

PRIVATE CARS

C5 - C8

2003

«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».

CAR 050014
Volume 2



PRESENTATION

THIS HANDBOOK summarises the specifications, adjustments, checks and special features of **CITROEN** private vehicles, not including UTILITY vehicles for which there exists a separate handbook.

The handbook is divided into nine groups representing the main functions :

GENERAL - ENGINE - INJECTION - IGNITION - CLUTCH, GEARBOX, DRIVESHAFTS - AXLES, SUSPENSION, STEERING - BRAKES - ELECTRICAL - AIR CONDITIONING.

In each section, the vehicles are dealt with in the following order : C5 and C8, or all models where applicable.

The information given in this handbook is based on vehicles marketed in **EUROPE**.

IMPORTANT

If you find that this handbook does not always meet your requirements, **we invite you to send us your suggestions** which we will take into account when preparing future publications. For example :

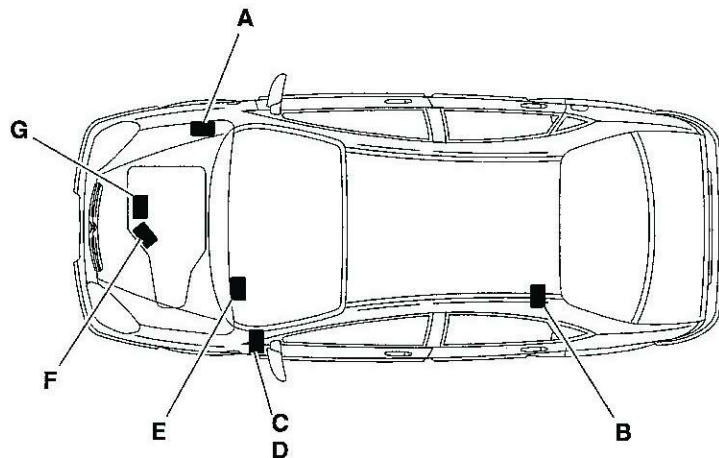
- INSUFFICIENT INFORMATION
- ISUPERFLUOUS INFORMATION
- INEED FOR MORE DETAILS

Please send your comments and suggestions to :

**CITROEN U.K. Ltd.
221, Bath Road,
SLOUGH,
SL1 4BA.
U.K.**

IDENTIFICATION OF VEHICLES

C5



- (A) Chassis stamp
(cold stamp on bodywork).
- (B) Manufacturer's data plate.
(under the rear bench seat)
- (C) A-S / RP No. and RP paint code
(label on front pillar close to driver's door).
- (D) Inflation pressures and tyre references.
(label on front pillar close to driver's door)
- (E) Serial no. on bodywork.
- (F) Gearbox reference – Factory serial no.
- (G) Engine legislation type – Factory serial no.

E1APO8RD

GENERAL

GENERAL	C5	IDENTIFICATION OF VEHICLES					
		Petrol saloons					
		1.8i 16V			2.0i 16V		
			Auto.		Auto.		
		X-SX			X-SX-Exclusive		
	Emission standard	L4	L5	L4	L5	L4	L5
	Type code	DC 6FZB	DC 6FZC/IF	DC 6FZE	DC RFNC/IF	DC RFNB	DC RFNE
	Engine type	6FZ			RFN		
	Cubic capacity (cc)	1749			1997		
	Fiscal rating (hp)	7		8	9		
Gearbox type	BE4/5		AL4	BE4/5	AL4		
Gearbox ident. plate	20 DL 29		20 TP 44	20 BL 30	20 TP 42		

IDENTIFICATION OF VEHICLES				C5
	Petrol saloons			
	2.0 HPi	30.i 24S V6		
			Auto.	
	Exclusive			
Emission standard	L4	L5		
Type code	DC RLZB	DC XFXC/IF		DC XFXF/IF
Engine type	RLZ	XFX		
Cubic capacity (cc)	1997	2946		
Fiscal rating (hp)	8	13		14
Gearbox type	BE4/5	ML/5C	ML/5T	4 HP 20
Gearbox ident. plate	20 DL31	20 LM 21	20 LE 95	20 HZ 13

GENERAL

C5		IDENTIFICATION OF VEHICLES						
GENERAL		Diesel saloons						
		2.0 HDi						
				Auto.			Auto.	
		X	X-Exclusive					
	Emission standard	L4						
	Type code	DC RHYB	DC RHSB		DC RHSE	DC RHZB		DC RHZE
	Engine type	RHY	RHS			RHZ		
	Cubic capacity (cc)	1997						
	Fiscal rating (hp)	6			7	6		7
	Gearbox type	BE4/5	ML/5C	ML/5T (*)	AL4	ML/5C	ML/5T	AL4
Gearbox ident. plate	20 DL 32	20 LM 18	20 LE 94	20 TP 43	20 LM 18	20 LE 94	20 TP 43	
(*) FAP = Particle filter								

IDENTIFICATION OF VEHICLES				C5
	Diesel saloons			
	2.2 HDi			
			Auto.	
	SX-Exclusive			
Emission standard	L4			
Type code	DC 4HXB		DC 4HXE	
Engine type	4HX			
Cubic capacity (cc)	2179			
Fiscal rating (hp)	8			
Gearbox type	ML/5C	ML/5T	4 HP 20	
Gearbox ident. plate	20 LM 17	20 LE 96	20 HZ 20	

GENERAL

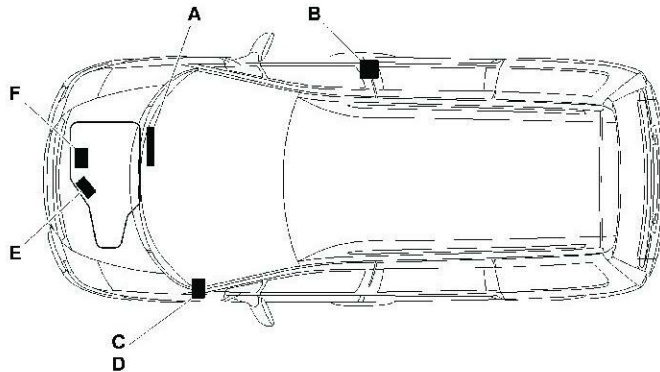
C5	IDENTIFICATION OF VEHICLES							
	Petrol estates							
	1.8i 16V		2.0i 16V		2.0 HPi	3.0i 24S V6		
	X-SX		Auto.		Auto.			
		SX Exclusive		Exclusive				
Emission standard	L4	L5		L4		L5		
Type code	DE 6FZC/IF	DE 6FZB	DE RFNC/IF	DE RFNE	DE RLZB	DE XFX/IF		DE XFXF/IF
Engine type	6FZ		RFN		RLZ	XFX		
Cubic capacity (cc)	1749		1997			2946		
Fiscal rating (hp)	7		9		8	13		14
Gearbox type	BE4/5			AL4	BE4/5	ML/5C	ML/5T	4 HP 20
Gearbox ident. plate	20 DL 29		20 DL 30	20 TP 42	20 DL 31	20 LM 21	20 LE 95	20 HZ 13

IDENTIFICATION OF VEHICLES							C5
	Diesel estates						
	2.0 HDi						
				Auto.			Auto.
	X	X-Exclusive					
Emission standard	L4						
Type code	DE RHYB	DE RHSB		DE RHSE	DE RHZB		DE RHZE
Engine type	RHY	RHS			RHZ		
Cubic capacity (cc)	1997						
Fiscal rating (hp)	6			7	6		7
Gearbox type	BE4/5	ML/5C	ML/5T	AL4	ML/5C	ML/5T	AL4
Gearbox ident. plate	20 DL 32	20 LM 18	20 LE 94 (*)	20 TP 43 (*)	20 LM 18	20 LE 94	20 TP 48 (*)
(*) FAP = Particle filter							

GENERAL	C5	IDENTIFICATION OF VEHICLES		
		Diesel estates		
		2.2 HDi		
			Auto.	
		SX-Exclusive		
	Emission standard	L4		
	Type code	DE 4HXB		DE 4HXE
	Engine type	4HX		
	Cubic capacity (cc)	2179		
	Fiscal rating (hp)	8		
	Gearbox type	ML/5C	ML/5T	4 HP 20
	Gearbox ident. plate	20 LM 17	20 LE 96	20 HZ 20

IDENTIFICATION OF VEHICLES

C8



(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.

GENERAL

E1AP0A2D

C8	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	EB 3FZC/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.							

IDENTIFICATION OF VEHICLES			C8
	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

C8	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 FAP (Particle filter). (**) = Without FAP (Particle filter).						

IDENTIFICATION OF VEHICLES			C8
	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		
(*) = FAP (Particle filter).			

ALL TYPES

CAPACITIES (in litres)

Draining method.

The oil capacities are defined according to the following methods.

- 1) - Vehicle on level surface (in high position, if equipped with hydropneumatic suspension).
- 2) - Engine warm (oil temperature **80°C**).
- 3) - Draining of the oil sump + removal of the cartridge (duration of draining + dripping = **15 min**).
- 4) - Refit plug + cartridge.
- 5) - Engine filling.
- 6) - Engine starting (allowing the cartridge to be filled).
- 7) - Engine stopped (stationary for **5 min**).

ESSENTIAL : Systematically check the oil level using the oil dipstick.

CAPACITIES (in litres)							C5
	C5						
	Petrol						
	1.8i 16V		2.0i 16V		2.0 HPi	3.0i V6	
	Auto.		Auto.			Auto.	
Engine type	6FZ		RFN		RLZ	XFX	
Engine with filter change	4.25					5.25	
Between Min. and Max.	1.7					2	
5-speed gearbox	1.8		1.8		1.8		
Automatic gearbox		6		6			8.3
After oil change		3		3			5.3
Braking circuit							
Hydraulic circuit	4.3						
Cooling system	8.8 – 9.3 (*)				8.8	14	
Fuel tank capacity	66						
(*) = With automatic gearbox							
ESSENTIAL : Systematically check the oil level using the oil dipstick.							

C5	CAPACITIES (in litres)						
	C5						
	Diesel						
	2.0 HDi					2.2 HDi	
	Auto.		Auto.		Auto.		
Engine type	RHY	RHS		RHZ		4HX	
Engine with filter change	4.5					4.75	
Between Min. and Max.	1.4					1.5	
5-speed gearbox	1.8			1.8		1.8	
Automatic gearbox			8.3 - 6 (1)		8.3 - 6 (1)		8.3
After oil change			5.3 – 3 (1)		5.3 – 3 (1)		5.3
Braking circuit							
Hydraulic circuit	4.3						
Cooling system	10.7 – 11.7 (With additional heating)						
Fuel tank capacity	68						
ESSENTIAL : Systematically check the oil level using the oil dipstick.							

CAPACITIES (in litres)							C8
	Petrol				Diesel		
	2.0i 16V		2.2i 16V	3.0i 24S	2.0 HDi		2.2 HDi
	Auto.				Auto.		
	Engine type	RFN		3FZ	XFW	RHT - RHW	
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		

ALL TYPES

LUBRICANTS - TOTAL recommended oils

Evolutions (year 2003).

CITROËN C3 PLURIEL.

Only petrol versions are available.

Normal maintenance interval : **30 000 km (20 000 miles)**
Severe maintenance interval : **20 000 km (12 000 miles)..**

ESSENTIAL : For all vehicles with a 30 000 km (20 000 miles) maintenance interval, use exclusively **TOTAL ACTIVA/QUARTZ 7000** or **9000** or any other oils offering identical specifications to these.

These oils offer specifications that are superior to those defined by norms **ACEA A3 OR API SJ/CF**.

Failing this, it is essential to adhere to the maintenance programmes covering severe operating conditions.

Use of oil grade 10W 40.

It is possible to use semi-synthetic oil **7000 10W40** on **HDi** and **HDi FAP** vehicles.

WARNING : To avoid problems with starting from cold, use this oil as allowed by the climatic conditions in the country concerned (see table).

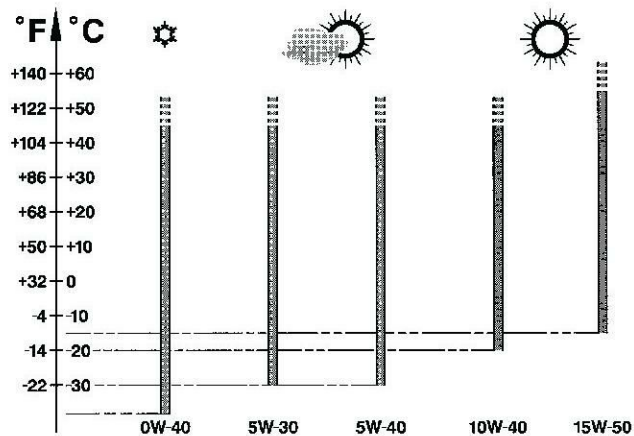
For more details see the oil usage table.

New commercial designation for energy economy oil.

The oil **TOTAL ACTIVA/QUARTZ 9000 5W30** becomes **TOTAL ACTIVA FUTUR 9000** (for France), **QUARTZ FUTURE 9000 5W30** (outside France).

The usage exclusions for this oil are the same as before :

- **XSARA VTS 2.0i 16V** (XU10J4RS).
- **RELAY 2.8 TDi; 2.8 HDi** (SOFIM engine).
- **HDi FAP** vehicles.
- **C3 1.6i 16V** (DV4TED4).
- **C8 2.2i** (EW12J4)



Engine oil norms.

Current norms.

The classification of these engine oils is established by the following recognised organisations :

- **S.A.E** : Society of Automotive Engineers.
- **API** : American Petroleum Institute.
- **ACEA** : Association des Constructeurs Européens d'Automobiles

ALL TYPES

LUBRICANTS - TOTAL recommended oils

S.A.E. Norms - Table for selection of engine oil grade

Selection of engine oil grades recommended for climatic conditions in countries of distribution

Evolution of the norms as at 01/01/2003

ACEA 2003 norms

The meaning of the first letter has not changed, it still corresponds to the type of engine :

A : petrol and dual fuel petrol / LPG engines.

B : diesel engines.

The figure following the first letter corresponds to the type of oil: .

3 : high performance oils.

4 : oils specifically for direct injection diesel engines.

5 : very high performance oils permitting lower fuel consumption

Example :

ACEA A3 : high performance oils specifically for petrol and dual fuel petrol / LPG engines

ACEA A/B : blended oils giving very high performance for all engines, also permitting better fuel economy, specifically for direct injection diesel engines

NOTE : From **01/01/2003** there is no longer any reference to the year of creation of the norm, (Example : **ACEA A3/B3 98** becomes **ACEA A3/B3**.)

API norms

The meaning of the first letter has not changed, it still corresponds to the type of engine :

S : petrol and dual fuel petrol / LPG engines.

C : diesel engines.

The second letter corresponds to the degree of evolution of the oil (ascending order).

Example : Norm **SL** is more severe than norm **SJ**, corresponding to a higher level of performance.

Recommendations.

ESSENTIAL : To preserve engine performances, all engines fitted in CITROËN vehicles must be lubricated with high quality oils (synthetic or semi-synthetic).

CITROËN engines are lubricated at the factory with **TOTAL** oil of grade **S.A.E.5W-30**.

TOTAL oil of grade **S.A.E.5W-30** allows improved fuel economies (approx **2.5%**).

The oil **5W30** is used only for the following engines (Year 2003) :

- **XU10 J4RS** : XSARA VTS 2.0i 16V (3-door)
- **SOFIM** : RELAY 2.8 TDi and 2.8 HDi.
- **HDi** : With particle filter (FAP).
- **DV4 TED4** : CITROËN C3 1.4 HDi 16V
- **EW 12J4** : CITROËN C8 2.2i.

WARNING : **CITROËN** engines prior to model year 2000 do not have to be lubricated with oils adhering to the norms : **ACEA A1-98** and **API SJ/CF EC** or current norms **ACEA A5/B5**

Denomination of **TOTAL** oils according to country of marketing :

TOTAL ACTIVA (France only).

TOTAL QUARTZ (outside France).

ALL TYPES**LUBRICANTS - TOTAL recommended oils****Recapitulation**

Norms to be observed for engine oils (year 2003)			
Year	Types of engine concerned	ACEA norms	API norms
2003	Petrol and dual fuel petrol / LPG engines	A3 or A5 5 (*)	SJ or SL
	Diesel engines	B3 or B5 (*)	CF

(*) It is essential not to use engine oils respecting these norms for the following engine-types : XU10 J4RS , SOFIM 2.8 TDi and SOFIM 2.8 HDi , HDi with particle filter (FAP), EW 12 J4, DV4 TED4.

Classes and grades of TOTAL recommended engine oils.

Oils marketed in each country are adapted to the local climatic conditions.

Blended oils for all engines (petrol, diesel and dual fuel petrol / LPG engines).			
	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA 9000 TOTAL QUARTZ 9000	5W40	A3 / B3	SL / CF
TOTAL ACTIVA FUTUR 9000 (*) TOTAL QUARTZ FUTUR 9000 (*)	5W30	A5 / B5	
TOTAL ACTIVATRAC	10W40	A3 / B3	

(*) Blended oils for all engines, permitting fuel economy.

LUBRICANTS - TOTAL recommended oils			ALL TYPES
	S.A.E. norms	ACEA norms	API norms
Oils specifically for petrol and dual fuel petrol / LPG engines			
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	10W-40	A3	SJ
TOTAL QUARTZ 9000	0W-40		
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	15W-50		
Oils specifically for diesel engines			
TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	10W-40	B3	CF
TOTAL ACTIVA DIESEL 7000	15W-50		

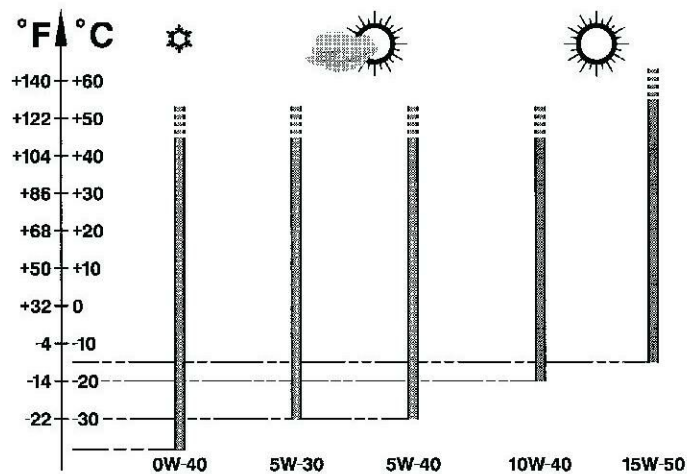
GENERAL

ALL TYPES		LUBRICANTS - TOTAL recommended oils				
Oil usage table						
Engine types		TOTAL ACTIVA QUARTZ				
		Synthetic 9000			Semi-synthetic 7000	
		0W40 cold countries	5W30	5W40	10W40	15W50 hot countries
Petrol engines	XU10 J4RS (Xsara VTS 2.0i 16V)	X		X	X	X
	EW 12 J4 (C8 2.2i 16V)	X		X	X	X
	Other petrol engines	X	X	X	X	X
Diesel engines	HDi engines with FAP (*)			X	X	
	Other HDi engines		X	X	X	
	SOFIM 2.8 TDi and 2.8 HDi (RELAY)			X	X	X
	DV4 TED4 (C3 2.0 HDi 16V)			X	X	X
	Indirect injection diesel engines		X	X	X	X
(*) = Particle filter						

LUBRICANTS - TOTAL recommended oils

ALL TYPES

Selection of TOTAL engine oils, to be used according to the climatic conditions in the country where the vehicle is marketed.



GENERAL

ALL TYPES		LUBRICANTS - TOTAL recommended oils	
FRANCE		ENGINE OILS	
		Blended oils for all engines, supplied in bulk	
Metropolitan FRANCE	TOTAL ACTIVRAC		S.A.E. norms : 10W40
	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
	900 5W-40 9000 5W-30 (*)	7000 10 W-40	7000 10 W-40 9000 5W-40
	9000 5W-40	7000 15W-50	7000 15W-50
Metropolitan FRANCE New Caledonia Guadeloupe Saint Martin Reunion Martinique Guyana Tahiti Mauritius Mayotte			
(*) = Blended oils for all engines, permitting fuel economy			

LUBRICANTS - TOTAL recommended oils			ALL TYPES
ENGINE OILS			
EUROPE	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Germany	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 9000 0W40	7000 10W40
Austria		7000 10W40	
Belgium		7000 10W40 9000 0W40	
Bosnia		7000 10W40 9000 0W40	
Bulgaria		7000 10W40	
Cyprus		7000 10W40 9000 15W40	
Croatia		7000 10W40	
(*) = Blended oils for all engines, permitting fuel economy			

ALL TYPES	LUBRICANTS - TOTAL recommended oils		
ENGINE OILS			
EUROPE	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Denmark	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 9000 0W40	7000 10W40
Spain		7000 10W40 7000 15W40	
Estonia		7000 10W40 9000 0W40	
Finland			
Great Britain		7000 10W40	
Greece		7000 10W40 7000 15W40	
Holland		7000 10W40 9000 0W40	
(*) = Blended oils for all engines, permitting fuel economy			

LUBRICANTS - TOTAL recommended oils			ALL TYPES
ENGINE OILS			
EUROPE	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Hungary	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 9000 0W40	7000 10W40
Italy			
Ireland		7000 10W40	
Iceland			
Latvia		7000 10W40 9000 0W40	
Lithuania			
Macedonia		7000 10W40	
(*) = Blended oils for all engines, permitting fuel economy			

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
		ENGINE OILS		
EUROPE	TOTAL ACTIVA		TOTAL ACTIVA DIESEL	
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines	
Malta	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 7000 15W50	7000 10W40	
Moldavia		7000 10W40		
Norway		7000 10W40 9000 0W40		
Poland		7000 10W40		
Portugal				
Slovakia		7000 10W40 9000 0W40		
Czech Republic				
(*) = Blended oils for all engines, permitting fuel economy				

LUBRICANTS - TOTAL recommended oils			ALL TYPES
ENGINE OILS			
EUROPE	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Romania	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 7000 15W50 9000 0W40	7000 10W40
Russia		7000 10W40 9000 0W40	
Slovenia			
Sweden		7000 10W40	
Switzerland			
Turkey		7000 10W40 9000 15W50 9000 0W40	
(*) = Blended oils for all engines, permitting fuel economy			

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
EUROPE		ENGINE OILS		
		TOTAL ACTIVA		TOTAL ACTIVA DIESEL
		Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Ukraine		9000 5W40 FUTURE 9000 5W30 (*)	7000 10W-40 9000 0W-40	7000 10W-40
Yugoslavia				
(*) = Blended oils for all engines, permitting fuel economy				

LUBRICANTS - TOTAL recommended oils			ALL TYPES
ENGINE OILS			
OCEANIA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Australia New Zealand	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W-40	7000 10W-40
AFRICA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Algeria, South Africa, Ivory Coast, Egypt, Gabon, Ghana, Kenya, Madagascar, Morocco, Nigeria, Senegal, Tunisia	9000 5W40	7000 15W-50	7000 10W-40
(*) = Blended oils for all engines, permitting fuel economy			

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
CENTRAL AND SOUTH AMERICA		ENGINE OILS		
		TOTAL ACTIVA		TOTAL ACTIVA DIESEL
		Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
	Argentina	9000 5W40	7000 10W-40 7000 15W-50	7000 10W-40
	Brazil			
	Chile			
	Cuba			
	Mexico			
	Paraguay			
	Uruguay			

LUBRICANTS - TOTAL recommended oils			ALL TYPES
ENGINE OILS			
SOUTH-EAST ASIA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
China	9000 5W40 FUTURE 9000 5W30	7000 10W50 7000 15W50	7000 10W40
South Korea		7000 10W40	
Hong Kong		7000 15W50	
India – Indonesia	9000 5W40		
Japan	9000 5W40 FUTURE 9000 5W30 (*)	7000 10W40 7000 15W50	
Malaysia	9000 5W40	7000 15W50	
Pakistan			
(*) = Blended oils for all engines, permitting fuel economy			

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
SOUTH-EAST ASIA		ENGINE OILS		
		TOTAL ACTIVA		TOTAL ACTIVA DIESEL
		Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Philippines		9000 5W40	7000 15W-50	7000 10W-40
Singapore				
Taiwan			7000 10W-40 7000 15W-50	
Thailand			7000 15W-50	
Vietnam				
(*) = Blended oils for all engines, permitting fuel economy				

LUBRICANTS - TOTAL recommended oils			ALL TYPES
MIDDLE EAST	ENGINE OILS		
	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Saudi Arabia – Bahrain Dubai United Arab Emirates	9000 5W40	7000 15W-50	7000 10W-40
Iran		7000 10W-40 7000 15W-50	
Israel – Jordan – Kuwait Lebanon – Oman – Qatar – Syria - Yemen		7000 15W-50	

GENERAL

ALL TYPES

LUBRICANTS - TOTAL recommended oils

GEARBOX OILS

Manual gearbox and SensoDrive	All countries	TOTAL TRANSMISSION BV Norms S.A.E. : 75W80 Part No. : 9730 A2.
MB3 automatic gearbox		TOTAL FLUIDE ATX
4HP20 and AL4 autoactive automatic gearboxes		TOTAL FLUIDE AT 42 Special oil distributed by CITROËN Part No. : 9730 A3
Transfer box and rear axle		Special oil distributed by CITROËN Part No. : 9736 22
		TOTAL TRANSMISSION X4 Part No. : 9730 A4

LUBRICANTS - TOTAL recommended oils

ALL TYPES

POWER STEERING OILS

Power steering	All countries	TOTAL FLUIDE ATX
	Very cold countries	TOTAL FLUIDE DAS Special oil distributed by CITROËN Part No. : 9730 A1

ENGINE COOLANT FLUID

		Pack	CITROËN Part No.	
			GLYSANTIN G33	REVKOGEL 2000
All countries	CITROËN fluid Protection : - 35C°	2 Litres	9979 70	9979 72
		5 Litres	9979 71	9979 73
		20 Litres	9979 76	9979 74
		210 Litres	9979 77	9979 75

GENERAL

ALL TYPES

LUBRICANTS - TOTAL recommended oils

BRAKE FLUID
Synthetic brake fluid

		Pack	CITROËN Part No.
All countries	CITROËN fluid	0.5 Litre	9979 05
		1 Litre	9979 06
		5 Litres	9979 07

HYDRAULIC CIRCUIT

All countries	Norm		Pack	CITROËN Part No.
TOTAL FLUIDE LDS	Colour	Orange	1 Litre	9979 69
TOTAL LHM PLUS		Green		ZCP 830095
TOTAL LHM PLUS Very cold countries				9979 20

WARNING : TOTAL FLUIDE LDS fluid cannot be blended with **TOTAL LHM LDS**

WARNING : CITROËN C5 : Use exclusively TOTAL FLUIDE LDS suspension fluid.

All countries

TOTAL HYDRAURINCAGE

LUBRICANTS - TOTAL recommended oils
ALL TYPES
SCREEN WASH FLUID

		Pack	CITROËN Part No.		
All countries	Concentrated : 250 ml		9980 33	ZC 9875 953U	9980 56
	Fluid ready for use	1 Litre	9980 06	ZC 9875 784U	
		5 Litres	9980 05	ZC 9885 077U	ZC 9875 279U

**GREASE
General use**

		Norms NLGI
All countries	TOTAL MULTIS 2	2
	TOTAL SMALL MECHANISMS	

Note : **NLGI** = National Lubricating Grease Institute.

GENERAL

ALL TYPES

ENGINE OIL CONSUMPTION

I - Oil consumption depends on :

- the engine type.
- how run-in or worn it is.
- the type of oil used.
- the driving conditions.

II - An engine can be considered **RUN-IN** after:

- **3,000 miles** (5,000 km) for a **PETROL engine**.
- **6,000 miles** (10,000 km) for a **DIESEL engine**.

III - MAXIMUM PERMISSIBLE oil consumption for a **RUN-IN** engine.

- **0.5 litres** per **600 miles** (1,000 km) for a **PETROL engine**.
- **1 litre** per **600 miles** (1,000 km) for a **DIESEL engine**.

DO NOT WORK BELOW THESE VALUES.

IV - **OIL LEVEL** : The level should **NEVER** be above the **MAX.** mark on the dipstick after changing or topping up the oil.

- This excess oil will be used up rapidly.
- It will reduce the engine output and adversely affect the operation of the air circuits and gas recycling.

ENGINE SPECIFICATIONS							C5 - C8
	Engines : 6FZ - RFN - RLZ - 3FZ - XFX - XFW						
	Petrol						
		C5	C8			C5	C8
	1.8i 16V	2.0i 16V		2.0 Hpi	2.2i 16V	3.0i 24S	
	Engine type	6FZ	RFN		RLZ	3FZ	XFZ
Cubic capacity (cc)	1749	1997			2230	2946	
Bore / Stroke	82.7/81.4	85/88			86/96	87/82.6	
Compression ratio	10.8/1			11.4/1	10.8/1	10.9/1	
Power ISO or EECKW - rpm	85-5500	100-6000		103-6000	116-5650	152-6000	150-6000
Power DIN (HP - rpm)	117-5500	136-6000	138-6000	143-6000	160-5650	210-6000	204-6000
Torque ISO or EEC (m.daN - rpm)	16-4000	19-4600	19-41000	19.2-4100	21.7-3900	28.5-3750	

C5 - C8		ENGINE SPECIFICATIONS							
	Engines : RHS - RHZ - RHT - RHW - RHY - RHW - 4HX - 4HW								
	Diesel								
	2.0 HDi				2.0 HDi 16V		2.2 HDi		
Engine type	RHS	RHZ	RHT	RHW	RHY	RHW	4HX	4HW	
Cubic capacity (cc)	1997						2179		
Bore / Stroke	85/88						86/96		
Compression ratio	17.6/1		17.3/1		17.6/1	18/1		17.6/1	
Power ISO or EEC KW - rpm	79-4000	80-4000	79-4000		66-4000	80-4000	98-4000	94-4000	
Power DIN (HP - rpm)	107-4000	110-4000	109-4000		90-4000	110-4000	13.6-4000	130-4000	
Torque ISO or EEC (m.daN - rpm)	25-1750		27-1750		20.5-1750	27-1750	31.7-2000	31.4-2000	

COMPRESSION RATIO - DIESEL ENGINES

C5

ENGINE		COMPRESSION RATIO	MAX. DIFFERENCE BETWEEN CYLINDERS
		In bars	
RHY RHS RHZ RHW	DW10	30 ± 5	5
4HX	DW12	20 ± 5	

C5	SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)						
	Engines : 6FZ - RFN - RLZ - RHY - RHS - RHZ - 4HX						
Crankshaft	Petrol			Diesel			
	6FZ	RFN	RLZ	RHY	RHS	RHZ	4HX
Bearing cap screws. - Pre-tightening - Angular tightening	2 ± 0.1 $60^{\circ} \pm 6^{\circ}$			2.5 ± 0.2 60°			
Con-rod cap screws. - Tightening - Slackening - Tightening - Angular tightening	2.3 ± 0.2 $46^{\circ} + 2^{\circ} - 4^{\circ}$						1 180° 2.3 ± 0.1 $46^{\circ} \pm 5$
Con-rod nuts - Pre-tightening - Angular tightening				2 ± 0.2 70°			
Accessories drive pulley - Tightening - Angular tightening	2.1 ± 0.1			4 ± 0.4 51°			7 ± 0.25 60°
Accessories drive pulley hub - Pre-tightening - Angular tightening (Sintered washer) - Angular tightening (Steel washer)	4 ± 0.4 $40^{\circ} \pm 4^{\circ}$ $53^{\circ} \pm 5^{\circ}$						

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)							C5
	Engines : 6FZ - RFN - RLZ - RHY - RHS - RHZ - 4HX						
Cylinder block	Petrol			Diesel			
	6FZ	RFN	RLZ	RHY	RHS	RHZ	4HX
Piston skirt spray jet				1 ± 0.1			
Sump - Pre-tightening - Tightening	0.8 ± 0.2			1.6 ± 0.2			1 1.6 ± 0.3
Timing belt guide roller - Pre-tightening - Tightening	3.7 ± 0.3			2.5 ± 0.2			1.5 4.3 ± 0.4
Timing guide roller - Pre-tightening - Tightening				2.5 ± 0.2			1.5 4.3 ± 0.4
Timing belt tensioner roller	2.1 ± 0.2			2.5 ± 0.2			
RH engine mounting - Pre-tightening - Tightening - - Tightening	6.1 ± 0.6			2.7 ± 0.2			1 (4 screws) 2 ± 0.2 (Ø 8) 4.5±0.2 (Ø10)

C5	SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)						
	Engines : 6FZ - RFN - RLZ - RHY - RHS - RHZ - 4HX						
Cylinder head	Petrol			Diesel			
	6FZ	RFN	RLZ	RHY	RHS	RHZ	4HX
Camshaft bearing cover - Tightening - Pre-tightening - Tightening	0.5 ± 0.1 0.9 ± 0.1			1 ± 0.1			1 ± 0.1 0.5 (Ø6) 1±0.1(Ø10)
Exhaust manifold - Pre-tightening - Tightening	3.5 ± 0.3			2 ± 0.2			1.5 3 ± 0.3
Valve cover - Pre-tightening - Tightening	0.5 1.1 ± 0.1	0.9 ± 0.1		0.8 ± 0.1			0.5 ± 0.15 0.9 ± 0.1
Camshaft pulley hub	7.5 ± 0.7			4.3 ± 0.5			
Hub pulley				2 ± 0.2			
Flywheel / Clutch							
Flywheel - Pre-tightening - Tightening	2 ± 0.2 21° ± 3°			4.8 ± 0.5			1.5 4.7 ± 0.4
Clutch plate	2 ± 0.2			2 ± 0.2			

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)							C5
	Engines : 6FZ - RFN - RLZ - RHY - RHS - RHZ - 4HX						
Lubrication circuit	Petrol			Diesel			
	6FZ	RFN	RLZ	RHY	RHS	RHZ	4HX
Oil pump - Pre-tightening - Tightening	0.9 ± 0.1			1.3 ± 0.1			0.7 0.9 ± 0.1
Coolant / oil heat exchanger				5.8 ± 0.5			
Lubrication pipe - Engine end - Turbocompressor end				3 ± 0.3 2 ± 0.2			
Injection circuit							
Injector - Tightening - Angular tightening				(Flange nut) 3 ± 0.3			0.4 ± 0.03 45° ± 5°
Union on injection rail				2 ± 0.2			
Injection pump			0.5 ± 0.1	2.25 ± 0.3			
Union on injector				2 ± 0.2			
Common rail fixing screw	0.9 ± 0.1		0.8 ± 0.1				
Injection pump pulley				5 ± 0.5			
Union on injection pump			2.6 ± 0.3	2 ± .02			
Cooling circuit							
Coolant pump	1.4 ± 0.1						1.6 ± 0.3
Coolant inlet housing	0.9 ± 0.1						2 ± .02

C5

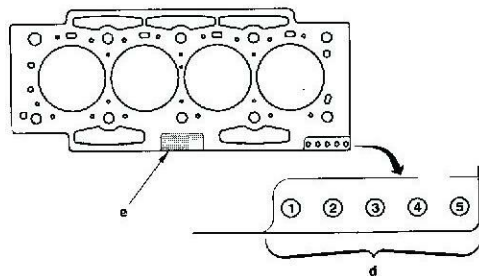
CYLINDER HEAD

Engines : 6FZ - RFN - RLZ

Cylinder head gasket identification

	Nominal dimension		Repair dimension	
	6FZ	RFN - RLZ		
Marking zone "d"	4 - 5	1-4	2-4-5	
Marking zone "e"			R1	R2
Gasket thickness (mm)	0.8		1.1	1.4
Supplier	MEILLOR			

Multilayer metallic cylinder head gasket.



(d) Marking zone.

(e) Marking zone.

B1DP183D

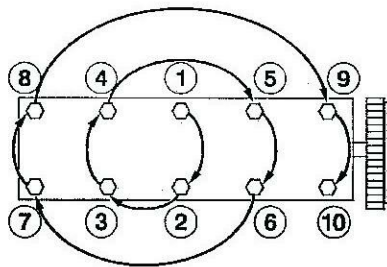
CYLINDER HEAD

C5

Engines : 6FZ - RFN - RLZ

Cylinder head tightening (m.daN)

Cylinder head bolts



NOTE : Retightening of the cylinder head after a completed repair is prohibited. Intervention est interdit.

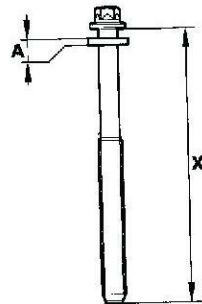
B1DP05BC

6FZ - RFN - RLZ

Pre-tightening	1.5 ± 0.1
Tightening	5 ± 0.1
Slackening	$360^\circ \pm 2^\circ$
Tightening	2 ± 0.2
Angular tightening	$285^\circ \pm 5^\circ$

(in the order 1 to 10)

NOTE : Oil the threads and under the heads of the cylinder head bolts. (Use engine oil or Molykote G Rapid Plus.)



B1DP16FC

A = Washer thickness : 4 ± 0.2 mm.

X = Length under heads of the new bolts = 144.5 ± 0.5 mm.

X = MAX. re-usable length

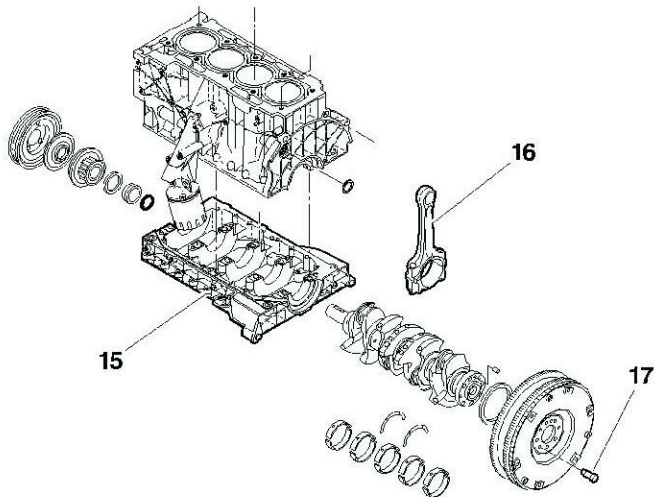
6FZ - RFN - RLZ

X= 147 mm

C8

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

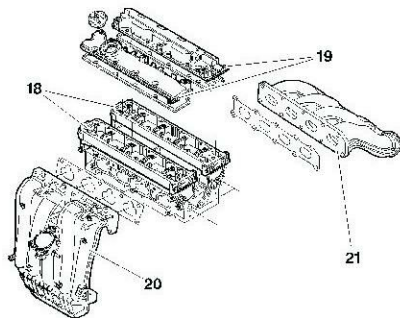
Description	(16) Con-rod caps	(17) Flywheel/ crankshaft fixing
Pre-tightening	1 ± 0.1	2.5 ± 0.2
Slackening	Yes	No
Re-tightening	2.5 ± 0.2	1 ± 0.1
Angular tightening	$46^\circ \pm 5^\circ$	$22^\circ \pm 2^\circ$

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C8

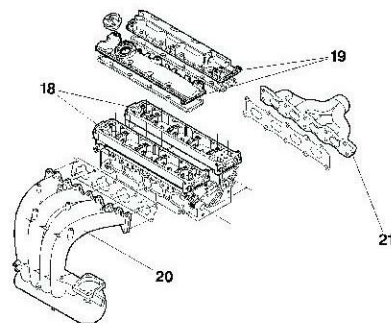
Equipment on cylinder head

Engine : RFN



B1BK1X9D

Engine : 3FZ



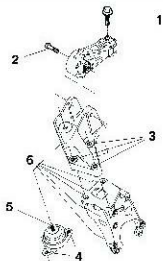
B1BK1XAD

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

C8

SPECIAL FEATURES: POWER UNIT SUSPENSION

Upper RH engine support



B1BK1X5D

Intermediate engine support



B1BK1X6D

Engines : RFN – 3FZ

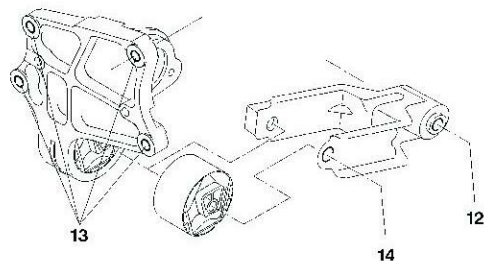
Ref.	Description	RFN		3FZ
	Gearbox type	BE4/5	AL4	ML5C
(1)	Rod/body fixing screw.	5 ± 0.5		
(2)	Engine support/torque reaction rod flexible stop pin	4.5 ± 0.4		
(3)	Upper support/intermediate support fixing screw.	6.5 ± 0.6		
(4)	Upper support/body fixing screw	3 ± 0.3		
(5)	Upper support/flexible support 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

C8

Intermediate engine support

Engines : RFN – 3FZ



B1BK1X7D

Ref.	Description	RFN		3FZ
	Gearbox type	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		

C8

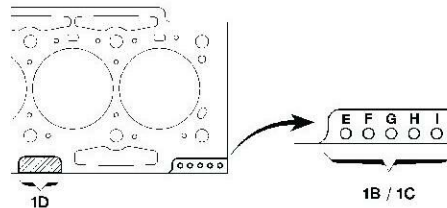
CYLINDER HEAD

Engines : RFN - 3FZ

Cylinder head gasket identification

Multi-layer metallic gasket.

Ref.	Cylinder head gasket thickness (mm)	
	RFN	3FZ
(1B) : Nominal dimension	E - H = 0.8	E - G = 0.8
(1C) : Repair dimension	E - F - H = 0.99	E - F - G none
(1D) : Manufacturer identification.		



B1BK24QD

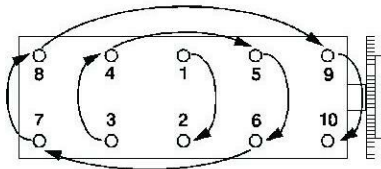
CYLINDER HEAD

C8

Engines : RFN - 3FZ

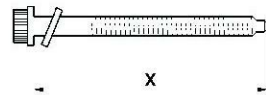
Cylinder head tightening (m.daN)

Cylinder head bolts



B1DK001C

B1DB002C



X

Tighten in the order indicated

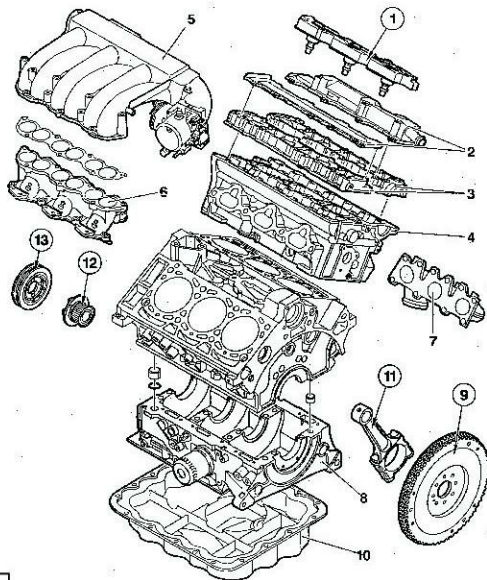
X = MAX. re-usable length

	RFN	3FZ	RFN	3FZ
Pre-tightening	1/ : 1.5		144.5 mm	127.5 mm
	2/ : 5			
Slackening	360°			
Tightening	2			
Angular tightening	285°	270°		

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFZ



(1) Compact coil unit	1 ± 0.1
(9) Flywheel	1
- Tightening	$60^\circ \pm 6^\circ$
- Angular tightening	
(11) Connecting rod caps	$2 \pm$
- Tightening	$74^\circ \pm 7$
- Angular tightening	
(12) Crankshaft hub	4 ± 0.4
- Tightening	$80^\circ \pm 8^\circ$
- Angular tightening	
(13) Crankshaft pulley	2.5 ± 0.2

B1BP1HAP

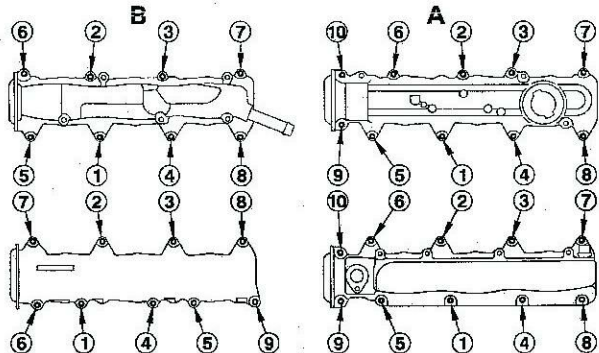
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

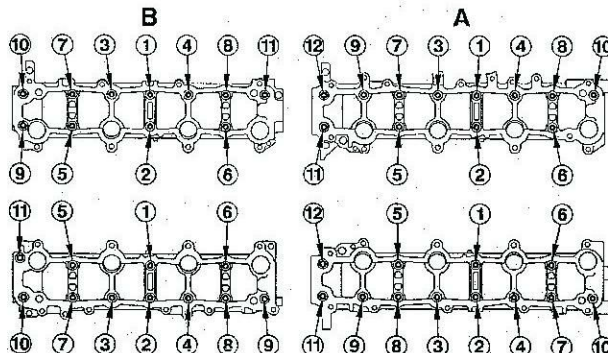
Engine : XFZ

- 2 Cylinder head cover (A) Front cyl. head - (B) Rear cyl. head

- 3 Bearing caps housing (A) Front cyl. head - (B) Rear cyl. head



B1DP08UD



B1DP08TD

WARNING : Tighten screw by screw in the order shown.

