PRIVATE CARS
CITROËN C5 - CITROËN C8

2005

«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 000.020
Volume 3

CORRESPONDENCE TABLE FOR PETROL ENGINES

Engine families	EW				ES	
	7	10		12	9	
	J4	A	J4		A	J4
	1.8i 16V	2.0i 16V		2.2i 16V HPi	3.0i 24V	
Engine types	6FZ	RFJ	RFN	3FZ	XFU	XFW
C5	X	X			X	
C8			X	X		X

CORRESPONDENCE TABLE FOR DIESEL ENGINES

Engine families	DV	DW						
	6	10					12	
	TED4	TED4			BTED4		TED	ATED4
	1,6 16V HDi	2,0 16VHDi					2,2 16VHDi	
Engine types	**9HZ**	**RHM**	**RHT**	**RHW**	**RHL**	**RHR**	**4HX**	**4HW**
C5	X				X	X	X	
C8		X	X	X				X

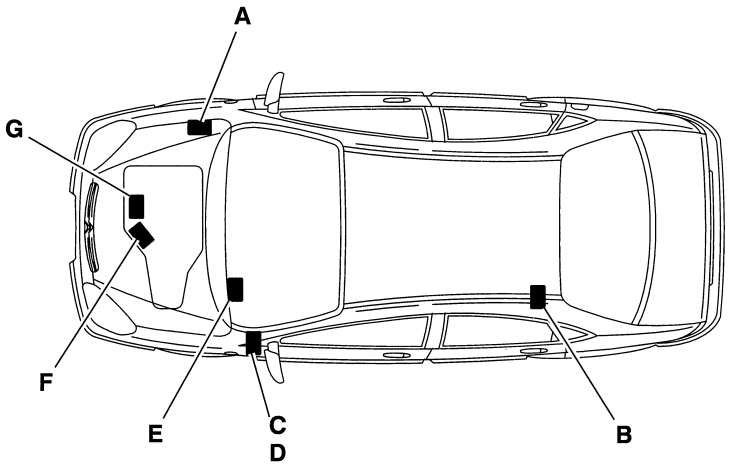
VERY IMPORTANT

As the booklet is constantly re-edited, this one only covers vehicles for this particular model year.

It is therefore necessary to order a new booklet each year and RETAIN THE OLD ONES.

IDENTIFICATION OF VEHICLES

C5



E1APO8RD

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.

C5 — IDENTIFICATION OF VEHICLES

Type approval

Structure

DC RFNC/IF	D	Family **(1)**
	C	Bodywork **(2)**
	RFN	Engine **(3)**
	C	Version **(4)**
	/IF	Variant **(5)**

Family (1)

D	C5

Body shape (2)

C	5-door saloon
E	Estate

Engine (3)

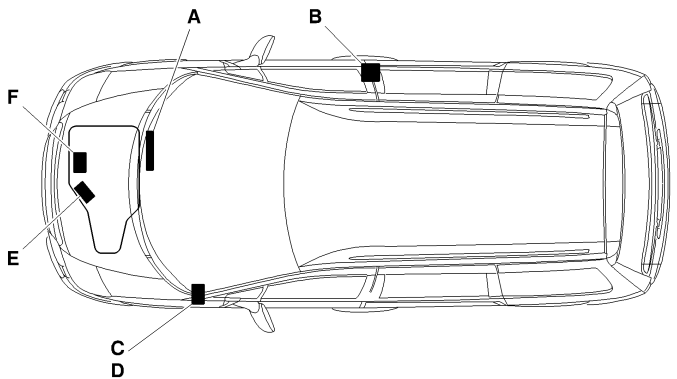
6FZ	EW7J4	1.8i 16V
RFJ	EW10A	2.0i 16V
XFU	ES9A	3.0i 24S
9HZ	DV6TED4	1.6i 16 HDi
RHL	DW10BTED4	2.0i 16V HDi
RHR		
4HX	DW12TED4	2.2 16V HDi

Version (4)

	Depollution levels							
	L3 / W3	L4	Euro IV	US / 83/87	Other	K / K'	Alcohol L3/L4	Alcohol Euro IV
Manual 5-speed gearbox	A	B	C	P	V	5	8	1
Manual 4-speed gearbox		E	F	R	W	6	9	2
Manual 6-speed gearbox ts		G	H	S	X			3
Automatic 6-speed gearbox		D	J	N				U
Axle and/or gearbox gears		K	L	T	Y	7	0	4
Other possible combinations		M						
No gearbox	Z							

Variants (5)

Entreprise convertible	T
Integral alternator-starter (ADIN)	AD
Without FAP	SF
Fiscal incentives	IF
Piloted manual gearbox	P
Downgraded depollution	D
LPG dual fuel	GL
STT2 (stop and start)	S



E1AP0A2D

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.

C8 — IDENTIFICATION OF VEHICLES

Type approval

Structure

EA XFWF/IF	E	Family **(1)**
	A	Bodywork **(2)**
	XFW	Engine **(3)**
	F	Version **(4)**
	/IF	Variant **(5)**

Family (1)

E	C8

Body shape (2)

A	Monospace 7 seats maximum
B	Monospace 8 seats maximum

Engine (3)

RFN	EW10J4	2.0i 16V
3FZ	EW12J4	2.2i 16V Hpi
XFW	ES9J4	3.0i 24S
RHM	DW10TED4	2.0i 16V HDi
RHT		
RHW		
4HW	DW12ATED4	2.2i 16V HDi

Version (4)

	Depollution levels							
	L3 / W3	L4	Euro IV	US 83/87	Other	K / K'	Alcohol L3/L4	Alcohol Euro IV
Manual 5-speed gearbox	A	B	C	P	V	5	8	1
Manual 4-speed gearbox		E	F	R	W	6	9	2
Manual 6-speed gearbox ts		G	H	S	X			3
Automatic 6-speed gearbox		D	J	N				U
Axle and/or gearbox gears		K	L	T	Y	7	0	4
Other possible combinations		M						
No gearbox	Z							

Variants (5)

Entreprise convertible	T
Integral alternator-starter (ADIN)	AD
Without FAP	SF
Fiscal incentives	IF
Piloted manual gearbox	P
Downgraded depollution	D
LPG dual fuel	GL
STT2 (stop and start)	S

CAPACITIES (in litres)

Draining methods

Oil capacities are defined according to the following methods

Draining of the engine lubrication system by **GRAVITY**	Draining of the engine lubrication system by **SUCTION**
Place the vehicle on horizontal ground *(in the high position if hydropneumatic suspension)*.	Place the vehicle on horizontal ground *(in the high position if hydropneumatic suspension).*
The engine should be hot *(oil temperature **80°C**)*.	The engine should be hot *(oil temperature **80°C**)*.
Drain the sump by gravity.	Remove the oil by suction through the dipstick tube.
Remove the oil filter cartridge *(time for draining and drip-drip = **15 minutes** approx.)*.	Remove the oil filter cartridge.
Refit the cap with a new seal.	Maintain the suction of oil in the sump *(**15 minutes** approx.)*.
Refit a new oil filter cartridge.	Refit a new oil filter cartridge.
Refill the engine with oil *(see table for oil capacity)*.	Refill the engine with oil *(see table for oil capacity)*.
Start the engine to fill the oil filter cartridge.	Start the engine to fill the oil filter cartridge.
Stop the engine *(allow to stabilise for **5 minutes**)*.	Stop the engine *(allow to stabilise for **5 minutes**)*.
	WARNING: Remove the suction container before starting the engine.

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

CAPACITIES (in litres)

	C5					
	Petrol					
	1.8i 16V	2.0i 16V		3.0i 24S		
			AUTO.			AUTO.
Engine type	6FZ	RFJ		XFU		
Engine with filter change	4,25	5		5,25		
Between Min. and Max.	1,7			2		
5-speed gearbox	1,8	1,8		1,8		
Automatic gearbox			6			7
After oil change			3			4
Braking circuit						
Hydraulic circuit	4,3					
Cooling system	8,8			14		
Fuel tank capacity	65					

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

CAPACITIES (in litres)

	C5				
	Diesel				
	1.6 16V HDi	2.0 16V HDi		2.2 16V HDi	AUTO.
Engine type	9HZ	RHL	RHR	4HX	
Engine with filter change	3,75	5,25		4,75	
Between Min. and Max.	1,55	1,9		1,5	
5-speed gearbox	1,8			1,8	
Automatic gearbox					8,3
After oil change					5,3
Braking circuit					
Hydraulic circuit	4,3				
Cooling system	10,5 11,7 (with additional heating)				
Fuel tank capacity	65				

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

CAPACITIES (in litres)

	C8								
	Petrol				Diesel				
	2.0i 16v	2.2i 16V	3.0i 24V	AUTO.	2.0 16V HDi			2.2 16V HDi	AUTO.
Engine type	RFN	3FZ	XFW		RHM	RHT	RHW	4HW	
Engine with filter change	4,25		5,25		4,75			4,75	
Between Min. and Max.	1,7		2		1,9			1,5	
5-speed gearbox	1,8	2			2				
Automatic gearbox				8,3					6
After oil change				5,3					3
Hydraulic circuit	0,66								
Cooling system	7	7,2		10,5	10				11,3
Fuel tank capacity	80								

LUBRICANTS - TOTAL recommended oils

EVOLUTIONS *(YEAR 2004).*

CITROËN C4

Petrol engine versions except 2.0 i 16V 180 hp *(132 kW)*:
- Normal maintenance interval: **30 000 km *(20 000 miles)***.
- Severe maintenance interval: **20 000 km *(12 000 miles)***.

Petrol engine version 2.0L i 16V 180 hp *(132 kW)*:
- Normal maintenance interval: **20 000 km *(12 500 miles)***.
- Severe maintenance interval: **15 000 km *(10 000 miles)***.

Diesel engine versions.
WARNING: Vehicles HDi FAP (*) do not accept the energy economy oil TOTAL ACTIVA FUTUR 9000 5W30 for France, TOTAL QUARTZ FUTURE 9000 5W30 outside France .

DV6 engines:
- Normal maintenance interval: **20 000 km *(12 500 miles).***
- Severe maintenance interval: **15 000 km *(10 000 miles).***

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

New Look CITROËN C5

Petrol engine versions:
- Normal maintenance interval: **30 000 km *(20 000 miles)***.
- Severe maintenance interval: **20 000 km *(12 000 miles)***.

Diesel engine versions.

WARNING: Vehicles HDi FAP (*) do not accept the energy economy oil TOTAL ACTIVA FUTUR 9000 5W30 for France, TOTAL QUARTZ FUTURE 9000 5W30 outside France.

DV6 engines:
- Normal maintenance interval: **20 000 km *(12 500 miles).***
- Severe maintenance interval: **15 000 km *(10 000 miles).***

DW engines :
- 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.

LUBRICANTS - TOTAL recommended oils

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

WARNING: To avoid difficulties when starting from cold *(< 20°C)*, use 5W40 oil.
For more details, see the oil usage table *(paragraph 3.3)*.

Commercial description for energy economy oil.
TOTAL ACTIVA FUTUR 9000 5W30 *(France only)*.
TOTAL QUARTZ FUTUR 9000 5W30 *(except France)*.
The exclusions for use of this oil are the following:
- XSARA VTS 2.0 16V (XU10J4RS).
- JUMPER/RELAY 2.8 HDi and 2.8 TDi (SOFIM engine).
- HDi FAP vehicles.
- CITROËN C3 HDi 16V (DV4TED4).
- CITROËN C8 2.2i (EW12J4).
- CITROËN C4 and C5 2.0i (EW10A).
- CITROËN C4 (EW10J4S).

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.

S.A.E. Norms - Table for selection of engine oil grade.
Selection of engine oil grades recommended for climatic conditions in countries of distribution *(see table, paragraph 3.3)*.

Evolution of the norms to 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, specific to direct injection diesel engines.

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**)*.

LUBRICANTS - TOTAL recommended oils

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 2004)*:
- XU10 J4RS : XSARA VTS 2.0i 16V (3-door).
- SOFIM : JUMPER / RELAY 2.8 TDi and 2.8 HDi.
- HDi : With particle filter (FAP).
- DV4 TED4 : CITROËN C3 1.4 16V HDi.
- EW 12J4 : CITROËN C8 2.2i.
- EW 10A : CITROËN C4 and C5 2.0i.
- EW10J4S engine : CITROËN C4.

WARNING: CITROËN engines prior to model year 2000 do not have to be lubricated with oils adhering to the norms:
- ACEA AI-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)*.

Summary.
Norms to be respected for engine oils *(year 2004)*.

Year	Engine types concerned	ACEA Norms	API Norms
2003	Petrol and LPG dual fuel engines	A3 or A5 **(*)**	SJ or SL
	Diesel engines	B3, B4 or B5 **(*)**	CF

(*) It is essential not to use engine oils respecting these norms for **XU10J4RS**, **SOFIM 2.8 TDi** and **SOFIM 2.8 HDi** engines, HDi engines with particle filter **EW10A**, **EW12J4**, **DV4TED4**.

LUBRICANTS - TOTAL recommended oils

Classes and grades of TOTAL recommended engine oils.

The oils distributed in each country are suited to the local climatic conditions.

Blended oils for all engines *(petrol, diesel and dual fuel petrol/LPG)*:

	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA 9000 TOTAL QUARTZ 9000	5W40	A3/B3/ B4	SL/CF
TOTAL ACTIVA FUTUR 9000 **(*)** TOTAL QUARTZ FUTUR 9000 **(*)**	5W30	A5/B5	
TOTAL ACTIVRAC	10W40	A3/B3	

(*) Blended oils for all engines giving fuel economy.

Oils for petrol, diesel and dual fuel petrol/LPG engines:

	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	10W40	A3	SL
TOTAL QUARTZ 9000	0W40		
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	15W50		

Oils specifically for diesel engines:

	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	10W40	B3	CF
TOTAL ACTIVA DIESEL 7000	15W50		

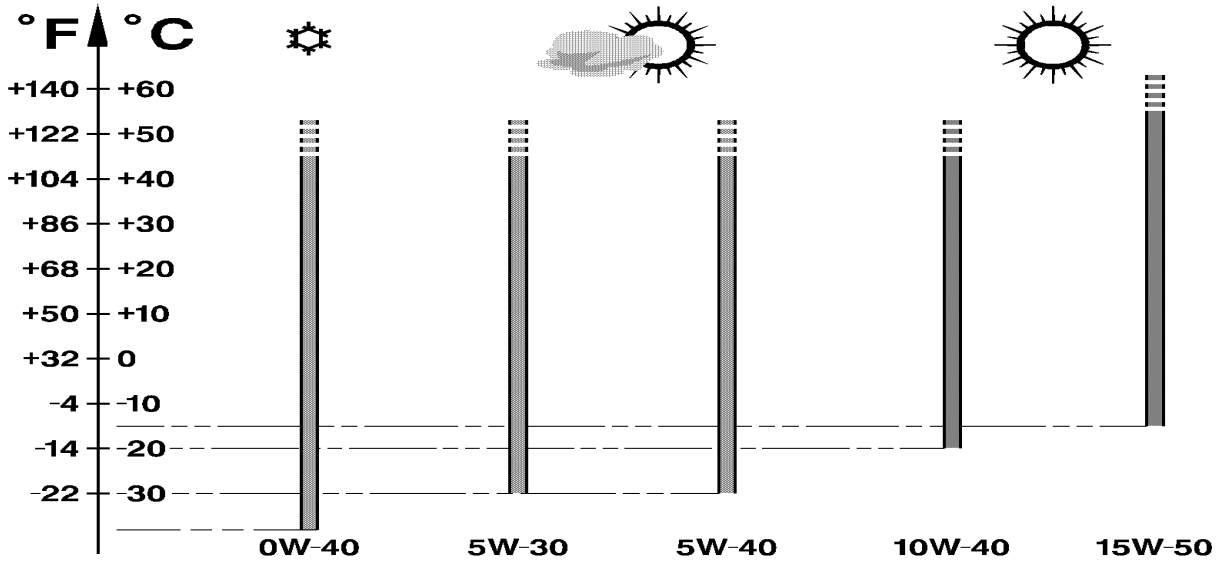
LUBRICANTS - TOTAL recommended oils

Oil usage table

Engine types		TOTAL ACTIVA QUARTZ				
		Synthetic 9000			Semi-synthetic 7000	
		0W40	5W30	5W40	10W40	15W50
				Hot countries		
			Temperate countries			
		Cold countries				
Petrol engines	EW10J4S (CITROËN C4)	X		X		
	EW12J4 (CITROËN C8 2.2i 16V)	X		X	X	X
	EW10A (CITROËN C4 and C5)	X		X	X	X
	Others petrol engines	X	X	X	X	X
Diesel engines	HDi engines with FAP (*)	X		X	X **(*)**	X
	Others HDi engines	X	X	X	X	X
	SOFIM 2.8 HDi and 2.8 TDi (RELAY)			X	X	X
	DV4 TED4 (C3 1.6 16V HDi)	X		X	X	X
	Indirect injection diesel engines		X	X	X	X

(*) Do not use this oil in cold climatic conditions *(temperature less than **- 20°C**)*.
See the table below for the choice of **TOTAL** engine oil grades to be used according to the climatic conditions in the country of marketing.

LUBRICANTS - TOTAL recommended oils



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LUBRICANTS - TOTAL recommended oils

FRANCE	ENGINE OILS	
	Blended oils for all engines, supplied in bulk	
Metropolitan FRANCE	**TOTAL ACTIVRAC**	**Norms S.A.E: 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**
Metropolitan FRANCE	**9000 5W40 FUTUR 9000 5W30 (*)**	**7000 10W40**	**7000 10W40 9000 5W40**
New Caledonia Guadeloupe Saint martin Reunion Martinique Guyana Tahiti Mauritius Mayotte	**9000 5W40**	**7000 15W50 7000 10W40**	**7000 15W50 7000 10W50**

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

LUBRICANTS - TOTAL recommended oils			
EUROPE	**ENGINE OILS**		
	TOTAL QUARTZ		**TOTAL QUARTZ DIESEL**
	Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol/LPG engines**	**Oils specifically for diesel engines**
Germany	**9000 5W40 FUTUR 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, giving fuel economy.

LUBRICANTS - TOTAL recommended oils

EUROPE	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
Denmark	9000 5W40 FUTUR 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, giving fuel economy.

LUBRICANTS - TOTAL recommended oils

EUROPE	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
Hungary	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W40 9000 0W40	7000 10W40
Italy		7000 10W40	
Ireland			
Iceland			
Latvia		7000 10W40 9000 0W40	
Lithuania			
Macedonia		7000 10W40	

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

LUBRICANTS - TOTAL recommended oils

EUROPE	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
Malta	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W40 7000 15W50	7000 10W40
Moldavia		7000 10W40	
Norway		7000 10W40 9000 0W40	
Poland		7000 10W40	
Portugal			
Slovakia			
Czech Republic		7000 10W40 9000 0W40	

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

LUBRICANTS - TOTAL recommended oils

EUROPE	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
Romania	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W40 7000 15W50 9000 0W40	7000 10W40
Russia		7000 10W40 9000 0W40	
Slovenia			
Sweden			
Switzerland		7000 10W40	
Turkey		7000 10W40 9000 15W50 9000 0W40	

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

LUBRICANTS - TOTAL recommended oils

EUROPE	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
Ukraine	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W40 9000 0W40	7000 10W40
Serbia-Montenegro			

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

LUBRICANTS - TOTAL recommended oils

OCEANIA	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ 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** **FUTUR 9000 5W30 (*)**	**7000 10W40**	**7000 10W40**

AFRICA	TOTAL QUARTZ		TOTAL QUARTZ 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 10W40** **7000 15W50**	**7000 10W40**

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

LUBRICANTS - TOTAL recommended oils

CENTRAL AND SOUTH AMERICA	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ 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 10W40** **7000 15W50**	**7000 10W40**
Brazil			
Chile			
Cuba			
Mexico			
Paraguay			
Uruguay			

LUBRICANTS - TOTAL recommended oils

SOUTH-EAST ASIA	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol/LPG engines	Oils specifically for diesel engines
China	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W50 7000 15W50	7000 10W40
South Korea		7000 10W40	
Hong Kong		7000 15W50	
India - Indonesia	9000 5W40		
Japan	9000 5W40 FUTUR 9000 5W30 (*)	7000 10W40 7000 15W50	
Malaysia	9000 5W40	7000 15W50	
Pakistan			

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

LUBRICANTS - TOTAL recommended oils

SOUTH-EAST ASIA	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ 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 15W50	7000 10W40
Singapore			
Taiwan		7000 10W40 7000 15W50	
Thailand		7000 15W50	
Vietnam			

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

LUBRICANTS - TOTAL recommended oils

MIDDLE EAST	ENGINE OILS		
	TOTAL QUARTZ		TOTAL QUARTZ 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 15W50	7000 10W40
Iran		7000 10W40 7000 15W50	
Israel - Jordan - Kuwait - Lebanon Oman - Qatar - Syria - Yemen		7000 15W50	

LUBRICANTS - TOTAL recommended oils

GEARBOX OILS

Manual and piloted manual gearboxes	All countries	TOTAL TRANSMISSION BV Norms S.A.E: 75W80 **Part No.: 9730 A2**
MB3 automatic gearbox		TOTAL FLUIDE ATX TOTAL FLUIDE AT 42 Special oil distributed by CITROËN **Part No.: 9730 A6**
4HP20 and AL4 autoactive automatic gearboxes		Special oil distributed by CITROËN **Part No.: 9736 22**
AM6 autoactive automatic gearbox		Special oil distributed by CITROËN **Part No.: 9980 D4**
Transfer box and rear axle		TOTAL TRANSMISSION X4 **Part No.: 9730 A7**

LUBRICANTS - TOTAL recommended oils

POWER STEERING OILS

Power steering all vehicles (except **CITROËN C4** and **C5**)	All countries	TOTAL FLUIDE ATX
Power steering **C4** and **C5**		TOTAL FLUIDE LDS Special oil distributed by CITROËN **Part No.: 9979 A3**
Power steering	Very cold countries	TOTAL FLUIDE DA Special oil distributed by CITROËN **Part No.: 9730 A1**

ENGINE COOLANT FLUID

		Packs	**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**

LUBRICANTS - TOTAL recommended oils

BRAKE FLUID
Synthetic brake fluid

		Packs	CITROËN Part No.
All countries	CITROËN fluid	**0,5** Litre	**9979 05**
		1 Litre	**9979 06**
		5 Litres	**9979 07**

HYDRAULIC SYSTEM

All countries	Norm		Packs	CITROËN Part No.
TOTAL FLUIDE LDS	Colour	**Orange**	**1** Litre	**9979 A3**
TOTAL LHM PLUS		**Green**		**9979 A1**
TOTAL LHM PLUS Very cold countries				**9979 A2**

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

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

All countries	**TOTAL HYDRAURINCAGE**

LUBRICANTS - TOTAL recommended oils

SCREEN WASH FLUID

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

GREASING
General use

		Norms NLGI
All countries	**TOTAL MULTIS 2**	**2**
	TOTAL SMALL MECHANISMS	

Note: NLGI = National Lubrificating Grease Institude.

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 INTERVENE 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.

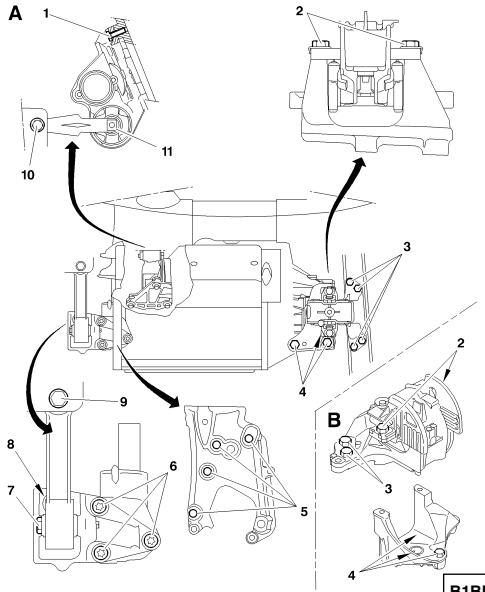
C5 - C8	ENGINE SPECIFICATIONS					
	Engines: 6FZ - RFJ - RFN - 3FZ - XFU - XFW					
	Petrol					
	1.8i 16V	2.0i 16V		2.2i 16V	3.0i 24S	
Engine type	**6FZ**	**RFJ**	**RFN**	**3FZ**	**XFU**	**XFW**
Cubic capacity (cc)	1749	1997		2230	2946	
Bore/stroke	82,7/81,4	85/88		86/96	87/82,5	
Compression ratio	10,8/1	11/1	10,8/1		10,9/1	
Power ISO or EEC (KW - rpm)	85-5500	103-6000	100-6000	116-5650	152-6000	
Torque ISO or EEC (m.daN - rpm)	16-4000	20-4000	19-4100	21,7-3900	28,5-3750	

ENGINE SPECIFICATIONS								C5 - C8
	Engines: 9HZ - RHM - RHT - RHW - RHL - RHR - 4HX - 4HW							
	Diesel							
	1.6 16V HDi	2.0 16V HDi					2.2 16V HDi	
Engine type	**9HZ**	**RHM**	**RHT**	**RHW**	**RHL**	**RHR**	**4HX**	**4HW**
Cubic capacity (cc)	1560	1997					2179	
Bore/stroke	75/88,3	85/88					85/96	
Compression ratio	18/1	17,3/1			18/1		17,6/1	
Power ISO or EEC (KW - rpm)	80-4000	79-4000		80-4000	93-4000	100-4000	98-4000	94-4000
Torque ISO or EEC (m.daN - rpm)	24-1750	25-1750	27-1750		32-2000		31,4-2000	

C5	COMPRESSION RATIO - DIESEL ENGINES

ENGINE	COMPRESSION RATIO	MAX. DIFFERENCE BETWEEN CYLINDERS
	In bars	
DV6 DW12	20 ± 5	5
DW10	30 ± 5	

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C5



Engines: 6FZ - RFJ	
1	4,5 ± 0,5
2	6 ± 0,6
3	6 ± 0,6
4	5,5 ± 0,5
5	4,5 ± 0,4
6	6 ± 0,6
7	2,8 ± 0,2
8	4,5 ± 0,4
9	6 ± 0,6
10	6 ± 0,6
11	6 ± 0,6

Fitting of the LH support.

A = EW10A and **EW7J4** engines with **BE4** gearbox.

B = EW10A engine with **AL4 gearbox.**

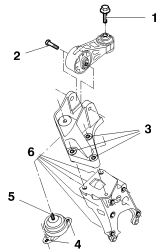
C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	
Engines: 6FZ - RFJ		
Crankshaft		
	6FZ	**RFJ**
Accessories drive pulley		
Tightening	**4 ± 0,4**	**4 ± 0,4**
Angular tightening	**53° ± 4°**	**40° ± 4°**
Con rod cap screws		
Pre-tightening	**1 ± 0,1**	
Tightening	**2,3 ± 0,2**	
Angular tightening	**46° ± 5°**	
Cylinder block		
Sump	**0,8 ± 0,2**	
Timing belt guide roller	**3,7 ± 0,3**	
Timing belt tensioner roller	**2,1 ± 0,2**	
Accessories drive belt guide roller		
Pre-tightening	**1,5 ± 0,1**	
Tightening	**3,7 ± 0,3**	
Accessories drive belt tensioner roller	**2 ± 0,2**	

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)		C5
Engines: 6FZ - RFJ		
Cylinder block		
	6FZ	**RFJ**
Camshaft bearing covers	**0,9 ± 0,1**	
Exhaust manifold	**3,5 ± 0,3**	
Valve cover	**1,1 ± 0,1**	
Camshaft pulley		
Pre-tightening	**3 ± 0,5**	
Tightening	**8,5 ± 0,5**	
Inlet camshaft pulley		
Pre-tightening		**2 ± 0,2**
Tightening		**11 ± 1**
Exhaust camshaft pulley		
Pre-tightening		**3 ± 0,5**
Tightening		**8,5 ± 0,5**
Cap		**1,1 ± 0,1**
Flywheel/clutch		
Flywheel		
Pre-tightening	**2,5 ± 0,2**	
Angular tightening	**21° ± 3°**	
Clutch mechanism	**2 ± 0,2**	

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	
Engines: 6FZ - RFJ		
	6FZ	RFJ
Lubrication circuit		
Oil pump	**0,9 ± 0,1**	
Injection circuit		
Common injection rail fixing screw	**0,9 ± 0,1**	
Cylinder block		
Coolant pump	**1,4 ± 0,1**	
Coolant outlet housing	**0,9 ± 0,1**	
Coolant outlet housing Tightening the screws to: Tightening the nuts to:		 **0,3 ± 0,1** **1 ± 0,1**

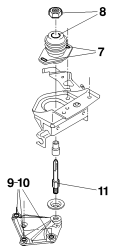
SPECIAL FEATURES: POWER UNIT SUSPENSION — C8

Upper RH engine support



B1BK1X5D

Intermediate engine support



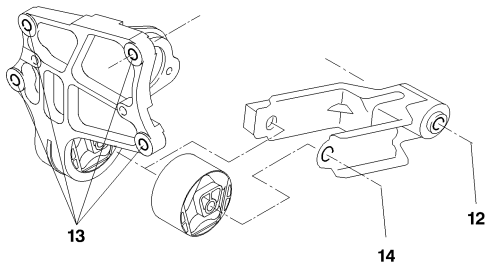
B1BK1X6D

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		

C8 SPECIAL FEATURES: POWER UNIT SUSPENSION

Intermediate engine support



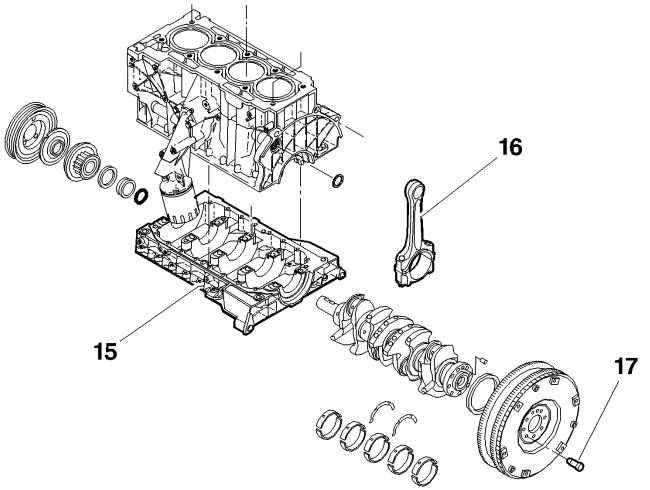
B1BK1X7D

Engines: RFN - 3FZ

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		

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

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 then 2 ± 0,2	1 ± 0,1
Angular tightening	70° ± 5°	

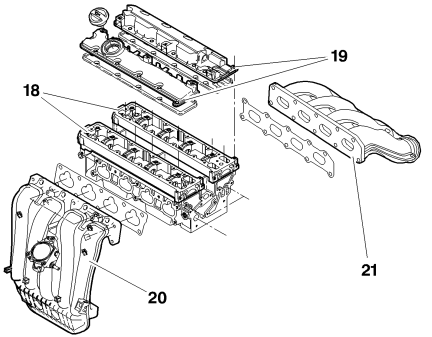
Crankshaft

Description	(16) Con rod caps	(17) Crankshaft flywheel fixing
Pre-tightening	1 ± 0,1	2,5 ± 0,2
Slackening	Yes	18° ± 1°
Re-tightening	2,5 ± 0,2	1 ± 0,1
Angular tightening	46° ± 5°	22° ± 2°

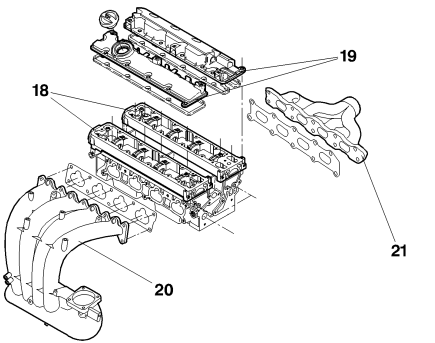
C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Equipment on cylinder head

Engine: RFN



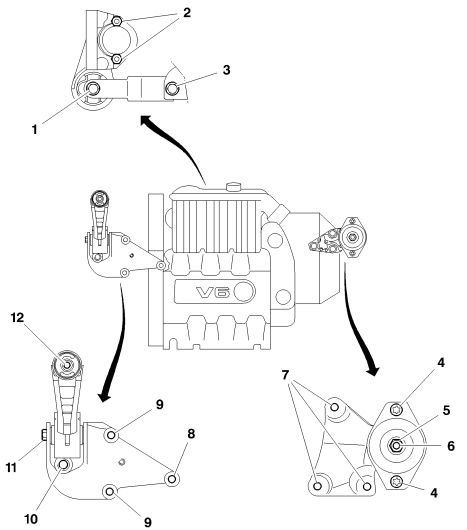
Engine: 3FZ



Description	(18) Camshaft bearing cap covers	(19) Cylinder head covers
Pre-tightening	0,5	0,5
Tightening	1 ± 0,1	1,5 ± 0,1
Description	**(20) Inlet manifold**	**(21) Exhaust manifold**
Tightening	1 ± 0,1	3,5 ± 0,3

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

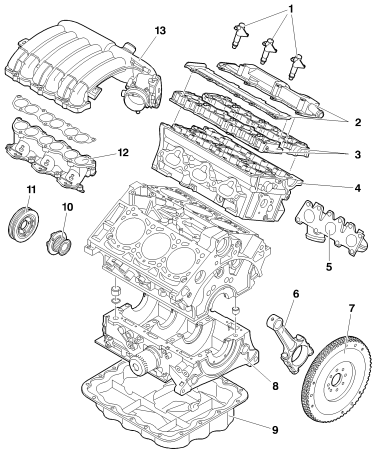
C5



B1BP32YP

Engine: XFU		
Lower RH engine support/torque reaction rod		
1		6 ± 0,5
2		1 ± 0,1
3		6 ± 0,5
LH engine support		
4		3 ± 0,3
5		6,5 ± 0,6
6		5 ± 0,5
7		4,5 ± 0,4
RH engine support		
8 and 9		6 ± 0,6
10		4,5 ± 0,4
11		6 ± 0,6
12		6 ± 0,6

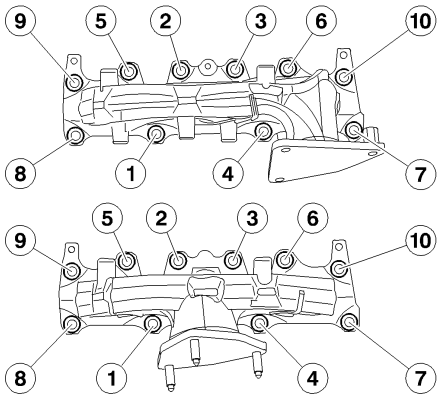
C5 SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)



B1BP27DP

	Engine: XFU	
1	**Pencil type ignition coil**	**0,8 ± 0,3**
	Sparking plug	
	Pre-tightening	**1 ± 0,1**
	Angular tightening	**90° ± 5°**
2	**Valve cover**	
	Pre-tightening	**0,5 ± 0,1**
	Tightening	**1 ± 0,1**
3	**Camshaft bearing cap cover**	
	Pre-tightening	**0,2 ± 0,1**
	Tightening	**1 ± 0,1**
4	**Cylinder block**	
	Pre-tightening	**2 ± 0,2**
	Slackening	**Yes**
	Tightening	**1,5 ± 0,1**
	Angular tightening	**225° ± 5°**

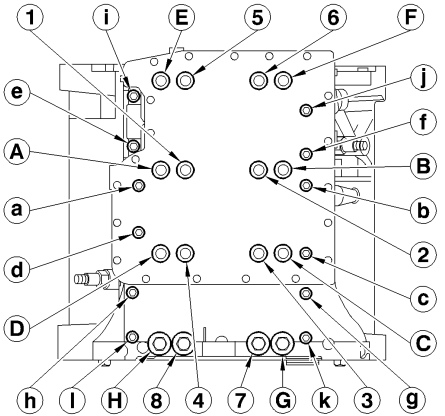
SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C5



B1JP02LD

Engine: XFU		
5	**Exhaust manifold** ***(with a new gasket)***	
	Pre-tightening *(sequence from 1 to 10)*	**1 ± 0,1**
	Tightening *(sequence from 1 to 10)*	**3 ± 0,3**
6	**Con rod caps**	
	Pre-tightening	**2 ± 0,2**
	Angular tightening	**74° ± 5°**
7	**Flywheel**	
	Pre-tightening	**2 ± 0,2**
	Angular tightening	**60° ± 5°**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)



B1BP2D3D

Engine: XFU

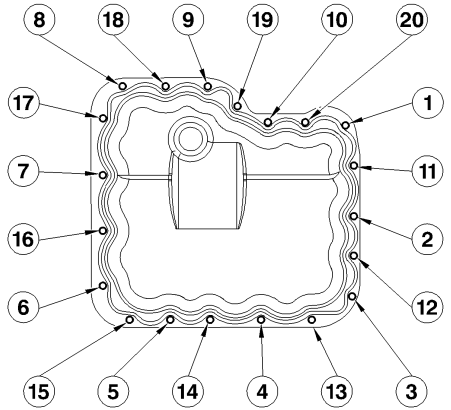
8	Crankshaft bearing

NOTE: Maximum length under heads for screws **M11 = 131,5 mm.**
NOTE: Maximum length under heads for screws **M8 = 119 mm.**

Perform the following operations:
- Brush the screw threads.
- Refit the screws having first pre-coated them with **«MOLYKOTE G RAPID PLUS»** grease on the threads and under heads.

Check the presence of the eight centring pins	
Pre-tighten the screws **M11** *(sequence from 1 to 8)*	**3 ± 0,3**
Pre-tighten the screws **M8** *(sequence from A to H)*	**1 ± 0,1**
Tighten the screws **M6** *(sequence from a to 1)*	**1 ± 0,1**
Slacken the screws **M11** and **M8**	**Yes**
Proceeding screw by screw	
Tighten the screws **M11** *(sequence from 1 to 8)*	**3 ± 0,3**
Angular tightening	**180°**
Tighten the screws **M8** *(sequence from A to H)*	**1 ± 0,1**
Angular tightening	**180°**

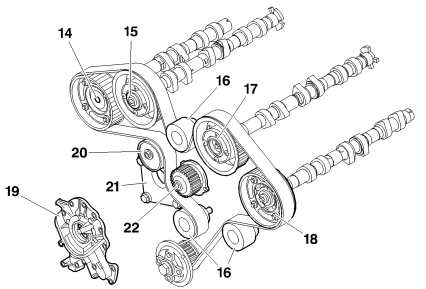
SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C5



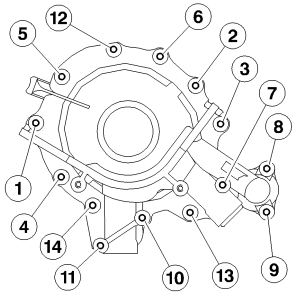
B1BP1GZD

Engine: XFU		
9	**Sump**	
	Pre-tightening *(sequence from 1 to 20)*	**0,5 ± 0,1**
	Tightening *(sequence from 1 to 20)*	**0,8 ± 0,1**
10	**Crankshaft pinion**	
	Pre-tightening	**4 ± 0,4**
	Angular tightening	**80°± 5°**
11	**Crankshaft pulley**	**2,5 ± 0,2**
12	**Inlet distributor *(with new seals)***	
	Pre-tightening	**0,4 ± 0,1**
	Tightening	**0,8 ± 0,1**
13	**Air inlet manifold**	
	Pre-tightening	**0,4 ± 0,1**
	Tightening	**0,8 ± 0,1**

C5 SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)



B1EP1FXD



B1FP04KC

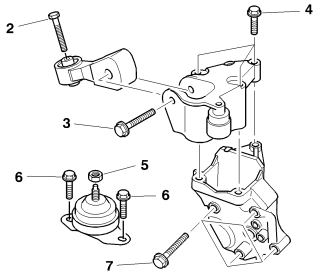
Engine: XFU		
14	**Camshaft hubs**	
	Pre-tightening	**2 ± 0,2**
	Angular tightening	**57° ± 5°**
15	**Cap**	**1,5 ± 0,1**
16	**Guide roller**	**8 ± 0,8**
17	**Camshaft pulleys**	
	Pre-tightening	**2 ± 0,2**
	Angular tightening	**115° ± 5°**
18	**Camshaft pulleys**	**1 ± 0,1**
20	**Timing belt tensioner roller**	**2,5 ± 0,2**
21	**Plate for the dynamic tensioner roller**	**2,5 ± 0,2**
22	**Coolant pump**	
	Pre-tightening	**0,5 ± 0,1**
	Tightening	**0,8 ± 0,1**
19	**Oil pump**	
	Pre-tightening	**0,5 ± 0,1**
	Tightening	**0,8 ± 0,1**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engine: XFW

Power unit suspension

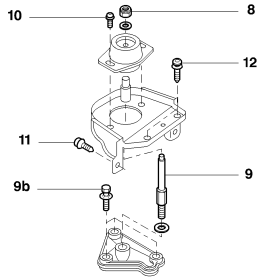
RH engine support (suspension)



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



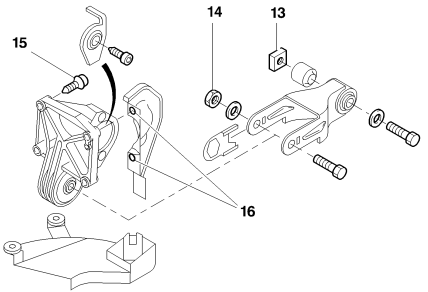
B1BK24SD

(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 suppor : **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

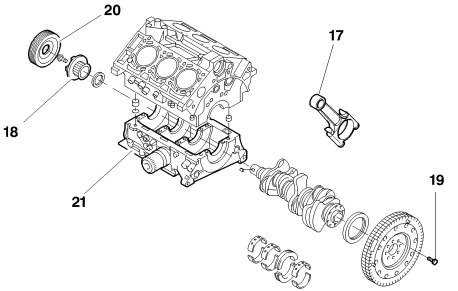
Power unit suspension - Engine support (lower)



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

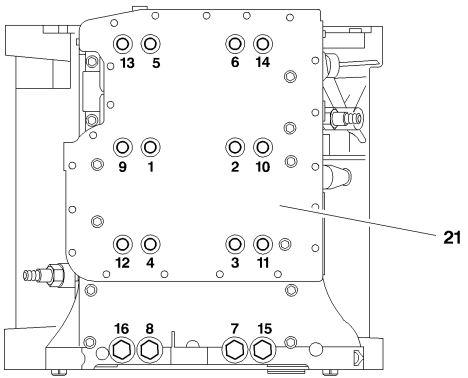
(17) Bearing plug	Tightening	**: 2 ± 0,2**
	Angular tightening	**: 74° ± 7°**
(18) Timing pinion	Tightening	**: 4 ± 0,4**
	Angular tightening	**: 80° ± 8°**
(19) Fixing of starter gear support flange, plus crankshaft converter support		
	Tightening	**: 2 ± 0,2**
	Angular tightening	**: 60° ± 6°**
(20) Accessory pulley on timing pinion		**: 2,5 ± 0,2**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engine: XFW

Crankshaft

Bearing cap cover



B1BK24VD

Respect the sequence of stages and the order of tightening

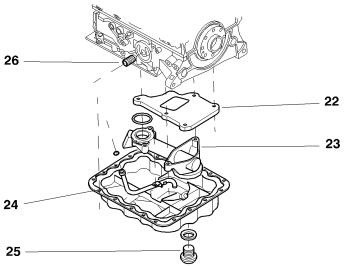
Ref./description	M11 (bolts from 1 to 8)	M8 (bolts from 9 to 16)	M6
(21) Fixings of bearings/plug covers or bearings/plugs	**Stage 1** 3 ± 0,3	**Stage 2** 1 ± 0,1	**Stage 3** 1 ± 0,1
21) Fixings of bearings/plug covers or bearings/plugs *(slacken **to zero torque**)*	**Stage 4** YES	**Stage 4** YES	NO
(21) Fixings of bearing plug cover or bearing plugs *(tighten **bolt by bolt**)* Tightening + Angular tightening	**Stage 5** 3 ± 0,3 180°	**Stage 6** 1 ± 0,1 180°	

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: XFW

Lubrication circuit

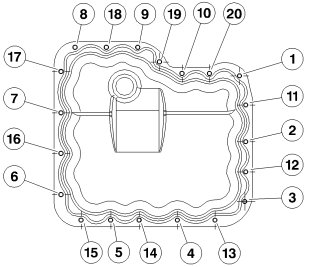
Lubrication circuit.



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

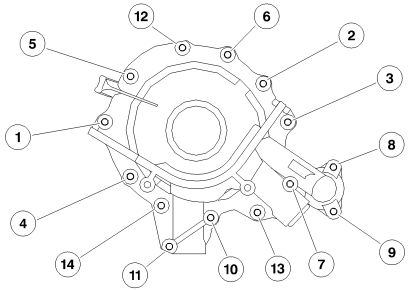
Stage 1: Do up bolts **13**,**15** and **17**.
Stage 2: Tighten bolts **13**,**15** and **17** to **: 0,2.**
Stage 3: Do up the **17** remaining bolts.
Stage 4: Tighten the remaining bolts to **: 0,5.**
Stage 5: Tighten all the bolts **: 0,8.**
Stage 6: Repeat the tightening a few times in the same order 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

Oil pump



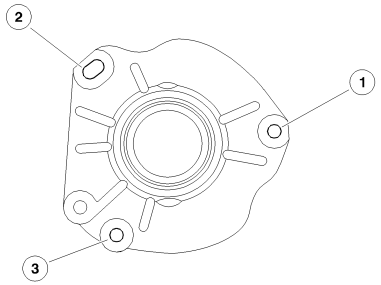
B1BK3B6D

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.

Cooling circuit

Coolant pump



B1BK3B7D

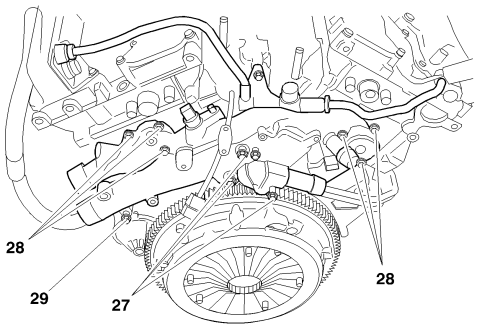
Stage 1: Position the screws and do them up by hand.
Stage 2: Pre-tighten the screws **: 0,5.**
Stage 3: Tighten the screws **: 0,8.**
Stage 4: Repeat the tightening a few times in the same order to obtain a tightening torque of **0,8 m.daN** on all the screws.

