

CORRESPONDENCE TABLE FOR PETROL ENGINES									
Engine families	TU		ET	TU		EW			
	1	3		5		7	10		
	JP		J4	JP +	JP4	J4	A	J4	J4S
	1.1i	1.4i	1.4i 16V	1.6i	1.6i 16V	1.8i 16V	2.0i	2.0i 16V	
Engine types	HFX	KFW	KFU	NFV	NFU	6FZ	RFJ	RFN	RFK
C4			X		X		X	X	X
XSARA		X			X			X	
XSARA PICASSO				X		X		X	
BERLINGO	X	X			X				

CORRESPONDENCE TABLE FOR DIESEL ENGINES									
Engine families	DV					DW			
	4		6			8	10		
	TD		TED4		ATED4	B	TD	ATED	BTED4
	1.4 HDi		1.6 16V HDi			1.9D	2.0 HDi		2.0 16V HDi
Engine types	8HX	8HZ	9HY	9HZ	9HX	WJY	RHY	RHZ	RHR
C4			X	X	X				X
XSARA	X	X				X	X	X	
XSARA PICASSO			X	X			X		
BERLINGO					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**.

PRIVATE CARS
C4-XSARA-XSARA PICASSO
BERLINGO

«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».



PRESENTATION

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

The handbook is divided into groups representing the main functions:

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

In each section, the vehicles are dealt with in the following order: C4 - XSARA - XSARA PICASSO - BERLINGO and all models where applicable.

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

IMPORTANT

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

- INSUFFICIENT INFORMATION
- SUPERFLUOUS INFORMATION
- NEED FOR MORE DETAILS

Please send your comments and suggestions to:

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

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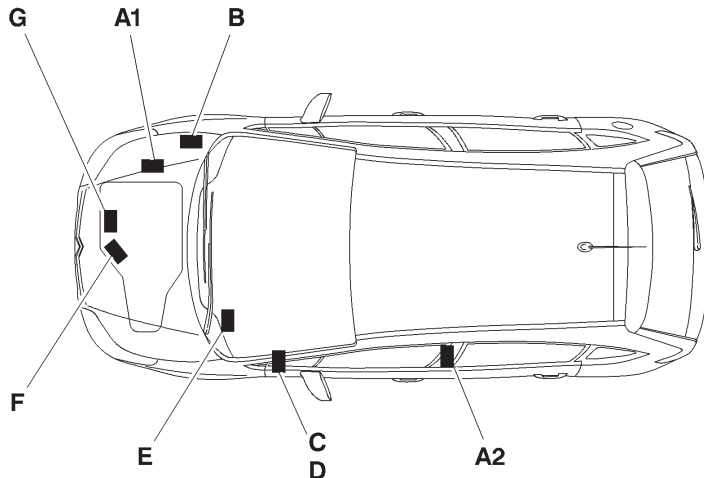
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IDENTIFICATION OF THE VEHICLE

C4



A - Manufacturer's name plate

A1 - Front RH chassis member = All versions except **CITROËN C4 Coupé EW10J4S** (right hand drive).

A2 - LH centre pillar = **CITROËN C4 coupé EW10J4S** (right hand drive).

B - Cold stamp

(cold stamp engraved on the bodywork).

C - AS/RP No. and RP paint code

(on the front pillar on driver's side).

D - Tyre pressures and tyre type

(on the front pillar on driver's side).

E - Serial number on bodywork.

F - Gearbox ident. reference - Factory serial no.

G - Engine legislation type - Factory serial no.

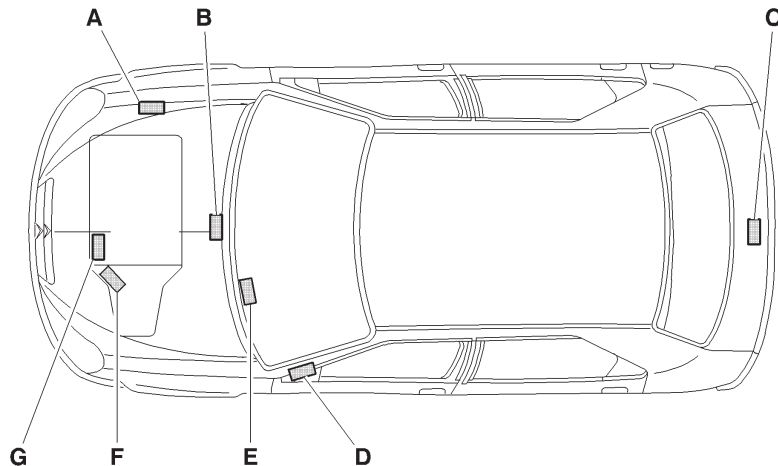
E1AP0EWD

GENERAL

C4			IDENTIFICATION OF THE VEHICLE									
Type approval												
Structure			Version (4)									
LA KFUC	L	Family (1)		Depollution levels								
	A	Bodywork (2)		L3	L4	L5	US	Others	K	Alcohol		
	KFU	Engine (3)		W3			83/87		K'	L3/L4	L5	
	C	Version (4)		Manual 5-speed gearbox	A	B	C	P	V	5	8	1
	/IF	Variant (5)		Manual 4-speed gearbox		E	F	R	W	6	9	2
Family (1)			Manual 6-speed gearbox		G	H	S	X			3	
L	C4		Automatic 6-speed gearbox		D	J	N				U	
Body shape (2)			Axle and/or gearbox gears		K	L	T	Y	7	0	4	
A	3-door saloon		Other possible combinations		M							
C	5-door saloon		No gearbox	Z								
G	3-door saloon not convertible from van											
R	5-door saloon not convertible from van											
Engine (3)			Variants (5)									
KFU	1.4i 16V	ET3J4	Entreprise convertible	T								
NFU	1.6i 16V	TU5JP4	Integral alternator-starter (ADIN)	AD								
RFJ	2.0i 16V	EW10A	Without FAP	SF								
RFN		EW10J4	Fiscal incentives	IF								
RFK		EW10J4S	Piloted manual gearbox	P								
9HY	1.6 16V HDi	DV6TED4	Downgraded depollution	D								
9HZ			LPG dual fuel	GL								
9HX			DV6ATED4	CNG dual fuel	GN							
RHR	2.0 16V HDi	DW10BTED4	STT2 (Stop and start)	S								

IDENTIFICATION OF THE VEHICLE

XSARA



A - Manufacturer's name plate (estate).

B - Chassis stamp, cold stamp.

C - Manufacturer's name plate (saloon).

D - Label:
(label affixed to the front pillar on driver's side)

- Tyre pressures.
- RP organisation no.
- Paint code.

E - Serial number (visible through the windscreen).

F - Engine legislation type - Factory serial no.

G - Gearbox ident. reference - Factory serial no.

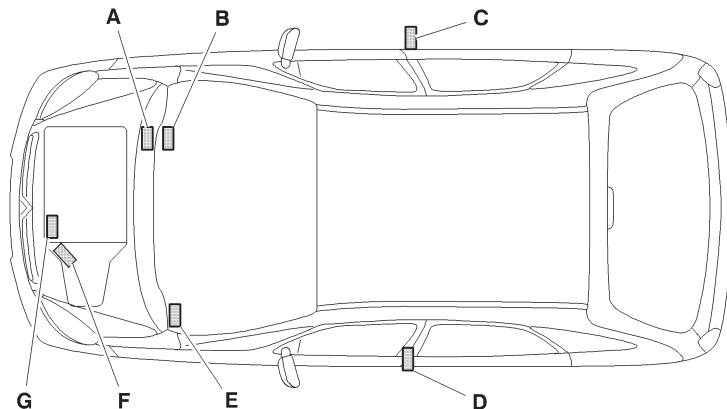
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GENERAL

XSARA			IDENTIFICATION OF THE VEHICLE									
Type approval												
Structure			Version (4)									
N2 RFN1/IF	N	Family (1)		Depollution levels								
	2	Bodywork (2)		15.04	Spécif US	93/59	96/69	98/69A	98/69B	Alcohol		
	RFN	Engine (3)		K	≠ CEE	L/W2	L3/W3	L4	L5	L3/L4		
	1	Version (4)		Manual 4-speed gearbox				V				
	/IF	Variant (5)		Manual 5-speed gearbox	G	H	E	F	B	1	K	
Family (1)			Manual 6-speed gearbox									
N	XSARA		Automatic 3-speed gearbox	T			D	L	2			
Body shape (2)			Automatic 4-speed gearbox	U	R		M	N	3	4		
2	Estate		Axle and/or gearbox gears	W	S	J	C	P	9			
			Manual 5-speed gearbox Mercosur/Iran	X			Y		A	5		
			No gearbox	Z								
Engine (3)			Variants (5)									
KFW	1.4i	TU3JP	Entreprise convertible	T								
NFU	1.6i 16V	TU5JP4	Integral alternator-starter (ADIN)	AD								
RFN	2.0i 16V	EW10J4	Without FAP	SF								
8HZ	1.4 HDi	DV4TD	Fiscal incentives	IF								
8HY	1.4 16V HDi	DV4TED4	Piloted manual gearbox	P								
WJY	1.9D	DW8B	Downgraded depollution	D (car or van not convertible)				TD (van convertible)				
RHY	2.0 HDi	DW10TD	LPG dual fuel	GPL (cylindrical tank)				GL (ring-shaped tank)				
RHZ		DW10ATED	STT2 (stop and start)	S								

IDENTIFICATION OF THE VEHICLE

XSARA PICASSO



- A** - Chassis stamp
(cold stamp on bodywork).
- B** - Chassis no. reminder
(label located at bottom of windscreen right hand side).
- C** - Manufacturer's data plate
(located at bottom of RH central pillar).
- D** - Label:
(located on front LH door inner panel)
 - Tyre pressures.
 - Tyre identification.
 - Spare wheel identification.
- E** - Label:
(located on fuse box cover)
 - Factory code.
 - A-S / RP N°.
 - Paint code.
- F** - Gearbox identification ref.
- G** - Engine legislation type - Factory serial number.

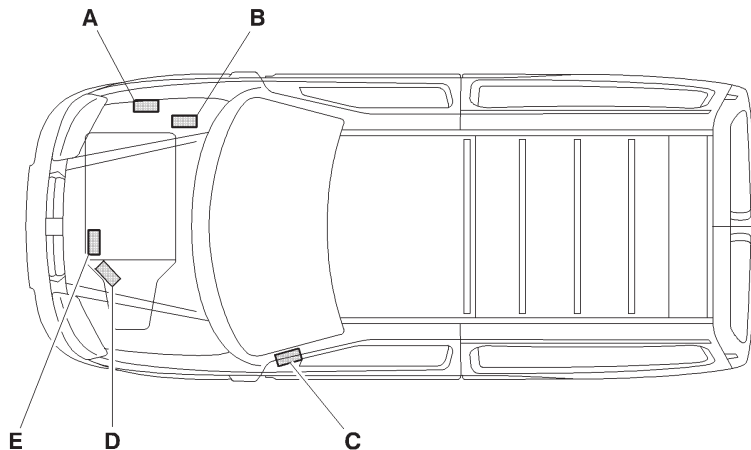
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GENERAL

XSARA PICASSO			IDENTIFICATION OF THE VEHICLE									
Type approval												
Structure			Version (4)									
CH 6FZC/IF	C	Family (1)		Depollution levels								
	H	Bodywork (2)		L3	L4	L5	US	Others	K	Alcohol		
	6FZ	Engine (3)		W3			83/87		K'	L3/L4	L5	
	C	Version (4)		Manual 5-speed gearbox	A	B	C	P	V	5	8	1
	/IF	Variant (5)		Manual 4-speed gearbox		E	F	R	W	6	9	2
Family (1)			Manual 6-speed gearbox		G	H	S	X			3	
C	XSARA PICASSO		Automatic 6-speed gearbox		D	J	N				U	
Body shape (2)			Axle and/or gearbox gears		K	L	T	Y	7	0	4	
H	Monoshell		Other possible combinations		M							
			No gearbox	Z								
Engine (3)			Variants (5)									
NFV	1.6i	TU5JP	Entreprise convertible	T								
6FZ	1.8i 16V	EW7J4	Integral alternator-starter (ADIN)	AD								
RFN	2.0i 16V	EW10J4	Without FAP	SF								
9HZ	1.6 16V HDi	DV6TED4	Fiscal incentives	IF								
9HY			Piloted manual gearbox	P								
RHY	2.0 HDi	DW10TD	Downgraded depollution	D (car or van not convertible)				TD (van convertible)				
			LPG dual fuel	GPL (cylindrical tank)				GL (ring-shaped tank)				
			STT2 (stop and start)	S								

IDENTIFICATION OF THE VEHICLE

BERLINGO



A - Chassis stamp, cold stamp.

B - Manufacturer's vehicle plate.

C - Label

- RPO No.
- Paint colour code.
- Tyre pressures.

D - Gearbox ident. reference - Factory serial no.

E - Engine legislation type - Factory serial no.

E1AP0AMD

GENERAL

BERLINGO			IDENTIFICATION OF THE VEHICLE									
Type approval												
Structure			Version (4)									
GJ NFUC/IF	G	Family (1)		Depollution levels								
	J	Bodywork (2)		L3	L4	Euro IV	US	Others	K	Alcohol		
	NFU	Engine (3)		W3			83/87		K'	L3/L4	Euro IV	
	C	Version (4)		Manual 5-speed gearbox	A	B	C	P	V	5	8	1
	/IF	Variant (5)		Manual 4-speed gearbox		E	F	R	W	6	9	2
Family (1)			Manual 6-speed gearbox		G	H	S	X			3	
			Automatic 6-speed gearbox		D	J	N				U	
Body shape (2)			Axle and/or gearbox gears		K	L	T	Y	7	0	4	
			Other possible combinations		M							
			No gearbox	Z								
Engine (3)			Variants (5)									
KFW	1.4i	TU3JP	2 sliding side doors standard for 800 Kg WJY			PLC	Van Turkey			TR		
NFU	1.6i 16V	TU5JP4	Multi-function roof standard for Car WJY			PMF	Van Spain			ES		
WJY	1.9D	DW8B	Without FAP			SF	Car/Van 5-seater			PL		
RHY	2.0 HDi	DW10TD	Fiscal incentives			IF						
			4x4 DANGEL			DGL						
			Downgraded depollution			D						
			Bi-carburation GPL			GL						
			Bi-carburation GNV			GN						
			STT2 (stop and start)			S						

IMPERATIVE: All these operations are to be performed following a reconnection of the battery.

Antiscanning function.

It is necessary to wait **1 minute** after the battery has been disconnected in order to be able to start the vehicle.

Electric windows.

It may be necessary to re-initialise the sequential and anti-pinch functions.

NOTE: If the window is open at the time the battery is reconnected, action the window switch several times to close it, then re-initialise.

Open the window fully.

Action and release the window switch until the window is completely closed.

NOTE: This operation has to be carried out on each electric window.

Multifunction screen.

It is necessary to adjust the date, time and outside temperature.

Reconfigure the personalisation menu of the multifunction screen.

Radio.

Reprogramme the radio stations.

Telematic unit (*radiotelephone RT3*).

Reprogramme the radio stations.

Warning: the vehicle has to be in the open air (*on switching on the ignition, the ECU searches for satellites*).

Reprogramme the customer parameters.

CAPACITIES (in litres)

Draining methods

Oil capacities are defined according to the following methods

Draining of the engine lubrication system by **GRAVITY**

Place the vehicle on horizontal ground (*in the high position if hydropneumatic suspension*).

The engine should be hot (*oil temperature **80°C***).

Drain the sump by gravity.

Remove the oil filter cartridge (*time for draining and drip-drip = **15 minutes** approx.*).

Refit the cap with a new seal.

Refit a new oil filter cartridge.

Refill the engine with oil (*see table for oil capacity*).

Start the engine to fill the oil filter cartridge.

Stop the engine (*allow to stabilise for 5 minutes*).

Draining of the engine lubrication system by **SUCTION**

Place the vehicle on horizontal ground (*in the high position if hydropneumatic suspension*).

The engine should be hot (*oil temperature **80°C***).

Remove the oil by suction through the dipstick tube.

Remove the oil filter cartridge.

Maintain the suction of oil in the sump (***15 minutes** approx.*).

Refit a new oil filter cartridge.

Refill the engine with oil (*see table for oil capacity*).

Start the engine to fill the oil filter cartridge.

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)					C4
	Petrol				
	1.4i 16V	1.6i 16V	2.0i 16V	2.0i	2.0i 16V
		AUTO.		AUTO.	
Engine type	KFU	NFU	RFN	RFJ	RFK
Oil capacity with change of cartridge	3,75	3,25	4,25	5	5,5
Between Min. and Max.	1,2	1,5	1,7	1,7	1,5
Manual gearbox	2 ± 0,15		2		2
Automatic gearbox		(1)		(1)	
After draining					
Braking circuit	With ESP = 0,85 Without ESP = 0,75				
Cooling circuit					
Manual gearbox	5,8	6,2	6,2 (2) - 6,6 (3)	6,2 (2) - 6,6 (3)	6,6
Automatic gearbox		6,7		6,8 (2) - 6,9 (3)	
Steering electro-pump reservoir	0,85				
Fuel tank	60				

IMPERATIVE: Systematically check the oil level using the oil dipstick.
 (1) = The gearbox is lubricated for life (as a guide, the TOTAL capacity is 5.85 litres after draining 3 litres).
 (2) = Temperature 37°C. (3) = Temperature 45°C.

C4	CAPACITIES (in litres)			
	Diesel			
	1.6 HDi 16V			2.0 HDi 16V
Engine type	9HX	9HY	9HZ	RHR
Oil capacity with change of cartridge	3,75			5,25
Between Min. and Max.	1,55			1,9
Manual gearbox	2			2,7
Braking circuit	With ESP = 0,85		Without ESP = 0,75	
Cooling circuit	6,5			8,1
Additive reservoir			2,5	2,5
Steering electro-pump reservoir	0,85			
Fuel tank	60			
<p>NOTE: (*) = Version with additional heating.</p> <p>IMPERATIVE: <u>Systematically check the oil level using the oil dipstick.</u></p>				

CAPACITIES (in litres)					XSARA	
	Petrol					
	1.4i	1.6i 16V		2.0i 16V		
		AUTO.		AUTO.		
Engine type	KFW	NFU		RFN		
Engine with filter element	3	3,25		4,25		
Between Min. and Max.	1,5	1,5		1,7		
5-speed gearbox	2			1,9		
Automatic gearbox			6		6	
After draining			3		3	
Hydraulic or brake circuit	With ABS = 0,50 Without ABS = 0,55					
Cooling circuit	7 6,5 (1)	6,5				
Fuel tank	54					
ESSENTIAL: <u>Systematically check the oil level using the oil dipstick.</u>						

XSARA		CAPACITIES (in litres)							
		Diesel							
		1.4 HDi		1.4 16V HDi		1.9D		2.0 HDi	
		→ RPO 9884	RPO 9885 →	→ RPO 9884	RPO 9885 →	(1)	(2)		AUTO.
Engine type		8HX 8HZ	8HX 8HZ	8HY		WJY	WJY	RHY	RHZ
Engine with filter element		3,75				4,5	3,75	4,5	
Between Min. and Max.		1,8	1,5	1,8	1,5	1,2	1,8	1,4	
5-speed gearbox		2				1,8			
Automatic gearbox									8,3
After draining									5,3
Hydraulic or brake circuit		With ABS = 0,50				Without ABS = 0,55			
Cooling circuit		5,7				9		8,5	
Fuel tank		54							
<p>(1) ==> RPO 9337 (manual dipstick with two twists).</p> <p>(2) = RPO 9338 → (manual dipstick without twists but with a sphere).</p> <p>ESSENTIAL: <u>Systematically check the oil level using the oil dipstick.</u></p>									

CAPACITIES (in litres)					XSARA PICASSO	
	Petrol			Diesel		
	1.6i	1.8i 16 V	2.0i 16V	1.6 16V HDi		2.0 HDi
			AUTO.			
Engine type	NFV	6FZ	RFN	9HZ	9HY	RHY
Engine with filter element filtrante	3	4,25		3,75		4,5
Between Min. and Max.	1,5	1,7		1,55 (3)		1,4
5-speed gearbox	1,8					1,8
Automatic gearbox			6			
After draining			3			
Hydraulic or brake circuit	0,58 litres					
Cooling circuit	5,8 (1) and (2)	6,5 (1) and (2)		11		11 (1) and (2)
Fuel tank capacity	55			60		
<div>(1) = With air conditioning. (2) = Without air conditioning. (3) = RPO 9884 → = Restyled XSARA PICASSO. ESSENTIAL: Systematically check the oil level using the oil dipstick.</div>						

BERLINGO	CAPACITIES (in litres)					
	Petrol			Diesel		
	1.1i	1.4i	1.6i 16V	1.4i 16V HDi	1.9 D (1)	2.0 HDi
Engine type	HFX	KFW	NFU	9HX	WJY	RHY
Engine with filter element	3		3,25	3,75	4,5	
Between Min. and Max.	1,5			1,55	1,2	1,4
5-speed gearbox	2		1,8			
Hydraulic or brake circuit	With ABS = 0,45 - Without ABS = 0,36					
Cooling circuit	8				9	
Fuel tank capacity	55			60		
<div>(1) = Manual dipstick without twists but with a sphere. ESSENTIAL: <u>Systematically check the oil level using the oil dipstick.</u></div>						

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*):

Oils specifically for diesel engines:

	S.A.E. norms	ACEA norms	API norms		S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA 9000 TOTAL QUARTZ 9000	5W40	A3/B3/ B4	SL/CF	TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	10W40	B3	CF
TOTAL ACTIVA FUTUR 9000 (*) TOTAL QUARTZ FUTUR 9000 (*)	5W30	A5/B5		TOTAL ACTIVA DIESEL 7000	15W50		
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						

GENERAL

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

°F ↑ °C

+140 +60
+122 +50
+104 +40
+86 +30
+68 +20
+50 +10
+32 0
-4 -10
-14 -20
-22 -30



0W-40

5W-30

5W-40

10W-40

15W-50

E4AP006D

GENERAL

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	9000 5W40	7000 15W50 7000 10W40	7000 15W50 7000 10W50
Guadeloupe			
Saint martin			
Reunion			
Martinique			
Guyana			
Tahiti			
Mauritius			
Mayotte			
(*) Blended oils for all engines, giving fuel economy.			

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
EUROPE	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			
ENGINE OILS			
EUROPE	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.			

GENERAL

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
EUROPE	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			
Ireland		7000 10W40	
Iceland			
Latvia		7000 10W40 9000 0W40	
Lithuania			
Macedonia		7000 10W40	
(*) Blended oils for all engines, giving fuel economy.			

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
EUROPE	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			
ENGINE OILS			
EUROPE	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		7000 10W40	
Switzerland			
Turkey		7000 10W40 9000 15W50 9000 0W40	
(*) Blended oils for all engines, giving fuel economy.			

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
EUROPE	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			
ENGINE OILS			
OCEANIA	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			
ENGINE OILS			
CENTRAL AND SOUTH AMERICA	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			

GENERAL

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
SOUTH-EAST ASIA	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			
ENGINE OILS			
SOUTH-EAST ASIA	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			
Vietnam		7000 15W50	
(*) Blended oils for all engines, giving fuel economy.			

GENERAL

LUBRICANTS - TOTAL recommended oils			
ENGINE OILS			
MIDDLE EAST	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

GENERAL

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
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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 Lubricating Grease Institute.

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.

ENGINE SPECIFICATIONS

	Petrol engines								
	All Types								
	TU1JP	TU3JP	ET3J4	TU5JP+	TU5JP4	EW7J4	EW10A	EW10J4	EW10J4S
Engine type	HFX	KFW	KFU	NFV	NFU	6FZ	RFJ	RFN	RFK
Cubic capacity (cc)	1124	1360		1587		1749	1997		
Bore/stroke	72/69	75/77		78,5/82		82,7/81,4	85/88		
Compression ratio	10,5/1		11/1	10,5/1	11/1	10,8/1	11/1	10,8/1	11/1
Power ISO or EEC (KW - rpm)	44,1-5500	55-5500	65-5250	70-5700	80-5800	85-5500	103-6000	100-6000	13-7000
Torque ISO or EEC (m.daN - rpm)	94-3500	12-2800	13,3-4250	13,5-3000	14,7-4000	16-4000	20-4000	19-4100	20,2-4750

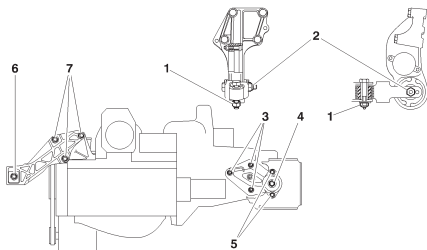
ENGINE SPECIFICATIONS

	Diesel engines								
	All Types								
	DV4TD		DV6TED4		DV6 ATED4	DW8B	DW10TD	DW10AT ED	DW10 BTED4
Engine type	8HX	8HZ	9HY	9HZ	9HX	WJY	RHY	RHZ	RHR
Cubic capacity (cc)	1398		1560			1868	1997		
Bore/stroke	73,7/82		75/88,3			82,2/88	85/88		
Compression ratio	17,9/1		18/1			23/1	17,6/1		18/1
Power ISO or EEC (KW - rpm)	50-4000		80-4000		66,2-4000	51-4600	66-4000	80-4000	100-4000
Torque ISO or EEC (m.daN - rpm)	15-1750	16-2000	24-1750		21,5-1750	12,5-2500	20,5-1900	25-1750	32-2000

XSARA

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: KFW



B1BP1EYD

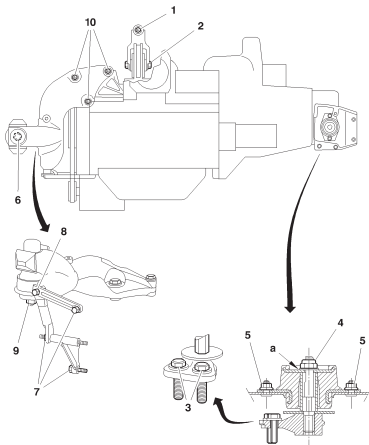
Power unit

1		$5 \pm 0,5$
2		$6 \pm 0,6$
3		$2,5 \pm 0,2$
4		$6,5 \pm 0,6$
5		$2,5 \pm 0,2$
6		$4,5 \pm 0,4$
7		$4,5 \pm 0,4$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

XSARA PICASSO

Engine: NFV



Power unit

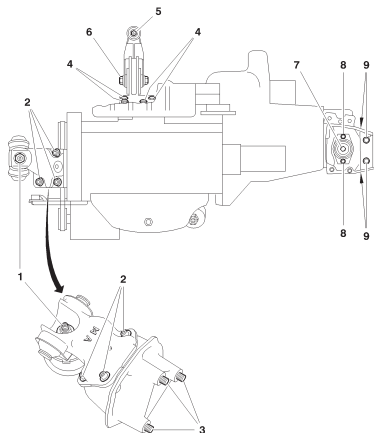
1		$5,5 \pm 0,5$
2		$5,5 \pm 0,5$
3		$6,5 \pm 0,6$
4		$6,5 \pm 0,6$
5		$2,2 \pm 0,2$
6		$3,3 \pm 0,3$
7		$2,7 \pm 0,2$
8		$4,6 \pm 0,4$
9		$4,5 \pm 0,4$
10		$4,5 \pm 0,4$

B1BP21HP

XSARA

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: NFU



B1BP2GGP

Power unit

1		4,5 ± 0,4
2		6 ± 0,6
3		4,5 ± 0,4
4		4 ± 0,4
5		6 ± 0,6
6		5,4 ± 0,8
7		6,5 ± 0,6
8		3 ± 0,3
9		4,5 ± 0,6

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)				XSARA - XSARA PICASSO	
		Tightening torques (m.daN)			
Engine type		KFW	NFV	NFU	
Crankshaft bearing screws	Pre-tightening Angular tightening	2 ± 0,2 45°	2 ± 0,2 50° ± 5°		
Connecting rod screws	Tightening	3,8 ± 0,4			
Flywheel screw	Tightening	6,5 ± 0,7			
Crankshaft pinion screw	Tightening	10 ± 1			
Camshaft pulley screw	Tightening	8 ± 0,8			
Camshaft hubs			8 ± 0,8		
Camshaft hub screw	Tightening		1 ± 0,1		

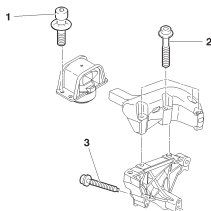
C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Suspensions for engine/gearbox assembly

Engine: KFU

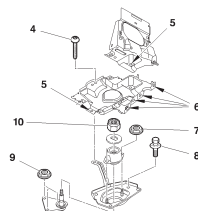
Gearbox on RH side



B1BP36BD

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

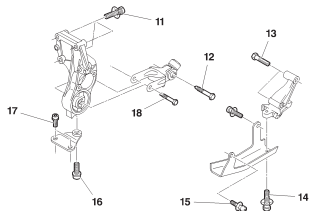
Gearbox on LH side



B1BP36CD

4	$1 \pm 0,2$
5	$1,8 \pm 0,2$
6	$2 \pm 0,2$
7	$3 \pm 0,3$
8	$1,9 \pm 0,1$
9	$2,5 \pm 0,2$
10	$6,5 \pm 0,6$

Gearbox under the engine



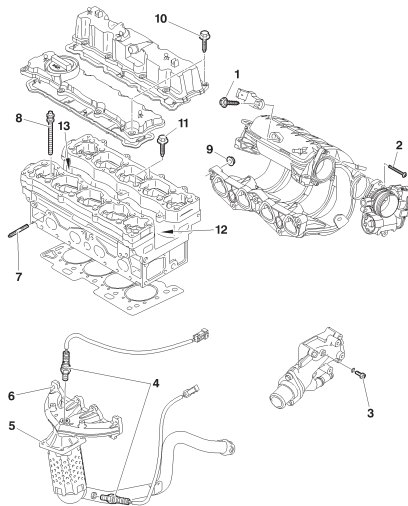
B1BP36DD

11	$4 \pm 0,4$
12	$4 \pm 0,4$
13	$4 \pm 0,4$
14	$4 \pm 0,4$
15	$4 \pm 0,4$
16	$2 \pm 0,2$
17	$4 \pm 0,4$
18	$5,4 \pm 0,5$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: KFU



B1BP368P

Cylinder head		
1	Inlet air pressure sensor	0,8 ± 0,1
2	Motorised butterfly housing fixing screws	0,8 ± 0,2
3	Coolant outlet housing screw	0,8 ± 0,2
4	Oxygen sensor	4,7 ± 0,7
5	Catalytic converter fixing nuts (*)	
	Pre-tightening	2 ± 0,2
	Tightening	4 ± 0,4
	Check the tightening	4 ± 0,4
6	Exhaust manifold nuts	1,8 ± 0,2
7	Exhaust manifold fixing stud	0,8 ± 0,1
8	Cylinder head bolts (*)	
	Pre-tightening	1,5 ± 0,2
	Tightening	2,5 ± 0,2
	Angular tightening	200° ± 5°
9	Inlet manifold screws	0,8 ± 0,1
10	Valve cover screws (*)	0,9 ± 0,1
11	Camshaft bearing cap screws (*)	1 ± 0,1
12	Sparking plugs	2,25 ± 0,2
13	Camshaft dephaser electrovalve fixing screws (VVT)	0,8 ± 0,2

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

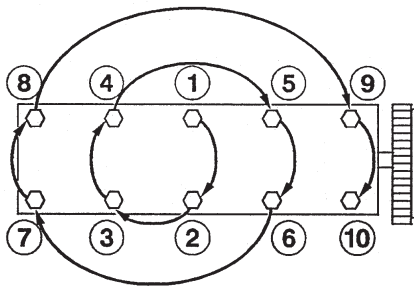
Engine: KFU

Cylinder head

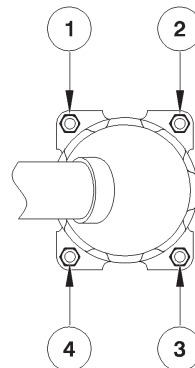
IMPERATIVE: Respect the tightening sequence.

- (8) Cylinder head bolts
 (10) Valve cover screws
 (11) Camshaft bearing cap screws

- (5) Catalytic converter fixing nuts



B1DP05BC

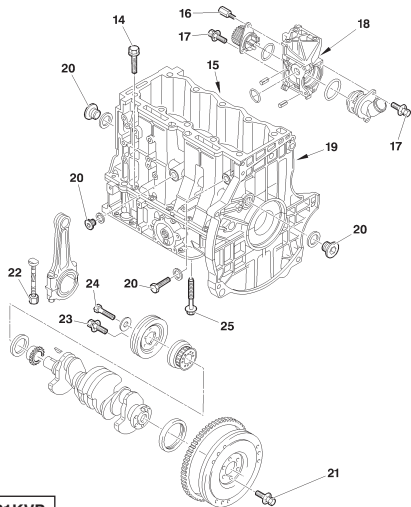


B1JP063C

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: KFU



B1DP1KVP

Cylinder block		
14	Crankshaft bearing cap sealing screw (*)	$0,8 \pm 0,1$
15	Knock sensor	$2 \pm 0,4$
16	Coolant pump stud screw	$1,6 \pm 0,2$
17	Coolant pump cover screw	$0,6 \pm 0,1$
18	Screw of coolant pump body on cylinder block	$6,5 \pm 0,6$
19	Cooling circuit plug	$3 \pm 0,5$
20	Oil circuit plugs	$3 \pm 0,5$
21	Flywheel screw (*)	$6,7 \pm 0,6$
22	Con rod cap fixing nut	$3,7 \pm 0,4$
23	Accessories drive belt pulley screw	$0,8 \pm 0,2$
24	Crankshaft pinion screw Tightening Angular tightening	$4 \pm 0,4$ $45^\circ \pm 4^\circ$
25	Crankshaft bearing cap cover screw (*) Tightening Angular tightening	2 $44^\circ \pm 4^\circ$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

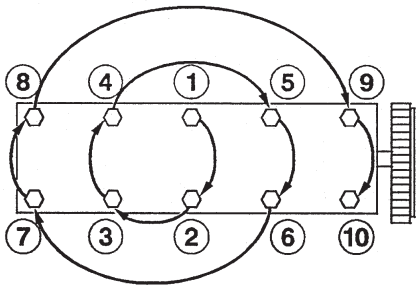
Engine: KFU

Cylinder block

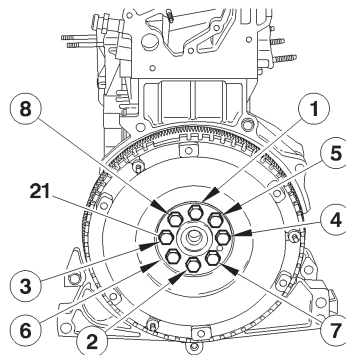
IMPERATIVE: Respect the tightening sequence.

- (14) Crankshaft bearing cap sealing screw
 (25) Crankshaft bearing cap cover screw

- (21) Flywheel screw



B1DP05BC

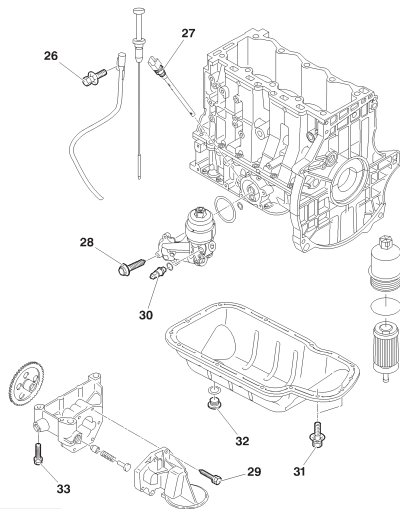


B1CP0GYC

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: KFU



B1BP369P

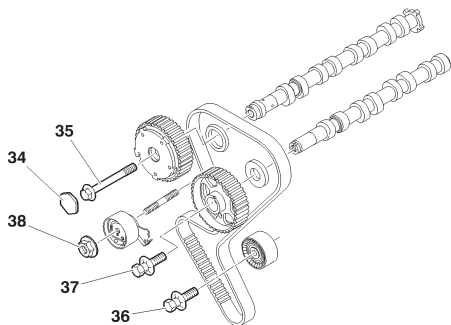
Lubrication

26	Oil gauge screw	$0,7 \pm 0,1$
27	Electric oil gauge fixing screw	$3,2 \pm 0,5$
28	Oil filter support screw	$1 \pm 0,1$
29	Strainer fixing screw	$1 \pm 0,1$
30	Oil pressure switch	$2 \pm 0,2$
31	Oil sump screw	$0,8 \pm 0,2$
32	Drain plug	$3 \pm 0,5$
33	Oil pump screw	$0,9 \pm 0,1$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: KFU



B1EP1GPD

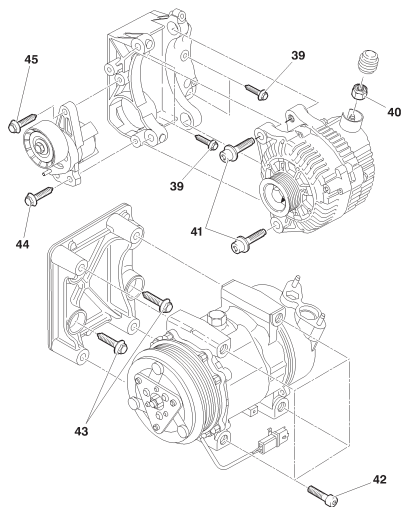
Timing

34	Inlet camshaft dephaser plug (VVT)	3,2 ± 0,2
35	Inlet camshaft dephaser screw (VVT)	
	Pre-tightening	2 ± 0,2
	Tightening	6 ± 0,6
36	Guide roller screw	2,1 ± 0,2
37	Exhaust camshaft pulley screw	4,5 ± 0,4
38	Tensioner roller screw	2,1 ± 0,2

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: KFU



B1BP36AP

Accessories

39	Alternator support fixing screw	$2,5 \pm 0,3$
40	Alternator power circuit fixing nut	$1,4 \pm 0,2$
41	Alternator fixing screw	$4 \pm 0,4$
42	Aircon compressor fixing screw	$2,4 \pm 0,1$
43	Aircon compressor support fixing screw	$2,5 \pm 0,4$
44	Bottom screw fixing tensioner roller support	$5,7 \pm 1$
45	Top screw fixing tensioner roller support	$2,5 \pm 0,6$

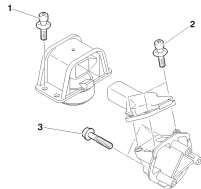
C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Suspensions for engine/gearbox assembly

Engine: NFU

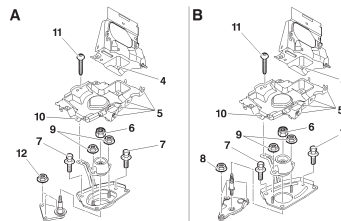
Gearbox on RH side



B1BP35WD

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

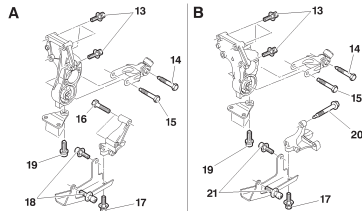
Gearbox on LH side



B1BP35XD

4	$1,8 \pm 0,2$
5	$2 \pm 0,2$
6	$6,5 \pm 0,6$
7	$1,9 \pm 0,1$
8	$4 \pm 0,4$
9	$3 \pm 0,3$
10	$1,8 \pm 0,2$
11	$1 \pm 0,2$
12	$2,5 \pm 0,2$

Gearbox below the engine



B1BP35YD

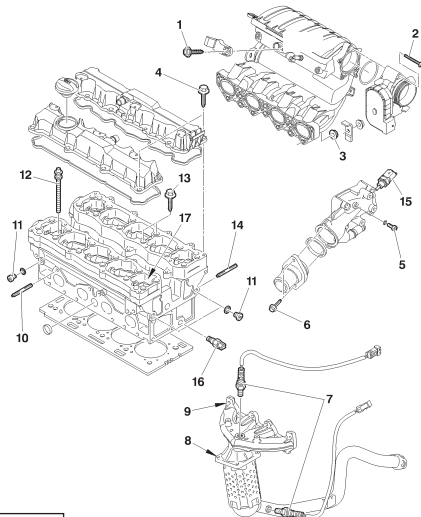
13	$4 \pm 0,4$
14	$4 \pm 0,4$
15	$5,4 \pm 0,5$
16	$6 \pm 0,6$
17	$4 \pm 0,4$
18	$6 \pm 0,6$
19	$2 \pm 0,2$
20	$4 \pm 0,4$
21	$4 \pm 0,4$

(A) MA manual gearbox
(B) AL4 automatic gearbox

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: NFU



B1BP362P

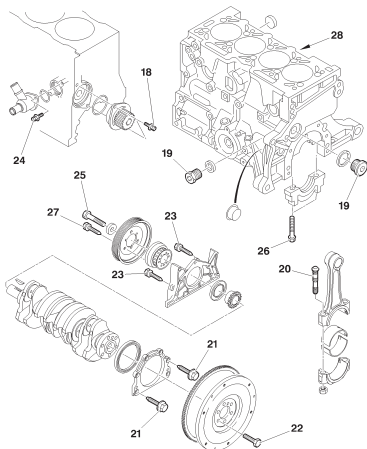
Cylinder head		
1	Inlet air pressure sensor	$0,8 \pm 0,1$
2	Motorised butterfly housing fixing screws	$0,7 \pm 0,1$
3	Inlet manifold nuts	$0,8 \pm 0,2$
4	Valve cover screws (*)	$0,9 \pm 0,1$
5	Coolant outlet housing screw	$0,8 \pm 0,2$
6	Thermostat fixing screw	$0,8 \pm 0,2$
7	Oxygen sensor	$4,7 \pm 0,7$
8	Catalytic converter fixing nuts (*)	
	Pre-tightening	$1,8 \pm 0,3$
	Tightening	$4 \pm 0,4$
	Check the tightening	$4 \pm 0,4$
9	Exhaust manifold nuts	$2,3 \pm 0,5$
10	Exhaust manifold fixing stud	$0,8 \pm 0,1$
11	Lubrication plug	$1,5 \pm 0,2$
12	Cylinder head bolts (*)	
	Tightening	$2 \pm 0,2$
	Angular tightening	$260^\circ \pm 5^\circ$
13	Camshaft bearing cap screws (*)	$0,9 \pm 0,1$
14	Inlet manifold fixing stud	$0,8 \pm 0,1$
15	Engine coolant temperature sensor (CMM)	$1,7 \pm 0,1$
16	Engine coolant temperature sensor (instrument panel)	$1,7 \pm 0,1$
17	Sparking plugs	$3 \pm 0,1$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: NFU

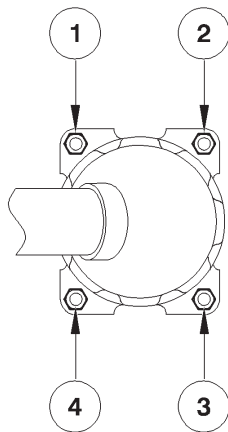


B1DP1KUP

Cylinder block

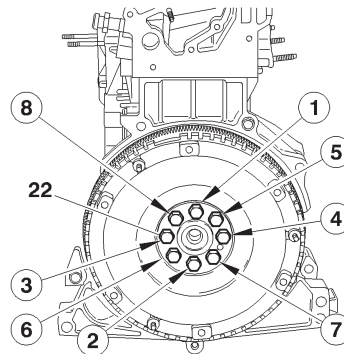
18	Coolant pump screw	$2 \pm 0,1$
19	Oil plug	$2,5 \pm 0,5$
20	Con rod cap bolt	$3,8 \pm 0,2$
21	Seal plate screw, flywheel end	$1 \pm 0,1$
22	Flywheel screw (*)	$7 \pm 0,7$
23	Seal plate screw, timing end	$1 \pm 0,1$
24	Coolant inlet manifold screw	$0,8 \pm 0,1$
25	Crankshaft pinion screw Tightening Angular tightening	$4 \pm 0,2$ $45^\circ \pm 3^\circ$
26	Crankshaft bearing cap screw Tightening Angular tightening	$2 \pm 0,1$ $49^\circ \pm 2^\circ$
27	Accessories drive belt pulley screw	$2,5 \pm 0,6$
28	Knock sensor	$2 \pm 0,5$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)**C4****Engine: NFU****IMPERATIVE: Respect the tightening sequence.**Sequence of tightening the nuts **(8)** (*Catalytic converter*)

B1JP063C

(22) Sequence of tightening the flywheel screws

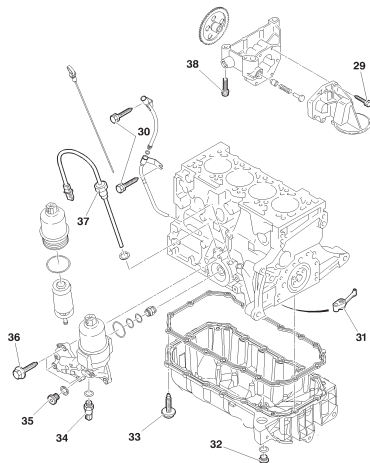


B1CP0GCC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: NFU



B1BP363P

Lubrication

29	Strainer fixing	$0,8 \pm 0,2$
30	Oil gauge screw	$0,8 \pm 0,1$
31	Piston skirt spray jet	$1,5 \pm 0,2$
32	Drain plug	$3 \pm 0,5$
33	Oil sump screw	$0,8 \pm 0,1$
34	Oil pressure switch	$2 \pm 0,2$
35	Oil circuit plugs	$2,5 \pm 0,5$
36	Oil filter support screw	$0,8 \pm 0,2$
37	Oil level sensor	$0,8 \pm 0,2$
38	Oil pump screw	$0,9 \pm 0,1$

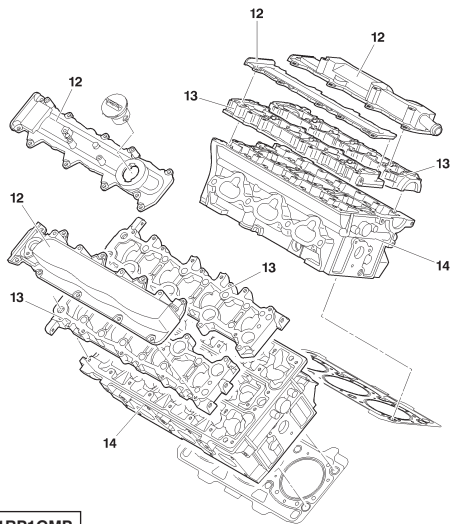
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: NFU

Timing

39	Camshaft pulley screw	4,5 ± 0,5
40	Guide roller screw	2 ± 0,2
41	Tensioner roller screw	2,1 ± 0,4

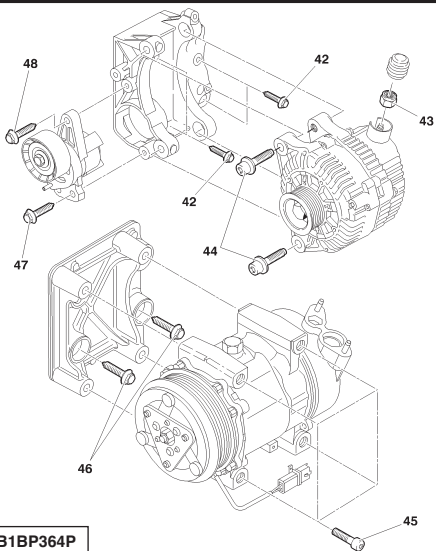


B1BP1GMP

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: NFU



Accessories

42	Alternator support fixing screw	$2,5 \pm 0,6$
43	Alternator power circuit fixing nut	$1,4 \pm 0,2$
44	Alternator fixing screw	$4 \pm 0,4$
45	Aircon compressor fixing screw	$2,5 \pm 0,2$
46	Tensioner roller support fixing screw	$2,5 \pm 0,6$
47	Bottom screw fixing tensioner roller support	$5,7 \pm 1$
48	Top screw fixing tensioner roller support	$2,5 \pm 0,6$

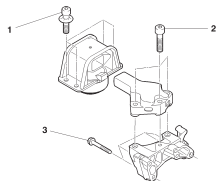
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Suspensions for engine/gearbox assembly

Engine: RFJ

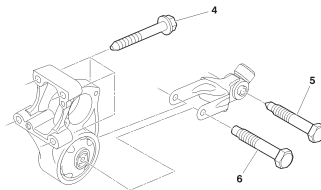
RH side



B1BP35TD

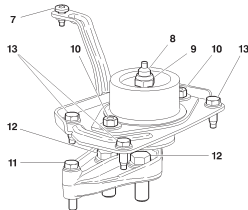
1	$6 \pm 0,6$
2	$6 \pm 0,6$
3	$4,5 \pm 0,4$

Torque reaction rod



B1BP35UD

4	$4,5 \pm 0,4$
5	$3,9 \pm 0,4$
6	$5,4 \pm 0,6$



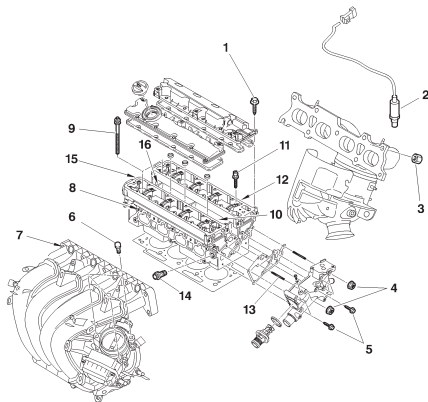
B1BP35VD

7	$1 \pm 0,1$
8	$5 \pm 0,5$
9	$6,5 \pm 0,6$
10	$3 \pm 0,3$
11	$3 \pm 0,3$
12	$6 \pm 0,6$
13	$1,9 \pm 0,2$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFJ



B1BP35MP

Cylinder head

1	Valve cover screws (*) Pre-tightening Tightening	0,5 1,1 ± 0,1
2	Oxygen sensor	4,7 ± 0,5
3	Exhaust manifold nuts	3,5 ± 0,3
4	Coolant outlet housing fixing nuts	1 ± 0,1
5	Coolant outlet housing bolts	0,3
6	Motorised butterfly housing fixing screws	0,8 ± 0,1
7	Inlet manifold fixings	2,2 ± 0,4
8	Inlet manifold fixing studs	0,8 ± 0,2
9	Cylinder head bolts (*) Pre-tightening 1 Pre-tightening 2 Angular slacken Tightening Angular tightening	1,5 ± 0,1 5 ± 0,5 360° 2 ± 0,2 285° ± 5°
10	Sparking plugs	2,7 ± 0,2

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

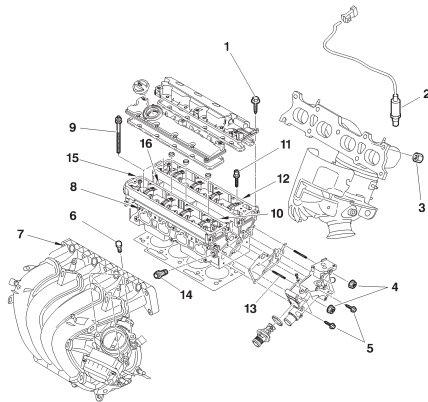
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFJ

Cylinder head

11	Camshaft bearing cap screws (*)	
	Pre-tightening	0,5
	Tightening	$1 \pm 0,1$
12	Exhaust manifold fixing stud	$0,8 \pm 0,2$
13	Coolant outlet housing fixing stud	$0,8 \pm 0,2$
14	Engine coolant temperature sensor	$1,7 \pm 0,1$
15	Inner timing cover screw	$0,8 \pm 0,1$
16	Electrovalve fixing screw (VVT)	$0,9 \pm 0,1$



B1BP35MP

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

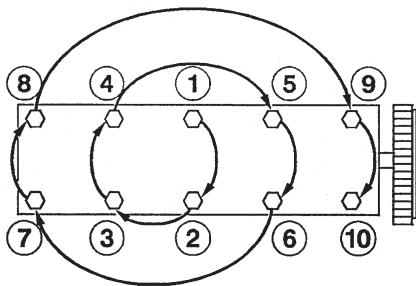
Engine: RFJ

Cylinder head

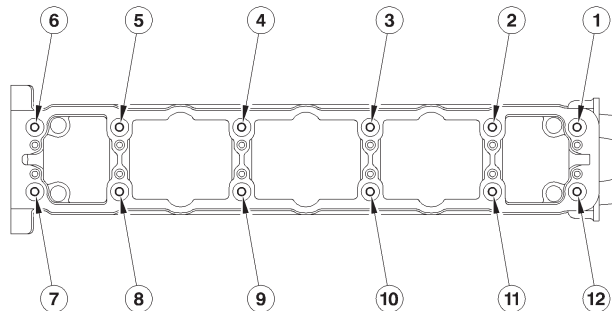
IMPERATIVE: Respect the tightening sequence.

- (1) Valve cover screws
(9) Cylinder head bolts

- (11) Camshaft bearing cap screws



B1DP05BC

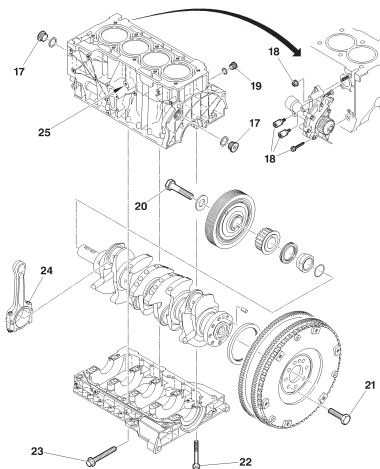


B1DP03XD

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFJ



B1DP1KSP

Cylinder block

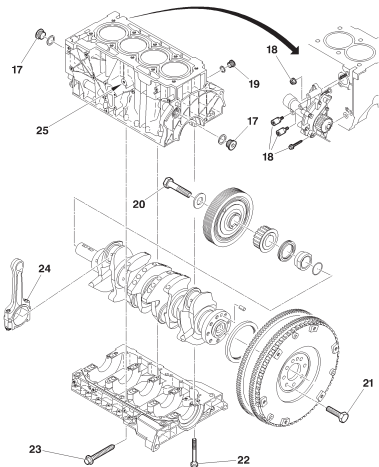
17	Oil circuit plugs	$3 \pm 0,3$
18	Coolant pump screw (*)	
	Pre-tightening	0,8
	Tightening	$1,4 \pm 0,1$
19	Cooling circuit plug	$3 \pm 0,3$
20	Accessories drive belt pulley screw	
	Tightening	$4 \pm 0,4$
	Angular tightening	$40^\circ \pm 4^\circ$
21	Flywheel screw (*)	
	Pre-tightening	$0,8 \pm 0,1$
	Tightening	$2 \pm 0,2$
	Angular tightening	$21^\circ \pm 3^\circ$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFJ



B1DP1KSP

Cylinder block

22	Crankshaft bearing cap cover screw (*)	1
	Pre-tightening	$2 \pm 0,2$
	Tightening	$72^\circ \pm 5^\circ$
23	Crankshaft bearing cap sealing screw	1
24	Con rod cap screw (*)	1
	Pre-tightening	$2,3 \pm 0,2$
	Tightening	$46^\circ \pm 5^\circ$
25	Knock sensor	$2 \pm 0,5$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFJ

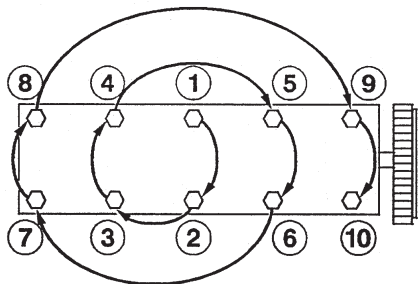
Cylinder head

IMPERATIVE: Respect the tightening sequence.