- Pre-tighten 0.5
 - Tighten 1 ± 0.1

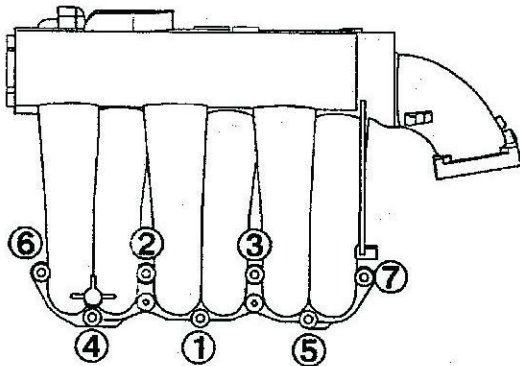
- Pre-tighten 0.2
 - Tighten 0.8

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

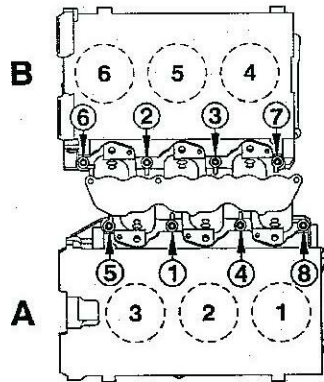
Engine : XFZ

- 5 Air inlet manifold



B1HPOLJC

- 6 Lower manifold (A) Front cyl. head - (B) Rear cyl. head



B1DP097C

WARNING : Tighten screw by screw in the order shown.

- Pre-tighten 1 ± 0.1
 - Tighten 2 ± 0.2

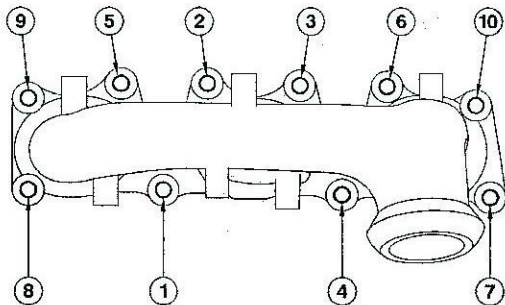
- Pre-tighten 1 ± 0.1
 - Tighten 2.5 ± 0.2

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

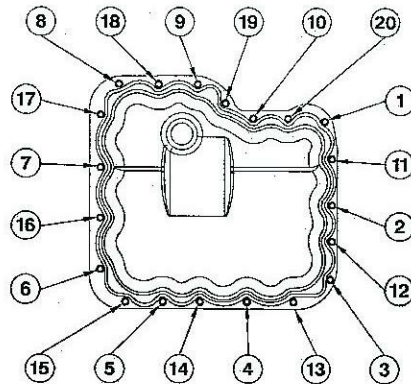
Engine : XFZ

-7 Exhaust manifold (NEW gasket)



B1BP1GXD

-10 Oil sump



B1BP1GZD

WARNING : Tighten screw by screw in the order shown.

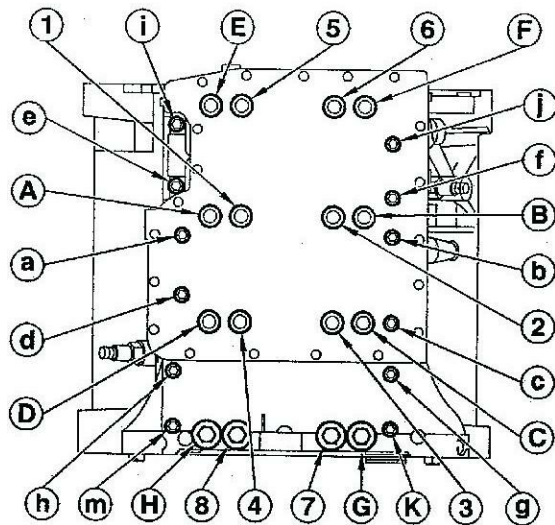
- Pre-tighten 1 ± 0.1
- Tighten 3 ± 0.3

- Pre-tighten $0.5 \pm$
- Tighten $0.8 \pm$

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFZ



- 8 Crankshaft bearing

- Clean the threads of the screws with a brush.
- Refit the screws with a coating of grease (MOLYKOTE G RAPID PLUS).
- Check that the 8 centring pins are in place

Maximum length under the heads of the screws :

- **M11 = 131.5 mm.**
- **M8 = 119 mm.**

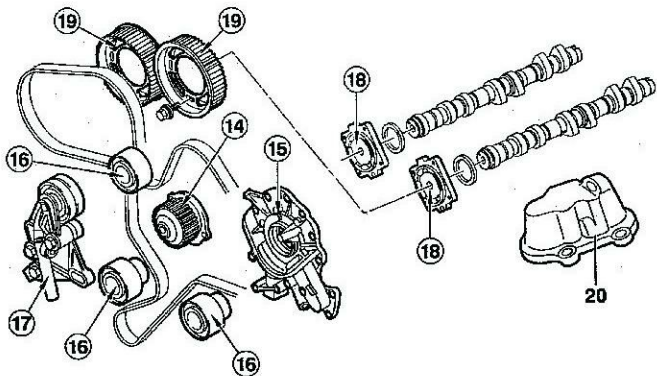
- Pre-tighten the M11 screws to **3 m.daN \pm 0,3** (1 to 8).
- Pre-tighten the M8 screws to **1 m.daN \pm 0,1** (A to H).
- Tighten the M6 screws to **1 m.daN \pm 0,1** (a to m).
- Slacken the M11 and M8 screws (screw by screw).
- Tighten the M11 screws to **3 m.daN \pm 0,3** (1 to 8).
- Tighten the M8 screws to **1 m.daN \pm 0,1** (A to H).

B1BP1GYD

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

Engine : XFZ



(14) Coolant pump	- Pre-tighten	0.5
	- Tighten	0.8
(15) Oil pump	- Pre-tighten	0.5
	- Tighten	0.8
(16) Guide roller		8 ± 0.8
(17) Tensioner roller		8 ± 0.8
(18) Camshaft hubs	- Pre-tighten	2 ± 0.2
	- Tighten	$57^\circ \pm 5^\circ$
(19) Camshaft pulley		1 ± 0.1

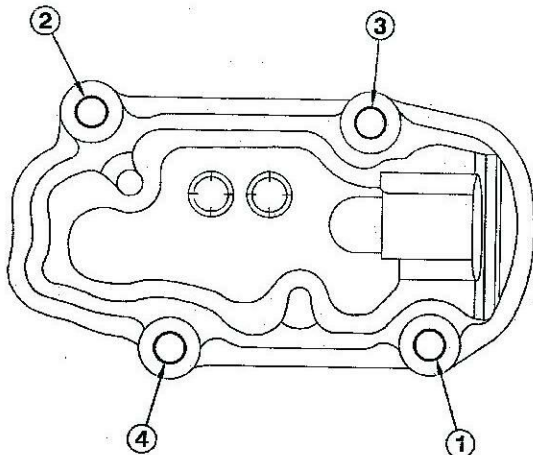
B1BP1HBD

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFZ

- 20 Oil vapour recovery housing.



WARNING : Tighten screw by screw in the order shown

- Pre-tighten **0.5 ±**
- Tighten **1 ± 0.1**

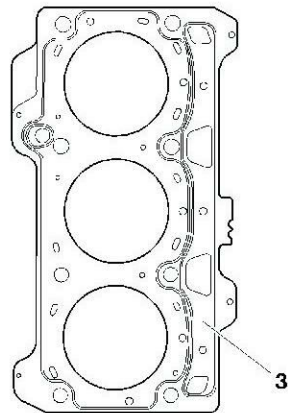
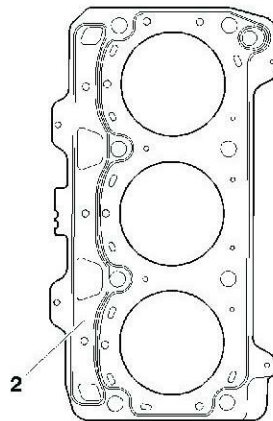
B1BP1H1D

CYLINDER HEAD**C5**

Engine : XFZ

Cylinder head gasket identification

Supplier	Thickness (Standard) (mm)	Thickness reference
ERLING	0.75	Central lug Exhaust end



- (1) LH cylinder head gasket.
(2) RH cylinder head gasket.

Multilayer metallic cylinder head seal.

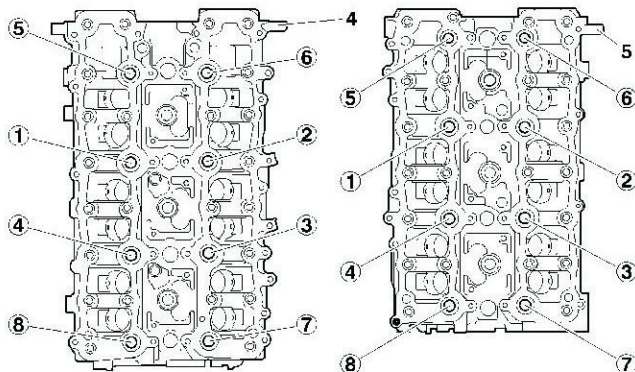
B1DP18YD

C5

CYLINDER HEAD

Engine : XFX

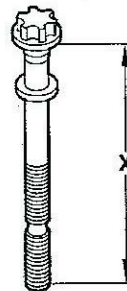
Cylinder head tightening (m.daN)



In the order indicated.

- Pre-tightening 2 ± 0.2
- Slackening **YES**
- Pre-tightening 1.5 ± 0.2
- Angular tightening 225°

Cylinder head bolts



Note : Oil the threads and under the heads of the bolts. (Use engine oil or Molykote G Rapid Plus).

X = MAX. re-usable length

XFX

B1DP18ZD

B1DP09VC

149.5 mm

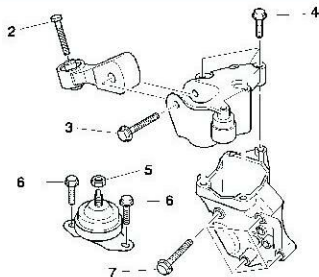
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C8

Engine : XFW

Power unit suspension

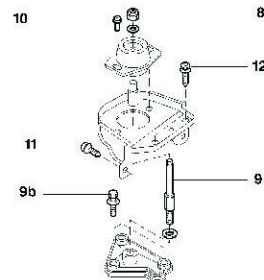
RH engine support (Suspension)



B1BK24RD

- | | |
|--|-----------------|
| (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 |

Gearbox suspension



B1BK24SD

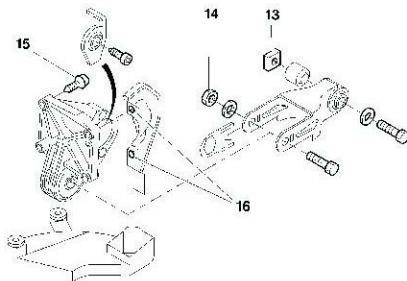
- | | |
|---|-----------------|
| (8) Fixing of gearbox support on LH flexible mounting | : 6.5 ± 0.6 |
| (9) Shaft | : 6.5 ± 0.6 |
| (10) Fixing of flexible mounting on support | : 3 ± 0.3 |
| (11) Fixing of flexible mounting support on body | : 2.5 ± 0.2 |
| (12) Fixing of flexible mounting support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

C8

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

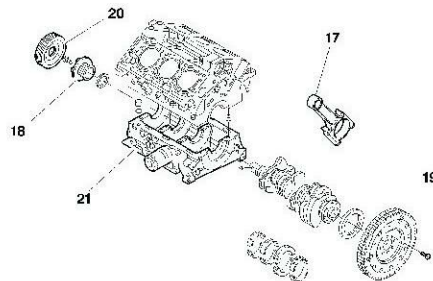
Power unit suspension – Engine support (Lower)



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

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

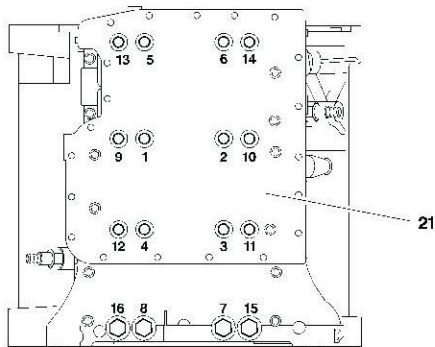
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C8

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	<u>Stage 1</u> 3 ± 0.3	<u>Stage 2</u> 1 ± 0.1	<u>Stage 3</u> 1 ± 0.1
(21) Fixings of bearings/cap covers or bearings/caps (Slacken to zero torque.)	<u>Stage 4</u> YES	<u>Stage 4</u> YES	NO
(21) Fixings of bearing cap cover or bearing caps (Tighten bolt by bolt) Tightening + Angular tightening	<u>Stage 5</u> 3 ± 0.3 180°	<u>Stage 6</u> 1 ± 0.1 180°	

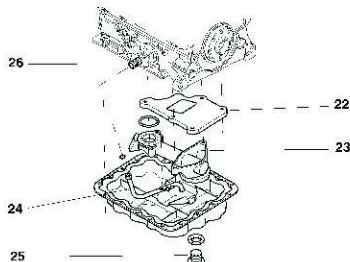
C8

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Lubrication circuit.

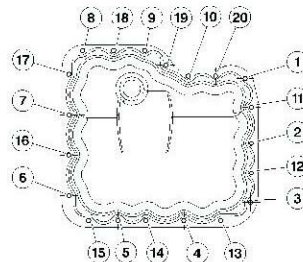
Lubrication circuit.



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)

C8

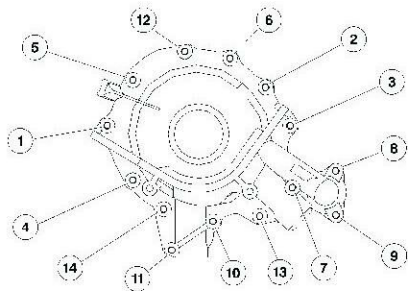
Engine : XFW

Lubrication circuit

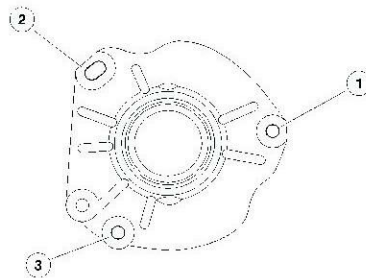
Cooling circuit

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.

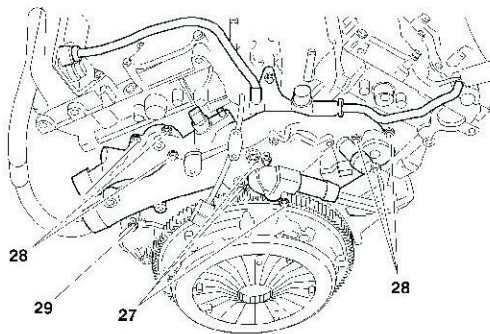
C8

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

Lubrication circuit

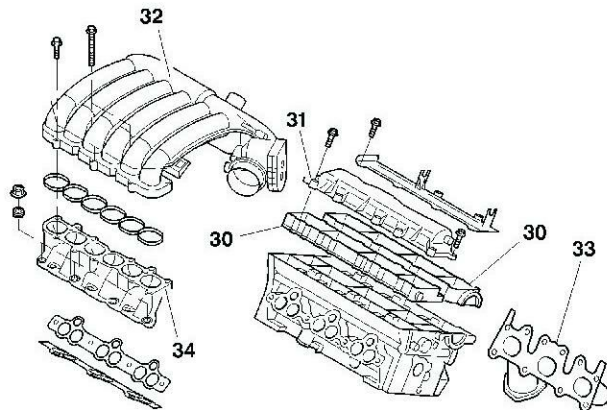
Coolant manifold



B1BK24YD

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

Cylinder head equipment



B1BK24ZD

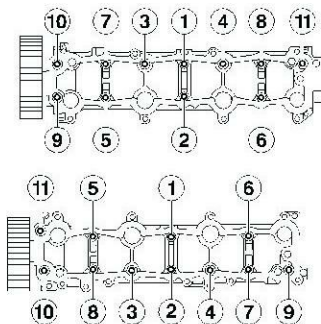
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C8

Engine : XFW

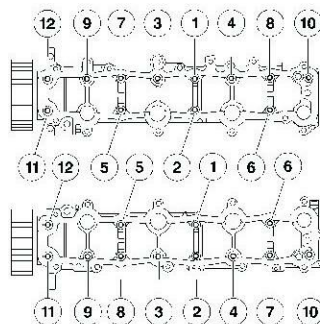
Cylinder head equipment

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

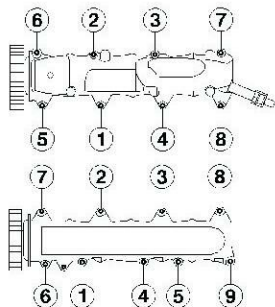
C8

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : XFW

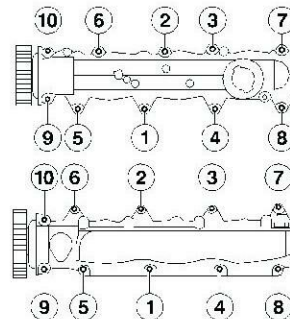
Cylinder head equipment

Valve covers (right hand side)



B1EK0GEC

Valve covers (left hand side)



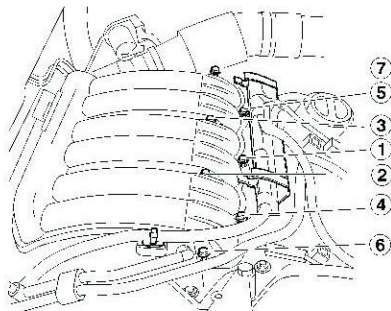
B1EK0GFC

Respect the sequence of stages and the order of tightening

(31) Valve cover :

Pre-tighten to : 0.5

Tighten to : 0.8

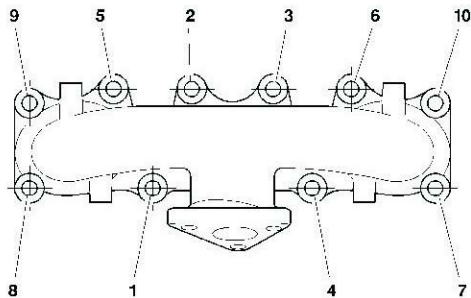
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)**C8****Engine : XFW****Cylinder head equipment****Inlet manifold****B1BK251D****Respect the sequence of stages and the order of tightening****(32) Inlet manifold:**Pre-tighten to : **0.4**Tighten to : **0.8**

C8

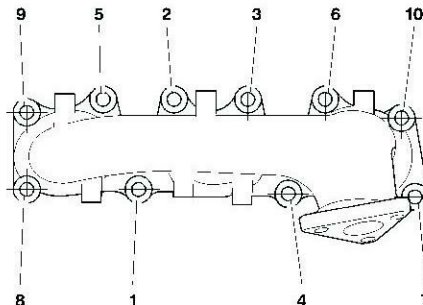
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

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

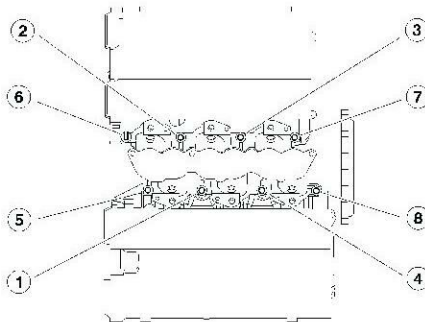
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C8

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

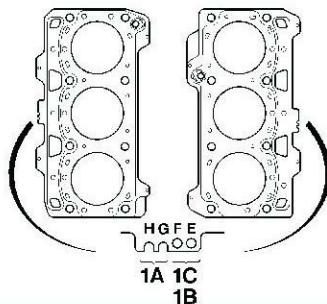
C8

CYLINDER HEAD

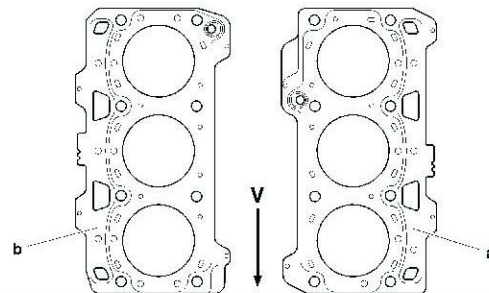
Engine : XFW

Cylinder head gasket identification

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



B1DK0QKD



B1DK0QLD

Cylinder head gasket thicknesses

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

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

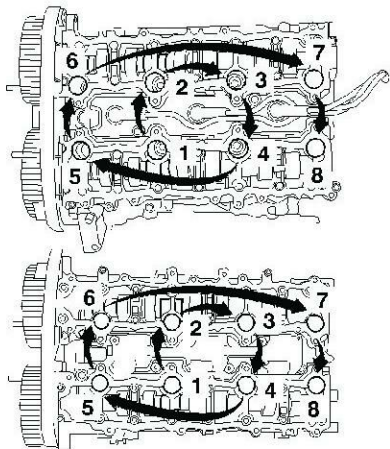
CYLINDER HEAD

C8

Engine : XFW

Cylinder head tightening (m.daN)

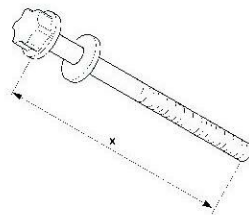
Cylinder head bolts



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).



B1DK0QPD

X = MAX. re-usable length

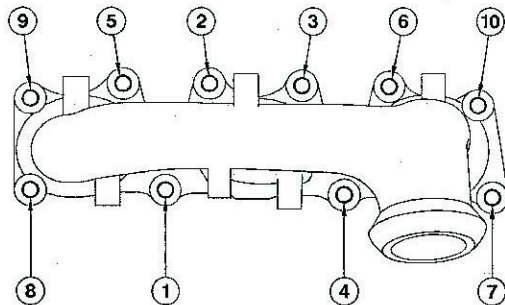
149.5 mm

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

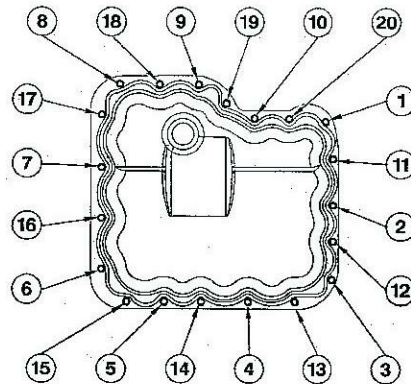
Engine : XFZ

- 7 Exhaust manifold (NEW gasket)



B1BP1GXD

- 10 Oil sump



B1BP1GZD

WARNING : Tighten screw by screw in the order indicated.

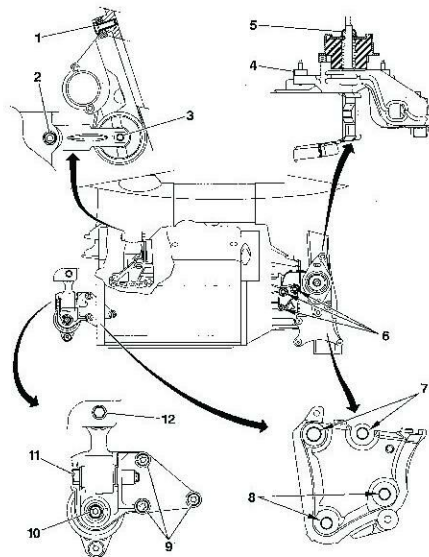
- Pre-tighten 1 ± 0.1
 - Tighten 3 ± 0.3

- Pre-tighten $0.5 \pm$
 - Tighten $0.8 \pm$

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

Engine : RHY



Tightening torques

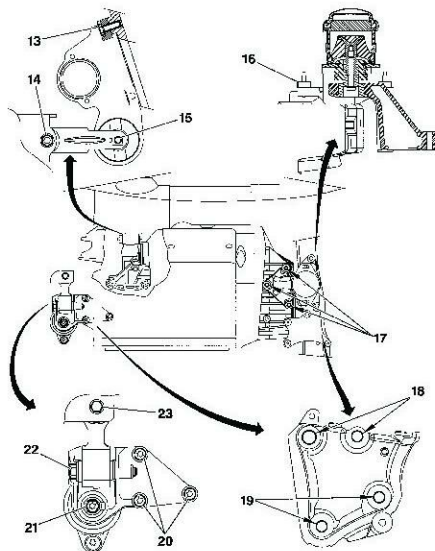
(1)	4.5 ± 0.5
(2)	5 ± 0.5
(3)	5 ± 0.5
(4)	2.7 ± 0.3
(5)	6.5 ± 0.6
(6)	4.5 ± 0.5
(7)	2.1 ± 0.2
(8)	4.5 ± 0.5
(9)	6.1 ± 0.6
(10)	4.5 ± 0.5
(11)	5 ± 0.5
(12)	5 ± 0.5

B1BP27KP

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engines : RHS - RHZ



Tightening torques

(13)	4.5 ± 0.5
(14)	5 ± 0.5
(15)	5 ± 0.5
(16)	2.7 ± 0.3
(17)	4.5 ± 0.5
(18)	2.1 ± 0.2
(19)	4.5 ± 0.5
(20)	6.1 ± 0.6
(21)	4.5 ± 0.5
(22)	5 ± 0.5
(23)	5 ± 0.5

B1BP27LP

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

Engines : RHS - RHZ

Crankshaft		Flywheel – Clutch	
Bearing cap fixing screws		Flywheel	4,8 ± 0,5
Pre-tightening	2,5 ± 0,2	Clutch plate	2 ± 0,2
Angular tightening	60°	Lubrication circuit	
Con rod nuts		Oil pump	1,3 ± 0,1
Pre-tightening	2 ± 0,2	Coolant/oil hear exchanger	5,8 ± 0,5
Angular tightening	70°	Turbocharger lubrication pipe	
Accessories drive pulley		Engine end	3 ± 0,3
→ RPO 8631	RPO 8631 →	Turbocharger end	2 ± 0,2
Pre-tightening	4 ± 0,4	Diesel.injection circuit	
Angular tightening	51° ± 5°	Injector fixing flange nut	3 ± 0,3
Cylinder block		Union on high pressure common injection rail	
Piston skirt spray jet	1 ± 0,1	Fuel	2 ± 0,2
Sump	1,6 ± 0,2	Injection pump on support	2,25 ± 0,2
Timing belt guide roller	2,5 ± 0,2	Union on diesel injection	2,2 ± 0,2
Timing belt tensioner roller	2,5 ± ,02	Injection pump pulley	5 ± 0,5
RH engine support	2,7 ± ,02	Union on fuel high pressure pump	2,2 ± 0,2
Cylinder head		Cooling circuit	
Camshaft bearing covers	1 ± 0,1	Coolant pump	1,5 ± 0,1
Exhaust manifold	2 ± 0,2	Coolant inlet housing	2 ± ,02
Valve cover	0,8 ± 0,1		
Camshaft pulley	4,3 ± 0,5		
Pulley on hub	2 ± 0,2		
Poulie sur moyeu	2 ± 0,2		

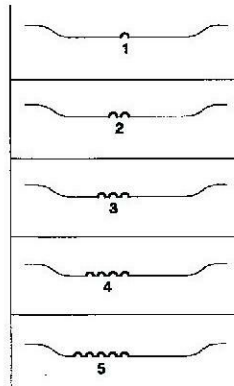
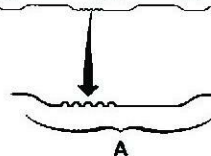
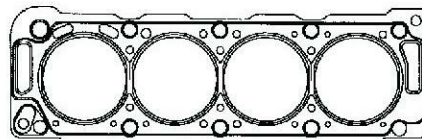
C5

CYLINDER HEAD

Engines : RHY - RHS - RHZ

Cylinder head gasket identification

Engine plate	Piston stand-proud (mm)	Thickness (mm)	Number of notches at A
RHZ RHY	0.47 to 0.605	1.30 ± 0.06	1
	0.605 to 0.655	1.35 ± 0.06	2
	0.655 to 0.705	1.40 ± 0.06	3
	0.705 to 0.755	1.45 ± 0.06	4
	0.755 to 0.83	1.50 ± 0.06	5



B1DP15AD

CYLINDER HEAD

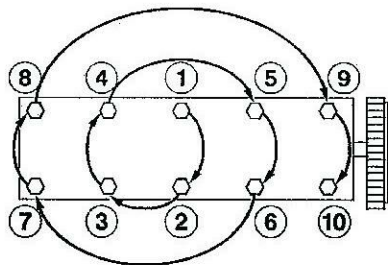
C5

Engines : RHY - RHS - RHZ

Cylinder head gasket identification

Cylinder head tightening (m.daN)

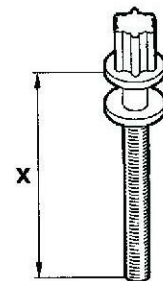
Cylinder head bolts



RHY - RHS - RHZ

- Pre-tightening 2 ± 0.2
- Tightening 6 ± 0.6
- Angular tightening $220^\circ \pm 5^\circ$

NOTE : Oil the threads and under the heads of the bolts. (Use engine oil or Molykote G Rapid Plus).



B1DP15EC

X = MAX. re-usable length

RHY - RHS - RHZ

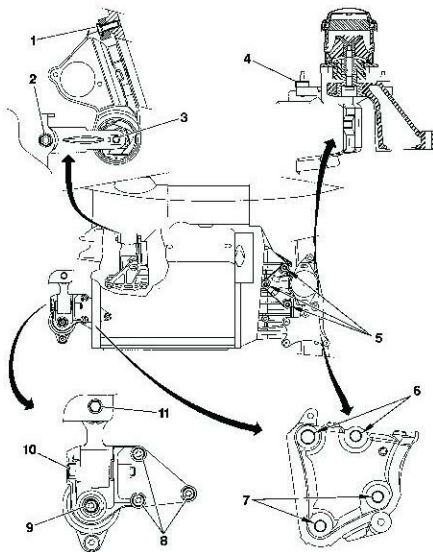
133.3 mm

B1DP05BC

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : 4HX



Tightening torques

(1)	4.5 ± 0.5
(2)	5 ± 0.5
(3)	5 ± 0.5
(4)	2.7 ± 0.3
(5)	4.5 ± 0.5
(6)	2.1 ± 0.2
(7)	4.5 ± 0.5
(8)	6.1 ± 0.6
(9)	4.5 ± 0.5
(10)	5 ± 0.5
(11)	5 ± 0.5

B1BP284P

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

C5

Engine : 4HX

Crankshaft		Cylinder block (continued)	
Bearing cap fixing screws		RH engine support	
Pre-tighten	2,5 ± 0,2	Pre-tighten (the four screws to)	1
Angular-tighten	60°	Tighten (the screws Ø 8 to)	2 ± 0,2
Rod cap screws		Tighten (the screws Ø 10 to)	4,5 ± 0,2
Tighten	1 ± 0,1	Cylinder head	
Slacken	180°	Camshaft bearing covers	
Tighten	2,3 ± 0,1	Tighten the studs to	1 ± 0,1
Angular-tighten	46° ± 5°	Pre-tighten the 28 screws Ø 6	0,5
Accessories drive pulley		Tighten the 28 screws Ø 6	1 ± 0,1
Tighten	7 ± 0,25	Exhaust manifold	
Angular-tighten	60° ± 5°	Pre-tighten the 8 nuts to	1,5 ± 0,1
Cylinder block		Tighten the 8 nuts to	3 ± 0,3
Piston skirt spray jet	1 ± 0,1	Valve cover	
Sump		Pre-tighten the 13 screws to	0,5
Pre-tighten	1 ± 0,1	Tighten the 13 screws to	9 ± 0,1
Tighten	1,6 ± 0,3	Camshaft pulley hub	4,3 ± 0,4
Timing belt guide roller		Pulley on hub	2 ± 0,2
Pre-tighten	1,5		
Tighten	4,3 ± 0,4		
Timing belt tensioner roller	2,5 ± ,02		

C5

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

Engine : 4HX

Flywheel – Clutch		Diesel.injection.circuit	
Flywheel		Diesel injector (do up by hand)	
Pre-tighten	1,5	Tighten	0,4 ± 0,04
Tighten	4,7 ± 0,4	Angular-tighten	45° ± 5°
Clutch plate	2 ± 0,2	Union on injection rail	2 ± 0,2
Lubrication circuit		Injection pump on support	2,25 ± 0,2
Oil pump		Union on diesel injection	2,2 ± 0,2
Pre-tighten	0,7	Injection pump pulley	5 ± 0,5
Tighten	0,9 ± 0,1	Union on injection pump	2,2 ± 0,2
Coolant/oil heat exchanger	5,8 ± 0,5	Cooling circuit	
Turbocharger lubrication pipe		Coolant pump	1,6 ± 0,3
Engine end	3 ± 0,3	Coolant outlet housing	2 ± 0,2
Turbocharger end	2 ± 0,2		

CYLINDER HEAD

C5

Engine : 4HX

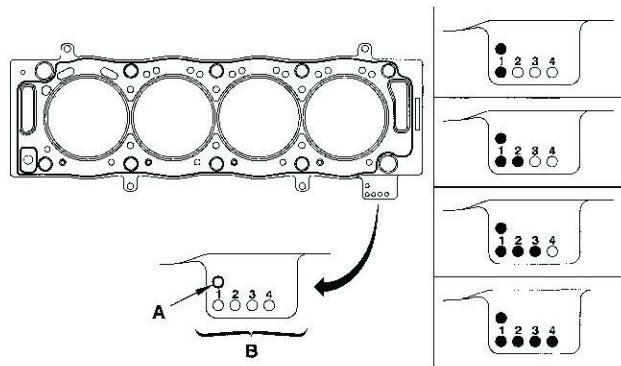
Cylinder head gasket identification

			Number of notches	
Engine plate	Piston stand-proud (mm)	Thickness (mm)	At A	At B
4HX	0.55 to 0.60	1.25 ± 0.04	1	1
	0.61 to 0.65	1.30 ± 0.04		2
	0.66 to 0.70	1.35 ± 0.04		3
	0.71 to 0.75	1.40 ± 0.04		4

Cylinder head gasket.

Multilayer cylinder head gasket.

Select seal thickness as a function of the piston stand-proud.



B1DP18XD

C5

CYLINDER HEAD (Continued)

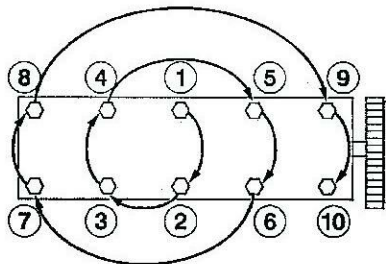
Engine : 4HX

Cylinder head tightening (m.daN)

4HX

ESSENTIAL : Proceed screw by screw in the order indicated.

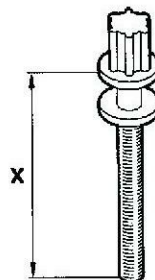
- Pre-tighten 2 ± 0.2 (Order 1 to 10).
- Tighten 6 ± 0.6 (Order 1 to 10).
- Destighten 360° (*Ordre 10 to 1*)
- Pre-tighten 2 ± 0.2 (Order 1 to 10).
- Tighten 6 ± 0.6 (Order 1 to 10).
- Angular-tighten $220^\circ \pm 5^\circ$ (Order 1 to 10).
(in 2 attempts max.)



B1DP05BC

Cylinder head bolts

4HX



NOTE : Oil the threads and under the heads of the bolts. (Use engine oil or Molykote G Rapid Plus).

B1DP15EC

X = MAX. re-usable length

4HX

X = 134.5 MM

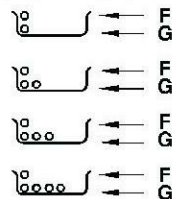
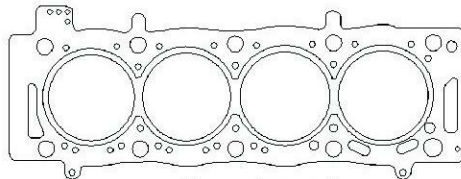
CYLINDER HEAD

C8

Engines : RHT - RHW - 4HW

Cylinder head gasket identification

Piston stand-proud (mm)	Thickness (mm)	Hole at F		Hole at G
		RHT RHW	4HW	
0.55 to 0.60	1.25 ± 0.04	0	1	1
0.61 to 0.65	1.30 ± 0.04	0	1	2
0.66 to 0.70	1.35 ± 0.04	0	1	3
0.71 to 0.75	1.40 ± 0.04	0	1	4



B1DK0Q6C

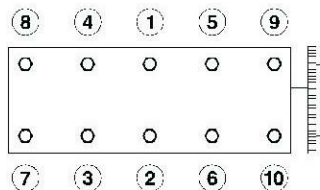
C8

CYLINDER HEAD

Engines : RHT - RHW - 4HW

Tighten cylinder head (m.daN)

Cylinder head bolts



B1DK00SC

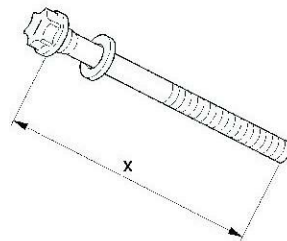
Tighten in the order indicated

Pre-tighten : 1/ 2
 2/ 6

Slacken : 360°

Tighten : 1/ 2
 2/ 6

Angular-tighten : 220°



NOTE : Oil the threads and under the heads of the bolts. (Use engine oil or Molykote G Rapid Plus).

B1DK1M6D

X = MAX. re-usable length

RHT - RHW

4HW

134 mm

134.5 mm

BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE

C5 - C8

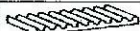




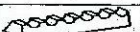


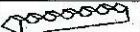


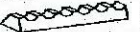


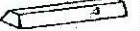


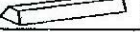


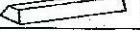


↓ 4099-T (C.TRONIC.105)



Tools



4122-T (C.TRONIC.105.5) ↓

1 daN = 1 Kg		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		daN		
TYPE DE COURROIES																									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 E6	18	23	27	31	34	37	40	43	46	49	52	54	56	58	60	62	64	66	68							
				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

C5 - C8		AUXILIARY EQUIPMENT DRIVE BELT													
		EW				ES		DW							
		7	10		12	9		10				12			
		J4		D	J4	J4		TD	ATED		ATED4		TED	TED4	
Engine type		6FZ	RFN	RLZ	3FZ	XFX	XFW	RHY	RHS	RHZ	RHW	RHT	4HX	4HW	
C5		X	X	X		X		X	X	X			X		
See pages :		96				98		100 to 103					106 to 107		
C8			X		X		X				X	X		X	
See pages :			97		97		99				104 to 105			108 to 109	

AUXILIARY EQUIPMENT DRIVE BELT**C5 - C8****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 93.

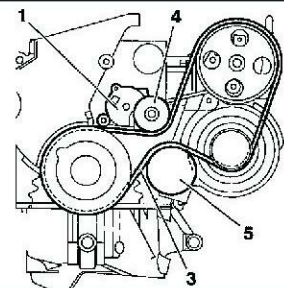
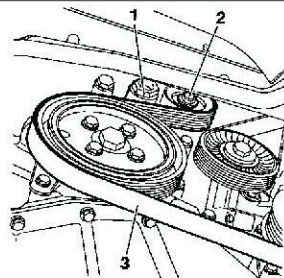
ESSENTIAL:

- **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.

C5

AUXILIARY EQUIPMENT DRIVE BELT

Without aircon



Engines : 6FZ - RFN - RLZ

Tools

[1] Pliers for removing plastic pegs

7504-T

Remove the belt.

- Detension the belt (3) by turning the tensioner roller (1), by the screw (2) (anti-clockwise).

WARNING : the screw (2) has a left hand thread.

- Remove the belt (3), while keeping the tensioner roller (1) tensioned.

Refit the belt.

- Compress the tensioner roller (1)
- Fit the belt (3).
- Release the tensioner roller (1).

Tightening torques m.daN.

Tensioner roller screw (4)	$2 \pm 0,2$
Guide roller screw (5)	$3,5 \pm 0,3$

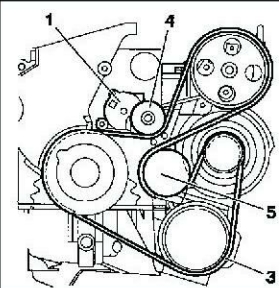
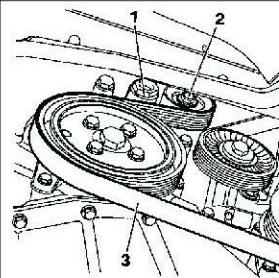
B1BP23PC

B1BP23QC

B1BP23PC

B1BP23RC

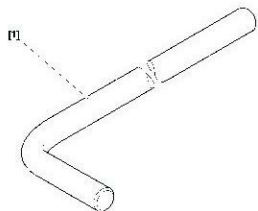
With aircon



AUXILIARY EQUIPMENT DRIVE BELT

C8

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.

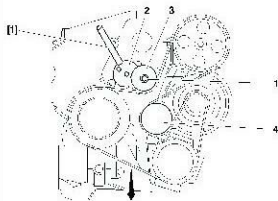
ESSENTIAL : Check that the rollers (3) and (4) turn freely (no tight spot).**Refitting.**

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

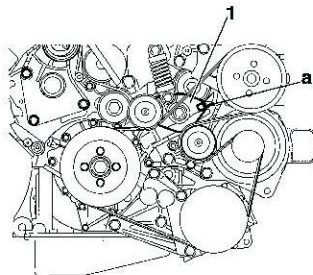


BXXK0AUD

C5

AUXILIARY EQUIPMENT DRIVE BELT

Engine : XFX



B1BP27EC

Tools

- | | |
|---|---------------|
| [1] Ratchet spanner S.171 FACOM (1/2 square) | S 171. |
| [2] Reduction box S.230 FACOM (1/2-3/8) | S 230. |

Remove.

Remove the engine cover.

Pivot the tensioner roller bracket (1) clockwise, until it locks, using tools [1] and [2] at «a».

Remove the auxiliary equipment drive belt.

ESSENTIAL : Check that the guide rollers are turning freely.
(No play and no tightness).

Refit.