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: XFW

Lubrication circuit

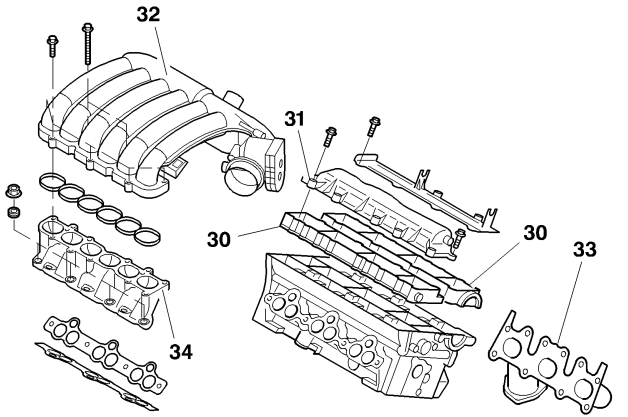
Coolant manifold



B1BK24YD

(27) Screws	**: 2,5 ± 0,2**
(28) Screws	**: 0,8**
(29) Screws	**: 0,8**

Cylinder head equipment



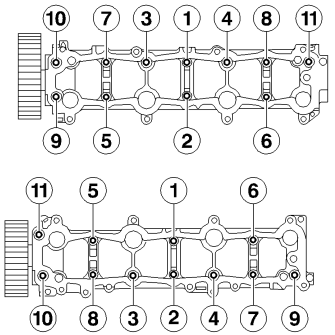
B1BK24ZD

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C8

Engine: XFW

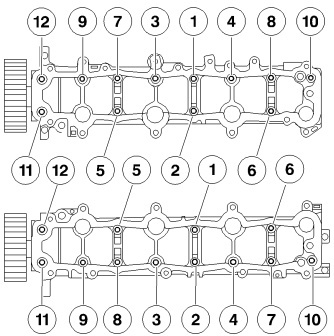
Cylinder head equipment

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:

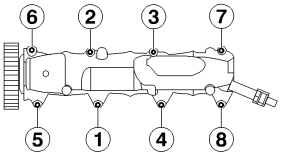
- Pre-tightening **: 0,2**
- Tightening **: 1**

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: XFW

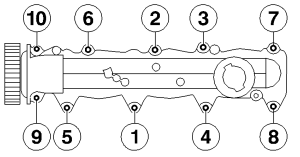
Cylinder head equipment

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:

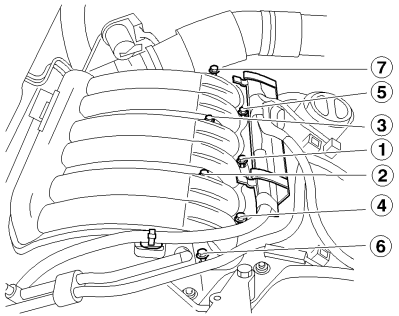
- Pre-tightening	**: 0,5**
- Tightening	**: 0,8**

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:

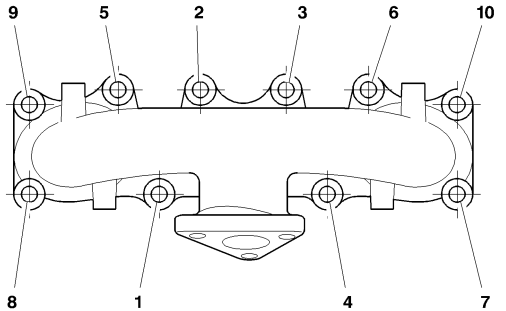
- Pre-tightening **: 0,4**
- Tightening **: 0,8**

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: XFW

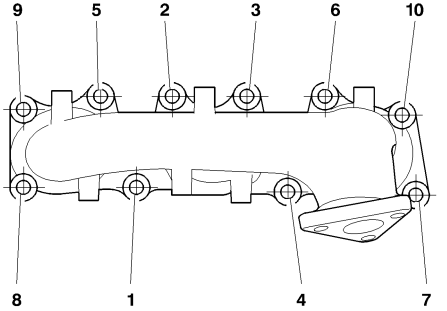
Cylinder head equipment

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:

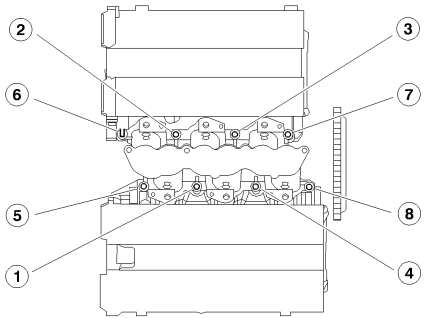
- Pre-tightening	**: 1**
- Tightening	**: 3 ± 0,3**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C8

Engine: XFW

Cylinder head equipment

Inlet distributor



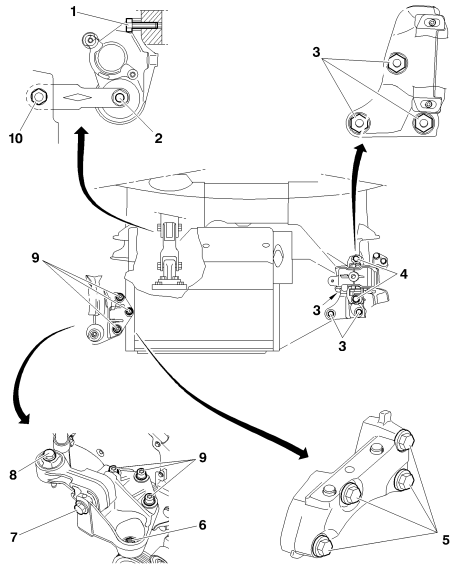
B1BK252D

Respect the sequence of stages and the order of tightening

(34) Inlet distributor:

- Pre-tightening	**: 0,4**
- Tightening	**: 0,8**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	



B1BP32EP

Engine: 9HZ		
Torque reaction rod		
1		6 ± 0,6
2		6 ± 0,6
10		6 ± 0,6
Upper LH engine support		
3		5,5 ± 0,5
Lower LH engine support		
4		6 ± 0,6
Lower RH engine support		
5		5,5± 0,5
RH engine support		
6		4,5 ± 0,4
7		6 ± 0,6
8		6 ± 0,6
9		6 ± 0,6

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engine: 9HZ	
Crankshaft	
Bearing cap fixing screws	
Pre-tightening	**1 ± 0,2**
Slackening	**180° ± 5°**
Tightening	**3 ± 0,3**
Angular tightening	**140° ± 5°**
Con rod screws	
Pre-tightening	**1 ± 0,1**
Angular tightening	**100° ± 5°**
Accessories drive belt pulley	
Pre-tightening	**3,5 ± 0,3**
Angular tightening	**190° ± 5°**
Cylinder block	
Sump	**1,3 ± 0,1**
Timing belt guide roller	**3,7 ± 0,3**
Timing belt tensioner roller	**2,7 ± 0,2**

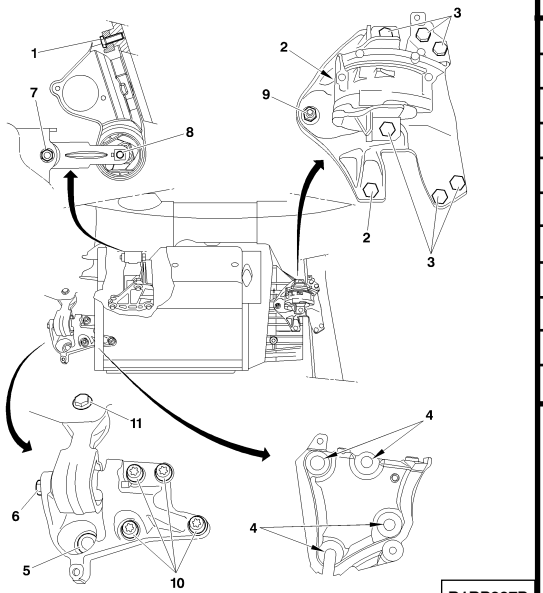
C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)
	Engine: 9HZ
	Cylinder block
Camshaft bearing covers	
Pre-tightening	**0,5 ± 0,1**
Tightening	**1 ± 0,1**
Oil trap	**1 ± 0,1**
Air inlet manifold	
Tightening	**1 ± 0,1**
Pre-tightening	**0,1**
Tightening	**0,9 ± 0,1**
Exhaust manifold	**3 ± 0,3**
Camshaft pulleys	
Pre-tightening	**2 ± 0,2**
Angular tightening	**50° ± 5°**
Cylinder block	
Pre-tightening	**2 ± 0,2**
Tightening	**4 ± 0,4**
Angular tightening	**260° ± 5°**
Exhaust gas recycling (EGR) electrovalve	**1 ± 0,1**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engine: 9HZ	
Flywheel	
Double damping flywheel	
Pre-tightening	**3 ± 0,3**
Angular tightening	**90° ± 5°**
Clutch mechanism	**2 ± 0,2**
Lubrication circuit	
Oil pump assembly	
Pre-tightening	**0,5 ± 0,1**
Tightening	**0,9 ± 0,1**
Oil/coolant heat exchanger	**1 ± 0,1**
Lubrication pipe for turbocharger	**3 ± 0,3**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)
Engine: 9HZ	
Diesel injection circuit	
Injector fixing flange nut Pre-tightening Angular tightening	 **0,4 ± 0,1** **65° ± 5°**
Fuel high pressure common injection rail on engine block	**2,2 ± 0,2**
Unions on fuel high pressure common injection rail Pre-tightening Tightening	 **2 ± 0,2** **2,5 ± 0,2**
Union on diesel injector Pre-tightening Tightening	 **2 ± 0,2** **2,5 ± 0,2**
Diesel injection pump on support	**2,2 ± 0,2**
Diesel injection pump pulley	**5 ± 0,5**
Union on diesel high pressure pump Pre-tightening Tightening	 **2 ± 0,2** **2,5 ± 0,2**
Cooling circuit	
Coolant pump Pre-tightening Tightening	 **0,3 ± 0,1** **0,9 ± 0,1**
Coolant outlet housing Pre-tightening Tightening	 **0,3 ± 0,1** **0,7 ± 0,1**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

C5



B1BP337P

Engines: RHL - RHR		
1		6 ± 0,6
2		6 ± 0,6
3		6 ± 0,6
4		5,6 ± 0,5
5		4,5 ± 0,4
6		5 ± 0,5
7		5 ± 0,5
8		5 ± 0,5
9		5,5 ± 0,5
10		6 ± 0,6
11		5 ± 0,5

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engines: RHL RHR

Crankshaft	
Bearing cap fixing screws	
Pre-tightening	**2,5 ± 0,2**
Angular tightening	**60° ± 5°**
Con rod nuts	
Pre-tightening	**1 ± 0,1**
Slackening	**180° ± 5°**
Tightening	**2,3 ± 0,2**
Angular tightening	**45° ± 5°**
Accessories drive pulleys	
Pre-tightening	**7 ± 0,7**
Angular tightening	**60° ± 5°**
Cylinder block	
Piston skirt spray jet (renovation)	**1 ± 0,1**
Sump	**1,6 ± 0,1**
Timing belt guide roller	**2,5 ± 0,2**
Timing belt tensioner roller	**2,1 ± 0,2**

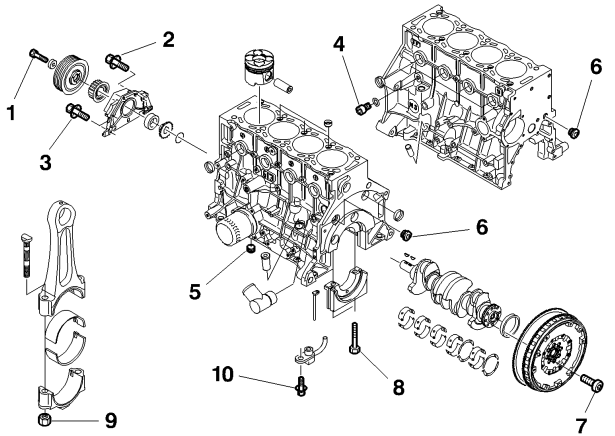
SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engines: RHL RHR	
Cylinder block	
Camshaft bearing covers	**1 ± 0,1**
Exhaust manifold	**3 ± 0,3**
Inlet valve cover	**0,9 ± 0,1**
Camshaft pinion	**4,3 ± 0,4**
Cylinder head	
Pre-tightening	**2,2 ± 0,2**
Tightening	**6 ± 0,6**
Slackening *(1 turn)*	**360°**
Tightening	**6 ± 0,6**
Angular tightening	**220° ± 5°**
Flywheel/clutch	
Flywheel	
Pre-tightening	**1,5 ± 0,1**
Tightening	**4,8 ± 0,4**
Clutch mechanism	**2 ± 0,2**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)
Engines: RHL - RHR	
Lubrication circuit	
Oil pump	**1,3 ± 0,1**
Oil/coolant heat exchanger	**5,8 ± 0,5**
Lubrication pipe for turbocharger	
Engine end	**4,7 ± 0,4**
Turbocharger end	**2,2 ± 0,2**
Diesel injection circuit	
Diesel injector	
Tightening by hand	**yes**
Tightening	**0,4 ± 0,1**
Angular tightening	**45° ± 5°**
Union on injection rail	**2,5 ± 0,2**
Injection pump	**2 ± 0,2**
Union on diesel injector	**2,5 ± 0,2**
Union on injection pump	**2,5 ± 0,2**
Cooling circuit	
Coolant pump	**1,6 ± 0,1**
Coolant inlet housing	**2 ± 0,2**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engines: RHL - RHR	
Diesel injection circuit	
Injector fixing flange nut	
Pre-tightening	**0,4 ± 0,1**
Angular tightening	**65° ± 5°**
Fuel high pressure common injection rail on engine block	**2,2 ± 0,2**
Unions on fuel high pressure common injection rail	
Pre-tightening	**2 ± 0,2**
Tightening	**2,5 ± 0,2**
Injection on diesel injector	
Pre-tightening	**2 ± 0,2**
Tightening	**2,5 ± 0,2**
Diesel injection pump on support	**2,2 ± 0,2**
Diesel injection pump pulley	**5 ± 0,5**
Union on diesel high pressure pump	
Pre-tightening	**2 ± 0,2**
Tightening	**2,5 ± 0,2**
Cooling circuit	
Coolant pump	
Pre-tightening	**0,3 ± 0,1**
Tightening	**0,9 ± 0,1**
Coolant outlet housing	
Pre-tightening	**0,3 ± 0,1**
Tightening	**0,7 ± 0,1**

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engines: RHM - RHT - RHW

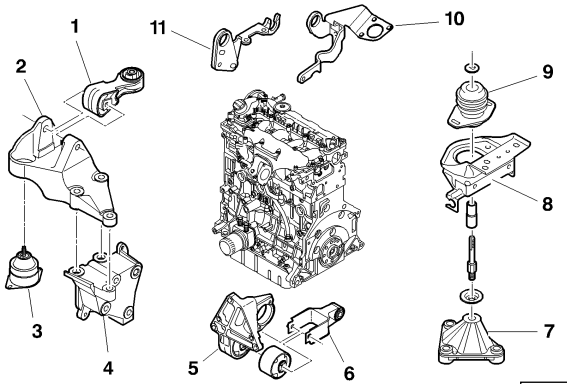


	Crankshaft	
(1)	**Pulley screw M14x150-70** Pre-tightening Angular tightening	 **5 ± 0,5** **62°**
(2)	**Screws M7x100-20 (x 4)** Pre-tightening Tightening	 **0,7 ± 0,1** **1,5 ± 0,1**
(3)	**Screws M7x100-40 (x 2) (*)** Pre-tightening Tightening	 **0,7 ± 0,1** **1,5 ± 0,1**
(4)	**Plug CHC M12x150-16 (x 1)**	**2,5 ± 0,2**
(5)	**Plug M15x150 (x 1)**	**2,5 ± 0,2**
(6)	**Plugs M15x150 (x 2)**	**4 ± 0,4**
(7)	**Screws M9x100-24 (+loctite FRENETANCH) (x8)**	**4,8 ± 0,5**
(8)	**Screws M12x150-81 (x10)** Pre-tightening Angular tightening (**)	 **2,5 ± 0,2** **60°**
(9)	**Nuts M9x100 (x8)** Pre-tightening Angular tightening	 **2 ± 0,2** **70°**
(10)	**Screws M16x10-16 (x4)**	**1 ± 0,1**

(*) = Re-use prohibited.
(**) = Tighten in a spiral commencing from the inside.

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engines: RHM - RHT - RHW

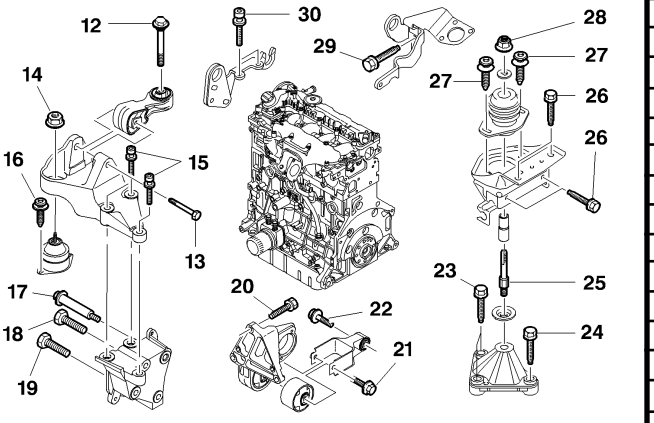


B1BK3EED

Engine suspension (identification)	
(1)	Upper RH torque reaction rod
(2)	Upper RH engine support
(3)	RH engine flexible support
(4)	Upper RH intermediate engine support
(5)	Lower RH engine support
(6)	Torque reaction rod
(7)	Upper LH intermediate engine support
(8)	LH engine support
(9)	LH engine flexible support
(10)	Lifting attachment, flywheel end
(11)	Lifting attachment, timing end

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engines: RHM - RHT - RHW

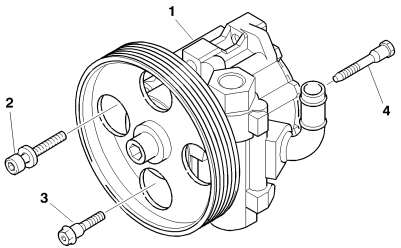


B1BK3EDD

Engine suspension (tightening torques)		
(12)	Spherical-base screw M10x150-75 **(x 1)**	**5 ± ,05**
(13)	Shaft screw **(x 1)**	**4,5 ± 0,4**
(14)	Nut M10x150 **(x 1)**	**4,5 ± 0,4**
(15)	Screws M10x150-60 **(x 3)**	**6 ± 0,6**
(16)	Screws M8x125-25 **(x 2)**	**3 ± 0,3**
(17)	Shouldered shaft screw M8x125-15 **(x 1)**	**2 ± 0,2**
(18)	Locking screw M10x125-85 **(x 1)**	**4,5 ± 0,4**
(19)	Locking screw M10x125-70 **(x 2)**	**4,5 ± 0,4**
(20)	Spherical-base screw M10x150-35 **(x 3)**	**4,5 ± 0,4**
(21)	Spherical-base screw M10x150-72 **(x 1)**	**6,5 ± 0,6**
(22)	Spherical-base screw M12x175-60 **(x 1)**	**9 ± 0,9**
(23)	Nut M10x150 **(x 1)**	**4,5 ± 0,4**
(24)	Screws M10 x150-55 **(x 2)**	**4,5 ± 0,4**
(25)	Support shaft **(x 1)**	**5 ± 0,5**
(26)	Screws M8x125-25 **(x 4)**	**2,5 ± 0,2**
(27)	Screws M8x125-25 **(x 2)**	**3 ± 0,3**
(28)	Locking nut M12x175-18 **(x 1)**	**6,5 ± 0,6**
(29)	Screws M8x125-25 **(x 1)**	**1,5 ± 0,1**
(30)	Screws M6x100-20 **(x 2)**	**1,2 ± 0,1**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

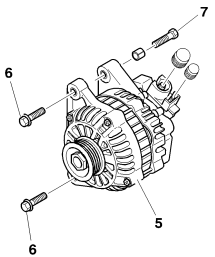
Engines: RHM - RHT - RHW



B1BK3E8D

Power steering pump		
(1)	Power steering pump	
(2)	Screws M8x125-30 **(x 1)**	**2,5 ± 0,2**
(3)	Shouldered shaft screw M8x125-22 **(x 1)**	**2,2 ± 0,2**
(4)	Shouldered shaft screw M8x125-48 **(x 1)**	**2,2 ± 0,2**

NOTE: Tightening the fixings **(2)** and **(3)** before the fixing **(4)**, to ensure that the auxiliary drive belt is correctly aligned.



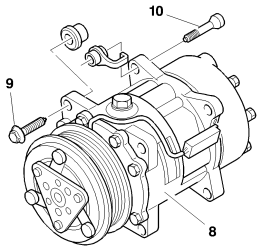
B1BK3E7D

Alternator		
(5)	Alternator	
(6)	Spherical-base screw M10 x150-50 **(x 2)**	**4,1 ± 0,4**
(7)	Screws M10x150-40 **(x 1)**	**3,9 ± 0,4**

NOTE: Tightening the fixings **(6)** before the fixing **(7)**, to ensure that the auxiliary drive belt is correctly aligned.

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

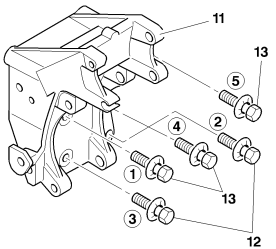
Engines: RHM - RHT - RHW



B1EK3E9D

Air conditioning compressor		
(8)	Air conditioning compressor	
(9)	Spherical-base screw M10x150-60 **(x 1)**	**4 ± 0,4**
(10)	Shouldered shaft screw M10x150-52 **(x 2)**	**4,2 ± 0,4**

NOTE: Tightening the fixing **(9)** before the fixing **(10)**, to ensure that the auxiliary drive belt is correctly aligned.



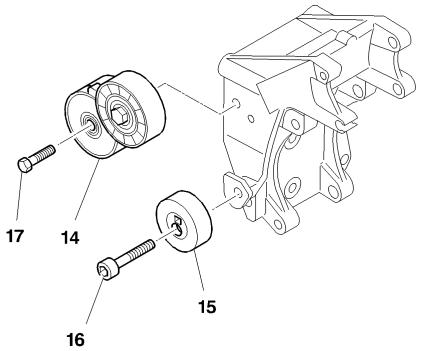
B1EK3EAD

Accessories support		
(11)	Power steering pump support	
(12)	Spherical-base screw M8 x125-35 **(x 2) (*)** Pre-tightening Tightening	 **1 ± 0,1** **2 ± 0,2**
(13)	Screws M8x125-80 **(x 1) (*)** Pre-tightening Tightening	 **1 ± 0,2** **2 ± 0,2**

(*) = In the order indicated *(1 to 5)*.

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engines: RHM - RHT - RHW

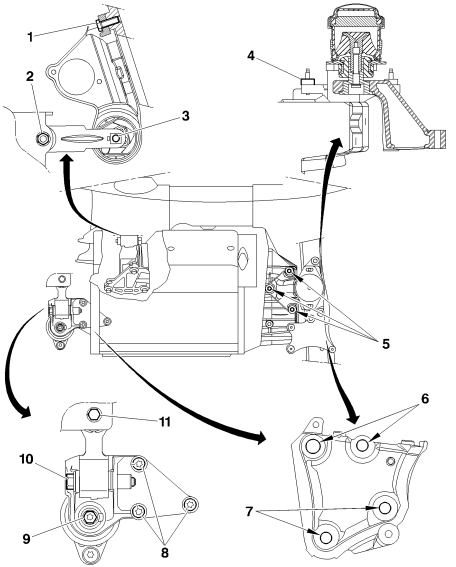


B1BK3EWD

Guide roller		
(14)	Dynamic tensioner roller	
(15)	Eccentric guide roller	
(16)	Screws M10x150-50 **(x 1)** Pre-tightening Tightening	 **1 ± 0,1** **4,3 ± 0,4**
(17)	Screws M8x150-60 **(x 1)** Pre-tightening Tightening	 **2 ± 0,2** **4,5 ± 0,4**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: 4HX



B1BP284P

Tightening torques (m.daN).

(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**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engine: 4HX	
Crankshaft	
Crankshaft bearing cap screws	
Pre-tightening	**2,5 ± 0,2**
Angular tightening	**60°**
Con rod cap screws	
Tightening	**1 ± 0,1**
Slackening	**180°**
Tightening	**2,3 ± 0,1**
Angular tightening	**46° ± 5°**
Accessories drive pulley	
Tightening	**7 ± 0,25**
Angular tightening	**60° ± 5°**

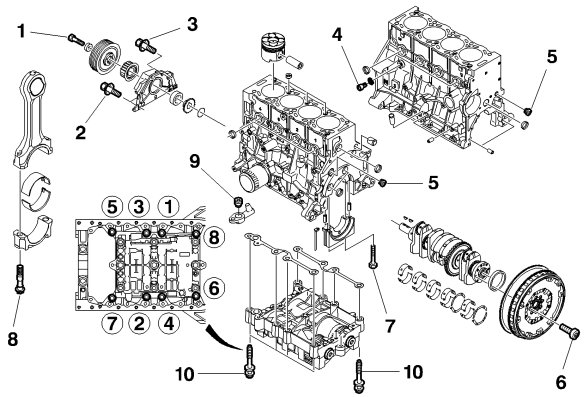
C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)
Engine: 4HX	
Cylinder block	
Piston skirt spray jets	**1 ± 0,1**
Sump	
Pre-tightening	**1 ± 0,1**
Tightening	**1,6 ± 0,3**
Timing belt guide roller	
Pre-tightening	**1,5 ± 0,1**
Tightening	**4,3 ± 0,4**
Timing belt tensioner roller	**2,5 ± 0,2**
RH engine support	
Pre-tightening **the 4 screws**	**1 ± 0,1**
Tightening the screws **Ø 8**	**2 ± 0,2**
Tightening the screws **Ø 10**	**4,5 ± 0,2**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)	C5
Engine: 4HX	
Cylinder block	
Camshaft bearing cap cover	
Tightening	**1 ± 0,1**
Pre-tightening **the 28 screws Ø 6**	**6 ± 0,5**
Tightening **the 28 screws Ø 6**	**1 ± 0,1**
Exhaust manifold	
Pre-tightening **the 8 nuts**	**1,5 ± 0,1**
Tightening **the 8 nuts**	**0,3 ± 0,3**
Valve cover	
Pre-tightening **the 13 screws**	**0,5 ± 0,15**
Tightening **the 13 screws**	**9 ± 0,1**
Camshaft pulley hub	**4,3 ± 0,4**
Pulley on hub	**2 ± 0,2**
Flywheel - Clutch	
Flywheel	
Pre-tightening	**1,5 ± 0,1**
Tightening	**4,7 ± 0,4**
Clutch mechanism	**2 ± 0,2**

C5	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)
Engine: 4HX	
Lubrication circuit	
Oil pump	
Pre-tightening	**0,7**
Tightening	**0,9 ± 0,1**
Oil/coolant heat exchanger	**5,8 ± 0,5**
Turbocharger lubrication tube	
Engine end	**3 ± 0,3**
Turbocharger end	**2 ± 0,2**
Diesel injection circuit	
Diesel injector	
Do up **the 2** nuts	**By hand**
Tightening	**4 ± 0,3**
Angular tightening	**45° ± 5°**
Union on injection rail	**2 ± 0,2**
Injection pump on support	**2,25 ± 0,3**
Union on diesel injector	**2 ± 0,2**
Injection pump pulley	**5 ± 0,5**
Union on injection pump	**2 ± 0,2**
Cooling circuit	
Coolant pump	**1,6 ± 0,3**
Coolant inlet housing	**2 ± 0,2**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engine: 4HW



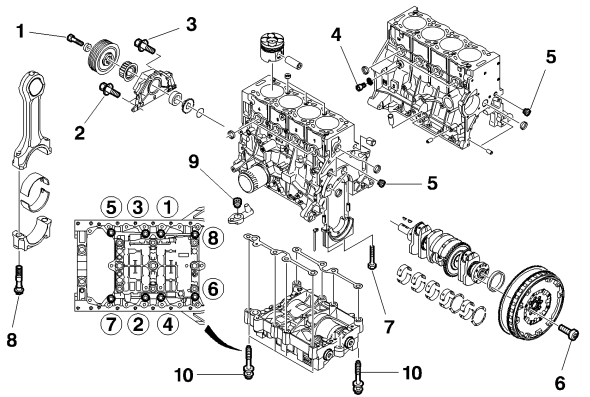
B1BK3EMD

	Crankshaft	
(1)	**Pulley screw M14x150-70**	
	Pre-tightening	**7 ± 0,5**
	Angular tightening	**82°**
(2)	**Screws M7x100-40 (x 2) (*)**	
	Pre-tightening	**0,7 ± 0,1**
	Tightening	**1,5 ± 0,1**
(3)	**Screws M7x100-20 (x 4)**	
	Pre-tightening	**0,7 ± 0,1**
	Tightening	**1,5 ± 0,1**
(4)	**Plug CHC M12x150-16 (x 1)**	**2,5 ± 0,2**
(5)	**Plugs M15x150 (x 2)**	**4 ± 0,4**
(6)	**Screws M9x100-24 (+loctite FRENETANCH) (x8)**	
	Pre-tightening	**1,5 ± 0,1**
	Tightening	**5 ± 0,5**
(7)	**Screws M12x150-81 (x10) (**)**	
	Pre-tightening	**1 ± 0,1**
	Tightening	**2,5 ± 0,2**
	Angular tightening	**60°**

(*) = Re-use prohibited.
(**) = Tighten in a spiral commencing from the inside.

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: 4HW



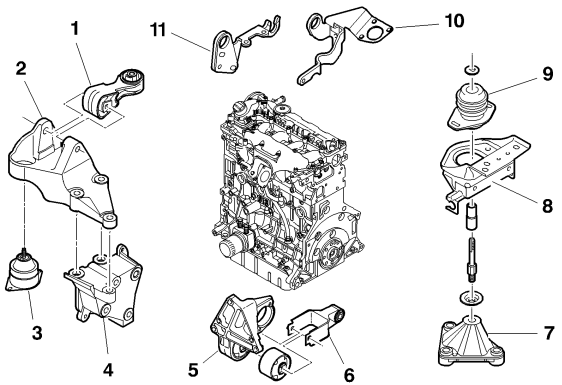
B1BK3EMD

	Crankshaft (continued)	
(8)	**Screws M7x100-20 (x8)** (*) (screw by screw and part stage)	
	Stage 1: Tightening	**1**
	Stage 2: Slackening	**180°**
	Stage 3: Tightening	**2,3 ± 0,2**
	Stage 4: Angular tightening	**46°**
(9)	**Screws M9x100-45 (x4) (*)**	**1 ±**
(10)	**Screws M8x125-60 (x8)** (***)	
	Pre-tightening	**0,5**
	Tightening	**1 ± 0,1**
	Angular tightening	**60°**

(*) = Re-use prohibited.
(**) = Tighten in a spiral, commencing from the inside.
(***) = Tighten in the order indicated **1 to 8**.

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engine: 4HW

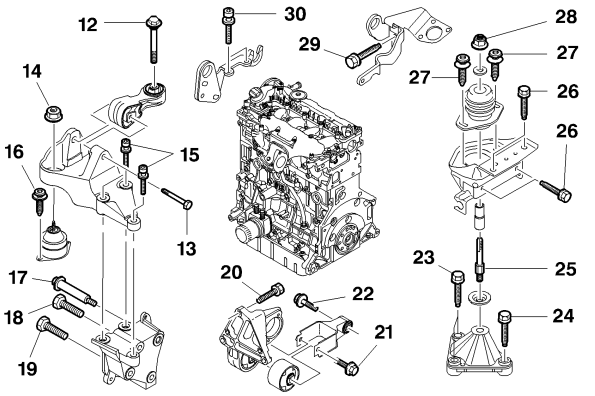


B1BK3EED

	Engine suspension (identification)
(1)	Upper RH torque reaction rod
(2)	Upper RH engine support
(3)	RH engine flexible support
(4)	Upper RH intermediate engine support
(5)	Lower RH engine support
(6)	Torque reaction rod
(7)	Upper LH intermediate engine support
(8)	LH engine support
(9)	LH engine flexible support
(10)	Lifting attachment, flywheel end
(11)	Lifting attachment, timing end

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

Engine: 4HW

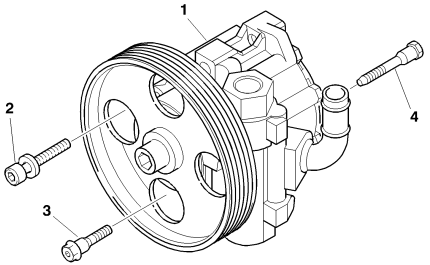


B1BK3EDD

Engine suspension (tightening torques)		
(12)	Spherical-base screw M10x150-75 **(x 1)**	**5 ± ,05**
(13)	Shaft screw **(x 1)**	**4,5 ± 0,4**
(14)	Nut M10x150 **(x 1)**	**4,5 ± 0,4**
(15)	Screws M10x150-60 **(x 3)**	**6 ± 0,6**
(16)	Screws M8x125-25 **(x 2)**	**3 ± 0,3**
(17)	Shouldered shaft screw M8x125-15 **(x 1)**	**2 ± 0,2**
(18)	Locking screw M10x125-85 **(x 1)**	**4,5 ± 0,4**
(19)	Locking screw M10x125-70 **(x 2)**	**4,5 ± 0,4**
(20)	Spherical-base screw M10x150-35 **(x 3)**	**4,5 ± 0,4**
(21)	Spherical-base screw M10x150-72 **(x 1)**	**6,5 ± 0,6**
(22)	Spherical-base screw M12x175-60 **(x 1)**	**9 ± 0,9**
(23)	Nut M10x150 **(x 1)**	**4,5 ± 0,4**
(24)	Screws M10 x150-55 **(x 2)**	**4,5 ± 0,4**
(25)	Support shaft **(x 1)**	**5 ± 0,5**
(26)	Screws M8x125-25 **(x 4)**	**2,5 ± 0,2**
(27)	Screws M8x125-25 **(x 2)**	**3 ± 0,3**
(28)	Locking nut M12x175-18 **(x 1)**	**6,5 ± 0,6**
(29)	Screws M8x125-25 **(x 1)**	**1,5 ± 0,1**
(30)	Screws M6x100-20 **(x 2)**	**1,2 ± 0,1**

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

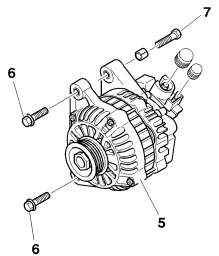
Engine: 4HW



B1BK3E8D

Power steering pump		
(1)	Power steering pump	
(2)	Screws M8x125-30 **(x 1)**	**2,5 ± 0,2**
(3)	Shouldered shaft screw M8x125-22 **(x 1)**	**2,2 ± 0,2**
(4)	Shouldered shaft screw M8x125-48 **(x 1)**	**2,2 ± 0,2**

NOTE: Tightening the fixings **(2)** and **(3)** before the fixing **(4)**, to ensure that the auxiliary drive belt is correctly aligned.



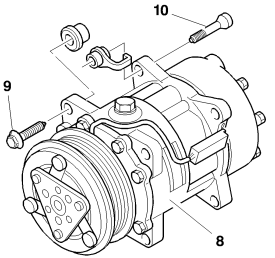
B1BK3E7D

Alternator		
(5)	Alternator	
(6)	Spherical-base screw M10 x150-50 **(x 2)**	**4,1 ± 0,4**
(7)	Screws M10x150-40 **(x 1)**	**3,9 ± 0,4**

NOTE: Tightening the fixings **(6)** before the fixing **(7)**, to ensure that the auxiliary drive belt is correctly aligned.

C8	SPECIAL FEATURES: TIGHTENING TORQUES (m.daN)

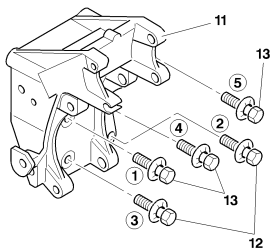
Engine: 4HW



B1EK3E9D

Air conditioning compressor		
(8)	Air conditioning compressor	
(9)	Spherical-base screw M10x150-60 **(x 1)**	**4 ± 0,4**
(10)	Shouldered shaft screw M10x150-52 **(x 2)**	**4,2 ± 0,4**

NOTE: Tightening the fixing **(9)** before the fixing **(10)**, to ensure that the auxiliary drive belt is correctly aligned.



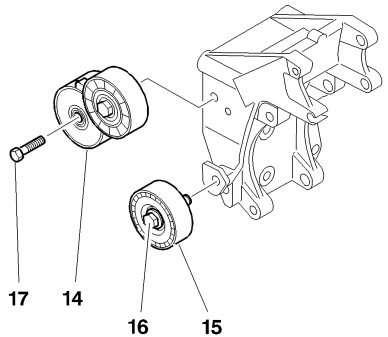
B1EK3EAD

Accessories support		
(11)	**Power steering pump support**	
(12)	**Spherical-base screw M8 x125-35 (x 2) (*)**	
	Pre-tightening	**1 ± 0,1**
	Tightening	**2 ± 0,2**
(13)	**Screws M8x125-80 (x 1) (*)**	
	Pre-tightening	**1 ± 0,2**
	Tightening	**2,3 ± 0,2**

(*) = In the order indicated *(1 to 5).*

SPECIAL FEATURES: TIGHTENING TORQUES (m.daN) — C8

Engine: 4HW



B1BK3EBD

Guide roller		
(14)	Dynamic tensioner roller	
(15)	Eccentric guide roller	
(16)	Screws M10x150 **(x 1)**	
	Pre-tightening	**1,5 ± 0,1**
	Tightening	**3 ± 0,3**
(17)	Screws M8x150-60 **(x 1)**	
	Pre-tightening	**2 ± 0,2**
	Tightening	**4,5 ± 0,4**

SPECIAL FEATURES - CYLINDER HEAD TIGHTENING

Engines all types

Cleaning to be carried out just prior to refitting the cylinder head

WARNING: Clean the contact faces with the approved CITROËN cleaning product.

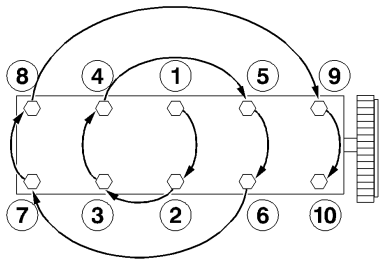
Do not use abrasives or cutting tools on the contact faces.

The contact faces must not bear any traces of impact or scratching.

Insert a tap in the threads of the holes in the cylinder block receiving the cylinder head bolts.

Brush the threads of the cylinder head bolts.

Oil the threads and under the heads of the bolts, using **MOLYKOTE G RAPID PLUS**.



B1DP05BC

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
6FZ	Pre-tightening Tightening Slackening Tightening Angular tightening	**1,5 ± 0,1** **5 ± 0,5** **360°** **2 ± 0,2** **285° ± 5°**	**147**
RFJ			**129,5**
RFN	Pre-tightening Tightening Slackening Tightening Angular tightening	**1,5 ± 0,1** **5 ± 0,5** **360°** **2 ± 0,2** **285° ± 5°**	**147**
3FZ	Pre-tightening Tightening Slackening Tightening Angular tightening	**1,5 ± 0,1** **5 ± 0,5** **360°** **2 ± 0,2** **270° ± 5°**	**129,5**

NOTE: Tightening of the cylinder head after a repair is prohibited.

SPECIAL FEATURES - CYLINDER HEAD TIGHTENING

Engines all types

Cleaning to be carried out just prior to refitting the cylinder head

WARNING: Clean the contact faces with the approved CITROËN cleaning product.

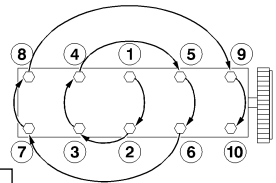
Do not use abrasives or cutting tools on the contact faces.

The contact faces must not bear any traces of impact or scratching.

Insert a tap in the threads of the holes in the cylinder block receiving the cylinder head bolts.

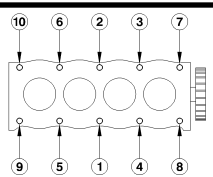
Brush the threads of the cylinder head bolts.

Oil the threads and under the heads of the bolts, using **MOLYKOTE G RAPID PLUS**.



B1DP05BC

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
RHM RHT RHW RHL RHR 4HX 4HW	Pre-tightening Tightening Slackening Pre-tightening Tightening Angular tightening	**2 ± 0,2** **6 ± 0,6** **360°** **2 ± 0,2** **6 ± 0,6** **220° ± 5°**	**134,5**



B1DP1CLC

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
9HZ	Pre-tightening Tightening Angular tightening	**2 ± 0,2** **4 ± 0,4** **230° ± 5°**	**147**

NOTE: Tightening of the cylinder head after a repair is prohibited.

SPECIAL FEATURES - CYLINDER HEAD TIGHTENING

Engines all types

Cleaning to be carried out just prior to refitting the cylinder head

WARNING: Clean the contact faces with the approved CITROËN cleaning product.

Do not use abrasives or cutting tools on the contact faces.

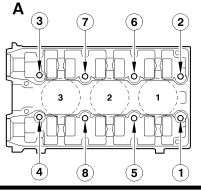
The contact faces must not bear any traces of impact or scratching.

Insert a tap in the threads of the holes in the cylinder block receiving the cylinder head bolts.

Brush the threads of the cylinder head bolts.

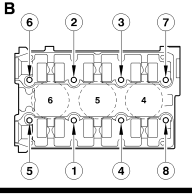
Oil the threads and under the heads of the bolts, using **MOLYKOTE G RAPID PLUS**.

A



B1DP1KCC

B



B1DP1KHC

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
XFU	Pre-tightening Slackening Pre-tightening Angular tightening	**2 ± 0,2** **360°** **1,5 ± 0,2** **225° ± 5°**	**149,5**

A = Front cylinder head.

B = Rear cylinder head.

NOTE: Tightening of the cylinder head after a repair is prohibited.

SPECIAL FEATURES - CYLINDER HEAD TIGHTENING

Engines all types

Cleaning to be carried out just prior to refitting the cylinder head

WARNING: Clean the contact faces with the approved CITROËN cleaning product.

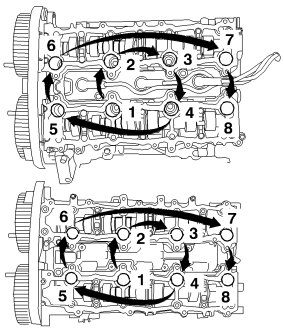
Do not use abrasives or cutting tools on the contact faces.

The contact faces must not bear any traces of impact or scratching.

Insert a tap in the threads of the holes in the cylinder block receiving the cylinder head bolts.

Brush the threads of the cylinder head bolts.

Oil the threads and under the heads of the bolts, using **MOLYKOTE G RAPID PLUS**.



B1EK0XAD

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
XFW	Pre-tightening Slackening Pre-tightening Angular tightening	**2 ± 0,2** **360°** **1,5 ± 0,2** **225° ± 5°**	**149,5**

NOTE: Tightening of the cylinder head after a repair is prohibited.

BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE

↓ **4099-T** (C.TRONIC.105)	← **Tools** →	**4122-T** (C.TRONIC.105.5) ↓

1 daN = 1 Kg TYPE DE COURROIES / daN	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	daN / 1 daN = 1 Kg TYPE DE COURROIES
S																					
	18	28	36	44	51	58	64	70	76	82	88	94	100	106	112						
	18	28	36	44	51	58	64	70	76	82	88	94	100	106	112						
P	E5	18	23	27	31	34	37	40	43	46	49	52	54	56	58	60	62	64	66	68	
	E6	25	32	39	45	50	54	58	62	66	70	74	78	81	84	86	88	89	90	91	
		32	41	48	55	62	69	76	83	90	96	102	108	114	120	126	132	138	144	150	
P 10	E6	27	36	43	49	55	61	66	71	76	80	84									
		32	41	49	57	63	69	75	81	87	93	99									10
P 11	E6	26	35	42	48	53	58	63	68	73	78	82									
		30	40	47	54	61	68	75	81	87	93	99									11
P 13	E7	45	55	65	74	83	89	95	101	107	113	119									
		36	49	52	64	73	80	86	92	98	104	110									13
T 10	E7	28	34	39	44	48	52	56	60	64	68	71									
		34	41	48	55	62	69	76	83	89	96	102									10
T 11	E8	32	39	45	51	56	61	66	71	76	79	81									
		37	43	51	59	66	73	80	86	92	98	104									11
T 13	E9	52	60	67	74	81	88	94	100	106	110	114									
		49	57	63	69	75	81	87	93	99	105	111									13

B1EP135D

AUXILIARY EQUIPMENT DRIVE BELT

	Petrol						Diesel							
	EW				ES		DV	DW						
	7	10		12	9		6	10					12	
	J4	A	J4		A	J4	TED4				BTED4		TED	ATED4
Engine type	6FZ	RFJ	RFN	3FZ	XFU	XFW	9HZ	RHM	RHT	RHW	RHL	RHR	4HX	4HW
C5	1.8i 16V	2.0i 16V			3.0i 24S		1.6 16V HDi				2.0 16V HDi		2.2 16V HDi	
C8				2.2i 16V HPi				2.0 16V HDi						2.2 16V HDi
See pages:	95	96	97		98	99	100 to 101	102 to 103			104		105 to 106	107 to 108

AUXILIARY EQUIPMENT DRIVE BELT

Engines: All types Petrol and Diesel

Tools.

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

WARNING: If using tool 4099-T (C.TRONIC 105), refer to the correspondence table on page 93.

Essential.

Before refitting the auxiliary equipment drive belt, check that:

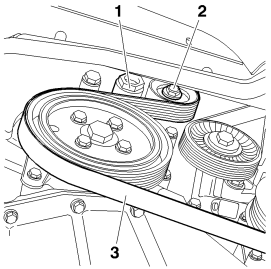
- 1 / The roller(s) rotate freely *(no play or stiffness)*.

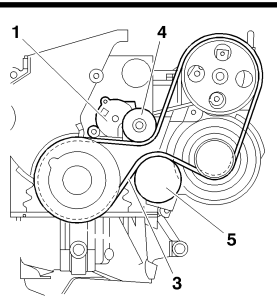
- 2 / The belt is correctly engaged in the grooves of the various pulleys.