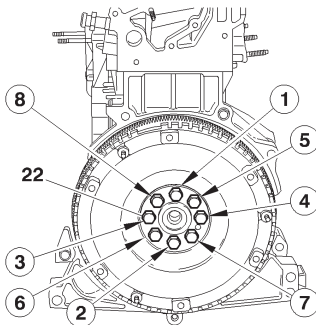
(22) Crankshaft bearing cap screws
(24) Con rod cap screws

(21) Flywheel screw

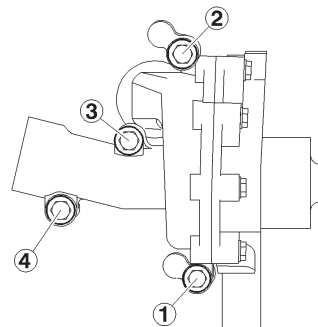
(18) Coolant pump screw



B1DP05BC



B1CP0GCC

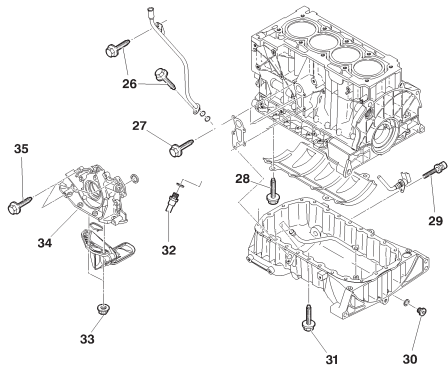


B1GP08WC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFJ



B1BP35NP

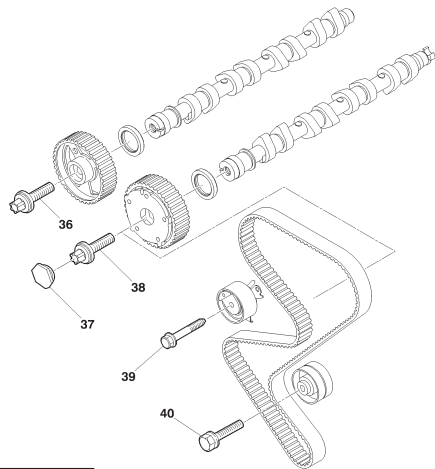
Lubrication

26	Oil gauge screw	$1 \pm 0,2$
27	Oil filter support screw	$0,8 \pm 0,1$
28	Anti-emulsion plate fixing screw	$1,9 \pm 0,3$
29	Oil level sensor fixing screw	$1 \pm 0,2$
30	Drain plug	$3,4 \pm 0,3$
31	Oil sump screw	$0,8 \pm 0,1$
32	Oil pressure switch	$2 \pm 0,2$
33	Oil strainer fixing nuts	$0,8 \pm 0,1$
34	Oil strainer stud	$0,6 \pm 0,1$
35	Coolant pump screw	$0,7$
	Pre-tightening	$1 \pm 0,1$
	Tightening	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFJ



B1EP1GJP

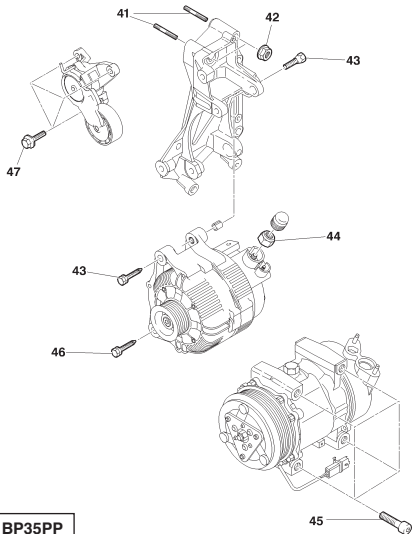
Timing

36	Exhaust camshaft pulley screw	
	Pre-tightening Tightening	$3 \pm 0,5$ $8,5 \pm 0,5$
37	Cap	$1,1 \pm 0,1$
38	Inlet camshaft pulley screw	
	Pre-tightening Tightening	$2 \pm 0,2$ 11 ± 1
39	Tensioner roller screw	$2,1 \pm 0,2$
40	Guide roller screw	
	Pre-tightening Tightening	$1,5 \pm 0,1$ $3,7 \pm 0,7$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFJ



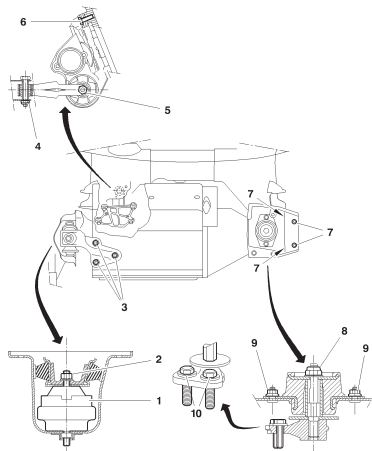
Accessories

41	Accessories support fixing stud	$0,8 \pm 0,1$
42	Accessories support fixings Pre-tightening Tightening	$1 \pm 0,1$ $1,9 \pm 0,2$
43	Alternator top fixing screw	$4,1 \pm 0,5$
44	Alternator power circuit fixing nut	$1,7 \pm 0,2$
45	Aircon compressor fixing screw	$2,3 \pm 0,3$
46	Alternator bottom fixing screw	$4,9 \pm 0,5$
47	Screw for fixing the automatic tensioner roller for the accessories drive belt	$2 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

XSARA - XSARA PICASSO

Engines: 6FZ - RFN



Power unit

1		$2 \pm 0,2$
2		$4,5 \pm 0,4$
3		$6 \pm 0,6$
4		$5,4 \pm 0,5$
5		$5,4 \pm 0,5$
6		$4,5 \pm 0,5$
7		$2,1 \pm 0,2$
8		$6,5 \pm 0,6$
9		$2,2 \pm 0,2$
10		$5 \pm 0,5$

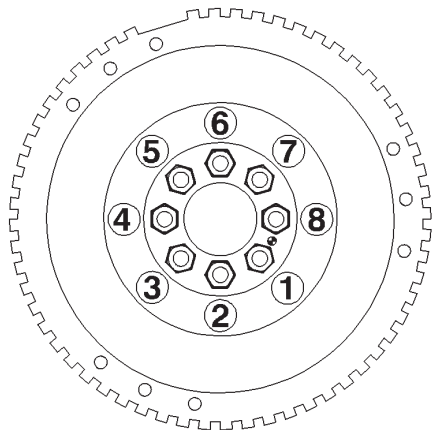
B1BP21AP

XSARA - XSARA PICASSO	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engine: RFN		
Crankshaft		
Bearing cap fixing screws		
Pre-tightening		2 ± 0,2
Angular tightening		60° ± 5°
Bearing cap screws		
Pre-tightening		2,3 ± 0,2
Angular tightening		46° ± 3°
Accessories belt automatic tensioner roller		2 ± 0,2
Accessories belt guide roller		
Pre-tightening		1,5 ± 0,1
Tightening		3,7 ± 0,3
Accessories support block		
Tightening (2 studs)		0,7 ± 0,2
Pre-tightening (4 screws)		1 ± 0,1
Tightening		1,9 ± 0,2
Cylinder block		
Sump		0,8 ± 0,2
Timing belt guide roller		
Pre-tightening		1,5 ± 0,1
Tightening		3,7 ± 0,3
Timing belt tensioner roller		2,1 ± 0,2
RH engine support		6 ± 0,6

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

XSARA - XSARA PICASSO

Engine: RFN



Cylinder head

Camshaft bearing cover	0,9 ± 0,1
------------------------	-----------

Exhaust manifold	3,5 ± 0,3
------------------	-----------

Valve cover	1,1 ± 0,1
-------------	-----------

Camshaft pulley	
-----------------	--

Pre-tightening	3 ± 0,3
----------------	---------

Tightening	7,5 ± 0,7
------------	-----------

Pulley on hub	2,1 ± 0,2
---------------	-----------

Timing pinion on crankshaft	
-----------------------------	--

Pre-tightening	4 ± 0,4
----------------	---------

Angular tightening	53° ± 4°
--------------------	----------

Flywheel / clutch

Clutch mechanism	2 ± 0,2
------------------	---------

Flywheel	
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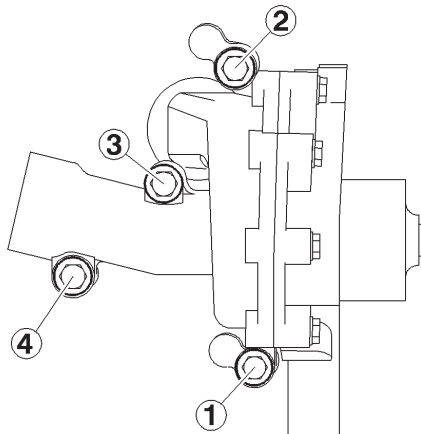
Pre-tightening	(sequence 1,5,3,7,2,6,4,8)	2 ± 0,2
----------------	----------------------------	---------

Angular tightening	(sequence 1,5,3,7,2,6,4,8)	21° ± 3°
--------------------	----------------------------	----------

XSARA - XSARA PICASSO

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFN



B1GP08WC

Lubrication circuit

Oil pump closing plate	0,8 ± 0,1
Oil pump	
Pre-tightening	0,7 ± 0,1
Tightening	0,9 ± 0,1

Injection circuit

Common injection rail fixing screws	0,9 ± 0,1
--	------------------

Cooling circuit

Coolant pump	
Pre-tightening (sequence 1,2,3,4)	0,8 ± 0,1
Tightening (sequence 1,2,3,4)	1,4 ± 0,1
Coolant inlet housing	0,9 ± 0,1

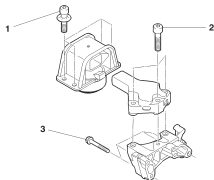
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Suspensions for engine/gearbox assembly

Engine: RFN

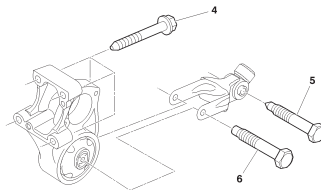
Gearbox on RH side



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

B1BP35TD

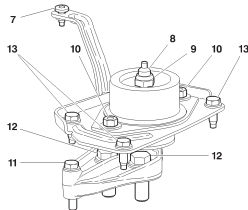
Gearbox at torque reaction rod



4	$4,5 \pm 0,4$
5	$3,9 \pm 0,4$
6	$5,4 \pm 0,6$

B1BP35UD

Gearbox on LH side



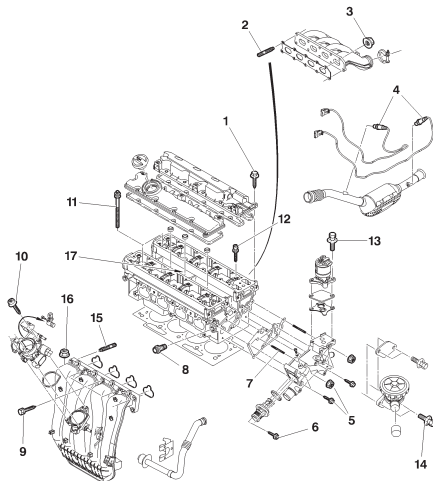
7	$1 \pm 0,1$
8	$5 \pm 0,5$
9	$6,5 \pm 0,6$
10	$3 \pm 0,3$
11	$3 \pm 0,3$
12	$6 \pm 0,6$
13	$1,9 \pm 0,2$

B1BP35VD

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFN



B1BP34MP

Cylinder head

1	Valve cover screws (*) Pre-tightening Tightening	0,5 $1,1 \pm 0,1$
2	Exhaust manifold stud	$0,7 \pm 0,1$
3	Exhaust manifold nuts Tightening on heat shield Tightening apart from on heat shield	$2,5 \pm 0,2$ $3,5 \pm 0,3$
4	Oxygen sensor	$4,7 \pm 0,5$
5	Coolant outlet housing fixing (BSE) Tightening of the nuts Tightening of the screws	$1 \pm 0,2$ $1 \pm 0,1$
6	Thermostat fixing screw	$0,8 \pm 0,1$
7	Coolant outlet housing fixing stud (BSE)	$0,3 \pm 0,1$
8	Engine coolant temperature sensor	$1,7 \pm 0,1$
9	Inlet manifold screws	$2,2 \pm 0,4$
10	Motorised butterfly housing fixing screws	$0,8 \pm 0,1$

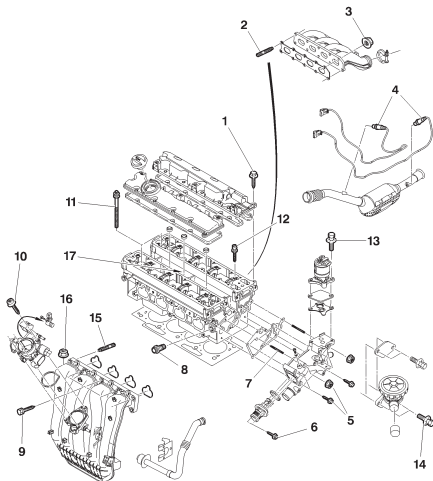
(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFN

Cylinder head



B1BP34MP

11	Cylinder head bolts (*)	
	1st pre-tightening	$1,5 \pm 0,1$
	2nd pre-tightening	$5 \pm 0,5$
	Angular slackening	360°
	Tightening	$2 \pm 0,2$
12	Camshaft bearing cap cover screws (*)	
	Pre-tightening	$0,5$
	Tightening	$1 \pm 0,1$
13	EGR valve screw	$0,8 \pm 0,1$
14	Valve for injection of air to the exhaust	$0,8 \pm 0,2$
15	Inlet manifold stud	$0,8 \pm 0,1$
16	Inlet manifold fixing nuts	$2,2 \pm 0,5$
17	Sparking plugs	$2,7 \pm 0,2$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

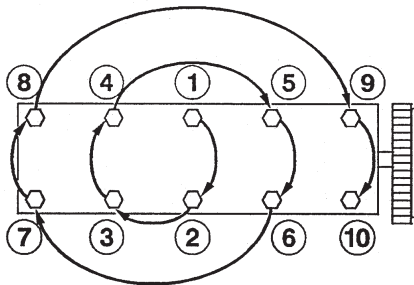
Engine: RFN

Cylinder head

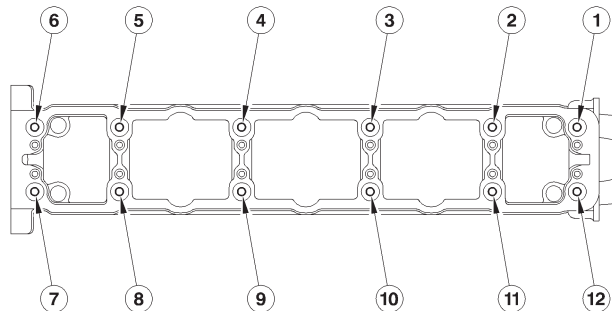
IMPERATIVE: Respect the tightening sequence.

- (1) Valve cover screws
(11) Cylinder head bolts

- (12) Camshaft bearing cap screws



B1DP05BC



B1DP03XD

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFN

Cylinder block		
18	Oil circuit plugs	$3 \pm 0,3$
19	Coolant pump screw (*)	
	Pre-tightening	0,8
	Tightening	$1,4 \pm 1$
20	Cooling circuit plug	$3 \pm 0,7$
21	Flywheel screw (*)	
	Pre-tightening	$0,8 \pm 0,1$
	Tightening	$2 \pm 0,2$
	Angular tightening	$23^\circ \pm 5^\circ$
22	Crankshaft bearing cap cover screw (*)	
	Pre-tightening	$1 \pm 0,1$
	Tightening	$2 \pm 0,1$
	Angular tightening	$60^\circ \pm 5^\circ$

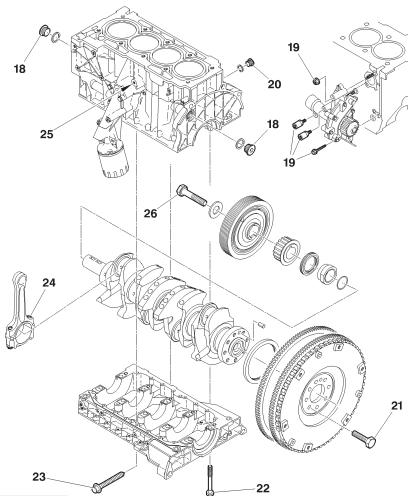
B1DP1KKP

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFN



B1DP1KKP

Cylinder block

23	Crankshaft bearing cap sealing screw	$1 \pm 0,1$
24	Con rod cap bolt (*) Pre-tightening Tightening Angular tightening	1 $2,3 \pm 0,1$ $46^\circ \pm 3^\circ$
25	Knock sensor	$2 \pm 0,5$
26	Accessories drive belt pulley screw Tightening Angular tightening	$4 \pm 0,4$ $53^\circ \pm 5^\circ$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFN

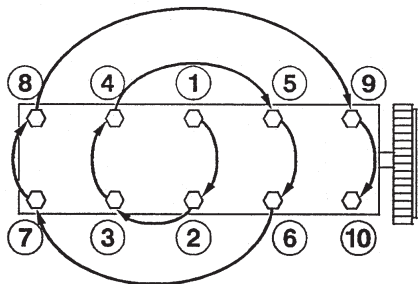
Cylinder head

IMPERATIVE: Respect the tightening sequence.

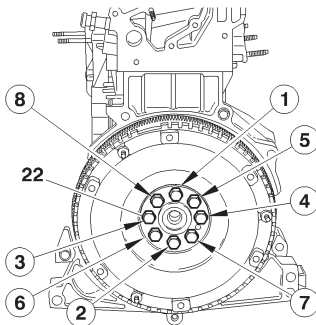
(22) Crankshaft bearing cap screws
(24) Con rod cap screws

(21) Flywheel screws

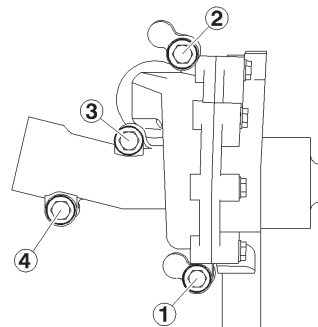
(19) Coolant pump screws



B1DP05BC



B1CP0GCC

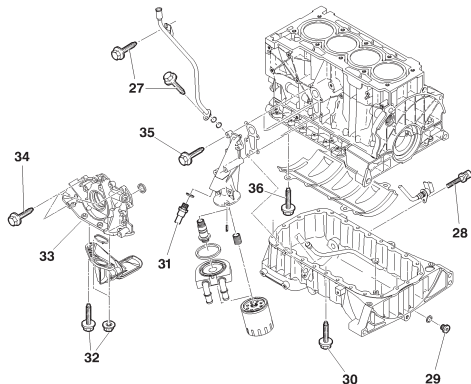


B1GP08WC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFN



B1BP34NP

Lubrication

27	Oil gauge screw	$1 \pm 0,2$
28	Oil level sensor fixing screw	$1 \pm 0,2$
29	Drain plug	$3,4 \pm 0,3$
30	Oil sump screw	$0,8 \pm 0,1$
31	Oil pressure switch	$2 \pm 0,2$
32	Oil strainer fixing nuts	$1,1 \pm 0,1$
33	Oil strainer stud	$0,6 \pm 0,1$
34	Oil pump screw	0,7
	Pre-tightening	$1 \pm 0,1$
	Tightening	
35	Oil filter support screw	$0,8 \pm 0,2$
36	Anti-emulsion plate fixing screw	$1,9 \pm 0,3$

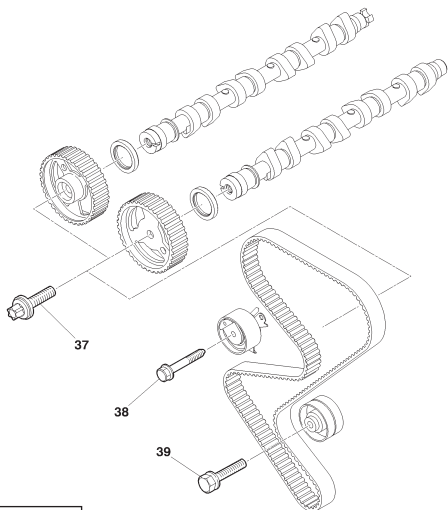
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFN

Timing

37	Camshaft pulley screw	7,5 ± 0,5
38	Tensioner roller screw	2 ± 0,3
39	Guide roller screw	3,5 ± 0,5

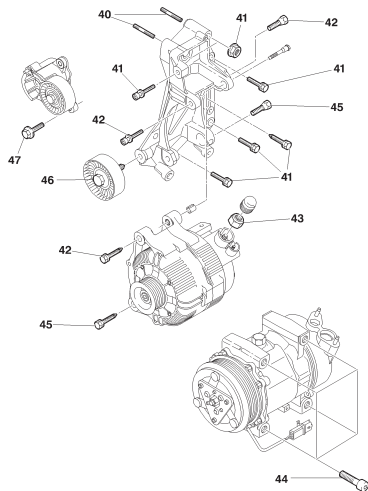


B1EP1G6P

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFN



B1BP34PP

Accessories

40	Accessories support fixing stud	$0,8 \pm 0,1$
41	Accessories support fixings	
	Pre-tightening	$1 \pm 0,1$
	Tightening	$1,9 \pm 0,2$
42	Alternator top fixing screw	$4,1 \pm 0,5$
43	Alternator power circuit fixing nut	$1,7 \pm 0,2$
44	Aircon compressor fixing screw	$2,3 \pm 0,3$
45	Alternator bottom fixing screw	$4,9 \pm 0,5$
46	Screw for fixing the guide roller for the accessories drive belt	
	Pre-tightening	$1,5 \pm 0,1$
	Tightening	$3,5 \pm 0,4$
47	Screw for fixing the automatic tensioner roller for the accessories drive belt	$2 \pm 0,2$

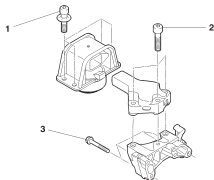
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Suspensions for engine/gearbox assembly

Engine: RFK

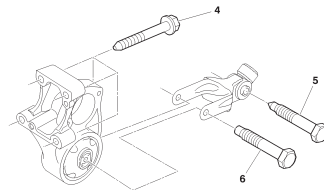
Gearbox on RH side



B1BP35TD

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

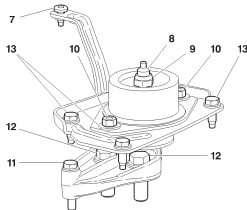
Gearbox at torque reaction rod



B1BP35UD

4	$4,5 \pm 0,4$
5	$3,9 \pm 0,4$
6	$5,4 \pm 0,6$

Gearbox on LH side



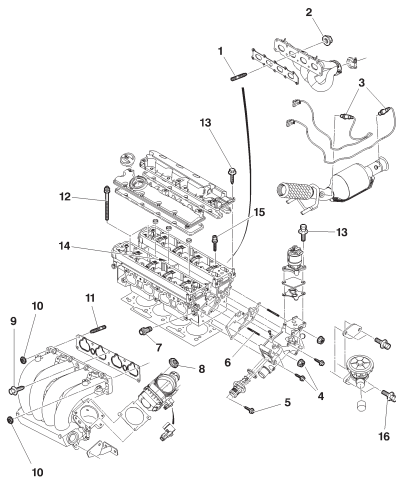
B1BP35VD

7	$1 \pm 0,1$
8	$5 \pm 0,5$
9	$6,5 \pm 0,6$
10	$3 \pm 0,3$
11	$3 \pm 0,3$
12	$6 \pm 0,6$
13	$1,9 \pm 0,2$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFK



B1BP35QP

Cylinder head

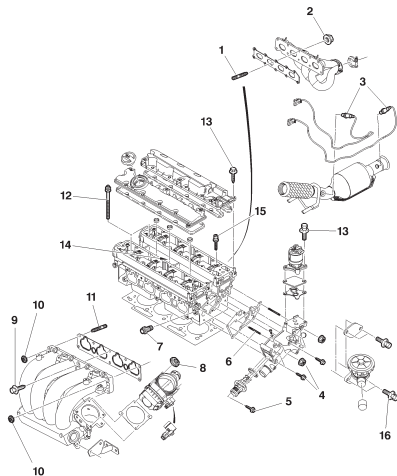
1	Exhaust manifold stud	0,7 ± 0,1
2	Exhaust manifold nuts Tightening on heat shield Tightening apart from on heat shield	2,5 ± 0,2 3,5 ± 0,3
3	Oxygen sensor	4,7 ± 0,5
4	Coolant outlet housing fixing Tightening of the nuts Tightening of the screws	1 ± 0,2 1 ± 0,1
5	Thermostat fixing screw	0,8 ± 0,1
6	Coolant outlet housing fixing stud	0,3 ± 0,1
7	Engine coolant temperature sensor	1,7 ± 0,1
8	Motorised butterfly housing fixing screws	0,8 ± 0,1
9	Inlet manifold screws	2,2 ± 0,4
10	Inlet manifold fixing nuts	2,2 ± 0,5
11	Inlet manifold stud	0,8 ± 0,1

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFK



B1BP35QP

Cylinder head

12	Cylinder head bolts (*)	
	1st pre-tightening	$1,5 \pm 0,1$
	2nd pre-tightening	$5 \pm 0,5$
	Angular slackening	360°
	Tightening	$2 \pm 0,2$
13	Angular tightening	$285^\circ \pm 5^\circ$
13	Valve cover screws (*)	
	Pre-tightening	0,5
14	Tightening	$1,1 \pm 0,1$
14	Sparking plugs	$2,7 \pm 0,2$
15	Camshaft bearing cap cover screws (*)	
	Pre-tightening	0,5
15	Tightening	$1,1 \pm 0,1$
16	Valve for injection of air to the exhaust	$0,9 \pm 0,2$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

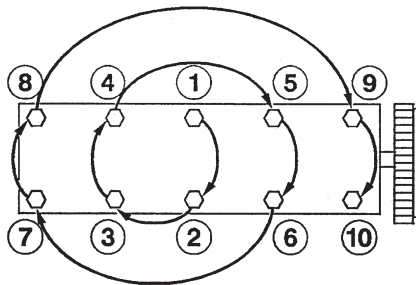
Engine: RFK

Cylinder head

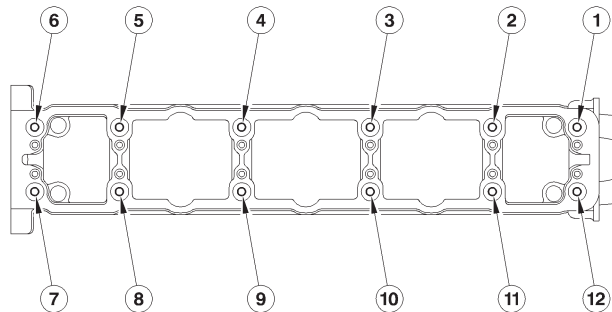
IMPERATIVE: Respect the tightening sequence.

- (12) Valve cover screws
(13) Cylinder head bolts

- (15) Camshaft bearing cap screws



B1DP05BC

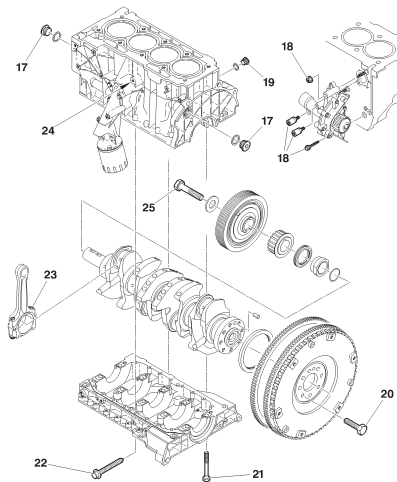


B1DP03XD

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFK



B1DP1KTP

Cylinder block

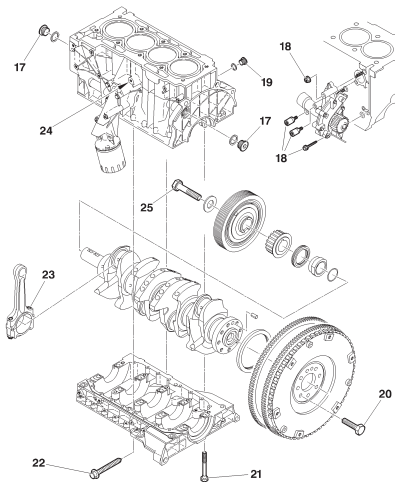
17	Oil circuit plugs	$3 \pm 0,3$
18	Coolant pump screw (*)	
	Pre-tightening Tightening	0,8 $1,4 \pm 1$
19	Cooling circuit plug	$3 \pm 0,7$
20	Flywheel screw (*)	
	Pre-tightening Tightening	$0,8 \pm 0,1$ $2 \pm 0,2$
	Angular tightening	$23^\circ \pm 5^\circ$
21	Crankshaft bearing cap cover screw (*)	
	Pre-tightening Tightening	$1 \pm 0,1$ $2 \pm 0,1$
	Angular tightening	$60^\circ \pm 5^\circ$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFK



B1DP1KTP

Cylinder block

22	Crankshaft bearing cap sealing screw	$1 \pm 0,1$
23	Con rod cap bolt (*) Pre-tightening Tightening Angular tightening	1 $2,3 \pm 0,1$ $46^\circ \pm 3^\circ$
24	Knock sensor	$2 \pm 0,5$
25	Accessories drive belt pulley screw Tightening Angular tightening	$4 \pm 0,4$ $80^\circ \pm 5^\circ$

(*) = IMPERATIVE: Respect the tightening sequence (see following page).

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFK

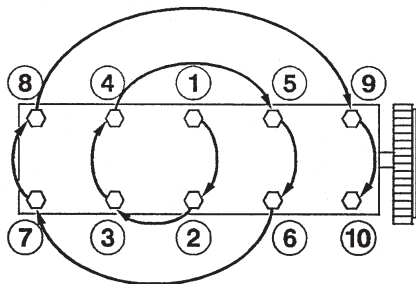
Cylinder head

IMPERATIVE: Respect the tightening sequence.

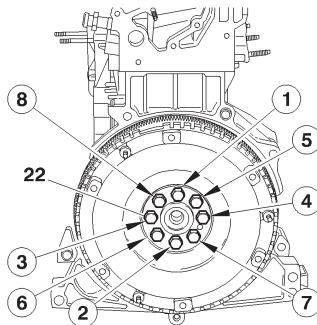
(21) Crankshaft bearing cap screws
(23) Con rod cap screws

(20) Flywheel screws

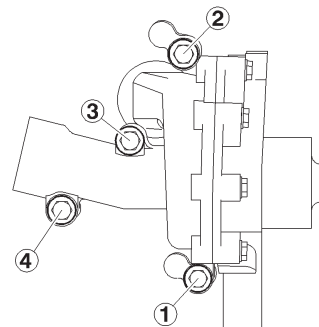
(18) Coolant pump screws



B1DP05BC



B1CP0GCC

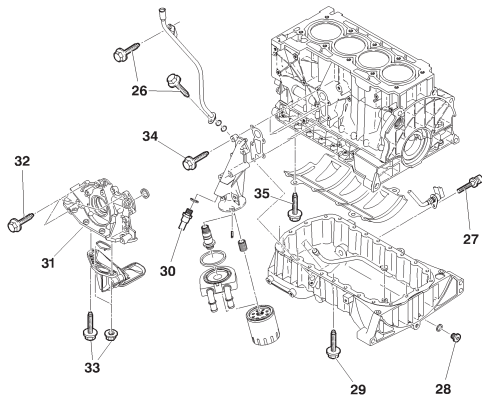


B1GP08WC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFK



B1BP35RP

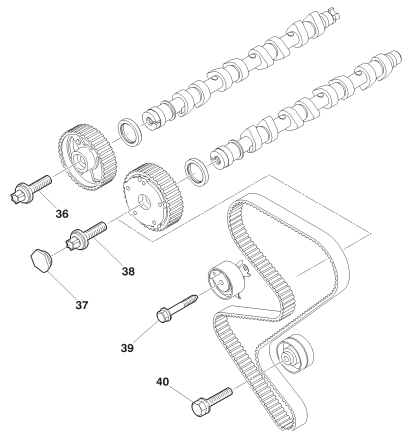
Lubrication

26	Oil gauge screw	$1 \pm 0,2$
27	Oil level sensor fixing screw	$1 \pm 0,2$
28	Drain plug	$3,4 \pm 0,3$
29	Oil sump screw	$0,8 \pm 0,1$
30	Oil pressure switch	$2 \pm 0,2$
31	Oil strainer stud	$0,6 \pm 0,1$
32	Oil pump screw	0,7
	Pre-tightening	$1 \pm 0,1$
	Tightening	
33	Oil strainer fixing nuts	$1,1 \pm 0,1$
34	Oil filter support screw	$0,8 \pm 0,2$
35	Anti-emulsion plate fixing screw	$1,9 \pm 0,3$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RFK



B1EP1GKP

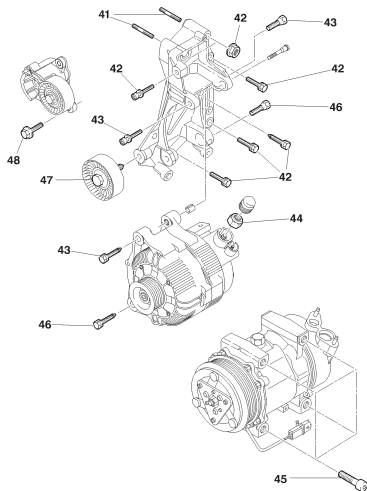
Timing

36	Camshaft pulley screw	$7,5 \pm 0,5$
37	Camshaft dephaser cap (VVT)	$3,2 \pm 0,3$
38	Inlet camshaft pulley screw Pre-tightening Tightening	$2 \pm 0,2$ 11 ± 1
39	Tensioner roller screw	$2,1 \pm 0,2$
40	Guide roller screw	$3,5 \pm 0,5$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RFK



B1BP35SP

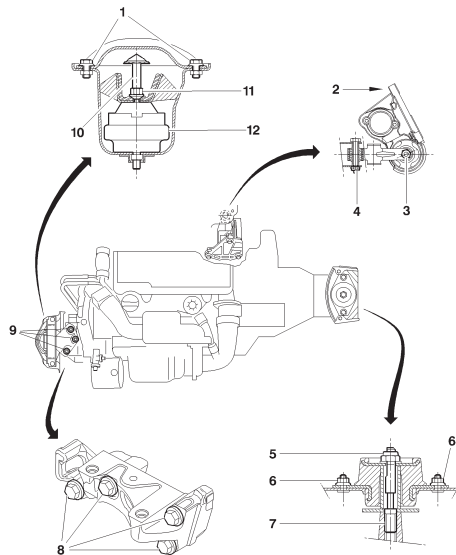
Accessories

41	Accessories support fixing stud	$0,8 \pm 0,1$
42	Accessories support fixings	
	Pre-tightening	$1 \pm 0,1$
	Tightening	$1,9 \pm 0,2$
43	Alternator top fixing screw	$4,1 \pm 0,5$
44	Alternator power circuit fixing nut	$1,6 \pm 0,2$
45	Aircon compressor fixing screw	$2,4 \pm 0,3$
46	Alternator bottom fixing screw	$4,9 \pm 0,5$
47	Screw for fixing the guide roller for the accessories drive belt	
	Pre-tightening	$1,5 \pm 0,1$
	Tightening	$3,5 \pm 0,4$
48	Screw for fixing the automatic tensioner roller for the accessories drive belt	$2 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

XSARA

Engines: 8HX - 8HZ



RH engine support

(1)	: $2 \pm 0,2$
(9)	: $2,5 \pm 0,2$
(10)	: $4,5 \pm 0,5$
(11)	: $4,5 \pm 0,5$
(12)	: $6 \pm 0,6$

RH lower engine support

(8)	: $5,7 \pm 0,9$
-----	-----------------

Torque reaction rod

(2)	: $4,5 \pm 0,5$
(3)	: $4,5 \pm 0,5$
(4)	: $4,5 \pm 0,5$

LH engine support

(5)	: $6,5 \pm 0,6$
-----	-----------------

Lower LH engine support

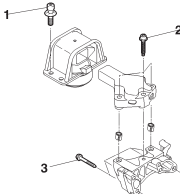
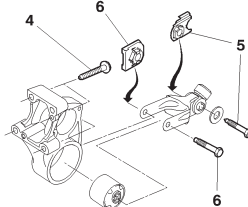
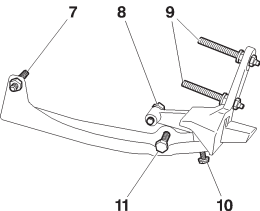
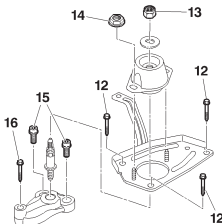
(6)	: $2,2 \pm 0,2$
(7)	: $2 \pm 0,2$

B1BP2WLP

XSARA		SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines		8HX	8HZ
		Crankshaft	
Bearing cap fixing screws		1	
Pre-tightening		YES	
Slackening		3	
Tightening		140°	
Angular tightening			
Con rod nuts		1	
Pre-tightening		YES	
Slackening		1,5 ± 0,1	
Tightening		100° ± 5°	
Angular tightening			
Accessories drive pulley		3 ± 0,4	
Pre-tightening		180° ± 5°	
Angular tightening			
		Cylinder blocks	
Sump		1 ± 0,1	
Timing belt guide roller		4,5 ± 0,4	3,7 ± 0,4
Timing belt tensioner roller		3 ± 0,3	2,3 ± 0,3

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA
Engines	8HX	8HZ
	Cylinder head	
Camshaft bearing covers		
Pre-tightening	0,5	
Tightening	1	
Fixing of camshaft sub-assemblies on cylinder head		
Pre-tightening	0,5	
Tightening	1	
Exhaust manifold	2,5 ± 0,2	
Valve cover	2,5 ± 0,2	
Camshaft pulley	4,3 ± 0,4	
	Flywheel	
Flywheel		
Pre-tightening	1,7	1,7
Angular tightening	70° ± 5°	75° ± 5°
Clutch mechanism	2 ± 0,2	
	Lubrication circuit	
Oil pump assembly		
Pre-tightening	0,5 ± 0,06	
Tightening	0,9 ± 0,1	
Coolant/oil heat exchanger	1 ± 0,1	

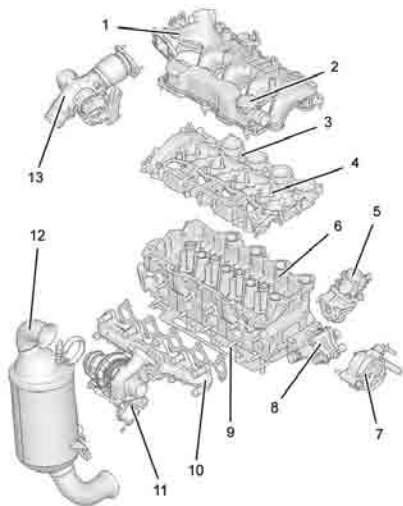
XSARA	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines	8HX - 8HZ	
	Diesel injection circuit	
Spherical-base screws for diesel injection fixing fork	0,3 ± 0,1	
Fuel high pressure common injection rail on engine block	2 ± 0,2	
Unions on fuel high pressure common injection rail Pre-tightening Tightening	1,7± 0,2 2,25 ± 0,2	
Diesel injection pump on support	2,25 ± 0,2	
Union on diesel injection pump		
Diesel injection pump pulley	5 ± 0,5	
Union on diesel high pressure pump	2,25 ± 0,2	
	Cooling circuit	
Coolant pump Pre-tightening Tightening	0,3 ± 0,06 1 ± 0,1	
Coolant outlet housing Pre-tightening Tightening	0,3 ± 0,06 0,7 ± 0,08	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)					C4	
Suspensions for engine/gearbox assembly						
Engines: 9HX - 9HY - 9HZ						
RH engine support				Torque reaction rod		
	1	6 ± 0,6			4	6 ± 0,6
	2	5,5 ± 0,5			5	3,9 ± 0,4
	3	6 ± 0,6			6	5,4 ± 0,8
B1BP38CC				B1BP38DC		
Impact absorber				LH engine support on gearbox		
	7	4 ± 0,4			12	2 ± 0,3
	8				13	6,5 ± 0,6
	9				14	3 ± 0,3
	10				15	6 ± 0,6
	11				16	2 ± 0,2
B1BP38EC				B1BP38FC		

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HY



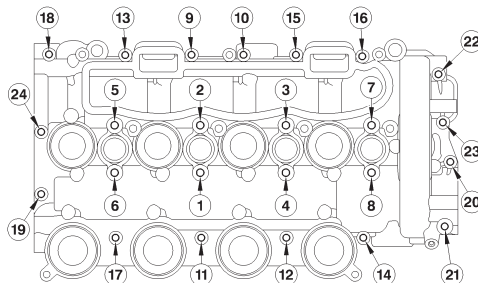
B1BP39YP

Cylinder head

1	Air inlet manifold	$1 \pm 0,1$
2	Oil trap	$1 \pm 0,1$
3	Camshaft bearing covers	$0,5 \pm 0,1$
	Pre-tightening	$1 \pm 0,1$
	Tightening	$1 \pm 0,1$

(3) Camshaft bearing cover screws

(4) Camshaft bearing cover studs

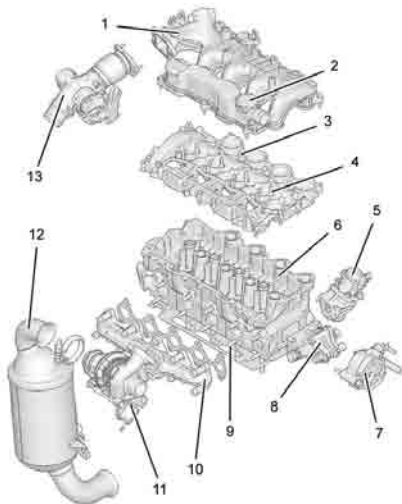


B1DP1D7D

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX

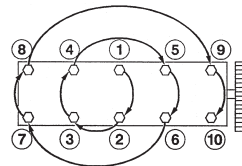


B1BP39YP

Cylinder head

4	Camshaft bearing cover studs Pre-tightening Tightening	$0,5 \pm 0,1$ $1 \pm 0,1$
5	Exhaust gas recycling electrovalve (EGR)	$1 \pm 0,1$
6	Cylinder head Pre-tightening Tightening Angular tightening	$2 \pm 0,2$ $4 \pm 0,5$ $260^\circ \pm 5^\circ$
7	Vacuum pump	$1,8 \pm 0,2$
8	Coolant outlet housing Pre-tightening Tightening	$0,3 \pm 0,1$ $0,7 \pm 0,1$

(6) Sequence for tightening the cylinder head bolts

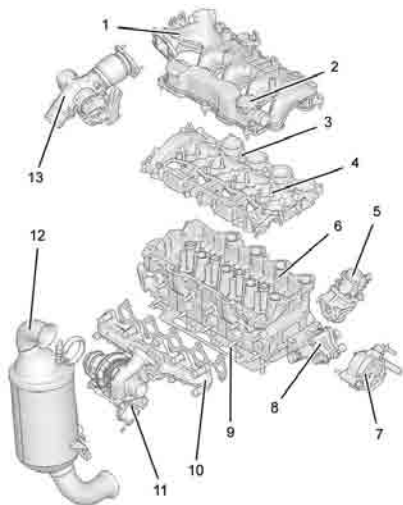


B1DP05BC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HX



B1BP39YP

Cylinder head

9	Exhaust manifold	$2,5 \pm 0,2$
10	Exhaust manifold stud	$1 \pm 0,2$
11	Turbocompressor nuts	$2,6 \pm 0,6$
12	Catalytic converter nuts	$2 \pm 0,1$
13	Air flowmeter Pre-tightening Tightening	$0,1$ $0,9 \pm 0,2$

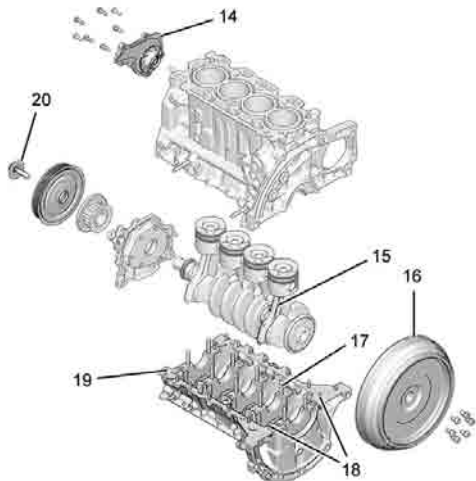
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX

Cylinder block

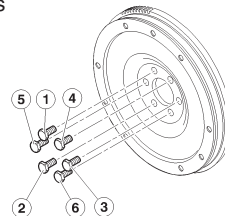
14	Coolant pump Pre-tightening Tightening	$0,3 \pm 0,1$ $0,9 \pm 0,1$
15	Con rod screws Pre-tightening Angular tightening	$1 \pm 0,1$ $100^\circ \pm 5^\circ$
16	Flywheel (according to equipment) Pre-tightening Angular tightening	$1,7 \pm 0,2$ $75^\circ \pm 5^\circ$
Clutch mechanism		$2 \pm 0,2$



B1DP1LKP

B1CP0GKC

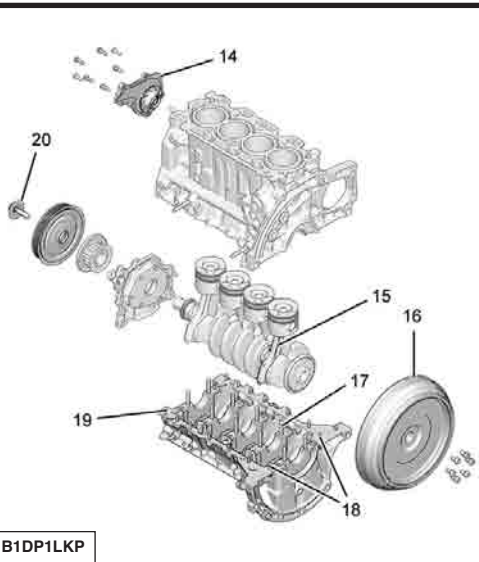
(16) Sequence for tightening the flywheel screws



C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HX



B1DP1LKP

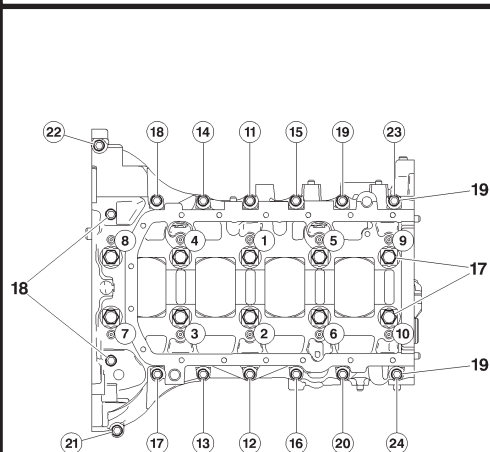
Cylinder block

17	Bearing cap fixing screws	
	Pre-tightening	$1 \pm 0,2$
	Slackening	180°
	Tightening	$3 \pm 0,3$
18	Crankshaft bearing cap cover screws	
	Pre-tightening	$0,8 \pm 0,3$
	Slackening	$0,8 \pm 0,3$
	Tightening	$0,6 \pm 0,2$
19	Crankshaft bearing cap cover screws	
	Pre-tightening	$0,6 \pm 0,2$
	Slackening	$0,8 \pm 0,3$
	Tightening	$0,6 \pm 0,2$
20	Accessories drive pulley	
	Pre-tightening	$3,5 \pm 0,4$
	Slackening	$190^\circ \pm 5^\circ$
	Tightening	$190^\circ \pm 5^\circ$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX



B1DP1LLD

Cylinder block

Crankshaft bearing cap cover

Tightening method:

Pre-tighten the **10** screws **(17)** (*from 1 to 10*) to
 Pre-tighten the **14** screws **(19)** (*from 11 to 24*) to
 Tighten the **2** screws **(18)** (*inside the flywheel bell housing*) to
 Slacken the screws **(17)** by
 Tighten the **10** screws **(17)** (*from 1 to 10*) to
 Tighten the screws **(17)** (*from 1 to 10*) by
 Tighten the **14** screws **(19)** (*from 11 to 24*) to

1
0,6
0,8
180°
3
140°
0,8

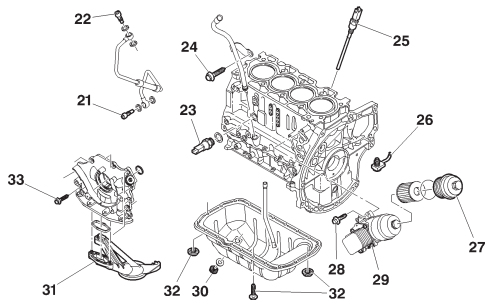
Sequence for tightening the screws (17), (18) and (19)

(17) Bearing cap fixing screws (*screw M9*)(18) Crankshaft bearing cap cover screws (*screw M6*)(19) Crankshaft bearing cap cover screws (*screw M6*)

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HX



B1DP1LMD

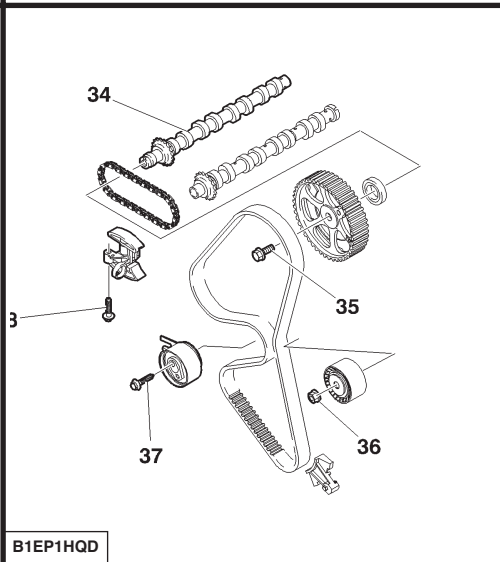
Lubrication

21	Turbocharger lubrication pipe	3 ± 0,5
22		2,1 ± 0,3
23	Oil pressure switch	2 ± 0,2
24	Oil gauge	0,8 ± 0,2
25	Electric oil gauge	2,7 ± 0,5
26	Piston skirt spray jets	2 ± 0,5
27	Oil filter cover	2,5 ± 0,5
28	Oil filter support	1 ± 0,2
29	Coolant/oil heat exchanger	1 ± 0,1
30	Drain plug	2,5 ± 0,3
31	Oil induction strainer	1 ± 0,1
32	Sump	1,2 ± 0,2
33	Oil pump assembly	0,9 ± 0,1

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX

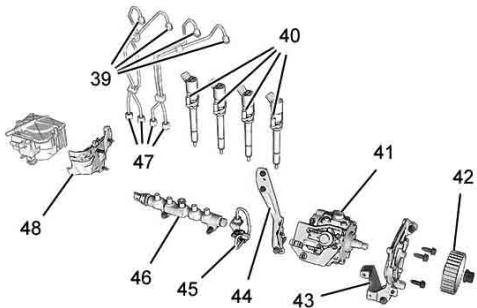


Timing		
34	Camshaft bearing caps	$1 \pm 0,1$
35	Camshaft pulleys	
	Pre-tightening	$2 \pm 0,2$
	Angular tightening	$50^\circ \pm 5^\circ$
36	Timing belt guide roller	$3,7 \pm 0,3$
37	Timing belt tensioner roller	$2,7 \pm 0,2$
38	Timing chain tensioner	$1 \pm 0,1$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HX



B1HP22SD

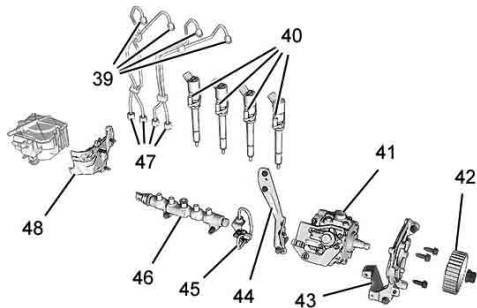
Injection circuit

39	Union on injector	
	Pre-tightening Tightening	$2 \pm 0,5$ $2,5 \pm 0,3$
40	Injector fixing flange but	
	Pre-tightening Angular tightening	$0,5 \pm 0,5$ $65^\circ \pm 5^\circ$
41	Diesel injection pump on support	$2,2 \pm 0,3$
42	Diesel injection pump pulley	$5 \pm 0,5$
43	Diesel fuel high pressure pump front support	$2 \pm 0,5$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX



B1HP22SD

Injection circuit

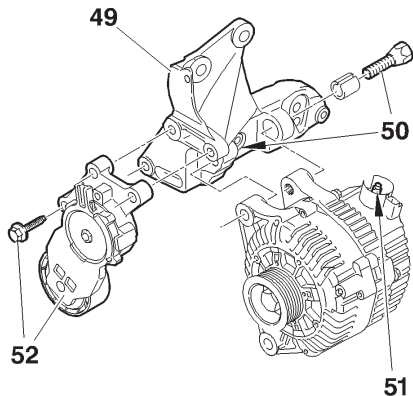
44	Diesel fuel high pressure pump rear support	$2 \pm 0,5$
45	Union on diesel fuel high pressure pump	
	Pre-tightening	$2 \pm 0,5$
	Tightening	$2,5 \pm 0,3$
46	Fuel high pressure common injection rail on engine block	$2,2 \pm 0,3$
47	Unions on fuel high pressure common injection rail	
	Pre-tightening	$2 \pm 0,5$
	Tightening	$2,5 \pm 0,3$
48	Fuel filter support	$0,7 \pm 0,1$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 9HX

Version without particle filter



D1AP02NC

Accessories

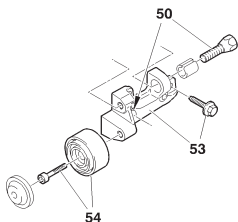
49	Multifunction support	$2 \pm 0,4$
50	Alternator fixing screw	$4,9 \pm 1,2$
51	Alternator power circuit fixing nut	$1,4 \pm 0,2$
52	Accessories tensioner roller	$2,1 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: 9HX

Version without air conditioning

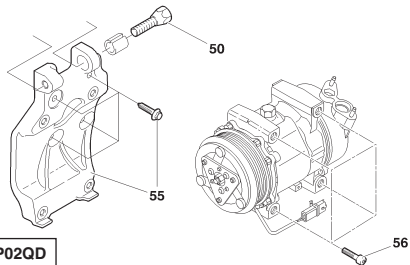


D1AP02PC

Accessories

53	Accessories support	$2 \pm 0,5$
54	Guide roller	$4,5 \pm 0,5$

Version with air conditioning



D1AP02QD

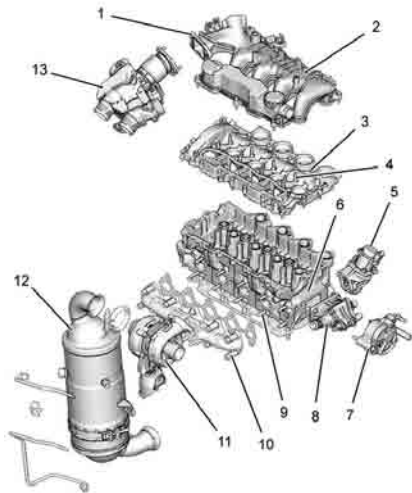
Accessories

55	Aircon compressor support	$2 \pm 0,5$
56	Aircon compressor screw	$2,4 \pm 0,5$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ

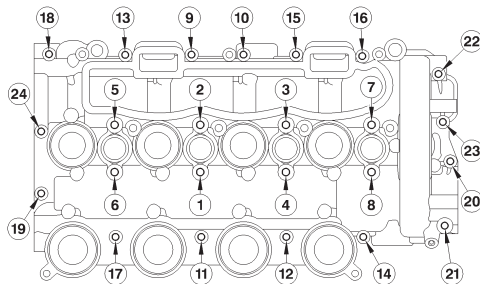


B1BP39XP

Cylinder head

1	Air inlet manifold	$1 \pm 0,1$
2	Oil trap	$1 \pm 0,1$
3	Camshaft bearing cover screws	$0,5 \pm 0,1$
	Pre-tightening	$1 \pm 0,1$
	Tightening	$1 \pm 0,1$

(3) Sequence for tightening the camshaft bearing cover screws

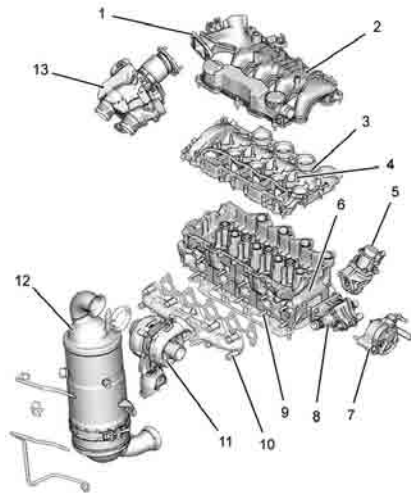


B1DP1D7D

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engines: 9HY - 9HZ

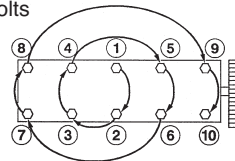


B1BP39XP

Cylinder head

4	Camshaft bearing cover studs	
	Pre-tightening Tightening	$0,5 \pm 0,1$ $1 \pm 0,1$
5	Exhaust gas recycling electrovalve (EGR)	$1 \pm 0,1$
6	Cylinder head	
	Pre-tightening	$2 \pm 0,2$
	Tightening Angular tightening	$4 \pm 0,5$ $260^\circ \pm 5^\circ$
7	Vacuum pump	$1,8 \pm 0,2$
8	Coolant outlet housing	
	Pre-tightening Tightening	$0,3 \pm 0,1$ $0,7 \pm 0,1$

(6) Sequence for tightening the cylinder head bolts

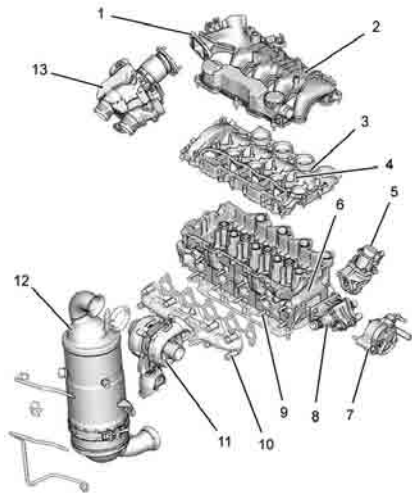


B1DP05BC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ



B1BP39XP

Cylinder head

9	Exhaust manifold	$5 \pm 0,2$
10	Exhaust manifold stud	$1 \pm 0,2$
11	Turbocompressor nuts	$2,6 \pm 0,6$
12	Catalytic converter nuts	$2 \pm 0,1$
13	Double butterfly housing (according to equipment)	
	Pre-tightening	0,1
	Tightening	$0,9 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

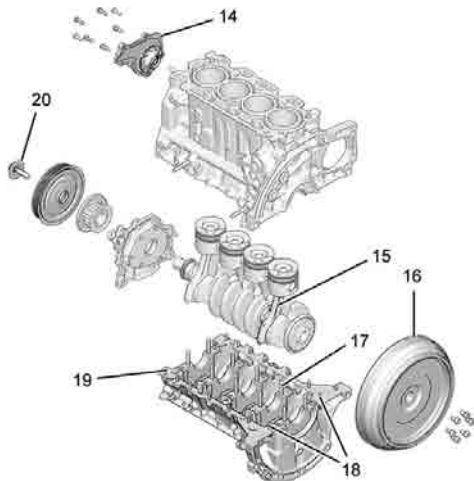
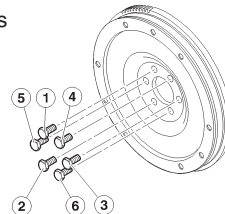
C4

Engines: 9HY - 9HZ

Cylinder block

14	Coolant pump	
	Pre-tightening Tightening	$0,3 \pm 0,1$ $0,9 \pm 0,1$
15	Con rod screws	
	Pre-tightening Angular tightening	$1 \pm 0,1$ $100^\circ \pm 5^\circ$
16	Damping flywheel (according to equipment)	
	Pre-tightening	$3 \pm 0,3$
	Angular tightening	$90^\circ \pm 5^\circ$
	Flywheel (according to equipment)	
	Pre-tightening	$1,7 \pm 0,2$
	Angular tightening	$75^\circ \pm 5^\circ$

(16) Sequence for tightening the flywheel screws



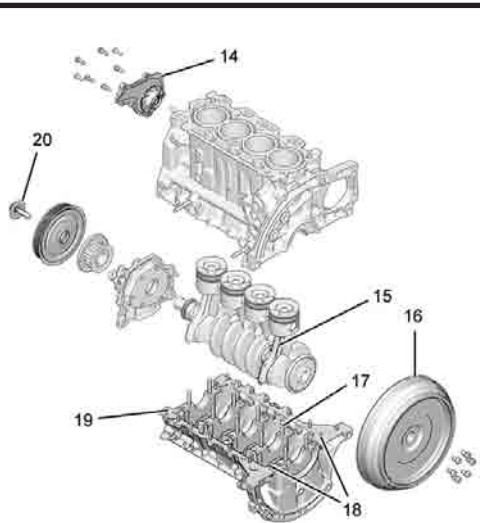
B1DP1LKP

B1CP0GKC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ



B1DP1LKP

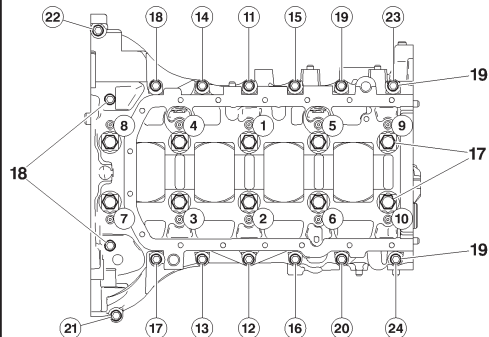
Cylinder block

17	Bearing cap fixing screws	
	Pre-tightening	$1 \pm 0,2$
	Slackening	180°
	Tightening	$3 \pm 0,3$
18	Crankshaft bearing cap cover screws	
	Pre-tightening	$0,8 \pm 0,3$
	Slackening	
	Tightening	
19	Crankshaft bearing cap cover screws	
	Pre-tightening	$0,6 \pm 0,2$
	Slackening	$0,8 \pm 0,3$
	Tightening	
20	Accessories drive pulley	
	Pre-tightening	$3,5 \pm 0,4$
	Slackening	$190^\circ \pm 5^\circ$
	Tightening	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engines: 9HY - 9HZ



B1DP1LLD

Cylinder block

Crankshaft bearing cap cover.