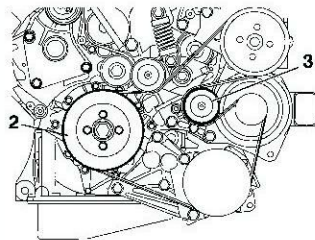
Refit the auxiliary equipment drive belt:

Respect the following order of assembly :

- The crankshaft pulley (2).
- The tensioner roller (3)

Release the tensioner roller bracket (1), by turning it anti-clockwise, using tools [1] and [2].

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



B1BP27FC

AUXILIARY EQUIPMENT DRIVE BELT

C8

Engine : XFW

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.

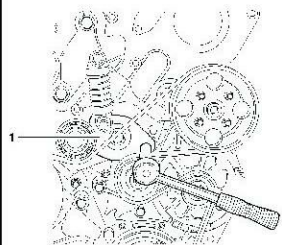
Commence with the crankshaft pulley **(2)**.

Finish with the tensioner roller **(3)**.

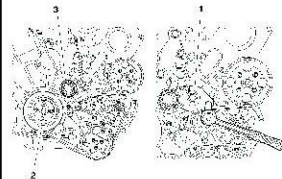
Free the support **(1)** of the tensioner roller, pivoting it anti-clockwise, using tools [1] and [2].

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

Continue the refitting operations in reverse order to removal.



B1EK0VAD



B1EK0VBD

C5

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHY - RHS - RHZ

Without air conditioning

Tools

- | | |
|---|---------------|
| [1] Belt tension adjusting square | : (-).0188 J2 |
| [2] Ø 4 mm peg | : (-).0188.Q1 |
| [3] Ø 2 mm peg | : (-).0188.Q2 |
| [4] Dynamic tensioner compression lever | : (-).0188.Z |

Remove

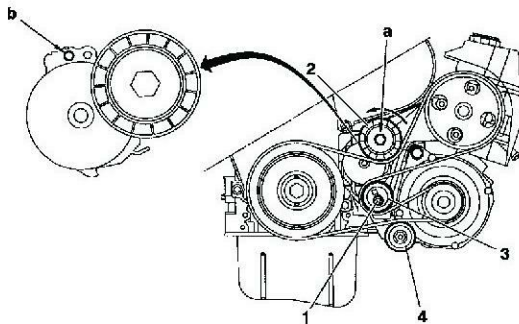
Re-use of belt

WARNING : Mark the direction the belt was fitted in case of re-use of the same belt.

- Compress the tensioner roller (2) by action at « a » (in anti-clockwise direction), tool [4].
- Keep the tensioner roller (2) compressed and remove the belt.

No re-use of belt.

- Compress the dynamic tensioner roller (2) by action at « a » (anti-clockwise), using tool [4].
- Peg using tool [2], at « b ».
- Hold the dynamic tensioner roller (2) compressed and remove the belt.
- Loosen the screw (1).



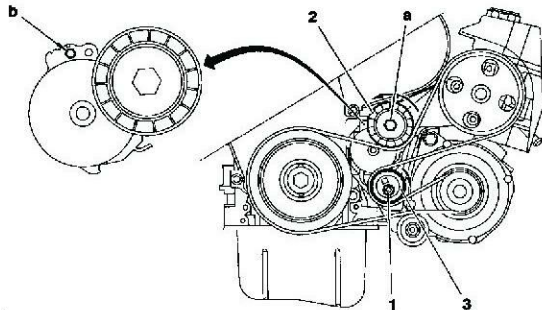
B1BP1YKD

AUXILIARY EQUIPMENT DRIVE BELT

C5

Engines : RHY - RHS - RHZ

Without air conditioning (continued)

**Refit.****Re-used belt.**

- Compress the tensioner roller (2) by action at « a » (anti-clockwise), tool [4].
- Refit the belt.

WARNING : Respect the direction in which the belt is fitted.

Remove the tool [4].

New belt.

Refit the belt.

- Turn the eccentric roller (3), tool [1] (clockwise) to free the tool [2] from its pegging at « b ».
- Hold the eccentric roller (3), tool [1], and tighten the screw (1) to $4.3 \pm 0.5 \text{ m.daN}$. Remove the tool [2].
- Rotate the crankshaft **4 times** in the direction of rotation.
- Check that it is possible to peg at « b », tool [3].
- If not possible to peg, restart the adjustment.

B1BP1YMD

C5

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHY - RHS - RHZ

With air conditioning

Outillages

[1] Belt tension adjusting square	: (-).0188 J2
[2] Ø 4 mm peg	: (-).0188.Q1
[3] Ø 2 mm peg	: (-).0188.Q2
[4] Dynamic tensioner compression lever	: (-).0188.Z

Remove

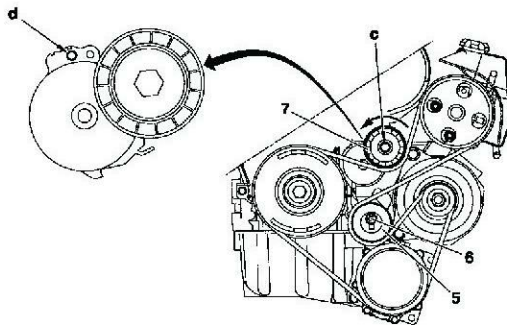
Re-use of belt

WARNING : Mark the direction the belt was fitted in case of re-use of the same belt.

- Compress the tensioner roller (7) by moving it at « c » (in anti-clockwise direction), tool [4].
- Hold the tensioner roller (7) compressed and remove the belt.

No re-use of belt.

- Compress the tensioner roller (7) by moving it at « c » (in anti-clockwise direction), tool [4].
- Peg using tool [2], at « d ».
- Loosen the screw (6).
- Bring the eccentric roller (5) towards the rear.
- Tighten the screw (6) by hand.
- Remove the belt.



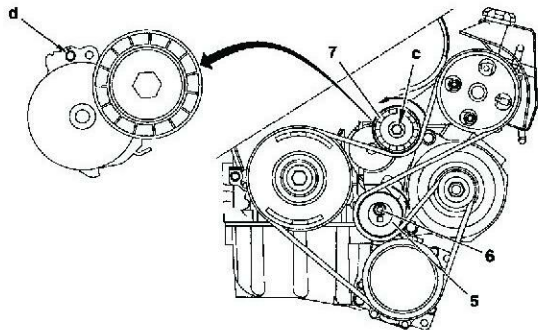
B1BP1YLD

AUXILIARY EQUIPMENT DRIVE BELT

C5

Engines : RHY - RHS - RHZ

With air conditioning (continued)

**Refit.****Re-used belt.**

- Compress the tensioner roller (7) by action at « c » (in anti-clockwise direction), tool [4].
- Refit the belt.

WARNING : Respect the direction in which the belt is fitted.

Remove the tool [4].

New belt.**Refit the belt.**

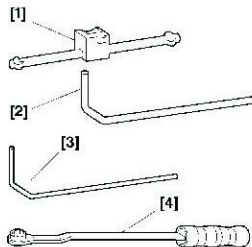
- Turn the eccentric roller (5), tool [1] (clockwise) to free the tool [2] from its pegging at « d ».
 - Hold the eccentric roller (5), tool [1], and tighten the screw (6) to 4.3 ± 0.5 m.daN.
- Remove the tool [2].
- Rotate the crankshaft **4 times** in the normal direction of rotation.
 - Check that it is possible to peg at « d », tool [3].
 - If not possible to peg, restart the adjustment.

B1BP1YND

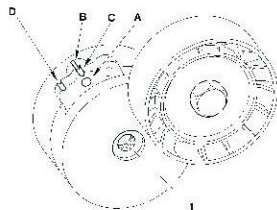
C8

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHT - RHW



E5AK0E9C



B3EK0DHD

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.

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 $4,5 \pm 0,4$ 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

C8

Engine : RHT - RHW

Removing (continued).

Slacken the fixing (2).

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

Bring the roller (3) back towards the rear.

Gently tighten the screw (2).

Remove the belt.

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

Refitting.

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

Refit the belt, finishing with the tensioner roller (4).

Action the roller (3), using tool [1] (clockwise) to free the tool [2].

Tighten the fixing (2) to $4,5 \pm 0,5$ m.daN, without altering the position of the roller.

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

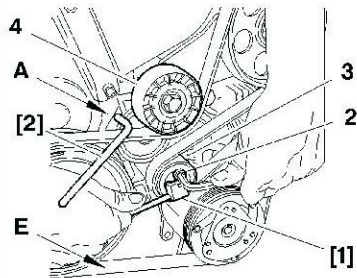
Remove the tool [1].

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.



B1BK1A4C

C5

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HX

Without air conditioning

Tools

[1] Dynamic tensioner compression lever

: (-).0188.Z

[2] Peg Ø 4 mm

: (-).0188.Q1

Remove.

WARNING : mark the direction of fitting in case the belt is to be reused

- Compress the tensioner roller (1) by action at «a» (*anti-clockwise*), using tool [1].
- Peg at «b», using tool [2].
- Remove the auxiliaries drive belt.

Refit.

- Refit the auxiliaries drive belt.
- Compress the tensioner roller (1) by action at «a» (*anti-clockwise*), using tool [1].
- Remove the tool [2] at «b».

B1BP270D

B1BP272D

AUXILIARY EQUIPMENT DRIVE BELT

C5

Engine : 4HX

With air conditioning

Tools

[1] Dynamic tensioner compression lever

: (-).0188.Z

[2] Peg Ø 4 mm

: (-).0188.Q1

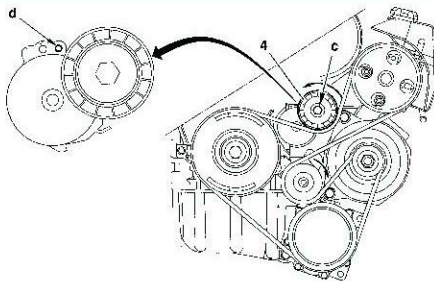
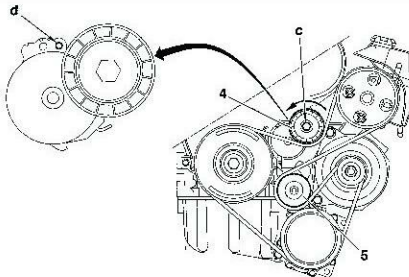
Remove.

WARNING : mark the direction of fitting in case the belt is to be reused.

- Compress the tensioner roller (4) by action at «c» (*anti-clockwise*), using tool [1].
- Peg at «d», using tool [2].
- Remove the auxiliaries drive belt.

Refit.

- Refit the auxiliaries drive belt.
- Compress the tensioner roller (4) by action at «c» (*anti-clockwise*), using tool [1].
- Remove the tool [2] at «d».



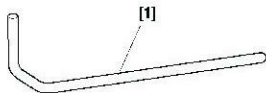
B1BP271D

B1BP273D

C8

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HW



E5AK0EDC

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.

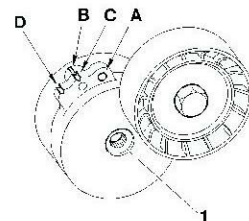
This marking system permits checking of the belt wear; if the marks (D) and (B) coincide, it implies that the belt requires replacing.
 Tighten the screw (1) to $4,5 \pm 0,4$ m.daN.

Removing.

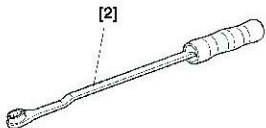
Remove:

- 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.



B3EK09PC

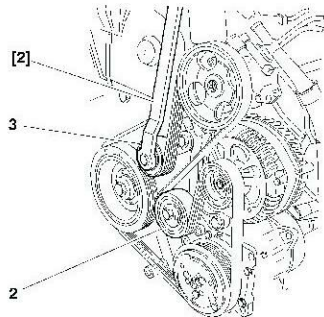


E5AK0E8C

AUXILIARY EQUIPMENT DRIVE BELT

C8

Engine : 4HW



B1BK1WD

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.

C5 - C8		CHECKING AND SETTING THE VALVE TIMING												
		EW				ES		DW						
		7	10		12	9		10				12		
		J4		D	J4	J4		TD	ATED		ATED4		TED	TED4
Engine type		6FZ	RFN	RLZ	3FZ	XFX	XFW	RHY	RHS	RHZ	RHW	RHT	4HX	4HW
C5		X	X	X		X		X	X	X			X	
See pages :		→ 2003						→ N° RPO 9128						
		111 to 114				136 to 141		150 to 154					164 to 169	
		2003 →						N° RPO 9128 →						
		129 to 135						157 to 163						
C8			X		X		X				X	X		X
See pages :		→ 2003												
			115 to 120		121 to 126		142 to 149					170 to 177		170 to 177
		2003 →												
			129 to 135		129 to 135									

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : 6FZ - RFN - RLZ → 2003

Tools

[1] Camshaft setting pegs	: (-).0189.A	Toolkit C.0189.
[2] Crankshaft setting peg	: (-).0189.B	
[3] Belt retaining pin	: (-).0189.K	
[4] Adaptor for angular tightening	: 4069-T	
[5] Hub immobilising tool	: 6310-T	

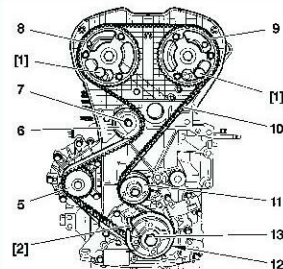
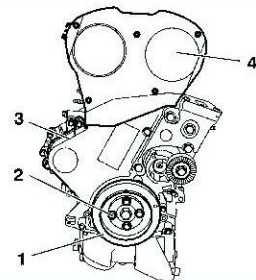
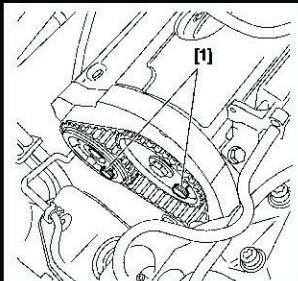
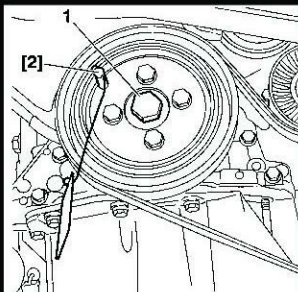
Checking the valve timing.

- Turn the engine by the crankshaft pinion screw (1) to bring it to pegging position.
- Peg the crankshaft, using tool [2].
- Peg the camshaft pulleys, using tools [1].

NOTE : The pegs [1] should engage without effort.**WARNING :** if the pegs do not engage without effort, restart the fitting and tensioning of the timing belt (see below).**Setting the valve timing.****Remove.**

- Remove the screws (2), the pulley (1), upper valve cover (4), lower valve cover (3).
- Turn the engine by the screw (13) of the pinion (12) to bring it to pegging position.
- Peg the pulleys (8) and (9) using tools [1].
- Peg the pinion (12) using tool [2].
- Loosen the screw (7) of the tensioner roller (6).
- Turn the tensioner roller (6) (clockwise).
- Remove the timing belt (10).

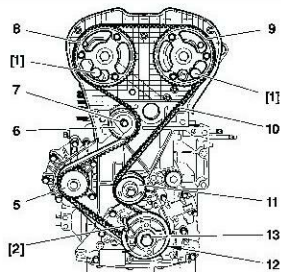
B1BP27JC B1BP25PC B1BP23XC B1EP14JD



C5

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ → 2003

**Refit**

- Refit the belt (10) on the pinion (12).
- Hold the belt (10) with tool [3].
- Position the belt (10) in the following order :
- The guide roller (11), the inlet camshaft pinion (9), the exhaust camshaft pinion (8), the water pump (5), the tensioner roller (6).

NOTE : Make sure that the belt (10) is as flush as possible with the outer face of the various pinions and rollers.

- Remove the tools [3] and [1].

Timing belt.**Adjusting the tension.**

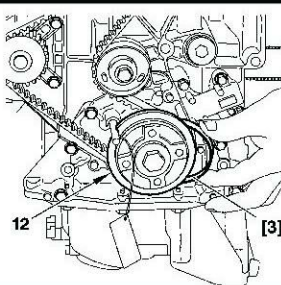
- Turn the roller (6) in the direction of the arrow «b»; using an Allen key at «a».
- Position the index «c» in its maximum setting at «d».

IMPERATIVE : The index «c» must stand proud of the notch «f» by an angular value of 10°. If it does not, replace the tensioner roller (6) or the timing belt and the tensioner roller (6)

Bring the index «c» to its adjusting position «f» by turning the tensioner roller (6) in the direction of the arrow «e»

WARNING: The index «c» must not stand proud of the notch «f» : if it does, restart the timing belt tensioning operation.

IMPERATIVE : The tensioner roller (6) must not turn while its fixing is being tightened up. If it does, recommence the adjusting operation.



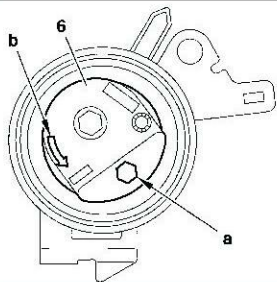
B1EP14JD

B1EP14KC

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : 6FZ - RFN - RLZ → 2003

**Adjusting the tension (continued).**

-Tighten the screw (7) of the the tensioner roller (6) to 2.1 ± 0.2 m.daN.

IMPERATIVE : The hexagonal drive of the tensioner roller (6) must be at 15° below the level of the cylinder head gasket «g». If not, replace the tensioner roller (6) or the timing belt and the tensioner roller (6).

Refit (continued).

-Remove the tools [1] and [2].

-Turn the crankshaft **10 times** in the normal direction of rotation.

IMPERATIVE : No pressure or outside action must be brought to bear on the timing belt.

-Peg the inlet camshaft pulley, using the tool [1].

Checks.**Timing belt tension.**

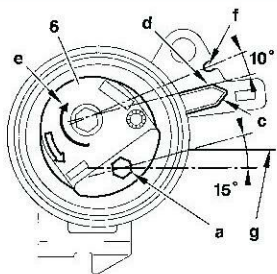
IMPERATIVE : Check the position of the index «c», it should be facing the notch «f». If the position of index «c» is not correct, restart the adjustment of its position.

Positioning of the crankshaft.

-Fit tool [2].

-As long as it is possible to fit tool [2], continue with the refit operations.

IMPERATIVE : If it is not possible to fit tool [2], reposition the flange (14).

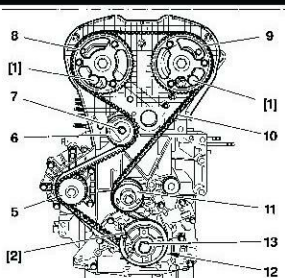
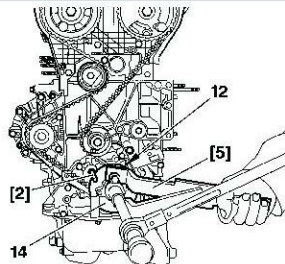


B1EP14MC B1EP14VC

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ → 2003

Checks (continued)Repositioning the flange.

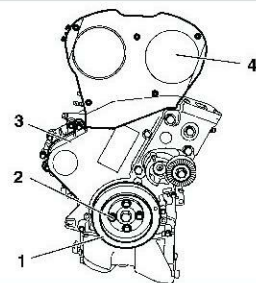
- Immobilise the crankshaft using tool [5].
- Loosen the screw (13).
- Release the pinion (12) of the crankshaft.
- Bring the flange (14) to the pegging position; using tool [5].
- Fit the tool [2].
- Immobilise the crankshaft using tool [5].
- Tighten screw (13) to $4 \pm 0.4 \text{ m.daN}$, then angular tighten to :
 $53^\circ \pm 4^\circ$ (Assembly with steel washer, gold in colour)
 $40^\circ \pm 4^\circ$ (Assembly with sintered washer, metallic in colour)

using the tool [4].

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

Refit :

- The lower valve cover (3).
- The upper valve cover (4).
- The crankshaft pulley (1).
- The screws (2).
- Pretighten the screws (2) to 1.5 m.daN .
- Tighten the screws (2) to $2.1 \pm 0.5 \text{ m.daN}$.



B1EP14PC

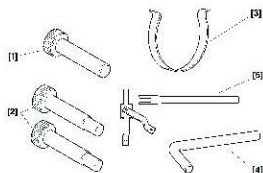
B1EP14JD

B1BP23XC

CHECKING AND SETTING THE VALVE TIMING

C8

Engine : RFN → 2003



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:

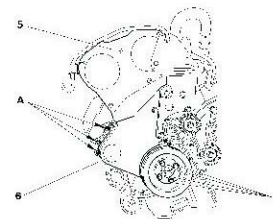
- The under-engine shield.
- The auxiliary drive belt (see corresponding operation).

Move aside:

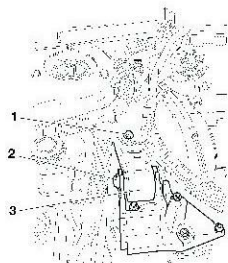
- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.

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

C8

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN → 2003

Removing (continued).

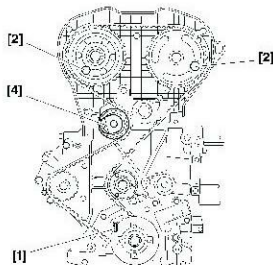
Peg :

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

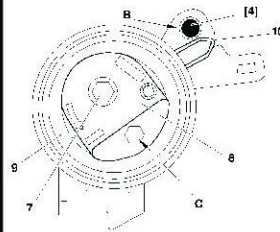
Slacken the screw (7) while holding tool [4].

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

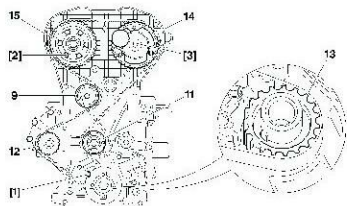


B1EK1UFD

CHECKING AND SETTING THE VALVE TIMING

C8

Engine : RFN → 2003



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].

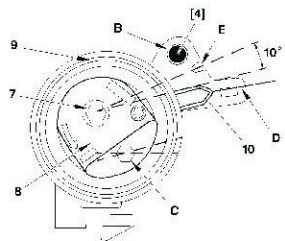
Refit the timing belt, well-tensioned, in the following sequence:

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

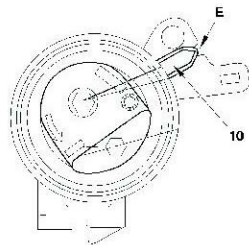
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN → 2003



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 $2 \pm 0,2 \text{ m.daN}$ 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).

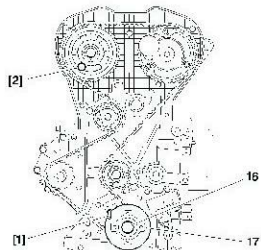
Check the position of the index (10).

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

C8

Engine : RFN → 2003



B1EK1TBD

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**).

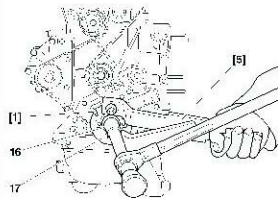
Tighten to

: $4 \pm 0,4 \text{ m.daN}$

Angular tighten to

: $53^\circ \pm 5^\circ$.

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



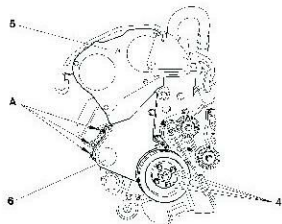
B1EK1TCD

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

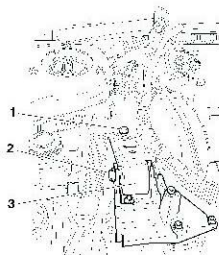
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : RFN → 2003



B1EK0V7D



B1EK1T7D

Refitting (continued).

Refit:

- The timing cover **(6)**.
- The auxiliary drive pulley.
- The screws **(4)**, tighten to **$2,1 \pm 0,2$ m.daN.**
- The timing cover **(5)**.
- The torque reaction rod **(3)**.
- The screws **(1)** and **(2)**, tighten to **$4,5 \pm 0,4$ m.daN.**

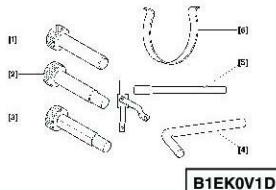
Refit the auxiliary drive belt (see corresponding operation).

Continue the refitting operations in reverse order to removal.

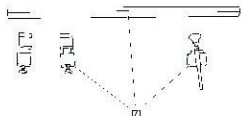
CHECKING AND SETTING THE VALVE TIMING

C8

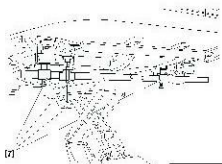
Engine : 3FZ → 2003



B1EK0V1D



B1EK1SJD



B1EK1SLD

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].

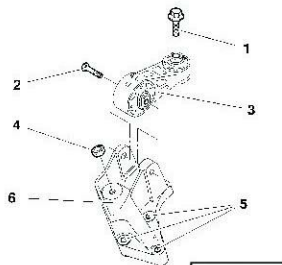
Move aside:

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

C8

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ → 2003



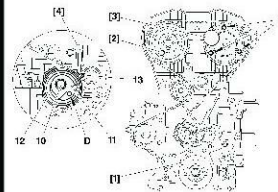
B1EK1SUD

Remove:

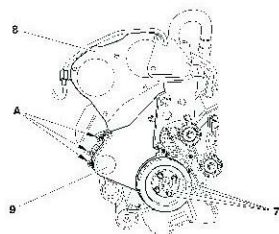
- The screws (1) and (2).
- The torque reaction rod (3).
- The nut (4).
- The 3 screws (5).
- The RH engine support (6).
- The screws (7), plus the auxiliary drive pulley.
- The timing covers (8) and (9).

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

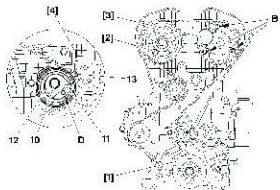


B1EK1SKD

CHECKING AND SETTING THE VALVE TIMING

C8

Engine : 3FZ → 2003



B1EK1SMD

Position tool [4].

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

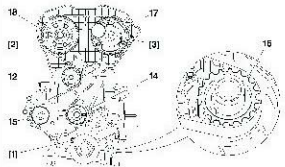
Using the hexagonal recess (D), turn the eccentric hub (11) of the tensioner roller (12) (clockwise), to detension the belt. The cursor (13) moves against the tool [4].

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 $3,5 \pm 0,3 \text{ m.daN}$.

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

Immobilise the belt, using tool [6].

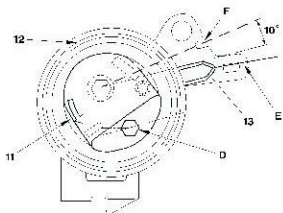
Refit the timing belt, well-tensioned, in the following sequence:

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

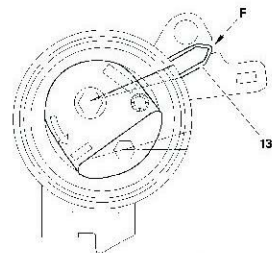
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ → 2003



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 $2 \pm 0,2 \text{ m.daN}$ 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).

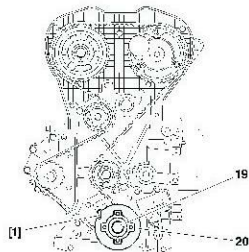
Check the position of the index **(13)**.

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

C8

Engine : 3FZ → 2003



B1EK1SRD

Positioning the crankshaft.

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

Peg:

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

If this is not possible, reposition the flange (20).

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

Immobilise the crankshaft, using tool [5].

Slacken the screw (19) so as to free the crankshaft pinion (16).

Bring the flange (20) to the pegging point, using tool [5].

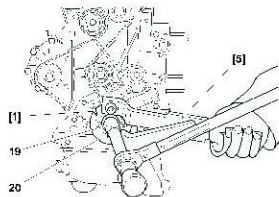
Position tool [1].

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

Tighten to : $4 \pm 0,4 \text{ m.daN}$

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

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

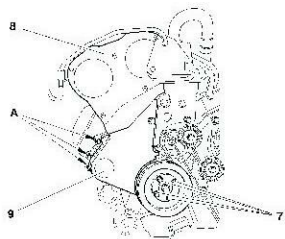


B1EK1SSD

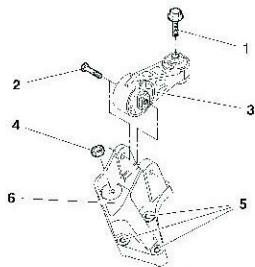
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : 3FZ → 2003



B1EK1STD



B1EK1SUD

Refitting (continued).

Refit:

- The timing cover (9).
- The auxiliary drive pulley.
- The screws (7), tighten to $2,1 \pm 0,2$ m.daN.
- The timing cover (8).
- The RH engine support (6).
- The torque reaction rod (3).

Tighten:

- Screws (5) to $6 \pm 0,6$ m.daN.
- Nut (4) to $4,5 \pm 0,4$ m.daN.
- Screws (1) and (2) to $4,5 \pm 0,4$ m.daN.

Refit the auxiliary drive belt (see corresponding operation).

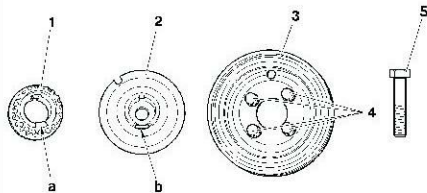
Continue the refitting operations in reverse order to removal.

CHECKING AND SETTING THE VALVE TIMING

ALL TYPES

OLD FITTING → 2003

Engine : 6FZ - RFN - RLZ - 3FZ → 2003



(1) Crankshaft pinion.

(2) Flange.

(3) Accessories drive pulley.

(4) Screw for fixing accessories drive pulley on the flange (2).

(5) Screw for fixing the flange (2) on the crankshaft.

«a» Integral keyway.

«b» Keyway slot.

The timing belt drive pinion (1) is separate from the flange (2).

With the screw (5) for fixing the flange (2) not tightened, the pinion (1) floats within the limit of travel of the integral keyway «a» in the keyway slot «b».

NOTE : The flange is immobilised on the crankshaft by a half-moon keyway and by the screw (5).

B1EP1B8D

ALL TYPES

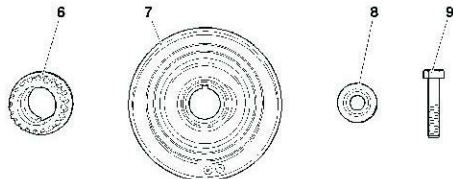
CHECKING AND SETTING THE VALVE TIMING

NEW FITTING

2003 →

Engine : 6FZ - RFN - RLZ - 3FZ

2003 →



B1EP1B9D

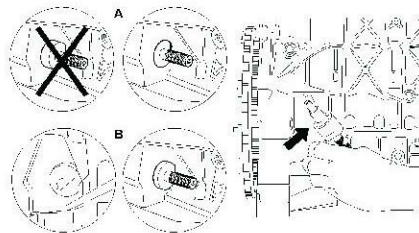
- (6) Crankshaft pinion.
- (7) Accessories drive pulley.
- (8) Washer.
- (9) Screw.

The pinion (6) is fitted as an idler on the crankshaft.

The accessories drive pulley (7) is immobilised on the crankshaft by a half-moon keyway and by the tightening of the shouldering of the washer (8) with the screw (9).

A : Pegging on manual gearbox.

B : Pegging on automatic gearbox.



B1BP2V2D

The crankshaft is pegged on the flywheel or on the converter drive plate (automatic gearbox).
The peg hole on the cylinder block (exhaust side) is calibrated and reinforced.

IMPERATIVE : Never turn the crankshaft with the accessories drive pulley slackened.

IMPERATIVE : Never remove the accessories drive pulley without pegging the crankshaft and camshafts.

IMPERATIVE : Always turn the crankshaft in the direction of rotation of the engine.

CHECKING AND SETTING THE VALVE TIMING

ALL TYPES

Engines : 6FZ - RFN - RLZ - 3FZ 2003 →

Tools.

[1] Camshaft setting peg	: (-).0189.A
[2] Crankshaft setting peg	: (-).0189.R
[3] Belt retaining pin	: (-).0189.K
[4] Adaptor for angular tightening	: 4069-T
[5] Tool for manœuvring and locking the tensioner roller	: (-).0189.S
[5a]	: (-).0189.S1
[5b]	: (-).0189.S2
Pliers for removing plastic pins	: 7504-T

Checking the setting of the timing

Removing.

Disconnect the battery negative terminal (See corresponding operation).

Raise and support the vehicle, front wheels hanging.

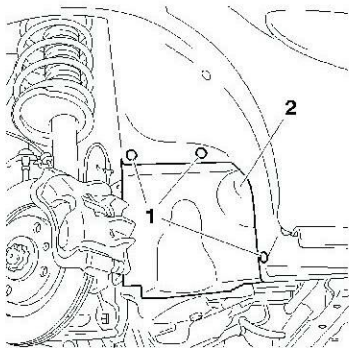
Remove:

The front RH wheel.

The plastic pins (1)

The splash-shield (2)

The upper timing cover.

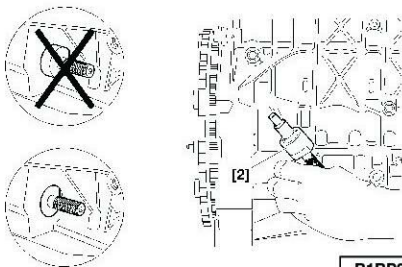


C4AP12TC

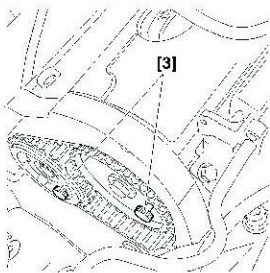
ALL TYPES

CHECKING AND SETTING THE VALVE TIMING

Engine : 6FZ - RFN - RLZ - 3FZ 2003 →



B1BP2V5D



B1EP1BAC

Checking the setting of the timing (continued).

Rotate the engine using the crankshaft pinion screw to bring it to the pegging position..

Peg the crankshaft, using tool [2].

Peg the camshaft pulleys, using tool [3]

WARNING : If the pegs are difficult to engage, repeat the operation to fit and tension the timing belt (See corresponding operation)

Refitting.

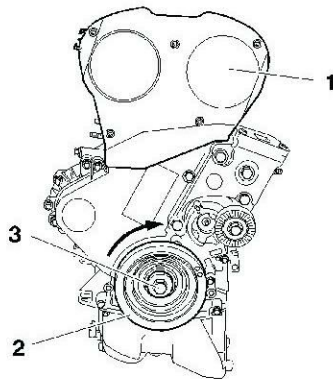
Remove tools [2] and [3].

Complete the refitting in the opposite order to removal.

CHECKING AND SETTING THE VALVE TIMING

ALL TYPES

Engines : 6FZ - RFN - RLZ - 3FZ 2003 →



C4AP12TC

Setting the timing.**Removing.**

Disconnect the battery negative terminal (See corresponding operation).

Raise and support the vehicle, front wheels hanging.

Remove:

The front RH wheel.

The plastic pins **(1)**

The splash-shield **(2)**

The accessories drive belt (See corresponding operation).

Unclip and move aside the fuel delivery pipe from the timing cover.

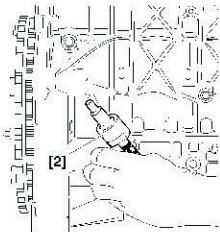
Remove the upper timing cover **(1)**.

Rotate the engine using the screw **(3)** of the crankshaft pulley **(2)** to bring it to the pegging position.

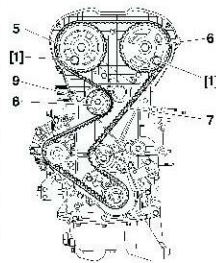
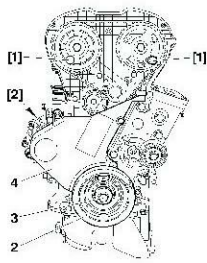
ALL TYPES

CHECKING AND SETTING THE VALVE TIMING

Engine : 6FZ - RFN - RLZ - 3FZ 2003 →



B1EP1B9D



B1EP1BBD

Setting the timing (continued)

Peg:

The crankshaft, using tool [2]

The camshaft pulleys (5) and (6), using tool [1]

Remove:

The screw (3) of the crankshaft pulley (2).

The lower timing cover (4) (by moving the engine).

IMPERATIVE : Never remove the crankshaft pulley (2) without pegging the crankshaft and camshafts.

Slacken the screw (9) of the tensioner roller (8).

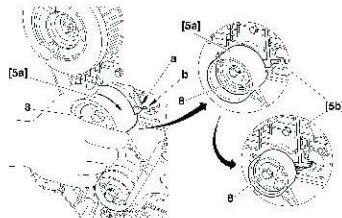
Turn the tensioner roller (8) (clockwise).

Remove the timing belt (7).

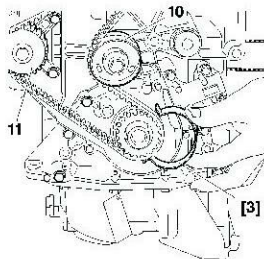
CHECKING AND SETTING THE VALVE TIMING

ALL TYPES

Engines : 6FZ - RFN - RLZ - 3FZ 2003 →



B1EP1BCD



B1EP1BDC

Setting the timing (continued)

Turn the tensioner roller (8), using tool [5a] to go past the notch (b).

Position tool [5b] to lock the index (a) and remove tool [5a].

Reposition the timing belt (7) on the crankshaft pulley.

Hold the timing belt (7) using tool [3].

Fit the timing belt (7) in place, strictly in the following sequence:

- Guide roller (10).
- Inlet camshaft pulley (6).
- Exhaust camshaft pulley (5).
- Coolant pump (11).
- Tensioner roller (8).

NOTE : Make sure that the belt (7) is as flush as possible with the outer face of the various pinions and rollers.

Remove :

- Tool [3].
- Tool [1] from the exhaust camshaft pulley.
- Tool [5b] from the tensioner roller (8).

Refit :

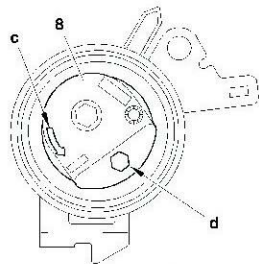
- The lower timing cover (4) (by moving the engine).
- The crankshaft pulley (2)
- The screw (3) of the crankshaft pulley.

Tighten the screw (3) to $4 \pm 0,4 \text{ m.daN}$, then angular-tighten to $53^\circ \pm 4^\circ$, using tool [4].

ALL TYPES

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ - 3FZ 2003 →



B1EP1BEC

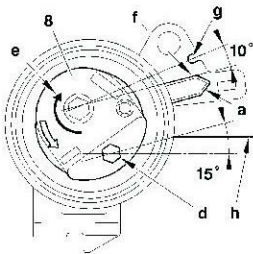
Tensioning the timing belt.

Turn the tensioner roller (8) in the direction of the arrow « c », by means of a hexagonal spanner at « d ».
Positionner l'index « a » en position « f »

IMPERATIVE : The index « a » should go past the slot « g » by an angular value of 10°.

If it does not, replace the tensioner roller or the timing belt and tensioner roller assembly.

Next bring the index « a » to its adjusting position « g », by turning the tensioner roller in the direction of the arrow « e ».



B1EP1BFC

WARNING : the index « a » should not pass the slot « g ».

Otherwise, repeat the operation to tension the timing belt.

IMPERATIVE : The tensioner roller should not turn during the tightening of its fixing.

If it does, repeat the operation to tension the timing belt.

Tighten the screw (9) of the tensioner roller (8) to $2,1 \pm 0,2$ m.daN.

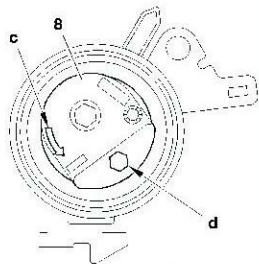
IMPERATIVE : The hexagonal tensioner roller drive should be approx. 15° below the level of the cylinder head gasket « h ».

If it is not, replace the tensioner roller or the timing belt and tensioner roller assembly.

CHECKING AND SETTING THE VALVE TIMING

ALL TYPES

Engines : 6FZ - RFN - RLZ - 3FZ 2003 →



B1EP1BEC

Refitting (continued)

Remove the tools [1] and [2].

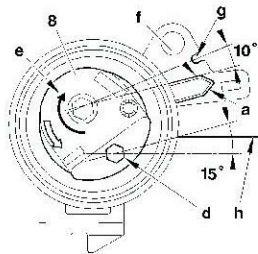
Rotate the crankshaft **ten times** (normal direction of rotation).**IMPERATIVE : No pressure or outside force should be brought to bear on the timing belt.**

Peg the inlet camshaft pulley, using tool [1].

Checks.

Tension of the timing belt.

ESSENTIAL : Check the position of the index « a », which should be opposite the slot « g ».
If the position of the index « a » is not correct, repeat the operations to tension the timing belt.



B1EP1BFC

Refit the upper timing cover (1).

Clip the fuel delivery hose on the timing cover.

Refit the accessories drive belt (See corresponding operation).

Lower the vehicle.

Reconnect the battery (See corresponding operation).

C5

CHECKING AND SETTING THE VALVE TIMING

Engine : XFX

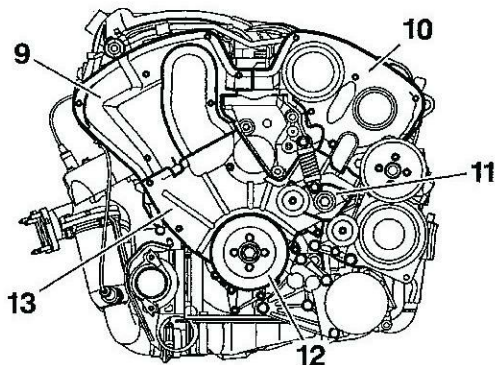
OUTILLAGES

- | | |
|---|-------------|
| [1] Camshaft setting pegs | (-).0187.B |
| [2] Crankshaft setting peg | (-).0187.A. |
| [3] Fuel pressure take-off union | 4192-T |
| [4] Belt retaining pin | (-).0187.J |
| [5] Exhaust camshaft hubs immobilising tool | (-).0187.F. |
| [6] Inlet camshaft hubs immobilising tool | (-).0187.F |

Remove the auxiliaries drive belt (*See corresponding operation*).

Checking the valve timing setting.**Remove :**

- The power steering pulley.
- The roller / dynamic tensioner assembly (11).
- The crankshaft pulley (12).
- The upper timing covers (9) and (10).
- The lower timing cover (13).

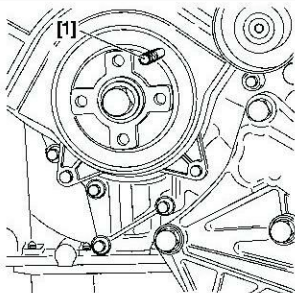


B1BP2BKC

CHECKING AND SETTING THE VALVE TIMING

C5

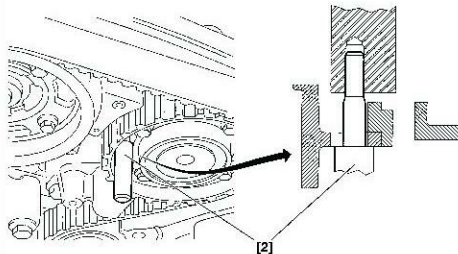
Engine : XFX

**Checking the valve timing setting (continued).**

- Peg the crankshaft, using tool [1].
- Check that the tool [2] engages without effort in the cylinder heads at the camshaft pulleys.
- Remove the tools [1] and [2].

Refit :

- The lower timing cover (13).
- The upper timing covers (9) and (10).
- The crankshaft pulley (12).
- The roller / dynamic tensioner assembly (11).
- The power steering pulley.
- Complete the refitting of components.
- Initialise the ignition injection ECU.



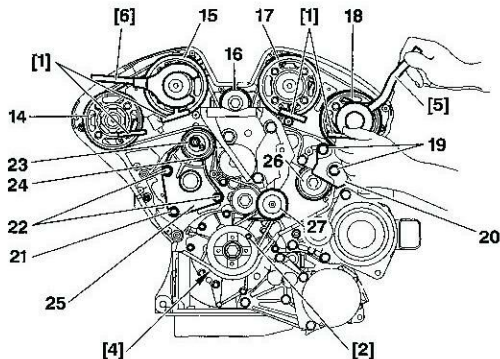
B1EP08TC

B1EP15UD

C5

CHECKING AND SETTING THE VALVE TIMING

Engine : XFX

**Setting the valve timing**

- Remove the components as necessary for the operation.
- Remove the screws (19) and the plate (20).
- Peg the crankshaft, using tool [2].

