

PRIVATE CARS

C2-C3-C3 PLURIEL-XSARA XSARA PICASSO-BERLINGO

2004

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

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

CAR 050014
Volume 1



PRESENTATION

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

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

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

In each section, the vehicles are dealt with in the following order: C2-C3-C3 PLURIEL XSARA -XSARA PICASSO - BERLINGO (1) and all models where applicable.

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

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- (1) **NOTE : The BERLINGO familiare appears only in :**
- The correspondance tables for petrol and diesel engines.
 - The general chapter.
- For all the other chapters, see the Mechanics' Handbook for UTILITY vehicles.**

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.**

XSARA 2, all types

Operation to reconnect the battery after a vehicle repair

WARNING

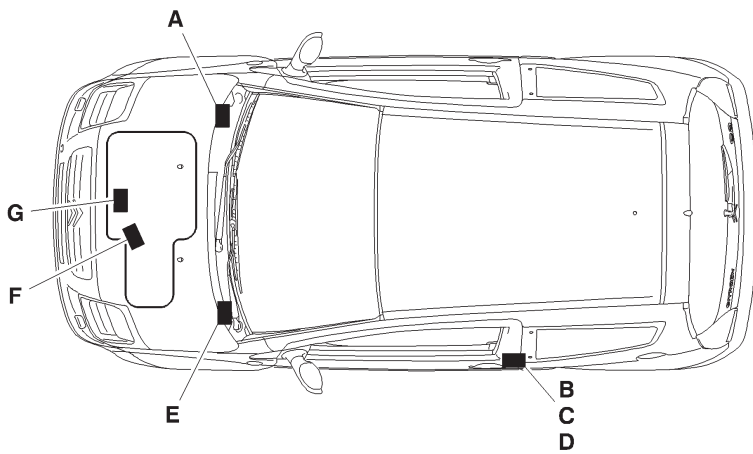
If the battery has been disconnected, after reconnecting it is **ESSENTIAL** to wait **1 minute** before switching on the ignition, otherwise the engine ECU will lock up.

If the ECU has locked up :

- Switch off the ignition.
- Wait **1 minute**.
- Switch the ignition back on, the ECU is unlocked.

IDENTIFICATION OF VEHICLES

C2



A - Cold stamp
(Cold stamp engraved on the bodywork)

B - Manufacturer's name plate
(On the LH centre pillar)

C - AS/RP No. and RP paint code
(On the LH centre pillar)

D - Tyre pressures and tyre type
(On the LH centre pillar)

E - Serial number on bodywork

F - Gearbox ident. reference – Factory serial no.

G - Engine legislation type– Factory serial no.

E1AP0C3D

GENERAL

C2	IDENTIFICATION OF VEHICLES						
	1.1i		1.4i			1.6i 16V	
	Pack - Pack ambiance		Pack ambiance - VTR - Exclusive			VTR	
Emission standard	L4	IFL5	L4	IFL5			
Type code	JM HFXB	JM HFXC/IF (*)	JM KFVB/P	JM KFVC/PIF (**)	JM KFVC/IF (*)	JM NFUC/PIF (*)	
Engine type	HFX		KFV			NFU	
Cubic capacity (cc)	1124		1360			1585	
Fiscal rating (hp)	4		5			6	
Gearbox type	MA/5S		MA/5N		MA/5L		
Gearbox ident. plate	20 CF 20 (m) (4) RPO 9688 → 9784 20 CP 20 RPO 9919 →		20 CF 21 (mp) (3) RPO 9688 → 9784 20 CP 21 RPO 9786 →		20 CF 25 (1) (m) (4) (5)	20 CF 16 (2) (m) (4) (6)	20 CN 48 (mp) (3) (7)
<p>(1) = Europe. (*) = IF. (3) mp = Piloted manual gearbox (2) = DAIC. (**) = PIF. (4) m = Manual gearbox</p> <p>(5) = 20 CF 25 RPO 9919 → 9784 20 CP 24 RPO 9919 → (6) = 20 CF 16 RPO 9688 → 9784 20 CP 16 RPO 9919 → (7) = 20 CN 48 RPO 9688 → 9784 20 CP 64 RPO 9786 → (8) = 20 CN 50 RPO 9688 → 9784 20 CP 66 RPO 9786 →</p>							

IDENTIFICATION OF VEHICLES					C2
	1.4 HDi Pack - Pack ambiance - Exclusive				
Emission standard	L4		IFL5		
Type code	JM 8HXB		JM 8HXC/IF (*)	JM 8HXC/PIF (**)	
Engine type	8HX				
Cubic capacity (cc)	1398				
Fiscal rating (hp)	4				
Gearbox type	MA/50				
Gearbox ident. plate	20 CN 51 (1) (m) (4) (5)	20 CN 33 (2) (m) (4) (6)	20 CN 51 (1) (m) (4) (5)	20 CN 33 (2) (m) (4) (6)	20 CN 49 (mp) (3) (7)
<p>(1) = Europe. (*) = IF. (3) mp = Piloted manual gearbox (2) = DAIC. (**) = PIF. (4) m = Manual gearbox</p> <p>(5) = 20 CN 51 RPO 9688 → 9784 20 CP 67 RPO 9919 → (6) = 20 CN 33 RPO 9688 → 9784 20 CP 54 RPO 9919 → (7) = 20 CN 49 RPO 9688 → 9784 20 CP 65 RPO 9786 →</p>					

GENERAL

C2 - C3

OPERATIONS TO BE CARRIED OUT AFTER A REPAIR

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.

Tailgate.

The opening of the tailgate is deactivated on reconnection of the battery.
Perform locking/unlocking to activate the opening of the tailgate.

Overspeed check.

The vehicle's overspeed values have to be re-initialised.

The button on the wiper stalk (*multifunction display B or C*) or the button on the dashboard (*multifunction display A or clock*) operates the following functions:

- Activation of the vehicle's overspeed function.
- Programming of the overspeed alert.

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.

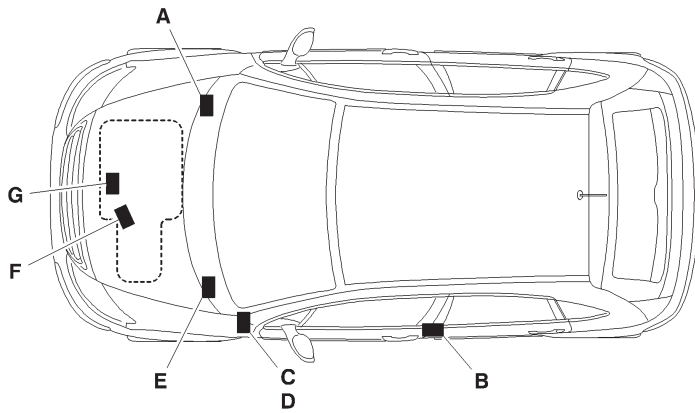
Action and release the window switch until the window is completely closed.

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

OPERATIONS TO BE CARRIED ORT AFTER A REPAIR	C2
<p>Sun roof. The anti-pinch function has to be re-initialised. Place the sun roof switch in the maximum tilt position. Keep the sun roof switch pressed until the sun roof ceases its movement. Release the sun roof switch within 5 seconds. Keep the sun roof switch pressed until the end of the sun roof opening sequence.</p> <p>Multifunction screen. It is necessary to adjust the date, time and ortside temperature. Adjust the display language of the multifunction screen if necessary. NOTE: The default display language of the multifunction screen is French.</p> <p>Navigation. Warning, the vehicle has to be in the open air (<i>on switching on the ignition, the ECU searches for satellites</i>). Vehicle location is only effective after some ten minutes. Reprogramme the customer paramanders.</p> <p>Radio. Reprogramme the radio stations.</p> <p>Radiotelephone RT3. Reprogramme the radio stations.</p>	

C3

IDENTIFICATION OF VEHICLES



A - Cold stamp
(Cold stamp engraved on the bodywork).

B - Manufacturer's name plate
(On the LH centre pillar)

C - AS/RP No. and RP paint code.
(label affixed to the front pillar on driver's side)

D - Tyre pressures and tyre type.
(label affixed to 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.

E1AP09HD

IDENTIFICATION OF VEHICLES								C3	
	Petrol								
	1.1i								
	Pack - Pack ambiance				Entreprise Pack		Pack - Pack ambiance		
Emission standard	K'	L4/INF	L4				IFL5		
Type code	FC HFX5	FC HFXB/D	FC HFXB	FN HFXB	FC HFXB/T	FR HFXB	FC HFXC/IF	FN HFXC/IF	
Engine type	HFX								
Cubic capacity (cc)	1124								
Fiscal rating (hp)	4								
Gearbox type	MA/5N								
Gearbox ident. plate	20 CP 14 (m) (1) (*)								
(1) m = Manual gearbox (*) EXPORT and DAIC = 20 CP 17 (14x60) (21x18).									

GENERAL

C3	IDENTIFICATION OF VEHICLES									
	PETROL									
	1.4i									
	AUTO.									
	Pack - Pack ambiance - Pack clim - Exclusive									
Emission standard	L4/INF	L4		IFL5		L4/INF	L4		IFL5	
Type code	FC KFVB/D	FC KFVB	FN KFVB	FC KFVC/IF	FN KFVC/IF	FC KFVE/D	FN KFVE	FC KFVE	FC KFVF/IF	FN KFVF/IF
Engine type	KFV									
Cubic capacity (cc)	1360									
Fiscal rating (hp)	5									
Gearbox type	MA/5L	MA/5N				AL4				
Gearbox ident. plate	20 CP 15 (m) (1) (*)					20 TP 75				
(1) m = Manual gearbox										
(*) EXPORT = 20 CP 16 (m) (1).										

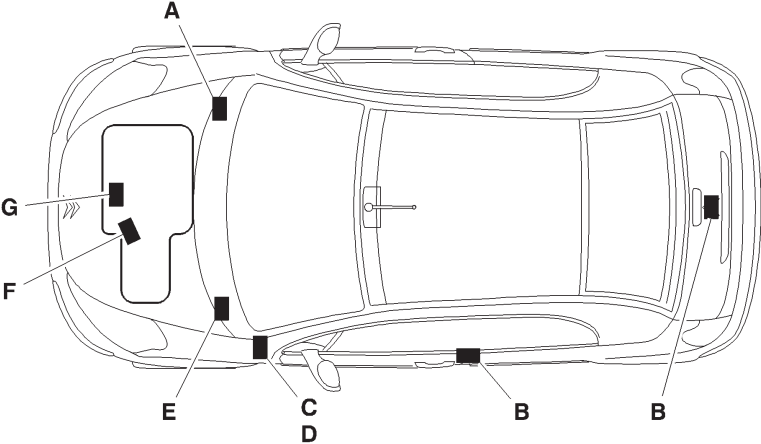
IDENTIFICATION OF VEHICLES						C3
	PETROL					
	1.4i 16V			1.6i 16V		
	SensoDrive			Pack ambiance - Pack clim - Exclusive		
Emission standard	L5			L4	IF/L5	
Type code	FC KFUC/P	FC KFUN/P	FN NFUB	FC NFUB	FC NFUC/IF	FC NFUC/PIF
Engine type	KFU			NFU		
Cubic capacity (cc)	1360			1587		
Fiscal rating (hp)	6					
Gearbox type	MA/5S					
Gearbox ident. plate	20 CP 56 (mp) (2)			20 CP 58 (m) (1) 20 CP 56 (mp) (2)		
(1) m = Manual gearbox (2) mp = Piloted manual gearbox						

GENERAL

C3	IDENTIFICATION OF VEHICLES							
	Diesel							
	1.4 HDi							
	Entreprise				Pack			
	Entreprise							
	club							
	Entreprise							
	Pack							
Emission standard	L4							
Type code	FC 8HXB/T	FN 8HXB	FC 8HXB	FC 8HXB/MOD	FC 8HXK	FR 8HXB	FN 8HWB	FC 8HWB
Engine type	8HX						8HW	
Cubic capacity (cc)	1398							
Fiscal rating (hp)	4							
Gearbox type	MA/50							
Gearbox ident. plate	20 CP 54 (m) (1) (*)				20 CP 65 (mp) (2)			
(1) m = Manual gearbox (2) mp = Piloted manual gearbox (*) EXPORT and DAIC = 20 CP 55 (m) (1) and 20 CP 72 (m) (1).								

IDENTIFICATION OF VEHICLES								C3
	Diesel							
	1.4 HDi 16V							
	Pack - Pack ambiance - Pack clim Exclusive			Pack clim		Pack - Pack ambiance - Pack clim Exclusive		
Emission standard	L4							
Type code	FC 8HVB	FN 8HVB	FC 8HYB	FC 8HYB/T	FC 8HYB/MOD	FC 8HYK	FN 8HYB	FR 8HYB
Engine type	8HV		8HY					
Cubic capacity (cc)	1398							
Fiscal rating (hp)	5							
Gearbox type	BE4/5L							
Gearbox ident. plate	20 DM 25 (m) (1)		20 DM 26 (m) (1)					
(1) m = Manual gearbox								

GENERAL

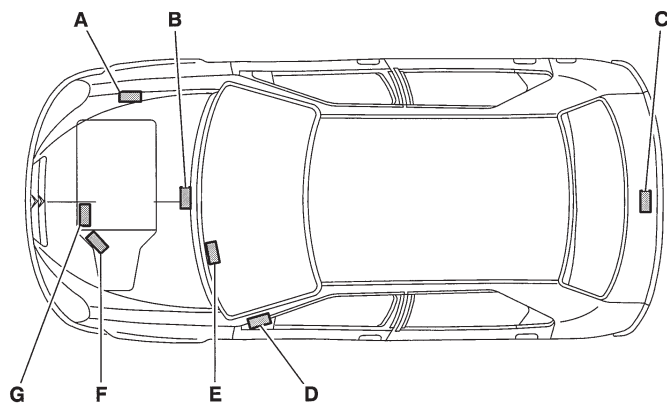
C3 PLURIEL	IDENTIFICATION OF VEHICLES
	<p>A - Cold stamp (Cold stamp engraved on the bodywork).</p> <p>B - Manufacturer's name plate (On the LH centre pillar)</p> <p>C - AS/RP No. and RP paint code. (label affixed to the front pillar on driver's side)</p> <p>D - Tyre pressures and tyre type. (label affixed to the front pillar on driver's side)</p> <p>E - Serial number on bodywork.</p> <p>F - Gearbox ident. reference – Factory serial no.</p> <p>G - Engine legislation type– Factory serial no.</p>
E1AP0B2D	

IDENTIFICATION OF VEHICLES				C3 PLURIEL
	Petrol			Diesel
	1.4i	1.6i 16V	1.4 HDi	
			SensoDrive	
Emission standard	L4	IF/L5	IF/L5	
Type code	HB KFVB	HB KFVC/IF	HB NFUC/IF	HB 8HXB
Engine type	KFV		NFU	8HX
Cubic capacity (cc)	1360		1587	1398
Fiscal rating (hp)	5		6	4
Gearbox type	MA/5N		MA/5S	MA/50
Gearbox ident. plate	20 CP 60 (m) (1)		20 CP 63 (mp) (2)	20 CP 71 (m) (1)
(1) m = Manual gearbox (2) mp = Piloted manual gearbox				

GENERAL

XSARA II

IDENTIFICATION OF VEHICLES



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.

E1AP08WD

IDENTIFICATION OF VEHICLES					XSARA II	
	Saloon petrol 3-door					
	1.4i		1.6i 16V			
	Océanic Pack	X - VTR	Pack VTR - VTS	AUTO.	AUTO.	
				SX	VTR - VTS	VTR
Emission standard	L4	L5/IF	L4		L5/IF	
Type code	NO KFWB	NO KFW1/IF	NO NFUB	NO NFUN	NO NFU1/IF	NO NFU3/IF
Engine type	KFW		NFU			
Cubic capacity (cc)	1360		1581			
Fiscal rating (hp)	5		7			
Gearbox type	MA/5		MA/5	AL4	MA/5	AL4
Gearbox ident. plate	20 CP 13		20 CP 51 (*)	20 TP 49	20 CP 51 (*)	20 TP 49
(*) NFU DAIC = 20 CP 52 (14x60) (21x18).						

GENERAL

XSARA II	IDENTIFICATION OF VEHICLES			
	Saloon petrol 3-door			
	2.0i 16V			
	<div style="border: 1px solid black; padding: 2px; display: inline-block;">AUTO.</div>			
	VTS			
Emission standard	L5/IF	L4/IF	L5/IF	L4
Type code	NO RFN1/IF	NO RFNN/IF	NO RFN3/IF	NO RFSB
Engine type	RFN			RFS
Cubic capacity (cc)	1998			
Fiscal rating (hp)	8	9	11	
Gearbox type	BE4/5	AL4	BE3/5	
Gearbox ident. plate	20 DL 40 20 DM 03 (1)	20 TP 47	20 TE 47	
(1) = Right hand drive : Hydraulic clutch control.				

IDENTIFICATION OF VEHICLES					XSARA II
	Saloon diesel 3-door				
	1.4 HDi	1.9 D	2.0 HDi		
	Pack	Océanic Pack club	Océanic - Pack VTR - VTS		AUTO. SX
Emission standard	L4				
Type code	N0 8HZB	N0 WJYB	N0 RHYB	N0 RHZB	N0 RHZN
Engine type	8HZ	WJY	RHY	RHZ	
Cubic capacity (cc)	1398	1868	1997		
Fiscal rating (hp)	4	5		6	
Gearbox type	BE4/5				AL4
Gearbox ident. plate	20 DM 54	20 DL 41 20 DM 05 (1)	20 DL 42 20 DM 07 (1) (*)	20 DM 10 20 DM 11 (1)	20 TP 48
<p>(1) = Right hand drive : Hydraulic clutch control. (*) DAIC DAD = 20 DM 08.</p>					

GENERAL

XSARA II	IDENTIFICATION OF VEHICLES					
	Saloon petrol 5-door					
	1.4i		1.6i 16V			
	Pack		Océanic - Pack Exclusive	AUTO. Exclusive	AUTO. X - SX Exclusive	
Emission standard	L4	L5	L4		L5/IF	
Type code	N1 KFW1/IF	N1 KFW1/IF	N1 NFUB	N1 NFUN	N1 NFU1/IF	N1 NFU3/IF
Engine type	KFW		NFU			
Cubic capacity (cc)	1360		1587			
Fiscal rating (hp)	5		7		8	
Gearbox type	MA/5		MA/5	AL4	MA/5	AL4
Gearbox ident. plate	20 CP 13		20 CP 51 (*)	20 TP 49	20 CP 51 (*)	20 TP 49
(*) NFU DAIC = 20 CP 52 (14x60) (21x18).						

IDENTIFICATION OF VEHICLES			XSARA II
	Saloon petrol 5-door		
	2.0i 16V		
	AUTO.		
	Exclusive		
Emission standard	L5/IF	L4	L5/IF
Type code	N1 RFN1/IF	N1 RFNN	RFN3/IF
Engine type	RFN		
Cubic capacity (cc)	1998		
Fiscal rating (hp)	8	9	
Gearbox type	BE4/5	AL4	
Gearbox ident. plate	20 DL 40 20 DM 03 (2)	20 TP 47	
(1) = Right hand drive : Hydraulic clutch control. (2) = Right hand drive : Hydraulic clutch control.			

GENERAL

XSARA II	IDENTIFICATION OF VEHICLES				
	Saloon diesel 5-door				
	1.4 HDi 16V	1.9 D	2 HDi		
	Pack - Leader	Océanic - Pack	Océanic - Leader - Leader Pack - Exclusive		
Emission standard	L4				
Type code	N1 8HZB	N1 WJYB	N1 RHYB	N1 RHZB	N1 RHZN
Engine type	8HZ	WJY	RHY	RHZ	
Cubic capacity (cc)	1398	1868	1997		
Fiscal rating (hp)	4	5		6	
Gearbox type	BE4/5				AL4
Gearbox ident. plate	20 DM 54	20 DL 41 20 DM 05 (1)	20 DL 42 20 DM 07 (1) (*)	20 DM 10 20 DM 11 (1)	20 TP 48
(1) = Right hand drive : Hydraulic clutch control. (*) DAIC DAD = 20 DM 08.					

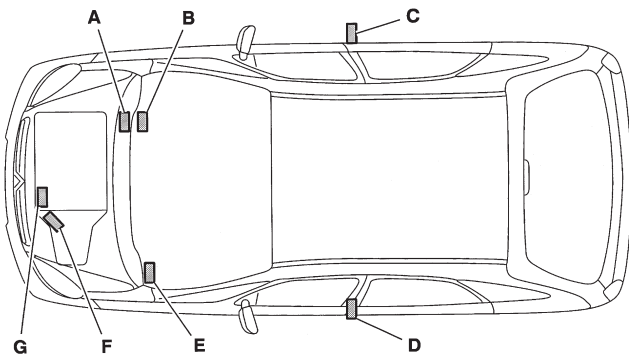
IDENTIFICATION OF VEHICLES					XSARA II	
	Estate petrol					
	1.4i			1.6i 16V		
	X - Pack			Océanic - Pack Exclusive		AUTO.
				Exclusive		Exclusive
Emission standard	L4	L5/IF	L4		L5/IF	
Type code	N2 KFWB	N2 KFW1/IF	N2 NFUB	N2 NFU1/IF	N2 NFUN	N2 NFU3/IF
Engine type	KFW		NFU			
Cubic capacity (cc)	1360		1581			
Fiscal rating (hp)	5		7			
Gearbox type	MA/5		MA/5		AL4	
Gearbox ident. plate	20 CP 44		20 CP 51 (*)		20 TP 49	

GENERAL

XSARA II	IDENTIFICATION OF VEHICLES							
	Estate petrol				Estate diesel			
	2.0i 16V			1.4 HDi	1.9 D	2.0 HDi		
	AUTO.					AUTO.		
	Exclusive			X - Pack	Océanic Pack	Océanic - Pack - Exclusive		
Emission standard	L5/IF	L4						
Type code	N2 RFN1/IF	N2 RFNN	N2 RFN3/IF	N2 8HZB	N2 WJYB	N2 RHYB	N2 RHZB	N2 RHZN
Engine type	RFN			8HZ	WJY	RHY	RHZ	
Cubic capacity (cc)	1998			1398	1868	1997		
Fiscal rating (hp)	8		9	4	5		6	
Gearbox type	BE4/5		AL4	BE4/5				AL4
Gearbox ident. plate	20 DL 40 20 DM 03 (1)		20 TP 47	20 DM 54	20 DL 41 20 DM 05 (1)	20 DL 42 20 DM 07 (1) (*)	20 DM10 20 DM 11 (1)	20 TP 48
(1) = Right hand drive : Hydraulic clutch control. (*) DAIC DAD = 20 DM 08.								

IDENTIFICATION OF VEHICLES

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 :
- Tyre pressures.
- Tyre identification.
- Spare wheel identification.
(Located on front LH door inner panel).
- E** - Label :
- Factory code.
- A-S / RP N°
- Paint code.
(Located on fuse box cover)
- F** - Gearbox identification ref.
- G** - Engine legislation type.
Factory serial number.

E1AP088D

GENERAL

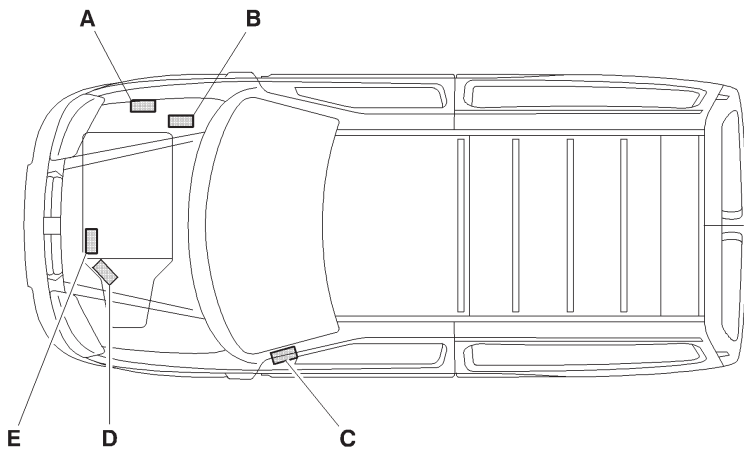
XSARA PICASSO		IDENTIFICATION OF VEHICLES		
	Petrol			
	1.6i	1.8i 16V		2.0i 16V
				AUTO.
	Océanic - Pack	Océanic - Pack - Exclusive		Exclusive
Emission standard	L4		IFL5	
Type code	CH NFVB	CH 6FZB	CH 6FZC/IF	CH RFNF/IF
Engine type	NFV	6FZ		RFN
Cubic capacity (cc)	1587	1749		1998
Fiscal rating (hp)	6	7		9
Gearbox type	BE4/5/ J (*)	BE4/5 V (*)		AL4
Gearbox ident. plate	20 DL 67	20 DL 69		20 TS 02
(*) L,J,V = Corresponds to the stepping of the gears.				

IDENTIFICATION OF VEHICLES			XSARA PICASSO
	Diesel		
	1.6 HDi 16V	2.0 HDi Océanic - Leader - Pack - Exclusive	
Emission standard	L4		
Type code	CH 9HZC	CH 9HYB	CH RHYB
Engine type	9HZ (*)	9HY (**)	RHY
Cubic capacity (cc)	1560		1997
Fiscal rating (hp)		6	5
Gearbox type	BE4/5L		BE4/5L
Gearbox ident. plate	20 DM 62		20 DL 65
(*) = With particle filter (FAP). (**) = Withort particle filter (FAP).			

GENERAL

BERLINGO

IDENTIFICATION OF VEHICLES



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

IDENTIFICATION OF VEHICLES			BERLINGO
	Berlingo petrol 5-seater		
	1.1i	1.4i	
	X	X - SX - Multispace	
Emission standard	L4/W4	L4/W4	IFL5
Type code	GJ HFXB	GJ KFWB	GJ KFWC/IF
Engine type	HFX	KFW	
Cubic capacity (cc)	1124	1360	
Fiscal rating (hp)	5	6	
Gearbox type	MA/5S	MA/5L	
Gearbox ident. plate	20 CD 43	20 CN 13	

GENERAL

BERLINGO	IDENTIFICATION OF VEHICLES			
	Berlingo petrol 5-seater			
	1.4i		1.6i 16V	
	Dual fuel		X - SX - Multispace	
	Multispace			
Emission standard	L4			IFL5
Type code	GJ KFWB/GL (1)	GJ KFWB/GN (2)	GJ NFUB	GJ NFUC/IF
Engine type	KFW		NFU	
Cubic capacity (cc)	1360		1587	
Fiscal rating (hp)	5		7	
Gearbox type	MA/5		BE4/5	
Gearbox ident. plate	20 CN 13		20 DM 46	
<p>(1) GL = LPG = Liquefied Petroleum Gas, with ring-shaped tank. (2) GN = CNG = Compressed Natural Gas, with cylindrical tank.</p>				

IDENTIFICATION OF VEHICLES			BERLINGO
	Berlingo diesel 5-seater		
	1.9 D	2.0 HDi	
	X - SX - Multispace	X - SX - Multispace	
Emission standard	L4		
Type code	GJ WJYB	GJ WJYB/PMF (1)	GJ RHYB
Engine type	WJY		RHY
Cubic capacity (cc)	1868		1997
Fiscal rating (hp)	5		6
Gearbox type	BE4/5		BE4/5
Gearbox ident. plate	20 DM 48		20 DM 50
(1) /PMF = Multifunction roof.			

GENERAL

CAPACITIES (in litres)**Draining mandhod.**

The oil capacities are defined according to the following mandhods.

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

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

CAPACITIES (in litres)					C2
	C2				
	Petrol			Diesel	
	1.1i	1.4i	1.6i 16V	1.4 HDi	
Engine type	HFX	KFV	NFU	8HX → RPO 9884	8HX RPO 9885 →
Drain by gravity : engine with filter change	3		3,25	3,75	
Bandween min. and max.	1,5			1,8	1,5
MA5 5-speed gearbox	2				
MA5 piloted 5-speed gearbox	2 ± 0,15				
Braking circuit	0,7 Litre version with front calipers Ø 48 / rear drums 0,8 Litre version with front calipers Ø 54 / rear discs				
Cooling system	7			5,6	
Fuel tank capacity	40			45	
ESSENTIAL: Systematically check the oil level using the oil dipstick.					

GENERAL

	CAPACITIES (in litres)												
	C3												
	Petrol					Diesel							
	1.1i	1.4i		1.4i 16V	1.6i 16V	1.4 HDi				1.4 HDI 16V			
		AUTO.			→ RPO 9884	RPO 9885 →	→ RPO 9884	RPO 9885 →					
Engine type	HFX	KFV		KFU	NFU	8HX	8HW	8HX	8HW	8HV	8HY	8HV	8HY
Drain <u>by gravity</u> : engine with filter change	3			3,75	3,25	3,75							
Bandween min. and max.	1,5			1,2	1,5	1,8		1,5		1,8		1,5	
Drain <u>by suction</u> : engine with filter change	3,1				3,1								
Bandween min. and max.	1,5				1								
5-speed gearbox	2					2				1,9			
Automatic gearbox													
After oil change			(1)										
Braking circuit	0,7 Litre version with front calipers Ø 48 / rear drums 0,8 Litre version with front calipers Ø 54 / rear discs												
Cooling system	7				7	5,7				5,6			
Fuel tank capacity	45												

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

(1) = The gearbox is **lubricated for life**. (For yorr information, the TOTAL capacity is **5,85 litres**, after draining: **3 litres**).

CAPACITIES (in litres)			C3 PLURIEL
	C3 Pluriel		
	Petrol		Diesel
	1.4i	1.6i 16V	1.4 HDi
Engine type	KFV	NFU	8HX
Drain <u>by gravity</u> : engine with filter change	3	3,25	3,75
Bandween min. and max.	1,5	1,5	1,5
5-speed gearbox	2		
Braking circuit	0,7 Litre version with front calipers Ø 48 / rear drums 0,8 Litre version with front calipers Ø 54 / rear discs		
Cooling system	7		5,7
Fuel tank capacity	45		
<p>ESSENTIAL: systematically check the oil level using the oil dipstick.</p> <p>(1) = The gearbox is lubricated for life. (For yorr information, the TOTAL capacity is 5,85 litres, after draining : 3 litres)</p>			

XSARA II	CAPACITIES (in litres)					
	XSARA II					
	Petrol					
	1.4i	1.6i 16V		2.0i 16V		
		AUTO.		AUTO.		
Engine type	KFW	NFU		RFN		RFS
Engine with filter element	3	3,25		4,25		
Bandween min. and max.	1,5	1,5		1,7		1
5-speed gearbox	2			1,9		1,9
Automatic gearbox			6		6	
After drainage			3		3	
Hydraulic or brake circuit	With ABS = 0,50 - Without ABS = 0,55					
Cooling system	7 6,5 (1)					
Fuel tank capacity	54					
ESSENTIAL: Systematically check the oil level using the oil dipstick.						

IDENTIFICATION OF VEHICLES					XSARA II	
	XSARA II					
	Diesel					
	1.4 HDi		1.9 D		2.0 HDi	
	→ RPO 9884	RPO 9885 →				AUTO.
Engine type		8HZ	WJY		RHY	RHZ
Engine with filter element	3,75		4,75 (1)	4,5 (2)	4,5	
Bandween min. and max.	1,8	1,5	1,6 (1)	1,2 (2)	1,4	
5-speed gearbox	2		1,8			
Automatic gearbox					8,3	
After drainage					5,3	
Hydraulic or brake circuit	With ABS = 0,50 - Without ABS = 0,55					
Cooling system	5,7		9		8,5	
Fuel tank capacity	54					
<p>(1) = → RPO 9337 (Manual dipstick with two twists) (2) = RPO 9338 → (Manual dipstick without twists but with a sphere) ESSENTIAL: Systematically check the oil level using the oil dipstick.</p>						

GENERAL

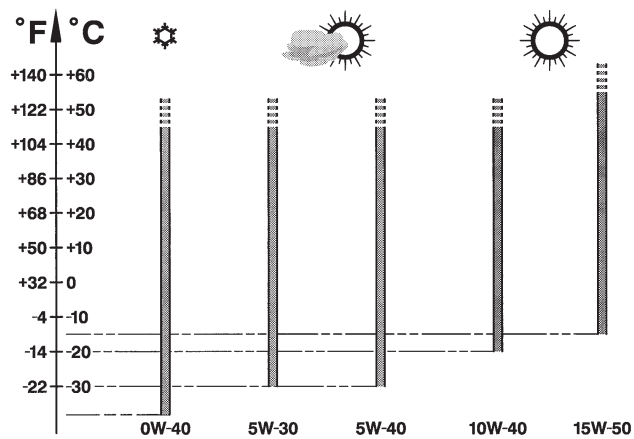
XSARA PICASSO		CAPACITIES (in litres)				
	XSARA PICASSO					
	Petrol			Diesel		
	1.6i	1.8i 16 V	2.0i 16V AUTO.	1.6 16V HDi	2.0 HDi	
Engine type	NFV	6FZ	RFN	9HZ	9HY	RHY
Engine with filter element	3	4,25		3,75		4,5
Bandween min. and max.	1,5	1,7		1,55 (3)		1,4
5-speed gearbox	1,8					1,8
Automatic gearbox			6			
After drainage			3			
Hydraulic or brake circuit	0,58 litres					
Cooling system	5,8 (1) and (2)	6,5 (1) and (2)		11		11 (1) and (2)
Fuel tank capacity	55			60		
(1) = With air conditioning (2) = Withort air conditioning (3) = RPO 9884 → = Restyled XSARA PICASSO.						
ESSENTIAL: Systematically check the oil level using the oil dipstick.						

CAPACITIES (in litres)				BERLINGO II	
	Berlingo 2				
	Petrol			Diesel	
	Ecological oil filter capacity 0.15 litre.				
	1.1i	1.4i	1.6i 16V	1.9 D	2.0 HDi
Engine type	HFX	KFW	NFU	WJY	RHY
Moteur avec cartorche	3		3,25	4,5	
Bandween min. and max.	1,5			1,2	1,4
5-speed gearbox	2		1,8	1,8	
Hydraulic or brake circuit	With ABS = 0,45 - Without ABS = 0,36				
Cooling system	8			9	
Fuel tank capacity	55			60	
ESSENTIAL: Systematically check the oil level using the oil dipstick.					