Tightening method:

Pre-tighten the 10 screws (17) (from 1 to 10) to

1

Pre-tighten the 14 screws (19) (from 11 to 24) to

0,6

Tighten the 2 screws (18) (inside the flywheel bell housing) to

0,8

Slacken the screws (17) by

180°

Tighten the 10 screws (17) (from 1 to 10) to

3

Tighten the screws (17) (from 1 to 10) by

140°

Tighten the 14 screws (19) (from 11 to 24) to

0,8

(17) Bearing cap fixing screws (screws M9)

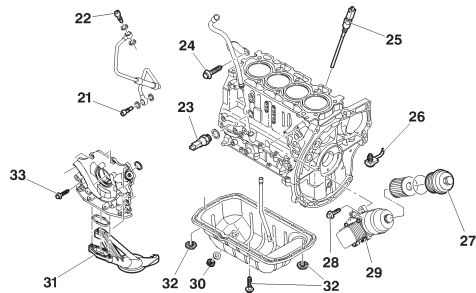
(18) Crankshaft bearing cap cover screws (screws M6)

(19) Crankshaft bearing cap cover screws (screws M6)

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ



B1DP1LMD

Lubrication

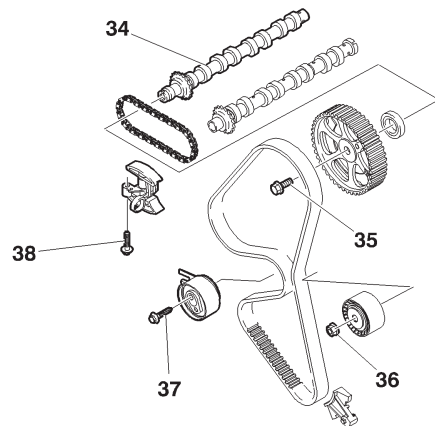
21	Turbocharger lubrication pipe	3 ± 0,5
22		2,1 ± 0,3
23	Oil pressure switch	2 ± 0,2
24	Oil gauge	0,8 ± 0,2
25	Oil level sensor	2,7 ± 0,5
26	Piston skirt spray jets	2 ± 0,5
27	Oil filter cover	2,5 ± 0,5
28	Oil filter support	1 ± 0,2
29	Coolant/oil heat exchanger	1 ± 0,1
30	Drain plug	2,5 ± 0,3
31	Oil induction strainer	1 ± 0,1
32	Oil sump	1,2 ± 0,2
33	Oil pump assembly	0,9 ± 0,1

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engines: 9HY - 9HZ

Timing



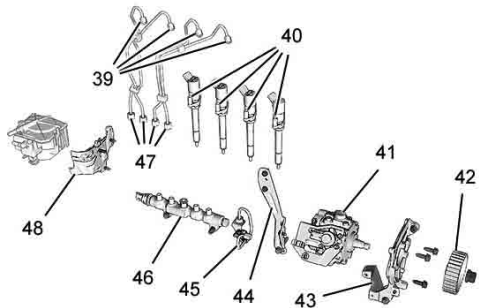
B1EP1HQD

34	Camshaft bearing caps	1 ± 0,1
35	Camshaft pulleys Pre-tightening Angular tightening	2 ± 0,2 50° ± 5°
36	Timing belt guide roller	3,7 ± 0,3
37	Timing belt tensioner roller	2,7 ± 0,2
38	Timing chain tensioner	1 ± 0,1

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ



B1HP22SD

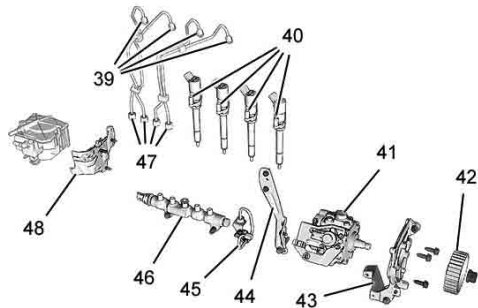
Injection circuit

39	Union on injector	
	Pre-tightening Tightening	$2 \pm 0,5$ $2,5 \pm 0,3$
40	Injector fixing flange but	
	Pre-tightening Angular tightening	$0,5 \pm 0,5$ $65^\circ \pm 5^\circ$
41	Diesel injection pump on support	$2,2 \pm 0,3$
42	Diesel injection pump pulley	$5 \pm 0,5$
43	Diesel fuel high pressure pump front support	$2 \pm 0,5$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engines: 9HY - 9HZ



B1HP22SD

Injection circuit

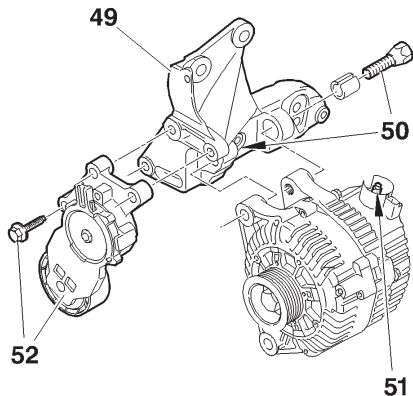
44	Diesel fuel high pressure pump rear support	$2 \pm 0,5$
45	Union on diesel fuel high pressure pump	
	Pre-tightening Tightening	$2 \pm 0,5$ $2,5 \pm 0,3$
46	Fuel high pressure common injection rail on engine block	$2,2 \pm 0,3$
47	Unions on fuel high pressure common injection rail	
	Pre-tightening Tightening	$2 \pm 0,5$ $2,5 \pm 0,3$
48	Fuel filter support	$0,7 \pm 0,1$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ

Version without particle filter



D1AP02NC

Accessories

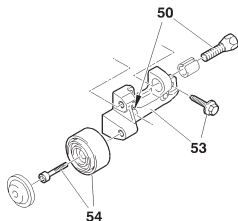
49	Multifunction support	$2 \pm 0,4$
50	Alternator fixing screw	$4,9 \pm 1,2$
51	Alternator power circuit fixing nuts	$1,4 \pm 0,2$
52	Accessories tensioner roller	$2,1 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engines: 9HY - 9HZ

Version without air conditioning

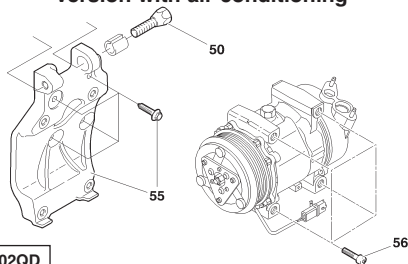


D1AP02PC

Accessories

53	Accessories support	$2 \pm 0,5$
54	Guide roller	$4,5 \pm 0,5$

Version with air conditioning



D1AP02QD

Accessories

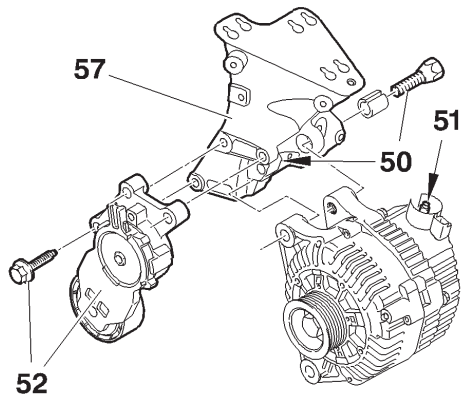
55	Aircon compressor support	$2 \pm 0,5$
56	Aircon compressor screw	$2,4 \pm 0,5$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 9HY - 9HZ

Version with particle filter



D1AP02RC

Accessories

57

Multifunction support

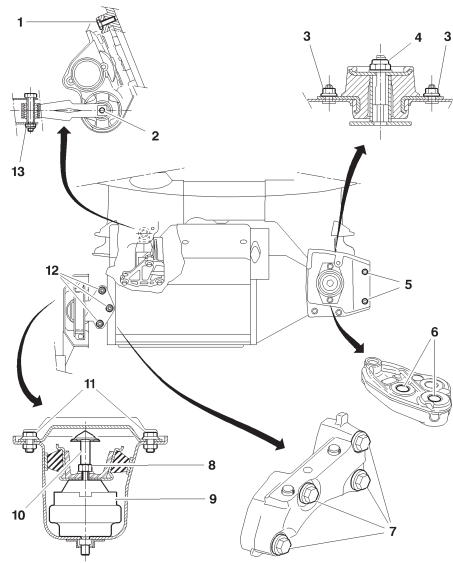
 $3,2 \pm 0,2$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

XSARA PICASSO

ENGINE

Engines: 9HZ - 9HY



Torque reaction rod

(1)	: $5,4 \pm 0,8$
(2)	: $5,4 \pm 0,8$
(13)	: $6 \pm 0,9$

LH upper engine support

(3)	: $2,1 \pm 0,2$
(4)	: $5 \pm 0,5$

Lower LH engine support

(5)	: $2,1 \pm 0,2$
(6)	: $5,7 \pm 0,8$

RH lower engine support

(7)	: $5,5 \pm 0,5$
-----	-----------------

RH engine support

(8)	: $4,5 \pm 0,4$
(9)	: $4,5 \pm 0,6$
(10)	: $2,5 \pm 0,6$
(11)	: $2,1 \pm 0,2$
(12)	: $6,1 \pm 0,6$

B1BP2Z4P

XSARA PICASSO	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines	9HZ - 9HY	
	Crankshaft	
Bearing cap fixing screws		
Pre-tightening	1 ± 0,2	
Slackening	180° ± 5°	
Tightening	3 ± 0,3	
Angular tightening	140° ± 5°	
Con rod screws		
Tightening	1 ± 0,1	
Angular tightening	100° ± 5°	
Accessories drive pulley		
Pre-tightening	3,5 ± 0,4	
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	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA PICASSO
Engines	9HZ - 9HY	
	Cylinder head	
Camshaft bearing covers		
Pre-tightening	0,5 ± 0,1	
Tightening	1 ± 0,1	
Exhaust manifold	3 ± 0,3	
Camshaft pulley		
Pre-tightening	2 ± 0,2	
Angular tightening	50° ± 5°	
Cylinder head		
Pre-tightening	2 ± 0,2	
Tightening	4 ± 0,5	
Angular tightening	260° ± 5°	
EGR valve	1 ± 0,1	
	Flywheel - Clutch	
Flywheel		
Pre-tightening	3 ± 0,3	
Angular tightening	90° ± 5°	
Clutch mechanism	2 ± 0,2	

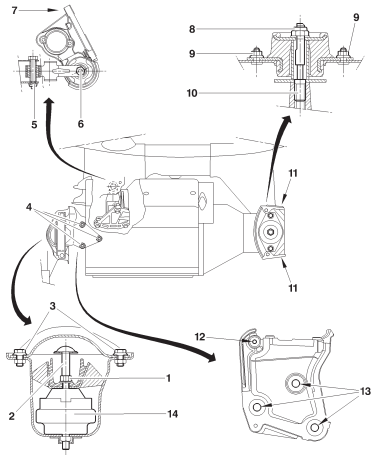
XSARA PICASSO		SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines		9HZ - 9HY	
		Lubrication circuit	
Oil pump assembly			
Pre-tightening		0,5 ± 0,1	
Tightening		0,9 ± 0,1	
Oil/coolant heat exchanger		1 ± 0,2	
Turbocharger lubrication pipe		3 ± 0,5	
		Diesel injection circuit	
Injector fixing flange nut			
Pre-tightening		4 ± 0,1	
Angular tightening		65° ± 5°	
Fuel high pressure common injection rail on engine block		2,2 ± 0,2	
Union on fuel high pressure common injection rail			
Pre-tightening		1,7 ± 0,2	
Tightening		2,2 ± 0,2	
Diesel injection pump on support		2,2 ± 0,2	
Union on injector diesel			
Pre-tightening		2 ± 0,5	
Tightening		2,5 ± 0,3	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA PICASSO
Engines	9HZ - 9HY	
	Diesel injection circuit (continued)	
Diesel injection pump pulley	5 ± 0,5	
Union on fuel high pressure pump		
Pre-tightening	2 ± 0,5	
Tightening	2,5 ± 0,3	
	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	

XSARA

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: WJY



B1BP1U5P

Engine suspension

1		$4,5 \pm 0,4$
2		$2,2 \pm 0,2$
3		$2,2 \pm 0,2$
4		$4,5 \pm 0,4$
5		$5 \pm 0,5$
6		$5 \pm 0,5$
7		$4,5 \pm 0,4$
8		$6,5 \pm 0,6$
9		$2,2 \pm 0,2$
10		$5 \pm 0,5$
11		$2,2 \pm 0,2$
12		$4,5 \pm 0,4$
13		$4,5 \pm 0,4$
14		$4,5 \pm 0,4$

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA
Engine: WJY		
Crankshaft		
Bearing cap fixing screws		$7 \pm 0,7$
Con rod nuts		$2 \pm 0,2$
Pre-tightening		$70^\circ \pm 5^\circ$
Angular tightening		
Accessories drive pulley hub		$4 \pm 0,2$
Pre-tightening		$55^\circ \pm 5^\circ$
Angular tightening		
Accessories drive pulley		$1 \pm 0,1$
Cylinder block		
Piston skirt spray jet		$1 \pm 0,1$
Sump		$1,6 \pm 0,1$
Timing belt guide roller		$4,3 \pm 0,4$
Timing belt tensioner roller		$2,1 \pm 0,2$
Cylinder head		
Camshaft bearing covers		$2 \pm 0,2$
Exhaust manifold		0,3
Valve cover		0,5
Camshaft / hub		$4,3 \pm 0,4$
Camshaft pinion / hub		$2,3 \pm 0,2$

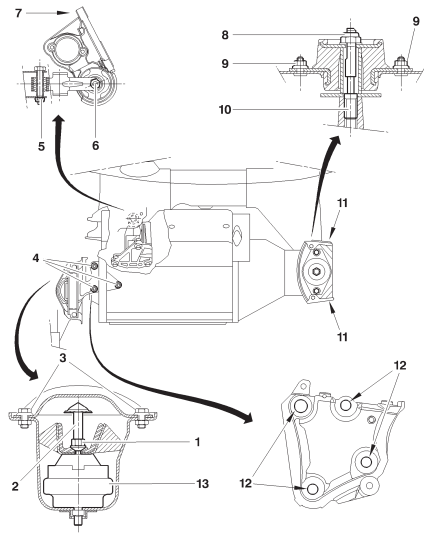
XSARA	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engine: WJY		
Crankshaft		
Bearing cap fixing screws		7 ± 0,7
Con rod nuts		
Pre-tightening		2 ± 0,2
Angular tightening		70° ± 5°
Accessories drive pulley hub		
Pre-tightening		4 ± 0,2
Angular tightening		55° ± 5°
Accessories drive pulley		1 ± 0,1
Cylinder block		
Piston spray jet		1 ± 0,1
Sump		1,6 ± 0,1
Timing belt guide roller		4,3 ± 0,4
Timing belt tensioner roller		2,1 ± 0,2
Cylinder head		
Camshaft bearing covers		2 ± 0,2
Exhaust manifold		3 ± 0,3
Valve cover		0,5
Camshaft / hub		4,3 ± 0,4
Camshaft pinion / hub		2,3 ± 0,2

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA
Engine: WJY		
Flywheel		
Flywheel		4,8 ± 0,4
Clutch mechanism		2 ± 0,2
Lubrication circuit		
Oil pump		2,3 ± 0,2
Coolant/oil heat exchanger		7 ± 0,7
Injection circuit		
Injector on cylinder head		9 ± 0,9
Diesel fuel heater		1,5 ± 0,1
Injection pump		2 ± 0,2
Union on injector		2,5 ± 0,2
Injection pump pulley		2,3 ± 0,2
Cooling circuit		
Coolant pump		1,5 ± 0,1
Coolant inlet housing		1,8 ± 0,1

XSARA

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: RHY - RHZ



B1BP1YDP

Engine suspension

1		4,5 ± 0,4
2		2,2 ± 0,2
3		2,2 ± 0,2
4		6,1 ± 0,6
5		4,5 ± 0,5
6		4,5 ± 0,5
7		4,5 ± 0,4
8		6,5 ± 0,6
9		2,2 ± 0,2
10		5 ± 0,5
11		2,2 ± 0,2
12		4,5 ± 0,4
13		4,5 ± 0,4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA
Engines: RHY - RHZ		
Crankshaft		
Bearing cap fixing screws		
Pre-tightening		2,5 ± 0,2
Angular tightening		60° ± 5°
Con rod nuts		
Pre-tightening		2 ± 0,2
Angular tightening		70° ± 5°
Accessories drive pulley hub		
Pre-tightening		4 ± 0,2
Angular tightening		51° ± 5°
Cylinder block		
Piston skirt spray jet		1 ± 0,1
Sump		1,6 ± 0,1
Timing belt guide roller		4,3 ± 0,4
Timing belt tensioner roller		2,5 ± 0,2
Cylinder head		
Camshaft bearing covers		1 ± 0,1
Exhaust manifold		2 ± 0,2
Valve cover		0,8
Camshaft / hub		4,3 ± 0,4
Camshaft pinion / camshaft hub		2 ± 0,2

XSARA	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines: RHY - RHZ		
Flywheel		
Flywheel		4,8 ± 0,4
Clutch mechanism		2 ± 0,2
Lubrication circuit		
Oil pump		1,6 ± 0,2
Coolant oil heat exchanger		7 ± 0,7
Turbocharger lubrication pipe		
Engine end		4,8 ± 0,4
Turbocharger end		2,2 ± 0,2
Injection circuit		
Injector fixing flange nut		3 ± 0,3
Unions on fuel high pressure common injection rail		2 ± 0,2
Injection pump on support		2,3 ± 0,2
Union on diesel injector		2 ± 0,2
Injection pump pulley		5 ± 0,5
Union on fuel high pressure pump		2 ± 0,2
Cooling circuit		
Coolant pump		1,5 ± 0,1
Coolant inlet housing		1,8 ± 0,1

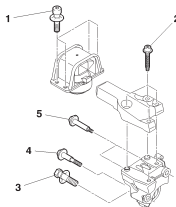
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Suspensions for engine/gearbox assembly

Engine: RHR

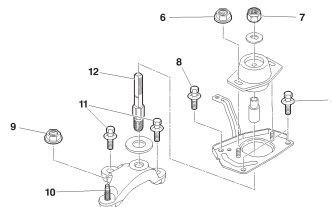
RH engine support



B1BP35HD

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

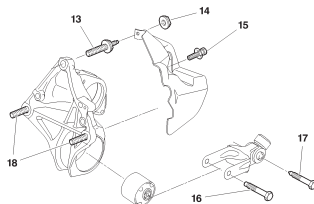
LH engine support



B1BP35JD

6	$3 \pm 0,3$
7	$6,5 \pm 0,6$
8	$2 \pm 0,2$
9	$4,5 \pm 0,4$
10	$3 \pm 0,3$
11	$5,5 \pm 0,5$
12	$5 \pm 0,5$

Lower engine support



B1BP35KD

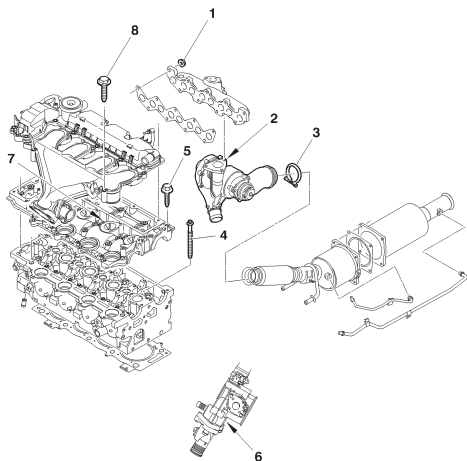
13	$6 \pm 0,6$
14	$1 \pm 0,1$
15	
16	$5,5 \pm 0,5$
17	$4 \pm 0,4$
18	$6 \pm 0,6$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RHR

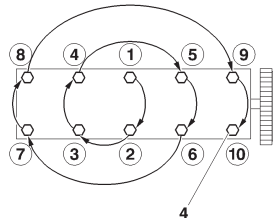
Cylinder head



B1DP1LCP

1	Exhaust manifold Pre-tightening Tightening	1,5 $3 \pm 0,3$
2	Turbocompressor	$2,5 \pm 0,2$
3	Exhaust clip	$2,5 \pm 0,5$
4	Cylinder head bolts (*) Pre-tightening Tightening Slackening Tightening Angular tightening	$2,2 \pm 0,2$ $6 \pm 0,5$ 1 Turn $6 \pm 0,5$ $220^\circ \pm 5^\circ$

(*) (4) Sequence of tightening

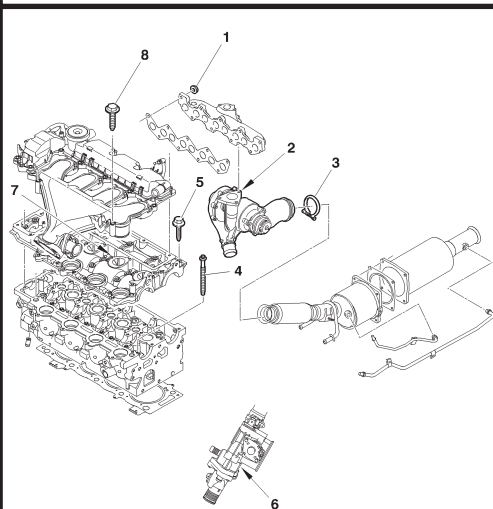


B1DP1LDC

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RHR



B1DP1LCP

Cylinder head

5	Camshaft bearing cap cover screws (*)	$1 \pm 0,1$
6	Coolant outlet housing fixing	$2 \pm 0,2$
7	Camshaft bearing cap cover studs (*)	0,5
	Pre-tightening (the 26 screws Ø 6)	
	Tightening (the 26 screws Ø 6)	$1 \pm 0,1$
8	Inlet valve cover screws (*) (19 screws)	$0,9 \pm 0,1$

C4

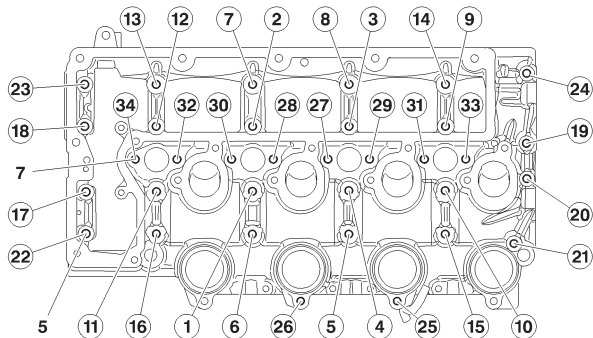
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RHR

Cylinder head

(*) Bolts (5) and (7) Sequence of tightening

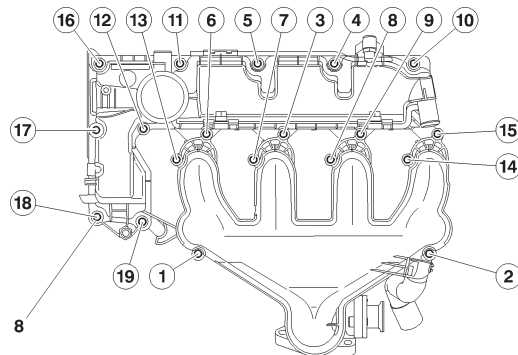
- (5) Camshaft bearing cap cover screws
 (7) Camshaft bearing cap cover studs



B1DP1LED

(*) Bolts (8) Sequence of tightening

- (8) Inlet valve cover screws



B1BP38ZD

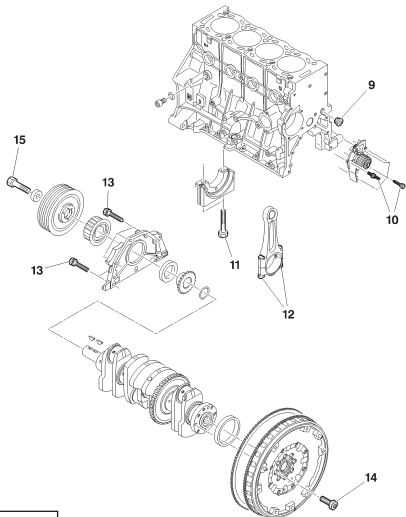
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

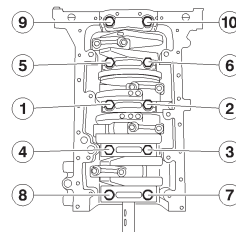
Engine: RHR

Cylinder block

9	Oil circuit plug	$3 \pm 0,3$
10	Coolant pump screw	$1,6 \pm 0,3$
11	Crankshaft bearing cap screws (*) Pre-tightening Angular tightening	$2,5 \pm 0,2$ $60^\circ \pm 5^\circ$
12	Con rod cap nuts Tightening Slackening Tightening Angular tightening	1 180° $2,3 \pm 0,1$ $45^\circ \pm 5^\circ$



(*) (11) Crankshaft bearing cap screws



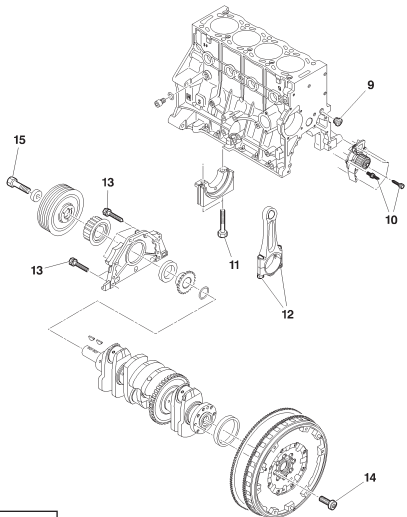
B1CP0GNP

B1CP0DGC

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RHR



B1CP0GNP

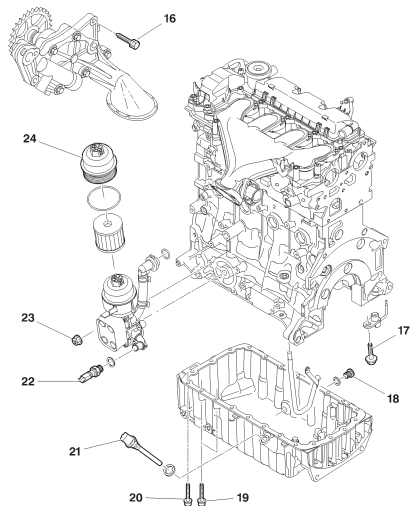
Cylinder block

13	Front closing plate screw	
14	Flywheel screws Pre-tightening Tightening	1,5 4,7 ± 0,4
15	Accessories drive pulley screw Pre-tightening Angular tightening	7 ± 0,25 60° ± 5°

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RHR



B1CP0GPP

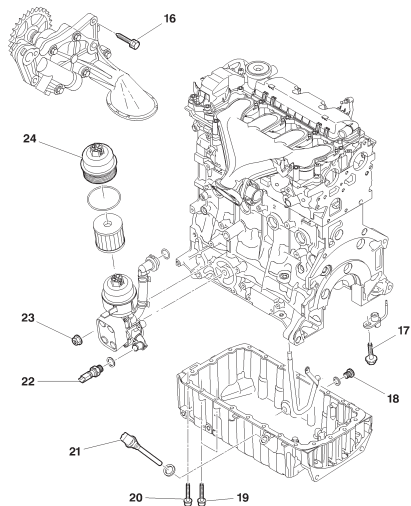
Lubrication

16	Oil pump screw	$1,6 \pm 0,1$
17	Piston skirt spray jet screw	$1 \pm 0,1$
18	Drain plug	$3,4 \pm 0,4$
19	Oil sump (length 40 mm) Pre-tightening Tightening	1 $1,6 \pm 0,3$
20	Oil sump (length 21 mm) Pre-tightening Tightening	1 $1,6 \pm 0,3$
21	Electric oil gauge	$2,7 \pm 0,2$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RHR

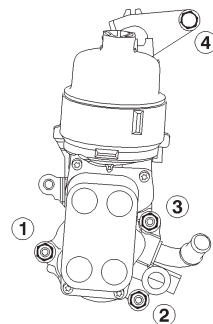


B1CP0GPP

Lubrication

22	Oil pressure switch	$2 \pm 0,2$
23	Oil filter support (*)	
	Tightening	$1 \pm 0,1$
	Tightening	$2 \pm 0,2$
24	Oil filter cover	$2,5 \pm 0,5$

(*) (23) Sequence of tightening

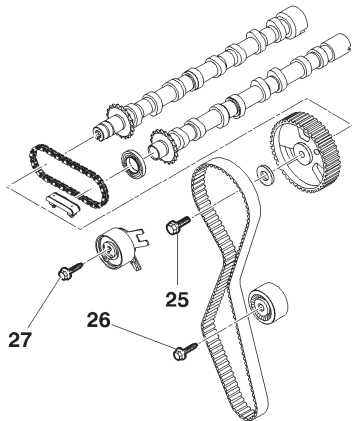


B1FP062C

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RHR



B1EP1HPD

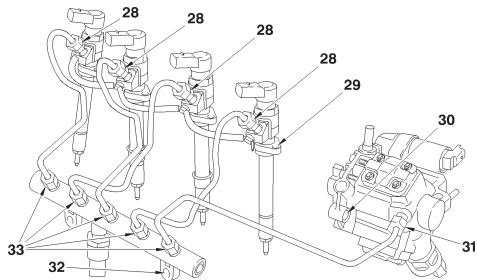
Timing

25	Camshaft drive pulley screw Tightening Angular tightening	$7 \pm 0,7$ $60^\circ \pm 5^\circ$
26	Guide roller screw Pre-tightening Tightening	1,5 $4,3 \pm 0,4$
27	Tensioner roller screw	$2,1 \pm 0,2$

C4

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: RHR



B1HP22LD

Injection circuit

28	High pressure pipe union on injector	$2,5 \pm 0,2$
29	Diesel injector nuts Do up both nuts by hand Tightening Angular tightening	$0,4 \pm 0,3$ $45^\circ \pm 5^\circ$
30	Fuel high pressure pump screw	$2,25 \pm 0,3$
31	High pressure pipe union on fuel high pressure pump	$2,5 \pm 0,2$
32	Fuel high pressure supply common rail nuts	$3 \pm 0,3$
33	Union on fuel high pressure supply common rail	$2,5 \pm 0,2$

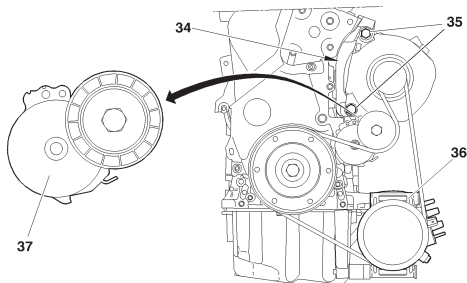
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C4

Engine: RHR

Accessories

34	Alternator support	$2 \pm 0,2$
35	Alternator	$4,9 \pm 0,4$
36	Aircon compressor	$2,5 \pm 0,2$
37	Accessories belt tensioner roller	$4,3 \pm 0,4$



B1BP390D

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.

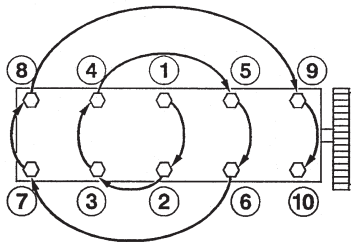
Do not use abrasives or cutting tools on the contact faces.

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)
NFU	Tightening Angular tightening	$2 \pm 0,2$ $260^\circ \pm 5^\circ$	$122 \pm 0,3$
KFU	Pre-tightening Tightening Angular tightening	$1,5 \pm 0,2$ $2,5 \pm 0,2$ $200^\circ \pm 5^\circ$	119
6FZ - RFN	Pre-tightening Tightening	$1,5 \pm 0,1$ $5 \pm 0,1$	147
RFJ	Angular slackening Tightening	$360^\circ \pm 2^\circ$ $2 \pm 0,75$	$127,5 \pm 0,5$
RFK	Angular tightening	$285^\circ \pm 5^\circ$	$144,5 \pm 0,5$

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.

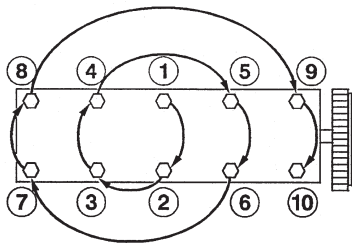
Do not use abrasives or cutting tools on the contact faces.

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)
WJY	Pre-tightening	$2 \pm 0,2$	125,5
	Tightening	$6 \pm 0,6$	
	Angular tightening	$180^\circ \pm 5^\circ$	
RHY - RHZ	Pre-tightening	$2 \pm 0,2$	133,3
	Tightening	$6 \pm 0,6$	
	Angular tightening	$220^\circ \pm 5^\circ$	
RHR	Pre-tightening	$2 \pm 0,2$	134,5
	Tightening	$6 \pm 0,6$	
	Slackening	360°	
	Pre-tightening	$2 \pm 0,2$	
	Tightening	$6 \pm 0,6$	
	Angular tightening	$220^\circ \pm 5^\circ$	

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.

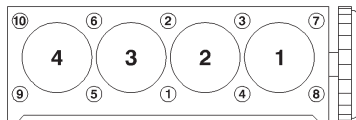
WARNING: Clean the contact faces with the approved CITROËN cleaning product.

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

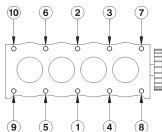
The contact faces must not bear any traces of impact or scratching.

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**.



B1BP10LC



B1DP1CLC

Engines	Tightening (m.daN)		Cylinder head bolts (Max. reusable length in mm)
KFW - NFV	Pre-tightening	$2 \pm 0,2$	175,5
	Angular tightening	$240^\circ \pm 5^\circ$	
8HX - 8HZ 8HY	Pre-tightening	$2 \pm 0,2$	149
	Tightening Angular tightening	$4 \pm 0,4$ $230^\circ \pm 5^\circ$	
9HY - 9HZ 9HX	Pre-tightening	$2 \pm 0,2$	147
	Tightening Angular tightening	$4 \pm 0,4$ $260^\circ \pm 5^\circ$	

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

BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE






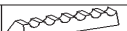
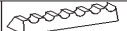


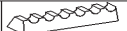

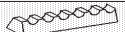

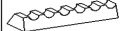
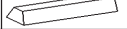






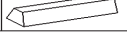



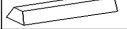



↓ 4099-T (C.TRONIC.105)



Tools



4122-T (C.TRONIC.105.5) ↓

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

AUXILIARY EQUIPMENT DRIVE BELT

	TU	ET	TU			EW				
	3		5			7	10			
	JP	J4	JP+	JP4		J4	A	J4		J4S
Engine type	KFW	KFU	NFV	NFU		6FZ	RFJ	RFN		RFK
C4		X		X			X	X		X
XSARA	X				X				X	
XSARA PICASSO			X			X			X	
See pages:	155	156 to 157	158	156 to 157	160	162	161	163	162	164

AUXILIARY EQUIPMENT DRIVE BELT

	DV							DW			
	4		6					8	10		
	TD		TED4				ATED4	B	TD	ATED	BTED4
Engine type	8HX	8HZ	9HY	9HZ	9HY	9HZ	9HX	WJY	RHY	RHZ	RHR
C4			X	X			X				X
XSARA	X	X						X	X	X	
XSARA PICASSO					X	X			X		
See pages:	165 to 166		167 to 168		169		167 to 168	170 to 175	176 to 179		180

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).

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

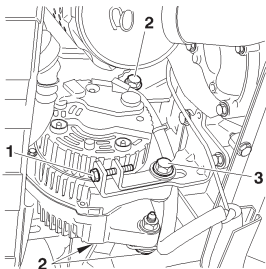
XSARA

Engine: KFW

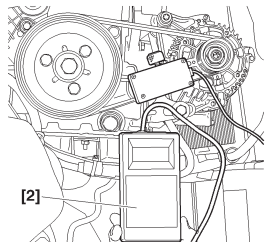
	<p align="center">Alternator</p> <p>[1] Belt tension measuring instrument : 4122-T</p> <ul style="list-style-type: none"> - Tension the belt using the screw (2). - Tension should be: 102 ± 7 SEEM units. - Tighten the screws (1). 		<p align="center">With air conditioning</p> <p>[1] Belt tension measuring instrument : 4122-T</p> <ul style="list-style-type: none"> - Tension the belt using the screw (4). - Tension should be: 102 ± 7 SEEM units. - Tighten the screws (3).
	<p align="center">Power-assisted steering</p> <ul style="list-style-type: none"> - New belt 100 SEEM units. - Re-used belt 75 SEEM units. <p>B1BP1B2C B1BP122C</p>		<p align="center">Power steering and air con.</p> <ul style="list-style-type: none"> - New belt 100 SEEM units. - Re-used belt 75 SEEM units. <p>B1BP1B3C B1BP124C</p>

C4

AUXILIARY EQUIPMENT DRIVE BELT



B1BP2LSC



B1BP2LTC

Engines: KFU - NFU

Tools.

- | | |
|--|--------------|
| [1] Pliers for removing plastic pegs | : 7504 -T |
| [2] Belt tension measuring instrument (SEEM) | : 4122 -T |
| [3] Compression lever for dynamic tensioner | : (-).0194.D |
| [4] Peg for dynamic tensioner roller of Ø 4 mm | : (-) 0194.F |

WARNING: (With or without air conditioning)

The auxiliaries drive belt **cannot be re-used** with a **manual tensioner roller**.

The auxiliaries drive belt **can be re-used** with a **dynamic tensioner roller**.

Removing.

Raise and support the vehicle, front wheels hanging.

Disconnect the battery.

Remove the front RH wheel and the front RH splash-shield, using tool [1].

Vehicle without air conditioning.

Slacken bolts (2), screw (3) and the tensioning screw (1).

Push back the alternator towards the engine.

Remove the auxiliary equipment drive belt.

Refitting.

Refit the new auxiliary equipment drive belt.

Respect the following sequence: Crankshaft pinion, alternator pulley.

Position tool [2] on the belt.

Tighten the screw (1) to tension the belt to: **120 ± 4 SEEM units**.

Tighten screw (3), bolts (2).

Remove tool [2].

Complete the refitting.

Engine: KFU

Véhicule with air conditioning.**Removing.**

Place tool [4] at «a».

Compress the dynamic tensioner roller.

Place tool [3] at «b».

Remove the auxiliary equipment drive belt.

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

Refitting.

NOTE: Visually check the condition of the auxiliary equipment drive belt prior to refitting.

Place tool [4] at «a».

Compress the dynamic tensioner roller.

Remove tool [3].

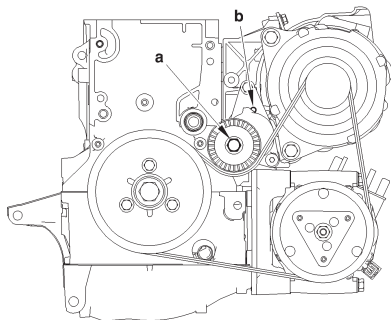
Refit the auxiliary equipment drive belt.

Respect the following sequence:

- Crankshaft pinion, aircon compressor pulley, alternator pulley, dynamic tensioner roller.

Remove the tools.

Complete the refitting.



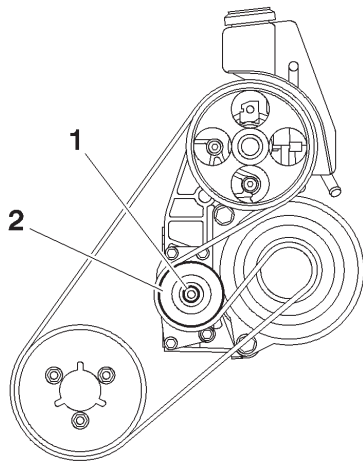
B1EP1GQD

XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT

Engine: NFV

Without air conditioning



Tools.

- [1] Pliers for removing plastic pegs
- [2] Belt tension measuring instrument
- [3] TORX spanner

: 7504 -T

: 4122 -T

Remove.

Release the central screw (1), tool [3].

Detension the tensioner roller (2) (*flat spanner 27 on flat*).

Remove the belt.

Refit.

Position the belt.

Hold the belt in position using the tensioner roller (2).

Pre-tension the belt **120 SEEM** units, tool [2].

Lock the central screw (1) tool [3].

Remove the tool [2].

Rotate the crankshaft **2 to 4 times**.Check the tension, **120 SEEM** units.

If not, restart the operation.

B1BP234C

Engine: NFV

With air conditioning

Tools.

- [1] Pliers for removing plastic pegs : 7504 -T
- [2] Belt tension measuring instrument : 4122 -T
- [3] 10 mm square (*drain spanner*)
- [4] TORX spanner

Remove.

Detension the automatic tensioner, tool [3].

Place a Ø 6 mm peg at (a) to immobilise the automatic tensioner.

Remove the belt.

Refit.

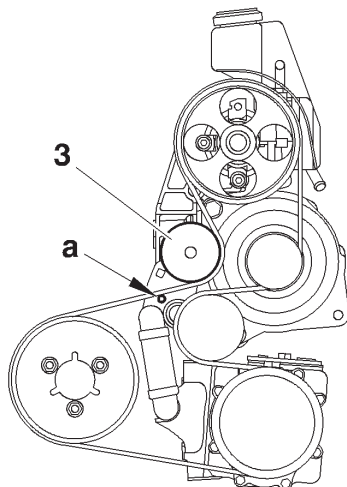
Position the belt.

Detension the automatic tensioner, tool [3].

Remove the Ø 6 mm peg.

Release the automatic tensioner.

Remove the tool [3].



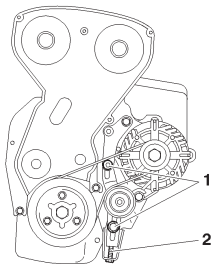
B1BP235C

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engine: NFU

Without air conditioning



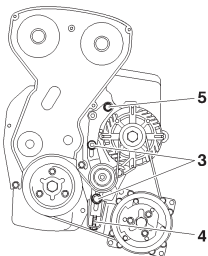
(1) Tensioner roller fixing screw

(2) Tensioning screw

- New belt: **120 SEEM** units.- Reused belt: **86.5 ± 3.5 SEEM** units.

B1BP1AMC

With air conditioning



(3) Tensioner roller fixing screw

(4) Tensioning screw

- New belt: **120 SEEM** units.- Reused belt: **86.5 ± 3.5 SEEM** units.**NOTE:** Removal of the tensioner roller makes it necessary to remove the plate with the upper fixing screw (5).

B1BP1ANC

AUXILIARY EQUIPMENT DRIVE BELT

C4

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 $2 \pm 0,2$ 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).

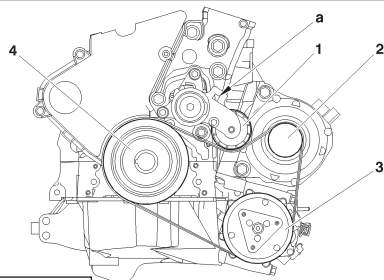
Remove tool [1].

Checking the tension of the auxiliaries drive belt.

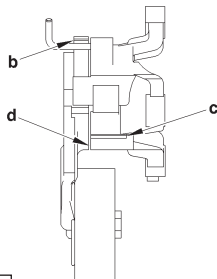
Check the tension of the auxiliaries drive belt:

- Mark «b» at the level of mark «c», new belt.

- Mark «b» at the level of mark «d», belt to be changed.



B1EP1FUD

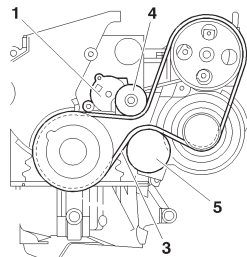
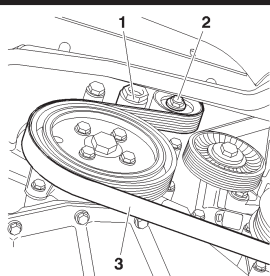


B1EP1FVC

XSARA - XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT

Without air conditioning



Engines: 6FZ - RFN

Tool.

[1] Pliers for removing plastic pegs

: 7504-T

Remove the belt.

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

The screw (2) (**WARNING: not left hand screw**).

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

Refit the belt.

Refit the belt (3), while keeping the tensioner roller (1) tight.

Release the tensioner roller (1).

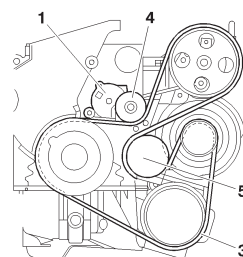
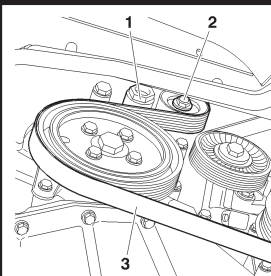
B1BP23PC

B1BP23QC

B1BP23PC

B1BP23RC

With air conditioning

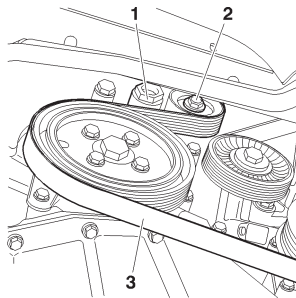


AUXILIARY EQUIPMENT DRIVE BELT

C4

Engine: RFN

Without air conditioning

**Removing.**

Raise and support the vehicle, wheels hanging.

Remove the front RH wheel, the plastic pins and the splash-shield.

Detension the belt (3) by turning the tensioner roller (1) by means of the screw (2) (clockwise).

NOTE: Screw (2) has a left hand thread.

Compress the tensioner roller (1).

Remove the auxiliaries drive belt (3).

IMPERATIVE: Check that the rollers (4) and (5) turn freely (*without play and without tight spots*).

Refitting.

Compress the tensioner roller (1).

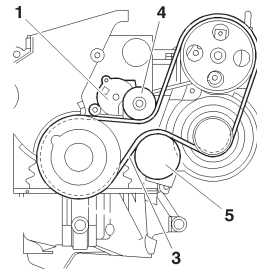
Fit the auxiliaries drive belt (3).

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

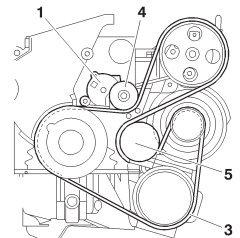
Complete the refitting.

Tightening torques:

- Tensioner roller screw (4) : $2 \pm 0,2$ m.daN.
- Guide roller screw (5) : $3,5 \pm 0,3$ m.daN.
- Wheel bolts : 9 ± 1 m.daN.



With air conditioning



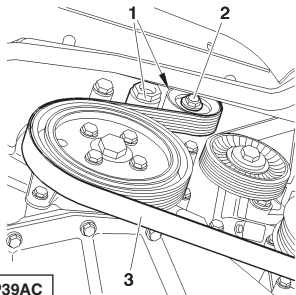
B1BP23PC

B1BP23QC

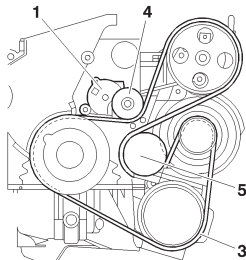
B1BP23RC

C4

AUXILIARY EQUIPMENT DRIVE BELT



B1BP39AC



B1BP23RC

Engine: RFK

Tools.

[1] Detensioning lever for auxiliaries drive belt tensioner roller
 Dynamic spanner extension
 Adaptor for socket 9x12
 Polygon socket 9x12

:
 : FACOM SJ.214
 : FACOM J.274
 : 016

Removing.

Raise and support the vehicle, wheels hanging.
 Remove the front RH wheel, the plastic pins and the splash-shield.
 Turn the tensioner roller (1) by the screw (2) (*anti-clockwise*), using tool [1] to detension the belt (3).
NOTE: Screw (2) has a left hand thread.
 Remove the auxiliaries drive belt (3).

Refitting.

IMPERATIVE: Check that the rollers (4) and (5) turn freely (*without play and without tight spots*).
 Refitting.

Compress the tensioner roller (1), using tool [1].
 Fit the auxiliaries drive belt (3).

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

Complete the refitting.

Tightening torques:

- Tensioner roller screw (4) tighten to
- Guide roller screw (5) tighten to

: $2 \pm 0,2$ m.daN.
 : $3,5 \pm 0,3$ m.daN.

AUXILIARY EQUIPMENT DRIVE BELT

XSARA

Engines: 8HX - 8HZ

Tools.

- [1] Dynamic tensioner compression lever : (-).0188.Z
 [2] Peg for dynamic tensioner roller : (-).0194.F

Removing.

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

Remove:

- the front RH wheel.
- the sound insulation under the engine.
- the splash-shield.

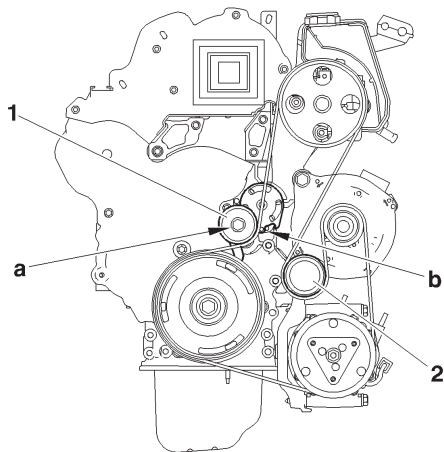
WARNING: Mark the direction of fitting of the accessories belt if it is to be re-used.

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

Peg at «b». using tool [2].

Keep the dynamic tensioner roller (1) compressed and remove the auxiliaries drive belt.

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

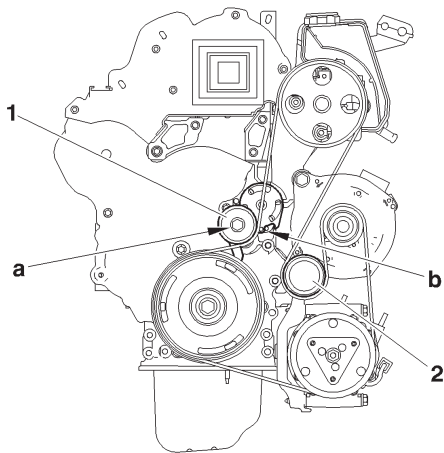


B1BP2VZD

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engines: 8HX - 8HZ



B1BP2VZD

Refitting.**WARNING:** If the accessories belt is being re-used, respect the direction of fitting of the belt.

Refit the accessories belt.

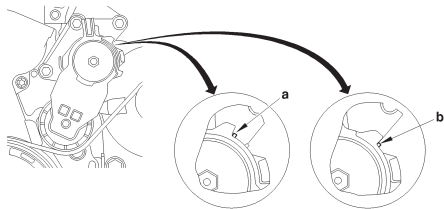
Compress the tensioner roller (**1**) by acting at «**a**» (*clockwise*), using tool [**1**].Remove tool [**2**].**IMPERATIVE:** Check that the belt is correctly positioned in the grooves of the different pulleys.

Complete the refitting in the opposite direction to removal.

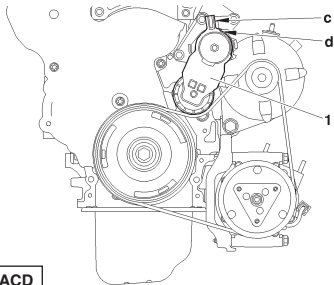
AUXILIARY EQUIPMENT DRIVE BELT

C4

Engines: 9HX - 9HY - 9HZ



B1EP18UD



B1BP3ACD

Tools.

- | | |
|--|---------------|
| [1] Dynamic tensioner roller lever (DV6 TED4 engine) | : (-).0194-E3 |
| [1a] Dynamic tensioner roller lever (DV6 ATED4 engine) | : (-).0194-E1 |
| [1b] Lever extension (DV6 ATED4 engine) | : (-).0194-E2 |
| [2] Dynamic tensioner roller locking peg | : (-).0194-F |

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

Markings on the dynamic tensioner roller.

- «a» position «maximum wear» of the auxiliaries drive belt.
 «b» Nominal position.

Removing.

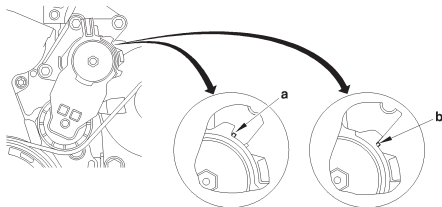
WARNING: Mark the direction of fitting of the auxiliaries drive belt in the case of re-use of the belt.

Compress the dynamic tensioner roller (1) by acting at «c» (clockwise), using tool [1].
 Peg using tool [2] at «d».
 Keep the dynamic tensioner roller (1) compressed and remove the auxiliaries drive belt.

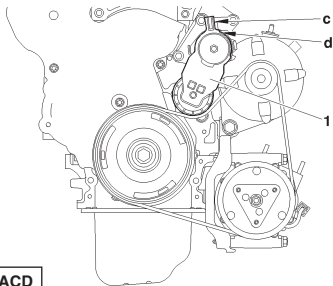
C4

AUXILIARY EQUIPMENT DRIVE BELT

Engines: 9HX - 9HY - 9HZ



B1EP18UD



B1BP3ACD

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).

AUXILIARY EQUIPMENT DRIVE BELT

XSARA PICASSO

Engines: 9HZ - 9HY

Tools.

[1] Dynamic tensioner compression lever : (-).0188.Z

[2] Peg for dynamic tensioner roller : (-).0194.F

Removing.

Remove the front RH wheel, the under-engine sounddeadening and the splash-shield.

Vehicle with air conditioning.**WARNING:** Mark the direction of fitting of the accessories drive belt, if it is to be re-used.Compress the tensioner roller (1) by acting at «a» (*clockwise*), using tool [1].

Peg at «b», using tool [2].

Remove the accessories drive belt.

IMPERATIVE: Check that the rollers (1) and (2) can turn freely (*without play and without tight spots*).**Refitting.****WARNING:** Belt to be re-used, mark the direction of fitting of the belt.

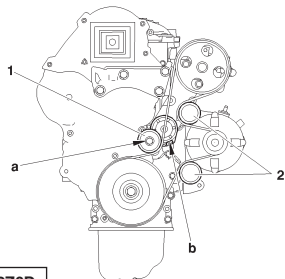
Refit the accessories drive belt.

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

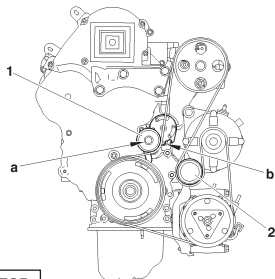
Remove tool [2].

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

Complete the refitting in the opposite order to removal.



B1BP2Z6D



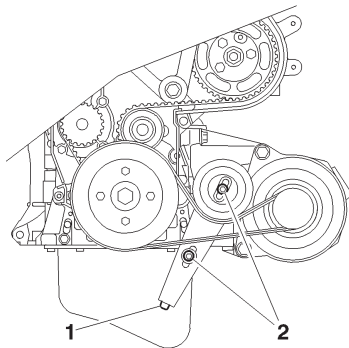
B1BP2ZCD

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engine: WJY

Without power-assisted steering



B1BP1SDC

Tool.

[1] Belt tension measuring instrument : 4122-T

Removal.

Loosen the screws (2).

Tighten the screw (1) until it is against its stop.

Remove the belt.

Refitting.

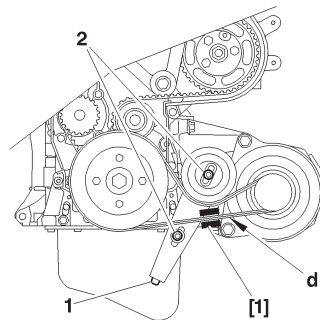
Refit the belt.

Fit the tool [1] on the belt at "d".

Tighten the screw (1) to obtain: 106 ± 10 SEEM units.

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

Remove the tool [1].



B1BP1SEC

AUXILIARY EQUIPMENT DRIVE BELT

XSARA

ENGINE

Engine: WJY

Without power-assisted steering, with air conditioning

Tool.

[1] Belt tension measuring instrument : 4122-T

Removal.

Loosen the screws (1).

Tighten the screw (2) until it is against its stop.

Remove the belt.

Refitting.

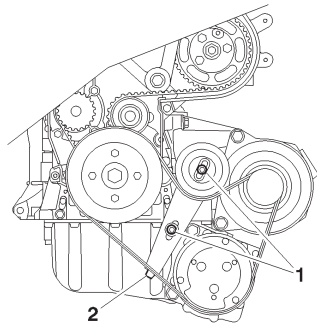
Refit the belt.

Fit the tool [1] at "e".

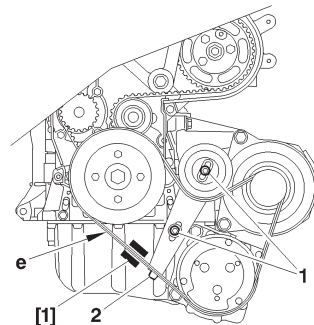
Tighten the screw (2) to obtain: 106 ± 10 SEEM units.

Tighten the screws (1) to 2 m.daN.

Remove the tool [1].



B1BP1SFC



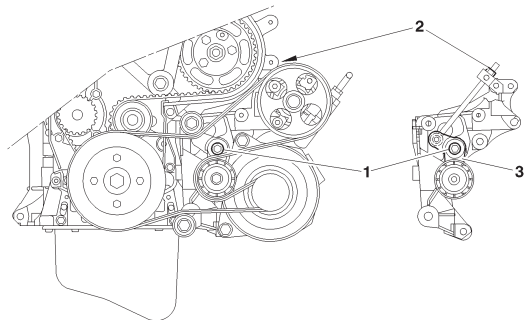
B1BP1SGC

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engine: WJY

Power-assisted steering, without air conditioning



Tool.

[1] Belt tension measuring instrument : 4122-T

Removal.**WARNING:** If the belt is to be reused, measure the tension before removal.

Loosen:

- the screw (1).
- the nut (2).

NOTE: The tensioner arm (3) must be against the alternator.

Remove the belt.

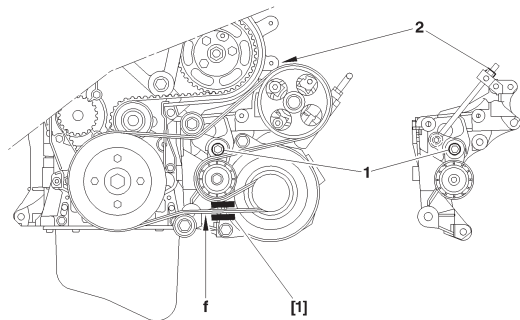
B1BP1SHD

AUXILIARY EQUIPMENT DRIVE BELT

XSARA

Engine: WJY

Power-assisted steering, without air conditioning (continued)

**Refitting.**

Refit the belt.

Place the tool [1] on belt at "f".

WARNING: Position tool [1] with the knob downwards.

Tighten the nut (2) to obtain a value of:

Reused belt:

- Keep the value taken at removal.

New belt:- Tension should be **110 SEEM** units.- Tighten the screw (1) to **9.5 m.daN**.

- Check belt tension, using tool [1].

Tension should be **144 ± 3 SEEM** units.

- Remove the tool [1].

- Start the engine and run it for **10 seconds**.

- Stop the engine.

- Place the tool [1] on the belt at "f".

- Tension should be **130 ± 4 SEEM** units.

- Remove the tool [1].

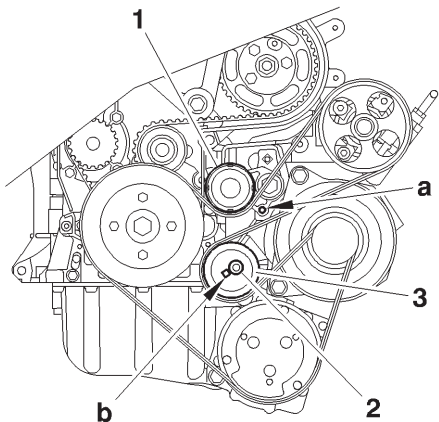
B1BP1SJD

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engine: WJY

Power-assisted steering, with air conditioning



Tools.

- [1] Dynamic tensioner peg : (-) 0188 H
 [2] Belt tension measuring instrument : 4122-T

Removal.

Peg the dynamic tensioner (1) at "a", using tool [1].

Loosen the screw (2) of the roller (3).

Turn the roller (3) backwards.

Remove the belt.

NOTE: If it can not be pegged at "a":

- Loosen the screw (2) of the roller (3).
- Using a 7 mm square drive, turn the roller (3) at "b".
- Peg the tensioner (1) at "a", using tool [1].

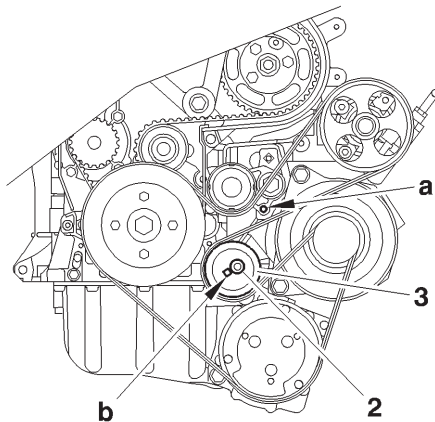
NOTE: If the belt is broken:

- Support the engine using a jack (*insert a wooden block between the housing and the jack*).
- Remove the right engine support.
- Using a square drive at (b) turn the tool (3) in the direction of the arrow "a", so that it can be pegged at "a" using the tool [1].

B1BP1SKC

Engine: WJY

Power-assisted steering, with air conditioning (continued)

**Refitting.**

Refit the belt.

Using a **7 mm** square drive at "**b**", turn the roller (**3**), until the tool [**1**] located at "**a**" becomes free.

Tighten the screw (**2**).

Remove the tool [**1**].

XSARA - XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT

Engines: RHY - RHZ

Without air conditioning

Tools.

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

Removing.

Re-use of belt.

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

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

Keep the tensioner roller (2) compressed and remove the belt.

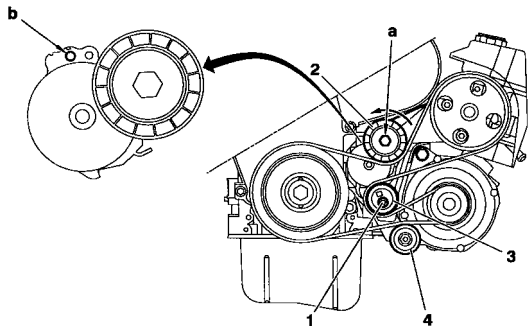
No re-use of belt.

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

Peg using tool [2] at «b».

Keep the tensioner roller (2) compressed and remove the belt.

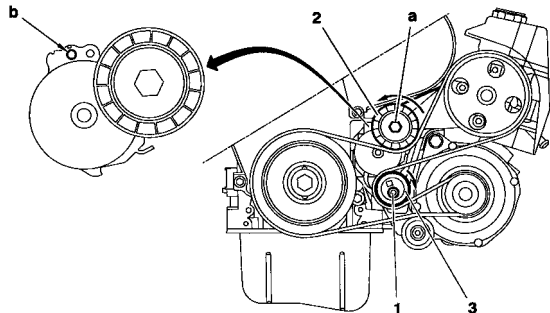
Loosen the screw (1).



B1BP1YKD

Engines: RHY - RHZ

Without air conditioning (continued)

**Refitting.****Re-used belt.**

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

WARNING: Respect the belt-fitting direction.

Remove the tool [4].

New belt.

Refit the belt.

Turn the eccentric roller (3), tool [1] (*clockwise*) to free the tool [2] from its pegging at «b».

Hold the eccentric roller (3), tool [1] and tighten the screw (1) to **4.3 m.daN**.

Remove the tool [2].

Rotate the crankshaft **4 times** in the direction of rotation.

Check that it is possible to peg at «b», tool [3].

If not possible to peg, restart the adjustment.

XSARA - XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT

Engines: RHY - RHZ

With air conditioning

Tools.

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

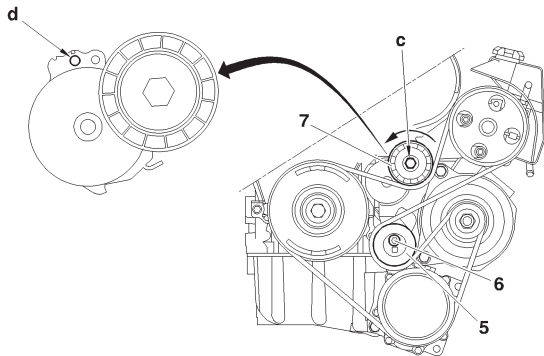
Removal.

Re-use of belt.

WARNING: Mark the direction the belt was fitted in case of re-use of the same belt. Compress the tensioner roller (7) by moving it at «c» (in anti-clockwise direction), tool [4]. Hold the tensioner roller (7) compressed and remove the belt.

No re-use of belt.

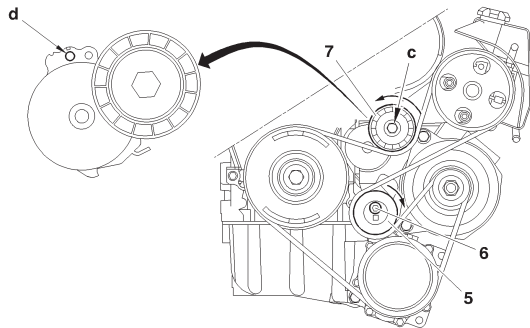
Compress the tensioner roller (7) by moving it at «c» (in anti-clockwise direction), tool [4]. Peg using tool [2], at «d». Loosen the screw (6). Bring the eccentric roller (5) towards the rear. Tighten the screw (6) by hand. Remove the belt.



B1BP1YLD

Engines: RHY - RHZ

With air conditioning (continued)

**Refitting.****Re-used belt.**

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

WARNING: Respect the direction belt was fitted.

Remove the tool [4].

New belt.

Refit the belt.

Turn the eccentric roller (5), tool [1] (*clockwise*) to free the tool [2] from its pegging at «d».

Hold the eccentric roller (5), tool [1] and tighten the screw (6) to 4.3 m.daN.

Remove the tool [2].

Rotate the crankshaft **4 times** in the direction of rotation.

Check that it is possible to peg at «d», tool [3].

If not possible to peg, restart the adjustment.

JUMPER

AUXILIARY EQUIPMENT DRIVE BELT

Engines: RHV - 4HY

Without air conditioning

Tools.

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

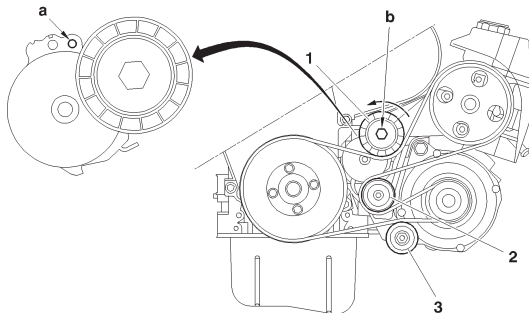
Refit the auxiliaries drive belt.

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».

Complete the refitting.



B1BP2J5D

CHECKING AND SETTING THE VALVE TIMING

	TU	ET	TU			EW				
	3		5			7	10			
	JP	J4	JP+	JP4		J4	A	J4	J4S	
Engine type	KFW	KFU	NFV	NFU		6FZ	RFJ	RFN		RFK
C4		X		X			X	X		X
XSARA	X				X				X	
XSARA PICASSO			X			X			X	
See pages:	185 to 187	188 to 192	185 to 187	197 to 202	193 to 196	217 to 223	103 to 209	210 to 216	217 to 223	224 to 231

CHECKING AND SETTING THE VALVE TIMING

	DV							DW			
	4		6					8	10		
	TD		TED4				ATED4	B	TD	ATED	BTED4
Engine type	8HX	8HZ	9HY	9HZ	9HY	9HZ	9HX	WJY	RHY	RHZ	RHR
C4			X	X			X				X
XSARA	X	X						X	X	X	
XSARA PICASSO					X	X			X		
See pages:	232 to 239		240 to 248		249 to 258		240 to 248	259 to 263	264 to 270		271 to 278

BELT TENSION CORRESPONDANCE TABLE / SEEM UNITS







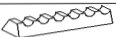




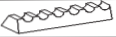


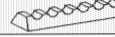

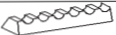



















↓ 4099-T (C.TRONIC.105)



Tools



4122-T (C.TRONIC.105.5) ↓

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

RECOMMENDATIONS: TIMING BELT**Recommendations.**

IMPERATIVE: After any repair involving removal of the timing belt, systematically replace:

- The timing belt.
- The tensioner roller fixing nut.