NOTE : Damp the rotation of the camshafts (15) and (17), using tool [6].

- Untighten the camshaft pulley screws (15) and (17).

NOTE : Damp the rotation of the camshafts (14) and (18), using tool [5].

- Untighten the camshaft pulley screws (14) and (18).

NOTE : Lubricate the tools [1], with grease **G6** (*TOTAL MULTIS*).

Peg the camshafts, using tools [1], [5] and [6].

Remove the screw (21) of the panel (25).

Untighten the nut (23) of the tensioner roller (24).

Untighten the screws (22) of the panel (25).

Remove the guide roller (16).

WARNING : mark the direction of fitting of the timing belt, in case the belt is to be reused

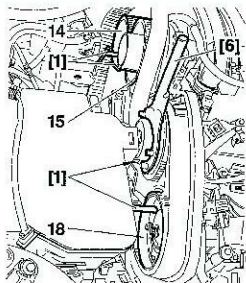
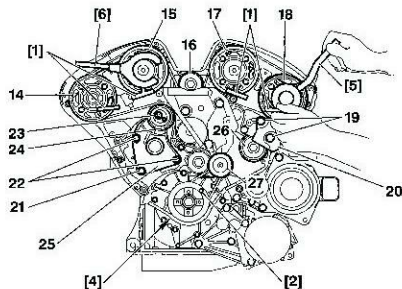
- Remove the timing belt.

B1EP15VD

CHECKING AND SETTING THE VALVE TIMING

C5

Engine : XFX

**Setting the valve timing (continued)****Refit.**

- Check that the camshafts and the crankshaft are correctly pegged.
- Check that the rollers and the water pump pulley are turning freely. (No tightness)
- Loosen the camshaft pulley screws by a **1/4 turn**.
- Make sure that the pulleys are turning freely on the camshaft hub.
- Turn the camshaft pulleys in a clockwise direction, to end of slots.

WARNING : Respect the direction of fitting of the belt : facing the timing, the inscriptions on the belt should be readable the correct way up.

- Fit the timing belt on the crankshaft pinion.
- Position the tool [6].
- Position the timing belt in the following sequence : *(Belt well tensioned)*.
- The roller (26), the pulley (18), the pulley (17),
- Keep the timing belt well tensioned :
- Refit the guide roller (16), **tighten to $8 \pm 0,8 \text{ m.daN}$** .
- Position the timing in the following sequence :
- The camshaft pulley (15), the camshaft pulley (14), the tensioner roller (24), the water pump pulley, and the guide roller (27).

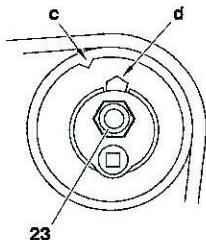
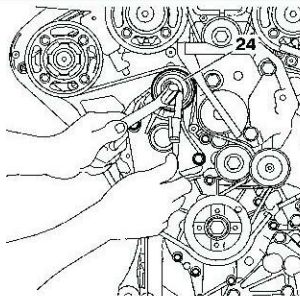
NOTE : When positioning the belt on the camshaft pulleys, turn these clockwise so as to engage the next tooth. The angular displacement of the pulleys should not be more than the equivalent of one tooth.

B1EP15VD

B1BP2BLC

C5

CHECKING AND SETTING THE VALVE TIMING



Engine : XFX

Setting the valve timing (continued)

Adjusting the timing belt tension.

- Pivot the plate (25) of the tensioner roller (24), using a spanner. (*type FACOM S.161*).
- Engage the screw (21) on the plate (25).
- Tighten the screws (21) and (22), tighten to $2,5 \pm 0,1$ m.daN.
- Position the belt under maximum tension ; pivot the tensioner roller (24), using a spanner (*type FACOM R 161*).

Tighten the nut (23) of the tensioner roller (24), tighten to $1 \pm 0,1$ m.dan.

- Check that the camshaft pinion screws are not at the end of slots.
(*By loosening one screw*).
- Otherwise, restart the operation of positioning the timing belt.
- Tighten at least 2 screws per camshaft pulley to $1 \pm 0,1$ m.daN.
- Remove the tools [1], [2] and [4].
- Rotate the crankshaft 2 turns in a clockwise direction.

IMPERATIVE : Never turn it back.

- Peg the crankshaft, using tool [2], and the camshaft pulleys, using tool [1].
- Untighten the nut (23) of the tensioner roller (24).
- Adjust the belt tension, pivoting the roller (24) using tool (*type FACOM S.161*).

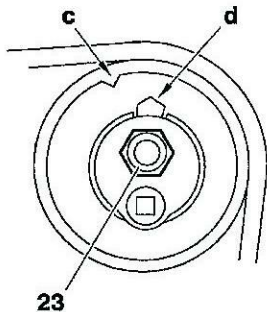
B1EP15WC

B1EP15XC

CHECKING AND SETTING THE VALVE TIMING

C5

Engine : XFX

**Setting the valve timing (continued)**

- Align the marks "c" and "d", without detensioning the timing belt.
(Failing this, restart the operation of adjusting the belt tension).
- Hold the tensioner roller (24).
- Tighten the nut (23), **tighten to $1 \pm 0,1$ m.daN.**
- Check the position of the tensioner roller.
- Remove the tools [1], [2] and [4].
- Turn the crankshaft **2 rotations** in the direction of engine rotation.

IMPERATIVE : Never turn it back.

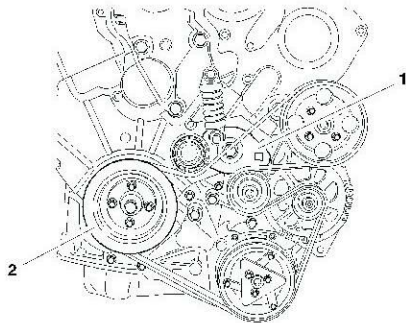
- Peg the crankshaft, using tool [2].
- Check the roller position (24) (the alignment of the marks "c" and "d" should be correct)
- Peg the camshaft pinions, using tool [1].
- If the peg [1] goes in, loosen the camshaft pulley screws by 45°
- If the peg [1] does not go in, then loosen the camshaft pulley screws by 45° and manoeuvre the hub using tool [5] until pegging is achieved.
- **WARNING** : Check that the camshaft pinion pulleys are not at the end of slots. Otherwise, restart the operation of positioning the timing belt.
- Tighten the camshaft pinion screws to $1 \pm 0,1$ m.daN.
- Remove the tools [1] and [2].
- Refit the panel (20), the screws (19) and tighten to 4 ± 0 , m.daN.
- Complete the refitting of all components.

B1EP15XC

C8

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

C8

Engine : XFW

Removing (continued).

Remove:

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

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

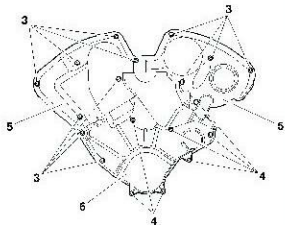
The support **(7)**.

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.

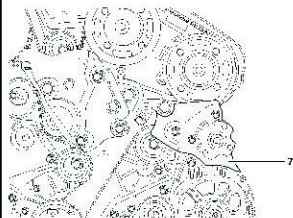
Peg in the sequence:

Camshafts, using tool [1].

Crankshaft, using tool [2].



B1EK005D



B1EK006D

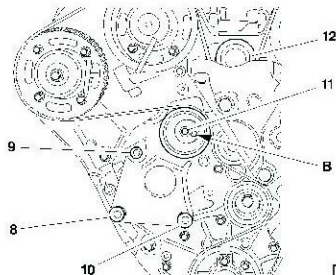


B1EK007D

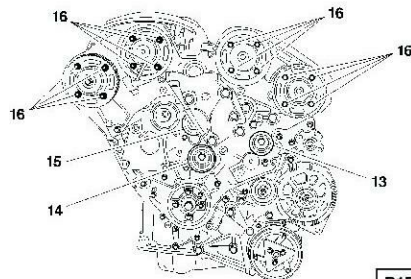
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK008D



B1EK009D

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 **$8 \pm 0,8$ 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.

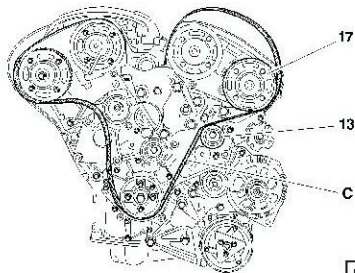
Engage the timing belt on the crankshaft pinion.

Immobilise the belt, using tool [4].

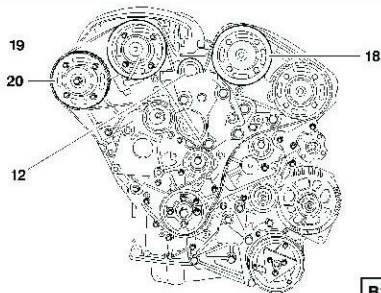
CHECKING AND SETTING THE VALVE TIMING

C8

Engine : XFW



B1EK00AD



B1EK00BD

Refitting (continued).

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

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

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

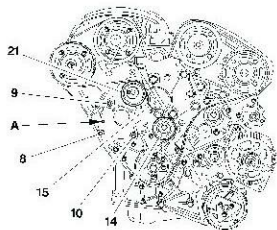
IMPERATIVE : The angular displacement value of the pinion relative to the timing belt should not be greater than the width of one tooth.

Engage the belt on the LH inlet camshaft pinion (18), as before.
Refit the roller (12), tighten to $8 \pm 0,8 \text{ m.daN}$.

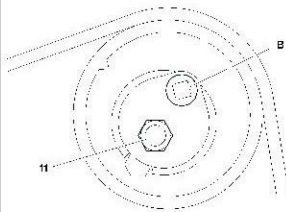
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00CD



B1EK00DD

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 $2,5 \pm 0,2$ 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**.

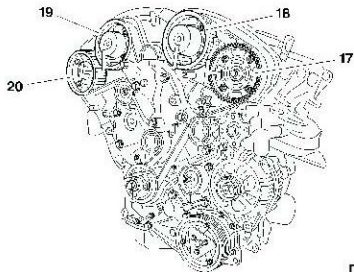
Tighten the nut (11) of the tensioner roller to $1 \pm 0,1$ m.daN.**IMPERATIVE** : Check that the camshaft pinions are not at end of slots (by removing a screw).

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

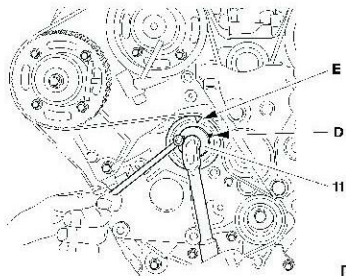
CHECKING AND SETTING THE VALVE TIMING

C8

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].

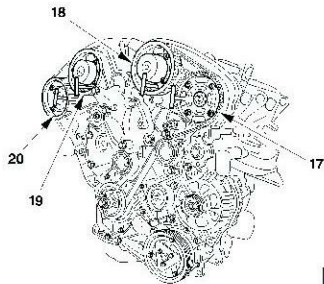
Check the position of the tensioner roller.

If the marks are not aligned, recommence the alignment of the marks (D) and (E) of the tensioner roller.

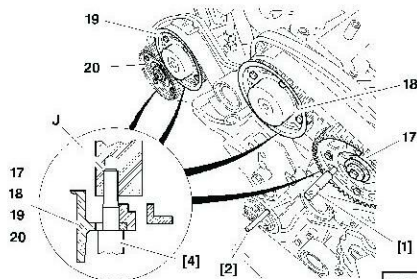
C8

CHECKING AND SETTING THE VALVE TIMING

Engine : XFW



B1EK00GD



B1EK00HD

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 $1 \pm 0,1$ m.daN.

Remove tools [1] and [2].

Checking the setting of the timing.

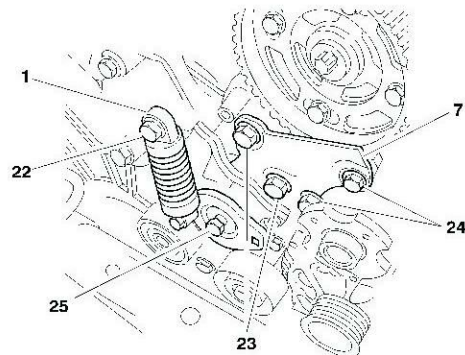
Effect **two rotations** (Normal direction of rotation of the engine).

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.

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).

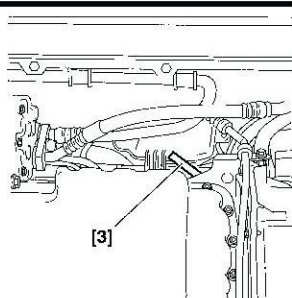
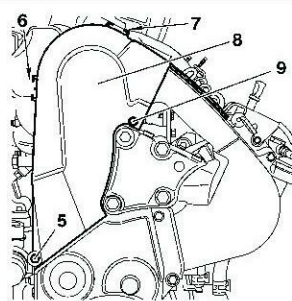
Complete the refitting operations in the opposite order to removal.

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

→ N° RPO 9127



Tools

[1] Belt tension measuring instrument	: 4122-T
[2] Tension lever	: (-).188.J2
[3] Engine flywheel peg	: (-).188.X
[4] Belt retaining pin	: (-).0188.K
[5] Camshaft pinion peg	: (-).0188.M
[6] Engine flywheel lock	: (-).0188.F
[7] Set of blocking plugs	: (-).0188.T
[8] Crankshaft pulley extractor	: (-).0188.P

Checking the setting of the valve timing.

Peg : - The engine flywheel, using tool [3]. (From under the vehicle)
 - The camshaft, using tool [5].

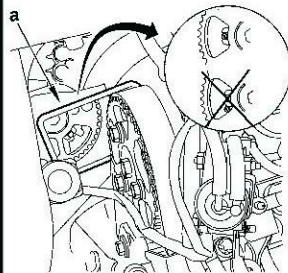
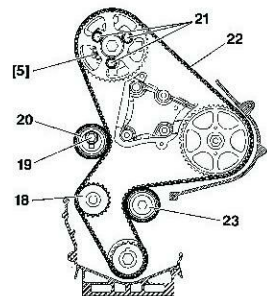
WARNING : On removing screws (6), (7), (9), and (5) of the timing cover, refit the screw (5) equipped with a spacer (thickness: 17 mm)

Tighten to $1,5 \pm 0,1$ m.daN.

(The screw (5) is one of the screws fixing and sealing the water pump).

WARNING : Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm, with the help of a mirror "a" and a Ø 7 mm screw.

IMPERATIVE : If pegging is impossible, restart the adjusting.
 (See corresponding operation).



B1EP14AC

B1BP282C

B1EP152D

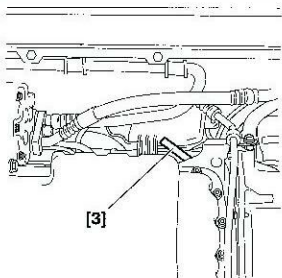
B1BP1YSC

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ

→ N° RPO 9127



Setting the valve timing.

Peg :The engine flywheel, tool [3]. *(From under the vehicle)*

The camshaft, tool [5].

Slacken :

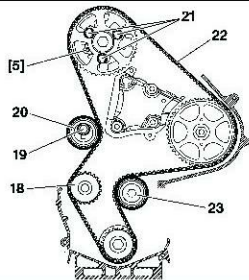
The three screws (9).

The screw (7) of the tensioner roller (6).

Remove the timing belt.

Checks :
IMPERATIVE : Just before refitting, carry out the checks below:
Check that :

- The rollers (20), (23) and the water pump turn freely *(without play or tightness)*.
- There are no traces of oil *(on camshaft or crankshaft)*.
- There are no leaks of coolant fluid *(from water pump)*.
- Replace defective components *(if necessary)*.



B1BP282C B1EP152D

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

→ N° RPO 9127

Setting the valve timing (continued).

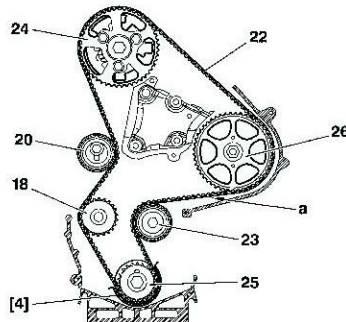
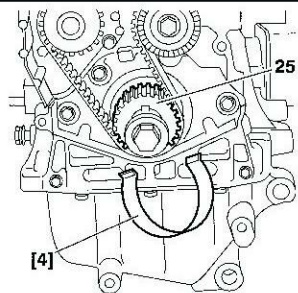
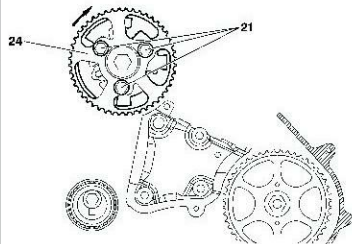
- Retighten the screws (21) by hand.
- Turn the pinion (24) (clockwise) to the bottom of the buttonhole.
- Refit the belt on the crankshaft (25)
- Hold the belt, using tool [4].

Reposition the timing belt, keeping the belt tight at "a", in the following order :

- Guide roller (23).
- Fuel high pressure pump pinion (26).
- Camshaft pinion (24).
- Water pump pinion (18).
- Tensioner roller (20).

NOTE : If needed, slightly turn the pinion (24) anti-clockwise (*not by more than one tooth*).

- Remove the tool [4].



B1EP153D

B1EP154C

B1EP155D

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ

→ N° RPO 9127

ENGINE

Setting the valve timing (continued).

Position tool [1] on the belt at "b".

Turn the roller (20) (anti-clockwise) using tool [2] to attain a tension of :
 98 ± 2 SEEM units

Tighten the screw of the roller (19), tighten to **2.5 m.daN**.

Remove one screw (21) from the pinion (24).

(to check that the screws are not against the end of the buttonhole).

Tighten the screws (21) to **2 m daN**.

Remove tools [1], [2], [3] and [5].

Rotate the crankshaft **8 times** (normal direction of rotation).

Fit the tool [3].

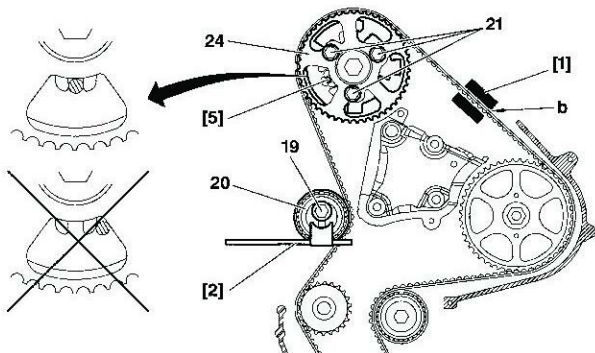
Loosen screws (21).

Fit tool [5].

Loosen screw (19) (to free the roller).

Fit tool [1].

Turn the roller (20) (anti-clockwise), tool [2], to attain a tension of :
 54 ± 2 SEEM units.



B1EP156D

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

→ N° RPO 9127

Setting the valve timing (continued).

Tighten :The screw of the roller (19) to 2.5 ± 0.2 m.daN.The screws (21) to 2 ± 0.2 m.daN

Remove the tool [1].

Refit the tool [1].

Tension value should be :

 54 ± 3 SEEM units**IMPERATIVE :** If value is incorrect, restart the operation.

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

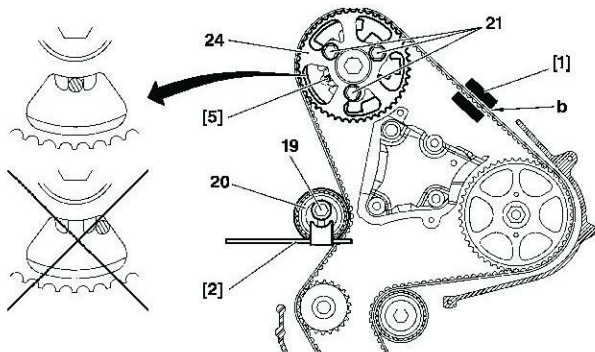
Rotate the crankshaft **2 times** (normal direction of rotation).

Fit the tool [3].

WARNING : Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm. In the case of an incorrect value, recommence the operation.

- Déposer l'outil [3].

- Terminer la repose des éléments.



B1EP156D

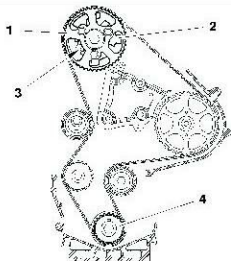
SPECIAL FEATURES : CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ

N° RPO 9128 →

OLD FITTING : → RPO 9127

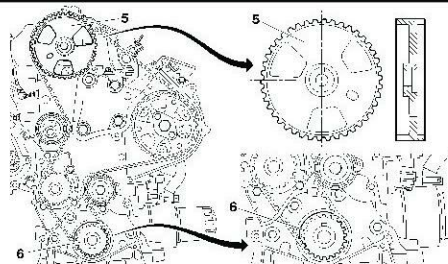


B1EP176D

- (1) "Idler" camshaft pulley
 (2) Target for cylinder reference sensor.
 (3) Camshaft hub.
 (4) "Fixed" crankshaft pinion.

The determining of the tension of the timing belt is done on the camshaft pulley (1).

NEW FITTING : RPO 9128 →



B1EP177D

The new timing on **8 valve engines DW10TD (RHY) and DW 10ATED (RHS-RHZ)** requires the following components :

- "Idler" crankshaft pinion
 "Fixed" camshaft pulley.

(5) "Fixed" camshaft pulley (pulley with integral cylinder reference sensor target).

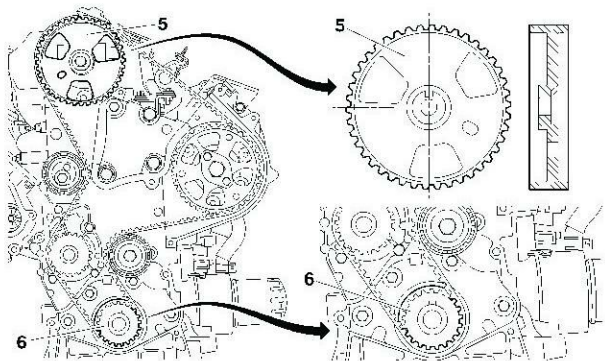
(6) "Idler" crankshaft pinion (with increased width keyway groove).
 The determining of the tension of the timing belt is done on the crankshaft pinion (6).

C5

SPECIAL FEATURES : CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

N° RPO 9128 →

NEW FITTING : RPO 9128 → (Continued)

The new fitting discontinues the following components :

- Camshaft hub.
- Cylinder reference sensor target.

Repair - Accessories drive pulley**Remove - Refit**

WARNING : Peg the camshaft and the crankshaft before ever removing the accessories drive pulley (the pegging prevents any offsetting of the camshaft).

If necessary, apply a paint spot to mark the accessories drive pulley being replaced.

Replacement parts.

The Replacement Parts service markets the old as well as the new components.

B1EP177D

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ N° RPO 9128 →

Tools.

- | | |
|--------------------------------------|----------------|
| [1] Belt tension measuring equipment | : 4122-T |
| [2] Tension lever | : (-).0188.J2. |
| [3]-Engine flywheel peg | : (-).0188.Y. |
| [4] Belt clamp | : (-).0188.AD |
| [5] Camshaft pulley peg | : (-).0188.M |
| [6] Engine flywheel lock | : (-).0188.F. |
| [7] Set of blocking plugs | : (-).0188.T. |
| [8] Pulley extractor | : (-).0188.P. |
| [9] 2 mm dia.peg | : (-).0188.Q2 |

Removing

IMPERATIVE : Respect the safety and cleanliness requirements that are specific to high pressure diesel injection (HDi) engines.

Undo the front RH wheel bolts.

Raise and support the vehicle on the front RH side.

Disconnect the battery negative terminal.

Remove :

The under-engine sound-deadening.

The front RH wheel.

The front RH splash-shield.

The engine cover.

Unclip and move aside the cooling hose.

Remove the accessories drive belt.

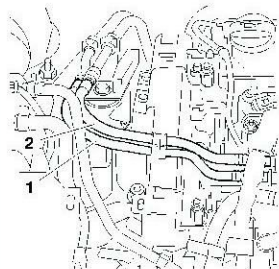
(See corresponding operation).

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

N° RPO 9128 →



Uncouple, plug and move aside, using tool [7], the fuel delivery pipe (2) and return pipe (1).

Remove :

Screws (3), (4) and (6).

Screw (7).

The upper timing cover (5).

WARNING : Refit screw (7) equipped with a spacer (17 mm thick), tighten the screw (7) to $1,5 \pm 0,1$ m. daN.

NOTE : The screw (7) is one of the screws securing the coolant pump and is there for its sealing.

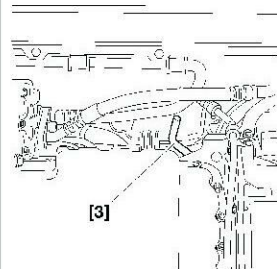
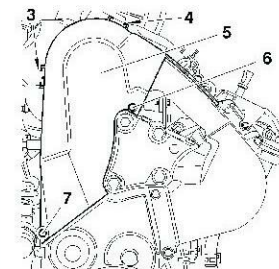
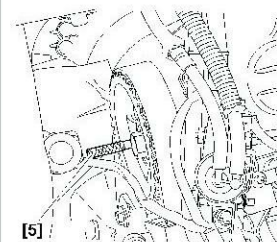
Put the gear lever in 5th gear.

Turn the road wheel to turn the engine in its direction of rotation.

Orient the camshaft pulley in the pegging position, use a mirror if necessary.

Peg the camshaft, using tool [5]

Peg the engine flywheel, using tool [3].



B1BP2R2C

B1EP1A7C

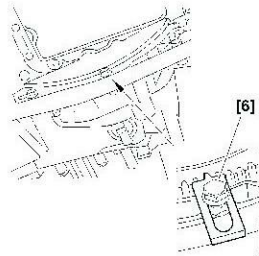
B1BP2H2C

B1BP2H3C

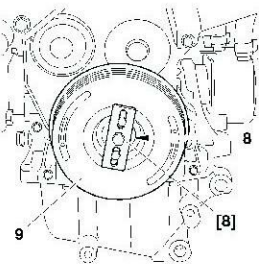
CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ N° RPO 9128 →



B1CP04BC



B1BP2R3C

Remove :

The fixings of the pipe linking the power steering pump with the rotary valve.

The clutch lower closing plate.

Lock the engine flywheel, using tool [6].

Remove the screw (8).

Refit the screw (8) without its thrust washer.

Remove :

The accessories pulley (9), using tool [8].

Tool [6].

The lower torque reaction rod.

Support the engine by means of a workshop hoist.

Remove :

The bearing shell fitting (10).

The nut (12).

Screws (11).

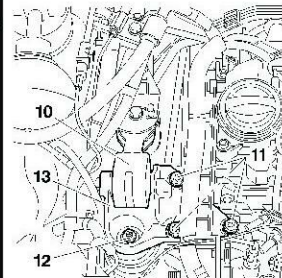
The bracket (13).

NOTE : Lift then lower the engine with the workshop hoist, to have access to the timing cover fixing screws.

Remove :

The intermediate timing cover.

The lower timing cover.



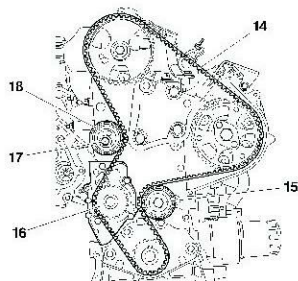
B1BP2R4C

C5

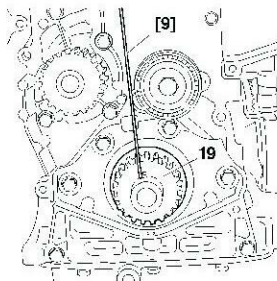
CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

N° RPO 9128 →



B1EP1A8D



B1EP1A9C

Slacken the screw (17) of the tensioner roller (18).

Remove the timing belt (14).

Checks.

IMPERATIVE : Just before refitting, carry out the checks below :

Check that :

- The rollers (18) and (15) turn freely (without play and without any tight spot).
- The coolant pump pulley (16) turns freely (without play and without any tight spot).
- There are no traces of oil leaks from the crankshaft and camshaft seals, etc.
- The crankshaft pinion travels freely on the keyway.

Replace defective components if necessary.

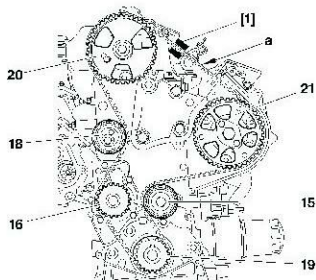
Peg the crankshaft pinion (19) by inserting tool [9] on the LH side of the keyway.

CHECKING AND SETTING THE VALVE TIMING

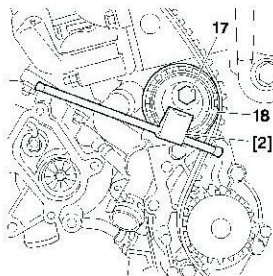
C5

Engines : RHY - RHS - RHZ

N° RPO 9128 →



B1EP1ABD



B1EP1ACC

Reposition the timing belt, belt at "a" well tensioned, in the following order :

Fuel high pressure pump pulley (21).

Guide roller (15).

Crankshaft pinion (19).

Coolant pump pinion (16).

Tensioner roller (18).

Position tool [1] on the belt at "a".

Remove tools [4] and [9]

Turn the tensioner roller (18) anti-clockwise, using tool [2], to attain an overtension of :

98 ± 2 SEEM units.

Tighten screw (17) of the tensioner roller to **$2,5 \pm 0,2$ m.da N.**

Lock the flywheel by means of tool [6].

Tighten the accessories drive pulley screw (8) to **$7 \pm 0,7$ m.da N.**

Remove tools [1], [3], [5] and [6].

Rotate the crankshaft **eight times** in the normal direction of rotation.

Peg :

The crankshaft, using tool [3].

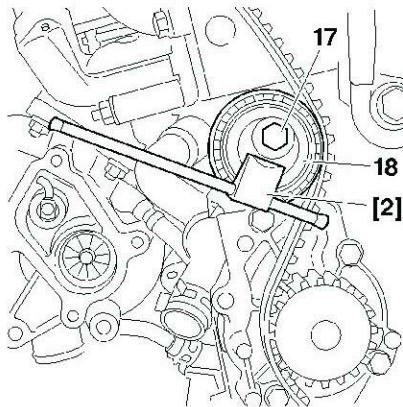
The camshaft drive pulley, using tool [5].

C5

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHS - RHZ

N° RPO 9128 →



B1EP1ACC

Lock the engine flywheel, using tool [6].

Slacken : The accessories drive pulley (8).

The screw (17) of the tensioner roller (18).

Fit the tool [1].

Turn the tensioner roller, using tool [2], to attain a tension of :

54 ± 2 SEEM units.

Tighten screw (17) of the tensioner roller (18) to $2,5 \pm 0,2$ m.daN.

Remove tool [1].

Fit tool [1].

The tension value should be :

54 ± 3 SEEM units.

ESSENTIAL : If the value is incorrect, recommence the operation.

Remove tools [1], [3], [5] and [6].

Rotate the crankshaft two times in the normal direction of rotation.

Peg :

The crankshaft, using tool [3].

The camshaft drive pulley.

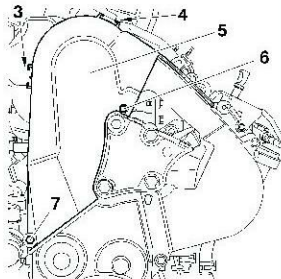
IMPERATIVE : If the pegging is not possible, recommence the operation.

CHECKING AND SETTING THE VALVE TIMING

C5

Engines : RHY - RHS - RHZ

N° RPO 9128 →



Remove :

Tools [3] and [5].

Screw (7) and the spacer.

Refit :

The lower, intermediate and upper covers (5)

Screw (7), **tighten to $1,5 \pm 0,1$ m.daN**

Screws (3), (4) and (6).

The bracket (13).

Screws (11), **tighten to $6,1 \pm 0,5$ m.daN**The nut (12), **tighten to $4,5 \pm 0,5$ m.daN**

Fit the bearing shell (10).

Take away the workshop hoist.

Clip the fuel delivery and return pipes.

Remove the tool [7].

Couple :

The fuel delivery pipe (12).

The fuel return pipe (1).

Coat the screw (8) with loctite **FRENETANCH**.

Refit the tool [6] and the screw (8) with the washer (22),

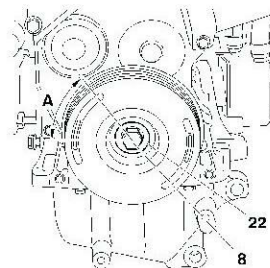
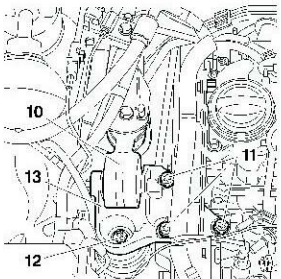
Tighten to $7 \pm 0,2$ m.daN and angular tighten to $A = 60^\circ \pm 5^\circ$

Refit the torque reaction rod on the lower engine support.

Remove the tool [6].

Reposition and reclip the cooling hose.

Complete the refitting of components in reverse order to removal.



B1EP1A7C

B1BP2R4C

B1EP1ADC

C5

CHECKING AND SETTING THE VALVE TIMING

Engine : 4HX

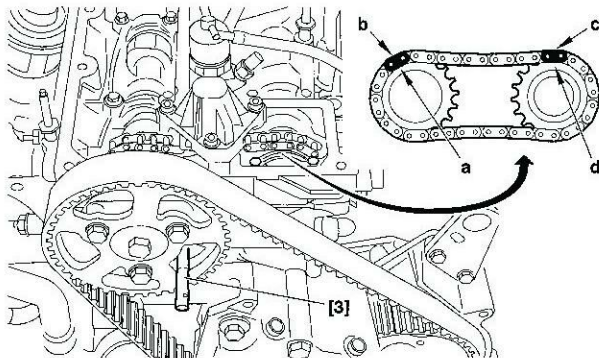
Tools

- | | |
|---------------------------------------|---------------|
| [1] Belt tension measuring instrument | : 4122-T |
| [2] Engine flywheel peg | : (-).0188.X. |
| [3] Tension lever | : (-).0188.Y. |
| [4] Belt compression spring | : (-).0188.K. |
| [5] Camshaft pinion peg | : (-).0188.M. |
| [6] Engine flywheel lock | : (-).0188.F. |
| [7] Set of blocking plugs | : (-).0188.T. |

IMPERATIVE : Respect the safety and cleanliness recommendations specific to high pressure diesel injection (HDi) engines.

Checking the setting of the valve timing.

- Turn the crankshaft (*normal direction of rotation*) and line up the black markings on the chain (**(b)** and **(c)**) with the teeth marked **(a)** and **(d)** of the camshaft drive pinions (*40 turns max. of the camshaft*).

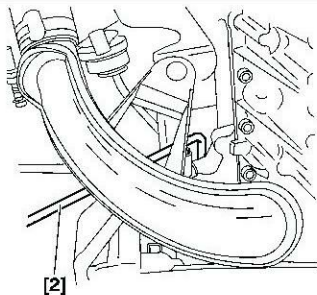


B1EP159D

CHECKING AND SETTING THE VALVE TIMING

C5

Engine : 4HX



Checking the setting of the valve timing (continued).

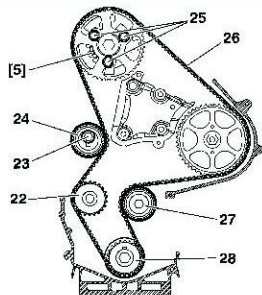
IMPERATIVE : If it is impossible to line up the marks on the chain and on the camshaft drive pinions, restart the camshaft setting.

(See operation for removing and refitting camshafts).

If the marks on the chains and pinions are coinciding, continue the checking operations.

Peg :

- The crankshaft, using tool [2].
- The camshaft pinion, using tool [5]



IMPERATIVE : Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm *(use a screw 7 mm in dia.)*.

If the offset is more than 1 mm, restart the setting of the valve timing

(See corresponding operation).

- Remove the tools [2] and [5].

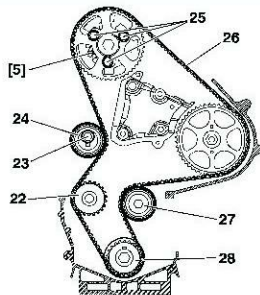
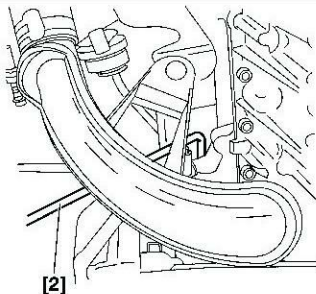
B1BP298C

B1EP15AD

C5

CHECKING AND SETTING THE VALVE TIMING

Engine : 4HX

**Setting the valve timing.**

- Turn the crankshaft to bring camshaft to its pegging point.
- Peg the crankshaft, using tool [2].
- Peg the camshaft, using tool [5].

Untighten :

- The three screws (25).
- The screw (23) of the tensioner roller (24).
- Remove the timing belt (26).

Checks.

IMPERATIVE : just prior to refitting, carry out the checks below:

Check :

- That the rollers (24) and (27) and the water pump (22) are turning freely. *(Without play and without tightness).*
- Absence of traces of oil leaks *(Crankshaft and camshaft sealing rings).*
- Absence of leaks of coolant fluid *(Water pump).*

NOTE : Replace defective components *(If necessary).*

B1BP298C

B1EP15AD

CHECKING AND SETTING THE VALVE TIMING

C5

Engine : 4HX

Setting the valve timing (continued).

Refit

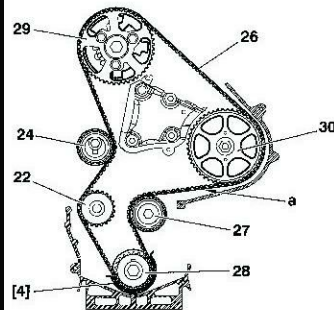
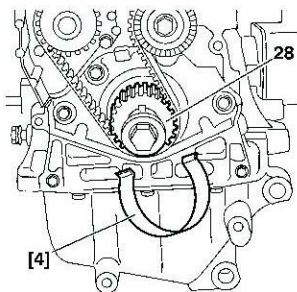
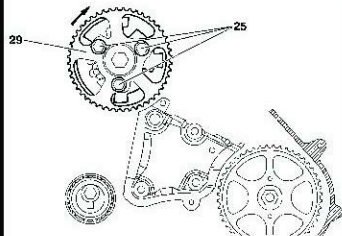
- Retighten the screws (25) by hand.
- Turn the pinion (29) (clockwise) to the bottom of the buttonhole.
- Refit the belt on the crankshaft (28)
- Hold the belt, using tool [4].

Reposition the timing belt, keeping the belt tight at "a", in the following order :

- Guide roller (27).
- Fuel high pressure pump pinion (30).
- Camshaft pinion (29).
- Water pump pinion (22).
- Tensioner roller (24).

NOTE : If needed, slightly turn the pinion (29) anti-clockwise (*not by more than one tooth*).

- Remove the tool [4].



B1EP15BD

B1EP15CC

B1EP15DD

CHECKING AND SETTING THE VALVE TIMING

Engine : 4HX

Setting the valve timing (continued)

Position tool [1] on the belt at "b".

Turn the tensioner roller (24) (anti-clockwise) using tool [2] to attain a tension of :
106 ± 2 SEEM units.

Tighten screw **(23)** of the tensioner roller, tighten to **2.5 m.daN**.

Remove one screw **(25)** from the pinion **(29)**.

(to check that the screws are not against the end of the buttonhole).

Tighten the screws (25) to 2 m daN.

Remove tools [1], [2], [3] and [5].

Rotate the crankshaft **8 times** (normal direction of rotation).

Fit the tool [3].

Loosen screws (25).

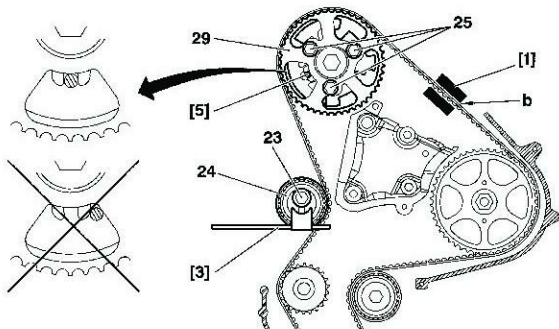
Fit tool [5].

Loosen screw **(23)** (to free the tensioner roller **(24)**).

Fit tool [1].

Turn the tensioner roller (24) (anti-clockwise), using tool [3], to attain a tension of : **51 ± 3 SEEM units.**

- Tighten :
- The screw (23) of the tensioner roller (24) to $2,5 \pm 0,2$ m.daN.
- The screws (25) to $2 \pm 0,2$ m.daN.



B1EP15ED

Engine : 4HX

Setting the valve timing (continued)

Remove the tool [1].

Refit the tool [1].

Tension value should be :

 51 ± 3 SEEM units.**IMPERATIVE :** If value is incorrect, restart the operation.

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

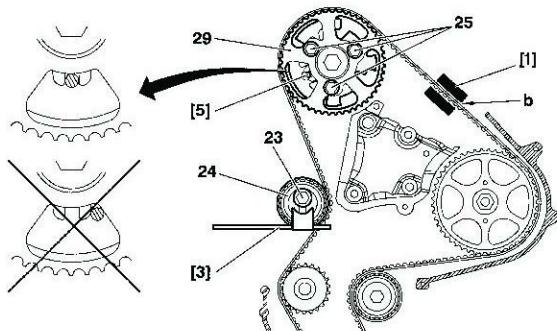
Rotate the crankshaft **2 times** (normal direction of rotation).

Fit the tool [3].

IMPERATIVE : Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm. In the case of an incorrect value, recommence the operation.

- Remove the tool [2].

- Complete the refitting of components.



Engines : RHT - RHW - 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

C8

Engines : RHT - RHW - 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.

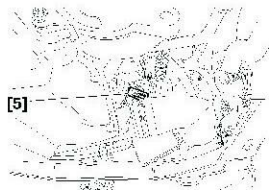
Remove:

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

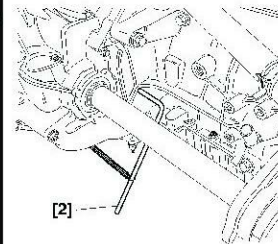
Turn the crankshaft.

Peg:

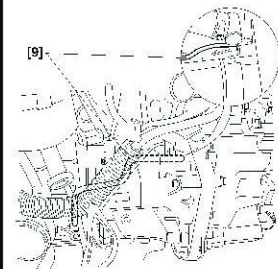
- The engine flywheel, tool [2] (engine **DW12TED4**).
- The engine flywheel, tool [9] (engine **DW10ATED4**).



B1EK0TVC



B1EK0TUC

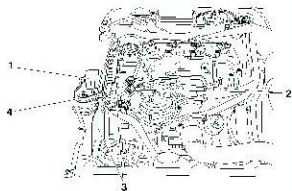


B1EK1T4D

C8

CHECKING AND SETTING THE VALVE TIMING

Engines : RHT - RHW - 4HW



B1EK1TTD

Removing (continued).

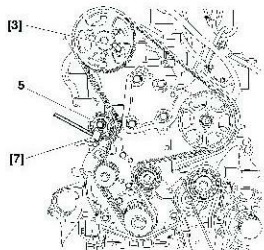
Disconnect the battery.

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).

