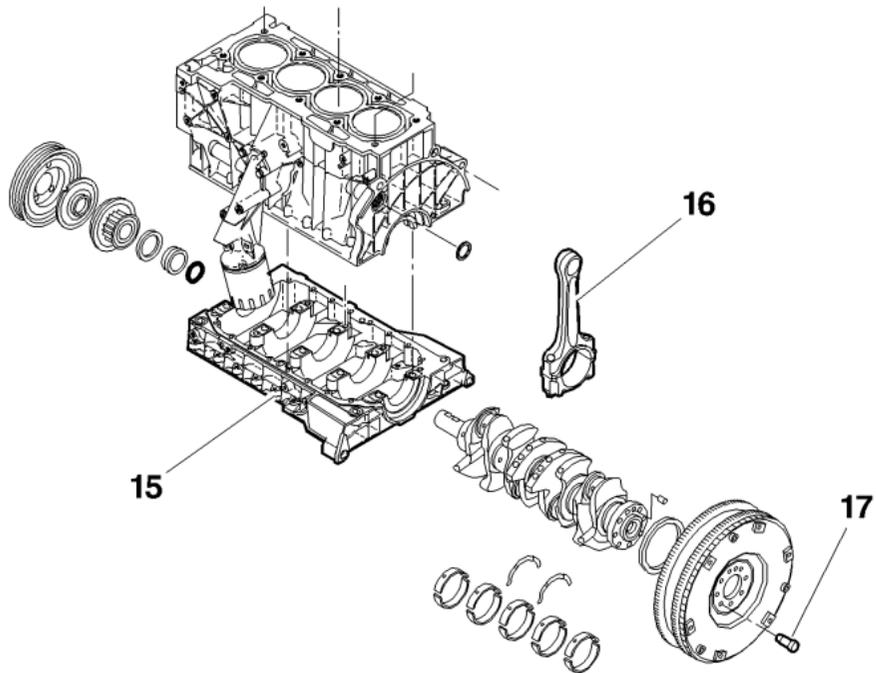
(B) Component reference.

(C) Factory serial no.

B1BB010D

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engines : RFN – 3FZ



B1BK1X8D

Crankshaft bearing cap cover (15)

Description	M11	M6
Pre-tightening	1 ± 0.1	0.5
Slackening	Yes	No
Re-tightening	1 ± 0.1 puis 2 ± 0.2	1 ± 0.1
Angular tightening	$70^\circ \pm 5^\circ$	

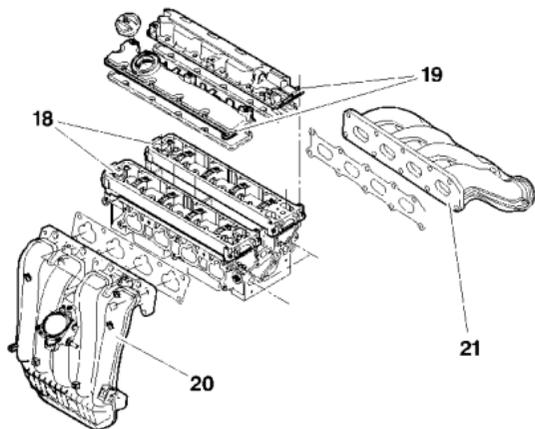
Crankshaft

Description	(16) Con-rod caps	(17) Flywheel/ crankshaft fixing
Pre-tightening	1 ± 0.1	2.5 ± 0.2
Slackening	Yes	$18^\circ \pm 1^\circ$
Re-tightening	2.5 ± 0.2	1 ± 0.1
Angular tightening	$46^\circ \pm 5^\circ$	$22^\circ \pm 2^\circ$

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

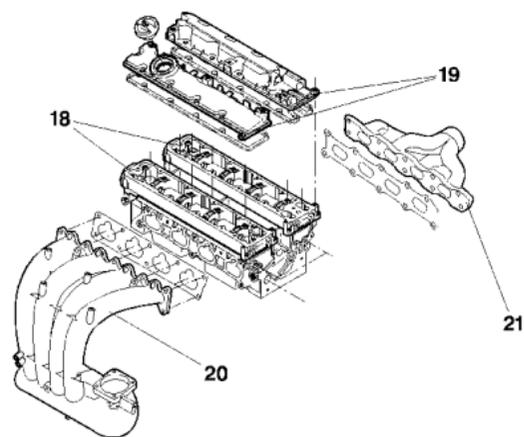
Equipment on cylinder head

Engine : RFN



B1BK1X9D

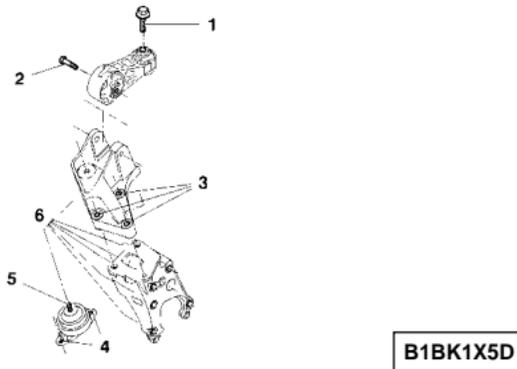
Engine : 3FZ



B1BK1XAD

Description	(18) Camshaft bearing cap covers	(19) Valve covers
Pre-tightening	0.5	0.5
Tightening	1 ± 0.1	1.5 ± 0.1
Description	(20) Inlet manifold	(21) Exhaust manifold
Tightening	1 ± 0.1	3.5 ± 0.3

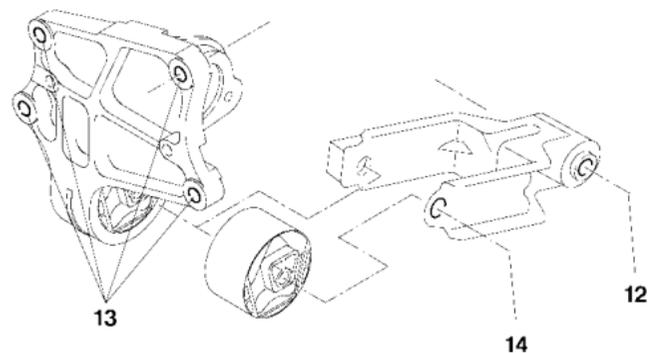
SPECIAL FEATURES: POWER UNIT SUSPENSION

Upper RH engine support		Engines : RFN – 3FZ			
	Ref.	Description	RFN		3FZ
	Gearbox type	BE4/5	AL4	ML5C	
	(1)	Rod/body fixing screw..	5 ± 0.5		
	(2)	Engine support/torque reaction rod flexible stop pin	4.5 ± 0.4		
	(3)	Upper support/intermediate support fixing screw.	6.5 ± 0.6		
	(4)	Upper support/body fixing screw	3 ± 0.3		
	(5)	Upper support/flexible support fixing nut.	4.5 ± 0.4		
	(6)	Support			
	(7)	LH flexible support/LH engine support fixing nut.	6.5 ± 0.6		
	(8)	LH flexible support/body fixing screw.	3 ± 0.3		
	(9)	Intermediate engine support/gearbox casing fixing screw.		4.5 ± 0.4	
(10)	LH intermediate support/gearbox fixing screw.	6 ± 0.6		4.5 ± 0.4	
(11)	Flexible support pin.	5 ± 0.5			

SPECIAL FEATURES: POWER UNIT SUSPENSION

Intermediate engine support

Engines : RFN – 3FZ

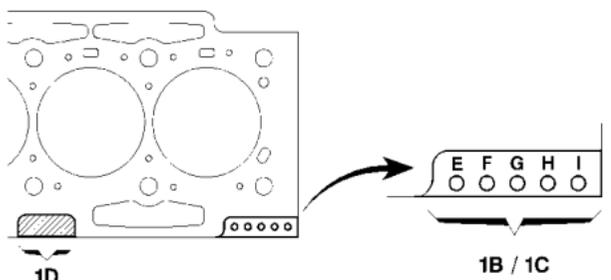
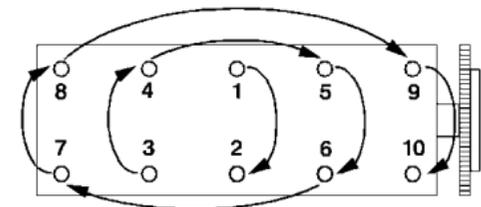
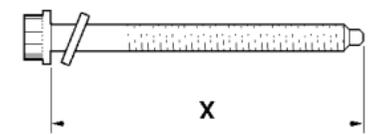


B1BK1X7D

Ref.	Description	RFN		3FZ
		BE4/5	AL4	ML5C
(12)	Lower RH rod/subframe fixing screw.	9 ± 0.9		
(13)	Lower RH engine support/cylinder block fixing screw.	4.5 ± 0.4		
(14)	Lower rod/lower RH engine support fixing screw	6.5 ± 0.6		

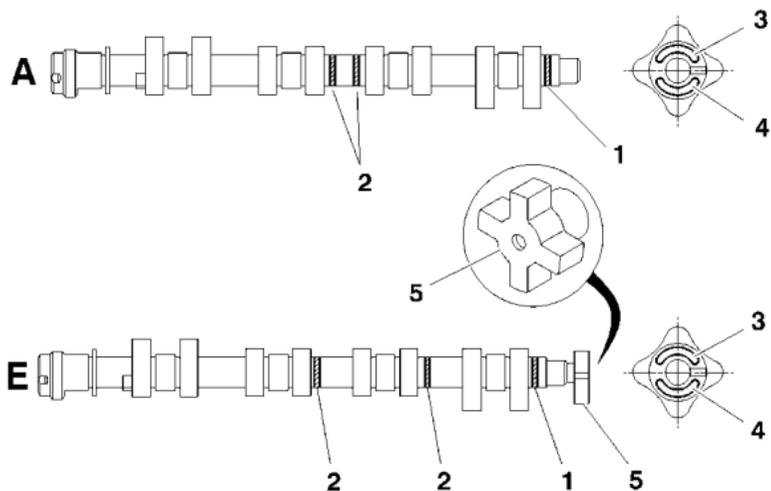
CYLINDER HEAD

Engines : RFN – 3FZ

Cylinder head gasket identification		Cylinder head tightening (m.daN)		Cylinder head bolts		
						
B1BK24QD		B1DK001C		B1DB002C		
Multi-layer metallic gasket.		Tighten in the order indicated		X = MAXI re-usable		
Ref.	Cylinder head gasket thickness (mm)				RFN	3FZ
	RFN	3FZ	Pre-tightening	RFN		
(1B) : Nominal dimension	E – H = 0.8	E – G = 0.8	Slackening	1/ : 1.5		
(1C) : Repair dimension	E – F – H = 0.99	E – F – G sans	Tightening	2/ : 5		
(1D) : Manufacturer identification.			Angular tightening	360°		
				2	144.5 mm	127.5 mm
				285°		
				270°		

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:

- | | |
|--------------------------------|----------------------------------|
| (1) Paint ring | : Repair reference. |
| (2) Green paint ring | : Factory reference. |
| (3) Inlet D1309 | : Exhaust D1348 . |
| (4) Inlet 96 332 713 99 | : Exhaust 96 3425433 99 . |

Timing belt.

- | | |
|-----------------|-----------|
| Width | : 25.4 mm |
| Number of teeth | : 153 |
| Material | : HSN |

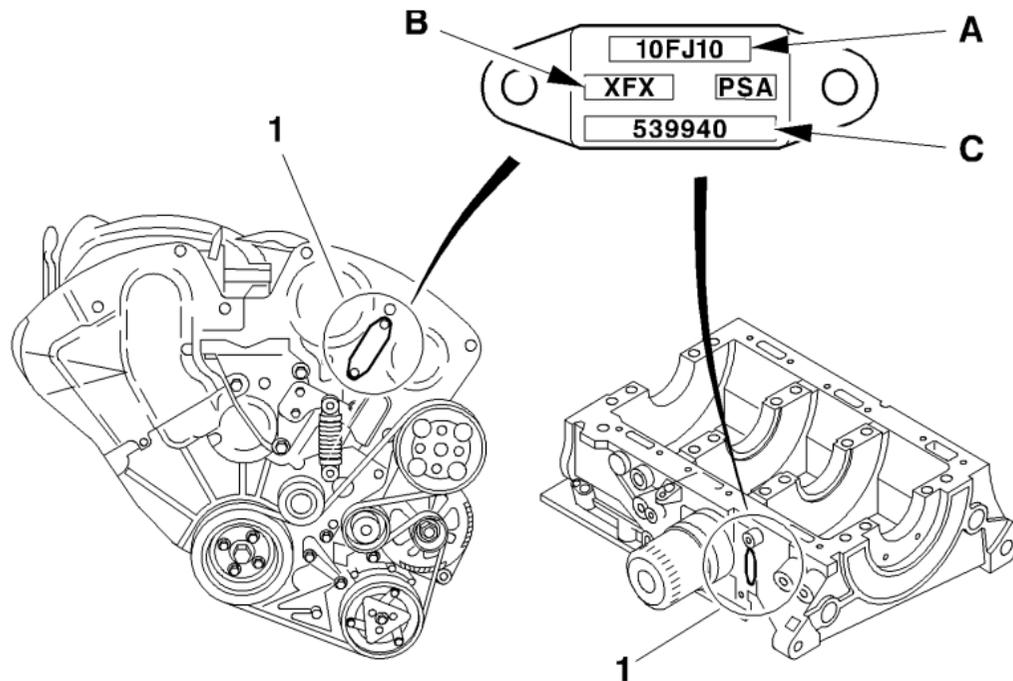
Valve clearances when cold

- | | |
|-------------|-------------------------|
| Inlet (A) | : NON adjustable |
| Exhaust (E) | : NON adjustable |

B1EK1UCD

ENGINE SPECIFICATIONS

Engine : XFW



(A) Component reference.

(B) Engine legislation type.

(C) Factory serial no.

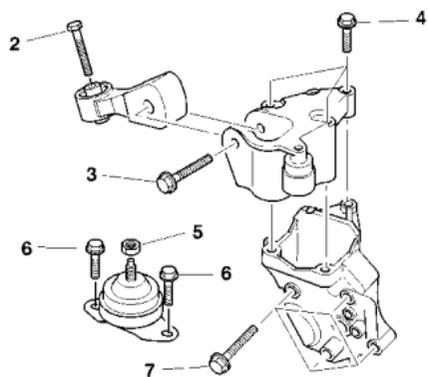
B1BK1JWD

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

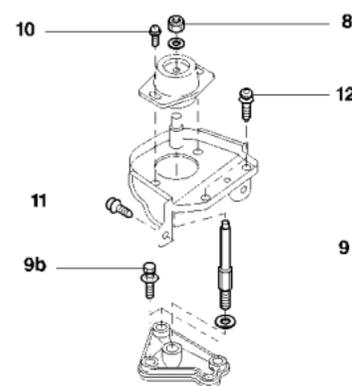
Power unit suspension

RH engine support (Suspension)



B1BK24RD

Gearbox suspension



B1BK24SD

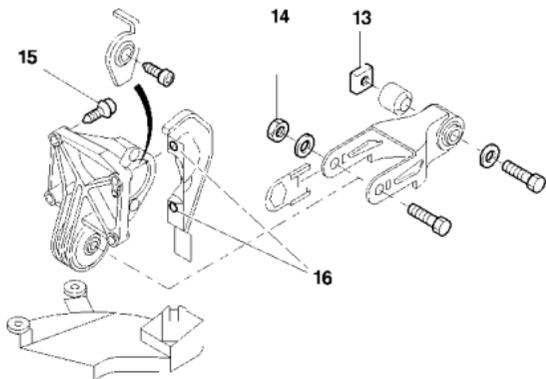
- | | |
|---|--------------------|
| (2) Link rod fixing | : 5 ± 0.5 |
| (3) Link rod fixing | : 4.5 ± 0.4 |
| (4) Fixing of upper RH engine support on intermediate engine support flexible mounting | : 6 ± 0.6 |
| (5) Fixing of RH engine support on flexible mounting | : 4.5 ± 0.4 |
| (6) Fixing of flexible mounting | : 3 ± 0.3 |
| (7) Fixing of RH intermediate engine support on cylinder block | : 6 ± 0.6 |

- | | |
|--|--------------------|
| (8) Fixing of gearbox support on LH flexible mounting | : 6.5 ± 0.6 |
| (9) Shaft | : 6.5 ± 0.6 |
| (10) Fixing of flexible mounting on support | : 3 ± 0.3 |
| (11) Fixing of flexible mounting support on body | : 2.5 ± 0.2 |
| (12) Fixing of flexible mounting support on body | : 2.5 ± 0.2 |

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

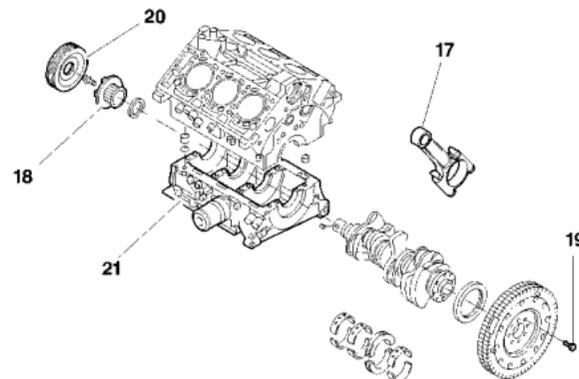
Power unit suspension – Engine support (Lower)



B1BK24TD

- | | |
|--|--------------------|
| (13) Torque reaction link rod fixing | : 9 ± 0.9 |
| (14) Fixing of link rod on torque reaction flexible mounting | : 6.5 ± 0.6 |
| (15) Fixing of torque reaction flexible mounting | : 4.5 ± 0.4 |
| (16) Fixing of heat shield on torque reaction flexible mounting | : 1 ± 0.1 |

Crankshaft



B1BK24UD

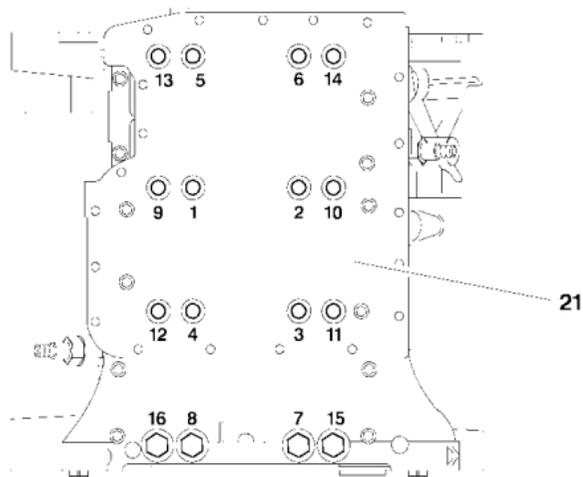
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|--|----------------------|--------------------|
| (17) Bearing cap | Tightening | : 2 ± 0.2 |
| | + Angular tightening | : 74° ± 7° |
| (18) Timing pinion | Tightening | : 4 ± 0.4 |
| | + Angular tightening | : 80° ± 8° |
| (19) Fixing of starter gear support flange, plus crankshaft converter support | Tightening | : 2 ± 0.2 |
| | Angular tightening | : 60° ± 6° |
| (20) Accessory pulley on timing pinion | | : 2.5 ± 0.2 |

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder block

Bearing cap cover



B1BK24VD

Respect the sequence of stages and the order of tightening

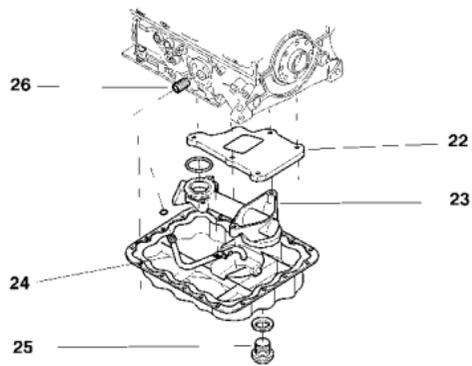
Reference/description	M11 Bolts from 1 to 8	M8 Bolts from 9 to 16)	M6
(21) Fixings of bearings/cap covers or bearings/caps	Stage 1 3 ± 0.3	Stage 2 1 ± 0.1	Stage 3 1 ± 0.1
21) Fixings of bearings/cap covers or bearings/caps (Slacken to zero torque.)	Stage 4 YES	Stage 4 YES	NO
(21) Fixings of bearing cap cover or bearing caps (Tighten bolt by bolt) Tightening + Angular tightening	Stage 5 3 ± 0.3 180°	Stage 6 1 ± 0.1 180°	

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Lubrication circuit

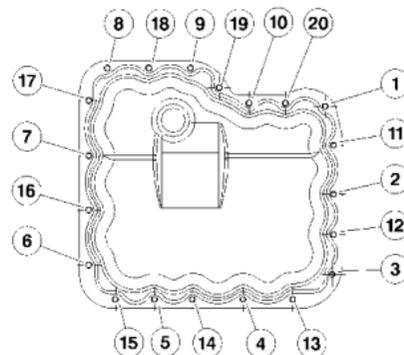
Lubrication circuit.