ALL TYPES	LUBRICANTS - TOTAL recommended oils
<p>Evolutions (year 2004).</p> <p>CITROËN C2, C3 PLURIEL, DISPATCH and DV6 engines.</p> <p>Only petrol versions are available.</p> <p>Normal maintenance interval: 30 000 km (20 000 miles). Severe maintenance interval: 20 000 km (12 000 miles).</p> <p>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.</p>	<p>Use of oil grade 10W 40. It is possible to use semi-synthetic oil 7000 10W40 on PETROL and DIESEL vehicles.</p> <p>WARNING: To avoid problems with starting from cold, use this oil as allowed by the climatic conditions in the country concerned (<i>see table</i>).</p> <p>For more details see the oil usage table.</p> <p>New commercial designation for energy economy oil. The oil TOTAL ACTIVA/QUARTZ 9000 5W30 becomes TOTAL ACTIVA FUTUR 9000 (<i>for France</i>), QUARTZ FUTURE 9000 5W30 (<i>outside France</i>). The usage exclusions for this oil are the same as before:</p> <ul style="list-style-type: none"> - XSARA VTS 2.0i 16V (XU10J4RS) - RELAY 2.8 TDi ; 2.8 HDi (SOFIM engine) - HDi FAP vehicles - C3 1.6i 16V (DV4TED4) - C8 2.2i (EW12J4)

LUBRICANTS - TOTAL recommended oils

ALL TYPES



Engine oil norms.

Current norms.

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

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

E4AP006D

GENERAL

ALL TYPES	LUBRICANTS - TOTAL recommended oils
<p>S.A.E. Norms - Table for selection of engine oil grade Selection of engine oil grades recommended for climatic conditions in countries of distribution. Evolution of the norms as at 01/01/2003</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p>ACEA 2003 norms The meaning of the first landter 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 landter corresponds to the type of oil: 3: high performance oils. 4: oils specifically for direct injection diesel engines. 5: very high performance oils permitting lower fuel consumption. Example: ACEA A3: high performance oils specifically for petrol and dual fuel petrol / LPG engines. ACEA A/B: blended oils giving very high performance for all engines, also permitting bandter 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 (<i>example: ACEA A3/B3 98 becomes ACEA A3/B3</i>).</p> </div> <div style="width: 48%;"> <p>API norms The meaning of the first landter has not changed, it still corresponds to the type of engine: S: petrol and dual fuel petrol / LPG engines. C: diesel engines. The second landter corresponds to the degree of evolution of the oil (<i>ascending order</i>). Example: Norm SL is more severe than norm SJ, corresponding to a higher level of performance.</p> </div> </div>	

LUBRICANTS - TOTAL recommended oils**ALL TYPES****Recommendations.**

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

CITROËN engines are lubricated at the factory with **TOTAL** oil of grade **S.A.E.5W-30**.
TOTAL oil of grade **S.A.E.5W-30** allows improved fuel economies (*approx 2.5%*).

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

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

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

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

TOTAL ACTIVA (*France only*).

TOTAL QUARTZ (*outside France*).

ALL TYPES

LUBRICANTS - TOTAL recommended oils

Récapitulation

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

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

Classes and grades of TOTAL recommended engine oils.

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

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

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

LUBRICANTS - TOTAL recommended oils

ALL TYPES

Oils specifically for petrol and dual fuel petrol / LPG engines			
	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	10W40	A3	SJ
TOTAL QUARTZ 9000	0W40		
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	15W50		

Oils specifically for diesel engines			
	S.A.E. norms	ACEA norms	API norms
TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	10W40	B3	CF
TOTAL ACTIVA DIESEL 7000	15W50		

GENERAL

ALL TYPES

LUBRICANTS - TOTAL recommended oils

Oil usage table

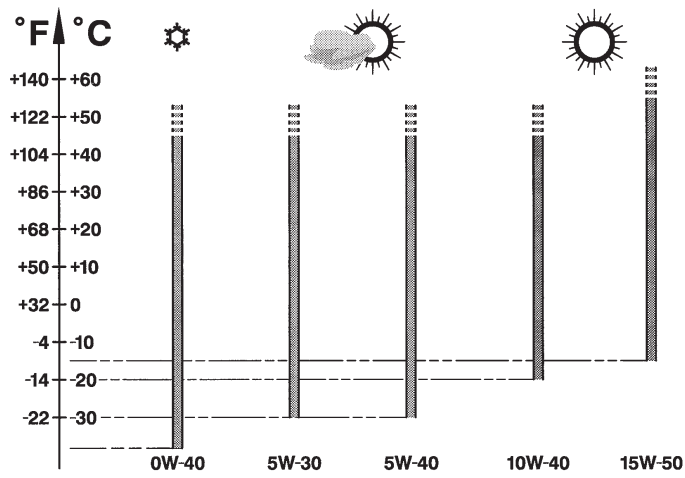
Engine types		TOTAL ACTIVA QUARTZ				
		Synthetic 9000			Semi-synthetic 7000	
		0W40 cold contries	5W30	5W40	10W40	15W50 hot countries
Petrol engines	XU10 J4RS (Xsara VTS 2.0i 16V)	X		X	X	X
	EW 12 J4 (C8 2.2i 16V)	X		X	X	X
	Other petrol engines	X	X	X	X	X
Diesel engines	HDi engines with FAP (*)			X	X	X
	Other HDi engines		X	X	X	X
	SOFIM 2.8 TDi and 2.8 HDi (RELAY)			X	X	X
	DV4 TED4 (C3 1.4 16V HDi)			X	X	X
	Indirect injection diesel engines		X	X	X	X

(*) = Particle filter

LUBRICANTS - TOTAL recommended oils

ALL TYPES

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



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GENERAL

ALL TYPES	LUBRICANTS - TOTAL recommended oils		
FRANCE	ENGINE OILS		
	Blended oils for all engines, supplied in bulk		
Metropolitan FRANCE	TOTAL ACTIVRAC	S.A.E. norms : 10W40	
	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Metropolitan FRANCE	9000 5W40 9000 5W30 (*)	7000 10 W40	7000 10 W40 9000 5W40
New Caledonia	9000 5W40	7000 15W50	7000 15W50
Guadeloupe			
Saint martin			
Réunion			
Martinique			
Guyana			
Tahiti			
Mauritius			
Mayotte			
(*) Blended oils for all engines, permitting fuel economy			

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

GENERAL

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

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

GENERAL

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

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

GENERAL

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

LUBRICANTS - TOTAL recommended oils			ALL TYPES
	ENGINE OILS		
OCEANIA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Australia New Zealand	9000 5W40 FUTURE 9000 5W30	7000 10W40	7000 10W40
AFRICA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Algeria, South Africa, Ivory Coast, Egypt, Gabon, Ghana, Kenya, Madagascar, Morocco, Nigeria, Senegal, Tunisia	9000 5W40	7000 15W50	7000 10W40

GENERAL

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
		ENGINE OILS		
CENTRAL AND SOUTH AMERICA		TOTAL ACTIVA		TOTAL ACTIVA DIESEL
		Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Argentina		9000 5W40	7000 10W50 7000 15W50	7000 10W40
Brazil				
Chile				
Cuba				
Mexico				
Paraguay				
Uruguay				

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

GENERAL

ALL TYPES		LUBRICANTS - TOTAL recommended oils		
		ENGINE OILS		
SOUTH-EAST ASIA	TOTAL ACTIVA		TOTAL ACTIVA DIESEL	
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines	
Philippines	9000 5W40	7000 15W50	7000 10W40	
Singapore				
Taiwan		7000 10W40 7000 15W50		
Thailand				
Vietnam		7000 15W50		

LUBRICANTS - TOTAL recommended oils			ALL TYPES
MIDDLE EAST	ENGINE OILS		
	TOTAL ACTIVA		TOTAL ACTIVA DIESEL
	Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
Saudi Arabia - Bahrain Dubai United Arab Emirates	9000 5W40	7000 15W50	7000 10W40
Iran		7000 10W40 7000 15W50	
Israel - Jordan - Kuwait Lebanon - Oman - Qatar - Syria - Yemen		7000 15W50	

GENERAL

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

LUBRICANTS - TOTAL recommended oils

ALL TYPES

POWER STEERING OILS

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

ENGINE COOLANT FLUID

	Pack	CITROËN Part No.	
		GLYSANTIN G33	REVKOGEL 2000
All countries	2 Litres	9979 70	9979 72
	5 Litres	9979 71	9979 73
	20 Litres	9979 76	9979 74
	210 Litres	9979 77	9979 75

CITROËN fluid
Protection: - 35C°

GENERAL

ALL TYPES		LUBRICANTS - TOTAL recommended oils			
BRAKE FLUIDS					
Synthetic brake fluid					
		Pack		CITROËN Part No.	
All countries	CITROËN fluid	0,5 Litre		9979 05	
		1 Litre		9979 06	
		5 Litres		9979 07	
HYDRAULIC CIRCUIT					
All countries	Norm		Pack		CITROËN Part No.
TOTAL FLUIDE LDS	Colour	Orange	1 Litre		9979 69
TOTAL LHM PLUS		Green			ZCP 830095
TOTAL LHM PLUS Very cold countries					9979 20
WARNING: TOTAL FLUIDE LDS fluid cannot be blended with TOTAL LHM.					
WARNING: CITROËN C5: Use exclusively TOTAL FLUIDE LDS suspension fluid.					
All countries			TOTAL HYDRAURINCAGE		

LUBRICANTS - TOTAL recommended oils

ALL TYPES

SCREEN WASH FLUID

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

**GREASE
General use**

		Norms NLGI
All countries	TOTAL MULTIS 2	2
	TOTAL SMALL MECHANISMS	

Note: NLGI = National Lubricating Grease Institute.

GENERAL

ALL TYPES

ENGINE OIL CONSUMPTION

I - Oil consumption depends on:

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

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

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

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

- **0.5 litres per 600 miles (1,000 km)** for a **PETROL** engine.
 - **1 litre per 600 miles (1,000 km)** for a **DIESEL** engine.
- DO NOT 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						
	Engines: HFX - KFV - KFW - KFU					
	Petrol					
	All types					
	1.1i		1.4i		1.4i 16V	
Vehicle	C2/C3	BERLINGO II	C2/C3/C3 Pluriel	Xsara II/Berlingo II	C3	
Emission standard	L4/IFL5	L4/W4	L4/IFL5/INF	K'/L4/W4/IFL5	IFL5/L4	
Engine type	HFX		KFV	KFW	KFU	
Cubic capacity (cc)	1124		1360			
Bore / Stroke	72/69		75/77			
Compression ratio	10,5/1				11/1	
Power ISO or EEC KW - rpm	44-5500	44,1-5500	54-5400	55-5500	65-5250	
Power DIN (HP - rpm)	61-5500	60-5500	75-5400	75-5500	90-5250	
Torque ISO or EEC (m.daN - rpm)	94-3400	94-3300 94-3500	12-3400	12-2800	13,3-3250	

ENGINE SPECIFICATIONS						
	Engines: NFV - NFU - 6FZ - RFN - RFS					
	Petrol					
	All types					
	1.6i	1.6i 16V	1.8i 16V	2.0i 16V		
Vehicle	Xsara Picasso	C2/C3 Xsara C3 Pluriel Berlingo II	Xsara Picasso	Xsara II Xsara Picasso	Xsara II	
Emission standard	L4	L4/IFL5	IFL5	IFL4/IFL5	L4	
Engine type	NFV	NFU	6FZ	RFN	RFS	
Cubic capacity (cc)	1587		1749	1998		
Bore / Stroke	78,5/82	78/82	82,7/81,4	85/86		
Compression ratio	10,5/1	11/1	10,8/1	10,8/1		
Power ISO or EEC KW - rpm	70-5700	80-5800	85-5500	100-6000	120-6000	
Power DIN (HP - rpm)	95-5700	110-5800	115-5500	136-6000	163-6000	
Torque ISO or EEC (m.daN - rpm)	13,5-3000	14,7-4000	16-4000	19-4100	19,3-5000	

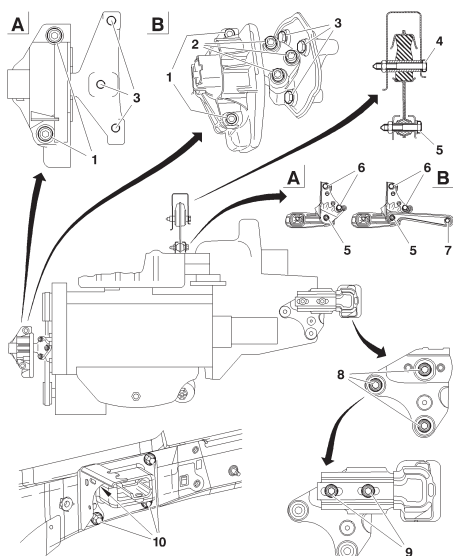
ENGINE SPECIFICATIONS					
	Engines: 8HX - 8HW - 8HZ - 8HV - 8HY				
	Diesel				
	All types				
	1.4 HDi			1.4 HDi 16V	
Vehicle	C2/C3/C3 Pluriel	C3	Xsara	C3	
Emission standard	L4/IFL5	L4			
Engine type	8HX	8HW	8HZ	8HV	8HY
Cubic capacity (cc)	1398				
Bore / Stroke	73/82		73,5/82	73/82	
Compression ratio	17,9/1			18,25/1	
Power ISO or EEC KW - rpm	50-4000			66-4000	
Power DIN (HP - rpm)	70-4000		69-4000	92-4000	
Torque ISO or EEC (m.daN - rpm)	15-2000		16-2000	20-2000	

ENGINE SPECIFICATIONS					
	Engines: 9HZ - 9HY - WJY - RHU - RHZ				
	Diesel				
	All types				
	1.6 HDi 16V	1.9 D		2.0 HDi	
Vehicle	Xsara Picasso		Xsara II	Berlingo II	Xsara II Xsara Picasso Berlingo II
Emission standard	L4				
Engine type	9HZ	9HY	WJY		RHY RHZ
Cubic capacity (cc)	1560		1868		1997
Bore / Stroke	88,3/75		82,2/88		85/88
Compression ratio	18/1		23/1		17,6/1
Power ISO or EEC KW - rpm	80-4000		51-4600		66-4000 80-4000
Power DIN (HP - rpm)	110-4000		71-4600		90-4000 109-4000
Torque ISO or EEC (m.daN - rpm)	24,5-2000		12,5-2500	10,5-2500	20,5-1900 25-1750

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C2

Engines: HFX - KFV - NFU



A = KFV

B = NFU

RH engine support

- (1) : $6 \pm 0,4$
- (2) : $6 \pm 0,6$
- (3) : $4,5 \pm 0,4$

Torque reaction rod

- (4) : $6 \pm 0,6$
- (5) : $6 \pm 0,6$
- (6) : $8,5 \pm 0,2$
- (7) : $6 \pm 0,6$

LH engine support on gearbox

- (8) : $3 \pm 0,3$
- (9) : $6 \pm 0,6$
- (10) : $5,5 \pm 0,5$

B1BP2Y3P

C2	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engines	HFX - KFV - NFU	
	Crankshaft	
Accessories drive pulley	2,5 ± 0,2	
Pinion fixing on crankshaft		
- Tightening	4 ± 0,4	
- Angular tightening	45° ± 4°	
	Cylinder block	
Sump	0,8 ± 0,2	
Timing belt tensioner roller	2,1 ± 0,2	
Accessories belt guide roller	2,5 ± 0,2	
Alternator support	2,5 ± 0,2	
Alternator TU1JP-TU3JP		
- Pre-tightening	1 ±	
- Tightening	3,7 ± 0,3	
Alternator TU5JP4		
- Pre-tightening	1 ±	
- Tightening	4 ± ,04	
Aircon compressor support	2,2 ± 0,2	
Aircon compressor	2,3 ± 0,2	

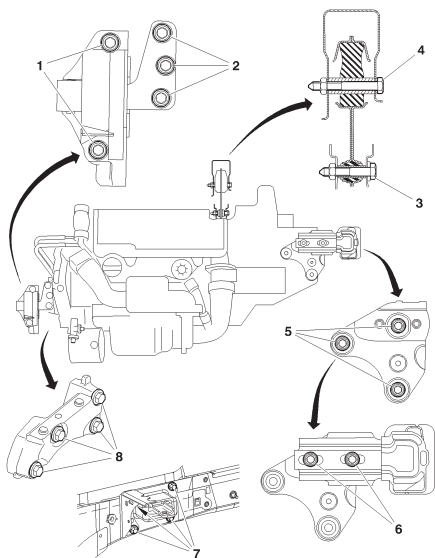
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C2
Engines	HFX - KFV - NFU	
	Cylinder head	
Coolant outlet housing		
- in plastic	0,8 ± 0,2	
- in aluminium	0,8 ± 0,2	
Camshaft bearing caps (TU1JP-TU3JP)		
- Tightening	2 ± 0,2	
- Angular tightening	44 °± 4°	
Camshaft bearing caps (TU5JP4)		
- Tightening	2 ± 0,2	
- Angular tightening	50° ± 5°	
Inlet manifold	0,8 ± 0,2	
Exhaust manifold	1,8 ± 0,4	
Valve rockers adjusting screw	1,75 ± 0,25	
Sparking plugs	3	
Camshaft pulley screw (TU1JP-TU3JP)	3,7 ± 0,2	
Camshaft pulley screw (TU5JP4)	4,5 ± 0,5	

C2	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)
Engines	HFX - KFV - NFU
	Flywheel - clutch
Engine flywheel	6,7 ± 1 (LOCTITE FRENATANCH)
Oil pressure mechanism	2 ± 0,2
	Lubrication Circuit
Oil pressure switch	3,5 ± 0,5
Oil pump	0,9 ± 0,1
	Cooling circuit
Coolant pump	1,6 ± 0,2

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C2

Engine: 8HX

(1) : $6 \pm 0,6$ (2) : $6 \pm 0,6$ (3) : $6 \pm 0,6$ (4) : $6 \pm 0,6$ (5) : $3 \pm 0,3$ (6) : $6 \pm 0,6$ (7) : $5,5 \pm 0,5$ (8) : $5,7 \pm 0,9$

B1BP2Y1P

C2	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engine	8HX	
	Crankshaft	
Bearing cap fixing screws		
Pre-tightening	1 ± 0,2	
Slackening	180°	
Tightening	3 ± 0,3	
Angular tightening	140°	
Con rod screws		
Tightening	1 ± 0,1	
Angular tightening	100° ± 5°	
Accessories drive pulley		
Pre-tightening	3 ± 0,3	
Angular tightening	180° ± 5°	
	Cylinder block	
Sump	1,3 ± 0,1	
Timing belt guide roller	2,3 ± 0,2	
Timing belt tensioner roller	3,7 ± 0,3	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C2
Engine	8HX	
	Cylinder head	
Camshaft bearing covers		
Pre-tightening	0,3 ± 0,1	
Tightening	1 ± 0,1	
Fixing of camshaft sub-assemblies on cylinder head		
Pre-tightening	0,3 ± 0,1	
Tightening	1 ± 0,1	
Exhaust manifold	3 ± 0,3	
Camshaft pulley		
Pre-tightening	0,3 ± 0,1	
Tightening	4,3 ± 0,4	
	Engine flywheel	
Flywheel		
Pre-tightening	1,7 ± 0,2	
Tightening	70° ± 5°	
Clutch mechanism	2 ± 0,2	

C2	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)	
Engine	8HX	
	Lubrication circuit	
Oil pump assembly		
Pre-tightening		0,5 ± 0,1
Tightening		0,9 ± 0,1
Coolant/oil heat exchanger		1 ± 0,1
	Diesel injection circuit	
Spherical-base screws for diesel injection fixing fork		2,5 ± 0,2
Fuel high pressure common injection rail on engine block		2,2 ± 0,2
Unions on fuel high pressure common injection rail		2,5 ± 0,2
Diesel injection pump on support		2,2 ± 0,2
Union on diesel injection		2,5 ± 0,2
Diesel injection pump pulley		5 ± 0,5
Union on diesel high pressure pump		2,5 ± 0,2
	Cooling circuit	
Coolant pump		
Pre-tightening		0,3 ± 0,1
Tightening		0,9 ± 0,1
Coolant outlet housing		
Pre-tightening		0,3 ± 0,1
Tightening		0,7 ± 0,1

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C3 - C3 PLURIEL
Engines: HFX - KFV - NFU		
	<p>C3</p> <p>A = HFX - KFV B = NFU</p> <p>RH engine support</p> <p>(1) : 4,5 ± 0,4 (2) : 6,1 ± 0,6 (3) : 4,5 ± 0,4</p> <p>Torque reaction rod</p> <p>(4) : 6 ± 0,6 (5) : 6 ± 0,6</p> <p>LH engine support on gearbox</p> <p>(6) : 3 ± 0,3 (7) : 6 ± 0,6 (8) : 5,5 ± 0,5</p>	<p>C3 Pluriel</p> <p>A = KFV B = NFU</p> <p>RH engine support</p> <p>(1) : 6 ± 0,4 (2) : 6 ± 0,6 (3) : 4,5 ± 0,4</p> <p>Torque reaction rod</p> <p>(4) : 6 ± 0,6 (5) : 6 ± 0,6</p> <p>LH engine support on gearbox</p> <p>(6) : 3 ± 0,3 (7) : 6 ± 0,6 (8) : 5,5 ± 0,5</p>
<p>B1BP2NEP</p>		

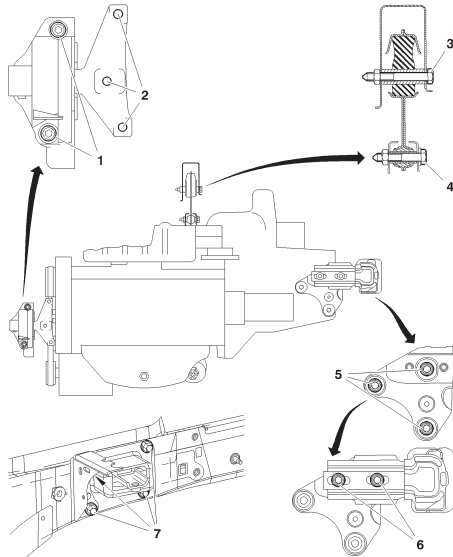
C3	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		
Engine types	Crankshaft		
	HFX	KFV	NFU
Accessories drive pulley	0,8 ± 0,2		
Pinion fixing on crankshaft	10 ± 1		2,5 ± 0,2
	Cylinder block		
Sump	0,8 ± 0,2		
Timing belt tensioner roller	2 ± 0,2		2,2 ± 0,2
Accessories belt tensioner roller	2 ± 0,2		2,5 ± 0,2
Alternator support fixing	1,7 ± 0,3		
Alternator fixing on support	3,7 ± 0,3		
	Cylinder head		
Coolant outlet housing	0,8 ± 0,2		
Camshaft bearing cap			
Tightening	2 ± 0,2		2 ± 0,2
Angular tightening	44° ± 4°		50° ± 5°
Inlet manifold	0,8 ± 0,2		
Exhaust manifold	1,7 ± 0,3		2 ± 0,2
Valve rockers adjusting screw	1,75 ± 0,25		
Sparking plugs	2,75 ± 0,25		
Camshaft pulley screw	8 ± 0,8		

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)			C3
	Flywheel - Clutch		
Engines	HFX	KFV	NFU
Flywheel	6,7 ± 0,6 + LOCTITE FRENETANCH		
Clutch mechanism	2 ± 0,2		
	Lubrication circuit		
Oil pressure switch	2 ± 0,2		
Oil pump	0,9 ± 0,1		
	Cooling circuit		
Coolant pump	1,4 ± 0,1		
Coolant outlet housing	0,8 ± 0,1		

C3

TIGHTENING TORQUES: POWER UNIT SUSPENSION

Engine: KFU



RH engine support

- (1) : $6 \pm 0,6$
- (2) : $6 \pm 0,6$

Torque reaction rod

- (3) : $6 \pm 0,6$
- (4) : $6 \pm 0,6$

LH engine support on gearbox

- (5) : $3 \pm 0,3$
- (6) : $6 \pm 0,6$
- (7) : $5,5 \pm 0,5$

B1BP2ZBP

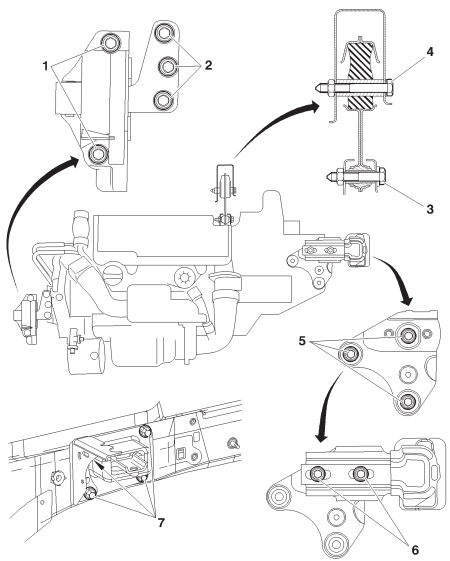
SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C3
Engine	KFU	
	Crankshaft	
Accessories drive pulley	0,8 ± 0,2	
Pinion fixing on crankshaft		
- Pre-tightening	4 ± 0,4	
- Angular tightening	45 ± 4°	
	Cylinder block	
Sump	0,8 ± 0,2	
Accessories belt guide roller	4 ± 0,4	
Timing belt tensioner roller	2,1 ± 0,2	
Accessories belt tensioner roller	2,5 ± 0,2	
Alternator support	2,5 ± 0,3	
Crankshaft bearing caps		
- Tightening	2 ± 0,3	
- Angular tightening	44° (re-used screws cleaned and greased)	
	Cylinder head	
Coolant outlet housing	0,8 ± 0,2	
Camshaft bearing caps	1 ± 0,2	
Camshaft bearing cap covers	0,9 ± 0,1	
Inlet manifold	0,8 ± 0,2	

C3	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)
	Cylinder head
Exhaust manifold	1,8 ± 0,2
Sparking plugs	2,2 ± 0,2
VVT pulley cap	4 ± 0,4
VVT control electrovalve	0,8 ± 0,2
VVT inlet camshaft pulley screw	
- Pre-tightening	2 ± 0,2
- Tightening	6,1 ± 0,6
Exhaust camshaft pulley screw	4,5 ± 0,4
	Flywheel / Clutch
Engine flywheel	6,7 ± 0,6 (coat the screws with LOCTITE FRENETANCH)
Clutch mechanism	2 ± 0,2
	Lubrication circuit
Oil pressure switch	2 ± 0,2
Oil pump	0,9 ± 0,1
	Cooling circuit
Coolant pump	1 ± 0,1
Coolant outlet housing	0,8 ± 0,1

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

C3

Engines: 8HX - 8HW



RH engine support

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

Torque reaction rod

- (3) : $6 \pm 0,6$
- (4) : $6 \pm 0,6$

LH engine support on gearbox

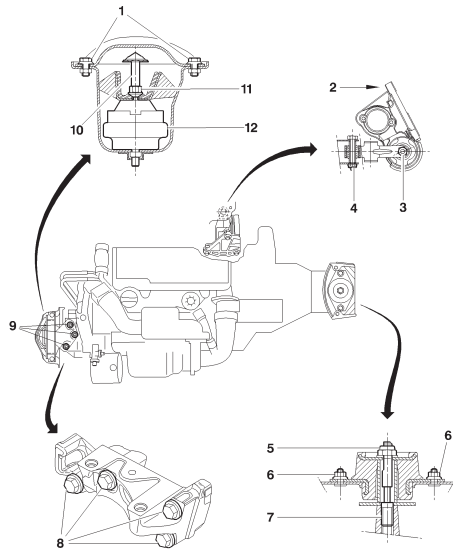
- (5) : $5,4 \pm 0,5$
- (6) : $6 \pm 0,6$
- (7) : $5,5 \pm 0,5$

B1BP2LJP

XSARA

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engine: 8HZ



RH engine support

(1)	: 2 ± 0,2
(9)	: 2,5 ± 0,2
(10)	: 4,5 ± 0,5
(11)	: 4,5 ± 0,5
(12)	: 6 ± 0,6

RH lower engine support

(8)	: 5,7 ± 0,9
-----	-------------

Torque reaction rod.

(2)	: 4,5 ± 0,5
(3)	: 4,5 ± 0,5
(4)	: 4,5 ± 0,5

LH engine support

(5)	: 6,5 ± 0,6
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LH lower engine support

(6)	: 2,2 ± 0,2
(7)	: 2 ± 0,2

B1BP2WLP

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C3 - C3 PLURIEL - XSARA	
Engines	8HX	8HW	8HZ
	Crankshaft		
Bearing cap fixing screw			
Pre-tightening		1	
Slackening		YES	
Tightening		3	
Angular tightening		140°	
Con rod nuts			
Pre-tightening		1	
Slackening		YES	
Tightening		1,5 ± 0,1	
Angular tightening		100° ± 5°	
Accessories drive pulley			
Pre-tightening		3 ± 0,4	
Angular tightening		180° ± 5°	
	Cylinder block		
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

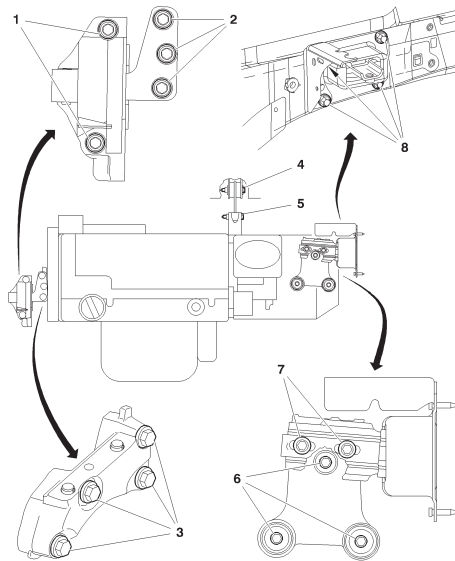
C3 - C3 PLURIEL - XSARA		SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		
Engines		8HX	8HW	8HZ
		Cylinder head		
Camshaft bearing covers				
Pre-tightening		0,5 ±		
Tightening		1 ±		
Fixings of camshaft sub-assemblies on cylinder head				
Pre-tightening		0,5		
Tightening		1		
Exhaust manifold		2,5 ± 0,2		
Valve cover		2,5 ± 0,2		
Camshaft pulley		4,3 ± 0,4		
		Flywheel		
Flywheel				
Pre-tightening		1,7		
Tightening		70° ± 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		

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C3 - C3 PLURIEL - XSARA
Engines	8HX - 8HW - 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	1,7 ± 0,2	
Tightening	2,25 ± 0,2	
Diesel injection pump on support		
Union on diesel injection	2,25 ± 0,2	
Diesel injection pump pulley	5 ± 0,5	
Union on diesel high pressure pump	2,25 ± 0,2	
	Cooling circuit	
Coolant pump		
Pre-tightening	0,3 ± 0,06	
Tightening	1 ± 0,1	
Coolant outlet housing		
Pre-tightening	0,3 ± 0,06	
Tightening	0,7 ± 0,08	

C3

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)

Engines: 8HV - 8HY



RH engine support

Screw (1) : $6 \pm 0,6$ Screw (2) : $6 \pm 0,6$

RH lower engine support

Screw (3) : $5,7 \pm 0,5$

LH upper engine support

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

LH lower engine support

Screw (6) : $5,4 \pm 0,5$

Torque reaction rod

Screw (4) : $6 \pm 0,6$ Screw (5) : $6 \pm 0,6$

B1BP2MNP

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		C3
Engines	8HV - 8HY	
	Crankshaft	
Bearing cap fixing screw		
Tightening	3 ± 0,3	
Angular tightening	140° ± 1°,4'	
Crankshaft pullet hub		
Tightening	3 ± 0,3	
Angular tightening	180° ± 5°	
	Cylinder block	
Oil sump	1 ± 0,1	
Timing belt tensioner roller	4 ± 0,4	
Timing belt guide roller	2,5 ± 0,2	
Timing belt guide roller support		
	Cylinder head	
Camshaft bearing cap cover	1 ± 0,1	
Inlet manifold		
Exhaust manifold	2,5 ± 0,2	
Cylinder head cover	Screws (M6) to 1 ± 0,2	
Camshaft pinion	4,3 ± 0,4	
Fuel high pressure pump pinion	5 ± 0,5	

C3	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)
Engines	8HV - 8HY
	Flywheel - Clutch
Flywheel	1,7 ± 0,2
Clutch mechanism	2 ± 0,2
	Lubrication circuit
Oil pump assembly	0,9 ± 0,1
Oil/coolant heat exchanger	1 ± 0,1
Turbocharger lubrication pipe	2,2 ± 0,2
	Injection circuit
Injector fixing flange nut	
Tightening	0,4 ± 0,1
Angular tightening	65° ± 5°
Unions on fuel high pressure common injection rail	2,3 ± 0,2
Fuel high pressure pump	
Union on diesel injector	
Fuel high pressure pump pinion	5 ± 0,5
Union on fuel high pressure pump	2,3 ± 0,2
	Cooling circuit
Coolant pump	1 ± 0,2±

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA - XSARA PICASSO		
		CYLINDER HEAD (mm)		
Engine types		KFW	NFV	NFU
Maximum permissible bow		0,05		
Gasket surface regrinding		- 0,20		
		TIGHTENING TORQUES (m.daN)		
Crankshaft bearing screws	Pre-tightening	2 ± 0,2	2 ± 0,2	
	Angular tighten	45°	50° ± 5°	
Connecting rod screws	Tightening	3,8 ± 0,4		
Flywheel screw	Tightening	6,5 ± 0,7		
Crankshaft pinion screw	Pre-tightening	10 ± 1		
	Angular tighten			
Camshaft pulley screw	Pre-tightening	8 ± 0,8		
	Angular tighten			
Camshaft hubs			8 ± 0,8	
Camshaft hub screw	Tightening		1 ± 0,1	

XSARA - XSARA PICASSO		SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)				
		CYLINDER HEAD (mm)				
Engine types		6FZ	RFN	RFS	WJY	RHY RHZ
Maximum permissible bow		0,05			0,03	
Gasket surface regrinding		- 0,30		- 0,20		- 0,40
		TIGHTENING TORQUES (m.daN)				
Crankshaft bearing screws	Pre-tightening	(1) $\varnothing 11 : 1 \pm 0,1$ (2) $\varnothing 6 : 1 \pm 0,1$	$2 \pm 0,1$			$2,5 \pm 0,3$
	Slackening	$\varnothing 11$ (only)				
	Tightening	$\varnothing 11$ to $1 \pm 0,1$ then to $2 \pm 0,1$		$8,5 \pm 0,8$	$7 \pm 0,7$	
	Tightening Angular Tightening	$\varnothing 11$ at $70^\circ \pm 5^\circ$ $\varnothing 6$ to $1 \pm 0,1$	$60^\circ \pm 6^\circ$			$60^\circ \pm 6^\circ$
Connecting rod screws	Pre-tightening	$1 \pm 0,1$		$4 \pm 0,4$	$2 \pm 0,2$	
	Slackening	180° (1/2 turn)				
	Tightening	$2,3 \pm 0,2$	$2,3 \pm 0,2$	$2 \pm 0,2$		
	Angular tightening	$46^\circ \pm 5^\circ$	$46^\circ \pm 4,6^\circ$	$70^\circ \pm 7^\circ$	$70^\circ \pm 7^\circ$	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA PICASSO
		Engines: 9HZ - 9HY
	<p>Torque reaction rod</p> <p>1 : 5,4 ± 0,8</p> <p>2 : 5,4 ± 0,8</p> <p>13 : 6 ± 0,9</p> <p>LH upper engine support</p> <p>3 : 2,1 ± 0,2</p> <p>4 : 5 ± 0,5</p> <p>LH lower engine support</p> <p>5 : 2,1 ± 0,2</p> <p>6 : 5,7 ± 0,8</p> <p>RH lower engine support</p> <p>7 : 5,5 ± 0,5</p> <p>RH engine support</p> <p>8 : 4,5 ± 0,4</p> <p>9 : 4,5 ± 0,6</p> <p>10 : 2,5 ± 0,6</p> <p>11 : 2,1 ± 0,2</p> <p>12 : 6,1 ± 0,6</p>	
	<p>B1BP2Z4P</p>	

XSARA PICASSO	SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)
Engines	9HZ - 9HY
	Crankshaft
Bearing cap fixing screw	
Pre-tightening	1 ± 0,2
Slackening	180°
Tightening	3 ± 0,3
Angular tightening	140°
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 diesel injector		
Pre-tightening	2 ± 0,5	
Tightening	2,5 ± 0,3	

SPECIAL FEATURES - TIGHTENING TORQUES (m.daN)		XSARA PICASSO
Engines	9HZ - 9HY	
	Diesel injection circuit	
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	

C2 - C3 - C3 PLURIEL

CYLINDER HEAD

Engines: HFX - KFV - NFU

Identification of cylinder head gasket

Engine types	Thicknesses (Standard)	Thicknesses (repair)	Thickness references
HFX	1,2 ± 0,1	1,4 ± 0,1	2
KFV			1
NFU	0,66 ± 0,04		4
KFU	1,2 ± 0,1	1,5 ± 0,1	

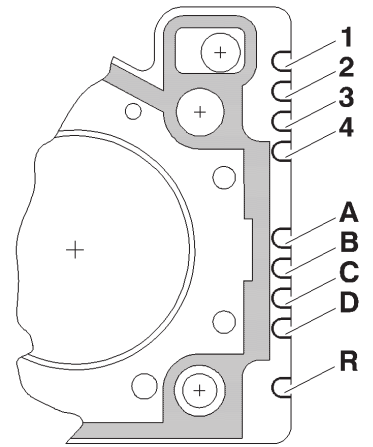
Identification marks

1,2,3,4 = Type of engine

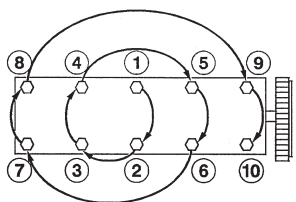
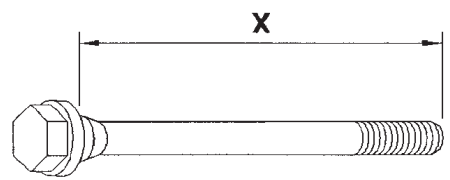
A,B,D =Suppliers.