AUXILIARY EQUIPMENT DRIVE BELT

C5

Without aircon





Engine: 6FZ

Tool.

[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.

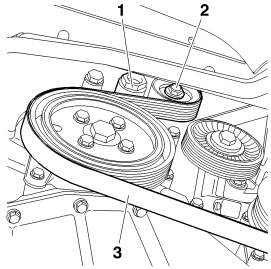
Compress the tensioner roller **(1)**.
Fit the belt **(3)**.
Release the tensioner roller **(1)**.

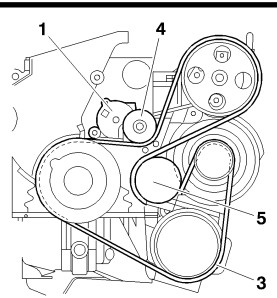
Tightening torques (m.daN).

Tensioner roller screw **(4)**	**: 2 ± 0,2**
Guide roller screw **(5)**	**: 3,5 ± 0,3**

B1BP23PC | B1BP23QC

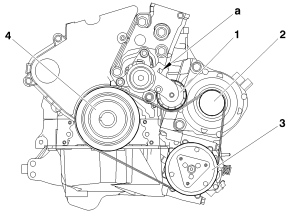
With aircon



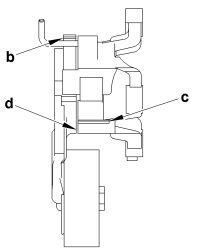


B1BP23PC | B1BP23RC

C5 AUXILIARY EQUIPMENT DRIVE BELT



B1EP1FUD



B1EP1FVC

Engine: RFJ

Tool.

[1] «Junior» T extension **: (-).1608.E**

Removing.

Engage tool **[1]** in the notch **«a»**.
Exert on the roller **(1)** an effort upwards to hold it at maximum.
Remove the auxiliaries drive belt.
Carefully release the tensioner roller **(1)** to reach its minimum.
Remove tool **[1]**.

IMPERATIVE: Check that the roller (1) turns freely *(without play and without tight spots)*.

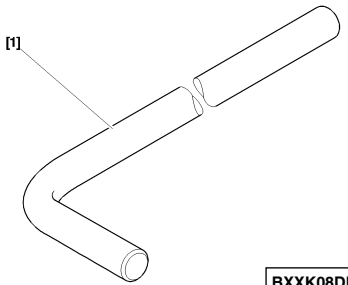
Refitting.

If removing the auxiliaries drive belt tensioner roller, tighten the screws **2 ± 0,2 m.daN**.
Engage tool **[1]** in the notch at **«a»**.
Exert on the roller **(1)** an effort upwards to hold it at maximum.
Position the *(new)* auxiliaries drive belt, in the following sequence:
- Auxiliaries drive pulley **(4)**, aircon compressor pulley **(3)**, tensioner roller **(1)** and alternator pulley **(2)**.

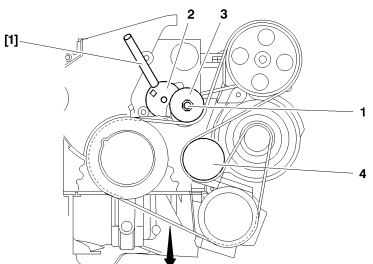
IMPERATIVE: Make sure that the auxiliaries drive belt is correctly positioned in the grooves of the various pulleys.

Release the tensioner roller **(1)**.
Remove tool **[1]**.
Check the tension of the auxiliaries drive belt:
- Mark **«b»** at the level of mark **«c»**, new belt.
- Mark **«b»** at the level of mark **«d»**, belt to be changed.

AUXILIARY EQUIPMENT DRIVE BELT



BXXK08DD



BXXK0AUD

Engines: RFN - 3FZ

Tool.

[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]**.

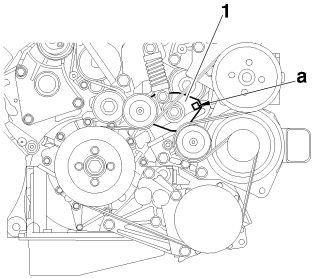
Remove the auxiliary drive belt.
ESSENTIAL: Check that the rollers (3) and (4) turn freely *(no tight spot)*.

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.

C5	AUXILIARY EQUIPMENT DRIVE BELT

Engine: XFU



B1BP27EC

Tools.

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

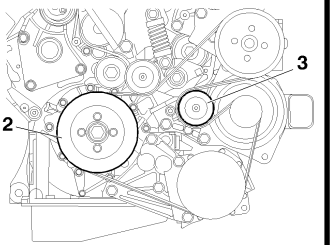
ESSENTIAL: Check that the guide rollers are turning freely ***(no play and no tightness)*****.**

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]**.

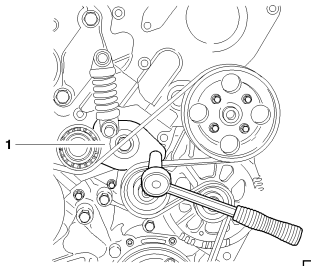
ESSENTIAL: Make sure that the belt is correctly positioned in the grooves of the various pulleys.



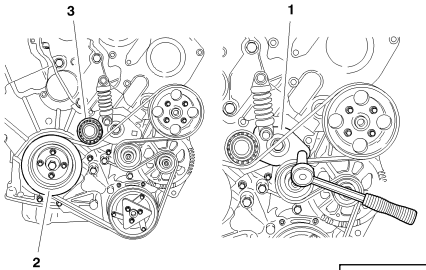
B1BP27FC

AUXILIARY EQUIPMENT DRIVE BELT

C8



B1EK0VAD



B1EK0VBD

Engine: XFW

Tools.

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

Removing.

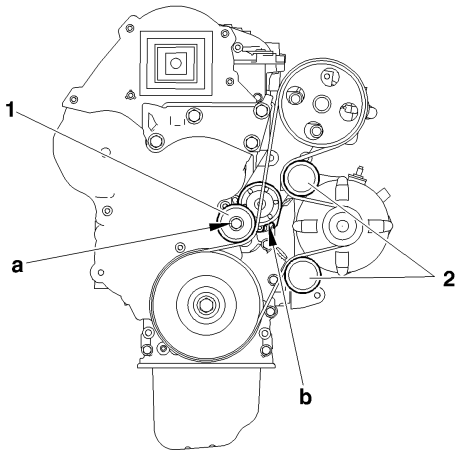
Move aside the power steering oil low pressure pipe flange.
Pivot the support **(1)** of the tensioner roller clockwise, as far as it will go, using tools **[1]** and **[2]**.
Remove the auxiliary drive belt.
IMPERATIVE: Check the operation of the rollers ***(no play, no tight spot).***

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.

C5	AUXILIARY EQUIPMENT DRIVE BELT
Without aircon	Engine: 9HZ



B1BP2Z6D

Tools.

[1] Dynamic tensioner compressure lever **: (-).0188.Z**
[2] Peg for dynamic tensioner roller **: (-).0494.F**

IMPERATIVE: Respect the safety and cleanliness requirements specific to High pressure Diesel injection (HDi) engine versions.

Disconnect the battery.
Remove the front RH wheel and the under-engine sound-deadening.

Removing.

WARNING: Mark the direction of fitting of the accessories drive belt, if it is to be re-used.

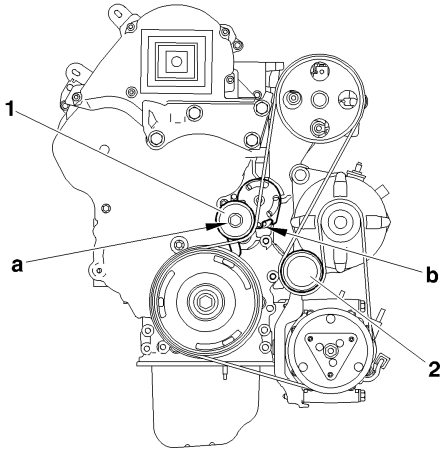
Compress the dynamic tensioner roller **(1)** by acting at **«a»** *(clockwise)*, using tool **[1]**.
Peg at **«b»**, using tool **[2]**.
Keeping the dynamic tensioner roller **(1)** compressed, remove the accessories drive belt.

IMPERATIVE: Check that the rollers (1) and (2) can turn freely *(without play and without tight spots)*.

AUXILIARY EQUIPMENT DRIVE BELT	C5

With aircon

Engine: 9HZ



B1BP2ZCD

Refitting.

WARNING: Belt to be re-used, mark the direction of fitting of the belt.

Refit the auxiliaries drive belt.

Compress the tensioner roller **(1)** by acting at **«c»** *(clockwise)*, using tool **[1]**.

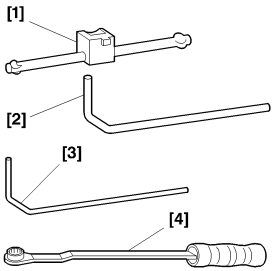
Remove tool **[2]**.

IMPERATIVE: Make sure that the auxiliaries drive belt is correctly positioned in the grooves of the various pulleys.

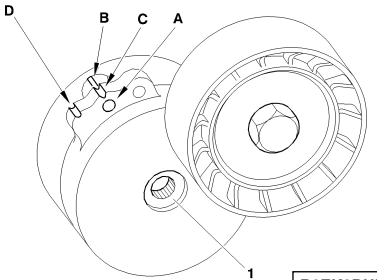
Refit:
- the front RH wheel, the sound-deadening under the engine.
- Reconnect the battery.

IMPERATIVE: Carry out the operations that are necessary following a reconnection of the battery *(see corresponding operation).*

C8 AUXILIARY EQUIPMENT DRIVE BELT



E5AK0E9C



B3EK0DHD

Engines: RHM - RHT - RHW

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 compressure 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 ± 0,4 m.daN**.

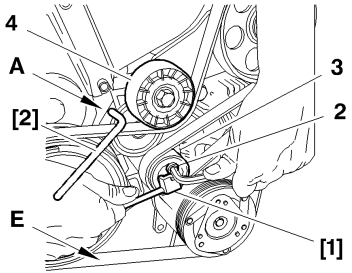
Removing.

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

Engines: RHM - RHT - RHW



B1BK1A4C

Removing (continued).

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

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

Refitting.

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

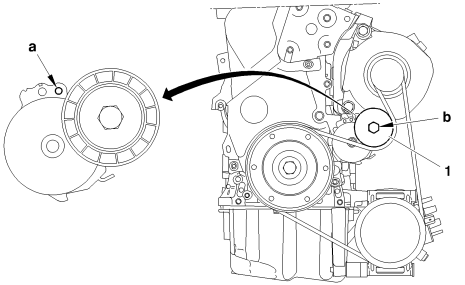
Refit the belt, finishing with the tensioner roller **(4)**.
Action the roller **(3)**, using tool **[1]** *(clockwise)* to free the tool **[2]**.
Tighten the fixing **(2)** to **4,5 ± 0,5 m.daN**, without altering the position of the roller.

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

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

C5	AUXILIARY EQUIPMENT DRIVE BELT

Engines: RHL - RHR



B1BP31AD

Tools.

[1] Dynamic tensioner compressure lever **: (-).0188.Z**
[2] Dynamic tensioner roller retaining peg **Ø 4mm** **: (-).0188.Q1**

Removing.
Remove the splash-shield, under-engine sound-deadening, front RH wheel.

WARNING: Mark the direction of fitting of the auxiliaries drive belt in the case of re-use of the belt.

Compress the dynamic tensioner roller **(1)** by acting at **«b»** *(anti-clockwise)*, using tool **[1]**.
Peg using tool **[2]** at **«a»**.

IMPERATIVE: Check that the roller (1) turns freely *(without play and without tight spots)*.

Refitting.
Refit the auxiliaries drive belt.

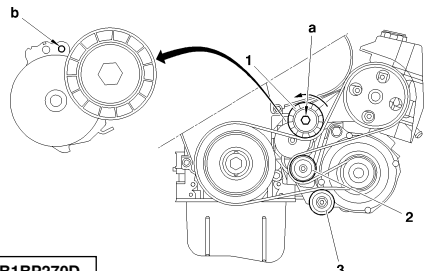
IMPERATIVE: Make sure that the auxiliaries drive belt is correctly positioned in the grooves of the various pulleys.

Compress the dynamic tensioner roller **(1)** by acting at **«b»**, using tool **[1]**.
Remove tool **[2]** at **«a»**.
Refit the splash-shield, under-engine sound-deadening, front RH wheel.

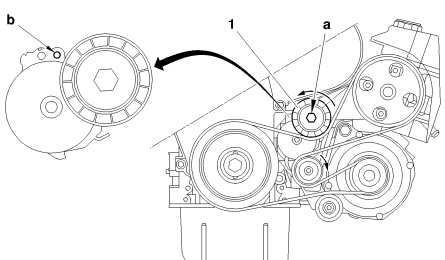
AUXILIARY EQUIPMENT DRIVE BELT

C5

Engine: 4HX



B1BP270D



B1BP272D

Without air conditioning

Tools.

[1] Dynamic tensioner compressure lever **: (-).0188.Z**
[2] Peg **Ø 4 mm** **: (-).0188.Q1**

Remove.

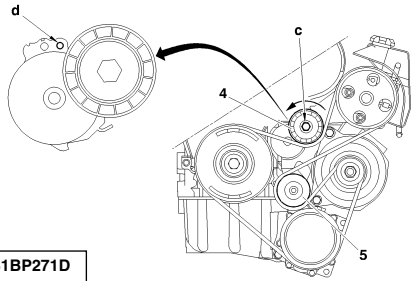
WARNING: Mark the direction of fitting in case the belt is to be reused.

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.

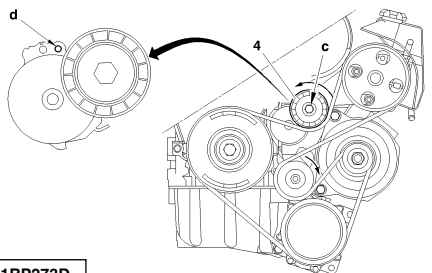
Refit.
Refit the auxiliaries drive belt.
Compress the tensioner roller **(1)** by action at **«a»** *(anti-clockwise)*, using tool **[1]**.
Remove the tool **[2]** at **«b»**.

C5	AUXILIARY EQUIPMENT DRIVE BELT

Engine: 4HX



B1BP271D



B1BP273D

Without air conditioning

Tools.

[1] Dynamic tensioner compressure lever **: (-).0188.Z**
[2] Peg **Ø 4 mm** **: (-).0188.Q1**

Remove.

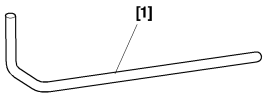
WARNING: Mark the direction of fitting in case the belt is to be reused.

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»**.

AUXILIARY EQUIPMENT DRIVE BELT

Engine: 4HW

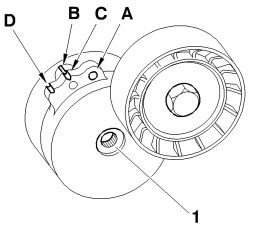


E5AK0EDC

Tools.

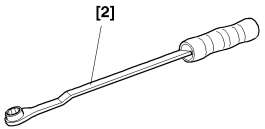
[1] Peg for dynamic roller **: (-) 0188-Q1**
[2] Dynamic roller compressure lever **: (-).1888-Z**

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



B3EK09PC

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

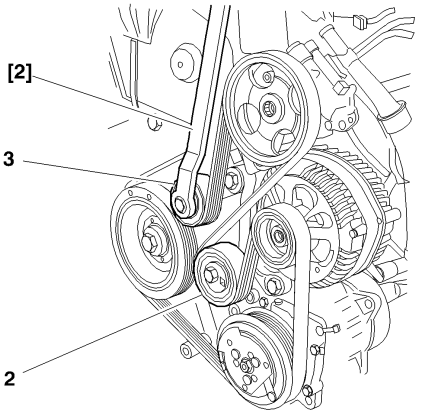


E5AK0E8C

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.

C8	AUXILIARY EQUIPMENT DRIVE BELT



B1BK1IWD

Engine: 4HW

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.

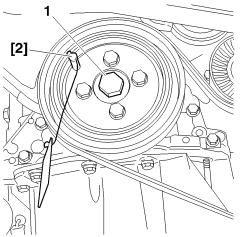
Rotate the engine **four times**.

Complete the refitting.

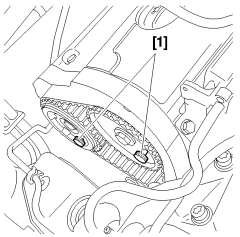
CHECKING AND SETTING THE VALVE TIMING

	Petrol						Diesel							
	EW				ES		DV	DW						
	7	10		12	9		6	10					12	
	J4	A	J4		A	J4	TED4				BTED4		TED	ATED4
Engine type	**6FZ**	**RFJ**	**RFN**	**3FZ**	**XFU**	**XFW**	**9HZ**	**RHM**	**RHT**	**RHW**	**RHL**	**RHR**	**4HX**	**4HW**
C5	1.8i 16V	2.0i 16V			3.0i 24S		1.6 16V HDi				2.0 16V HDi		2.2 16V HDi	
C8			2.0i 16V	2.2i 16V HPi		3.0i 24S		2.0 16V HDi						2.2 16V HDi
See pages:	**110 to 115**	**116 to 122**	**123 to 130**	**131 to 138**	**139 to 144**	**145 to 152**	**153 to 163**	**180 to 187**			**164 to 173**		**174 to 179**	**180 to 187**

C5	CHECKING THE VALVE TIMING



B1BP27JC



B1BP25PC

Engine: 6FZ

Tools.

[1] Camshaft setting peg **: (-).0189.A**
[2] Crankshaft setting peg **: (-).0189.B**

Checking the setting of the timing.

Removing.

Disconnect the battery negative terminal.
Raise and support the vehicle, front wheels hanging.
Remove the front RH wheel, the splash-shield and the upper timing cover.
Turn the engine by means of the crankshaft pinion screw **(1)**, clockwise, to bring it to the pegging position.
Peg the crankshaft, using tool **[2]**.
Peg the camshaft pulleys, using tool **[1]**.

NOTE: The peg **[1]** should go in without effort.

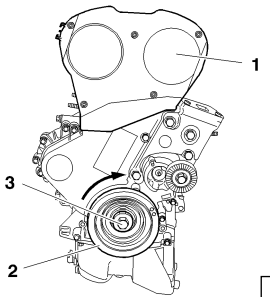
WARNING: If the pegs go in only with difficulty, repeat the operation for fitting and tensioning the timing belt *(see corresponding operation)*.

Refitting.

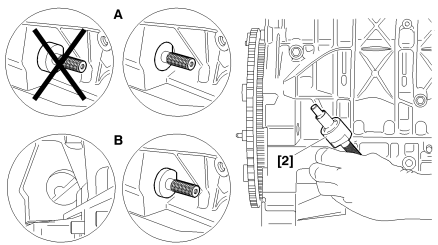
Remove the pegs **[1]** and **[2]**.
Refit the upper timing cover, the splash-shield, the plastic pins and the front RH wheel.

CHECKING AND SETTING THE VALVE TIMING

C5



B1BP2V4C



B1BP2V3D

Engine: 6FZ

Tools.

[1] Camshaft setting peg	**: (-).0189.A**
[2] Crankshaft setting peg	**: (-).0189.R**
[3] Timing belt retaining pin	**: (-) 0189.K**
[4] Adaptor for angular tightening	**: 4069-T**
[5] Tool for moving and locking the tensioner roller	**: (-).0189.S**
[5a]	**: (-).0189.S1**
[5b]	**: (-).0189 S2**

Removing.

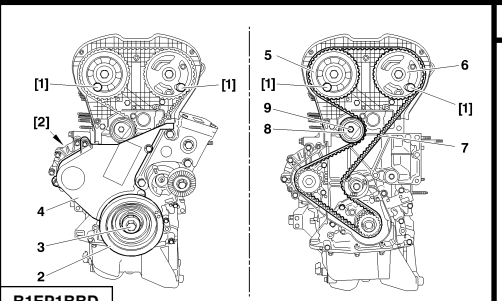
Disconnect the battery negative terminal.
Raise and support the vehicle, front wheels hanging.
Remove the accessories drive belt *(see corresponding operation)*.
Remove the upper timing cover **(1)**.

Turn the engine by means of the screw **(3)** of the crankshaft pinion **(2)**, to bring it to the pegging position.

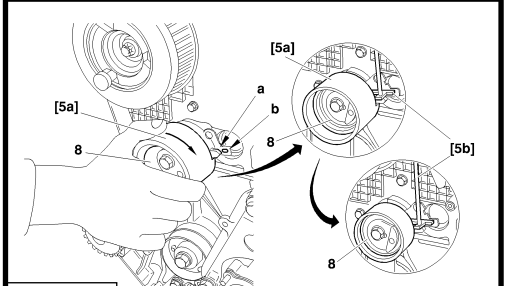
A: Pegging on the manual gearbox.
B: Pegging on the automatic gearbox.

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

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1BBD



B1EP1BCD

Engine: 6FZ

Peg the camshaft pulleys **(5)** and **(6)**, using tool **[1]**.

Remove:

- The screw **(3)**.
- The crankshaft pulley **(2)**.
- The lower timing cover **(4)**.

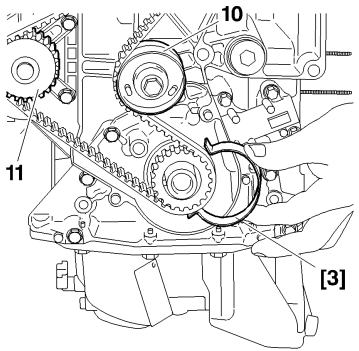
IMPERATIVE: Never remove the crankshaft pulley (2) without pegging the crankshaft and camshafts.

Slacken the screw **(9)** of the tensioner roller **(8)**.
Turn the tensioner roller **(8)** clockwise.
Remove the timing belt **(7)**.

Refitting.
Turn the tensioner roller **(8)**, using tool **[5a]**, to go past the slot **«b»**.

Position the tool **[5b]** to lock the index **«a»** and remove the tool **[5a]**.

CHECKING AND SETTING THE VALVE TIMING — C5



B1EP1BDC

Engine: 6FZ

Reposition the timing belt **(7)** on the crankshaft pulley **(1)**.
Hold the timing belt **(7)** in place using tool **[3]**.
Fit the timing belt **(7)** in place, respecting the following order:
- The guide roller **(10)**, the inlet camshaft pulley **(6)**, the exhaust camshaft pulley **(5)**, the coolant pump **(11)**, the tensioner roller **(8)**.

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

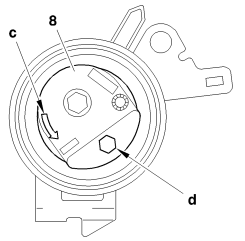
Remove:
- Tool **[3]**.
- Tool **[1]** from the exhaust camshaft pulley.
- Tool **[5b]** from the tensioner roller **(8)**.

Refit:
- The lower timing cover **(4)**.
- The crankshaft pulley **(2).**
- Screw **(3)** of the crankshaft pulley.

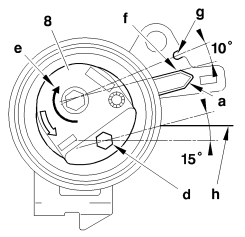
Tightening	**: 4 ± 0,4 m.daN**.
Angular tightening	**: 53 ± 4°**.

Using tool **[4]**.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1BEC



B1EP1BFC

Engine: 6FZ

Tensioning the timing belt.

Turn the tensioner roller **(8)** in the direction of the arrow **«c»**, by means of a hexag. spanner at **«d»**.
Place the index **«a»** in 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»**.

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

Otherwise, repeat the operation to tension the timing belt.

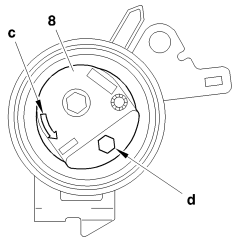
IMPERATIVE: The tensioner roller should not turn during the tightening of its fixing.
If it does, repeat the operation to tension the timing belt.

Tighten the screw **(9)** of the tensioner roller **(8)** to **2,1 ± 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.

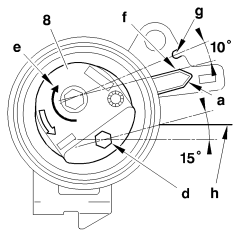
Refitting.
Remove the tools **[1]** and **[2]**.
Rotate the crankshaft **ten times** *(normal direction of rotation).*

CHECKING AND SETTING THE VALVE TIMING — C5

Engine: 6FZ



B1EP1BEC



B1EP1BFC

IMPERATIVE: No pressure or outside force should be brought to bear on the timing belt.

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

Checks.

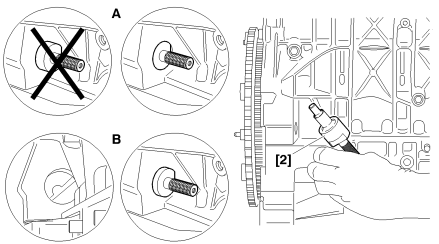
Tension of the timing belt.

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.

Refitting.

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 THE VALVE TIMING



B1BP2V3D

Engine: RFJ

Tools.

[1] Camshaft pinion peg **: (-).0194.A**
[2] Crankshaft setting peg **: (-).0189.R**
[3] Engine lifting crossmember

Removing.

Disconnect the battery negative terminal.
Raise and support the vehicle, front wheels hanging.
Remove:
- The front RH wheel
- The plastic pins holding the splash-shield *(press on the central axis to release them)*.
- The splash-shield.

A: Pegging on the manual gearbox.
B: Pegging on the automatic gearbox.

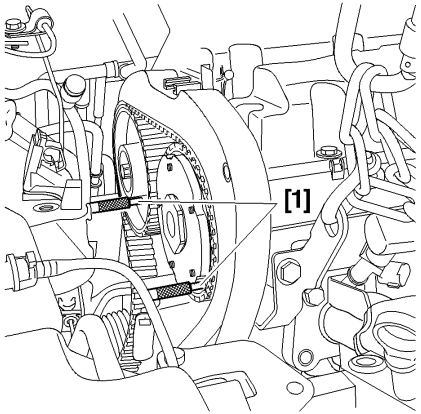
Turn the engine by means of the crankshaft pinion screw, to bring it to the pegging position.
Peg the crankshaft, using the peg **[2]**.
Position tool **[3]**.
Suspend the engine.

Remove:
- The RH engine support.
- The upper timing cover.

CHECKING THE VALVE TIMING

C5

Engine: RFJ



B1BP32GC

Peg the camshaft pulleys, using tool **[1]**.

NOTE: The pegs **[1]** should go in without forcing.

WARNING: If the pegs go in only with difficulty, repeat the operation for fitting and tensioning the timing belt *(see corresponding operation)*.

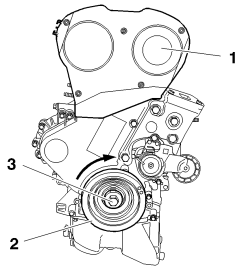
Refitting.

Remove the pegs **[1]** and **[2]**.
Refit:
- The upper timing cover.
- The RH engine support.

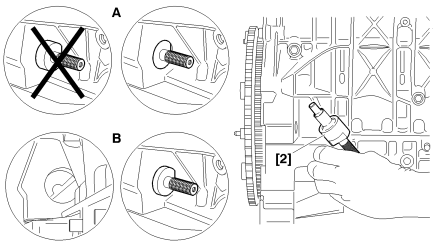
Remove tool **[3]**.

Refit :
- The splash-shield.
- The plastic pins.
- The front RH wheel.

C5	CHECKING AND SETTING THE VALVE TIMING



B1BP310C



B1BP2V3D

Engine: RFJ

Tools.

[1] Camshaft setting peg	**: (-).0194.B**
[2] Crankshaft setting peg	**: (-).0189.R**
[3] Timing belt retaining pin	**: (-) 0189.K**
[4] Adaptor for angular tightening	**: 4069-T**
[5] Hub immobilising tool	**: (-).0189.S**
[5a]	**: (-).0189.S1**
[5b]	**: (-).0189.S2**
[6] Engine lifting crossmember	

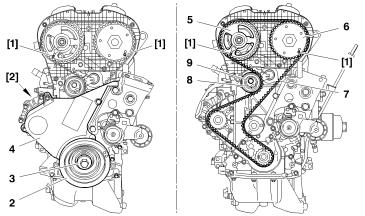
Removing.

Disconnect the negative terminal of the battery.
Raise and support the vehicle, front wheels hanging.
Remove the auxiliaries drive belt *(see corresponding operation).*
Unclip and move aside the fuel supply hose from the timing cover.
Remove the upper timing cover **(1)**.
Position the tool **[6]**.
Suspend the engine.
Remove the RH engine support and the upper timing cover **(1)**.
Turn the engine by means of the screw **(3)** of the crankshaft pinion **(2)** to bring it to the pegging position.

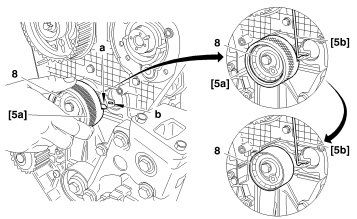
A: Pegging on the **manual gearbox**.
B: Pegging on the **automatic gearbox**.
Peg the crankshaft, using tool **[2]**.

CHECKING AND SETTING THE VALVE TIMING

C5



B1EP1EUD



B1EP1EVD

Engine: RFJ

Peg the camshaft pulleys **(5)** and **(6)**, using tool **[1]**.

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

Remove:

- The screw **(3)**.
- The crankshaft pulley **(2)**.
- The lower timing cover **(4)**.

Slacken the screw **(9)** of the tensioner roller **(8)**.
Turn the tensioner roller **(8)** clockwise.
Remove the timing belt **(7)**.

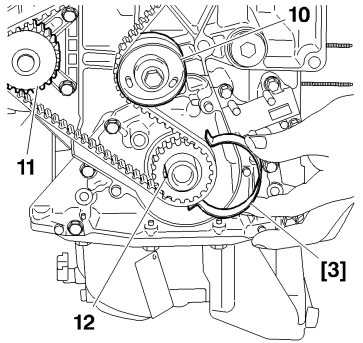
Refitting.

Turn the tensioner roller **(8)**, using tool **[5a]**, to go past the slot **«b»**.

Position the tool **[5b]** to lock the index **«a»** and remove the tool **[5a]**.

C5	CHECKING AND SETTING THE VALVE TIMING

Engine: RFJ



B1EP1EWC

NOTE: Check the presence of the keyway **(12)**.
Reposition the timing belt **(7)** on the crankshaft pulley **(1)**.
Hold the timing belt **(7)** in place using tool **[3]**.
Fit the timing belt **(7)** in place, respecting the following order:
- The guide roller **(10)**, the inlet camshaft pulley **(6)**, the exhaust camshaft pulley **(5)**, the coolant pump **(11)**, the tensioner roller **(8)**.

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

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

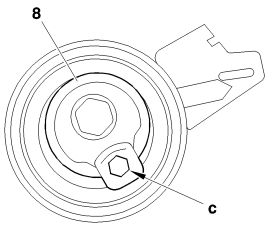
Refit:
- The lower timing cover **(4)**.
- The crankshaft pulley **(2)**.
- Screw **(3)** of the crankshaft pulley

Tightening **: 4 ± 0,4 m.daN**
Angular tightening **: 53 ± 4°** using tool **[4]**.

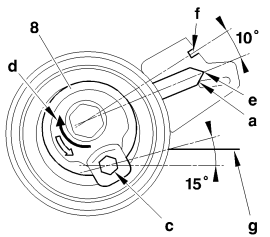
CHECKING AND SETTING THE VALVE TIMING

C5

Engine: RFJ



B1EP1EXC



B1EP1EYC

Tensioning the timing belt.

Turn the tensioner roller **(8)** clockwise, using a hexagonal spanner at **«c»**.
Place the index **«a»** in position **«e»**.

IMPERATIVE: The index «a» should go past the slot «f» by an angular value of 10°.
If it does not, replace the tensioner roller or the tensioner roller and timing belt assembly.

Then bring the index **«a»** to its adjustment position **«f»**, by turning the tensioner roller in the direction of the arrow **«d»**.

WARNING : The index «a» must not go past the slot «f».
If it does, restart the operation to tension the timing belt.
IMPERATIVE: The tensioner roller must not turn during the tightening of its fixing.

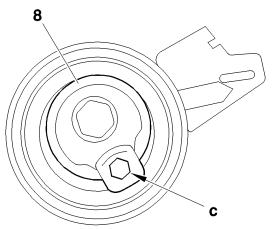
If it does turn, restart the operation to tension the timing belt.
Tighten the screw **(9)** of the tensioner roller **(8)** to **2,1 ± 0,2 m.daN**.

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

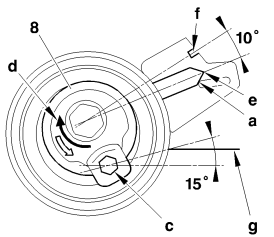
Otherwise, replace the tensioner roller or the tensioner roller and timing belt assembly.

Refitting.
Remove the tools **[1]** and **[2]**.
Rotate the crankshaft **ten times** *(normal direction of rotation).*

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1EXC



B1EP1EYC

Engine: RFJ

IMPERATIVE: No exterior pressure or action should be applied on the timing belt.

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

Checking.
Timing belt tension.

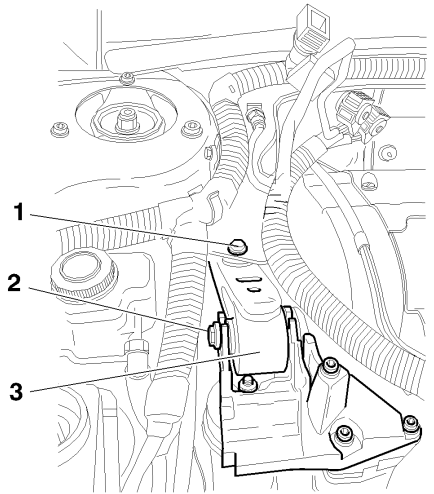
IMPERATIVE: Check the position of the index «a», it should be opposite the slot «f».
If the position of the index «a» is not correct, repeat the operations to tension the timing belt.

Refitting.
Refit the upper timing cover **(1)**.
Refit the RH engine support.
Remove tool **[6]**.
Clip the fuel supply hose on the timing cover.
Refit the auxiliaries drive belt *(see corresponding operation)*.
Lower the vehicle.
Reconnect the battery *(see corresponding operation)*.

CHECKING AND SETTING THE VALVE TIMING

C8

Engine: RFN



B1EK1T7D

Tools.

[1] Camshaft setting peg	**: (-) 0189.A**
[2] Crankshaft setting peg	**: (-).0189.R**
[3] Timing belt retaining pin	**: (-).0189.K**
[4] Adaptor for angular tightening	**: 4069-T**
[5] Tool for moving and locking the tensioner roller	**: (-).0189.S**
[5a]	**: (-).0189.S1**
[5b]	**: (-).0189 S2**
[6] Peg for positioning the dynamic tensioner roller	**: (-).0189.J**

Removing.

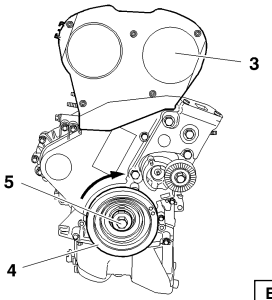
Disconnect the battery.

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

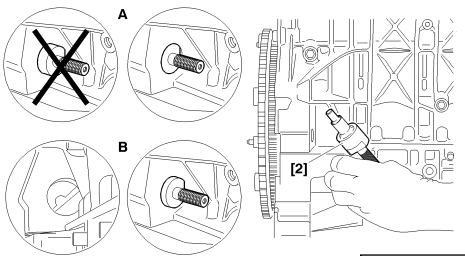
Move aside:
- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.

Remove:
- The screws **(1)** and **(2)**.
- The torque reaction rod **(3)**.

C8	CHECKING AND SETTING THE VALVE TIMING



B1BP2WBC



B1BP2V3D

Engine: RFN

Setting the timing (continued).

Remove the upper timing cover **(4)**.

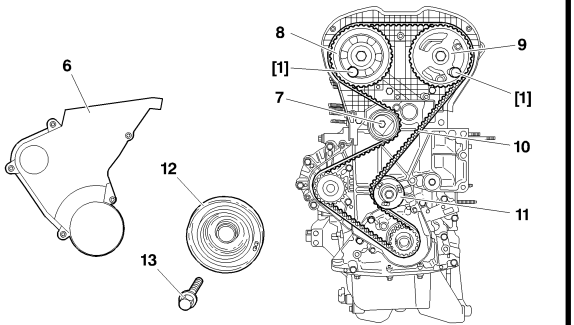
WARNING: Do not slacken the screws «a».

Turn the engine by means of the crankshaft pinion screw **(5)**, to bring it to the pegging position.

A: Pegging on the manual gearbox, tool **[2]**.
B: Pegging on the automatic gearbox, tool **[2]**.

CHECKING AND SETTING THE VALVE TIMING

C5



B1EP1BWD

Engine: RFN

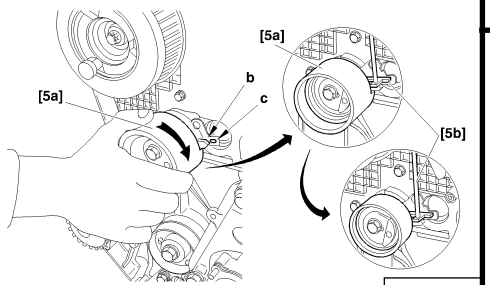
Setting the timing (continued).

Peg the camshaft pulleys **(8)** and **(9)**, using tool **[1]**.
The screw **(13)**.
The crankshaft pulley **(12)**.
The timing cover **(6)**.

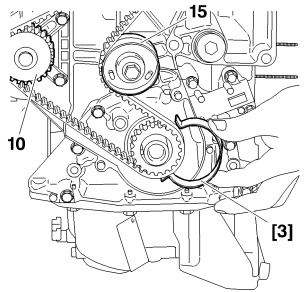
IMPERATIVE: Never remove the crankshaft pulley without pegging the crankshaft and camshafts.

Slacken the screw **(7)** of the tensioner roller.
Turn the tensioner roller *(clockwise)*.
Remove the timing belt **(9)**.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BQD



B1EP1BRC

Engine: RFN

Refitting.

IMPERATIVE: Check that the tensioner roller, guide roller and coolant pump can turn freely *(without play and without tight spots)*; check also that these rollers are not noisy and/or that they are not splashed with grease.

If replacing the tensioner roller: Tighten to **3,5 ± 0,3 m.daN.**

Turn the tensioner roller, using tool **[5a],** to go past the slot **«c»**.
Position the tool **[5b]** to lock the index **«b»** and remove the tool **[5a].**

IMPERATIVE: Systematically replace the following components: Timing belt, exhaust manifold fixing nuts, timing belt tensioner roller nut.

Reposition the timing belt **(10)** on the crankshaft pinion.

Hold the timing belt **(10)** in place using tool **[3].**

CHECKING AND SETTING THE VALVE TIMING — C8

Engine: RFN

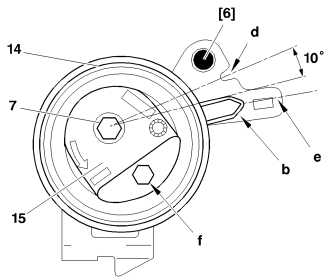
Fit the timing belt **(10)** in place, respecting the following order:
- Guide roller **(11)**.
- Inlet camshaft pulley **(9)**.
- Exhaust camshaft pulley **(8)**.
- Coolant pump.
- Tensioner roller.

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

Remove:
- Tool **[2]**.
- Tool **[3]**.
- Tool **[1]** from the exhaust camshaft pulley.
- Tool **[5b]** from the tensioner roller.

Refit:
- The lower timing cover.
- The crankshaft pulley **(12)**.
- The screw **(13)**.
- Tighten screw **(13)** to **4 ± 0,4 m.daN**, then angular tighten to **53° ± 4°**, tool **[4]**.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BXD

Engine: RFN

Tensioning the timing belt.

IMPERATIVE: This operation must be one with the engine cold.

«e» Max. position
«d» Nominal tension position

Using the hexagonal bracket **«f»**, turn the hub of the tensioner roller **(14)** *(anti-clockwise)*, to bring the index **«b»** to position **«e»** to tension the belt to the maximum.

Turn the eccentric hub **(15)** of the roller **(14)** *(clockwise)*, until the cursor **(b)** comes into gentle contact with the peg **[6]**.

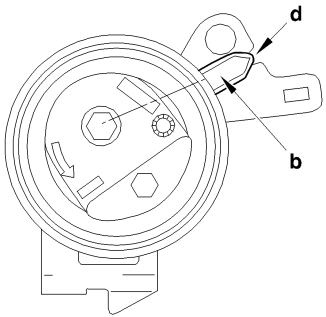
IMPERATIVE: Never turn the eccentric hub (15) by a complete rotation when the tool [6] is in position.

NOTE: This operation enables you to position the index **«b»** in the nominal position **«d»**.

Tighten screw **(7)** to **2 m.daN**, holding the roller by means of the hexagonal bracket **«f»**.

Remove the pegs **[1]**, **[2]** and **[6]**.

CHECKING AND SETTING THE VALVE TIMING



B1EP1BTC

Engine: RFN

Checks.

Make **<u>two rotations</u>** 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.

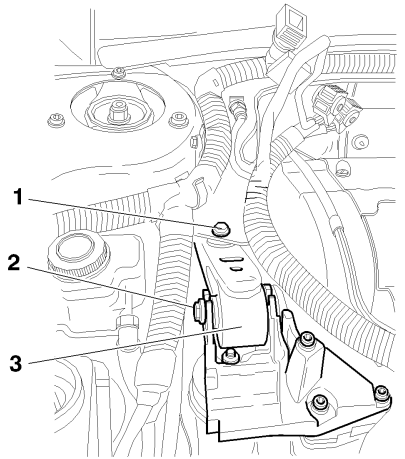
Remove the setting pegs.

Make **<u>ten rotations</u>** of the crankshaft *(direction of rotation of the engine)*.

Check the position of the index **(15)**.

If the index **(15)** is not in its adjustment position **«e»**, recommence the operations to tension the timing belt.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EK1T7D

Engine: RFN

Refitting (continued).

Refit:

- The upper timing cover.

- The torque reaction rod **(3)**.

- The screw **(1)**, tighten to **4,5 m.daN.**

- The screw **(2)**, tighten to **4,5 m.daN.**

- Continue the refitting operations in reverse order to removal.

- Refit the auxiliary drive belt *(see corresponding operation)*.

CHECKING AND SETTING THE VALVE TIMING — C8

Engine: 3FZ

Tools.

[1] Camshaft setting peg **: (-) 0189.A**
[2] Crankshaft setting peg **: (-).0189.R**
[3] Timing belt retaining pin **: (-).0189.K**
[4] Adaptor for angular tightening **: 4069-T**
[5] Tool for moving and locking the tensioner roller **: (-).0189.S**
[5a] **: (-).0189.S1**
[5b] **: (-).0189 S2**
[6] Peg for positioning the dynamic tensioner roller **: (-).0189.J**
[7] Camshaft setting peg **: (-).0189.L**

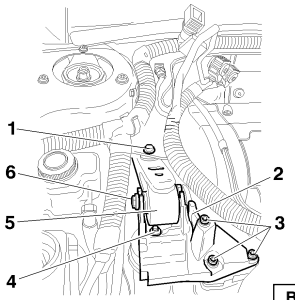
Removing.
Disconnect the battery.

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

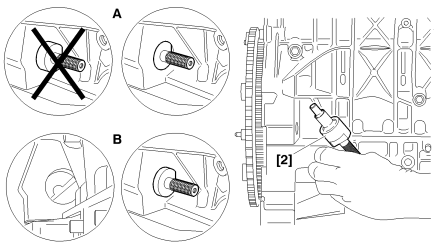
Move aside:
- The fuel delivery pipe.
- The canister purge electrovalve.
- The expansion chamber.

Place a jack under the vehicle to support the engine.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BMC



B1BP2V3D

Engine: 3FZ

Remove:

- The screws **(1)** and **(6)**.

- The torque reaction rod **(3)**.

- The nut **(4)**.

- The three screws **(3)**.

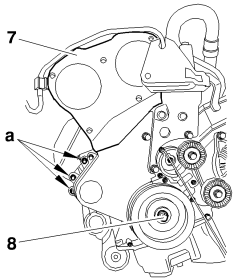
- The RH engine support **(2)**.

IMPERATIVE: Uncouple the exhaust line to avoid any damage to the flexible pipe caused by twisting, pulling and bending it while removing one of the power unit supports.

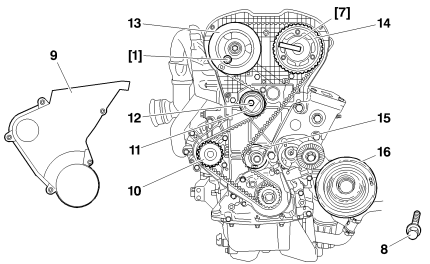
A: Pegging on the manual gearbox, tool **[2]**.
B: Pegging on the automatic gearbox, tool **[2]**.

CHECKING AND SETTING THE VALVE TIMING

C8



B1EP1BNC



B1EP1BPD

Engine: 3FZ

Remove the timing cover **(7)**.

WARNING: Do not slacken the screws (a).

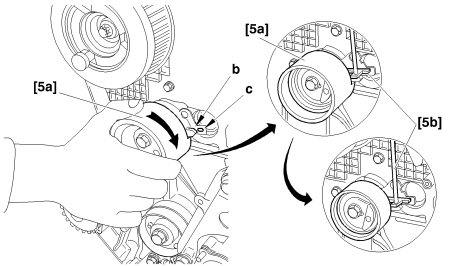
Rotate the engine by means of the screw **(8)** of the crankshaft pinion to bring it to the pegging position.
Peg the camshaft pulleys **(13)** and **(14)**, using tools **[1]** and **[7]**.

Remove:
- The screw **(8)**.
- The crankshaft pulley **(16)**.
- The timing cover **(9)**.

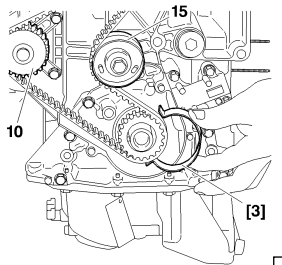
IMPERATIVE: Never remove the crankshaft pulley without pegging the crankshaft and camshafts.