B1BK24WD

(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

Oil sump



B1BK24XD

Respect the sequence of stages and the order of tightening

- 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.

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

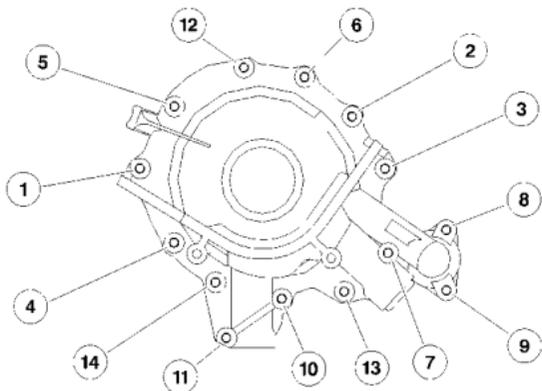
Engine : XFW

Lubrication circuit

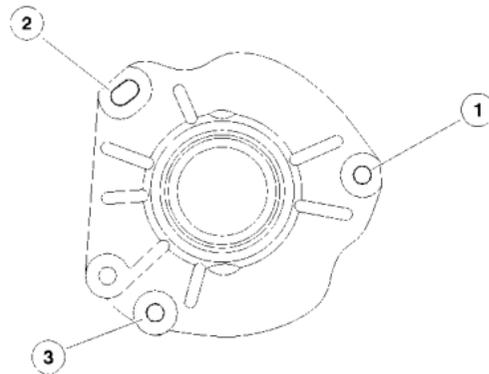
Cooling circuit

Oil pump

Coolant pump



B1BK3B6D



B1BK3B7D

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.

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**

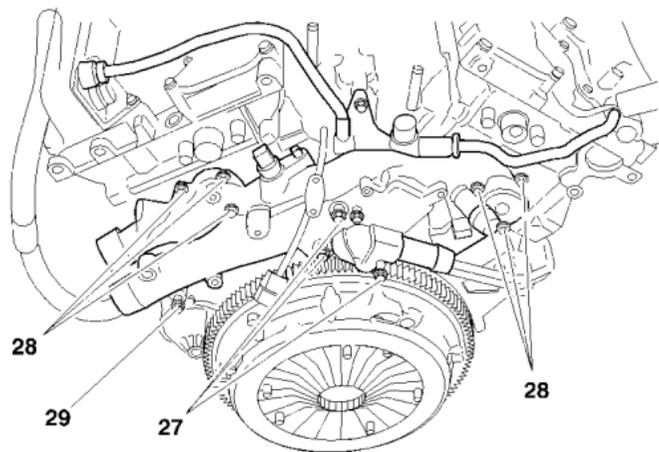
Stage 4 : Repeat the tightening a few times in the same order to obtain a tightening torque of **0.8 m.daN** on all the screws.

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Lubrication circuit

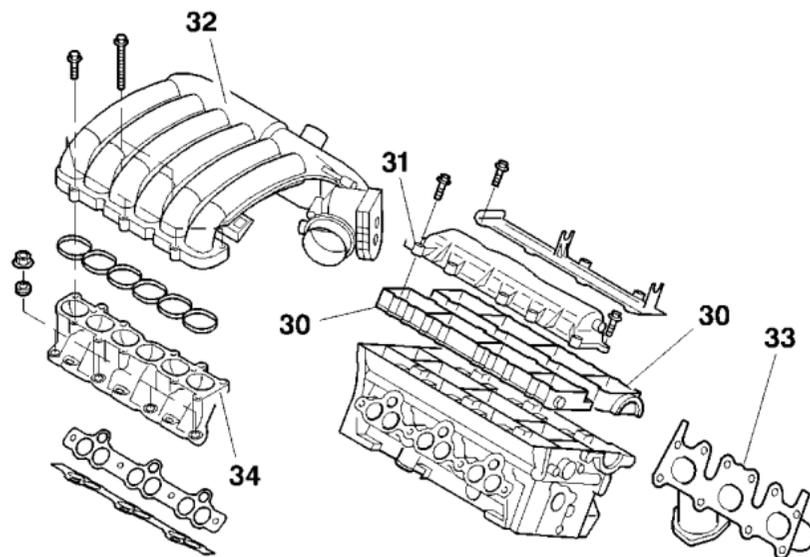
Coolant manifold



B1BK24YD

- | | |
|-------------|-----------------|
| (27) Screws | : 2.5 ± 0.2 |
| (28) Screws | : 0.8 |
| (29) Screws | : 0.8 |

Cylinder head equipment



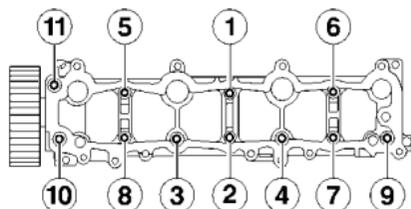
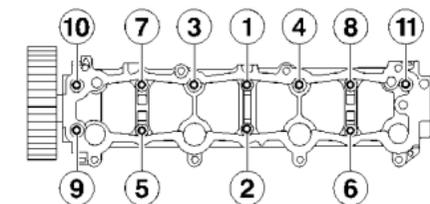
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SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

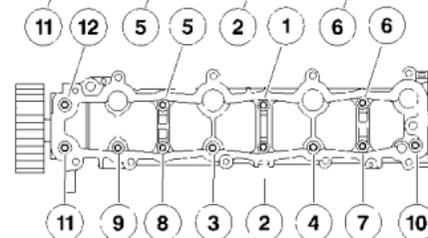
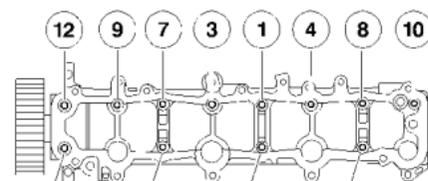
Cylinder head equipment

Camshaft bearing cap cover (right hand side)



B1EK0GCC

Camshaft bearing cap cover (left hand side)



B1BK3B8D

Respect the sequence of stages and the order of tightening

(30) Camshaft bearing cap cover or camshaft bearing:

Pre-tighten to : **0.2**

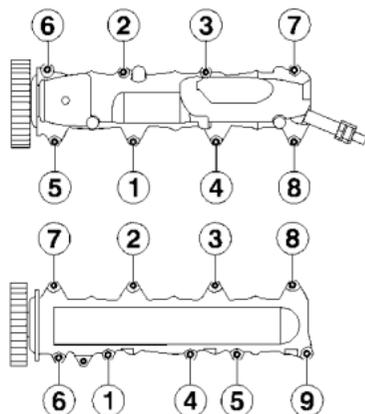
Tighten to : **1**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

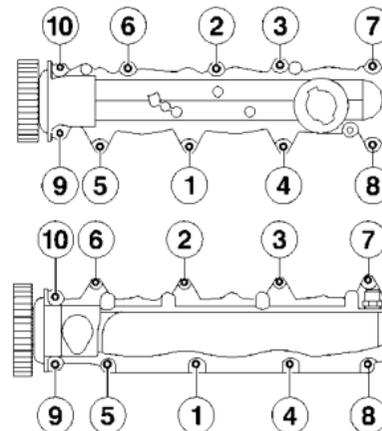
Cylinder head equipment

Valve covers (right hand side)



B1EK0GEC

Valve covers (left hand side)



B1EK0GFC

Respect the sequence of stages and the order of tightening

(31) Valve cover :

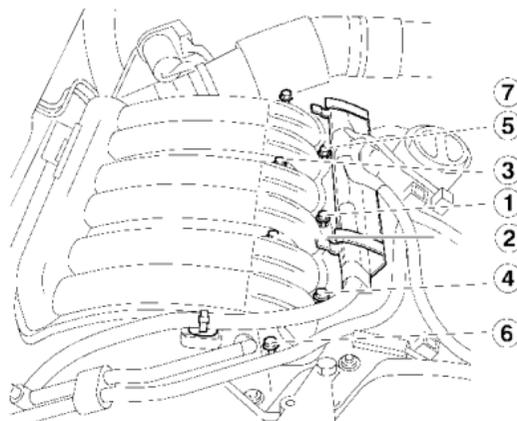
Pre-tighten to	: 0.5
Tighten to	: 0.8

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder head equipment

Inlet manifold



B1BK251D

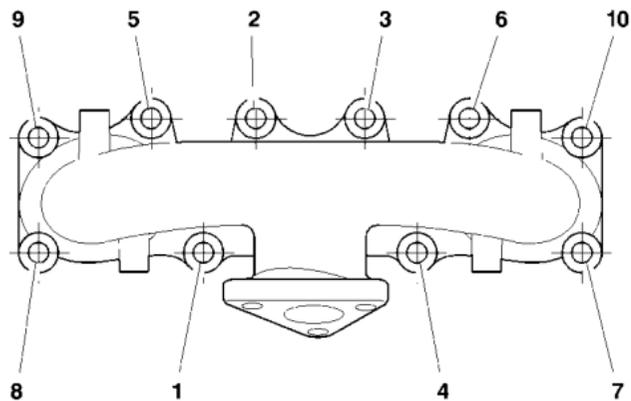
Respect the sequence of stages and the order of tightening**(32)** Inlet manifold:Pre-tighten to : **0.4**Tighten to : **0.8**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

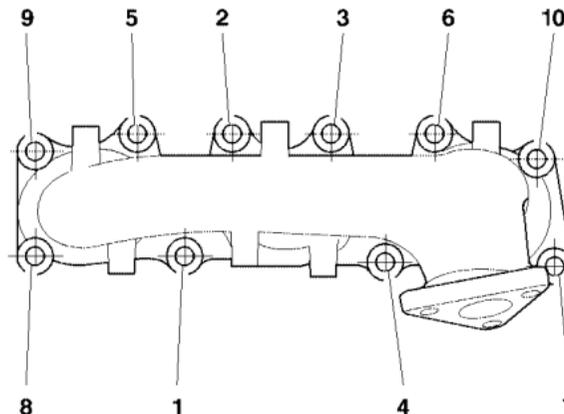
Cylinder head equipment

Exhaust manifold (right hand side)



B1JK03ND

Exhaust manifold (left hand side)



B1JK03LD

Respect the sequence of stages and the order of tightening

(33) Exhaust manifold:

Pre-tighten to

: 1

Tighten to

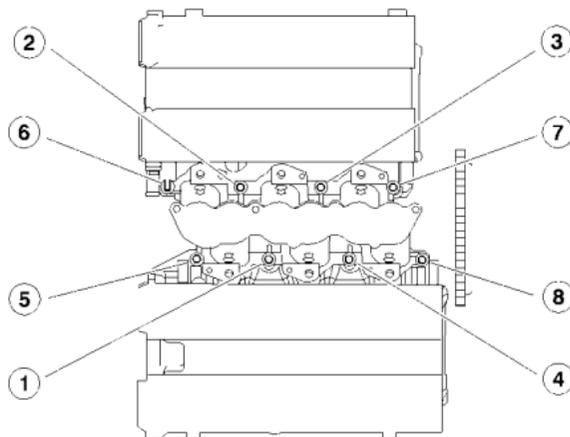
: 3 ± 0.3

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Cylinder head equipment

Inlet distributor



B1BK252D

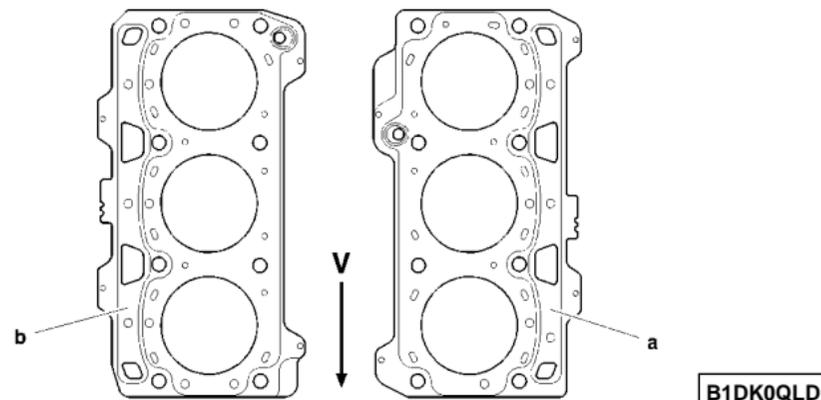
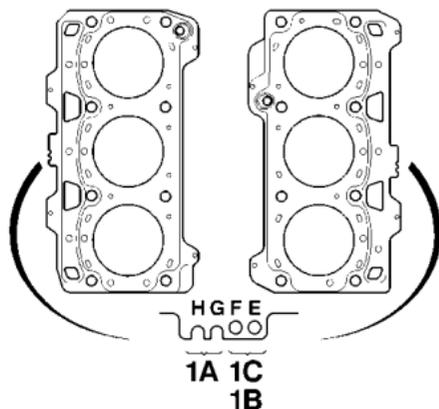
Respect the sequence of stages and the order of tightening**(34)** Inlet distributor:Pre-tighten to : **0.4**Tighten to : **0.8**

CYLINDER HEAD

Engine : XFW

Identification of cylinder head gaskets

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



Respect the sequence of stages and the order of tightening

Cylinder head gasket thicknesses

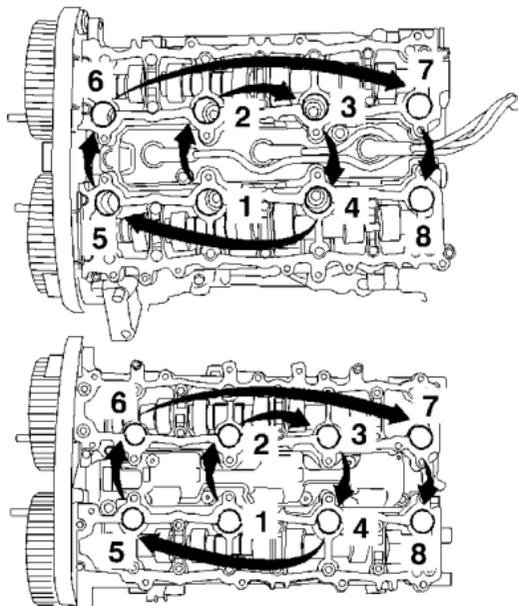
(1A) : Engine ref : G-H	
(1B) : Nominal dimension: Without marking	= 0.75 mm
(1C) : CRepair dimension : E (1st repair dimension R1)	= 0.95 mm
(1C) : Repair dimension: E-F (2nd repair dimension R2)	= 1.15 mm

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

CYLINDER HEAD

Engine : XFW

Cylinder head tightening (m.daN)

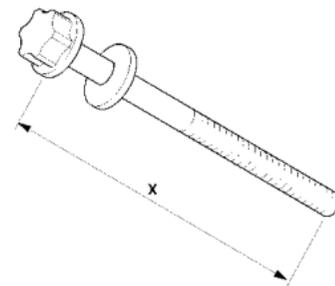


B1EK0XAD

Pre-tightening	: 2
Slackening	: YES
Tightening	: 1.5
Angular tightening	: 225°

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

Cylinder head bolts



B1DK0QPD

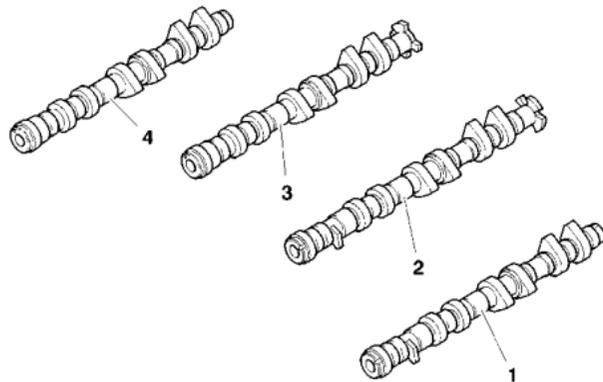
X = MAX. re-usable

149.5 mm

CYLINDER HEAD

Engine : XFW

Identification of camshafts



B1EK0WVD

A = Inlet camshaft

E = Exhaust camshaft

The camshafts are identified by the following references:

(1) Exhaust camshaft	E389 (Front)
(2) Inlet camshaft.	A423 (Front)
(3) Inlet camshaft.	A422 (Rear)
(4) AExhaust camshaft	E388 (Rear)

Timing belt

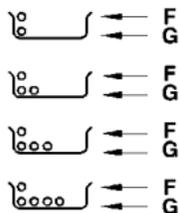
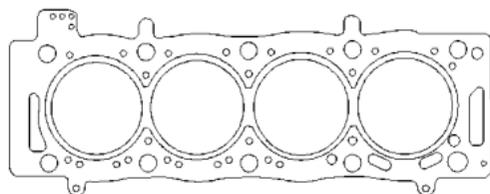
Width: 32 mm

Number of teeth: 259

CYLINDER HEAD

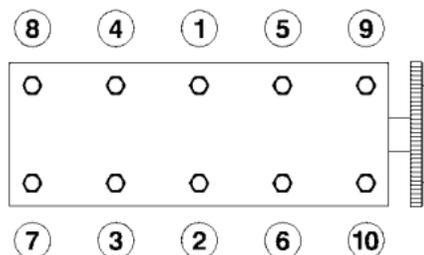
Engines : RHT – RHW - 4HW

Identification of cylinder head gasket



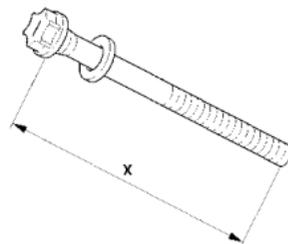
B1DK0Q6C

Cylinder head tightening (m.daN)



B1DK00SC

Cylinder head bolts



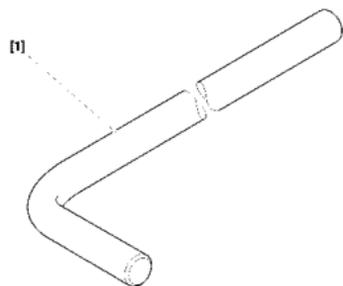
NOTE : Grease the bolts on the threads and under the heads, using engine oil or Molykote G plus).G Plus)

B1DK1M6D

Piston stand-proud (mm)	Thickness (mm)	Hole at F		Hole at G	Tighten in the order indicated		X = MAX. re-usable	
		RHT RHW	4HW		Pre-tightening :		RHT - RHW	4HW
0.55 to 0.60	1.25 ± 0.04	0	1	1	1/ 2			
0.61 to 0.65	1.30 ± 0.04	0	1	2	2/ 6			
0.66 to 0.70	1.35 ± 0.04	0	1	3	Tightening : 1/ 2			
0.71 to 0.75	1.40 ± 0.04	0	1	4	2/ 6			
					Angular tightening : 220°		134 mm	134.5 mm

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RFN-3FZ



BXXK08DD

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).