C = Gasket material.

R = Repair.



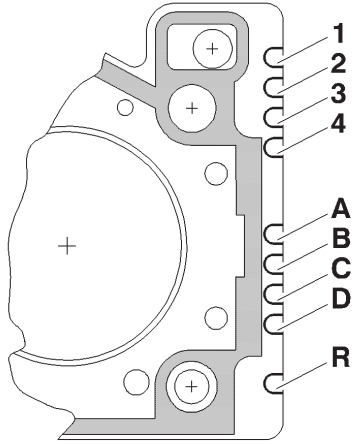
B1BP10KC

CYLINDER HEAD		C2 - C3 - C3 PLURIEL		
Engines: HFX - KFV - NFU				
Cylinder head tightening (m.daN)		Cylinder head bolts		
 <p>NOTE: Retightening of the cylinder head after a completed repair is prohibited.</p>	HFX - KFV		 <p>NOTE: Oil the threads and under the heads of the bolts (use engine oil or Molykote G Rapid Plus).</p>	
	Tightening	:		$2 \pm 0,2$
	Angular tightening	:		$240^\circ \pm 5^\circ$
	(In the order 1 to 10)			
KFU				
Pre-tightening	:	$1,5 \pm 0,2$		
Tightening	:	$2,5 \pm 0,2$		
Angular tightening	:	$200 \pm 5^\circ$		
(In the order 1 to 10)				
NFU				
Tightening	:	$2 \pm 0,2$		
Angular tightening	:	$260^\circ \pm 5^\circ$		
(In the order 1 to 10)				
		X =MAX. re-usable length		
		HFX - KFV	KFV	NFU
		$175,5 \pm 0,5$	119	$122 \pm 0,3$

B1BP10KC

B1BP1DVC

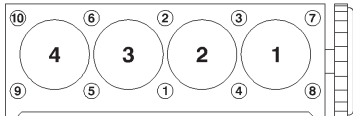
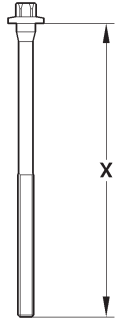
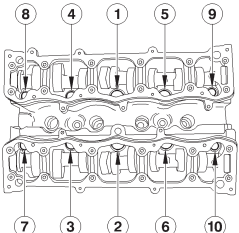
XSARA - XSARA PICASSO		CYLINDER HEAD			
Engines: KFW - NFV - NFU					
Identification of cylinder head gasket					
Engine type		KFW	NFV	NFU	
Identification marks		(Notch on cylinder head gasket) *			
Thickness	1	1	1	1	
	2	0	0	1	
	3	0	0	1	
	4	0	1	1	
Suppliers	CURTY	A	0		
		B	0		
		D	0		
	MEILLOR	A	1		
		B	1		
		D	0		
	ELRING	A			
		B			
		D			
	REINZ	A			1
		B			0
		D			0
Material	C	0 (With asbestos) – 1 (Without asbestos)			
Repair	R	0 (Standard gasket) – 1 (Repair gasket)			



0 = Without notch

1 = One notch

B1BP10KC

CYLINDER HEAD (Continued)		XSARA - XSARA PICASSO	
Engines: KFW - NFV - NFU			
Cylinder head tightening (m.daN)		One Cylinder head bolts	
	KFW - NFV		
	Pre-tightening : 2 Angular tightening : $240 \pm 5^\circ$		
	NFU	NOTE: Oil the threads and under the heads of the bolts (<i>use engine oil or Molykote G Rapid Plus</i>).	<small>B1DP059C</small>
	Pre-tightening : 2 Angular tightening : $260 \pm 5^\circ$		
		X =MAX. re-usable length	
		KFW - NFV	NFU
		X = 175,5 ± 0,5 mm	X = 122,6 mm

B1BP10LC

B1DP13NC

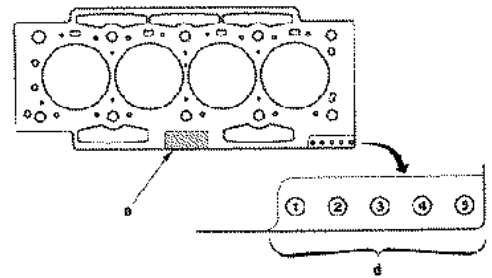
XSARA - XSARA PICASSO

CYLINDER HEAD

Engine: 6FZ

Identification of cylinder head gasket

	Nominal dimension	Repair dimension		
Identification zone "d"	4 - 5	2 - 4 - 5		
Marking zone "e"		R1	R2	R3
Gasket thickness (mm)	0,8	1	1,1	1,3
Supplier	MEILLOR			

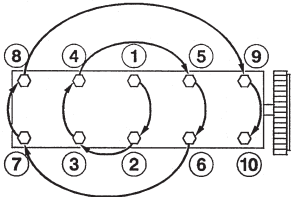
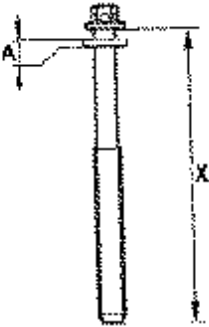
**Identification marks**

"d" = Identification zone.

"e" = Marking zone.

NOTE: 3 layer metallic gasket

B1DP183D

CYLINDER HEAD		XSARA - XSARA PICASSO	
Engine: 6FZ			
Cylinder head tightening (m.daN)		One Cylinder head bolts	
	6FZ		B1DP16FC
	Pre-tightening : $1,5 \pm 0,2$ Tightening : $5 \pm 0,2$ Destightening : 360° (1 turn) Tightening : $2 \pm 0,2$ Angular tightening : $285^\circ \pm 5^\circ$		A = Washer thickness: $4 \pm 0,2$ mm. X = Length under heads of new bolts = $144,5 \pm 0,5$ mm.
	NOTE: Oil the threads and under the heads of the bolts (use engine oil or Molykote G Rapid Plus).		X =MAX. re-usable length
			6FZ
	X = 147 mm		

B1DP05BC

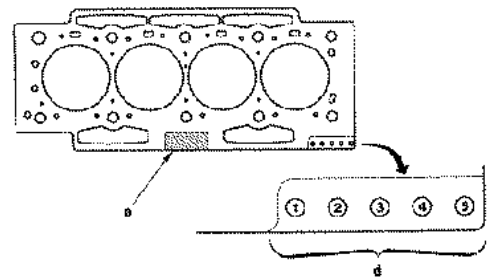
XSARA - XSARA PICASSO

CYLINDER HEAD

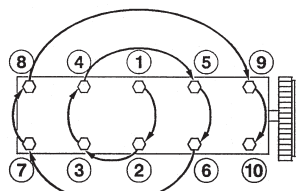
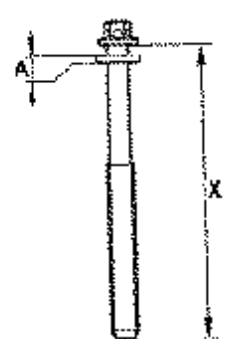
Engine: RFN

Identification of cylinder head gasket

	Nominal dimension	Repair dimension	
Identification zone "d"	4 - 5	2 - 4 - 5	
Marking zone "e"		R1	R2
Gasket thickness (mm)	0,8	1,1	1,4
Supplier	MEILLOR		
Multilayer metallic gasket			

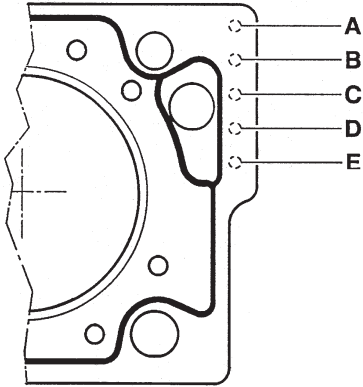


B1DP183D

CYLINDER HEAD		XSARA - XSARA PICASSO	
Engine: RFN			
Cylinder head tightening (m.daN)	One Cylinder head bolts		
	RFN		
	Pre-tightening : $1,5 \pm 0,2$		<div style="border: 1px solid black; padding: 2px; display: inline-block;">B1DP16FC</div>
	Tightening : $5 \pm 0,2$		
	Destightening : 360° (1 turn)		
	Tightening : $2 \pm 0,2$		
Angular tightening : $285^\circ \pm 5^\circ$			
<p>NOTE: Oil the threads and under the heads of the bolts (use engine oil or Molykote G Rapid Plus).</p>		<p>A = Washer thickness: $4 \pm 0,2$ mm. X = Length under heads of new bolts = $144,5 \pm 0,5$ mm.</p>	
		X =MAX. re-usable length	
		RFN	
		X = 147 mm	

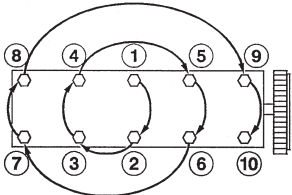
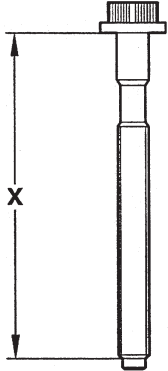
B1DP05BC

XSARA		CYLINDER HEAD	
Engine: RFS			
Identification of cylinder head gasket			
Engine type		RFS	
Identification marks		(Notch on cylinder head gasket) *	
Suppliers	MEILLOR	A	1
		B	0
		C	1
		D	0
		E	0



* 0 = Without notch
1 = One notch

B1BP004C

CYLINDER HEAD		XSARA
Engine: RFS		
Cylinder head tightening (m.daN)	One Cylinder head bolts	
	<p>RFS</p> <p>Pre-tightening : 3,5 Slackening : NO Tightening : 7 Angular tightening : 160°</p> <p>NOTE: Oil the threads and under the heads of the bolts (use engine oil or Molykote G Rapid Plus).</p>	
	<p>B1DP05BC</p>	<p>B1DP13PC</p> <p>X =MAX. re-usable length</p> <p>RFS</p> <p>112 mm</p>

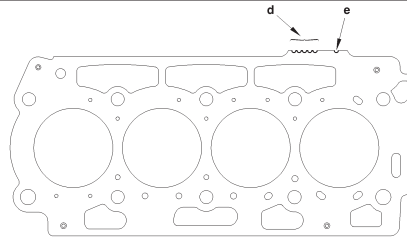
C2 - C3 - C3 PLURIEL - XSARA

CYLINDER HEAD

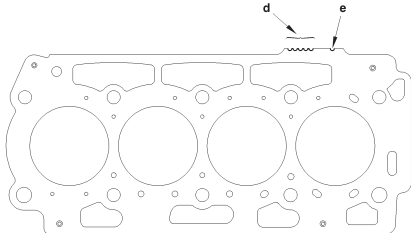
Engines: 8HX - 8HW - 8HZ

Identification of cylinder head gasket

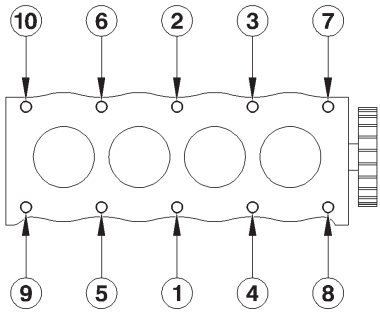
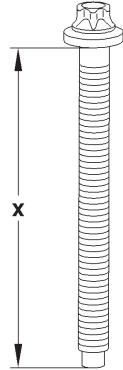
Engine types	Supplier	Piston standproud (mm)	Thicknesss (mm)	No. of notches at "d"	No. of notches at "e"	Type of gasket: Metallic multilayer «d» Thickness reference. «e» Engine reference.
8HY - 8HV	ELRING	0,771 to 0,820	1,35	1	1	
		0,611 to 0,720	1,25	2		
		0,721 to 0,770	1,30	3		
		0,821 to 0,870	1,40	4		
		0,871 to 0,977	1,45	5		



B1DP1CMD

CYLINDER HEAD						C3
Engines: 8HY - 8HV						
Identification of cylinder head gasket						
Engine types	Supplier	Piston standproud (mm)	Thickness (mm)	No. of notches at "d"	No. of notches at "e"	Type of gasket: Metallic multilayer
8HY - 8HV	ELRING	0,771 to 0,820	1,35	1	2	«d» Thickness reference. «e» Engine reference.
		0,611 to 0,720	1,25	2		
		0,721 to 0,770	1,30	3		
		0,821 to 0,870	1,40	4		
		0,871 to 0,977	1,45	5		
						

B1DP1CKD

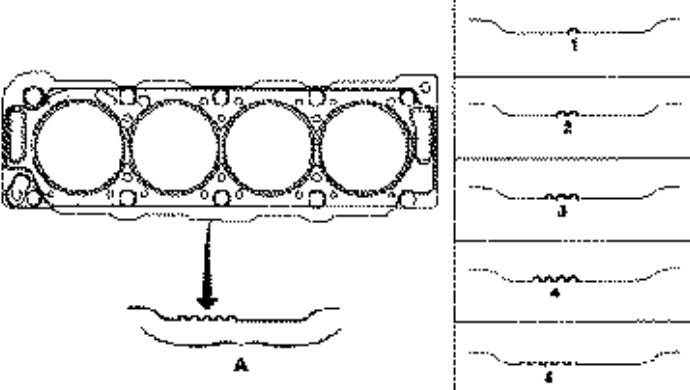
C2 - C3 - C3 PLURIEL		CYLINDER HEAD	
Engines: 8HX - 8HW - 8HZ - 8HV - 8HY			
Cylinder head tightening (m.daN)		One Cylinder head bolts	
 <p>The cylinder head gasket is dry-fitted.</p> <p>NOTE: Retightening of the cylinder head after a completed repair is prohibited.</p>		<p>8HX - 8HW - 8HZ - 8HV - 8HY</p> <p>Pre-tightening : $2 \pm 0,2$ m.daN Tightening : $4 \pm 0,4$ m.daN Angular tightening : $230^\circ \pm 5^\circ$</p> <p style="text-align: center;">(In the order 1 to 10)</p> <p>NOTE:</p> <ul style="list-style-type: none"> - The bolts should have been thoroughly cleaned and dried with a dry metal brush. - Oil the threads and under the heads of the bolts (<i>use engine oil or Molykote G Rapid Plus</i>). - Pass a tap into the holes in the cylinder block. 	
			
B1DP1CLC		B1DP1DBC	
		X =MAX. re-usable length	
		8HX - 8HW - 8HZ - 8HV - 8HY	
		X = 149 mm	

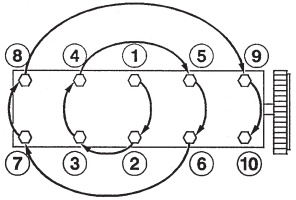
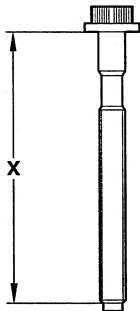
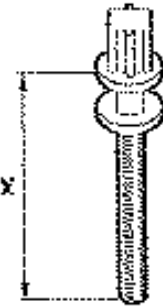
CYLINDER HEAD						XSARA PICASSO
Engines: 9HZ - 9HY						
Identification of cylinder head gasket						
Engine types	Supplier	Piston standproud (mm)	Thickness (mm)	No. of notches at "d"	No. of notches at "e"	Type of gasket: Metallic multilayer
9HZ - 9HY	FEDERAL MOGUL	0,685 to 0,734	1,35	1	3	«d» Thickness reference. «e» Engine reference.
		0,533 to 0,634	1,25	2		
		0,635 to 0,684	1,30	3		
		0,735 to 0,784	1,40	4		
		0,785 to 0,886	1,45	5		

B1DP1HOD

XSARA PICASSO		CYLINDER HEAD	
Engines: 9HZ - 9HY			
Cylinder head tightening (m.daN)		One Cylinder head bolts	
<p>The cylinder head gasket is dry-fitted.</p> <p>NOTE: Retightening of the cylinder head after a completed repair is prohibited.</p>		<p>9HZ - 9HY</p> <p>Pre-tightening : $2 \pm 0,2$ m.daN</p> <p>Tightening : $4 \pm 0,4$ m.daN</p> <p>Angular tightening : $260^\circ \pm 5^\circ$</p> <p>(In the order 1 to 10)</p> <p>NOTE:</p> <ul style="list-style-type: none"> - The bolts should have been thoroughly cleaned and dried with a dry metal brush. - Oil the threads and under the heads of the bolts (use engine oil or Molykote G Rapid Plus). - Pass a tap into the holes in the cylinder block. 	
		<p>B1DP1DBC</p> <p>X =MAX. re-usable length</p> <p>9HZ - 9HY</p> <p>X = 147 mm</p>	
B1DP1CLC			

CYLINDER HEAD					XSARA
Engine: WJY					
Identification of cylinder head gasket					
Plaque Engine	Piston standproud (mm)-(*)	Thickness (mm) ± 0,04	Number of holes at A	Number of holes at B	WJY
WJY	0,51 to 0,55	1,26	2	1	
	0,55 to 0,59	1,30		2	
	0,59 to 0,63	1,34		3	
	0,63 to 0,67	1,38		4	
	0,67 to 0,71	1,42		5	
<p>(A) = Repère engine. (B) = Thickness references. (*) = Take the highest piston as a reference.</p>					
					B1DP14QD

XSARA - XSARA PICASSO		CYLINDER HEAD	
Engines: RHY - RHZ			
Identification of cylinder head gasket			
Plaque Engine	Piston standproud (mm)	Thickness (mm)	No. of notches at A
RHY RHZ	0,47 to 0,605	1,30 ± 0,06	1
	0,605 to 0,655	1,35 ± 0,06	2
	0,655 to 0,705	1,40 ± 0,06	3
	0,705 to 0,755	1,45 ± 0,06	4
	0,755 to 0,83	1,50 ± 0,06	5
			
B1DP15AD			

CYLINDER HEAD (Continued)		XSARA - XSARA PICASSO		
Engines: WJY - RHY - RHZ				
Cylinder head tightening (m.daN)		One Cylinder head bolts		
 <p>NOTE: Oil the threads and under the heads of the bolts (<i>use engine oil or Molykote G Rapid Plus</i>).</p>	<p>WJY</p> <p>Pre-tightening : 2 Tightening : 6 Angular tightening : 180°</p>			
	<p>RHY - RHZ</p> <p>Pre-tightening : 2 Tightening : 6 Angular tightening : 220°</p>	<p>B1DP13PC</p>	<p>B1DP15EC</p>	
	<p>X =MAX. re-usable length</p>		<p>WJY</p>	<p>RHY - RHZ</p>
	<p>B1DP05BC</p>		<p>125,5 mm</p>	<p>133,3 mm</p>

ALL TYPES		BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE																														
↓ 4099-T (C.TRONIC.105)		Tools																		→ 4122-T (C.TRONIC.105.5) ↓												
1 daN = 1 Kg TYPE DE COURROIES		daN	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	daN	1 daN = 1 Kg TYPE DE COURROIES								
S			18	28	36	44	51	58	64	70	76	82	88	94	100	106	112															
P		E5 E6	18 25	23 32	27 39	31 45	34 50	37 54	40 58	43 62	46 66	49 70	52 74	54 78	56 81	58 84	60 86	62 88	64 89	66 90	68 91											
P		E6	27	36	43	49	55	61	66	71	76	80	84																			
P		E6	26	35	42	48	53	58	63	68	73	78	82																			
P		E7	45	55	65	74	83	89	95	101	107	113	119																			
T		E7	28	34	39	44	48	52	56	60	64	68	71																			
T		E8	32	39	45	51	56	61	66	71	76	79	81																			
T		E9	52	60	67	74	81	88	94	100	106	110	114																			

AUXILIARY EQUIPMENT DRIVE BELT							PETROL		
	TU			ET	TU		EW		XU
	1	3		3	5		7	10	
	JP			J4	JP +	JP4	J4		J4RS
Engine type	HFX	KFV	KFW	KFU	NFV	NFU	6FZ	RFN	RFS
C2	1.1i	1.4i				1.6i 16V			
See pages:	118 to 119					118 to 119			
C3	1.1i	1.4i		1.4i 16V		1.6i 16V			
See pages:	118 to 119			123 to 124		118 to 119			
C3 Pluriel		1.4i				1.6i 16V			
See pages:		118 to 119				118 to 119			
XSARA			1.4i			1.6i 16V		2.0i 16V	2.0i 16V
See pages:			122			125		128	126 to 127
XSARA Picasso					1.6i		1.8i 16V	2.0i 16V	
See pages:					120 to 121		128		

DIESEL		AUXILIARY EQUIPMENT DRIVE BELT								
	DV							DW		
	4				6			8	10	
	TD			TED4				B	TD	ATED
	Engine type	8HX	8HW	8HZ	8HV	8HY	9HZ	9HY	WJY	RHY
C2	1.4 HDi									
See pages:	135 to 136									
C3	1.4 HDi	1.4 HDi		1.4 HDi 16V	1.4 HDi 16V					
See pages:	135 to 136			139						
C3 Pluriel	1.4 HDi									
See pages:	135 to 136									
XSARA			1.4 HDi					1.9 D	2.0 HDi	2.0 HDi
See pages:			137 to 138					129 to 134	141 to 144	
XSARA Picasso						1.6 HDi 16V	1.6 HDi 16V		2.0 HDi	
See pages:						140			141 to 144	

AUXILIARY EQUIPMENT DRIVE BELT 2002**ALL TYPES**

Engines: All Types Petrol and Diesel

Tools.

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

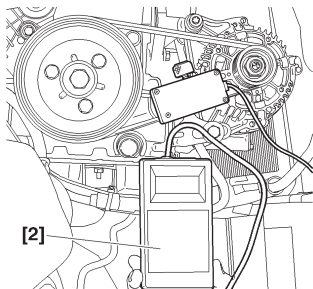
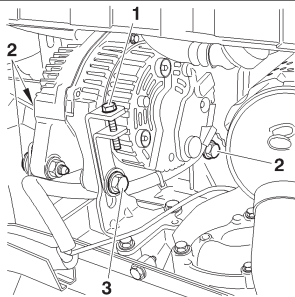
WARNING: If using tool **4099-T** (*C.TRONIC 105*), refer to the correspondence table on page 96.

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.

C2 - C3 - C3 PLURIEL

AUXILIARY EQUIPMENT DRIVE BELT



Engines: HFX - KJV - NFU

Tools.

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

: 7504 -T
 : 4122-T

Vehicle without air conditioning.**Remove.**

Slacken:

- Screw (2).
- Screw (3).
- Tensioning screw (1).

Push the alternator back towards the engine.
 Remove the belt.

Refit.

Refit the belt.

Respect the following sequence:

- Crankshaft pinion.
- Alternator pulley.

Place tool [2] on the belt.

Tighten screw (1) to achieve a tension of:

55 ± 3 SEEM units.

Tighten:

- Screw (3).
- Screw (2).

Remove tool [2] and complete the refitting.

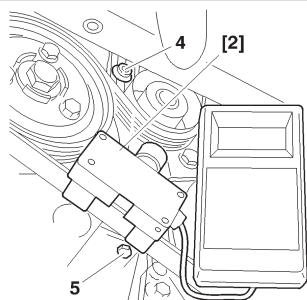
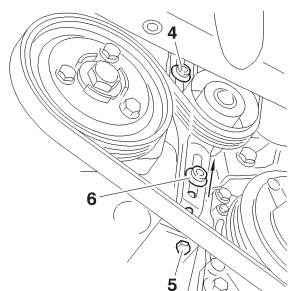
B1BP2LSC

B1BP2LTC

AUXILIARY EQUIPMENT DRIVE BELT

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - NFU

**Vehicle with air conditioning.****Remove****Slacken:**

- Screws (6), (4) and (5).
- Fully detension the belt by acting on the tensioner roller.
- Remove the accessories drive belt.

Refit.

Respect the following sequence:

- Crankshaft pinion.
- Aircon compressor pulley.
- Guide roller.
- Alternator pulley.
- Tensioner roller.

Place tool [2] on the belt.

- Tighten screw (5) to achieve a belt tension of:

120 ± 3 SEEM units.

- Tighten screws (4) and (6)
- Remove tool [2].
- Complete the refitting.

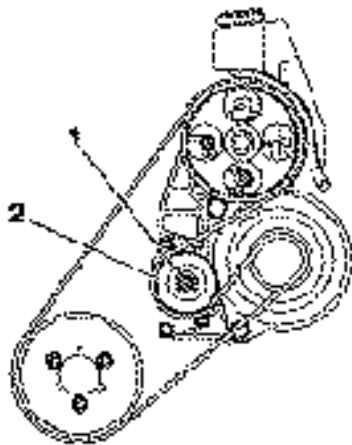
B1BP10VC B1BP10XC

XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT

Engine: NFV

Without air conditioning.



Tools.

- | | |
|---------------------------------------|-----------|
| [1] Pliers for removing plastic pegs | : 7504 -T |
| [2] Belt tension measuring instrument | : 4122 -T |
| [3] TORX spanner | |

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.

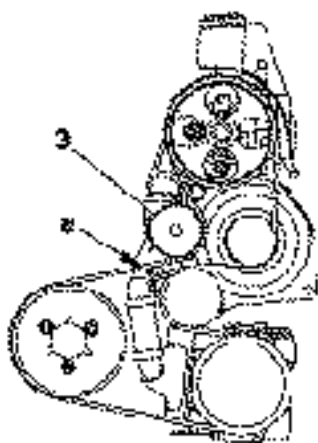
B1BP234C

AUXILIARY EQUIPMENT DRIVE BELT

XSARA PICASSO

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


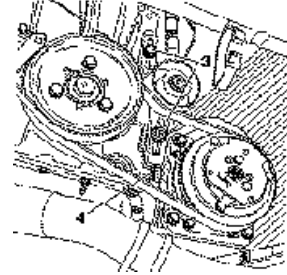
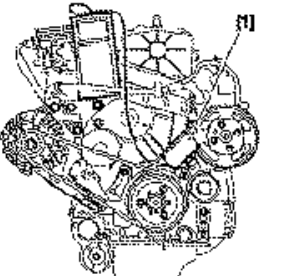
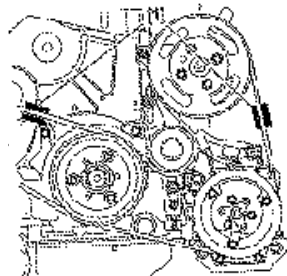
Remove.

- Detension the automatic tensioner, tool [3].
- Place a \varnothing 6 mm peg at (a) to immobilise the automatic tensioner.
- Remove the belt.

Refit.

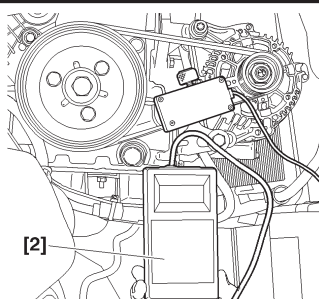
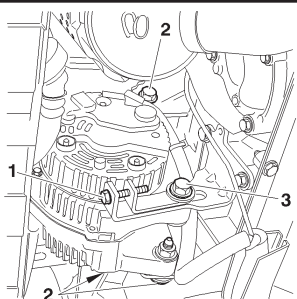
- Position the belt
- Detension the automatic tensioner, tool [3].
- Remove the \varnothing 6 mm peg.
- Release the automatic tensioner.
- Remove the tool [3].

B1BP235C

XSARA		AUXILIARY EQUIPMENT DRIVE BELT 2002	
Engine: KFW			
	Alternator		With air conditioning
	<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>[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).
	Power-assisted steering		Power steering and air con.
	<ul style="list-style-type: none"> - New belt 100 SEEM units. - Re-used belt 		<ul style="list-style-type: none"> - New belt 100 SEEM units. - Re-used belt 75 SEEM units.
	B1BP1B2C B1BP122C		B1BP1B3C B1BP124C

AUXILIARY EQUIPMENT DRIVE BELT

C3



Engine: KFU

Tools.

[1] Pliers for removing plastic pegs	: 7504 -T
[2] Belt tension measuring instrument (SEEM)	: 4122 -T

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.**Removing.**

Slacken the tension, screw (2), screw (3) and screw (1).

Push back the alternator towards the engine.

Remove the auxiliary equipment drive belt.

Refitting.

Refit the 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 **55 ± 3 SEEM units.**

- Tighten screw (3), screw (2).

- Remove tool [2].

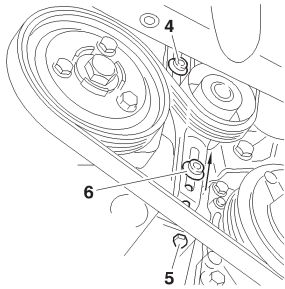
- Complete the refitting in the opposite order to removal.

B1BP2LSC	B1BP2LTC
----------	----------

C3

AUXILIARY EQUIPMENT DRIVE BELT

Engine: KFU

**Vehicle With air conditioning.****Removing.**

Slacken the tension, screw (6), screw (4) and screw (5).
 Completely detension the belt by acting on the tensioner roller.
 Remove the auxiliary equipment drive belt.

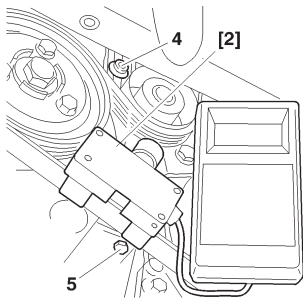
Refitting.

Refit the auxiliary equipment drive belt.
 Respect the following sequence :
 - Crankshaft pinion, aircon compressor pulley, alternator pulley guide roller and guide roller.
 - Position tool [2] on the belt. Tighten the screw (5) to tension the belt to
120 ± 3 SEEM units.

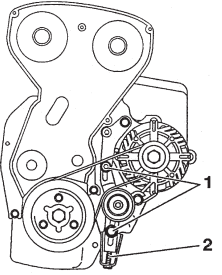
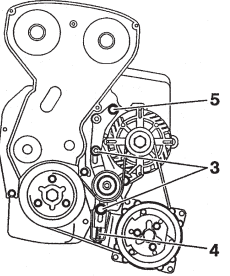
Tighten screw (4), screw (6).

Remove tool [2].

Complete the refitting in the opposite order to removal.



B1BP10VC B1BP10XC

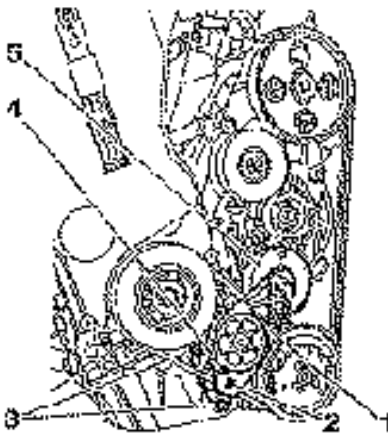
AUXILIARY EQUIPMENT DRIVE BELT 2002		XSARA
Engine: NFU		
	Without air conditioning	
	<p>(1) Tensioner roller fixing screw (2) Tensioning screw - New belt: 120 SEEM units. - Reused belt: 86.5 ± 3.5 SEEM units.</p> <p>B1BP1AMC</p>	
	With air conditioning	
	<p>(3) Tensioner roller fixing screw (4) Tensioning 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).</p> <p>B1BP1ANC</p>	

XSARA

AUXILIARY EQUIPMENT DRIVE BELT 2002

Engine: RFS

With air conditioning.



B1BP1HJC

- Fit the drive belt.
- The tensioner roller (1).
- Tighten the screws (3) to **2 m.daN**.
- Move the tensioner roller (1) using the tool (**9.52 mm square drive (3/8)**) at (2), in order to remove the tool or locking peg (**Ø 4 mm**) at (4).
- Slowly release the tensioner roller (1) so that the roller (5) presses against the belt.

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA

Engine: RFS

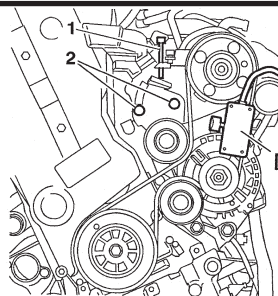
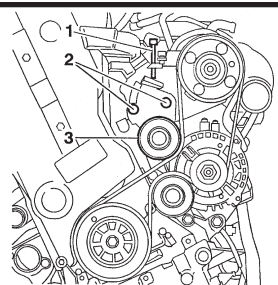
Without air conditioning.