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

ENGINE

Engines: KFW - NFV

Tools.

- [1] Flywheel peg : 4507-T.A
- [2] Camshaft pulley peg : 4507-T.B
- [3] Square : 4507-T.J
- [4] Belt tension measuring instrument : 4122-T
- [5] Valve rocker thrust plate : 4533-T.Z

Toolkit 4507-T

Checking the timing.

Peg the flywheel, using tool [1].

Peg the camshaft pulley, using tool [2].

Setting the timing.

NOTE: Remove the sparking plugs, to ease rotation of the crankshaft.

Rotate the engine by means of the crankshaft screw (1).

Peg the camshaft pinion.

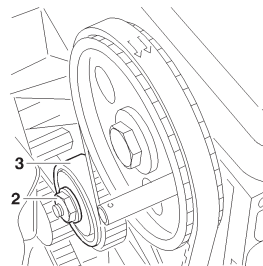
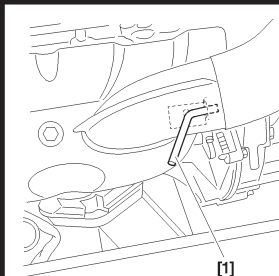
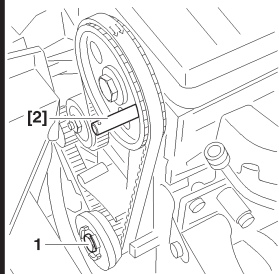
Peg the flywheel

Slacken the nut (2).

Fullt detension the belt by acting on the tensioner roller.

Remove the belt.

IMPERATIVE: Check that the tensioner roller turns freely (*no tight spot*).



B1EP067C

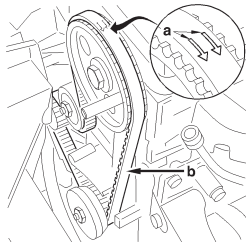
B1EP066C

B1EP068C

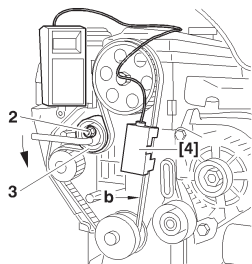
XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: KFW - NFV



B1EP069C



B1EP06AC

Refitting the timing belt.**NOTE :** Check that the pegs [1] and [2] are in place.**WARNING:** Respect the direction of fitting of the belt: The arrows "a" indicate the direction of rotation of the crankshaft.

Position:

- The timing belt, belt "b" well-tensioned in the following order: Crankshaft pinion, camshaft pulley, coolant pump pulley, tensioner roller.
- Tool [5] (*respect the direction of fitting relative to the valve timing*).
- Put the tensioner roller in contact with the belt.
- Tighten the nut (2).

Pre-tensioning the belt.

Place tool [4] on the tensioned part "b" of the belt.

Slacken the screw (2).

Turn the roller (3) in the anti-clockwise direction using the drive square, to obtain a value of: **44 SEEM** units.Tighten the nut (2) to **2 m.daN**.

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

Rotate the crankshaft **4 turns** in the normal direction of rotation.**IMPERATIVE:** Never turn the crankshaft backwards.

Engines: KFW - NFV

Pre-tensioning the timing belt (continued).

Make sure of the timing setting by refitting the pegs [1] and [2].

Remove the valve cover.

Position the tool [5] (*respect the direction of fitting relative to the valve timing*).

Adjusting the belt tension.

Place tool [4] on the tensioned part of the belt.

Slacken the nut (2).

Detension the belt, but too much.

Tension the timing belt to obtain a value of: **31 ± 2 SEEM** units.

Tighten the nut (2) to **2 m.daN**.

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

Checking the belt tension.

Rotate the crankshaft **2 turns** in the normal direction of rotation.

Check that it is still possible to peg the following components.

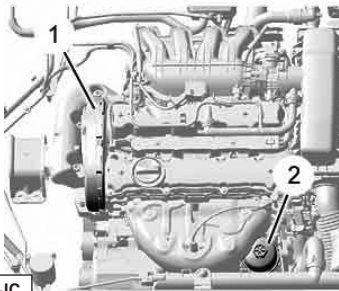
Flywheel.

Camshaft.

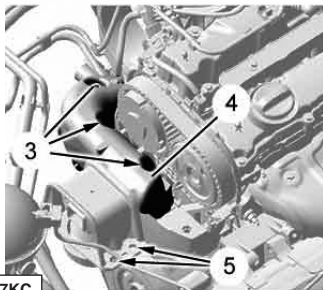
IMPERATIVE: Repeat the belt tensioning operation if the pegging is not possible.

C4

CHECKING THE VALVE TIMING



B1BP37JC



B1BP37KC

Engine: KFU

Tools.

- [1] Flywheel setting peg
 [2] Camshaft setting peg
 [3] Camshaft setting peg

: 4507-TA. Toolkit 4507-T
 : 4533-TA.C1
 : (-).0194.A

IMPERATIVE: Respect the safety and cleanliness requirements.

Checking.

Disconnect the battery.

Remove:

- The engine cover.
- The upper timing cover (1).
- The oil filter (2).

Remove the sparking plugs to facilitate rotation of the engine.

Turn the engine by means of the crankshaft screw.

IMPERATIVE: Never turn the engine backwards.

Suspend the engine.

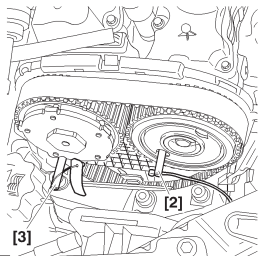
Remove:

- The screws (3), the upper RH engine support (4) and the screws (5).

CHECKING THE VALVE TIMING

C4

Engine: KFU



B1BP2ZMC

Checking (continued).

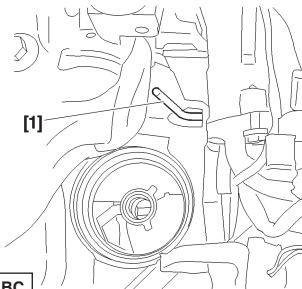
Position the tools [3] and [2].

Peg the flywheel, using tool [1].

NOTE: If the setting is not correct, recommence the operation.

Remove the tools.

Complete the refitting.



B1BP2MBC

C4

CHECKING AND SETTING THE VALVE TIMING

Engine: KFU

Tools.

- | | |
|--------------------------|--------------|
| [1] Flywheel setting peg | : 4507-T.A |
| [2] Camshaft setting peg | : 4533-T.AC1 |
| [3] Camshaft setting peg | : (-).0194.A |
| [4] Belt retaining pin | : 4533-TA.D |

IMPERATIVE: Respect the safety and cleanliness requirements.**Setting the timing.**

Raise and support the vehicle, wheels hanging.

Disconnect the battery.

Remove the engine cover.

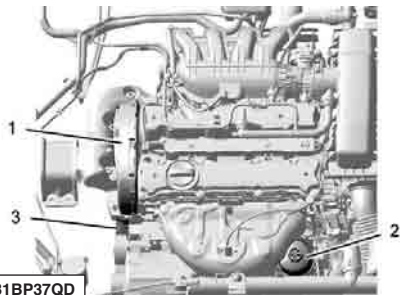
Raise and support the vehicle, wheels hanging.

Remove:

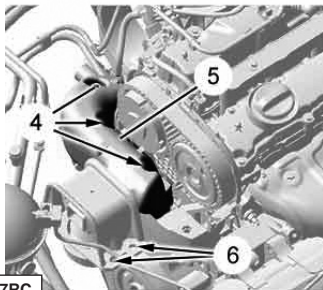
- The accessories drive belt **(3)** (*see corresponding operation*).
- The crankshaft pulley, the engine cover.
- The upper timing cover **(1)**.
- The oil filter **(2)**.

Remove the sparking plugs to facilitate rotation of the engine.

Suspend the engine.

Remove the screws **(4)**, the upper RH engine support **(5)** and the screws **(6)**.

B1BP37QD



B1BP37RC

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: KFU

Setting the timing (continued).

Rotate the engine by means of the crankshaft screw (*clockwise*), to bring it to the pegging position.

Peg the flywheel, using tool [1].

Position the tools [2] and [3].

Remove the engine support assembly (9), the fixing screw (8) and the lower cover (7).

Slacken the nut (11).

Fully detension the belt by moving the tensioner roller (10).

Remove the timing belt.

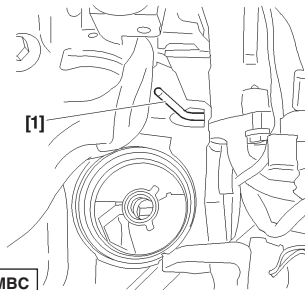
IMPERATIVE: Check that the tensioner roller turns freely (*no tight spot*).

Refitting.

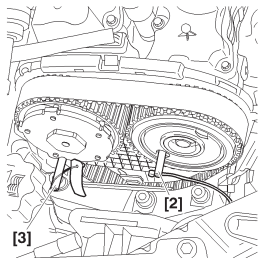
Position the (*new*) timing belt, in the following sequence:

- The inlet camshaft pulley, the exhaust camshaft pulley, the guide roller, the crankshaft pulley, position the tool [4], the coolant pump pulley, the dynamic tensioner roller.

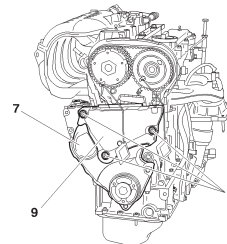
Remove the tools [1], [2], [3] and [4].



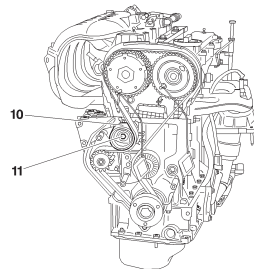
B1BP2MBC



B1BP2ZMC



B1CP0GLD

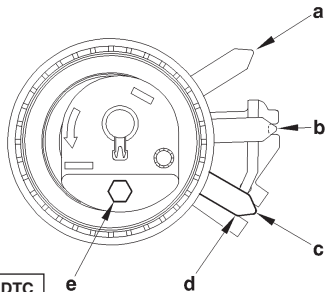


B1CP0GMD

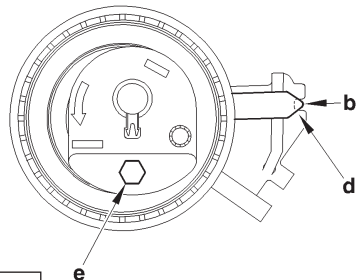
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: KFU



B1EP1DTC



B1EP1DUC

Overtension on the belt.Position «a»: Tensioner roller in **detensioned** position.Position «b»: Tensioner roller in **normal** position.Position «c»: Tensioner roller in **overtension** position.

Turn the tensioner roller (10), using an allen spanner at «e».

Place the index «d» in position «c», hold the belt to the maximum of the interval indicated.

Tighten the tensioner roller fixing nut to $2,1 \pm 0,2 \text{ m.daN}$.Rotate the crankshaft four turns (*normal direction of rotation*).**IMPERATIVE: Never turn it backwards.**

Check the timing setting by refitting the pegs [1], [2] and [3].

Remove the pegs [1], [2] and [3].

Adjusting the fitting tension of the timing belt.

Slacken the nut, holding the position of the tensioner roller, using an allen spanner at «e».

Bring the index «d» to its adjustment position at «b».

WARNING: The index «d» should not go past the notch «b». If it does, repeat the operation to tension the timing belt.

Maintain the roller (10) in this position, using an allen spanner.

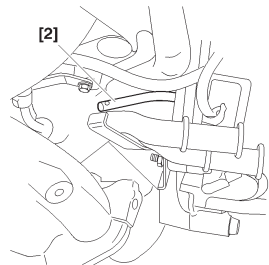
Tighten the tensioner roller fixing nut to $2,1 \pm 0,2 \text{ m.daN}$.**IMPERATIVE: The tensioner roller should not turn during the tightening of its fixing. If it does, repeat the operation to tension the timing belt.**

Complete the refitting.

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: NFU



B1EP11BC

Tools.

- [1] Belt tension measuring instrument
- [2] Flywheel locating peg
- [3] Camshaft pulley locating peg, exhaust
- [4] Camshaft pulley locating peg, inlet
- [5] Tensioning tool

: 4122-T

: 4507-T.A

: 4533-T.A C2

: 4533-T.A C1

: 4707-T.J

Tool kit 4507-T

Checking the valve timing.

Peg the flywheel using the tool [2].

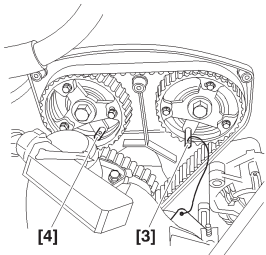
Peg the exhaust camshaft pulley [3].

Peg the inlet camshaft pulley [4].

Setting the valve timing.

Peg the flywheel using the tool [2].

Peg the camshaft pulleys [3] and [4].

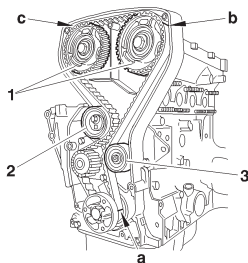


B1EP11CC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: NFU



B1EP11DC

Setting the valve timing.

Loosen the screw (2), remove the belt.

Loosen the six pulley screws (1) on the hubs *(there should be a slight amount of friction between the screws and the pinions)*.

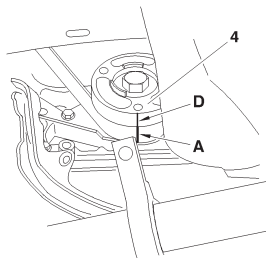
Check that the rollers (2) and (3) rotate freely.

NOTE: The belt bears three identification marks (a), (b) and (c), facing its own teeth (1), (52) and (72) respectively *(identification marks = white paint lines on the back of the belt facing the corresponding teeth)*.

Refit the belt.

Line up mark (A) on the belt with groove (D) of the pinion (4).

Hold the belt against the pinion (4).

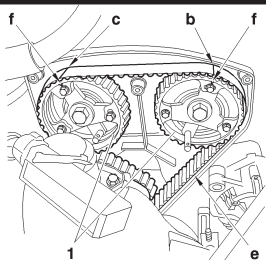


B1EP11EC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: NFU



B1EP11FC

Setting the valve timing.

Turn the two pulleys **(1)** clockwise to the end of the slots.

With the belt strip **(e)** fully tensioned, place the belt over the pulley, first exhaust side, then inlet side, while ensuring that marks **(b)** and **(c)** on the belt are aligned with marks **(f)** on the pulleys.

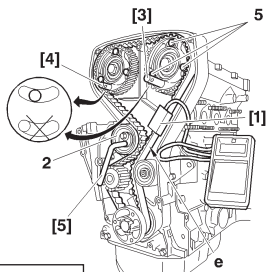
Hold the belt in this position and engage it over the water pump pinion and the tensioner roller.

Fit the tool **[1]** on the belt at **(e)**.

Rotate the roller **(2)** (using tool **[5]**) in an anti-clockwise direction, to obtain: **63 SEEM** units.

Tighten the roller **(2)** to **2 m.daN**.

Tighten the six screws **(5)** to **1 m.daN**.



B1EP11GC

Essential: Check that:

- The camshaft pulleys **(1)** are not at the end of the slots (*by removing a screw*).
- The markings on the belt are aligned with the markings on the crankshaft and camshaft pulleys.

If not, repeat the setting procedure.

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: NFU

Setting the valve timing.

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

Rotate the engine by **four turns** in the normal direction (*do not turn backwards*).

Peg the flywheel [2].

Loosen the six screws (5), while ensuring there is still a slight amount of friction with the pulley.

Peg the camshaft hubs using pegs [3] and [4].

WARNING: In certain cases, it may be necessary to slightly turn the camshaft using the hub fixing screw.

Fit the tool [1].

Loosen the tensioner roller screw (2).

Rotate the roller (2) (*using tool [5]*) in an anti-clockwise direction to obtain: **37 SEEM** units.

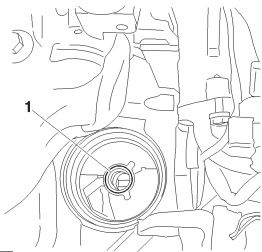
Tighten the tensioner roller screw (2) to **2 m.daN**.

Tighten the six pulley screws (1) to **1 m.daN**.

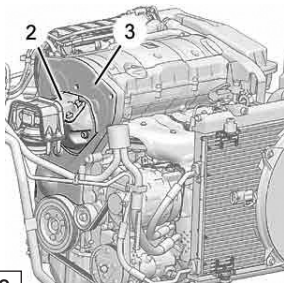
Remove the tools.

CHECKING THE VALVE TIMING

C4



B1BP2M7C



B1BP381C

Engine: NFU

Tools.

- | | | |
|---------------------------|--------------|----------------|
| [1] Flywheel setting peg | : 4507-T.A | Toolkit 4507-T |
| [2a] Camshaft setting peg | : 4533-TA.C1 | |
| [3b] Camshaft setting peg | : 4533-TA.C2 | |

IMPERATIVE: Respect the safety and cleanliness requirements.

Checking.

Disconnect the negative terminal of the battery.

Remove:

- The oil filter (1).
- Suspend the engine.

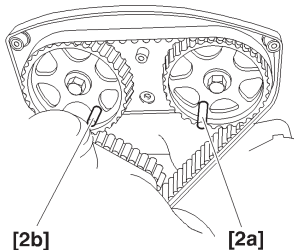
Remove:

- The engine support (2) and the upper timing cover (3).

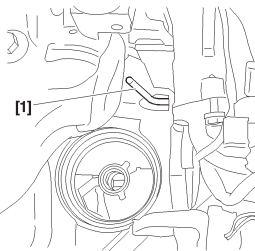
C4

CHECKING THE VALVE TIMING

Engine: NFU



B1EP170C



B1BP2MBC

Remove the sparking plugs, to facilitate rotation of the crankshaft.

Rotate the engine by means of the crankshaft pinion screw (*clockwise*) to bring it to the pegging position.

Fit the tools [2a] and [2b].

Peg the flywheel, using tool [1].

NOTE: If the setting proves impossible, restart the timing setting operation.

Remove the tools [1], [2a] and [2b].

Complete the refitting.

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

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: NFU

Tools.

- | | | |
|----------------------------------|--------------|----------------|
| [1] Flywheel setting peg | : 4507-T.A | Toolkit 4507-T |
| [2a] Camshaft setting peg | : 4533-TA.C1 | |
| [2b] Camshaft setting peg | : 4533-TA.C2 | |
| [3] Belt retaining pin | : 4533-T.AD | |
| [4] Dynamic tensioner roller pin | : 4200-T.H | |

IMPERATIVE: Respect the safety and cleanliness requirements.**Removing.**

Raise and support the vehicle, front wheels hanging

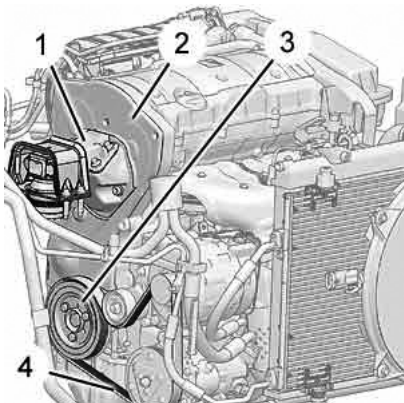
Disconnect the battery.

Remove:

- The auxiliaries drive belt (4) (*see corresponding operation*).
- The crankshaft pulley (3).
- The oil filter.

Suspend the engine, using a workshop hoist.

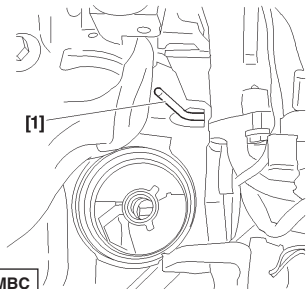
Remove the timing cover, the engine support (1), the intermediate support and the timing cover (2).



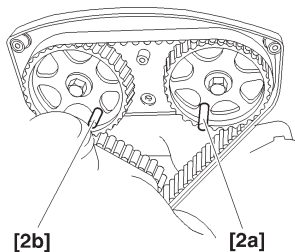
B1BP382C

C4

CHECKING AND SETTING THE VALVE TIMING



B1BP2MBC



B1EP170C

Engine: NFU

Peg the flywheel, using tool [1].

Position the tools [2a] and [2b].

Slacken the tensioner roller.

Turn the dynamic tensioner roller so as to be able to position the tool [4], with the aid of an Allen key placed at «a».

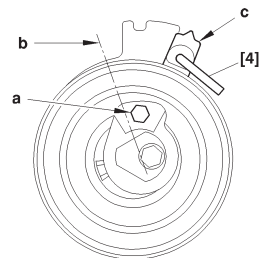
Turn the tensioner roller towards the right to bring it to the index «c» in position «b».

Peg the tensioner roller in this position in order to slacken the timing belt to the maximum.

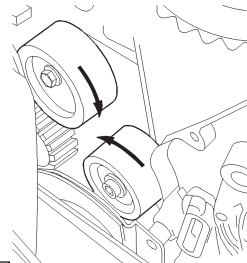
IMPERATIVE: Never make the dynamic tensioner roller turn by a complete rotation.

Remove the timing belt (8).

Check that the rollers and the pump pulley turn freely (*no tight spot*).



B1EP18PC

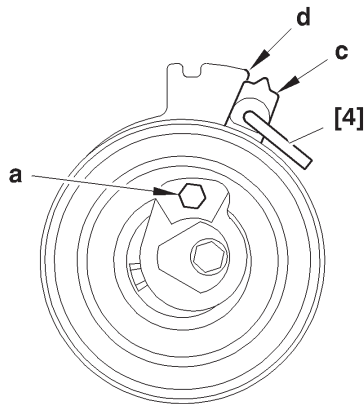


B1EP18QC

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: NFU

**Refitting.**

Fit the (*new*) timing belt in position, in the following order:

- Inlet camshaft pulley, exhaust camshaft pulley, guide roller, crankshaft pulley, position tool [5], coolant pump pulley, dynamic tensioner roller.

Remove tools [1], [2a], [2b] and [4].

Overtension on the belt.

Turn the tensioner roller (7) with the aid of a hexagonal spanner at «a».

Bring the index «c» to position «d», to tension the belt to the maximum of the interval indicated.

Hold the tensioner roller, using tool [4].

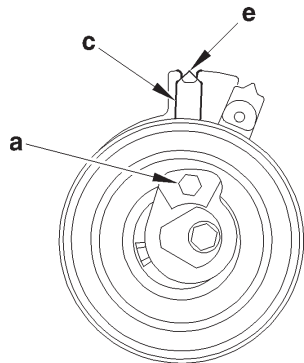
Tighten the fixing nut of the tensioner roller, tightening to **1 m.daN**.

Turn the crankshaft by **4 rotations** (*normal direction of rotation*).

IMPERATIVE: Never make the crankshaft rotate backwards.

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

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



Adjusting the fitting tension of the timing belt.

Slacken the nut while maintaining the position of the tensioner roller, with the aid of a hexagonal spanner at «a».

Next bring the index «c» to its adjusting position «e».

WARNING: The index «c» must not go beyond the notch «e». If it should do this, restart the timing belt tensioning operation.

Hold the tensioner roller in this position with the aid of a hexagonal spanner.

Tighten the tensioner roller fixing nut to 2.2 ± 0.2 m.daN.

IMPERATIVE: The tensioner roller must not rotate during the tightening of its fixing. If it does, restart the timing belt tensioning operation.

Refitting.

Refit the timing covers, the crankshaft pulley, the auxiliaries drive belt (*see corresponding operation*).

Complete the refitting.

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

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFJ

Tools.

- [1] Camshaft pinion peg
 [2] Crankshaft setting peg

: (-).0194.A

: (-).0189.R

IMPERATIVE: Respect the safety and cleanliness requirements.

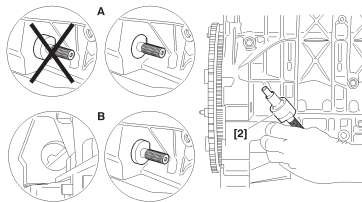
Disconnect the battery.

Raise and support the vehicle, front wheels hanging.

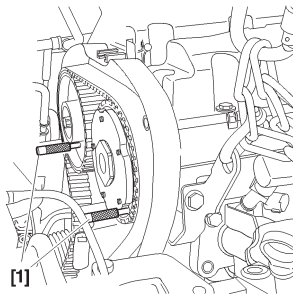
Remove the front RH wheel, the plastic pins holding the splash-shield, the splash-shield itself.

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.



B1BP2V3D

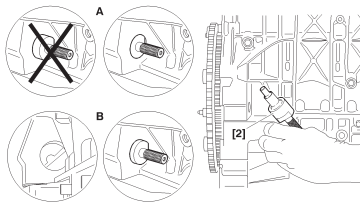


B1BP38VC

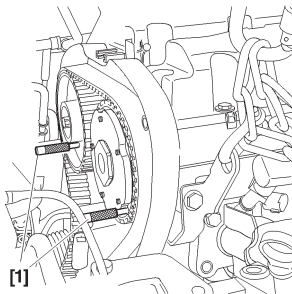
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFJ



B1BP2V3D



B1BP38VC

Peg the crankshaft, using tool [2].

Suspend the engine, using a workshop hoist.
Remove the RH engine support, the upper timing cover.
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*).

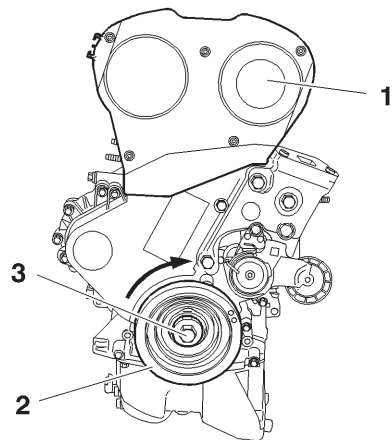
Refitting.

Remove tools [1] and [2].
Complete the refitting.

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

CHECKING AND SETTING THE VALVE TIMING

C4



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
Pliers for removing plastic pins	: 7504-T

IMPERATIVE: Respect the safety and cleanliness requirements.**Checking and setting the timing.****Removing.**

Disconnect the negative terminal of the battery (*see corresponding operation*).

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.

Suspend the engine by means of a workshop hoist.

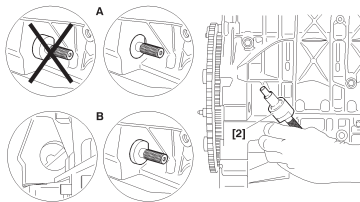
Remove the RH engine support and the timing cover (1).

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

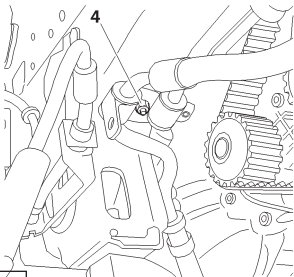
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFJ



B1BP2V3D



B3EP15JC

Checking and setting the timing (continued).

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

Peg the crankshaft, using tool [2].

Remove the fixing bracket screw (4).

Move aside the power steering pipes.

Peg the camshaft pulleys (6) and (7), using tool [1].

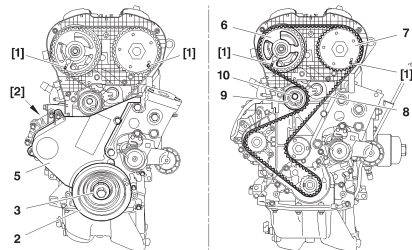
Remove the screw (3), the crankshaft pulley (2) and the lower timing cover (5).

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

Slacken the screw (10) of the tensioner roller (9).

Turn the tensioner roller (9) (*clockwise*).

Remove the timing belt (8).

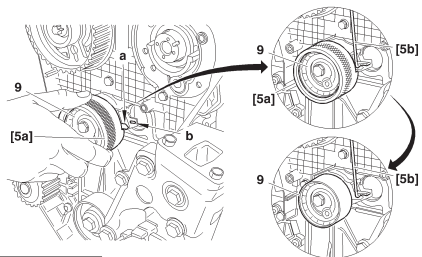


B1EP1G1D

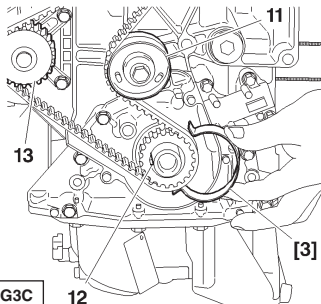
CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFJ



B1EP1G2D



B1EP1G3C

12

Checking and setting the timing (continued).

Refitting.

Turn the tensioner roller (9), using tool [5a] to go past the notch «b».

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

NOTE: Check the presence of the crankshaft pinion keyway (12) before positioning the timing belt. Reposition the timing belt (8) on the crankshaft pinion (1).

Hold the timing belt in place (8) using tool [3].

Put the timing belt (8) in place, in the following sequence:

- Guide roller (11).
- Inlet camshaft pulley (7).
- Exhaust camshaft pulley (6).
- Coolant pump (13).
- Tensioner roller (9).

NOTE: Make sure that the timing belt (8) is as flush as possible with the outer faces of the various pinions and rollers.

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

Refit the lower timing cover (5), the pulley (2) and the screw (3) of the crankshaft pulley.

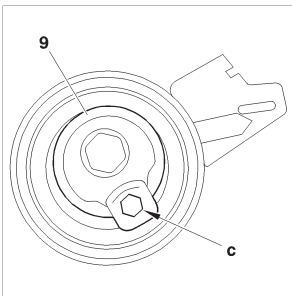
Tighten the screw (3) to $4 \pm 0,4 \text{ m.daN}$.

Angular tighten $40^\circ \pm 4^\circ$, using tool [4].

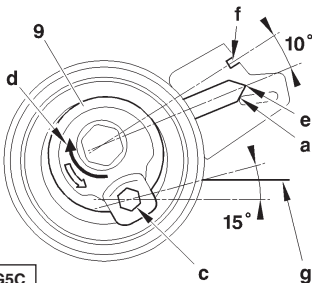
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFJ



B1EP1G4C



B1EP1G5C

Tensioning the timing belt.**Refitting (continued).**

Turn the tensioner roller (9) anti-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 (10) of the tensioner roller (9) to $2,1 \pm 0,2$ 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.

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFJ

Tensioning the timing belt.

Refitting (continued).

Remove the tools [1] and [2].

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

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.

Complete the refitting.

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

C4

CHECKING THE VALVE TIMING

Engine: RFN

Tools.

[1] Camshaft setting peg : (-).0189.A

[2] Crankshaft setting peg : (-).0189.R

IMPERATIVE: Respect the safety and cleanliness requirements.**Checking the timing.****Removing.**

Disconnect the battery negative terminal.

Raise and support the vehicle, front wheels hanging.

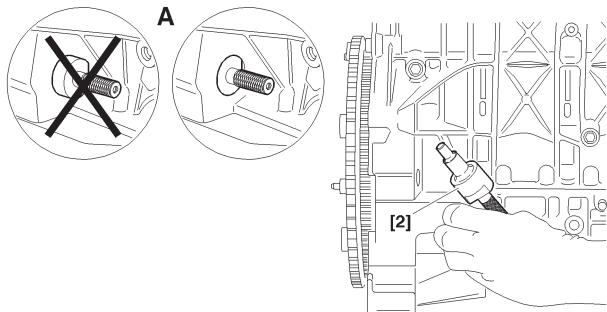
Remove the front RH wheel, the splash-shield and the upper timing cover.

A: Pegging on the **manual** gearbox.

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

Peg the crankshaft, using tool [2].

Unclip the fuel supply hose from the timing cover.

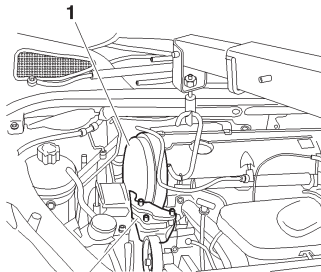


B1BP36QD

CHECKING THE VALVE TIMING

C4

Engine: RFN



B1EP1GTC

2

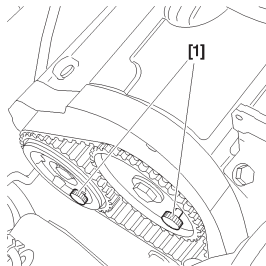
Checking the timing (continued).

Suspend the engine, using a workshop hoist.
Remove the engine support (2) and the timing cover (1).
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*).

Complete the refitting.

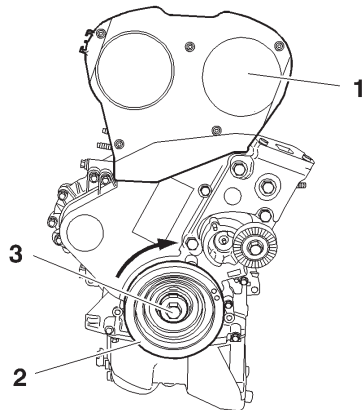


B1EP1GUC

C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFN



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] Hub immobilising tool	: (-).0189.S
[5a]	: (-).0189.S1
[5b]	: (-).0189.S2
Pliers for removing plastic pins	: 7504-T

IMPERATIVE: Respect the safety and cleanliness requirements.

Checking and setting the timing.

Removing.

Disconnect the negative terminal of the battery (*see corresponding operation*).

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 timing cover (1).

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

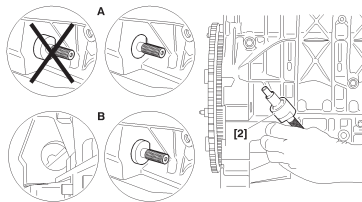
B1BP2V4C

CHECKING AND SETTING THE VALVE TIMING

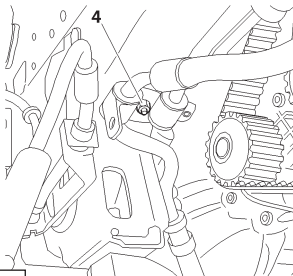
C4

Engine: RFN

Checking and setting the timing (continued).

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

B1BP2V3D



B3EP15JC

Peg the crankshaft, using tool [2].

Remove the fixing bracket screw (4).

Move aside the power steering pipes.

Peg the camshaft pulleys (6) and (7), using tool [1].

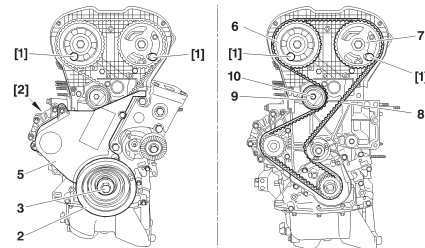
Remove the screw (3), the crankshaft pulley (2) and the lower timing cover (5).

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

Slacken the screw (10) of the tensioner roller (9).

Turn the tensioner roller (9) (*clockwise*).

Remove the timing belt (8).

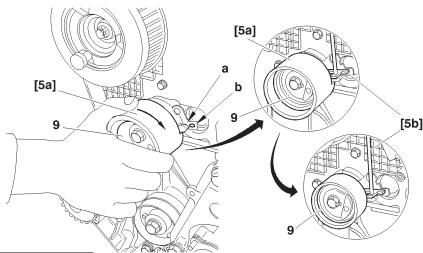


B1EP1G8D

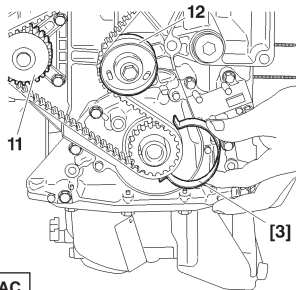
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFN



B1EP1G9D



B1EP1GAC

Checking and setting the timing (continued).

Refitting.

Turn the tensioner roller (9), using tool [5a] to go past the notch «b». Position the tool [5b] to lock the index «a» and remove the tool [5a]. Reposition the timing belt (10) on the crankshaft pinion (1). Hold the timing belt in place (10) using tool [3].

Put the timing belt (10) in place, in the following sequence:

- Guide roller (12).
- Inlet camshaft pulley (7).
- Exhaust camshaft pulley (6).
- Coolant pump (11).
- Tensioner roller (9).

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

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

Refit the lower timing cover (5), the pulley (2) and the screw (3) of the crankshaft pulley.

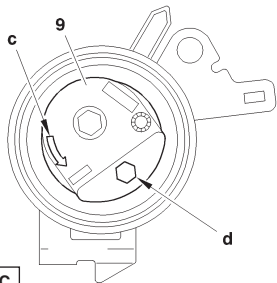
Tighten the screw (3) to $4 \pm 0,4$ m.daN.

Angular tighten $53^\circ \pm 4^\circ$, using tool [4].

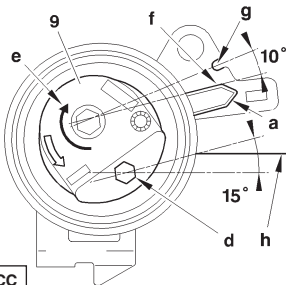
CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFN



B1EP1GBC



B1EP1GCC

Tensioning the timing belt.**Refitting (continued).**

Turn the tensioner roller (9) in the direction of the arrow «c», using a hexagonal 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 tensioner roller and timing belt assembly.

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

WARNING: The index «a» must not go past the slot «g».

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

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

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

Engine: RFN

Tensioning the timing belt.

Refitting (continued).

Remove the tools [1] and [2].

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

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

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

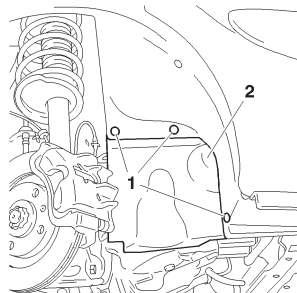
Checking.

Timing belt tension.

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

Complete the refitting.

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

**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
Pliers for removing plastic pins	: 7504-T

Checking the setting of the timing.**Removing.**

Disconnect the battery negative terminal (*see corresponding operation*).

Raise and support the vehicle, front wheels hanging.

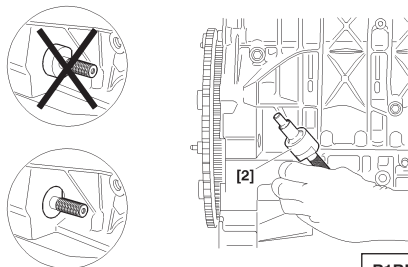
Remove:

- The front RH wheel.
- The plastic pins (1).
- The splash-shield (2).
- The upper timing cover.

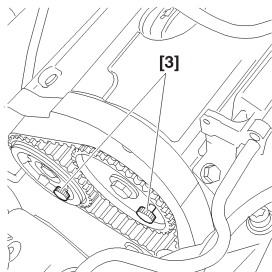
XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN



B1BP2V3D



B1EP1BAC

Checking the setting of the timing (continued).**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 tool **[2]**.

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

NOTE: The pegs **[3]** 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 tools **[2]** and **[3]**.

Complete the refitting in reverse order to removal.

Engines: 6FZ - RFN

Setting the timing.**Removing.**

Disconnect the battery negative terminal (*see corresponding operation*).

Raise and support the vehicle, front wheels hanging.

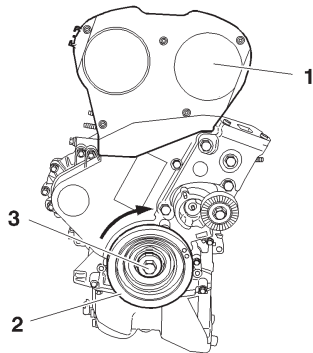
Remove:

- The front RH wheel.
- The plastic pins (1).
- The splash-shield (2).
- The accessories drive belt (*see corresponding operation*).

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

Remove the upper timing cover (1).

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

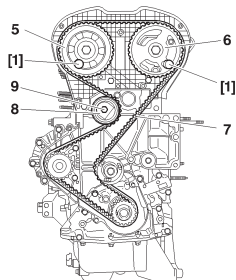
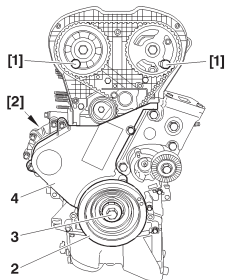
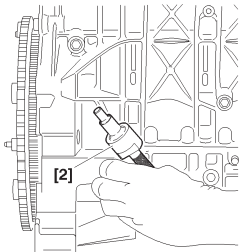


B1BP2V4C

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN

**Setting the timing (continued).****A:** Pegging on the **manual** gearbox.**B:** Pegging on the **automatic** gearbox.

Peg:

- The crankshaft, using tool [2].
- The camshaft pulleys (5) and (6), using tool [1].

Remove:

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

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

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

Turn the tensioner roller (8) *(clockwise)*.

Remove the timing belt (7).

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

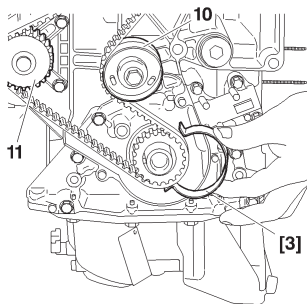
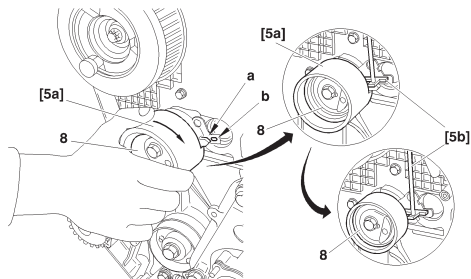
B1BP2V3D

B1EP1BBD

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: 6FZ - RFN

**Setting the timing (continued).**

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

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

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

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

Fit the timing belt (7) in place, respecting the following order:

- Guide roller (10).
- Inlet camshaft pulley (6).
- Exhaust camshaft pulley (5).
- Coolant pump (11).
- 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) (*by moving the engine*).
- The crankshaft pulley (2).
- Screw (3) of the crankshaft pulley.

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

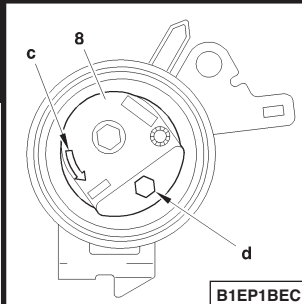
B1EP1BCD

B1EP1BDC

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN



B1EP1BEC

Tensioning the timing belt.

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

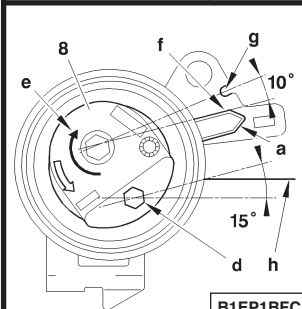
IMPERATIVE: The index «a» should go past the slot «g» by an angular value of 10°.

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.



B1EP1BFC

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

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

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

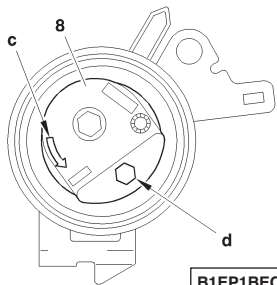
IMPERATIVE: The hexagonal tensioner roller drive should be approx. 15° below the level of the cylinder head gasket «h».

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

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: 6FZ - RFN



B1EP1BEC

Refitting (continued).

Remove the tools [1] and [2].

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

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

Checks.

Tension of the timing belt.

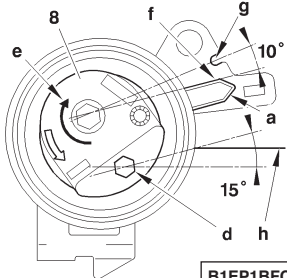
ESSENTIAL: Check the position of the index «a», which should be opposite the slot «g».**If the position of the index «a» is not correct, repeat the operations to tension the timing belt.**

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*).

B1EP1BFC

C4

CHECKING THE VALVE TIMING

Engine: RFK

Tools.

- [1] Camshaft setting peg
 [2] Crankshaft setting peg

: (-).0194.B
 : (-).0189.R

IMPERATIVE: Respect the safety and cleanliness requirements.

Checking the timing.

Removing.

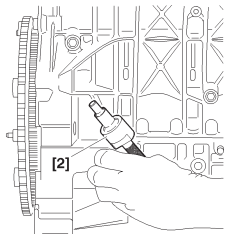
Disconnect the battery negative terminal.
 Raise and support the vehicle, front wheels hanging.
 Remove the front RH wheel and the splash-shield.

A: Pegging on the **manual** gearbox.

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

Unclip:

- The fuel supply hose from the upper timing cover.
- The fuel vapour re-induction circuit.

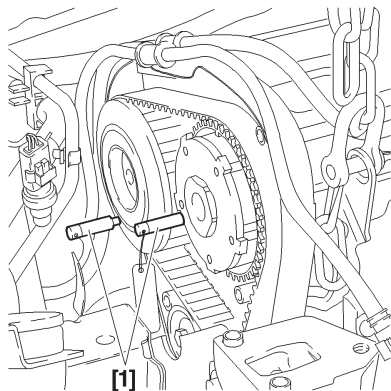


B1BP2V5D

CHECKING THE VALVE TIMING

C4

Engine: RFK

**Checking the timing (continued).**

Suspend the engine, using a workshop hoist.

Remove:

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

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*).

Remove the pegs [1] and [2].

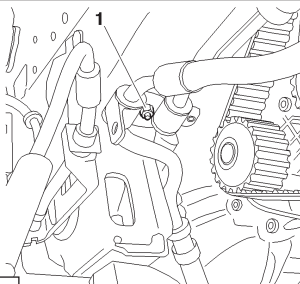
Complete the refitting.

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

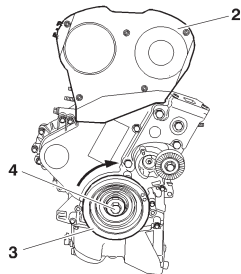
B1EP1GRC

C4

CHECKING AND SETTING THE VALVE TIMING



B3EP15YC



B1BP36YC

Engine: RFK

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] Hub immobilising tool | : (-).0189.S |
| [5a] | : (-).0189.S1 |
| [5b] | : (-).0189.S2 |
| Pliers for removing plastic pins | : 7504-T |

IMPERATIVE: Respect the safety and cleanliness requirements.**Checking and setting the timing.****Removing.**

Disconnect the negative terminal of the battery (*see corresponding operation*).

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 screw (1).

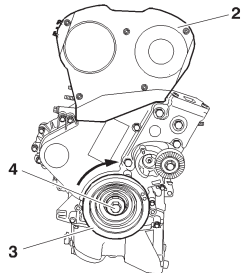
Move aside the power steering pipes.

Turn the engine by means of the screw (4) of the crankshaft pinion (3) to bring it to the pegging position.

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFK



B1BP36YC

Checking and setting the timing (continued).

Peg the crankshaft using tool [2].

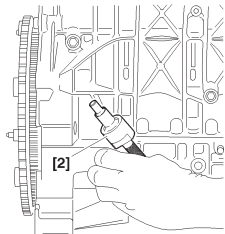
Suspend the engine, using a workshop hoist.

Remove:

- The upper RH engine support.
- The upper timing cover (2).



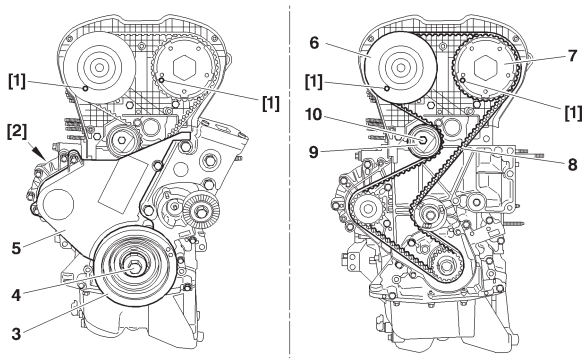
B1BP2V5D



C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFK



Checking and setting the timing (continued).

Peg the camshaft pulleys (6) and (7), using tool [1].

Remove:

- The screw (4).
- The crankshaft pulley (3).
- The lower timing cover (5).

IMPERATIVE: Never remove the crankshaft pulley (3), without pegging the crankshaft and the camshafts.

Slacken the screw (10) of the tensioner roller (9).

Turn the tensioner roller (9) (*clockwise*).

Remove the timing belt (8).

B1EP1GWD

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFK

Checking and setting the timing (continued).

Refitting.

Turn the tensioner roller (9), using tool [5a] to go past the notch «b».
Position the tool [5b] to lock the index «a» and remove the tool [5a].
Reposition the timing belt (8) on the crankshaft pinion (3).
Hold the timing belt (8) in place, using tool [3].

Put the timing belt (8) in place, in the following sequence:

- Guide roller (12).
- Inlet camshaft pulley (7).
- Exhaust camshaft pulley (6).
- Coolant pump (11).
- Tensioner roller (9).

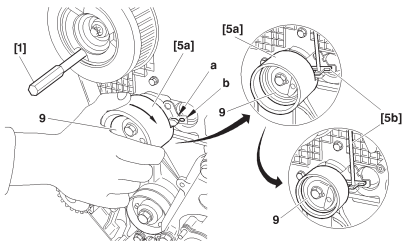
NOTE: Make sure that the timing belt (8) is as flush as possible with the outer faces of the various pinions and rollers.

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

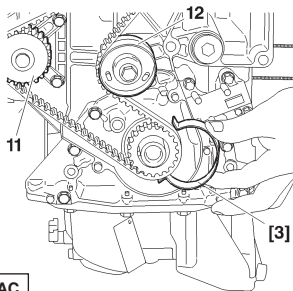
Refit the lower timing cover (5), the pulley (3) and the screw (4) of the crankshaft pulley.

Tighten the screw (4) to $4 \pm 0,4 \text{ m.daN}$.

Angular tighten $80^\circ \pm 5^\circ$, using tool [4].



B1EP1GXD

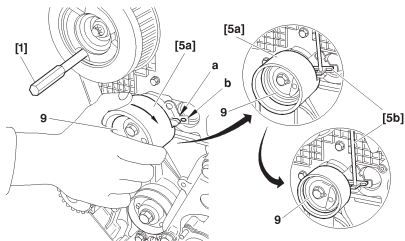


B1EP1GAC

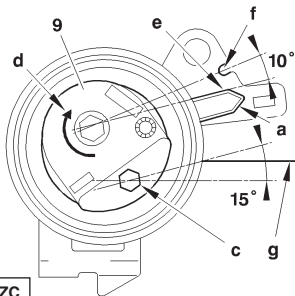
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RFK



B1EP1GXD



B1EP1GZC

Tensioning the timing belt.

Turn the tensioner roller (9) anti-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 (10) of the tensioner roller (9) to $2,1 \pm 0,2$ 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.

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RFK

Checking and setting the timing (continued).

Refitting (continued).

Remove the tools [1] and [2].

Refit the upper RH engine support.

Remove the workshop hoist.

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

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

Suspend the engine using a workshop hoist.

Remove the upper RH engine support.

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.

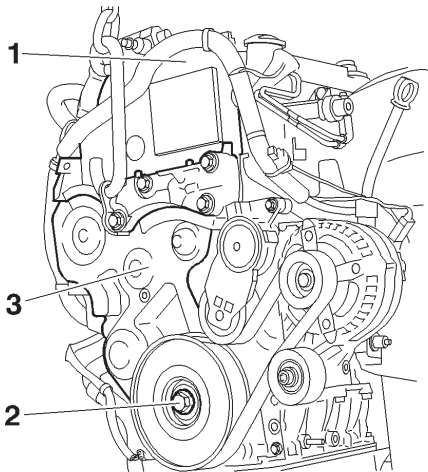
Complete the refitting.

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

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HZ



Tools.

- | | |
|---|--------------|
| [1] Pliers for removing plastic pegs | : 7504-T |
| [2] Lever for detensioning the dynamic tensioner roller | : (-).0194.E |
| [3] Engine flywheel setting peg | : (-).0194.C |
| [4] Camshaft setting peg | : (-).0194.B |
| [5] Crankshaft and high pressure pump setting peg | : (-).0194.A |

Preliminary operations.

Remove:

- The front RH wheel.
- The front RH splash-shield, using tool [1].
- The clips of the electrical harness on the upper timing cover.
- The accessories belt, using tool [2] (*see corresponding operation*).

Checking the setting.

Disconnect the battery negative cable.

Remove the upper timing cover (1).

Rotate the engine using the screw (2) of the crankshaft pulley.

NOTE: The locking hole is located under the crankshaft bearing cap cover.

Undo the screw (2).

Detension the auxiliary drive belt dynamic tensioner roller, using tool [2].

B1BP2LXC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engines: 8HX - 8HZ

Checking the setting (continued).

Remove:

- The accessories drive belt.
- The accessories drive pulley.
- The lower timing cover (3).

IMPERATIVE: The magnetic track should show no signs of damage and should not be approached by any other source of magnetism.

Reposition the screw (2).

Remove tool [3].

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

Position the tool [4].

Peg the crankshaft pinion (1), using tool [5].

Peg the high pressure pump pinion, using tool [5].

NOTE: Index «a» of the roller tensioner must be centred within the area «b».

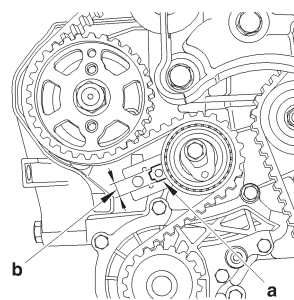
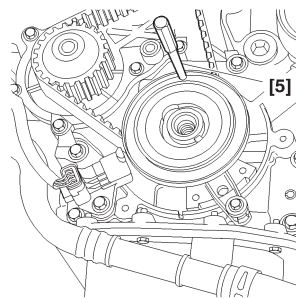
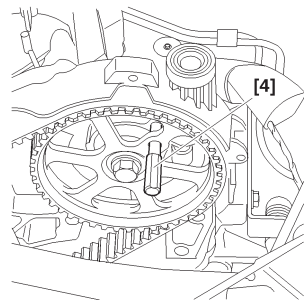
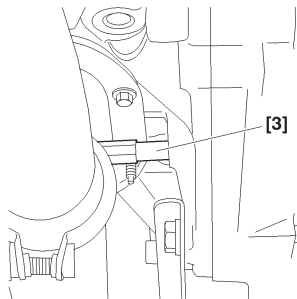
Check the correct positioning of index «a».

Remove tools [4] and [5].

Rotate the engine **ten times**.

Fit the tools [4] and [5].

If pegging is not possible, carry out the operation to remove/refit the timing belt (*see corresponding operation*).



B1JP03SC

B1EP18DC

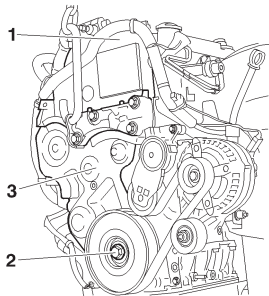
B1EP18EC

B1EP18FC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HZ

**Setting the timing.**

Remove the upper timing cover (1).

Rotate the engine by means of the crankshaft screw (2).

NOTE: The pegging hole is located under the crankshaft bearing cap cover.

Peg the engine flywheel, using tool [3].

Remove the lower timing cover (3).

Uncouple the exhaust line from the manifold.

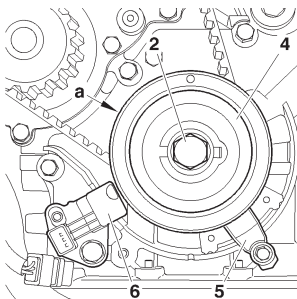
IMPERATIVE: Uncouple the exhaust line in order to avoid damaging the front flexible pipe. Twisting, pulling and bending the front flexible pipe reduces its life.

Remove:

- The engine speed sensor (6).
- The belt retaining stop (5).
- The screw (2).
- The crankshaft pinion (4) (with its magnetic track «a»).

IMPERATIVE: The magnetic track should show no signs of damage and should not be approached by any other source of magnetism. Should this not be adhered to, it is essential to replace the crankshaft pinion.

Refit the screw (2).



B1BP2LXC

B1EP18GC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engines: 8HX - 8HZ

Setting the timing (continued).

Remove the tool [3].

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

Peg the camshaft pulley, using tool [4].

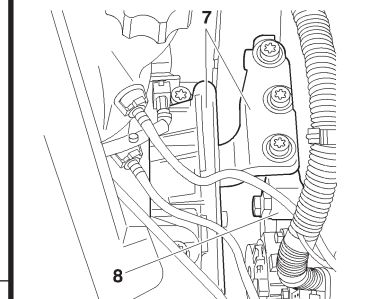
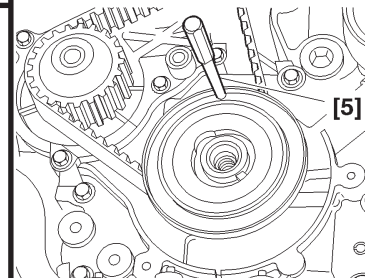
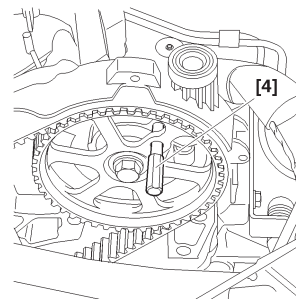
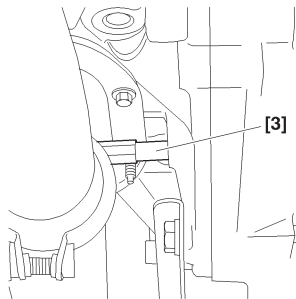
Peg:

- The crankshaft pinion (6), using tool [5].
- The high pressure pump pinion, using tool [5].

Support the engine with the aid of a roller jack equipped with a chock.

Remove:

- The RH engine support (7).
- The intermediate engine support (*right hand side*) (8).



B1JP03SC

B1EP18DC

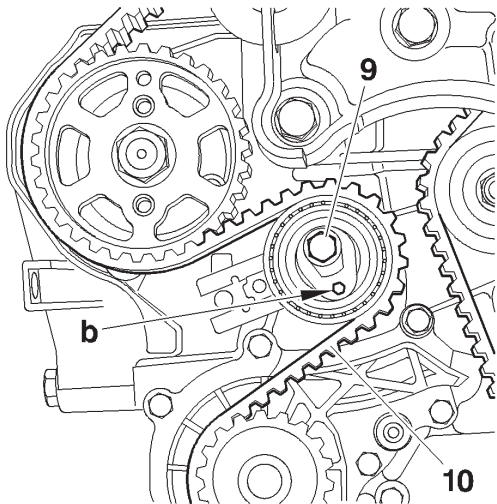
B1EP195C

B1BP2LYC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HZ



B1EP18HC

Setting the timing (continued).

Hold the tensioner roller, using a hexagonal spanner at «b».

Slacken the screw (9).

Remove the timing belt (10).

Refitting.

IMPERATIVE: Check that both the tensioner roller and the fixed roller turn freely (*no tight spots*). If this is not the case, replace the rollers.

Fitting of the pulleys.

- Camshaft pulley : Tighten to $4,3 \pm 0,4$ m.daN.
- Fuel high pressure pump pulley : Tighten to $5 \pm 0,5$ m.daN.

The crankshaft pinion is located without a screw at the end of the crankshaft.

Fitting of the rollers.

IMPERATIVE: Check that the tensioner roller turns freely (*no tight spot*).

Otherwise, replace the rollers.

- Guide roller : Tighten to $4,5 \pm 0,4$ m.daN.
- Tensioner roller : Pre-tighten to $0,1$ m.daN.

Check the condition of the seals at the camshaft and at the crankshaft pinion.

CHECKING AND SETTING THE VALVE TIMING

XSARA

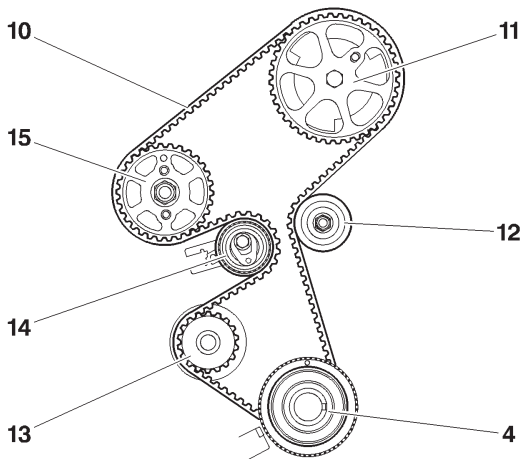
Engines: 8HX - 8HZ

Setting the timing (continued).

NOTE: Screw (9) slackened.

Position the timing belt (10) observing the following sequence:

- Crankshaft pinion (4).
- Guide roller (12).
- Camshaft pulley (11) (*check that the belt is held correctly against the roller*).
- Coolant pump pinion (13).
- Fuel high pressure pump pulley (15).
- Tensioner roller (14).

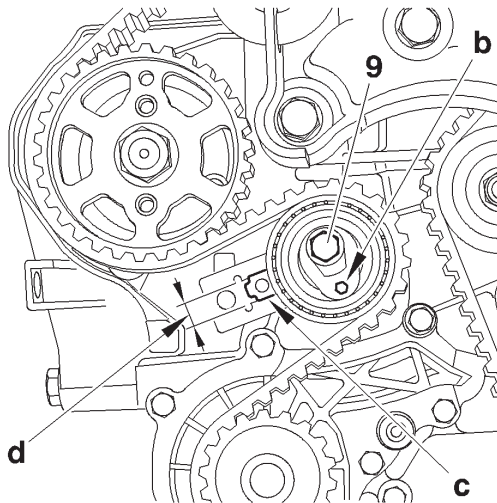


B1EP18JD

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HZ



B1EP18KC

Setting the timing (continued).

Turn the tensioner roller to the right to bring the index «c» to position «d», using a hexagonal spanner.

Tighten the screw (9) of the tensioner roller, tighten to $3 \pm 0,3$ m.daN.

Remove the tools [4] and [5].

Rotate the engine **ten times** (*check that the timing pinion is correctly up against the crankshaft*).

Check:

- The pegging of the camshaft.
- The crankshaft pinion.
- The fuel high pressure pump pinion (15).
- The correct positioning of the index of the dynamic tensioner.

If these are not correct, repeat the operation to position the timing belt.