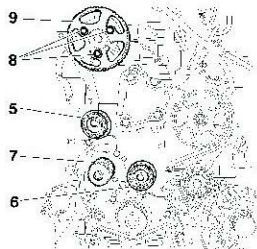
Retighten the fixing to the position of maximum de-tension. (Tighten to **0,1 m.daN**).

Remove the timing belt.

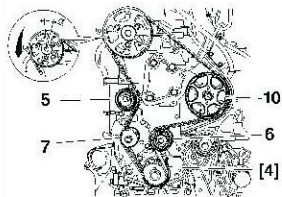
CHECKING AND SETTING THE VALVE TIMING

C8

Engines : RHT - RHW - 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 $4,3 \pm 0,4$ 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.

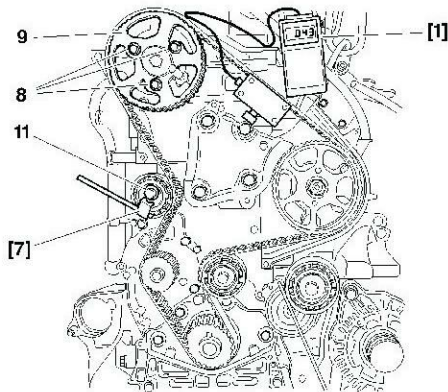
Pre-tighten the fixing screw of the tensioner roller to **0,1 m.daN**.

Remove the tool [4].

C8

CHECKING AND SETTING THE VALVE TIMING

Engines : RHT - RHW - 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 **$2,3 \pm 0,2$ 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 **$2 \pm 0,2$ m.daN**.

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

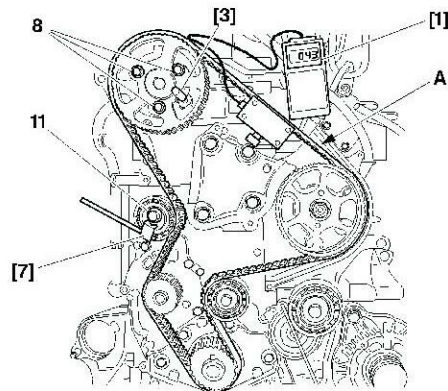
Effect eight turns of the engine in the normal direction of rotation.

IMPERATIVE : Never turn the crankshaft backwards.

CHECKING AND SETTING THE VALVE TIMING

C8

Engines : RHT - RHW - 4HW

**Tensioning the timing belt.**

Refit the pegs [2] and [3].

Slacken the screws (8).

Tighten the screws (8), by hand.

Slacken the screws (8) by a $1/6$ turn.

Slacken screw (11).

Place tool [1] on the belt at (A).

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

51 ± 2 SEEM units.

Tighten screw (11) to $2,3 \pm 0,2$ m.daN. (without modifying the position of the roller).

Tighten the screws (8) to $2 \pm 0,2$ m.daN.

Remove tool [1] to release the internal forces.

Refit the tool [1].

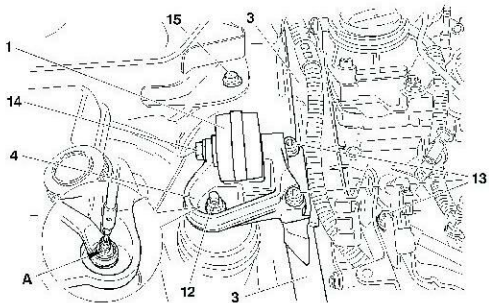
The tension value should be between 48 and 55 SEEM units.

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

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

B1EK1T1D

Engines : RHT - RHW - 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 $6,1 \pm 0,6 \text{ m.daN}$.
- The nut (12), tighten to $4,5 \pm 0,4 \text{ m.daN}$.

IMPERATIVE : Apply an opposite torque at (A).

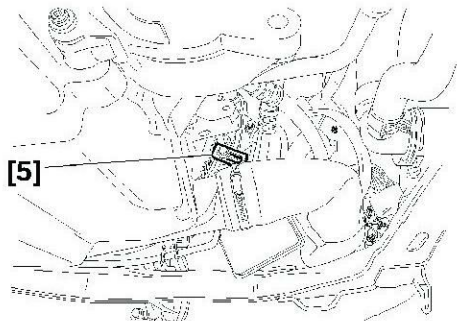
Refit:

- The torque reaction rod (1).
- Screw (14), tighten to $5 \pm 0,5 \text{ m.daN}$.
- Screw (15), tighten to $5 \pm 0,5 \text{ m.daN}$.

CHECKING AND SETTING THE VALVE TIMING

C8

Engines : RHT - RHW - 4HW



Refit:

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

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

Tightening torque for the screw:

Tighten to : **$7 \pm 0,7$ m.daN (+ LOCTITE FRENETANCH)**
Angular tighten : **$60^\circ \pm 6^\circ$ (Tool FACOM D360).**

Check the tightening: **$26 \pm 2,6$ 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.

B1EK0TVC

ALL TYPES

VALVE CLEARANCES

The valve clearances must be checked with the engine cold

● Inlet

⊗ Exhaust

ALL TYPES

Hydraulic adjustment

POSSIBLE PROCEDURES

For engines with 4 cylinders in a line (1-3-4-2)

Rocking

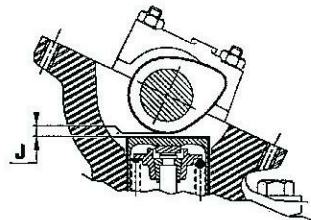
Rocking	Adjust
1 ● ⊗ 1	4 ● ⊗ 4
3 ● ⊗ 3	2 ● ⊗ 2
4 ● ⊗ 4	1 ● ⊗ 1
2 ● ⊗ 2	3 ● ⊗ 3

Fully open (Exhaust)

Valves fully open	Adjust
⊗ 1	3 ● ⊗ 4
⊗ 3	4 ● ⊗ 2
⊗ 4	2 ● ⊗ 1
⊗ 2	1 ● ⊗ 3

⊗ Inlet

● Exhaust



Engines without hydraulic adjustment : the clearance (**J**) should be checked opposite the cam.

B1DP13QC

CHECKING THE OIL PRESSURE								C5	
Tools Toolkit 4103 -T	Petrol engines								
	1.8i 16V		2.0i 16V		2.0 HPi		3.0i V6		
Engine type	6FZ		RFN		RLZ		XFX		
Temperature (°C)	90°C								
Pressure (Bars)	1.5	5	1.5	5	1.5	5	7	8	
Rpm	1000	3000	1000	3000	1000	3000	900	3000	
	Diesel engines								
	2.0 HDi					2.2 HDi			
Engine type	RHY - RHS - RHZ					4HX			
Temperature (°C)	90°								
Pressure (Bars)	2	4	2	4	2	4	2	4	
Rpm	1000	2000	1000	2000	1000	2000	1000	2000	
ESSENTIAL : Respect the safety and cleanliness recommendations.									
WARNING : Oil pressure should be checked with the engine cold, after checking the oil level.									

C8

CHECKING THE OIL PRESSURE

	Petrol engines							
	2.0i 16V		2.2i 16V			3.0i 24S		
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	2.0	4.0	2.0	4.0
Rpm	1000	2000	1000	2000	1000	2000	1000	2000

ESSENTIAL : Respect the safety and cleanliness recommendations.

WARNING : Oil pressure should be checked with the engine cold, after checking the oil level.

FILTRES A HUILE

C5

To be read together with the petrol and diesel correspondence tables

		6FZ	RFN	RLZ	AFX	RHY	RHS	RHZ	4HX
PURFLUX	LS 923	X	X	X		X	X	X	X
	LS 880 A				X				

		Ø (mm)	Height (mm)
Specifications	LS 923	76	89
	LS 880 A	86	97

C8

CHECKING THE OIL PRESSURE

To be read together with the petrol and diesel correspondence tables

RFN - 3FZ

XFW

RHW - RHT - 4HW

PURFLUX

LS 923

X

X

LS 880 A

X

Specifications

LS 880 A

Ø (mm)

Height (mm)

76

89

LS 923

86

97

FILLING AND BLEEDING THE COOLING CIRCUIT

C5

TOOLS

- [1] Filling cylinder
[2] Adaptor for filling cylinder

: 4520-T
: 4222-T.

ESSENTIAL : Respect the safety and cleanliness recommendations.

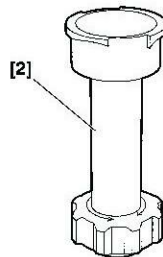
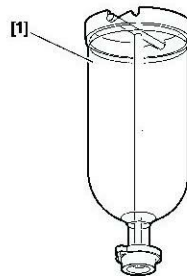
- The draining and refilling operations can be carried out by means of a WINN'S coolant replacement apparatus or similar; **it is essential to follow the instructions when using this apparatus.**

Filling and bleeding

- Fit the cylinder adaptor [2] 4222-T and the filling cylinder [1] 4520 -T.
- Use the coolant to ensure protection between - 15°C and - 37°C.
- Slowly fill the system.

NOTE : Keep the cylinder filled up (visible level).

- Close each bleed screw as soon as the coolant flows without air bubbles.
- Start the engine : Engine speed **1500 rpm**.
- Maintain this speed until the third cooling cycle (cooling fans have cut in and cut out).
- Stop the engine and allow it to cool down.
- Remove the filling cylinder [1] 4520-T and the adaptor [2] 4222-T.
- Top up the system to the **maximum** mark, with the engine cold.
- Refit the filler cap.



B1GP00AC

E5AP1GNC

C5 - C8		IDLING - DEPOLLUTION						
Vehicles		Engine type	Emission standard	Make - Injection type	Idling speed (± 50 rpm)		% Content	
					Manual gearbox	Auto. gearbox: N engaged	CO	CO2
C5	1.8i 16V EW7J4	6FZ	L4 IF/L5	SAGEM S2000	700		< 0.5	> 9
	2.0i 16V EW10J4	RFN	IF/L5	M. MARELLI 48P2	800			
	2.0i 16V HPi EW10D	RLZ	L4	SIEMENS SIRIUS 81	900			
	3.0i V6 ES9J4	XFZX	IF/L5	BOSCH ME 7.4.6.	650	600		
C8	2.0i 16V EW10J4	RFN	IF/L5	M. MARELLI 4MP2	800		< 0.5	> 9
	2.2i 16v EW12J4	3FZ	IF/L5	M. MARELLI 4MP2				
	3.0i V6 ES9J4	XFZX	IF/L5	BOSCH ME 7.4.6	650	600		

PETROL INJECTION							C5 - C8
	C5				C8		
	1.8i 16V EW7J4	2.0i 16V EW10J4	2.0i 16V HPi EW10D	3.0i V6 ES9J4S	2.0i 16 V EW10J4	2.2i 16 V EW12J4	3.0i V6 ES9J4S
Engine type	6FZ	RFN	RLZ	XFX	RFN	3FZ	XFX
Emission standard	L4 - IF/L5	IF L5	L4	IF/L5	IF L5	IF L5	IF/L5
Make Injection type	SAGEM S2000	M.MARELLI 48P2	SIEMENS SIRIUS 81	BOSCH ME 7.4.6	M.MARELLI 4MP2	M.MARELLI 4MP2	BOSCH ME 7.4.6
Fuel pressure (bars)	3.5	3.5	5	3.5	3.5	3.5	3.5
Overspeed cut-off (rpm)	6500	6530	5500	6520	6000	5650	6520
Injection cut-in during deceleration (rpm)	12.2	14.5	1.88	16	14.5	14.5	16
Injector resistive value (ohms)	3 800 at 10°C 2500 at 20° C 800 at 50°C 230 at 90° C						
Engine coolant temperature sensor resistive value (ohms)	Stepper motor : 53						
Idling actuator or stepper motor resistive value (ohms)	3 800 at 10°C 2500 at 20° C 800 at 50°C 230 at 90° C						

ALL TYPES	DEPOLLUTION TECHNICAL CHECKS (FRANCE)	
All Types Petrol CO Corrected (ln %)		All Types Diesel (m ⁻¹)
<p>Conditions : At idle, engine warm.</p> <p>→ 01/96</p> <p>Less than 4.5 % for vehicles registered before 10/86. Less than 3.5 % for vehicles registered after 10/86.</p> <p>With catalytic converter</p> <p>Greater than 2.0i 89 M.Y. All Types 93 M.Y.</p> <p>CO less than 0.5 % at idle speed.</p> <p>CO less than 0.3 % at fast idle speed between 2500 and 3000 rpm (*)</p> <p>Lambda Probe value 0,97 to 1,03.</p>		<p>01/96 →</p> <p>Atmospheric engine.</p> <p>Less than 2.5 m⁻¹</p> <p>Turbocharged engine.</p> <p>Less than 3.0 m⁻¹</p>

EMISSION STANDARDS							ALL TYPES
STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A/S	RP					
ECE R 15.04	K K'	15.04 15.04	Petrol Diesel	Utility vehicles : All Types	→ 10/89 imminent	→ Utility vehicle limits = private vehicle limits increased by 25 % → For private vehicles and utility vehicles in major export	With oxygen sensor, without catalytic converter
ECE R 15.05	W vp	15.05	Petrol	Private vehicles : > 2 litres • new models • existing models	01/10/88 → 01/10/89 →	Brussels directive 88/76 « Luxembourg Accords » → Replaced by 89/458 + 91/441	

INJECTION

	ALL TYPES			EMISSION STANDARDS				
	STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
	E.E.C.	PSA		Engines	Vehicles	Applicable		
		A/S	RP					
INJECTION	US 83	Z	US 83	Petrol Diesel	Private vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard	With oxygen sensor and catalytic converter for petrol vehicles
	US 87	Y	US 87	Petrol Diesel	Private vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard	With catalytic converter and EGR
	US 93	Y2	US 93	Petrol Diesel	Private vehicles : • certain Export countries	Current	→ Adoption of U.S. standard	

EMISSION STANDARDS							ALL TYPES
STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A/S	RP					
US 84 LDT	X1	US 84	Petrol Diesel	Private vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard Utility vehicles légers	
US 87 LDT	X2	US 87	Petrol Diesel	Private vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard Utility vehicles légers	
US 90 LDT	X3	US 90	Petrol Diesel	Private vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard Utility vehicles légers	

INJECTION

ALL TYPES			EMISSION STANDARDS				
STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A/S	RP					
EURO 2 (EURO 96)	L3	CEE 95	Petrol Diesel	Private vehicles : < 6 seats and < 2.5 tonnes • new models • existing models	01/96 → 01/97 →	Brussels Directive 94/12 → EURO 93 standard made stricter	With oxygen sensor and reinforced catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles.
EURO 2 (EURO 96)	W3	CEE 95	Petrol Diesel Gas	Utility vehicles : < 3.5 tonnes Class 1 : • new models • existing models Class 2/3 : • new models • existing models	01/97 → 10/97 → 01/98 → 10/98 →	Brussels Directive 96/69 → 3 class depending on vehicle weight Class 1 < 1250 kg Class 2 : 1250/1700 kg Class 3 : 1700 kg	With oxygen sensor and reinforced catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles.

EMISSION STANDARDS							ALL TYPES
STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A/S	RP					
EURO 3 (EURO 2000)	W3		Petrol Diesel Gas	Utility vehicles : < 3.5 tonnes Class 1 : • new models • existing models Class 2/3 : • new models • existing models	→ 01/2000 → 01/2001 → 01/2001 → 01/2002	Brussels Directive 98/69 → EURO 2 standard (L3) made stricter → Fiscal incentives → 3 classes depending on vehicle weight : Class 1 < 1305 kg Class 2 : 1305/1760 kg Class 3 : 1760 kg	With 2 oxygen sensors and catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles. With EOBD on-board diagnosis.
EURO 4	IF / L5		Petrol	Private vehicles : All Types • new models • existing models	→ 01/2005 → 01/2006	Brussels Directive 99/102 → EURO 3 standard (L4) made stricter → Fiscal incentives	With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.

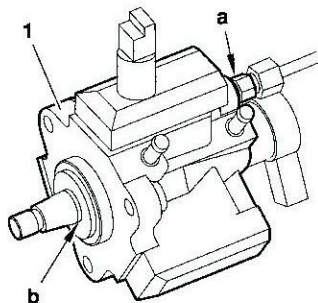
INJECTION

ALL TYPES			EMISSION STANDARDS				
STANDARD			APPLICATIONS			NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A/S	PR					
EURO 4	IF / L5		Petrol Diesel Gas	Private vehicles : All Types • new models • existing models	→ 01/2005 → 01/2006	Brussels Directive: 2001/1 → EURO 3 standard (L4) made stricter → Fiscal incentives	With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.
EURO 4	IF / L5		Petrol Gas	Utility vehicles : < 3.5 tonnes Class 1 : • new models • existing models Class 2/3 : • new models • existing models	→ 01/2005 → 01/2006 → 01/2006 → 01/2007	Brussels Directives: 99/102 et 2001/1 (Gas) → EURO 3 standard (L4) made stricter → Fiscal incentives → 3 classes depending on vehicle weight : Class 1 < 1305 kg Class 2 : 1305/1760 kg Class 3 : 1760 kg	With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.

PROHIBITED OPERATIONS: HDi DIRECT INJECTION SYSTEM

C5 - C8

Engines : RHY - RHS - RHZ - 4HX - RHW - RHT - 4HW



Cleaning.

- The use of high pressure cleaners is prohibited.
- Do not use compressed air.

Fuel supply circuit.

- Required fuel : diesel.

Electric circuit.

- Swapping injection ECUs between two vehicles will render it impossible to start either vehicle.
- It is forbidden to supply a diesel injector with 12 volts.

High pressure fuel pump.

Do not separate the following components from the high pressure fuel pump (5) :

- Sealing ring (b) (no replacement parts).
- High pressure outlet connector (a) (will cause a malfunction).

HDi = High pressure Diesel injection

B1HP19LC

INJECTION

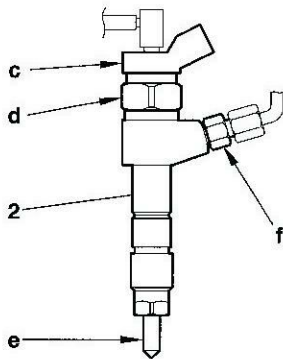
C5 - C8

PROHIBITED OPERATIONS: HDi DIRECT INJECTION SYSTEM

Engines : RHY - RHS - RHZ -4HX

Engines : RHY - RHS - RHZ - 4HX - RHW - RHT - 4HW

Engines : RHW - RHT - 4HW



B1HP19NC

Diesel injectors.**WARNING: Diesel and ultrasonic cleaners are prohibited.**

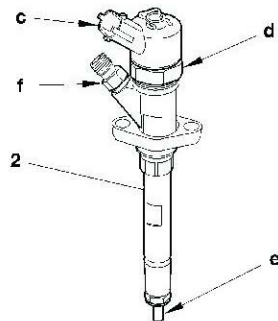
Do not separate the following components from the diesel injector carrier (2) :

- Diesel injector (e) (no replacement parts).
- Electromagnetic element (c) (no replacement parts).

Do not alter the position of the nut (d) (malfunction).

Do not separate the connector (f) from a diesel injector.

It is forbidden to clean the carbon deposits from the diesel injector nozzle.



B1HP19MC

SAFETY REQUIREMENTS : HDi DIRECT INJECTION SYSTEM

C5 - C8

Engines : RHY - RHS - RHZ - 4 HX

SAFETY REQUIREMENTS

Preamble.

All interventions on the injection system must be carried out to conform with the following requirements and regulations :

- Competent health authorities.
- Accident prevention.
- Environmental protection.

WARNING : Repairs must be carried out by specialised personnel informed of the safety requirements and of the precautions to be taken.

Safety requirements.

IMPERATIVE : Take into account the very high pressures in the high pressure fuel circuit (1350 bars), and respect the requirements below :

- No smoking in proximity to the high pressure circuit when work is being carried out.
- Avoid working close to flame or sparks.

Engine running :

- Do not work on the high pressure fuel circuit.
- Always stay clear of the trajectory of any possible jet of fuel, which could cause serious injuries.
- Do not place your hand close to any leak in the high pressure fuel circuit.

After the engine has stopped, wait **30 seconds** before any intervention.

NOTE : This waiting time is necessary in order to allow the high pressure fuel circuit to return to atmospheric pressure.

C5 - C8

SAFETY REQUIREMENTS : HDi DIRECT INJECTION SYSTEM

Engines: RHY - RHS - RHZ - 4HX

CLEANLINESS REQUIREMENTS.**Preliminary operations****IMPERATIVE : The technician should wear clean overalls.**

Before working on the injection system, it may be necessary to clean the apertures of the following sensitive components :
(refer to corresponding procedures).

- Fuel filter.
- High pressure fuel pump.
- Third piston deactivator.
- High pressure regulator.
- High pressure sensor.
- High pressure fuel injection common rail.
- High pressure fuel pipes
- Diesel injector carriers.

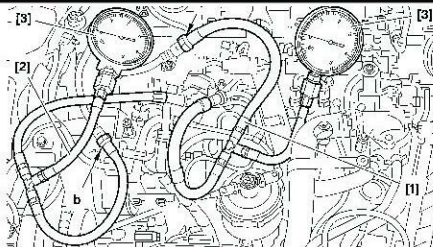
IMPERATIVE : After dismantling, immediately block the apertures of the sensitive components with plugs, to avoid the entry of impurities.**Work area.**

- The work area must be clean and free of clutter.
- Components being worked on must be protected from dust contamination.

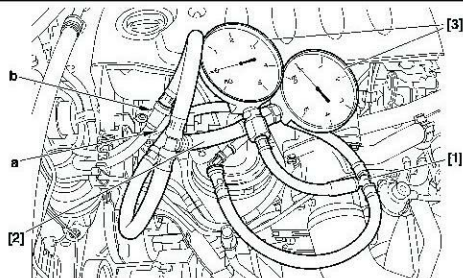
CHECKS : LOW PRESSURE FUEL SUPPLY CIRCUIT

C5

Engines : RHY - RHS - RHZ



Engine : 4HX



Engines : RHY - RHS - RHZ - 4HX

TOOLS

- | | | |
|---|------------|------------|
| [1] Ø 10 mm low pressure connector | : 4215-T. | |
| [2] Ø 8 mm low pressure connector | : 4218 -T. | |
| [3] Pressure gauge for testing boost pressure | : 4073-T | Kit 4073-T |
| [4] Extension | : 4251-T. | |

Connect the tool [1] between the booster pump and the fuel filter (white mark at "a" on the fuel supply pipe).

Connect the tool [2] downstream of the diesel injectors, between the high pressure fuel pump and the fuel filter (green mark at "b" on the fuel return pipe).

WARNING : Any check of pressure downstream of the fuel filter is PROHIBITED.

NOTE : To check the pressures while the vehicle is being driven, insert tool [4] between tool [3] and tools [1] et [2].

Checks on pressure : static.

- Switch on ignition
- For **3 seconds** (normal functioning):
- Fuel supply pressure shown by the pressure gauge [3] = 2.6 ± 0.4 Bar.
- Fuel return pressure shown by the pressure gauge [3] = 0.6 ± 0.4 Bar.

B1BP20JD

B1BP27BD

INJECTION

C5

CHECKS : LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines : RHY - RHS - RHZ - 4HX (Continued)

Checks on pressure : dynamic.

Engine running, at idle (normal functioning):

- Fuel supply pressure shown by the pressure gauge [3] = 2 ± 0.4 Bar.
- Fuel return pressure shown by the pressure gauge [3] = 0.8 ± 0.4 Bar.

Abnormal functioning

Fuel supply pressure	Fuel return pressure	Checks
Between 3.3 and 4 Bar	0.8 ± 0.4 Bar	Check the condition of the diesel filter
More than 4 Bar	Less than 0.8 Bar	Check the low pressure regulator incorporated in the filter (locked shut) : replace.
More than 4 Bar	More than 0.8 Bar	Check the fuel return circuit (pipe pinched or trapped....).
Between 0.8 and 1.5 Bar	Less than 0.8 Bar	Check the fuel supply circuit : - Booster pump (low pressure), piping.

Impossible to start the engine :Fuel supply pressure less than **0.8 Bar** :

- Check the low pressure regulator incorporated in the filter (locked open)
- Check the high pressure pump distribution valve (locked shut)

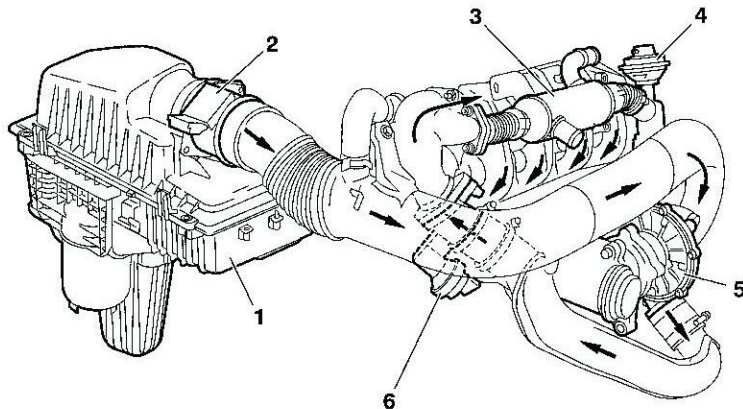
Check : diesel injector return flow. (Table below)**Uncouple the diesel injector return pipe.**

Check :	Notes
The flow should be drop by drop	Diesel injector functioning correctly
Excessive fuel return	Diesel injector locked shut.

AIR SUPPLY CIRCUIT SPECIFICATION

C5

Engine : RHY



- | | |
|------------------------------------|----------------------------------|
| (1) Air filter | PSA 7899. |
| (2) Flowmeter | SIEMENS. |
| (3) Water / recycled gas exchanger | VALEO. |
| (4) EGR valve | PURFLUX. |
| (5) Turbocharger | KKK K03. |
| (6) Air butterfly | MAGNETI MARELLI
48W7 Ref. 648 |

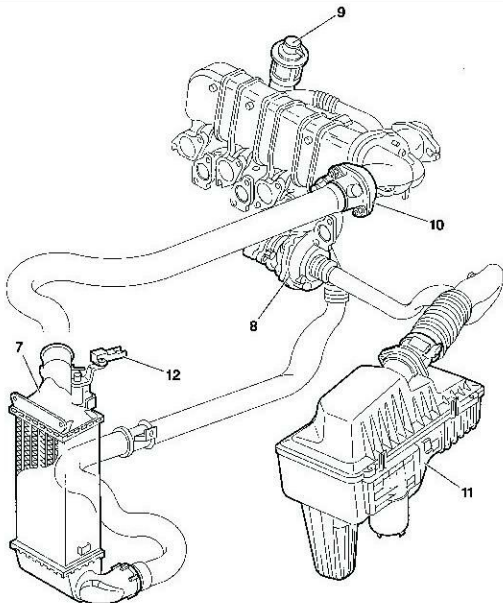
B1HP1A6D

INJECTION

C5

AIR SUPPLY CIRCUIT SPECIFICATION

Engines : RHS - RHZ



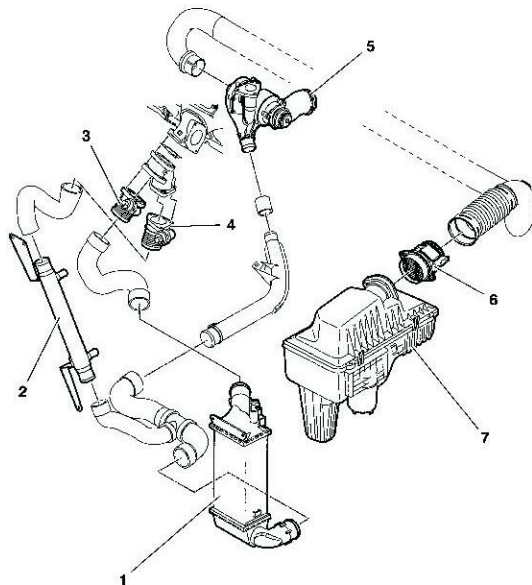
B1HP1A7P

(7) Air / air heat exchanger	VALEO.
(8) Turbocharger	KKK K03.
(9) EGR valve	PURFLUX.
(10) Air butterfly	MAGNETI MARELLI 48W7 Ref. 648.
(11) Air filter	PSA 7899.
(12) Turbocharging pressure sensor	NIPPON DENSO.

AIR SUPPLY CIRCUIT SPECIFICATION

C5

Engine : 4HX



(1) Air / air exchanger

(2) Air / water exchanger

(3) Warm air metering device **BOSCH.**

(4) Cold air metering device **BOSCH.**

(5) Turbocharger **ALLIEDSIGNAL GT1549P.**

(6) Flowmeter **SIEMENS.**

(7) Air filter **PSA 7885.**

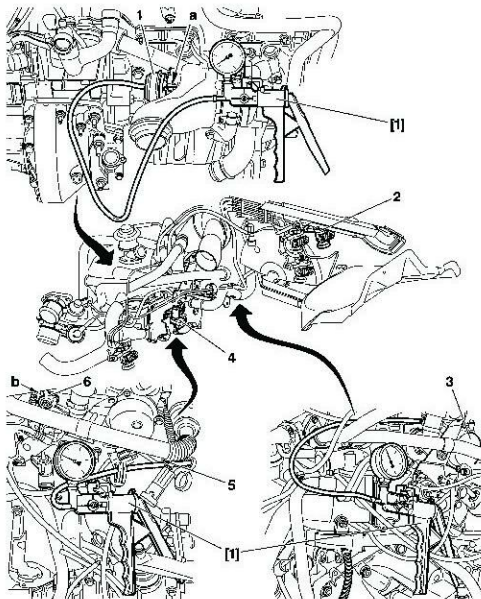
B1HP1BYP

INJECTION

C5

AIR SUPPLY CIRCUIT SPECIFICATION

Engine : 4HX



ESSENTIAL : Respect the safety and cleanliness recommendations.

Tool.

[1] Manual vacuum pump: **FACOM DA 16.**

Checks.

ESSENTIAL : Respect the safety and cleanliness recommendations that are specific to high pressure diesel injection (HDi) engines.

B1HP1ARP

CHECKS : AIR SUPPLY CIRCUIT**C5****Engine : 4HX****Vacuum pump.**

- Connect the tool [1] on the vacuum pump (3).
- Start the engine.
- The vacuum should be **0.8 bar** at **750 rpm**.

Boost vacuum regulation electrovalve.

- Connect the tool [1] between the electrovalve (2) and the valve (1).
- Compare readings with the values in the table below

Engine speed (rpm)	Vacuum (Bar)
780	0.6 Bar
4000	0.25 Bar

Boost pressure regulation valve.

- Connect the tool [1] on the valve (1). (Grey marking on pipe).
- Apply a vacuum of **0.8 bar**. The rod "a" should move **12 ± 2 mm**.
- Rod "a" should be moved **12 mm**.

«Swirl» control electrovalve.

- Connect the tool [1] as an adaptor between the electrovalve (4) and the control diaphragm of the «Swirl» (5).
- Compare readings with the values in the table below :

Engine speed (rpm)	Vacuum (Bar)
780	0.6 Bar
4000	0.25 Bar

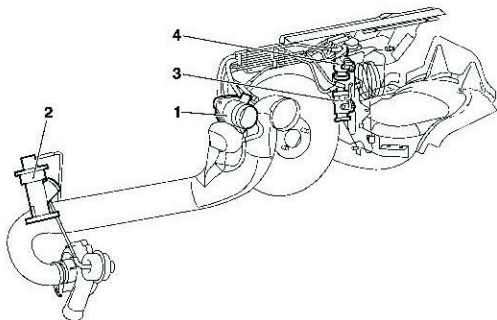
«Swirl» control diaphragm.

- Connect the tool [1] on the control diaphragm of the «Swirl» (5).
- Apply a vacuum of approx. **0.6 Bar** ; the pin (6) should be at the end stop, at «b».

C5

CHECKS : EXHAUST GAS RECYCLING CIRCUIT

Engines : RHY - RHS - RHZ



(1) Butterfly housin

(2) EGR valve (tube with blue marking)

(3) Electrovalve (black connector)

(4) Electrovalve (blue connector)

Tools

[1] Manual vacuum pump

: FACOM DA 16.

ESSENTIAL : Respect the safety and cleanliness requirements specific to high pressure diesel injection (HDi) engines.

EGR electrovalve

- Check, not under load, between the electrovalve (4) and the EGR valve (2).
- Connect the tool [1] between the electrovalve (3) and the butterfly housing (1).
- Compare readings with the values in the table below.

Butterfly housing electrovalve.

- Check, not under load, between the electrovalve (3) and the butterfly housing (1).
- Connect the tool [1] between the electrovalve (3) and the butterfly housing (1).
- Compare readings with the values in the table below.

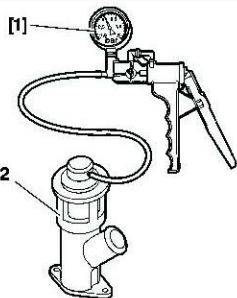
Engine speed (rpm)	Vacuum value (bar)
780	0.5 Bar
2500	0 Bar

B1HP1BVD

CHECKS : EXHAUST GAS RECYCLING CIRCUIT

C5

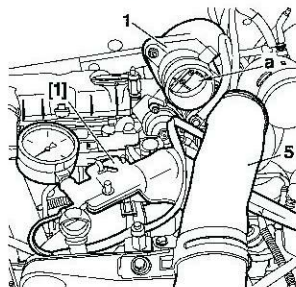
Engines : RHY - RHS - RHZ



EGR valve

- Connect tool [1] on the **EGR** valve capsule take-off (2).
- Apply a vacuum of approx. **0.6 bar** to activate the **EGR** valve.
- In abruptly suppressing the vacuum, the valve should click and lock itself back on its seating.
- Repeat the operation several times.

Butterfly housing



- Remove the air duct between the air/air exchanger and the butterfly housing (5), (1).
- Connect tool [1] on the butterfly housing vacuum capsule (1).
- Apply a vacuum of approx. **0.8 bar**, the flap (a) of the butterfly housing (1) should be closed.

B1HP1BWC B1BP2ADC

INJECTION

C5

CHECKS : EXHAUST GAS RECYCLING CIRCUIT

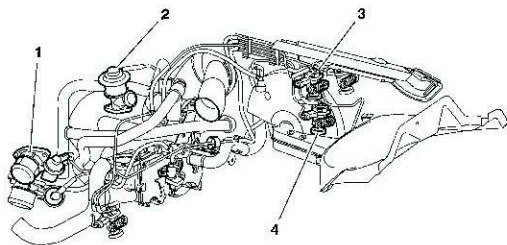
Engine : 4HX

TOOLS

[1] Manual vacuum pump

: FACOM DA 16.

ESSENTIAL : Respect the safety and cleanliness requirements specific to high pressure diesel injection (HDi) engines.

**Electrovalve (EGR).**

- Check, not under load, between the electrovalve (3) (*blue connector*) and the **EGR** valve (2). (*tube with blue marking*).
- Connect the tool [1] between the electrovalve (3) and the **EGR** valve (2).
- Compare readings with the values in the table below.

Butterfly housing electrovalve

- Check, not under load, between the electrovalve (4) (*black connector*) and the butterfly housing (1) (*Metering pump cold*), (*tube with white marking*).
- Connect the tool [1] between the electrovalve (4) and the butterfly housing (1).
- Compare readings with the values in the table below.

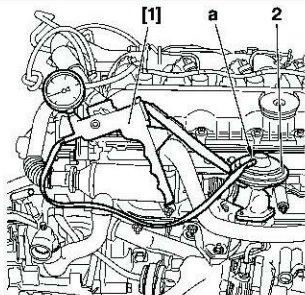
Engine speed (rpm)	Vacuum value (bar)
780	0.5 Bar
2500	0 Bar

B1HP1B8D

CHECKS : EXHAUST GAS RECYCLING CIRCUIT

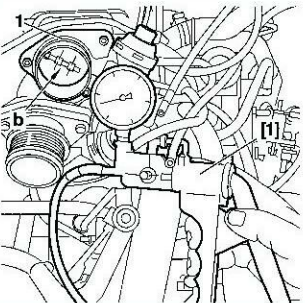
C5

Engine : 4HX



EGR valve

- Connect tool [1] on the take-off (a) of the **EGR** valve capsule (2).
- Apply a vacuum of approx. **0.6 bar** to activate the **EGR** valve.
- In abruptly suppressing the vacuum, the valve should click and lock itself back on its seating.
- Repeat the operation several times.



Butterfly housing

- Remove the air duct between the air/air exchanger and the butterfly housing (1).
- Disconnect the tube (*white marking*) on the electrovalve (4) (*black connector*).
- Connect tool [1] on the tube with the white marking.
- Apply a vacuum of approx. **0.8 bar**, the flap (b) of the butterfly housing (1) should be closed.

B1BP29NC

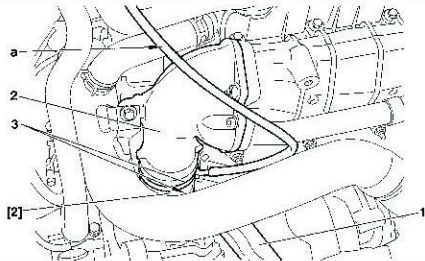
B1BP29PC

INJECTION

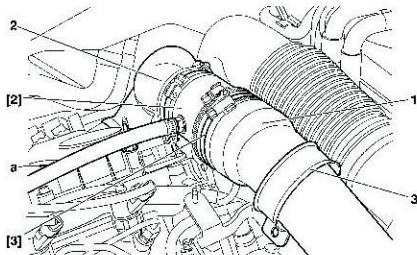
C5

CHECKS : TURBO PRESSURE

Engine : RHY



Engines : RHS - RHZ



Engines : RHY - RHS - RHZ

TOOLS.

- [1] Pressure gauge for checking boost pressure
- [2] Sleeve for checking boost pressure
- [3] Adaptor sleeve

: 4073-T.A Kit 4073-T
 : 4185-T
 : 4219-T

Checks.

Preparation for RHY engine

Remove :

- The collars (3).
- The sleeve.
- Insert the tool [2] between the tube (1) and the duct (2).
- Position the tool [1] in the vehicle.
- Connect the pressure gauge [1] to the tool [2] with its tube (a) long enough for the gauge to be positioned inside the vehicle.

Checks.

Preparation for RHZ engine

- Remove the collar fixing (3).
- Insert the tool [2] equipped with tool [3], between the tube (1) and the duct (2).
- Position the tool [1] in the vehicle.
- Connect the sleeve [2] on the pressure gauge [1] with the tube (a).

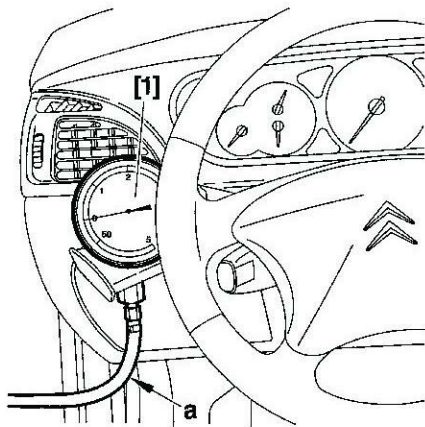
B1BP1ZXD

BHP12JD

CHECKS : TURBO PRESSURE

C5

Engines : RHY - RHS - RHZ



Procedure.

ESSENTIAL : Observe the following checking requirements :

- Engine at running temperature.
- Vehicle in running order.
- Engine at full load.
- Start the engine.
- Engage first gear and start the vehicle.
- Engage the gears up to third gear.
- Decelerate to **2000 rpm**.
- Gradually accelerate.
- Check the pressure : **0.95 ± 0.05 Bar**.
- Remove the tools [1] and [2].

Refit:

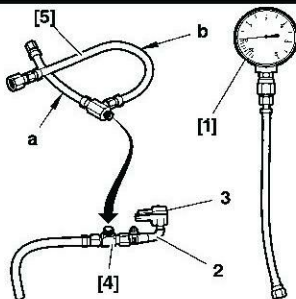
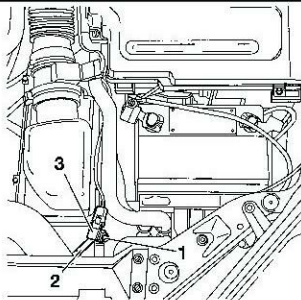
- The sleeve.
- The collars (3).
- Tighten the collars (3).

C5FP0ACC

INJECTION

C5

CHECKS : TURBO PRESSURE



Engine : 4HX

Tools

- | | |
|--|-----------|
| [1] Pressure gauge for checking pressure | 7073-T.A. |
| [2] Extension cable for taking pressure | 8607-T.A |
| [3] Union and hose for taking pressure | 8607-T.B. |
| [4] Adaptor for taking pressure | 8607-T.C. |
| [5] Unions and hoses for taking pressure | 4088-T |

Checks.

ESSENTIAL : Respect the safety and cleanliness requirements specific to high pressure diesel injection (HDi) engines.

Preliminary operations.

Carry out the following operations:

Remove the screw (1).

Disconnect the tube (2).

Move aside the pressure sensor (3).

Preparation of tools : in position on the vehicle.

Fit as follows :

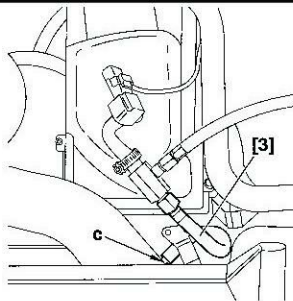
Remove the hose (a) of tool [5], screw in its place the tool [3], remove the hose (b) of tool [5], screw the hose (b) of tool [5] on the pressure gauge [1], screw the adaptor [4] onto the tool [5]. Connect the tube (2) of the pressure sensor (3) on the tool [4], tighten the tube (2) with a Serflex type collar.

B1BP28DC

E5AP1SUC

CHECKS : TURBO PRESSURE

C5



Engine : 4HX

Preparation of tools : in position on the vehicle (continued).

Screw the tool [3] on the take-off of the turbo air radiator at «c».

Place the pressure gauge on the cup holder at «d.».

Connect the extension [2] on the hose «b» and tool [5].

ESSENTIAL : Observe the following checking requirements.

- Start the engine.
- Engage first gear and start the vehicle.
- Engage the gears up to third gear.
- Decelerate to **1500 rpm**.

Accelerate gradually : the pressures should be the following :

1.1 ± 0.05 b at 2000 rpm

1.2 ± 0.05 b at 3000 rpm.

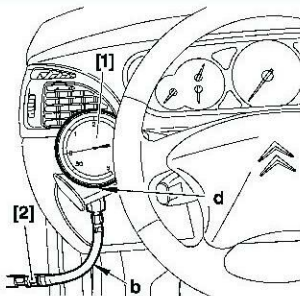
Return the vehicle to normal.

Remove the tools [1], [2], [3], [4] and [5].

Reposition the pressure sensor (3).

Couple the tube (2).

Refit and tighten the screw (1).



INJECTION

B1BP28EC

C5FPOBLC

C5			INJECTION PUMP SPECIFICATIONS (BOSCH and SIEMENS).			
Engines			Injection system	ECU	High pressure pump	Injectors
DW	10	TD	BOSCH	BOSCH EDC 15C2	BOSCH CP1	9625542580
			SIEMENS (except PICASSO)	SIEMENS ECUSID801	5WS 40001	5WS40000
	12	ATED	BOSCH	BOSCH EDC 15C2	BOSCH CP1	9625542580
		TED4				96372277980

SPARKING PLUGS						C5 - C8
Vehicles - Models		Engine type	BOSCH	EYQUEM	Electrode gap	Tightening torque (m.daN)
C5	1.8i 16V	6FZ		RFN 52 HZ	0.9 ± 0.05	2.75 ± 0.2
	2.0i 16V	RFN				
	2.0i 16V HPi	RLZ	ZR8PTT15		1	2.25 ± 0.2
	3.0i 24S	XFX	FGR8MQPE			(1) 1 ± 0.1 (2) 90°
C8	2.0i 16V	RFN		RFN 52 HZ	0.9 ± 0.05	2.75 ± 0.2
	2.0i 16V HPi	3FZ				
	3.0i 24S	XFW	FR8KDC		1	(1) 1 ± 0.1 (2) 90°

An E.E.C. decree of **25 June 1976**, regulates the speed displayed by the speedometer in relation to the actual speed travelled.