Tools.

[1] Belt tension measuring instrument : 4122-T

- (1) Tensioning screw.
- (2) Roller support fixing screw (3).

- Lightly tighten the screws (2).
- Place the tool [1] on the belt.
- Tension the belt using the screw (1).
 - Reused belt **90 SEEM units**.
 - New belt **120 SEEM units**.
- Tighten the screws (2) to **2 m.daN**.
- Remove the tool [1].
- Rotate the crankshaft by 3 turns (*direction of rotation*).
- Check the belt tension using the tool [1], and adjust (*if necessary*).



B1EP12XC B1EP12YC

XSARA - XSARA PICASSO		AUXILIARY EQUIPMENT DRIVE BELT 2002	
Without air conditioning.	Engines: 6FZ - RFN		With air conditioning.
	<p>Tools.</p> <p>[1] Pliers for removing plastic pegs : 7504-T</p> <p>Remove the belt.</p> <ul style="list-style-type: none"> - Detension the belt (3) by turning the screw (2) of the tensioner roller (1) (<i>anti-clockwise</i>). - The screw (2) (<i>WARNING: not left hand screw</i>). - Remove the belt (3), while keeping the tensioner roller (1) tight. <p>Refit the belt.</p> <ul style="list-style-type: none"> - Refit the belt (3), while keeping the tensioner roller (1) tight. - Release the tensioner roller (1). 		
B1BP23PC	B1BP23QC	B1BP23PC	B1BP23RC

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA

Engine: WJY

Sans Power-assisted steering.

Tools.

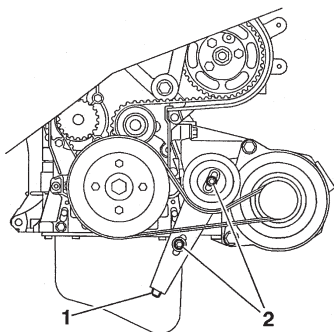
[1] Belt tension measuring instrument : 4122-T

Removal.

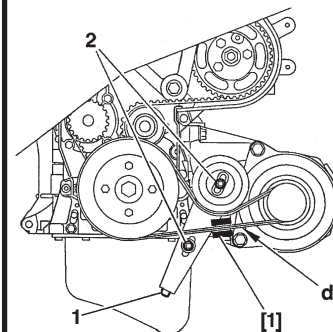
- Loosen the screws (2).
- Tighten the screw (1) until it is against its stop.
- Remove the belt.

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].



B1BP1SDC



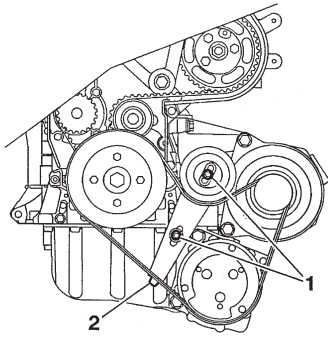
B1BP1SEC

XSARA

AUXILIARY EQUIPMENT DRIVE BELT 2002

Engine: WJY

Sans Power-assisted steering With air conditioning.



B1BP1SFC

Tools.

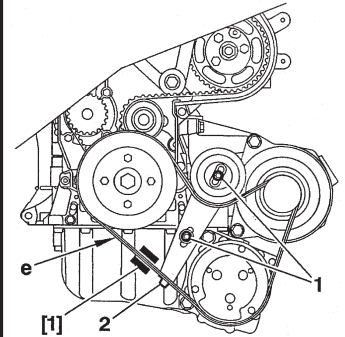
[1] Belt tension measuring instrument : 4122-T

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].



B1BP1SGC

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA

Engine: WJY

Power-assisted steering without air conditioning.

Tools.

[1] Belt tension measuring instrument : 4122-T

Removal.

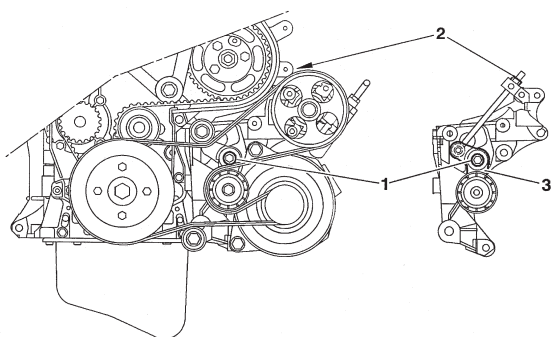
WARNING: If the belt is to be reused, measure the tension before removal.

Loosen:

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

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

- Remove the belt.



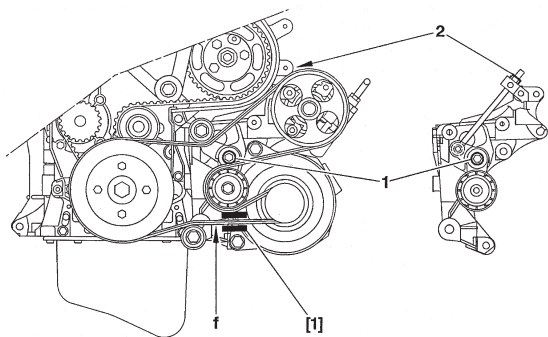
B1BP1SHD

XSARA

AUXILIARY EQUIPMENT DRIVE BELT

Engine: WJY

Power-assisted steering without air conditioning (continued).



B1BP1SJD

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**.

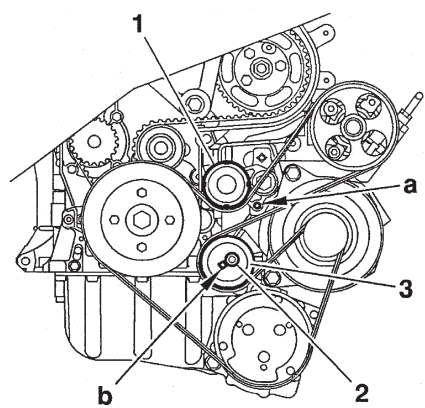
- Tighten the screw (1) to **9.5 m.daN**.
- Check belt tension, using tool [1].
- Tension should be **144 ± 3 SEEM units**.
- Remove the tool [1].
- Start the engine and run it for **10 seconds**.
- Stop the engine.
- Place the tool [1] on the belt at "f".
- Tension should be **130 ± 4 SEEM units**.
- Remove the tool [1].

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA

Engine: WJY

Power-assisted steering with air conditioning.



B1BP1SKC

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:

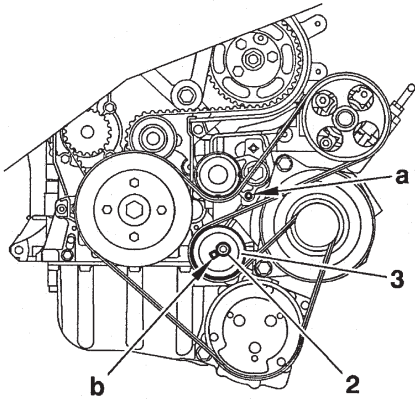
- Support the engine using a jack (*insert a wooden block between the housing and the jack*).
- Remove the right engine support.
- Using a square drive at (b) turn the tool (3) in the direction of the arrow "a", so that it can be pegged at "a" using the tool [1].

XSARA

AUXILIARY EQUIPMENT DRIVE BELT 2002

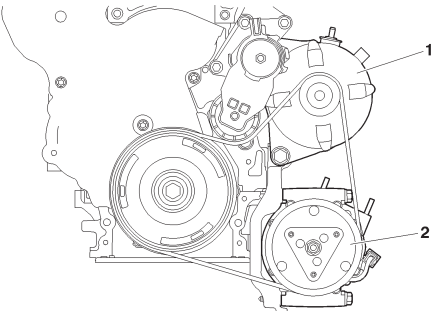
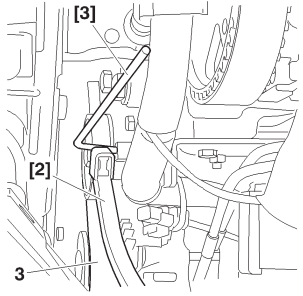
Engine: WJY

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].

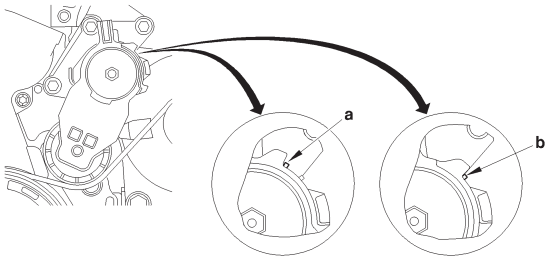
B1BP1SLC

AUXILIARY EQUIPMENT DRIVE BELT		C2 - C3 - C3 PLURIEL
With compressor and alternator.	Engines: 8HX - 8HW	
	<p>Tools.</p> <p>[1] Pliers for removing plastic pegs : 7504-T [2] Tensioner roller compression lever : (-).0194.E [3] Tensioner roller setting peg Ø4 mm : (-).0194.F</p> <p>Removing. Disconnect the battery negative cable. Raise and support the vehicle, wheels hanging. Remove the front RH wheel. Move aside the splash-shield, using tool [1].</p> <p>IMPERATIVE: In the case of belt re-use, mark the direction of rotation of the belt. If the index on the tensioner roller is outside the marks, change the auxiliary equipment drive belt.</p> <p>The alternator (1). The aircon compressor (2). Detension the auxiliary belt tensioner roller, using tool [2]. Position the peg [3]. Remove the auxiliary drive belt.</p>	
B1BP2MJD		B1BP2MKC

C2 - C3 - C3 PLURIEL

AUXILIARY EQUIPMENT DRIVE BELT

Engines: 8HX - 8HW

**Markings on the dynamic tensioner roller.**

- «a» Position of «maximum wear» of the auxiliary drive belt.
- «b» Normal position.

Refitting.

NOTE: Check that the tensioner roller moves freely (*no tight spot*). If this is not the case, replace the tensioner roller.

Respect the direction of fitting of the drive belt.

Complete the setting of the belt, of both sides, by means of the tensioner roller. Make sure that the drive belt is correctly positioned in the «V» grooves of the various pulleys.

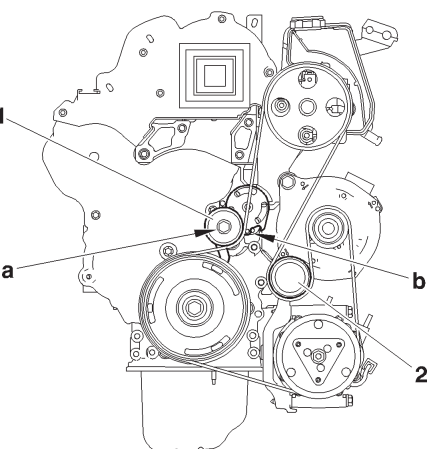
Move the tool [2] on the tensioner roller to remove the peg [3].

B1EP18UD

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA

Engine: 8HZ



B1BP2VZD

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 engines (HDi).

Remove:

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

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].

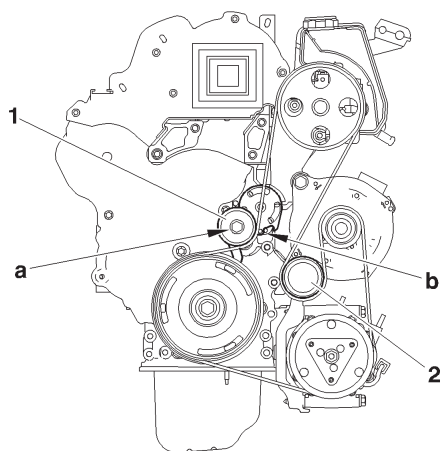
Keeping the tensioner roller (1) compressed, remove the accessories drive belt.

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

XSARA

AUXILIARY EQUIPMENT DRIVE BELT 2002

Engine: 8HZ



B1BP2VZD

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.

AUXILIARY EQUIPMENT DRIVE BELT

C3

Engines: 8HY - 8HV

Tools.

[1a] Dynamic tensioner roller lever	: (-).0194-E1
[1b] Lever extension	: (-).0194-E2
[2] Accessories belt roller locking peg Ø 4 mm	: (-).0194-F

Removing.

Pivot the tensioner roller support (1) *(clockwise)*, using tools [1a] and [1b] at «a».
Remove the belt.

Immobilise the support (1) of the tensioner roller, using tool [2].
Remove the auxiliary drive belt (2).

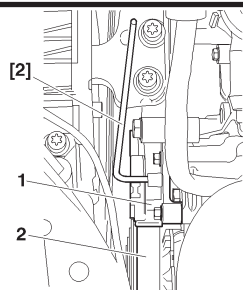
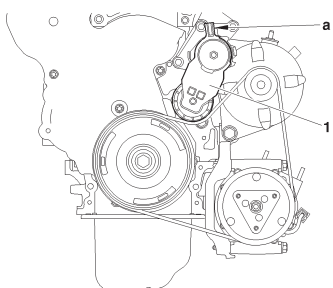
IMPERATIVE: Ensure that the tensioner rollers turn freely (no play, no tight spot).

Refitting.

Refit the belt.

Move the tool [1] on the tensioner roller to remove the peg [2].

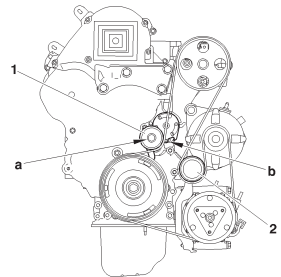
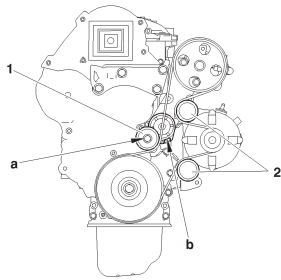
ESSENTIAL: Make sure that the belt is correctly positioned in the various pulley grooves.



B1BP2MYD B1BP2MZC

XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT



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

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA - XSARA PICASSO

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

Removal.

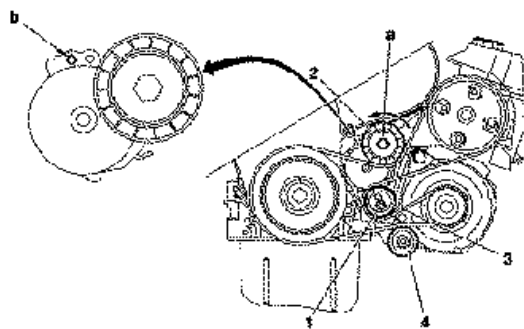
Re-use of belt.

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

- Compress the tensioner roller (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).



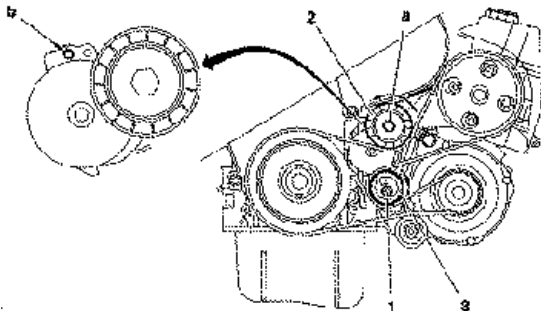
B1BP1YKD

XSARA - XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT 2002

Engines: RHY - RHZ

Without air conditioning (continued).



B1BP1YMD

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.

AUXILIARY EQUIPMENT DRIVE BELT 2002

XSARA - XSARA PICASSO

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].

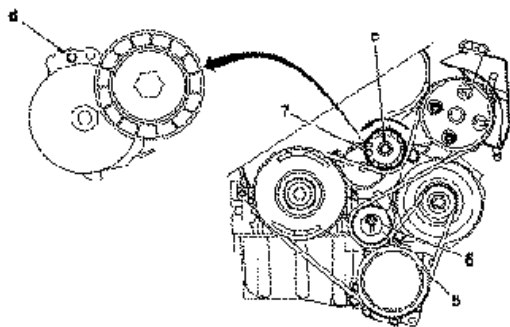
- Peg using tool [2], at «d».

- Loosen the screw (6).

- Bring the eccentric roller (5) towards the rear.

- Tighten the screw (6) by hand.

- Remove the belt.



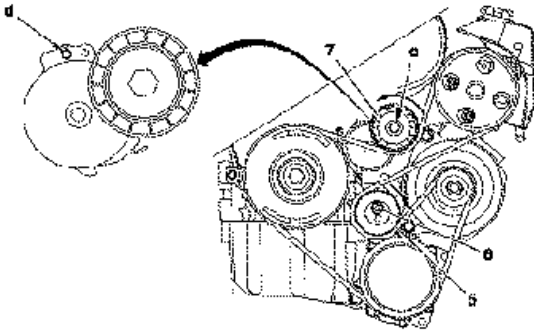
B1BP1YLD

XSARA - XSARA PICASSO

AUXILIARY EQUIPMENT DRIVE BELT 2002

Engines: RHY - RHZ

With air conditioning (continued).



B1BP1YND

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.

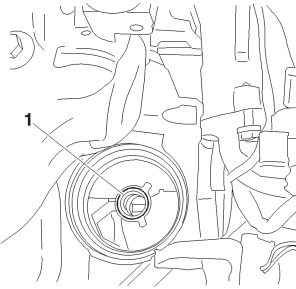
CHECKING AND SETTING THE VALVE TIMING							PETROL		
	TU			ET	TU		EW		XU
	1	3		3	5		7	10	
	JP			J4	JP +	JP4	J4		J4RS
Engine type	HFX	KFV	KFW	KFU	NFV	NFU	6FZ	RFN	RFS
C2	1.1i	1.4i				1.6i 16V			
See pages:	148 to 157					148 to 157			
C3	1.1i	1.4i		1.4i 16V		1.6i 16V			
See pages:	148 to 157			165 to 170		148 to 157			
C3 Pluriel		1.4i				1.6i 16V			
See pages:		148 to 157				148 to 157			
XSARA			1.4i			1.6i 16V		2.0i 16V	2.0i 16V
See pages:			148 to 157			161 to 164		171 to 178	179 to 183
XSARA Picasso					1.6i		1.8i 16V	2.0i 16V	
See pages:					158 to 160		171 to 178		

	DIESEL		CHECKING AND SETTING THE VALVE TIMING							
	DV						DW			
	4			6			8	10		
	TD		TED4				B	TD	ATED	
Engine type	8HX	8HW	8HZ	8HV	8HY	9HZ	9HY	WJY	RHY	RHZ
C2	1.4 HDi									
See pages:	184 to 191									
C3	1.4 HDi	1.4 HDi		1.4 HDi 16V	1.4 HDi 16V					
See pages:	184 to 191			192 to 200						
C3 Pluriel	1.4 HDi									
See pages:	184 to 191									
XSARA			1.4 HDi					1.9 D	2.0 HDi	2.0 HDi
See pages:			184 to 191					211 to 215	216 to 224	
XSARA Picasso						1.6 HDi 16V	1.6 HDi 16V		2.0 HDi	
See pages:						201 to 210			216 to 224	

RECOMMENDATIONS: TIMING BELT		ALL TYPES
Petrol Engine	Diesel Engine	
<p style="text-align: center;">Recommendations.</p> <p style="text-align: center;">IMPERATIVE: After any repair involving removal of the timing belt, systematically replace:</p> <p style="text-align: center;">The timing belt, The tensioner roller fixing nut.</p>		

C2 - C3 - C3 PLURIEL

CHECKING AND SETTING THE VALVE TIMING



Engines: HFX - KFV - NFU

Tools.

[1] Engine flywheel peg	: 4507-T.A
[2] Camshaft pulley peg	: 4507-T.B
[3a] Camshaft peg	: 4533-TA.C1
[3b] Camshaft peg	: 4533-TA.C2
[4] Dynamic tensioner roller pin	: 4200-T.H
[5] Belt retaining pin	: 4533-T.AD
[6] Pliers for removing plastic pins	: 7504-T

Checking the valve timing.

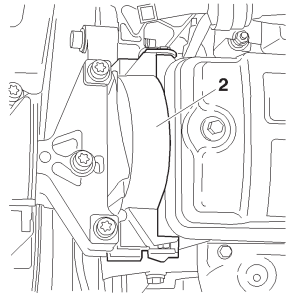
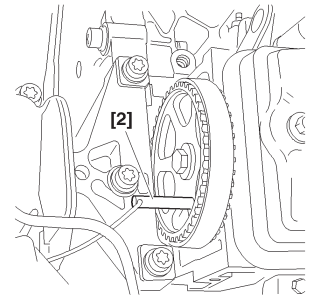
Engines: HFX - KFV - NFU.

Raise and support the front RH side of the vehicle.
 Disconnect the battery positive terminal.
 Engage 5th gear.
 Remove the oil filter (1).

Engines: HFX - KFV.

Remove:

- The timing top casing (2).
- Turn the wheel to rotate the engine (*normal direction of rotation*).
- Peg the camshaft pulley, using tool [2].



B1BP2M7C

B1BP2M8C

B1BP2M9C

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL

Engine: NFU

Checking the timing (continued).

Engine: NFU.

Place a jack under the engine, peg the engine.

Remove:

- The engine support (4) complete.
- The timing casing (3).
- The sparking plugs (*eases engine rotation*).

Turn the wheel to rotate the engine (*normal direction of rotation*).

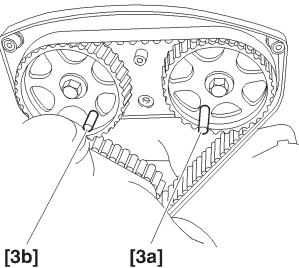
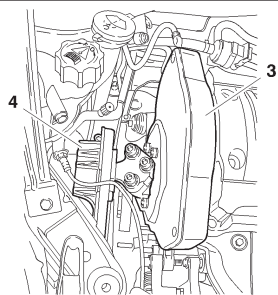
Position the pegs [3a] and [3b].

Peg the flywheel, using tool [1].

If the setting is not correct, recommence the operation.

Remove the tools [1], [2], [3a] and [3b].

Complete the refitting.



B1BP2MAC

B1EP18MC

B1BP2MBC

C2 - C3 - C3 PLURIEL

CHECKING AND SETTING THE VALVE TIMING

Engines: HFX - KFV

Setting the timing.**Preliminary operation.**

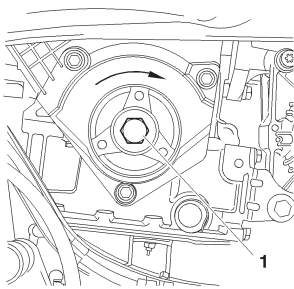
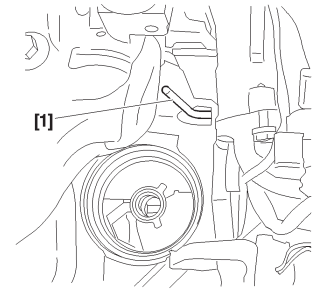
Lift and support the vehicle, wheels hanging.

Disconnect the battery.

Remove:

- The front RH wheel.
- The splash-shield, using tool [6].
- The accessories belt (*See corresponding operation*).
- The crankshaft pulley.
- The oil filter.

Place a jack under the engine, peg the engine.

**Removing.****Engines: HFX – KFV.**Turn the engine by means of screw (1) (*normal direction of rotation*).

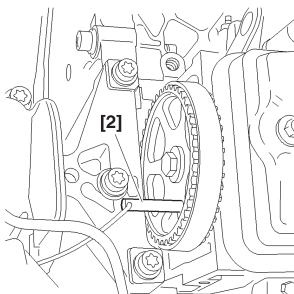
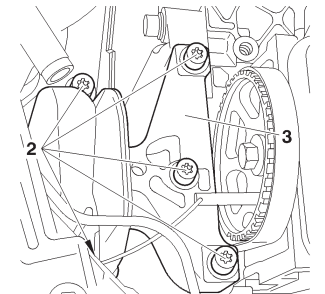
Remove the timing casings.

Peg the camshaft pinion, using tool [2].

Peg the flywheel, using tool [1].

Remove:

- The fixing screws (2).
- The upper engine support (3).



B1BP2MCC B1BP2M9C

B1BP2MBC B1BP2MDC

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV

Setting the timing (continued).**Engines: HFX – KFV.**

Slacken the screws (4) without removing them.

Remove the bottom engine support assembly (5), and the fixing screws (4).

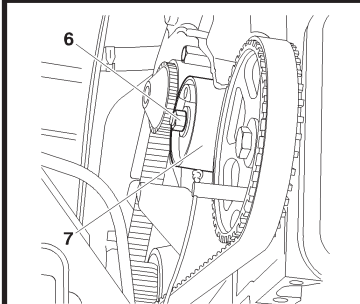
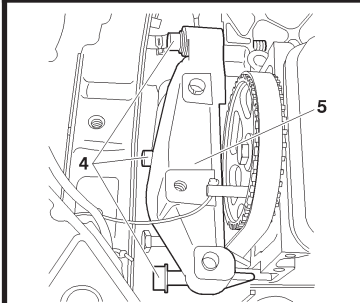
Slacken the nut (6).

Completely detension the belt by acting on the tensioner roller (7).

Remove the timing belt.

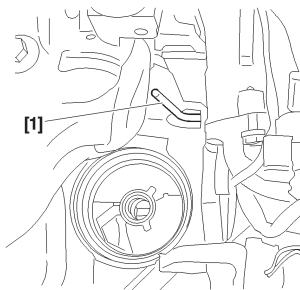
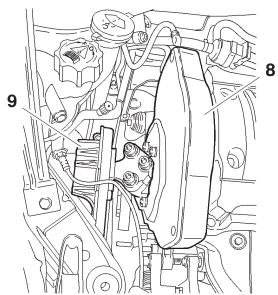
IMPERATIVE: Check that the tensioner roller turns freely (no tight spot).

B1BP2MEC B1EP18NC



C2 - C3 - C3 PLURIEL

CHECKING AND SETTING THE VALVE TIMING

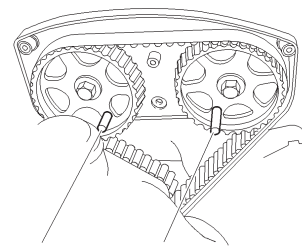


Engine: NFU

Engine: NFU.**Setting the timing (continued).**

Remove:

- The bottom plastic casing.
- The engine support (9).
- The middle support.
- The timing cover (8).
- Peg the flywheel, using tool [1].
- Position the tools [3a] and [3b].



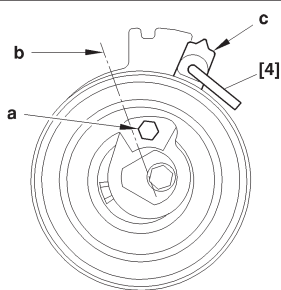
B1BP2MFC B1BP2MBC

B1EP18MC

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL

Engine: NFU

**Setting the timing (continued).**Engine: NFU.

Slacken the tensioner roller.

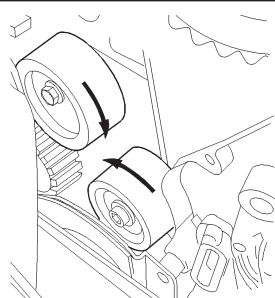
Turn the tensioner roller so as to be able to position the tool [4], with the aid of an Allen key placed at «a».

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).

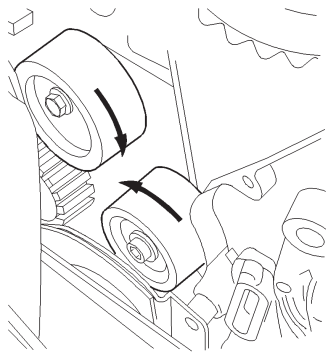
Check that the rollers (9) and (10) turn freely (*no tight spot*).

B1EP18PC B1EP18QC

C2 - C3 - C3 PLURIEL

CHECKING AND SETTING THE VALVE TIMING

Engines: HFX - KFV



B1EP18QC

Setting the timing (continued).

Engines: HFX-KFV.

Refit.

WARNING: Respect the direction of fitting of the belt (*the arrows «d» indicate the direction of rotation of the crankshaft*).

Refit the timing belt.

Position the timing belt, belt «e» well tensioned, in the following order:

- Crankshaft pinion, hold the belt using tool [5].
- Camshaft pulley.
- Coolant pump pulley.
- Tensioner roller.

Remove the pegs [1] and [2].

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL

Engines: KFX - KFV - NFU

Setting the timing (continued).

Engines: HFX-KFV.**Refitting.****NOTE:** Check that the pegs [1] and [2] are in place.**WARNING:** Respect the direction of fitting of the timing belt, the arrows «d» indicate the direction of rotation of the crankshaft.

Refit the timing belt.

Position the timing belt, belt «e» well tensioned, in the following order:

Crankshaft pinion, hold the belt using tool [5].

- Camshaft pulley.
- Coolant pump pulley.
- Tensioner roller.

Remove the tools [1], [2].

Engine: NFU.

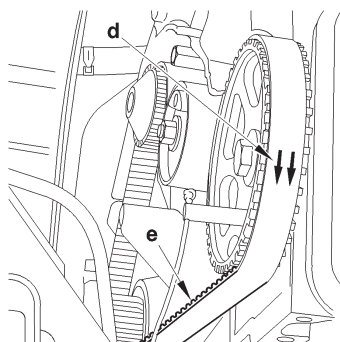
Fit the timing belt in position in the following order:

- Inlet camshaft pulley.
- Exhaust camshaft pulley.
- Guide roller.
- Crankshaft pulley.

Position tool [5].

- Coolant pump pulley.
- Dynamic tensioner roller.

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

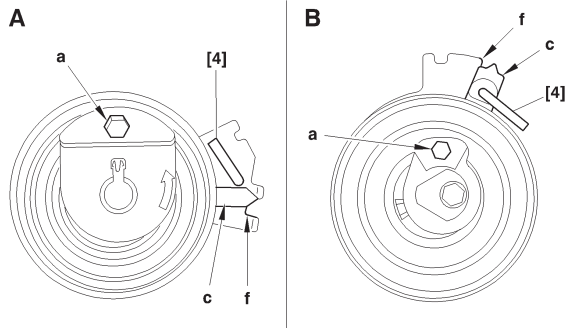


B1EP18RC

C2 - C3 - C3 PLURIEL

CHECKING AND SETTING THE VALVE TIMING

Engine: NFU

Timing belt overtensioned.**A:** Engine: HFX – KFV.**B:** Engine: NFU.

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

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

Hold the tensioner roller (7), using tool [4].

Tighten the fixing nut of the tensioner roller, tightening to $1 \pm 0,1$ 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 tools [1], [2] and [3].

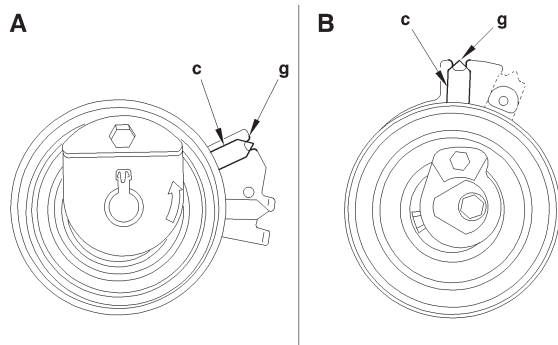
Remove the tools [1], [2] and [3].

B1EP18SD

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - NFU

Adjusting the fitting tension of the timing belt.**A:** Engine: HFX – KFV.**B:** Engine: NFU.

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 «a».

The index «c» should not go beyond the notch «g».

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

Hold the tensioner roller (7) in this position, with the aid of a hexagonal spanner. Tighten the tensioner roller fixing nut to :

2 ± 0.2 m.daN. (HFX - KFV engines)

2.2 ± 0.2 m.daN. (NFU engine)

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

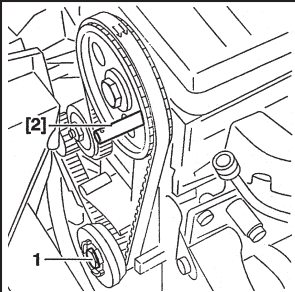
Complete the refitting.

B1EP18TD

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

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

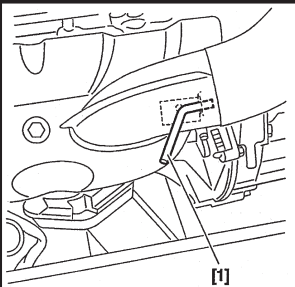
} Tool kit 4507-T

Checking the timing.

- Peg the flywheel, using tool [1].
- Peg the camshaft pulley, using tool [2].

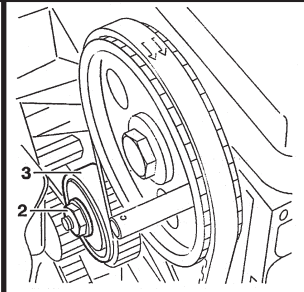
Setting the timing.

- 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*).

[1]

B1EP067C B1EP066C



B1EP068C

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: KFW - NFV

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.

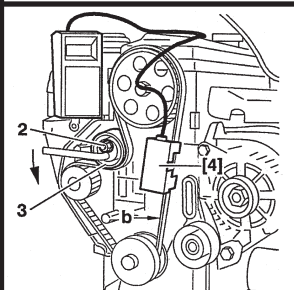
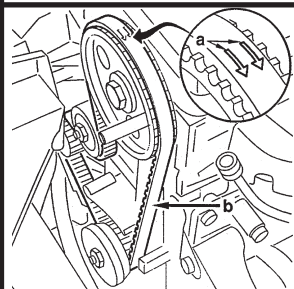
Position:

- 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.



B1EP069C B1EP06AC

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

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.

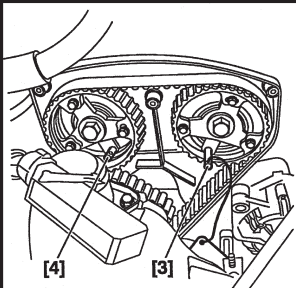
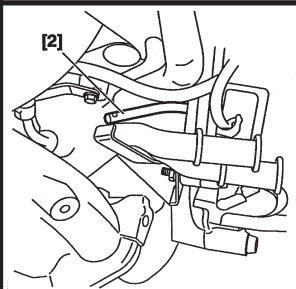
- Rotate the crankshaft **2 turns** in the normal direction of rotation.
- Check that it is still possible to peg the following components.
- Flywheel.
- Camshaft.

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

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: NFU



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

Tools.

- : 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.

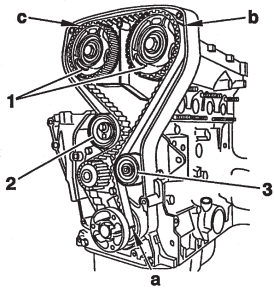
- Peg the flywheel using the tool [2].
- Peg the camshaft pulleys [3] and [4].

B1EP11BC B1EP11CC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: NFU

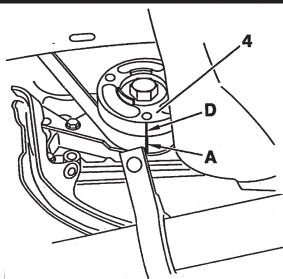


Setting the valve timing.