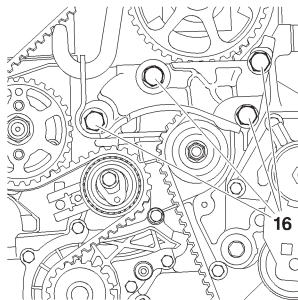
Refit:

- The engine speed sensor (6).
- The belt retaining stop (5), tighten to $0,7$ m.daN.

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engines: 8HX - 8HZ



Setting the timing (continued).

Refit:

- The intermediate RH engine support, tighten the screws (16) to $5,5 \pm 0,5$ m.daN.
- The RH engine support, tighten the screws (17) to $4,5 \pm 0,4$ m.daN.
- The bottom timing cover (3).

Immobilise the engine flywheel, using tool [3].

Remove the screw (2).

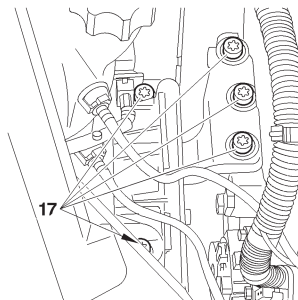
Refit the accessories drive pulley and tighten to:

- Pre-tighten to : $3 \pm 0,3$ m.daN.
- Angular tighten to : $180^\circ \pm 1,8^\circ$.

Remove tool [3].

Refit:

- The top cover (1).
- The accessories belt (*see corresponding operation*).
- The exhaust line (*see corresponding operation*).
- The front RH splash-shield.
- The front RH wheel.



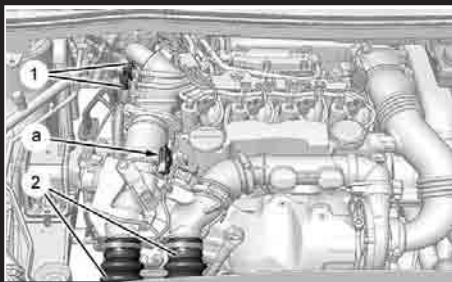
B1EP18LC

B1BP2LZC

C4

CHECKING THE VALVE TIMING

Engines: 9HX - 9HY - 9HZ



B1BP38TD

Tools.

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

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

Checking and setting the timing.

Raise and support the vehicle, wheels hanging.

Disconnect the battery.

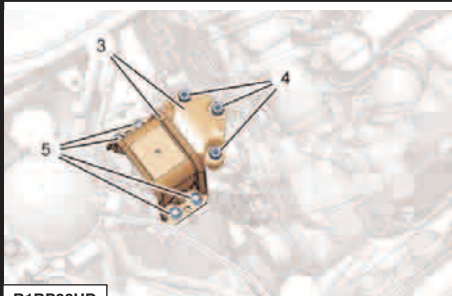
Uncouple:

- The fuel supply unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).
- The exhaust line at the catalytic converter flexible pipe.
- Disconnect the connecteur at «a».

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

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

Remove the four screws (5), the three screws (4) and the engine supports (3).

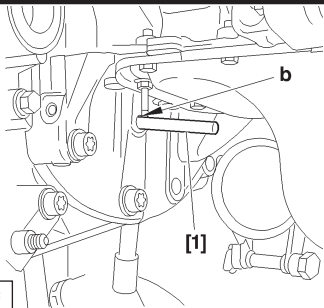


B1BP38UD

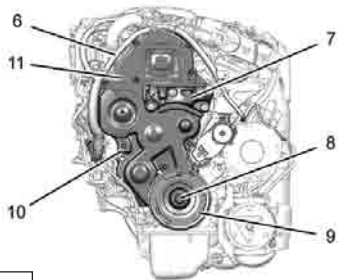
CHECKING THE VALVE TIMING

C4

Engines: 9HX - 9HY - 9HZ



B1BP305C



B1EP1HJD

Turn the engine in the normal direction of rotation until the peg [1] engages in the setting hole.

Peg the flywheel at «b», using tool [1].
Move aside the electrical harness (6).

Remove:

- The engine support (7).
- The screw (8).
- The accessories drive pulley (9).
- The lower timing cover (10).
- The upper timing cover (11).
- The tool [1].

Refit the screw (8).

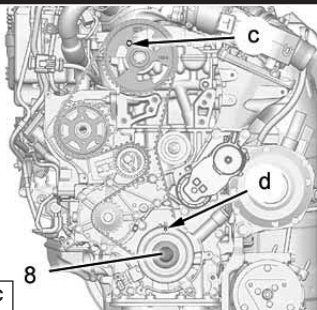
Rotate the crankshaft **six times** (*clockwise*).

IMPERATIVE: Never turn it backwards.

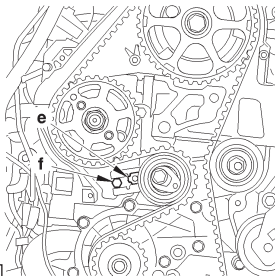
C4

CHECKING THE VALVE TIMING

Engines: 9HX - 9HY - 9HZ



B1EP1HKC



B1EP1E5C

Checking the timing (continued).

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*).

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.

Peg the flywheel at «b», using tool [1].

Remove the screw (8).

Refit the upper timing cover (11), lower timing cover (10), the accessories drive pulley (9), the screw (8).

Tightening method for the screw (8):

- Pre-tighten to $3 \pm 0,3 \text{ m.daN}$.

- Angular tighten: $180^\circ \pm 5^\circ$.

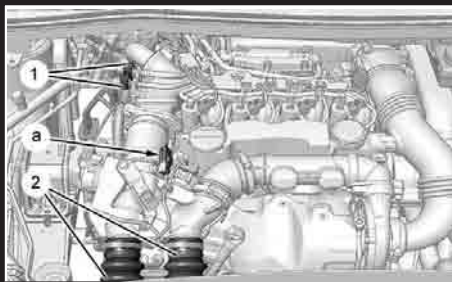
Remove the tool [1] and complete the refitting.

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

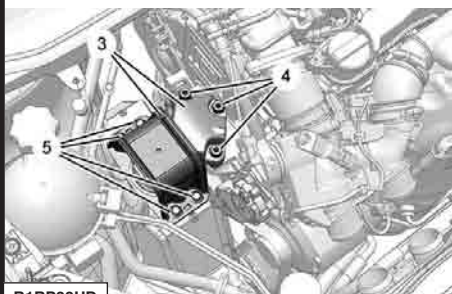
CHECKING AND SETTING THE VALVE TIMING

C4

Engines: 9HX - 9HY - 9HZ



B1BP38TD



B1BP38UD

Tools.

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

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

Checking and setting the timing.

Raise and support the vehicle, wheels hanging.

Disconnect the battery.

Uncouple:

- The fuel supply unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).
- The exhaust line at the flexible pipe.
- Disconnect the connecteur at «a».

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

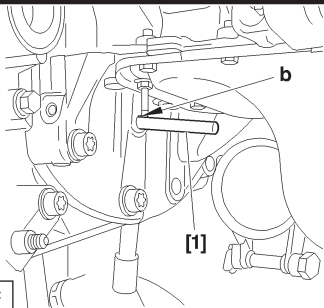
Support the engine with a roller jack equipped with a block.

Remove the four screws (5), the three screws (4) and the engine supports (3).

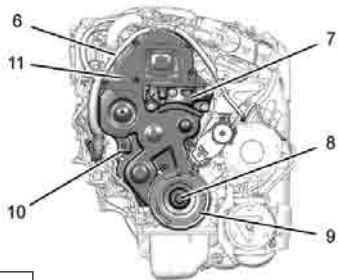
C4

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HX - 9HY - 9HZ



B1BP305C



B1EP1HJD

Checking and setting the timing (continued).

Turn the engine in the normal direction of rotation until the peg [1] engages in the setting hole.

Peg the flywheel at «b», using tool [1].
Move aside the electrical harness (6).

Remove:

- The engine support (7).
- The screw (8).
- The accessories drive pulley (9).
- The lower timing cover (10).
- The upper timing cover (11).
- The tool [1].

Refit the screw (8).

Rotate the crankshaft to bring the camshaft to its pegging point.

Peg:

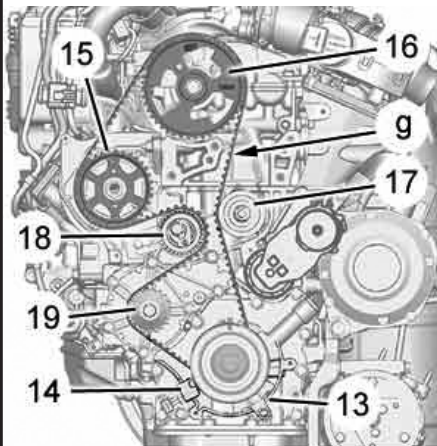
- The camshaft at «c», using tool [2] (*oil the pegs*).
- The fuel high pressure pump pulley (15) at «f» using a **5 mm** diameter peg.

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

CHECKING AND SETTING THE VALVE TIMING

C4

Engines: 9HX - 9HY - 9HZ

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

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

Remove:

- The timing belt protector (13).
- 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.

Checks.

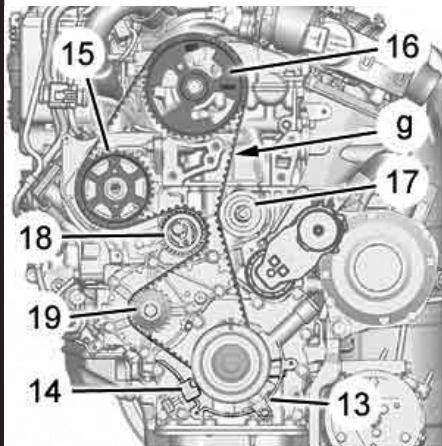
ESSENTIAL: Just prior to refitting, proceed to the checks as below.

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 engine speed sensor target (14) is not damaged or scratched.

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

Engines: 9HX - 9HY - 9HZ



Checking and setting the timing (continued).

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).

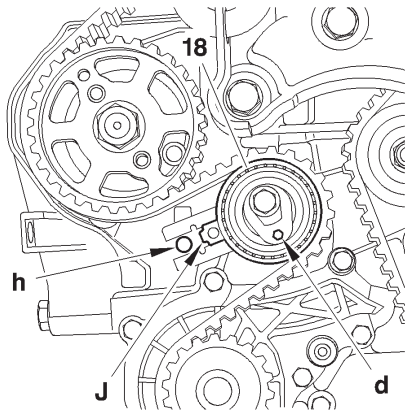
Reposition the timing belt, strip «f» well tensioned, in the following sequence:

- Guide roller (17).
- Camshaft pulley (16).
- Fuel high pressure pump pulley (15).
- Coolant pump pulley (19).
- Tensioner roller (18).

CHECKING AND SETTING THE VALVE TIMING

C4

Engines: 9HX - 9HY - 9HZ

**Adjusting the timing belt tension.**

Act on the tensioner roller (18) to align the marks «j» 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 $3,7 \pm 0,3 \text{ m.daN}$.

Check the position of the tensioner roller (*the alignment of the marks «j» and «h» should 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 «j» and «h» should be correct*).

If this is not the case, repeat the operation to tension the timing belt.

Peg the camshaft pulley, using tool [2].

Engines: 9HX - 9HY - 9HZ

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. If the offset is too great, repeat the operation to position the timing belt (*see corresponding operation*).

Remove the tools [2] and [3].

Refit tool [1] at «b».

Remove the screw (8).

Refit:

- The upper timing cover (11).
- The lower timing cover (12).
- The pulley (9).
- The screw (8).

Tightening method for the screw (8):

- Pre-tighten to $3 \pm 0,3 \text{ m.daN}$.
- Angular tighten $180^\circ \pm 5^\circ$.

Remove tool [1].

Refit:

- The engine support (7), tighten to $5,5 \pm 0,9 \text{ m.daN}$.
- The engine support (3).
- The four screws (5), tighten to $5,5 \pm 0,8 \text{ m.daN}$.
- The three screws (4), tighten to $5,5 \pm 0,8 \text{ m.daN}$.
- The electrical harness (6).

Disengage the jack from under the engine.

Complete the refitting.

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

CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY

Tools.

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

Checking and setting the timing.**Removing.**

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 accessories drive belt (*see corresponding operation*).

Uncouple:

- The fuel supply unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).
- The exhaust line (*at the flexible pipe*).

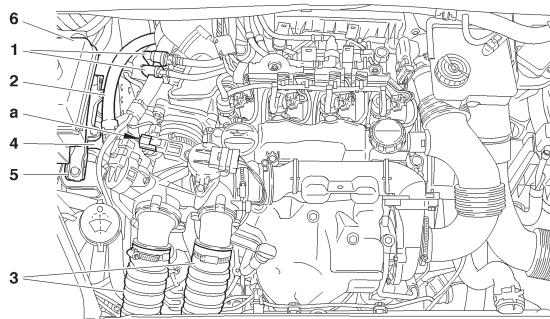
Disconnect the connector at «a».

Remove and move aside the power steering fluid reservoir (6).

Uncouple, plug and move aside the tube (2).

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

Remove the engine supports (4) and (5).

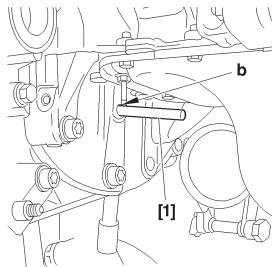


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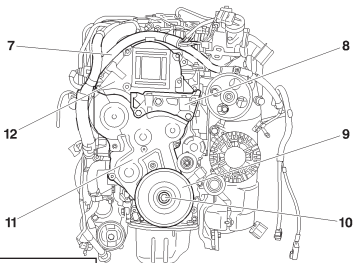
XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HZ - 9HY



B1BP305C



B1EP1E3D

Rotate the engine to drive it in its normal direction of rotation.

Peg the flywheel, using tool [1] at «b».

Move aside the harness (7).

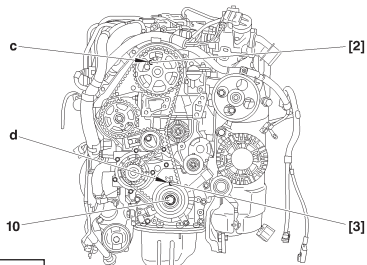
Remove:

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

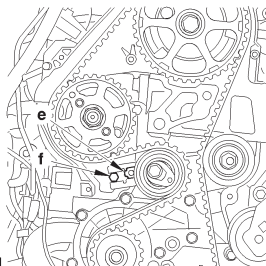
CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY



B1EP1E4D



B1EP1E5C

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 peg).

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).

Note: The index «e» of the dynamic tensioner roller should be centred in the interval «d».

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].

XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HZ - 9HY

Refitting.

Refit tool [1] at «b».

Remove the screw (10).

Refit:

- The upper timing cover (12).
- The lower timing cover (11).
- The accessories drive pulley (9).
- The screw (10).

Tightening torque

Screw (10)	Pre-tighten to	: $3 \pm 0,3 \text{ m.daN}$.
	Angular tighten	: $180^\circ \pm 5^\circ$.

Remove tool [1].

Refit:

- The engine support (8), tighten to $5,5 \pm 0,4 \text{ m.daN}$.
- The engine support (4), tighten to $6,1 \pm 0,6 \text{ m.daN}$.
- The engine support (5), tighten to $2,5 \pm 0,2 \text{ m.daN}$.
- The electrical harness (7).
- The power steering fluid reservoir (6).

Couple:

- The tube (2).
- The exhaust line, tighten the clip to $2,5 \pm 0,3 \text{ m.daN}$.
- The fuel unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).

Connect the connector at «a».

Refit:

- The accessories drive belt (*see corresponding operation*).
- The front RH splash-shield (*see corresponding operation*).
- The front RH wheel, tighten to $9 \pm 1 \text{ m.daN}$.
- 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*).

CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY

Tools.

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

Checking and setting the timing.**Removing.**

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 accessories drive belt (*see corresponding operation*).

Uncouple:

- The fuel supply unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).
- The exhaust line (*at the flexible pipe*).

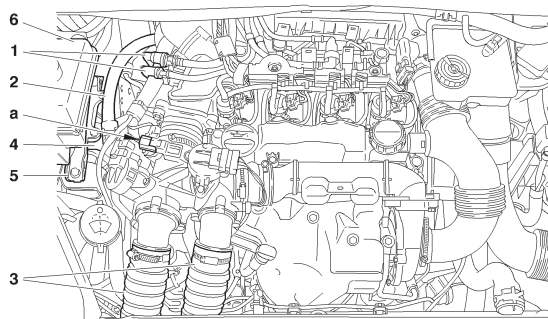
Disconnect the connector at «a».

Remove and move aside the power steering fluid reservoir (6).

Uncouple, plug and move aside the tube (2).

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

Remove the engine supports (4) and (5).

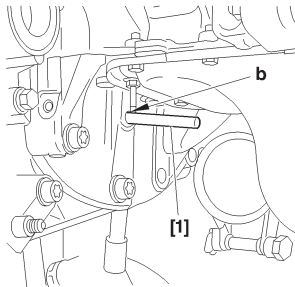


B1BP304D

XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HZ - 9HY



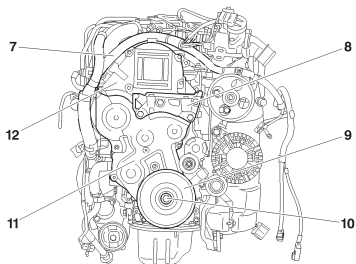
Rotate the engine to drive it in its normal direction of rotation.

Peg the flywheel at «b», using tool [1].

Move aside the harness (7).

Remove:

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



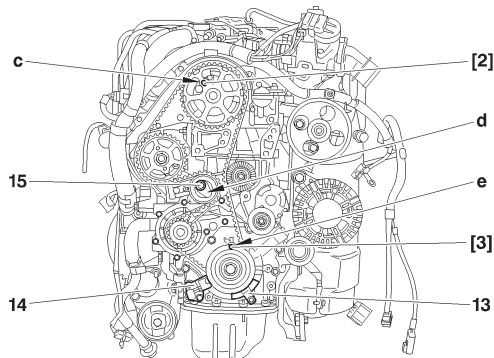
B1BP305C

B1EP1E3D

CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY



Refit the screw **(10)**.

Turn the crankshaft to bring the camshaft towards its pegging point.

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

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

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

Remove:

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

Slacken the screw **(15)** 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.

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 engine speed sensor target **(15)** is not damaged or scratched.

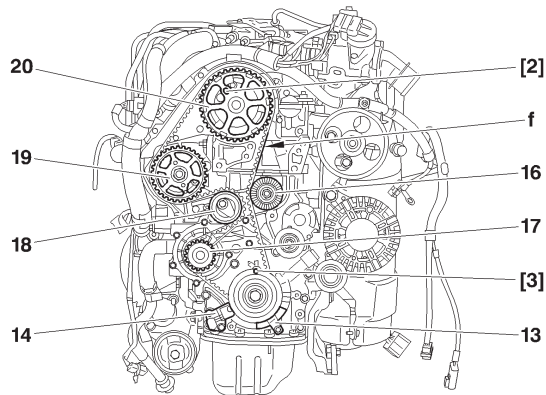
Replace any components that are defective (*if necessary*).

B1EP1E6D

XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HZ - 9HY

**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:

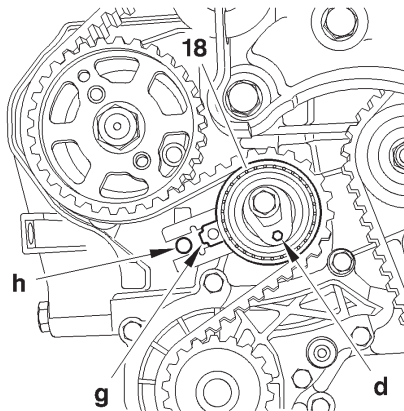
- Guide roller **(16)**.
- Camshaft pulley **(20)**.
- Fuel high pressure pump pulley **(19)**.
- Coolant pump pulley **(17)**.
- Tensioner roller **(18)**.

B1EP1E7D

CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY

**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 $3,7 \pm 0,3$ m.daN.

Check the position of the tensioner roller (*the alignment of the marks «g» and «h» should 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» should 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 hole and the pegging hole is not more than 1 mm. If the offset is too great, repeat the operation.

Remove tools [2] and [3].

B1EP1E8C

XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 9HZ - 9HY

Refitting (continued).

Refit tool [1] at «b».

Remove the screw (10).

Refit:

- The upper timing cover (12).
- The lower timing cover (11).
- The accessories drive pulley (9).
- The screw (10).

Tightening torque

- | | | |
|--------------|-----------------|--|
| - Screw (10) | Pre-tighten to | $3 \pm 0,3 \text{ m.daN.}$ |
| | Angular tighten | $180^\circ \pm 5^\circ.$ |

Remove tool [1].

Refit:

- The engine support (8), tighten to **$5,5 \pm 0,4 \text{ m.daN.}$**
- The engine support (4), tighten to **$6,1 \pm 0,6 \text{ m.daN.}$**
- The engine support (5), tighten to **$2,5 \pm 0,2 \text{ m.daN.}$**
- The electrical harness (7).
- The power steering fluid reservoir (6).

Disengage the jack from under the engine.

Couple:

- The tube (2).
- The exhaust line, tighten the clip to **$2,5 \pm 0,3 \text{ m.daN.}$**
- The fuel unions (1).
- The air/air heat exchanger inlet and outlet pipes (3).

Connect the connector at «a».

Refit:

- The accessories drive belt (*see corresponding operation*).
- The front RH splash-shield (*see corresponding operation*).
- The front RH wheel, tighten to **$9 \pm 1 \text{ m.daN.}$**

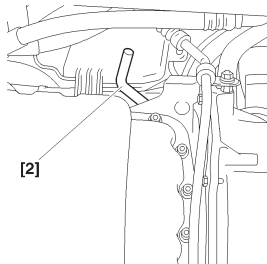
Reconnect the positive and negative terminals of the battery.

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

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: WJY



B1BP2FTC

Tools.

- | | |
|---|--------------------------|
| [1] Pliers for removing plastic pins | : 7504-T or (-).1311 |
| [2] Flywheel peg | : 7014-T.J or (-).0188 Y |
| [3] Injection pump setting peg Ø 6 mm | : (-).0188 H |
| [4] Screw H M8 | : (-).0188 E |
| [5] Belt retaining pin | : (-).0188 K |
| [6] Square for adjusting belt tension | : (-).0188 J1 |
| [7] Belt tension measuring instrument, with digital display | : SEEM CTG 105.5M |

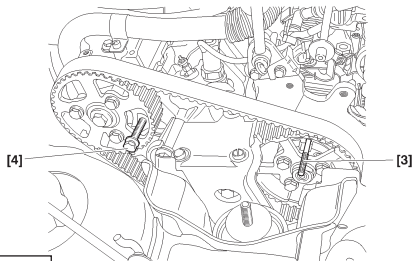
Checking the timing.

Peg the flywheel, using tool [2].

Peg the camshaft hub, using tool [4].

Peg the injection pump hub, using tool [3].

IMPERATIVE: If the pegging proves impossible, repeat the setting of the timing.



B1EP16PD

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: WJY

Setting the timing.**Removing.**

Disconnect the battery.

Remove the front RH lower splash-shield, using tool [1].

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

Uncouple and plug the diesel fuel delivery and return hoses.

Support the engine, using a workshop hoist.

Remove the RH engine support.

Engage **5th gear** to permit rotation of the engine.

Remove the upper cover (1).

Remove the intermediate cover (2).

Remove the lower cover (3).

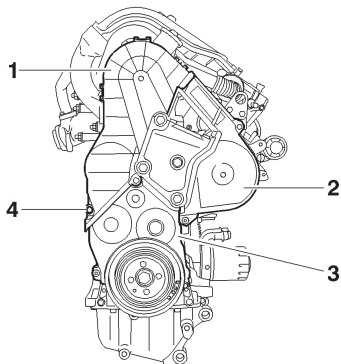
WARNING: Refit the screw (4) equipped with a washer (5 mm thick).

Rotate the front RH wheel to drive the engine in its normal direction of rotation.

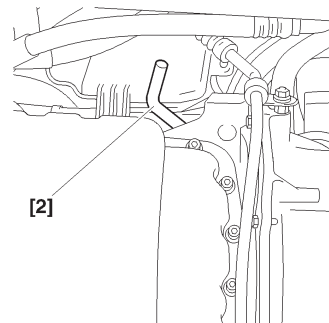
Bring the camshaft drive and injection pump pinions to their setting points.

Position the peg [2] (*from underneath the vehicle*).

Continue turning the engine until the peg [2] engages in the flywheel.



B1BP30BC



B1BP2FTC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: WJY

Setting the timing (continued).

Peg the camshaft hub, using tool [4].

Peg the injection pump hub, using tool [3].

Slacken screws (5) and (6).

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

Remove the timing belt.

Refitting.

Retighten screws (5) and (6) by hand.

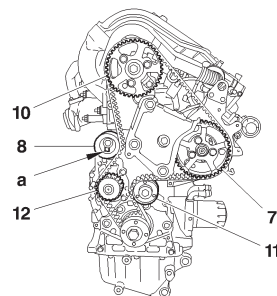
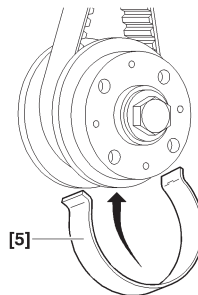
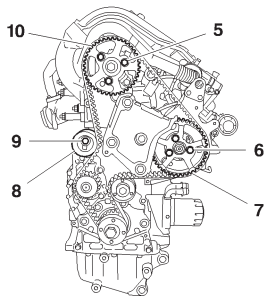
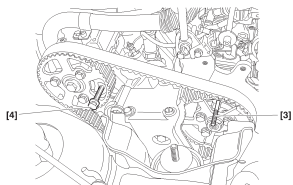
Turn the pinions (10) and (7) clockwise in order to place them at end of slots.

Fit the timing belt on the crankshaft.

Hold the belt, using tool [5].

Position the timing belt in the following sequence:

- Guide roller (11).
- Injection pump pinion (7).
- Camshaft pinion (10).
- Coolant pump pinion (12).
- Tensioner roller (8).



B1EP16PD

B1EP1EDC

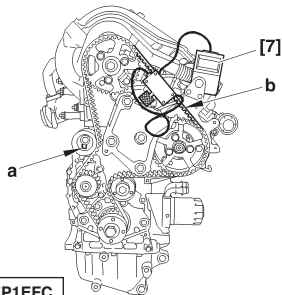
B1EP132C

B1EP1EEC

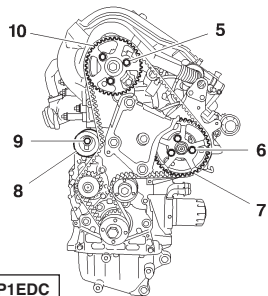
XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: WJY



B1EP1EFC



B1EP1EDC

Setting the timing (continued).

NOTE: If necessary, you can slightly rotate the pinions (10) and (7) anti-clockwise in order to engage the belt. The angular displacement value of the belt in relation to the pinions should not be more than half a tooth. Remove tool [5].

Act on the tensioner roller (8) by its square «a», using tool [6] to check that the camshaft and injection pump pinions can turn freely.

Position the belt tension instrument [7] on the belt at «b».

Using tool [6], act at «a» in the direction opposite to that of engine rotation, to obtain a tension value of **106 ± 2 SEEM** units.

Tighten screws (9), (5) and (6).

Remove tools [7], [2], [3] and [4].

Rotate the crankshaft **8 times** in the normal direction of rotation.

Peg the flywheel, using tool [2].

Peg the camshaft hub, using tool [4].

Peg the injection pump hub, using tool [3].

Slacken screws (9), (5) and (6).

Position the belt tension instrument [7] on the belt at «b».

Using tool [6], act at «a» in the direction opposite to that of engine rotation, to obtain a tension value of **42 ± 2 SEEM** units.

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: WJY

Setting the timing (continued).

Tighten:

- Screw (9) to 2.1 ± 0.2 m.daN.
- Screws (5) to $2,3 \pm 0.2$ m.daN.
- Screws (6) to $2,3 \pm 0.2$ m.daN.
- Remove and refit tool [7].
- The tension value should be between 38 and 46 SEEM units.
- Remove tools [7], [2], [3] and [4].
- Turn the crankshaft 2 times in the normal direction of rotation.
- Peg the flywheel, using the peg [2].
- Visually check the peggings of the camshaft and injection pump.

ESSENTIAL: Visually check that the offsets between the holes of the camshaft and injection pump hubs and the corresponding pegging holes are not more than 1 mm. If necessary, recommence the procedure for fitting the timing belt.

Setting the timing (continued).

- Remove the peg [2].
- Remove the screw (4) and the washer.
- Refit the lower cover (3).
- Refit the intermediate cover (2).
- Refit the upper cover (1).
- Remove the RH engine support.
- Take away the workshop hoist.
- Remove the plugs and recouple the diesel fuel delivery and return hoses.
- Refit the accessories drive belt (*see corresponding operation*).
- Refit the RH lower splash-shield.
- Disengage 5th gear.
- Connect the battery.

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ

Tools.

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

Removing.

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

Undo the front RH wheel bolts.

Raise and support the vehicle on the front RH side.

Disconnect the battery negative terminal.

Remove:

- The under-engine sound-deadening.
- The front RH wheel.
- The front RH splash-shield.
- The engine cover.

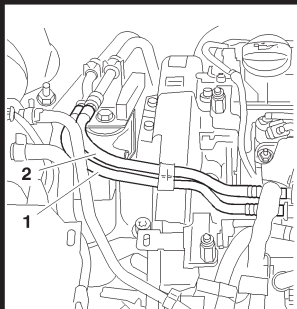
Unclip and move aside the cooling hose.

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

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ



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

Remove:

- Screws (3), (4) and (6).
- Screw (7).
- The upper timing cover (5).

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

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

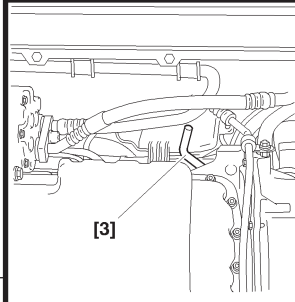
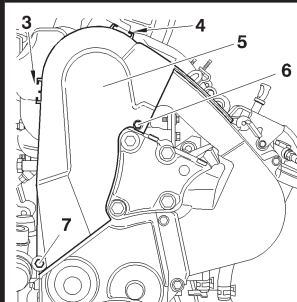
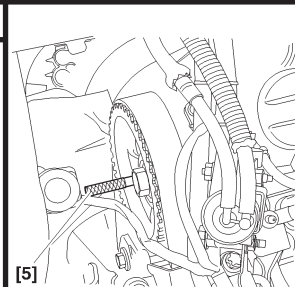
Put the gear lever in **5th gear**.

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

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

Peg the camshaft, using tool [5].

Peg the engine flywheel, using tool [3].



B1BP2R2C

B1EP1A7C

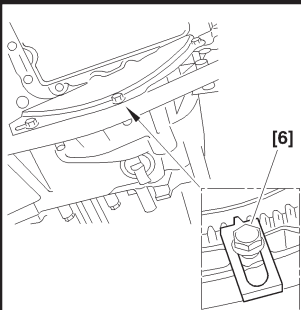
B1BP2H2C

B1BP2H3C

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ



Remove:

- The fixings of the pipe linking the power steering pump with the rotary valve.
- The clutch lower closing plate.
- Lock the engine flywheel, using tool [6].

Remove the screw (8).

Refit the screw (8) without its thrust washer.

Remove:

- The accessories pulley (9), using tool [8].
- Tool [6].
- The lower torque reaction rod.

Support the engine by means of a workshop hoist.

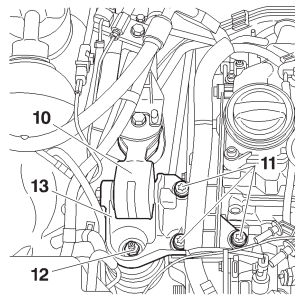
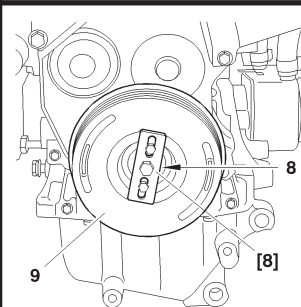
Remove:

- The bearing shell fitting (10).
- The nut (12).
- Screws (11).
- The bracket (13).

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

Remove:

- The intermediate timing cover.
- The lower timing cover.



B1CP04BC

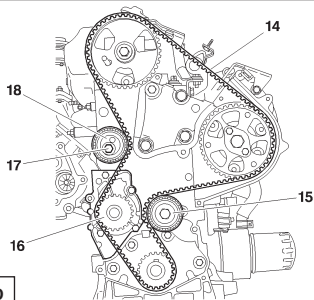
B1BP2R3C

B1BP2R4C

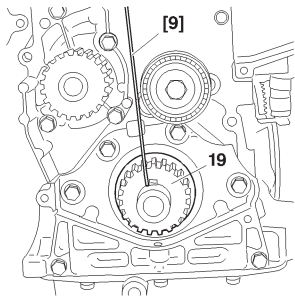
CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ



B1EP1A8D



B1EP1A9C

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

Remove the timing belt (14).

Checks.

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

Check that:

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

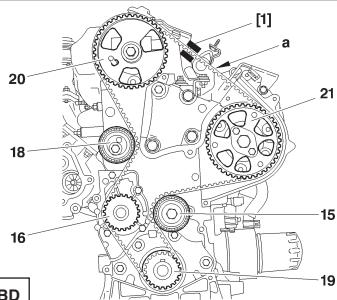
Replace defective components if necessary.

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

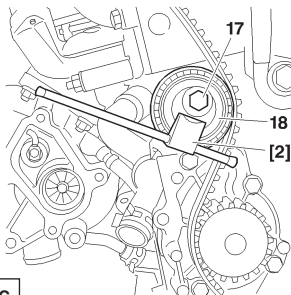
XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ



B1EP1ABD



B1EP1ACC

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

- Fuel high pressure pump pulley (21).
- Guide roller (15).
- Crankshaft pinion (19).
- Coolant pump pinion (16).
- Tensioner roller (18).

Position tool [1] on the belt at «a».

Remove tools [4] and [9].

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

98 ± 2 SEEM units.

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

Lock the flywheel by means of tool [6].

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

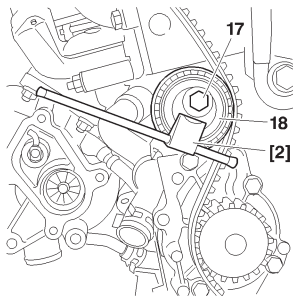
Remove tools [1], [3], [5] and [6].

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

Peg:

- The crankshaft, using tool [3].
- The camshaft drive pulley, using tool [5].

Engines: RHY - RHZ



Lock the engine flywheel, using tool [6].

Slacken the accessories drive pulley (8).

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

Fit the tool [1].

Turn the tensioner roller, using tool [2], to attain a tension of: 54 ± 2 SEEM units.

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

Remove tool [1].

Fit tool [1].

The tension value should be: 54 ± 3 SEEM units.

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

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

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

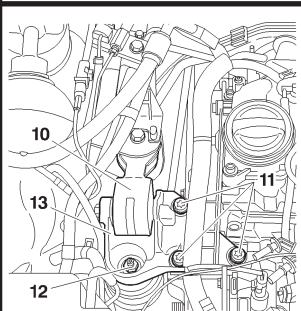
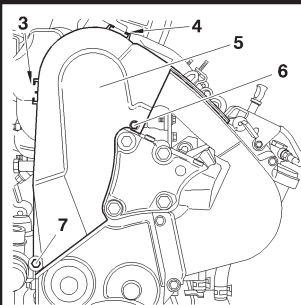
Peg:

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

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

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING



Engines: RHY - RHZ

Remove:

- Tools [3] and [5], Screw (7) and the spacer.

Refit:

- The lower, intermediate and upper covers (5).
- Screw (7), tighten to $1,5 \pm 0,1$ m.daN.
- Screws (3), (4) and (6).
- The bracket (13).

Screws (11), tighten to $6,1 \pm 0,5$ m.daN.

The nut (12), tighten to $4,5 \pm 0,5$ m.daN.

Fit the bearing shell (10).

Take away the workshop hoist.

Clip the fuel delivery and return pipes.

Remove the tool [7].

Couple:

- The fuel delivery pipe (12).
- The fuel return pipe (1).
- Coat the screw (8) with loctite **FRENETANCH**.

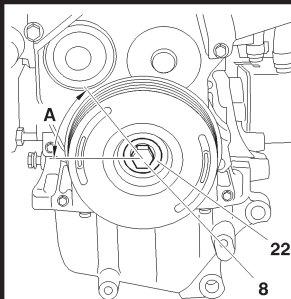
Refit the tool [6] and the screw (8) with the washer (22), tighten to $7 \pm 0,2$ m.daN and angular tighten to $A = 60^\circ \pm 5^\circ$.

Refit the torque reaction rod on the lower engine support.

Remove the tool [6].

Reposition and reclip the cooling hose.

Complete the refitting of components in reverse order to removal.



B1EP1A7C

B1BP2R4C

B1EP1ADC

CHECKING THE VALVE TIMING

C4

Engine: RHR

Tools.

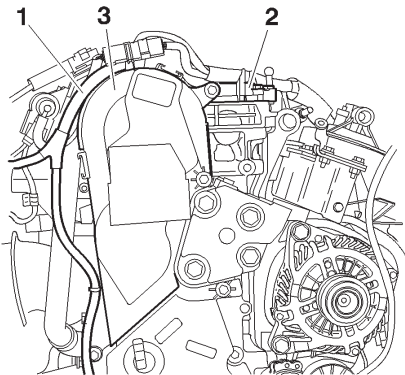
[1] Kit of plugs	: (-).0188.T	
[2] Double flywheel setting peg	: (-).0188.X	Toolkit 0188-T
[3] Camshaft setting peg	: (-).0188.M	

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.
 Uncouple, plug and move aside, using tool [1], the fuel supply and fuel return pipes..
 Suspend the engine, using a workshop hoist.
 Remove the engine support bracket and the engine support.
 Move aside the electrical harness (1).

Remove:

- The camshaft position sensor.
- The inlet cylinder head cover (2).
- The upper timing cover screws.
- The upper timing cover (3).

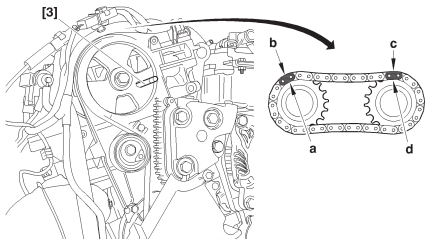


B1EP1GFC

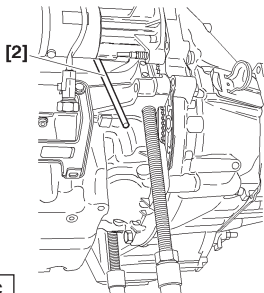
C4

CHECKING THE VALVE TIMING

Engine: RHR



B1EP1FND



B1BP31FC

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 camshafts*).

Peg:

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

Remove tools [1] and [3].

Complete the refitting.

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: 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	(-).0188.P

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

Removing.

Slacken the front RH wheel bolts.

Raise and support the front RH side of the vehicle.

Disconnect the negative terminal of the battery.

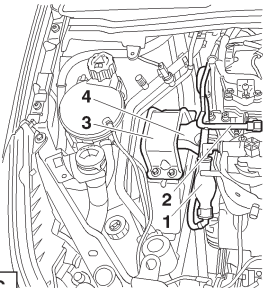
Remove:

- The under-engine sound-deadening.
- The front RH wheel.
- The front RH splash-shield.
- The engine cover.

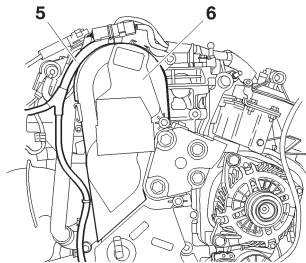
Remove the auxiliaries drive belt (*see corresponding operation*).

C4

CHECKING AND SETTING THE VALVE TIMING



B1BP351C



B1EP1FAC

Engine: RHR

Uncouple, plug and move aside, using tool [7], the fuel delivery pipe (1) and the fuel return pipe (2). Suspend the engine, using a workshop hoist. Remove the bracket (3) and the RH engine support (4). Move aside the electrical harness (5).

Remove:

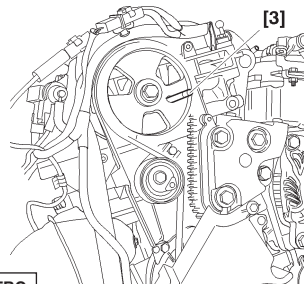
- The upper timing cover screws.
- The upper timing cover (6).

Rotate the engine by means of the auxiliaries drive pulley. Orient the camshaft pinion in the pegging position, use a mirror if necessary.

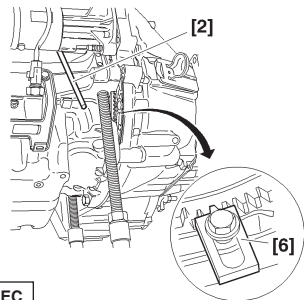
Peg the camshaft, using tool [3].

Peg the engine flywheel, using tool [2].

Lock the flywheel, using tool [6].



B1EP1FBC



B1BP31EC

CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RHR

Remove:

- The screw (8).
- 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].

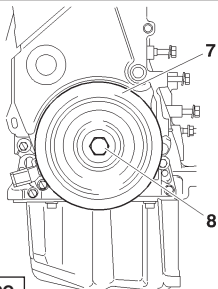
Slacken the screw (12) of the tensioner roller (17).

Remove the timing belt (13).

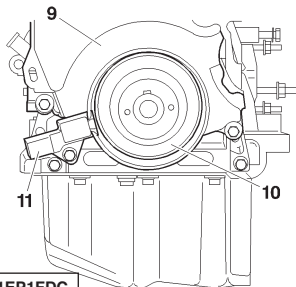
Checks.**IMPERATIVE:** Just before refitting, carry out the checks below.

Check:

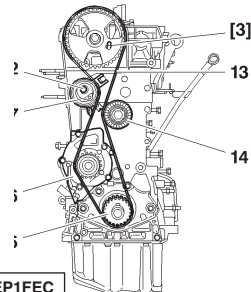
- That the rollers (14) and (17) turn freely (*without play and without any tight spot*).
 - That the coolant pump pulley (16) turns freely (*without play and without any tight spot*).
 - That there are no traces of oil leaks from the crankshaft and camshaft seals, etc.
 - That the crankshaft pinion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



B1EP1FCC



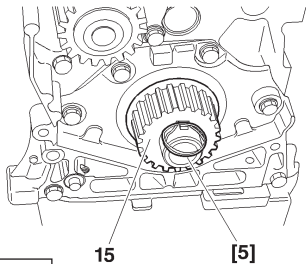
B1EP1FDC



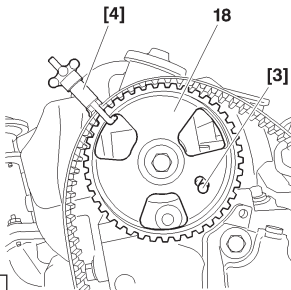
B1EP1FEC

C4

CHECKING AND SETTING THE VALVE TIMING



B1EP1FFC



B1EP1FGC

Engine: RHR

Refitting.

Centre the crankshaft pinion (15), using tool [5].
 Reposition the timing belt on the pulley (18).
 Put the tool [4] in place (*tighten moderately*).

Reposition the timing 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].

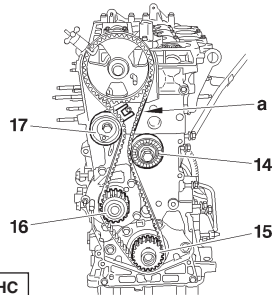
Bring the index «d» outside the plate at «c», by turning the tensioner roller in the direction of the arrow «b», using a hexagonal spanner at «e». Tighten screw (12) of the tensioner roller (17) to $2,1 \pm 0,2$ m.daN.

Lock the flywheel, by means of tool [6].

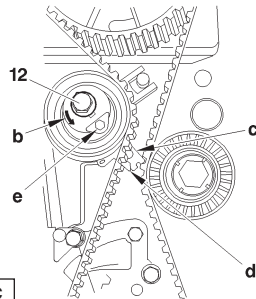
Refit the auxiliaries drive pulley (7).

Tighten the screw (8) to $7 \pm 0,7$ m.daN.

Remove tools [6], [2] and [3].



B1EP1FHC

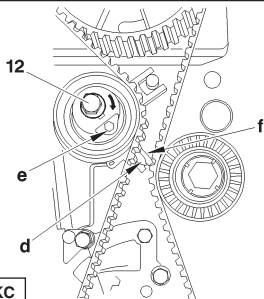


B1EP1FJC

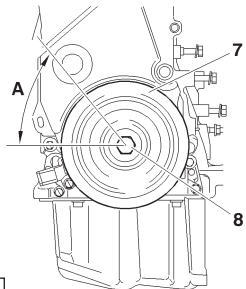
CHECKING AND SETTING THE VALVE TIMING

C4

Engine: RHR



B1EP1FKC



B1EP1FLC

Refitting.

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

Peg the crankshaft, using tool [2] and the camshaft drive pinion, using tool [3].

Lock the flywheel, using tool [6].

Slacken the screw (8) of the auxiliaries drive pulley (7) and the screw (12) of the tensioner roller (17).

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 $2,1 \pm 0,2$ m.daN.

- The auxiliaries drive pulley to $7 \pm 0,7$ m.daN.

Remove tools [2], [3] and [6].

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

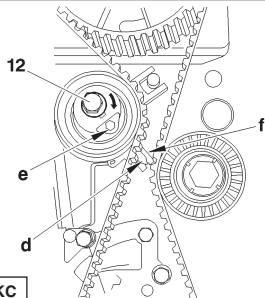
Refit tools [2] and [3].

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

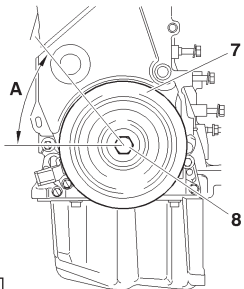
C4

CHECKING AND SETTING THE VALVE TIMING

Engine: RHR



B1EP1FKC



B1EP1FLC

Refitting.

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*).

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 lower torque reaction rod.

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 $7 \pm 0,7$ m.daN, then angular tighten by $A = 60^\circ \pm 5^\circ$.

Remove tools [2], [3] and [6].

Complete the refitting.

CHECKING THE OIL PRESSURE								C4	
	Petrol					Diesel			
Engine type	KFU	NFU	RFJ	RFN	RFK	9HX	9HY	9HZ	RHR
Temperature (°C)	90°		80°						
Pressure (bars)			1,5		3	1,3			1,9
Rpm			1000						
Pressure (bars)	3				5,6				4
Rpm	2000				2000				2000
Pressure (bars)			5		6,3				
Rpm			3000		3000				
Pressure (bars)	4					3,5			
Rpm	4000					4000			
	Tools (Toolkit 4103)								
2279-T.Bis	X	X	X	X	X	X	X	X	X
4103-T	X	X	X	X	X	X	X	X	X
(-).0710.F1			X						
(-).0710.B1			X						
(-).1503.J						X	X	X	
4103-T.B				X	X				
7001-T	X	X		X	X				X
4202-T				X	X				
NOTE: The oil pressure should be checked with the engine hot, after the oil level has been checked.									

XSARA	CHECKING THE OIL PRESSURE							
To be read with the Petrol and Diesel correspondence tables								
	XSARA							
Engine type	KFW	NFU	RFN	8HZ	8HX	WJY	RHY	RHZ
Temperature (°C)	90°C							
Pressure (bars)			1,5	1,3		1,8	2	
Rpm			1000	1000				
Pressure (bars)	3							
Rpm	2000							
Pressure (bars)	4							
Rpm	3000							
Pressure (bars)			5,1	3,5		4,5	4	
Rpm			4000					
	Tools (Toolkit 4103-T)							
2279-T.Bis	X	X	X	X		X	X	X
4103-T	X	X	X	X		X	X	X
4202-T			X				X	X
1503-J				X				
3099-T						X		
7017-T.X23						X		
NOTE: The oil pressure should be checked with the engine hot, after the oil level has been checked.								

CHECKING THE OIL PRESSURE

XSARA PICASSO

To be read with the Petrol and Diesel correspondence tables

	XSARA PICASSO					
Engine type	NFV	6FZ	RFN	9HZ	9HY	RHY
Temperature (°C)	90°C		80°C		90°C	
Pressure (bars)		3,3	1,5	1,3		2
Rpm		1000				
Pressure (bars)	3					
Rpm	2000					
Pressure (bars)			5			
Rpm			3000			
Pressure (bars)	4	6,3		3,5		4
Rpm	4000			4000		
	Tools (Toolkit 4103-T)					
2279-T.Bis	X	X	X	X	X	X
4103-T	X	X	X	X	X	X
7001-T	X					
4202-T		X	X		X	
1503-J				X	X	

NOTE: The oil pressure should be checked with the engine hot, after the oil level has been checked.

VALVE CLEARANCE SETTINGS

The valve clearances must be checked with the engine cold.

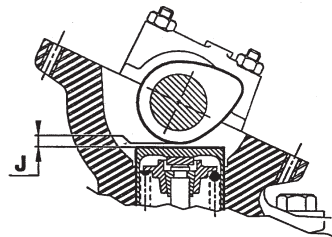
	● Inlet	⊗ Exhaust
TU1JP - TU3JP (except TU5JP4)	0,20 mm ± 0,05	0,40 mm ± 0,05
WJY	0,15 mm ± 0,08	0,30mm ± 0,08
TU5JP4 DV4/DV6/EW10 All types	Hydraulic adjustment	

POSSIBLE PROCEDURES

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

Rocking		⊗ Exhaust ● Inlet	Fully open (exhaust)	
Rocking	Adjust		Valves fully open	Adjust
1 ● ⊗ 1	4 ● ⊗ 4		⊗ 1	3 ● ⊗ 4
3 ● ⊗ 3	2 ● ⊗ 2		⊗ 3	4 ● ⊗ 2
4 ● ⊗ 4	1 ● ⊗ 1		⊗ 4	2 ● ⊗ 1
2 ● ⊗ 2	3 ● ⊗ 3		⊗ 2	1 ● ⊗ 3

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



B1DP13QC

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

XSARA

Engines: 8HX - 8HZ

Tools.

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

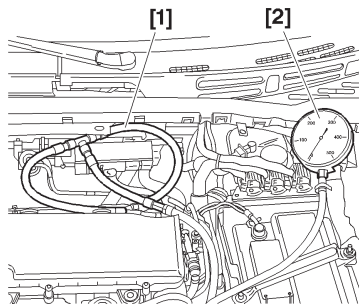
IMPERATIVE: Respect the safety and cleanliness specific to high pressure diesel injection engines.

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.

Check the negative pressure according to the table below:

Vacuum	Observations
10 ± 5 cmHg	Engine driven by the starter motor
20 ± 5 cmHg	Engine running under full load
60 ± 5 cmHg	Supply circuit obstructed (<i>full tank strainer, piping, fuel filter</i>)



B1BP2WHC

INJECTION

C4

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines: 9HX - 9HY - 9HZ

Tools.

[1] Ø 10 mm low pressure connector

: 4215-T

[2] Pressure gauge for testing boost pressure

: 4073-T.A

Toolkit 4073-T

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

Remove the air filter duct.

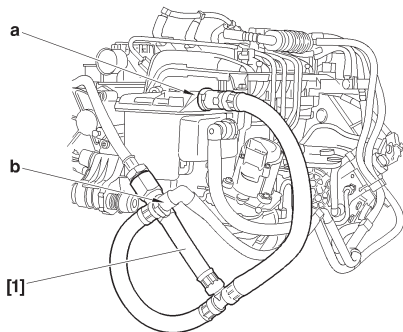
Link tool [1] in series, downstream of the injectors, between the fuel high pressure pump and the fuel filter at «a» and «b».

WARNING: Any checking of pressure downstream of the fuel filter is prohibited.

Switch on the ignition.

Check the pressure :

Vacuum measured by the pressure gauge [2]:



Vacuum	Observations
$10 \pm 0,5 \text{ cmHg}$	Engine driven by the starter motor.
$20 \pm 0,5 \text{ cmHg}$	Engine running under full load
$60 \pm 0,5 \text{ cmHg}$	Supply circuit obstructed (<i>full tank strainer, piping, fuel filter</i>)

B1CP0GFD

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

XSARA PICASSO

Engines: 9HZ - 9HY

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.

Remove the air filter duct.

Link tool [1] in series, downstream of the injectors, between the fuel high pressure pump and the fuel filter at «a» and «b».

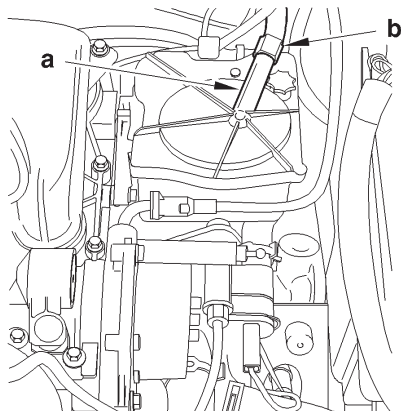
WARNING: Any checking of pressure downstream of the fuel filter is prohibited.

Switch on the ignition.

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

Check the negative pressure according to the table below:

Vacuum	Observations
10 ± 05 cmhg	Engine driven by the starter motor
20 ± 20 cmhg	Engine running under full load
60 ± 05 cmhg	Supply circuit obstructed (<i>full tank strainer, piping, fuel filter</i>)



B1BP2PHC

INJECTION

C4

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

Engine: 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.

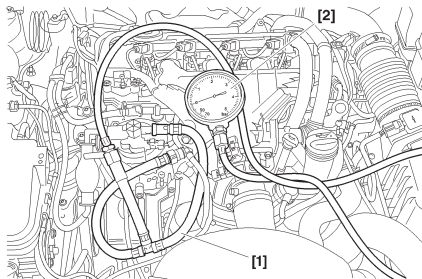
ESSENTIAL: Check that the tool [2] is clean.

Normal vacuum values.

Engine driven by the starter motor

: $10 \pm 0,5$ cmHg.

Engine running under full load

: 20 ± 10 cmHg.**Abnormal vacuum values.**Supply circuit obstructed (*full tank strainer, piping, fuel filter*): 60 ± 20 cmHg.

B1BP33RD

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

XSARA

Engine: RHY

Tools.

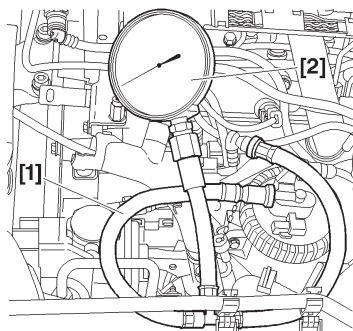
- [1] Ø 10 mm low pressure connector : 4215-T
 [2] Pressure gauge for testing boost pressure : 4073-T.A Toolkit 4073-T

Checks.

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.



Vacuum	Observations
10 ± 05 cmhg	Engine driven by the starter motor
20 ± 20 cmhg	Engine running under full load
60 ± 05 cmhg	Supply circuit obstructed (<i>full tank strainer, piping, fuel filter</i>)

B1BP2KUC

INJECTION

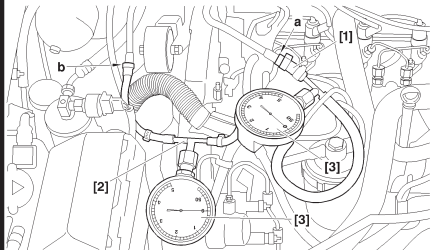
XSARA PICASSO

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines: RHY - RHZ

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



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**.

Checks on pressure: static.

- Switch on ignition.

For 3 seconds (normal functioning):

- Fuel supply pressure shown by the pressure gauge [3] = 1.8 ± 0.4 bar.

- Fuel return pressure shown by the pressure gauge [3] = 0.5 ± 0.4 bar.

B1BP1TWD

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

XSARA PICASSO

Engines: RHY - RHZ (continued)

Checks on pressure: dynamic.

Engine running, at idle (*normal functioning*):

- Fuel supply pressure shown by the pressure gauge [3] = 2 ± 0.4 bar.
- Fuel return pressure shown by the pressure gauge [3] = 0.7 ± 0.4 bar.

Abnormal functioning

Fuel supply pressure	Fuel return pressure	Checks
Between 3 and 3.5 bar	0.7 ± 0.2 bar	Check the condition of the diesel filter
More than 3.5 bar	Less than 0.7 bar	Check the low pressure regulator incorporated in the filter (<i>locked shut</i>): replace.
More than 3.5 bar	More than 0.7 bar	Check the fuel return circuit (<i>pipe pinched or trapped...</i>)
Between 0.8 and 1.5 bar	Less than 0.7 bar	Check the fuel supply circuit: - Booster pump (<i>low pressure</i>), piping

Impossible to start the engine:

Fuel supply pressure less than 0.8 bar:

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

Check: diesel injector return flow (*table below*).

Uncouple the diesel injector return pipe.

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

XSARA

CHECKS: TURBO PRESSURE

Engines: 8HX - 8HZ

Tools.

[1] Pressure gauge for checking boost pressure

: 4073-T.A

[2] Sleeve for checking boost pressure

: (-).0171.F

Checks.

IMPERATIVE: Respect the following test conditions:

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

Preparation.

Remove the clips (1).

Fit the tool [2] in the place of the duct (2).

Couple the sleeve [2] on the pressure gauge [1] using the tube «a».

Mode of operation.

Position tool [1] in the vehicle.

Start the engine.

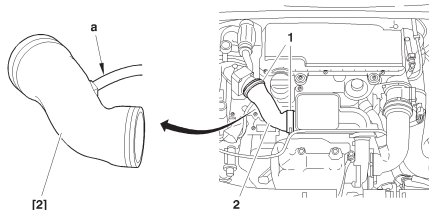
Engage **first gear**, start the vehicle.

Engage the gears up to third gear.

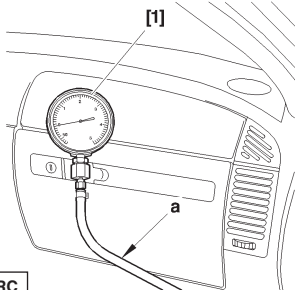
Decelerate to an engine speed of **1000 rpm**.Check the pressure: **$0,6 \pm 0,05$ bar (1500 rpm)**.Accelerate freely (*change from fourth gear to third gear*).Check the pressure: **$0,9 \pm 0,05$ bar (between 2500 and 3500 rpm)**.

Remove tools [1], [2] and «a».

Reposition the tube (2) and tighten the clips (1).



B1BP2NXD



C5FP06RC

CHECKS: TURBO PRESSURE

C4

Engines: 9HX - 9HY - 9HZ

IMPERATIVE: Respect the safety and cleanliness requirements.

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: **$0,6 \pm 0,05$ bar (1500 rpm)**.

Accelerate freely (*change from fourth gear to third gear*).

Check the pressure: **$0,9 \pm 0,05$ bar (between 2500 and 3500 rpm)**.

XSARA PICASSO

CHECKS: TURBO PRESSURE

Engines: 9HZ - 9HY

IMPERATIVE: Respect the safety and cleanliness requirements.

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**.

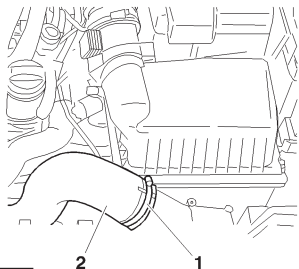
Check the pressure: **$0,6 \pm 0,05$ bar (1500 rpm)**.

Accelerate freely (*change from fourth gear to third gear*).

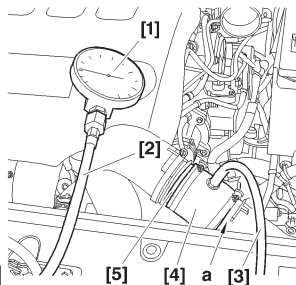
Check the pressure: **$0,9 \pm 0,05$ bar (between 2500 and 3500 rpm)**.

CHECKS: TURBO PRESSURE

C4



B1BP356C



B1HP1ZXC

Engine: RHR

Tools.

[1] Pressure gauge for checking the turbo pressure	: 4073-T	Toolkit 4073-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	

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

Preliminary operation.

Slacken the clip (1).

Uncouple the air duct (2).

Connect the tool [1] on tool [2] and the tool [3] on tool [2].

Positioning on the vehicle.

Insert the tools [4] and [5] between the air duct (2) and the turbo air cooler outlet at «a».

Connect the tool [3] on tool [4].

Position the tool [1] inside the vehicle.

Start the engine.

Accelerate to 4000 rpm.

The value should be

: $1 \pm 0,2$.

Return 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).

INJECTION

XSARA PICASSO

CHECKS: TURBO PRESSURE

Engine: RHY

Tools.

[1] Pressure gauge for checking boost pressure

: 4073-T.A Kit 4073-T

[2] Sleeve for checking boost pressure

: 4185-T

Checks.

IMPERATIVE: respect the following checking requirements: Engine at running temperature. Vehicle running at full load.

Preparation.

Remove the collar (3) and the sleeve.

Insert the tool [2] between the pipe (1) and the duct (2).

Position tool [1] in the vehicle.

Connect the pressure gauge [1] to the tool [2] with its tube «a» long enough for the gauge to be positioned inside the vehicle.

Procedure.

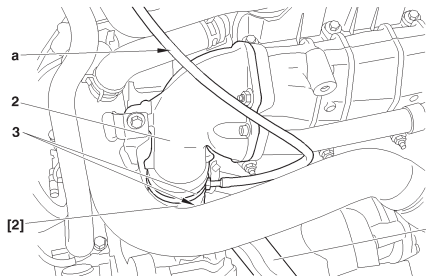
Start the engine.

Engage **first gear** and start the engine.Engage the gears up to **third gear**.Decelerate to **2000 rpm**.

Gradually accelerate.

Check the pressure: **0.95 ± 0.05 bar**.

Remove the tools, refit the collars (3) and the sleeve.



B1BP1ZXD

Engine: RHZ

Tools.