This decree stipulates :

- The speed indicated by a speedometer must never be lower than the actual vehicle speed.
- Between the speed displayed «SD» and the speed travelled «ST», there must always be the following relationship :

$$VR < VL < 1,10 VR + 4 \text{ Km/h}$$

Example : For an actual speed of **100 Kph** the speed displayed by the speedometer may be between **100** and **114 Kph**.

The speed indicated by the speedometer may be influenced by :

- The speedometer.
- The tyres fitted to the vehicle.
- The final drive ratio.
- The speedometer drive ratio.

Any of these components can be checked without removing them from the vehicle. (See information note **N° 78-85 TT of 19 October 1978**).

NOTE : Before replacing the speedometer, check the conformity of the following points :

- The tyres fitted to the vehicle.
- The gearbox final drive ratio.
- The speedometer drive ratio.

CLUTCH SPECIFICATIONS					C5
	Petrol				
	1.8i 16V	2.0i 16V		2.0 HPi	3.0i V6
Engine type	6FZ	RFN		RLZ	XFX
Gearbox type	BE4/5			ML/5	
Marque	VALEO				
Mécanisme / Type	230 DNG 4700		230 DING 4700	230 DNG 4700 R	242 T 6500
Clutch disc	11 R 10X	12 R 14X	228 D 73 12 R 14 X	11 R 14X	11 A 14X
Ø of lining. Ext/Int	228/155				242/162
Quality of lining	F 808	F 410	F 808 DS		F 410

C5**CLUTCH SPECIFICATIONS****Diesel****2.0 HDi****2.2 HDi****Engine type****RHY****RHS****RHZ****4HX****Gearbox type**

BE4/5

ML/5

Supplier

LUK

Mechanism / type

230 P 4700

225 T 5700

242 T 6500

Clutch disc

Damping performed by engine flywheel

Ø of lining. Ext/Int

228/155

225/150

242/162

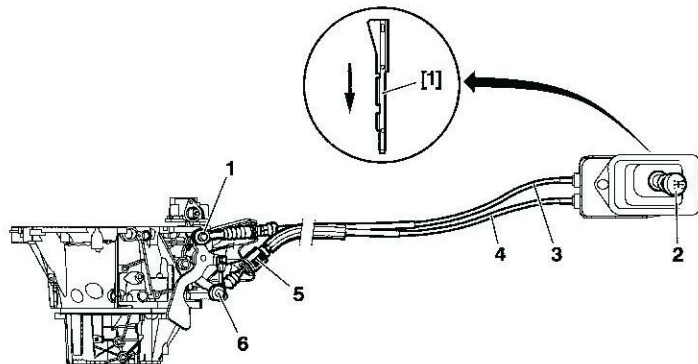
Quality of lining

F 408

F 808

CLUTCH SPECIFICATIONS				C8
	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			

Engines : 6FZ - RFN - RLZ - RHY

**Gear controls**

[1] Gear lever positioning tool **8605-T**.

- (1) Gear engagement ball-joint \varnothing 10 mm.
- (2) Gear control lever
- (3) Gear engagement control cable.
- (4) Gear selection control cable.
- (5) Cable selection locking key.
- (6) Gear selection ball-joint \varnothing 10 mm.

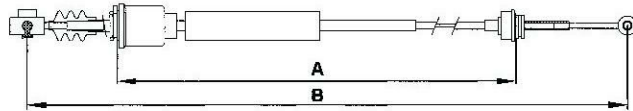
B2CP3CJD

BE4/5 GEARBOX CONTROL SPECIFICATIONS

C5

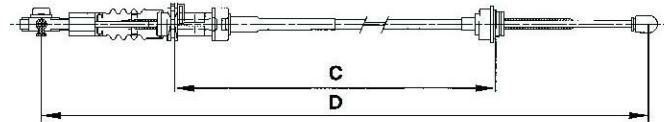
Engines : 6FZ - RFN - RLZ - RHY

Gear selection control cable.



B2CP3CKD

Gear engagement control cable

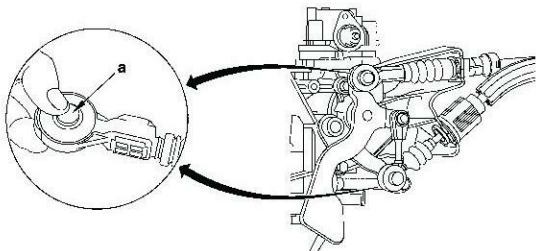


B2CP3CLD

	Left hand drive	Right hand drive		Left hand drive	Right hand drive
Lenght A	730 ± 3mm		Lenght G	700 ± 3 mm	
Lenght B	937.5 ± 7.5mm		Lenght H	983 ± 7.5 mm	

Note : See adjustment : **page 220.**

Engines : 6FZ - RFN - RLZ - RHY

**Adjustments.**

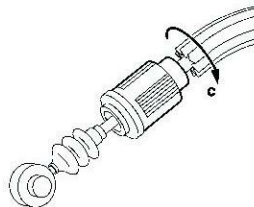
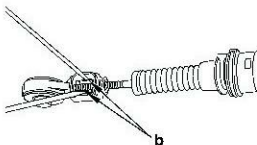
WARNING : Control cables should be adjusted each time the gearbox is removed or cables changed.

WARNING : Do not use oil to detach the ball-joints.

To release the ball-joint, press at the centre «a» then pull the ball-joint upwards.

Ball-joints alone can be changed by removing the unlocking key with the aid of two thin screwdrivers, unclip at «b».

To unlock the ball-joint, turn in the direction of the arrow «c».



B2CP3CVD

B2CP3CWC

B2CP3CXC

Engines : 6FZ - RFN - RLZ - RHY

Tools.

[1] Tool for positioning the gearbox control lever

8605-T

Toolkit 9040-T

Adjustments.

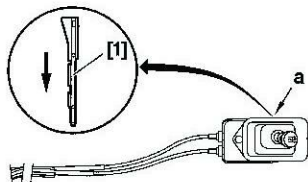
Cables should be adjusted each time the gearbox, gear controls or power unit are removed

Adjustment principles :

- Lock the gear lever in neutral position, using tool [1].
- Position the gearbox in neutral.
- Anchor the ball-joints on the gearbox levers.
- Lock the cable lengths with the ball-joint locking keys.

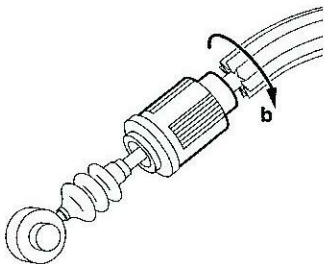
Inside the vehicle.

- Remove the central console (*See corresponding operation*).
- Remove the plastic blank at (a).
- Insert tool [1] fully and rotate a quarter turn to lock the gear control lever.
- At neutral.

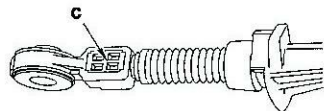


B2CP3E7C

Engines : 6FZ - RFN - RLZ - RHY

**Adjustments (continued)****Under the bonnet.**

- Remove the air filter assembly.
- Unlock the gear engagement cable ball-joint **(b)**.
- Unlock the gear selection cable ball-joint **(c)**.
- Make sure the gear levers (*engagement and selection*) are in neutral position.
- Lock the cable lengths with the ball-joint locking keys.
- Remove the tool [1].

**Checks.**

- Check that all the gears engage without «**tightness**».
- Check that the gear lever moves identically forwards and backwards and to right and left. If not :
- Repeat the adjustment.

Refit the console and the air filter assembly.

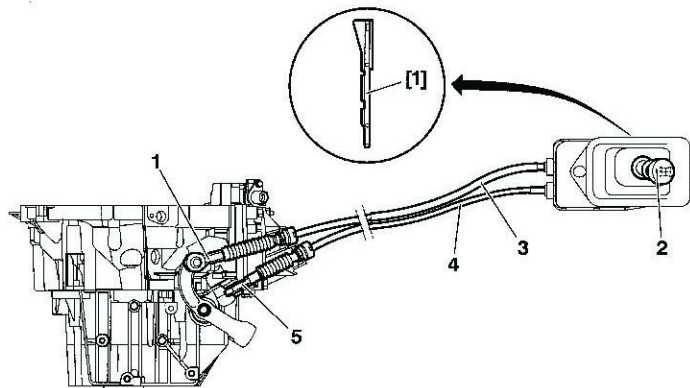
B2CP3E8C

B2CP3E9C

ML/5 GEARBOX CONTROL SPECIFICATIONS

C5

Engines : XFX - RHZ - RHS - 4HX



[1] Gear lever positioning tool **8605-T.**

(1) Gear engagement ball-joint **Ø 10 mm.**

(2) Gear control lever

(3) Gear engagement control cable.

(4) Gear selection control cable.

(5) Gear selection ball-joint **Ø 10 mm.**

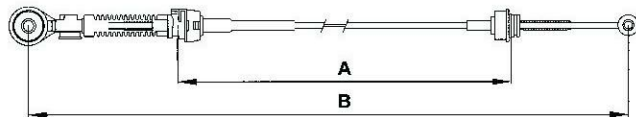
B2CP3CQD

C5

ML/5 GEARBOX CONTROL SPECIFICATIONS

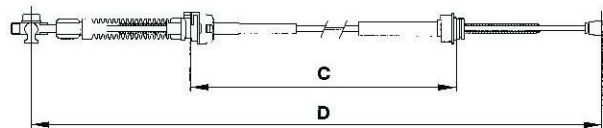
Engines : XFX - RHZ - RHS - 4HX

Gear selection control cable.



B2CP3CRD

Gear engagement control cable.



B2CP3CSD

Left hand drive

Right hand drive

Lenght A

 $750 \pm 3\text{mm}$

Lenght B

 $1012 \pm 7.5\text{mm}$

Left hand drive

Right hand drive

Lenght C

 $771 \pm 3\text{ mm}$

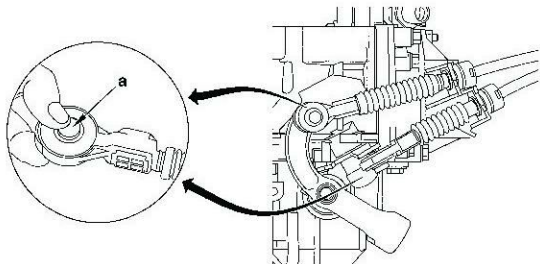
Lenght D

 $1094 \pm 7.5\text{ mm}$ **Note :** See adjustment: **page 225.**

CHECKS AND ADJUSTMENTS : ML/5 GEARBOX CONTROLS

C5

Engines : XFX - RHZ - RHS - 4HX



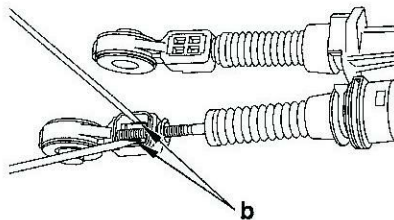
Adjustments.

WARNING : Control cables should be adjusted each time the gearbox is removed or cables changed.

WARNING : Do not use oil to detach the ball-joints.

To release the ball-joint, press at the centre «a» then pull the ball-joint upwards.

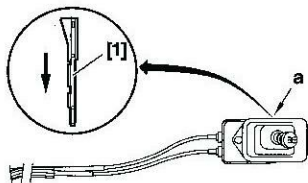
Ball-joints alone can be changed by removing the unlocking key with the aid of two thin screwdrivers, unclip at «b».



B2CP3CTD

B2CP3BYC

Engines : XFX - RHZ - RHS - 4HX



Tools

[1] Tool for positioning the gearbox control lever

8605-T

Toolkit 9040-T

Adjustments.

Cables should be adjusted each time the gearbox, gear controls or power unit are removed.

Adjustment principles :

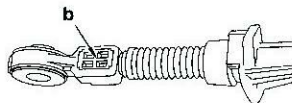
- Lock the gear lever in neutral position, using tool [1].
- Position the gearbox in neutral.
- Anchor the ball-joints on the gearbox levers.
- Lock the cable lengths with the ball-joint locking keys.

Inside the vehicle.

- Remove the central console (*See corresponding operation*).
- Remove the plastic blank at (a).
- Insert tool [1] fully and rotate a quarter turn to lock the gear control lever.
- At neutral.

B2CP3E7C

Engines : XFX - RHZ - RHS - 4HX

**Adjustments (continued)****Under the bonnet.**

- Remove the air filter assembly.
- Unlock the gear engagement and selection cable ball-joint **(b)**
- Make sure the gear levers (*engagement and selection*) are in neutral position.
- Lock the cable lengths with the ball-joint locking keys.
- Remove the tool [1].

Checks.

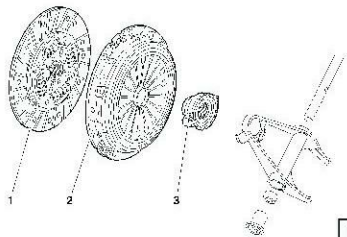
- Remove the tool [1].
- Check that all the gears engage without «**tightness** ».
- Check that the gear lever moves identically forwards and backwards and to right and left. If not :
- Repeat the adjustment.
- Refit the console and the air filter assembly.

C8

CLUTCH SPECIFICATIONS

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

«Push» clutch



B2BB000D

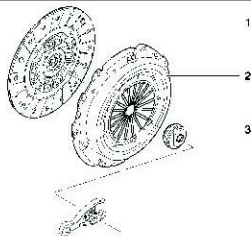
«Push» clutch and «Pull» clutch

(1) Clutch disc.

(2) Clutch plate.

(3) Clutch bearing.

«Pull» clutch



B2BK22WD

HYDRAULIC CLUTCH CONTROL SPECIFICATION

C8

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**.

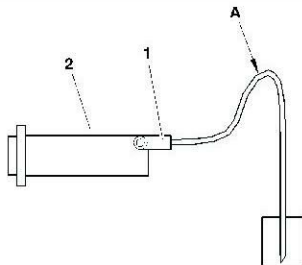
IMPERATIVE : Do not use any automatic bleed apparatus (risk of the fluid emulsifying in the reservoir).

Remove:

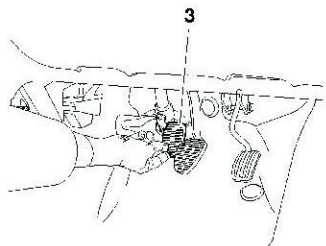
- The pollen filter and its support (see corresponding operation in chapter on aircon).
- The air filter and its union.
- The under-engine sound-deadening.

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

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



B2BK22XD



B2BK064C

Bleeding the hydraulic clutch control (continued).

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.

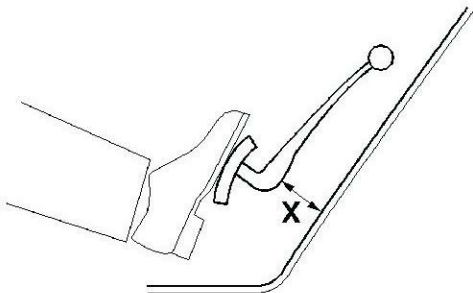
NOTE : For new bleed operations: open the bleed screw (1).

If necessary, repeat the operation.

HYDRAULIC CLUTCH CONTROL SPECIFICATION

C8

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.

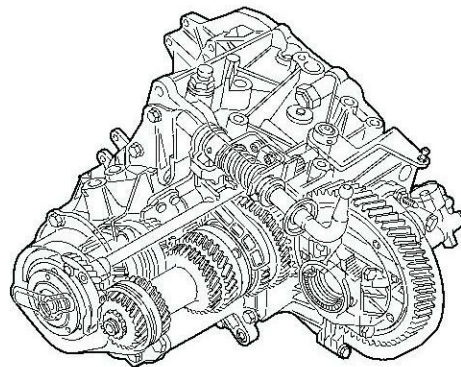
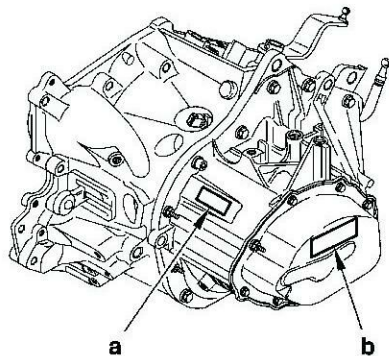
Tighten the bleed screw **(1)** to **0,75.m.daN**.

C5

GEARBOX AND TYRE SPECIFICATIONS

	Petrol				
	18i 16V		2.0i 16V		2.0 HPI
		Automatic		Automatic	
Engine type	6FZ		RFN		RLZ
Tyres-Rolling circumference	195/65 R15 – 1.93 m		195/65 R15 – 1.93 m		
Gearbox type	BE4/5	AL4	BE4/5	AL4	BE4/5
Gearbox ident. plate	20 DL 29	20 TP 44	20 DL 30	20 TP 42	20 DL 31
Reduction box torque	19x79	21x73	19x79	23x73	19x77
Speedometer ratio	22x18	52x67	22x18	52x67	Sans
	Petrol				
	3.0i V6				
		Automatic			
Engine type	XFX				
Tyres-Rolling circumference	215/55 R16 – 1.96 m				
Gearbox type	ML/5C	ML/5T	4 HP 20		
Gearbox ident. plate	20 LE 95	20 LE 95	20 HZ 13		
Reduction box torque	16x65		20x69		
Speedometer ratio	Sans		59x68		

GEARBOX AND TYRE SPECIFICATIONS					C5
	Diesel				
	2.0 HDi			2.2 HDi	
	Automatic				
Engine type	RHY	RHS - RHZ			4HX
Tyres-Rolling circumference	195/65 R15 – 1.93 m				215/65 R16-1.96 m
Gearbox type	BE4/5	ML/5C	ML/5T	AL4	ML/5C
Gearbox ident. plate	20 DL 32	20 LM 18	20 LE 94	20 TP 43	20 LM 17
Reduction box torque	19x75	16x65		25x68	17x67
Speedometer ratio	Sans	None		52x67	Sans
	Diesel				
	2.2 HDi				
	Automatic				
Engine type	4HX				
Tyres-Rolling circumference	215/65 R16-1.96 m				
Gearbox type	ML/5T	4 HP 20			
Gearbox ident. plate	20 LE 96	20 HZ 20			
Reduction box torque	17x67	23x66			
Speedometer ratio	Sans	59x68			

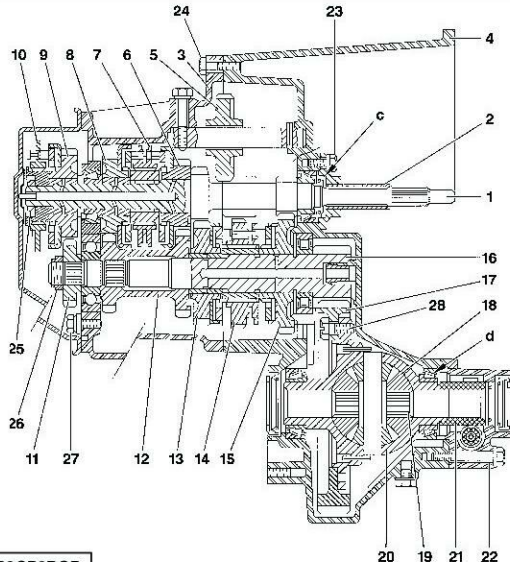


- (a) = Marking zone (sequence and serial no.).
(b) = Location of identification label.

BE4/5 GEARBOX

C5

Engine : RFN



Description

- (1) Primary shaft.
- (2) Clutch bearing guide.
- (3) Gearbox casing.
- (4) Clutch housing.
- (5) Reverse idle.
- (6) Drive gear (3rd gear).
- (7) 3rd/4th gear synchroniser
- (8) Drive gear (4th gear).
- (9) Drive gear (5th gear).
- (10) 5th gear synchroniser.
- (11) Driven gear (5th gear).
- (12) Driven gear (2nd / 4th gear)
- (13) Driven gear (2nd gear).

- (14) 1st / 2nd gear synchroniser
- (15) Driven gear (1st gear).
- (16) Secondary shaft.
- (17) Differential gear.
- (18) Satellite gears.
- (19) Planet gears.
- (20) Differential housing.
- (21) Speedometer drive.
- (22) Extension.

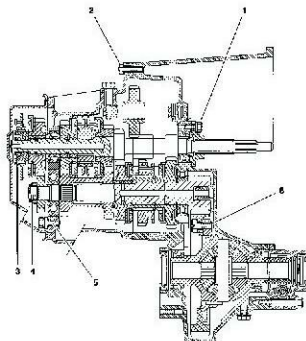
"d" Adjusting shims : 0,7 to 2,4 mm.
(From 0,10 to 0,10 mm)

"c" Adjusting shims: 1,4 to 1,6 mm.
(From 0,10 to 0,10 mm)

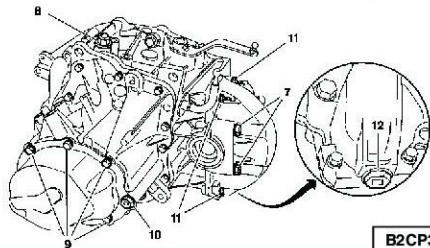
B2CP3BQP

C5

BE4/5 GEARBOX



B2CP3BSP



B2CP3BTD

Engine : RFN

Tightening torques

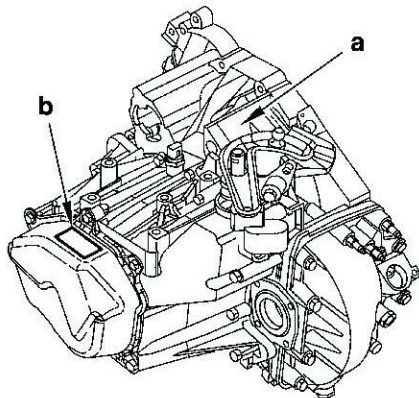
Ref.	Description	Number of screws	m.daN
1	End guide	3	1.2 ± 0.1
2	Clutch housing	13	1.3 ± 0.1
3	Primary shaft nut	1	7.2 ± 0.7
4	Secondary shaft nut	1	6.5 ± 0.7
5	Yoke holding screw	2	1.5 ± 0.1
6	Differential gearwheel screw	2	6.5 ± 0.7
R	Reverse gear contact	1	2.5 ± 0.3
7	Differential housing	4	5 ± 0.5
8	Breather pipe	1	1.7 ± 0.2
9	Rear housing cover screw	7	1.2 ± 0.1
10	Top-up plug	1	2.2 ± 0.2
11	Differential housing screw	4	1.2 ± 0.1
12	Drain plug screw	1	3.5 ± 0.4

ML/5 GEARBOX SPECIFICATION

C5

Engines : XFX - RHZ - RHS - 4HX

Identification



Identification.

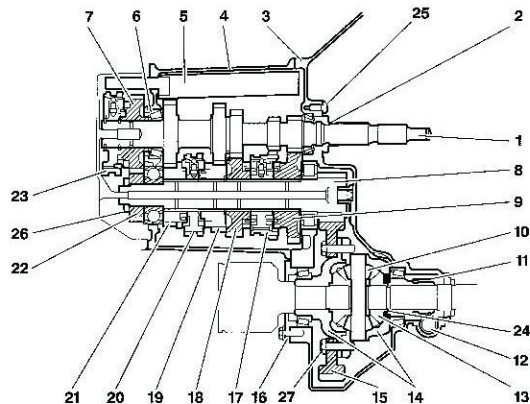
(a) Marking zone
(Sequence and serial no.).

(b) Location of identification label.

B2CP3CMC

Engines : XFX - RHZ - RHS - 4HX

Identification (continued)



- (1) Primary shaft.
- (2) Clutch bearing guide.
- (3) Clutch housing
- (4) Gearbox casing.
- (5) Oil channel
- (6) Primary shaft bearing adjustment shim.
- (7) Drive gear (5th)
- (8) Secondary shaft.
- (9) Driven gear (1st)
- (10) Satellite gears.
- (11) Speedometer screw.
- (12) Speedometer drive.
- (13) Planet gears.
- (14) Differential housing
- (15) Differential gearwheel.
- (16) Differential bearing stop plate.
- (17) 1st/2nd gear synchroniser and reverse gear driven gear.

- (18) Driven gear (2nd)
- (19) Driven gears (3rd)
- (20) 3rd/4th gear synchroniser.
- (21) Driven gears (4th)
- (22) Driven gears (5th)
- (23) 5th gear synchroniser.
- (24) Planet gear adjustment shim.

Tightening torques m.daN.

- (25) Clutch bearing guide $2 \pm 0,2$
- (26) Secondary shaft nut $17 \pm 1,5$
- (27) Differential screw $7,5 \pm 0,5$

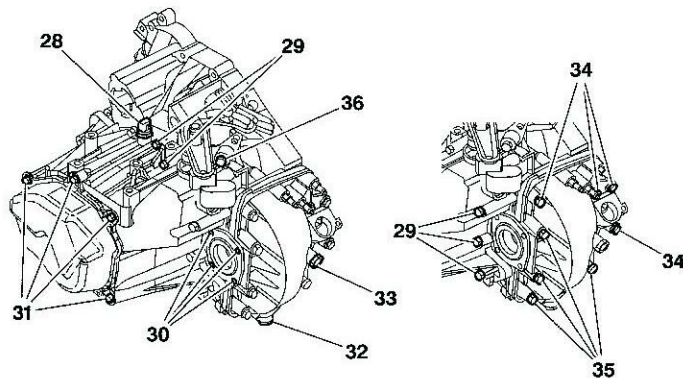
B2CP3CNP

ML/5 GEARBOX SPECIFICATION

C5

Engines : XFX - RHZ - RHS - 4HX

Identification (continued)



Tightening torques m.daN.

(28) Reverse lamp switch	2,5 ± 0,2
(29) Gearbox casing /clutch housing fixing screws	2 ± 0,2
(30) Differential bearing stop plate screws	2 ± 0,2
(31) Gearbox rear casing screws	2 ± 0,2
(32) Drain plug	3 ± 0,3
(33) Filling / top-up plug	3 ± 0,3
(34) M8 screw (<i>Differential housing fixing</i>)	2 ± 0,2
(35) M10 screw (<i>Differential housing fixing</i>)	4 ± 0,5
(36) Selector guide screw	4 ± 0,5

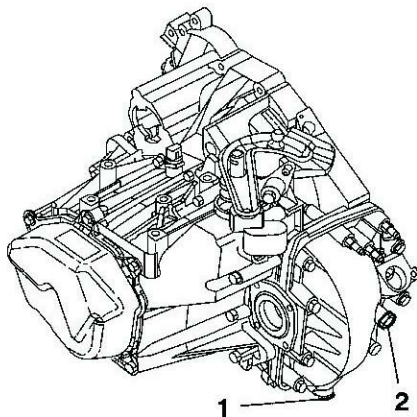
B2CP3CPD

C5

ML/5 GEARBOX SPECIFICATION

Engines : XFX - RHZ - RHS - 4HX

Recommendations - Precautions



(1) Drain plug.

(2) Filler and top-up plug.

Oil quality.

- See chapter on lubricants: page 23.

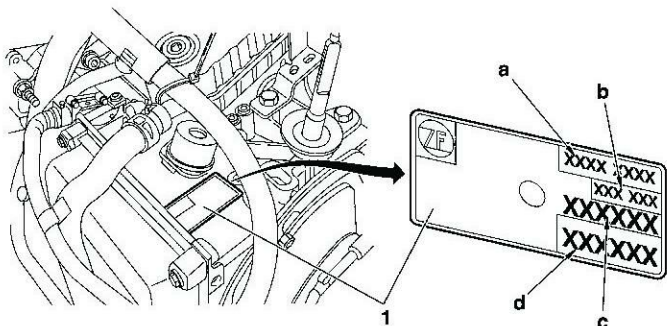
Oil quantity.

- After draining

= 1.8 litres

B2CP3CUC

Engines : XFX - 4HX

**Identification.**

(1) Identification plate
(riveted on the casing).

(a) Serial no..

(b) ZF number.
(last digits taken into account)

(c) Type of automatic gearbox.

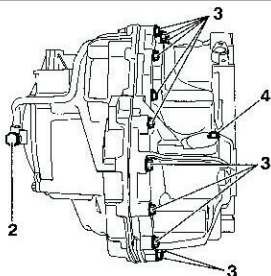
(d) Component reference

Oil quality and quantity
(See chapter, page 23).

C5

4 HP 20 AUTOACTIVE GEARBOX SPECIFICATION

Engines : XFX - 4HX

**Gearbox exterior.**

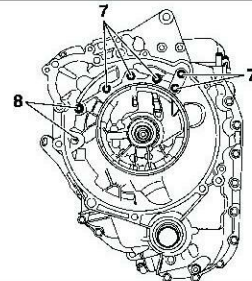
- (2) Oil channel union fixing
- (3) Exterior fixing of converter cover on clutch housing
- (4) Speedometer take-off aperture plug
- (5) Steel casing fixing
- (6) Converter fixing on engine
- (7) Interior fixing of converter cover on clutch housing
- (8) Torx fixing of converter cover on clutch housing

Drain plug

- Heat exchanger fixing
- Selector lever position switch fixing
- Converter cover fixing on engine cover (XFX engine)
- Converter cover fixing on engine cover (4HX engine)

B2CP3CZC

B2CP24BC

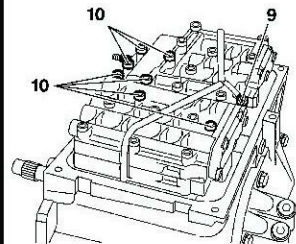
 $2,5 \pm 0,5$ $2,3 \pm 0,5$ $1 \pm 0,1$ $0,6 \pm 0,1$ 6 ± 1 $2,3 \pm 0,5$ $2,3 \pm 0,5$ $4,5 \pm 0,8$ $3,5 \pm 0,5$ $1 \pm 0,2$ $6,5 \pm 1$ $5,8 \pm 1$ 

B2CP24CC

4 HP 20 AUTOACTIVE GEARBOX SPECIFICATION

C5

Engines : XFX - 4HX



Tightening torques m.daN.

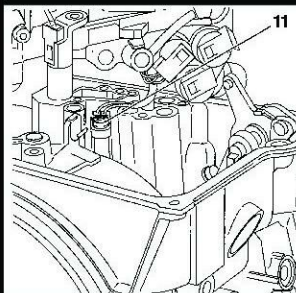
Gearbox interior.

- (9) Input speed sensor fixing
- (10) Hydraulic block fixing (Large head)
- (11) Output speed sensor fixing

$0,8 \pm 0,1$

$0,8 \pm 0,1$

$1 \pm 0,2$



B2CP24DC

B2CP24EC

Engines : 6FZ - RFN - RHZ - XFX - 4HX

Precautions to be taken

Towing.

The front of the vehicle must be raised in order to be towed.

If the front of the vehicle cannot be raised :

IMPERATIVE : - Put gear lever in position «N».

- Do not add any oil.

AL4 gearbox

- Do not exceed 50 km/h (30mph) over a distance of 50 km (30m).

4 HP 20 gearbox

- Do not exceed 70 km/h (45mph) over a distance of 100 km (60m).

Driving.

Never drive with the ignition switched off.

Never push the vehicle to try to start it;
(impossible with an automatic gearbox).

Lubrication

The automatic gearbox is only lubricated when the engine is running.

REMOVING - REFITTING. (Automatic gearbox).

WARNING : Never place the gearbox on its lower casing (risk of deforming the tray and damaging the hydraulic valve block).
Never use the connections as handles for raising, turning, holding or pushing the gearbox.

ESSENTIAL :

- Fit the converter retaining peg while the gearbox is removed.**
- Fit the centring peg to locate the gearbox on the engine:
(remove the converter retaining peg just before locating)**

WARNING : With the emergency programme selected, an impact is felt when changing from "P" → "R" ou "N" → "R".

RECOMMENDATIONS - PRECAUTIONS (AL 4 and 4 HP 20 AUTOMATIC GEARBOXES)	C5
Engines : 6FZ - RFN - RHZ	
Procedure to be followed prior to carrying out repairs on AL4 autoactive gearbox	
<p>If a gearbox malfunction occurs, there are two possible configurations depending on the seriousness of the fault :</p> <ul style="list-style-type: none"> - Gearbox in back-up mode with a replacement programme of (the fault values are taken in substitution). - Gearbox in back-up mode with an emergency programme (3rd hydraulic) <p>WARNING : In the emergency programme, an impact is felt when changing P/R, N/R and N/D. Réception client. Discuss with the customer, to find out all the malfunction symptoms..</p> <p>Oil quality – Oil level. Oil quality. If the gearbox has suffered a serious fault resulting in a malfunction or the destruction of a clutch, the oil will overheat and become contaminated with impurities : the oil is said to be «burnt». This is characterised by a black colour and the presence of an unpleasant smell. <u>ESSENTIAL</u> : The gearbox must be replaced.</p>	<p>Oil level. See corresponding operation. An excessive oil level can result in the following consequences : <ul style="list-style-type: none"> - Excessive heating of the oil. - Oil leaks. An insufficient level causes the destruction of the gearbox. Top up the level of oil in the gearbox (if necessary). Check using a diagnostic tool. Read the fault codes (engine and gearbox) Absence of fault codes. Carry out parameter measures, actuator tests and a road test. Presence of fault codes. Carry out the necessary repairs. Delete the fault codes. Carry out a road test to check the repair and, if need be, modify the gearbox ECU parameters (this is essential after an initialisation of the ECU).</p>

Engines : 6FZ - RFN - RHZ - XFX - 4HX

Procedure prior to carrying out repairs (continued)

When the ECU detects an erroneous or non-existent value on input or output :

- It writes the fault in memory.
- For each associated context, it writes the context of the oldest fault in memory.
- It initiates a back-up mode strategy.

There are two types of back-up modes :

- The ECU makes replacement values available (relating to comfort, gear selection quality, loss of functions).
- Access to emergency programme (only 3rd ratio and reverse are available)

NOTE : 4 HP 20 : A snatching may be felt when changing : **P/R - N/R - N/D.**

**Reading the fault codes.
Read the fault codes.**

No fault codes present :

Carry out a measure of parameters.

Anomalies present :

- **YES :** Carry out the necessary repairs.
- **NO :** Read the fault codes – engine ECU
- Carry out a road test.

Following an initialisation of the ECU, for a certain period of time there may be an inconsistent gear selection quality (while ECU parameters are adapted to the gearbox).

To achieve a consistent standard, it is necessary to carry out a road test taking in frequent gear changes (auto-adaptive laws).

Engines : 6FZ - RFN - RHZ - XFX - 4HX

ECU : Downloading, Configuration, Initialisation (Pedal).**Downloading. (AL 4 and 4 HP 20)**

Updating the gearbox ECU by downloading :

- Follow the procedure using the diagnostic equipment.

The operation of downloading is used to update the automatic gearbox ECU or to adapt it to evolutions of the engine ECU.

After downloading, carry out the following :

- Note down the value in the oil usage counter present in the **automatic gearbox** ECU.
- Delete the fault codes.
- Again note down the value in the oil usage counter and compare it with the value previously read.
- Pedal initialisation (**AL 4**)
- Configuration (if needed) (**AL 4**)
- **A reinitialisation of the autoadaptives (AL4 and 4 HP 20).**
- A road test (**AL 4 and 4 HP 20**).)

Following the diagnostic tool procedure.

24

IMPERATIVE : Every update of the automatic gearbox ECU must be accompanied by an update of the engine ECU.

Engines : 6FZ - RFN - RHZ

ECU : Downloading, Configuration, Initialisation (Pedal) (continued)

Downloading (AL 4 only).

ECU downloading procedure :

- Follow the diagnostic tooling procedure.

A new ECU or downloaded update is always configured with the following options :

- SHIFT LOCK gear selection lever position.
- OBD outlet (emission standard L4).

If the ECU is to be fitted to a vehicle without one or both of these options:

- Carry out a configuration which inhibits the diagnosis of the option(s) concerned.

- IMPERATIVE : For a certain period of time, while the ECU parameters are adapted to the gearbox, there may be an inconsistent gear selection quality. To achieve a consistent standard, it will be necessary to carry out a road test taking in frequent gear changes (auto adaptive laws).

Pedal initialisation. (AL 4 only).

A pedal initialisation must be carried out in the following cases :

- Replacement of the automatic gearbox ECU.
- Replacement of the automatic gearbox.
- Downloading of the ECU configuration.
- Adjustment or replacement of the accelerator cable.
- Replacement of the throttle potentiometer.

Engines : XFX - 4HX

SHIFT LOCK

The **shift lock** is a system which locks the gear selection lever in the park position «P».

Unlocking the «shift lock» (normal operation).

Switch on the ignition.

Apply the brake pedal and keep it pressed.

Using the selection lever, disengage from position «P».

Unlocking the «shift lock» (with a fault).

NOTE : It is impossible to unlock the «**shift lock**» with the « **normal operation**» method.

The causes of the fault may arise from the following components :

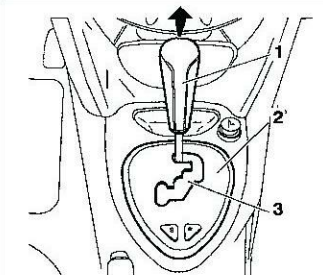
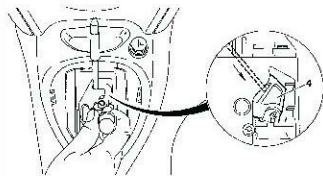
- «**Shift lock**».
- Gear lever position switch.
- Automatic gearbox ECU.
- Electrical harnesses.
- Battery voltage.

Remove :

- The gear lever knob (1) by pulling upwards.
- The cover (2) (unclip).
- The shutter.

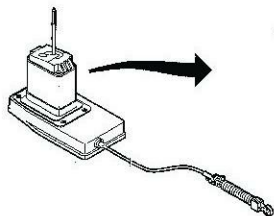
Unlock the «**shift lock**» (4) using a screwdriver.

Using the selection lever, disengage from position «P».



C5FPOCUD

C5FPOCTC

**Selection control.**

The gear selection control has **5 positions**.

The selection lever is guided by the shape of the stepped gate and by a retaining spring which holds it towards the left.

The gear selection control is equipped with the «shift lock», so you have to switch on the ignition and apply the brake pedal to unlock the selection lever from the park position.

Selection (P) : Park (*locking and immobilisation of the vehicle*).

Selection (R) : Reverse gear.

Selection (N) : Neutral.

Selection (D) : Drive (*Use of the four gears in their autoadaptive automatic function*)

Selection (M) : Manual (**M + M -**) allowing the driver to select gears by pulling and pushing the gear lever.

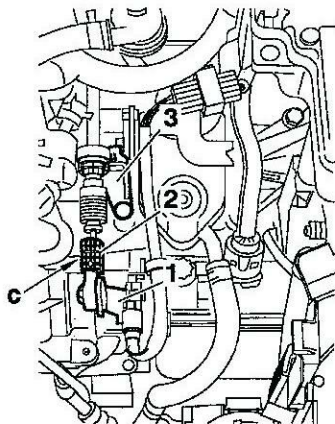
In position **M**, selection is by an electronic sensor located close to the gear lever.

The variation of flux necessary to the movement of the sensor cells is obtained by a magnet located on the lever itself.

This enables the change of status.

B2CP3DKD

Engines : XFX - 4HX

**Selection control (continued).**

In position **M**, selection is by an electronic sensor located close to the gear lever.

The variation of flux necessary to the movement of the sensor cells is obtained by a magnet located on the lever itself. This enables the change of status. The information is transmitted to the gearbox ECU.

Two switches placed on the gear control gate permit the driver to choose one of the following three driving programmes:

- Normal : The normal programme operates in the absence of the other two (*Eco law, autoadaptive mode*).
- **Sport (a)** : Permits a more dynamic, sporty performance.
- **Snow (b)** : Facilitates starting and adhesion on slippery surfaces.

To return to the normal programme, press a second time on the sport switch or snow switch.

Only when the selector is in position **(P)** or **(N)** can the engine be started.

- **(1)** Control linkage with ball-joint.
- **(2)** Automatic adjustment (*Push-button « c », pressed in to lock the control adjustment, springs out for the adjustment to be made*).
- **(3)** Cable sleeve stop.

The automatic gearbox is controlled by a cable.

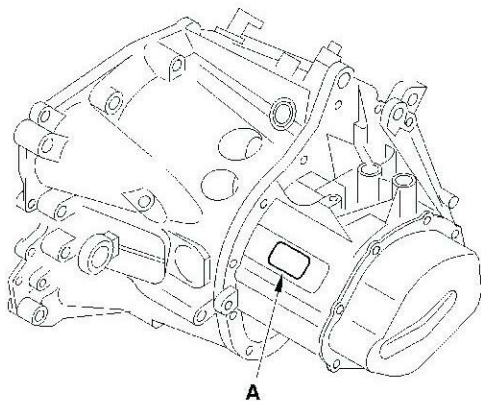
B3CP3DLC

C8

GEARBOX AND TYRE SPECIFICATIONS

	Petrol			
	2.0i 16V		2.2i 16V	3.0i 24S
	Automatic			Automatic
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
Gearbox ident. plate	20 DL 26 (*)	20 DL 27 (**)	20 TP 74	20 LM 09
Reduction box torque	14x62		21 x 73	14x65
Speedometer ratio	18x14		20 x 16	25x20
	Diesel			
	2.0 HDi		2.2 HDi	
	Automatic			
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	

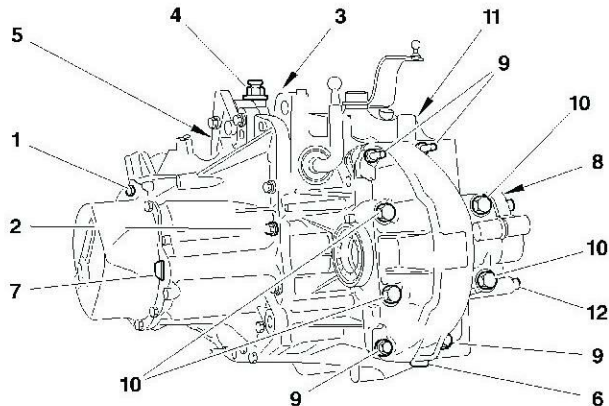
Engine : RFN



(A) Marking zone including:

- Component reference.
- Factory serial no.

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) Speedometer 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

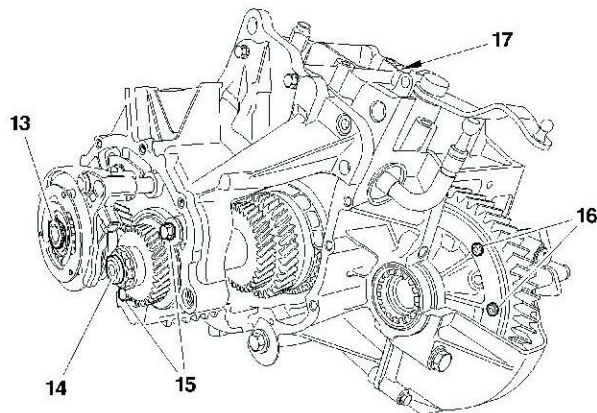
B2CKUB0D

BE4/5 GEARBOX TIGHTENING TORQUES (m.daN)

C8

Engine : RFN

Tightening torques m.daN.