- 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).*



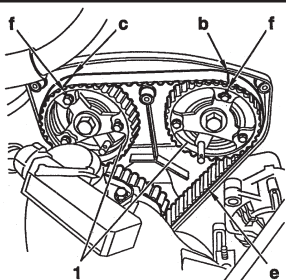
- Refit the belt.
- Line up mark **(A)** on the belt with groove **(D)** of the pinion **(4)**.
- Hold the belt against the pinion **(4)**.

B1EP11DC | B1EP11EC

CHECKING AND SETTING THE VALVE TIMING

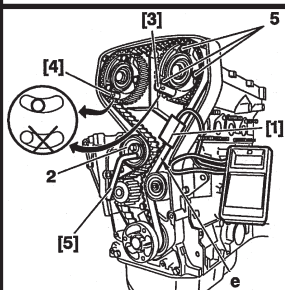
XSARA

Engine: NFU



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 **1m.daN**.

**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.

B1EP11FC B1EP11GC

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 **4 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 **1m.daN**.
- Remove the tools.

CHECKING AND SETTING THE VALVE TIMING

C3

Engine: KFU

Tools.

- | | |
|----------------------------|--------------|
| [1] Flywheel peg | : 4507-T |
| [2] Camshaft peg | : 4533-TA.C1 |
| [3] Crankshaft setting peg | : (-).0194.A |

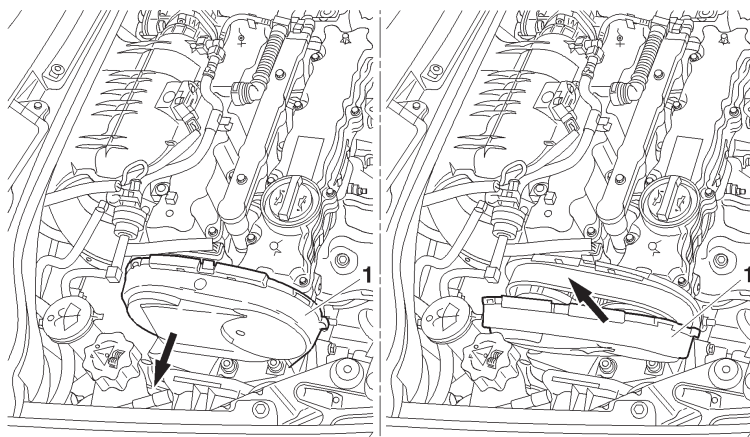
Checks.

Raise and support the vehicle, front wheels hanging.
Disconnect the battery.

Remove:

- The oil filter.
- The engine cover.
- The upper timing cover (1).
- The sparking plugs, to ease rotation of the engine.

Rotate the engine by means of the crankshaft screw
(*never turn the engine backwards*).

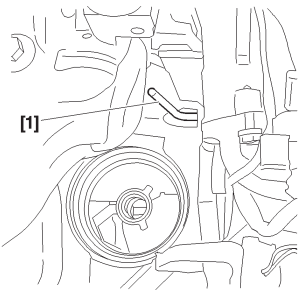
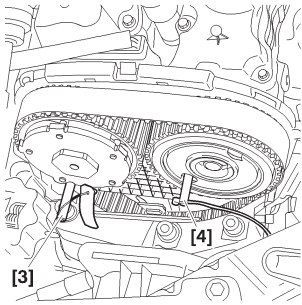


B1BP2ZJD

C3

CHECKING AND SETTING THE VALVE TIMING

Engine: KFU



Position the tools [3] and [2].

Peg the flywheel, using tool [1].

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

Remove the pegs [2] and [3].

Refit :

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

Reconnect the battery.

Lower the vehicle.

Perform the operations that are necessary following a reconnection of the battery.

B1BP2ZTC B1BP2MBC

CHECKING AND SETTING THE VALVE TIMING

C3

Engine: KFU

Tools.

[1] Flywheel setting peg	: 4507-T
[2] Engine support crossmember	:
[3] Crankshaft setting peg	: (-).0194.A
[4] Camshaft peg	: 4533-TA.C1
[5] Belt retaining pin	: 4533-T.AD

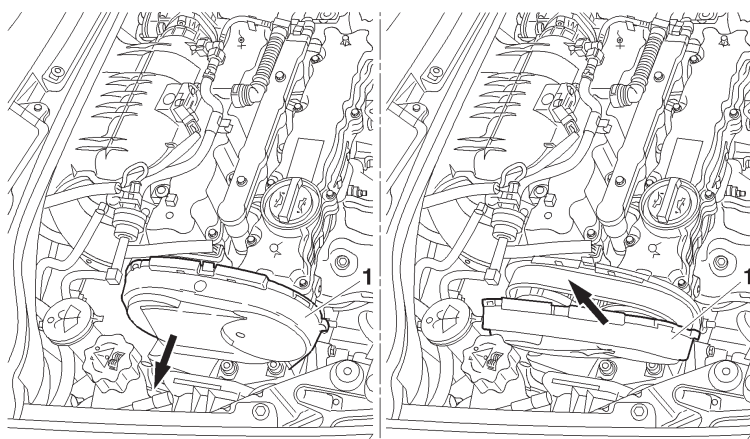
Removing.

Raise and support the vehicle, front wheels hanging.
Disconnect the battery.

Remove:

- The front RH wheel.
- The front RH splash-shield.
- The engine cover.
- The accessories drive belt (*see corresponding operation*).
- The crankshaft pulley.
- The oil filter.

Remove the upper timing cover (1).

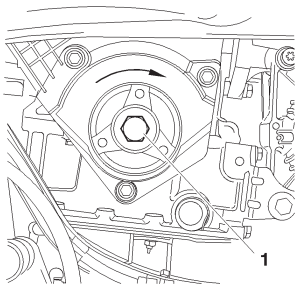


B1BP2ZJD

C3

CHECKING AND SETTING THE VALVE TIMING

Engine: KFU



1

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

Peg the flywheel, using tool **[1]**.

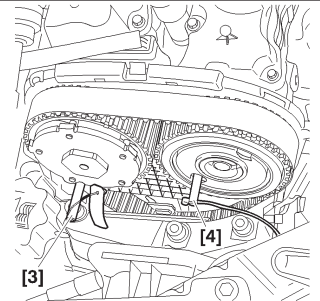
Position the tools **[3]** and **[4]**.

Position the tool **[2]**.

Support the engine.

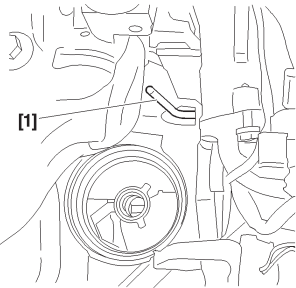
Remove the screws **(3)**.

The upper RH engine support.

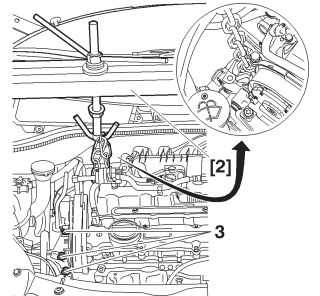


[3]

[4]



[1]



3

[2]

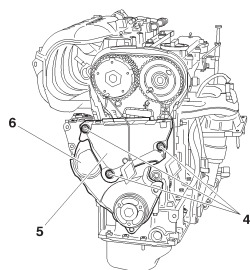
B1BP2MCC B1BP2MBC

B1BP2ZTC B1BP2ZUC

CHECKING AND SETTING THE VALVE TIMING

C3

Engine: KFU



Remove:

- The lower engine support assembly (5) and the fixing screw (4).
- Remove the lower timing cover (6).
- Slacken the nut (7).
- Remove the timing belt.

IMPERATIVE: Check that the tensioner roller turns freely (*no tight spot*).**Refitting.**Fit the (*new*) timing belt, in the following sequence:

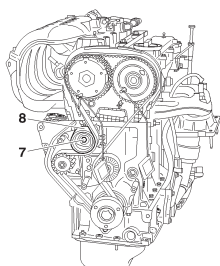
- Inlet camshaft pulley.
- Exhaust camshaft pulley.
- Guide roller.
- Crankshaft pulley.

Position the tool [5].

Coolant pump pulley.

Dynamic tensioner roller.

Remove tools [3], [4] and [5].

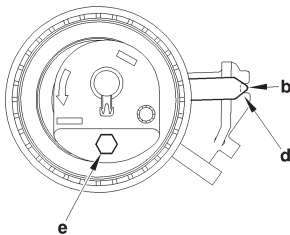
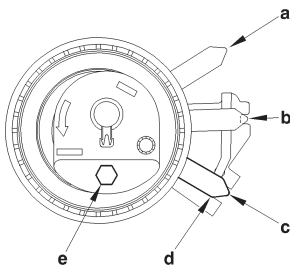


B1CP0F1D B1CP0F2D

C3

CHECKING AND SETTING THE VALVE TIMING

Engine: KFU

**Overtensioning the belt.**

Position «a» Tensioner roller in slackened position.

Position «b» Tensioner roller in normal position.

Position «c» Tensioner roller in overtensioned position.

Turn the tensioner roller (8) using an allen spanner at «e».

Position the index «d» in position «c», tension the belt to the maximum indicated.

Tighten the fixing nut of the tensioner roller to $2,1 \pm 0,2$ m.daN.Rotate the crankshaft by **4 turns** (*normal direction of rotation*).**IMPERATIVE: Never turn the crankshaft backwards.**

Make sure the timing setting is correct by refitting the pegs [1], [3] and [4].

Remove the pegs [1], [3] and [4].

Adjusting the tension of the belt.

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

Then bring the index «d» to its adjustment position «b».

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

Maintain the tensioner roller (8) in this position, using the allen spanner.

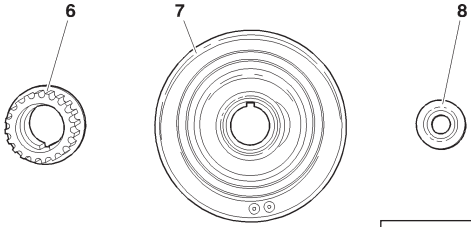
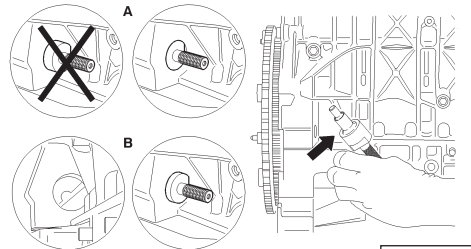
Tighten the fixing nut of the tensioner roller to $2,1 \pm 0,2$ m.daN.**IMPERATIVE: The tensioner roller should not turn during the tightening of its fixing. If it should do so, repeat the operation to tension the timing belt.**

Refitting.

Complete the refitting in the opposite order to removal.

B1EP1DTC

B1EP1DUC

CHECKING AND SETTING THE VALVE TIMING		XSARA - XSARA PICASSO
NEW ASSEMBLY	2003 →	Engines: 6FZ - RFN 2003 →
 <p style="text-align: right;">B1EP1B9D</p>		<p>(6) Crankshaft pinion (7) Accessories drive pulley (8) Washer (9) Screw</p> <p>The pinion (6) is fitted as an idler on the crankshaft. The accessories drive pulley (7) is immobilised on the crankshaft by a half-moon keyway and by the tightening of washer (8) and screw (9).</p> <p>A: Pegging on manual gearbox. B: Pegging on automatic gearbox.</p>
 <p style="text-align: right;">B1BP2V2D</p>		<p>The pegging of the crankshaft is done on the flywheel, or on the converter drive plate (<i>automatic gearbox</i>).</p> <p>The pegging hole on the cylinder block (<i>exhaust end</i>) is calibrated and reinforced.</p> <p>IMPERATIVE: Never turn the crankshaft with the accessories drive pulley slackened.</p> <p>IMPERATIVE: Never remove the accessories drive pulley without pegging the crankshaft and the camshafts.</p> <p>IMPERATIVE: Always turn the crankshaft in the direction of engine rotation.</p>

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

NOTE: Checking and setting the timing → 2003: See Mechanic's Handbook 2003: pages 163 to 173.

Engines: 6FZ - RFN 2003 →

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.

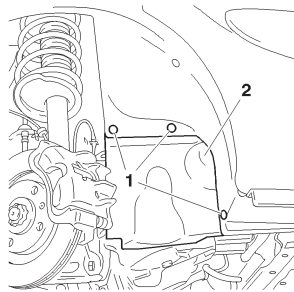
Removing.

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.



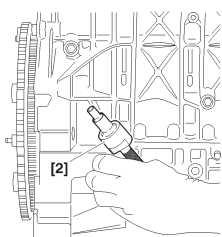
C4AP12TC

CHECKING AND SETTING THE VALVE TIMING

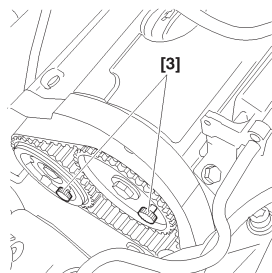
XSARA - XSARA PICASSO

Engines: 6FZ - RFN

2003 →



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.

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN 2003 →

Setting the timing.

Removing.

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

Raise and support the vehicle, front wheels hanging.

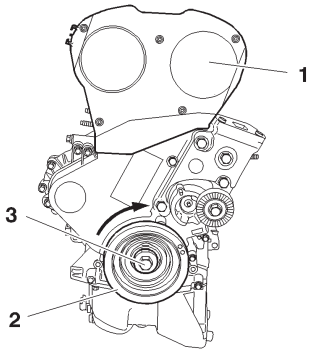
Remove:

- 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.



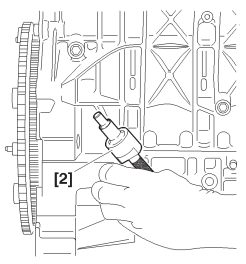
B1BP2V4C

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: 6FZ - RFN 2003 →

Setting the timing (continued).



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

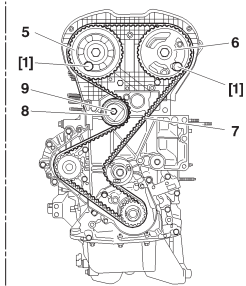
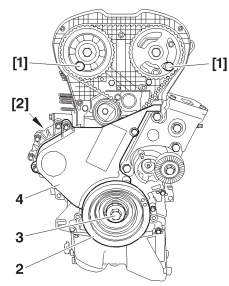
- Peg:**
- The crankshaft, using tool [2].
 - The camshaft pulleys (5) and (6), using tool [1].

- 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.

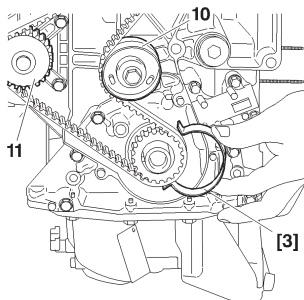
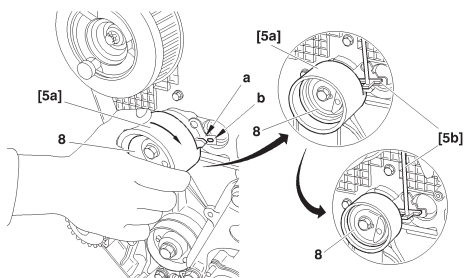


B1BP2V3D B1EP1BBD

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN 2003 →

**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 $4 \pm 0,4$ m.daN, then angular tighten to $53^\circ \pm 4^\circ$, tool [4].

B1EP1BCD

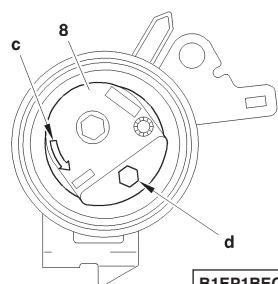
B1EP1BDC

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: 6FZ - RFN 2003 →

Tensioning the timing belt.



B1EP1BEC

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

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

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

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

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

Otherwise, repeat the operation to tension the timing belt.

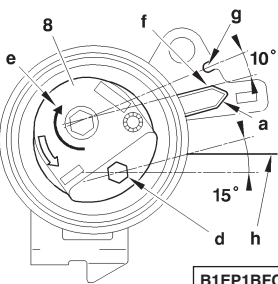
IMPERATIVE: The tensioner roller should not turn during the tightening of its fixing.

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

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

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

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



B1EP1BFC

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: 6FZ - RFN 2003 →

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.

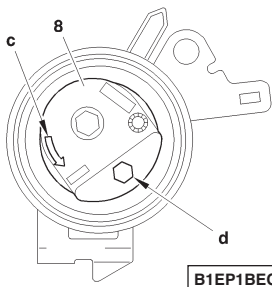
Peg the inlet camshaft pulley, using tool [1].

Checks.

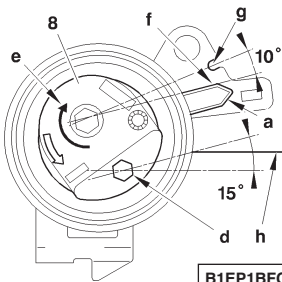
Tension of the timing belt.

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*).



B1EP1BEC

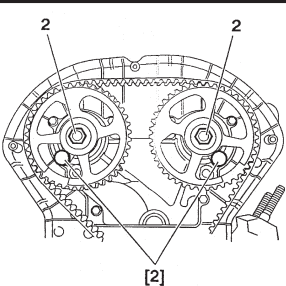
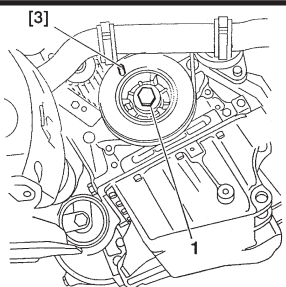


B1EP1BFC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: RFS



Tools.

- | | | |
|---|------------|-------------------|
| [1] Belt tension measuring instrument | : 4122-T | } Tool kit 7004-T |
| [2] Camshaft pulley locating peg | : 9041-T.Z | |
| [3] Crankshaft locating peg | : 7014-T.N | |
| [4] Camshaft pulley locking peg | : 4200-T.G | |
| [5] Tensioner spanner | : 7017-T.W | |
| [6] Toothed sector for locking the flywheel | : 9044-T | |

Checking the setting.

- Turn the engine by the crankshaft screw (1).
- Peg the crankshaft using the tool [3].

ESSENTIAL: Check that the crankshaft DAMPERS pulley is in good condition. If the hub/pulley markings do not line up, the crankshaft pulley must be replaced.

- Peg the camshaft using the tool [2] (*the locating pegs [2] should slide in easily*).
- If this is not the case, set the timing.

NOTE: Camshaft hubs (*see pages 138 and 139*).

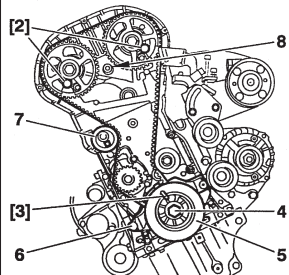
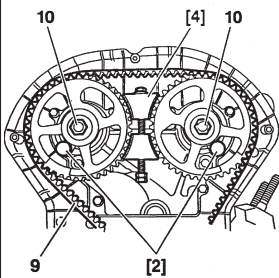
B1EP12FC B1EP12GC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: RFS

Setting the valve timing.



- Peg the crankshaft using tool [3].
- Peg the camshaft pulleys using tool [2].
- Lock the flywheel using the tool [6].

Refit:

- The pulley (5).
- The screw (4) (*tighten moderately*).
- The peg [3].

Remove:

- The peg [3].
- The screw (4) (*brush the screw thread*).
- The pulley (5).
- The lower cover (6).

Remove:

- The tool [6].
- The studs (8).
- Fit the tool [4].
- Loosen the screws (10).
- Remove the tool [4].
- Slacken the tensioner roller (7).
- Remove the belt (9).

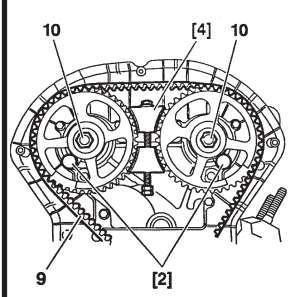
B1EP120C B1EP112C

CHECKING AND SETTING THE VALVE TIMING

XSARA

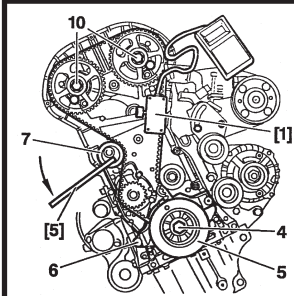
Engine: RFS

Pretensioning the timing belt.



- Peg the crankshaft using the tool [3].
 - Peg the camshaft pulleys using the tool [2].
- NOTE:** Ensure that the camshaft pulleys rotate freely on the hubs. Clean the contact faces of the pulleys and hubs.
- Turn the camshaft pulleys in a clockwise direction to bring them to the end of the slots.
 - Fit the belt (9).
 - Fit the tool [1].
 - Turn the roller (7) using the tool [5].
 - Pre-tension to: (*Pulleys slackened*).

Engine	RFS
New belt	55 SEEM units



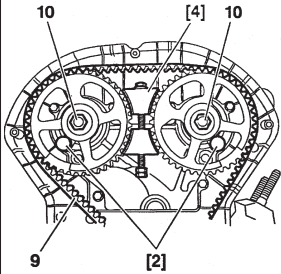
- Tighten the screws of the roller (7) to **2 m.daN**.
- Fit the tool [4].
- Tighten the screws (10) to **4 m.daN**.
- Remove the tools.
- Rotate the crankshaft by **six turns** (*normal direction of rotation*).

B1EP120C B1EP121C

XSARA

CHECKING AND SETTING THE VALVE TIMING

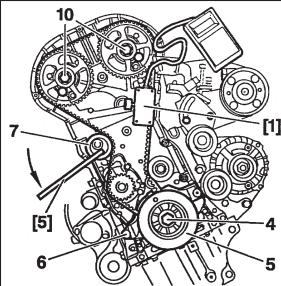
Engine: RFS



Tensioning the timing belt.

- Peg the crankshaft using the tool [3].
- Peg the camshaft pulleys using the tool [2].

NOTE: If it is not easy to peg the camshaft hubs, loosen the tensioner roller (7), and turn the camshafts using the screw (10).



- Fit the tool [4].
- Loosen the screws (10).
- Remove the tool [4].
- Loosen the tensioner roller (7).
- Fit the tool [1] to the belt.
- Turn the roller (7) using the tool [5].

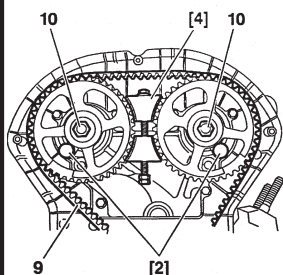
B1EP120C

B1EP121C

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: RFS



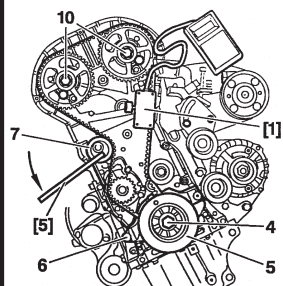
- Tension to: (*Pulleys slackened*).

Engine	RFS
New belt	35 SEEM units

- Tighten the screw of the roller (7) to 2 m.daN.
- Fit the tool [4].
- Tighten the screws (10) to 7.5 m.daN.
- Remove the tools.
- Rotate the crankshaft by two turns (*normal direction of rotation*).
- Check the pegging of the crankshaft/camshaft using tools [2] and [3].

NOTE: Tools [2] and [3] should slide in easily.

- Remove the tools.

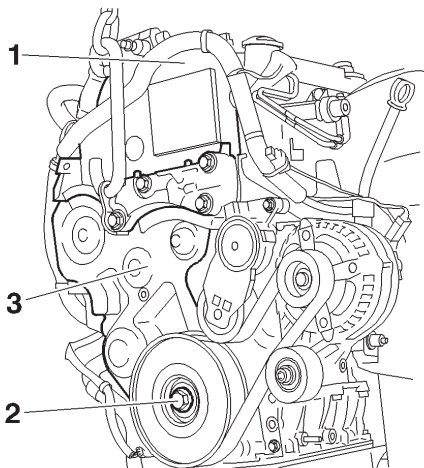


B1EP120C B1EP121C

C2 - C3 - C3 PLURIEL - XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HW - 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*).

Check ing 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

C2 - C3 - C3 PLURIEL - XSARA

Engines: 8HX - 8HW - 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».

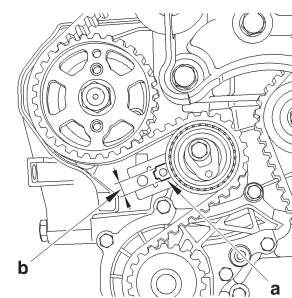
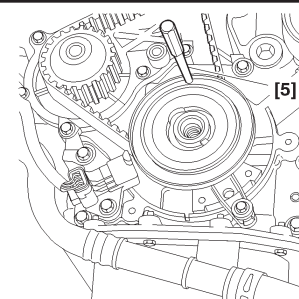
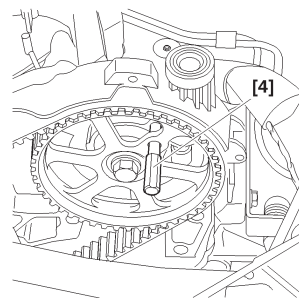
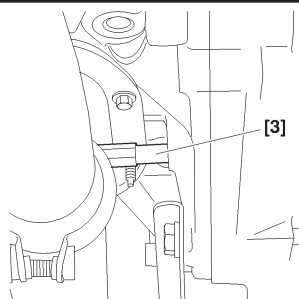
Check the correct positioning of index «a».

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

C2 - C3 - C3 PLURIEL - XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HW - 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.

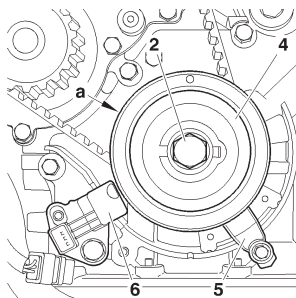
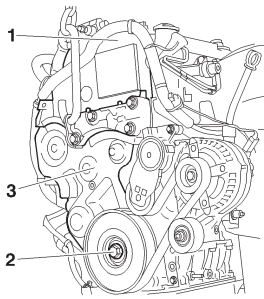
IMPERATIVE: Uncouple the exhaust line in order to avoid damaging the front flexible pipe. Twisting, pulling and bending the front flexible pipe reduces its life.

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

C2 - C3 - C3 PLURIEL - XSARA

Engines: 8HX - 8HW - 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].

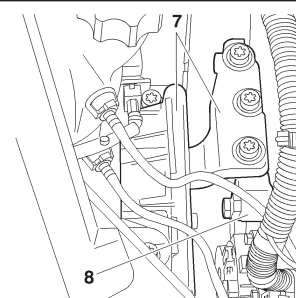
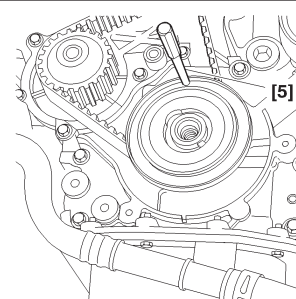
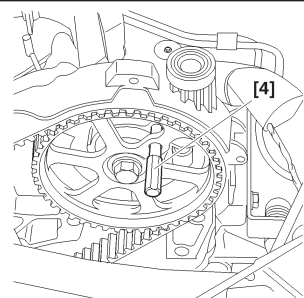
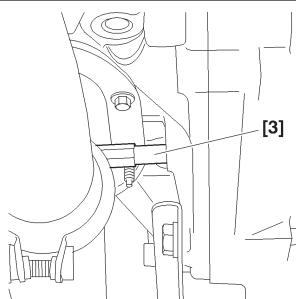
Peg:

- 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).



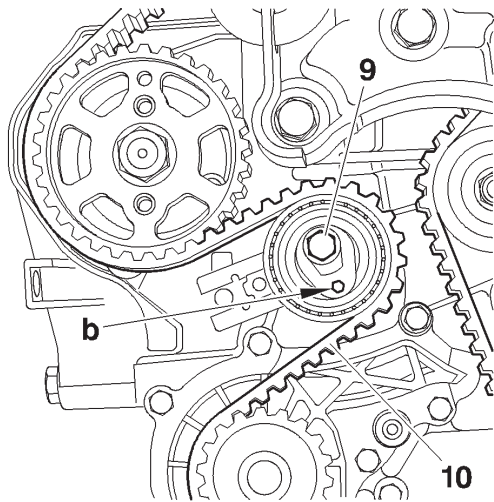
B1JP03SC B1EP18DC

B1EP195C B1BP2LYC

C2 - C3 - C3 PLURIEL - XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HW - 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

C2 - C3 - C3 PLURIEL - XSARA

Engines: 8HX - 8HW - 8HZ

Setting the timing (continued).

NOTE: Screw (9) slackened.

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

- Crankshaft pinion (4).

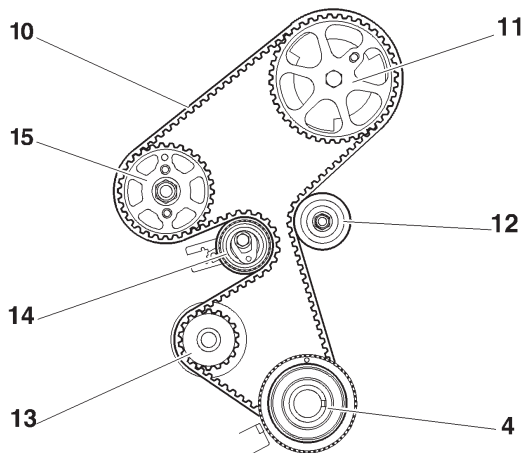
- Guide roller (12).

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

C2 - C3 - C3 PLURIEL - XSARA

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HX - 8HW - 8HZ

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 $3 \pm 0,3 \text{ m.daN}$.
Remove the tools [4] and [5].

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

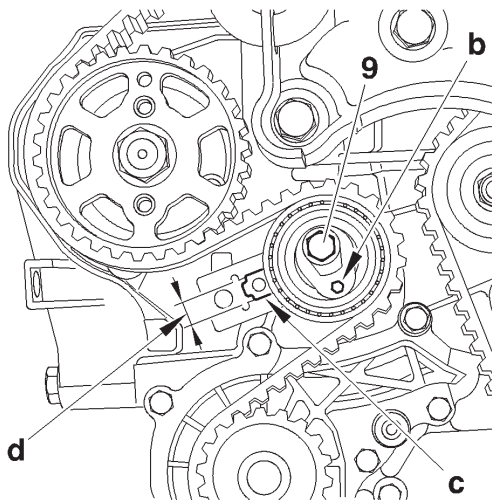
Check:

- 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 $0,7 \text{ m.daN}$.



B1EP18KC

CHECKING AND SETTING THE VALVE TIMING

C2 - C3 - C3 PLURIEL - XSARA

Engines: 8HX - 8HW - 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).

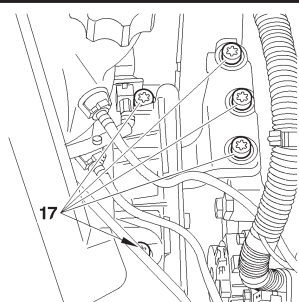
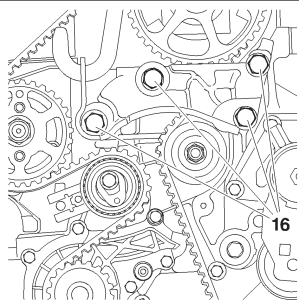
Refit the accessories drive pulley and tighten to:

- 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.

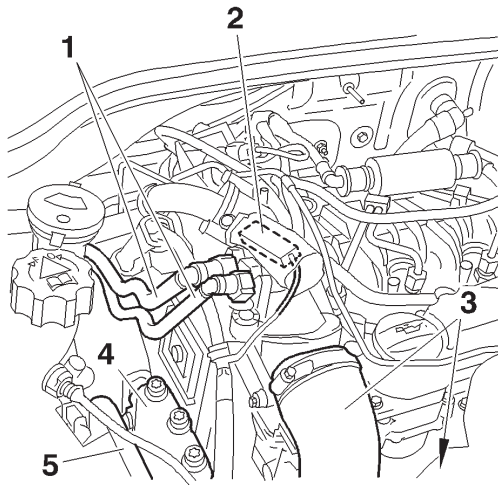


B1EP18LC B1BP2LZC

C3

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HY - 8HV



Tools.

[1] Engine flywheel peg Ø 12 mm	: (-).0194-C
[2] Camshaft pulley peg Ø 8 mm	: (-).0194-B
[3] Crankshaft pulley peg Ø 5 mm	: (-).0194-A

Preliminary operations.

Remove:

- The front RH wheel.
- The front RH splash-shield.
- The accessories belt (*see corresponding operation*).

Uncouple:

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

Disconnect the connector (2).

Support the engine by means of a roller jack equipped with a chock.

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

B1BP2N0C

CHECKING AND SETTING THE VALVE TIMING

C3

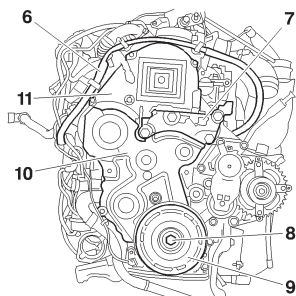
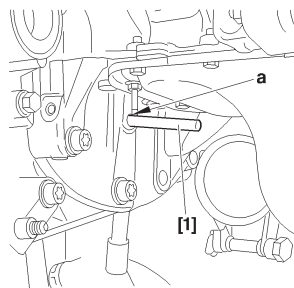
Engines: 8HY - 8HV

Checks.

Rotate the engine to engage it (*normal direction of rotation*).
 Immobilise the engine flywheel at «a», using tool [1].
 Move aside the harness (6).

Remove:

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



B1BP2N1C B1BP2N2C

C3

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HY - 8HV

Checks (continued).

Refit the screw (8).
 Rotate the crankshaft six times (*clockwise*).

IMPERATIVE: Never rotate the engine backwards.

Peg:

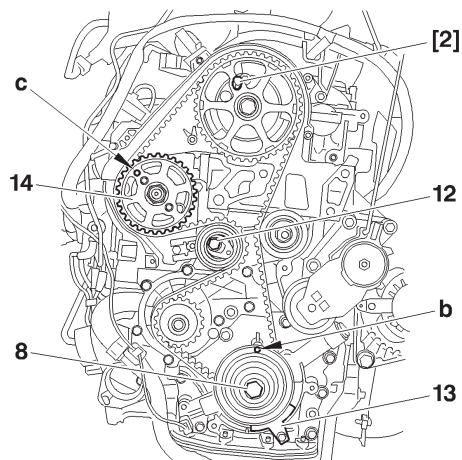
- The camshaft, using tool [2] (*oil the pegs*).
- The fuel high pressure pump pulley (14), using tool [3] at «c».

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

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

IMPERATIVE: Should it be impossible to peg the camshaft, check that the offset between the hole in the camshaft pinion and the pegging hole is not greater than 1 mm.

Otherwise repeat the operation to position the timing belt (*see corresponding operation*).