Slacken the screw **(12)** of the tensioner roller **(11)**.
Turn the tensioner roller **(11)** *(clockwise)*.
Remove the timing belt.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BQD



B1EP1BRC

Engine: 3FZ

Refitting.

IMPERATIVE: Check that the tensioner roller, guide roller and coolant pump can turn freely *(without play and without tight spots)*; check also that these rollers are not noisy and/or that they are not splashed with grease.

If replacing the tensioner roller **(15)**: Tighten to **3,5.**

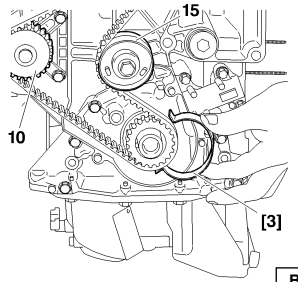
Turn the tensioner roller, using tool **[5a],** to go past the slot **«c».**
Position the tool **[5b]** to lock the index **«b»** and remove the tool **[5a].**

IMPERATIVE: Systematically replace the following components: Timing belt, exhaust manifold fixing nuts, timing belt tensioner roller nut.

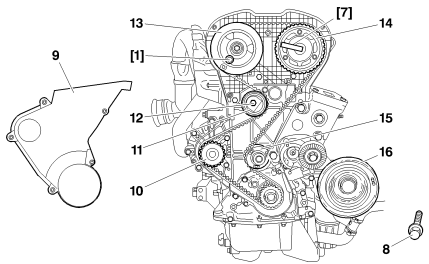
Reposition the timing belt on the crankshaft pinion.

Hold the timing belt in place using tool **[3]**.

CHECKING AND SETTING THE VALVE TIMING — C8



B1EP1BRC



B1EP1BPD

Engine: 3FZ

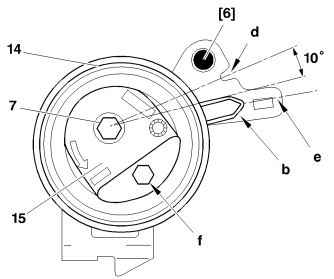
Fit the timing belt in place, respecting the following order:
- Guide roller **(15)**.
- Inlet camshaft pulley **(14)**.
- Exhaust camshaft pulley **(13)**.
- Coolant pump **(10)**.
- Tensioner roller **(11)**.

NOTE: Make so that the belt is as flush as possible with the exterior face of the various pinions and rollers.

Remove:
- Tool **[3]**.
- Tool **[1]** from the exhaust camshaft pulley.
- Tool **[5b]** from the tensioner roller.

Refit:
- The lower timing cover **(9)**.
- The crankshaft pulley **(16)**.
- The screw (8) of the crankshaft pulley.
- Tighten screw **(8)** to **4 ± 0,4 m.daN**, then angular tighten to **53° ± 4°**, tool **[4]**.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BXD

Engine: 3FZ

Tensioning the timing belt.

IMPERATIVE: This operation must be done with the engine cold.

«e» Max. position
«d» Nominal tension position

Using the hexagonal bracket **«f»**, turn the hub of the tensioner roller **(18)** *(anti-clockwise)*, to bring the index **«b»** to position **«e»** to tension the belt to the maximum.

Turn the eccentric hub **(17)** of the roller **(18)** *(clockwise)*, until the cursor **(b)** comes into gentle contact with the peg **[6].**

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

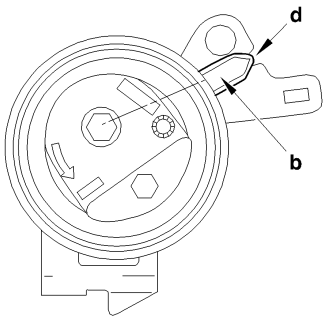
NOTE: This operation enables you to position the index **«e»** in the nominal position **«d»**.

Tighten screw **(12)** to **2 m.daN**, holding the roller by means of the hexagonal bracket **«f»**.

Remove the pegs **[7]**, **[2]** and **[4]**.

CHECKING AND SETTING THE VALVE TIMING — C8

Engine: 3FZ



B1EP1BTC

Checks.

Make **<u>two rotations</u>** 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.

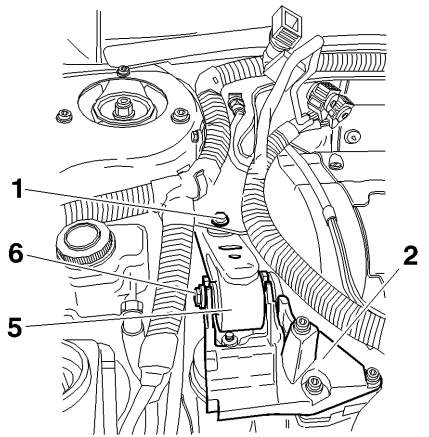
Remove the setting pegs.

Make **<u>ten rotations</u>** of the crankshaft *(direction of rotation of the engine)*.

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

If the index **(b)** is not in its adjustment position **«e»**, recommence the operations to tension the timing belt.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EP1BUC

Engine: 3FZ

Refitting (continued).

Refit:
- The upper timing cover.
- The RH engine support **(2)**.
- The torque reaction rod **(5)**.

The screw **(1)**, tighten to **4,5 m.daN.**

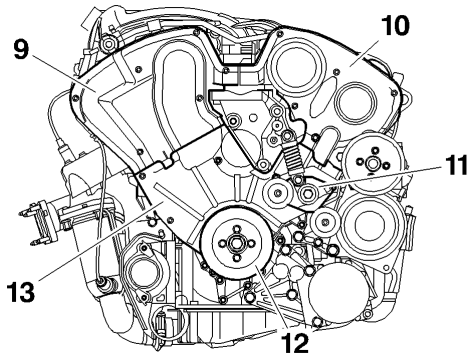
The screw **(6)**, tighten to **4,5 m.daN**.

Continue the refitting operations in reverse order to removal.

Refit the auxiliary drive belt *(see corresponding operation)*.

CHECKING THE VALVE TIMING

C5



B1BP2BKC

Engine: XFU

Tools.

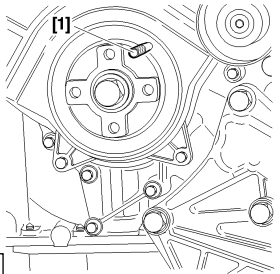
[1] Camshaft setting pegs	**: (-).0187.B**
[2] Crankshaft setting peg	**: (-).0187.A**
[3] Fuel pressure take-off union	**: 4192-T**
[4] Belt retaining pin	**: (-).0187.J**
[5] Exhaust camshaft hubs immobilising tool	**: (-).0187.F**
[6] Inlet camshaft hubs immobilising tool	**: (-).0187.F**

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

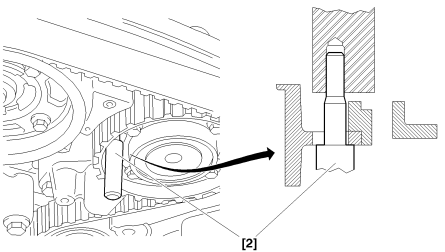
Checking the valve timing.

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)**.

C5	CHECKING THE VALVE TIMING



B1EP08TC



B1EP15UD

Engine: XFU

Checking the valve timing (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]**.

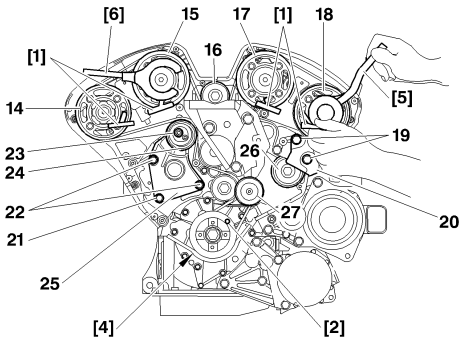
Refit:
- The lower timing cover **(13)**.
- The upper timing covers **(9)** and **(10)**.
- The crankshaft pulley **(12)**.
- The roller/dynamic tensioner assembly **(11)**.
- The power steering pulley.

Complete the refitting of components.

Initialise the ignition injection ECU.

CHECKING AND SETTING THE VALVE TIMING

C5



B1EP15VD

Engine: XFU

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)**.

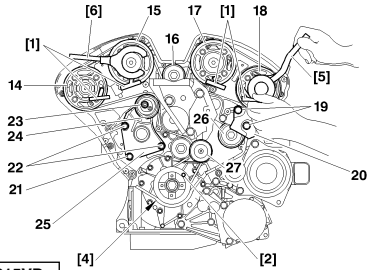
Untighten the screws **(22)** of the panel **(25)**.

Remove the guide roller **(16)**.

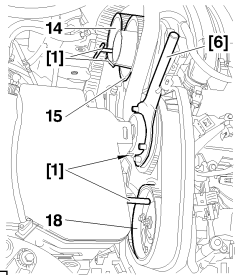
WARNING: Mark the direction of fitting of the timing belt, in case the belt is to be reused.

Remove the timing belt.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP15VD



B1BP2BLC

Engine: XFU

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

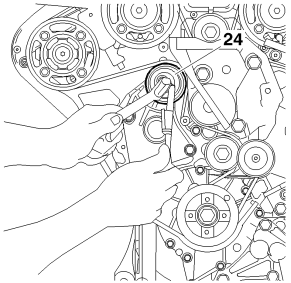
Keep the timing belt well tensioned:
- Refit the guide roller **(16)**, tighten to **8 ± 0,8 m.daN**.

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)**.

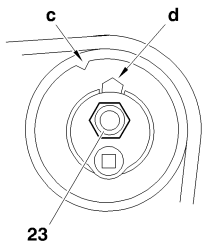
NOTE: When positioning the belt on the camshaft pulleys, turn these clockwise so as to engage the next tooth. The angular displacement of the pulleys should not be more than the equivalent of one tooth.

CHECKING AND SETTING THE VALVE TIMING

C5



B1EP15WC



B1EP15XC

Engine: XFU

Setting the valve timing (continued).

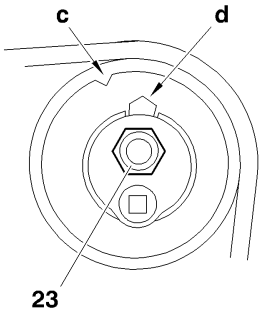
Adjusting the timing belt tension.

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 ± 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 ± 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 ± 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**)*.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP15XC

Engine: XFU

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 ± 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 manœuvre 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 ± 0,1 m.daN**.

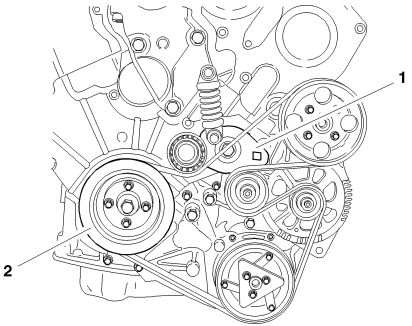
Remove the tools **[1]** and **[2]**.

Refit the panel **(20)**, the screws **(19)** and tighten to **4 ± 0, m.daN**.

Complete the refitting of all components.

CHECKING AND SETTING THE VALVE TIMING

C8



B1EK004D

Engine: XFW

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.

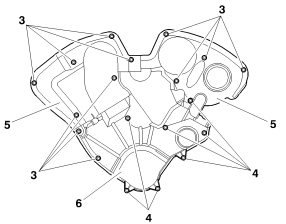
Remove:
- The front RH wheel
- The RH wheelarch.
- The front RH tie-bar.
- The auxiliary drive belt *(see corresponding operation)*.
- The tensioner roller assembly **(1)**.
- The crankshaft pulley **(2)**.

Support the engine using a stand.

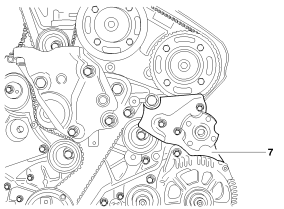
Remove:
- The upper RH torque reaction rod.
- The RH engine support.

C8 CHECKING AND SETTING THE VALVE TIMING

Engine: XFW



B1EK005D



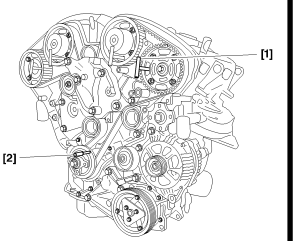
B1EK006D

Removing (continued).

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

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

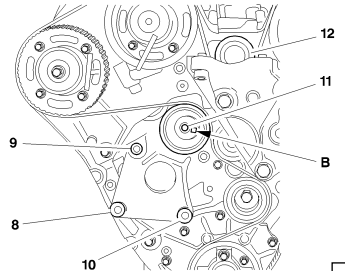
Peg in the sequence:
- Camshafts, using tool **[1]**.
- Crankshaft, using tool **[2]**.



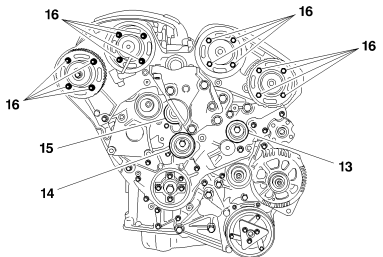
B1EK007D

CHECKING AND SETTING THE VALVE TIMING

C8



B1EK008D



B1EK009D

Engine: XFW

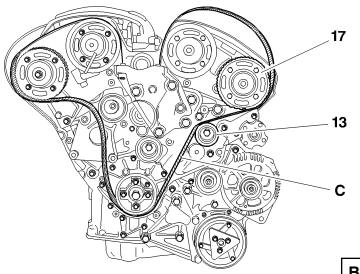
Removing (continued).

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

Refitting.

Make sure that the camshafts, as well as the crankshaft, are correctly pegged.
Check that the rollers **(13)** and **(14)**, as well as the coolant pump **(15)** turn freely *(no tight spots)*.
If replacing the belt, tighten the rollers **(13)** and **(14)** to **8 ± 0,8 m.daN**.
Slacken screws **(16)** by a **1/4 turn**.
Ensure that the camshaft pinions rotate freely on their hubs.
Turn the four camshaft pinions *(clockwise)*, to end of slots.
Engage the timing belt on the crankshaft pinion.
Immobilise the belt, using tool **[4]**.

C8	CHECKING AND SETTING THE VALVE TIMING



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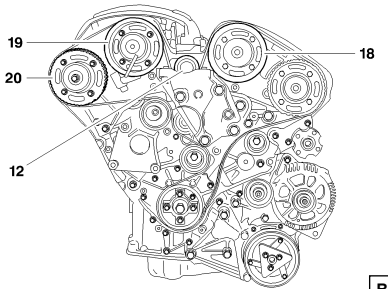


B1EK00BD

Engine: XFW

Refitting (continued).

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

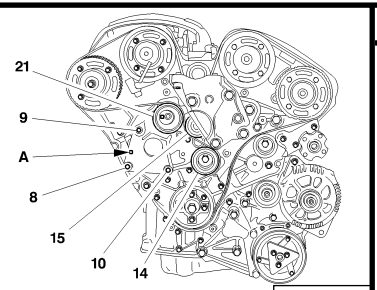
NOTE: Carefully turn the camshaft pinion in the opposite direction to the rotation of the engine in order to engage the belt on the pinion.

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

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

Engage the belt on the LH inlet camshaft pinion **(18)**, as before.
Refit the roller **(12)**, tighten to **8 ± 0,8 m.daN**.

CHECKING AND SETTING THE VALVE TIMING



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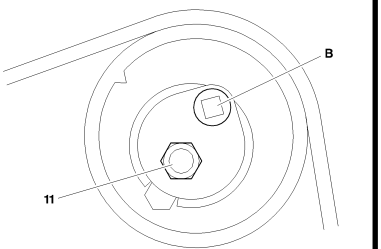


B1EK00DD

Engine: XFW

Refitting (continued).

Engage the belt on:
- The roller **(13)**.
- The camshaft pinions, inlet **(19)** then RH exhaust **(20)**, as before for the camshafts.

Simultaneously engage the belt on:
- The roller **(21)**.
- The pump **(15)**.
- The roller **(14)**.

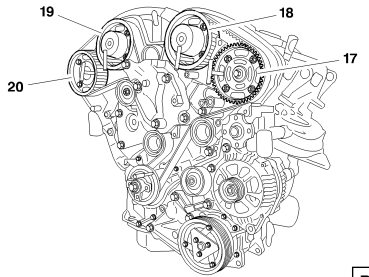
Using tool **FACOM S.161**, at «**A**», pivot the plate to be able to engage the screw **(8)**.
Tighten screws **(8)**, **(9)** and **(10)** to **2,5 ± 0,2 m.daN**.
Pivot the tensoner roller to tension the belt to the maximum *(anti-clockwise)*, using tool **FACOM R.161** at «**B**»:
- SEEM CTI 901-1: **440 ± 15 SEEM** units,
- SEEM CTG 105.5: **83 ± 2 SEEM** units,
- SEEM CTG 105.6: **86 ± 2 SEEM** units.

Tighten the nut **(11)** of the tensioner roller to **1 ± 0,1 m.daN**.

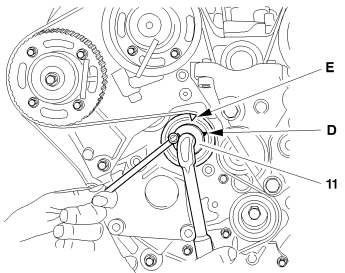
IMPERATIVE: Check that the camshaft pinions are not at end of slots *(by removing a screw)*.

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

C8	CHECKING AND SETTING THE VALVE TIMING



B1EK00ED



B1EK0VRD

Engine: XFW

Refitting (continued).
Tighten at least two screws **(16)** per hub to **1 ± 0,1 m.daN**, in the order indicated:
- **(17)**, **(18)**, **(19)** and **(20)**.
Remove tools **[4]**, **[7]**, **[1]** and **[2]**.
Effect **two rotations** of the crankshaft *(direction of rotation of the engine)*.

WARNING: Never rotate the engine backwards.

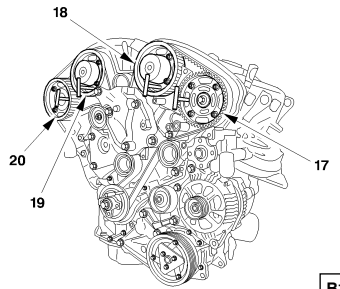
Peg the crankshaft, using tool **[2]**.
Slacken the nut **(11)** a **1/4 turn**.
Align the marks **(D)** and **(E)** of the tensioner roller, using tool **FACOM R.161**.
Tighten the nut **(11)** to **2,5 ± 0,2 m.daN**, without altering the position of the roller.
Remove the crankshaft setting peg **[2]**.
Effect **two rotations** of the crankshaft.

WARNING: Never rotate the engine backwards.

Peg the crankshaft, using tool **[2].**
Check the position of the tensioner roller.
If the marks are not aligned, recommence the alignment of the marks **(D)** and **(E)** of the tensioner roller.

CHECKING AND SETTING THE VALVE TIMING

C8



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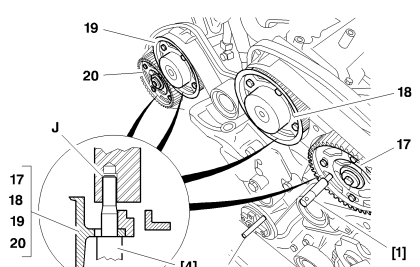


B1EK00HD

Engine: XFW

Refitting (continued).

Peg the camshaft hubs, starting with LH exhaust **(17)** then **(18)** and **(20)**, using tool **[1]**, proceeding in the following way:

- The peg goes in: slacken by **45°** the fixing screws of the pinion on the camshaft hub.
- The peg does not go in: slacken by **45°** the fixing screws of the pinion on the camshaft hub until the peg will go in.

ESSENTIAL:

- Check that the camshaft pinions are not at end of slots *(by removing a screw)*.

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

Tighten the pinions in the sequence below:

- Pinions **(17)**, **(18)**, **(19)**, **(20)** tighten to **1 ± 0,1 m.daN**.

Remove tools **[1]** and **[2]**.

Checking the setting of the timing.

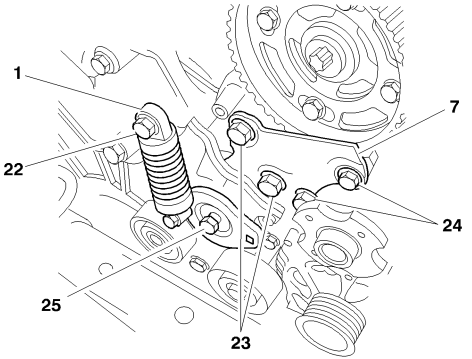
Effect **<u>two rotations</u>** *(normal direction of rotation of the engine)*.

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.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EK00JD

Engine: XFW

Checking the setting of the timing (continued).

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

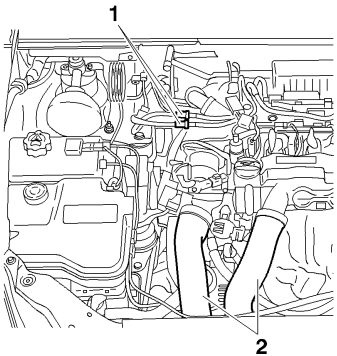
Refitting (continued).
Refit:
- The power steering pump.
- The support **(7)**.
- The tensioner roller assembly **(1)**.

Tighten:
- Screw **(22)** to **2,5 m.daN** + LOCTITE FRNETANCH.
- Screw **(23)** to **4,0 m.daN** + LOCTITE FRNETANCH.
- Screw **(24)** to **2,5 m.daN** + LOCTITE FRNETANCH.
- Screw **(25)** to **6,0 m.daN** + LOCTITE FRNETANCH.

Tighten the crankshaft pulley screws to **2,5 ± 0,2 m.daN**.
Refit the auxiliary drive belt *(see corresponding operation)*.
Complete the refitting operations in the opposite order to removal.

CHECKING THE VALVE TIMING

C5



B1BP32CC

Engine: 9HZ

Tools.

[1] Flywheel setting peg **: (-).0194.C**
[2] Camshaft setting peg **: (-).0194.B**
[3] Crankshaft setting peg **: (-).0194.A**

Removing.

IMPERATIVE: Respect the safety and cleanliness requirements specific to High pressure Diesel injection (HDi) engine versions.

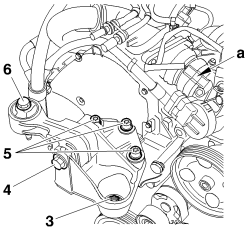
Raise and support the vehicle, wheels hanging.
Disconnect the positive and negative terminals of the battery.

Remove:
- The front RH wheel
- The front RH splash-shield.
- The auxiliary drive belt *(see corresponding operation)*.

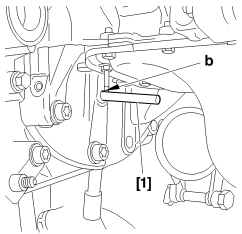
Uncouple:
- The fuel supply unions **(1)**.
- The air/air heat exchanger inlet and outlet pipes **(2)**.
- The exhaust line *(at the flexible pipe)*.

C5	CHECKING THE VALVE TIMING

Engine: 9HZ



B1BP32DC



B1BP305C

Support the engine with a roller jack equipped with a block.

Disconnect the connector at **"a"**.

Slacken the screw **(4)**.

Remove:
- The screw **(6)**.
- The nut **(3)**.
- The **3** screws **(5)**.

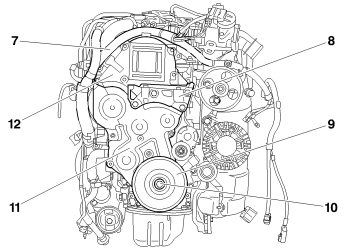
- The RH engine support and upper torque reaction rod assembly.

Turn the engine in the normal direction of rotation.

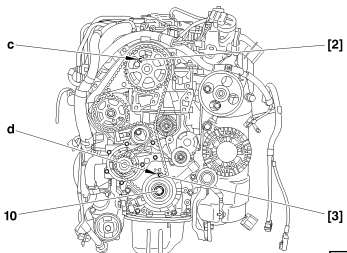
Peg the flywheel using the peg **[1]** at **"b"**.

CHECKING THE VALVE TIMING — C5

Engine: 9HZ



B1EP1E3D



B1EP1E4D

Move aside the electrical harness **(7)**.

Remove:
- The engine support **(8)**.
- The screw **(10)**.
- The accessories drive pulley **(9)**.
- The lower timing cover **(11)**.
- The upper timing cover **(12)**.
- The tool **[1]**.

Refit the screw **(10)**.

Rotate the crankshaft **six times** *(clockwise)*.

IMPERATIVE: Never turn it backwards.

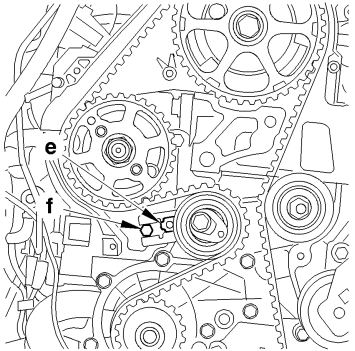
Peg the camshaft at **«c»**, using tool **[2]** *(oil the pegs)*.

WARNING: The magnetic track should not show any sign of damage and should not be approached by any other magnetic source.

Peg the crankshaft at **«d»**, using tool **[3]**.

ESSENTIAL: Should it not be possible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm. If it is more, repeat the operation to position the timing belt *(see corresponding operation)*.

C5	CHECKING THE VALVE TIMING



B1EP1E5C

Engine: 9HZ

NOTE: The index **«e»** of the dynamic tensioner roller should be centred in the interval **«f»**.

Check the correct positioning of the index **«e»**.

If it is not correct, repeat the operation to tension the timing belt *(see corresponding operation)*.

Remove tools **[2]** and **[3]**.

Refitting.

Refit tool using tool **[1]** at **«b»**.
Remove the screw **(10)**.
Refit the upper timing cover **(12)**, lower timing cover **(11)**, the accessories drive pulley **(9)**, the screw **(10)**.

Tightening method for the screw **(10)**:
- Pre-tightening **: 3 ± 0,3 m.daN.**
- Angular tightening **: 180° ± 5°.**

Remove the tool **[1]**.

CHECKING THE VALVE TIMING	C5

Engine: 9HZ

Refit:
- The engine support **(8)**, tighten to **: 5,5 ± 0,9 m.daN**.

- The RH engine support and upper torque reaction rod assembly.

- The nut **(3)**, tighten to **: 4,5 ± 0,5 m.daN.**
- The three screws **(5)**, tighten to **: 5,5 ± 0,8 m.daN.**
- The screw **(6)**, tighten to **: 6 ± 0,6 m.daN.**
- The screw **(4)**, tighten to **: 6 ± 0,6 m.daN.**

- The electrical harness **(7)**.

Couple:
- The exhaust line, tighten to **: 2,5 ± 0,3 m.daN.**
- The fuel supply unions **(1)**.
- The air/air heat exchanger inlet and outlet pipes **(2)**.

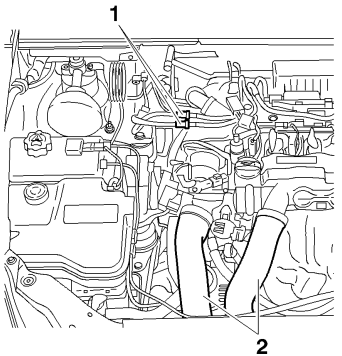
Connect the connector at **"a"**.

Refit:
- The auxiliary drive belt *(see corresponding operation).*
- The front RH splash-shield.
- The front RH wheel.

Reconnect the positive and negative terminals of the battery.

IMPERATIVE: Carry out the operations that are necessary following a reconnection of the battery *(see corresponding operation)*.

C5	CHECKING AND SETTING THE VALVE TIMING



B1BP32CC

Engine: 9HZ

Tools.

[1] Flywheel setting peg **: (-).0194.C**
[2] Camshaft setting peg **: (-).0194.B**
[3] Crankshaft setting peg **: (-).0194.A**

Removing.

IMPERATIVE: Respect the safety and cleanliness requirements specific to High pressure Diesel injection (HDi) engine versions.

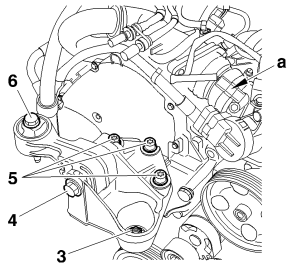
Raise and support the vehicle, wheels hanging.
Disconnect the positive and negative terminals of the battery.

Remove:
- The front RH wheel.
- The front RH splash-shield.
- The auxiliary drive belt *(see corresponding operation).*

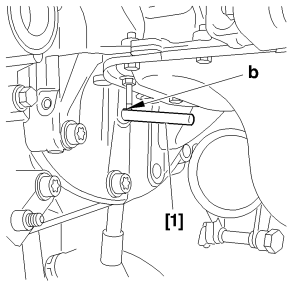
Uncouple:
- The fuel supply unions **(1)**.
- The air/air heat exchanger inlet and outlet pipes **(2)**.
- The exhaust line *(at the flexible pipe).*

CHECKING AND SETTING THE VALVE TIMING

C5



B1BP32DC



B1BP305C

Engine: 9HZ

Support the engine with a roller jack equipped with a block.

Disconnect the connector at **"a"**.

Slacken the screw **(4)**.

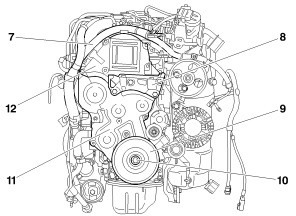
Remove:
- The screw **(6)**.
- The nut **(3)**.
- The **3** screws **(5)**.

- The RH engine support and upper torque reaction rod assembly.

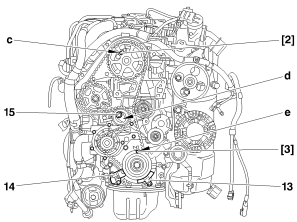
Turn the engine in the normal direction of rotation.

Peg the flywheel using the peg **[1]** at **"b"**.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1E3D



B1EP1E6D

Engine: 9HZ

Move aside the electrical harness **(7)**.

Remove:
- The engine support **(8)**.
- The screw **(10)**.
- The accessories drive pulley **(9)**.
- The lower timing cover **(11)**.
- The upper timing cover **(12)**.
- The tool **[1]**.

Refit the screw **(10)**.

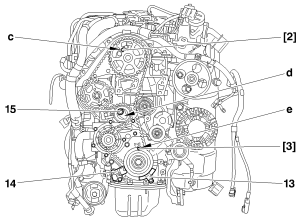
Turn the crankshaft to bring the camshaft to its pegging point.
Peg the camshaft at **«c»**, using tool **[2]** *(oil the pegs)*.

WARNING: Do not damage or bear against the track of the target of the engine speed sensor (13).

Peg the crankshaft at **«e»**, using tool **[3]**.
Remove the timing belt protector **(13)** and the engine speed sensor **(14)**.
Slacken the screw **(12)** of the tensioner roller and keep it slackened using an allen spanner at **«d».**
Detension the timing belt by pivoting the tensioner roller *(clockwise)*.
Remove the timing belt, starting with the coolant pump pinion.

CHECKING AND SETTING THE VALVE TIMING

C5



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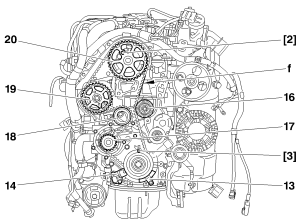


B1EP1E7D

Engine: 9HZ

Checks.
ESSENTIAL: Just prior to refitting, proceed to the checks as below.

Check:
- That the rollers and the coolant pump pulley turn freely *(without play and without tight spot)*.
- That there are no signs of oil leaks *(at the crankshaft and camshaft seals)*.
- That there are no leaks of coolant fluid *(at the coolant pump)*.
- That the track of the target of the engine speed sensor **(14)** is not damaged or scratched.

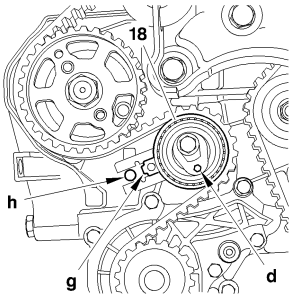
Replace any components that are defective *(if necessary)*.

Refitting.
Fit the timing belt on the crankshaft pinion.
Position the belt on the guide roller, belt well tensioned.

Refit:
- The timing belt protector **(13)**.
- The engine speed sensor **(14)**.

Reposition the timing belt, strip **«f»** well tensioned, in the following sequence:
- Guide roller **(16)**.
- Camshaft pulley **(20)**.
- Fuel high pressure pump pulley **(19)**.
- Coolant pump pulley **(17)**.
- Tensioner roller **(18)**.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1E8C

Engine: 9HZ

Adjusting the timing belt tension.

Act on the tensioner roller **(18)** to align the marks **«g»** and **«h»**, avoiding detensioning the timing belt, using an allen spanner at **«d»**.
Should this fail, repeat the operation to tension the timing belt.
Hold the tensioner roller **(18)**.
Tighten the tensioner roller fixing nut to **3,7 ± 0,3 m.daN**.
Check the position of the tensioner roller *(the alignment of the marks «**g**» and «**h**» has to be correct)*.
Remove tools **[2]** and **[3]**.
Rotate the crankshaft **six times** *(clockwise)*.

IMPERATIVE: Never rotate the engine backwards.

WARNING: Do not touch or damage the track of the target of the engine speed sensor (14).

Peg the crankshaft, using tool **[3]**.
Check the position of the tensioner roller *(the alignment of the marks «**g**» and «**h**» has to be correct)*.
If this is not the case, repeat the operation to tension the timing belt.
Peg the camshaft pulley, using tool **[2]**.

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. If the value is not correct, repeat the operation.

Remove the tools **[2]** and **[3]**.

CHECKING AND SETTING THE VALVE TIMING — C5

Engine: 9HZ

Remove the screw **(10)**.
Refit the upper timing cover **(11)**, the lower timing cover **(12)**, the pulley **(9)** and the screw **(10)**.

Tightening method for the screw **(10)**:
- Pre-tighten to **: 3 ± 0,3 m.daN**.
- Angular tighten **: 180° ± 5°**.

Remove tool **[1]**.

Refit:
- The engine support **(8)**, tighten to **: 5,5 ± 0,9 m.daN.**
- The RH engine support and upper torque reaction rod assembly.
- The nut **(3)**, tighten to **: 4,5 ± 0,5 m.daN.**
- The **three** screws **(5)**, tighten to **: 5,5 ± 0,8 m.daN.**
- The screw **(6)**, tighten to **: 6 ± 0,6 m.daN.**
- The screw **(4)**, tighten to **: 6 ± 0,6 m.daN.**
- The electrical harness **(7)**.

Couple:
- The exhaust line, tighten to **: 2,5 ± 0,3 m.daN.**
- The fuel supply unions **(1)**.
- The air/air heat exchanger inlet and outlet pipes **(2)**.

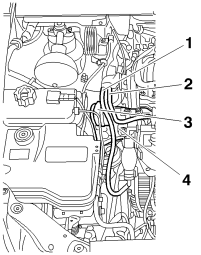
Connect the connector at **«a»**.

Refit:
- The accessories drive belt *(see corresponding operation)*.
- The front RH splash-shield, the front RH wheel.

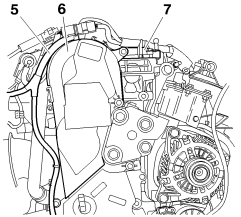
Reconnect the positive and negative terminals of the battery.

IMPERATIVE: Perform the operations that are necessary following a reconnection of the battery *(see corresponding operation).*

C5 CHECKING THE VALVE TIMING



B1BP31DC



B1EP1FMC

Engines: RHL - RHR

Tools.

[1] Kit of plugs **: (-).0188.T**
[2] Double flywheel setting peg **: (-).0188.X**
[3] Camshaft setting peg **: (-).0188.M**

IMPERATIVE: Respect the safety and cleanliness requirements specific to High pressure Diesel injection (HDi) engine versions

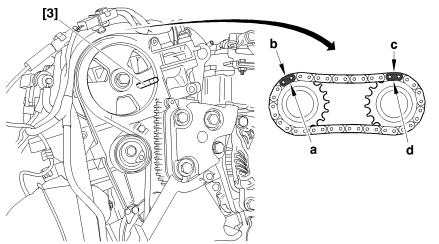
Remove the engine cover and the battery.
Disconnect the negative terminal of the battery.
Raise and support the front of the vehicle.
Remove the under-engine sound-deadening and the front RH splash-shield *(see corresponding operation)*.
Uncouple, plug and move aside, using tool **[1]**, the fuel supply **(1)** and fuel return **(2)** pipes.
Suspend the engine, using a workshop hoist.
Remove the torque reaction rod **(3)** and the RH engine support **(4)**.

Move aside the electrical harness **(5)**.

Remove:
- The camshaft position sensor.
- The inlet cylinder head cover **(6)**.
- The upper timing cover screws.
- The upper timing cover **(6)**.

CHECKING THE VALVE TIMING

C5



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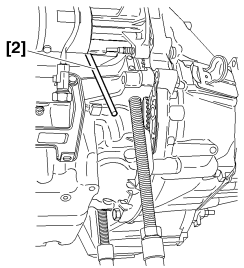


B1BP31FC

Engines: RHL - RHR

Checks.

Turn the crankshaft in the normal direction of rotation.
Line up the black markings **«b»** and **«c»** on the chain with the teeth **«a»** and **«d»** of the camshaft drive pinions *(**40 turns** of the camshafts maximum)*.

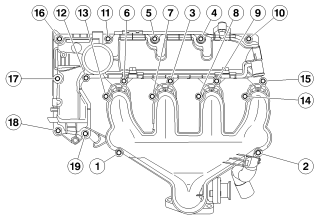
IMPERATIVE: If it is impossible to line up the markings on the chain with the camshaft drive pinions, repeat the setting of the camshafts *(see operation: removing-refitting of camshafts)*.

Peg:
- The crankshaft, using tool **[2]**.
- The camshaft pinion, using tool **[3]**.

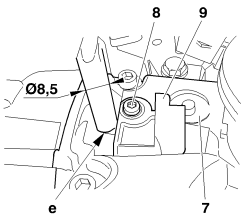
IMPERATIVE: Should it be impossible to peg the camshaft, check that the offset between the camshaft hole and the pegging hole is not more than 1 mm *(use a screw 7 mm in dia.)*.
If the offset is more than 1 mm, repeat the operation to set the timing *(see corresponding operation)*.

Remove tools **[1]** and **[3]**.

C5	CHECKING THE VALVE TIMING



B1BP2XLD



B1EP1FPC

Engines: RHL - RHR

Additional operations.
Refit:
- The inlet valve cover **(7)**.
- The **16** fixing screws and the **2** screws at refs. **1** and **2** for the camshaft bearing caps cover.
- The camshaft position sensor *(without tightening its fixing screw)*.

Tighten the **19** screws **: 9 ± 0,1 m.daN** *(in the sequence indicated)*.

Adjusting the camshaft position sensor.
Peg the engine flywheel, using tool **[2]**.

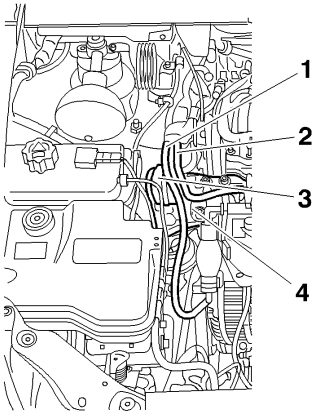
Sensor re-used:
- Position a drill **Ø 8,5** at **"e"** *(between the inlet valve cover **(7)** and the camshaft position sensor **(9)**)*.
- Tighten the screw **(8)** **: 2 ± 0,2 m.daN.**
- Remove the tool **[2]**.

New sensor:
- Place the camshaft position sensor **(9)** in contact with the target *(camshaft pinion)*.
- Tighten the screw **(8)** **: 2 ± 0,2 m.daN.**
- Remove the tool **[2]**.

Complete the refitting.

CHECKING AND SETTING THE VALVE TIMING

C5



B1BP31DC

Engines: RHL - RHR

Tools.

[1] Kit of plugs	**: (-).0188.T**
[2] Double flywheel setting peg	**: (-).0188.X**
[3] Camshaft setting peg	**: (-).0188.M**
[4] Belt clamp	**: (-).0188.AD**
[5] Pinion centrer	**: (-).0188.AH**
[6] Flywheel lock	**: (-).0188.F**
[7] Pulley extractor	**: (-).0188.P**

Removing.

IMPERATIVE: Respect the safety and cleanliness requirements specific to High pressure Diesel injection (HDi) engine versions.

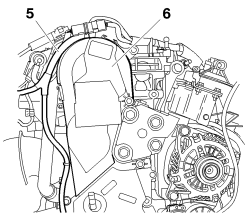
Slacken the front RH wheel bolts.
Raise and support the front RH side of the vehicle.
Disconnect the negative terminal of the battery.
Remove the under-engine sound-deadening, the front RH wheel, the front RH splash-shield, the engine cover.
Remove the auxiliaries drive belt *(see corresponding operation)*.

Uncouple, plug and move aside, using tool **[1]**:
- The fuel delivery pipe **(1)**.
- The fuel return pipe **(2)**.

Suspend the engine, using a workshop hoist.
Remove the torque reaction rod **(3)** and the RH engine support **(4)**.

C5 CHECKING AND SETTING THE VALVE TIMING

Engines: RHL - RHR



B1EP1FAC

Move aside the electrical harness **(5)**.

Remove:
- The upper timing cover screws.
- The upper timing cover **(6)**.

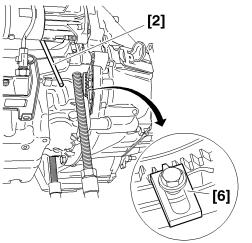
Rotate the engine by means of the auxiliaries drive pulley.

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

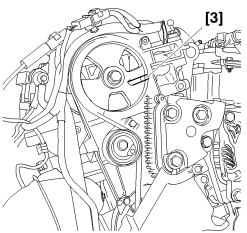
Peg the camshaft, using tool **[3]**.

Peg the engine flywheel, using tool **[2]**.

Lock the flywheel, using tool **[6]**.



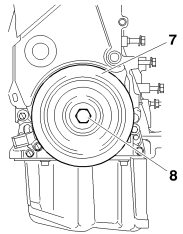
B1BP31EC



B1EP1FBC

CHECKING AND SETTING THE VALVE TIMING

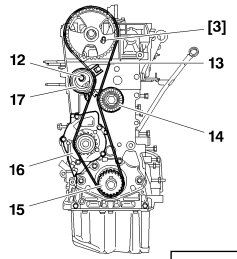
Engines: RHL - RHR



B1EP1FCC

Remove:
- The screw **(8)** and the auxiliaries drive pulley **(7)**.
- The crankshaft position sensor **(11)**.
- The lower timing cover **(9)**.
- The target of the crankshaft position sensor **(10)**, using tool **[7]**.
- The lower torque reaction rod.
- The tool **[6]**.

Slacken the screw **(12)** of the tensioner roller **(17)**.
Remove the timing belt **(13)**.



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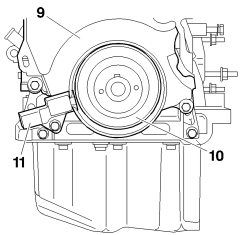
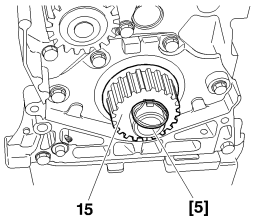


B1EP1FDC

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

Check:
- That the rollers **(14)** and **(17)** turn freely *(without play and without any tight spot)*.
- That the coolant pump pulley **(16)** turns freely *(without play and without any tight spot)*.
- That there are no signs of oil leaks from the crankshaft and camshaft seals, etc.
- That the crankshaft pinion travels freely on the keyway **(15)**.

Replace defective components if necessary.



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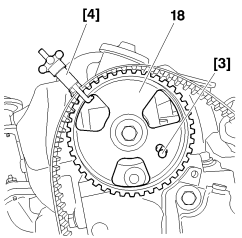


B1EP1FGC

Engines: RHL - RHR

Refitting.

Centre the crankshaft pinion **(15)**, using tool **[5]**.

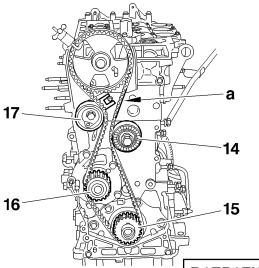
Reposition the timimg belt on the pulley **(18)**.

Put the tool **[4]** in place *(tighten moderately).*

Reposition the timimg belt, strip **«a»** well tensioned, in the following order:

- Guide roller **(14)**.
- Crankshaft pinion **(15)**.
- Coolant pump pinion **(16)**.
- Tensioner roller **(17)**.

Remove tools **[4]** and **[5]**.

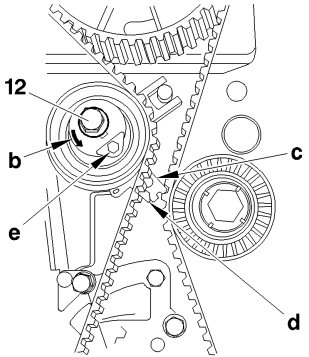


B1EP1FHC

CHECKING AND SETTING THE VALVE TIMING

C5

Engines: RHL - RHR



B1EP1FJC

Bring the index **«d»** outside the plate at **«c»**, by turning the tensioner roller in the direction of the arrow **«b»**, using a hexagonal spanner at **«e»**.

Tighten screw **(12)** of the tensioner roller **(17)** to **2,1 ± 0,2 m.daN**.
Lock the flywheel, by means of tool **[6]**.
Refit the auxiliaries drive pulley **(7)**.
Tighten the screw **(8)** to **7 ± 0,7 m.daN**.
Remove tools **[6]**, **[2]** and **[3]**.

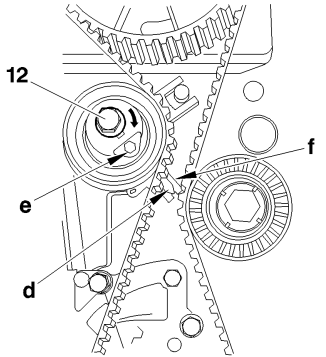
Rotate the crankshaft **ten times** *(in the direction of rotation of the engine)*.

Peg:
- The crankshaft, using tool **[2]**.
- The camshaft drive pinion, using tool **[3]**.

Lock the flywheel, using tool **[6]**.

Slacken:
- The screw **(8)** of the auxiliaries drive pulley **(7)**.
- The screw **(12)** of the tensioner roller **(17)**.

C5	CHECKING AND SETTING THE VALVE TIMING



B1EP1FKC

Engines: RHL - RHR

Turn the tensioner roller *(clockwise)*, using a hexagonal spanner at **«e»**.