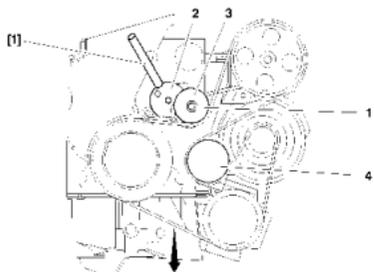
Refitting.

Refit the auxiliary drive belt.

Check that the auxiliary drive belt is correctly positioned in the grooves of the various pulleys.

Remove tool [1].

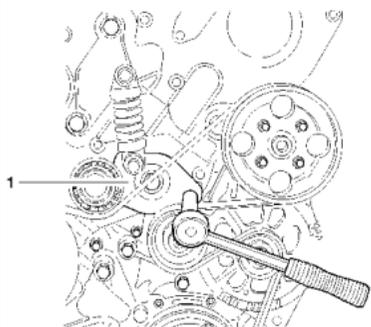
Continue the refitting operations in reverse order to removal.



BXXK0AUD

AUXILIARY EQUIPMENT DRIVE BELT

Engine : XFW



B1EK0VAD

Tools

- [1] Ratchet spanner **FACOM (1/2" square)**.
- [2] Reduction box **FACOM S.230 (1/2" - 3/8" 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.

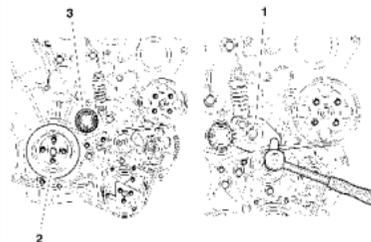
Commence with the crankshaft pulley (2).

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.

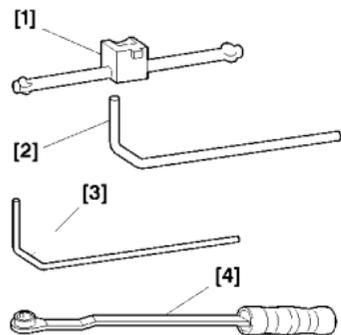
Continue the refitting operations in reverse order to removal.



B1EK0VBD

AUXILIARY EQUIPMENT DRIVE BELT

Engine : RHT - RHW

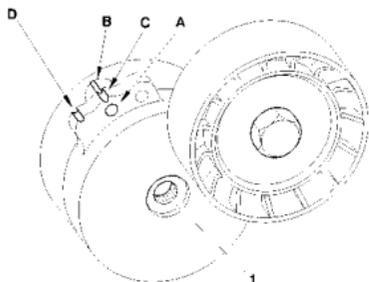


E5AK0E9C

Tools.

- | | |
|--------------------------------------|----------------|
| [1] Tensioning lever | : (-).0188-J2. |
| [2] Peg for dynamic roller Ø 4 mm | : (-) 0188-Q1. |
| [3] Peg for dynamic roller Ø 2 mm | : (-).0188-Q2. |
| [4] Dynamic roller compression lever | : (-).1888-Z. |

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



B3EK0DHD

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

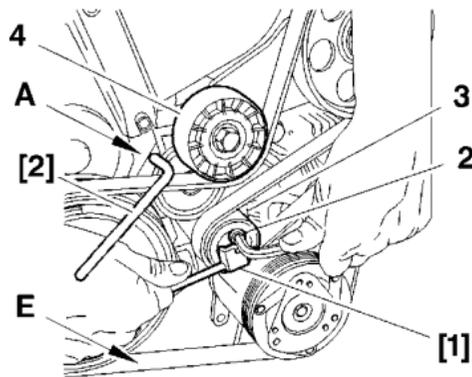
Remove:

- 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



B1BK1A4C

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.

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HW

Tools.

- [1] Peg for dynamic roller
 [2] Dynamic roller compression lever

: (-) 0188-Q1

: (-).1888-Z.

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

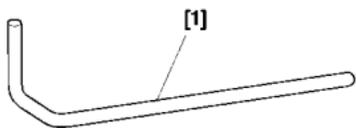
This marking system permits checking of the belt wear; if the marks (D) and (B) coincide, it implies that the belt requires replacing.
 Tighten the screw (1) to 4.5 ± 0.4 m.daN.

Removing.

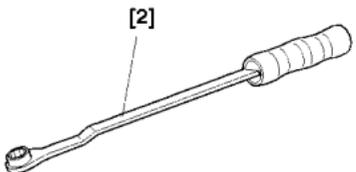
Remove:

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

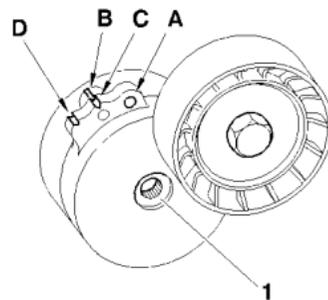
IMPERATIVE : Mark the direction of rotation of the belt if to be re-used.



E5AK0EDC



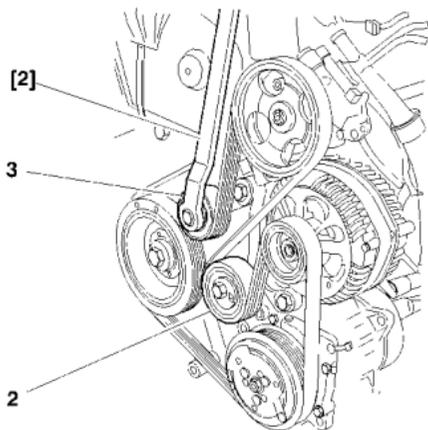
E5AK0E8C



B3EK09PC

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HW



B1BK1IWD

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.

BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE

↓ 4099-T (C.TRONIC.105)



Tools



4122-T (C.TRONIC.105.5) ↓

1 daN = 1 Kg TYPE DE COURROIES		daN	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	daN	1 daN = 1 Kg TYPE DE COURROIES									
S			18	28	36	44	51	58	64	70	76	82	88	94	100	106	112																
			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												
		E6	25	32	39	45	50	54	58	62	66	70	74	78	81	84	86	88	89	90	91												
			32	41	48	55	62	69	76	83	90	96	102	108	114	120	126	132	138	144	150												
P		E6	27	36	43	49	55	61	66	71	76	80	84																				
			32	41	49	57	63	69	75	81	87	93	99																				
P		E6	26	35	42	48	53	58	63	68	73	78	82																				
			30	40	47	54	61	68	75	81	87	93	99																				
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	98	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.

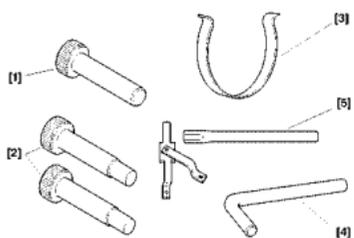
ESSENTIAL:

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



B1EK1UDD

Tools.

- [1] Crankshaft setting peg : (-).0189-B
 [2] Camshaft hub setting pegs : (-).0189-AZ
 [3] Belt retaining pin : (-).0189-K
 [4] Positioning peg : (-).0189-J
 [5] Tool for immobilising hub : (-).6310-T

Removing.

Disconnect the battery.

Remove:

- The under-engine shield.
- The auxiliary drive belt (see corresponding operation).

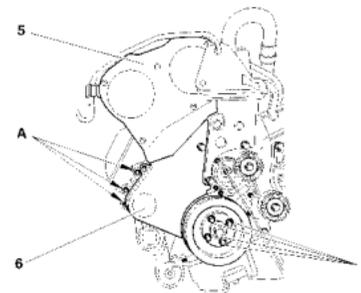
Move aside:

- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.

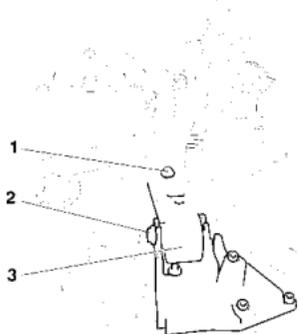
Remove:

- 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).



B1EK0V7D



B1EK1T7D

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN

Removing (continued).

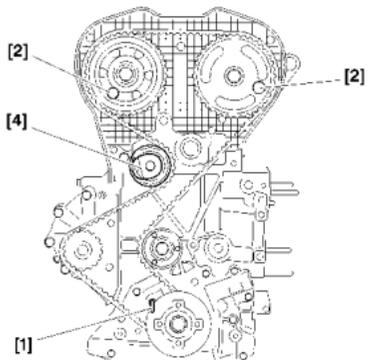
Peg :

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

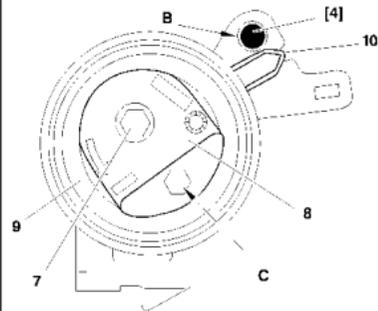
Slacken the screw (7) while holding tool [4].

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.



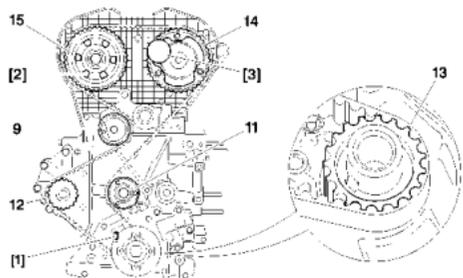
B1EK1UED



B1EK1UFD

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN



B1EK1T8D

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.

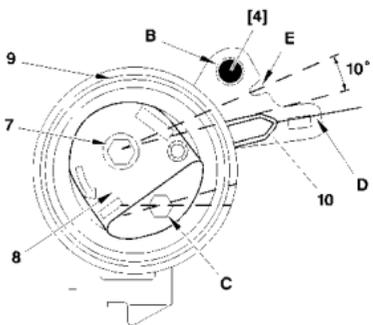
Immobilise the belt, using tool [3].

Refit the timing belt, well-tensioned, in the following sequence:

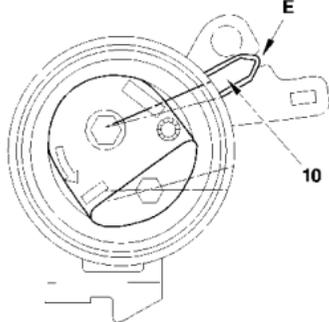
- Guide roller (11).
- Pinions (14) and (15).
- Coolant pump (12).
- Tensioner roller (9).

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN



B1EK1T9D



B1EK1TAD

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.

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN

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].

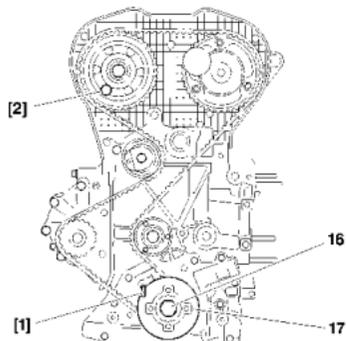
Tightening of screw (16) (Tool **FACOM D360**).

Tighten to : 4 ± 0.4 m.daN

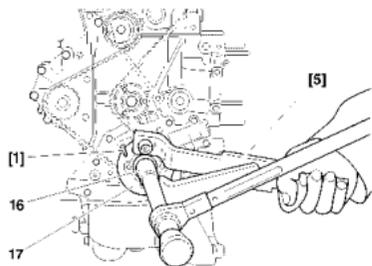
Angular tighten to : $53^\circ \pm 5^\circ$.

Remove tools [1], [2] and [5].

IMPERATIVE : When tightening screw (16), hold the pulley (17) in position, using tool [5].



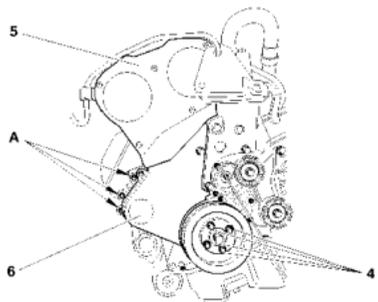
B1EK1TBD



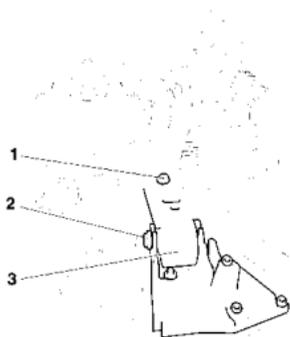
B1EK1TCD

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN



B1EK0V7D



B1EK1T7D

Refitting (continued).

Refit:

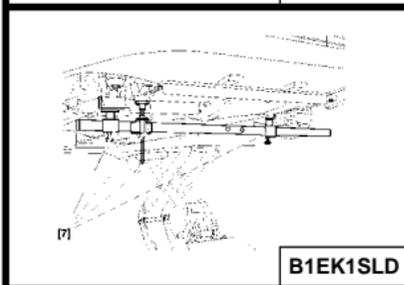
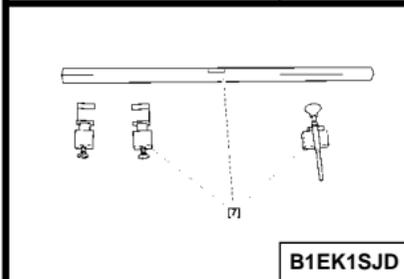
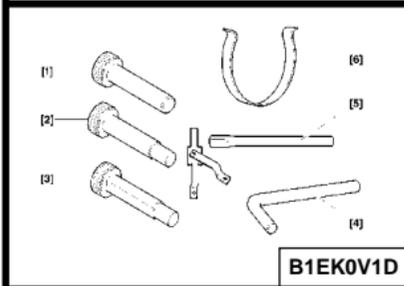
- The timing cover **(6)**.
- The auxiliary drive pulley.
- The screws **(4)**, tighten to **2.1 ± 0.2 m.daN**.
- The timing cover **(5)**.
- The torque reaction rod **(3)**.
- The screws **(1)** and **(2)**, tighten to **4.5 ± 0.4 m.daN**.

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 |
| [2] Exhaust camshaft setting peg | : (-).0189-AZ |
| [3] Inlet camshaft setting peg | : (-).0189-L |
| [4] Positioning peg | : (-).0189-J |
| [5] Tool for immobilising hub | : 6310-T |
| [6] Belt retaining pin | : (-).0189.K |
| [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).

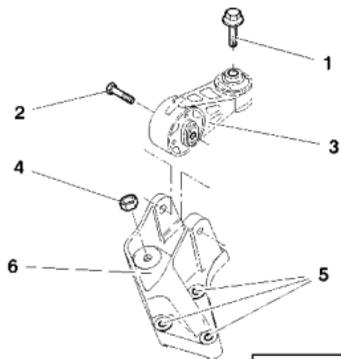
Position the tool [7].

Move aside:

- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ



B1EK1SUD

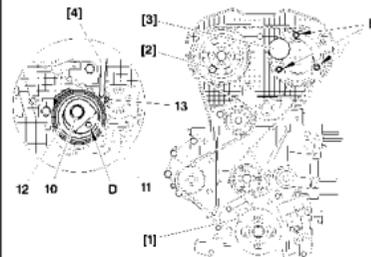
Remove:

- 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).

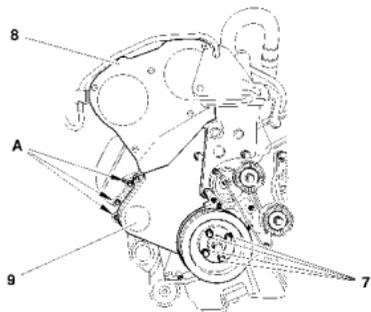
WARNING : Do not slacken the fixing screws (A).**IMPERATIVE :** Do not slacken the fixing screws (B).

Peg:

- The exhaust camshaft, using tool [2].
- The inlet camshaft, using tool [3].
- The crankshaft, using tool [1].



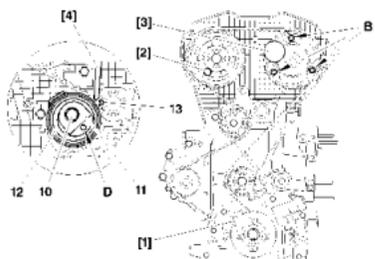
B1EK1SMD



B1EK1SKD

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ



B1EK1SMD

Position tool [4].

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

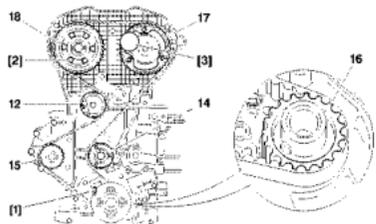
Using the hexagonal recess (D), turn the eccentric hub (11) of the tensioner roller (12) (clockwise), to detension the belt. The cursor (13) moves against the tool [4].

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).



B1EK1SND

When replacing the belt (14), tighten the fixing to 3.5 ± 0.3 m.daN.

Position the belt on the crankshaft pinion (16), respecting its direction of fitting.

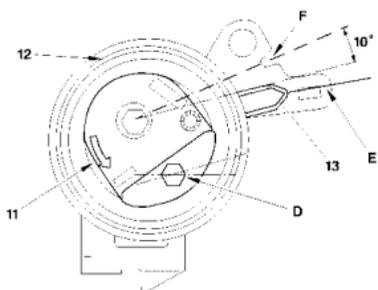
Immobilise the belt, using tool [6].

Refit the timing belt, well-tensioned, in the following sequence:

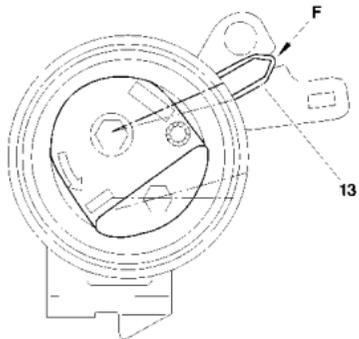
- Guide roller (14).
- Pinion (17).
- Pinion (18).
- Coolant pump (15).
- Tensioner roller (12).

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ



B1EK1SPD



B1EK1SQD

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 excentric 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

Engine : 3FZ

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].

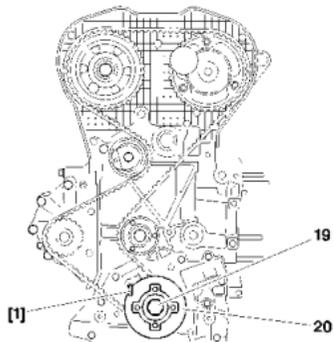
Position tool [1].

Tightening of screw (19) (Tool **FACOM D360**).

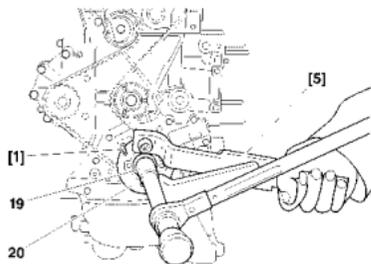
Tighten to : 4 ± 0.4 m.daN

Angular tighten to : $53^\circ \pm 5^\circ$.