B1EP18YD

CHECKING AND SETTING THE VALVE TIMING

C3

Engines: 8HY - 8HV

Checks (continued).

NOTE: The index «e» of the dynamic tensioner roller should be centred within the area «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*).

Refitting.

Refit the tool [1] at «a».

Remove the screw (8).

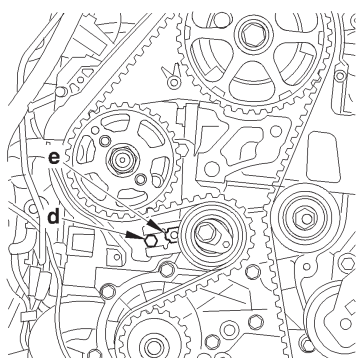
Refit:

- The upper timing cover (11).
- The lower timing cover (10).
- The accessories drive pulley (9).
- The screw (8).

Tightening torque.

- Screw (8):
 - Pre-tighten to : $3 \pm 0,3$ m.daN.
 - Angular tightening : $180^\circ \pm 5^\circ$.

Remove the tool [1].



B1EP18ZC

C3

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HY - 8HV

Checks (continued).

Refit:

- The engine support (7), tighten to $1,5 \pm 0,4$ m.daN.
- The engine support (4), tighten to $6,1 \pm 0,6$ m.daN.
- The engine support (5), tighten to $6 \pm 0,6$ m.daN.
- The electrical harness (6).

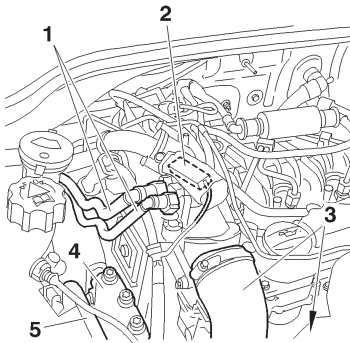
Couple:

- The exhaust line, tighten the collar to : $2,5 \pm 0,3$ m daN.
 - The fuel supply unions (1).
 - The air/air heat exchanger inlet/outlet pipes (3).
- Connect the connector (2).

Refit:

- The accessories belt (*see corresponding operation*).
- The front RH splash-shield (*see corresponding operation*).
- The front RH road wheel, tighten to 9 ± 1 m.daN.

Reconnect the battery.



B1BP2N0C

CHECKING AND SETTING THE VALVE TIMING

C3

Engines: 8HY - 8HV

Setting the timing.

Perform the preliminary operations for checking the timing up to removing tool [1] at «a» for immobilizing the engine flywheel.

Refit screw (8).

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

Peg the camshaft, using tool [2] (*oil the pegs*).

WARNING: Do not press or damage the track which is the target for the engine speed sensor (14).

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

Remove:

- The timing protector (13).

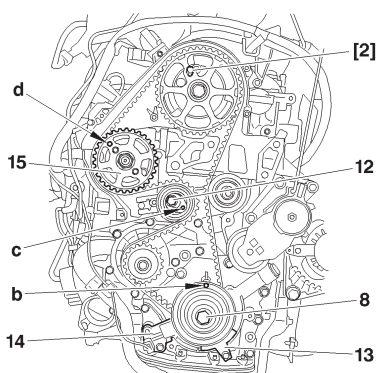
- The engine speed sensor (14).

Slacken the screw (12) of the tensioner roller, keeping it slack with the aid of a hexagonal spanner at «c».

Detension the belt by pivoting the tensioner roller (*clockwise*).

Remove the timing belt, commencing with the coolant pump pinion.

Peg the pulley (15), using a 5 mm diameter peg at «d».



B1EP18VD

C3

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HY - 8HV

Setting the timing (continued).

Checking the setting.**IMPERATIVE: Just prior to refitting, carry out the following tests.**

Check that:

- the rollers and the coolant pump operate freely (*no play and no tight spot*).
- there are no traces of oil (*from the crankshaft and camshaft sealing rings*).
- there is no leak of coolant fluid (*from the coolant pump*).
- the target track of the engine speed sensor (**14**) is not damaged or scratched (*if necessary replace the defective components*).

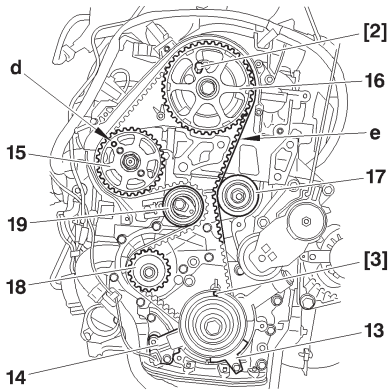
Refitting.

Fit the timing belt on the crankshaft pinion.

Position the belt on the guide roller, with the belt well tensioned.

Refit:

- The timing protector (**13**).
- The sensor (**14**).



B1EP18WD

CHECKING AND SETTING THE VALVE TIMING

C3

Engines: 8HY - 8HV

Setting the timing (continued).

Checks (continued).

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

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

Remove the 5 mm diameter peg at «d».

Adjusting the fitting tension of the belt.

Action the tensioner roller (19) to align the marks «f» and «g», avoiding detensioning the timing belt, with the aid of a male hexagonal spanner, at «c».

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

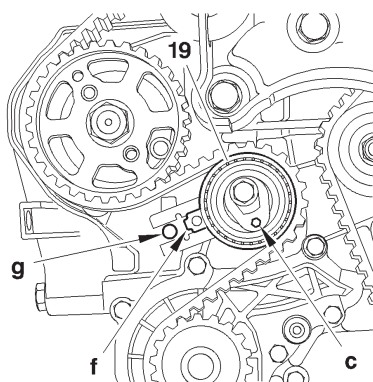
Hold the tensioner roller in position (19).

Tighten the tensioner roller, tightening to $3,7 \pm 0,3$ m.daN.

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

Remove tools [2] and [3].

Turn the crankshaft **six rotations** (*clockwise*).



B1EP18XC

C3

CHECKING AND SETTING THE VALVE TIMING

Engines: 8HY - 8HV

Adjusting the timing belt tension (continued).

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 «f» and «g» should be correct*).

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

Peg the camshaft pulley, using tool [2].

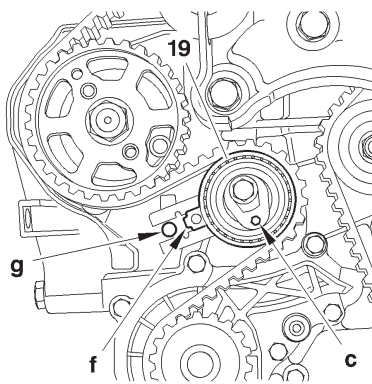
IMPERATIVE: Should it be impossible to peg the camshaft, check that the offset between the camshaft hole and the pegging hole is not more than 1 mm. If the offset is too great, repeat the operation.

Remove the pegs [2] and [3].

Refit tool [1] at «a».

Remove the screw (8).

Complete the refitting.



B1EP18XC

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*).

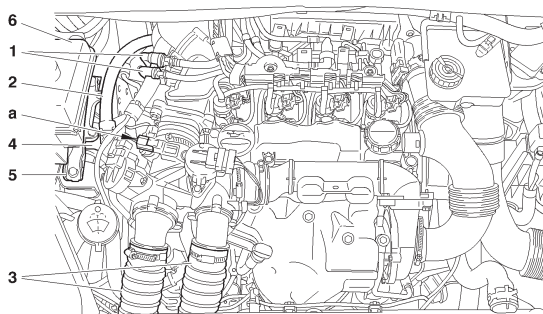
Disconnect the connector at «a».

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).

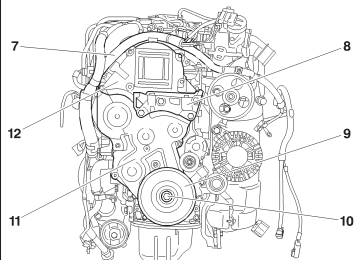
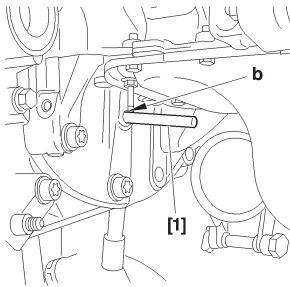


B1BP304D

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, 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].

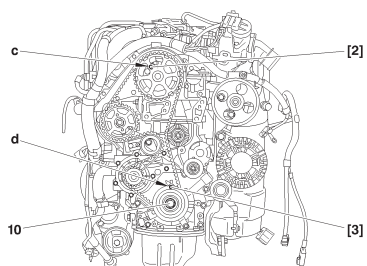
B1BP305C

B1EP1E3D

CHECKING AND SETTING THE VALVE TIMING

XSARA PICASSO

Engines: 9HZ - 9HY



Refit the screw (10).
Rotate the crankshaft **six times** (clockwise).

IMPERATIVE: Never turn it backwards.

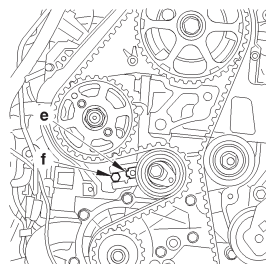
Peg the camshaft at «c», using tool [2] (oil the peg).

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].



B1EP1E4D B1EP1E5C

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	: $3 \pm 0,3$ m.daN.
	Angular tighten	: $180^\circ \pm 5^\circ$.

Remove tool [1].

Refit:

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

Couple:

- The tube (2).
 - The exhaust line, tighten the clip to $2,5 \pm 0,3$ 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 ± 1 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*).

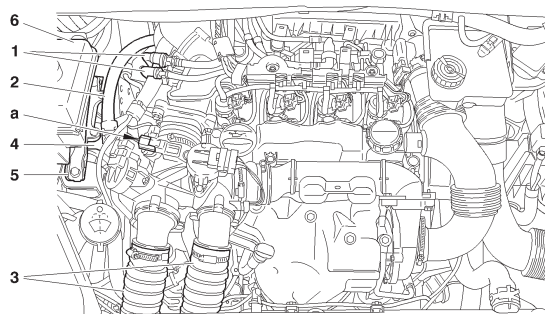
Disconnect the connector at «a».

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).

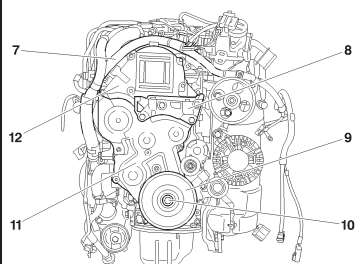
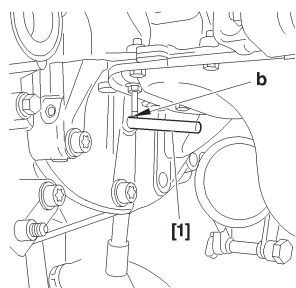


B1BP304D

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].

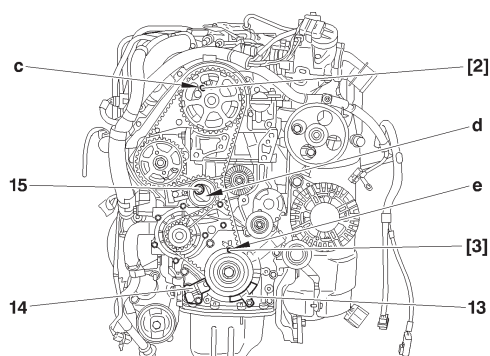
B1BP305C

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:

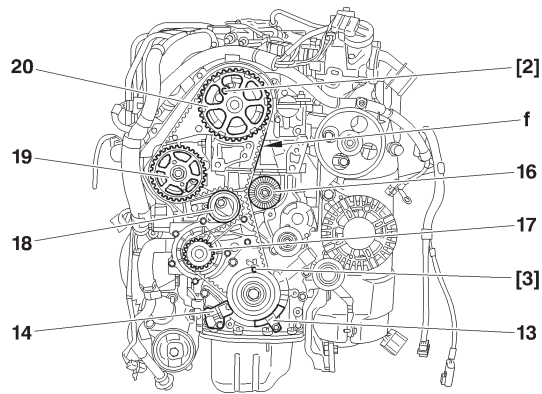
- That the rollers and the coolant pump pulley turn freely (*without play and without tight spot*).
 - That there are no signs of oil leaks (*at the crankshaft and camshaft seals*).
 - That there are no leaks of coolant fluid (*at the coolant pump*).
 - That the track of the engine speed sensor target (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:

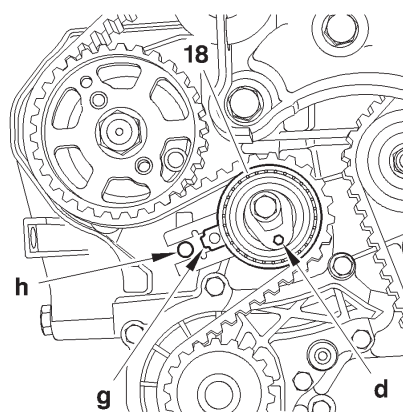
- Guide roller **(16)**.
- Camshaft pulley **(20)**.
- Fuel high pressure pump pulley **(19)**.
- Coolant pump pulley **(17)**.
- Tensioner roller **(18)**.

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	: $3 \pm 0,3$ m.daN.
	Angular tighten	: $180^\circ \pm 5^\circ$.

Remove tool [1].

Refit:

- The engine support (8), tighten to $5,5 \pm 0,4$ m.daN.
- The engine support (4), tighten to $6,1 \pm 0,6$ m.daN.
- The engine support (5), tighten to $2,5 \pm 0,2$ 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 $2,5 \pm 0,3$ 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 ± 1 m.daN.

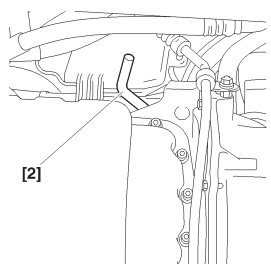
Reconnect the positive and negative terminals of the battery.

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



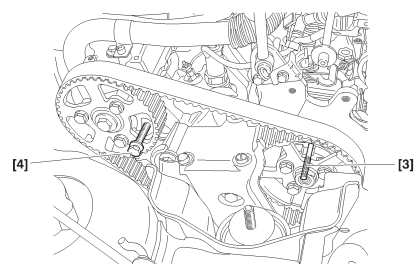
Tools.

- | | |
|---|--------------------------|
| [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.



B1BP2FTC B1EP16PD

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: WJY

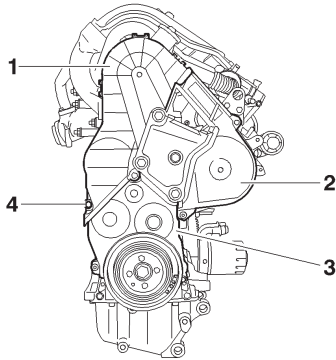
Setting the timing.

Removing.

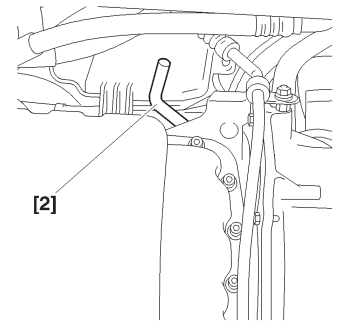
- Disconnect the battery.
- Remove the front RH lower splash-shield, using tool [1].
- Remove the accessories drive belt (*see corresponding operation*).
- Uncouple and plug the diesel fuel delivery and return hoses.
- Support the engine, using a workshop hoist.
- Remove the RH engine support.
- Engage 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).

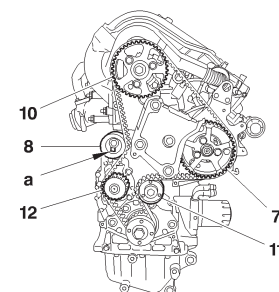
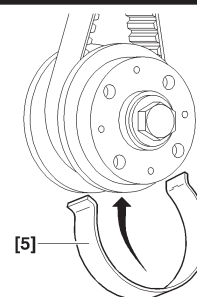
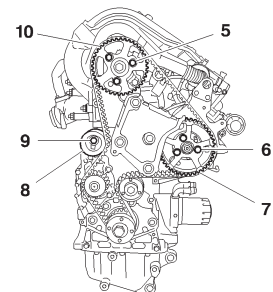
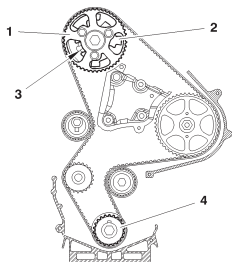
- Peg the camshaft hub, using tool [4].
- Peg the injection pump hub, using tool [3].
- Slacken screws (5) and (6).
- Slacken screw (9) of the tensioner roller (8).
- Remove the timing belt.

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

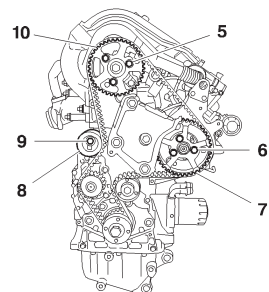
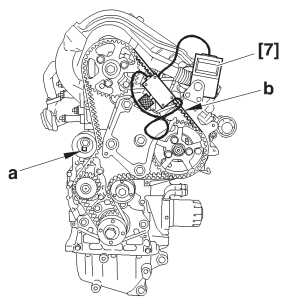
B1EP132C B1EP1EEC

XSARA

CHECKING AND SETTING THE VALVE TIMING

Engine: WJY

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**.

B1EP1EFC

B1EP1EDC

CHECKING AND SETTING THE VALVE TIMING

XSARA

Engine: WJY

Setting the timing (continued).

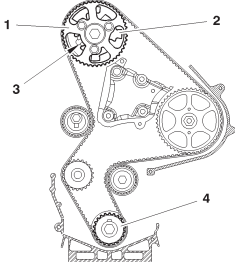
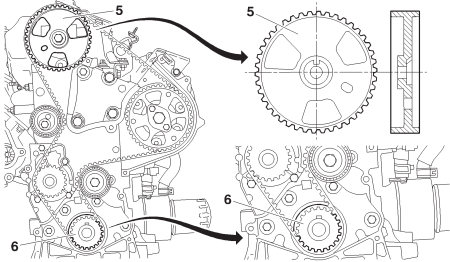
Tighten:

- 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.

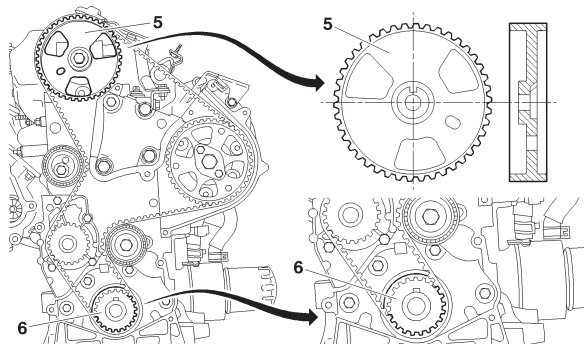
XSARA - XSARA PICASSO	CHECKING AND SETTING THE VALVE TIMING	
Engines: RHY - RHZ		N° RPO 9128 →
OLD FITTING: → N° RPO 9127		NEW FITTING N° RPO 9128 →
		
<p>(1) «Idler» camshaft pulley (2) Target for cylinder reference sensor. (3) Camshaft hub. (4) «Fixed» crankshaft pinion.</p> <p>The determining of the tension of the timing belt is done on the camshaft pulley (1).</p>	<p>The new timing on 8 valve engines DW10TD (RHY) and DW10ATED (RHS-RHZ) requires the following components: «Idler» crankshaft pinion «Fixed» camshaft pulley.</p> <p>(5) «Fixed» camshaft pulley (pulley with integral cylinder reference sensor target). (6) «Idler» crankshaft pinion (with increased width keyway groove).</p> <p>The determining of the tension of the timing belt is done on the crankshaft pinion (6).</p>	
B1EP176D	B1EP177D	

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ N° RPO 9128 →

NEW FITTING N° RPO 9128 → (Continued)



The new fitting discontinues the following components:

- Camshaft hub.
- Cylinder reference sensor target.

**Repair – Accessories drive pulley
Remove – Refit**

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

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

Replacement parts.

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

B1EP177D

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

NOTE: Checking and setting the valve timing on engines: RHY-RHZ N° / RPO 9127
See Mechanic's Handbook 2003: pages 193 to 196

Engines: RHY - RHZ

N° RPO 9128 →

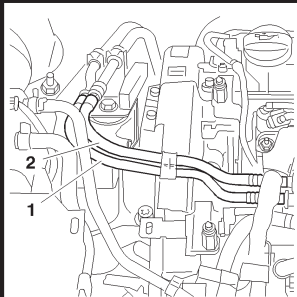
Tools.		Removing.
[1] Belt tension measuring equipment	: 4122-T	<p>IMPERATIVE: Respect the safety and cleanliness requirements that are specific to high pressure diesel injection (HDi) engines.</p> <p>Undo the front RH wheel bolts. Raise and support the vehicle on the front RH side. Disconnect the battery negative terminal.</p> <p>Remove:</p> <ul style="list-style-type: none"> - The under-engine sound-deadening. - The front RH wheel. - The front RH splash-shield. - The engine cover. <p>Unclip and move aside the cooling hose. Remove the accessories drive belt (see corresponding operation).</p>
[2] Tension lever	: (-).0188.J2	
[3] Engine flywheel peg	: (-).0188.Y	
[4] Belt clamp	: (-).0188.AD	
[5] Camshaft pulley peg	: (-).0188.M	
[6] Engine flywheel lock	: (-).0188.F	
[7] Set of blocking plugs	: (-).0188.T	
[8] Pulley extractor	: (-).0188.P	
[9] 2 mm dia.peg	: (-).0188.Q2	

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ

N° RPO 9128 →



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

Remove:

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

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

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

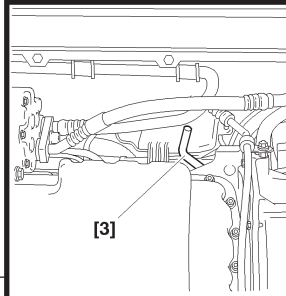
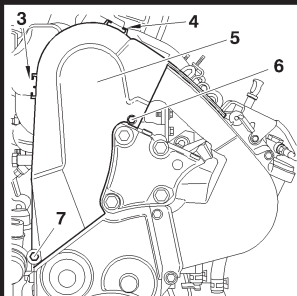
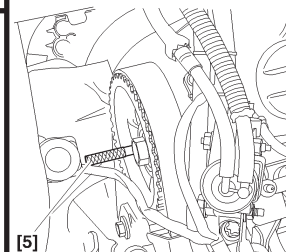
Put the gear lever in 5th gear.

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

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

Peg the camshaft, using tool [5].

Peg the engine flywheel, using tool [3].



B1BP2R2C

B1EP1A7C

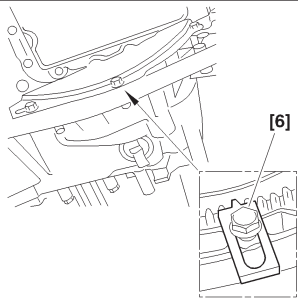
B1BP2H2C

B1BP2H3C

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ N° RPO 9128 →



[6]

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.

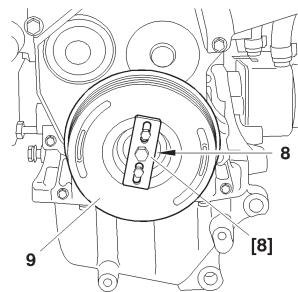
Remove:

- 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:

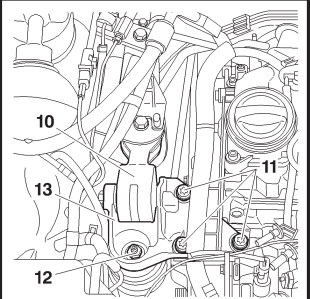
- The intermediate timing cover.
- The lower timing cover.



8

[8]

9



10

13

12

11

B1CP04BC

B1BP2R3C

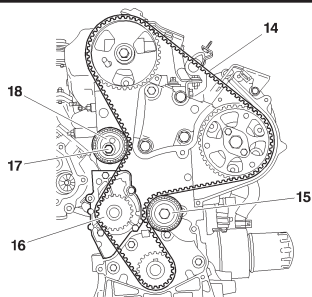
B1BP2R4C

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ

N° RPO 9128 →



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

Remove the timing belt (14).

Checks.

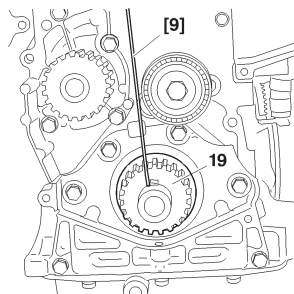
IMPERATIVE: Just before refitting, carry out the checks below.

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.



B1EP1A8D

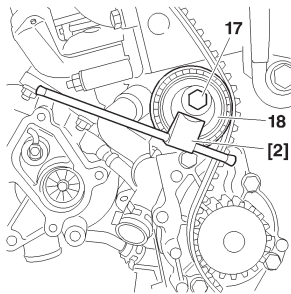
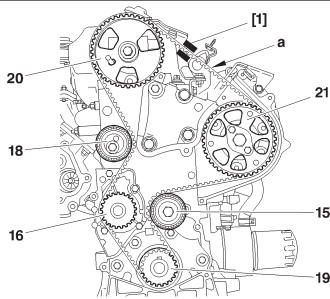
B1EP1A9C

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ

N° RPO 9128 →



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 ± 0,2 m.da N.**

Lock the flywheel by means of tool [6].

Tighten the accessories drive pulley screw (8) to **7 ± 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].

B1EP1ABD

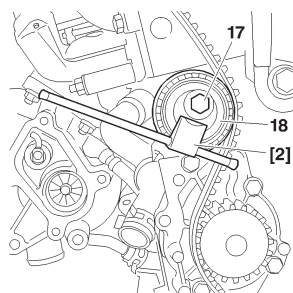
B1EP1ACC

CHECKING AND SETTING THE VALVE TIMING

XSARA - XSARA PICASSO

Engines: RHY - RHZ

N° RPO 9128 →



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.

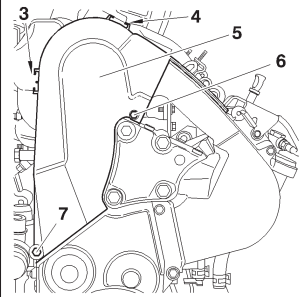
IMPERATIVE: If the pegging is not possible, recommence the operation.

B1EP1ACC

XSARA - XSARA PICASSO

CHECKING AND SETTING THE VALVE TIMING

Engines: RHY - RHZ N° RPO 9128 →



Remove:

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

Refit:

- The lower, intermediate and upper covers (5).
- Screw (7), tighten to $1,5 \pm 0,1$ m.daN.
- Screws (3), (4) and (6).
- The bracket (13).
- Screws (11), tighten to $6,1 \pm 0,5$ m.daN.
- The nut (12), tighten to $4,5 \pm 0,5$ m.daN.

Fit the bearing shell (10).

Take away the workshop hoist.

Clip the fuel delivery and return pipes. Remove the tool [7].

Couple:

- The fuel delivery pipe (12).
- The fuel return pipe (1).

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

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

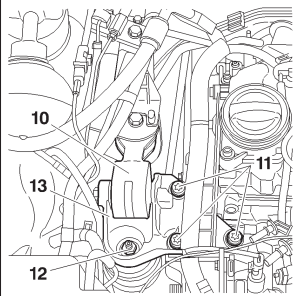
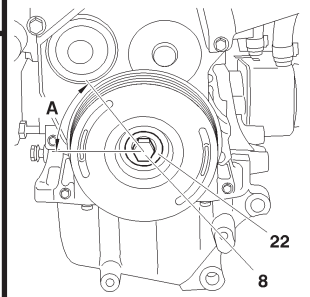
Tighten to $7 \pm 0,2$ m.daN and angular tighten to $A = 60^\circ \pm 5^\circ$.

Refit the torque reaction rod on the lower engine support.

Remove the tool [6].

Reposition and reclip the cooling hose.

Complete the refitting of components in reverse order to removal.



B1EP1A7C

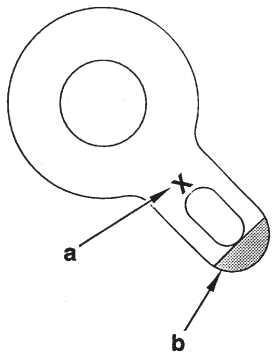
B1BP2R4C

B1EP1ADC

SPECIAL FEATURES OF THE TIMING

Camshaft hub identification

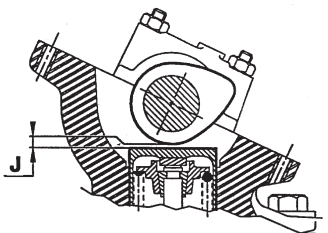
RFS



B1EP122C

Engine	Hubs	"a" Engraving	"b" Paint marking
RFS	Inlet	B	BLUE
	Exhaust		

VALVE CLEARANCE SETTINGS

The valve clearances must be checked with the engine cold			POSSIBLE PROCEDURES For engines with 4 cylinders in a line (1-3-4-2)			
	● Inlet	⊗ Exhaust	Rocking		Fully open (Exhaust)	
			Rocking	Adjust	Valves fully open	Adjust
Petrol all types (Except 16V-NFU)	0,20 mm ± 0,05	0,40 mm ± 0,05	1 ● ⊗ 1	4 ● ⊗ 4	⊗ 1	3 ● ⊗ 4
NFU	1 mm ± 0,05	1 mm ± 0,05	3 ● ⊗ 3	2 ● ⊗ 2	⊗ 3	4 ● ⊗ 2
Petrol - 16V all types 1.4 HDi 1.4 HDi 16V Diesel 2.0 HDi	Hydraulic adjustment		4 ● ⊗ 4	1 ● ⊗ 1	⊗ 4	2 ● ⊗ 1
Diesel all types (Except Diesel 1.4 HDi 1.4 HDi 16V 2.0 HDi)	0,15 mm ± 0,08	0,30 mm ± 0,08	2 ● ⊗ 2	3 ● ⊗ 3	⊗ 2	1 ● ⊗ 3
			<p>Engines without hydraulic adjustment: the clearance (J) should be checked opposite the cam.</p> <div style="text-align: right; margin-top: 10px;">  </div>			

B1DP13QC

CHECKING THE OIL PRESSURE					C2 - C3 - C3 PLURIEL			
To be read with the Petrol and Diesel correspondence tables								
Plaque engine	XFV	KFV	NFU	8HX				
Temperature (°C)	90°C							
Pressure (Bars)	3	4		1,3	3,5			
Rpm	2000	4000		1000	4000			
Tools (Kit 4103-T)								
2279-T.Bis	X	X	X	X				
4103-T.B	X	X	X	X				
7001-T	X	X	X					
1503.J				X				
C3 - C3 Pluriel								
Plaque engine	HFX	KFV	KFU	NFU	8HX	8HW	8HV	8HY
Temperature (°C)	90°C							
Pressure (Bars)	3	4		1,3	3,5			
Rpm	2000	4000		1000	4000			
Tools (Kit 4103-T)								
2279-T.Bis	X	X	X	X	X	X	X	X
4103-T.B	X	X	X	X	X	X	X	X
7001-T	X	X	X	X				
1503.J					X	X	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								
Plaque engine	KFW	NFU	RFN	RFS	8HZ	WJY	RHY	RHZ
Temperature (°C)	90°C			80°C	90°C			
Pressure (Bars)	3	4	1,5 - 5,1	2 - 5,5	1,3 - 3,5	1,8 - 4,5	2	4
Rpm	2000	4000	1000 - 4000	1000 - 4000	1000 - 4000	1000 - 4000	1000	4000
Tools (Kit 4103-T)								
2279-T.Bis	X	X	X	X	X	X	X	X
4103-T.B	X	X	X	X	X	X	X	X
7001-T				X				
4202-T			X				X	X
5709-T.B2				X				
1503-J					X			
4156-T						X		
7017-T.X23						X		
<p>NOTE: The oil pressure should be checked with the engine hot, after the oil level has been checked.</p>								

CHECKING THE OIL PRESSURE

XSARA PICASSO

To be read with the Petrol and Diesel correspondence tables

XSARA PICASSO

Plaques engine	NFV	6FZ	RFN	9HZ	9HY	RHY
Temperature (°C)	90°C		80°C	90°C		
Pressure (Bars)	3 - 4	3,3 - 6,3	1,5 - 5	1,3	3,5	2 - 4
Rpm	2000 - 4000	1000 - 4000	1000 - 3000	1000	4000	1000 - 4000
Tools (Kit 4103-T)						
2279-T.Bis	X	X	X	X	X	X
4103-T.B	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.

OIL FILTERS

OIL FILTERS										
TU all types				ET3J4	TU all types			EW	XU	
1.1i		1.4i		1.4i 16V	1.6i	1.6i 16V		1.8i 16V	2.0i 16V	
HFX	KFV	KFW	KFU	NFV (1)	NFU	6FZ	RFN	RFS		
C2	1109 R7									
C3			1109 X4		1109 R7					
C3 Pluriel	1109 R7									
Xsara			1109 R7				1109 T1	1109 N3		
Xsara Picasso					1109 T1		1109 T1			
DV4TD			DV4TED4		DV6TED4		DW8	DW10		
1.4 HDi			1.4 HDi 16V		1.6 HDi 16V		1.9 D	2.0 HDi		
8HX	8HW	8HZ	8HV	8HY	9HZ	9HY	WJY	RHY	RHZ	
C2	1109 S5									
C3	1109 S5		1109 S5							
C3 Pluriel	1109 S5									
Xsara			1109 S5				1109 T1			
Xsara Picasso			1109 S5		1109 S5			1109 T1		
PURFLUX	= 1109 R7 – 1109 N3 – 1109 T1									
MAHLE	= 1109 S5			(1) = NFV (90 hp = 1109 T1) et NFV (100 hp = 1109 R7)						
FILTRAUTO	= 1109 X4									

FILLING AND BLEEDING THE COOLING CIRCUIT

ALL TYPES

Tools.

- [1] Filling cylinder : 4520-T
 [2] Adaptor for filling cylinder : 4222-T

IMPERATIVE: Respect the safety and cleanliness requirements.

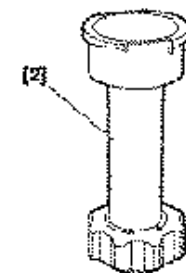
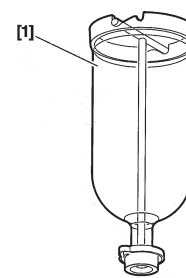
- The draining and refilling operations can be carried out using WINN'S or similar coolant fluid replacement equipment; it is **essential to follow the instructions as stated for that equipment.**

Filling and bleeding.

- Fit the cylinder adaptor [2] 4222-T (*Picasso, C2, C3*) and the filling cylinder [1] 4520-T (*all types*).
- Use the coolant to ensure protection between - 15°C and - 37°C.
- Slowly fill the system.