Position the index **«d»** opposite the notch **«f»**.

Tighten:
- The screw **(12)** of the tensioner roller **(17)** to **2,1 ± 0,2 m.daN.**
- The auxiliaries drive pulley to **7 ± 0,7 m.daN**.

Remove tools **[3]** and **[6]**.

Rotate the crankshaft **two times** *(in the direction of rotation of the engine).*

Refit tools **[2]** and **[3]**.

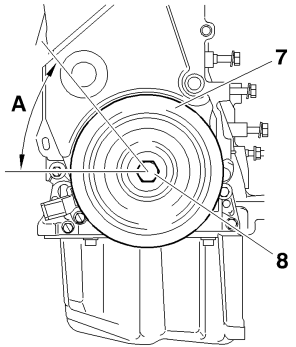
Check the position of the index **«d»**, it should be opposite the notch **«f»**.

IMPERATIVE: If the position of the index «d» is not correct, restart the operations to tension the timing belt *(for this, slightly slacken the screw (12) of the tensioner roller).*

CHECKING AND SETTING THE VALVE TIMING

C5

Engines: RHL - RHR



B1EP1FLC

Refit tool **[6]**.
Remove the auxiliaries drive pulley **(7)**.
Refit the crankshaft position sensor target **(10)**, the lower timing cover **(9)**, the crankshaft position sensor **(11)**, the torque reaction rod on the lower engine support.

Take away the workshop hoist.

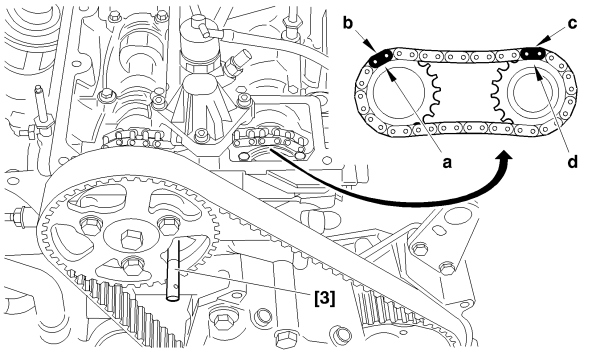
Coat the screw **(8)** with **Loctite FRENETANCH**.
Refit the auxiliaries drive pulley **(7)** and the screw **(8)** with its washer.
Tighten the screw **(8)** to **7 ± 0,7 m.daN**, then angular tighten by **A = 60° ± 5°.**
Remove tools **[2]**, **[3]** and **[6]**.

Refit the upper timing cover **(6)**.
Reposition the electrical harness **(5)**.
Refit the RH engine support **(4)**, the torque reaction rod **(3)**.
Reclip the fuel supply and return pipes.
Connect the fuel supply pipe **(1)**, the fuel return pipe **(2)**.

Refit:
- The auxiliaries drive belt *(see corresponding operation)*.

Complete the refitting.

C5 CHECKING AND SETTING THE VALVE TIMING



B1EP159D

Engine: 4HX

Tools.

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

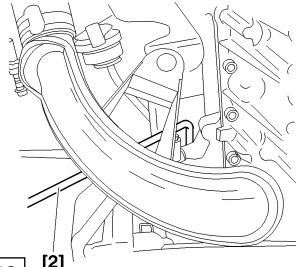
IMPERATIVE: Respect the safety and cleanliness recommendations specific to high pressure diesel injection (HDi) engines.

Checking the setting of the valve timing.

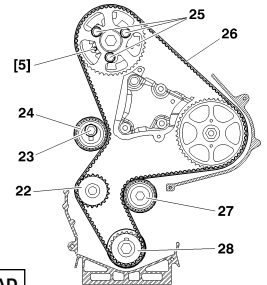
Turn the crankshaft *(normal direction of rotation)* and line up the black markings on the chain **(b)** and **(c)** with the teeth marked **(a)** and **(d)** of the camshaft drive pinions *(**40 turns** max. of the camshaft).*

CHECKING AND SETTING THE VALVE TIMING

C5



B1BP298C



B1EP15AD

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)*.

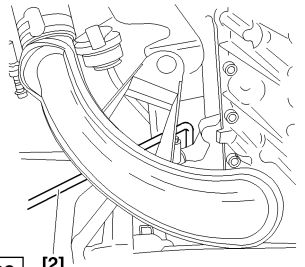
If the marks on the chains and pinions are coinciding, continue the checking operations.

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

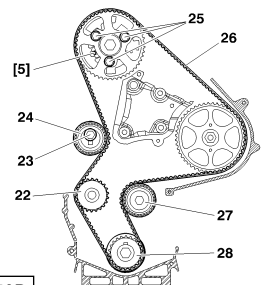
IMPERATIVE: Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm *(use a screw 7 mm in dia.)*.
If the offset is more than 1 mm, restart the setting of the valve timing *(see corresponding operation)*.

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

C5	CHECKING AND SETTING THE VALVE TIMING



B1BP298C



B1EP15AD

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]**.

Slacken:
- The three screws **(25)**.
- The screw **(23)** of the tensioner roller **(24)**.

Remove the timing belt **(26)**.

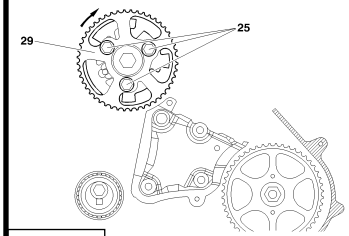
Checks.

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

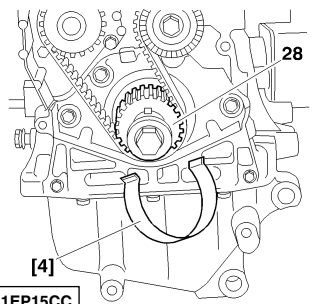
Check:
- That the rollers **(24)** and **(27)** and the coolant pump **(22)** are turning freely *(without play and without tightness)*.
- Absence of traces of oil leaks *(crankshaft and camshaft sealing rings)*.
- Absence of leaks of coolant fluid *(coolant pump)*.

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

CHECKING AND SETTING THE VALVE TIMING



B1EP15BD



B1EP15CC

Engine: 4HX

Setting the valve timing (continued).

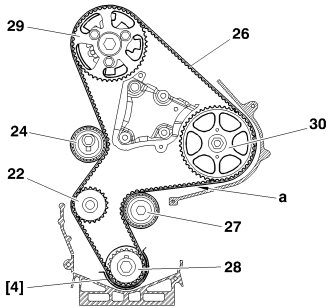
Refit.

- 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)**.

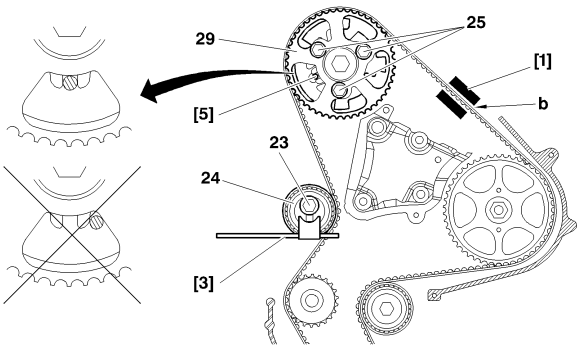
NOTE: If needed, slightly turn the pinion **(29)** anti-clockwise *(not by more than one tooth)*.

- Remove the tool **[4]**.



B1EP15DD

C5	CHECKING AND SETTING THE VALVE TIMING



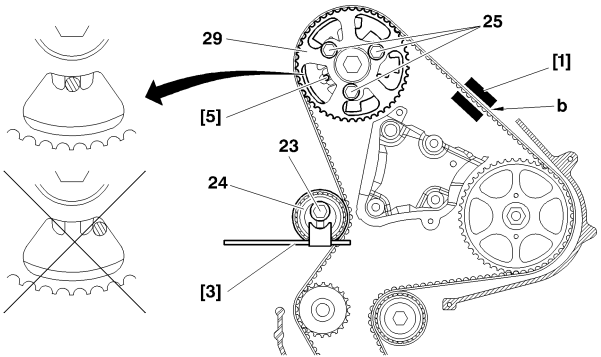
B1EP15ED

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 ± 0,2 m.daN**.
- The screws **(25)** to **2 ± 0,2 m.daN**.

CHECKING AND SETTING THE VALVE TIMING

C5



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.

C8	CHECKING AND SETTING THE VALVE TIMING

Engines: RHM - 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**

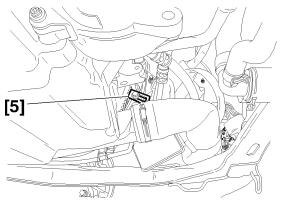
Removing.

Remove:

- The front RH splashshield.
- The under-engine shield.
- The auxiliary drive belt *(see corresponding operation)*.

CHECKING AND SETTING THE VALVE TIMING

Engines: RHM - RHT - RHW - 4HW



B1EK0TVC

Removing.

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

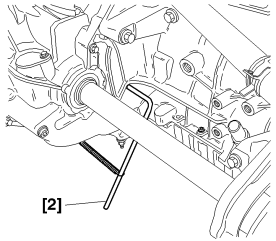
Refit the screw without the washer.

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

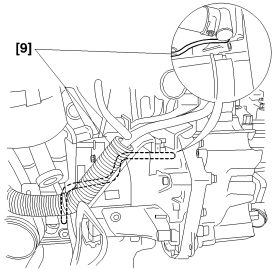
Turn the crankshaft.

Peg:

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



B1EK0TUC

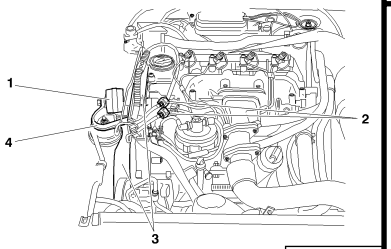


B1EK1T4D

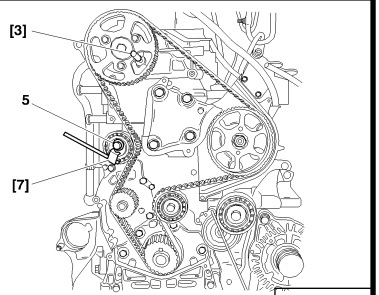
C8

CHECKING AND SETTING THE VALVE TIMING

Engines: RHM - RHT - RHW - 4HW



B1EK1TTD



B1EK1T2D

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

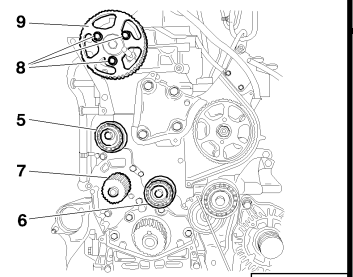
IMPERATIVE: Plug the apertures using tool [13].

Protect the radiator harness with strong cardboard cut out to the dimensions of the radiator.
Remove:
- The RH engine support **(4)**.
- The timing covers **(3)**.
- The lower timing cover.

Peg the camshaft pulley, using tool **[3]**.
Slacken the tensioner roller fixing **(5)**.
Retighten the fixing to the position of maximum de-tension *(tighten to **0,1 m.daN**)*.
Remove the timimg belt.

CHECKING AND SETTING THE VALVE TIMING

C8



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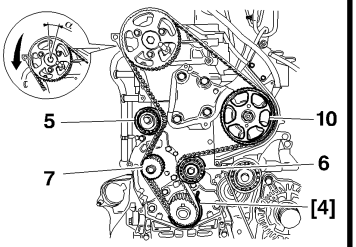


B1EK0TYC

Engines: RHM - RHT - RHW - 4HW

Refitting.

IMPERATIVE: Check that the rollers (5) and (6) as well as the coolant pump (7) turn freely *(no play, no tight spot)*, check also that these rollers are not noisy and/or that they are not throwing out grease.

In the event of replacement, tighten the roller **(6)** to **4,3 ± 0,4 m.daN**.

Slacken the screws **(8)**.

Check that the pulley **(9)** turns freely on its hub.

Tighten the screws **(8)** by hand.

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

Turn the pulley **(9)** *(clockwise)*, to end of slots.

Refit the timing belt, well tensioned, in the following order:

- Crankshaft *(immobilise the belt, using tool **[4]**)*.
- Guide roller **(6)**.

Engage the timing belt on the pulley **(10)**.

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

WARNING: The angular displacement «a» of the pulley relative to the belt should not be greater than the width of one tooth.

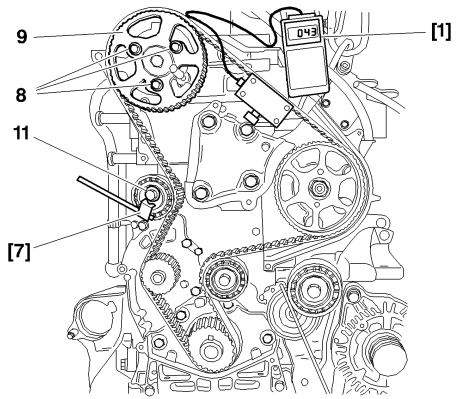
Engage the belt on the tensioner roller **(5)** and on the coolant pump pinion **(7)**.

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

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

Remove the tool **[4]**.

C8	CHECKING AND SETTING THE VALVE TIMING



B1EK1TSD

Engines: RHM - RHT - RHW - 4HW

Pre-tensioning the timing belt.

Position the tool **[1]**.

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

Turn the roller **(5)** *(anti-clockwise)*, using tool **[7]** to obtain a tension of: **98 ± 2 SEEM** units.

Tighten the screw **(11)** to **2,3 ± 0,2 m.daN** *(without modifying the position of the roller)*.
Remove the tool **[1]**.

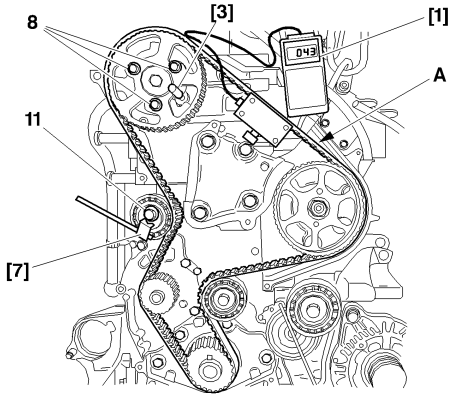
IMPERATIVE: By removing one of the screws (8) on the pulley (9), make sure that these screws (8) are not at end of slots *(if they are, repeat the operation to refit the timing belt)*.

Bring the screws **(8)** into contact with the pulleys.
Tighten the screws **(8)** to **2 ± 0,2 m.daN**.
Remove the setting pegs **[3]** and **[2]**.
Effect **eight turns** of the engine in the normal direction of rotation.

IMPERATIVE: Never turn the crankshaft backwards.

CHECKING AND SETTING THE VALVE TIMING

C8



B1EK1T1D

Engines: RHM - RHT - RHW - 4HW

Tensioning the timing belt.

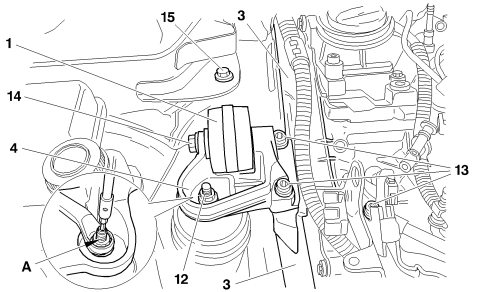
Refit the pegs **[2]** and **[3]**.
Slacken the screws **(8)**.
Tighten the screws **(8)** by hand.
Slacken the screws **(8)** by a **1/6 turn**.
Slacken screw **(11)**.
Place tool **[1]** on the belt at **(A)**.
Turn the roller *(anti-clockwise)*,using tool **[7]** to obtain a tension of: **51 ± 2 SEEM** units.

Tighten screw **(11)** to **2,3 ± 0,2 m.daN** *(without modifying the position of the roller)*.
Tighten the screws **(8)** to **2 ± 0,2 m.daN**.
Remove tool **[1]** to release the internal forces.
Refit the tool **[1]**.
The tension value should be between **48** and **55 SEEM** units.

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

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

C8	CHECKING AND SETTING THE VALVE TIMING



B1EK1T0D

Engines: RHM - RHT - RHW - 4HW

Checking the timing setting.

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

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

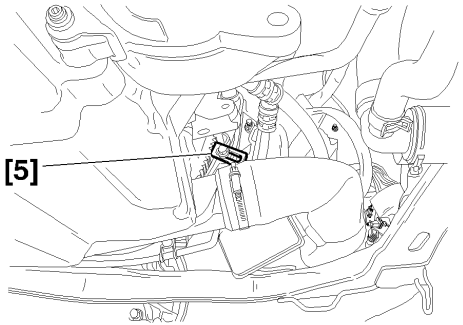
Remove the peg **[2]**.
Refit:
- The lower timing cover.
- The elements **(3)** of the timing cover.
- The engine support **(4)**.
- The screws **(13)**, tighten to **6,1 ± 0,6 m.daN**.
- The nut **(12)**, tighten to **4,5 ± 0,4 m.daN**.

IMPERATIVE: Apply an opposite torque at (A).

Refit:
- The torque reaction rod **(1)**.
- Screw **(14)**, tighten to **5 ± 0,5 m.daN**.
- Screw **(15)**, tighten to **5 ± 0,5 m.daN**.

CHECKING AND SETTING THE VALVE TIMING

C8



B1EK0TVC

Engines: RHM - 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 ± 0,7 m.daN *(+ LOCTITE FRENETANCH).***
- Angular tighten **: 60° ± 6° *(Tool FACOM D360)***.

Check the tightening: **26 ± 2,6 m.daN.**

Refit the auxiliary drive belt *(see corresponding operation)*.

Remove tool **[5]**.
Refit the closing plate, tighten to **0,7 m.daN**.
Tighten the wheel bolts to **10 m.daN**.
Complete the refitting in reverse order to removal.
Initialise the various ECUS.

CHECKING THE OIL PRESSURE

To be read with the Petrol and Diesel correspondence tables

Engine type	6FZ	RFJ	RFN	3FZ	XFU	XFW
Temperature (°C)	80°C					
Pressure (bars)	1,5			3,4	2	1,2
Rpm	1000				900	650
Pressure (bars)	5				5	
Rpm	3000				3000	
Pressure (bars)				6,9		
Rpm				4000		
2279-T.Bis	X					
4103-T.B	X					
7001-T	X		X			
4202-T				X		X
(-).0710.F1		X				
(-).0710.B1		X			X	

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

CHECKING THE OIL PRESSURE

To be read with the Petrol and Diesel correspondence tables

Engine type	9HZ	RHM	RHT	RHW	RHL	RHR	4HX	4HW
Temperature (°C)	80°C							
Pressure (bars)	1,3	2			1,9		2	
Rpm	1000							
Pressure (bars)		4						
Rpm		2000						
Pressure (bars)	3,5							
Rpm	4000							
2279-T.Bis	X							
4103-T.B	X							
7001-T					X	X		
4202-T		X	X	X			X	X
(-).1503.J	X							

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

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

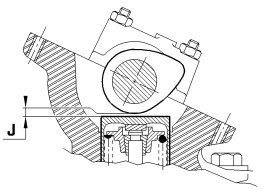
Rocking	Adjust
1 ● ⊗ 1	4 ● ⊗ 4
3 ● ⊗ 3	2 ● ⊗ 2
4 ● ⊗ 4	1 ● ⊗ 1
2 ● ⊗ 2	3 ● ⊗ 3

● **Inlet**

⊗ **Exhaust**

Fully open (exhaust)

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

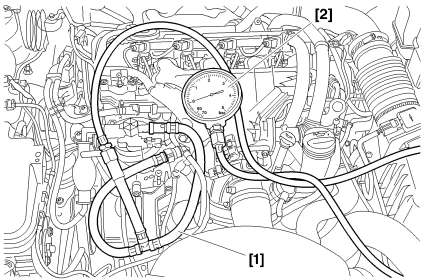


Engines without hydraulic adjustment:
The clearance **(J)** should be checked opposite the cam.

B1DP13QC

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

C5



B1BP33RD

Engines: RHL - RHR

Tools.

[1] Ø 10 mm low pressure connector **: 4215-T**
[2] Pressure gauge for testing boost pressure **: 4073-T.A Toolkit 4073-T**

IMPERATIVE: Respect the safety and cleanliness specific to high pressure diesel injection engines.

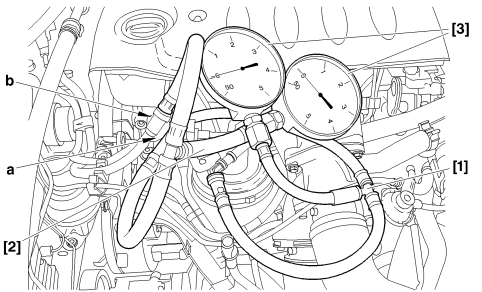
Link tools **[1]** and **[2]** in series between the fuel high pressure pump and the fuel filter.

ESSENTIAL: Check that the tool [2] is clean.

Normal vacuum values.
Engine driven by the starter motor **: 10 ± 0,5 cmHg.**
Engine running under full load **: 20 ± 10 cmHg.**

Abnormal vacuum values.
Supply circuit obstructed *(full tank strainer, piping, fuel filter)* **: 60 ± 20 cmHg.**

C5	CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT



B1BP27BD

Engine: 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.**

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT — C5

Engine: 4HX

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 suppy 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.

Checks	Observe
The flow should be drop by drop	Diesel injector functioning correctly
Excessive fuel return	Diesel injector locked shut

C5	CHECKS: TURBO PRESSURE
	Engine: 9HZ

Preparation.

IMPERATIVE: Respect the following test conditions:

- Engine at operating temperature.
- Vehicle in running order.
- Engine under full load.

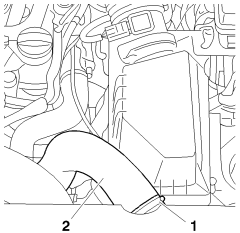
Connect the diagnostic tool to the vehicle's diagnostic socket, carry out parameter measures.

Mode of operation.

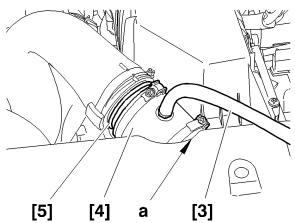
Start the engine.
Engage **first gear**, start the vehicle.
Engage the gears up to **third gear**.
Decelerate to an engine speed of **1000 rpm**.
Check the pressure: **0,6 ± 0,05 bar *(1500 rpm)***.
Accelerate freely *(change from **4th gear** to **3rd gear**)*.
Check the pressure: **0,9 ± 0,05 bar *(between 2500 and 3500 rpm)***.

CHECKS: TURBO PRESSURE

C5



B1BP33PC



B1HP1ZEC

Engines: RHL - RHR

Tools.

[1] Pressure gauge for checking the pressure	**: 7073-T**
[2] Pressure take-off extension	**: 8607-T.A**
[3] Pressure take-off union and hose	**: 8607-T.B**
[4] Sleeve for checking the turbo pressure	**: 4185-T**
[5] Adaptor sleeve	**: 4219-T**

Checks.

IMPERATIVE: Respect the safety and cleanliness specific to high pressure diesel injection engines.

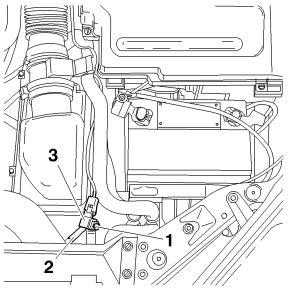
Preliminary operations.

Slacken the clip **(1)**.
Uncouple the air supply duct **(2)**.
Fit tool **[1]** on tool **[2]**.

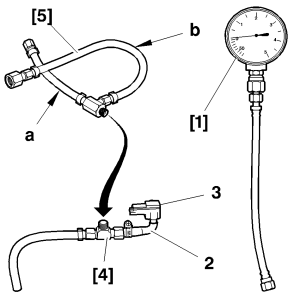
Checking.

Insert the tools **[4]** and **[5]** between the air duct **(2)** and the turbo air cooler outlet at **«a»**.
Fit the tool **[3]** on tool **[4]**.
Position tool **[1]** inside the vehicle.
Start the engine.
Accelerate the engine to **4000 rpm**.
The pressure should be : **1 ± 0,2 bar**.
Returning the vehicle to conformity
Remove tools **[1]**, **[2]**, **[3]**, **[4]** and **[5]**.
Recouple the air duct **(2)** on the turbo air cooler.
Tighten the clip **(1)**.

C5	CHECKS: TURBO PRESSURE



B1BP28DC



E5AP1SUC

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.

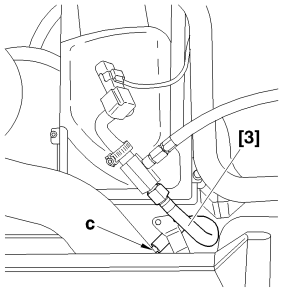
Carry out the following operations:

- Remove the screw **(1)**.
- Disconnect the tube **(2)**.
- Move aside the pressure sensor **(3)**.

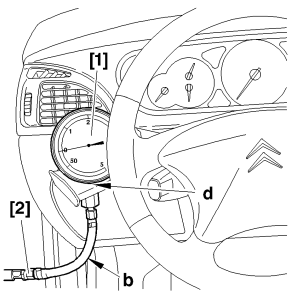
Preparation of tools: In position on the vehicle.

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]** into 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.



B1BP28EC



C5FPOBLC

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]**.

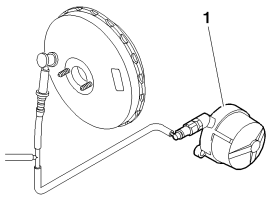
ESSENTIAL: Observe the following checking requirements.

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

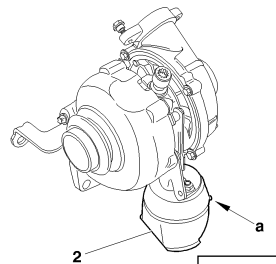
Accelerate gradually: the pressures should be the following:
- **1.1 ± 0.05 b at 2000 rpm**
- **1.2 ± 0.05 b at 3000 rpm.**

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)**.

C5	CHECKING THE AIR SUPPLY CIRCUIT



B1HP1UGC



B1HP1UHC

Engine: 9HZ

Tool.

[1] Manual pressure-vacuum pump **: FACOM DA 16**

Checks.

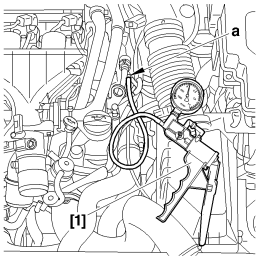
Vacuum pump.

Connect the tool **[1]** into the vacuum pump **(1)**.
Start the engine.
Wait **30 seconds**.
The vacuum value should be **0.9 ± 0.1 bar** at idle.

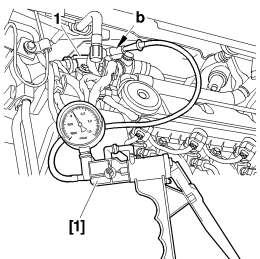
NOTE: The exhaust gas recycling valve is not linked to the air supply circuit.
The exhaust gas recycling electrovalve is controlled by the engine ECU.

Turbocharging pressure regulation valve.

Connect the tool **[1]** on the valve **(2)** *(tube identified by the colour grey)*.
Appy a vacuum of approx. **0.8 bar**.
Rod **"a"** should move **12 ± 2 mm**.



B1BP33ZC



B1BP340C

Engines: RHL - RHR

Tool.

[1] Manual pressure-vacuum pump **: FACOM DA 16**

Checks.

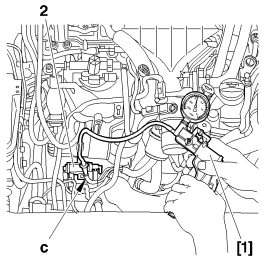
IMPERATIVE: Respect the safety and cleanliness specific to high pressure diesel injection engines.

Checking the vacuum source *(vacuum pump)*.
Connect the tool **[1]** on the take-off **«a»**.
Start the engine.
The value should be **: 1 ± 0,2.**

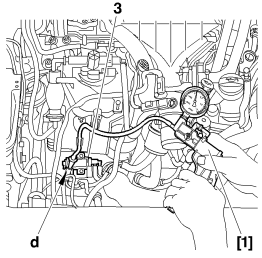
Turbocharging pressure electrovalve.
Connect the tool **[1]** on the vacuum supply **«b»** of the electrovalve **(1)**.
Start the engine.
The value should be **: 1 ± 0,2**

Cold air circuit electrovalve.
Connect the tool **[1]** on the vacuum supply **«c»** of the electrovalve **(2)**.
Start the engine.
The value should be **: 1 ± 0,2**

Warm air circuit electrovalve.
Connect the tool **[1]** on the vacuum supply **«d»** of the electrovalve **(3)**.
Start the engine.
The value should be **: 1 ± 0,2**.

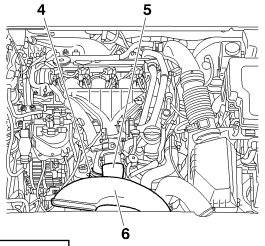


B1BP341C

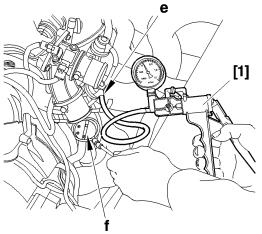


B1BP342C

C5	CHECKING THE AIR SUPPLY CIRCUIT



B1BP343C



B1BP344C

Engines: RHL - RHR

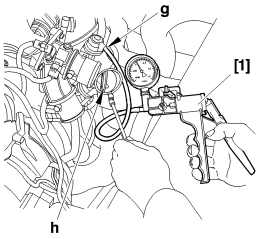
Checking the warm air opening.

Remove:
- The air duct **(4)**.
- The air duct **(5)**.
- The air duct **(6)**.

Connect the tool **[1]** on the warm air butterfly control diaphragm at **«e»**.
Apply a vacuum of **0,7 ± 0,2**, the warm air butterfly **«f»** should be fully open.

Checking the cold air closing.

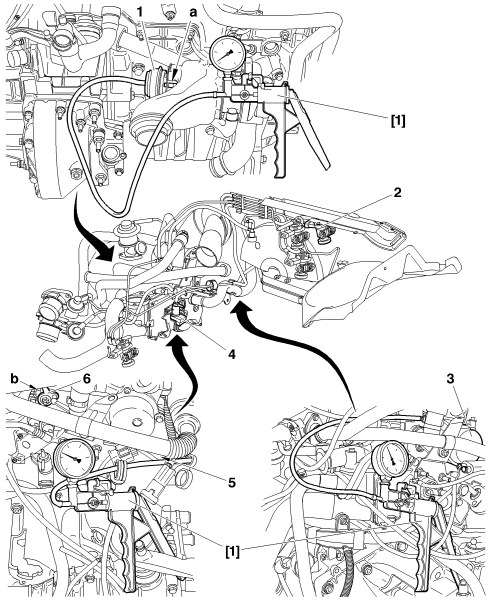
Connect the tool **[1]** on the cold air butterfly control diaphragm at **«g»**.
Apply a vacuum of **0,65 ± 0,2**, the cold air butterfly **«h»** should be fully closed.
Refit:
- The air duct **(4)**.
- The air duct **(5)**.
- The air duct **(6)**.



B1BP345C

CHECKING THE AIR SUPPLY CIRCUIT

C5



B1HP1ARP

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.

C5	CHECKING THE AIR SUPPLY CIRCUIT

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**.

Turbo 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**

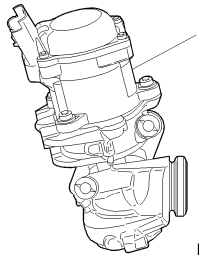
Turbo pressure regulation valve.
Connect the tool **[1]** on the valve **(1)** *(grey marking on pipe)*.
Appy a vacuum of **0.8 bar**. The rod **"a"** should move **12 ± 2 mm**.
Rod **"a"** should be moved **12 mm**.

«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 bar**
4000	**0,6 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»**.

Engine: 9HZ

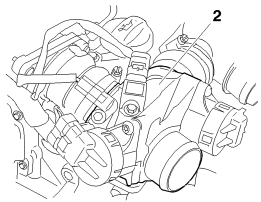


B1HP1UPC

Exhaust gas recycling (EGR) electrovalve (1).

NOTE: The engine ECU pilots the **EGR** valve.

Perform the check with the aid of a diagnostic tool.
Carry out the following operations with the diagnostic tool:
- «INJECTION» menu.
- Actuator tests.
- EGR electrovalve.
Check that you can hear the click from the **EGR** regulation electrovalve.

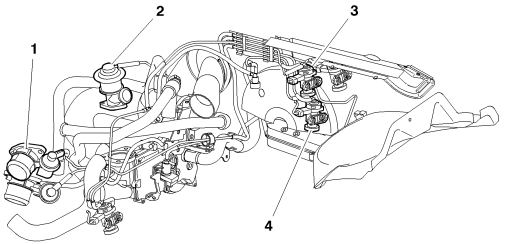


B1HP1Z5C

Double butterfly housing *(vehicle with particle filter)* (2).

Perform the check with the aid of a diagnostic tool.
Carry out the following operations with the diagnostic tool:
- «INJECTION» menu.
- Actuator tests.
- EGR butterfly.
- Exchanger butterfly.
Check that you can hear the click from the double butterfly housing.

C5	CHECKS: EXHAUST GASES RECYCLING CIRCUIT



B1HP1B8D

Engine: 4HX

Tool.

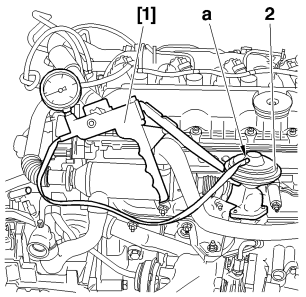
[1] Manual vacuum pump **: FACOM DA 16**

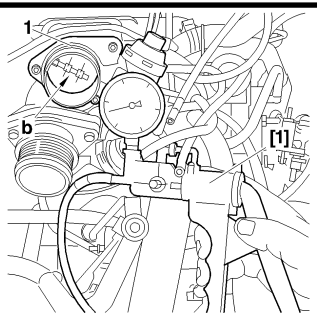
ESSENTIAL: Respect the safety and cleanliness requirements specific to high pressure diesel injection (HDi) engines.

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)	Valeur de la dépression
780	**0,5 bar**
2500	**0 bar**





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

C5 - C8		SPARKING PLUGS							
Vehicles		Engine types	BOSCH	Electrode gap	EYQUEM	Electrode gap	CHAMPION	Electrode gap	Tightening torque
C5	1.8l 16V	6FZ	FR 8 ME	0,9 ± 0,1	RFN 52 HZ	0,9 ± 0,05	REC 9 YCL	0,9 ± 0,05	2,75 ± 0,2
	2.0i 16V HPi	RFJ	ZR 8 TPP 15	1,0 ± 0,1					2,25 ± 0,2
	3.0i 24S	XFU	FGR 8 MQPE	0,55 ± 0,2					1 ± 0,1 90°
C8	2.0i 16V	RFN	FR 8 ME	0,9 ± 0,1	RFN 52 HZ	0,9 ± 0,05	REC 9 YCL	0,9 ± 0,05	2,75 ± 0,2
	2.2i 16V HPi	3FZ							
	3.0i 24S	XFW	FGR 8 MQPE	0,55 ± 0,2					1 ± 0,1 90°

SPEEDOMETER

An E.E.C. **decree of 25 June 1976**, regulates the speed displayed by the speedmeter 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:

ST < SD < 1.10 ST + 4 Kph

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.

C5	CLUTCH SPECIFICATIONS			
	Petrol	Diesel		
	1.8i 16V	1.6 16V HDi	2.0 16V HDi	
Engine type	**6FZ**	**9HZ**	**RHL**	**RHR**
Gearbox type	BE4/5		ML/6	
Feature	«**Pull**» clutch			
Flywheel	Single	Double		
Supplier	VALEO		LUK	
Mechanism/type	230 DNG 4700	225 DNG 5450	235 P 7400	
Clutch disc	11 R 10 X	Clutch with double damping flywheel **(DVA) (*)**		
Ø of lining. Ext/Int	228,5/155	225/150	235/150	
Quality of lining	810 DS			

(*) DVA = Double damping flywheel.

CLUTCH SPECIFICATIONS						C8
	Petrol		Diesel			
	2.0i 16V	2.2i 16V HPi	2.0 16V HDi			2.2 16V HDi
Engine type	RFN	3FZ	RHM	RHT	RHW	4HW
Gearbox type	BE4/5	ML/5				
Feature	«**Push**» clutch		«**Pull**» clutch			
Flywheel	Single		Double			
Supplier	VALEO		LUK			
Mechanism/type	230 DGN 5100	230 DGN 5300	225 T 5700			242 T 6500
Clutch disc	11 R 14 X		Clutch with double damping flywheel **(DVA) (*)**			
Ø of lining. Ext/Int	228/155		225/150			242/162
Quality of lining	F 808					

(*) DVA = Double damping flywheel.

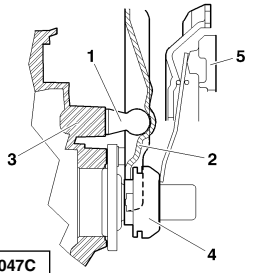
MANUAL GEARBOX SPECIFICATIONS

Vehicle	Engine	Gearbox type	Sequence	Torque ratio	Drive ratio
Type BE4/5					
C5	EW7J4	BE4/5J	20 DM 70	17X71	None
	EW10A	BE4/5J	20 DM 66		
		BE4/5N	20 DM 85	17x81	
	DV6TED4	BE4/5R	20 DM 65	17x71	
C8	EW10J4	BE4/5J	20 DM 00	14x62	
			20 DM 01		
Type ML5					
C8	EW12J4	ML5C	20 LM 31	14x65	25x20
	DW10TED4	ML5C	20 LM 06	15x67	
	DW12ATED4	ML5C	20 LM 30	16x69	
Type ML6					
C8	DW12 TED4	ML6C	20 MB 09	16x69	25x20

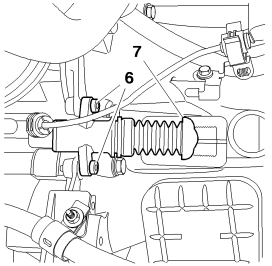
GEARBOX SPECIFICATIONS

Vehicle	Engine	Gearbox type	Sequence	Torque ratio	Drive ratio
Type AL4					
C5	EW10A	AL4	20 TS 10	21x73	52x67
Type AM6					
C5	ES9A	AM6	20.GH 07	15x53	49x52
Type 4 HP 20					
C5	DW12TED4	4 HP 20	20 HZ 20	23x66	59x68
C8	ES9J4		20 HZ 27	19x73	

CLUTCH SPECIFICATIONS



B2BP047C



B2CP3FAC

Engines: 6FZ - 9HZ

Clutch types**: (BE4/5).**

«Push» clutch with hydraulic control.

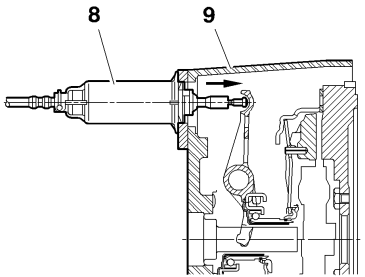
Description.
The declutch control has a declutch fork mounted on a ball-joint.
(1) The ball-joint is screwed into the clutch casing
(2) Declutch fork
(3) Clutch casing
(4) Bearing
(5) Clutch plate

The clutch control slave cylinder **(7)** is fixed by two screws **(6)** onto the exterior of the clutch casing.

Tightening torques (m.daN).

Clutch plate/flywheel	**: 2 ± 0,2**
Flywheel/crankshaft	**: 4,8 ± 0,5**
Double damping flywheel/crankshaft	
- Tightening	**: 2,5 ± 0,2**
- Angular tightening	**: 21° ± 3°**

Engines: XFX - RHS - RHZ - 4HX



B2BP04LC

Clutch types: **(ML5C-ML6C).**

«Pull» clutch with hydraulic control.

Description.
The clutch control slave cylinder **(8)** is secured on the clutch housing **(9)** by rotation ***(1/3 turn)***.

Tightening torques (m.daN).

Clutch plate/flywheel	**: 2 ± 0,2**
Flywheel/crankshaft	
- Tightening	**: 2 ± 0,2**
- Angular tightening	**: 60° ± 5°**

C5	HYDRAULIC CLUTCH CONTROL SPECIFICATION

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.

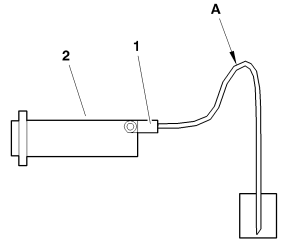
IMPERATIVE: Use only new, clear brake fluid, avoid entry of any foreign bodies or impurities into the hydraulic circuit.

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

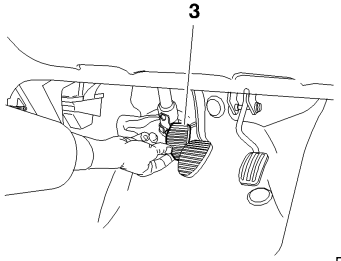
IMPERATIVE: Do not use any automatic bleed apparatus *(risk of the fluid emulsifying in the reservoir)*.

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.



B2BK22XD



B2BK064C

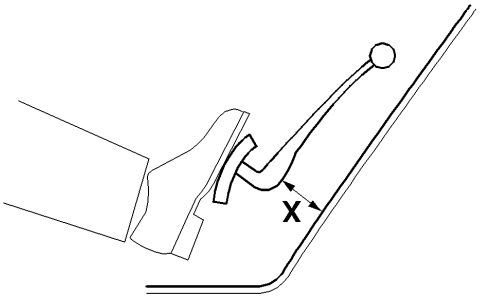
Bleeding the hydraulic clutch control (continued).

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.



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.

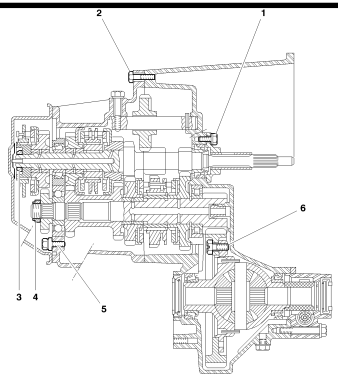
Engage a gear.

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)*.

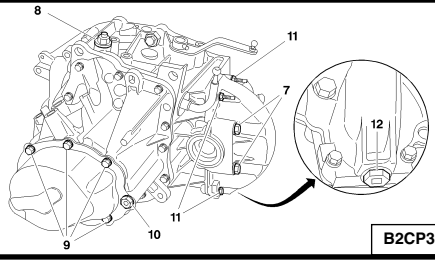
NOTE: If incorrect, repeat the bleed operations.

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

BE4/5 GEARBOX: TIGHTENING TORQUES



B2CP3BSP



B2CP3BTD

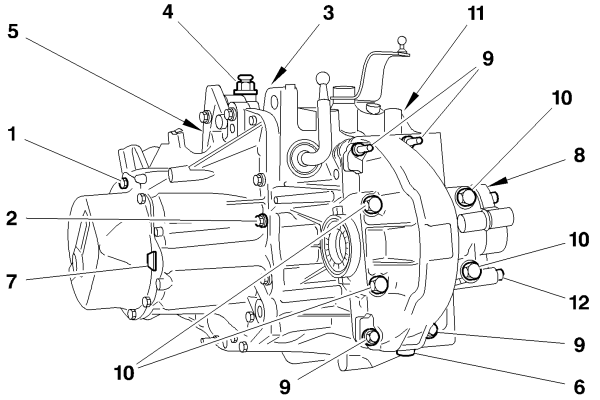
Engines: 6FZ - RFN - 9HZ

Tightening torques

Ref.	Description	No. of screws	Tightening
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 screwss	2	6,5 ± 0,7
	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

BE4/5 GEARBOX: TIGHTENING TORQUES

Engines: 6FZ - RFN - 9HZ

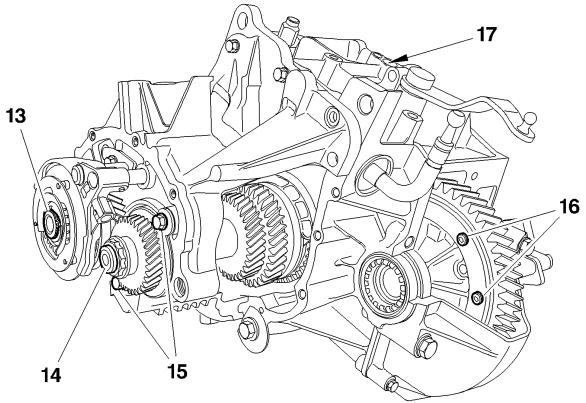


B2CKUB0D

Tightening torques (m.daN).