Remove tools [1], [3] and [5].



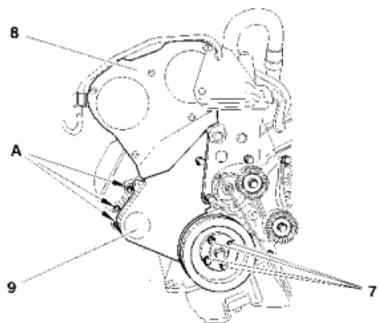
B1EK1SRD



B1EK1SSD

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ



B1EK1STD

Refitting (continued).

Refit:

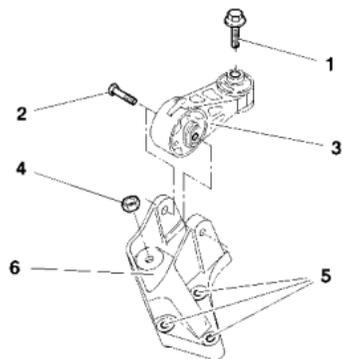
- The timing cover (9).
- The auxiliary drive pulley.
- The screws (7), tighten to 2.1 ± 0.2 m.daN.
- The timing cover (8).
- The RH engine support (6).
- The torque reaction rod (3).

Tighten:

- Screws (5) to 6 ± 0.6 m.daN
- Nut (4) to 4.5 ± 0.4 m.daN
- Screws (1) and (2) to 4.5 ± 0.4 m.daN

Refit the auxiliary drive belt (see corresponding operation).

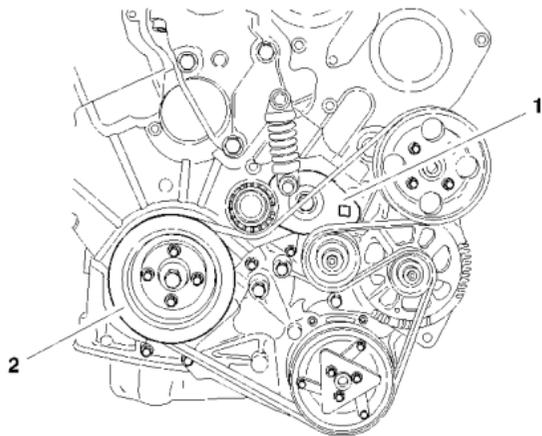
Continue the refitting operations in reverse order to removal.



B1EK1SUD

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK004D

Tools.

- | | |
|---|---------------|
| [1] Camshaft setting pegs | : (-).0187-B |
| [2] Crankshaft setting peg | : (-).0187-A |
| [3] Belt retaining pin | : (-).0187-J |
| [4] Peg for checking camshaft settings | : (-).0187-CZ |
| [5] Tool for immobilising inlet camshaft hubs | : (-).0187-C |
| [6] Tool for immobilising exhaust camshaft hubs | : (-).0187-F |
| [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:

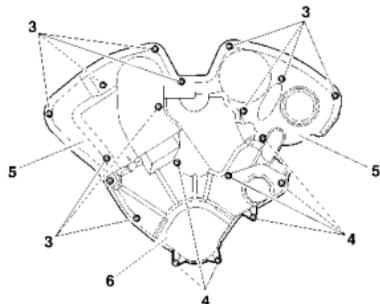
The **twelve screws (3)** (6 mm external hexagonal adaptor).The **seven screws (4)** (7 mm external hexagonal adaptor).The **two covers (5)**.The cover **(6)**.

The fixing screws of the power steering pump, then suspend the latter.

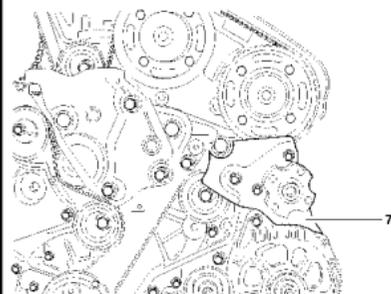
The support **(7)**.

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.

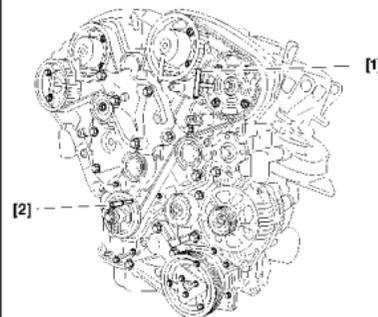
Peg in the sequence:

Camshafts, using tool **[1]**.Crankshaft, using tool **[2]**.

B1EK005D



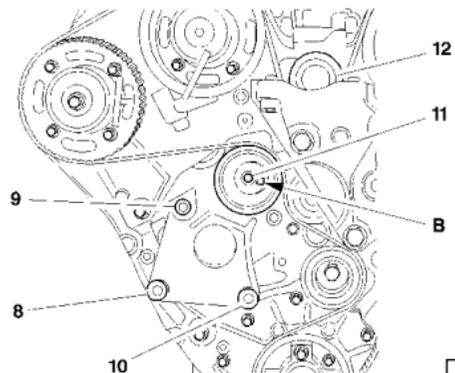
B1EK006D



B1EK007D

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK008D

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.

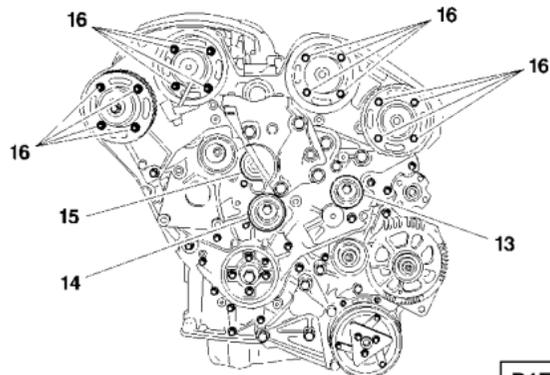
Slacken screws (16) by a $1/4$ turn.

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.

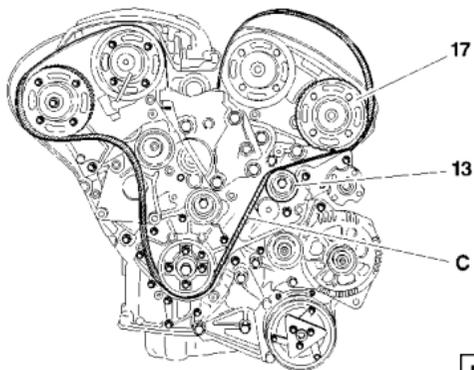
Immobilise the belt, using tool [4].



B1EK009D

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00AD

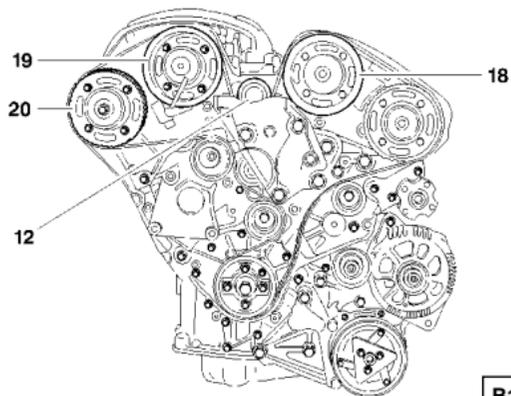
Refitting (continued).

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.

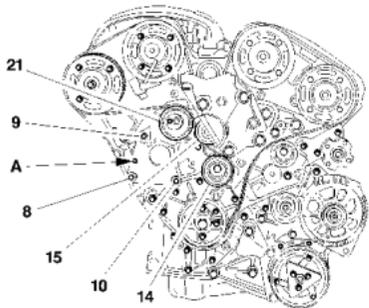


B1EK00BD

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

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00CD

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.

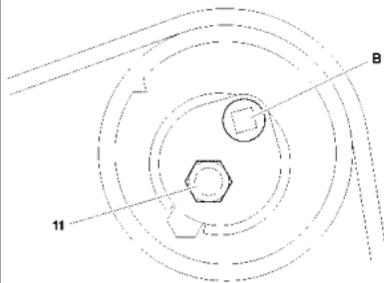
Pivot the tensioner roller to tension the belt to the maximum (anti-clockwise), using tool **FACOM R.161** at «B» :

- 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).

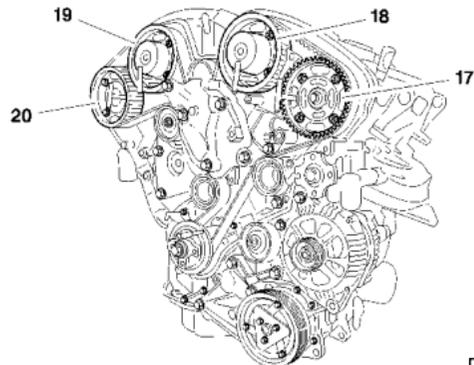
If they are, repeat the operation to refit the belt.



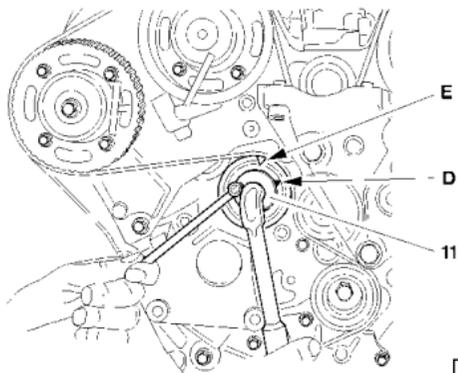
B1EK00DD

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00ED



B1EK0VRD

Refitting (continued).

Tighten at least two screws **(16)** per hub to $1 \pm 0.1 \text{ m.daN}$, 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 $2.5 \pm 0.2 \text{ m.daN}$, 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.

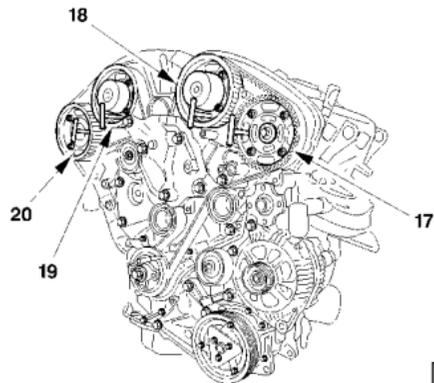
Peg the crankshaft, using tool **[2]**.

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



B1EK00GD

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]

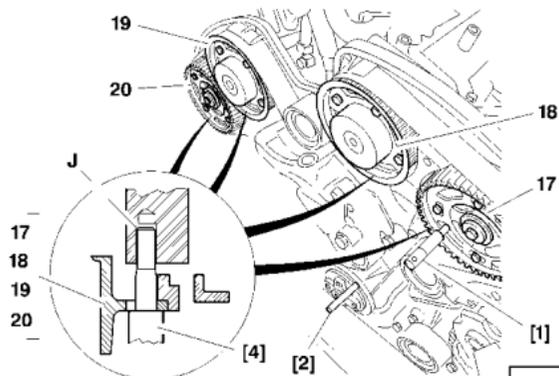
Checking the setting of the timing.

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

IMPERATIVE : Never turn the engine backwards.

Refit the crankshaft peg [2].

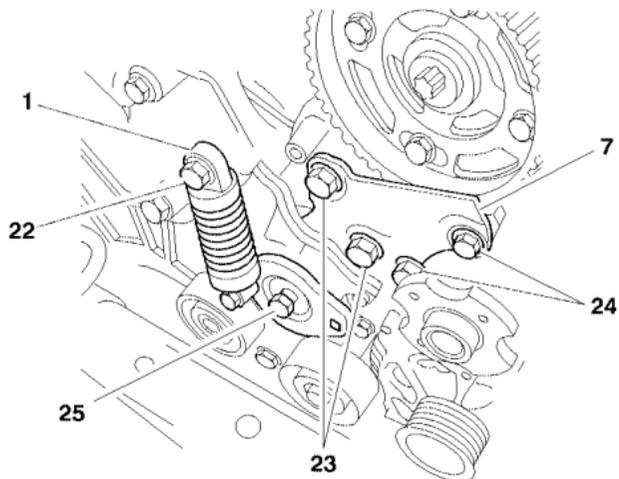
Check that the peg for checking the camshaft settings [4] engages freely in the cylinder heads (J), as far as the camshaft pinions.



B1EK00HD

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00JD

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

Engines : RHT-4HW

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
[7] Tensioning lever	: (-).0188-J2
[8] Pulley extractor	: (-).0188-P
[9] Crankshaft setting peg (engine DW10ATED4)	: (-).0188-Y
[10] Crossmember	: 4090-T
[11] Tie-bar support	: 4176-T
[12] Retaining support	: (-).0911-J
[13] Support with adjustable screw	: (-).0911-H
[14] 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].

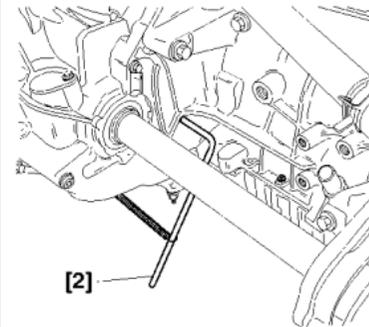
Turn the crankshaft.

Peg:

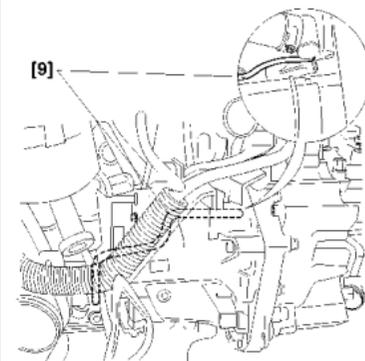
- The engine flywheel, tool [2] (engine **DW12TED4**).
- The engine flywheel, tool [9] (engine **DW10ATED4**).



B1EK0TVC



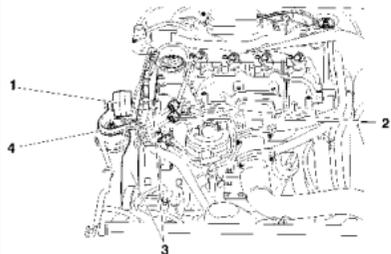
B1EK0TUC



B1EK1T4D

CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW



B1EK1TTD

Removing (continued).

Disconnect the battery.

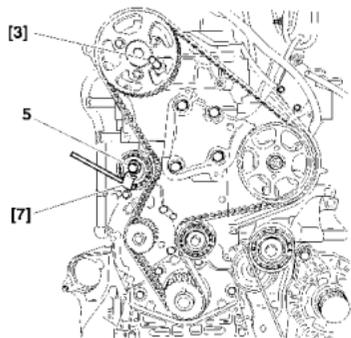
Move aside the header tank.

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].



B1EK1T2D

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].

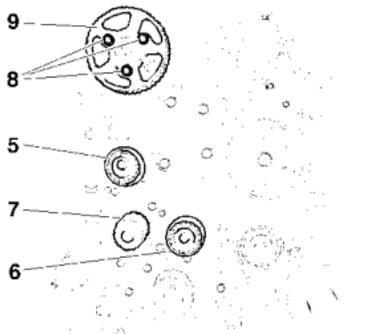
Slacken the tensioner roller fixing (5).

Retighten the fixing to the position of maximum de-tension. (Tighten to **0.1 m.daN**).

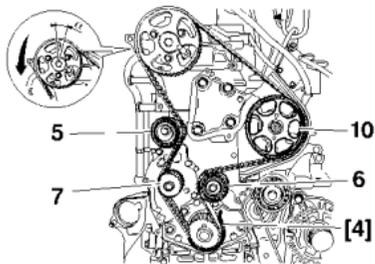
Remove the timing belt.

CHECKING AND SETTING THE VALVE TIMING

Engines : RHT-4HW



B1EK0TXC



B1EK0TYC

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).

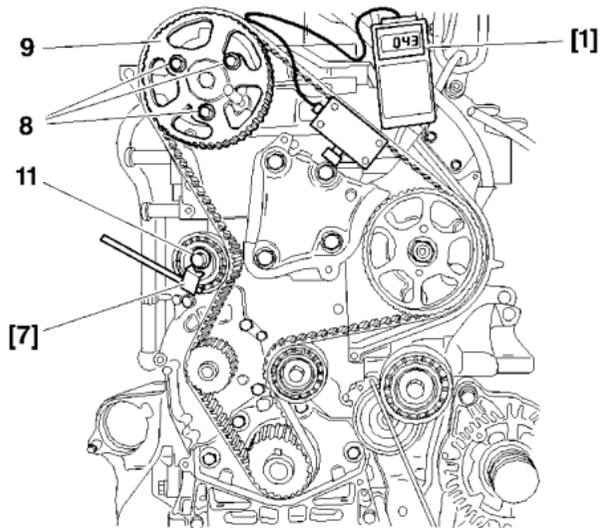
Turn the tensioner roller (5) (anti-clockwise), so as to put the tensioner roller (5) in contact with the belt.

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



B1EK1TSD

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 ± 2 SEEM units.

Tighten the screw (11) to **2.3 ± 0.2 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 ± 0.2 m.daN**.

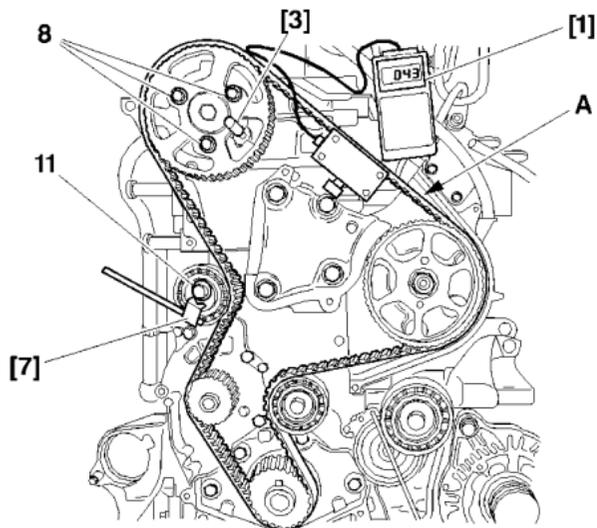
Remove the setting pegs [3] and [2].

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



B1EK1T1D

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 ± 2 SEEM units.

Tighten screw (11) to 2.3 ± 0.2 m.daN. (without modifying the position of the roller).

Tighten the screws (8) to 2 ± 0.2 m.daN.

Remove tool [1] to release the internal forces.

Refit the tool [1].

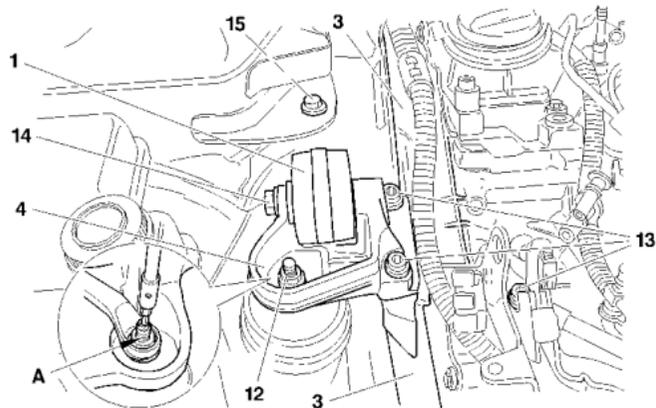
The tension value should be between **48 and 55 SEEM units.**

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



B1EK1T0D

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.