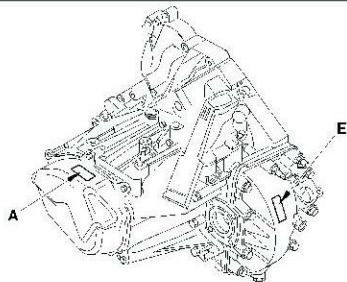
(13) Primary shaft nut	: 7,5 ± 0,7
(14) Secondary shaft nut	: 6,5 ± 0,6
(15) Bearing retaining screw	: 1,5 ± 0,1
(16) Differential gearwheel screw	: 6 ± 0,6
(17) Gear control support screw	: 1,5 ± 0,1

B2CKUB1D

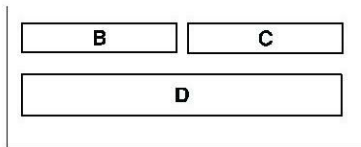
C8

ML5C GEARBOX SPECIFICATION

Engines : 3FZ - RHT - RHW - 4HW



B2CKUC2D



B2CKUCAD

(A) Label.

(B) Gearbox reference.

(C) Sequence no.

(D) Bar code.

(E) Marking zone:

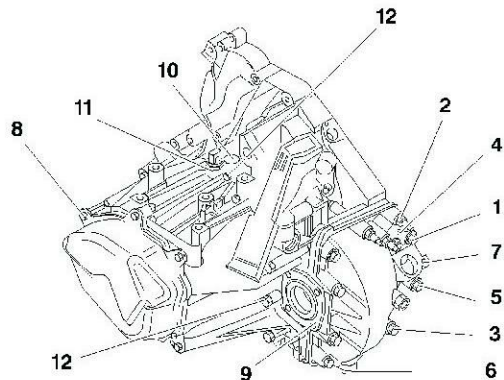
Gearbox reference.

Sequence no.

ML5C GEARBOX SPECIFICATION

C8

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.

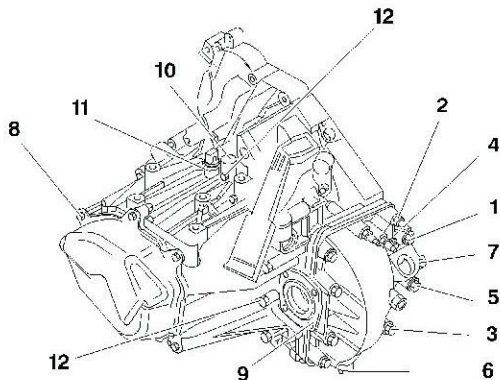
Tightening torques m.daN.

(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

Engines : 3FZ – RHT – RHW – 4HW



Tightening torques (m.daN).

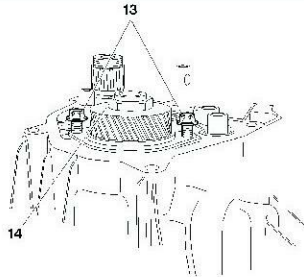
- | | |
|--|-----------------|
| (8) Fixing of gearbox cover on gearbox casing | : $2 \pm 0,2$ |
| (9) Bearing stop plate | : $2 \pm 0,2$ |
| (10) Vent hole. | |
| (11) Reverse gear switch | : $2,5 \pm 0,2$ |
| (12) Fixing of gearbox casing on clutch casing | : $2 \pm 0,2$ |

B2CKUC4D

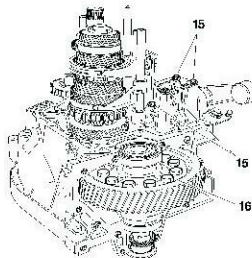
ML5C GEARBOX SPECIFICATION

C8

Engines : 3FZ - RHT - RHW - 4HW



B2CKUC5D

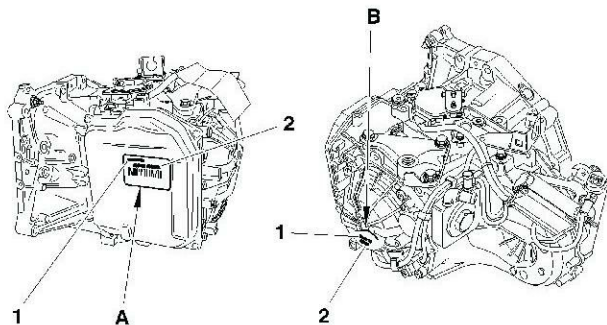


B2CKUC6D

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	: $7,7 \pm 0,7$

Engines : RFN - RHT



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

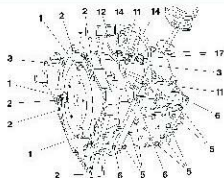
(1) Component reference.

(2) Serial no.

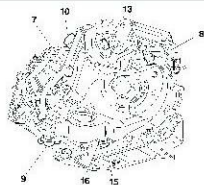
AL4 AUTOMATIC GEARBOX SPECIFICATION

C8

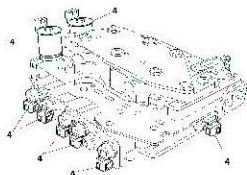
Engines : RFN - RHT



B2CKU7AD



B2CKU7BD



B2CKU7CD

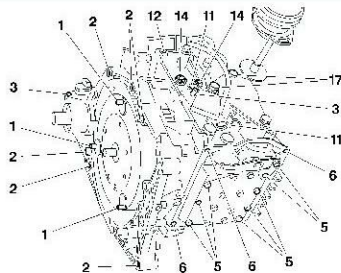
Tightening torques m.daN.

- | | |
|---|-----------------|
| (1) Converter: | |
| Pre-tightening | : $1 \pm 0,1$ |
| Tightening | : $3 \pm 0,3$ |
| (2) Fixing of gearbox on cylinder block | : $5,2 \pm 0,5$ |
| (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 | : $1 \pm 0,1$ |
| (8) Automatic gearbox input speed sensor | : $1 \pm 0,1$ |
| (9) Line pressure sensor | : $0,9$ |

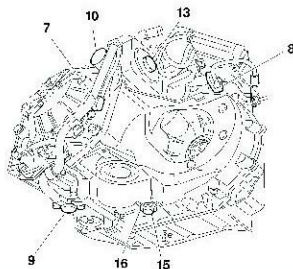
C8

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**C8****Engine : XFW****Tools.**

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

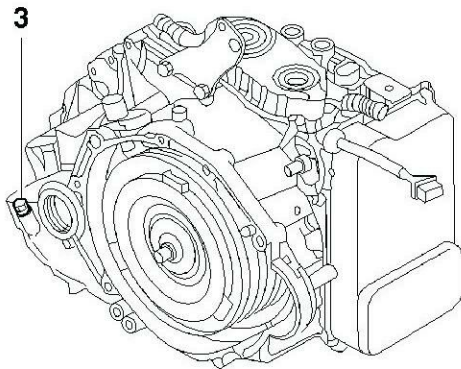
NOTE :

- 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**».

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 :

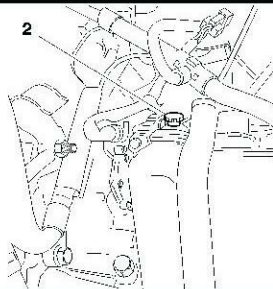
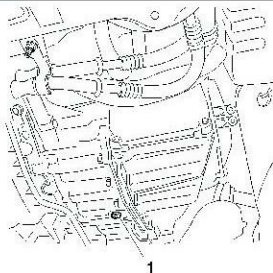
- Oil does not flow out.
 - Refit the top-up plug (3).
 - Add **0,5 litres** of oil. (Refer to the chapter on refilling).
- Repeat the procedure of checking the oil level.
Refit the metallic part of the vent plug (2), using an **18mm** dia. punch and a mallet.
Clip the plastic part of the vent plug (2).

B2CK0JQC

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

C8

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.

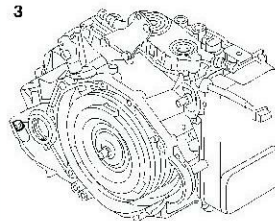
Start the engine and allow it to run at idling speed (applying the brake pedal) and engage all the gears using the gear selector. Return to «P».

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

C5 - C8		DRIVESHAFTS - GEARBOX					
			Tightening torques (m.daN)		Gearbox oil seal mandrels		
Vehicles	Gearbox	Engines	Driveshaft bearing	Driveshaft nut	Right	Left	Tool kit
C5 C8	BE4/5	6FZ - RFN - RLZ RHY	C5		7114-T.W	7114-T.X	7116-T
	ML/5	XFX - RHZ - 4HX RHT- RHW	2 ± 0.2	32.5 ± 1.5	9017-T.C	5701-T.A	9017-T
	AL4	6FZ - RFN - RHZ RHT	C8		0338 J1 0338 J3	0338 H1 0338 H2	0338
	4 HP20	XFX - XFW - 4HX	1.0	10 + 60°	8010-T.D 8010-T.K1	8010-T.J 8010-T.K2	8010-T

Tightening torques (m.daN) of the wheel bolts

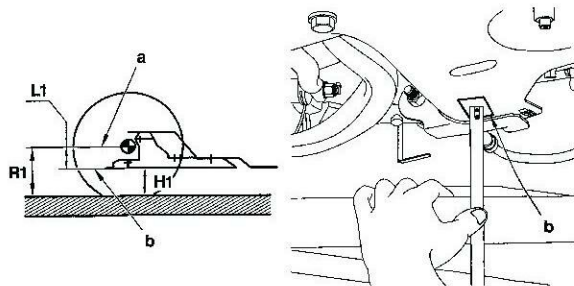
CITROËN	C5	Steel Aluminium	9 ± 0.5
	C8		10 ± 0.5

AXLE GEOMETRY

C5

Measuring front height

The measurement of the front dimension «H1» is between ground level and the measuring zone on the front subframe (to the rear of the front yokes fixing the suspension arm).



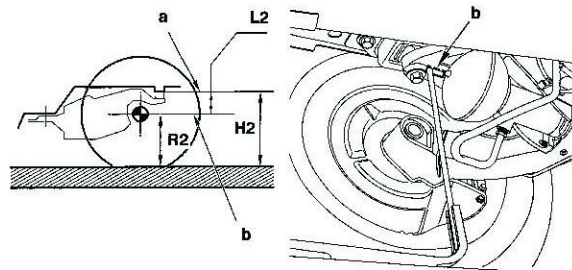
B3BP166D

L1 (mm)

Theoretical dimension between the level of the front subframe and the wheel axis.

140

Measuring rear height



B3BP168D

L2 (mm)

Theoretical dimension between the measuring zone on the crossmember support and the wheel axis.

73

C5

AXLE GEOMETRY

Front axle

Rear axle

Vehicle

Tracking

Castor

Camber

King pin
inclination

Tracking

Camber

Adjustable

Non adjustable

Adjustable

Non adjustable

All Types

0 à - 3 mm
0° à - 0° 27'

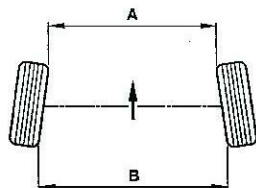
3° 03' ± 30'

0° ± 30'

12° 56' ± 30'

5.4 ± 1.3 mm
0° 49' ± 0° 12'

- 1° ± 20'



NOTE

A < B = Positive figure :

+ =

TOE-IN

A > B = Negative figure :

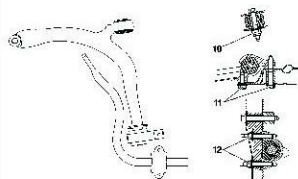
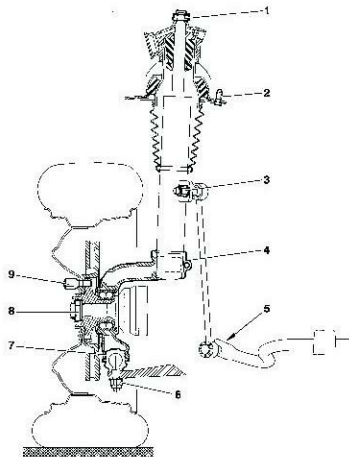
- =

TOE-OUT

B3CP02UC

FRONT AXLE

C5



Tightening torques m.daN.

(1) Suspension leg upper fixing	$7 \pm 0,7$
(2) Suspension leg fixing on bodyshell	$4,3 \pm 0,6$
(3) Anti-roll bar link rod upper fixing	$6,4 \pm 0,6$
(4) Anti-roll bar link rod upper fixing	$6,4 \pm 0,6$
(5) Ball-joint fixing	$4,5 \pm 0,4$
(6) Ball-joint fixing on pivot	$25 \pm 2,5$
(7) Suspension leg upper fixing on pivot	$5,4 \pm 0,5$
(8) Hub nut	$32,5 \pm 2,6$
(9) Wheel fixing	9 ± 1
(10) Arm front fixing	$13 \pm 1,3$
(11) Arm rear fixing	$8 \pm 0,8$
(12) Anti-roll bar bearing fixing on subframe	$4,2 \pm 0,6$
Stabiliser bar fixing on subframe	$6,6 \pm 0,6$

Anti-roll bar

Engines	Diameter (mm)	Colour ref.
All types (except ES9J4)	23.5	Yellow
ES9J4	24.5	White

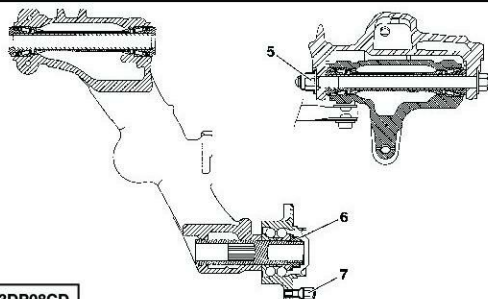
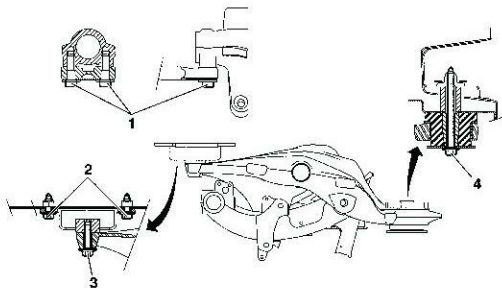
NOTE : The geometry specifications are given with the suspension specifications

B3CP05VP

B3CP05WD

C5

REAR AXLE



Tightening torques m.daN.

(1) Anti-roll bar fixing	13,1± 1,4
(2) Rear rubber mounting fixing on bodyshell	8 ± 1,2
(3) Rear subframe fixing	11,5± 1,1
(4) Front subframe fixing on bodyshell	11,5± 1,1
(5) Suspension shaft fixing	14,9± 1,3
(6) Hub nut	25± 2,5
(7) Wheel fixing	9± 1

NOTE : (3) and (4) Face and threads not greased.

Engines	Anti-roll bar	
	Diameter (mm)	Colour ref.
All types (except ES9J4)	21.5	Blue
ES9J4	22	Yellow
All types estates		

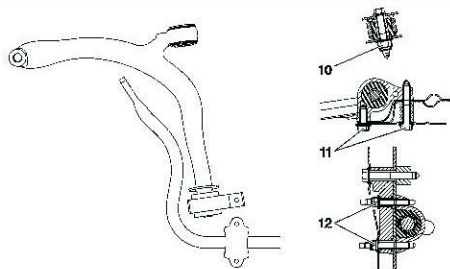
NOTE : The geometry specifications are given with the suspension specifications.

B3DP08BD

B3DP08CD

SUSPENSION

C5



Front suspension

Tightening torques m.daN.

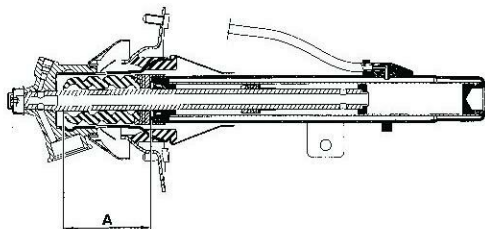
(10) Arm front fixing	$13 \pm 1,3$
(11) Arm rear fixing	$8 \pm 0,8$
(12) Anti-roll bar bearing fixing on subframe	$4,2 \pm 0,6$

Hydractive 3+ hydraulic suspension (power steering)

Suspension piston diameter	= 35 mm.
Anti-roll bar diameter	= 23,5 mm.
Anti-roll bar colour reference	= Yellow.

Suspension leg.

Bump stop, height	«A» = 97 mm.
-------------------	--------------

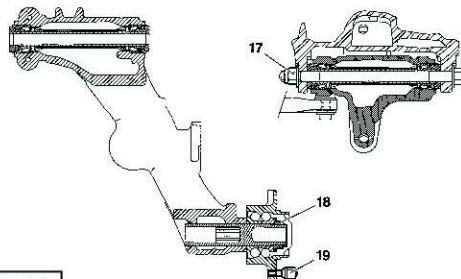
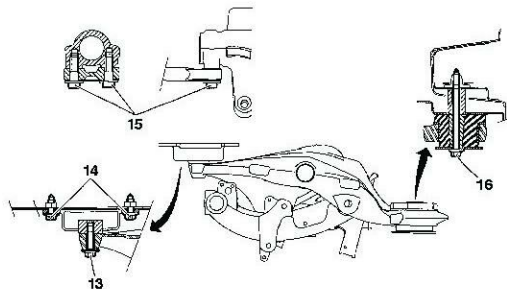


B3CP05WD

B3BP167D

C5

SUSPENSION



Rear suspension

Tightening torques m.daN.

(13) Subframe rear fixing	11,5 ± 1,1
(14) Rear rubber mounting fixing on bodyshell	8 ± 1,2
(15) Anti-roll bar fixing	13,1 ± 1,4
(16) Front fixing of subframe on bodyshell	11,5 ± 1,1
NOTE : (13) and (16) Face and threads greased.	
(17) Arm shaft fixing	14,9 ± 1,3
(18) Hub nut	25 ± 2,5
(19) Wheel fixing	9 ± 1
Stabiliser bar fixing on subframe	6,6 ± 0,6

Hydractive 3+ hydraulic suspension (power steering)

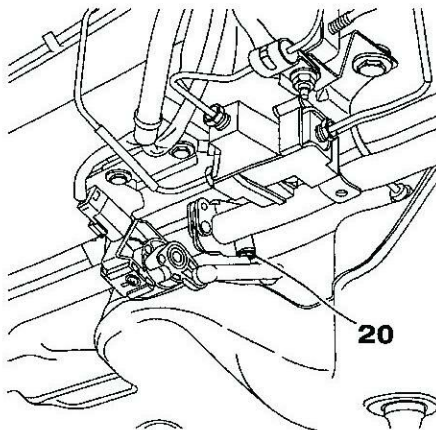
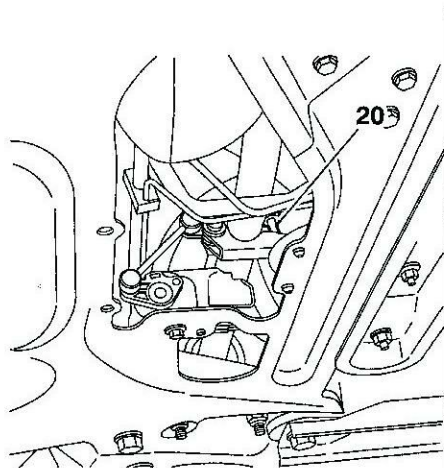
Suspension piston diameter	= 37 mm
Anti-roll bar diameter	
- Saloon	= 21,5 mm
- Estate	= 22 mm
Anti-roll bar colour reference	
- Saloon	= Blue
- Estate	= Green

B3DP08ND

B3DP08PD

SUSPENSION

C5



Height control

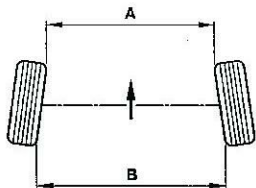
Tightening torques m.daN.

(20) Clips

0.6

B3CP06TD

C5		SUSPENSION				
Front axle					Rear axle	
Vehicle	Tracking	Castor	Camber	King pin inclination	Tracking	Camber
	Adjustable	Non adjustable			Adjustable	Non adjustable
Tous types	0 à - 3 mm 0° à - 0° 27'	3° 03' ± 30'	0° ± 30'	12° 56' ± 30'	5.4 ± 1.3 mm 0° 49' ± 0° 12'	- 1° ± 20'

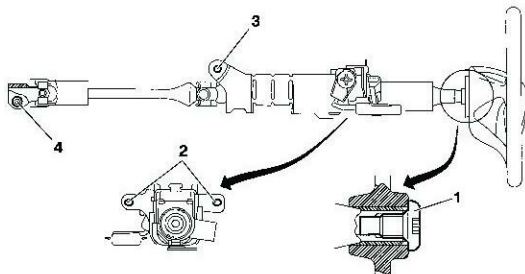


NOTE		
A < B = Positive figure :	+ =	TOE-IN
A > B = Negative figure :	- =	TOE-OUT

SPECIFICATIONS OF POWER-ASSISTED STEERING

C5

Engines : 6FZ - RFN - RLZ - XFX - RHY - RHS - RHZ - 4HX

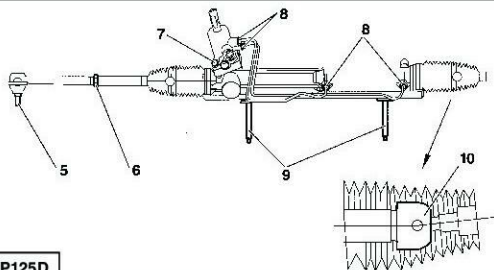


Tightening torques m.daN.

(1) Steering wheel fixing	$2 \pm 0,3$
(2) Column fixing on mounting	$2,3 \pm 0,4$
(3) Column fixing on mounting	$2,3 \pm 0,2$
(4) Cardan fixing	$2,3 \pm 0,3$
(5) Ball-joint fixing on pivot	$3,5 \pm 0,6$
(6) Link rod lock nut	$6 \pm 0,4$
(7) Valve fixing on cover	$2,3 \pm 0,1$
(8) Piping fixing on ram	$0,8 \pm 0,8$
(9) Mechanism fixing on subframe	$8 \pm 0,9$
(10) Steering rack ball-joint	$9 \pm 0,9$

Quantity of oil = 4.3 litres

Quality of oil = TOTAL FLUIDE LDS



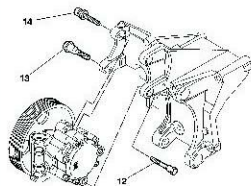
B3EP124D

B3EP125D

C5

SPECIFICATIONS OF POWER-ASSISTED STEERING

Engines : 6FZ - RFN - RLZ - XFX - RHY - RHS - RHZ - 4HX



Engines	Steering rack travel (mm)	Number of teeth		Number of turns of the wheel	Steering ratio	Angle of lock	
		Pinion	Rack			Inner	Outer
6FZ RFN-RLZ-RHY-RHS-RHZ	2x83	9	33	3.3	50.4/1	39.74°	35.65°
XFX 4HX	2x74			3		34.29°	31.58°

Engines	Supplier	Flow type	Regulation pressure	Pulley diameter
6FZ RFN-RLZ RHY RHS RHZ 4HX	ZF	Falling	100 bars	129 mm
XFX	SAGINAW	Constant		

Tightening torques m.daN

Engine types	EW-DW	ES9J4
(12) Screw	2.2 ± 0.3	2.5 ± 0.6
(13) Screw		
(14) Screw		

Petrol engine : A power-assisted steering pressure switch is installed on the hydraulic piping, between the high pressure pump and the steering valve.

Engine XFX : A converter, integral with the valve, modulates the assistance according to the vehicle speed.

Length of steering rods (*Adjustment*) between ball-joints = **362 mm.**

Power-assisted steering hydraulic circuit.

The oil supplies both the steering circuit and the suspension circuit.

B3EP127D

AXLE GEOMETRY (SETTING AT REFERENCE HEIGHT)**C8****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

Check the pressures in the tyres.

Check the conformity of the tyres.

Remove the wheel trims.

Lock the steering rack at point zero: straight ahead (See corresponding operation).

Tooling required

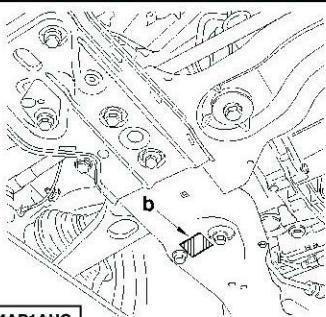
- | | |
|-----------------------------|------------|
| [1] Set of two compressors | : 9511-T.A |
| [2] Set of two shackles | : 9511-T.C |
| [3] Set of four straps | : 9511-T.B |
| [4] Set of two slings | : 9511-T.D |
| [5] Under body height gauge | : 2305-T |

C8

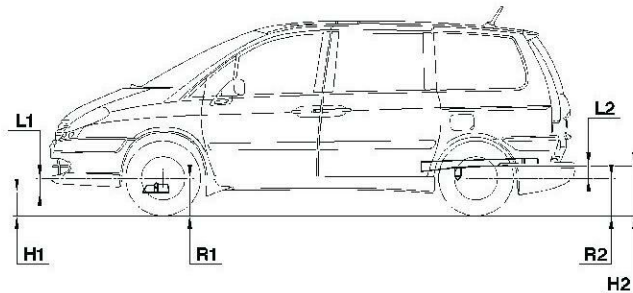
AXLE GEOMETRY

Setting at reference height (continued)

Measuring front height (H1)

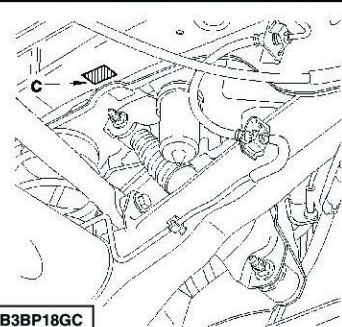


C4AP1AUC



E1AP0AYD

Measuring rear height (H2)



B3BP18GC

Front height

$$H1 = R1 - L1$$

H1 = Measurement between the bottom of the subframe (**b**) at the front fixing of the suspension wishbone, and the ground.

R1 = Radius of front wheel under load.

L1 = Distance between the centre of the wheel and the bottom of the subframe at the front fixing of the suspension wishbone.

Rear height

$$H2 = R2 + L2$$

H2 = Measurement between bottom of longeron (**c**) and the ground.

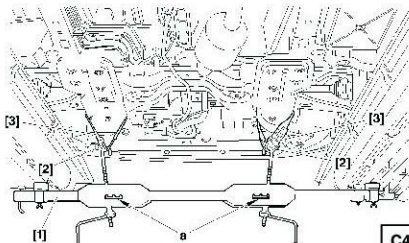
R2 = Radius of rear wheel under load.

L2 = Distance between the centre of the wheel and the bottom of the longeron.

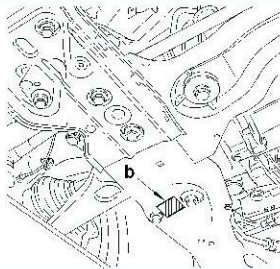
AXLE GEOMETRY

C8

Setting at reference height (continued)

Height of the vehicle at the front at reference height ($H1 = R1 - L1$)

C4AP1ATD



C4AP1AUC

Engage the straps [3] 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 bottom of the subframe (b) at the front fixing of the wishbone, and the ground.

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

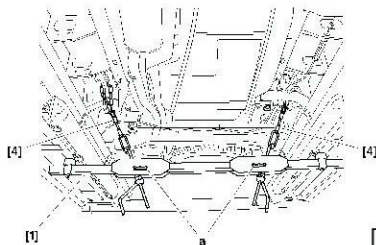
NOTE : Only the tracking is adjustable.

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

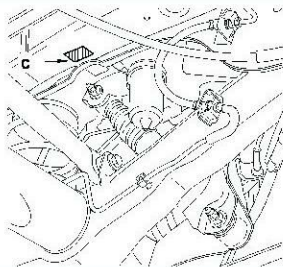
C8

AXLE GEOMETRY

Setting at reference height (continued)

Height of the vehicle at the rear at reference height ($H2 = R2 + L2$)

C4BP1CND



B3BP18GC

Engage the slings [4] on the rear longerons.

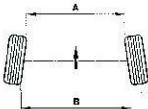
Position the suspension compressor [1] selecting the separation (a) most suited to pull the straps as far upwards as possible.

Compress the suspension so as to obtain, on the RH and LH sides, the bodysell height $H2$ (reference height), to be measured between the bottom of the longeron « 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								C8	
Values for front suspension angles				Values for rear suspension angles					
Engines	RFN	3FZ-RHT RHW-4HW	XFW	Engines	RFN	3FZ-RHT RHW-4HW	XFW		
Tyres	205x65 R15	215x65 R15	215x60 R16	Tyres	205x65 R15	215x65 R15	215x60 R16		
L1 (mm)	126			L1 (mm)	126				
L2 (mm)	94			L2 (mm)	94				
Adjustable				Non Adjustable					
Tracking (mm)	2 ± 1			Tracking (mm)	5 ± 1				
Tracking (degrees)	0° 17' ± 0° 08'			Tracking (degrees)	0° 45' ± 0° 08'		0° 42 ± 0° 08'		
Non Adjustable				Non Adjustable					
Camber	0° 0' ± 30'			Camber	- 1° ± 30'				
Castor	3° 30' ± 30'								
Angle of pivot	12° 24' ± 30'								
						NOTE			
				A < B = Positive figure :		+	=	TOE-IN	
				A > B = Negative figure :		-	=	TOE-OUT	

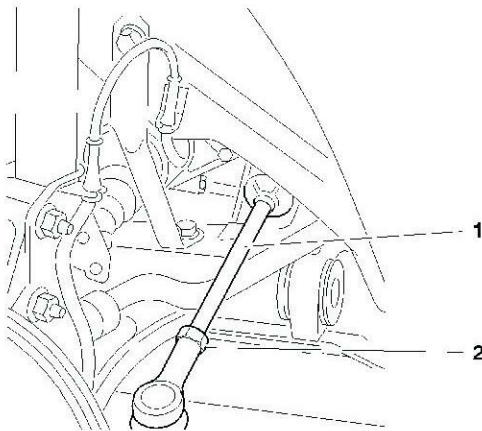
B3CP02UC

B3CP02UC

C8

AXLE GEOMETRY

Réglage des trains roulants



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

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

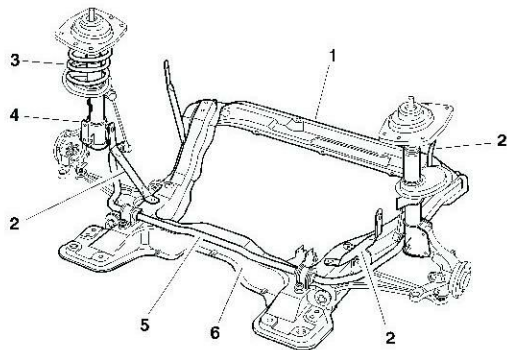
One turn of the rod = **2 mm approx.**

Tighten the nuts **(2)**, tighten to **4 ± 0,4 m.daN.**

B3BKAELD

FRONT AXLE

C8



Identification

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

Anti-roll bar

Engines

Diameter (mm)

RFN-3FZ-RHT-RHW-4HW

21.5

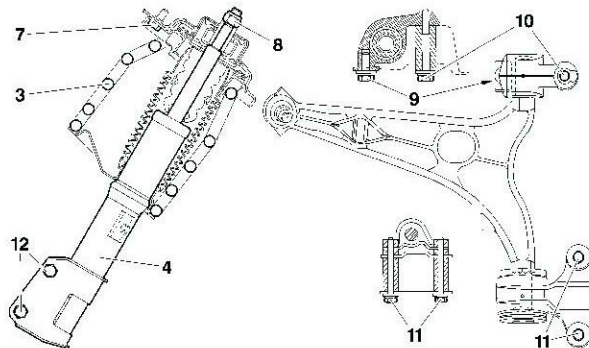
XFW

22

B3CK09JD

C8

FRONT AXLE



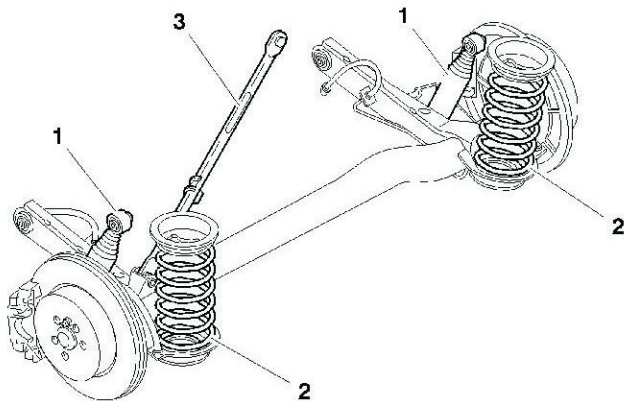
Tightening torques (m.daN)

Fixing of subframe on body	: $10,7 \pm 1$
Fixing on tie-rod on body	: $6,3 \pm 0,6$
Fixing of crossmember on body	: $8 \pm 0,8$
Fixing of tie-rod on front subframe	: $6,3 \pm 0,6$
Fixing of damper on pivot	: $9 \pm 0,9$
(12) Fixing of damper on pivot	: $9,2 \pm 0,9$
(8) Fixing of damper rod on upper cup	: $9 \pm 0,9$
(7) Fixing of upper cup on body	: $4,5 \pm 0,4$
Fixing of anti-roll bar on subframe	: $10,5 \pm 1$
Driveshaft nut	: 10 ± 1
(9) Front fixing of wishbone on subframe (screw length 30 mm)	: $10,5 \pm 1$
(10) Front fixing of wishbone on subframe (screw length 85 mm)	: $12,5 \pm 1$
(11) Rear fixing of wishbone on subframe	: $10,5 \pm 1$
Fixing of ball-joint on pivot	: $7 \pm 0,7$
Fixing of steering track rod on pivot	: $3,8 \pm 0,3$
Fixing of track rod on damper body	: $5,5 \pm 0,5$
Fixation biellette sur barre antidévers	: $5,5 \pm 0,5$

B3BP18FD

REAR AXLE

C8



Identification

(1) Damper.

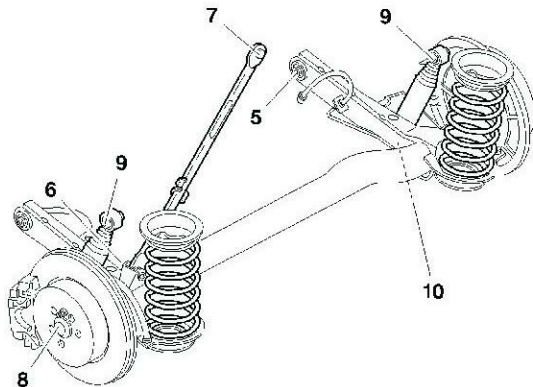
(2) Spring.

(3) Stabiliser bar.

B3DK0AFD

C8

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	: $9 \pm 0,9$

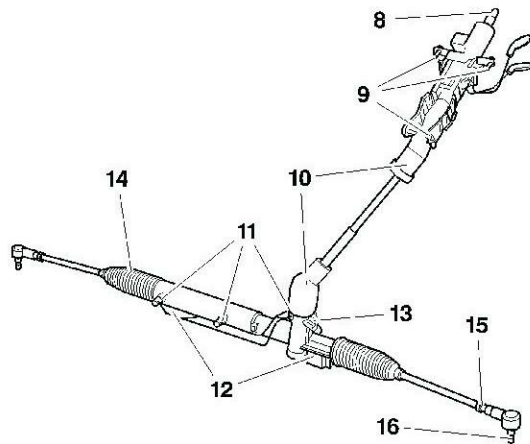
B3DK0AGD

C8	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				

SPECIFICATIONS OF POWER-ASSISTED STEERING

C8

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



Tightening torques (m.daN)

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

B3EK0K0D

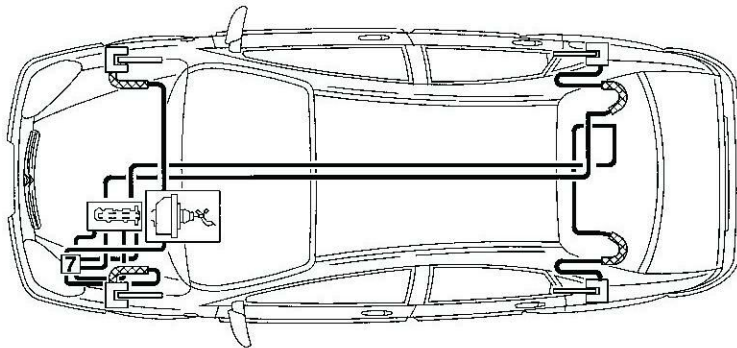
C5			BRAKE SPECIFICATIONS				
				1.8i 16V	2.0i 16V	2.0 HPi	3.0i V6
Engine type				6FZ	RFN	RLZ	XXF
FR	Ø mm	Master cylinder		22.2 (valve type)			
		Master-vac		254			
		Caliper/piston makes		BOSCH ZO 54/55 BIR 54	BOSCH ZO 57/56 BIR 57		BOSCH ZO 57/28BIR 57
		Brake disc	Non-ventilated				
	Ventilated		266	283	288		
	Disc thickness/min. thickness		22/20	26/24	28/26		
	Brake pad grade		ABEX 949/1	ABEX 949/1	TEXTAR T 4110		
RR	Ø mm	Cylinder or caliper		PSA - 32 (double piston)			
		Drum / Ø max.					
		Brake disc	Non-ventilated	276			
	Disc thickness/min. thickness		14/12				
	Make		ABEX or TEXTAR				
	Brake lining grade		949/1 or T 4110				

BRAKE SPECIFICATIONS							C5
				2.0 HDi			2.2 HDi
Engine type				RHY	RHS	RHZ	4HX
FR	Ø mm	Master cylinder		22.2 (valve type)			
		Master-vac		254			
		Caliper/piston makes		BOSCH ZO 57/26 BIR 57	BOSCH ZO 57/28 BIR 57		
		Brake disc	Non-ventilated				
	Ventilated		283	288			
	Disc thickness/min. thickness		26/24	28/26			
	Brake pad grade		TEXTAR T 4110				
RR	Ø mm	Cylinder or caliper		PSA - 32 (double piston)			
		Drum / Ø max.					
		Brake disc	Non-ventilated	276			
	Disc thickness/min. thickness		14/12				
	Make		TEXTAR or ABEX				
	Brake lining grade		T 4110 or 949/1				

C5

BRAKE SPECIFICATIONS

Braking circuit



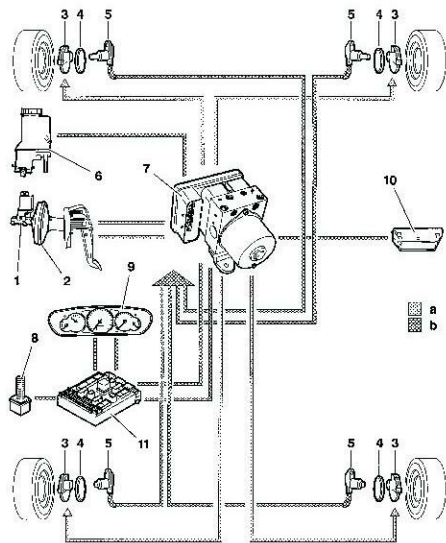
B3FP12WD

Braking system specifications

- Braking circuit at «X».
- Front brakes with ventilated discs.
- Rear brakes with non-ventilated discs.
- Handbrake lever controlling cables acting on the front wheels.
- The compensator and main brake limiter functions are assured by the ABS EBD system fitted as standard at the factory on all versions.

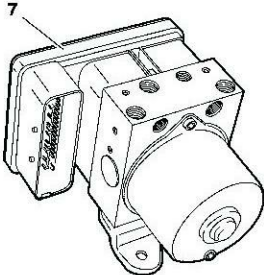
NOTE : EBD = Electronic Brakeforce Distribution

Braking circuit diagram



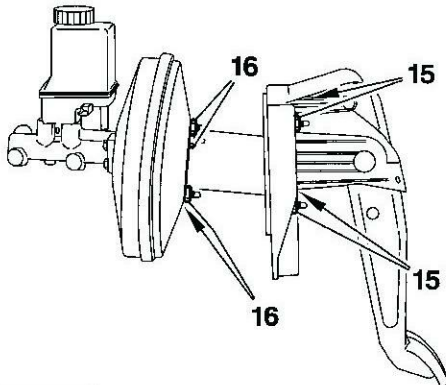
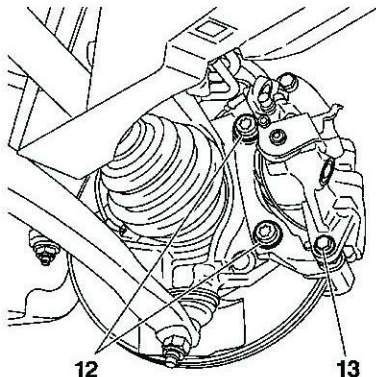
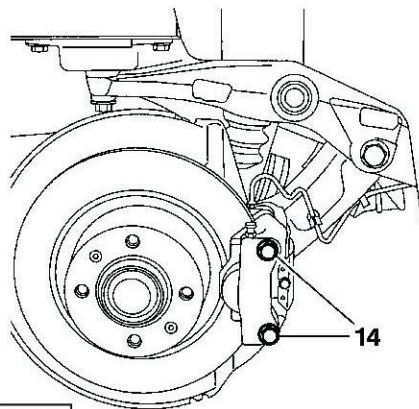
- (a) Hydraulic circuit.
- (b) Electrical circuit.
- (1) Master cylinder in tandem.
- (2) Braking servo.
- (3) Brake caliper.
- (4) Hub equipped with a bearing with an integral magnetic wheel (**48 pairs of poles**).
- (5) Wheel sensor.
- (6) Brake fluid level sensor.
- (7) Hydraulic block plus ECU.
- (8) Stoplamp switch.
- (9) Instrument panel.
- (10) Diagnostic socket.
- (11) Built-in systems interface (**BSI**).

B3GP02HP

C5		BRAKE SPECIFICATIONS				
(7) Hydraulic block						
		Elements	Ref.	Supplier	Part No.	Observations
		Electronic ECU.	7	ITT - A	ABS MK.60	47 way connector. Alone on the hydraulic block.
					BASR MK.60	
		Front wheel sensor.	5	ITT - A	96 332 952 80	2 way black connector. The sensors are inductive-type. Mounted on the pivot. Non-adjustable airgap: 0,2 to 1,5 mm. Tightening torque : 0.8 ± 0.2 m.daN
		Rear wheel sensor.			96 332 954 80	2 way black connector. The sensors are inductive-type Mounted on the brake caliper support. Non-adjustable airgap: 0.15 à 1.6 mm. Tightening torque: 0.8 ± 0.2 m.daN
		Hub bearing.	4	SNR		Hub equipped with a bearing with an integral magnetic wheel (48 pairs of poles).
		Hydraulic block.	7	TEVES	ABS MK.60 96 371 711 80	Installed on the front LH wheelarch. 4 adjustment channels.
BASK MK.60 96 371 712 80						

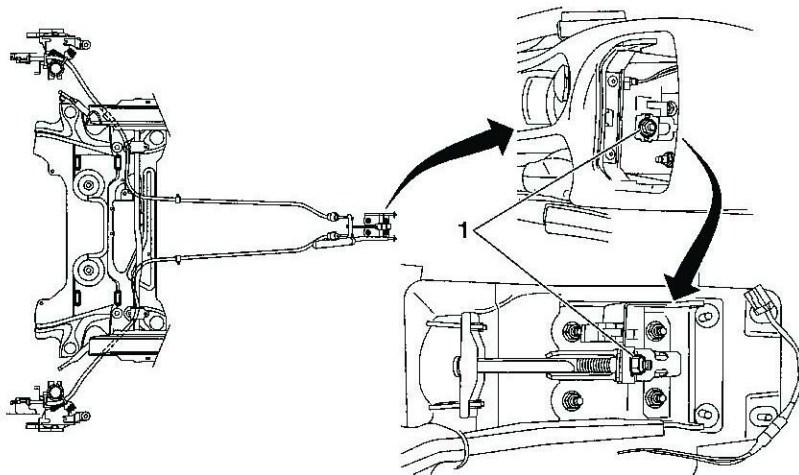
B3FP12XC

B3FP12XC

BRAKE SPECIFICATIONS				C5
Brake pedal carriage		Front brake		Rear brake
				
B3FP130C		B3FP12YC		B3FP12ZC
Couple de serrage (m.daN).				
(15) Fixing on bodyshell		(12) Caliper fixing on pivot		(14) Rear caliper fixing on suspension arm 7 ± 0.7
(16) Servo fixing		(13) Yoke fixing on caliper		
1.8 ± 0.25		12 ± 1.8		
2.1 ± 0.1		3.1 ± 0.1		

C5

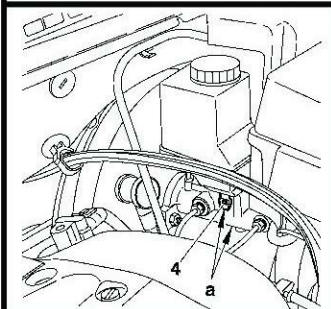
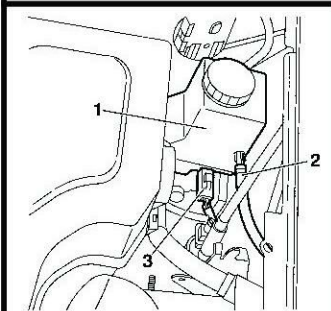
HANDBRAKE (Adjustment)



Adjustment

- Remove the rear ashtray from the handbrake console.
- **(1)** Nut for adjusting the tension of the handbrake cables.
- Raise and support the vehicle with the front wheels hanging free.
- Check the correct routing of the brake cables under the vehicle.
- Apply and release the handbrake **10 times**.
- Set the handbrake to the **5th notch**.
- Tighten the nut **(1)** until the front brakes are applied.
- Pull the handbrake lever vigorously **4 to 5 times**.
- Set the handbrake to the **5th notch**.
- Check that the front brakes are applied.
- With the handbrake released, check that the wheels can be turned freely by hand.
- Lower the vehicle.
- Refit the rear ashtray to the handbrake console.