- [1] Pressure gauge for checking boost pressure : 4073-T.A Kit 4073-T
 [2] Sleeve for checking boost pressure : 4185-T
 [3] Adaptor sleeve : 4229-T

Checks.

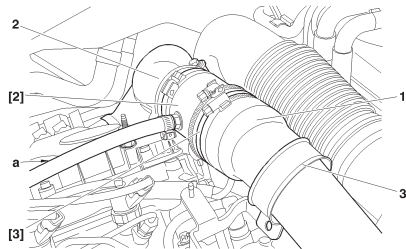
IMPERATIVE: respect the following checking requirements: Engine at running temperature.
 Vehicle in running order at full load.

Preparation.

Remove the collar fixing (3).
 Insert the tool [2] connected with tool [3], between the pipe (1) and the duct (2).
 Position tool [1] in the vehicle.
 Connect the sleeve [2] to the tool [1] with its tube «a».

Procedure.

Start the engine.
 Engage **first gear** and start the engine.
 Engage the gears up to **third gear**.
 Decelerate to **1000 rpm**.
 Accelerate hard, and check the pressure: **0.6 ± 0.05 bar (1500 rpm)**.
 Accelerate freely in kick-down (*changing from **fourth** to **third gear***).
 Check the pressure: **0.95 ± 0.05 bar (between 2500 and 3500 rpm)**.
 Remove the tools, reposition the pipe (1) and refit the collar (3).



B1HP12JD

XSARA

CHECKING THE AIR SUPPLY CIRCUIT

Engines: 8HX - 8HZ

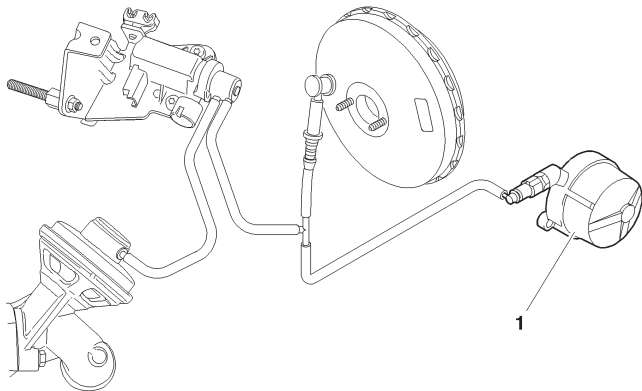
Tool.

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

Vacuum pump:

- Connect the tool [1] onto the vacuum pump (1).
- Start the engine.
- Wait **30 seconds**.

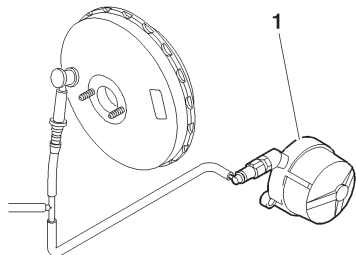
The vacuum value should be **0.9 ± 0.1 bar** at idle.



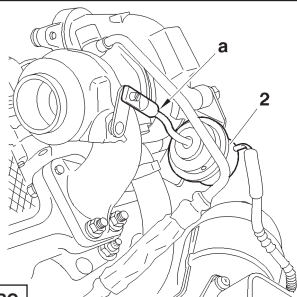
B1HP1K8D

CHECKING THE AIR SUPPLY CIRCUIT

C4



B1HP1UGC



B1HP22RC

Engine: 9HX

Tool.

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

Checks.

Vacuum pump.

Connect the tool [1] into the vacuum pump (1).

Start the engine.

The vacuum value should be **0.9 ± 0.1 bar** at idle (*after 30 seconds of operation*).

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).

Apply a vacuum of approx. **0.8 bar**.

Rod "a" should move **6 ± 2 mm**.

INJECTION

C4

CHECKING THE AIR SUPPLY CIRCUIT

Engines: 9HY - 9HZ

Tool.

[1] Manual pressure-vacuum pump

: FACOM DA 16

Checks.

Vacuum pump.

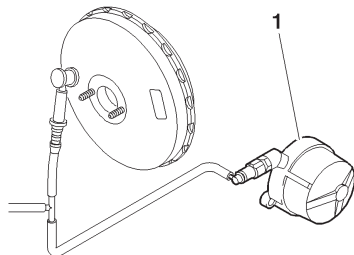
Connect the tool [1] into the vacuum pump (1).

Start the engine.

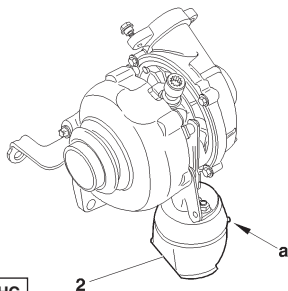
Wait **30 seconds**.The vacuum value should be **0.9 ± 0.1 bar** at idle.**NOTE:** The exhaust gas recycling valve is not linked to the air supply circuit.

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*).Apply a vacuum of approx. **0.8 bar**.Rod "a" should move **12 ± 2 mm**.

B1HP1UGC



B1HP1UHC

CHECKING THE AIR SUPPLY CIRCUIT

C4

INJECTION

Engine: RHR

Tool.

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

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

WARNING: After switching off the ignition, wait 15 minutes before disconnecting the battery (*to guarantee memorisation of the initialisations of the different ECUS*).

Checking the vacuum source (vacuum pump).

Connect the tool [1] on the take-off «a».

Start the engine.

The value should be : $1 \pm 0,2$.

Turbocharging pressure electrovalve.

Connect the tool [1] on the vacuum supply «b» of the electrovalve (1).

Start the engine.

The value should be : $1 \pm 0,2$.

Cold air circuit electrovalve.

Connect the tool [1] on the vacuum supply «c» of the electrovalve (2).

Start the engine.

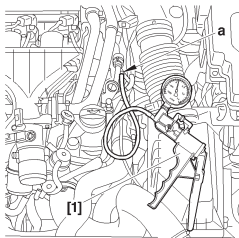
The value should be : $1 \pm 0,2$.

Warm air circuit electrovalve.

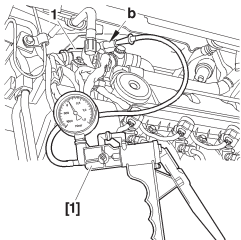
Connect the tool [1] on the vacuum supply «d» of the electrovalve (3).

Start the engine.

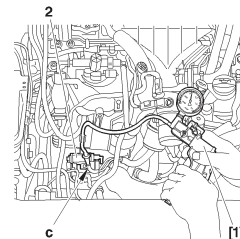
The value should be : $1 \pm 0,2$.



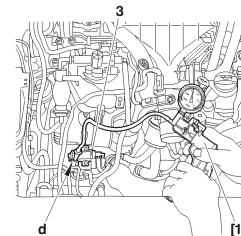
B1BP33ZC



B1BP340C



B1BP341C

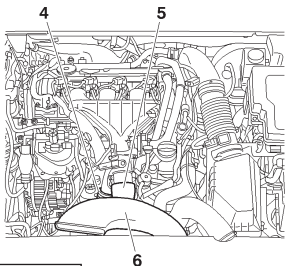


B1BP342C

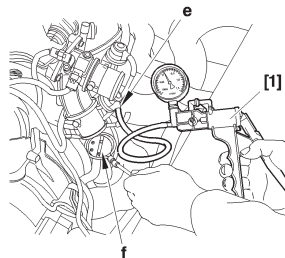
C4

CHECKING THE AIR SUPPLY CIRCUIT

Engine: RHR



B1BP343C



B1BP344C

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 $0,7 \pm 0,2$, the warm air butterfly «f» should be fully open.

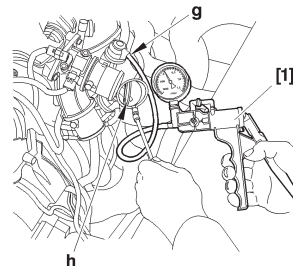
Checking the cold air closing.

Connect the tool [1] on the cold air butterfly control diaphragm at «g».

Apply a vacuum of $0,65 \pm 0,2$, the cold air butterfly «h» should be fully closed.

Refit:

- The air duct (4).
- The air duct (5).
- The air duct (6).



B1BP345C

Engines: RHY - RHZ

Tool.

: FACOM DA 16

[1] Manual vacuum pump

IMPERATIVE: Respect the safety and cleanliness requirements.**Vacuum pump.**

Connect the tool [1] on the vacuum pump (1).

Start the engine.

Pressure should be **0.8 bar** at **780 rpm**.**Boost pressure regulator electrovalve.**

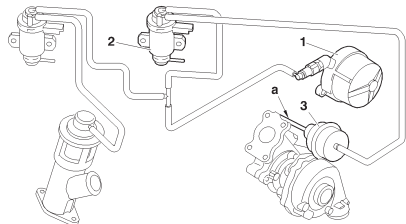
Connect the tool [1] between the electrovalve (2) and the valve (3) of the boost pressure regulator.

Compare readings with the values in the table below.

Engine speed (rpm)	Pressure (bar)
780	0,6
4000	0,25

Pressure regulator valve.

Connect the tool [1] on the valve (3).

Apply a pressure of **0.5 bar** to activate the rod "a".Rod "a" should move **12 mm**.

B1HP12FD

Engines: 8HX - 8HZ

Tool.

[1] Manual pressure-vacuum pump

: FACOM DA 16

IMPERATIVE: Respect the safety and cleanliness requirements.**EGR valve.**

Connect tool [1] on the capsule take-off (2).

Apply a vacuum of approx. **0,6 bar** several times to activate the rod «a».

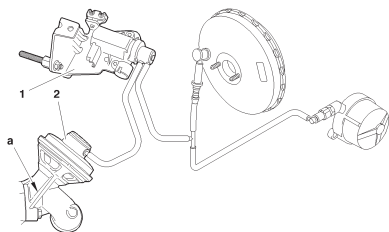
In abruptly suppressing the vacuum, the valve should click and lock itself back on its seating.

Regulation electrovalve (EGR).

Check to be performed between the electrovalve (1) and the EGR valve (2).

Link the tool [1] in series, between the electrovalve (1) and the capsule (2).

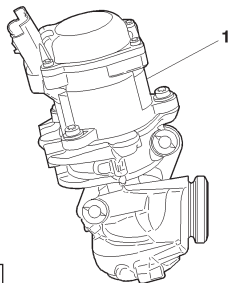
Compare the values noted with those in the table below.



B1HP1K6D

Engine speed (rpm)	Vacuum value
780	0,5 bar
2500	0 bar

Engines: 9HZ - 9HY



B1HP1UPC

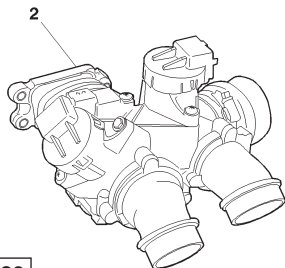
Exhaust gas recycling (EGR) valve.**(1)** Exhaust gas recycling (EGR) electrovalve**NOTE:** The engine ECU pilots the EGR valve.

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.



B1HP1UQC

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

Perform the check with the aid of a diagnostic tool.

Carry out the following operations with the diagnostic tool:

- «**INJECTION**» menu.- **Actuator tests.**- **Butterfly.****EGR exchanger butterfly.**

Check that you can hear the click from the double butterfly housing.

XSARA PICASSO

CHECKS: EXHAUST GASES RECYCLING CIRCUIT

Engines: RHY - RHZ

Tool.

[1] Manual vacuum pump

: FACOM DA 16

IMPERATIVE: Respect the safety and cleanliness requirements.**EGR valve.**

Connect the tool [1] to the capsule union (1).

Apply, several times in succession, a vacuum of approx. **0.6 bar** to activate the rod "a".

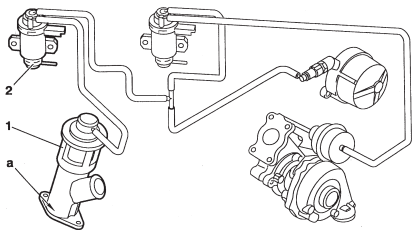
In abrupt reaction to the vacuum, the valve should close on its seating with a clicking noise.

Exhaust gas recycling (EGR) electrovalve.

Check, not under load, between the electrovalve (2) and the EGR valve (1).

Connect the tool [1] between the electrovalve (2) and the capsule (1).

Compare readings with the values in the table below.



B1HP12GD

Engine speed (rpm)	Vacuum value
780	0,5 bar
2500	0 bar

SPARKING PLUGS

Vehicles		Engine type	BOSCH	EYQUEM	CHAMPION	SAGEM	Electrode gap setting	Tightening torque	
C4	1.4i 16V	KFU	VR8SE				0,9 ± 0,05	2,25 ± 0,2	
	1.6i 16V	NFU						3 ± 0,3	
	2.0i 16V	RFN				RFN52HZ3A		2,7 ± 0,2	
	2.0i	RFJ			REC9MCLX				
	2.0i 16V	RFK	FR 7 ME						
XSARA	1.4i	KFW	FR 7 DE	RFN 58 LZ	RC 8 YLC			2,5 ± 0,2	
	1.6i 16V	NFU	FR 7 ME	RFN 58 HZ					
	2.0i 16V	RFN	FR 8 ME	RFN 52 HZ	REC 9 YCL				
XSARA PICASSO	1.6i	90 hp 100 hp	NFV		RFN 58 LZ				
				FR 7 DE		RC 8 YLC			
	1.8i 16V	6FZ	FR 8 ME	RFN 52 HZ	REC 9 YCL				
	2.0i 16V	RFN							

IGNITION

SPEEDOMETER

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

This decree stipulates:

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

$$ST < SD < 1.10 ST + 4 \text{ Kph}$$

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.

CLUTCH SPECIFICATIONS				C4
	Petrol			
	ET3J4	TU5JP	EW10J4	EW10J4S
Engine type	KFU	NFU	RFN	RFK
Gearbox type	MA5/L	MA5/N	BE4/5N	BE4R/5S
Supplier	SACHS	VALEO	VALEO	VALEO
Mechanism/type	200 MF 3850	200 CPX 3850	230 DNG 5100	230 DNG 5100
Hub disc	SAE 24/48-18Z	11 RX	11 R 14X	11 R 14X
Ø of lining. ext/int	200/134	200/137	228.6/155	228.6/155
Quality of lining	F810 DS	810 DS	810 DS	810 DS

C4	CLUTCH SPECIFICATIONS			
	Diesel			
	DV6TED4		DV6ATED4	DW10BTED4
Engine type	9HY (*)	9HZ (*)	9HX	RHR (**)
Gearbox type	BE4/5L			ML6C
Supplier	LUK			
Mechanism/type	235 P 4800			235 P 7400
Hub disc				
Ø of lining. ext/int	234/165			235/150
Quality of lining	810 DS			
<p>NOTE: (*) DVAR: Equipped with a Double Damping Flywheel with springs in the radial position in relation to the axis of the crankshaft.</p> <p>NOTE: (**) DVA: Equipped with a Double Damping Flywheel with springs arranged concentrically.</p>				

CLUTCH SPECIFICATIONS				XSARA
	TU3JP	TU5JP4	EW10J4	
Engine type	KFW	NFU	RFN	
Gearbox type	MA/5	MA/5	BE4/5	
Supplier	VALEO			
Mechanism/type	180CPO 3400	200 CPR 3800	230 DNG 4700	
Hub disc	180 XJF 73 C	200X(D95) 11A12X	230 DNG 4700	
Ø of lining. ext/int	180/127	200/137	228/155	
Quality of lining	F 408	F 808		

XSARA	CLUTCH SPECIFICATIONS				
	DV4TD		DW8B	DW10TD	DW10ATED
Engine type	8HX	8HZ	WJY	RHY	RHZ
Gearbox type	BE4/5				
Supplier	LUK				
Mechanism/type	200 P 4200		200 P 3700	230 P 4700	235 T 5700
Hub disc			215 F (D 93) 22 BX	228	228D
Ø of lining. ext/int	200/134		200/134	230/155	235/155
Quality of lining	F 408				F202

CLUTCH SPECIFICATIONS						XSARA PICASSO	
	TU5JP+	EW7J4	EW10J4	DV6TED4		DW10TD	
Engine type	NFV	6FZ	RFN	9HY	9HZ	RHY	
Gearbox type	BE4/5						
Supplier	VALEO					LUK	
Mechanism/type	200 DNG 3800	230 DNG 4700	215 DT 5250	225 DNG 5100		230 P 4700	
Hub disc	200X(D95) 11A12X	230 DNG 4700	215 FD 95			228	
Ø of lining. ext/int	200/137	228/155	215/147	225/150		230/155	
Quality of lining	F410	F 808		F 810 DS		F408	

MA MANUAL GEARBOX SPECIFICATIONS

Vehicle	Engine	Gearbox type	Sequence	Torque ratio	Drive ratio
C4	ET3J4	MA/5L	20 CQ 15	13x59	21x18
	TU5JP4	MA/5N	20 CQ 16	13x61	None
XSARA	TU3JP	MA/5L	20 CP 44	16x65	21x18
			20 CP 52	14x60	
	TU5JP4	MA/5N	20 CP 51	16x65	
		MA/5L	20 CP 52	14x60	

BE4/5 MANUAL GEARBOX SPECIFICATIONS

Vehicle	Engine	Gearbox type	Sequence	Torque ratio	Drive ratio
C4	TU5JP4	BE4/5N	20 DM 81	15x74	21x18
	EW10A/J4		20 DM 71	17x81	None
		BE4R/5S	20 DM 74	19x77	
	EW10J4S	BE4/5L	20 DM 68	17x73	
	DV6TED4	BE4R/5L	20 DM 69	19x72	
	DV6ATED4	MA/5L	20 DM 75	19x72	
XSARA	EW10J4	BE4/5J	20 DM 03	19x72	22x19
		BE4/5N	20 DM 04	17x77	
	DV4TD	BE4/5L	20 DM 53	19x75	
			20 DM 54		
	DW8B	BE4/5N	20 DM 05	19x75	
			20 DM 06	17x77	
	DW10TD	BE4/5L	20 DM 07	19x70	
			20 DM 08	17x77	
	DW10ATED	BE4/5	20 DM 10	17x61	
BE4/5L		20 DM 11			
XSARA PICASSO	TU5JP+	BE4/5J	20 DM 64	17x73	22x18
	EW7J4	BE4/5V	20 DL 69	19x77	
	DV6TED4	BE4/5L	20 DM 62	19x70	
	DW10TD		20 DM 56	15x64	

CLUTCH
GEARBOX
TRANSMISSION

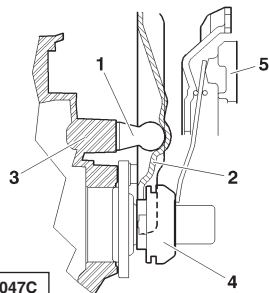
ML6/AL4 GEARBOX SPECIFICATIONS

Vehicle	Engine	Gearbox type	Sequence	Torque ratio	Drive ratio
Type ML6					
C4	DW10BTED4	ML6C	20 MB 01	17x67	None
Type AL4					
C4	TU5JP4	AL4	20 TS 12	20x73	None
	EW10A	AL4	20 TS 11	21x73	
XSARA	TU5JP4	AL4	20 TP 97	21x73	
	EW10J4	AL4	20 TP 89	23x73	
	DW10ATED	AL4	20 TP 90	27x70	
XSARA PICASSO	EW10J4	AL4	20 TS 02	23x73	

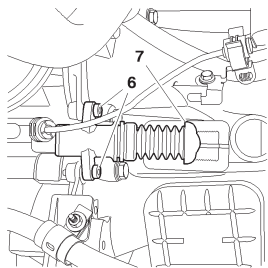
CLUTCH SPECIFICATIONS

C4

Engines: KFU - NFU - RFN - RFJ - RFK - 9HX - 9HY - 9HZ - RHR



B2BP047C



B2CP3FAC

NOTE: All the clutches are «push» type with hydraulic control.

NOTE: The **DV6TED4** and **DW10BTED4** engines are equipped with a double damping flywheel (DVA).

Description.

The declutch control has a declutch fork with a ball-joint on the axis.

- (1) The ball-joint is screwed into the clutch casing
- (2) Declutch fork
- (3) Clutch casing
- (4) Bearing
- (5) Clutch plate

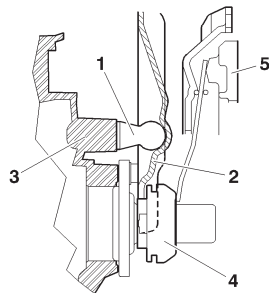
The clutch control slave cylinder (7) is fixed by two screws (6) into the exterior of the clutch casing.

CLUTCH
GEARBOX
TRANSMISSION

XSARA - XSARA PICASSO

CLUTCH SPECIFICATIONS

Engines: KFW - NFU - NFV - 6FZ - RFN - 8HX - 8HZ - 9HY - 9HZ - WJY - RHY - RHZ



NOTE: All the clutches are «push» type with hydraulic control.

Description.

The declutch control has a declutch fork mounted on a ball-joint.

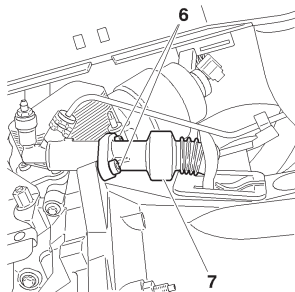
(1) The ball-joint is screwed into the clutch casing

(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.

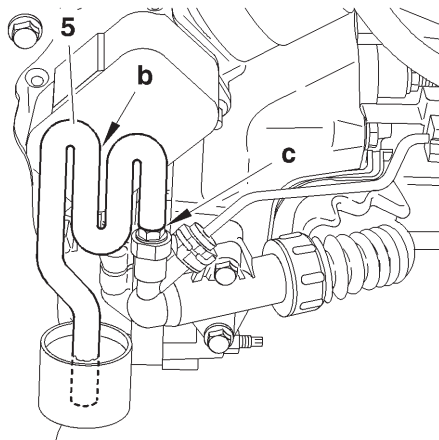
Tightening torques (m.daN).

Fixing of clutch plate/engine flywheel	: $2 \pm 0,2$.
Fixing of clutch control slave cylinder / clutch housing	: $2 \pm 0,25$.
Fixing of engine flywheel/crankshaft	
Pre-tightening	: $1,75 \pm 0,2$.
Angular tightening	: $75^\circ \pm 5^\circ$.
Checking torque	: $6,3 \pm 2,2$.

B2BP047C

B2BP05SC

Bleeding the hydraulic clutch control



IMPERATIVE: Use only new brake fluid that is not emulsified, avoid any ingress of impurities into the hydraulic circuit.

IMPERATIVE: Do not use automatic bleeding equipment (*risk of the brake fluid emulsifying in the hydraulic circuit*).

Couple a transparent tube (5) on the bleed screw, at «c».

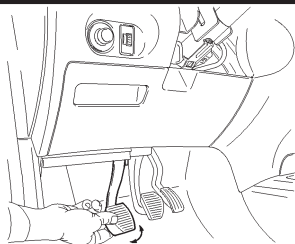
Submerge the end of the tube (5) in the recipient containing the brake fluid, located below the level of the clutch slave cylinder.

Use the transparent tube (5) to act as a siphon, at «b».

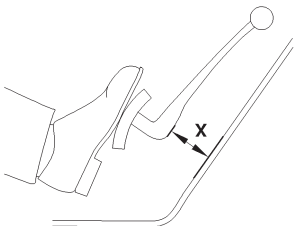
WARNING: the end of the tube (5) must be submerged in the brake fluid.

Open the bleed screw at «c».

Bleeding the hydraulic clutch control



C5FP0FQC



B2BP04YC

Action the clutch pedal manually through its full travel: **7 times** rapidly down and up.

Allow the clutch pedal to come back up to its high position.

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

Open the bleed screw at «C».

Action the clutch pedal manually through its entire travel: **7 times** rapidly down and up.

The last time, keep the clutch pedal fully down.

Reclose the bleed screw, at «C».

If necessary, repeat the operation.

Top up the brake fluid to the **MAX.** level of the brake fluid reservoir.

Work the clutch vigorously **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 **45 mm** (*the dimension (**X**) is given as a guide*).

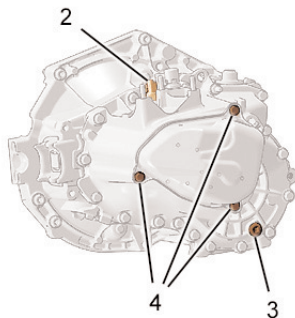
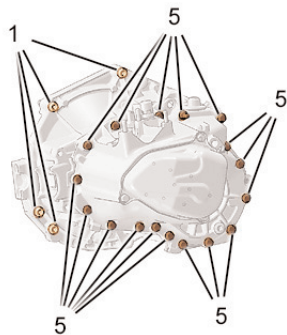
Repeat the bleed operations if necessary.

TIGHTENING TORQUES: MA/5 GEARBOX

C4

Engines: KFU - NFU

Tightening torques (m.daN).



- | | |
|--|-----------------|
| (1) Gearbox fixings on engine | : $4,5 \pm 0,5$ |
| (2) Reverse gear switch | : $2,5 \pm 0,2$ |
| (3) Drain plug | : $3,3 \pm 0,3$ |
| (4) 5th gear housing fixing | : $2,2 \pm 0,2$ |
| (5) Fixing of gearbox housing and clutch housing | : $1,9 \pm 0,2$ |

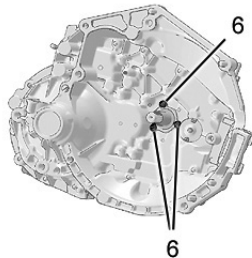
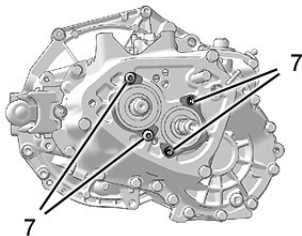
B2CP3ZHD

CLUTCH
GEARBOX
TRANSMISSION

Engines: KFU - NFU

Tightening torques (m.daN).

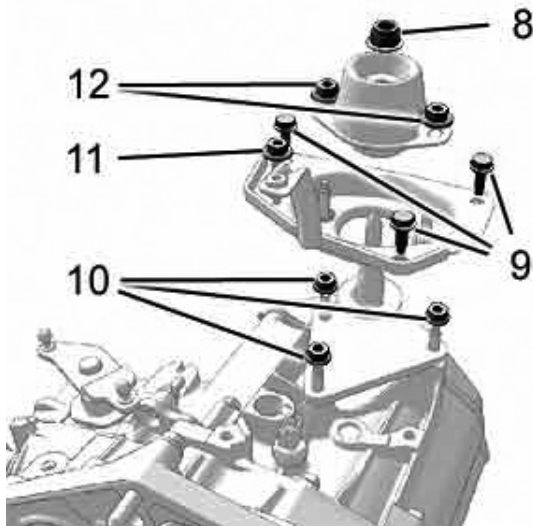
- (6) Clutch bearing guide screw : $1 \pm 0,1$
- (7) Bearing retaining clip screw : $1,8 \pm 0,2$
- Intermediate plate fixing : $5 \pm 0,5$
- Hydraulic clutch slave cylinder fixing : $3 \pm 0,3$



TIGHTENING TORQUES: MA/5 GEARBOX

C4

Engines: KFU - NFU



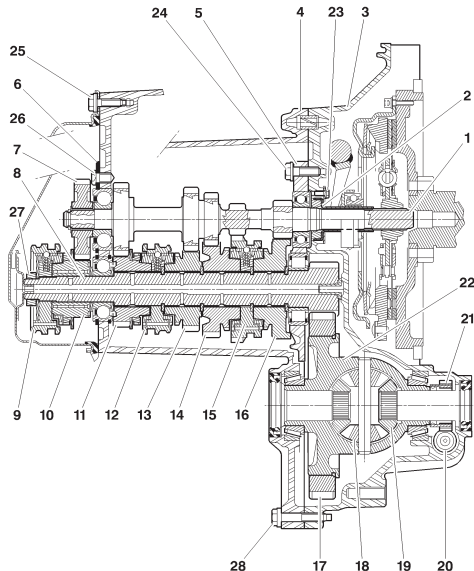
Tightening torques (m.daN).

(8) Gearbox support shaft nut	: $6,5 \pm 0,6$
(9) Screws fixing gearbox support on body	: $1,9 \pm 0,1$
(10) Gearbox support plate nut	: $2,5 \pm 0,2$
(11) Nut fixing gearbox support on body	: $1,9 \pm 0,1$
(12) Nut securing rubber bush	: $3 \pm 0,3$

B2CP3ZKC

CLUTCH
GEARBOX
TRANSMISSION

Engines: KFW - NFU

Tightening torques (m.daN).

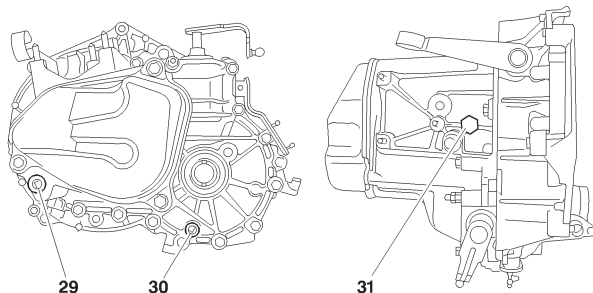
- | | |
|---|------------------|
| (23) Clutch bearing guide (3 fixing screws) | : $0,6 \pm 0,15$ |
| (24) Intermediate plate (11 fixing screws) | : $5 \pm 0,5$ |
| (25) Rear cover (3 fixing screws) | : $2,2 \pm 0,2$ |
| (26) Bearing retaining clip (4 fixing screws) | : $1,8 \pm 0,2$ |
| (27) Secondary shaft nut (1 nut) | : 14 ± 1 |
| (28) Gearbox casing (15 fixing screws) | : $1,8 \pm 0,2$ |

B2CP167P

MA/5 GEARBOX SPECIFICATIONS

XSARA

Engines: KFW - NFU



Tightening torques (m.daN).

(29) Top-up plug (x1) : **2,5 ± 0,5**

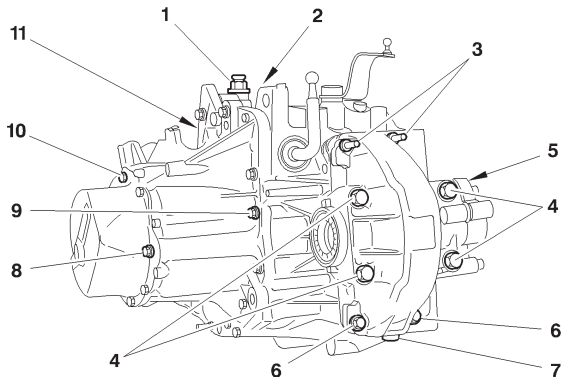
(30) Drain plug (x1) : **2,5 ± 0,5**

(31) Reverse gear switch (x1) : **2,5 ± 0,5**

B2CP169D

CLUTCH
GEARBOX
TRANSMISSION

Engines: RFN - RFK - 9HX - 9HY - 9HZ

Tightening torques (m.daN).

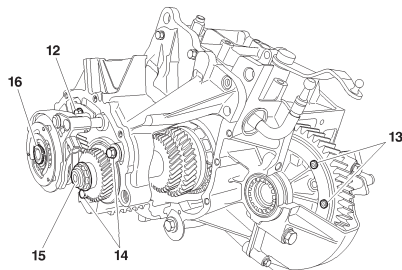
(1) Air vent hole	: $1,5 \pm 0,2$
(2) Reverse gear rocker switch shaft fixing nut	: $4,5 \pm 0,2$
(3) Differential housing fixing nut	: $1,5 \pm 0,2$
(4) Screw fixing ($\varnothing M10$) differential housing	: $5 \pm 0,5$
(5) Speedometer drive support	: $1,5 \pm 0,2$
(6) Screw fixing ($\varnothing M7$) differential housing	: $1,5 \pm 0,2$
(7) Drain plug	: $3,5 \pm 0,2$
(8) Level plug	: $2,2 \pm 0,2$
(9) Screw fixing gearbox housing/clutch housing	: $1,3 \pm 0,2$
(10) Screw fixing 5th gear housing	: $1,5 \pm 0,2$
(11) Reverse gear switch	: $2,5 \pm 0,2$

B2CP3ZXD

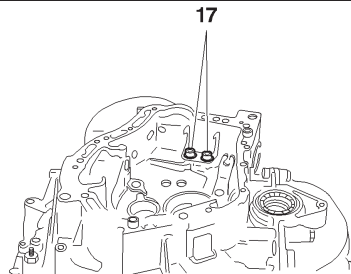
TIGHTENING TORQUES: BE4/5 GEARBOX

C4

Engines: RFN - RFK - 9HX - 9HY - 9HZ



B2CP3ZYD



B2CP3ZZC

Tightening torques (m.daN).

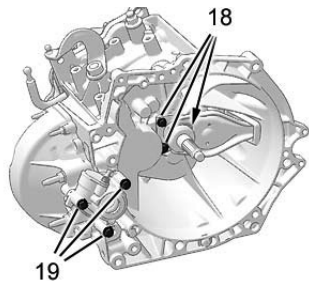
(12) Fork shaft stop screw	: 1,5 ± 0,2
(13) Differential gearwheel fixing screw	: 6 ± 0,5
(14) Bearing stop screw	: 1,5 ± 0,2
(15) Secondary shaft nut	: 6,5 ± 0,5
(16) Primary shaft nut	: 7,3 ± 0,5
(17) Gear control support fixing screw	: 1,5 ± 0,2

CLUTCH
GEARBOX
TRANSMISSION

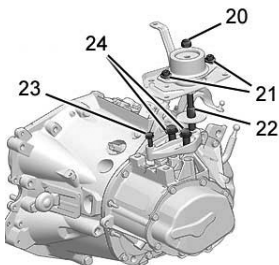
C4

TIGHTENING TORQUES: BE4/5 GEARBOX

Engines: RFN - RFK - 9HX - 9HY - 9HZ



B2CP400C



B2CP401C

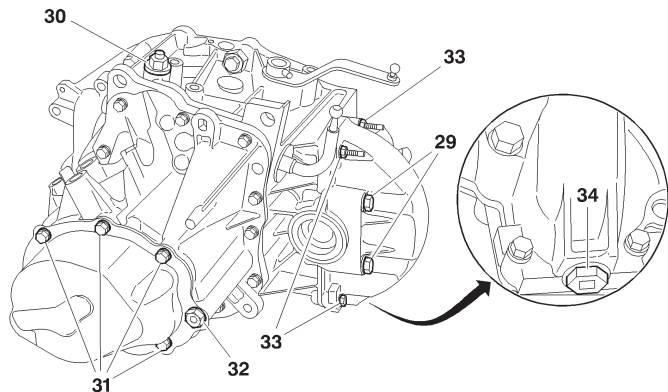
Tightening torques (m.daN).

- | | |
|--|------------------|
| (18) Stop guide screw | : $1,25 \pm 0,2$ |
| (19) Speedometer fixing screw | : $1,5 \pm 0,2$ |
| (20) Gearbox support shaft nut | : $6,5 \pm 0,6$ |
| (21) Nuts fixing rubber support | : $3 \pm 0,2$ |
| (22) Gearbox rubber support shaft | : $5 \pm 0,5$ |
| (23) Screw M10 fixing the engine/gearbox housing support | : $6 \pm 0,5$ |
| (24) Screws M10 fixing the engine/gearbox housing support | : $3 \pm 0,3$ |

TIGHTENING TORQUES: BE4/5 GEARBOX

XSARA - XSARA PICASSO

Engines: 6FZ - RFN - WJY - 8HX - 8HZ - 9HY - 9HZ - RHY - RHZ



B2CP3BRD

Tightening torques (m.daN).

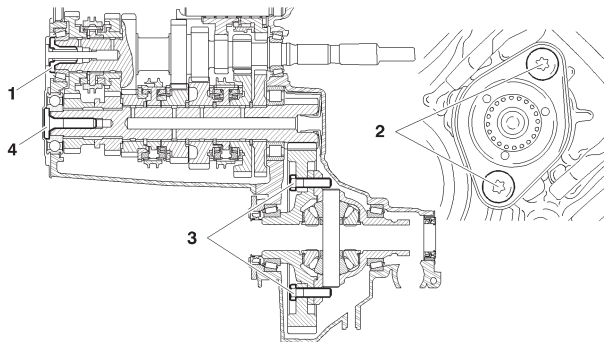
(23) Clutch bearing guide (3 screws)	: 1,25 ± 0,2
(24) Clutch housing (13 screws)	: 1,3 ± 0,2
(25) Primary shaft nut (1 screw)	: 7,25 ± 0,5
(26) Secondary shaft nut (1 screw)	: 6,5 ± 0,5
(27) Yoke retaining screw (2 screws)	: 1,5 ± 0,2
(28) Differential gearwheel screw (2 screws)	: 6,5 ± 0,5
Reverse gear switch (1 screw)	: 2,5 ± 0,3
(29) Differential housing (4 screws)	: 5 ± 0,5
(30) Breather pipe	: 1,7 ± 0,2
(31) Rear housing cover screws (7 screws)	: 1,25 ± 0,2
(32) Top-up plug (1 screw)	: 2,2 ± 0,2
(33) Differential housing screws (4 screws)	: 1,25 ± 0,2
(34) Drain plug (1 screw)	: 3,5 ± 0,3

CLUTCH
GEARBOX
TRANSMISSION

C4

TIGHTENING TORQUES: ML6 GEARBOX

Engine: RHR

Tightening torques (m.daN).

- | | |
|----------------------------------|-----------------|
| (1) Primary shaft screw | : 10 ± 1 |
| (2) Bearing guide screw | : $2 \pm 0,2$ |
| (3) Differential gearwheel screw | : $7,7 \pm 0,3$ |
| (4) Secondary shaft screw | : $13 \pm 1,3$ |

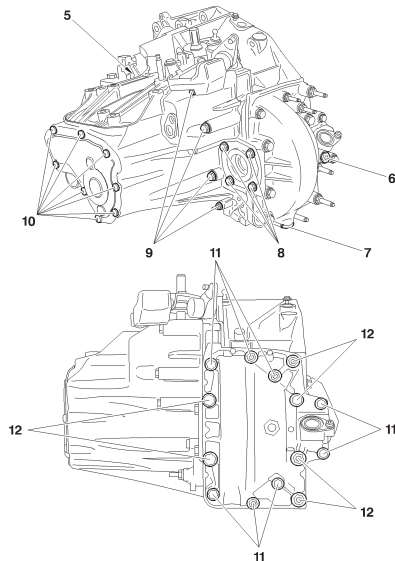
CLUTCH
GEARBOX
TRANSMISSION

B2CP3ZLD

TIGHTENING TORQUES: ML6 GEARBOX

C4

Engine: RHR



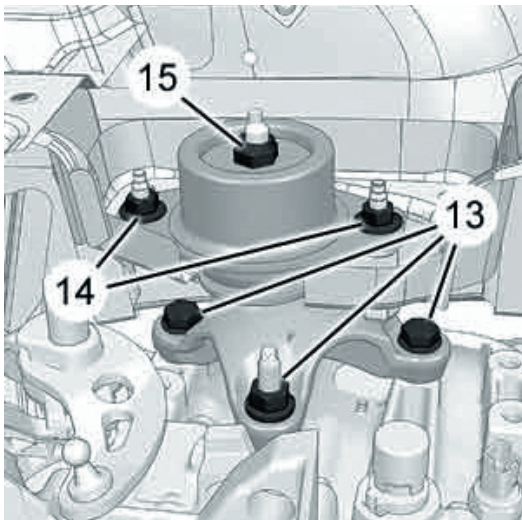
Tightening torques (m.daN).

(5) Reverse gear switch	: $2,5 \pm 0,5$
(6) Level plug	: $3 \pm 0,2$
(7) Drain plug	: $3 \pm 0,3$
(8) Differential bearing stop plate screw	: $3 \pm 0,3$
(9) Screw fixing gearbox housing / clutch housing	: $3 \pm 0,3$
(10) 6th gear housing fixing screw	: $2 \pm 0,2$
(11) Differential housing fixing (screws M8)	: $1,8 \pm 0,3$
(12) Differential housing fixing (screws M10)	: $4 \pm 0,8$

B2CP3ZMP

CLUTCH
GEARBOX
TRANSMISSION

Engine: RHR

Tightening torques (m.daN).

(13) Screws/nuts fixing the gearbox support : $4,5 \pm 0,4$

(14) Screw fixing the rubber bush : $3 \pm 0,3$

(15) Nut fixing the gearbox casing : $6,5 \pm 0,6$

B2CP3ZNC

MA/5 GEARBOX CONTROLS

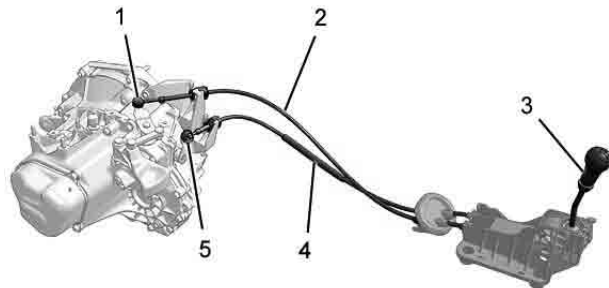
C4

Engines: KFU - NFU

Gear controls

The gear selection and engagement cables have no adjustment.

NOTE: The two gear control cables cannot be separated.



(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

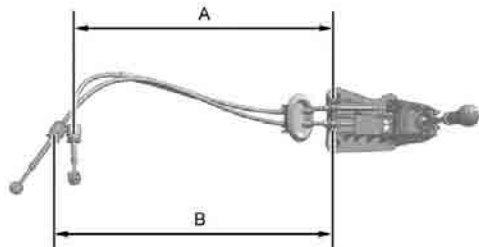
B2CP3ZCD

CLUTCH
GEARBOX
TRANSMISSION

C4

MA/5 GEARBOX CONTROLS

Engines: KFU - NFU



B2CP3ZDD

Gear engagement and selection control cables

Length A (mm)

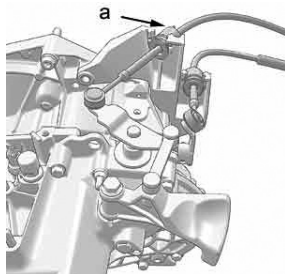
Gear engagement control cable

791,2 ± 2

Length B (mm)

Gear selection control cable

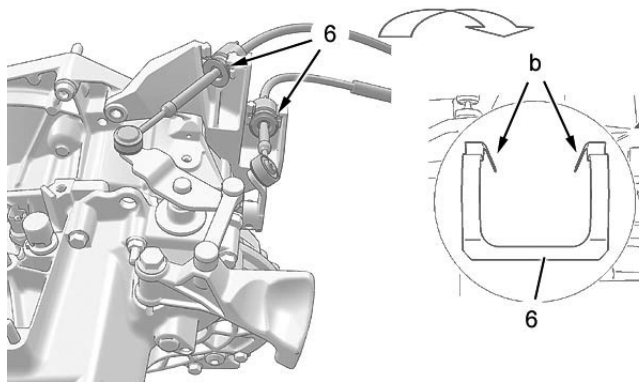
791,2 ± 2

CLUTCH
GEARBOX
TRANSMISSION

B2CP3ZEC

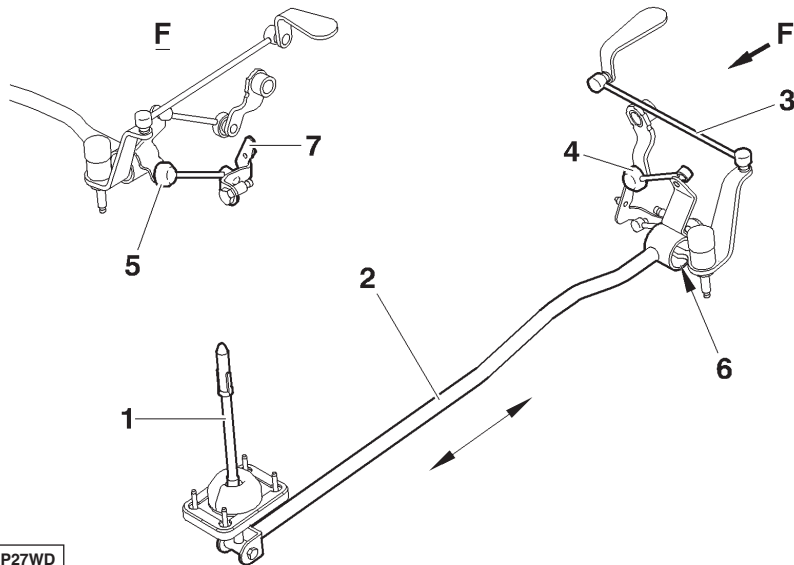
NOTE: The gear engagement cable has a **black colour** identification on the sleeve stop at «a».

Engines: KFU - NFU

Features.**Unlocking a sleeve stop:**

- Press on the tabs of the clip (6) at «b», using a flat screwdriver.
- Disengage the sleeve stops from their supports by pulling upwards.

Engines: KFW - NFU - 8HX - 8HZ



- (1) Gear lever
- (2) Gear control bar
- (3) Engagement rod
- (4) Gear selection rod
- (5) Torque reaction rod
- (6) Gear engagement ball-joint
- (7) Fixed point on gearbox

Adjustment.

The gear control assembly is not adjustable.
The rods do not have threaded ends.

Features.

Grease the gear engagement ball-joint.

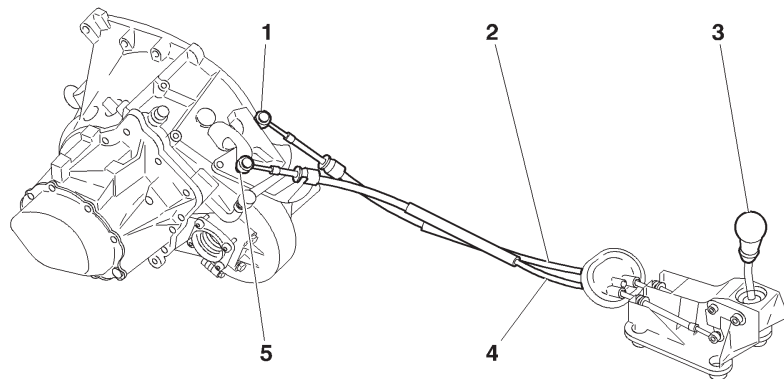
WARNING: To secure the ball-joints, set the gearbox control to neutral. After fitting the gear control assembly, check that all the gears will engage without any "tight spot".

B2CP27WD

BE4/5 GEARBOX CONTROLS

C4

Engines: NFU - RFN - RFK - 9HX - 9HY - 9HZ



The gear selection and engagement cables have no adjustment.

Gear controls.

(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

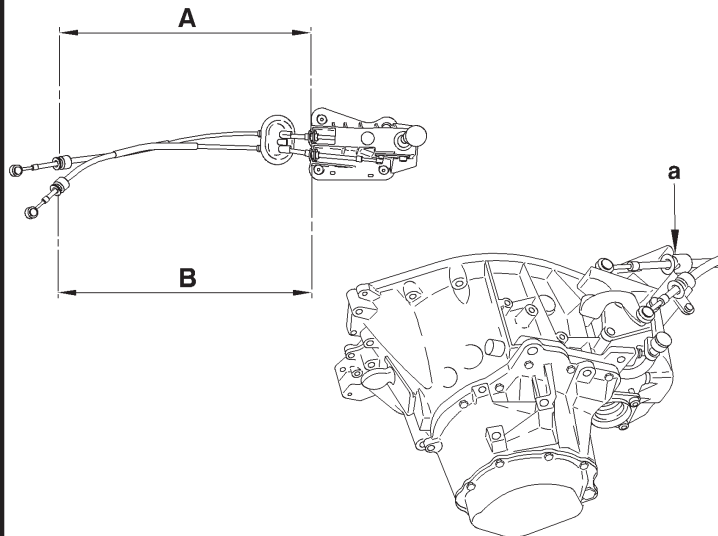
B2CP3ZOD

CLUTCH
GEARBOX
TRANSMISSION

C4

BE4/5 GEARBOX CONTROLS

Engines: NFU - RFN - RFK - 9HX - 9HY - 9HZ



Length A (mm)

Gear engagement control cable

643 ± 2

Length B (mm)

Gear selection control cable

670 ± 2

NOTE: The gear engagement cable has a **black colour** identification on the sleeve stop at «a».

B2CP3Z1C

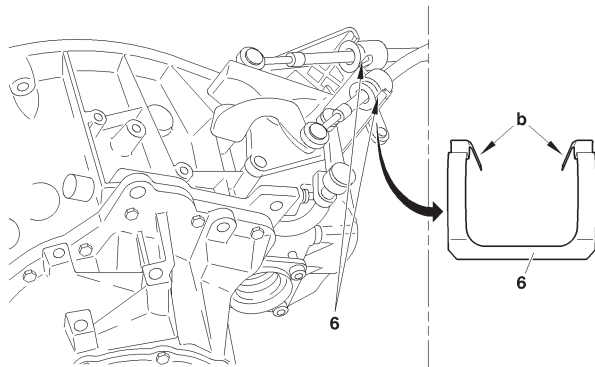
B2CP3Z2C

CLUTCH
GEARBOX
TRANSMISSION

Engines: NFU - RFN - RFK - 9HX - 9HY - 9HZ

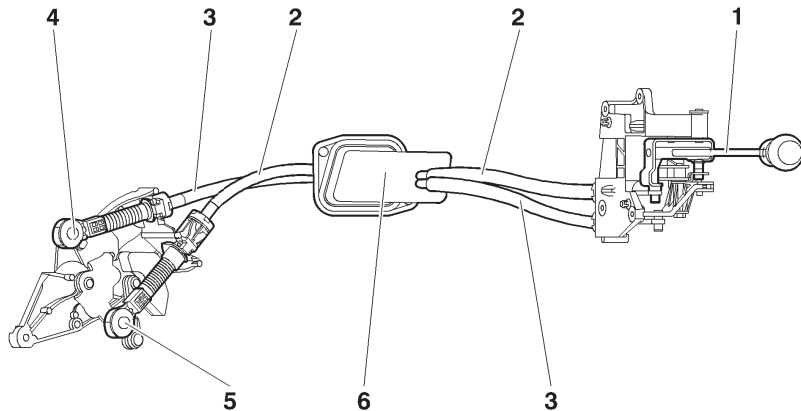
Features.**Unlocking a sleeve stop:**

- Press on the tabs of the clip **(6)** at «**b**», using a flat screwdriver.
- Disengage the sleeve stops from their supports by pulling upwards.



B2CP3Z3D

Engines: NFV - 6FZ - RFN - WJY - 8HX - 8HZ - 9HY - 9HZ - RHY - RHZ



(1) Gear control lever

(2) Gear engagement control cable (*)

(3) Gear selection control cable (*)

(4) Gear selection ball-joint Ø 10 mm

(5) Gear engagement ball-joint Ø 10 mm

(6) Flexible insulating grommet through the bulkhead

(*) = These two cables cannot be separated.

B2CP3BWD

Engines: NFV - 6FZ - RFN - WJY - 8HX - 8HZ - 9HY - 9HZ - RHY - RHZ

Principles of adjusting the gear controls.

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

Principles.

Lock the gear lever in neutral position, using tool: **9607-T**.

Place the gearbox in neutral.

Couple the cables on the lever.

Fit the ball-joints on the gearbox lever.

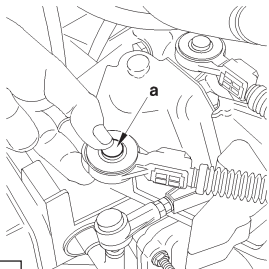
Lock the cable lengths with the ball-joint locking keys.

WARNING: Do not use any tool to unclip the ball-joints.

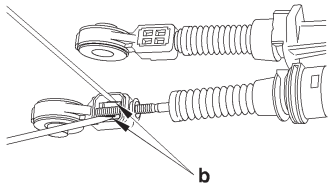
To unlock the ball-joint, press at the centre «a», then pull the ball-joint upwards.

NOTE: Changing an individual ball-joint is possible as long as the locking key is removed.

Unclip at «b», using two small screwdrivers.



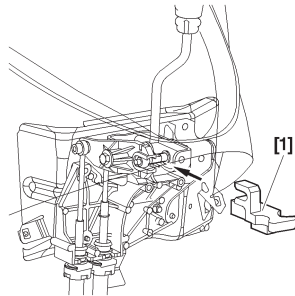
B2CP3BXC



B2CP3BYC

Engines: NFV - 6FZ - RFN - WJY - 8HX - 8HZ - 9HZ - 9HY - RHY - RHZ

Adjusting the gear controls



Tools.

[1] Tool for positioning the gear lever

: 9607-T

Adjustments.

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

Inside the vehicle.

Remove the trim under the gear lever.

Lock the gear lever in neutral position, using tool [1].

Under the bonnet.

Remove the air filter assembly.

Unlock the ball-joint keys at «a».

Place the gear selection and control levers on neutral.

Lock the cable lengths with the ball-joint locking keys.

Checks.

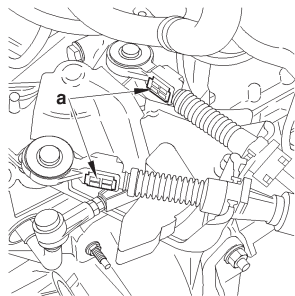
Remove the tool [1].

Check that all the gears engage without «tightness». Check that the gear lever moves identically forwards and backwards and to right and left.

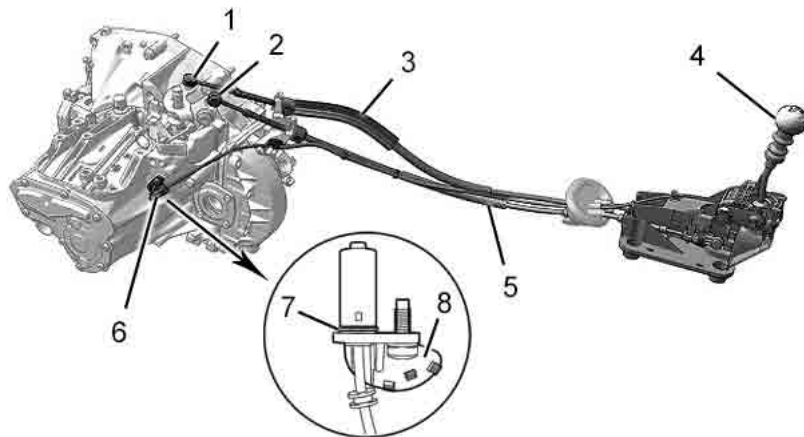
If it does not, repeat the adjustment.

Refit the trim under the gear lever.

Refit the air filter assembly.



Engine: RHR

**Gear controls.**

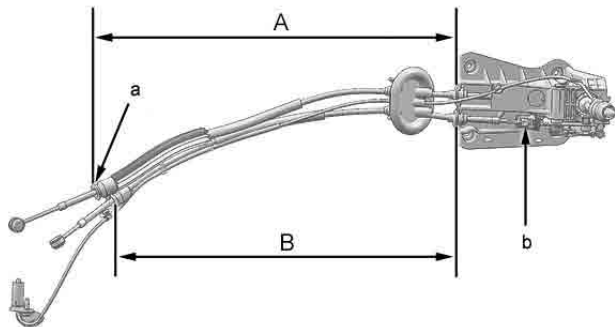
- (1) Gear engagement ball-joint Ø 10 mm
- (2) Gear selection ball-joint Ø 10 mm
- (3) Gear engagement control cable
- (4) Gear control lever
- (5) Gear selection control cable
- (6) Reverse gear unlocking cable
- (7) O-ring seal
- (8) Reverse gear unlocking device

C4

CHECKS AND ADJUSTMENTS: ML6 GEARBOX CONTROLS

Engine: RHR

Adjustment of the gear selection control cable



Adjustment NO

Length A (mm)

Gear engagement control cable

 723 ± 2

Adjustment YES at «b»

Length B (mm)

Gear selection control cable

 674 ± 2

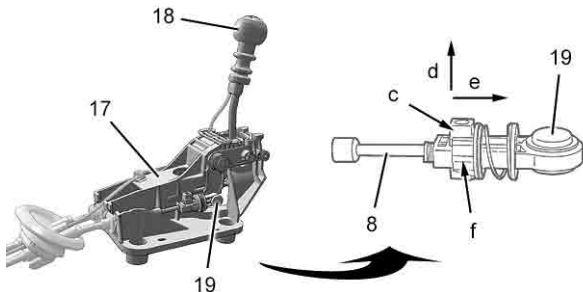
NOTE: In order to differentiate the two gear control cables when they have been removed, the gear engagement cable has a **black colour** identification on the sleeve stop at «a».

B2CP3ZQD

CLUTCH
GEARBOX
TRANSMISSION

Engine: RHR

Adjustment of the gear selection control cable



Perform the following operations simultaneously:

- Move the cylinder «f» in the direction of the arrow «e».
- Pull the locking key «c» in the direction of the arrow «d».

Check that the gear lever (18) is in the mid position on the control housing (17).

Couple the ball-joint (19).

Press on the locking key «c».

IMPERATIVE: Check that all the gears engage.

RECOMMENDATIONS/PRECAUTIONS : AL4 AUTOMATIC GEARBOX

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*).

RECOMMENDATIONS/PRECAUTIONS : AL4 AUTOMATIC GEARBOX

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 insufficient level causes the destruction of the gearbox.
Top up the level of oil in the gearbox *(if necessary)*.

Check using a diagnostic tool.

Read the fault codes *(engine and gearbox)*.

Absence of fault codes.

Carry out parameter measures, actuator tests and a road test.

Presence of fault codes.

Carry out the necessary repairs.

Delete the fault codes.

Carry out a road test to check the repair and, if need be, modify the gearbox ECU parameters *(this is essential after an initialisation of the ECU)*.

RECOMMENDATIONS/PRECAUTIONS : AL4 AUTOMATIC GEARBOX**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:

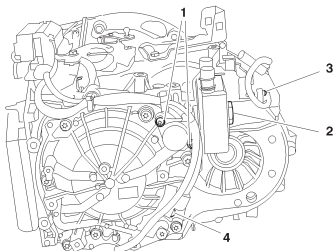
- «**Oil counter**».

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

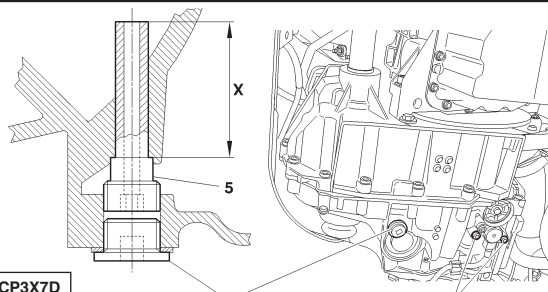
TIGHTENING TORQUES: AL4 AUTOMATIC GEARBOX

C4 - XSARA - XSARA PICASSO

Engines: NFU - RFJ



B2CP3EDD



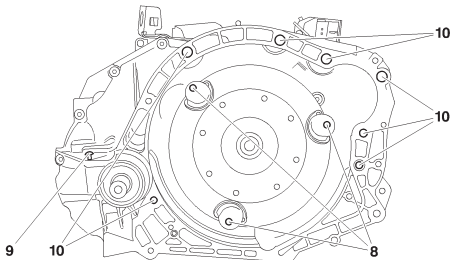
B2CP3X7D

Tightening torques (m.daN).

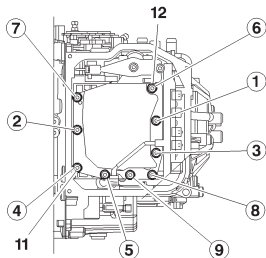
- | | |
|--|-----------------|
| (1) Fixing of the electrovalve for modulation of the flow of oil into the exchanger (EPDE) | : $1 \pm 0,2$ |
| (2) Heat exchanger fixing | : 5 ± 1 |
| (3) Output speed sensor fixing | |
| (4) Output speed sensor fixing | : $1 \pm 0,2$ |
| (5) Oil overflow and drain fixing (<u>$X = 48 \text{ mm}$</u>) | : $0,9 \pm 0,2$ |
| (6) Oil level plug | : $3,3 \pm 0,5$ |
| (7) Oil pressure sensor fixing | : $0,8 \pm 0,1$ |

CLUTCH
GEARBOX
TRANSMISSION

Engines: NFU - RFJ



B2CP3EED



B2CP3X8C

Tightening torques (m.daN).

(8) Fixing of converter on diaphragm

Pre-tightening

: $1 \pm 0,1$

Tightening

: $3 \pm 0,3$

(9) Plug fixing

: $0,8 \pm 0,2$

(10) Gearbox fixing on engine

: $5,2 \pm 1$ **Hydraulic block fixing.**

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

Pre-tighten (*no strict order*)

: 0,9

Slacken

: All 7 screws

Tighten (*respect the order indicated*)

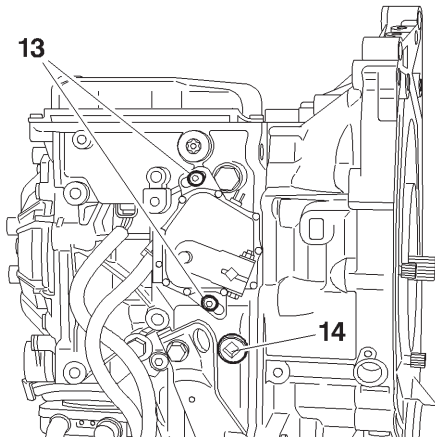
: 0,75

NOTE: The screw (11) is shouldered.

TIGHTENING TORQUES: AL4 AUTOMATIC GEARBOX

C4 - XSARA - XSARA PICASSO

Engines: NFU - RFJ



(13) Fixing of selector lever position switch

: $1,5 \pm 0,2$

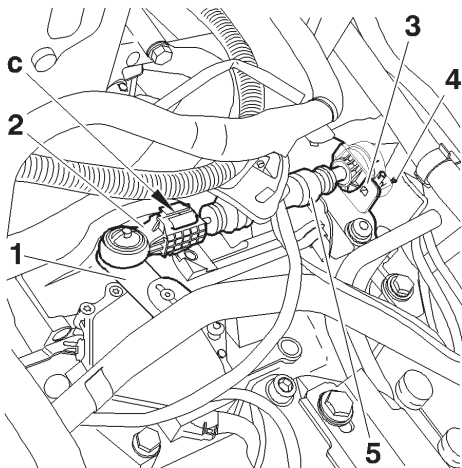
(14) Oil filler plug

: $2,4 \pm 0,4$

B2CP3EGC

CLUTCH
GEARBOX
TRANSMISSION

Engines: NFU - RFJ

**Gearbox end.**

The automatic gearbox is controlled by a cable.