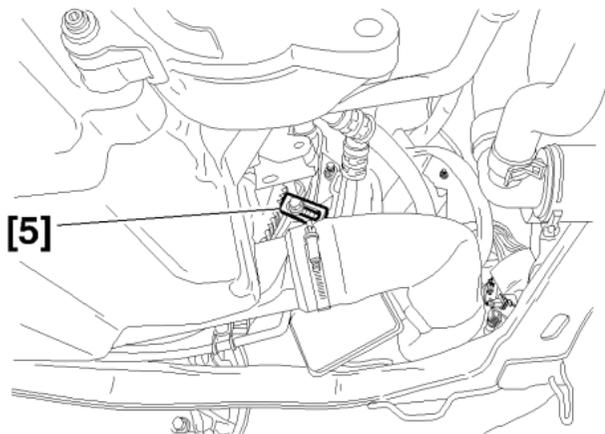
IMPERATIVE : Apply an opposite torque at (A).

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



B1EK0TVC

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.

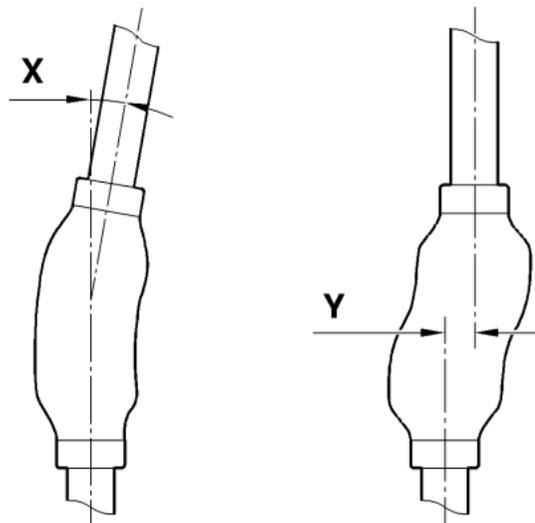
COOLING SYSTEM SPECIFICATIONS

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

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

EXHAUST SPECIFICATIONS

Petrol engines all types



B1JP02JC

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°** angular (**X**), **20mm** axial, **25 mm** shear (**Y**) (flexible pipe not fitted).

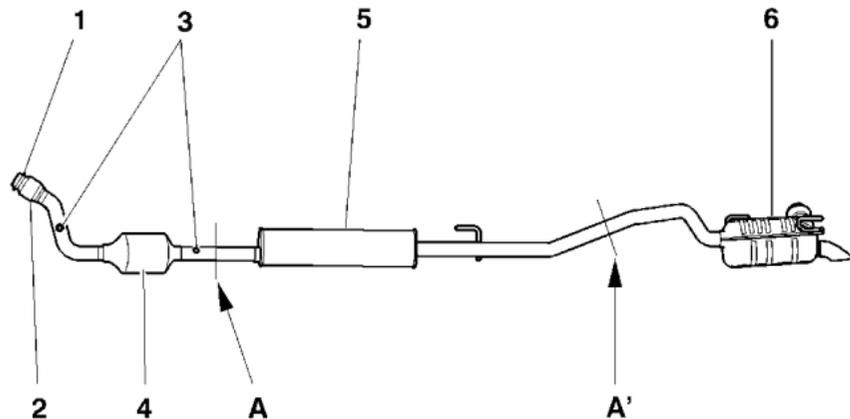
Do not distort the flexible pipe by more than **3°** angular (**X**), **0 mm** axial, **3 mm** shear (**Y**) (flexible pipe in place).

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)

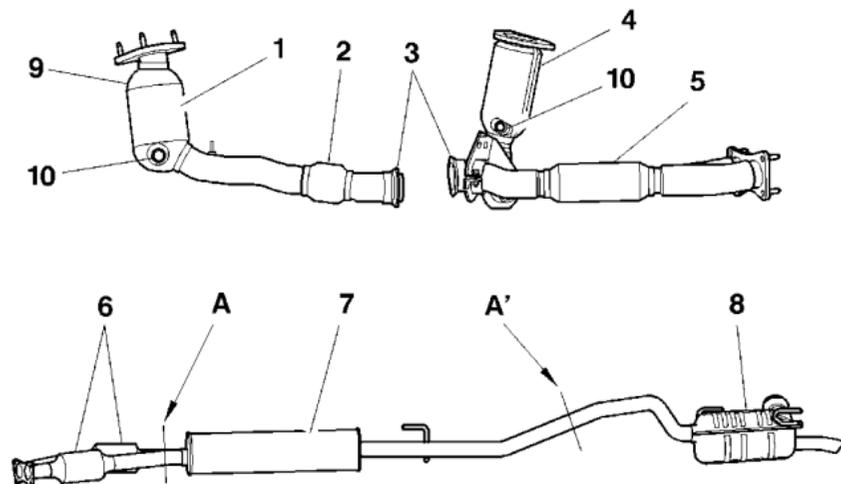


(1) Bicone collar \varnothing 74.5 mm Fixing of catalytic converter/manifold pipework	: 2.5 ± 0.4
(2) Flexible metallic pipe	
(3) Lambda probes take-off	: 4.7 ± 0.7
(4) Catalytic converter	
(5) Intermediate silencer	
(6) Rear silencer	
A and A' : After sales cutting zones. Connecting sleeve \varnothing 55 mm	: 5.2 ± 0.7

B1JK05YD

EXHAUST SPECIFICATIONS

Engine : XFW



Tightening torques (m.daN)

- | | |
|--|-----------------|
| (1) Front precatlyser | |
| (2) Flexible metallic pipe | |
| (3) Bicone collar \varnothing 66 mm
(front/rear precatlyser assembly) | : 2.5 \pm 0.4 |
| (4) Rear precatlyser | |
| (5) Flexible metallic pipe | |
| (6) Catalytic converters | |
| (7) Intermediate silencer | |
| (8) Rear silencer | |
| (9) Upstream lambda probe take-off | : 4.7 \pm 0.7 |
| (10) Downstream lambda probe take-off | : 4.7 \pm 0.7 |
| A and A' After sales cutting zones.
Connecting sleeve \varnothing 55 mm | : 5.2 \pm 0.7 |

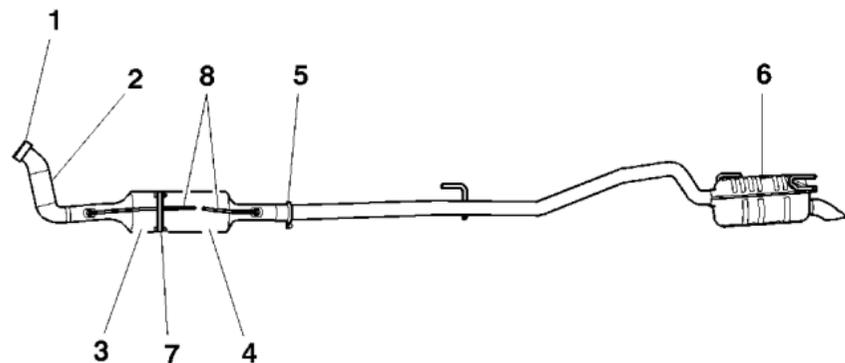
B1JK05ZD

EXHAUST SPECIFICATIONS

Engines : RHT-4HW

With particle filter

Tightening torques (m.daN)



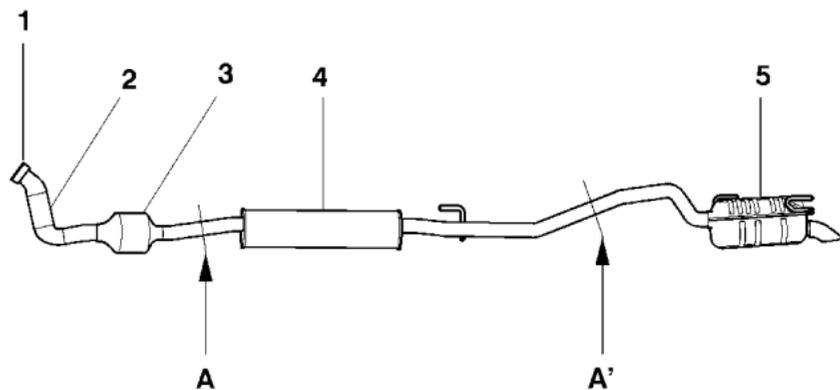
(1) Ball-joint front fixing bracket	: 4.5 ± 0.7
(2) Precatalyser	
(3) Catalytic converter	
(4) Particle filter	
(5) Bicone collar Ø 74.5 mm	: 2.5 ± 0.4
(6) Rear silencer	
(7) Catalytic converter bracket (P. filter)	: 3.3 ± 0.5
(8) C. converter and p. filter pressure take-off	: 1.7 ± 0.1

B1JK060D

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 \varnothing 55 mm: 5.2 ± 0.7

B1JK061D

CHECKING THE OIL PRESSURE

	Petrol engines							
	2.0i 16V		2.2i 16V			3.0i 24V		
Engine type	RFN		3FZ			XFW		
Temperature (°C)	80°C							
Pressure (Bars)	1.5	5	3.4	6.3	6.9	1.2	2	5
Rpm	1000	3000	1000	2000	4000	650	900	3000
	Diesel engines							
	2.0 HDi				2.2 HDi			
Engine type	RHT- RHW				4HW			
Temperature (°C)	80°C							
Pressure (Bars)	2.0		4.0		2.0		4.0	
Rpm	1000		2000		1000		2000	

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

To be read together with the Petrol and Diesel correspondence tables

		2.0i 16V – 2.2i 16V	3.0i 24V	2.0 HDi – 2.2 HDi
PURFLUX	LS 880		X	
	LS 923	X		X

		Ø (mm)	Height (mm)
Specifications	LS 880	86	140
	LS 923		

CLUTCH SPECIFICATION

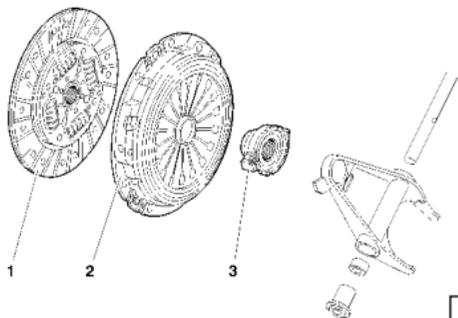
	Petrol		Diesel	
	2.0i 16V	2.2i 16V	2.0 HDi	2.2 HDi
Engine type	RFN	3FZ	RHT - RHW	4HW
Gearbox type	BE4/5	ML5C		
Feature	«Push» clutch		«Pull» clutch	
Supplier	VALEO		LUK	
Mechanism / type	230 DNG 4700	230 DNG 5100	225 T 5700	242 T 6500
Clutch disc	11 R 14 X		Clutch with double damping flywheel (DVA)	
No. of splines				
Ø of lining. Ext/Int	228/155		225/150	242/162
Quality of lining	F 808			

CLUTCH
GEARBOX
DRIVESHAFTS

CLUTCH SPECIFICATION

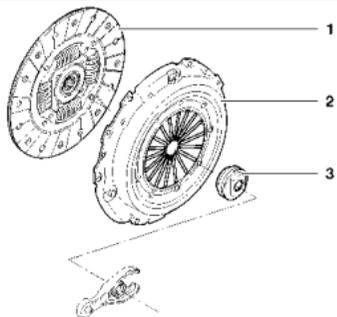
Engines: RFN – 3FZ – RHT – RHW – 4HW

«Push» clutch



B2BB000D

«Pull» clutch



B2BK22WD

«Push» clutch and «Pull» clutch.

(1) Clutch disc.

(2) Clutch plate.

(3) Clutch bearing.

HYDRAULIC CLUTCH CONTROL SPECIFICATION

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

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).

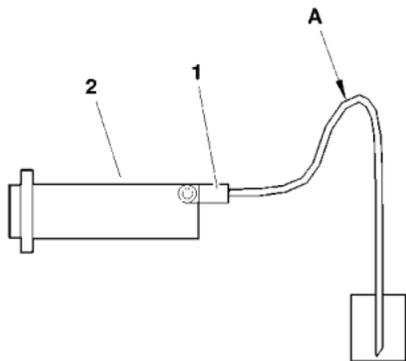
Remove:

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

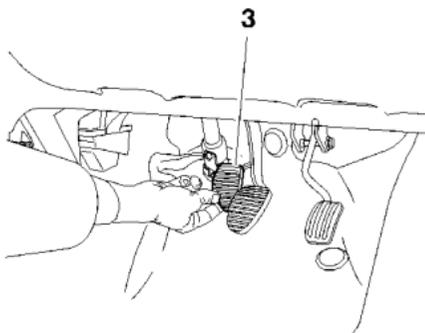
Refill the brake fluid reservoir to the maximum of its capacity.

HYDRAULIC CLUTCH CONTROL SPECIFICATION

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



B2BK22XD



B2BK064C

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.

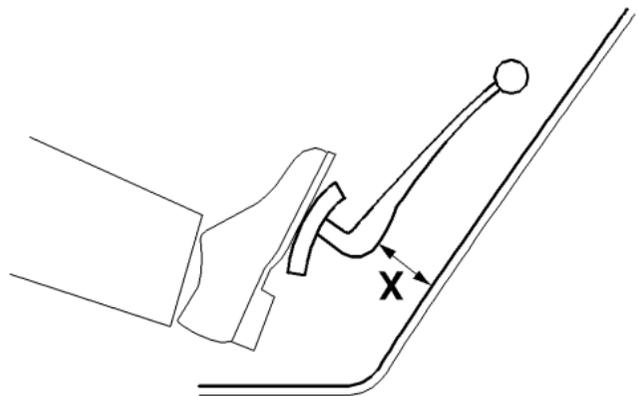
Fill the brake fluid reservoir to the maximum of its capacity.

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



B2BK065C

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**.

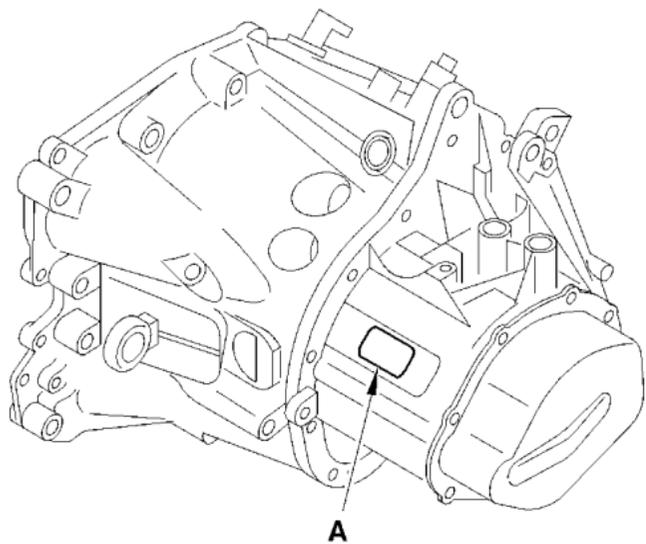
CLUTCH
GEARBOX
DRIVESHAFTS

GEARBOX AND TYRE SPECIFICATIONS

	Petrol			
	2.0i 16V		2.2i 16V	3.0i 24V
			Auto.	Auto.
Engine type	RFN		3FZ	XFW
Tyres-Rolling circumference	205/65 R 15 – 1.973 m		215/65 R15-2.016 m	215/60 R16-2.025 m
Gearbox type	BE4/5	AL4	ML5C	4 HP 20
Gearbox ident. plate	20 DL 26 (*)	20 DL 27 (**)	20 TP 74	20 HZ 27
Reduction box torque	14x62		21 x 73	14x65
Speedometer ratio	18x14		20 x 16	25x20
	Diesel			
	2.0 HDi		2.2 HDi	
			Auto.	
Engine type	RHT - RHW	RHT	4HW	
Tyres-Rolling circumference	215/65 R 15 - 2.016 M			
Gearbox type	ML5C	AL4	ML5C	
Gearbox ident. plate	20 LM 05	20 TP 74	20 LM 01	
Reduction box torque	15x67	21 x 73	16x69	
Speedometer ratio	27x21	20 x 16	27x21	

BE4/5 GEARBOX SPECIFICATION

Engine : RFN



(A) Marking zone including:

- Component reference.
- Factory serial no.

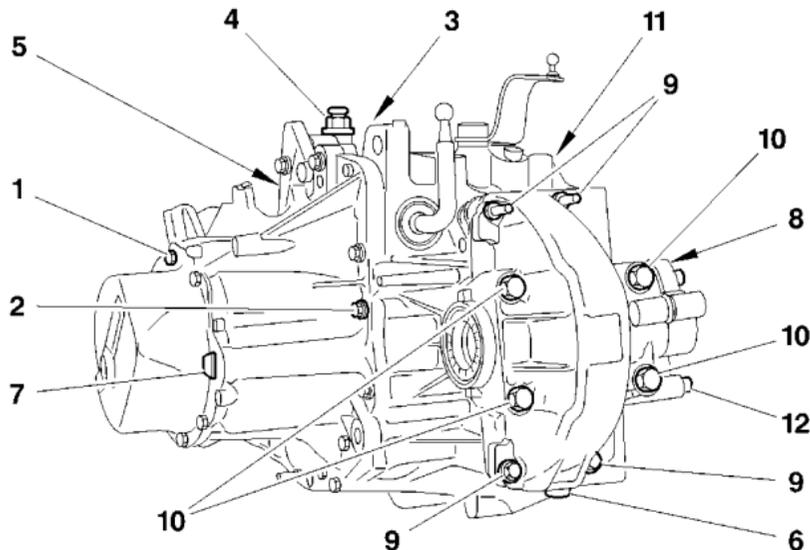
B2CKU3PD

CLUTCH
GEARBOX
DRIVESHAFTS

BE4/5 GEARBOX SPECIFICATION

Engine : RFN

Tightening torques m.daN.



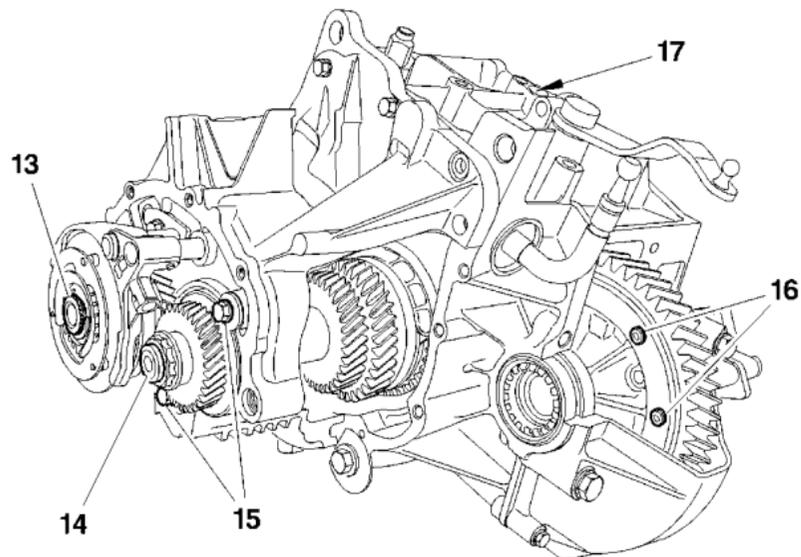
(1) Gearbox rear casing	: 1.5 ± 0.1
(2) Gearbox casing / clutch casing fixings	: 1.5 ± 0.1
(3) Reverse gear rocker shaft fixing nut	: 4.5 ± 0.4
(4) Breather pipe	: 1.5 ± 0.1
(5) Reverse gear switch	: 2.5 ± 0.2
(6) Drain plug	: 3.5 ± 0.2
(7) Top-up plug	: 2 ± 0.2
(8) Speedo drive support	: 1.5 ± 0.1
(9) 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

B2CKUB0D

CLUTCH
GEARBOX
DRIVESHAFTS

BE4/5 GEARBOX SPECIFICATION

Engine : RFN



Tightening torques m.daN.