B3FP12JD



- [1] Generic bleeding apparatus
- [2] PROXIA station
- [3] LEXIA station

Tools.

- : "LURO" or similar.
- : 4165-T.
- : 4171-T.

Bleeding, filling.

Draining the brake fluid reservoir.

- Drain the brake fluid reservoir (1) to the maximum (if necessary, use a clean syringe).
- Disconnect the connector (3).
- Uncouple the pipe (2).
- Remove the reservoir (1) by separating the lugs «a» from the shaft (4).
- Empty the brake fluid reservoir (1).
- Clean the brake fluid reservoir (1).

Remove :

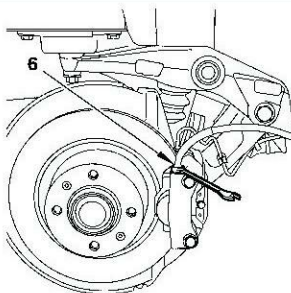
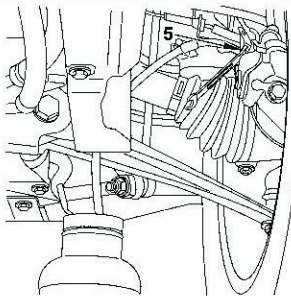
- The brake fluid reservoir (1).
- The shaft (4).
- Couple the pipe (2).
- Reconnect the connector (3).

B3FP139C

B3FP13AC

C5

BLEEDING AND FILLING THE BRAKING SYSTEM



Bleeding, filling (continued).

Filling the braking system.

WARNING : Use only those hydraulic fluids that are approved and recommended.

- Fill the brake fluid reservoir (1).

Bleeding the braking system.

WARNING: During the bleeding operation, take care to maintain the level of brake fluid in the reservoir and to top it up, using only brake fluid that is clean and clear.

Bleeding the primary circuit.

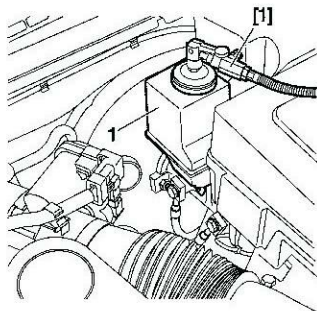
WARNING: The ABS should not be active during the bleeding operation.

- Front brake caliper: Bleed screw (5).
- Rear brake caliper: Bleed screw (6).
- Bleed each wheel cylinder, proceeding in the following order :

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

B3FP13BC

AB3FP13CC



Bleeding, filling (continued).

With the bleeding apparatus

- Connect the bleeding apparatus [1] on the brake fluid reservoir (1).
- Adjust the apparatus pressure to **2 Bars**.

For each circuit :

- Connect a transparent tube onto the bleed screw, submerge the other end of the tube in a clean container.
- Open the bleed screw, wait until the fluid is flowing out without air bubbles.
- Close the bleed screw.
- Remove the bleeding apparatus [1].
- Check the brake fluid level (*Should be between «**DANGER**» level and «**MAXI**» level*).
- Fill if necessary with the approved and recommended synthetic brake fluid.

Without the bleeding apparatus.

NOTE : Two operators are necessary.

For each circuit :

- Apply the brake pedal to place the circuit under pressure.
- Connect a transparent tube onto the bleed screw, submerge the other end of the tube in a clean container.
- Open the bleed screw, wait until the fluid is flowing out without air bubbles.
- Close the bleed screw.
- Remove the tool [1].

NOTE : Recommence the process a second time if that is necessary.

- Check the brake fluid level, (*Should be between «**DANGER**» level and «**MAXI**» level*).
- Fill if necessary with the approved and recommended synthetic brake fluid.

Bleeding, filling (continued).**Bleeding the secondary circuit.**

NOTE : The bleeding apparatus is connected on the brake reservoir.

- Use **LEXIA** or **PROXIA** diagnostic tools.

Select the menu corresponding to the vehicle :

- ABS menu.
- ESP menu.
- Follow the instructions on the diagnostic tool.
- At the end of the bleeding process, check and top up, if necessary, the brake fluid level.
- Check that the brake pedal travel has not been lengthened, otherwise repeat the bleeding procedure.
- Remove the tools.

BRAKE SPECIFICATIONS							C8	
			2.0i 16V	2.2i 16V	3.0i 24S	2.0 HDi	2.2 HDi	
Engine type			RFN	3FZ	XFW	RHT - RHW	4HW	
FR	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 60		BREMBO 40 + 44	LUCAS 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						

C8

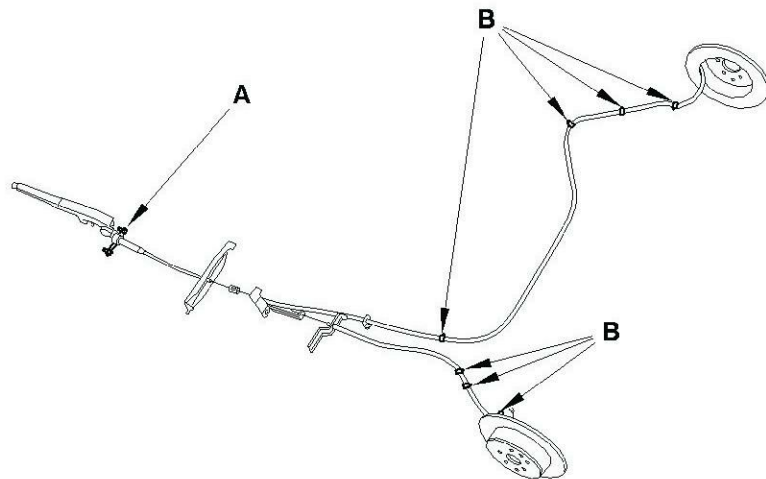
BRAKE TIGHTENING TORQUES (m.daN)**Engines : RFN - 3FZ - XFW - RHT - RHW - 4HW****Tightening torques (m.daN)**

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

C8

Identification



(A) Zone for fixing on floor.

(B) Clips for retaining on bodyshell.

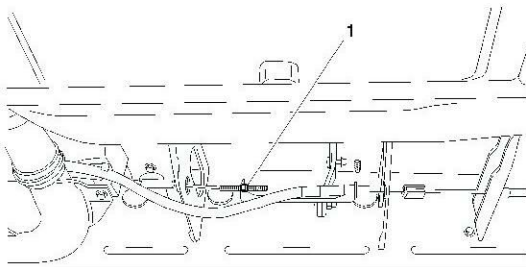
B3FK263D

BRAKES

C8

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

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.

C8

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.

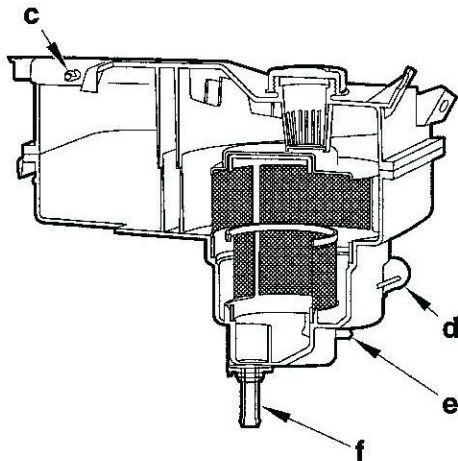
C5

- (A) High pressure hydraulic circuit.
- (B) Low pressure hydraulic circuit.
- (C) Electric circuit.
- (21) Built-in Hydro-electronic Interface (BHI).
- (22) Front slimline sphere.
- (23) Front suspension cylinder.
- (24) Rear slimline sphere.
- (25) Rear suspension cylinder.
- (26) Front hydractive 3+ regulator accumulator.
- (27) Front hydractive 3+ regulator.
- (28) Rear hydractive 3+ regulator accumulator.
- (29) Rear hydractive 3+ regulator
- (30) Front height sensor.
- (31) Rear height sensor.
- (32) LDS fluid reservoir .
- (33) Suspension switch.

B4CP01FP

C5

HYDRAULIC SPECIFICATIONS



Reservoir

Reference	Function	Component
"d"	Induction	(BHI) Built-in Hydro-electronic Interface Power steering pump
"e"	Return	(BHI) Built-in Hydro-electronic Interface
"f"		Power steering pump
"c"		Suspension cylinders

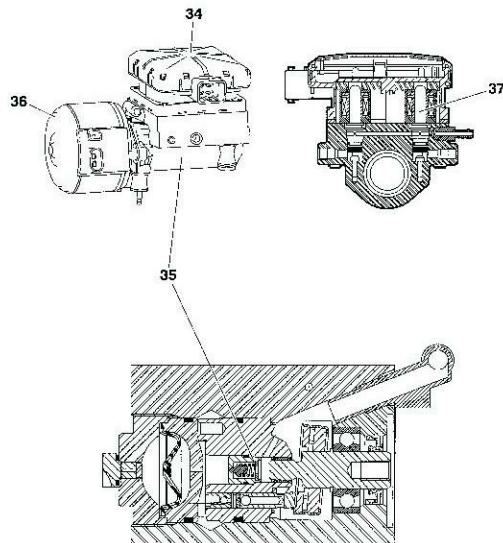
Synthetic fluid **TOTAL FLUIDE LDS.**
Capacity of the circuit **4.3 litres.**

B4BP01BC

HYDRAULIC SPECIFICATIONS

C5

Built-in Hydro-electronic Interface (BHI).



Ref.	Component	Specifications
(36)	Electric motor	2350 ± 150 tr/min
(35)	Hydraulic unit comprising : Pump with 5 axial pistons - Anti-pulse hydropneumatic accumulator A safety valve	Throughput = 0,7 l/min at 2300 rpm Diameters of the pistons = 6,35 mm Safety valve rating = 180 Bars
(34)	Electronic control unit	
(37)	4 electrovalves: Front suspension inlet Rear suspension inlet Front suspension exhaust Rear suspension exhaust	The vehicle's anti-sink function is assured by the exhaust electrovalves

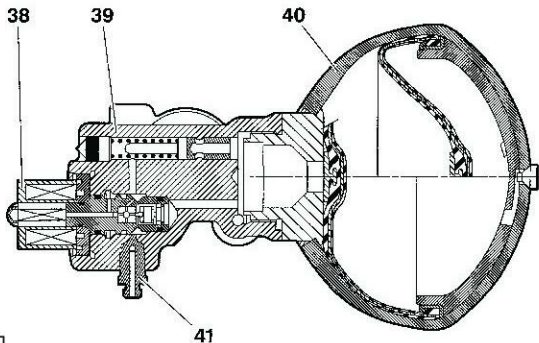
B3BP169P

HYDRAULIC
SYSTEM

C5

HYDRAULIC SPECIFICATIONS

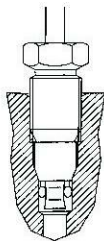
Hydractive 3+ regulator



B4BP01CD

Hydraulic unions

G



B4DP003D

H



J



- (40) Slimline sphere.
(39) Hydractive regulator.
(38) Electrovalve.
(41) Depressurisation screw.

Reference

Tube diameter
(mm)

Tightening torque
m.daN

G

3.5

 1.5 ± 0.3

H

6.35

J

10

 2.5 ± 0.5

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES**C5****Special features****Identification**

- Fitting of new slimline spheres with multilayer membrane and earth grey colour.
- It is prohibited either to recharge or repair this type of sphere.
- The number marked on the suspension sphere is the reference number for the component, not the Replacement Parts No.
- The 2-digit number on the suspension sphere indicates the value of the initial inflation pressure.

Example :

Suspension sphere marking	Batch	Day of manufacture	Year of manufacture	Time of manufacture	Pressure rating (Bars)
96 420 906 80	AG2	066	0	13.59	57

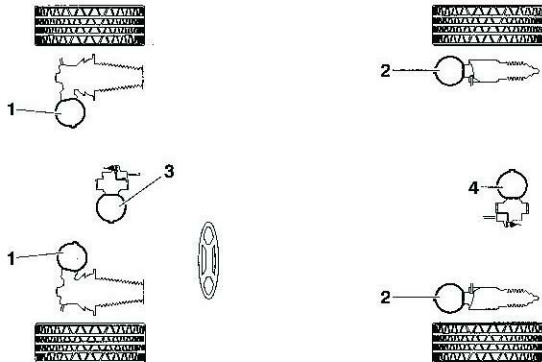
- The pressure rating of this type of suspension sphere is given merely as a guide.
- When checking, the value read could be higher than the nominal value.

NOTE : Suspension cylinders on the same axle should be equipped with the same type of membranes.

IMPERATIVE : Tightening torques for the spheres : 2.7 ± 0.5 mda.N.

C5

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES



(1) Front suspension sphere.

(2) Rear suspension sphere.

(3) Front hydractive 3+ regulator accumulator.

(4) Rear hydractive 3+ regulator accumulator.

B4BP01DD

Special features

Identification

The « **slimline** » spheres are grey in colour, with multilayer membranes.

IMPERATIVE : It is impossible to recharge or overhaul the « **slimline** » spheres with nitrogen.

The **two-figure** number marked on the suspension sphere indicates the initial pressure rating value.

Example

Suspension sphere marking	Day in year of manufacture	Year of manufacture	Time of manufacture	Pressure rating (Bars)
HF	066	00	13.59	57

- The pressure rating of this type of suspension sphere is given merely as a guide.

- When checking, the value read could be higher than the nominal value.

NOTE : Suspension cylinders on the same axle should be equipped with the same type of suspension spheres.

IMPERATIVE : Tightening torques for suspension spheres : **2,7 ± 0,5 mda.N.**

C5**SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES****Hydractive 3 hydraulic suspension****(1) Front suspension spheres****Engines****Suspension sphere marking****Volume (cc)****Pressure rating (Bars)****All
Type****6FZ****HF****385****57****RHY-RHS-RHZ****HG****(2) Rear suspension spheres****Engines****Suspension sphere marking****Volume (cc)****Pressure rating (Bars)****Saloon****HJ****KA****385****31****Estate****RHY-RHS-RHZ****HP****HT****44****HYDRAULIC
SYSTEM**

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES					C5
Hydractive 3+ hydraulic suspension					
		(1) Front suspension spheres			
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (Bars)	
All Types	RFN	HH	385	44	
	XFX-4HX	HI		52	
		(2) Rear suspension spheres			
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (Bars)	
Saloon	RFN-XFX-4HX	HE	385	25	
		HZ			
Estate		HO		44	
		HW			

C5		SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES			
Hydractive 3+ hydraulic suspension					
		(3) Front hydractive regulator accumulator			
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (Bars)	
All Types	RFN-4HX	HD	385	62	
	XFX	HQ			
		(4) Rear hydractive regulator accumulator			
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (Bars)	
All Types	RFN-4HX	GP	385	45	
	XFX	HR		44	

STARTER MOTORS

C5 - C8

Abbreviations and definitions

Coding of climates is as follows :

CLIMATES :

C	Hot	: Starting possible as low as -18°C
T	Temperate	: Starting possible as low as -18°C
F	Cold	: Starting possible as low as -25°C
GF	Very cold	: Starting possible as low as -30°C

Meaning of abbreviations :

BV	: Gearbox
MANUEL	: Manual gearbox
AUTOMATIC	: Automatic gearbox
MAP	: Piloted manual gearbox
DA REFRI	: Mechanical power steering, aircon

C5

STARTER MOTORS

Petrol engines

Engine	Gearbox	Reference	Class	Climate
1.8i 16 V	M	U	3	C.T.F
		V	4	GF
	A	U	3	C.T
		V	4	F.GF
2.0 16V HPi	M	U	3	C.T
		V	4	F.GF
2.0 16V	M	U	3	C.T
		V	4	F.GF
	A	U	3	C.T
		V	4	F.GF
2.0i 24 S	M	R2	4	C.T.F.GF
	A	R2	4	C.T.F.GF

STARTER MOTORS				C5
Diesel engines				
Engines	Gearbox	Reference	Class	Climate
2.0 HDi	M	X	4	C.T
		Z1	6	F.GF
		Y	5	C.T
		Z1	6	F.GF
	A	Z1	6	C.T
		Z3	6+	F.GF
2.2 HDi	M	Y	5	C.T
		Z3	6+	F.GF
	A	Y	5	C.T
		Z3	6+	F.GF

C8

STARTER MOTORS

Petrol engines

Engines	Gearbox	Reference	Class	Climate
1.8i 16 V	M	U	3	C.T
		V	4	F.GF
2.2 16 V HPi		U	3	C.T
		V	4	F.GF
3.0i 24 S	A	R2	4	C.T.F.GF

Diesel engines

2.0 16 V HDi	M	Y	5	C.T
		Z1	6	F.GF
Y		5	C.T	
2.2 HDi		Z3	6+	F.GF

ALTERNATORS

C5 - C8

Abbreviations and definitions

Coding of climates is as follows :

CLIMATES :

C : Hot
T : Temperate
F : Cold
GF : Very cold

Meaning of abbreviations :

BV : Gearbox
MANUEL : Manual gearbox
AUTOMATIC : Automatic gearbox
MANUELP : Piloted manual gearbox
NON REFRI : Without air conditioning
REFRI : With air conditioning
DA : Power-assisted steering
GEP : Electro-pump motor
DP : Double lug
3 Pts : 3-Point
NC : Not marketed
TT : All Types
N : Level
SOP : Without Option
TOP : All Options
L.C. : Heated rear screen
DAG : Left hand drive
DAD : Right hand drive

C5		ALTERNATORS											
Engine/ Gearbox	Climate	Without hi-fi pack						With hi-fi pack					
		Without heated seat			With heated seat			Without heated seat			With heated seat		
		Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.
1.8i 16V 2.0i 16V 2.0i 16 V HPi MANUEL	C	12						12					
	T	9											
	F												
	GF												
1.8i 16 V AUTOMATIC	C	12						12	15	12		15	
	T								12			12	
	F	9						9			9		
	GF										12		
2.0i 16V AUTOMATIC	C	12						15					
	T							12					12
	F	12				9	9						
	GF						12						

Meaning of abbreviations, see page: 321

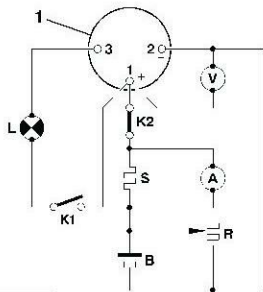
Meaning of abbreviations, see page: 321

ALTERNATORS												C5	
Engine Boîte	Climat	Without hi-fi pack						With hi-fi pack					
		Without heated seat			With heated seat			Without heated seat			With heated seat		
		Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.	Base	Mono Navig.	Colour Navig.
3.0i 24 S MANUEL AUTOMATIC	C	15						15					
	T												
	F												
	GF												
2.0 16V HPi MANUEL	C	12	12		12	12		12					
	T	9			9								
	F			9			9						
	GF												
2.0 HDi 2.0 16 V HDi MANUEL	C	15											
	T												
	F												
	GF												
2.0 HDi AUTOMATIC	C	15											
	T												
	F												
	GF												
Meaning of abbreviations, see page: 321													

C8		ALTERNATORS												
Engine/ gearbox	AIRCON												Climate	
	Without heated seats						With heated seats							
	Base			RT3			Base			RT3				
	N1	N2	N3	N1	N2	N3	N1	N2	N3	N1	N2	N3		
2.0i 16 V 2.2 16 V HPi MANUEL	9						9	15						C
	8							9						T
								9						F
								9						GF
2.0i 16 V AUTOMATIC	15	15					15	15					C	
	9						9						T	
	8	9					8			9			F	
	9						9						GF	
3.0i 24 S 2.016 V HDi AUTOMATIC	15												C	
													T	
													F	
													GF	
2.0 HDi MANUEL													C	
													T	
													F	
													GF	

CHARGING CIRCUIT - ALTERNATOR WITH MONO-FUNCTION REGULATOR

ALL TYPES



D1AP025C

A : Ammeter
B : Battery
G : Generator
L : Warning lamp
K1 and **K2** : Switch
R : Electric charge
S : Shunt 200mV/200A
V : Voltmeter
1 : Alternator.

Checking the alternator output

Connect as shown in the diagram opposite, using an ammeter (**A**), a voltmeter (**V**), and a rheostat (**R**) or a Volt/Ammeter/Rheostat combination.

Referring to the vehicle's equipment specification (*see table opposite*), adjust the engine speed and rheostat charge to obtain **U=13.5V**.

Reminder : The excitation energising current will flow through the warning lamp; check that the warning lamp comes on when the ignition is switched on. It should go out when the engine has started (accelerate slightly).

Checking the voltage regulator

Set the rheostat to zero and disconnect all the electrical consumers.

Display **3000 alternator rpm**. If **U** alternator is > 14.7 V, the regulator is faulty.

Note: These tests should be performed with the engine hot and the battery fully charged.

Method of reading the alternator speed

Fit a reflecting shim on the pulley of the alternator.

Adjust a stroboscope to the frequency equivalent to the control speed.

(e.g. **2000 rpm = 2000/60 = 83 Hz**)

Adjust the engine speed so that the shim appears fixed.

ALL TYPES		CHARGING CIRCUIT - ALTERNATOR WITH MONO-FUNCTION REGULATOR						
MINIMUM OUTPUTS (in A)								
Alternator speed	Min. output	Class						
		6	7	8	9	12	15	18
1800 rpm	I1	27	39	46	61	73	89	108
2000 rpm	I2	34	46	54	68	80	105	123
3000 rpm	I3	47	60	68.5	84	100	139	164
4000 rpm	I4	55	65	75	92	110	145	176
6000 rpm	I5	61	69	78.5	96	120	151	183
8000 rpm	I6	63	70	80	97	123	157	188
15000 rpm	I7	64	73	82	97	124	157	188
MINIMUM YIELDS (in %)								
Alternator speed		Class						
		6	7	8	9	12	15	18
1800 rpm		49	50	52	57	58	60	61
2000 rpm		48	49	51	54	55	57	60
3000 rpm		45	46	48	51	52	54	56
4000 rpm		43	44	46	48	50	52	53
6000 rpm		39	40	42	43	48	50	50
8000 rpm		26	37	39	40	45	48	48
15000 rpm		24	25	27	29	34	38	38

PRE-HEATING AND STARTING CIRCUITS				ALL TYPES
Vehicles	Engine	Pre-heater plugs	Pre-heater control unit	Pre-post-heating (Pre-heating time at 20°C)
C5	2.0 HDI 2.0 16V HDI	CHAMPION CH 170	CARTIER 51299011A NAGARES 960411-P	Piloted by the diesel injection ECU
	2.2 HDI	BERU A0100 226 344	CARTIER 51299011A NAGARES 960411-P	
Preheater plug resistance : $0.4 \Omega \leq R \leq 0.6 \Omega$				

C5 - C8		AIR CONDITIONING R 134 a (HFC)				
Vehicle	Engine version	Date	Refrigerant refill (± 25 gr)	Compressor		
				Variable capacity	Oil quantity cc	Oil reference
C5	1.8i 16V - 2.0i 16V 2.0 HPi 3.0i 24S 16V 2.2 HDi	11/2000 →	650`+ 0 - 50 gr	SD 7 V16	SD 7 V16	SP 10
	2.0 HPi			DELPHI V5 (1)	265 ± 15	PLANETELF 488
C8	2.0i 16V - 2.2 16V HPi 3.0i 24S - 2.0 16V HDi 2.2 HDi	06/2002	750 (± 25 gr)	SD 7 V16	135	SP 10
(1) HARRISON Division.						

SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)**C5 - C8**

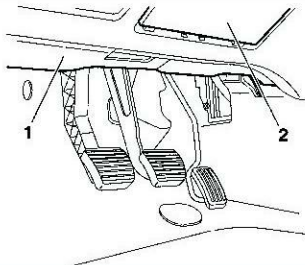
Summary table for presence of pollen filter

Vehicle	Equipment	RPO no.	Presence of filter	Observations
C5	Aircon all types		YES	Located under the dashboard.
C8				Located in the engine compartment.

C5

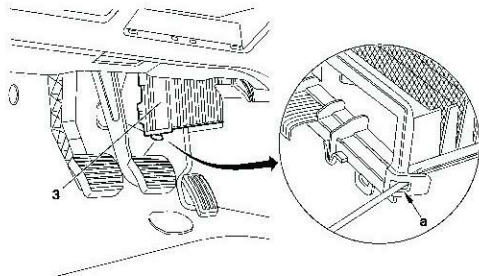
SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)

Pollen filter



Remove :

- The trim (1) under the dashboard (*driver's side*).
- The cover (2).



Unclip at « a » and pull out the pollen filter (3).

Remove the pollen filter (3).

C5FP0C5C

C5FP0C6D

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

C5

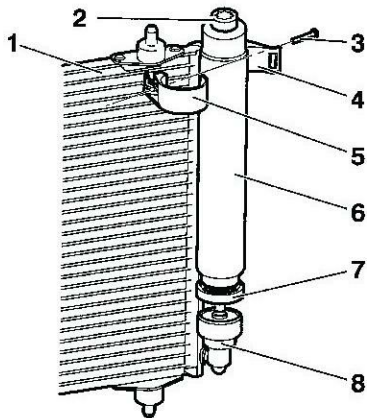
Drying cartridge

Tools

MULLER - ECOTECHNICS

70 FACOM

(Bottle /skirt / bottle nozzle /grease / compressor oil)



[1] Filling and recycling station

[2] TORX adaptor

[3] After Sales kit

Reminder : All repairs on an aircon circuit require the aircon circuit to be drained.

After carrying out the dismantling operations necessary to gain access to the condenser, proceed to clean the area of the skirt (8) of the reservoir (6) using a cloth, then replace the dryer reservoir (6).

Removing the plastic bracket holding the reservoir (6) :

- Remove the screw (3) (*Torx 20*), from the bracket assembly/plastic counter-bracket (4) and (5).
- Remove the counter-bracket (5). (*Rotate it round the hinge in a clockwise direction*).
- Disengage the bracket from the harness (1) (*Rotate it round the reservoir (6) anti-clockwise*).
- Remove the bracket (5) from the reservoir body (6).

Unscrewing the reservoir (6).

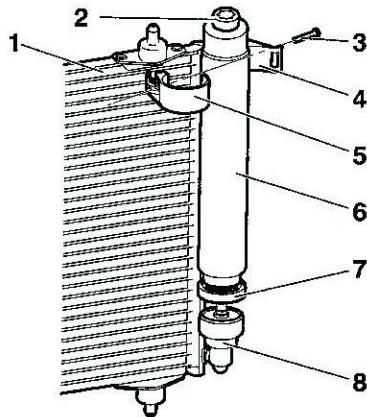
- Unscrew the reservoir (6) using the tool [2].

C5HP16EC

C5

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

Condenser with integral reservoir (continued)



Removing the reservoir (6) from the base (8).

WARNING : This operation requires the greatest care, the base (8) should be kept clean prior to fitting the new reservoir.

- Remove the reservoir (6) and the protection skirt (7), avoiding **WITHOUT FAIL** any contact or collision with other items under the bonnet (*Risk of impurities entering the base (8)*).
- Check before refitting the reservoir (6) that the base (8) is clean.
(If it is not, clean in and around the base (8) with a paper cloth.)

Preparing the new dryer reservoir

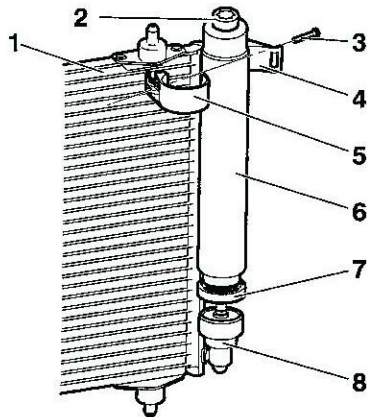
- Remove the black plastic protection cap from the reservoir neck (6), leaving in place the green protection at the other end, in order to keep the new reservoir (6) sealed when mounting it in the base (8) of the condenser.
- Use the grease sachet in the replacement kit, to lubricate the threads of the reservoir.
- Use the oil sachet in the replacement kit, to lubricate the two O-ring seals of the reservoir (6).
- Position the reservoir (6), with its new protection skirt (7) from the replacement kit, and engage the threads of the reservoir (6) in the base (8).
- Check that the downward edge of the skirt (7), covers the base (8) all around it.

C5HP16EC

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

C5

Condenser with integral reservoir (continued)



WARNING : The reservoir (6) contains a drying agent. As soon as the black protection is removed, the reservoir must be mounted in the base (8), otherwise there is a risk of damaging the air conditioning circuit.

Screwing the reservoir (6) into the base (8).

- Screw the reservoir (6) manually, until the neck of the reservoir (6) is in contact with the bottom of the base (8).
- Tighten with a torque spanner and tool [2] at (2) to $1,3 \pm 0,1$ m.daN.

Fitting the plastic bracket. (New, from the replacement parts kit).

Proceed in the opposite order to removal, tighten the screw (3) to 0,15 m.daN.

C5HP16EC

ALL TYPES

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

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 134.a fluid.

b) - Using draining/filling equipment fitted with an oil decanter.

- Drain the R 134.a 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 134.a 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 134.a fluid.

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

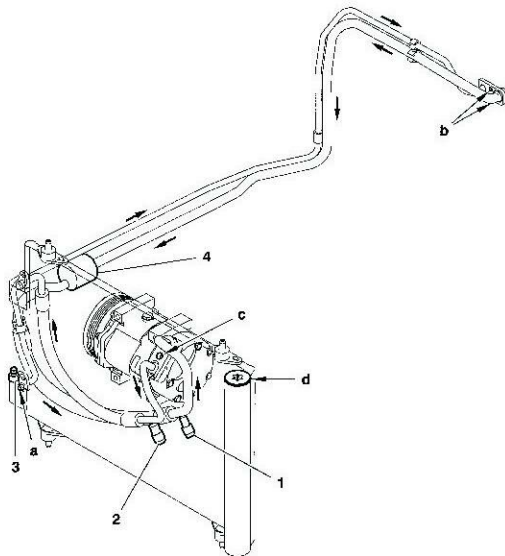
Either before or during filling of the system with R 134.a fluid, introduce **80 cc** of NEW oil into the system.

ALL TYPES	CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM
CHECKING TEMPERATURES.	
<p style="text-align: center;">TOOLS</p> <p>Two thermometers.</p> <p>Preliminary conditions.</p> <p>Position of the air conditioning controls :</p> <ul style="list-style-type: none"> - Maximum cold air. - Air blower in maximum position. - Air distributor in "ventilation" position, with the dashboard vents open. - Air intake flap in "exterior air" position. <p>Conditions and vehicle equipment.</p> <ul style="list-style-type: none"> - Bonnet closed. - Doors and windows shut. - Ensure the vehicle is in a sheltered area (away from wind, sun, etc..). 	<p>CHECKS.</p> <p>If all these conditions are met, take the following action :</p> <ul style="list-style-type: none"> - Start the engine, with the air conditioning off, and wait for the cooling fan first speed to cut in. - Operate the air conditioning and set the engine speed to 2500 rpm. <p>NOTE : If the exterior temperature reaches 40 °C, the engine speed will return to 2000 rpm in order to prevent the compressor from being cut off by the High Pressure safety device (Pressostat).</p> <p>After the air conditioning has been on for three minutes, measure :</p> <ul style="list-style-type: none"> - the exterior temperature in the workshop, - the temperature of the air coming out of the central vents. <p>Compare the two values using the table overleaf.</p>

AIR CONDITIONING SYSTEM R 134.a

C5

Engines : 6FZ - RFN - RLZ



(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket

Tighten to **0,8 m.daN**

(b) Pressure control valve

Tighten to **0,8 m.daN**

(c) Compressor bracket

Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir

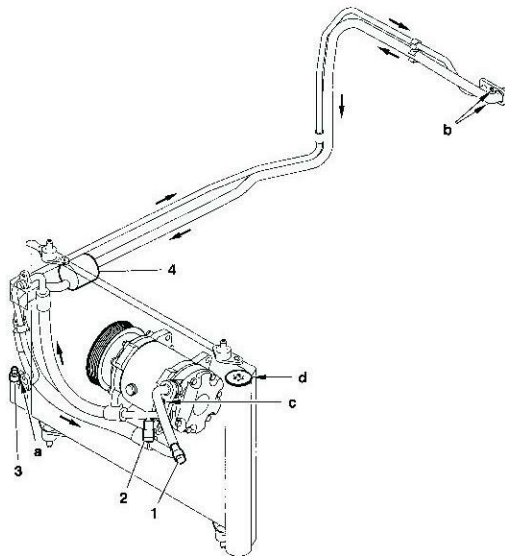
Tighten to **1,4 ± 0,2 m.daN.**

C5HP15QP

C5

AIR CONDITIONING SYSTEM R 134.a

Engine : XFX



(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket

Tighten to **0,8 m.daN**

(b) Pressure control valve

Tighten to **0,8 m.daN**

(c) Compressor bracket

Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir

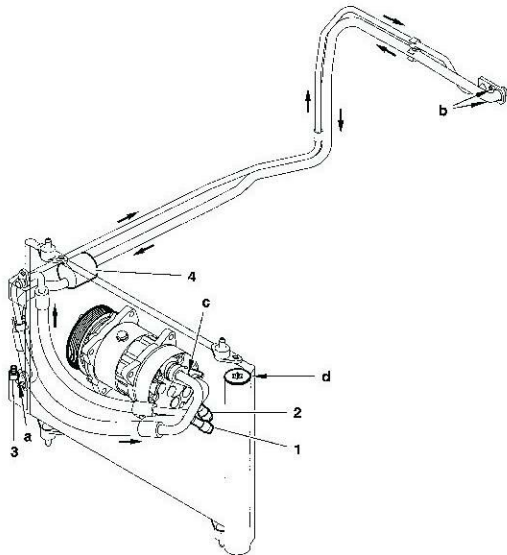
Tighten to **1,4 ± 0,2 m.daN.**

C5HP15RP

AIR CONDITIONING SYSTEM R 134.a

C5

Engines : RHY - RHZ



(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket

Tighten to **0,8 m.daN**

(b) Pressure control valve

Tighten to **0,8 m.daN**

(c) Compressor bracket

Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir

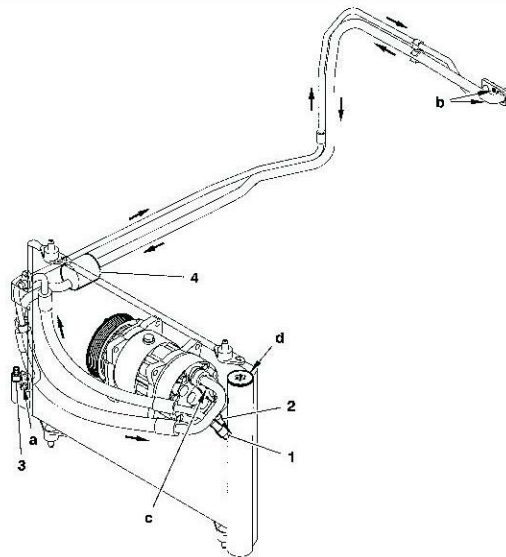
Tighten to **1,4 ± 0,2 m.daN.**

C5HP15SP

C5

AIR CONDITIONING SYSTEM R 134.a

Engine : 4HX



(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket

Tighten to **0,8 m.daN**

(b) Pressure control valve

Tighten to **0,8 m.daN**

(c) Compressor bracket

Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir

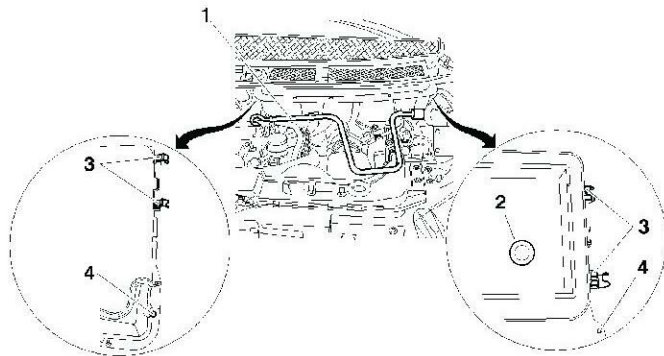
Tighten to **1,4 ± 0,2 m.daN.**

C5HP15TP

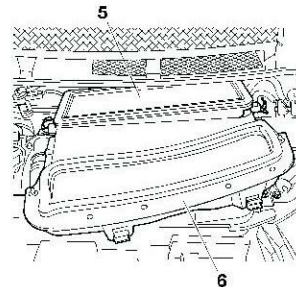
SPECIAL FEATURES : AIR CONDITIONING SYSTEM (R 134.a)

C8

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).

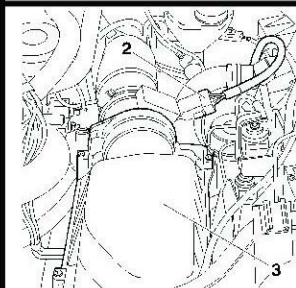
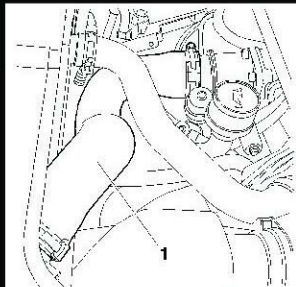
Refitting.

Proceed in reverse order.

C8

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).

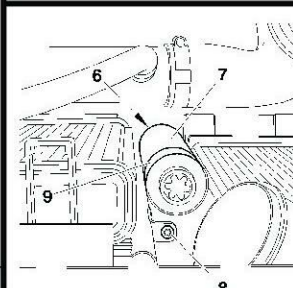
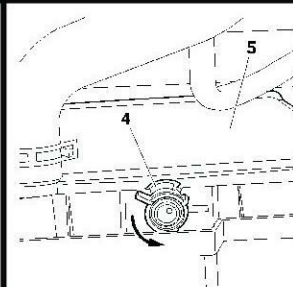
Remove the air filter (3).

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

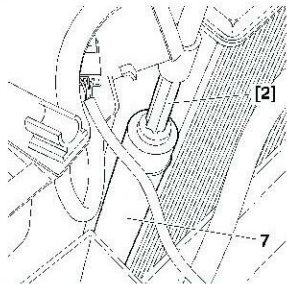
C5HP184C

C5HP185C

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

C8

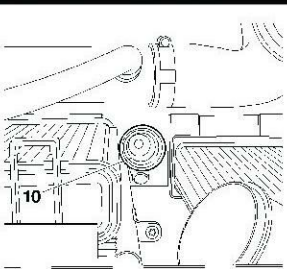
Removing-refitting the drying cartridge (continued)



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.

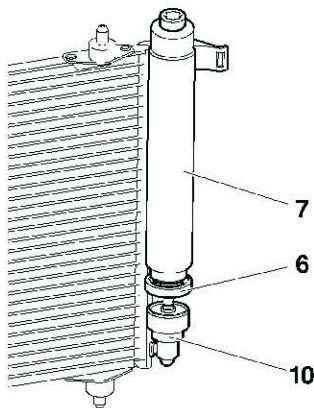
C5HP186C

C5HP187C

C8

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.

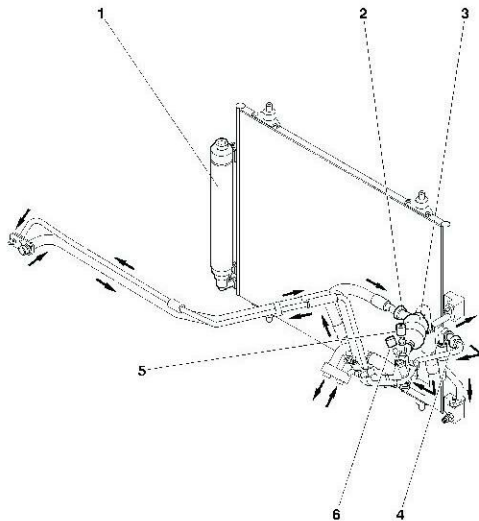
Proceed to:

- Recharge the circuit. (See corresponding operation).
- Check that the air conditioning system functions correctly. (See corresponding operation).

AIR CONDITIONING SYSTEM R 134.a

C8

Engines : RFN - 3FZ



1 - Drying cartridge.

2 - Clickfit union. (Tool **8005-T.C**)

3 - Buffer capacity.

4 - Clickfit union. (Tool **8005-T.A**)

5 - High pressure valve.

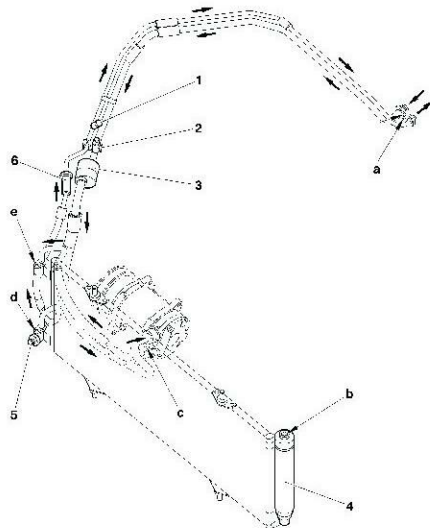
6 - Low pressure valve.

C5HP17TP

C8

AIR CONDITIONING SYSTEM R 134.a

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

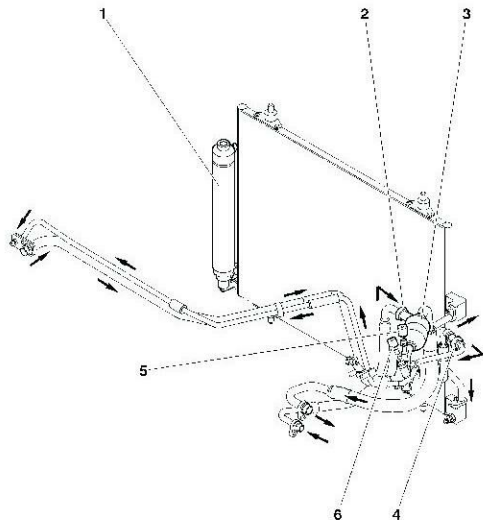
e 0.8

C5HP18TP

AIR CONDITIONING SYSTEM R 134.a

C8

Engines : RHT - 4HW



1 - Drying cartridge.

2 - Clickfit union. (Tool **8005-T.C**)

3 - Buffer capacity.

4 - Clickfit union. (Tool **8005-T.A**)

5 - High pressure valve.

6 - Low pressure valve.

C5HP17UP