«C» Push-button

(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

(4) Selection control locking clip (5) on the sleeve stop (3)

Engines: NFU - RFJ

SHIFT LOCK.

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).

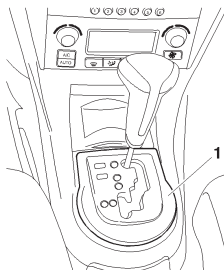
NOTE: It is impossible to unlock the «**shift lock**» with the «**Normal operation**» method.

The fault may originate from one of the following components:

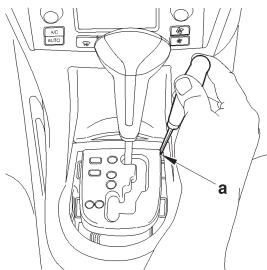
- «**Shift lock**».
- Gear lever position switch.
- Automatic gearbox ECU.
- Electrical harnesses.
- Battery voltage.

Remove:

- The gear lever cover (1) (pull upwards).
- Unlock the «**shift lock**» by pressing at «a» with the aid of a screwdriver.
- Move the gear selection lever out of position «**P**».

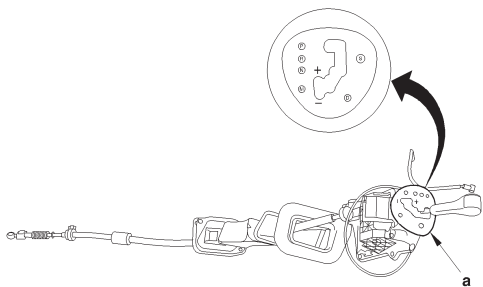


C5FP0NZC



C5FP0P0C

Engines: KfV - RFN

**In passenger compartment.**

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 gear selector control has **5 positions**.

Position «**P**»: Park (*locking and immobilisation of the vehicle*).

Position «**R**»: Reverse gear.

Position «**N**»: Neutral.

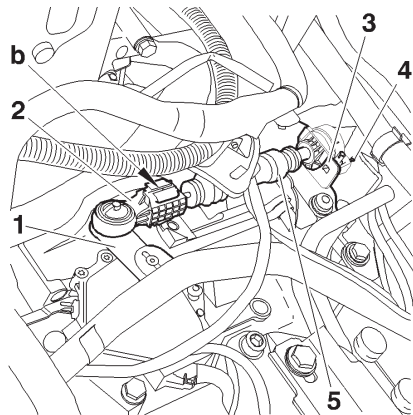
Position «**D**»: Drive (*use of the **4 gears** in their autoadaptive automatic function*).

Position «**M**»: Manual (*this position lets the driver select his own gears in sequential mode by pulling the gear selector to «**M-**» or pushing it to «**M+**»*).

NOTE: Only the positions «**P**» or «**N**» authorise the starting of the engine.

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.

Engines: KFV - RFN

**Gearbox end.**

The automatic gearbox is controlled by a cable.

«c» or «d» Push-button.

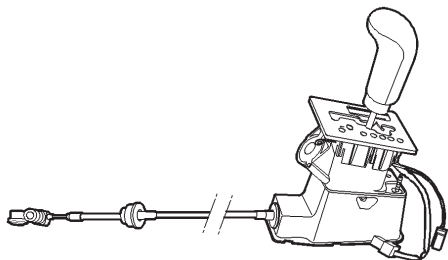
(1) Control lever with ball-joint

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

(3) Sleeve stop

(4) Selection control locking clip (5) on the sleeve stop (3)

Engines: NFU - RFN - RHZ



In passenger compartment.

The selector control has **6 positions**.

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.

Push the lever to the right to exit from position «**P**».

NOTE: The vehicle is equipped with the «**shift lock**»: you have to switch on the ignition and press the brake pedal to unlock the selector lever from position «**P**».

P: Park (*system locked*).

R: Reverse gear.

N: Neutral.

D: Automatic (*1st to 4th gear*).

3: Automatic (*1st to 3rd gear*).

2: Automatic (*1st to 2nd gear*).

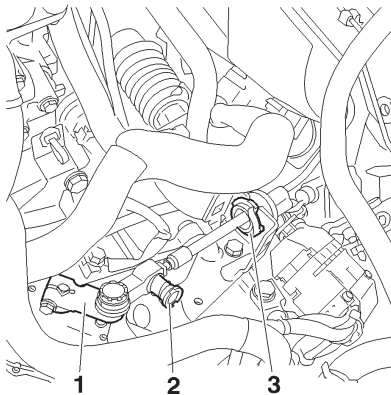
A switch located to the left of the gear control allows the driver to choose from these programmes:

- **Normal:** Conventional use of the automatic gearbox.
- **Sport:** This programme favours performance.
- **Snow:** In position «**D**», starting is in **2nd** gear for diesel and in **3rd** gear for petrol.

NOTE: Only the positions «**P**» or «**N**» authorise the starting of the engine.

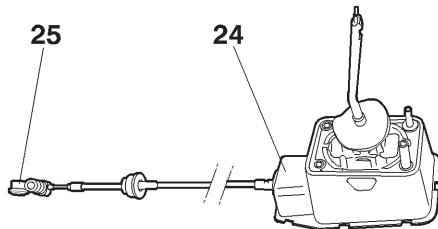
B2CP3ADC

Engines: NFU - RFN - RHZ

**Gearbox end.****(1)** Control lever**(2)** Automatic adjustment**(3)** Sleeve stop

The automatic gearbox is controlled by a cable.

Engines: NFU - RFN - RHZ



Refitting the gearbox control.

Proceed in the opposite order to removal.

IMPERATIVE: To adjust the gear selection control, place the gear selection lever in the park position. Press on the component (25) without bending the cable, then release.

IMPERATIVE: Check that all the gears can engage.

B2CP3AXC

RECOMMENDATIONS/PRECAUTIONS: AL4 AUTOMATIC GEARBOX (SHIFT LOCK)

XSARA

Engines: NFU - RFN - RHZ

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*).

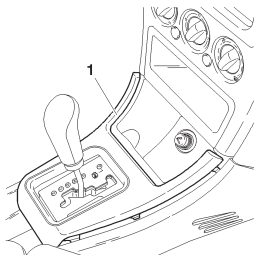
NOTE: It is impossible to unlock the «**shift lock**» with the «**Normal operation**» method.

The fault may originate from one of the following components:

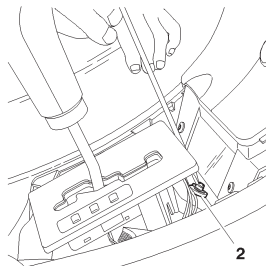
- «**Shift lock**».
- Gear lever position switch.
- Automatic gearbox ECU.
- Electrical harnesses.
- Battery voltage.

Remove:

- The cover (1).
- Unlock the «**shift lock**» (2) with the aid of a screwdriver.
- Move the gear selection lever out of position «**P**».

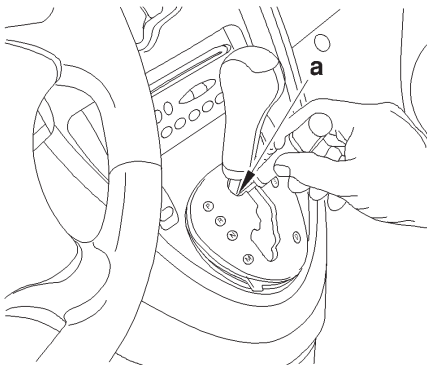


C5FP06YC



C5FP06ZC

CLUTCH
GEARBOX
TRANSMISSION



Engine: RFN

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).

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

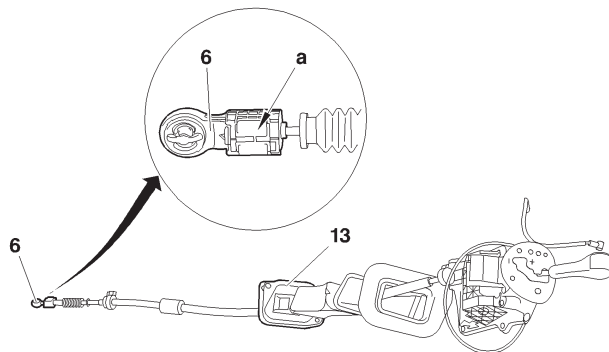
The fault may originate from one of the following components:

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

Remove:

- Unlock the «**shift lock**» by pressing at «**a**» with a screwdriver placed in the gear selection control gate.
- Move the gear selection lever out of position «**P**».

Engine: RFN

**Refitting.**

Proceed in the opposite order to removal.

Lubricate the support (13).

New gear selection control.

Couple the ball-joint (6).

WARNING: Do not deform the selection lever on the automatic gearbox.

Push in the component (a) without bending the cable.

Check all the gear selection control positions.

Re-used gear selection control.

Release the component (a).

Couple the ball-joint (6).

Push in the component (a) without bending the cable.

Check all the gear selection control positions.

DRIVESHAFTS - GEARBOX										
			Tightening torques (m.daN)		Gearbox oil seal mandrels					
Vehicles	Gearbox	Engines	Driveshaft bearing	Driveshaft nut	RH side	LH side	Toolkit			
C4	MA/5	ET3J4 TU5JP4	2 ± 0,2	32,5 ± 2,6	7114-T.W	7114-T.X	7116-T			
XSARA		TU3JP TU5JP4								
C4	BE4/5	EW10/DV6 All types						9017-T.C	5701-T.A	9017-T
XSARA XSARA PICASSO		EW7/10J4B DW8 DV6/DW10								
C4	ML6	DW10BTED4			(-) 0338 J1 + (-) 0338 J3	(-) 0338 H1 (-) 0338 H2	(-). 0338			
XSARA	AL4	TU5JP4 EW10A								
		TU5JP EW10J4 DW10ATED								
XSARA PICASSO		EW10J4						Seal extractor RH / LH (-) 0338 C		
					(-) 0338 J1 + (-) 0338 J3	(-) 0338 H1 (-) 0338 H2				
Tightening torque (m.daN) for wheel bolts.										
C4 = 9 ± 1		XSARA = 8,5 ± 0,8			XSARA PICASSO = 10 ± 1					

AXLE GEOMETRY

C4

Conditions for checking and adjusting

Tools

Tyres inflated to correct pressures.

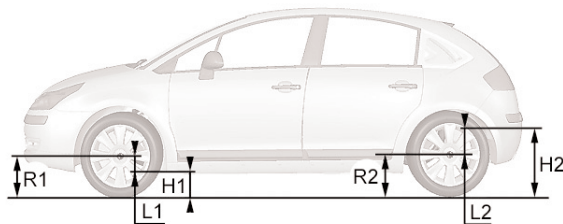
Steering rack locked at mid point (*see corresponding operation*).

: [1] Gauge for measuring the the wheel radius, 4 bolts

Vehicle at reference height.

: 4300-T.

Vehicle heights at reference height



E1AP0F3D

Front height

L1

$$H1 = R1 - L1$$

H1 = Measurement between the measuring zone underneath the front subframe and the ground.

R1 = Front wheel radius under load.

L1 = Distance between the wheel axis and the measuring zone underneath the front subframe.

Rear height

L2

$$H2 = R2 + L2$$

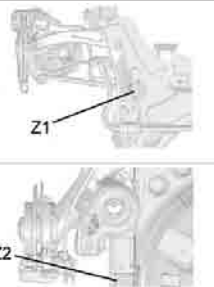
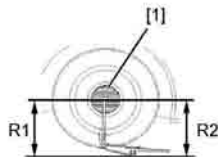
H2 = Measurement between the measuring zone underneath the rear sill and the ground.

R2 = Rear wheel radius under load.

L2 = Distance between the wheel axis and the measuring zone underneath the rear sill.

C4

AXLE GEOMETRY



B3CP097D

Measuring front height

Measuring rear height

[1] Gauge for measuring the the wheel radius, 4 bolts

: 4300-T

Z1 = Measuring zone underneath the front subframe.**Z2** = Measuring zone underneath the rear sill.Measure the radius of the front wheel **R1** - Calculate dimension **H1 = R1 - L1**Measure the radius of the rear wheel **R2** - Calculate dimension **H2 = R2 + 2**Value at reference
height
(+ 10 - 8 mm)All types
(except CRD) (*)
L1 = 144 mmCRD vehicles (*)
L1 = 124 mmValue at reference
height
(+ 12 - 10 mm)All types (except
entreprise et CRD) (*)
L2 = 68 mmentreprise
vehicles
L2 = 48 mmCRD
vehicle (*)
L2 = 88 mm

(*) = **CRD**: Difficult road conditions: definition for a type of vehicle with axles and suspension designed for driving on rough roads.
Compress the suspension to obtain the calculated values.
The height difference between the two axle dimensions should be less than **10 mm**.

AXLE GEOMETRY

C4

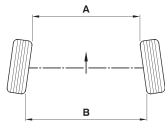
Front axle

Dissymmetry of lower castor $0^{\circ} 30'$.

Dissymmetry of lower camber $0^{\circ} 30'$.

Distribute symmetrically, LH / RH wheel, the total tracking value.

Engines		ET3J4 - TU5JP DV6	EW10 DV6	DW10BTED4	EW10DV6 DW10BTED4
Tyres		195/65 R 15	205/55 R 16		205/50 R 17
Camber (± 0° 30')	No adjustable	0°			
Castor (± 0° 30')		5°	5° 09'		5° 12'
Pivot angle (± 0° 30')		11° 41'			
Tracking	Adjustable	- 2,5 ± 1 mm			
		- 0° 23' ± 0° 09'	- 0° 21' ± 0° 09'		- 0° 20' ± 0° 08'



NOTE: Front of the vehicle (following arrow).

B3CP02UC

$A < B$ = Positive figure:

+ =

NOTE

TOE-IN

$A > B$ = Negative figure:

- =

TOE-OUT

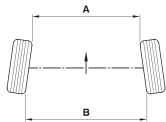
C4

AXLE GEOMETRY

Rear axle

Dissymmetry of lower camber $0^{\circ} 30'$.

Engines		ET3J4 - TU5JP DV6	EW10DV6 DW10BTED4	EW10DV6 DW10BTED4
Tyres		195/65 R 15	205/55 R 16	205/50 R 17
Camber ($\pm 0^{\circ} 30'$)	No adjustable	$1^{\circ} 45'$		
Push angle ($\pm 0^{\circ} 06'$)		0°		
Tracking	Adjustable	$6,5 \pm 1 \text{ mm}$		
		$0^{\circ} 59' \pm 0^{\circ} 09'$	$0^{\circ} 55' \pm 0^{\circ} 09'$	$0^{\circ} 52' \pm 0^{\circ} 08'$

**NOTE:** Front of the vehicle (*following arrow*).

NOTE

A < B = Positive figure:

+ =

TOE-IN

A > B = Negative figure:

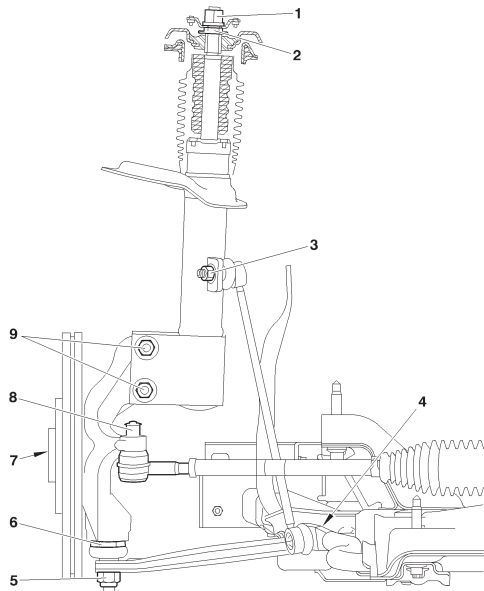
- =

TOE-OUT

B3CP02UC

TIGHTENING TORQUES: FRONT AXLE

C4



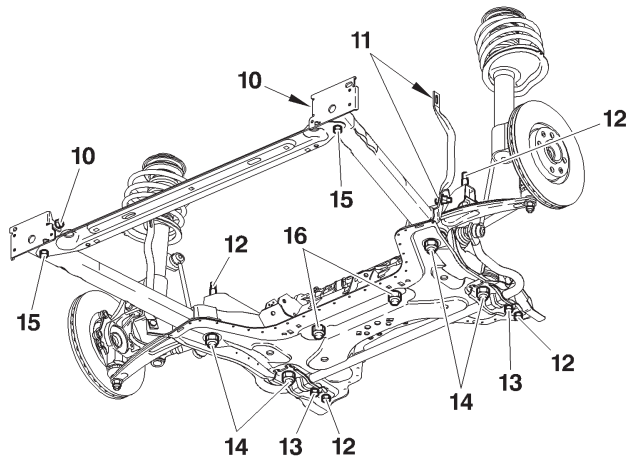
B3BP18ZP

Tightening torques (m.daN).

(1) Nut fixing suspension leg on body	: 6,9 ± 0,6
(2) Nut fixing upper damper cup	: 6,9 ± 0,6
(3) Upper fixing of anti-roll bar rod	: 3,6 ± 0,3
(4) Lower fixing of anti-roll bar rod	: 3,6 ± 0,3
(5) Nut fixing pivot lower ball-joint	: 4,2 ± 0,4
(6) Fixing of pivot lower ball-joint on pivot	: 23 ± 2,3
(7) Hub nut	: 32,5 ± 2,6
(8) Steering ball-joint on pivot	: 3,5 ± 0,3
(9) Fixing of suspension leg on pivot	: 9 ± 0,9

Anti-roll bars

Engines	Diameter (mm)	Colour
ET3J4 TU5JP - EW10A/J4 DV6	21.5	Pink
EW10J4S DW10BTED4	22	White

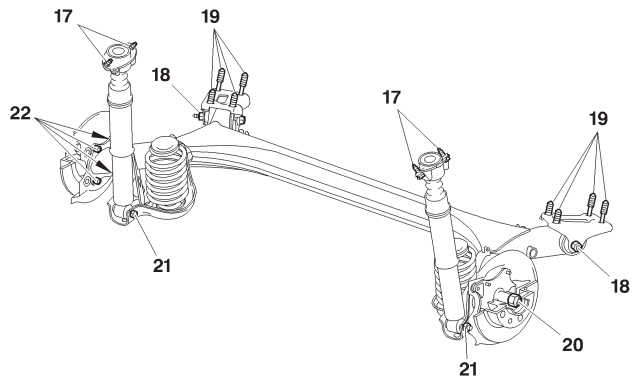


Tightening torques (m.daN).

- | | |
|--|-----------------|
| (10) Fixing of subframe extension on body | : $5,1 \pm 1,2$ |
| (11) Fixing of tie-rod on body | : $1,8 \pm 0,4$ |
| (12) Tie-rod screw on front subframe | : $9,8 \pm 0,9$ |
| (13) Fixing of anti-roll bar bearing on subframe | : $10,4 \pm 1$ |
| (14) Fixing of lower suspension arm on subframe | : $11,1 \pm 1$ |
| (15) Fixing of subframe extension on body | : $8,5 \pm 0,8$ |
| (16) Fixing of steering mechanism on subframe | : $8 \pm 0,8$ |

TIGHTENING TORQUES: REAR AXLE

C4



B3DP0BDD

Tightening torques (m.daN).

(17) Damper upper fixing	: 5,8 ± 0,5
(18) Fixing of yoke on rear axle	: 7,6 ± 0,7
(19) Fixing of rear axle yoke on body	: 6,2 ± 0,6
(20) Stub axle bearing nut	
- Pre-tightening	: 9 ± 0,9
- Angular tightening	: 29° ± 5°
(21) Damper lower fixing	: 6 ± 0,6
(22) Fixing of stub axle carrier on rear axle	: 6,3 ± 0,6

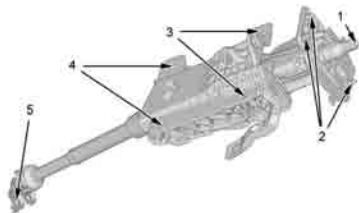
Anti-roll bars

Engines	Diameter (mm) (interior x exterior)	Thickness of the crossmember panel (mm)
ET3J4 TU5JP4 EW10A/J4 DV6	21x27	5
EW10J4S	24x30	6
DW10BTED4	21x27	

AXLES
SUSPENSION
STEERING

C4

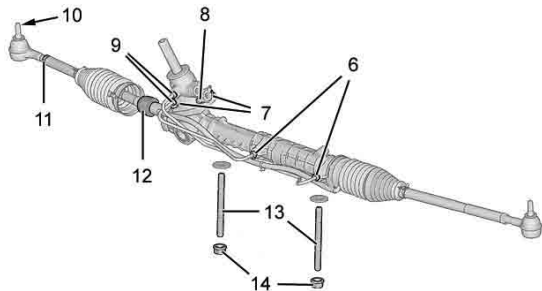
TIGHTENING TORQUES: POWER-ASSISTED STEERING



B3EP176D

Steering column

Ref.	Description	Tightening
1	Fixed central controls steering wheel screw	2,2 ± 0,2
2	Steering column interface nuts	
3	Upper nuts	
4	Lower nuts	
5	Fixing of steering cardan on valve stem	



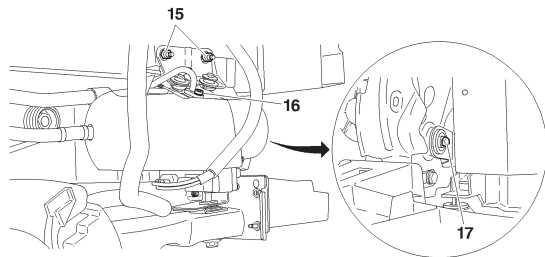
B3EP177D

Steering mechanism with integral ram

Ref.	Description	Tightening
6	Union of hydraulic pipe on ram	0,8 ± 0,1
7	Fixing of distributor valve on steering mechanism	1,5 ± 0,1
8	Fixing of bracket on distributor valve	2 ± 0,2
9	Union of hydraulic pipe on distributor valve	0,8 ± 0,1
10	Steering ball-joint nut	3,5 ± 0,3
11	Locking nut for adjustment of steering track rods	5,5 ± 0,5
12	Fixing of ball-joint on steering rack	7 ± 0,7
13	Stud on steering mechanism	0,8 ± 0,1
14	Nut fixing mechanism on subframe	8 ± 0,8

TIGHTENING TORQUES: POWER-ASSISTED STEERING

C4



Steering assistance electrovalve

Ref.	Description	Tightening
15	Fixing of electrovalve on chassis member	$2,3 \pm 0,2$
16	Screw fixing bracket on electrovalve	$2 \pm 0,2$
17	Fixing of electrovalve on chassis member	$2,2 \pm 0,2$

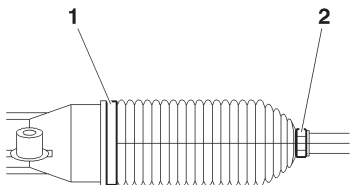
B3EP178D

C4

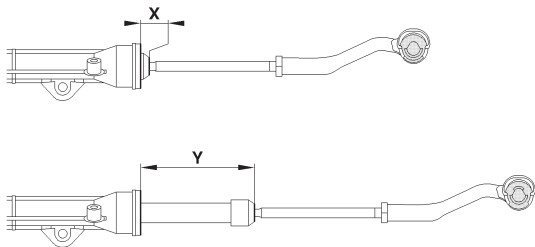
SPECIAL FEATURES: STEERING

Engines: KFU - NFU - RFN - RFJ - RFK - 9HX - 9HY - 9HZ - RHR

Setting the steering rack mid-point



B3EP13UC



B3EP13VD

Preliminary operation.

Raise and support the vehicle on a two-column lift.

Remove (*on RH side*):

- The clip (1).
- The clip (2).

Detach the steering rack protection gaiter.

Setting.

Move the steering to full left hand lock.

Measure the dimension **X**.

Move the steering to full right hand lock.

Measure the dimension **Y**.

Calculate the dimension

$$: L = (Y - X) : 2.$$

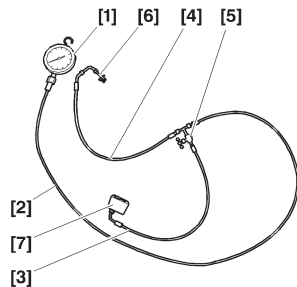
Position the steering rack to the dimension "**L**" (*mid-point of the steering rack*).

Refit:

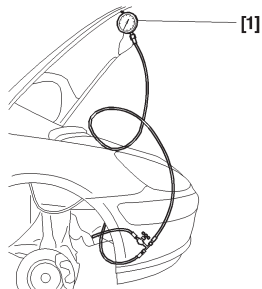
- The protection gaiter.
- The clip (1) (*new*) and the clip (2).

CHECKING THE POWER STEERING ASSISTANCE PRESSURE

C4



B3EP16CC



B3EP16DC

Tools.

[1] Pressure gauge	: (-).0710.AZ
[2] Checking tube: pressure gauge to tap	: (-).0710.B1
[3] Checking tube: high pressure pipe to tap	: (-).0710.B2
[4] Checking tube: high pressure pump to tap	: (-).0710.B3
[5] 3-way tap	: (-).0710.C
[6] Union	: (-).0710.J
[7] Union	: (-).0710.K
[8] Plugs for checking valve sealing	: (-).0710.H

Precautions to be taken.

Work with care to avoid entry of polluting particles into the circuit.

NOTE: The correct operation of the system requires perfect cleanliness of the fluid and of the hydraulic components.

Check:

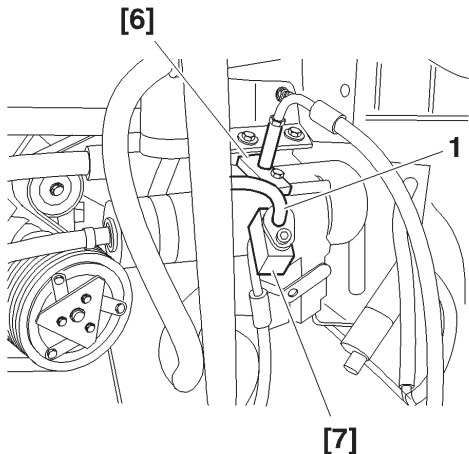
- The level of the power steering fluid.
- The condition of the piping and unions.

Using the tools.

Prepare the checking assembly [1], [2], [3], [4], [5], [6] and [7].

Attach the tool [1].

Remove the front RH wheel, the splash-shield and the screen wash reservoir.



Preliminary operation.

Move aside the high pressure pipe (1).

Do up:

- The union [6] on the power steering electropump.
- The union [7] on the high pressure pipe (1).
- Tighten all the unions.

Fill the power steering reservoir **10 mm** above the **max. level**.

IMPERATIVE: Use new power steering fluid for both filling and topping-up the circuit.

Open the tap [5].

Start the engine and allow it to run for **5 seconds**.

Stop the engine.

Move the steering **several times** in each direction.

Check the steering fluid level and make sure that there are no leaks.

Checking the electropump pressure.

Start the engine.

Close the tap [5] for **5 seconds**.

Open the tap [5].

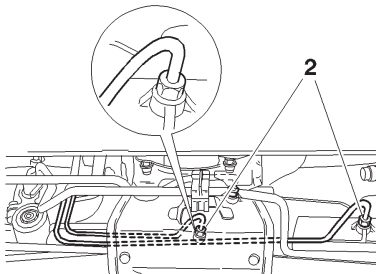
Stop the engine.

At accelerated idle (**1200 to 1500 rpm**), the pressure should be **105 ± 5 bars**.

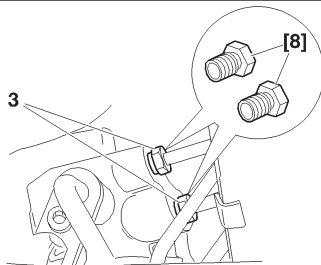
If the electropump pressure is correct, check the valve sealing.

CHECKING THE POWER STEERING ASSISTANCE PRESSURE

C4



B3EP16FC



B3EP16GC

Checking the valve sealing.

Remove the under-engine shield.

Move aside the heat shield from the steering mechanism.

Slacken the unions (2) on the power steering ram.

Uncouple the two supply pipes (3) from the distributor valve and move them aside.

Fit on the distributor valve the two plugs [8], tighten to **0,8 m.daN**.

Move the steering slowly from lock to lock, to drain the ram.

Top up the level of the power steering fluid.

Open the tap [5].

Stop the engine.

Maintain the engine speed at accelerated idle.

Hold the wheels on full lock, first on one side then on the other.

The pressure should adjust to **105 ± 5 bars**.

The pressure is correct: replace the steering mechanism.

The pressure is lower than the values above: replace the distributor valve.

Couple the two supply pipes (3) on the distributor valve; tighten to **0,8 m.daN**.

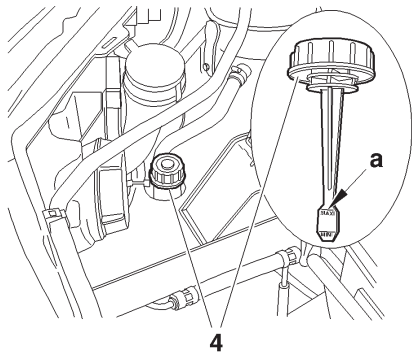
Retighten the unions (2) on the power steering ram; tighten to **0,8 m.daN**.

Remove the union [7] on the high pressure pipe (1) and the union [6] on the power steering electropump.

Refit:

- the high pressure pipe (1); tighten to **2 ± 0,2 m.daN**.

- the screen wash reservoir, the front RH splash-shield and the front RH wheel.



Fill the power steering reservoir to the **max.** mark «**a**» on the cap **(4)**.

Engine stopped, move the steering slowly from lock to lock, in both directions approx. **ten times**.

Top up the fluid to the max. mark «**a**» on the cap **(4)**.

Run the engine at idle for **3 minutes**, without any action on the steering wheel.

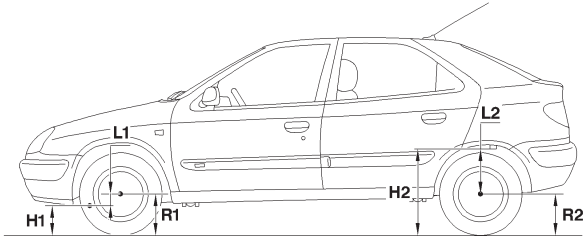
Move the steering from lock to lock, until there is no longer any tight spot.

Top up the level if it again goes down.

Bleed the circuit by moving the steering **several times** in each direction.

Top up the level if it again goes down.

IMPERATIVE: Use new power steering fluid for both filling and topping-up the circuit.

AXLE GEOMETRY		XSARA
Front and rear measuring points - RPO 8667 →		
XSARA ALL TYPES		
Front height		Rear height
<div data-bbox="104 606 235 640" data-label="Text">B3CP06ZD</div> 		
<p>H1 = Dimension between the centre of the front suspension arm mounting and the ground.</p> <p>R1 = Front wheel radius under load.</p> <p>L1 = Distance between the centre of the wheel and the centre of the front suspension arm mounting.</p>		<p>H2 = Dimension between the contact face of the rear mounting and the ground.</p> <p>R2 = Rear wheel radius under load.</p> <p>L2 = Distance between the centre of the wheel and the contact face of the rear mounting on the bodyshell.</p>

XSARA

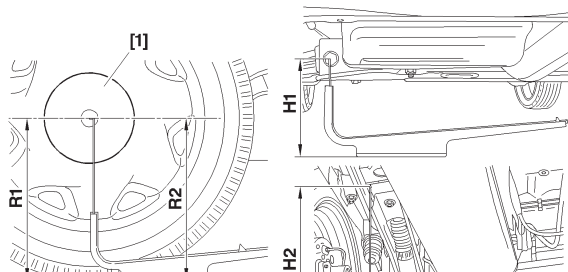
AXLE GEOMETRY

Reference heights - RPO 8667 →

Tools

[1] Gauge for measuring the radius of wheels with 4 bolts

: 4300-T0



B3CP04AD

Setting at reference height

Front axle

Rear axle

Measure the dimension «R1». Calculate the dimension $H1 = R1 - L1$.Measure the dimension «R2». Calculate the dimension $H2 = R2 + L2$.

All types (except CRD version)

CRD version

All types (except Estates
and CRD version)

Estates

CRD version

90,5 mm

75,5 mm

83 mm

88 mm

103 mm

Compress the suspension to obtain the values (H1) and (H2).

NOTE: The difference in height between the two sides should be less than 10 mm.

AXLE GEOMETRY

XSARA

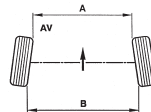
Values of the front and rear suspensions, at reference height - RPO 8667 →

ESSENTIAL: When checking the suspensions, the vehicle should be at reference height.

Tools used.

Compress the suspension, to obtain the values at reference height.

- | | |
|---------------------------------------|------------|
| [1] Set of two suspension compressors | : 9511-T.A |
| [2] Set of four straps | : 9511-T.B |
| [3] Set of four shackles | : 9511T.C |



NOTE

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

B3CP04LC

XSARA

AXLE GEOMETRY

Values of the front and rear suspensions, at reference height

RPO 8667 →

Front axle

	Tolerances	Adjustable	Saloon or Entreprise All TU3JP engines	Saloon / Estate All engines (except TU3JP/CRD)	Saloon TU3JP CRD (*)	Saloon / Estate CRD All engines (except TU3JP)
Tracking	± 1 mm	YES	- 1,5 ± 1 mm			
			- 0°15' ± 10' (toe-out)			
Castor	± 18'	NO	3°		2°55'	2°55'
Pivot angle	± 30'		10°40'	10°44'	10°22'	10°26'
Camber	± 30'		0°		0°12'	0°07'

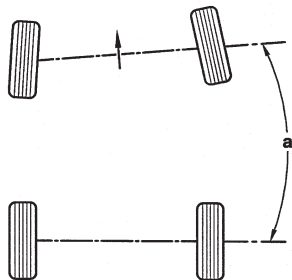
Rear axle

	Tolerances	Adjustable	Saloon all engine types Saloon entreprise	Estate all engine types	Saloon / Estate CRD (*) all engine types
Tracking	± 1,3 mm	YES	4,54 ± 1,3 mm	4,27 ± 1,3 mm	3,45 ± 1,3 mm
			0° 41' ± 11'	0° 39' ± 11'	0° 31' ± 10'
Camber	± 15'	NO	- 0°57'	- 0°58'	- 0°59'

(*) CRD = Difficult road conditions.

AXLE GEOMETRY

XSARA



a = Angle which defines the tracking between the front and rear axles.

Its value must not exceed 12'.

Anti-roll bars

Engine versions

Diameter

Colour ref.

ALL TYPES

Saloon

19

Blue

Estate

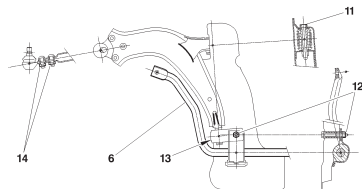
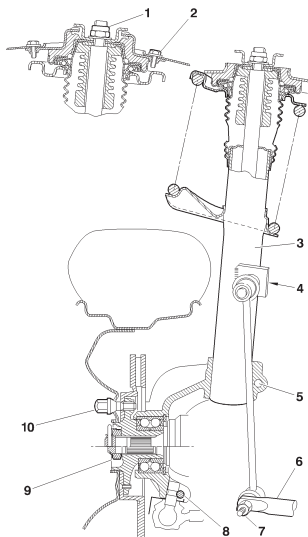
20

Yellow

B3CP04UC

XSARA

TIGHTENING TORQUES: FRONT AXLE



Vehicles from **RPO 8667** → are all equipped as standard with ventilated discs.

Tightening torques (m.daN).

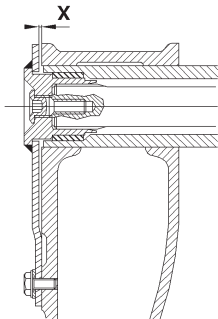
(1) Damper nut	: $4,5 \pm 0,4$
(2) Cup screw	: $2,5 \pm 0,3$
(3) Suspension leg	
(4) Anti-roll bar link rod upper ball-joint	: $3,7 \pm 0,3$
(5) Suspension leg pivot (<i>hollow pivot</i>)	: $4,5 \pm 0,5$
(5) Suspension leg pivot (<i>pivot «H»</i>)	: $5,5 \pm 0,5$
(6) Anti-roll bars	: $3,7 \pm 0,3$
(7) Anti-roll bar link rod lower ball-joint	
(8) Pivot lower ball-joint	: $4 \pm 0,4$
(9) Driveshaft nut	: $32,5 \pm 2,5$
(10) Wheel bolt	: 9 ± 1
(11) Lower arm front mounting	: $7,6 \pm 0,7$
(12) Lower arm rear mounting and anti-roll bar bearing	: $6,8 \pm 0,6$
(13) Screw under rear mounting	: $3,1 \pm 0,3$
(14) Ball-joint fixing on lower arm	: $5 \pm 0,5$
Subframe to bodyshell fixing screw	: $8,5 \pm 0,8$

B3CP040P

B3CP041D

REAR AXLE

XSARA

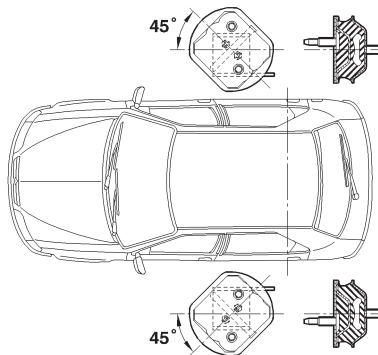


B3DP04TC

Operating clearance - $X = 1$ to 1.4 mm.

NOTE: The RH torsion bar can be identified by **1 paint line**.

The LH torsion bar can be identified by **2 paint lines**.

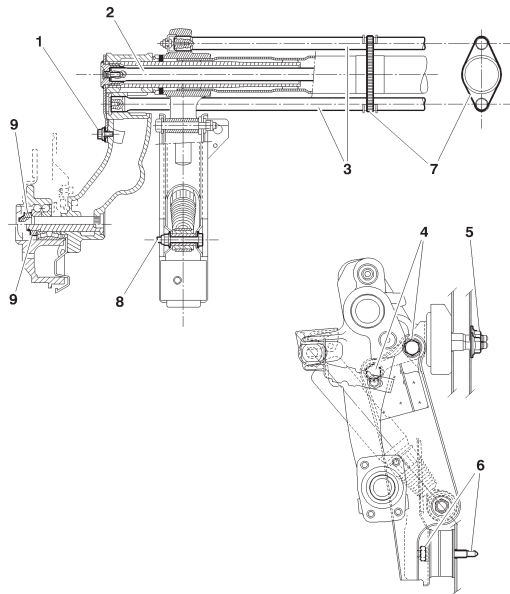


B3DP04UD

- The **front** silentblocks are aligned at an angle of **45°** in relation to the vehicle's axis.
- The **rear** silentblocks are in parallel with the vehicle's axis.

NOTE: There are two suppliers for the silentblocks:

- **RBT**, identified by a **Green** or **Yellow** painted dot on the side of the mounting.
 - **PAULSTRA**, identified by a **Black** painted dot on the side of the mounting.
- It is **FORBIDDEN** to swap components of different suppliers.

Tightening torques (m.daN).

(1) Anti-roll bar lever	: $3,2 \pm 0,3$
(2) Anti-roll bar	
(3) Transversal torsion bars	
(4) Rear crossmember flanges	: $8,3 \pm 0,8$
(5) Front silentblocks	: $5,5 \pm 0,5$
(6) Rear silentblocks	: $4,5 \pm 0,4$
(7) Anti-vibration clamp	
(8) Damper pin	: $9,6 \pm 0,9$
(9) Stub axle nuts (<i>lubricated</i>)	: $18,5 \pm 1$

NOTE:

- The RH torsion bar is identified by **1 paint line**.
- The LH torsion bar is identified by **2 paint lines**.

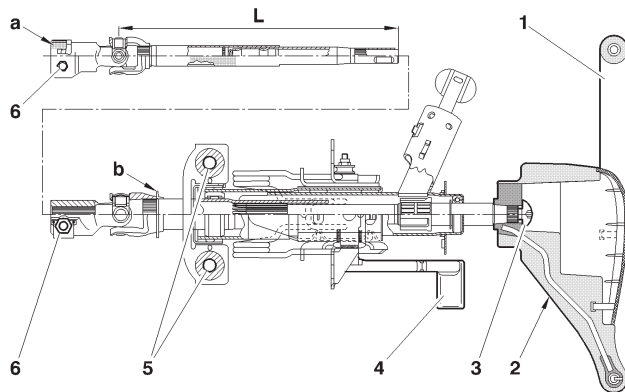
B3DP04SP

TIGHTENING TORQUES: MANUAL STEERING

XSARA

Steering wheel - Manual steering

Tightening torques (m.daN).



(2) AIRBAG to steering wheel fixing : 0.8

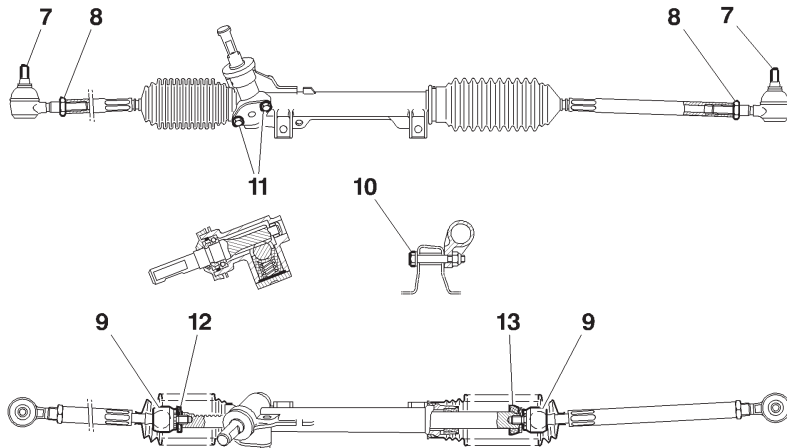
(3) Steering wheel fixing : 3.3

(5) Steering column to support fixing : 2.3

(6) Steering cardan joint fixing : 2.3

B3EP08PD

Manual steering

Tightening torques (m.daN).

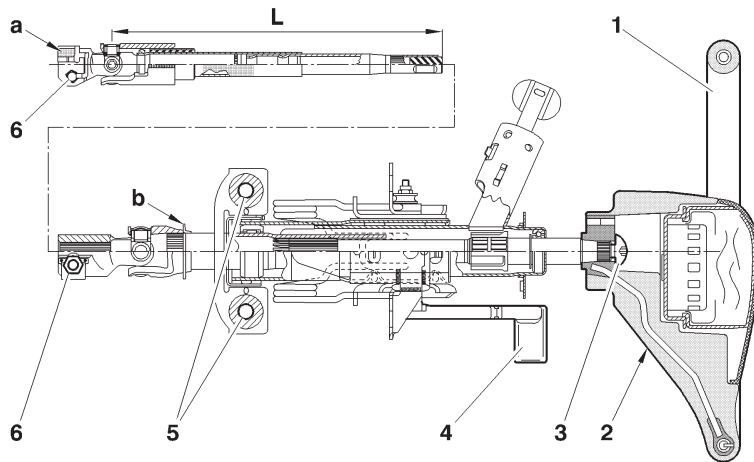
- | | |
|---------------------------------|-------|
| (7) Pivot ball-joint nut | : 4 |
| (8) Link rod lock nut | : 4.5 |
| (9) Ball-joint on steering rack | : 6 |
| (10) Fixing on cradle | : 5 |
| (11) Plunger flange screws | : 1.2 |

B3EP042D

TIGHTENING TORQUES: POWER-ASSISTED STEERING

XSARA

Steering wheel - Power steering

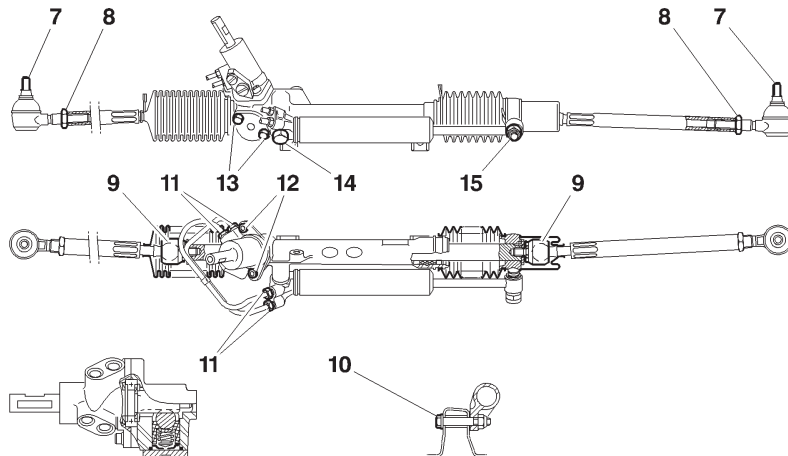


Tightening torques (m.daN).

(2) AIRBAG to steering wheel fixing	: 0.8
(3) Steering wheel fixing	: 3.3
(5) Steering column to support fixing	: 2.3
(6) Steering cardan joint fixing	: 2.3

B3EP08QD

Power steering

Tightening torques (m.daN).

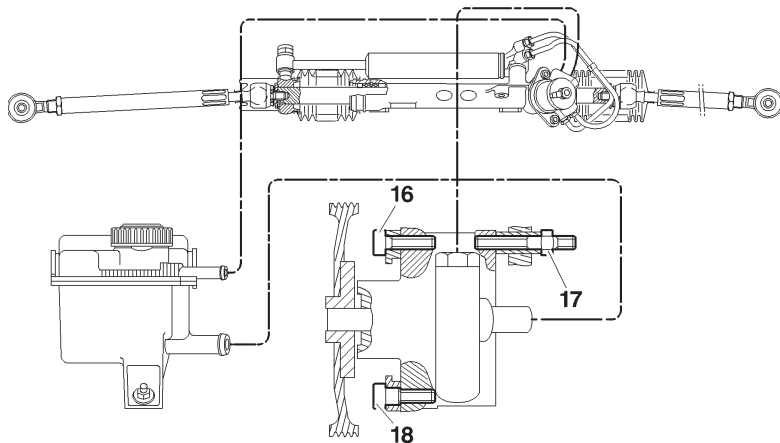
(7) Pivot ball-joint nut	: 4
(8) Link rod lock nut	: 4.5
(9) Ball-joint on steering rack	: 6
(10) Fixing on subframe	: 5
(11) Hydraulic pipe connection	: 2.5
(12) Valve to housing fixing	: 1.2
(13) Plunger flange screw	: 1.2
(14) Screw fixing the steering ram to the housing	: 5.5
(15) Nut fixing the steering ram to the yoke	: 5.5

B3EP08RD

TIGHTENING TORQUES: POWER-ASSISTED STEERING

XSARA

Power-assisted steering assembly



Tightening torques (m.daN).

High pressure tube (*rubber seal pump side*) : 2.5
Power-assisted valve and pump union

Return pipe.

Power-assisted valve union : 2.5
(16) Upper front fixing (E3) : 2.5
(17) Upper rear fixing (E3) : 2.2
(18) Fixing (E3) : 2.2

Tightening sequence.

Tighten screws (16) and (18).
Lightly tighten screw (17), then fully tighten.

Pressure switch on the pressure circuit.

Switch opens 30 to 35 bars.
Switch closes 25 bars.
Tighten to : 2 m.daN.

B3EP045D

XSARA PICASSO

AXLE GEOMETRY

Measurements at reference height

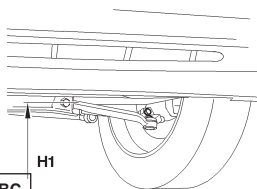
WARNING: The values shown should only be used as guides. In case of doubt, check the settings at reference height

Conditions for checking and adjusting: Tyres inflated to correct pressures. Vehicle at reference height. Steering rack locked at mid point (see corresponding operation).

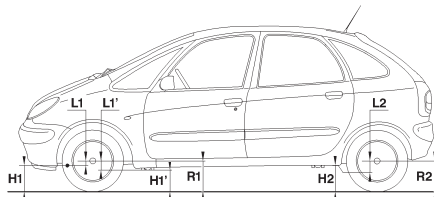
NOTE: To make the setting of reference height easier, it is acceptable to take the measurement from the flange of the jacking point.

Front height

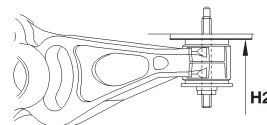
Rear height



B3CP05BC



B3CP058D



B3DP079C

$$H1 = R1 - L1 \quad H1' = R1 - L1'$$

$$H2 = R2 - L2$$

H1 = From the front suspension arm linkage bolt axis to the ground.

R1 = Radius of the front wheel when laden.

L1 = From the centre of the wheel to the front suspension arm linkage bolt axis.

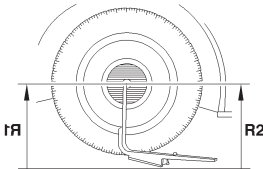
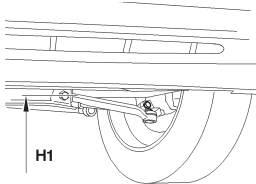
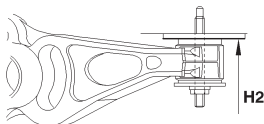
H1' = From the front jacking point to the ground.

L1' = From the front jacking point to the radius of the front wheel when laden.

H2 = From the rear axle silentblock face to the ground.

R2 = Radius of the rear wheel when laden.

L2 = From the centre of the wheel to the rear axle silentblock face.

AXLE GEOMETRY				XSARA PICASSO	
Measurements at reference height (the reference height of the vehicle is set as per the table below).					
Front axle				Rear axle	
					
B3CP05BC		B3CP05AC		B3DP079C	
Vehicles all engine versions (except CRD (*))					
Front axle			Rear axle		
$H1 = R1 - L1$ or $H1' = R1 - L1'$			$H2 = R2 + L2$		
$L1 = 90,5 \text{ mm}$		$L1' = 124 \text{ mm}$	$L2 = 8,5 \text{ mm}$		
Value at reference height (-8/+3 mm)			Value at reference height (+10/-3 mm)		
Measure the radius of the front wheel: R1 . Calculate the dimension H1 ou H1' .			Measure the radius of the rear wheel: R2 . Calculate the dimension H2 .		
(*) = Difficult road conditions. Compress the suspension to obtain the calculated values. NOTE: The difference in height between the two sides should be less than 10 mm .					

XSARA PICASSO

AXLE GEOMETRY

Measurements at reference height (*compress the suspension to obtain the calculated values*).

Vehicles all engine versions (except CRD (*))

Front axle

Rear axle

Vehicle

Tracking

Castor

Pivot angle

Camber

Tracking

Camber

Adjustable

Yes

No

ALL TYPES

$0 \pm 1 \text{ mm}$
 $- 0^{\circ}09' \text{ à } + 0^{\circ}09'$

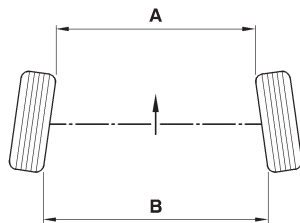
$3^{\circ} \pm 18'$

$10^{\circ}43' \pm 30'$

$0^{\circ} \pm 30'$

$4,8 \pm 1,3 \text{ mm}$
 $- 0^{\circ}43' \pm 0^{\circ}12'$

$- 1^{\circ}13' \pm 18'$



NOTE

$A < B$ = Positive figure:

+ =

TOE-IN

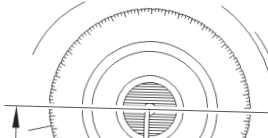
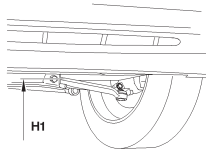
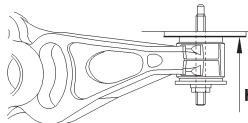
$A > B$ = Negative figure:

- =

TOE-OUT

B3CP02UC

AXLES
SUSPENSION
STEERING

AXLE GEOMETRY				XSARA PICASSO	
Checks at reference height (the reference height of the vehicle is set as per the table below).					
Front axle				Rear axle	
					
B3CP05BC		B3CP05AC		B3DP079C	
CRD vehicle versions (*)					
Front axle			Rear axle		
$H1 = R1 - L1$ or $H1' = R1 - L1'$			$H2 = R2 + L2$		
$L1 = 75,5 \text{ mm}$		$L1' = 109 \text{ mm}$		$L2 = 23,5 \text{ mm}$	
Measure the radius of the front wheel: R1 . Calculate the dimension H1 or H1' .			Measure the radius of the rear wheel: R2 . Calculate the dimension H2 .		
(*) = Difficult road conditions. Compress the suspension to obtain the calculated values. NOTE: The difference in height between the two sides should be less than 10 mm .					

XSARA PICASSO

AXLE GEOMETRY

Measurements at reference height (*compress the suspension to obtain the calculated values*).

Vehicles all engine versions (except CRD (*))

Front axle

Rear axle

Vehicle

Tracking

Castor

Pivot angle

Camber

Tracking

Camber

Adjustable

Yes

No

ALL TYPES

- 1 ± 1 mm
- 0°18' à 0°0'

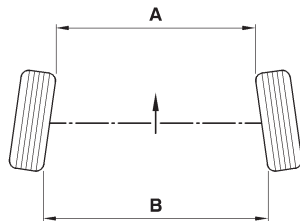
2°56' ± 18'

10°25' ± 30'

0°07' ± 30'

3,7 ± 1,3 mm
- 0°33' ± 0°12'

- 1°14' ± 18'



NOTE

A < B = Positive figure:

+ =

TOE-IN

A > B = Negative figure:

- =

TOE-OUT

B3CP02UC

TIGHTENING TORQUES: FRONT AXLE

XSARA PICASSO

Tightening torques (m.daN).

- | | |
|---|-----------------|
| (1) Damper nut | : 4.5 ± 0.4 |
| (2) Cup screw | : 2.5 ± 0.2 |
| (3) Suspension leg | |
| (4) Anti-roll bar link rod ball-joint | : 3.7 ± 0.3 |
| (5) Suspension leg swivel | : 4.5 ± 0.4 |
| (6) Anti-roll bar | |
| (7) Anti-roll bar link rod ball-joint | : 3.7 ± 0.3 |
| (8) Lower swivel ball-joint | : 4 ± 0.4 |
| (9) Hub nut (<i>greased</i>) | : 32.5 ± 2 |
| (10) Wheel bolt | |
| (face and threads not greased) | : 9 ± 1 |
| (11) Lower arm front pivot | : 7.6 ± 0.7 |
| (12) Lower arm rear pivot and anti-roll bar bearing | : 6.8 ± 0.6 |
| (13) Screw under rear pivot | : 3.5 ± 0.3 |
| Lower arm in forged steel | : 3.7 ± 0.3 |
| Lower arm in plate steel | : 3.1 ± 0.3 |
| Screw fixing subframe on bodyshell | : 8.5 ± 0.8 |
| Screw fixing ball-joint on lower arm (<i>plate steel</i>) | : 4.5 ± 0.4 |

Anti-roll bar

Engines

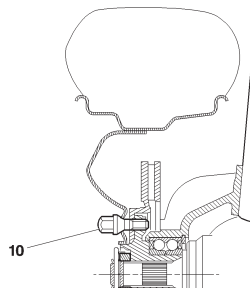
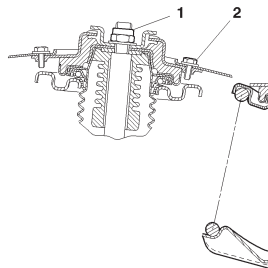
Diameter

Colour ref.

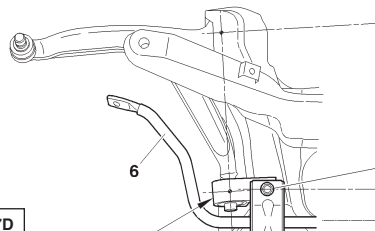
ALL TYPES

21

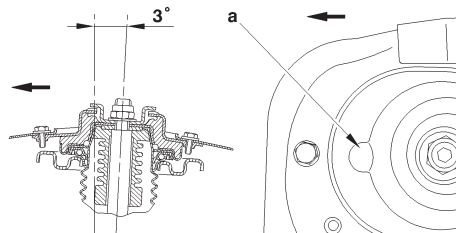
WHITE



B3CP056P

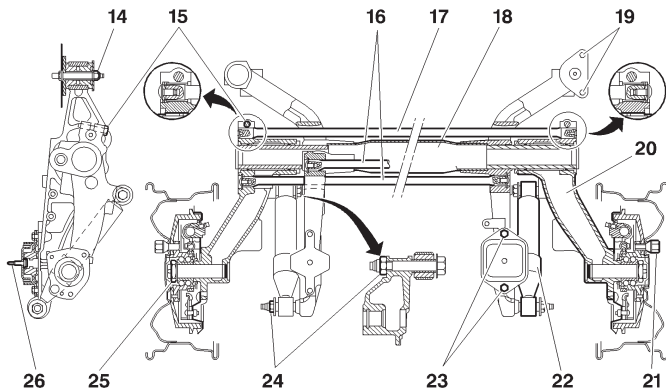


B3CP057D



B3CP043D

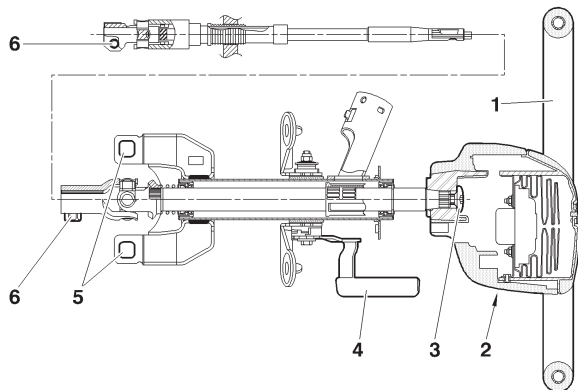
Suspension leg angle:
Tab «a» towards the front.

Tightening torques (m.daN).

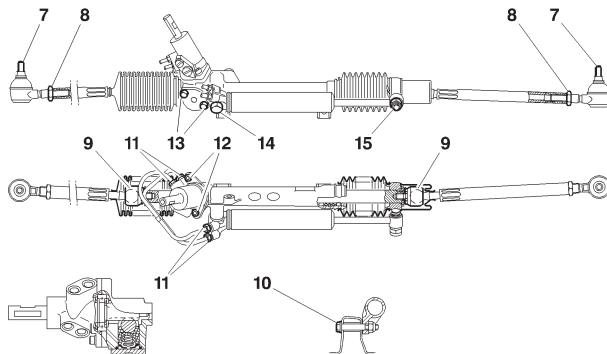
(14) Front silentblock on subframe	: 9.4 ± 0.9
(15) Anti-roll bar bolt	: 5.5 ± 0.5
(16) Rear torsion bar	
(17) Anti-roll bar	
(18) Tubular axle	
(19) Front silentblock on bodyshell	: 4 ± 0.4
(20) Rear upper arm.	
(21) Wheel bolt (<i>face and threads not lubricated</i>)	: 9 ± 1
(22) Damper	
(23) Rear silentblock on subframe	: 5.4 ± 0.5
(24) Damper pin nut	: 11 ± 1
(25) Stub axle nuts (<i>lubricated</i>)	: 25 ± 2
(26) Rear silentblock on bodyshell	: 6.5 ± 0.6

	Torsion bar		Anti-roll bar	
Engines	Ø (mm)	Colour ref.	Ø (mm)	Colour ref.
ALL TYPES	19,6	PINK	21	ORANGE

NOTE: The RH torsion bar can be identified by **1** paint line.
The LH torsion bar can be identified by **2** paint lines.

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

(2) Airbag to steering wheel fixing	: 0.8 ± 0.1
(3) Steering wheel fixing	: 3.3 ± 0.6
(5) Steering column to support fixing	: 4 ± 0.1
(6) Steering cardan joint fixing	: 2.3 ± 0.2



Tightening torques (m.daN).

(7) Pivot ball-joint nut	: 4 ± 0.4
(8) Steering rod adjusting lock nut	: 4.5 ± 0.4
(9) Ball-joint on steering rack	: 6 ± 0.6
(10) Fixing steering on subframe	: 8 ± 0.8
(11) Hydraulic pipe connection	: 2.4 ± 0.2
(12) Power steering valve	: 1.2 ± 0.2
(13) Plunger flange screws	: 1.2 ± 0.2
(14) Steering ram screw on housing	: 9 ± 1
(15) Steering ram screw on yoke	: 9 ± 1

NOTE: When removing the steering, it is imperative to replace screws (14) and (15) (*new screws*).

B3EP117D

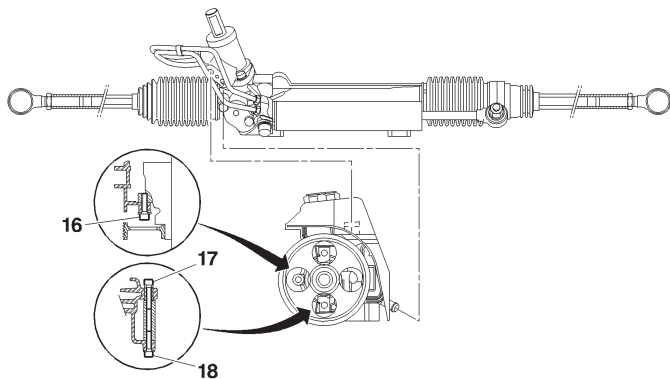
Tightening torques (m.daN).

Unions between pump unions and power steering valve	: 2 ± 0.3
(16) Fixing screw	: 2.2 ± 0.3
(17) Fixing screw	: 2.2 ± 0.3
(18) Fixing screw	: 2.2 ± 0.3

NOTE: Coat the threads with product «E3».