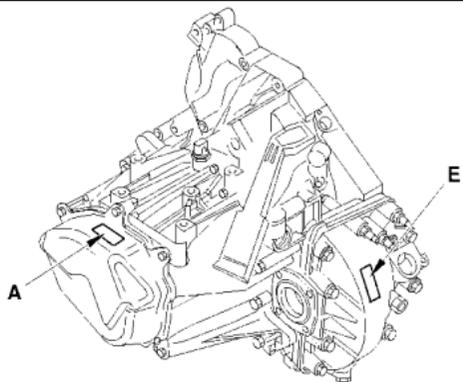
(13) Primary shaft nut	: 7.5 ± 0.7
(14) Secondary shaft nut	: 6.5 ± 0.6
(15) Bearing retaining screw	: 1.5 ± 0.1
(16) Differential gearwheel screw	: 6 ± 0.6
(17) Gear control support screw	: 1.5 ± 0.1

B2CKUB1D

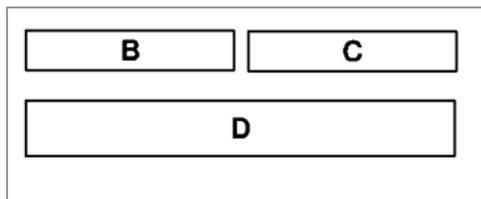
CLUTCH
GEARBOX
DRIVESHAFTS

ML5C GEARBOX SPECIFICATION

Engines : 3FZ – RHT – RHW – 4HW



B2CKUC2D



B2CKUCAD

(A) Label.

(B) Gearbox reference.

(C) Sequence no.

(D) Bar code.

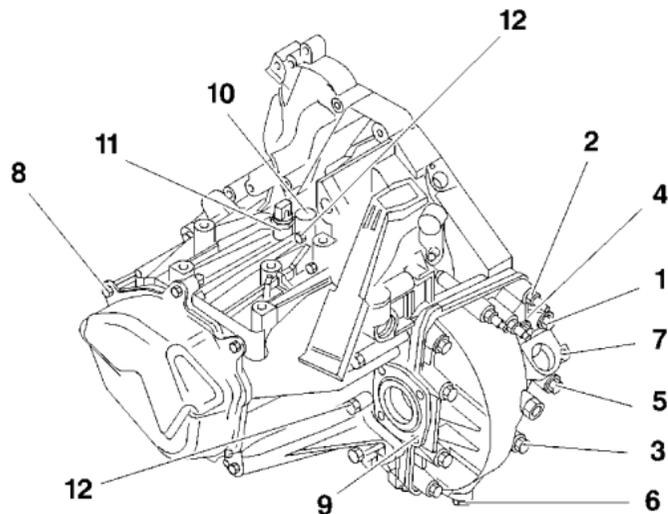
(E) Marking zone:

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

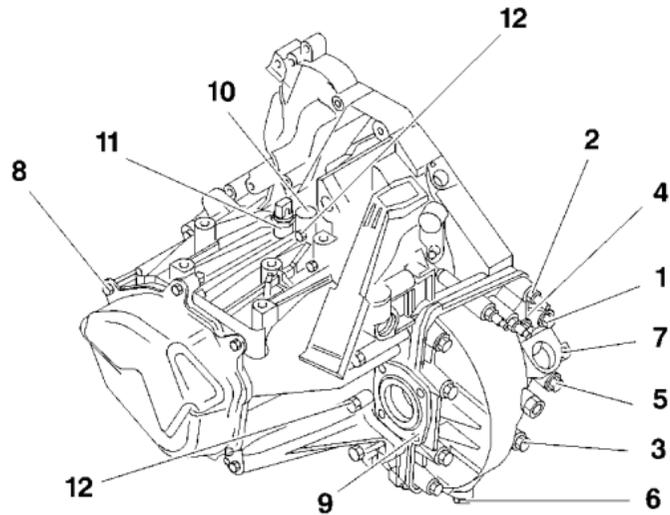
WARNING : Do not use the plug on the differential housing, this does not allow the gearbox oil level to be checked.

B2CKUC4D

CLUTCH
GEARBOX
DRIVESHAFTS

ML5C GEARBOX SPECIFICATION

Engines : 3FZ – RHT – RHW – 4HW



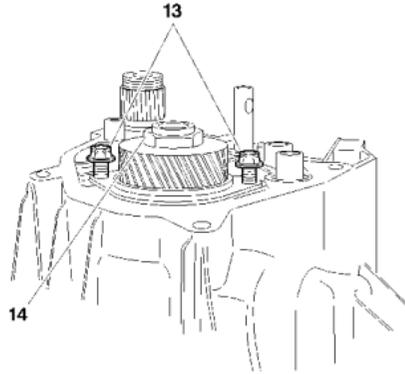
Tightening torques m.daN.

- | | |
|--|-----------------|
| (8) Fixing of gearbox cover on gearbox casing | : $2 \pm 0,2$ |
| (9) Bearing stop plate | : $2 \pm 0,2$ |
| (10) Vent hole. | |
| (11) Reverse gear switch | : $2,5 \pm 0,2$ |
| (12) Fixing of gearbox casing on clutch casing | : $2 \pm 0,2$ |

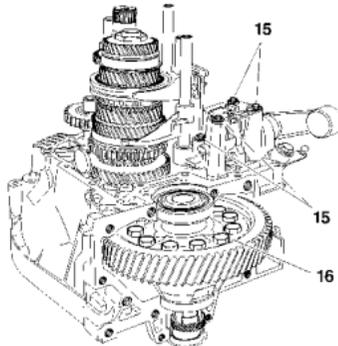
B2CKUC4D

ML5C GEARBOX SPECIFICATION

Engines : 3FZ – RHT – RHW – 4HW



B2CKUC5D



B2CKUC6D

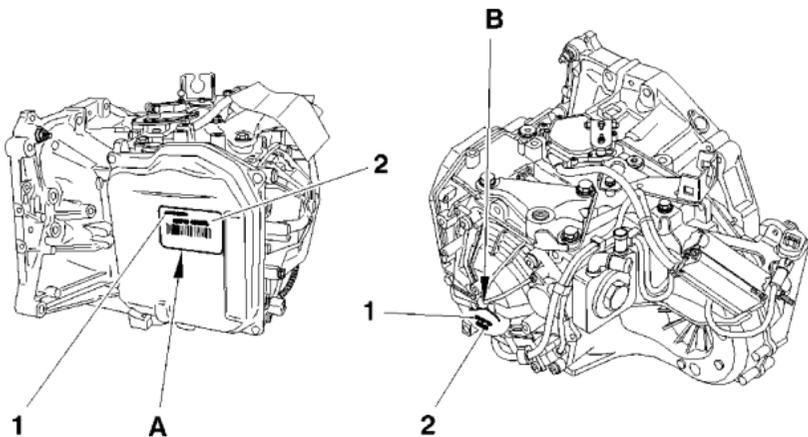
Tightening torques m.daN..

- | | |
|-----------------------------------|-----------------|
| (13) Flange fixing screws | : $2 \pm 0,2$ |
| (14) Secondary shaft nut | : $17 \pm 1,7$ |
| (15) Gear control support screw | : $1,5 \pm 0,1$ |
| (16) Differential gearwheel screw | : 7.7 ± 0.7 |

CLUTCH
GEARBOX
DRIVESHAFTS

AL4 AUTOMATIC GEARBOX SPECIFICATION

Engines : RFN - RHT



The automatic gearbox is identified by a self-adhesive label **(A)** or, failing that, by a marking **(B)**.

(1) Component reference.

(2) Serial no.

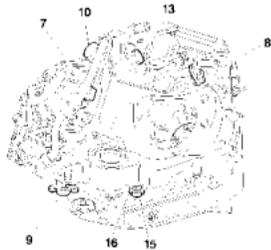
B2CA085D

AL4 AUTOMATIC GEARBOX SPECIFICATION

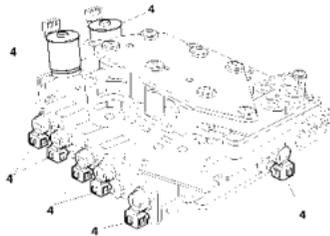
Engines : RFN - RHT



B2CKU7AD



B2CKU7BD



B2CKU7CD

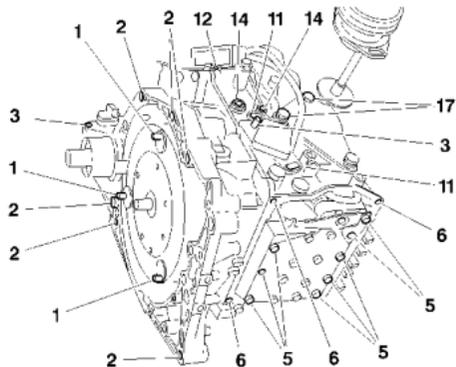
Tightening torques m.daN.

- | | |
|---|-------------|
| (1) Converter: | |
| Pre-tightening | : 1 ± 0,1 |
| Tightening | : 3 ± 0,3 |
| (2) Fixing of gearbox on cylinder block | : 5,2 ± 0,5 |
| (3) Speedometer drive | : 0,8 |
| (4) Electrovalve and/or regulators on hydraulic block | : 0,9 |
| (5) Hydraulic block | : 0,8 |
| (6) Hydraulic block casing | : 0,8 |
| (7) Automatic gearbox input speed sensor | : 1 ± 0,1 |
| (8) Automatic gearbox input speed sensor | : 1 ± 0,1 |
| (9) Line pressure sensor | : 0,9 |

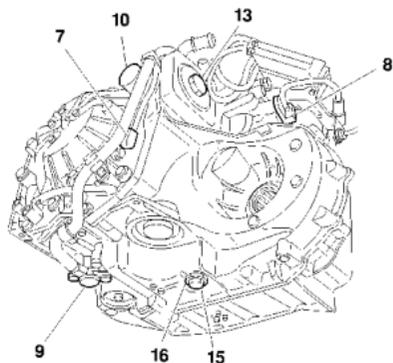
CLUTCH
GEARBOX
DRIVESHAFTS

AL4 AUTOMATIC GEARBOX SPECIFICATION

Engines : RFN - RHT



B2CKU7AD



B2CKU7BD

Tightening torques m.daN.

(10) Electrovalve controlling flow into the exchanger	: $1 \pm 0,1$
(11) Multifunction switch	: $1,5 \pm 0,1$
(12) Sleeve stop	: $1,5 \pm 0,1$
(13) Automatic gearbox heat exchanger	: $5 \pm 0,5$
(14) Filler cap	: $2,4 \pm 0,2$
(15) Top-up plug	: $2,4 \pm 0,2$
(16) Gearbox drain plug	: $4 \pm 0,4$
(17) Gearbox support	: $4,5 \pm 0,4$
Driveshaft nut (M24x150)	: $32,5 \pm 3$

DRAIN / REFILL /TOP-UP : 4 HP 20 GEARBOX

Engine : XFW

Tools.

- [1] Filling kit : (-).0341
[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.

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.

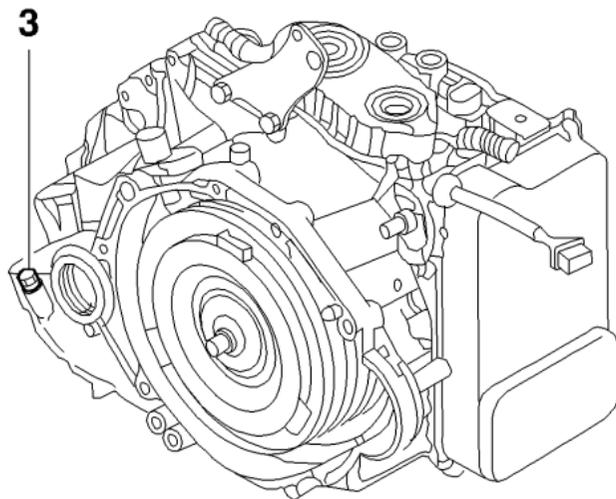
Make starting this operation, make sure that the oil temperature is well below **55°C**; if it is not, allow the oil to cool.

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**».

DRAIN / REFILL / TOP-UP : 4 HP 20 GEARBOX

Engine : XFW

**Checks (continued)**

With the engine running at the temperature $55^{\circ} \pm 1^{\circ}\text{C}$, open the top-up plug (3).
Wait for the temperature to reach $60^{\circ} \pm 1^{\circ}\text{C}$.

1st possibility :

- Oil flows out, the level is correct.
- Refit the top-up plug (3), tighten to $2,5 \pm 0,2 \text{ m.daN}$.

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).

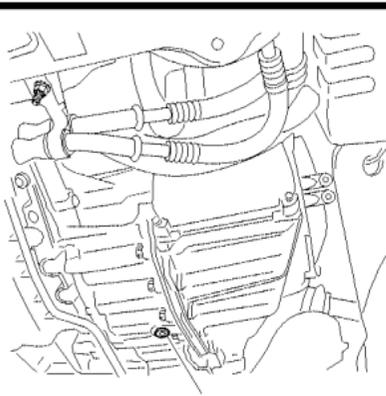
Repeat the procedure of checking the oil level.

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).

B2CK0JQC

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 $4,5 \pm 0,4$ 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.

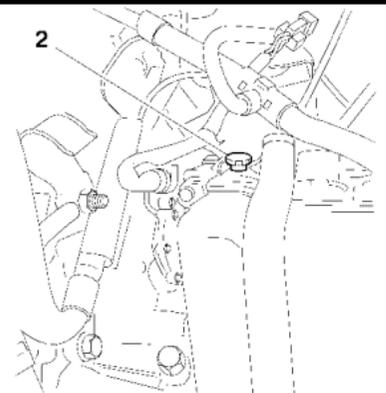
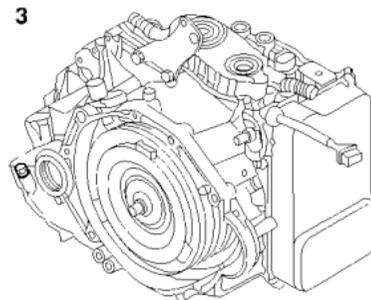
Start the engine and allow it to run at idling speed (applying the brake pedal) and engage all the gears using the gear selector. Return to «P».

Add oil until it flows out via the top-up hole.

Reclose the top-up hole.

Stop the engine.

IMPERATIVE : Check the oil level.



B2CK17KC

B2CK0JPC

B2CK0JQC

CLUTCH
GEARBOX
DRIVESHAFTS

DRIVESHAFTS - GEARBOX

			Tightening torques (m.daN)		Gearbox oil seal mandrels		
Vehicles	Gearbox	Engines	Driveshaft bearing	Driveshaft nut	Right	Left	Tool kit
C8	BE4/5	RFN	1.0	10 + 60°	7114-T.X	7114-T.W	7116-T
		3FZ					
	ML5C	RHT - RHW			9017-T.C	5701-T.A	9017-T
		4HW					
	AL4	RFN			(-).0338.J1 (-).0338.J3	(-).0338.H1 (-).0338.H2	(-).0338
		RHT					
	4 HP 20	XFW			(-).8010-T.D (-).8010-T.K1	(-).8010-T.J (-).8010-T.K2	(-).8010-T

Tightening torques (m.daN) for the wheel bolts

CITROËN C8	Steel	10 ± 0.5
	Light alloy	

CLUTCH
GEARBOX
DRIVESHAFTS

WHEELS AND TYRES

			2.0i 16V	2.2i 16V	3.0i 24S	2.0 HDi	2.2 HDi
Engine type			RFN	3FZ	XFW	RHT - RHW	4HW
Tyre circumference	S		MICHELIN XH1 205x65 R 15 94 H 1.973 m	MICHELIN PRIMACY 215x65 R 15 96 H 2.016 m	MICHELIN HX MXM 215x60 R16 99H 2.025 m	MICHELIN XH1 205x65 R 15 94 H 1.973 m	MICHELIN XH1 205x65 R 15 94 H 1.973 m
	T		6.5 J 15-5-27		Non	6.5 J 15-5-27	
Wheel	A		CHARMES 6.5J15-5-27 (*)		DOUGLAS 7J16-5-27	CHARMES 6.5J15-5-27 (*)	
Pressure (Bars)	Front/ Rear	(1)	2.5/2.5	2.4/2.4	2/2	2.4/2.4	
	Front/ Rear	(2)	2.5/3.2	2.4/3	2/3	2.4/3	
Spare wheel	Tyre circumference		This tyre is the same size as the tyres fitted on the wheels.				
	Wheel						
	Pressure (Bars)		3.2	3		3	
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).**

**AXLES
SUSPENSION
STEERING**

WHEELS AND TYRES

Inflation pressures

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

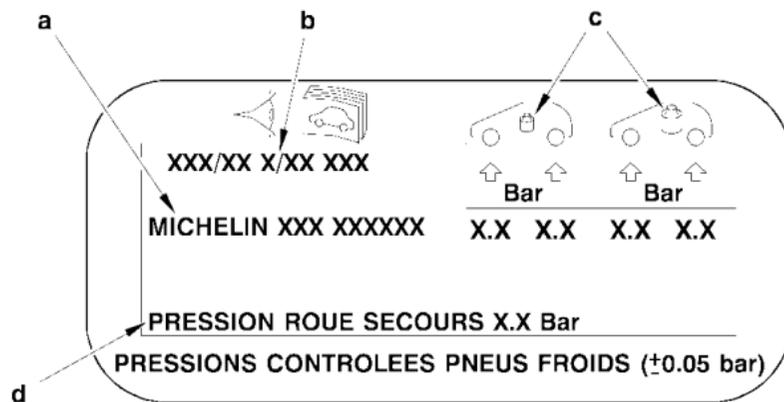
a: Type of tyre.

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.



B2GP00ND

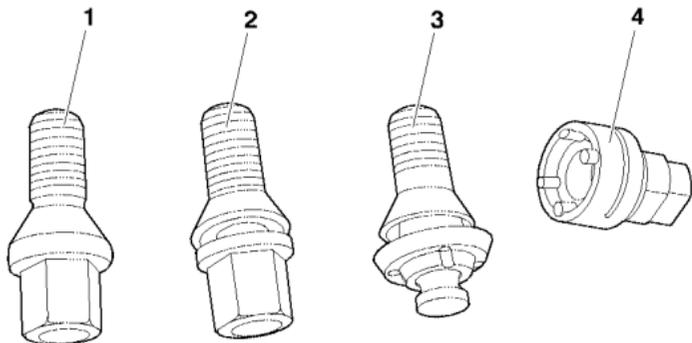
WHEELS AND TYRES

Wheel bolts.

- (1) Bolt for steel wheel.
- (2) Bolt for light alloy wheel.
- (3) Anti-theft bolt for light alloy wheel.
- (4) Anti-theft socket.

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.