(1) Gearbox rear casing	**: 1,5 ± 0,1**
(2) Gearbox casing/clutch casing fixings	**: 1,5 ± 0,1**
(3) Reverse gear rocker shaft fixing nut	**: 4,5 ± 0,4**
(4) Breather pipe	**: 1,5 ± 0,1**
(5) Reverse gear switch	**: 2,5 ± 0,2**
(6) Drain plug	**: 3,5 ± 0,2**
(7) Top-up plug	**: 2 ± 0,2**
(8) Speedo drive support	**: 1,5 ± 0,1**
(9) Differential housing fixings **(M7)**	**: 1,5 ± 0,1**
(10) Differential housing fixings **(M10)**	**: 5 ± 0,5**
(11) Clutch bearing guide fixing screw	**: 1,5 ± 0,1**
(12) Differential extension fixing	**: 1,5 ± 0,1**

Engines: 6FZ - RFN - 9HZ



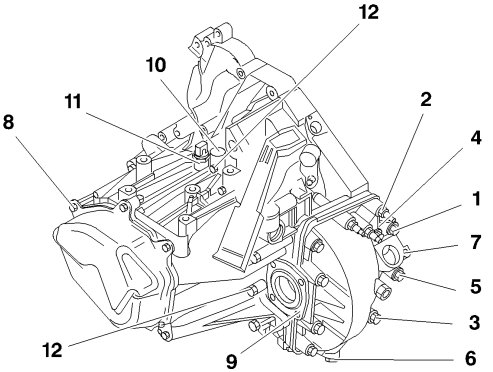
B2CKUB1D

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 screws	**: 6 ± 0,6**
(17) Gear control support screw	**: 1,5 ± 0,1**

ML5C GEARBOX: TIGHTENING TORQUES

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



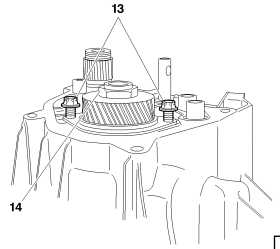
B2CKUC4D

Ref.	Description	Tightening
1	1 screw **M8-45**	**1,8 ± 0,1**
2	1 screw **M8-70**	**1,8 ± 0,1**
3	1 screw **M10-70**	**4 ± 0,4**
4	1 screw **M10-50**	**4 ± 0,4**
5	1 screw **M10-85**	**4 ± 0,4**
6	Screw	**3 ± 0,3**
7	Speedometer control support	**1 ± 0,1**
8	Fixing of gearbox cover on gearbox casing	**2 ± 0,2**
9	Differential bearing stop plate	**2 ± 0,2**
10	Air vent	
11	Reverse gear switch	**2,5 ± 0,2**
12	Fixing of gearbox casing on clutch casing	**2 ± 0,2**

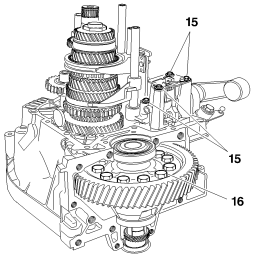
ML5C GEARBOX: TIGHTENING TORQUES

C8

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



B2CKUC5D

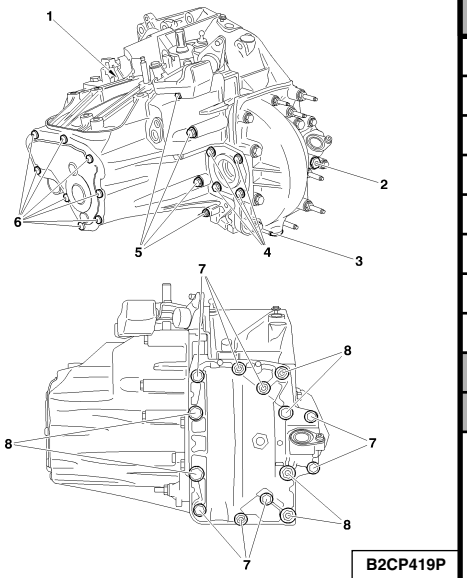


B2CKUC6D

Ref.	Description	Tightening
13	Flange fixing screws	**2 ± 0,2**
14	Secondary shaft nut	**17 ± 1,7**
15	Gear control support screws	**1,5 ± 0,1**
16	Differential gearwheel screws	**7,7 ± 0,7**

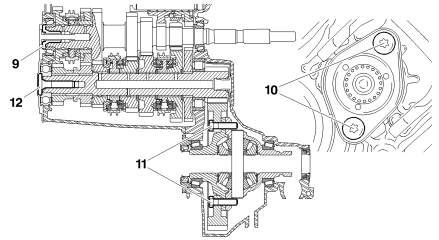
ML6C GEARBOX: TIGHTENING TORQUES

Engines: RHL - RHR



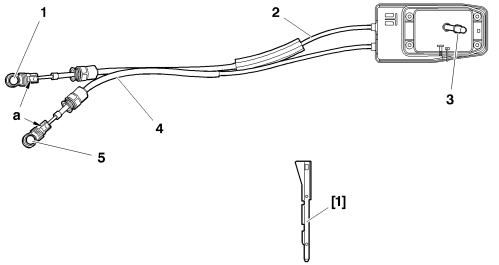
Ref.	Description	Tightening
1	Reversing lamp switch	**2,5 ± 0,2**
2	Top-up plug	**3 ± 0,3**
3	Drain plug	**3 ± 0,3**
4	Differential bearing stop plate screw	**3 ± 0,3**
5	Screw fixing gearbox casing on clutch casing	**3 ± 0,3**
6	Screw fixing 6th housing	**2 ± 0,2**
7	Differential housing fixings *(screws **M8**)*	**1,8 ± 0,1**
8	Differential housing fixings *(screws **M10**)*	**4 ± 0,4**
	Fixing screw for coupling of engine on gearbox	**5,5 ± 0,5**
	Gearbox support stud	**3 ± 0,3**

Engines: RHL - RHR



B2CP41AD

Ref.	Description	Tightening
9	Primary shaft screw	10 ± 0,1
10	Stop guide screw	2 ± 0,2
11	Differential gearwheel screws	7,7 ± 0,7
12	Secondary shaft screw	13 ± 1,5



B2CP3XAD

Gear controls.

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

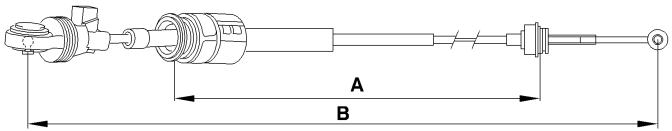
(1) Gear engagement ball-joint **Ø 10 mm**
(2) Gear engagement control cable
(3) Gear control lever

(4) Gear selection control cable
(5) Gear selection ball-joint **Ø 10 mm**
(6) Cable selection locking key

BE4/5 GEARBOX: CONTROL SPECIFICATIONS

Engines: 6FZ - 9HZ

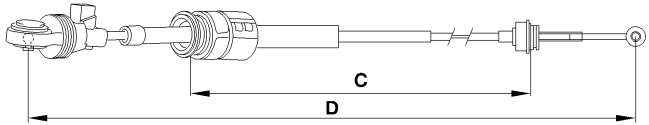
Gear selection control cable



B2CP3XBD

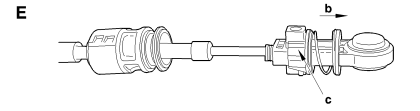
	Left hand drive	Right hand drive
Length A	707 mm	
Length B	829,6 mm	

Gear engagement control cable

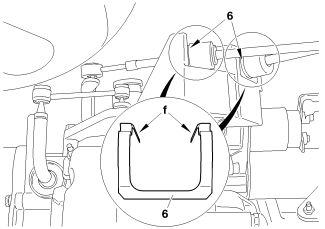


B2CP3XCD

	Left hand drive	Right hand drive
Length C	680 mm	
Length D	831 mm	



B2CP3XDD



B2CP3XED

Adjustments.

IMPORTANT: The control cables must be adjusted every time a cable is changed.

Features.

E: Position locked
F: Position unlocked

To unlock the length of the gear control cable sleeve:

- Move the cylinder **"c"** in the direction of the arrow **"b".**

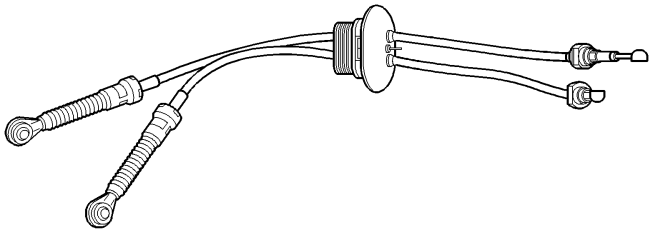
- Pull the locking key **"e"** in the direction of the arrow **"d".**

To unlock a sleeve stop:

- Press on the tabs of the fixing **(6)** at **"f".**

- Disengage the sleeve stops from their supports.

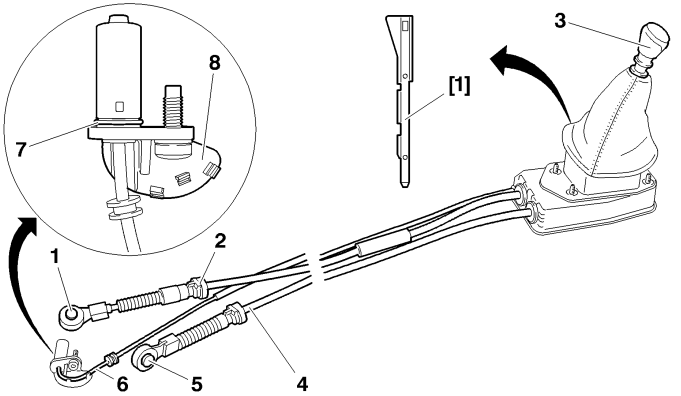
Engine: RFN



B2CKUBND

Gear control cable

Engines: RHL - RHR



B2CP3KXD

Gear controls.

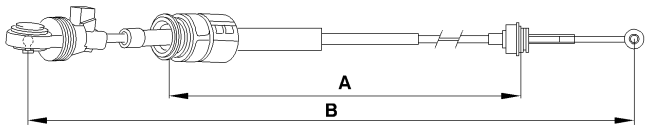
Gear control is by means of cables:
- Gear selection control cable.
- Gear engagement control cable.
- Reverse gear control cable.

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

(1) Gear engagement ball-joint **: Ø 10 mm**
(2) Gear engagement control cable
(3) Gear control lever
(4) Gear selection control cable
(5) Gear selection ball-joint **: Ø 10 mm**
(6) Reverse gear unlocking cable
(7) O-ring seal
(8) Reverse gear unlocking device

Engines: RHL - RHR

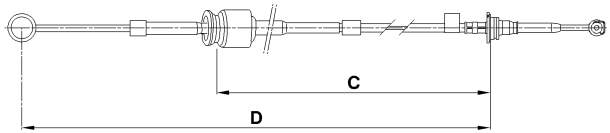
Gear selection control cable



B2CP3XBD

	Left hand drive	Right hand drive
Adjustment	yes	
Length A	757 mm	
Length B	908 mm	

Gear engagement control cable



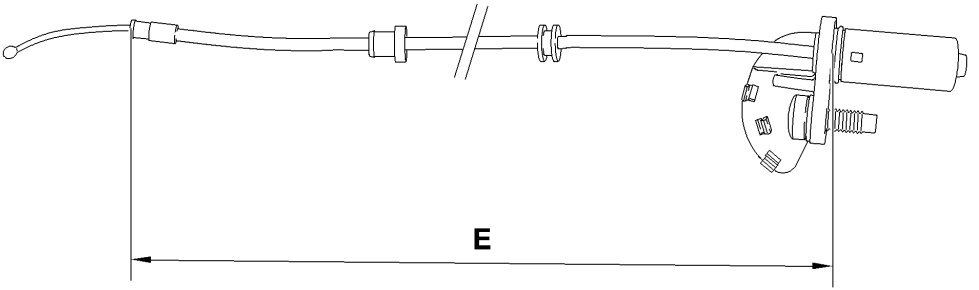
B2CP3XND

	Left hand drive	Right hand drive
Adjustment	no	
Length C	798 mm	
Length D	965 mm	

C5	ML/6C GEARBOX: CONTROL SPECIFICATIONS

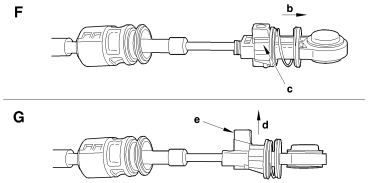
Engines: RHL - RHR

Reverse gear unlocking cable

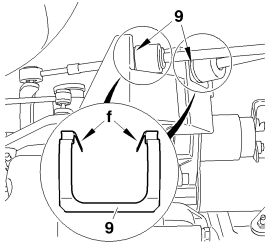


B2CP3XUD

	Left hand drive	Right hand drive
Adjustment	no	
Length E	1060 mm	



B2CP3XPD



B2CP3XQC

Adjustments.

NOTE: The gear engagement control cable is not adjustable.

IMPORTANT: Adjust the selection control cable each time it is changed.

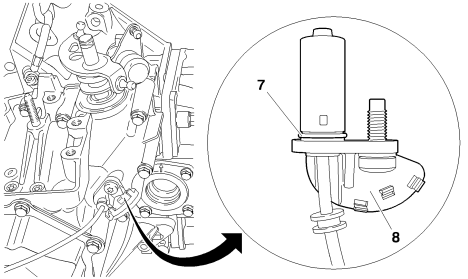
E: Position locked
F: Position unlocked

To unlock the length of the gear selection control cable sleeve:

- Move the cylinder **"c"** in the direction of the arrow **"b".**
- Pull the locking key **"e"** in the direction of the arrow **"d".**

To unlock a sleeve stop:

- Press on the tabs of the fixing **(9)** at **"f".**
- Disengage the sleeve stops from their supports, by lifting them.



B2CP3KZD

Device for unlocking reverse gear **(8)**, external to the gearbox.

The system for locking/unlocking reverse gear utilises the **5th gear** synchroniser.

IMPERATIVE: Systematically replace the O-ring seal (9) at each removal.

AL 4 AUTOMATIC GEARBOX: RECOMMENDATIONS - PRECAUTIONS

Precautions to be taken

Repairs on mechanical components.

Never place the gearbox on the ground without protection.

In order to avoid breaking the input shaft ring, it is **imperative** that the converter retaining bracket should be in place when handling the gearbox.

It is **imperative** to use the centring peg and the converter retaining bracket to couple the gearbox on the engine.

After coupling the gearbox on the engine, remove the centring peg.

Modification of the oil usage counter value.

Exchanging the gearbox ECU:

- Note down the gearbox counter value.
- Transfer the value read into the the new gearbox ECU.

Exchanging the gearbox:

- Initialise the oil usage counter to **0.**

Draining the gearbox:

- Initialise the oil usage counter *(follow the diagnostic tool procedure)*.

AL 4 AUTOMATIC GEARBOX: RECOMMENDATIONS - PRECAUTIONS

Procedure to be followed prior to carrying out repairs on AL4 autoactive gearbox

If a gearbox malfunction occurs, there are two possible configurations depending on the seriousness of the fault:
- 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)*.

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.

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.

ESSENTIAL: The gearbox must be replaced.

Oil level *(see corresponding operation).*

An excessive oil level can result in the following consequences:
- Excessive heating of the oil.
- Oil leaks.
An insufficent 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)*.

Procedure for initialising the automatic gearbox ECU

Downloading.

Updating the gearbox ECU by downloading:
- Follow the procedure using the diagnostic tool.

The downloading operation enables the automatic gearbox to be updated, or adapted to an evolution of the engine ECU.
Before commencing the downloading, take the value of the oil usage counter present in the automatic gearbox ECU.

After the downloading operation, carry out the following:
- A clearing of faults.
- An initialisation of the auto-adaptives.
- A writing of the value of the oil usage counter previously read.
- A road test.

ESSENTIAL: Every update of the automatic gearbox ECU should be accompanied by an update of the engine ECU.

Updating the value of the oil usage counter.

Using PROXIA.
Access to reading and recording of the oil counter is via the menu:

- «**Configuration *(integrated circuit button)*/Oil counter**».

- Adjustment of the oil counter value is done in incremental steps of **2750 units**.

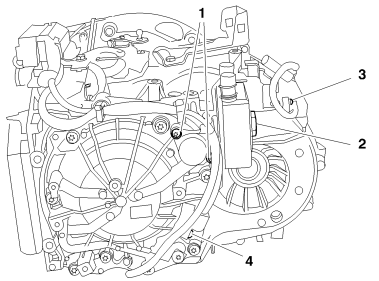
Using LEXIA.
Access to reading and recording of the oil counter is via the menu:

- «**Oil counter**».

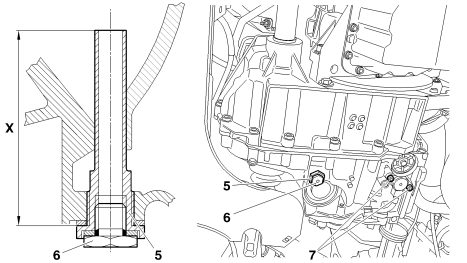
- Adjustment of the oil counter value is done by entering directly the **5 figures** of the oil counter.

C5	AL4 GEARBOX: TIGHTENING TORQUES

Engine: RFJ



B2CP3EDD

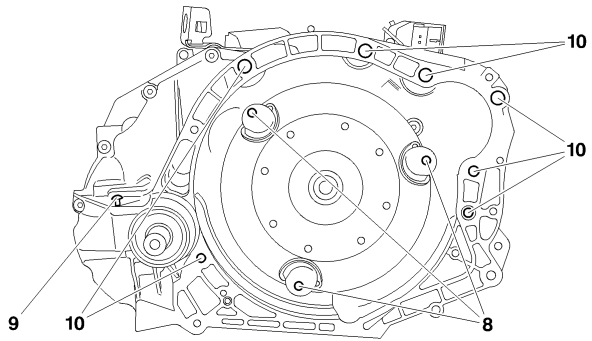


B2CP311D

Tightening torques (m.daN).

(1) Oil flow modulation electrovalve fixing	**: 1 ± 0,2**
(2) Heat exchanger fixing	**: 5 ± 1**
(3) Output speed sensor fixing	**: 1 ± 0,2**
(4) Output speed sensor fixing	**: 1 ± 0,2**
(5) Oil overflow and drain fixing **X = 48 mm** *(**EW10** engine versions)*	: **0,9 ± 0,1**
(6) Oil level plug	**: 3,3 ± 0,4**
(7) Oil pressure sensor fixing	**: 0,8 ± 0,1**

Engine: RFJ



B2CP3EED

Tightening torques (m.daN).

(8) Fixing of converter on diaphragm

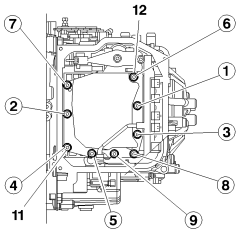
Pre-tightening	**: 1 ± 0,1**
Tightening	**: 3 ± 0,3**

(9) Plug fixing **: 0,8 ± 0,2**

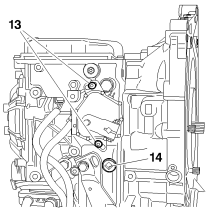
(10) Gearbox fixing on engine **: 5,2 ± 1**

AL4 GEARBOX: TIGHTENING TORQUES

Engine: RFJ



B2CP3X8C



B2CP3EGC

Tightening torques (m.daN).

Hydraulic block fixing.

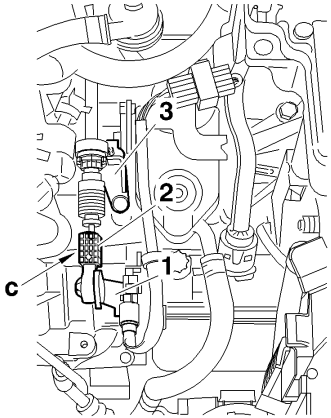
Centre the hydraulic block, using screws **(11)** and **(12)**.

Pre-tighten	*(no strict order)*	**: 0,9.**
Slacken		**: All 9 screws.**
Tighten	*(respect the order indicated)*	**: 0,75.**

(13) Fixing of selector lever position switch **: 1,5 ± 0,2**

(14) Oil filler plug **: 2,4 ± 0,4**

Engine: RFJ



B2CP3DLC

Gearbox end.

The automatic gearbox is controlled by a cable.

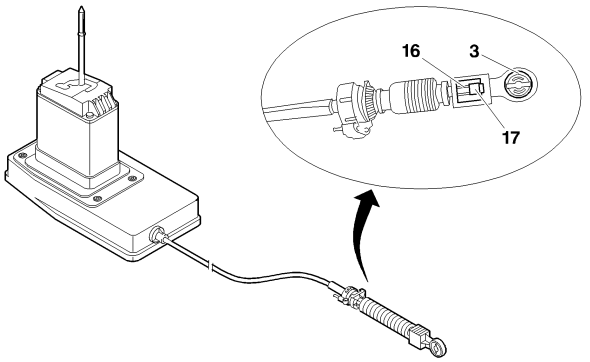
«c» Clip for unlocking the push-button in pushed-in position

(1) Control lever with ball-joint

(2) Automatic adjustment *(pull out the button to adjust the control, push it in to lock the adjustment of the control)*

(3) Sleeve stop

Engine: RFJ



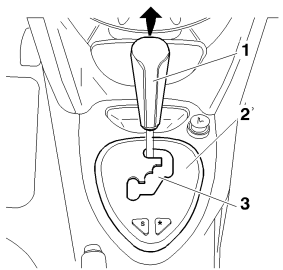
B2CP3DWD

On refitting.

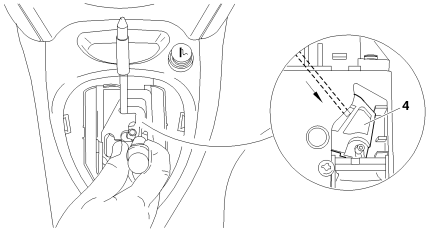
Refitting the gearbox control.

New gear selection control.
Couple the ball-joint **(3)**.
Push in the component **(16)** without bending the cable.
Release the component **(16)**.
Lock the adjustment by means of component **(17)**.
Check all the gear selection control positions.

Re-used gear selection control.
Unlock component **(17)**.
Release the component **(16)**.
Couple the ball-joint **(3)**.
Push in the component **(16)** without bending the cable.
Release the component **(16)**.
Lock the adjustment by means of component **(17)**.
Check all the gear selection control positions.



C5FP0CTC



C5FP0CUD

Engine: RFJ

SHIFT LOCK.

NOTE: The **"shift lock"** is a system that locks the gear selection lever in position **«P»**.

Unlocking the SHIFT LOCK *(normal operation)*.

Switch on the ignition.
Press the brake pedal and keep it pressed.
Move the gear selection lever out of position **«P»**.

Unlocking the SHIFT LOCK *(with an operating fault)*.

Should it be impossible to unlock the **"shift lock"** with the **normal operation** method, the fault may originate from one of the following components:
- **"Shift lock"**.
- Gear lever position switch.
- Automatic gearbox ECU.
- Electrical harnesses.
- Battery voltage.

Remove:
- The gear lever knob **(1)** *(pull upwards)*.
- The cover **(2)** *(unclip)*.
- The grid **(3)**.
- Unlock the **"shift lock" (4)** with the aid of a screwdriver.
- Move the gear selection lever out of position **«P»**.

Engines: 4HX - XFW - 4HW

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.
- Do not exceed 45 mph over a distance of 60 miles maximum.

Driving.
Never drive with the ignition switched off.
NOTE: The automatic gearbox is only lubricated when the engine is running.

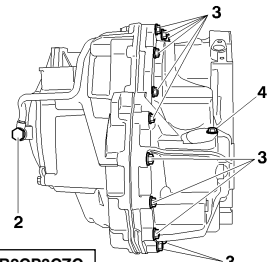
Repairs on electrical components.
Do not disconnect:
- The battery when the engine is running.
- The ECU when the ignition is switched on.

Before reconnecting a switch, check:
- The condition of the various contacts *(for deformation, corrosion etc).*
- The presence and condition of the mechanical locking.

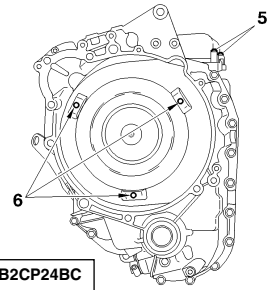
When performing electrical checks:
- The battery should be correctly charged.
- Never use a voltage source higher than **16V**.
- Never use a test lamp.

Repairs on mechanical components.
Never place the gearbox on the ground without protection.
Do not use the unions on the gearbox as handles for moving the gearbox.
It is **imperative** that the converter retaining peg should be in place when removing the gearbox.
It is **imperative** to use the centring pegs to couple the gearbox on the engine.
Remove the converter retaining peg before coupling the gearbox on the engine.

Engines: 4HX - XFW - 4HW



B2CP3CZC

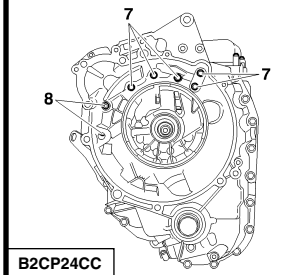


B2CP24BC

Tightening torques (m.daN).

Gearbox exterior.

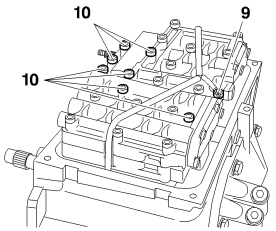
(2) Oil channel union fixing	**: 2,5 ± 0,5**
(3) Exterior fixing of converter cover on clutch housing	**: 2,3 ± 0,5**
(4) Speedometer take-off aperture plug	**: 1 ± 0,1**
(5) Steel casing fixing	**: 0,6 ± 0,1**
(6) Converter fixing on engine	**: 6 ± 1**
(7) Interior fixing of converter cover on clutch housing	**: 2,3 ± 0,5**
(8) Torx fixing of converter cover on clutch housing	**: 2,3 ± 0,5**
Drain plug	**: 4,5 ± 0,8**
Heat exchanger fixing	**: 3,5 ± 0,5**
Selector lever position switch fixing	**: 1 ± 0,2**
Converter cover fixing on engine cover **(XFX engine)**	**: 6,5 ± 1**
Converter cover fixing on engine cover **(4HX engine)**	**: 5,8 ± 1**

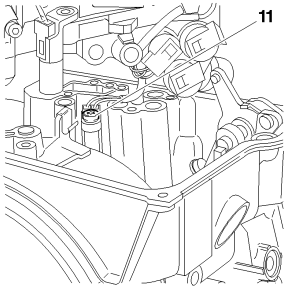


B2CP24CC

4 HP 20 GEARBOX: TIGHTENING TORQUES

Engines: 4HX - XFW - 4HW





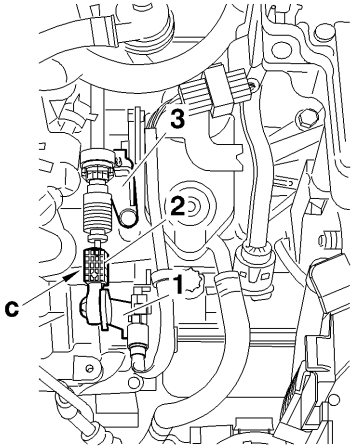
Tightening torques (m.daN).

Gearbox interior.

(9) Input speed sensor fixing	**: 0,8 ± 0,1**
(10) Hydraulic block fixing *(large head)*	**: 0,8 ± 0,1**
(11) Output speed sensor fixing	**: 1 ± 0,2**

B2CP24DC | **B2CP24EC**

Engine: 4HX

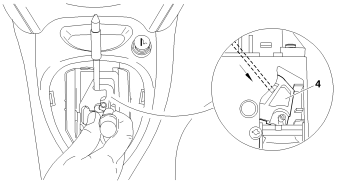


B2CP3DLC

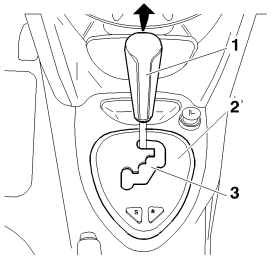
Selection control.

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, auto-adaptive mode).*
- Sport: Permits a more dynamic, sporty performance.
- Snow: 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.



C5FP0CUD



C5FP0CTC

Engine: 4HX

SHIFT LOCK.

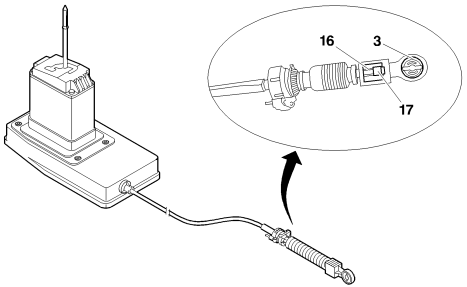
The **"shift lock"** is a system which locks the gear selection lever in the park position **«P»**.

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).***
If it should be 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.
Move the selection lever to disengage from position **«P»**.



B2CP3DWD

Engine: 4HX

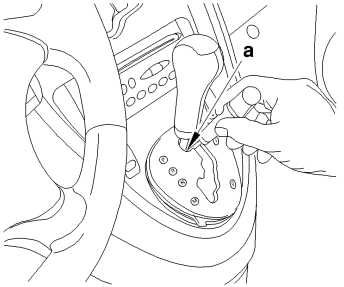
On refitting.
New gear selection control.

Couple the ball-joint **(3)**.
Push in the component **(16)** without bending the cable.
Release the component **(16)**.
Lock the adjustment by means of component **(17)**.
Check all the gear selection control positions.

Re-used gear selection control.

Unlock component **(17)**.
Release the component **(16)**.
Couple the ball-joint **(3)**.
Push in the component **(16)** without bending the cable
Release the component **(16)**.
Lock the adjustment by means of component **(17)**.
Check all the gear selection control positions.

Complete the fitting in the opposite order to removal *(see corresponding procedure)*.



B2CP3N8C

Engines: XFW - 4HW

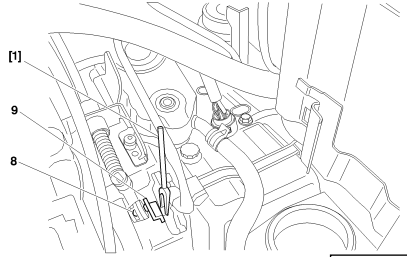
SHIFT LOCK.

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

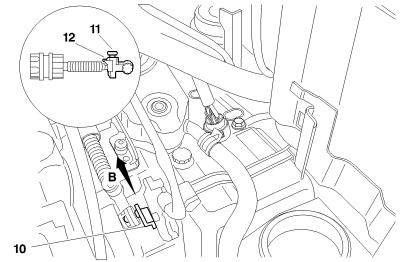
Unlocking the “shift lock” ***(normal operation).***
Switch on the ignition.
Apply the brake pedal and keep it pressed.
Using the selection lever, disengage from position **«P»**.

Unlocking the “shift lock” ***(with a fault).***
If it should be 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:
- Unlock the **“shift lock” (4)** using a screwdriver, placed in the aperture of the gear selection control grid.
- Move the selection lever to disengage from position **«P»**.



B2CKUBXD



B2CKUBYD

Engines: XFW - 4HW

On refitting.

IMPERATIVE: Fit new clips and collars.

WARNING: Check that the gear control cables are correctly routed.

Proceed in opposite order to removal.

IMPERATIVE: To clip the ball-joint (8) position tool [1] *(ball-joint extractor (-).0338.E)* under the selection lever (9).

If necessary, adjust the selection control *(if new or maladjusted)*.

Adjusting the selection control.

Selection lever in position **«P»**.
Engagement lever **(10)** as far as possible towards the rear of the vehicle **(B)**.
Lock the adjustments of the gears by pressing on the plastic component **(11)**.
The adjustment is complete.
Check all the gear selection control positions.

NOTE: to unlock the gear control adjustment system, press on the plastic component **(12)**.

C5	AM6 AUTOMATIC GEARBOX: RECOMMENDATIONS - PRECAUTIONS

Engine: XFU

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.
- Do not exceed 45 mph over a distance of 60 miles maximum.

Driving.
Never drive with the ignition switched off.
NOTE: The automatic gearbox is only lubricated when the engine is running.

Repairs on electrical components.
Do not disconnect:
- The battery when the engine is running.
- The ECU when the ignition is switched on.

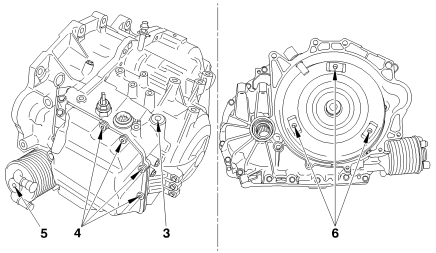
Before reconnecting a switch, check:
- The condition of the various contacts *(for deformation, corrosion, etc).*
- The presence and condition of the mechanical locking.

When performing electrical checks:
- The battery should be correctly charged.
- Never use a voltage source higher than **16V**.
- Never use a test lamp.

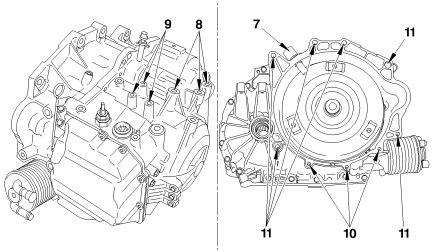
Repairs on mechanical components.
Never place the gearbox on the ground without protection.
Do not use the unions on the gearbox as handles for moving the gearbox.
It is **imperative** that the converter retaining peg should be in place when removing the gearbox.
It is **imperative** to use the centring pegs to couple the gearbox on the engine.
Remove the converter retaining peg before coupling the gearbox on the engine.

AM6 GEARBOX: TIGHTENING TORQUES

Engine: XFU



B2CP3YTD



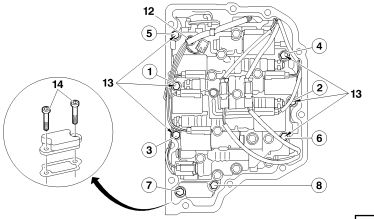
B2CP3YUD

Tightening torques (m.daN).

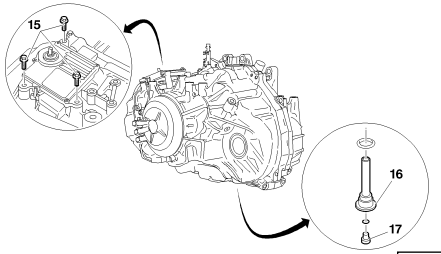
(3) Filler cap	**: 4 ± 0,4**
(4) Hydraulic valve block casing	**: 1,5 ± 2**
(5) Auto. gearbox heat exchanger	**: 4,2 ± 0,4**
(4) Input speed sensor fixing	**: 1 ± 0,2**
(6) Torque converter	
Pre-tightening	**: 2 ± 0,2**
Tightening	**: 6 ± 0,6**
(7) Engine speed sensor	**: 0,8 ± 0,1**
(8) Gearbox support	**: 5,5 ± 0,5**
(9) Sleeve stop	**: 3,5 ± 0,3**
(10) Closing panel fixing	**: 2 ± 0,2**
(11) Fixting of gearbox on cylinder block	**: 6 ± 0,6**

AM6 GEARBOX: TIGHTENING TORQUES

Engine: XFU



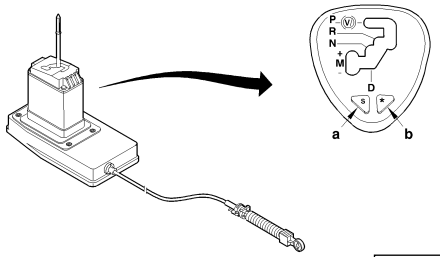
B2CP3YVD



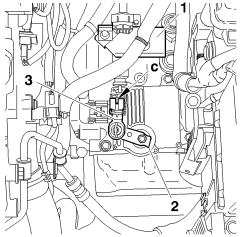
B2CP3YWD

Tightening torques (m.daN).

(12) Oil temperature sensor tightening plate	**: 1 ± 0,1**
(13) Hydraulic valve block *(sequence indicated)*	**: 1 ± 0,1**
(14) Oil induction cover	**: 1 ± 0,1**
(15) ECU screws	**: 2,5 ± 0,2**
(16) Oil drain and overflow plug	**: 1 ± 0,1**
(17) Oil level plug	**: 4,8 ± 0,5**



B2CP3DKD



B2CP3WVC

Engine: XFU

The gear selector is guided by the shape of the stepped gate and by a retaining spring which pulls it to the left hand side.
The **2 switches** placed on the gear control gate permit the driver to choose one of the following three driving programmes:

- Normal programme: Operates as the default programme *(eco law, autoadaptive mode)*.
- Sport programme (a): Permits a more dynamic, sporty performance.
- Snow programme (b): Facilitates starting and adhesion on slippery surfaces.

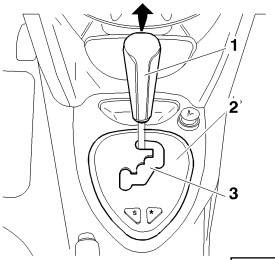
NOTE: To return to the normal programme, press a **second time** on the sport switch or snow switch.

Gearbox end.
The automatic gearbox is controlled by a cable.

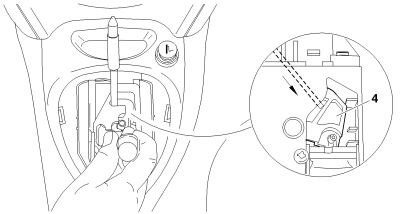
«c» Push-button in pushed-in position

(1) Sleeve stop
(2) Control lever with ball-joint
(3) Automatic adjustment

Automatic adjustment:
- Pull out button **«c»** to adjust the control.
- Push in button **«c»** to lock the adjustment of the control.



C5FP0CTC



C5FP0CUD

Engine: XFU

SHIFT LOCK.

NOTE: The **«shift lock»** is a system that locks the gear selection lever in position **«P»**.

Unlocking the «SHIFT LOCK» ***(normal operation).***
Switch on the ignition.
Press the brake pedal and keep it pressed.
Move the gear selection lever out of position **«P»**.

Unlocking the «SHIFT LOCK» ***(with an operating fault).***
Should it be impossible to unlock the **«shift lock»** with the **«Normal operation»** method, the fault may originate from one of the following components:
- **«Shift lock».**
- Gear lever position switch.
- Automatic gearbox ECU.
- Electrical harnesses.
- Battery voltage.

Remove:
- The gear lever knob **(1)** *(pull upwards)*.
- The cover **(2)** *(unclip)*.
- The grid **(3)**.
- Unlock the **«shift lock» (4)** with the aid of a screwdriver.
- Move the gear selection lever out of position **«P»**.

			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 - 9HZ	C5		7114-T.W	7114-T.X	7116-T
	ML/5	3FZ - RHM - RHT RHW - 4HW	2 ± 0,2	32,5 ± 1,5	9017-T.C	5701-T.A	9017-T
	ML/6	RHL - RHR					
	AM6	XFU	C8		(-).0336.U	(-).0336.V	0336
	AL4	RFJ	1 ± 0,1	10 + 60°	0338 J1 0338 J3	0338 H1 0338 H2	0338
	4 HP20	4HX - XFW - 4HW			8010-T.D 8010-T.K1	8010-T.J 8010-T.K2	8010-T

Tightening torques (m.daN) of the wheel bolts

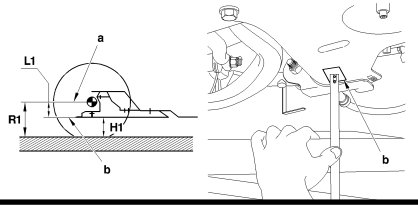
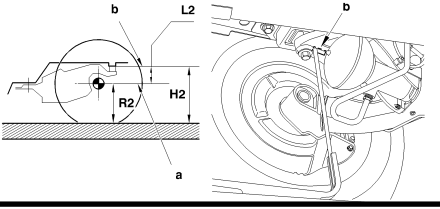
CITROËN	C5	Steel Aluminium	9 ± 0,5
	C8		10 ± 0,5

C5	AXLE GEOMETRY

Conditions for checking and adjusting: Tyre pressures in conformity, setting at reference height, steering rack set at zero point *(see corresponding operation).*

Tools. Gauge for measuring radius of wheels with 4 fixing bolts **: 4300-T**

All types except CARLSSON

Measuring front height	Measuring rear height
 B3BP166D	 B3BP168D
H1 = R1 – L1	**H2 = R2 + L2**
H1 = Front height ***(± 6 mm)***. **R1 =** Wheel radius *(mm)*. **L1 =** Theoretical dimension between the level of the front subframe and the wheel axis.	**H2 =** Rear height ***(± 6 mm)***. **R2 =** Wheel radius *(mm)*. **L2 =** Theoretical dimension between the measuring zone on the crossmember support and the wheel axis.
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).*	The measurement of the rear dimension **«H2»** is between ground level and the measuring zone on the rear axle crossmember *(forward of the rear fixing of the rear axle crossmember on the body).*
L1 = 140 mm	**L2 = 68 mm**
The dimension **L1** for checking front height is between the level **"b"** of the front subframe and the wheel axis **"a"**.	The dimension **L2** for checking rear height is between the measuring zone **"b"** and the wheel axis **"a"**.

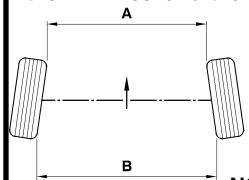
AXLE GEOMETRY — C5

All types except CARLSSON

	Front axle				Rear axle	
Vehicle	**Tracking**	**Castor**	**Camber**	**King pin inclination**	**Tracking**	**Camber**
	Adjustable	**No adjustable**			**No adjustable**	
All types	**0 to -3 mm 0° to -0° 25'**	**3° 03' ± 30'**	**-0° ± 30'**	**12° 56' ± 30'**	**4,5 ± 1,3 mm 0° 38' ± 0° 11'**	**- 1° ± 20'**

Castor : Dissymmetry less than **0° ± 30'.**
Camber : Dissymmetry less than **0° ± 30'.**
King pin inclination : Dissymmetry less than **0° ± 30'.**

IMPERATIVE: Distribute the total tracking symmetrically between the LH wheel and the RH wheel.



B3CP02UC

NOTE: Front of the vehicle indicated by the arrow.

Camber : Dissymmetry less than **0° ± 30'.**

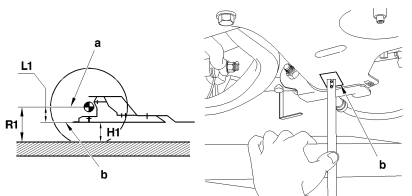
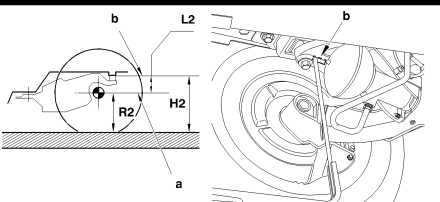
	NOTE	
A < B = Positive figure:	+ =	TOE-IN
A > B = Negative figure:	− =	TOE-OUT

C5	AXLE GEOMETRY

Conditions for checking and adjusting: Tyre pressures in conformity, setting at reference height, steering rack set at zero point *(see corresponding operation).*

Tools. Gauge for measuring radius of wheels with 4 fixing bolts **: 4300-T**

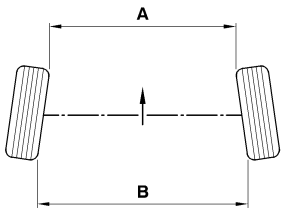
CARLSSON

Measuring front height	Measuring rear height
 B3BP166D	 B3BP168D
H1 = R1 – L1	**H2 = R2 + L2**
H1 = Front height ***(± 6 mm)***. **R1 =** Wheel radius *(mm)*. **L1 =** Theoretical dimension between the level of the front subframe and the wheel axis.	**H2 =** Rear height ***(± 6 mm)***. **R2 =** Wheel radius *(mm)*. **L2 =** Theoretical dimension between the measuring zone on the crossmember support and the wheel axis.
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).*	The measurement of the rear dimension **«H2»** is between ground level and the measuring zone on the rear axle crossmember *(forward of the rear fixing of the rear axle crossmember on the body).*
L1 = 155 mm	**L2 = 64 mm**
The dimension **L1** for checking front height is between the level **"b"** of the front subframe and the wheel axis **"a"**.	The dimension **L2** for checking rear height is between the measuring zone **"b"** and the wheel axis **"a"**.

AXLE GEOMETRY

C5 CARLSON

Front axle					Rear axle	
CARLSSON						
Vehicle	**Tracking**	**Castor**	**Camber**	**King pin inclination**	**Tracking**	**Camber**
	Adjustable	**No adjustable**			**No adjustable**	
All types	**0 to - 2 mm 0° to - 0° 15'**	**3° 03' ± 30'**	**-0° 04' ± 30'**	**12° 56' ± 30'**	**5,1 ± 1,3 mm 0° 41' ± 0° 12'**	**- 1° 03' ± 20'**



NOTE: Front of the vehicle indicated by the arrow.

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

B3CP02UC

C5	AXLE GEOMETRY: CHECKING AND ADJUSTING VEHICLE HEIGHT

Tools.

[1] Gauge for measuring radius of wheels *(4 bolts)* **: 8006-T**
[2] Gauge for height under bodyshell **: 2305-T**
[3] **LEXIA** station **: 4171-T**
[4] **PROXIA** station **: 4165-T**

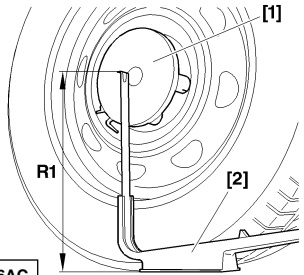
Preliminary operations.

Check the level of LDS fluid *(see corresponding operation)*.
Check the tyre pressures.
Place the vehicle on a **4 column** lift.
Put the vehicle in the normal position.
Release the handbrake.
Start the engine.

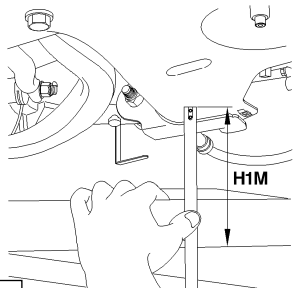
Checks by axle.

Lift the vehicle by hand.
Release when the weight becomes too great.
The vehicle descends, then re-ascends and stabilises.
Meaure the height.
Push down the vehicle by hand.
Hold the vehicle in this position, release when it rises.
The vehicle ascends, then descends and stabilises.
Measure the height.
Take the average of the **2 measures**.

AXLE GEOMETRY: CHECKING AND ADJUSTING VEHICLE HEIGHT



B3CP06AC



B3CP06BC

Measuring of heights.

Measuring the wheel radius.

To determine the centre of the wheel, place tool **[1]** on the heads of the wheel bolts.
Meaure the radius **R1** using tool **[2]** *(distance from ground to centre of wheel).*

Measuring the front height H1M.

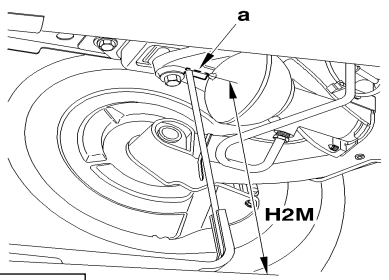
The front height **H1M** is measured between the ground and the subframe, to the rear of the front fixing yokes of the suspension tripod.

Calculating the front height H1C.

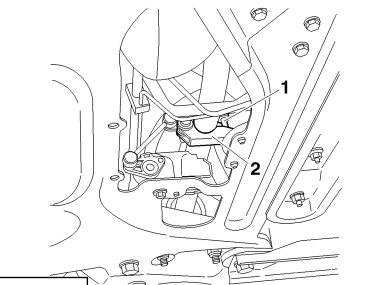
All types except CARLSSON	CARLSSON
H1C = R1 - 140 mm	**H1C = R1 - 155 mm**
R1 = Radius of front wheel (mm)	**R1** = Radius of front wheel (mm)

Compare:
- The value measured **H1M**.
- The value calculated **H1C**.
- Adjust the front height if necessary.

C5	AXLE GEOMETRY: CHECKING AND ADJUSTING VEHICLE HEIGHT



B3DP08HC



B3CP06CC

Measuring the rear height H2M.

The rear height **H2M** is measured between the ground and zone **«a»** on the crossmember.

Calculating the rear height H2C.