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

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



B1GP00AC E5AP1GNC

IDLING - DE POLLUTION					C2 - C3 - C3 PLURIEL - XSARA PICASSO			
Vehicles		Engine type	Emission standard	Make - Injection type	Idling speed (± 50 rpm)		% Content	
					Man. gbox	Auto. gbox : N gear engaged	CO	CO2
C2 C3 PLURIEL	1.1i	HFX	L4/IFL5	MAGNETTI MARELLI 48P	850		< 0,5	> 9
	1.4i	KFW - KfV	L4/IFL5	SAGEM S2000				
	1.6i 16V	NFU	L4	BOSCH M 7.4.4.				
C3	1.1i	HFX	L4/IFL5	MAGNETTI MARELLI 48P				
	1.4i	KFW	L4/IFL5	SAGEM S2000				
	1.4i 16V	KFU	L5	MAGNETTI MARELLI 6LP				
	1.6i 16V	NFU	L4	BOSCH M 7.4.4.				
XSARA	1.4i	KFW	L4/IFL5	SAGEM S2000				
	1.6i	NFU	L4	BOSCH M.7.4.4.				
	2.0i	RFN	L4	MAGNETTI MARELLI MM 48P2				
	2.0i 16V	RFS	L3	M. MARELLI 1AP10				
XSARA PICASSO	1.6i	NFV	L4	BOSCH M7.4.4.	700			
	1.8i	6FZ	L4	SAGEM S2000	850			
	2.0i 16V	RFN	L4/IFL5	M. MARELLI 6LP				

PETROL INJECTION				C2
	C2			
	1.1i	1.4i	1.6i 16V	
Engine type	HFX	KFV	NFU	
Emission standard	L4/IFL5	L4/IFL5	IFL5	
Injection make and type	M. MARELLI 48P2	SAGEM S2000	BOSCH M.7.4.4.	
Fuel pressure (bars)	3	3	3	
Overspeed cut-off (rpm)	5500	5500	6600	
Injector resistive value (ohms)	14,5	12,2	14,5	
Engine coolant temperature sensor resistive value (ohms)	3 800 at 10°C	2500 at 20° C	800 at 50°C	230 at 90° C
Idling actuator or stepper motor resistive value (ohms)	Stepper motor: 53			
Air temperature sensor resistive value (ohms)	3 800 at 10°C	2500 at 20° C	800 at 50°C	230 at 90° C

C3 - C3 PLURIEL		PETROL INJECTION				
	C3				C3 PLURIEL	
	1.1i	1.4i	1.4i 16V	1.6i 16V	1.4i	1.6i 16V
Engine type	HFX	KFV	KFU	NFU	KFV	NFU
Emission standard	K'-L4INF-L4/IFL5	K'-L4INF-L4/IFL5	L5	L4	L4/IFL5	IFL5
Injection make and type	M. MARELLI 48P2	SAGEM S2000	M. MARELLI 6LP	BOSCH M.7.4.4.	SAGEM S2000	BOSCH M.7.4.4.
Fuel pressure (bars)	3,5	3,5	3,5	3,5	3,5	3,5
Overspeed cut-off (rpm)	5500	5500	5500	5800	5500	5800
Injector resistive value (ohms)	14,5	12,2	14,5	14,5	14,5	14,5
Engine coolant temperature sensor resistive value (ohms)	3800 at 10° C		2 500 at 20° C		800 at 50° C	
Idling actuator or stepper motor resistive value (ohms)	Stepper motor: 53					
Air temperature sensor resistive value (ohms)	3800 at 10° C		2 500 at 20° C		800 at 50° C	
	230 at 90° C					

PETROL INJECTION				XSARA - XSARA PICASSO		
	XSARA 2			XSARA PICASSO		
	1.4i	1.6i 16V	2.0i 16V	1.6i	1.8i 16V	2.0i 16V
Engine type	KFW	NFU	RFN	NFV	6FZ	RFN
Emission standard	L4/IFL5/L5	L4/IFL5	L4/IFL5	L4	IFL5	L4/IFL5
Injection make and type	SAGEM S2000	BOSCH M.7.4.4.	M. MARELLI 6LP	BOSCH M.7.4.4.	SAGEM S2000	M. MARELLI 6LP
Fuel pressure (bars)	3	3	3,5	3,5	3,5	3,5
Overspeed cut-off (rpm)	5500	5800	6000	5700	5500	6000
Injector resistive value (ohms)	14,5	14,5	14,5	14,5	12,2	14,5
Engine coolant temperature sensor resistive value (ohms)	3800 at 10° C		2 500 at 20° C	800 at 50° C		230 at 90° C
Idling actuator or stepper motor resistive value (ohms)	Stepper motor: 53					
Air temperature sensor resistive value (ohms)	3800 at 10° C		2 500 at 20° C	800 at 50° C		230 at 90° C

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

EMISSION STANDARDS						ALL TYPES
STANDARD			APPLICATIONS		OBSERVATIONS	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles		
	A/S	PR				
ECE R 15.04	K K'	15.04 15.04	Petrol Diesel	Utility vehicles: All Types	→ 10/89 imminent	→ Utility vehicle limits = private vehicle limits increased by 25 %. → For private vehicles and utility vehicles in major export
ECE R 15.05	W vp	15.05	Petrol	Private vehicles: > 2 litres • new models • existing models	01/10/88 → 01/10/89 →	Brussels directive 88/76 «Luxembourg Accords» → Replaced by 89/458 + 91/441

INJECTION

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

EMISSION STANDARDS						ALL TYPES	
E.E.C.	STANDARD		Engines	APPLICATIONS		OBSERVATIONS	CHARACTERISTICS
	A/S	PR		Vehicles	Applicable		
US 84 LDT	X1	US 84	Petrol Diesel	Private vehicles: • certain non-EEC European countries • certain Export countries	Current	→ Adoption of the U.S. standard for light utility vehicles	
US 87 LDT	X2	US 87	Petrol Diesel	Private vehicles: • certain non-EEC European countries • certain Export countries	Current	→ Adoption of the U.S. standard for light utility vehicles	
US 90 LDT	X3	US 90	Petrol Diesel	Private vehicles: • certain non-EEC European countries • certain Export countries	Current	→ Adoption of the U.S. standard for light utility vehicles	

INJECTION

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

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

INJECTION

ALL TYPES			EMISSION STANDARDS			
STANDARD			APPLICATIONS		OBSERVATIONS	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles		
	A/S	PR				
EURO 4	IF/L5		Petrol Diesel Gas	Private vehicles: All types • new models • existing models	→ 01/2005 → 01/2006	Brussels Directive: 2001/1 → EURO 3 standard (L4) made stricter → Fiscal incentives With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.
EURO 4	IF/L5		Petrol Gas	Utility vehicles: < 3,5 tonnes Class 1: • new models • existing models Class 2/3: • new models • existing models	→ 01/2005 → 01/2006 → 01/2006 → 01/2007	Brussels Directives: 99/102 et 2001/1 (Gas) → EURO 3 standard (L4) made stricter → Fiscal incentives → 3 classes depending on vehicle weight: Class 1 < 1305 kg Class 2: 1305/1760 kg Class 3: 1760 kg With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.

SAFETY REQUIREMENTS: HDi DIRECT INJECTION SYSTEM

Engines: HDi ALL TYPES

SAFETY REQUIREMENTS.**Preamble.**

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

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

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

Safety requirements.

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

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

Engine running:

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

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

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

SAFETY REQUIREMENTS: HDi DIRECT INJECTION SYSTEM

Engines: HDi ALL TYPES

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

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

- Fuel filter.
- High pressure fuel pump.
- High pressure fuel injection common rail.
- High pressure fuel pipes
- Diesel injector carriers.

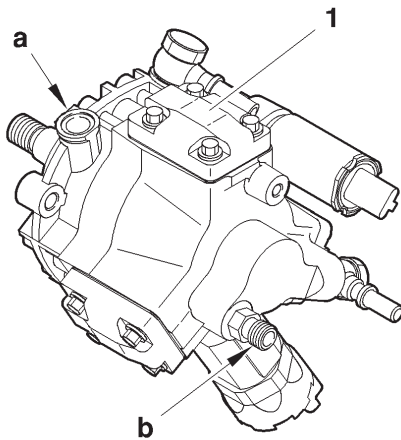
IMPERATIVE: After dismantling, immediately block the apertures of the sensitive components with plugs, to avoid the entry of impurities.**Work area.**

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

PROHIBITED OPERATIONS: SIEMENS HDI DIRECT INJECTION SYSTEM

C2 - C3 -XSARA

Engines: 8HX - 8HW - 8HZ



B1HP1K9C

Cleaning.

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

Fuel supply circuit.

- Required fuel: diesel.

Electric circuit.

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

High pressure fuel pump.

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

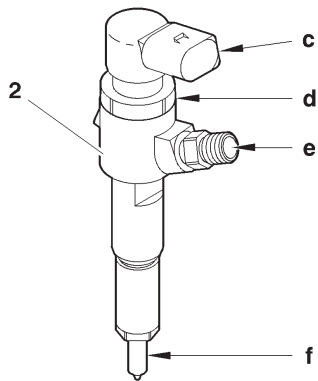
- Sealing ring (a) (*no replacement parts*).
- High pressure outlet connector (b) (*will cause a malfunction*).

PS: HDi = High pressure Diesel injection

C2 - C3 -XSARA

PROHIBITED OPERATIONS: SIEMENS HDI DIRECT INJECTION SYSTEM

Engines: 8HX - 8HW - 8HZ



B1HP1KAC

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

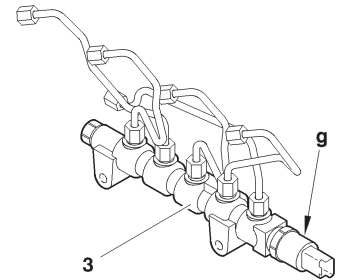
Do not separate the following components from the diesel injector carrier (**2**):

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

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

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

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

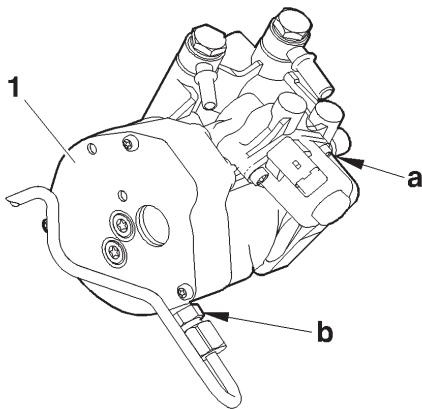


B1HP1KBC

PROHIBITED OPERATIONS: DELPHI HDI DIRECT INJECTION SYSTEM

C3

Engines: 8HY - 8HV



Cleaning.

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

Fuel supply circuit.

- Required fuel: diesel.

Electric circuit.

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

High pressure fuel pump.

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

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

PS: HDi = High pressure Diesel injection

B1HP1J6C

INJECTION

C3

PROHIBITED OPERATIONS: DELPHI HDI DIRECT INJECTION SYSTEM

Engines: 8HY - 8HV

Fuel high pressure injection common rail.

Do not separate the pressure regulator «**c**» from the injection common rail (**2**) (*Risk of malfunction*).

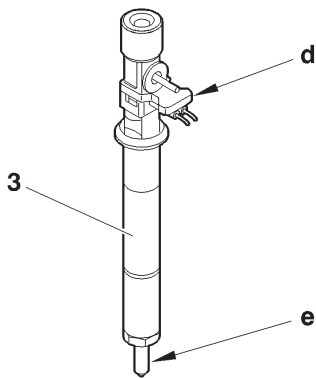
Diesel injectors.

WARNING: Diesel and ultrasonic cleaners are prohibited.

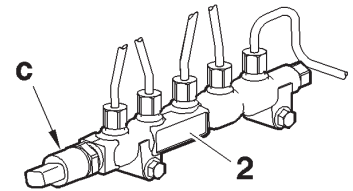
Do not separate the following components from the diesel injector carrier (**3**):

- Diesel injector (**e**) (*no replacement parts*).
- Electromagnetic component «**d**» (*no replacement parts*).

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



B1HP1J8C

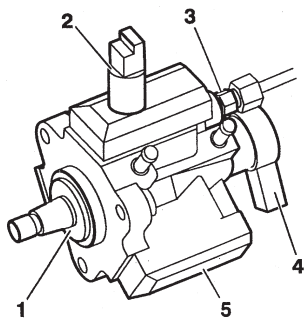


B1HP1J7C

PROHIBITED OPERATIONS: HDI DIRECT INJECTION SYSTEM

XSARA PICASSO

Engines: RHY - RHZ



Cleaning.

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

Fuel supply circuit.

- Required fuel: diesel.
- WARNING:** Do not use other fuels.

Electric circuit.

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

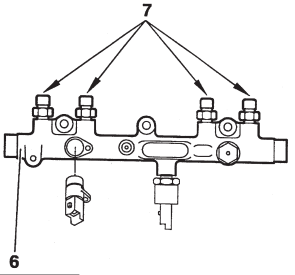
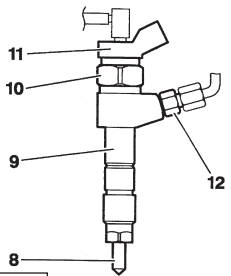
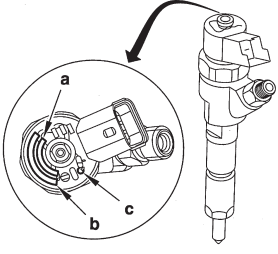
High pressure fuel pump.

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

- High pressure fuel pump third piston deactivator (3) (*no replacement parts*).
- High pressure fuel regulator (4) (*no replacement parts*).
- Sealing ring (1) (*no replacement parts*).
- High pressure outlet connector (3) (*will cause a malfunction*).

PS: HDi = High pressure Diesel injection

B1HP12CC

XSARA PICASSO	PROHIBITED OPERATIONS: HDi DIRECT INJECTION SYSTEM													
 <p style="font-size: small; margin-top: 5px;">B1HP12DC</p>	Engines: RHY - RHZ													
 <p style="font-size: small; margin-top: 5px;">B1HP12EC</p>	<p>High pressure fuel injection common rail.</p> <ul style="list-style-type: none"> - Do not separate the connectors (7) from the common injection rail (6) (malfunction). <p>Diesel injectors.</p> <p>WARNING: Diesel and ultrasonic cleaners are prohibited.</p> <p>Do not separate the following components from the diesel injector carrier (9):</p> <ul style="list-style-type: none"> - Diesel injector (8) (no replacement parts). - Electromagnetic element (11) (destruction). - Do not alter the position of the nut (10) (malfunction). - Do not separate the connector (12) from a diesel injector. - It is forbidden to clean the carbon deposits from the diesel injector nozzle. - Identification: Injector carrier - There are two types of diesel injector carrier classed according to fuel flow. <p>Identification by engraving or paint mark</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 5px 0;"> <thead> <tr> <th style="width: 25%;">Injector carrier</th> <th style="width: 15%;">Engraving</th> <th style="width: 20%;">Paint mark</th> <th style="width: 40%;">Location</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Class 1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">Blue</td> <td rowspan="2" style="vertical-align: middle;">On the upper part of the coil near to the fuel return aperture</td> </tr> <tr> <td style="text-align: center;">Class 2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">Green</td> </tr> </tbody> </table> <p>Identification markings:</p> <ul style="list-style-type: none"> -«a»: Supplier identification. -«b»: PSA identification number. -«c»: Class identification. <p style="margin-top: 5px;">IMPERATIVE: When replacing a diesel injector carrier, order a component of the same class. (See repair manual)</p>			Injector carrier	Engraving	Paint mark	Location	Class 1	1	Blue	On the upper part of the coil near to the fuel return aperture	Class 2	2	Green
Injector carrier	Engraving	Paint mark	Location											
Class 1	1	Blue	On the upper part of the coil near to the fuel return aperture											
Class 2	2	Green												
 <p style="font-size: small; margin-top: 5px;">B1HP16PC</p>														

SPECIFICATIONS OF THE DELPHI DIESEL INJECTION PUMP					XSARA
					PUMP -TYPE - REFERENCE
Dépollution					L3
Equipment					Transponder
XSARA	DW	8B	WJY	DWLP 12 R8448 B 371 B	

INJECTION

XSARA		SPECIFICATIONS OF THE DELPHI DIESEL INJECTION PUMP										
Engine type	Pump Type Reference	Static timing	Dynamic	Reference		Code	Injector	Adjustments (rpm)			Max. speed	
		Initial advance Compression Time (cylinder N° 4)	timing checking (at idle)	Injector	Injector holder + injector	colour	needle lift pressure (Bar)	Fast idling	Anti-stall	Idling	Unladen rpm	Laden rpm
WJY	DWLP 12 R 8448 B/*	Engine TDC Pegging hole. Value «X» engraved on the pump.		RDNO SDC 6903	LDCR 0260 IAA		135,5 ± 5	950 ± 25	1500 + 3 mm shim	875 ± 25	875 ± 25	5350 ± 125
<p>(*) = See table page: 251.</p>												

CHECKING AND SETTING THE DELPHI MECHANICAL INJECTION PUMP

XSARA

Engine: WJY

Tools.

[1] Flywheel locating peg	: 7014-T.J	
[2] H M8 screw	: (-).0188.E	Tool kit C.0188
[3] Injection pump setting peg \varnothing 6 mm	: (-).0188.H	

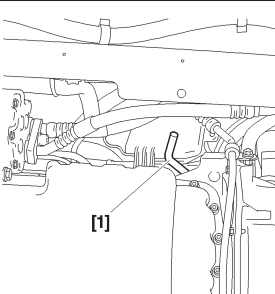
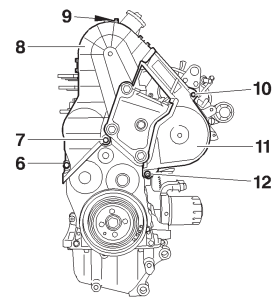
After carrying out the necessary dismantling operations on the vehicle, proceed in the following manner:

Remove:

- The screws (6), (7), (9), (10) and (12).
- The upper casing (8).
- The intermediate casing (11).

WARNING: Refit the screw (6) equipped with a washer. (*Thickness 5 mm*)

- Turn the front RH wheel to turn the engine. (*Normal direction of rotation*)
- Bring the camshaft and injection pump pulleys to their setting point.
- Position the flywheel peg, using tool [1]. (*From below the vehicle*)
- Turn the engine until the peg [1] engages in the flywheel.

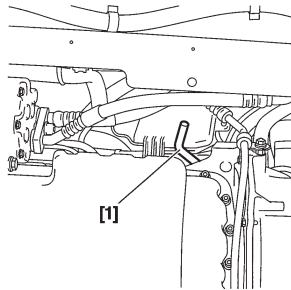
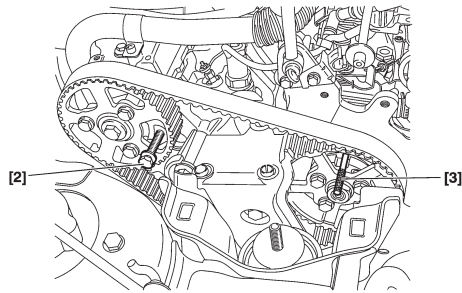


B1EP12NC

B1BP1S9C

XSARA

CHECKING AND SETTING THE DELPHI MECHANICAL INJECTION PUMP



Engine: WJY (continued)

Peg:

- The camshaft hub, using tool [2].
- The injection pump hub, using tool [3].

Impossible to peg the camshaft.

Reset the valve timing (See page 245).

Possible to peg the camshaft, but not the injection pump.

Carry out the following operations:

- Loosen the screws of the injection pump hub.
- Turn the injection pump hub.
- Insert the peg [3] into the setting hole.
- Tighten the screws of the injection pump hub. Tighten to $2,3 \pm 0,2$ m.daN.

ESSENTIAL: If setting the diesel injection pump proves impossible, reset the valve timing. (See page 251)

Remove:

- The tools [1], [2] and [3].
- The screw (6) and the washer.

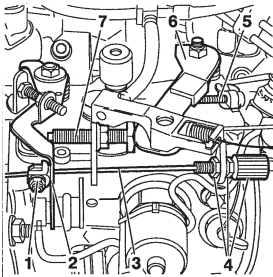
Reassemble the components.

B1EP12WD B1BP1S9C

ADJUSTING THE MECHANICAL CONTROLS OF THE DELPHI INJECTION PUMP

XSARA

Engine: WJY



Adjusting the fast idle.

Engine cold.

- Ensure that the lever (2) is up against its stop to the right.
- If not, adjust the tension of the cable (3) using the cable clamp (1).
- Finish tensioning using the sleeve tensioner (4).

Engine hot.

- Check that the cable (3) is in tension.

Checking the thermostatic sensor.

- There should be a minimum 6 mm cable travel between a cold and a hot engine.

Adjusting the accelerator control.

Prior conditions.

- Engine hot (*cooling fan is engaged twice*).

Checking the accelerator cable tension.

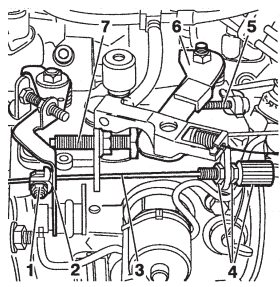
- Fully depress the accelerator pedal.
- Check that the lever (6) is against its stop (5) otherwise, alter the position of the pin.
- If not, adjust the position of the accelerator cable tensioning retaining pin.
- Ensure that in the idle position the lever (6) is against the stop (7).

B1HP0K9C

XSARA

ADJUSTING THE MECHANICAL CONTROLS OF THE DELPHI INJECTION PUMP

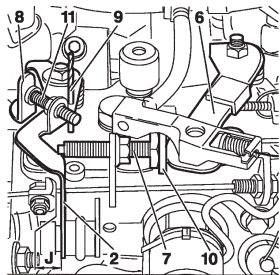
Engine: WJY (continued)

**Adjusting the anti-stall (residual output).**

- Insert a **3 mm** thick shim (**10**) between the throttle lever (**6**) and the anti-stall screw (**7**).
- Push the stop lever (**8**).
- Insert a **3 mm** diameter peg (**9**) in the lever (**2**).
- Adjust the engine speed to **1500 rpm ± 100** using the stop screw (**7**).
- Remove the shim (**10**) and the peg (**9**).

Adjusting the idle speed.

- Adjust the speed using the idle adjustment screw (**11**).
- Idling speed: **825 ± 25 rpm**.

**Checking the engine deceleration.**

- Move the throttle lever (**6**) to obtain an engine speed of **3000 rpm**.
- Release the throttle lever (**6**).
- The deceleration should be between **2.5** and **3.5** seconds.
- The drop should be approximately **50 rpm** in relation to the idle speed.
- Deceleration too fast, (*the engine has a tendency to stall*) slacken the screw (**7**) by a quarter turn.
- Deceleration too slow, (*engine speed is greater than the idle speed*) tighten screw (**7**) by a quarter turn.

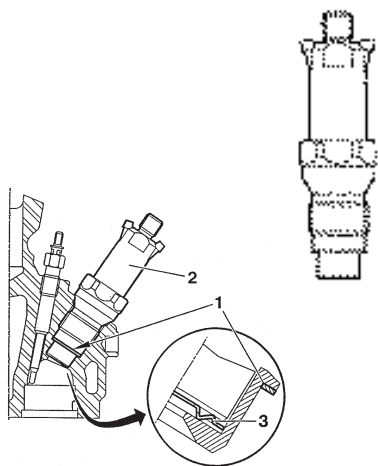
NOTE: In each case, check the idle speed for any necessary adjustments.

B1HP0K9C B1HP0KAC

FITTING DELPHI DIESEL INJECTORS

XSARA

Engine: WJY



Fitting an injector.

- The copper seal (1) and the fire seal washer (3) are to be replaced each time they are removed.

NOTE: Fitting parts of different makes is **PROHIBITED**.

WARNING: Ensure that the fire seal washer (3) is fitted the right way round.

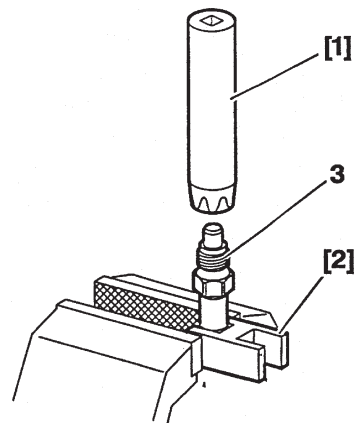
Tighten the injector holder on the cylinder head to:
9 m.daN

[1] Tool to remove/refit injectors

: 7007-T

[2]

: 7008-T.A Tool kit 4123-T



(3) Tighten lightly to prevent any distortion.

B1DP158C B1HP12VC

B1HP0YGC

XSARA PICASSO			INJECTION PUMP SPECIFICATIONS (BOSCH and SIEMENS)			
Engines			Injection system	ECU	High pressure pump	Injectors
DV	6	TE	BOSCH	BOSCH EDC 16C3	BOSCH CP 3.2	760680
				BOSCH EDC 15C2	BOSCH CP1	9625542580
DW	10	TD	SIEMENS (except PICASSO)	SIEMENS ECUSID801	5WS 40001	5WS40000
		ATED	BOSCH	BOSCH EDC 15C2	BOSCH CP1	9625542580

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

C2 - C3

Engines: 8HX - 8HW

Tools.

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

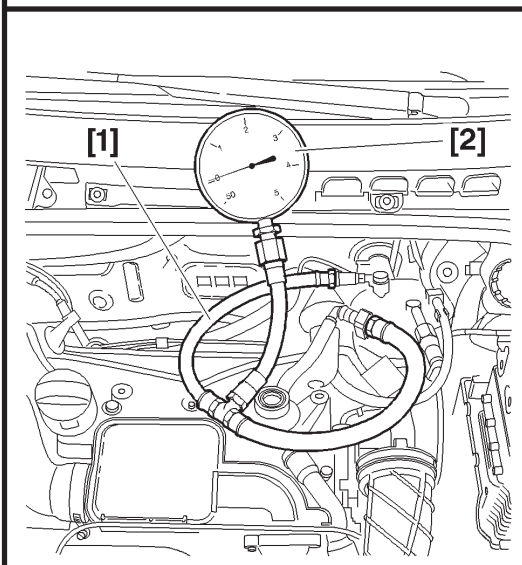
IMPERATIVE: Respect the safety and cleanliness specific to high pressure diesel injection engines.

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>).

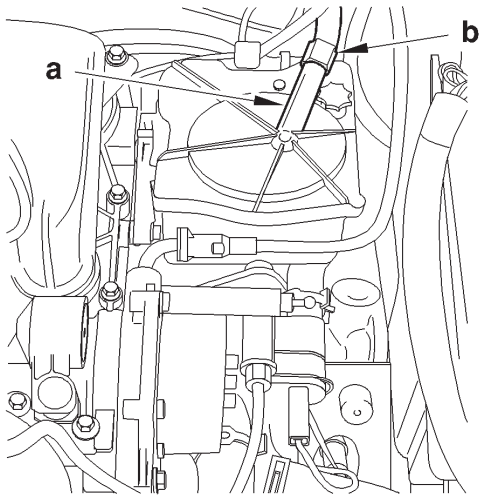


B1BP2NWC

C3 - XSARA PICASSO

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines: 8HV - 8HY - 9HZ - 9HY



B1BP2PHC

Tools.

- [1] Ø 10 mm low pressure connector : 4215-T.
- [2] Pressure gauge for testing boost pressure : 4073-T.A Tool kit 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>).

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

XSARA PICASSO

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

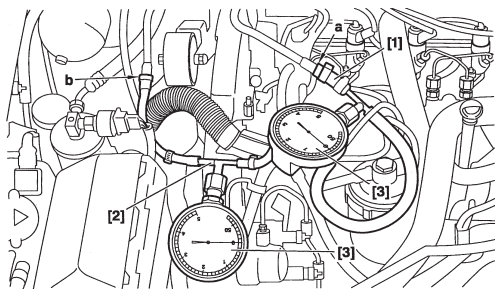
Connect the tool [1] between the booster pump and the fuel filter (*white mark at "a" on the fuel supply pipe*).

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

XSARA PICASSO

CHECKS: LOW PRESSURE FUEL SUPPLY CIRCUIT

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	$0,7 \pm 0,2$ 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:

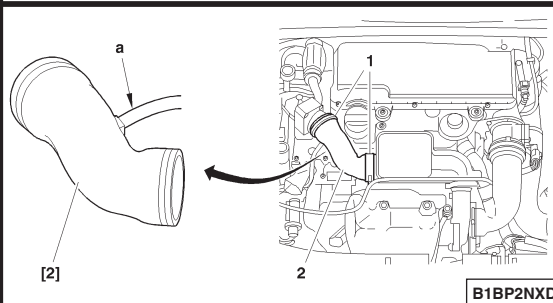
- Check the low pressure regulator incorporated in the filter (*locked open*).
- Check the high pressure pump distribution valve (*locked shut*).

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

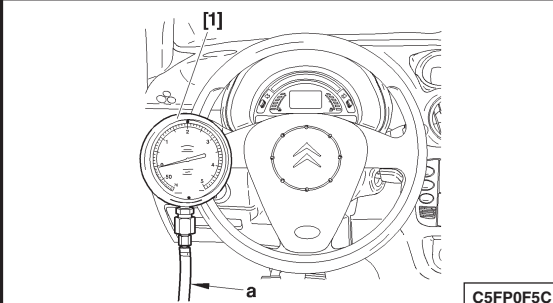
Check:	Observe:
The flow should be drop by drop.	Diesel injector functioning correctly.
Excessive fuel return.	Diesel injector locked shut.

CHECKS: TURBO PRESSURE

C2 - C3



B1BP2NXD



C5FP0F5C

Engines: 8HX - 8HW

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 ± 0,05 bar (1500 rpm)**.

Accelerate freely (change from fourth gear to third gear).

Check the pressure: **0,9 ± 0,05 bar (between 2500 and 3500 rpm)**.

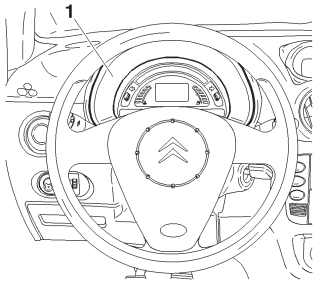
Remove tools [1], [2] at «a».

Reposition the tube (2) and tighten the clips (1).

C3

CHECKS: TURBO PRESSURE

Engines: 8HV - 8HY



C5FP0EJC

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.

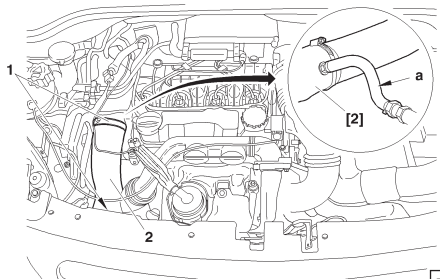
Engage first gear, start the vehicle.

Engage the gears up to third gear.

Decelerate to an engine speed of **1000 rpm**.Check the pressure: **0,6 ± 0,05 bar (1500 rpm)**.Accelerate freely (*change from fourth gear to third gear*)Check the pressure: **0,9 ± 0,05 bar (between 2500 and 3500 rpm)**.

Remove tools [1], [2] at «a».

Reposition the tube (2) and tighten the clip (1).



B1BP2NBD

CHECKS: TURBO PRESSURE

XSARA PICASSO

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 ± 0,05 bar (1500 rpm)**.

Accelerate freely (*change from fourth gear to third gear*).

Check the pressure: **0,9 ± 0,05 bar (between 2500 and 3500 rpm)**.

XSARA PICASSO

CHECKS: TURBO PRESSURE

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.

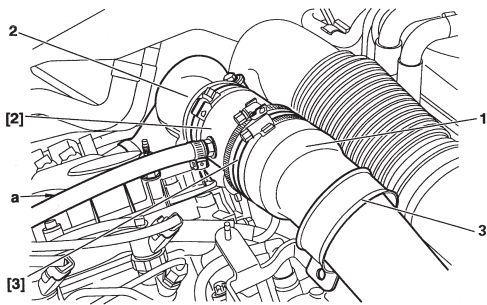
IMPERATIVE: respect the following checking requirements: Engine at running temperature. Vehicle in running order at full load.

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

CHECKS: TURBO PRESSURE**XSARA PICASSO**

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.

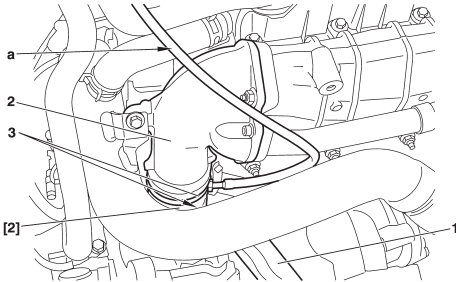
IMPERATIVE: respect the following checking requirements: Engine at running temperature. Vehicle running at full load.

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.

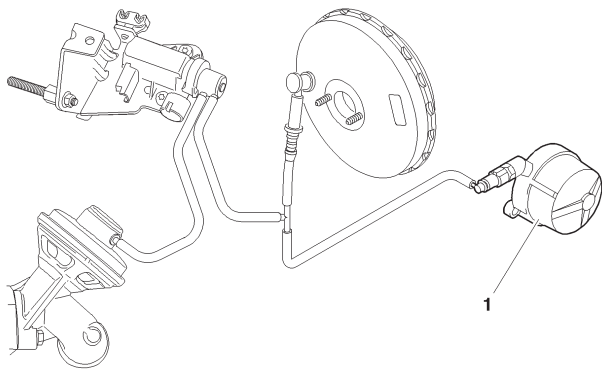


B1BP1ZXD

C2 - C3

CHECKING THE AIR SUPPLY CIRCUIT

Engines: 8HX - 8HW - 8HY - 8HV



Tools.

[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

XSARA PICASSO

Engines: RHY - RHZ

Tools.

[1] Manual vacuum pump : FACOM DA 16
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.

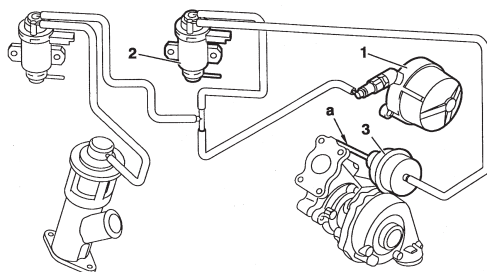
- Connect the tool [1] between the electrovalve (2) and the valve (3) of the boost pressure regulator.

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 be moved **12 mm**.

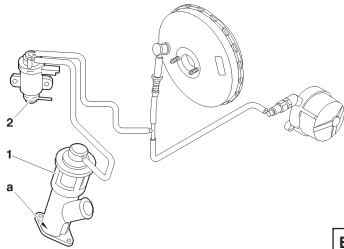


B1HP12FD

C2 - C3

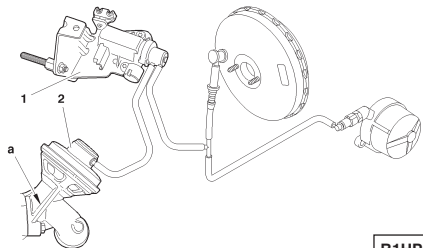
CHECKS: EXHAUST GASES RECYCLING CIRCUIT

Engines: 8HX - 8HW



B1HP15GD

Engines: 8HV - 8HY



B1HP1K6D

Tools.