B2GP014D

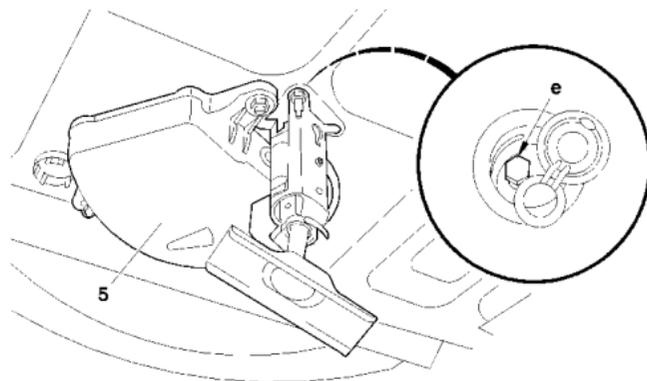
Spare wheel

Anti-theft securing of the spare wheel.

- (5) Winch.
- (e) Winch control.

The wheel is retained at the centre by a cable linking its hub to the floor of the boot.

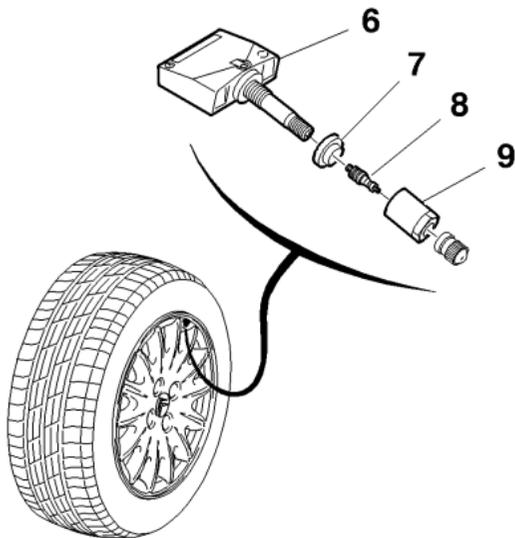
The cable cannot be accessed from under the vehicle.



C4BP1CCD

WHEELS AND TYRES

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 ± 0.1 m.daN**.

WARNING :

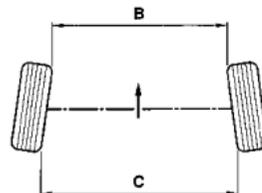
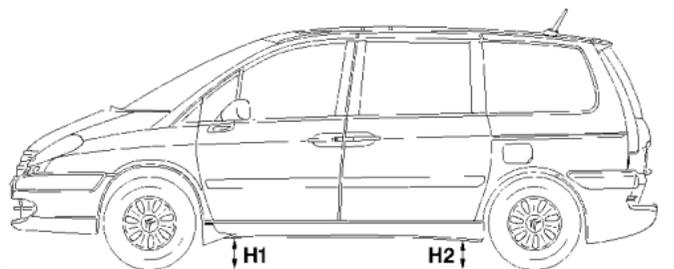
- Each time a tyre is replaced, the valve (8) must be replaced.
- Each time a rim is replaced, the seal (7) must be replaced.
- Each time a valve is replaced, it is necessary to have the transmitter recognised by the BSI, with the aid of a diagnostic tool.

B2GP015C

AXLE GEOMETRY

Front axle

Engines	Specification	H1	Wheel tracking		Camber	Castor	King pin inclination
			(mm)	(°)			
RFN	205/65 R15	170	$+2 \pm 1$	$+0^{\circ}18' \pm 0^{\circ}9'$	$0^{\circ} \pm 30'$	$3^{\circ}30' \pm 30'$	$12^{\circ}24' \pm 40'$
3FZ RHT RHW 4HW	215/65 R15	174					
XFW	215/60 R16	178					



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

E1AP0A5D

AXLES
SUSPENSION
STEERING

AXLE GEOMETRY

Front axle

Engines	Specification	H1	Wheel tracking		Camber
			(mm)	(°)	(°)
RFN	205/65 R15	390	5 ± 1	$0^{\circ}46' \pm 0^{\circ}8'$	$1 \pm 30'$
3FZ RHT RHW 4HW	215/65 R15	394			
XFW	215/60 R16	398			

AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)

Tools.

- | | |
|---------------------------------------|------------|
| [1] Set of two suspension compressors | : 9511-T.A |
| [2] Set of two shackles | : 9511-T.C |
| [3] Under body height gauge | : 2305-T |
| [4] Set of two straps | : 9511-T.B |
| [5] Set of two slings | : 9511-T.D |

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.

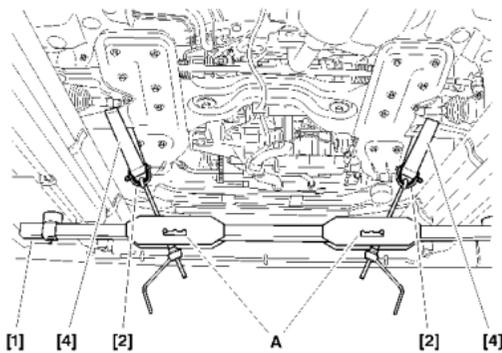
WARNING : The checks of the front and rear axle geometry values, as well as the adjusting of the front suspension should be carried out at precise positions of suspension compression (reference height) on a suspension test bed.

Make sure that :

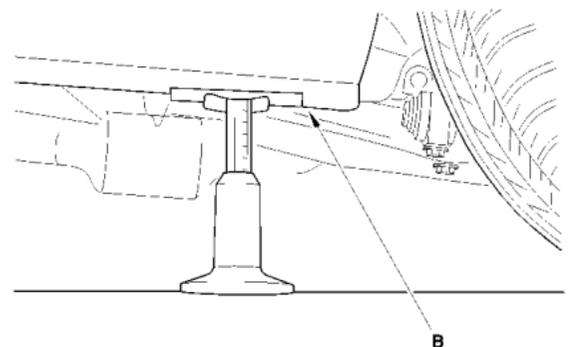
- Tyres are in conformity and at the correct inflation pressures.
- The front wheels are straight ahead.

Remove wheel trims.

AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)



B3BKAEGD



B3BKAEJD

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.

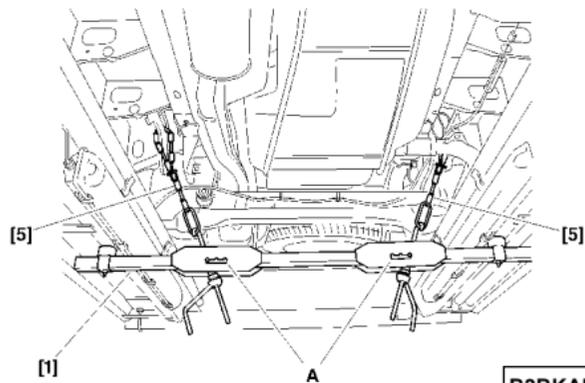
Compress the suspension so as to obtain, on the RH and LH sides, the bodyshell height H1 (reference height), to be measured between the lowermost edge (B) and the ground.

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

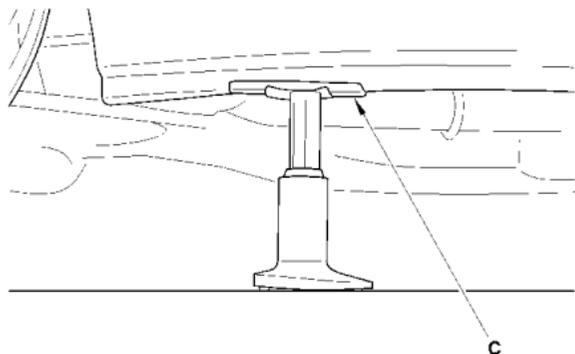
NOTE : Only the tracking is adjustable.

WARNING : The tracking value varies as a function of the vehicle height.

AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)



B3BKAEHD



B3BKAEKD

At the rear (H2).

Engage the slings [5] on the rear longerons.

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

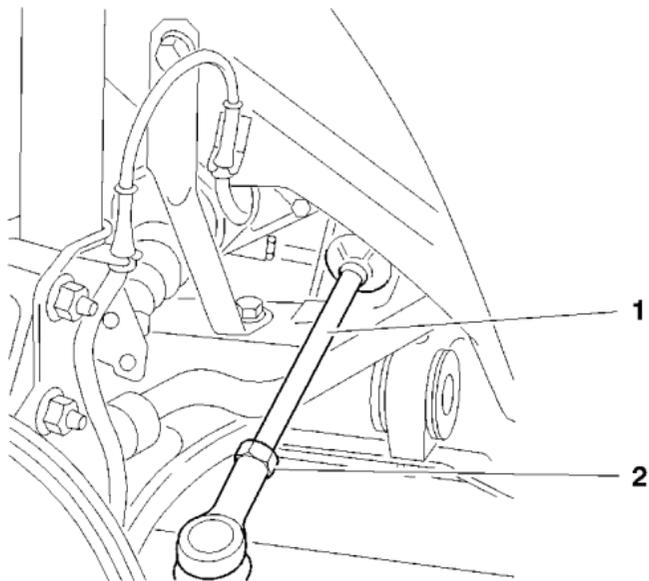
Compress the suspension so as to obtain, on the RH and LH sides, the bodyshell height H2 (reference height), to be measured between the lowermost edge (C) and the ground.

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.

AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)



Adjusting the rolling axles.

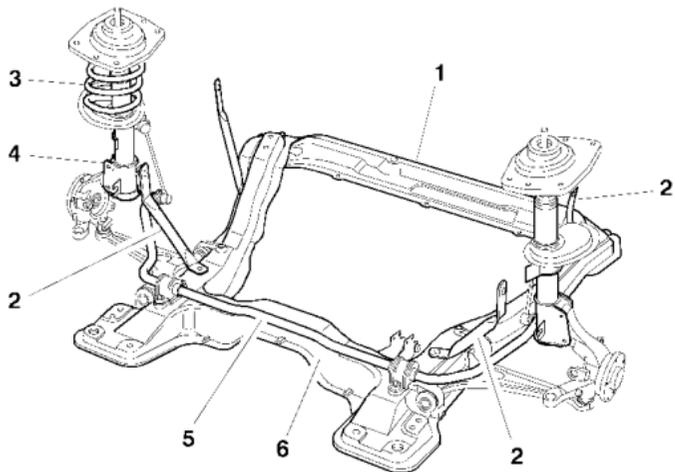
NOTE : Only the tracking is adjustable (at the front).

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

One turn of the rod = **2 mm approx.**

Tighten the nuts (2), tighten to **4 ± 0.4 m.daN.**

FRONT AXLE



Identification

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

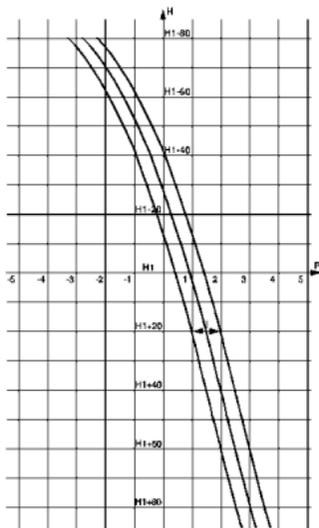
Engines	Anti-roll bar Diameter (mm)
RFN-3FZ-RHT-RHW-4HW	21.5
XFW	22

B3CK09JD

AXLES
SUSPENSION
STEERING

FRONT AXLE

Vehicle in running order



(H) Height between the ground and the jacking point.

(P) Wheel tracking.

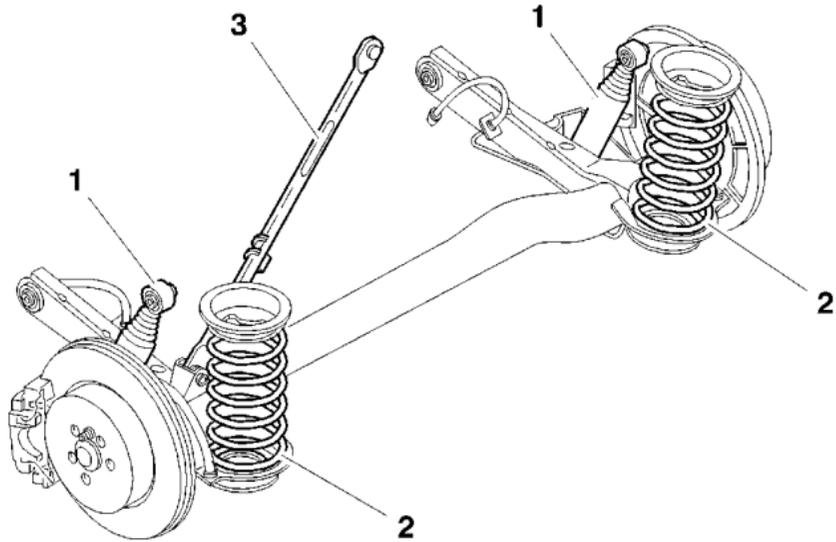
(I) Tolerance ± 0.5 mm.

B3CK08KD

Tightening torques (m.daN)

Fixing of subframe on body	: 10.5 ± 1
Fixing on tie-rod on body	: 6.5 ± 0.6
Fixing of crossmember on body	: 8 ± 0.8
Fixing of tie-rod on subframe	: 6.5 ± 0.6
Fixing of damper on pivot	: 9 ± 0.9
Fixing of damper rod on upper cup	: 9 ± 0.9
Fixing of upper cup on body	: 3.5 ± 0.3
Fixing of anti-roll bar on subframe	: 10.5 ± 1
Driveshaft nut	: 10 ± 1
Fixing of wishbone on subframe	: 7 ± 0.7
Fixing of ball-joint on pivot	: 7 ± 0.7
Fixing of steering track rod on pivot	: 4 ± 0.4
Fixing of track rod on damper body	: 5.5 ± 0.5
Fixation biellette sur barre antidévers	: 5.5 ± 0.5

REAR AXLE



Identification

(1) Damper.

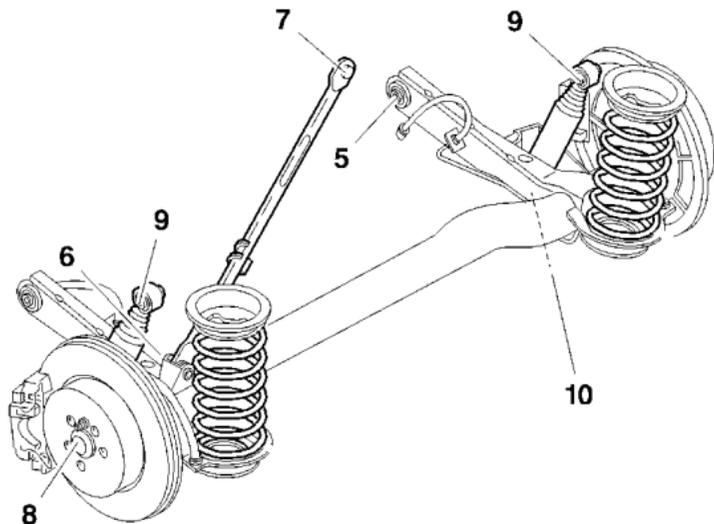
(2) Spring.

(3) Stabiliser bar.

B2CP3J3D

AXLES
SUSPENSION
STEERING

REAR AXLE



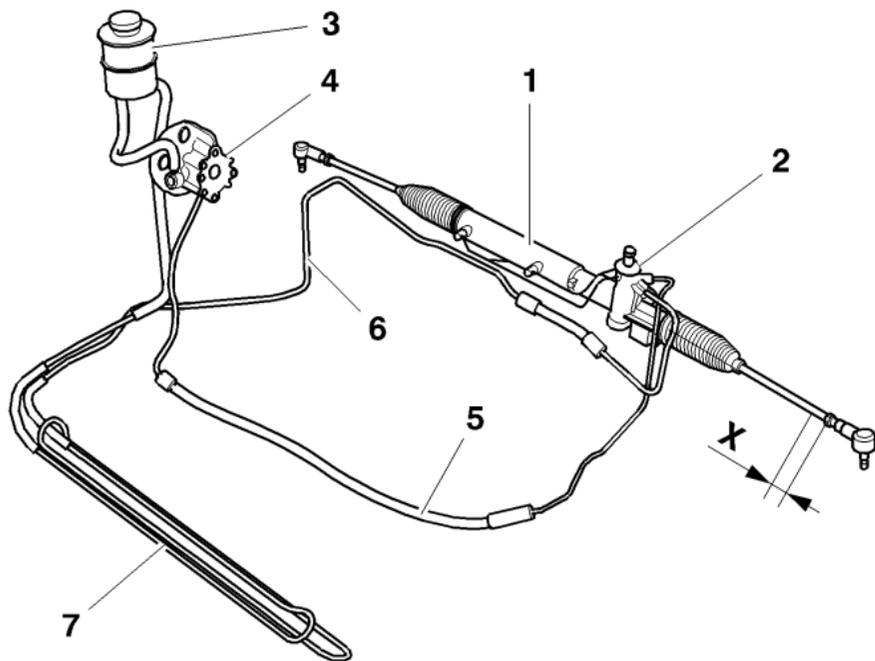
Tightening torques (m.daN)

(5) Fixing of rear axle on body	: $8 \pm 0,8$
(6) Fixing of stabiliser bar on rear axle	: $8 \pm 0,8$
(7) Fixing of stabiliser bar on body	: $6 \pm 0,6$
(8) Hub nut	: $38 \pm 3,8$
(9) Fixing of damper on body	: $9 \pm 0,9$
(10) Fixing of damper on rear axle	: $9 \pm 0,9$

B3DK0AGD

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)

B3EK0J9D

AXLES
SUSPENSION
STEERING

SPECIFICATIONS OF POWER-ASSISTED STEERING

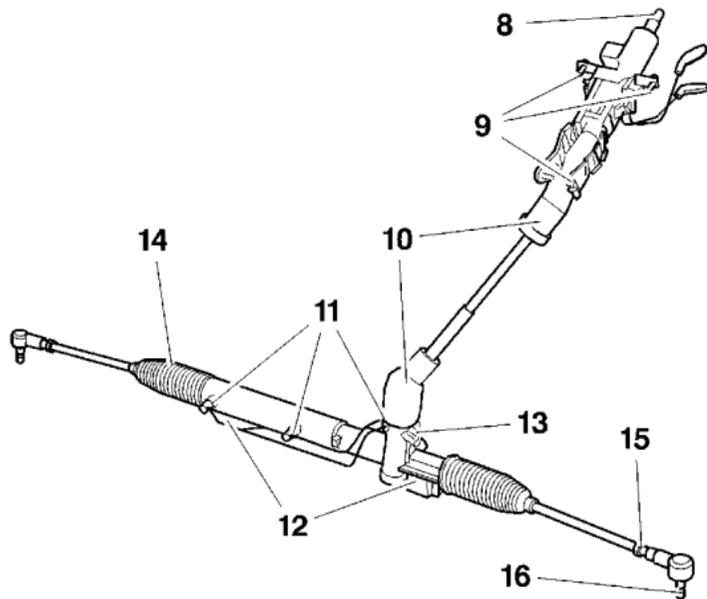
Engines : RFN – 3FZ – XFW – RHT – RHW – 4HW

Engine type	RFN	3FZ	XFW	RHT - RHW	4HW
Features	Power steering with integral ram				
Travel (mm)	166		156	162	
Angle of lock for inside wheel	40°48'		37°18'	39°24'	
Angle of lock for outside wheel	34°36'		32°24'	33°42'	
Type of pump	Falling flow				
Pump pressure (bars)	100	110			
Circuit capacity (litres)	1.3				
Number of steering wheel rotations	3.25		3.05	3.17	
Number of teeth on drive pinion	9				

AXLES
SUSPENSION
STEERING

SPECIFICATIONS OF POWER-ASSISTED STEERING

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



Tightening torques (m.daN)