All types except CARLSSON	CARLSSON
H2C = R2 + 68 mm.	**H2C = R2 + 64 mm.**
R2 = Radius of rear wheel (mm)	**R2** = Radius of rear wheel (mm)

Compare:
- The value measured **H2M**.
- The value calculated **H2C**.
- Adjust the front height if necessary.

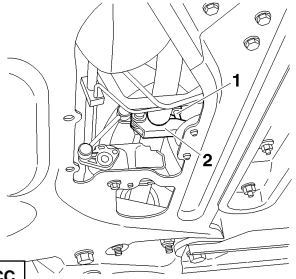
Adjustment of heights.

Adjustment using a diagnostic tool.
This adjustment is done when the heights measured are within the tolerance of the heights calculated.

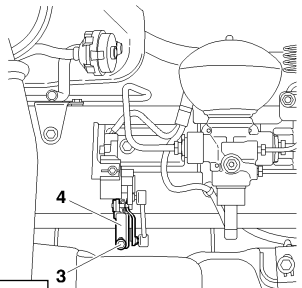
Mechanical pre-adjustment.
This adjustment is done when the heights measured are not within the tolerance of the heights calculated ***(± 10 mm)***.

AXLE GEOMETRY: CHECKING AND ADJUSTING VEHICLE HEIGHT

C5



B3CP06CC



B3DP08JC

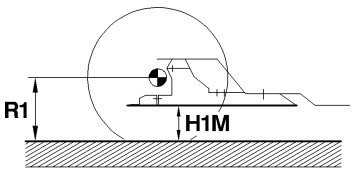
Front height.

Slacken by one turn the screw **(1)** on the collar **(2)**.
Retighten the screw by hand.
To decrease the height, turn the collar **(2)** towards the front of the vehicle.
To increase the height, turn the collar **(2)** towards the rear of the vehicle.
Repeat the operation to obtain the dimension calculated **H1C** ***(± 10 mm)***.
Tighten the screw **(1)** to **0,6 m.daN**.
Adjust using tool **[3]** or tool **[4]**.

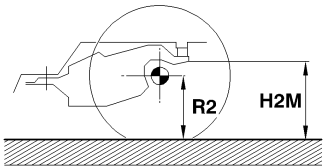
Rear height.

Slacken by one turn the screw **(3)** on the collar **(4)**.
Retighten the screw by hand.
To decrease the height, turn the collar **(4)** towards the front of the vehicle.
To increase the height, turn the collar **(4)** towards the rear of the vehicle.
Repeat the operation to obtain the dimension calculated **H2C** ***(± 10 mm)***.
Tighten the screw **(3)** to **0,6 m.daN**.
Adjust using tool **[3]** or tool **[4]**.

C5	AXLE GEOMETRY: CHECKING AND ADJUSTING VEHICLE HEIGHT



B3BP164C



B3BP165C

Adjustment of heights using tool **[3]** or tool **[4]**.
Connect either tool **[3]** or **[4]** to the vehicle's diagnostic socket.
Go into the menu:
- Adjustment of reference heights.
- Configuration.

NOTE: H1M = Front measured height, in mm.

All Types except CARLSSON : Calculate: **280 - (R1 - H1M).**
CARLSSON : Calculate: **(R1 - H1M).**

Enter this value in the diagnostic tool.

NOTE: H2M = Rear measured height, in mm.
Calculate **(R2 - H2M).**
Enter this value in the diagnostic tool.

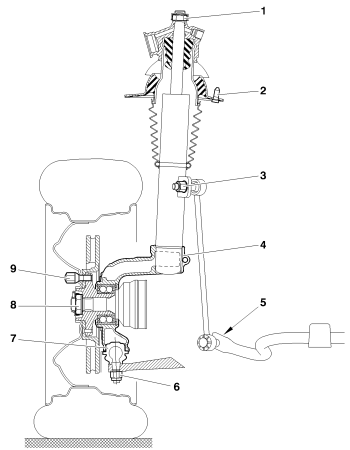
Wait for the vehicle height to correct itself.

Measure the front height **(H1M)**.
Check that: **H1M = H1C ± 2 mm**.

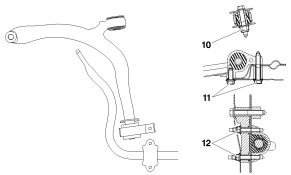
Measure the rear height **(H2M)**.
Check that: **H2M = H2C ± 2 mm**.

FRONT AXLE

C5



B3CP05VP

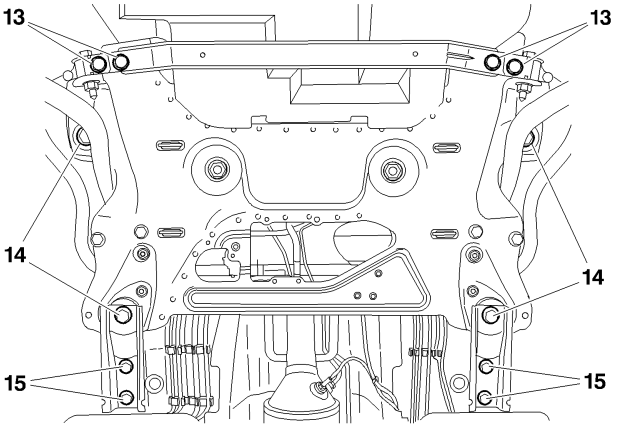


B3CP05WD

Tightening torques (m.daN).

(1) Suspension leg upper fixing	
Pre-tightening	**: 5 ± 0,6**
Angular tightening	**: 65° ± 5°**
(2) Suspension leg fixing on bodyshell	**: 4,3 ± 0,6**
(3) Anti-roll bar link rod upper fixing	**: 6,4 ± 0,6**
(4) Suspension leg fixing on pivot	**: 5,4 ± 0,5**
(5) Anti-roll bar link rod lower fixing	**: 6,4 ± 0,6**
(6) Ball-joint fixing	**: 4,5 ± 0,4**
(7) Ball-joint fixing on pivot	**: 25 ± 2,5**
(8) Hub nut	**: 32,5 ± 2,6**
(9) Wheel bolt	**: 9 ± 1**
(10) Arm front fixing	**: 13 ± 1,3**
(11) Arm rear fixing	**: 10,5 ± 1**
(12) Anti-roll bar bearing fixing on subframe	**: 4,2 ± 0,6**

C5 FRONT AXLE



B3CP08ND

The front subframe is equipped with a stabiliser bar linking between the two front extensions.

(13) Stabiliser bar fixing **: 6,6 ± 0,9**

(14) Fixing of subframe on body **: 14 ± 1,4**

(15) Fixing of subframe rear yoke on body **: 10 ± 1**

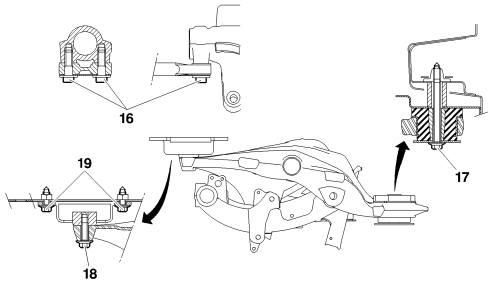
Saloons and Estates and CARLSSON

	Anti-roll bar	
Engines	**Diameter (mm)**	**Colour ref.**
All types Saloons and CARLSSON Estates except ES9J4	**23,5**	**Yellow**
ES9J4 + CARLSSON Saloons	**24,5**	**White**

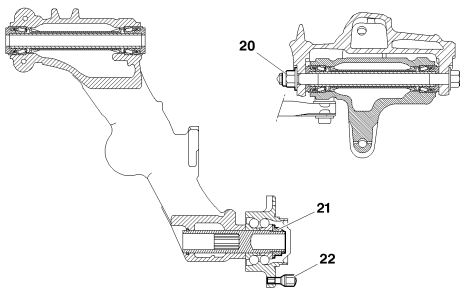
NOTE: The geometry specifications are given with the suspension specifications.

REAR AXLE

C5



B3DP0BBD

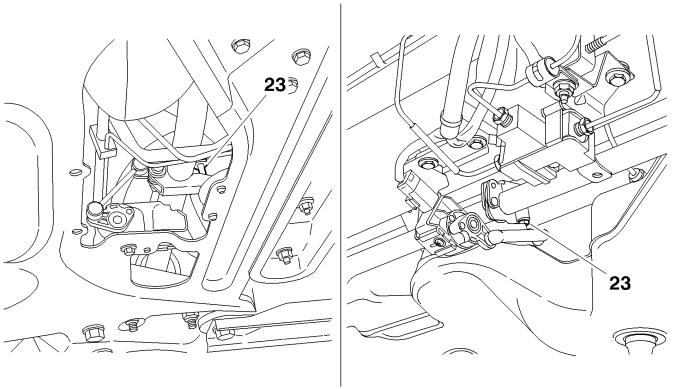


B3DP0BCD

Tightening torques (m.daN).

(16) Anti-roll bar fixing	**: 13 ± 1,3**
(17) Front subframe fixing on body	**: 11,1 ± 1,1**
(18) Rear subframe fixing	**: 11,5 ± 1,1**
(19) Rear rubber mounting fixing on bodyshell	**: 9 ± 1,3**
(20) Suspension shaft fixing	**: 14,9 ± 1,3**
(21) Hub nut	**: 25 ± 2,5**
(22) Wheel bolt	**: 9 ± 1**

	Anti-roll bar	
Engines	**Diameter (mm)**	**Colour ref.**
All types (except ES9J4)	**21,5**	**Blue**
ES9J4	**22,5**	**Yellow**
Estates all types CARLSSON		



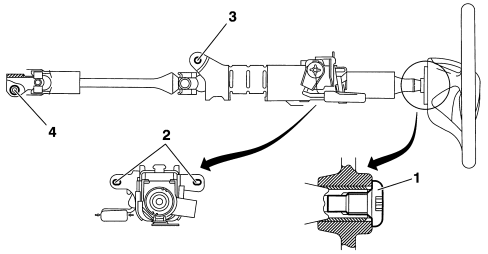
B3CP08RD

Height control.

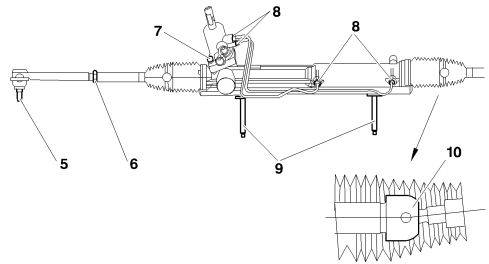
(23) Height sensor clip screw **: 0,6**

POWER-STEERING SPECIFICATIONS

Engines: All types



B3EP124D

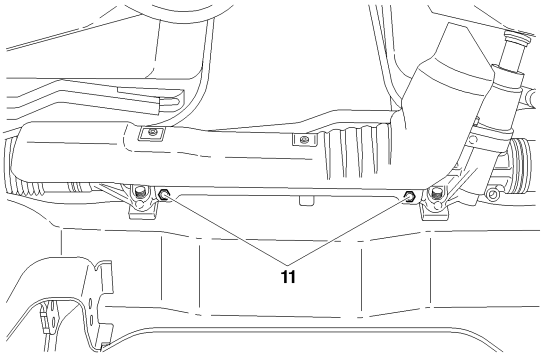


B3EP125D

Tightening torques (m.daN).

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

C5	POWER-STEERING SPECIFICATIONS



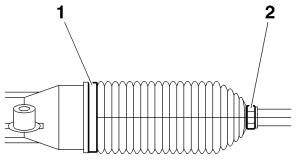
B3EP126D

Tightening torque (m.daN).

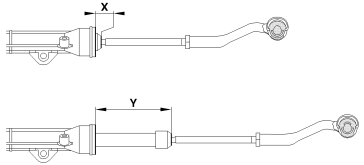
(12) Heat shield fixing on casing **: 1,2 ± 0,2**

POWER-STEERING SPECIFICATIONS

C5



B3EP13UC



B3EP13VD

IMPERATIVE: Respect the precautions to be taken prior to any operation ***(refer to the brochure "Recommendations-precautions").***

Preliminary operation.
Raise and support the vehicle on **2-column** lift.
Remove *(on the RH side)*:
- The clip **(1)**.
- The clip **(2)**.

Detach the steering rack protection gaiter.

Setting.
Turn the steering wheel to full **LH** lock.
Measure the dimension **X**.
Turn the steering wheel to full **RH** lock.
Measure the dimension **Y**.
Calculate the dimension **L = (Y - X) : 2**.
Position the steering rack to the dimension **"L"** *(mid point of the steering rack).*

Additional operation.
Refit:
- The protection gaiter.
- The clip **(2)**.
- The clip **(1)** *(new).*

C8	AXLE GEOMETRY

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.

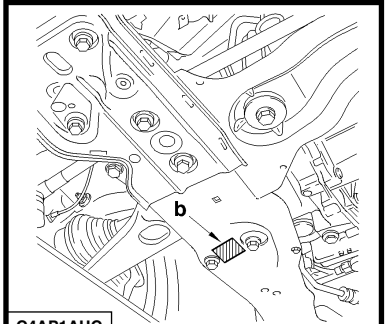
[1] Set of two compressors	**: 9511-T.A**
[2] Set of two shackles	**: 9511-T.C**
[3] Set of four straps	**: 9511-T.B**
[4] Set of two slings	**: 9511-T.D**
[5] Under body height gauge	**: 2305-T**

AXLE GEOMETRY

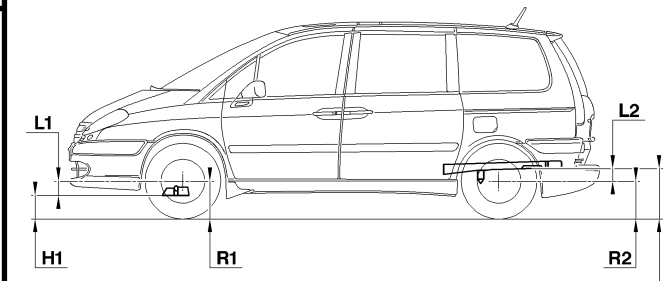
C8

Setting at reference height

Measuring front height (H1)

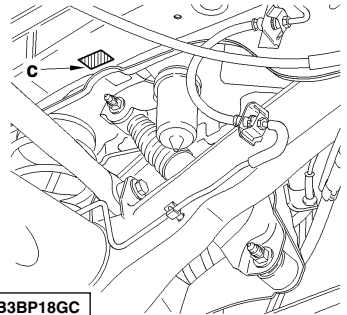


C4AP1AUC



E1AP0AYD

Measuring rear height (H2)



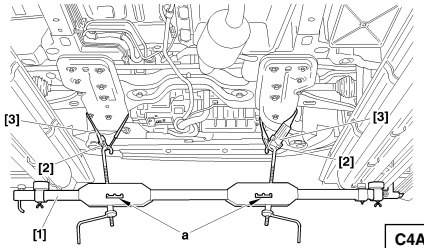
B3BP18GC

Front height	Rear height
H1 = R1 - L1	**H2 = R2 + L2**
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.	**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.

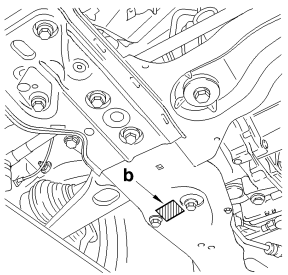
C8	FRONT AXLE GEOMETRY

Setting at reference height

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.

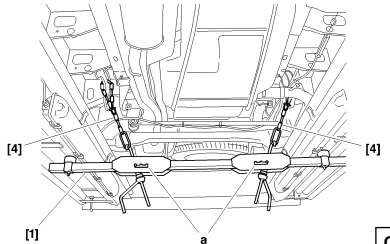
NOTE: Only the tracking is adjustable.

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

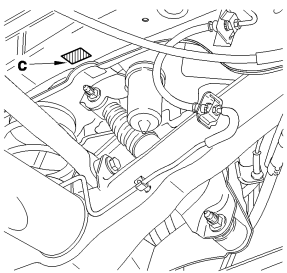
REAR AXLE GEOMETRY — C8

Setting at reference height

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.

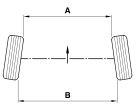
Compress the suspension so as to obtain, on the RH and LH sides, the bodyshell height **H2** *(reference height)*, to be measured between the bottom of the longeron **«c»** and the ground.

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.

C8	AXLE GEOMETRY							
Values for front suspension angles					Values for rear suspension angles			
Engines	RFN	3FZ - RHM - RHT RHW - 4HW	XFW		Engines	RFN	3FZ - RHM - 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					No 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'	
No adjustable					No adjustable			
Camber	0° 0' ± 30'				Camber	1° ± 30'		
Castor	3° 30' ± 30'							
Angle of pivot	12° 24' ± 30'							



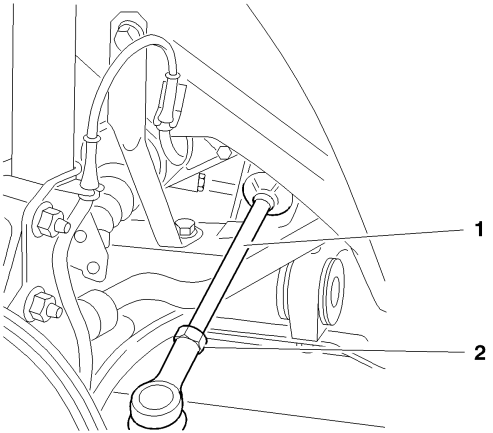
B3CP02UC

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

AXLE GEOMETRY

C8

Adjusting the rolling axles



B3BKAELD

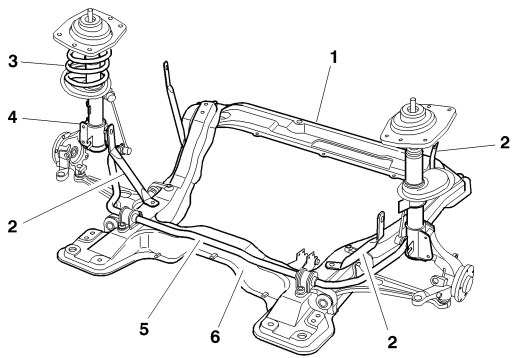
NOTE: Only the tracking is adjustable *(at the front)*.

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**.

C8	FRONT AXLE



B3CK09JD

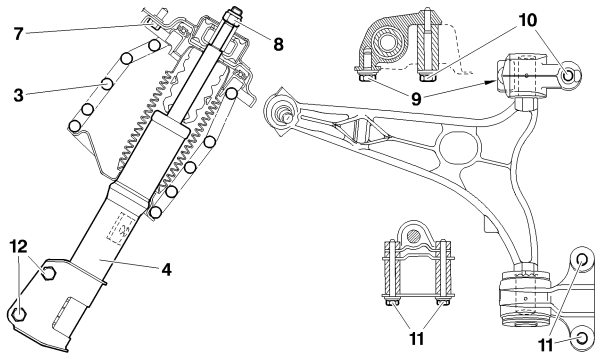
Identification.

(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 RHM - 4HW	**21,5**
XFW	**22**

FRONT AXLE

C8

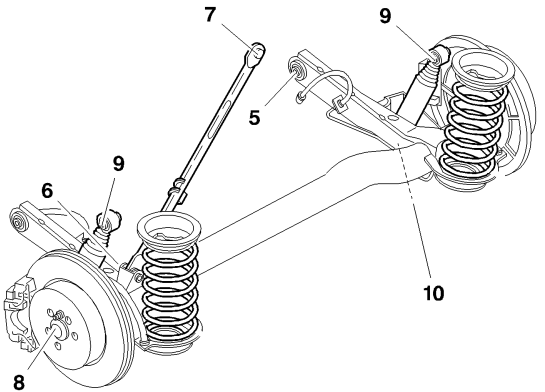


B3BP18FD

Tightening torques (m.daN).

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

C8	REAR AXLE



B3DP0AGD

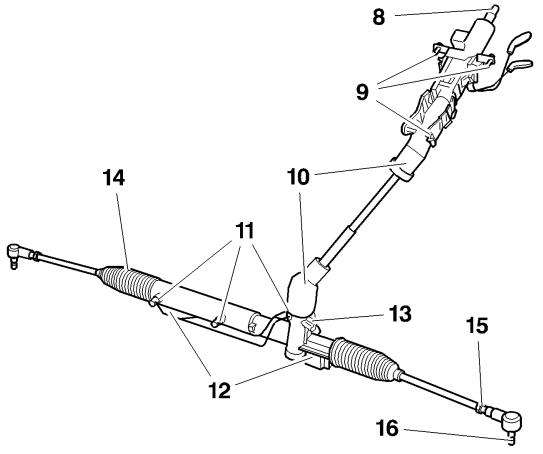
Tightening torques (m.daN).

(4) Fixing of damper on body	**: 9 ± 0,9**
(5) Fixing of stabiliser bar on rear axle	**: 8 ± 0,8**
(6) Fixing of stabiliser bar on body	**: 6 ± 0,6**
(7) Fixing of rear axle on body	**: 8 ± 0,8**
(8) Fixing of damper on rear axle	**: 9 ± 0,9**
(9) Hub nut	**: 38 ± 3,8**

POWER-STEERING SPECIFICATIONS

C8

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



B3EK0K0D

Tightening torques (m.daN).

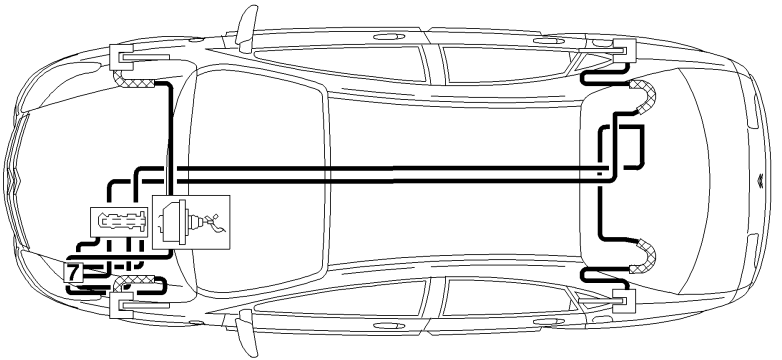
(8) Steering wheel fixing nut	**: 2 ± 0,2**
(9) Fixing of steering column to support	**: 2 ± 0,2**
(10) Fixing of upper and lower shafts to steering column	**: 2,5 ± 0,2**
(11) Fixing of ram valve supply unions	**: 1 ± 0,1**
(12) Fixing of steering mechanism	**: 14,5 ± 1,4**
(13) Fixing of pump/valve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

C5				BRAKE SPECIFICATIONS			
				1.8i 16V		2.0i 16V	3.0i 24S
				Saloon	Estate		
Engine type				6FZ		RFJ	XFU
FT	Ø mm	Master cylinder		22,2 (valve type)			
		Master-vac		254			
		Caliper makes/ Pistons		BOSCH BIR ZO 54/22	BOSCH BIR ZO 57/26		BOSCH BIR ZO 57/28
		Disc	Ventilated	266	283		288
	Disc thickness/min. thickness			22/20	26/24		28/26
	Brake pad thickness			17,3/2,5	17,8/2,5		
	Brake pad grade			FERODO 749/1			
RR	Ø mm	Cylinder or caliper		PSA - 32 (double piston)			
		Disc	Plain	276			
	Disc thickness/min. thickness			14/12			
	Brake pad thickness			11,9/3			
	Brake pad grade			TEXTAR T 4110		ABEX 949/1	

BRAKE SPECIFICATIONS				C5		
			1.6 16V HDi	2.0 16V HDi		2.2 16V HDi
Engine type			9HZ	RHL	RHR	4HX
FT	Ø mm	Master cylinder	22,2 (valve type)			
		Master-vac	254			
		Caliper makes/ pistons	BOSCH BIR ZO 57/26	BOSCH BIR ZO 57/28		
		Disc Ventilated	283	288		
	Disc thickness/min. thickness		26/24	28/26		
	Brake pad thickness		17,8/2,5			
	Brake pad grade		FERODO 749/1			
RR	Ø mm	Cylinder or caliper	PSA - 32 (double piston)			
		Disc Plain	276			
	Disc thickness/min. thickness		14/12			
	Brake pad thickness		11,9/3			
	Brake pad grade		TEXTAR T 4110		ABEX 949/1	

C5	BRAKE SPECIFICATIONS

Braking circuit	Braking system specifications



B3FP7DKD

Braking circuit at «**X**».

Front brakes with ventilated discs.

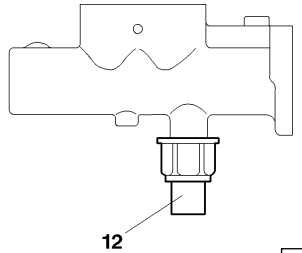
Rear brakes with non-ventilated discs.

Handbrake lever controlling cables acting on the front wheels.

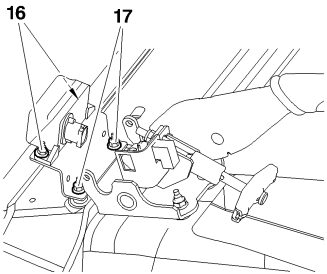
The compensator and main brake limiter functions are assured by the **ABS EBD** system fitted as standard at the factory on all versions.

ESP is fitted as standard on the entire range.

NOTE: EBD = Electronic Brakeforce Distribution.
ESP = Electronic Stability Programme.



B3FP7A0C



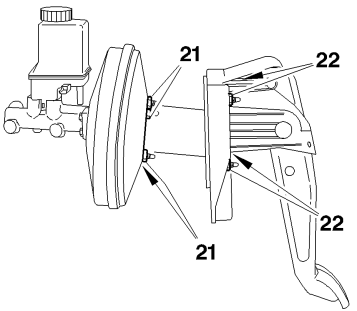
B3FP79ZC

Tightening torques (m.daN).

(12) Brake fluid pressure sensor on master-cylinder	**: 2,5 ± 0,5**
(16) Fixing of gyrometer/accelerometer sensor on support	**: 0,9 ± 0,1**
(17) Fixing of support on body	**: 0,9 ± 0,1**
Piping on master-cylinder	**: 1,5 ± 0,3**

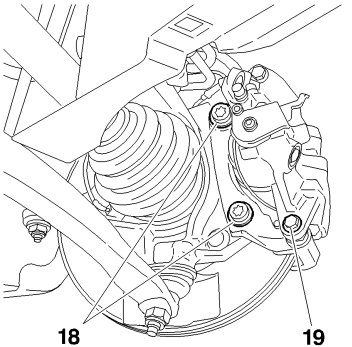
C5	BRAKE SPECIFICATIONS

Brake pedal carriage



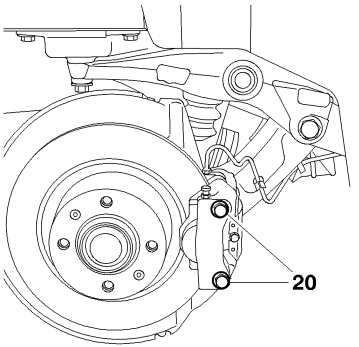
B3FP7DNC

Front brakes



B3FP7DLC

Rear brakes



B3FP7DMC

Tightening torques (m.daN).

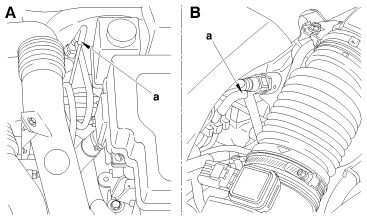
(21) Fixing on bodyshell **: 1,8 ± 0,3**
(22) Servo fixing **: 1,7 ± 0,25**

(18) Caliper fixing on pivot **: 12 ± 1,8**
(19) Yoke fixing on caliper **: 3,1 ± 0,1**

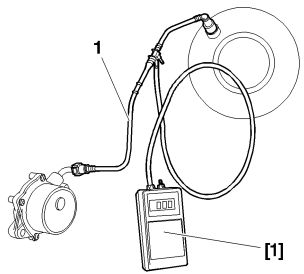
(20) Rear caliper fixing on suspension arm **: 7 ± 0,7**

CHECKING THE VACUUM PUMP

C5



B3FP7DQD



B3FP15RC

Tool.

[1] Pressure checker **: Toolkit S.1602**

Checks.

A: Engines **DW10** and **DV6**
B: Engine **DW12**

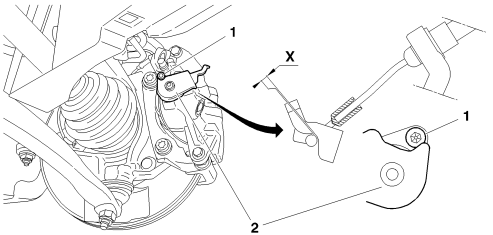
Locate the vacuum pipe **(1)** between the vacuum pump and the braking servo.
Uncouple the vacuum pipe at **"a"**.
Connect the tool **[1]** onto the vacuum pipe **(1)**.
Run the engine at idle.
Check the vacuum value.

NOTE: The vacuum value should be higher than or equal to **0,850 bar**.
Engines DW10, DW12 and DV6:

Engine oil temperature	Minimum vacuum	Maximum time *(in seconds)* to wait for minimum vacuum
80°C ± 5°	500 mbars	4,5
	800 mbars	18

If the value is lower, check:
- The vacuum pump directly.
- The sealing of the circuit on the link pipes and on the brake servo.

C5	CHECKING AND ADJUSTING THE PARKING BRAKE



B3FP7DCD

ESSENTIAL: Respect the safety and cleanliness requirements.

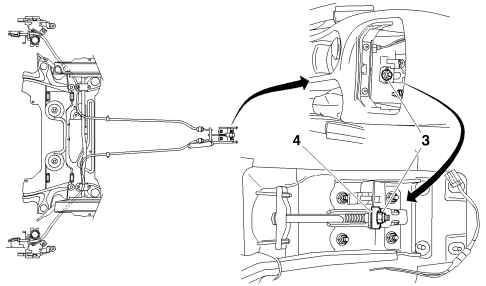
Remove the central console *(see corresponding operation)*.
Raise and supprt the vehicle on a **2-column lift**.

To bed in the parking brake cables, operate as follows:

With the engine running:
- Press **5 times** on the brake pedal in order to place the braking circuit under pressure.
- Apply and release the parking brake lever **5 times**.

Conditions for adjustment:
- Parking brake lever in the released position.
- Check that the parking brake cables are correctly routed.
- Check that the **LH** and **RH** caliper levers **(2)** are against the screws **(1)**.

Admissible clearance between the caliper lever **(2)** and the parking brake cable attachment:
X = 0 to 1 mm.



B3FP7DDD

(3) Nut for adjusting the tension of the parking brake cables

Apply and release the parking brake lever **5 times**.
Place the parking brake lever in the released position.
Tighten the nut **(3)** until it is in contact with the component **(4)**.
Apply and release the parking brake lever **5 times**.
Place the parking brake lever in the released position.

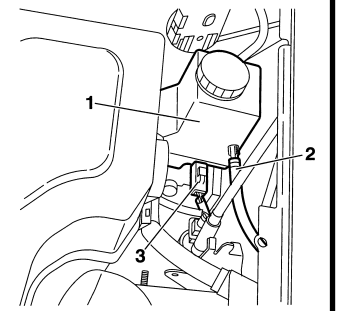
Check:
- That there is no clearance between the extremities of the parking brake cables and the slide.
- That the RH and LH caliper levers **(2)** are against the screws **(1)**.

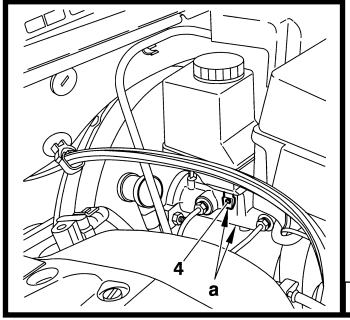
IMPERATIVE: If these two checks are not satisfactory, repeat the adjustment procedure.

Lower the vehicle.

Refit the central console.

C5	DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM





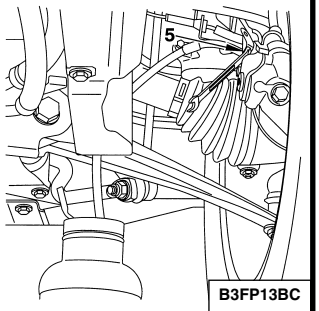
Tools.

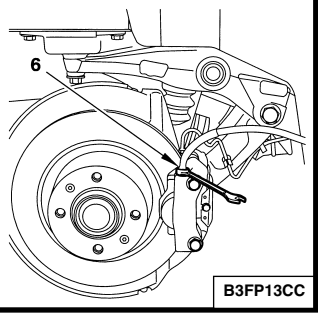
[1] Generic bleeding apparatu **: «LURO» or similar**
[2] LEXIA statio **: 4171-T**
[3] PROXIA station **: 4165-T**

NOTE: Bleeding of the secondary braking circuit is done with the help of diagnostic tools **[2]** or **[3]**.

Draining the brake fluid reservoir.
Drain the brake fluid reservoir **(1)** to the maximum extent *(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)**.
Refit the brake fluid reservoir **(1)** and the shaft **(4)**.
Couple the pipe **(2)**.
Reconnect the connector **(3)**.
Filling the braking system.
WARNING: Use only those hydraulic fluids that are approved and recommended.
Fill the brake fluid reservoir **(1)**.
Bleeding the primary 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.
WARNING: The ABS should not be active during the bleeding operation.

B3FP139C | B3FP13AC



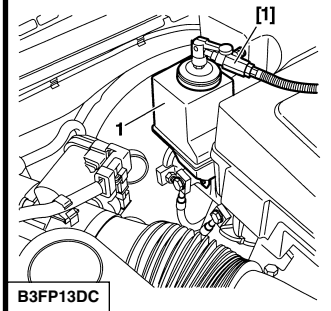


Front brake caliper : Bleed screw **(5)**.
Rear brake caliper : Bleed screw **(6)**.

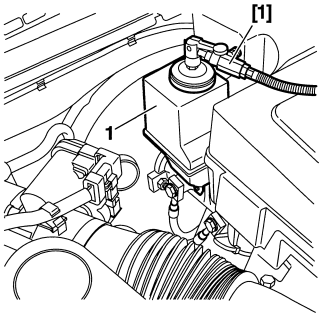
Bleed each wheel cylinder, proceeding in the following order:

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

Using the bleeding apparatus.
Connect the bleeding apparatus **[1]** on the brake fluid reservoir **(1)**.
Adjust the apparatus pressure to **2 bars**.
For each brake 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.
- Check the brake fluid level *(should be between «**DANGER**» level and «**MAXI**» level)*.
- Fill if necessary with the approved and recommended synthetic brake fluid.



C5	DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM



B3FP13DC

Without bleeding apparatus.
NOTE: Two operators are necessary.
For each brake 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 equipment **[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 the secondary 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.
NOTE: The bleeding apparatus is still connected on the brake fluid reservoir.
Use the diagnostic tools **[2]** or **[3]**.
Select the menu corresponding to the vehicle: **ABS** menu and **ESP** menu.
Follow the instructions given by the diagnostic tool.
At the end of the bleeding programme, check the brake fluid level and top up, if necessary.
Check the brake pedal travel *(no lengthening)*, if it is not satisfactory 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	RHM - RHT - RHW	4HW
FT	Ø mm	Master cylinder		22,2 (valve type)		23,8 (valve type)	22,2 (valve type)	
		Master-vac		254		203.2 + 228.6	254	
		Caliper makes/ pistons		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 makes/ pistons		LUCAS C38HR 38				
		Disc	Ventilated	272				
	Disc thickness/min. thickness			12/10				
	Brake pad grade			TEXTAR T 4131				

C8	BRAKE TIGHTENING TORQUES (m.daN)

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

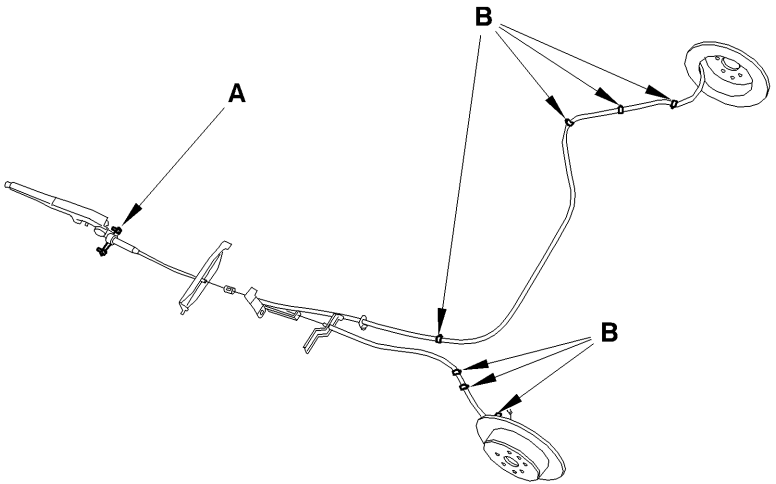
Tightening torques (m.daN).

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



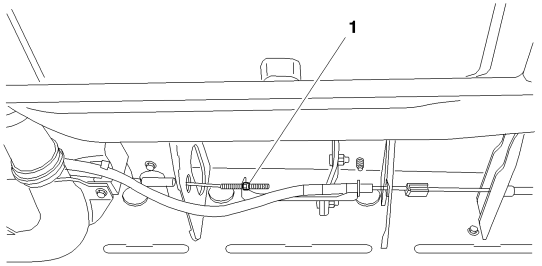
B3FK263D

(A) Zone for fixing on floor

(B) Clips for retaining on bodyshell

C8	ADJUSTING THE HANDBRAKE

Adjustment



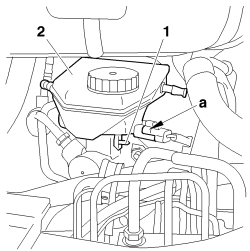
B3FK264D

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.



B3FP7CKC

Tools.

[1] Brake fluid reservoir filler plug	**: (-).0810**
[1] Approved automatic bleeding apparatus	**: «LURO» or similar**
[1] LEXIA diagnostic tool	**: 4171-T**
[1] PROXIA diagnostic tool	**: 4165-T**

Draining.

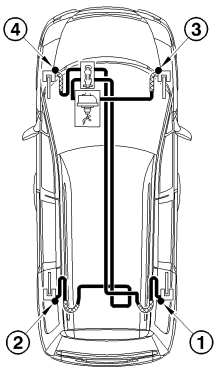
Remove the pollen filter *(see corresponding operation)*.
Take out the filter from the brake fluid reservoir.
Drain the brake fluid reservoir to the maximum extent, with the aid of a syringe.
Drain the brake fluid reservoir **(1)** to the maximum extent *(if necessary, use a clean syringe)*.
Disconnect the connector at **"a"**.
Remove the shaft **(1)**.
Remove brake fluid reservoir **(2)**.
Clean the brake fluid reservoir **(2)**.
Refit the brake fluid reservoir **(2)** and the shaft **(1)**.
Disconnect the connector at **"a"**.
Refit the filter in the brake fluid reservoir.

Filling.

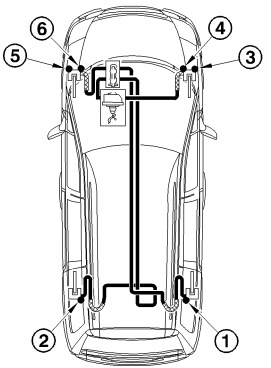
IMPERATIVE: Use only new, clear brake fluid, avoiding any ingress of impurities into the hydraulic circuit.
Use only hydraulic fluid(s) that are approved and recommended: **DOT 4**.
Renew the brake fluid in the calipers, by bleeding the circuit until clean fluid flows out.

C8	DRAINING, FILLING AND BLEEDING THE BRAKING SYSTEM

A



B



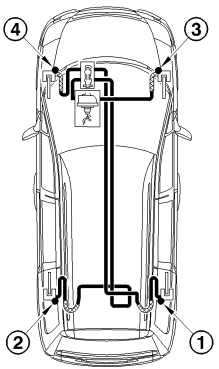
B3FP7CLD

Bleeding the primary braking circuit.
WARNING: Respect the sequence for opening the bleed screws: From 1 to 6.
A: Brake calipers: **LUCAS** *(at the front)*
B: Brake calipers: **BREMBO** *(at the front)*
Tightening toques for the bleed screws:
- Front brake calipers: **1,5 ± 0,1 m.daN.**
- Rear brake calipers: **1,5 ± 0,1 m.daN.**

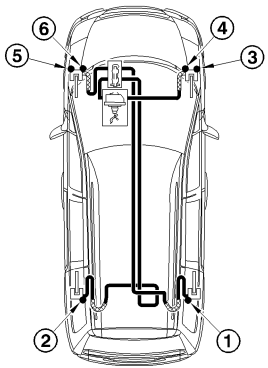
WARNING: During the bleeding operation, take care to maintain the level of brake fluid in the reservoir and to top it up, using only brake fluid that is clean and clear.

Using the bleeding apparatus.
Position the tool **[1]** on the brake fluid reservoir **(2)**.
Connect the tool **[1]** to the approved automatic bleeding apparatus.
Adjust the apparatus pressure to **2 bars**.
For each brake 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.
- Check the brake fluid level *(should be between **«MINI»** level and **«MAXI»** level)*.
- Fill if necessary with the approved and recommended synthetic brake fluid.

A



B



B3FP7CLD

Without bleeding apparatus.
NOTE: 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 by itself.
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.
Check the brake fluid level *(should be between «**MINI**» level and «**MAXI**» level)*.
Fill if necessary with the approved and recommended synthetic brake fluid.

Bleeding the secondary braking system.
NOTE: The bleeding apparatus is still connected on the brake fluid reservoir.
Use the diagnostic tools **LEXIA** or **PROXIA**.
Select the menu corresponding to the vehicle: **ABS** menu or **ESP** menu.
Follow the instructions given by the diagnostic tool.
At the end of the bleeding programme, check the brake fluid level and top up, if necessary.
Check the brake pedal travel *(no lengthening)*, if it is not satisfactory repeat the bleeding procedure.
Remove the tools.

C5	SAFETY REQUIREMENTS: HYDRACTIVE 3 HYDRAULIC SUSPENSION

All operations on the **Hydractive 3 hydraulic** circuit must be performed in conformity with the following requirements and regulations:
Authorities competent in matters of health:
- Accident prevention.
- Environmental protection.

WARNING: Operations should be carried out by specialised personnel who have had training in the safety requirements and precautions to be taken.

Safety requirements.

ESSENTIAL: In view of the special features of the hydraulic suspension system, observe the requirements below, before undertaking any repair.

IMPERATIVE: Depending on the operation to be carried out, respect the requirements for supporting and securing the vehicle.

<table>
<tr><th>Wheels hanging</th><th colspan="3">Wheels not hanging</th></tr>
<tr><td rowspan="2">2-column lift or secure the vehicle on 4 axle stands</td><td>Vehicle on the ground</td><td colspan="2">Vehicle 4-column lift</td></tr>
<tr><td>Depressurisation of the circuit (see corresponding operation)</td><td>Checking and adjusting of heights (switch on ignition)</td><td>Other operations (depressurisation of the hydraulic circuit)</td></tr>
</table>

During the operation.

Wait for the pressure in the hydraulic circuit to fall fully before disconnecting the unions on the following components *(risk of sudden sinking of the vehicle)*:
- Built-in Hydro-electronic Interface **(BHI)**.
- Front suspension cylinder.
- Rear suspension cylinder.
- Front stiffener regulator .
- Rear stiffener regulator.

IMPERATIVE: Do not operate on the hydraulic circuit without making the prssure drop *(see corresponding operation)*.

Engine running:
- Do not operate on the hydraulic suspension circuit.
- Always remain out of range of any possible projections of fluid, as these could cause serious injuries.

NOTE: In the event of contact of **LDS fluid** with the eyes, rinse them with copious amounts of water and seek specialist advice.
NOTE: In the event of lengthy contact of **LDS fluid** with the skin, wash it with soap and water.
WARNING: After the engine has stopped, wait 30 seconds before commencing any operation.

IMPERATIVE: Do not remain underneath the vehicle during an operation to adjust vehicle heights or during actuator *(electrovalve)* tests.

Cleanliness requirements.

WARNING: Non respect of the cleanliness requirements may cause a contamination of the circuit and a malfunctioning of the suspension.

Preliminary operations.
The work area must be kept clean and uncluttered.
The technician must wear clean overalls.
Components being stored during the repair must be protected from dust.
The tooling required for an operation on the suspension system should always be cleaned prior to the operation.

During the operation.
Before operating on the suspension circuit, proceed to clean the hydraulic components and unions.

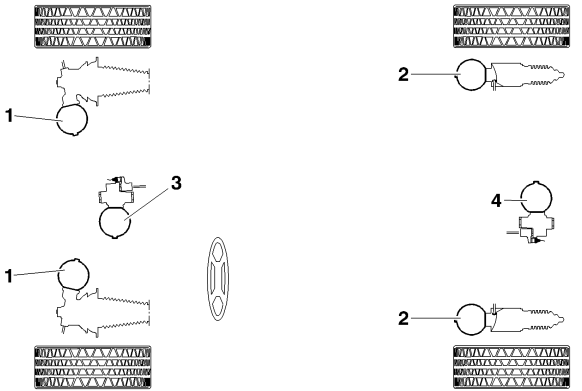
IMPERATIVE: Approved cleaner: SODIMAC degreaser.

IMPERATIVE: After a dismantling, immediately blank the hydraulic components and unions with plugs. The plugs should be used for one operation only.

Any component that has been removed must be plugged and placed in a clean plastic bag.

IMPERATIVE: After a dismantling, any cleaning using compressed air or products is strictly prohibited. Any LDS fluid that is collected must not be re-used. Ny top-up must be done with new fluid.

C5	SPECIFICATION - IDENTIFICATION: SUSPENSION SPHERES



B4BP01DD

(1) Front suspension sphere

(2) Rear suspension sphere

(3) Front hydractive 3 + regulator accumulator

(4) Rear hydractive 3 + regulator accumulator

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 number marked on the suspension sphere is the component reference and not the Replacement Parts No.
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	13h59	57

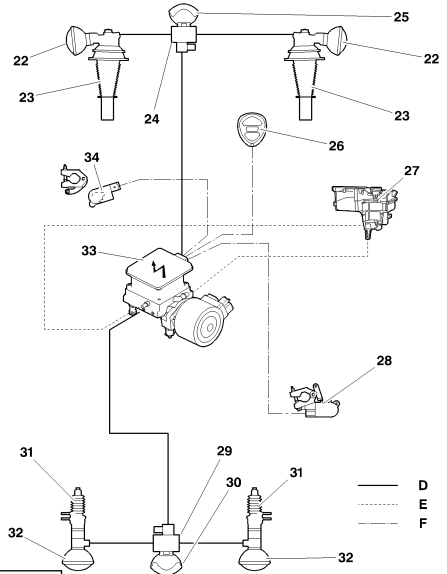
The pressure rating of this type of suspension sphere is given merely as a guide.
When checking, the value read could be higher than the nominal value.
Suspension cylinders on the same axle should be equipped with the same type of suspension spheres.