A pressure switch is implanted in the hydraulic piping between the high pressure pump and the power steering valve.

- Opening pressure = **30 / 35 bars**.
 - Closing pressure = **25 bars** minimum.
- Tightening torque = 2 ± 0.2 .

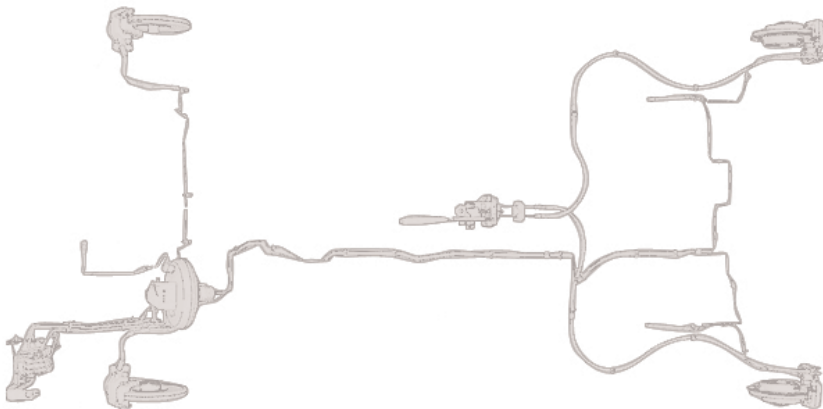


C4		BRAKE SPECIFICATIONS									
				With ABS							
				ET3J4		TU5JP4		DV6		TU5JP4	
				Manual				Auto.			
FT	Ø mm	Master cylinder		22,2 (in valve) (1)							
		Amplifier		22,86/BOSCH/EVA2 (2)		25,4/ BOSCH/MCT8 (2)					
		Supplier/pistons		BOSCH/ZOH 54/22				BOSCH/ZOH 54/26			
		Disc	Ventilated	266				283			
	Disc thickness		22/20				26/24				
	Brake pad grade		FEDERAL MODUL/F769				GALFER/G4554				
RR	Ø mm	Cylinder or caliper		BOSCH/TRW C38							
		Disc	Plain	249							
	Disc thickness		9/7								
	Brake pad grade		GALFER/G4554								
(1) AFU system (EBA) = Emergency Brake Assist (incorporated as standard).											
(2) AFD system = Automatic lighting of hazard warning lamps on emergency braking (incorporated as standard).											
Brake fluid reservoir.											
Supplier: BOSCH, brake fluid quality: DOT 4.											
The brake fluid reservoir is in 2 parts: the principal reservoir (equipped with a level detector) and a separate reservoir, they are linked by a rislan pipe by means of a clickfit union.											

BRAKE SPECIFICATIONS										C4
				With ESP						
				ET3J4	TU5JP4	EW10A/J4	EW10J4S	DV6TED4/ATED4	DW10 BTED4	
				Manual/Automatic						
FT	Ø mm	Master cylinder		23,8 (in click) (1)						
		Amplifier		25,4/ BOSCH/MCT8 (2)						
		Supplier pistons		BOSCH/ZOH 54/26		TEVES/F N3 57/26	BOSCH/ZOH 54/26		TEVES/F N3 57/26	
		Disc	Ventilated	283		302	283		302	
	Disc thickness		26/24							
	Brake pad grade		GALFER/G4554		JURID 976	GALFER/G4554		JURID 976		
	RR	Ø mm	Cylinder or caliper		BOSCH/TRW C38					
Disc			Plain	249						
Disc thickness		9/7								
Brake pad grade		GALFER/G4554								
(1) AFU system (EBA) = Emergency Brake Assist (<i>incorporated as standard</i>).										
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Brake fluid reservoir.										
Supplier: BOSCH , brake fluid quality: DOT 4 .The brake fluid reservoir is in 2 parts : the principal reservoir (<i>equipped with a level detector</i>) and a separate reservoir, they are linked by a rislan pipe by means of a clickfit union.										

C4

BRAKE SPECIFICATIONS



B3FP7E1D

Braking system.

Braking circuit in the form of an **X**.

Disc brakes at the front and at the rear
(*vehicles all types*):

- The front brake discs are ventilated.
- The rear brake discs are plain.

NOTE: The front brake pads have no wear warning lamp.

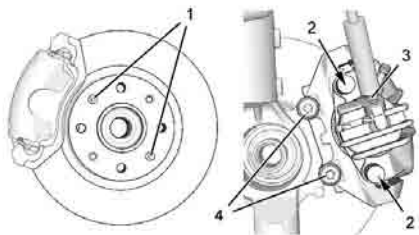
Handbrake lever controlled by cables acting on the rear wheels.

The compensator and main brake limiter functions are assured by the **ABS REF systems**.

NOTE: REF = Electronic Brakeforce Distribution (EBD).

TIGHTENING TORQUES: BRAKING SYSTEM

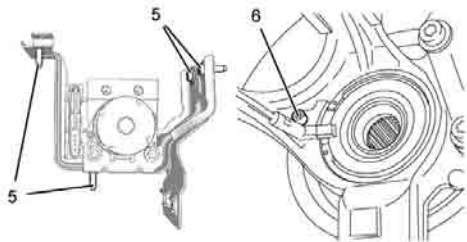
C4



B3FP7DVD

Front brakes

1	Front brake disc	$1 \pm 0,1$
2	Yoke on caliper	$3 \pm 0,3$
3	Unions on brake piping	$1,5 \pm 0,1$
4	Caliper on pivot	$10,5 \pm 1$

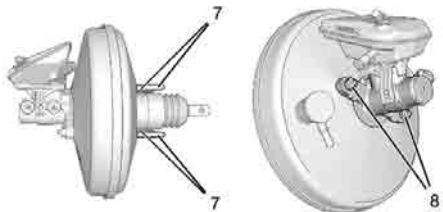


B3FP7DWD

5	ABS/ESP hydraulic block support on the chassis member	$0,2 \pm 0,1$
6	Wheel sensor	$0,8 \pm 0,1$

C4

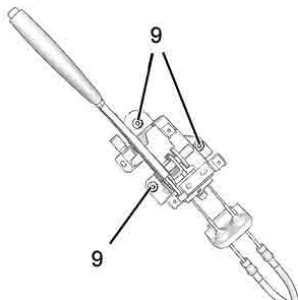
TIGHTENING TORQUES: BRAKING SYSTEM



B3FP7DXD

Front brakes

7	Braking amplifier	$2,2 \pm 0,3$
8	Master cylinder on braking amplifier	$2 \pm 0,5$



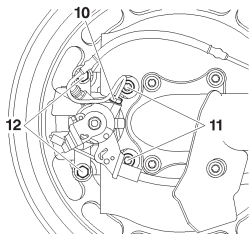
B3FP7DYC

Parking brake

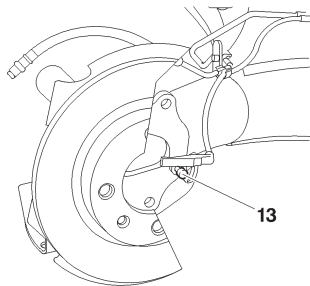
9	Parking brake lever	$1,5 \pm 0,2$
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TIGHTENING TORQUES: BRAKING SYSTEM

C4



B3FP7DZC



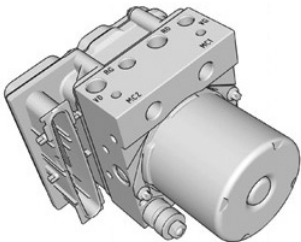
B3FP7EOC

Rear brakes

10	Unions on brake piping	$1,5 \pm 0,1$
11	Rear brake caliper support	$5,3 \pm 0,5$
12	Rear brake caliper	$3 \pm 0,3$
13	Wheel sensor	$0,8 \pm 0,1$

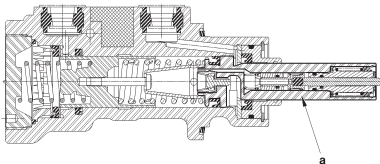
C4

ABS/ESP HYDRAULIC BLOCK



B3FP7E3C

Components	Supplier	Type	Observations
Hydraulic block	BOSCH	ABS REF 8.0	Installed under the front LH chassis member. 4 regulation channels.
		ESP 8.0	

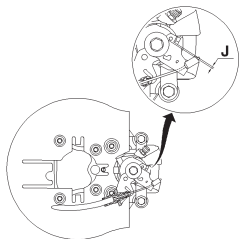


B3FP7E2D

The emergency braking control is incorporated in the primary piston at «a».

PARKING BRAKE ADJUSTMENT

C4



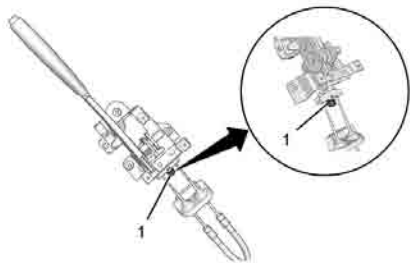
B3FP7F1C

Adjustment.**IMPERATIVE:** Respect the safety and cleanliness requirements.

Raise and support the vehicle.
Remove the central console.

WARNING: Check the routing of the brake cables under the vehicle.

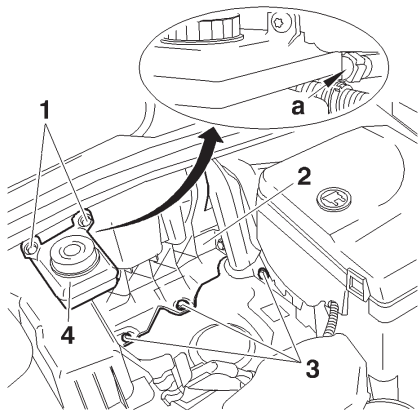
Release the handbrake lever.
Press gently on the brake pedal (*then repeat the operation 3 times*).
Action the handbrake lever with a force of **40 daN**.
Use a feeler gauge at «J» to measure the movement of the lever in relation to its stop.

NOTE: The movement should be less than **1,5 mm** and more than **0,05 mm**.

B3FP7F2D

(1) Nut for adjusting the tension of the handbrake cables
Move the nut **(1)** to obtain a movement «J» less than or equal to **1,5 mm**.
Action the handbrake lever **8 times** with a force of **40 daN**.
With the handbrake released, check the movement «j» with a feeler gauge.
NOTE: The movement should be less than **1,5 mm** and more than **0,05 mm**.

Refit the central console (*see corresponding operation*).
Check the efficiency of the handbrake.



B3FP7EQC

Tools.

- [1] Bleeding apparatus
- [2] LEXIA diagnostic tool
- [3] PROXIA diagnostic tool

: «LURO» or similar
 : 4171-T
 : 4165-T

NOTE: Bleeding of the secondary braking circuit is done with the aid of diagnostic tools [2] and [3].

Draining of the brake fluid reservoir.

Remove the screws (3) and the battery tray (2).

Remove the filter of the brake fluid reservoir (4).

Drain the brake fluid reservoir (4) to the maximum extent (*if necessary, use a clean syringe*).

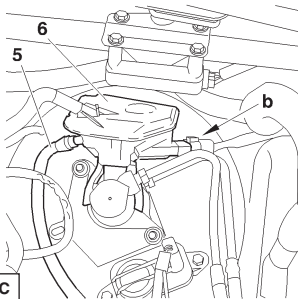
Remove the screws (1).

Uncouple the clickfit union at «a».

Remove the brake fluid reservoir (4).

BLEEDING AND FILLING THE BRAKING SYSTEM

C4



B3FP7ERC

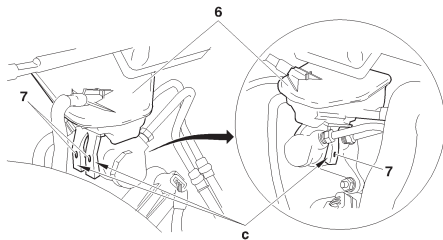
Disconnect the connector «b».
 Uncouple the pipe (5).
 Remove the reservoir (6), moving aside the tabs «c» of the pins (7).
 Clean the brake fluid reservoir (4) and the brake fluid reservoir (6).
 Refit the brake fluid reservoir (6).
 Couple the pipe (5).
 Reconnect the connector «b».
 Couple the clickfit union, at «a».

Refit:

- The brake fluid reservoir (4).
- The screws (1).
- The filter of the brake fluid reservoir.
- The battery tray.
- The screws (3).
- The battery.

Reconnect the battery.

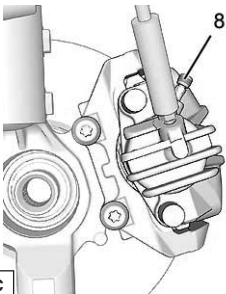
IMPERATIVE: Carry out the operations that are necessary following a reconnection of the battery (*see corresponding operation*).



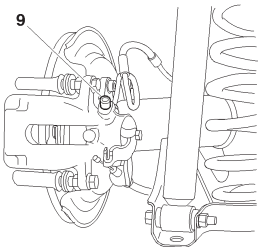
B3FP7ESD

C4

BLEEDING AND FILLING THE BRAKING SYSTEM



B3FP7ETC



B3FP7EUC

Filling the braking circuit.

WARNING: Use only the approved and recommended hydraulic fluids.

IMPERATIVE: Only use new brake fluid that has not emulsified; avoid any introduction of impurities into the hydraulic circuit.

Fill the brake fluid reservoir (4).

Bleeding the primary braking circuit.

WARNING: During the bleed operations: take care to maintain the level of the brake fluid in the reservoir, keep it topped up.

WARNING: The ABS system must not be in action during the bleed operation.

WARNING: Respect the sequence for the opening of the bleed screws.

Front brake caliper : Bleed screw (8).

Rear brake caliper : Bleed screw (9).

Bleed each brake caliper, proceeding in the following sequence:

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

Bleeding the braking circuit with the bleed apparatus.

Connect the bleed apparatus [1] on the brake fluid reservoir (4).

Adjust the apparatus pressure to **2 bars**.

For each brake circuit:

- Couple a transparent tube on the bleed screw.
- Submerge the other end of the tube in a clean container.
- Open the bleed screw.
- Wait until the brake fluid flows out without air bubbles.
- Close the bleed screw.
- Remove the bleed apparatus [1].

Check the level of the brake fluid (*between the «**DANGER**» level and the «**MAXI**» level*).

Fill if necessary with the the approved and recommended synthetic brake fluid.

Bleeding the braking circuit without the bleed apparatus.

NOTE: Two operators are necessary.

For each brake circuit:

- Apply the brake pedal to place the circuit under pressure.
- Couple a transparent tube on the bleed screw.
- Submerge the other end of the tube in a clean container.
- Open the bleed screw.
- Wait until the fluid flows out without air bubbles.
- Close the bleed screw.

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

Check the level of the brake fluid (*between the «**DANGER**» level and the «**MAXI**» level*).

Fill if necessary with the the approved and recommended synthetic brake fluid.

Bleeding the secondary braking circuit.

WARNING: During the bleed operations: take care to maintain the level of the brake fluid in the reservoir, keep it topped up.

NOTE: The bleed apparatus [1] is still connected on the brake fluid reservoir (4).

Use the diagnostic tools [2] or [3].

Select the menu corresponding to the vehicle:

- **ABS** menu (*according to equipment*).
- **ESP** menu (*according to equipment*).

Follow the instructions of the diagnostic tool.

At the end of the bleed programme, check the level of the brake fluid, top up if necessary.

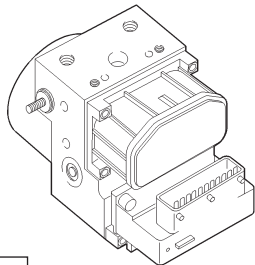
Check the travel of the brake pedal: it must not be excessive. If it is, restart the bleed procedure.

BRAKE SPECIFICATIONS										XSARA
				Estates						
				TU3JP	TU5JP4	EW10J4	DW8	DV4TD	DW10TD	DW10 ATED
FT	Ø mm	Master cylinder		Without ABS 23,8 (<i>expansion holes</i>)			With ABS 23,8 (<i>valve</i>)			
		Amplifier		228,6						
		Caliper makes/pistons		BOSCH 54		LUCAS 57		BOSCH 54		
		Disc	Ventilated	266		283		266		
	Disc thickness/min. thickness		22 / 20							
	Brake pad grade		FERF 769		ASFM 380		FERF 769			
	Thickness/min. thickness		13 / 2							
	RR	Ø mm	Drum - Ø min./max.		228 / 230			228 / 230		
Disc non-ventilated				247			247			
Disc thickness/min. thickness			8 / 6			8 / 6				
Make		JURID								
Brake lining grade		E 558	519		E 558		519			
Make/type		BOSCH/Load-sensitive compensator								
Cut-off pressure in bars		32								
Ramp/paint reference		0,3 - White								

XSARA

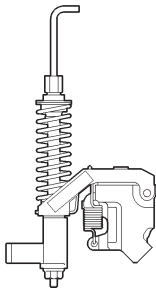
ABS/ESP HYDRAULIC BLOCK

1



B3FP09HC

2



B3FP09JC

Braking system specifications

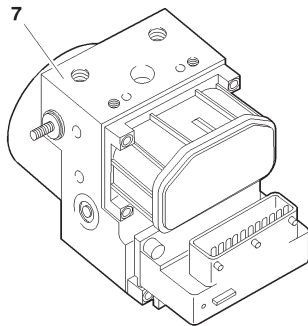
- 'X' braking circuit.
- Front: disc brakes, ventilated (*according to model*).
- Rear: drum brakes with automatic adjustment.
- Cable operated handbrake acting on the rear wheels.

- (1) Hydraulic valve block «**ABS Bosch 5.3**» or
(1) Hydraulic valve block «**ABS Bosch 5.3 REF**» or
(1) Hydraulic valve block «**ABS with ESP Bosch 5.7**».
- (2) Load sensitive braking compensator (*according to model*).

BRAKE SPECIFICATIONS

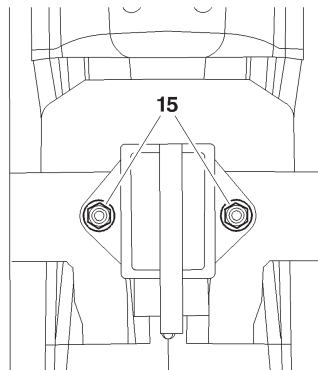
XSARA

(7) Hydraulic block



B3HP002C

Gyrometer sensor

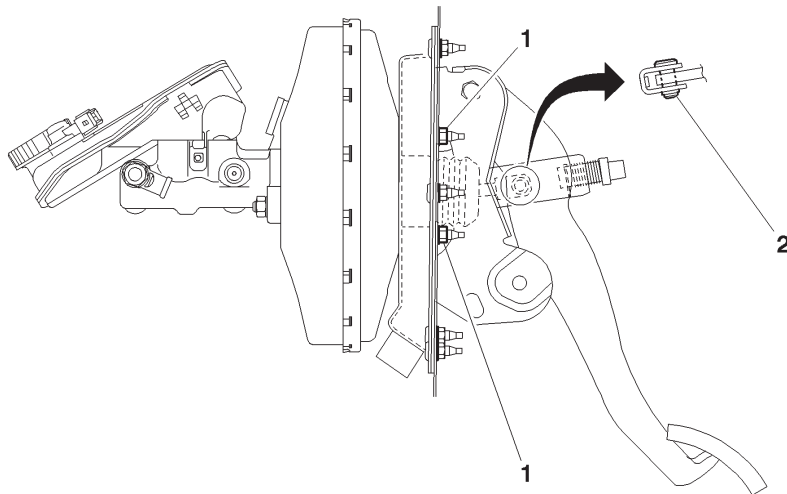


C4AP17YC

Components	Supplier	Part no.	Observations	
ESP hydraulic block	BOSCH	5.7 ESP	Located on the front LH wheelarch: 4 adjustment channels.	<p>IMPERATIVE: Respect the direction of fitting of the gyrometer/accelerometer sensor (<i>connector towards the rear of the vehicle</i>).</p> <p>WARNING: The gyrometer/accelerometer sensor should not be subjected to any impact. Any gyrometer/accelerometer sensor having suffered an impact must be replaced.</p> <p>Tightening torque (15): $0,6 \pm 0,1$ m.daN.</p>

XSARA

TIGHTENING TORQUES: BRAKING SYSTEM



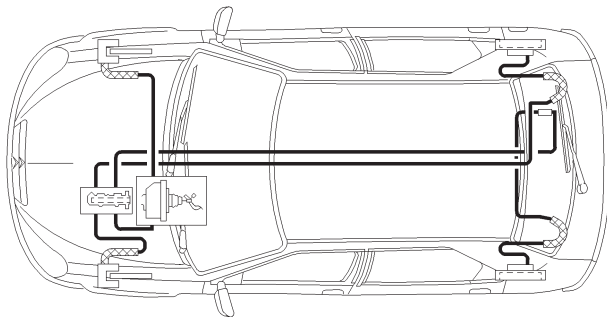
Tighten the nuts (1) to **2.3 m.daN**.

The shaft (2) is held in place by a plastic clip.

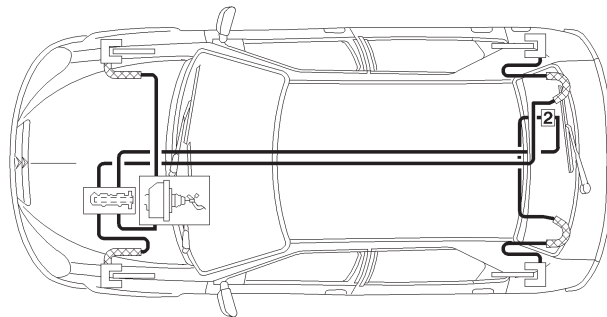
B3FP10YD

BRAKE SPECIFICATIONS

XSARA

Braking system without ABS (*rear drum brakes*)

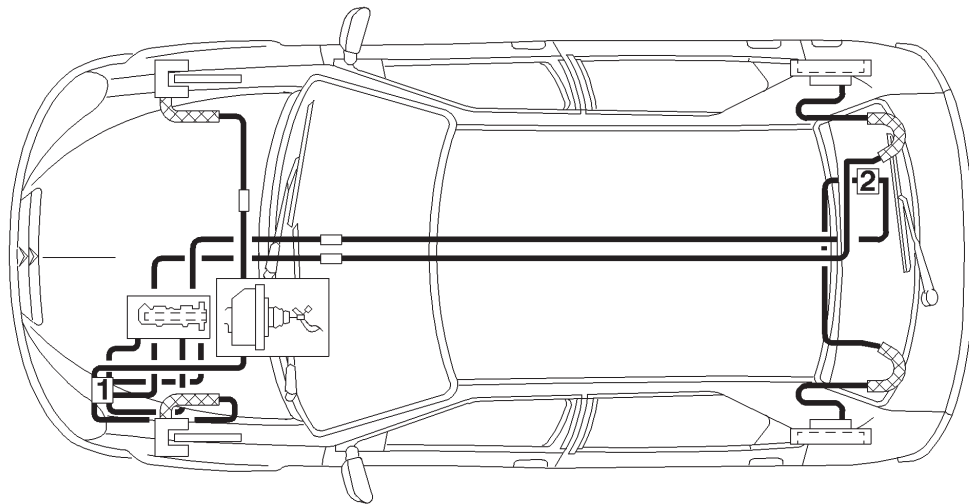
B3FP14FD

Braking system without ABS (*rear disc brakes*)

B3FP14GD

XSARA

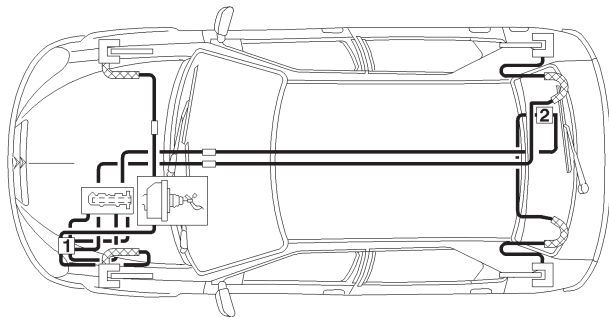
BRAKE SPECIFICATIONS

Braking system with ABS (*rear drum brakes*)

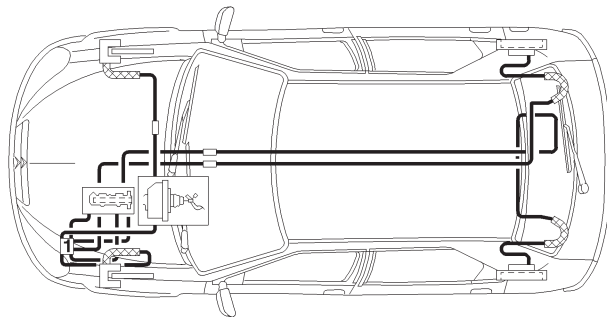
B3FP14HD

BRAKE SPECIFICATIONS

XSARA

Braking system with ABS REF (*rear disc brakes*)

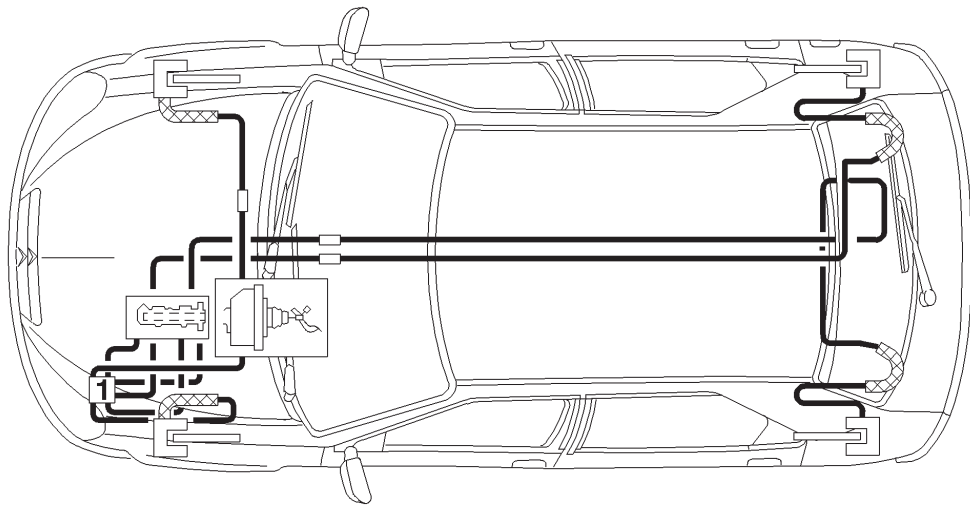
B3FP14JD

Braking system with ABS REF (*rear drum brakes*)

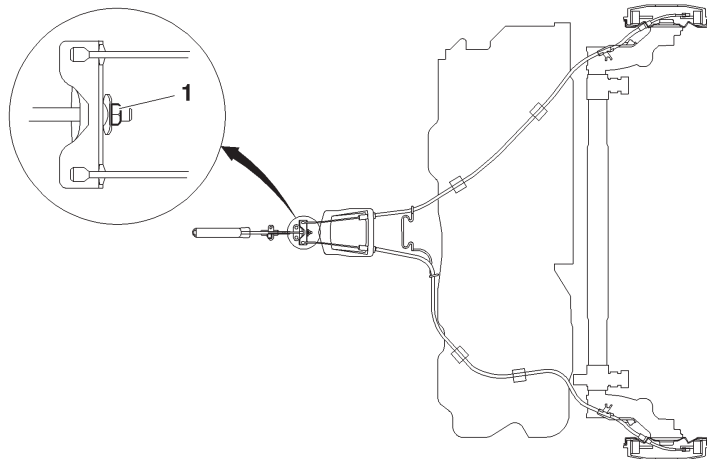
B3FP14KD

XSARA

BRAKE SPECIFICATIONS

Braking system with ABS REF (*rear drum brakes*)

B3FP14LD



Checking and adjusting the handbrake.

Remove the handbrake console.
Jack up and chock the vehicle with the rear wheels hanging free.
Check the correct routing of the brake cables under the vehicle.
Apply and release the handbrake **ten times**.
Set the handbrake to the **3rd** notch.
Tighten the nut (**1**) until the rear brakes are applied.
Pull the handbrake lever vigorously **4 to 5 times**.
Set the handbrake to the **3rd** notch.
Check that the rear brakes are applied.
Check that the wheels can be turned freely by hand with the handbrake released.
Lower the vehicle.
Refit the handbrake console.

XSARA

BLEEDING THE BRAKING SYSTEM

Bleeding: The brakes can be bled either:

- using brake bleeding equipment, in which case the pressure of the equipment should be set to **2 bars**.
- or in the conventional way.

IMPERATIVE order of bleeding

Wheels:

- Rear Right.
- Front Left.
- Rear Left.
- Front Right.

Top up using brake fluid supplied by **CITROËN Replacement Parts**.

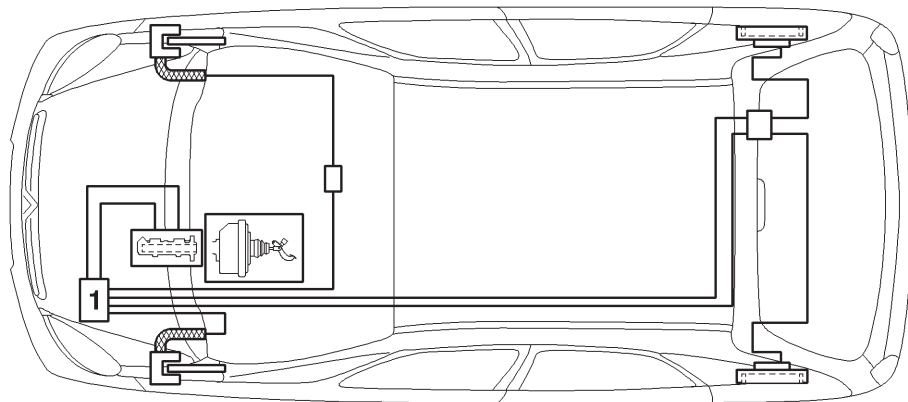
BRAKE SPECIFICATIONS						XSARA PICASSO	
				Mercosur		Europe	
				Without ESP (*)			
				EW10J4	DW10TD	TU5JP+	EW4J4
FT	Ø mm	Master cylinder		23,8			
		Master-vac/ Master cylinder travel		254/34			
		Caliper makes Piston		LUCAS C54/54		BOSCH ZOH54/54	
		Disc	Ventilated	266			
	Disc thickness/min. thickness		20,4/18,4		22/20		
	Makes/brake pad grade		JURID/3724		FERODO/769 (37)		
	RR	Rear brake plates Supplier/type		LUCAS/ENERGIT/C52980			
Ø mm		Cylinder or caliper	22,2				
		Drum/Ø max.	228,6/230				
Make		ABEX					
Brake lining grade		4930/2					
Compensator/supplier/type Cut-off pressure in bars		TEVESITTA (load-sensitive rear braking compensator) 20/61,6					
(*) ESP = Electronic Stability Program.							

XSARA PICASSO				BRAKE SPECIFICATIONS			
				All Types			
				With ESP (*)			
				EW4J4	EW10J4	DV6	DW10TD
FT	Ø mm	Master cylinder		23,8			
		Master-vac/ Master cylinder travel		254/35			
		Caliper makes/pistons		BOSCH ZOH54/54			
		Disc	Ventilated	283			
		Disc thickness/min. thickness		26/24			
	Brake pad supplier/grade		FERODO/769 (37)				
	RR	Ø mm	Rear brake caliper Supplier/type		TRW C38		
Disc			plain	247			
Disc thickness/min. thickness		9/7					
Make		GALFER					
Brake lining grade		G 4554					
Compensator: Cut-off pressure in bars		On versions with ABS, there is no load-sensitive rear braking compensator					
(*) ESP = Electronic Stability Program.							

BRAKING SYSTEM SPECIFICATIONS

XSARA PICASSO

Without ABS

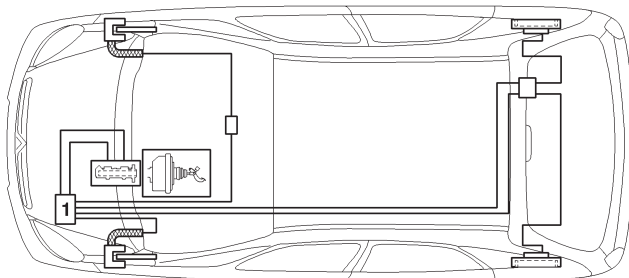


B3FP11WD

XSARA PICASSO

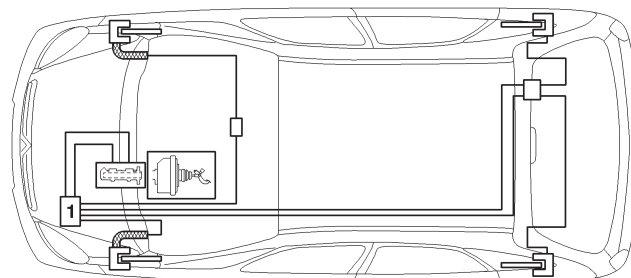
BRAKING SYSTEM SPECIFICATIONS

With ABS



B3FP7B9D

With EPS (Electronic Stability Program)

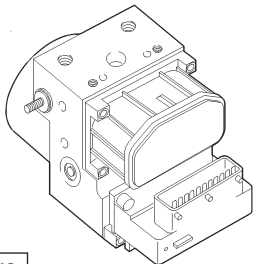


B3FP7BRD

BRAKE SPECIFICATIONS

XSARA PICASSO

1

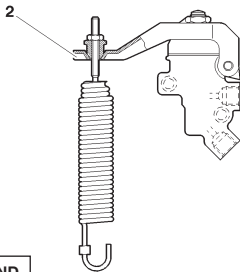


B3FP09HC

Braking system specifications

- 'X' braking circuit.
- Front: disc brakes, ventilated.
- Rear: drum brakes with automatic adjustment.
- Cable operated handbrake acting on the rear wheels.
- Load sensitive braking compensator (*non **ABS** versions*).

2

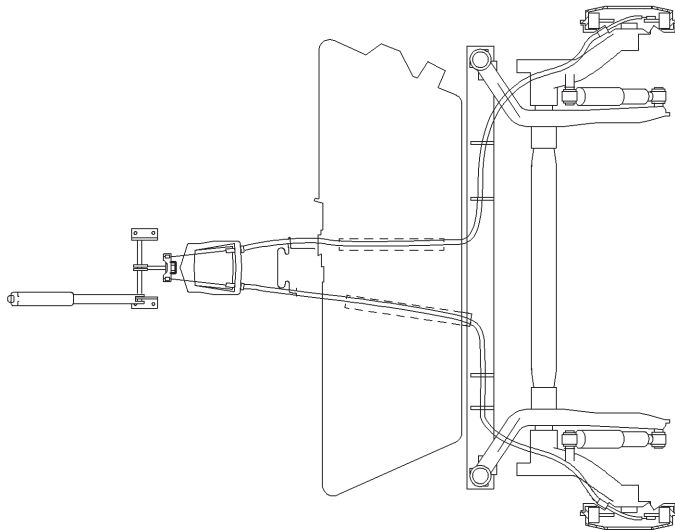


B3FP08ND

- (1) Hydraulic valve block «**ABS Bosch 5.3**» or
- (1) Hydraulic valve block + ECU.
- (2) Load sensitive braking compensator (*according to version*).

XSARA PICASSO

PARKING BRAKE ADJUSTMENT

**Adjustment.**

Remove the handbrake trim **(1)**.
Unclip the sound-deadening **(2)**.
Raise and support the vehicle with the rear wheels hanging free.
Check the correct routing of the brake cables under the vehicle.
Apply and release the handbrake **4 times**.
Set the handbrake to the **5th** notch.
Tighten the nut **(3)** until the rear brakes are applied.
Pull the handbrake lever vigorously **4 to 5 times**.
Set the handbrake to the **5th** notch.
Check that the rear brakes are applied.
With the handbrake released, check that the wheels can be turned freely by hand.
Lower the vehicle.
Refit the sound-deadening **(2)** and the handbrake trim **(1)**.

BLEEDING THE BRAKING SYSTEM

XSARA PICASSO

Tools

Bleeding equipment of type «LURO» or similar.

IMPERATIVE: For bleeding the secondary circuit, use ELIT, LEXIA or PROXIA diagnostic tools.

Draining.

Drain the brake fluid reservoir as empty as possible using a syringe.

Disconnect the brake fluid warning lamp connector.

Retrieve the brake fluid reservoir from its supply pipes by pulling upwards.

Finish emptying the reservoir of brake fluid.

Clean the brake fluid reservoir.

Refit the brake fluid reservoir.

Reconnect the brake fluid warning lamp connector.

Filling.

Refill the reservoir with brake fluid.

WARNING: Use only the recommended hydraulic fluids.

Bleeding.

NOTE: Two technicians are required.

IMPERATIVE: During bleed operations, ensure that the level of brake fluid is maintained in the reservoir and top it up, use only new brake fluid.

Bleed each wheel cylinder, proceeding in the following order:

- Rear right hand wheel.
- Front left hand wheel.
- Rear left hand wheel.
- Front right hand wheel.

AIR CONDITIONING R 134.a (HFC)						
Vehicle	Engines	Date	Refrigerant refill (gr)	Compressor		
				Variable Capacity	Oil quantity cc	Oil reference
C4	All types (except DW10BTED4)	09/04 →	450 ± 25	SD 7C 12	135	SP 10
	DW10BTED4			SD 6 C 12		
XSARA	All types	10/00 →	565 ± 25	SD 6 V 12		
XSARA PICASSO	TU5JP + EW7	12/02 →	675 ± 50			
	EW10J4					
	DV6TED4	01/04 →	625 ± 50			
	DW10	12/02 →	675 ± 50			

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)

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 dehydrator.
- 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 circuit.

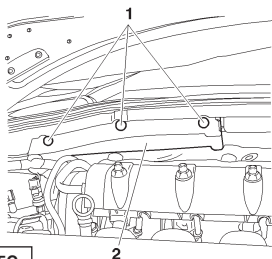
When changing one of the following components, add the quantity stated:

- | | |
|--|-----------------------------------|
| - A drying bottle | : 15 cc of compressor oil. |
| - A condenser or an evaporator | : 20 cc of compressor oil. |
| - High pressure or low pressure pipework | : 5 cc of compressor oil. |
| - A drying cartridge | : 15 cc of compressor oil. |

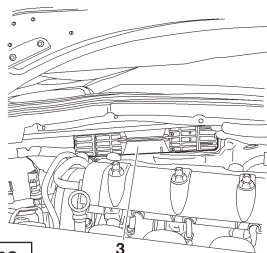
SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)

C4

Pollen filter



C5HP1C5C



C5HP1C6C

Note: The pollen filter is located in the engine compartment on the RH side.

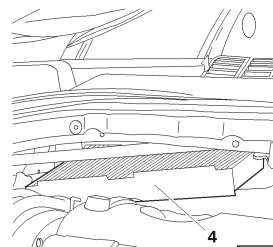
Removing.

Remove:

- The plastic pins (1).
- The plastic cover (2).
- The flap (3).
- The pollen filter (4).

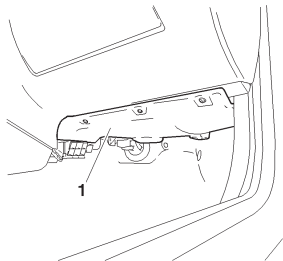
Refitting.

Proceed in reverse order.



C5HP1C7C

Pollen filter



C5HP07JC

Removing-refitting.

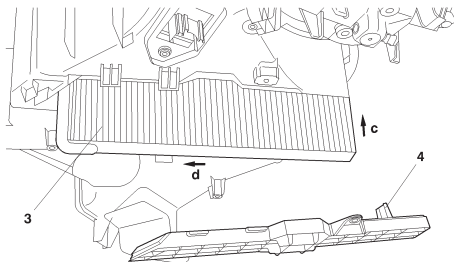
Remove:

- The interior trim (1).
- The cover (4).
- The pollen filter (3).

Concerns vehicles equipped with aircon without temperature regulation.

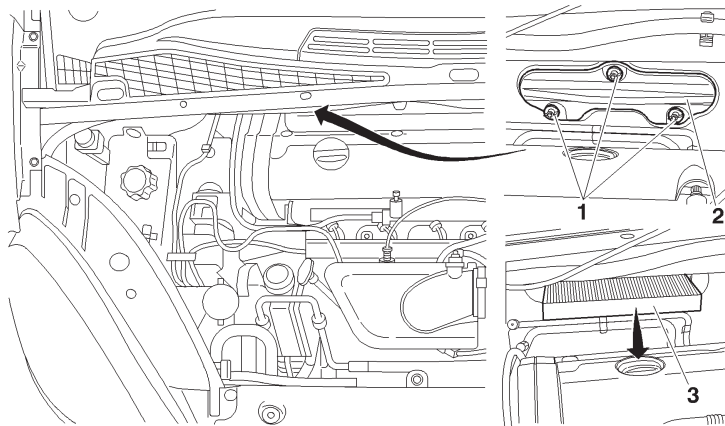
Fitting of a new pollen filter necessitates the following operations:

- Engage the pollen filter upwards (following arrow «c»).
- Slide the pollen filter towards the rear (following arrow «d»).
- Position the index (4) on the cover forward of the pollen filter ((4) Index on the cover).



C5FP075D

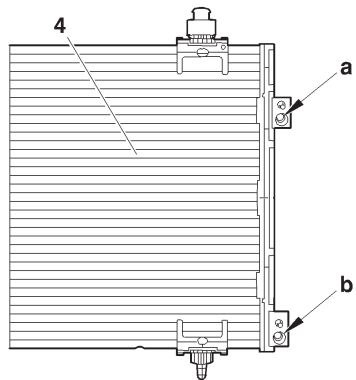
Pollen filter

**Remove:**

- The three screws (1).
- The cover (2).

Remove the pollen filter.

Changing the filtering/drying cartridge



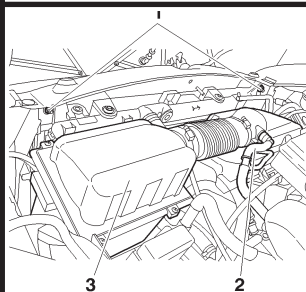
The condenser **(4)** has a cylinder acting as a fluid reservoir with a filtering cartridge incorporated in it.

a: Inlet union

b: Outlet union

NOTE: The filtering cartridge cannot be swapped.

Changing the filtering/drying cartridge



Tools.

- [1] Charge station
[2] TORX adaptor

: *(according to workshop equipment)*
: TORX 70 FACOM

Removing.

Depressurise the aircon circuit, using tool [1].

Uncouple the hose (2).

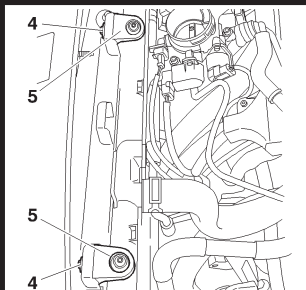
Remove:

- The air filter assembly (3).
- The nuts (1).

Protect the radiator harness with strong cardboard cut to the dimensions of the radiator.
Move aside the cooling fan.

Remove:

- The screws (4).
- The brackets (5).



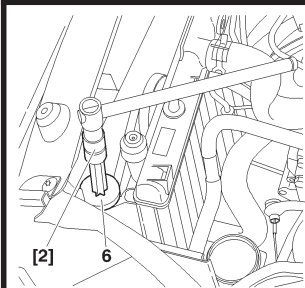
B1BP23FC

B1BP23GC

XSARA PICASSO

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

Changing the filtering/drying cartridge



Move aside the radiator/condenser assembly.
Remove the plug (6), using tool [2].
Support the radiator/condenser assembly thus moved aside.
Remove the filtering/drying cartridge (7), using pliers.

Refitting.

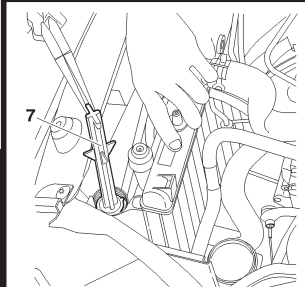
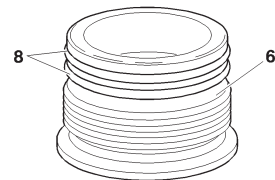
Refit the filtering/drying cartridge (7).
Clean the threads of the plug (6).
It is essential to change the O-ring seals (8).
Lubricate the O-ring seals (8) with aircon compressor oil.
Refit:

- The plug (6), using tool [2], tighten to $1,4 \pm 0,2 \text{ m.daN}$.
- The brackets (5).
- The screws (4).
- The cardboard from the radiator harness.
- The nuts (1).
- The air filter assembly (3).

Couple the hose (2).

Recharge the circuit (**R134.a**) (*according to equipment*) (*see corresponding operation*).

Check the operation of the air conditioning.



C5HP14NC

C5HP14PC

C5HP14QC

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Outillage EXXOTest

Outillage (flash équipement & matériel).

Exxoclim : 2.4.2-1
Mode d'emploi : Voir notice constructeur



E5AP2N5D

Outillage VALEO

Outillage.

Clim test 2 : 4372-T



E5AP2N4D

Procédure de l'essai.

Contrôle.

Mettre en place l'outillage (selon notice du constructeur).

Opérations préliminaires.

Fermer tous les aérateurs frontaux.

Démarrer le moteur.

Ouvrir l'aérateur frontal gauche.

Positionner la commande du répartiteur d'air sur «débit frontal».

Activer la commande «**recirculation d'air**».

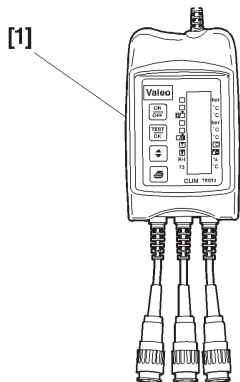
Activer la commande "AIR
CONDITIONING ".

Position des commandes de AIR
CONDITIONING :

- Commande de température sur froid maxi.
- Commande de pulseur en position vitesse maximum.

Laisser la AIR

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



Tools.

[1] Clim test 2 VALEO

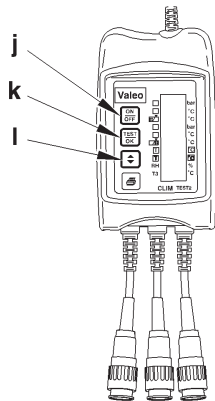
: 4372-T

Checks.

Position the tool [1] *(depending on manufacturer's instructions)*.

E5AP2ECC

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



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.

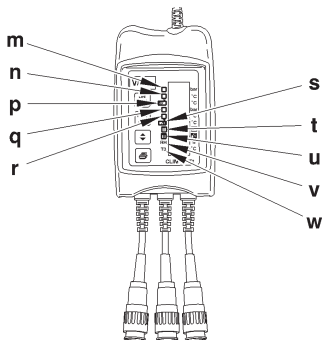
Activate the «**air conditioning**» control.

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



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).

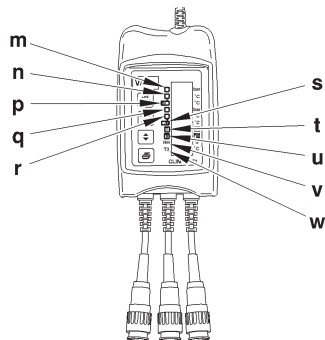
Values «p»	Origins	Solutions
SR < 2°C	Lack of aircon fluid in the aircon condenser (should be more than 150 grammes)	Add some aircon fluid
2°C < SR < 4°C	Lack of aircon fluid in the aircon condenser (should be around 100 to 150 grammes)	
4°C < SR < 10°C/12°C	Correct quantity	
SR > 10°C/12°C	Excess aircon 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**.

E5AP2FBC

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM



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.

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).

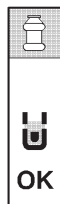
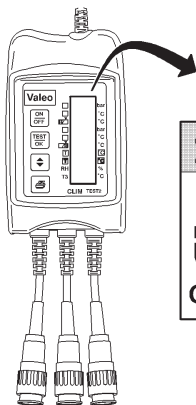
Values «s»	Origins	Solutions
$2^{\circ} < SC < 15^{\circ}C$	Correct quantity	
$SC > 15^{\circ}C$	Lack of aircon fluid in the cooling circuit	Add some aircon fluid
$SC < 2^{\circ}C$	Excess aircon fluid in the cooling circuit	Remove some aircon fluid

Blown air temperature «u».

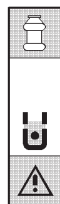
The blown air temperature should be between $2^{\circ}C$ and $10^{\circ}C$.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

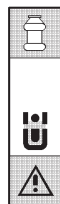
Interpretation of the diagnosis



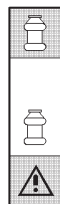
x



y



z



aa



ab

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 (<i>wiring, fuses, etc.</i>)
	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
	The clutch of the aircon compressor remains engaged and slips	Aircon compressor valves defective
		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

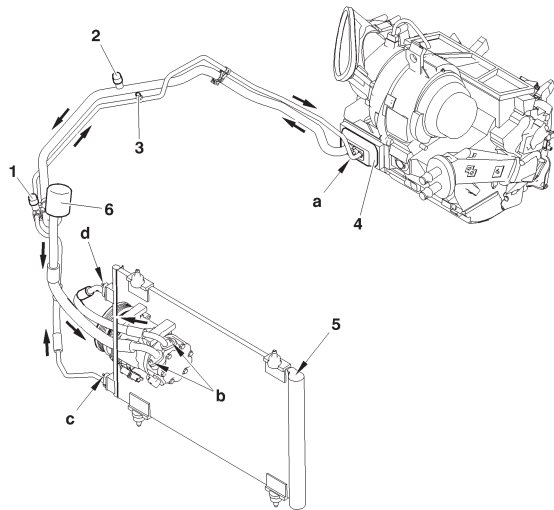
Principal problem	Symptom	Possible causes
Abnormal levels of pressure	Low pressure normal and high pressure too high	Presence of air in the aircon circuit
	Low pressure normal and high pressure too low	Aircon pressostat defective
		Evaporator sensor defective
	Low pressure too high and high pressure 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.

AIR CONDITIONING SYSTEM (R 134.a)

C4

Engines: ET3J4 - TU5JP4

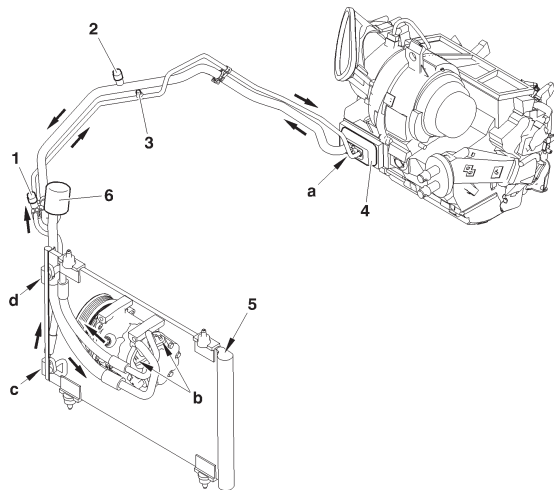


- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat (*tighten to 0,6 m.daN*)
- (4) Aircon pressure reducer
- (5) Filtering and drying cartridge
- (6) Buffer capacity

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**

«b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**

C5HP1BHP



- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat (*tighten to 0,6 m.daN*)
- (4) Aircon pressure reducer
- (5) Filtering and drying cartridge
- (6) Buffer capacity

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**

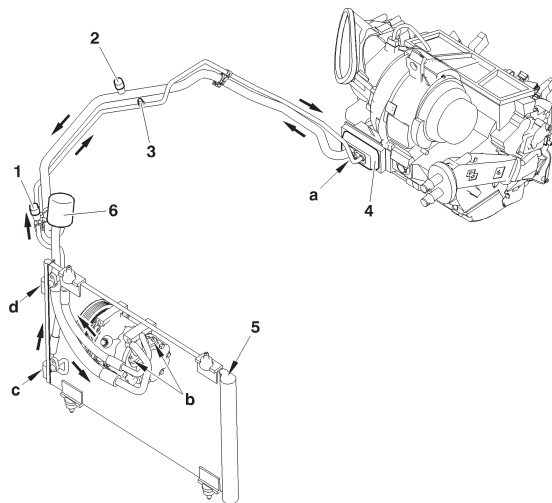
«b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**

«c» and «d» Outlet and inlet of the aircon condenser, tighten to **0,6 m.daN**

AIR CONDITIONING SYSTEM (R 134.a)

C4

Engines: EW10A - EW10J4S



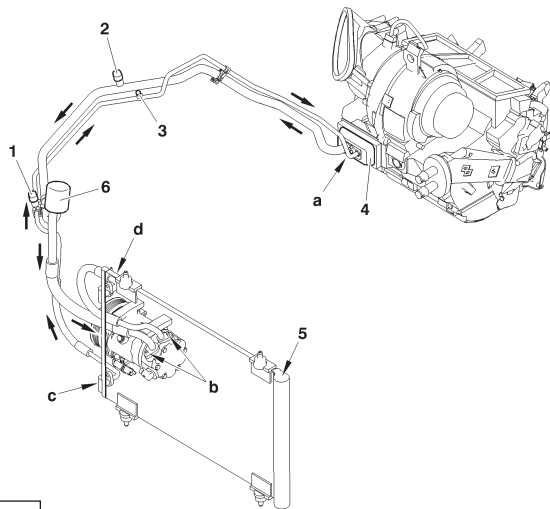
- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat (*tighten to 0,6 m.daN*)
- (4) Aircon pressure reducer
- (5) Filtering and drying cartridge
- (6) Buffer capacity

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**

«b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**

«c» and «d» Outlet and inlet of the aircon condenser, tighten to **0,6 m.daN**

C5HP1BLP



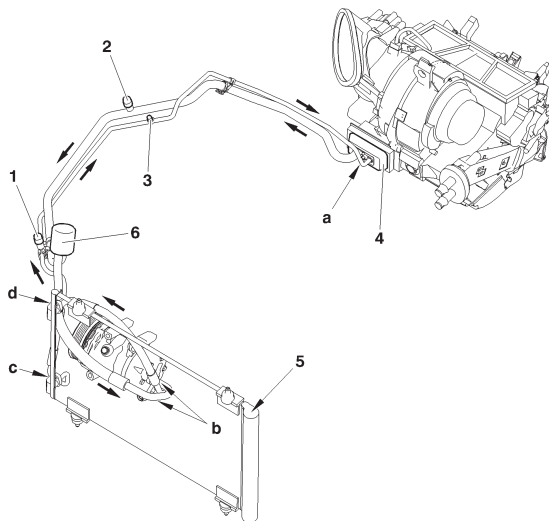
- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat (*tighten to 0,6 m.daN*)
- (4) Aircon pressure reducer
- (5) Filtering and drying cartridge
- (6) Buffer capacity

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**
 «b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**
 «c» and «d» Outlet and inlet of the aircon condenser, tighten to **0,6 m.daN**

AIR CONDITIONING SYSTEM (R 134.a)

C4

Engine: DW10BTED4



- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat (*tighten to 0,6 m.daN*)
- (4) Aircon pressure reducer
- (5) Filtering and drying cartridge
- (6) Buffer capacity

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**

«b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**

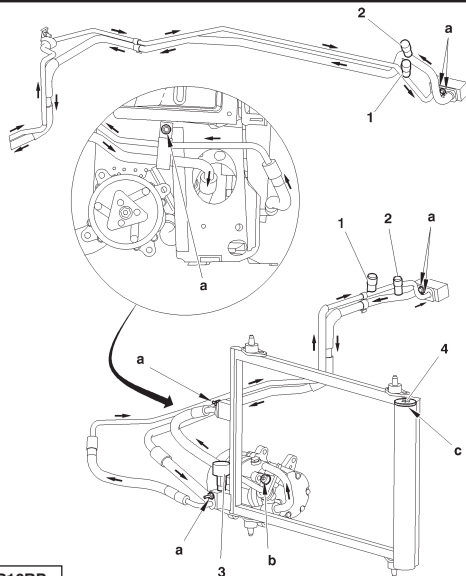
«c» and «d» Outlet and inlet of the aircon condenser, tighten to **0,6 m.daN**

C5HP1BJP

XSARA

AIR CONDITIONING SYSTEM (R 134.a)

Engines: TU3JP - TU5JP4 - EW10J4 - DV4TD - DW8B - DW10TD - DW10ATED



- (1) High pressure valve
- (2) Low pressure valve
- (3) Pressostat
- (4) Dryer

NOTE: The method of connecting the High Pressure and Low Pressure compressor pipes may vary according to engine type.

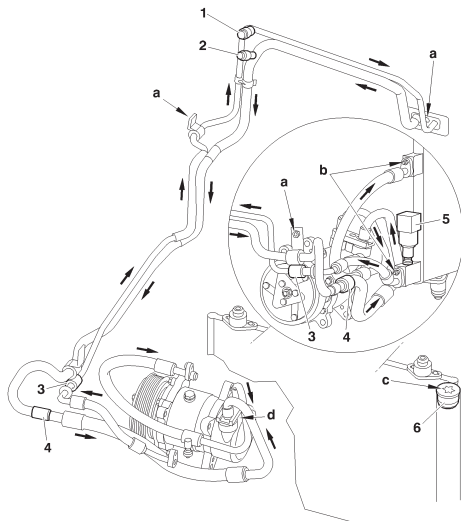
Tightening torques (m.daN).

(a) : 0,8

(b) : $4 \pm 0,4$

C5HP16RP

Engine: TU5JP+

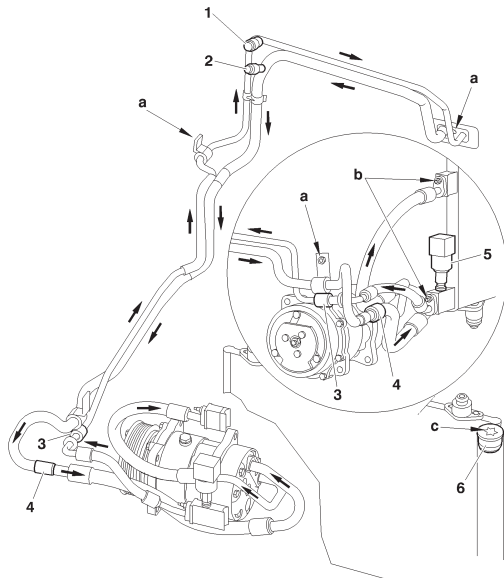


- (1) High pressure valve
- (2) Low pressure valve
- (3) High pressure clickfit union (*tool 8005-T.C*)
- (4) Low pressure clickfit union (*tool 8005-T.A*)
- (5) Pressostat : $1,8 \pm 0,6$ m.daN
- (6) Filtering/drying cartridge plug

Tightening torques (m.daN).

a	: $0,8 \pm 0,1$
b	: $0,5 \pm 0,1$
c	: $1,4 \pm 0,2$
d	: $2,5 \pm 0,25$

Engine: EW7J4



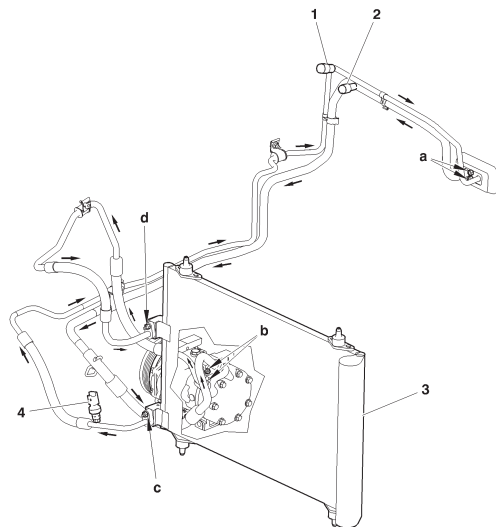
- (1) High pressure valve
 (2) Low pressure valve
 (3) High pressure clickfit union (*tool 8005-T.C*)
 (4) Low pressure clickfit union (*tool 8005-T.A*)
 (5) Pressostat : $1,8 \pm 0,6$ m.daN
 (6) Filtering/drying cartridge plug

Tightening torques (m.daN).

- a : $0,8 \pm 0,1$
 b : $0,5 \pm 0,1$
 c : $1,4 \pm 0,2$
 HP/LP compressor flange fixing : $2,5 \pm 0,25$

C5HP13QP

Engine: DV6TED4



- (1) High pressure valve
- (2) Low pressure valve
- (3) Dryer

NOTE: The filtering and drying cartridge is removed from under the condenser.

- (4) Pressostat

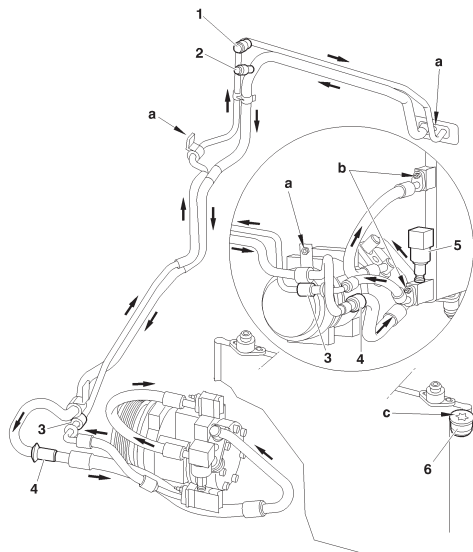
Tightening torques (m.daN).

«a» Outlet and inlet of the aircon pressure reducer, tighten to **0,8 m.daN**

«b» Outlet and inlet of the aircon compressor, tighten to **0,7 m.daN**

«c» and «d» Outlet and inlet of the aircon condenser, tighten to **0,6 m.daN**

Engine: DW10



- (1) High pressure valve
 (2) Low pressure valve
 (3) High pressure clickfit union (*tool 8005-T.C*)
 (4) Low pressure clickfit union (*tool 8005-T.A*)
 (5) Pressostat : $1,8 \pm 0,6$ m.daN
 (6) Filtering/drying cartridge plug

Tightening torques (m.daN).

- a : $0,8 \pm 0,1$
 b : $0,5 \pm 0,1$
 c : $1,4 \pm 0,2$

HP/LP compressor flange fixing : $4,2 \pm 0,15$

C5HP13RP