(8) Steering wheel fixing nut	: 2 ± 0,2
(9) Fixing of steering column to support	: 2 ± 0,2
(10) Fixing of upper and lower shafts to steering column	: 2,5 ± 0,2
(11) Fixing of ram valve supply unions	: 1 ± 0,1
(12) Fixing of steering mechanism	: 14,5 ± 1,4
(13) Fixing of pump/valve supply unions	
Pump	: 2 ± 0,2
Valve	: 2,5 ± 0,2
(14) Fixing of ball-joint housing on steering rack	: 9 ± 0,9
(15) Steering rod locking nut	: 6 ± 0,6
(16) Steering ball-joint nut	: 4 ± 0,4

B3EK0K0D

AXLES
SUSPENSION
STEERING

BRAKE SPECIFICATIONS

			2.0i 16V	2.2i 16V	3.0i 24S	2.0 HDi	2.2 HDi
Engine type			RFN	3FZ	XFW	RHT - RHW	4HW
FT	Ø mm	Master cylinder	22,2 (valve type)		23,8 (valve type)	22,2 (valve type)	
		Master-vac	254		203.2 + 228.6	254	
		Caliper/piston makes	LUCAS		BREMBO	LUCAS	
		60	40 + 44		60		
	Disc	Ventilated	285		310	285	
	Disc thickness/min. thickness		28/26		32/30	28/26	
	Brake pad grade		GALFER 3366 (8)		-	FERODO 782 (2)	
RR	Ø mm	Caliper/piston makes	LUCAS C38HR				
		38					
	Disc	Ventilated	272				
	Disc thickness/min. thickness		12/10				
	Make		TEXTAR				
Brake pad grade		T 4131					

BRAKE TIGHTENING TORQUES (m.daN)

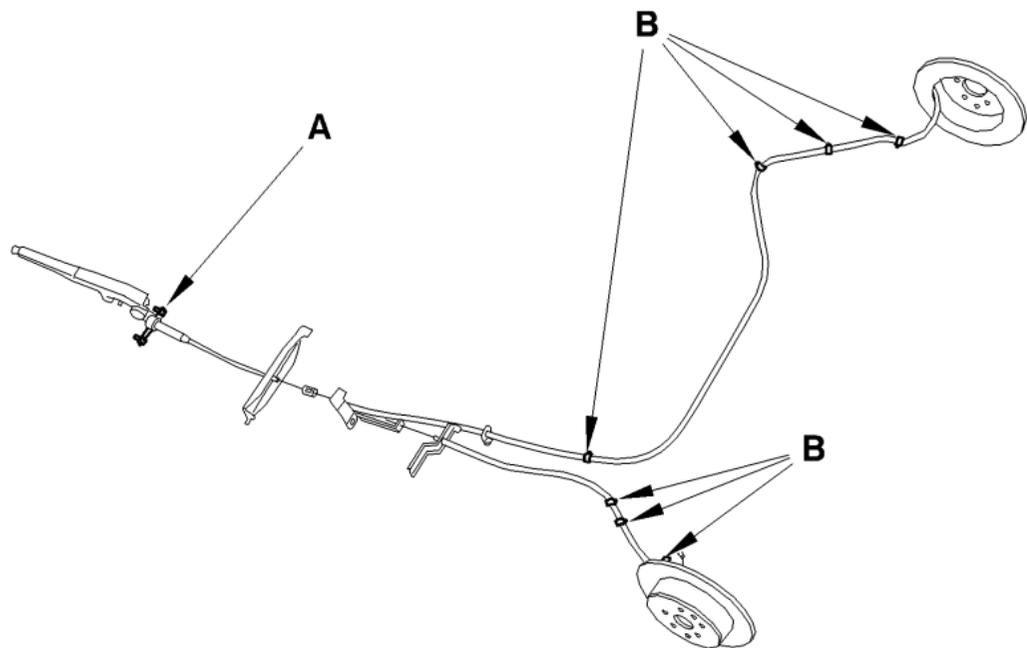
Engines : RFN – 3FZ – XFW – RHT – RHW – 4HW

Tightening torques (m.daN)

Fixing of disc on hub	: 1.5 ± 0.1
Fixing of front brake caliper on support	: 3.5 ± 0.3
Fixing of front brake caliper support on pivot	: 16 ± 1.6
Fixing of brake pipe unions	: 1.5 ± 0.1
Fixing of rear brake caliper on support	: 3.5 ± 0.3
Fixing of rear brake caliper support on pivot	: 9.5 ± 0.9
Fixing of brake servo on pedal gear	: 2 ± 0.2
Fixing of master-cylinder on servo	: 2 ± 0.2
Fixing of handbrake lever on body	: 4 ± 0.4

ADJUSTING THE HANDBRAKE

Identification



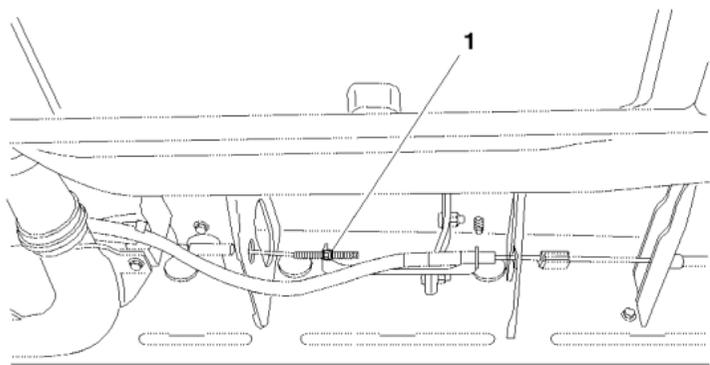
(A) Zone for fixing on floor.

(B) Clips for retaining on bodyshell.

B3FK263D

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.

B3FK264D

DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM

Tools.

- | | |
|--------------------------------|---------------------|
| [1] Generic bleeding apparatus | : «LURO» or similar |
| [2] Filler plug | : (-).0810 |
| [3] PROXIA diagnostic tool | : 4165-T |
| [4] LEXIA diagnostic tool | : 4171-T |

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:

Position tool [2] on the brake fluid reservoir.

Connect tool [2] to an approved automatic bleed apparatus (See Tools). 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.

AIR CONDITIONING SYSTEM (R 134A) (HFC)

Vehicle	Engines	Date	Refrigerant refill (± 25 gr)	Compressor		
				Variable capacity	Quantity of oil (cc)	Quality of oil
C8	RFN	13/06/02 →	750	SD 7 V 16	135 ± 15	SP10
	3FZ					
	XFW					
	RHT - RHW					
	4HW					

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134A)

Tightening torques (m.daN).

Pipe diameters	Unions	
	Steel / Steel	Aluminium / Steel
M 06	1.7 ± 3	1.3 ± 3
M 08	3.8 ± 3	2 ± 2
M 10	4 ± 3	2.5 ± 3

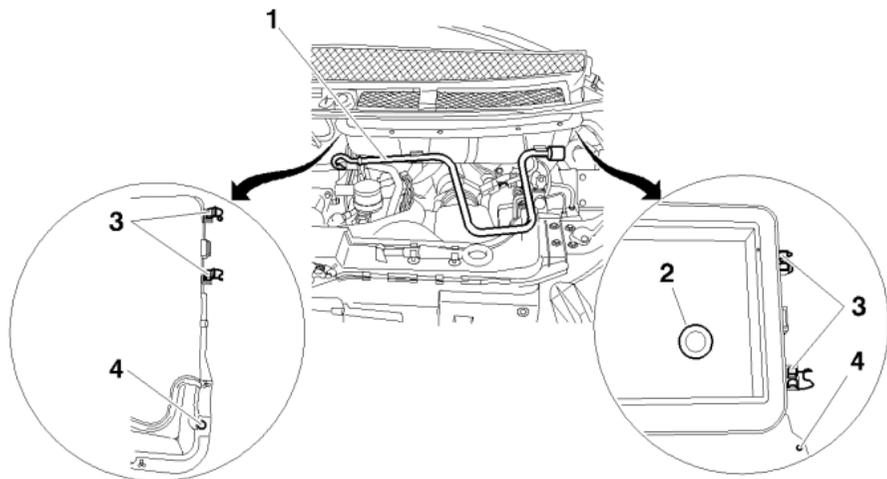
NOTE : Tighten the unions to the recommended torques using a retaining spanner whenever possible.

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

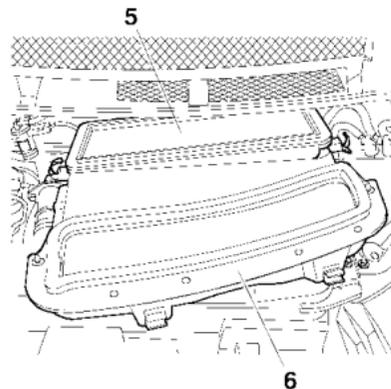
WARNING : For R 134A quantities: see table on page: 120).

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)

Pollen filter



C5HP182D



C5HP183C

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.

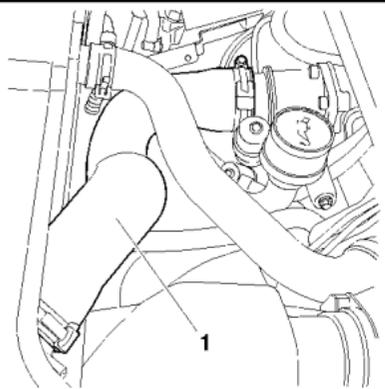
Slacken the screws (4) on the RH and LH sides by a quarter turn.

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).

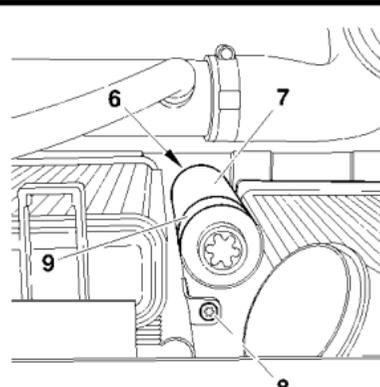
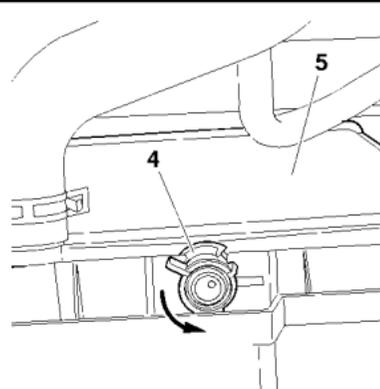
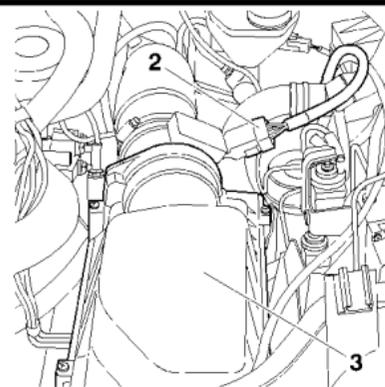
Remove the air filter (3).

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).

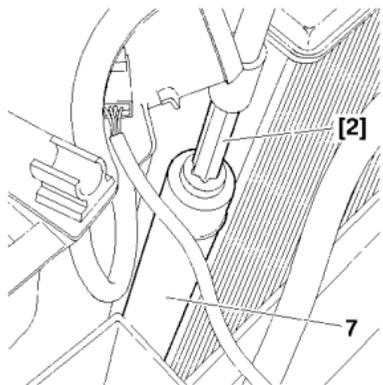


B1BP2MGC

B1BP2MHC

C5HP184C

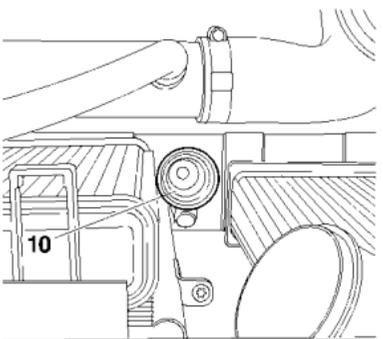
C5HP185C

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)**Removing-refitting the drying cartridge (continued)**

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.

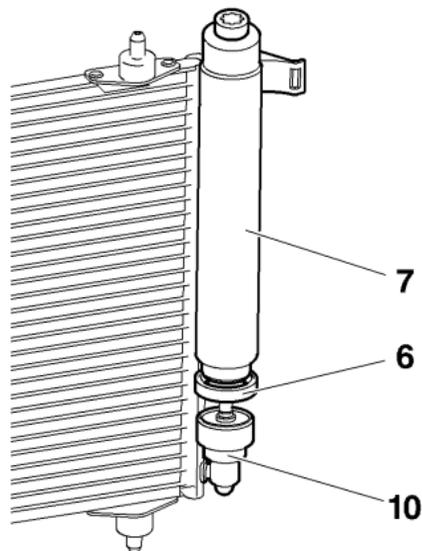


Cap the base **(10)**.

WARNING: Do not allow more than **5 minutes** to elapse between unwrapping the cartridge (reservoir **(7)**) and fitting it.

C5HP186C

C5HP187C

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)**Removing-refitting the drying cartridge (continued)**

C5HP188C

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 $1,4 \pm 0,1$ 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.

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134A)**Checking the compressor oil level (continued)****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

	Low pressure too low	Low pressure normal	Low pressure too high
High pressure too low	<ul style="list-style-type: none"> - Insufficient fluid charge. - Constriction of the HP system. - Dirty pressure control valve. 	<ul style="list-style-type: none"> - Cooling fan speed unsuitable. - Faulty compressor. 	<ul style="list-style-type: none"> - Faulty pressure control valve. - Faulty compressor.
High pressure normal	<ul style="list-style-type: none"> - Faulty compressor. - Dirty evaporator. 	<ul style="list-style-type: none"> - Circuit normal. 	<ul style="list-style-type: none"> - Cooling fan speed unsuitable.
High pressure too high	<ul style="list-style-type: none"> - Faulty pressure control valve. - System blocked. - Water in the system. 	<ul style="list-style-type: none"> - Presence of solid matter in the system. - Dirty condenser. 	<ul style="list-style-type: none"> - Excessive fluid charge. - Dirty condenser. - Faulty pressure control valve. - Cooling fan speed unsuitable.

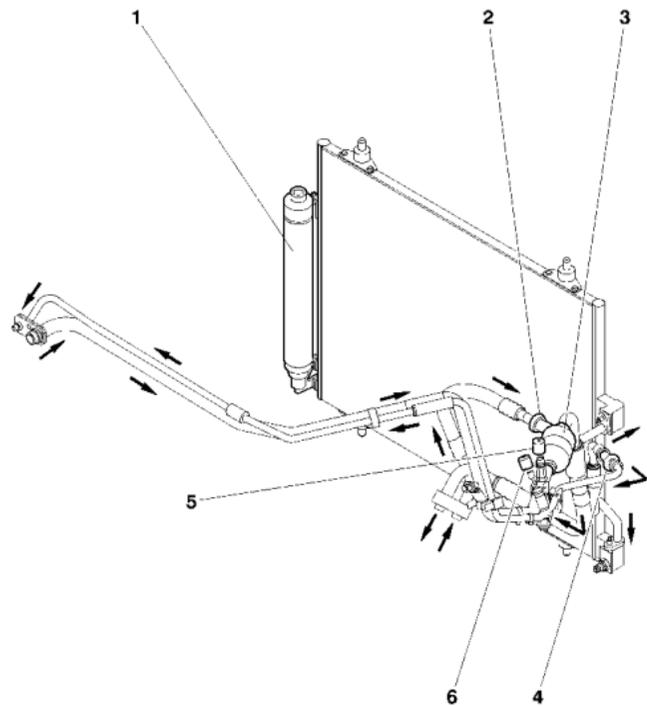
Checking the pressure at temperatures between 15°C and 35°C for information only.

In general, the pressure should be approximately :

- for **R134A** fluid, less than **2 Bars** (Low pressure), and between **13** and **24 Bars** (High pressure).

AIR CONDITIONING SYSTEM R 134A

Engines : RFN-3FZ



1 Drying cartridge.

2 Clickfit union.

3 Buffer capacity.

4 Clickfit union.

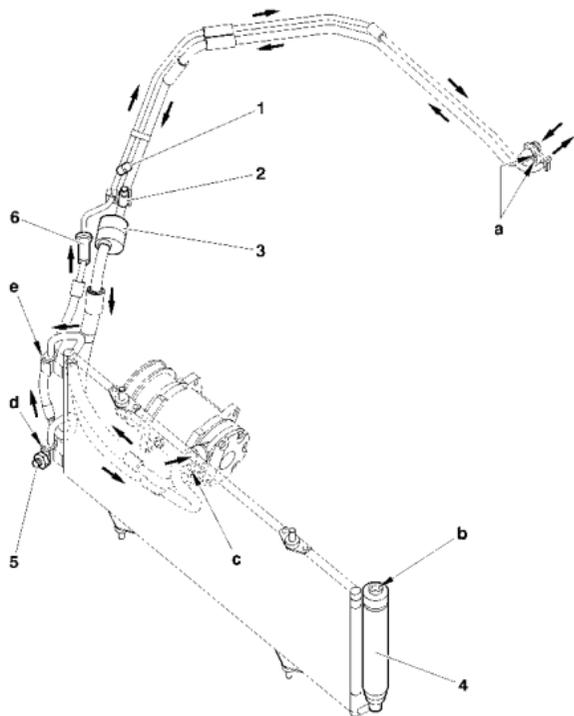
5 High pressure valve

6 Low pressure valve

C5HP17TP

AIR CONDITIONING SYSTEM R 134A

Engine : XFW



- 1 High pressure valve
- 2 Low pressure valve
- 3 Buffer capacity.
- 4 Drying cartridge.
- 5 Pressostat
- 6 Clickfit union. (Tool **8005-T.C**)

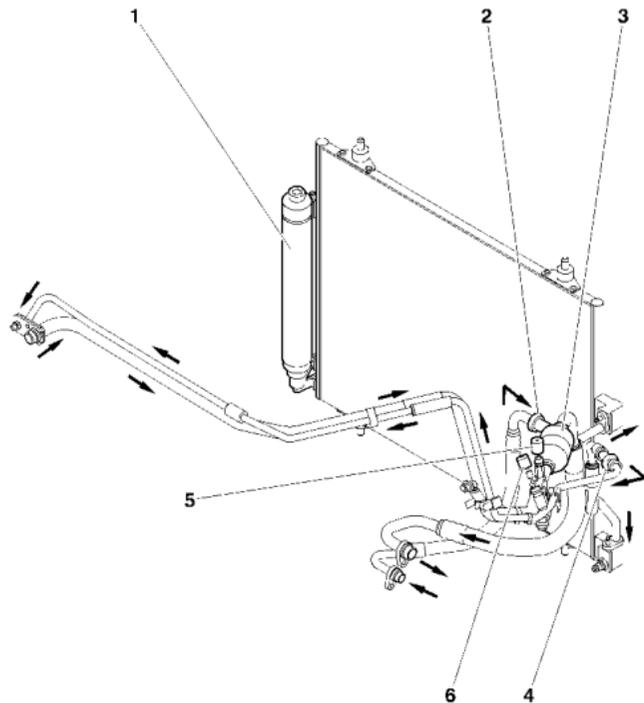
Tightening torques (m.daN).

a	0.8
b	1.4
c	
d	
e	0.8

C5HP18TP

AIR CONDITIONING SYSTEM R 134A

Engines : RHT-4HW



1 Drying cartridge.

2 Clickfit union.

3 Buffer capacity.

4 Clickfit union.

5 High pressure valve (Tool **8005-T.C**)

6 Low pressure valve (Tool **8005-T.A**)

C5HP17UP