IMPERATIVE: Tightening torques for suspension spheres : 2,7 ± 0,5 m.daN.

C5	SPECIFICATION - IDENTIFICATION: SUSPENSION SPHERES			
Hydractive 3 hydraulic suspension				
		(1) Front suspension spheres		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
All types	6FZ	HF	385	57
	RFJ	HG		
	9HZ			
	RHL - RHR	KC		
		(2) Rear suspension spheres		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
Saloon	6FZ	KB	385	31
	RFJ			
	9HZ			
	RHL - RHR	KD		
Estate	6FZ	HT		44
	RFJ			
	9HZ			
	RHL - RHR			

SPECIFICATION - IDENTIFICATION: SUSPENSION SPHERES				C5
Hydractive 3 + hydraulic suspension				
		(1) Front suspension spheres		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
All types	XFU	HI	385	52
	4HX			
	XFU - CARLSON			
		(2) Rear suspension spheres		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
Saloon	XFU	KE	385	25
	4HX			
Estate	XFU	HW		44
	4HX			
Saloon/ Estate	XFU - CARLSON	HT		

C5	SPECIFICATION - IDENTIFICATION: SUSPENSION SPHERES			
Hydractive regulator accumulators				
		(3) Front hydractive regulator accumulator		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
Saloon	XFU	HQ	385	62
	4HX			
Estate	XFU	HD		
	4HX			
Saloon/ Estate	XFU - CARLSON	KA		31
		(4) Rear hydractive regulator accumulator		
Engines		Suspension sphere marking	Volume (cc)	Pressure rating (bars)
Saloon	XFU	HR	385	44
	4HX	GV		
Estate	XFU	HR		
	4HX			
Saloon	XFU - CARLSON	HW		
Estate		HR		



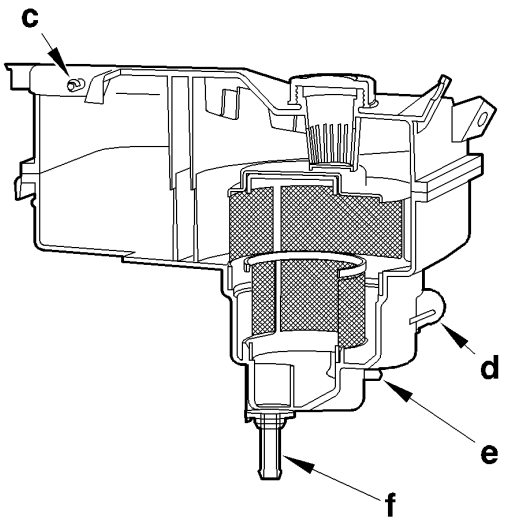
B4CP01GP

Location of components

(D) High pressure hydraulic circuit
(E) Low pressure hydraulic circuit
(F) Electric circuit
(22) Front **«slimline»** suspension sphere
(23) Front suspension cylinder
(24) Front **hydractive 3** + regulator
(25) Front **hydractive 3** + regulator accumulator
(26) Sequential control suspension switch
(27) LDS fluid reservoir
(28) Rear height sensor
(29) Rear **hydractive 3** + regulator
(30) Rear **hydractive 3** + regulator accumulator
(31) Rear suspension cylinder
(32) Rear **«slimline»** suspension sphere
(33) Built-in Hydro-electronic Interface **(BHI)**
(34) Front height sensor

NOTE: LDS = Liquide direction suspension *(fluid for steering/suspension)*.

HYDRAULIC SPECIFICATIONS



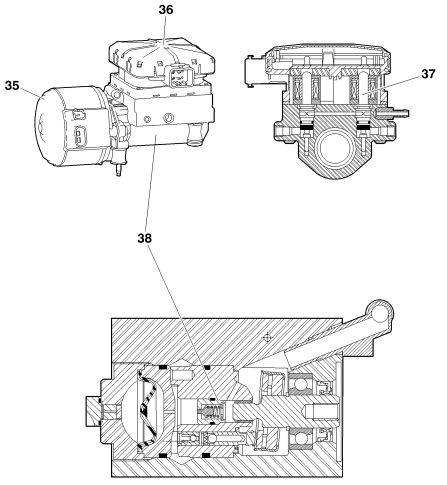
B4BP01BC

Hydraulic fluid		
Type of suspension	**Type of steering**	**Capacity (litres)**
Hydractive 3	Left hand drive	**4,5**
Hydractive 3	Right hand drive	**4,7**
Hydractive 3 + All engines except XFX	Left hand drive	**5,2**
Hydractive 3 + All engines except XFX	Right hand drive	**5,4**
Hydractive 3 + Engine XFX	Left hand drive	
Hydractive 3 + Engine XFX	Right hand drive	**5,6**

(LDS suspension fluid is orange in colour and 100% synthetic (TOTAL LDS).

Hydraulic fluid reservoir		
Reference	**Function**	**Component**
«c»	Return	Suspension cylinders
«d»	Induction	Built-in Hydro-electronic Interface Power steering pump
«e»	Return	Built-in Hydro-electronic Interface
«f»		Power steering pump

The LDS fluid level is checked with the vehicle in the low position *(see corresponding operation)*.

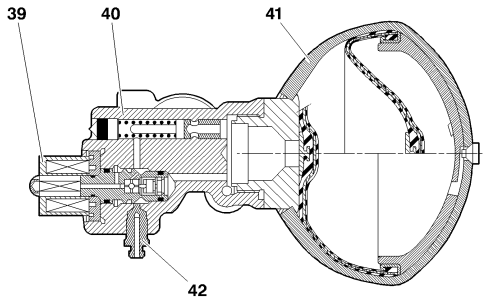


Built-in Hydro-electronic Interface (BHI)

Ref.	Function	Component
(36)	Electronic control unit	
(38)	Hydraulic unit comprising: Pump with **5 axial pistons** Anti-pulse hydropneumatic accumulator Safety valve	Throughput = **0,7 l/min at 2300 rpm** Diameters of the pistons = **6,35 mm** Safety valve rating = **180 bars**
(35)	Electric motor	**2350 ± 150 tr/min**
(37)	Suspension inlet electrovalve (front) Suspension inlet electrovalve (rear) Suspension exhaust electrovalve (front) Suspension exhaust electrovalve (rear)	The vehicle's anti-sink function is assured by the exhaust electrovalves

C5 + CARLSON	HYDRAULIC SPECIFICATIONS

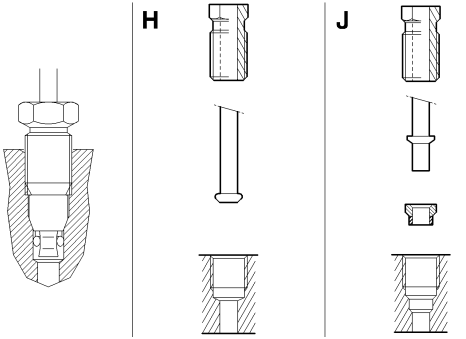
Hydractive 3 + regulator



B4BP01KD

(39) Electrovalve
(40) Hydractive regulator
(41) «**Slimline**» suspension sphere
(42) Depressurisation screw

Hydraulic unions



B4DP003D

Reference	Tube diameter (mm)	Tightening torque m.daN
G	3,5	1,5 ± 0,3
H	6,35	
J	10	2,5 ± 0,5

IMPERATIVE: At each operation, it is necessary to change the hydraulic seals.
WARNING: Each time you remove a hydraulic union, reference G: Remove the O-ring seal from its housing.

DE-PRESSURISING THE HYDRAULIC SUSPENSION CIRCUIT — C5

Tools.

[1] PROXIA station **: 4165-T**
[2] LEXIA station **: 4171-T**

De-pressurisation.

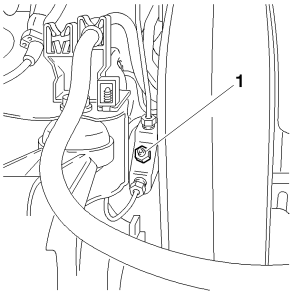
NOTE: It is possible to de-pressurise the suspension by individual axle.

Using a diagnostic tool.

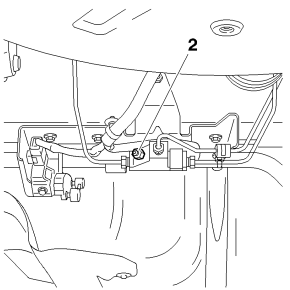
Start the engine.
Place the height control in the **«LOW»** position.
Wait for the vehicle height to reach the position required.
Stop the engine.
Connect the diagnostic tool **[1]** or **[2]** to the vehicle's diagnostic socket.
Switch on the ignition.
Go into the menus:
- Suspension.
- Actuator tests.

Select and validate the electrovalves line for front descent.
Wait for the vehicle's front suspension to sink completely.
Select and validate the electrovalves line for rear descent.
Wait for the vehicle's rear suspension to sink completely.

C5 DE-PRESSURISING THE HYDRAULIC SUSPENSION CIRCUIT



B3BP16GC



B3BP16HC

Without using a diagnostic tool.

IMPERATIVE: Any LDS fluid that is collected must not be re-used.

NOTE: Collect the **LDS** fluid in order to keep the work area clean.
Respect the environment.

Start the engine.
Place the height control in the **«LOW»** position.
Stop the engine.

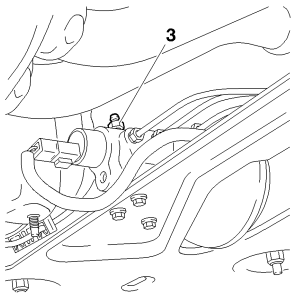
Vehicle with suspension Hydractive 3.

Front suspension: undo the pressure release screw **(1)** by **one turn**.
Wait for the pressure in the hydraulic circuit to drop fully.

Rear suspension: undo the pressure release screw **(2)** by **one turn**.
Wait for the pressure in the hydraulic circuit to drop fully.

DE-PRESSURISING THE HYDRAULIC SUSPENSION CIRCUIT

C5

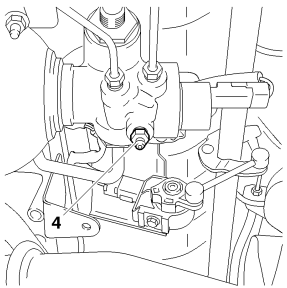


B3BP16JC

Vehicle with suspension Hydractive 3 +.

Front suspension: undo the pressure release screw **(3)** by one turn.

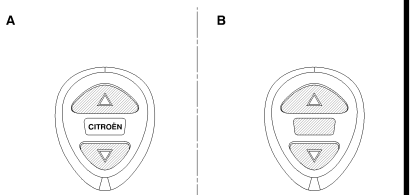
Wait for the pressure in the hydraulic circuit to drop fully.



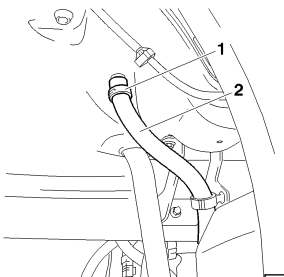
B3BP16KC

Rear suspension: undo the pressure release screw **(4)** by one turn.

Wait for the pressure in the hydraulic circuit to drop fully.



B4BP01ED



C4CP0SDC

Tools.

[1] Pliers for CLIC clips **: 4121-T**
[2] LEXIA station **: 4171-T**
[3] PROXIA station **: 4165-T**

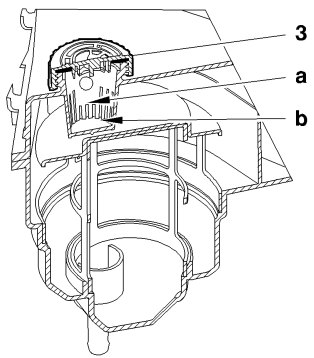
Identification.
Sequential control suspension switch.
A: Suspension **Hydractive 3**
B: Suspension **Hydractive 3 +**

Draining.

IMPERATIVE: Any LDS fluid that is collected must not be re-used.
Start the engine.

Place the suspension height control in the **"LOW"** position.
Stop the engine.
Raise and support the vehicle, wheels hanging.
WARNING: The LDS fluid reservoir is pressurised.
Open the cap of the **LDS** fluid reservoir.
Remove:
- The front RH wheel.
- The front RH splash-shield.

Release the clip **(1)**, using tool **[1]**.
Disengage the hose **(2)** from the **LDS** fluid reservoir.
Drain the **LDS** fluid reservoir.



B4BP01MC

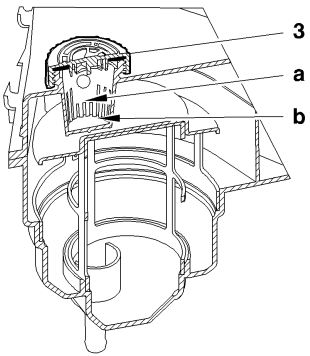
Filling.

Couple the hose **(2)**.
Refit:
- A new clip **(1)**.
- The front RH splash-shield.
- The front RH wheel.

Lower the vehicle.

Open the cap **(3)**.
Add **LDS** fluid to bring the level between the minimum mark **"b"** and the maximum mark **"a"**.

Bleeding.
Apply a pressure of **0,5 bars** in the **LDS** fluid reservoir *(using tool: **FACOM 920**)*.
Start the engine.
Wait for the vehicle height to stabilise.
Place the suspension height control in the **"HIGH"** position.
Place the suspension height control in the **"LOW"** position.
Move the steering in both directions, from lock to lock.
Stop the engine.
Check that the **LDS** fluid level is between the minimum mark **"b"** and the maximum mark **"a"**.



B4BP01MC

Checking and toppping up the LDS fluid level.

Start the engine.
Place the suspension height control in the **"LOW"** position.
Wait until the vehicle height is in the position required.
Stop the engine.
Connect the tool **[1]** or **[2]** to the vehicle diagnostic socket.
Switch on the ignition.

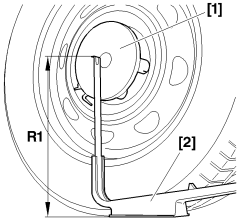
Successively select the following menus:
- Suspension.
- De-pressurising.

Follow the instructions given on the screen:
- Switch off the ignition, once there is de-pressurisation.
- Wait **1 minute**.

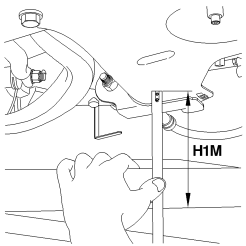
Disconnect the battery

NOTE: Non-compliance with this procedure re-pressurises the suspension circuit.
Remove the engine cover.

Open the cap **(3)**.
If the **LDS** fluid level is below the minmum mark **"b"**: Add **LDS** fluid up to the level.



B3CP06AC



B3CP06BC

Measurement of heights.

Measuring the wheel radius.

To determine the centre of the wheel, place the tool **[1]** on the heads of the wheel bolts.
Meaure the radius **R1** with the tool **[2]** *(distance between the ground and the centre of the wheel)*.

Measuring the front height H1M.

The front height **H1M** is measured between the ground and the subframe, at the rear of the front fixing yokes of the suspension triangle.

Calculating the front height H1C.

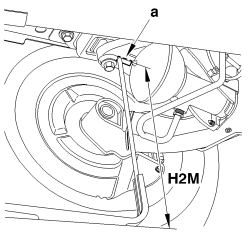
Except CARLSSON **: H1C = R1 - 140 mm**.

CARLSSON **: H1C = R1 - 155 mm.**

R1 = Radius of front wheel *(mm)*.

Compare:
- The value measured **H1M.**
- The value calculated **H1C.**

Adjust the front height if necessary.

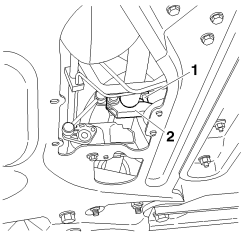


B3DP08HC

Measuring the rear height H2M.
The rear height **H2M** is measured between the ground and the zone **"a"** on the crossmember.
Calculating the rear height H2C.
Except CARLSSON : H2C = R2 + 68 mm.
CARLSSON : H2C = R2 + 64 mm.
R2 = Radius of rear wheel *(mm)*.
Compare:
- The value measured **H2M.**
- The value calculated **H2C.**

Adjust the rear height if necessary.

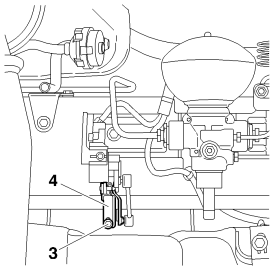
Adjusting the heights.
Adjustment using a diagnostic tool.
This adjustment is done when the heights measured are within the tolerance of the heights calculated.



B3CP06CC

Mechanical pre-adjustment.
This adjustment is done when the heights measured are not within the tolerance of the heights calculated ***(± 10 mm)***.
Front height:
- Slacken, by one turn, the screw **(1)** on the clip **(2)**.
- Retighten the screw by hand.
- To decrease the height, turn the clip **(2)** towards the front of the vehicle.
- To increase the height, turn the clip **(2)** towards the rear of the vehicle.

Repeat the operation until you obtain the calculated dimension **H1C *(± 10 mm)***.
Tighten the screw **(1)** to **0,6 m.daN**.
Adjust with diagnostic tool **[2]** or **[3]**.



B3DP08JC

Rear height:

Slacken, by one turn, the screw **(3)** on the clip **(4)**.

Retighten the screw by hand.

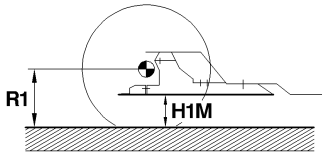
To decrease the height, turn the clip **(4)** towards the rear of the vehicle.

To increase the height, turn the clip **(4)** towards the front of the vehicle.

Repeat the operation until you obtain the calculated dimension **H2C** ***(± 10 mm)***.

Tighten the screw **(3)** to **0,6 m.daN**.

Adjust with diagnostic tool **[2]** or **[3]**.



B3BP164C

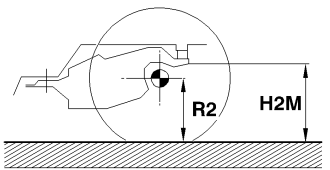
Adjusting of heights using diagnostic tool **[2]** or **[3]**.

Connect diagnostic tool **[2]** or **[3]** to the vehicle diagnostic socket.
Go into the menu:
- Adjustment of reference heights.
- Configuration.

NOTE: H1M = front measured height *(mm)*.

Except CARLSSON : Calculate **280 - (R1-H1M)** for the front.
CARLSSON : Calculate **(R1-H1M)** for the front.

Re-enter this value in the diagnostic tool.



B3BP165C

NOTE: H2M = rear measured height *(mm)*.

Calculate **(H2M-R2)** for the rear.
Re-enter this value in the diagnostic tool.
Wait for the correction of the vehicle height.

Measure the front height (H1M).
Check that: **H1C ± 2 mm**.

Measure the rear height (H2M).
Check that: **H2M = H2C ± 2 mm**.

Tools.

[1] Gauge for measuring the radius of wheels with 4 bolts **: 4300-T**
[2] Gauge for under-body height **: 2305-T**
[3] LEXIA station **: 4171-T**
[4] PROXIA station **: 4165-T**

(see chapter on axle geometry).

Preliminary operations.
Check the level of LDS fluid *(see corresponding operation)*.
Check the tyre pressures.
Place the vehicle on a **4-column lift**.
Place the vehicle in the normal position.
Release the parking brake.
Start the engine.

Checking by axle.
Lift the vehicle by hand.
Release when you cannot lift any further.
The vehicle descends, then re-ascends and stabilises.
Measure the height.
Push the vehicle down by hand.
Hold the vehicle in this position, release when it re-ascends.
The vehicle ascends, then re-descends and stabilises.
Measure trhe height.
Make an average of the **2 measurements**.

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	All types	09/04 >	625	SD 7 C16	135	SP 10
C8	All types except ES9J4	06/02 >	600	SD 6 V12		
	ES9J4			SD 7 V16		

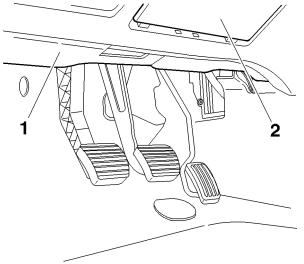
SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)	C5 - C8

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

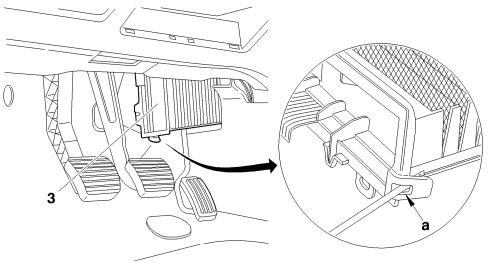


C5FP0C5C

Remove:

- The trim **(1)** under the dashboard *(driver's side)*.

- The cover **(2)**.



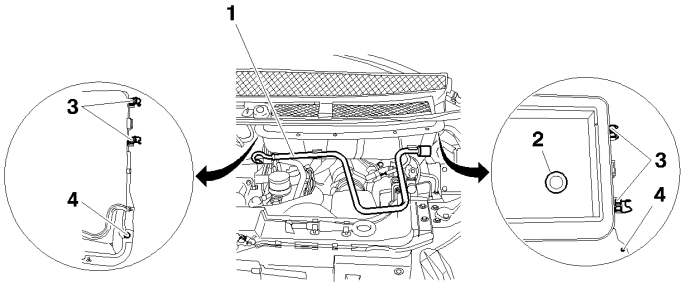
C5FP0C6D

Unclip at **«a»** and pull out the pollen filter **(3)**.

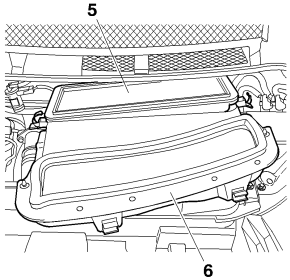
Remove the pollen filter **(3)**.

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.

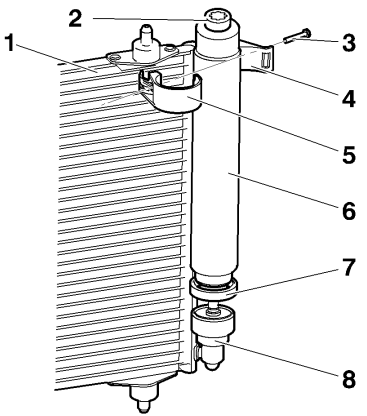
Remove the jack handle **(1)**.
Disconnect the evacuation pipe **(2)**.
Unlock at **(3)**, on the right and on the left.
Undo by a **1/4 turn** the screws **(4)**, on right and on left.
Pull the assembly **(6)** towards the outside.
Remove the pollen filter **(5)**.

Refitting.

Proceed in the opposite order to removal.

C5	SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)

Drying cartridge



C5HP16EC

Tools.

[1] Filling and recycling station **: MULLER - ECOTECHNICS**
[2] TORX adaptor **: 70 FACOM**
[3] After Sales kit **: *(bottle/skirt/bottle nozzle/grease/compressor oil)***
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)**.

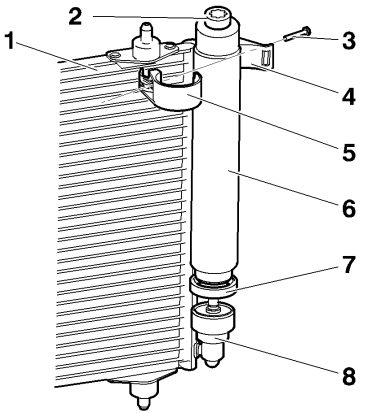
Removing the plastic bracket holding the reservoir **(6)**:

- 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]**.

SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a) — C5

Condenser with integral reservoir



C5HP16EC

Removing the reservoir **(6)** from the base **(8)**.

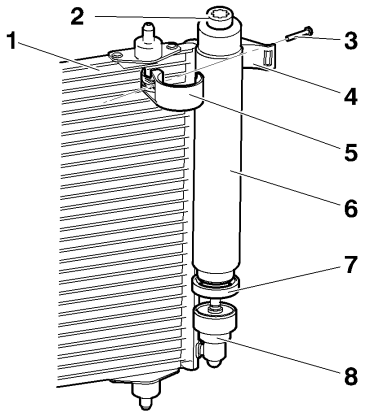
WARNING: This operation requires the greatest care, the base (8) should be kept clean prior to fitting the new reservoir.
Remove the reservoir **(6)** and the protection skirt **(7)**, avoiding **WITHOUT FAIL** any contact or collision with other items under the bonnet *(risk of impurities entering the 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.

C5	SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)

Condenser with integral reservoir (continued)



C5HP16EC

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 on the reservoir **(6)** manually, until the neck of the reservoir **(6)** is in contact with the bottom of the base **(8)**.

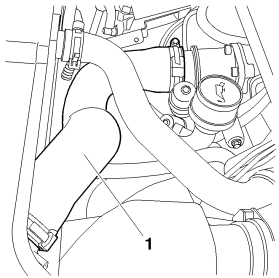
Tighten with a torque spanner and tool **[2]** at **(2)** to **1,3 ± 0,1 m.daN**.

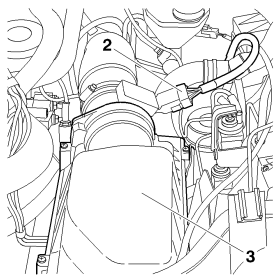
Fitting the plastic bracket *(new, from the Replacement Parts kit)*.

Proceed in the opposite order to removal, tighten the screw **(3)** to **0,15 m.daN**.

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)**.

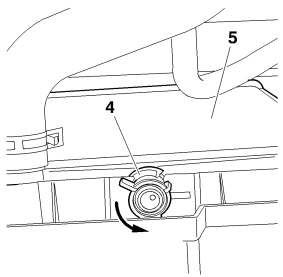
Remove the air filter **(3)**.

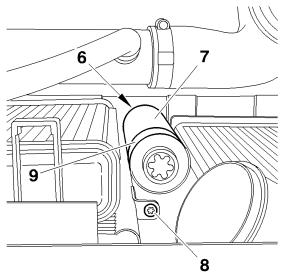
Turn the plastic pins **(4)** a **quarter turn**.

Move aside the condenser **(5)**.

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

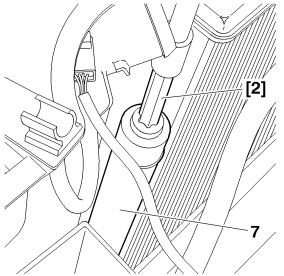
Remove the screw **(8)** of the clip **(9)**.





C8	SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)

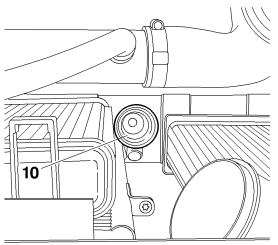
Removing-refitting the drying cartridge (continued)



Unscrew the reservoir **(7)** *(using adaptor **TORX 70 FACOM**).*

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

WARNING: Components must be kept clean prior to a new reservoir being fitted.



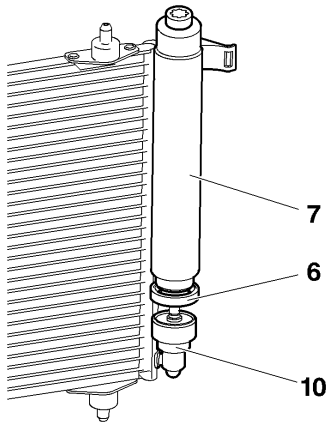
Plug the base **(10)**.

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

C5HP186C | C5HP187C

SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a) — C8

Removing-refitting the drying cartridge (continued)



C5HP188C

Refitting.
Note: Before fitting the reservoir **(7)**, make sure that the base is clean **(10)** *(if it is not, use paper towel to clean inside the base **(10)**)*.
Preparation of the new dryer reservoir.
Remove the protection plug from the neck of the reservoir **(7)**.
Leave the protection in place on the end of the reservoir **(7)** until fitting.
Treatments:
- Grease the threads of the reservoir **(7)** *(sachet of grease in the kit)*.
- Lubricate the two O-ring seals of the reservoir **(7)** *(sachet of oil in the kit)*.

Remove:
- The protection plug fitted at the time of removal, from the base **(10)**.
- The protection from the end of the reservoir **(7)**.

Engage the reservoir **(7)** with its skirt **(6)** on the threads of the base **(10)**.
Screw on the reservoir by hand **(7)**, until the neck of the reservoir **(7)** makes contact with the base **(10)**.
NOTE: Check that the bottom edge of the skirt **(6)** covers the base **(10)** all the way round.
Tighten the reservoir **(7)** ***(TORX 70 FACOM)***, Tighten to **1,4 ± 0,1 m.daN.**
Fit the plastic clip **(9)** and the screw **(8)** *(new, from exchange kit)*.
Complete the refitting, in reverse order to removal.
Proceed to:
- Recharge the circuit *(see corresponding operation)*.
- Check that the air conditioning functions correctly *(see corresponding operation)*.

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.

If changing one of the following components, add as below:

- A drying bottle	: **15 cc** of compressor oil.
- A condenser or an evaporator	: **20 cc** of compressor oil.
- A high pressure or low pressure pipe	: **5 cc** of compressor oil.
- A drying cartridge	: **15 cc** of compressor oil.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Outillage EXXOTest

Outillage (flash équipent & materiel)

Exxoclim : 2.4.2-1

Mode d'emploi : Voir notice constructeur

E5AP2N4D

Outillage

Clim test 2 : 4372-T

E5AP2N5D

Outillage VALEO

Procédure de l'essai

Contrôle

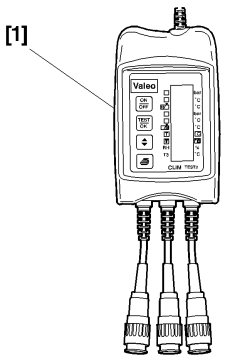
Mettre en place l'outil **CLIM TEST II** (selon notice du constructeur)

Opération préliminaires.

Fermer tous les aérateurs frontaux.
Démarer le moteur.
Ouvrir l'aérateur frontal gauche.
Positionner la commande du répartiteur d'air sur **"débit frontal".**
Activer la commande **"recirculation d'air".**
Activer la commande **"air conditioning".**

Position des commandes de air conditioning :
Commande de température sur froid maxi.
Commande de pulseur en position vitesse maximum.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



E5AP2ECC

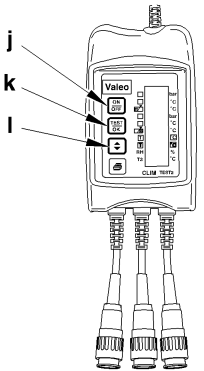
Tool.

[1] Clim test 2 VALEO **: 4372-T**

Checks.

Position the tool **[1]** *(depending on manufacturer's instructions)*.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



E5AP2FAC

Checking.

Position the tool **CLIM TEST II** *(according to the manufacturer's instructions)*.

Preliminary operations.

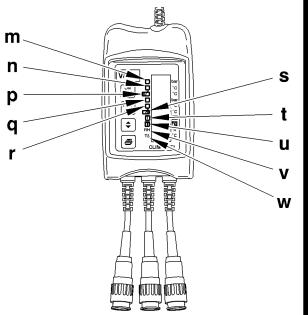
Close all the front air vents.
Start the engine.
Open the front LH air vent.
Position the air distribution control to **«frontal flow»**.
Activate the **«air recirculation»** control.
Activate the **«air conditioning»** control.

Positions of the air conditioning controls:

- Temperature control on maximum cold.
- Blower control in maximum speed position.

Let the air conditioning operate for **5 minutes**.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



E5AP2FBC

Interpretation of the measurements.

«m»: High pressure.
«n»: High temperature.
«p»: Under-cooling (SR).
«q»: Low pressure.
«r»: Low temperature.
«s»: Over-heating (SC).
«t»: Ambient air temperature.
«u»: Blown air temperature.
«v»: Humidity.
«w»: Temperature **T3.**

Under-cooling.

The under-cooling represents the difference between the condensation temperature and the aircon fluid temperature at the aircon condenser outlet.

The under-cooling gives the quantity of aircon fluid *(in the liquid state)* in the air conditioning circuit.

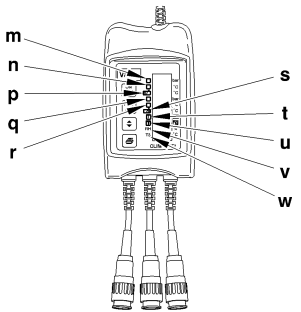
Values for under-cooling (SR).

Values «p»	Origins	Solutions
SR < 2°C	Lack of aircon fluid in the aircon condenser *(should be more than **150 grammes**)*	Add some aircon fluid
2°C < SR <4°C	Lack of aircon fluid in the aircon condenser *(should be around **100** to **150** grammes)*	
4°C < SR < 10°C/12°C	Correct quantity	
SR > 10°C/12°C	Excess aircon fluid in the aircon condenser	Remove some aircon fluid
SR > 15°C		

Blown air temperature «u».

The blown air temperature should be between **2°C** and **10°C.**

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



E5AP2FBC

Interpretation of the measurements.

«m»: High pressure.
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«r»: Low temperature.
«s»: Over-heating (SC).
«t»: Ambient air temperature.
«u»: Blown air temperature.
«v»: Humidity.
«w»: Temperature **T3.**

Over-heating (SC).

The over-heating represents the difference between the aircon fluid temperature at the evaporator outlet and the evaporation temperature.
The over-heating gives the quantity of aircon fluid *(in the liquid state)* in the air conditioning circuit

Values for over-heating (SC).

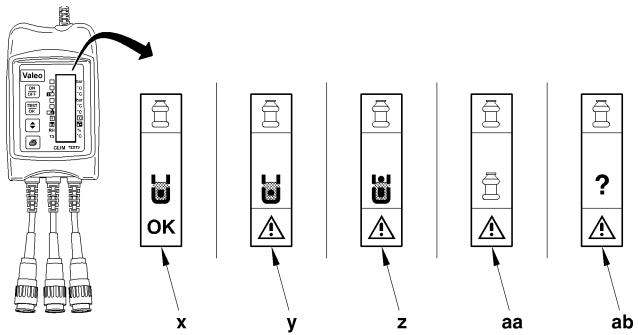
Values «p»	Origins	Solutions
2° < SC < 15°C	Correct quantity	
SC > 15°C	Lack of aircon fluid in the cooling circuit	Add some aircon fluid
SC < 2°C	Excess aircon fluid in the cooling circuit	Remove some aircon fluid

Blown air temperature «u».

The blown air temperature should be between **2°C** and **10°C.**

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Interpretation of the diagnosis



E5AP2FCD

«x» Check satisfactory
«y» Lack of aircon fluid in the aircon circuit
«z» Excess aircon fluid in the aircon circuit
«aa» Filtering and drying cartridge clogged
«ab» Other problems *(see table on previous page)*

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Aircon circuit diagnosis table

Principal problem	Symptom	Possible causes
The aircon compressor does not turn or stops suddenly	The clutch of the aircon compressor does not engage, or disengages suddenly	Aircon compressor clutch
		Lack of aircon fluid in the aircon circuit
		Aircon pressostat
		Aircon evaporator sensor
		Electrical circuit *(wiring, fuses, etc.)*
	The clutch of the aircon compressor remains engaged and stops suddenly	Auxiliaries drive belt
		Aircon compressor
		Filtering and drying cartridge
		Aircon pressure reducer
		Leak of aircon fluid
		Aircon compressor clutch

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Aircon circuit diagnosis table

Principal problem	Symptom	Possible causes
The aircon compressor makes an abnormal noise	The clutch of the aircon compressor remains engaged	Incorrect adjustment of the aircon compressor clutch
		Aircon fluid quantity
		Aircon compressor defective
		Lack of aircon fluid in the aircon circuit
		Aircon compressor valves defective
	The clutch of the aircon compressor remains engaged and slips	Aircon compressor clutch
		Auxiliaries drive belt

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Aircon circuit diagnosis table

Principal problem	Symptom	Possible causes
Abnormal levels of pressure	Low pressure and high pressure too high	Aircon pressure reducer defective
		Duct clogged
	Low pressure too high and high pressure too low	Aircon compressor seal defective
	Low pressure too low and high pressure too high too high	Aircon evaporator sensor defective
		Aircon pressure reducer jammed
		Filtering and drying cartridge obstructed
		Duct clogged
	Low pressure and high pressure too low	Duct clogged
		Aircon pressure reducer jammed
		Lack of aircon fluid in the aircon circuit
		Aircon compressor defective

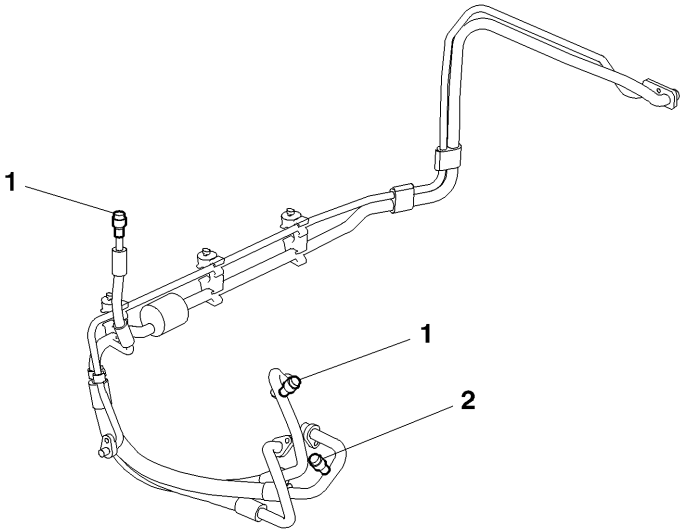
CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Aircon circuit diagnosis table

Principal problem	Symptom	Possible causes
Abnormal levels of pressure	Low pressure normal and high pressure too high	Presence of air in the aircon circuit
	Low pressure normal and high pressure too low	Aircon pressostat defective
		Evaporator sensor defective
	Low pressure too high and high pressure normal	Aircon pressure reducer jammed open
	Low pressure too low and high pressure normal	Filtering and drying cartridge saturated or clogged
		Aircon pressure reducer iced up
Air conditioning operating in back-up mode	Under cooling too weak	Lack of aircon fluid
	Under cooling excessive	Excess aircon fluid
		Presence of air in the aircon circuit
		Filtering and drying cartridge clogged

NOTE: In all cases, measure the excessive heating **(SC)** and the blow air temperature.

C5	AIR CONDITIONING SYSTEM (R 134.a)
Engines: All types	Evolution of the HP/LP filling valves



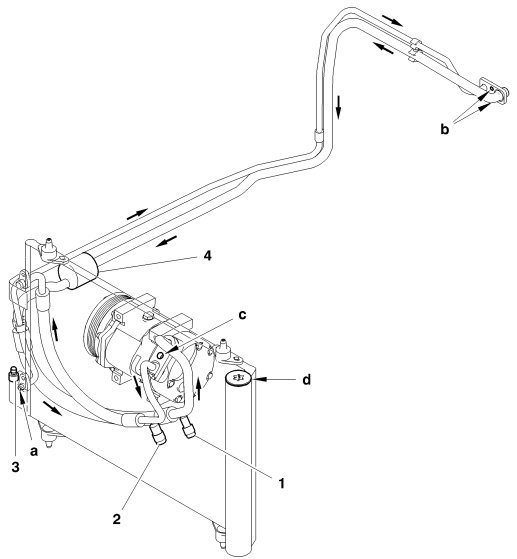
C5HP1A9D

(1) High pressure valve ***(two versions)***

(2) Low pressure valve ***(one version)***

AIR CONDITIONING SYSTEM (R 134.a) — C5

Engines: 6FZ - RFJ



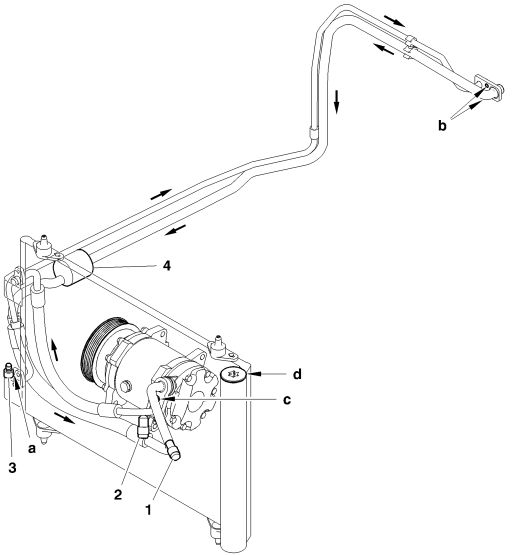
C5HP15QP

(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**

C5	AIR CONDITIONING SYSTEM (R 134.a)

Engine: XFX



C5HP15RP

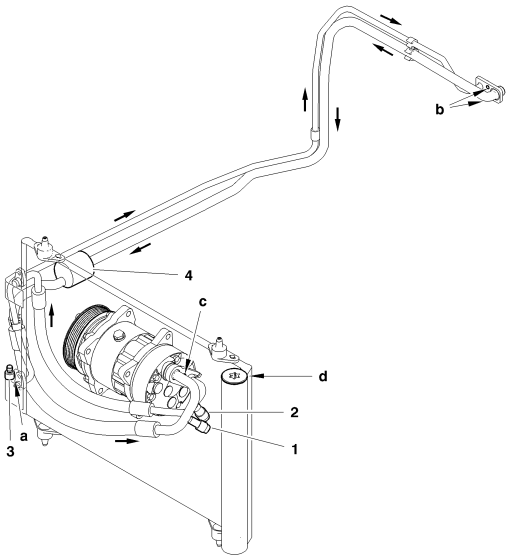
(1) High pressure valve
(2) Low pressure valve
(3) Pressostat
(4) Capacity

(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**

AIR CONDITIONING SYSTEM (R 134.a)

C5

Engines: RHL - RHR



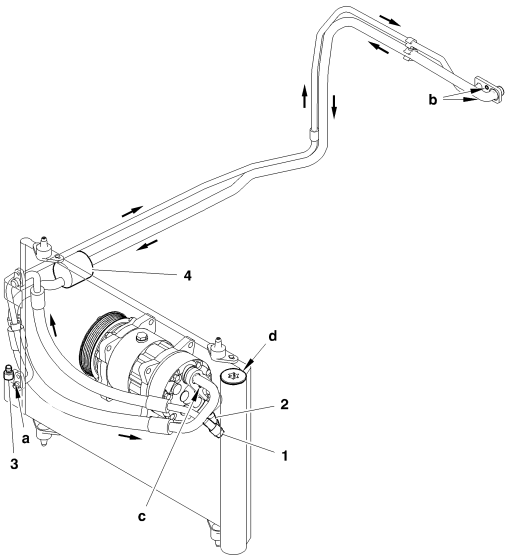
C5HP15SP

(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**

C5	AIR CONDITIONING SYSTEM (R 134.a)

Engine: 4HX



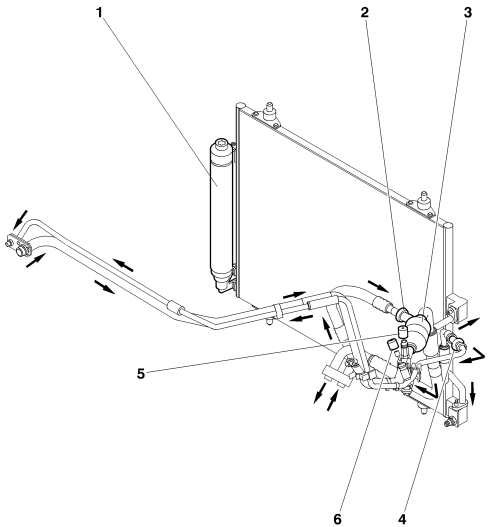
C5HP15TP

(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**

AIR CONDITIONING SYSTEM (R 134.a) — C8

Engines: RFN - 3FZ



C5HP17TP

1 - Drying cartridge

2 - Clickfit union *(tool **8005-T.C**)*

3 - Buffer capacity

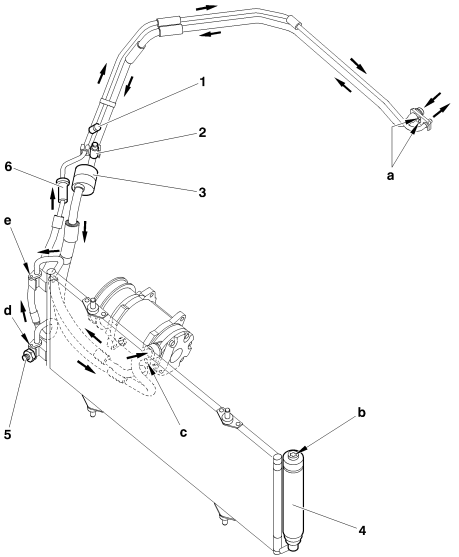
4 - Clickfit union *(tool **8005-T.A**)*

5 - High pressure valve

6 - Low pressure valve

C8	AIR CONDITIONING SYSTEM (R 134.a)

Engine: XFW



C5HP18TP

1 - High pressure valve

2 - Low pressure valve

3 - Buffer capacity

4 - Drying cartridge

5 - Pressostat

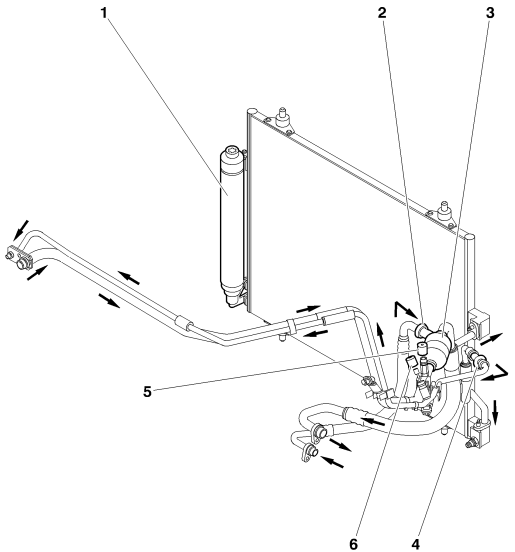
6 - Clickfit union *(tool **8005-T.C**)*

Tightening torques (m.daN).

a	**: 0,8**
b	**: 1,4**
c	
d	
e	**: 0,8**

AIR CONDITIONING SYSTEM (R 134.a) — C8

Engines: RHM - RHT - RHW - 4HW



C5HP17UP

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