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

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

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). (Engine: 8HX-8HW).

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.

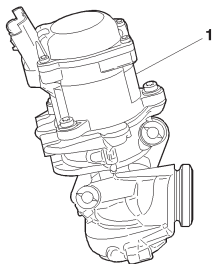
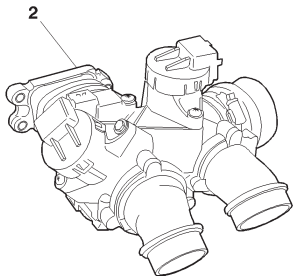
Regulation electrovalve (EGR). (Engine: 8HV-8HY).

Check to be performed between the electrovalve (2) and the EGR valve (1).

Link the tool [1] in series, between the electrovalve (2) and the capsule (1).

Compare the values noted with those in the table below.

Engine speed (rpm)	Vacuum value
780	0,5
2500	0

CHECKS: EXHAUST GASES RECYCLING CIRCUIT		XSARA PICASSO
Engines: 9HZ - 9HY		
	B1HP1UPC	<p>Exhaust gas recycling (EGR) valve.</p> <p>(1) Exhaust gas recycling (EGR) electrovalve</p> <p>NOTE: The engine ECU pilots the EGR valve.</p> <p>Perform the check with the aid of a diagnostic tool.</p> <p>Carry out the following operations with the diagnostic tool:</p> <ul style="list-style-type: none"> - «INJECTION» menu. - Actuator tests. - EGE electrovalve. <p>Check that you can hear the click from the EGR regulation electrovalve.</p>
	B1HP1UQC	<p>Double butterfly housing (vehicle with particle filter).</p> <p>(2) Double butterfly housing.</p> <p>Perform the check with the aid of a diagnostic tool.</p> <p>Carry out the following operations with the diagnostic tool:</p> <ul style="list-style-type: none"> - «INJECTION» menu. - Actuator tests. - Butterfly. - EGR exchanger butterfly. <p>Check that you can hear the click from the double butterfly housing.</p>

XSARA PICASSO

CHECKS: EXHAUST GASES RECYCLING CIRCUIT

Engines: RHY - RHZ

Tools.

[1] Manual vacuum pump

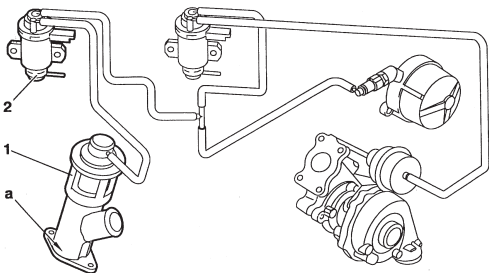
: FACOM DA 16

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
2500	0

PARTICLE FILTER SAFETY AND CLEANLINESS REQUIREMENTS**ALL TYPES****General.**

ESSENTIAL: Given the very high pressures prevailing in the fuel high pressure circuit (1600 Bars), respect the following regulations.

- It is forbidden to smoke in the immediate proximity of the high pressure circuit during a repair.
- Avoid working close to flames or sparks.

When the engine is running:

- Do not touch the fuel high pressure circuit.
- Always keep out of range of possible projections of fuel, which could cause serious injuries.
- Do not place your hand near to any leak on the fuel high pressure circuit.
- After the engine has stopped, wait 30 seconds before starting any operation.

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

Safety rules.

IMPERATIVE: Wait at least an hour before starting any repair on the exhaust line.

Forced regeneration of the particle filter:

- Check that there are no aerosols or inflammable products inside the vehicle's boot.
- Wear high temperature gloves.
- Connect the vehicle to a gas extractor approved for this type of operation.

IMPERATIVE: In the absence of the required installations, carry out the forced regeneration of the particle filter outside the workshop, in a concreted area well away from any inflammable materials. Place the vehicle in the high position.

ALL TYPES

PARTICLE FILTER SAFETY AND CLEANLINESS REQUIREMENTS

Operations on the fuel additive circuit.

IMPERATIVE: For all operations on the additive circuit, wear protective goggles and gloves that are resistant to hydrocarbons.

The work area must be ventilated.

In the event of any significant dispersion of additive:

- Wear a breathing mask for filtering the particles.
- Recover as much of the product as possible.
- Place the product thus recovered in an appropriately labelled container.
- Wash the soiled area with copious amounts of water.
- Dispose of materials and solid residues in an authorised recovery point.

IMPERATIVE: The filling kit should be recycled following a repair. All «Eolys» additive containers that have been opened should be disposed of.

Cleanliness rules.**ESSENTIAL:** The operator should wear clean overalls.

Before working on the injection circuit, it may be necessary to clean the unions of the following sensitive components (*see corresponding operations*).

- Fuel filter.
- Fuel high pressure pump.
- Fuel high pressure regulator.
- Fuel high pressure common injection rail.
- Fuel high pressure piping.
- Diesel injector carriers.

IMPERATIVE: After dismantling, immediately blank the unions of the sensitive components with plugs, to prevent any ingress of impurities.

SPECIAL FEATURES: FORCED REGENERATION OF THE PARTICLE FILTER**ALL TYPES****Tools.**

Diagnostic stations : LEXIA or PROXIA

Imperative: Respect the safety and cleanliness requirements.

Forced regeneration of the particle filter.

IMPERATIVE: Respect the safety and cleanliness requirements specific to HDi engines.

ESSENTIAL: Connect the vehicle to a gas extractor approved for this type of operation.

In the absence of the required installations, carry out the forced regeneration of the particle filter outside the workshop, in a concreted area well away from any inflammable materials. Place the vehicle in the high position.

WARNING: Check that the fuel level is sufficient (*at least 20 litres*).

Start the engine and allow it to warm up (*60°C minimum*).

Connect the diagnostic tool to the vehicle's central socket.

Trigger the regeneration cycle, with the diagnostic tool.

Automatic running of the regeneration cycle of the particle filter:

- Autocheck by the engine ECU.
- Stabilisation of engine speed at **4000 rpm**, operating with post injection.
- Change to idling speed (*for 30 seconds*).
- Stabilisation of engine speed at **3000 rpm**, checking of the efficiency of the regeneration of the particle filter.
- Change to idling speed.

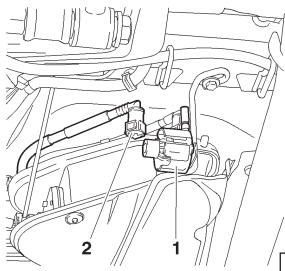
NOTE: Let the engine run at idling speed for the benefit of cooling.

Stop the engine.

IMPERATIVE: Wait for at least an hour before any operation on the exhaust line.

XSARA PICASSO

SPECIAL FEATURES: PARTICLE FILTER / FILLING OF THE ADDITIVE RESERVOIR



B1HP1UVCC

Imperative: Respect the safety and cleanliness requirements.

Tools.

Filling kit comprising the following items:

1 Container of Eolys

2 Filters

2 Tubes

1 Empty container

2 Hooks

1 Adaptor

Filling.

IMPERATIVE: Respect the safety and cleanliness requirements specific to HDi engines.

IMPERATIVE: For all operations on the additive circuit, wear protective goggles and gloves that are resistant to hydrocarbons.

Place the vehicle on a lift.

Disconnect the battery negative terminal.

Unclip the the factory filler connector (1).

Couple the container of additive to the tube (2) using the adaptor and the tube (*with tap*) from the filling kit.

Screw the filler connector on the additive container (3) at «b».

Place the additive container (3) on the component lift.

Open the tap located on the filler connector at «a».

Tilt the additive container (3) (*to facilitate the end of filling*).

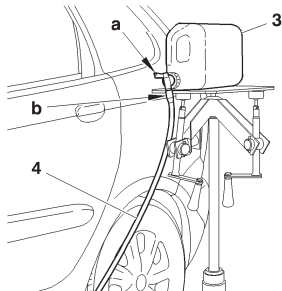
Close the tap at «a».

Remove the filler connector and the tube (4).

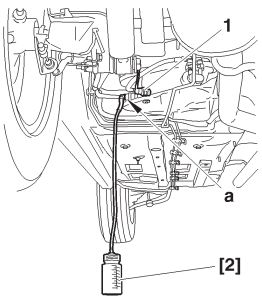
Couple the tube (2).

Reconnect the battery negative terminal.

IMPERATIVE: The filling kit should be recycled after this operation. Any «Eolys» additive containers that have been opened should not be kept.

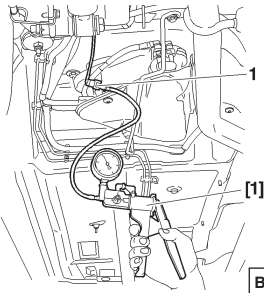


C4BP1EGC

SPECIAL FEATURES: PARTICLE FILTER / CHECKING THE ADDITIVE PUMP	XSARA PICASSO						
	<p style="text-align: center;">Engine: 9 HZ</p> <p>IMPERATIVE: Respect the safety and cleanliness requirements.</p> <p style="text-align: center;">Tools.</p> <table border="0"> <tr> <td>[1] Manual pressure/vacuum pump</td> <td>: FACOM DA 16</td> <td></td> </tr> <tr> <td>[2] Additive container</td> <td>: (-).1613.G</td> <td>Kit 1613</td> </tr> </table> <p style="text-align: center;">Checks.</p> <p>IMPERATIVE: Respect the safety and cleanliness requirements specific to HDi engines. IMPERATIVE: For all operations on the additive circuit, wear protective goggles and gloves that are resistant to hydrocarbons.</p> <p>Place the vehicle on a lift. Raise the vehicle To test the flow of the additive pump : Uncouple the tube (1). Couple tool [2] on the outlet «a» of the additive reservoir. Operate for 50 seconds the actuator test «Additive pump» with the aid of LEXIA or PROXIA.</p> <p>IMPERATIVE: The volume collected by the tool [2] should be 20 ± 5 ml.</p> <p>NOTE: Replace the additive pump if it is defective. Couple the tube (1). Operate the actuator test «Filling the tube: additive pump – additive injector», with the aid of LEXIA or PROXIA.</p>	[1] Manual pressure/vacuum pump	: FACOM DA 16		[2] Additive container	: (-).1613.G	Kit 1613
	[1] Manual pressure/vacuum pump	: FACOM DA 16					
[2] Additive container	: (-).1613.G	Kit 1613					
B1HP1UTC							

XSARA PICASSO

SPECIAL FEATURES: PARTICLE FILTER / CHECKING THE ADDITIVE PUMP



B1HP1UUC

Sealing of the additive injector.

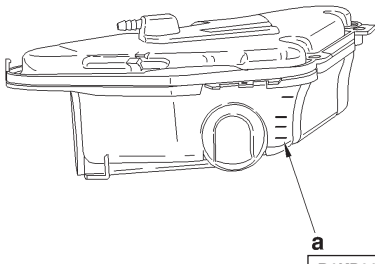
Couple tool [1] to the tube (1).
Action the manual pump [1].

WARNING: The additive injector should open at a pressure of 100 ± 20 Bars.

Action the manual pump in vacuum [1] at **800 m.bars**.

WARNING: The downstream pressure should not fall rapidly.

NOTE: Replace the fuel tank if the injector is defective.



B1KP019C

Couple the tube (1).

Operate the actuator test «**Filling the tube: additive pump – additive injector**», with the aid of **LEXIA** or **PROXIA**.

Check the additive level.

The checking of the additive level is done with reference to the gradations «a» marked on the additive reservoir.

The top graduation indicates maximum filling (**3 Litres**).

The difference between the two gradations equates to **0,25 Litres**.

SPARKING PLUGS							ALL TYPES		
Vehicles		Engine type	BOSCH	Electrode gap setting	EYQUEM	Electrode gap setting	CHAMPION	Electrode gap setting	Tightening torque
C2	1.1i	HFX	FR7 DE	0,9 ± 0,1	RFN 58 LZ	0,9 ± 0,05	RC 8 YLC	0,9 ± 0,05	2,5 ± 0,2 mda.N
	1.4i	KFV			RFN 58 HZ				
	1.6i 16V	NFU	FR7 ME						
C3	1.1i	HFX	FR7 DE	0,9 ± 0,05	RFN 58 LZ		RC 8 YLC		
	1.4i	KFV							
	1.4i 16V	KFU	VR8 SE						
	1.6i 16V	NFU	FR7 ME						
C3	1.4i	KFV	FR7 DE	0,9 ± 0,1	RFN 58 HZ		RC 8 YLC		
PLURIEL	1.6i 16V	NFU	FR7 ME		RFN 58 LZ				
					RFN 58 HZ				
XSARA	1.4i	KFW	FR7 DE	0,9 ± 0,1	RFN 58 LZ	RC 8 YLC			
	1.6i 16V	NFU	FR7 ME		RFN 58 HZ				
	2.0i 16V	RFN	FR8 ME		RFN 52 HZ	REC 9 YCL			
		RFS	FR6 DE		RFN 62 LZ				
XSARA PICASSO	1.6i	90 hp		0,9 ± 0,1	RFN 58 LZ	RC 8 YLC			
		100 hp	NFV		FR7 DE				
	1.8i 16V	6FZ	FR8 ME		RFN 52 HZ	REC 9 YCL			
	2.0i 16V	RFN							

ALL TYPES**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				C2
	1.1i	1.4i	1.6i 16V	1.4 HDi
Engine type	HFX	KFV	NFU	8HX
Gearbox type Supplier	BVM	BVM/BVMP (*)	BVM/BVMP (*)	BVM/BVMP (*)
	MA 5/S	MA 5 N/L	MA 5 S/L	MA 5/O
Mechanism / type	VALEO		LUK	
Engine type	180 CP0 3400		200 P 3900	
Bearing supplier / height	SKF 17 mm			
Clutch disc	11 R 10		?	?
Ø of lining. Ext/Int	180/127		200/134	
Quality of lining	408			
(*) : BVM = Manual gearbox. : BVMP = Piloted manual gearbox.				

C3 - C3 PLURIEL		CLUTCH SPECIFICATIONS						
	1.1i	1.4i	1.4i 16V	1.6i 16V	1.4 HDi		1.4 HDi 16V	
Engine type	HFX	KFV	KFU	NFU	8HX	8HW	8HV	8HY
Gearbox type Supplier	MA/5						BE4/5	
Mechanism / type	VALEO		?	LUK				
Engine type	180 CPO 3400		200 MF 3850	200 P 3900			230 P 4700	
Clutch disc	11 R 10 X		200 VTB					
Ø Garniture.Ext/Int	180/127		?	200/134			228/155	
Quality of lining	F408							

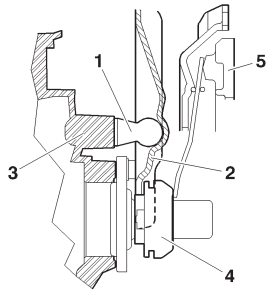
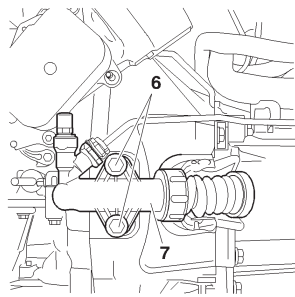
CLUTCH SPECIFICATIONS				XSARA
	1.4i	1.6i 16V	2.0i 16V	
Engine type	KFW	NFU	RFN	RFS
Gearbox type Supplier	MA/5	MA/5	BE4/5	
Mechanism / type	VALEO			
Engine type	180CPO 3400	200 CPR 3800	230 DNG 4700	215 DT 5250
Clutch disc	180 XJF 73 C	200X(D95) 11A12X	230 DNG 4700	215 FD 95
Ø Garniture.Ext/Int	180/127	200/137	228/155	215/147
Quality of lining	F 408	F 808		

CLUTCH
GEARBOX
TRANSMISSION

XSARA	CLUTCH SPECIFICATIONS			
	1.4 HDi	1.9 D	2.0 HDi	
Engine type	8HZ	WJY	RHY	RHZ
Gearbox type Supplier	BE4/5			
Mechanism / type	LUK			
Engine type	200 P 4200	200 P 3700	230 P 4700	235 T 5700
Clutch disc		215 F (D 93) 22 BX	228	228D
Ø Garniture.Ext/Int	200/134	200/134	230/155	235/155
Quality of lining	F 408			F202

CLUTCH SPECIFICATIONS					XSARA PICASSO	
	1.6i	1.8i 16V	2.0i 16V	1.4 HDi 16V		2.0 HDi
Engine type	NFV	6FZ	RFN	9HZ	9HY	RHY
Gearbox type Supplier	BE4/5					
Mechanism / type	VALEO					LUK
Engine type	200 DNG 3800	230 DNG 4700	215 DT 5250	225 DNG 5100		230 P 4700
Clutch disc	200X(D95) 11A12X	230 DNG 4700	215 FD 95			228
Ø Garniture.Ext/Int	200/137	228/155	215/147	225/150		230/155
Quality of lining	F410	F 808		F 810 DS		F408

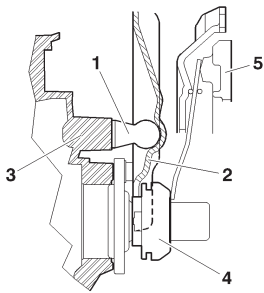
CLUTCH
GEARBOX
TRANSMISSION

C2 - C3 - C3 PLURIEL	CLUTCH SPECIFICATIONS										
	<p style="text-align: center;">Engines: HFX – KFV – KFU – NFU – 8HX – 8HW – 8HV – 8HY</p> <p>NOTE: All the clutches are «push» type with hydraulic control.</p> <p>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.</p>										
	<p>The clutch control slave cylinder (7) is fixed by two screws (6) onto the exterior of the clutch casing.</p> <p style="text-align: center;">Tightening torques (m.daN).</p> <table border="0"> <tr> <td>- Fixing of clutch plate / engine flywheel</td> <td style="text-align: right;">: 2 ± 0,2</td> </tr> <tr> <td>- Fixing of clutch control slave cylinder / clutch housing</td> <td style="text-align: right;">: 2 ± 0,25</td> </tr> <tr> <td>- Fixing of engine flywheel / crankshaft</td> <td></td> </tr> <tr> <td style="padding-left: 100px;">Pre-tightening</td> <td style="text-align: right;">: 1,7 ± 0,1</td> </tr> <tr> <td style="padding-left: 100px;">Angular tightening</td> <td style="text-align: right;">: 70° ± 5°</td> </tr> </table>	- Fixing of clutch plate / engine flywheel	: 2 ± 0,2	- Fixing of clutch control slave cylinder / clutch housing	: 2 ± 0,25	- Fixing of engine flywheel / crankshaft		Pre-tightening	: 1,7 ± 0,1	Angular tightening	: 70° ± 5°
- Fixing of clutch plate / engine flywheel	: 2 ± 0,2										
- Fixing of clutch control slave cylinder / clutch housing	: 2 ± 0,25										
- Fixing of engine flywheel / crankshaft											
Pre-tightening	: 1,7 ± 0,1										
Angular tightening	: 70° ± 5°										
<p>B2BP047C B2BP04QC</p>											

CLUTCH SPECIFICATIONS

XSARA - XSARA PICASSO

Engines: KFW - NFU - NFV - 6FZ - RFN - RFS - 8HZ - 9HZ - 9HY - WJY - RHY - RHZ



NOTE: All the clutches are «push» type with hydraulic control.

Description.

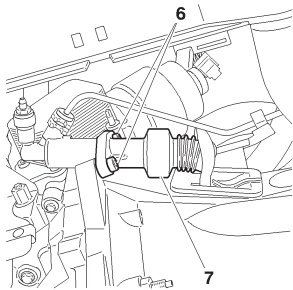
The declutch control has a declutch fork mounted on a ball-joint.

- (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.

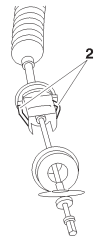
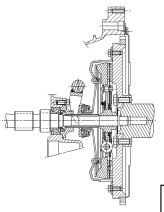
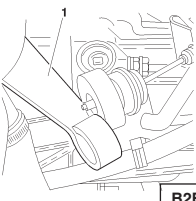
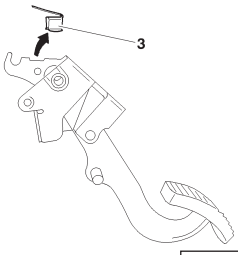
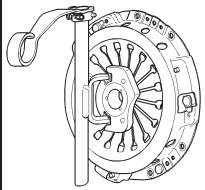
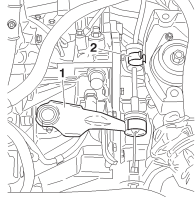
Tightening torques (m.daN).

- 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 : $1,75 \pm 0,1$
 - Angular tightening : $75^\circ \pm 5^\circ$
 - Checking torque : $6,3 \pm 2,2$



B2BP047C

B2BP05SC

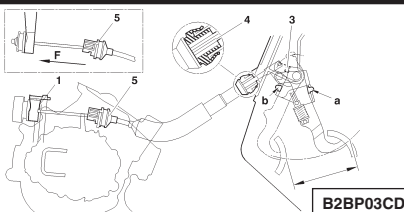
XSARA - XSARA PICASSO		CLUTCH CONTROLS: FEATURES / CHECKS AND ADJUSTMENTS	
Engines: KFW - NFU - 6FZ - RFN - RFS - 8HX - 9HZ - 9HY - WJY - RHY - RHZ			
«PUSH» clutch		<p>Clutch cable.</p> <p>Removing.</p> <p>Uncouple the cable from the lever (1).</p> <p>Unclip the cable from the gearbox by actioning the side tabs (2).</p> <p>Detach the cable from the bulkhead.</p> <p>Remove the clip (3).</p> <p>Uncouple the cable from the clutch pedal.</p>	 <p>B2BP02VC</p>
 <p>B2BP001C</p>	 <p>B2BP002C</p>		
«PULL» clutch		 <p>B2BP02WC</p>	
 <p>B2BP002C</p>	 <p>B2BP03BC</p>		

CLUTCH CONTROLS: FEATURES / CHECKS AND ADJUSTMENTS

XSARA - XSARA PICASSO

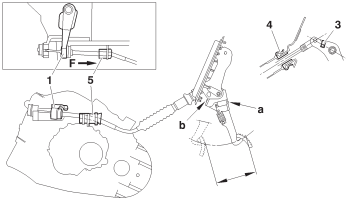
Engines: KFW - NFU - 6FZ - RFN - RFS - 8HX - 9HZ - 9HY - WJY - RHY - RHZ

«PUSH» clutch



B2BP03CD

«PULL» clutch



B2BP03DD

Refitting.

Place the pedal in the high position (*contact at "a"*).

Attach the cable yoke on the hook of the clutch pedal.

Fit a new clip (**3**).

Fit the end-piece (**4**) to the bulkhead (*fit with G6 grease*).

Clip the end-piece (**5**) on the gearbox.

Couple the cable to the lever (**1**).

Depress the clutch cable several times to lodge the cable in place.

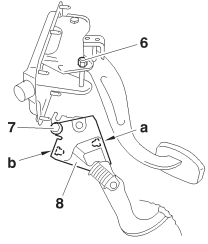
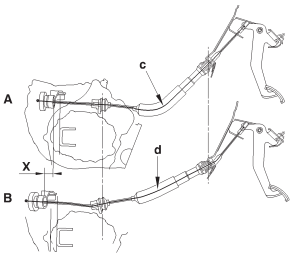
Check that the end-piece (4) is correctly lodged on the bulkhead.

Check the operation of the automatic adjusting system.

After fitting the cable, pull the clutch lever in the inverse direction (*direction F*), the lever should move back when pulled by hand.

Press the clutch pedal very lightly and repeat the same operation. The lever should not move back.

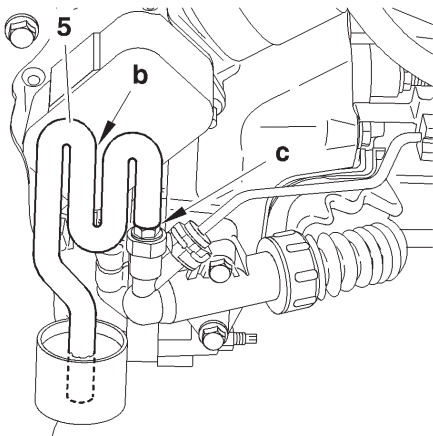
WARNING: If a system blockage is detected when checking, or if the pedal has been removed, the pedal position must be adjusted. The correct positioning of the pedal is obtained by the angular displacement of the stop supports "a" and "b".

XSARA - XSARA PICASSO	CLUTCH CONTROLS: FEATURES / CHECKS AND ADJUSTMENTS		
Engines: KFW - NFU - 6FZ - RFN - RFS - 8HX - 9HZ - 9HY - WJY - RHY - RHZ			
	<p>Adjusting the pedal height.</p> <p>Loosen the nut (6) and the screw (7). Using a lever, raise the stop support (8) to its highest position. In this position, there should be a substantial free play in the pedal. Lower the support until there is a free play of 2 ± 1 mm. Tighten the nut (6) and the screw (7). Check that the clutch cable sleeve can move freely. At rest, the clutch cable sleeve should be free and able to lengthen and shorten.</p>		
	<p>Clutch pedal travel.</p> <p>The automatic clutch wear adjustment system has no manual adjustment. Pedal travel is identical on all models: 154 ± 5 mm. The adjustment is achieved by reducing the length of the cable sleeve. WARNING: Automatic adjustment of the pedal travel is accompanied by a modification of the curvature of the cable sleeve. Do not add any supplementary fixing points or alter the routing in any way.</p> <p>«c» Routing of new cable. «b» Routing after adjustment of play. «x» Clutch wear.</p>		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">B2BP03EC</td> <td style="width: 50%;">B2BP03FD</td> </tr> </table>	B2BP03EC	B2BP03FD
B2BP03EC	B2BP03FD		

CLUTCH CONTROLS: FEATURES / CHECKS AND ADJUSTMENTS HYDRAULIQUE

C3 PLURIEL- XSARA
C2-C3-XSARA PICASSO

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».

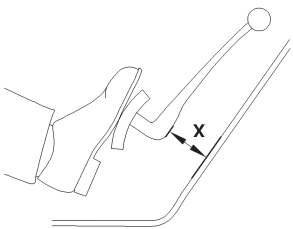
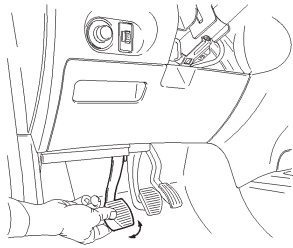
B2BP04XC

CLUTCH
GEARBOX
TRANSMISSION

C2 - C3 - C3 PLURIEL
XSARA PICASSO

CLUTCH CONTROLS: FEATURES / CHECKS AND ADJUSTMENTS HYDRAULIQUE

Bleeding the hydraulic clutch control



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.

C5FP0FQC | B2BP04YC

CLUTCH
GEARBOX
TRANSMISSION

GEARBOX AND TYRE SPECIFICATIONS					C2
Manual gearbox					
	Petrol			Diesel	
	1.1i	1.4i		1.4 HDi	
Engine types	HFX	KFV		8HX	
Tyres-rolling	165/70 R14	165/70 R14	185/55 R14	165/70 R14	185/55 R15
Circumference	1,804 m	1,804 m	1,781 m	1,804 m	1,781 m
Gearbox type	MA 5/S	MA 5/N	MA 5/L	MA 5/0	
Gearbox ident. plate	20 CP 20 PRO 9919 →	20 CP 21 PRO 9919 →	20 CP 16 PRO 9919 →	20 CP 55 PRO 9919 →	20 CP 67 PRO 9919 →
Reduction box torque	16x65		14X60	17X61	
Speedometer ratio	21x18				

CLUTCH
GEARBOX
TRANSMISSION

CLUTCH
GEARBOX
TRANSMISSION

C2	GEARBOX AND TYRE SPECIFICATIONS					
	Piloted manual gearbox					
	Petrol					Diesel
	1.4i		1.6i 16V			1.4 HDi
Engine types	KFV		NFU			8HX
Tyres-rolling	165/70 R14	185/55 R15	185/55 R14	195/45 R16	185/70 R15	165/70 R14
Circumference	1,804 m	1,781 m	1,781 m	1,772 m	1,804 m	1,804 m
Gearbox type	MA 5/N		MA 5/S		MA 5/L	MA 5/O
Gearbox ident. plate	20 CP 21 PRO 9786 →		20 CP 64 PRO 9786 →		20 CP 66 PRO 9786 →	20 CP 65 PRO 9786 →
Reduction box torque	16x65		16x63		14x60	16X63
Speedometer ratio	21x18					21x18

GEARBOX AND TYRE SPECIFICATIONS						C3
Manual gearbox	Petrol					
	1.1i	1.4i			1.6i 16V	
				AUTOMATIC		
Trim level	X - SX - Exclusive	X - SX	Exclusive	X - SX	Exclusive	X - SX Exclusive
Engine type	HFX	KFV			NFU	
Tyres-rolling - Circumference	165/70 R 14 1,804 m		185/60 R15 1,828 m	165/70 R 14 1,804 m	185/60 R15 1,828 m	
Gearbox type	MA/5			AL4	MA/5	
Gearbox ident. plate	20 CP 14	20 CP 15 ou (*)		20 TP 75	20 CP 58	
Reduction box torque	14x60	16x63		21x73	17x64	
Speedometer ratio	21x18					
	u Diesel					
	1.4 HDi			1.4 HDi 16V		
Trim level	X - SX - Exclusive					
Engine type	8HX	8HW	8HV	8HY		
Tyres-rolling - Circumference	165/70 R14 1,804			185/60 R15 1,828 m		
Gearbox type	MA/5			BE4/5		
Gearbox ident. plate	20 CP 54 (2)			20 DM 25	20 DM 26	
Reduction box torque	17x61			19x72	19x77	
Speedometer ratio	21x18			22x19		
(1) Export et DAIC = 20 CP 16 (14X60) (21X18) - (2) EXPORT et DAIC = 20 CP 55 - 20 CP 72 (16X65) (21X18).						

CLUTCH
GEARBOX
TRANSMISSION

C3	GEARBOX AND TYRE SPECIFICATIONS		
	Piloted manual gearbox		
	Petrol		Diesel
	1.4i 16V	1.6i 16V	1.4 HDi
Trim level			
Engine type	KFU	NFU	8HX
Tyres-rolling Circumference	185/60 R15 1,828 m		165/70 R14 1,804 m
Gearbox type	MA/5		
Gearbox ident. plate	20 CP 56		20 CP 65
Reduction box torque	17x64		16x63
Speedometer ratio			21x18

GEARBOX AND TYRE SPECIFICATIONS			C3 PLURIEL
	Petrol		Diesel
	1.4i	1.6i 16V	1.4 HDi
Engine types	KFV	NFU	8HX
Tyres-rolling Circumference			
Gearbox type	MA/5N	MA/5S	MA/50
Gearbox ident. plate	20 CP 60 (m) (1)	20 CP 63 (mp) (2)	20 CP 71 (m) (1)
Reduction box torque	13x59	16x65	14x60
Speedometer ratio	21x18		

(1) m = Manual gearbox.
(2) mp = Piloted manual gearbox.

CLUTCH
GEARBOX
TRANSMISSION

XSARA		GEARBOX AND TYRE SPECIFICATIONS				
		Petrol				
		1.4i	1.6i 16V		2.0i 16V	
			AUTOMATIC		AUTOMATIC	
Engine type		KFW	NFU		RFN	RFS
Tyres-rolling - Circumference	195/55 R15 - 1,815 m					
Gearbox type	MA/5		AL4	BE4/5	AL4	BE3/5
Gearbox ident. plate	20 CP 13 (1)	20 CP 51 (2)	20 TP 49	20 DL 40	20 TP 47	20 TE 47
Reduction box torque	16x65		21x73	19x72	23x73	14x62
Speedometer ratio	21x18		24x21	22x19	24x21	22x19
		Diesel				
		1.9 D	1.4 HDi	2.0 Hdi		AUTOMATIC
Engine type		WJY	8HZ	RHY (3)	RHZ	
Tyres-rolling - Circumference	195/55 R15 - 1,815 m					
Gearbox type	BE4/5					AL4
Gearbox ident. plate	20 DL 41	20 DM 54	20 DL 42	20 DM 10	20 TP 48	
Reduction box torque	19x75		19x70	17x61		14x62
Speedometer ratio	22x19					22x19
NOTE: (RHY engine - BE4/5 gearbox) - (1) Estate = 20 CP 44 (16x65) (21x18) - (2) DAIC = 20 CP 52 (14x60) (21x18) - (3) XSARA DAIC RHD = 20 DM 08 Right hand drive: 6FZ-RFN = 20 DM 03 - WJY = 20 DM 05 - 8HZ = 20 DM 53 - RHY = 20 DM 07 - RHZ = 20 DM 11						

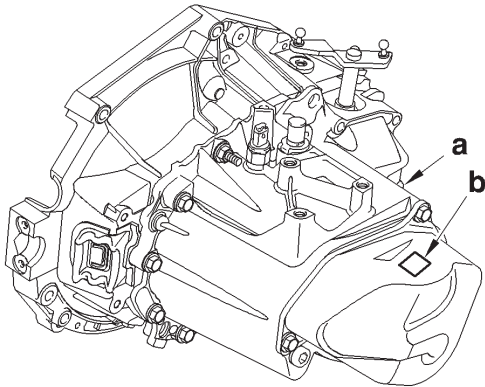
GEARBOX AND TYRE SPECIFICATIONS			XSARA PICASSO
	Petrol		
	1.6i	1.8i 16V	2.0i 16V AUTOMATIC
Engine type	NFV	6FZ	RFN
Tyres-rolling Circumference	185/65 R15 1,895 m		
Gearbox type	BE4/5		AL4
Gearbox ident. plate	20 DL 67	20 DL 69	20 TS 02
Reduction box torque	15x64	19x77	21x73
Speedometer ratio	22x18		24x20
	Diesel		
	1.6 16V HDi		2.0 HDi
Engine type	9HZ	9HY	RHY
Tyres-rolling Circumference	185/65 R15 1,895 m		
Gearbox type	BE4/5		
Gearbox ident. plate	20 DM 62		20 DL 65
Reduction box torque	19x70		19x72
Speedometer ratio	22x18		22x18
Right hand drive:	NFV = 20 DL 67	6FZ = 20 DL 69	RHY = 20 DL 65.

CLUTCH
GEARBOX
TRANSMISSION

C2 - C3 - C3 PLURIEL

MA/5 GEARBOX

Engines: HFX - KFV - NFU - 8HX - 8HW



«a» Identification label.

«b» Location for engraving of serial and gearbox nos.

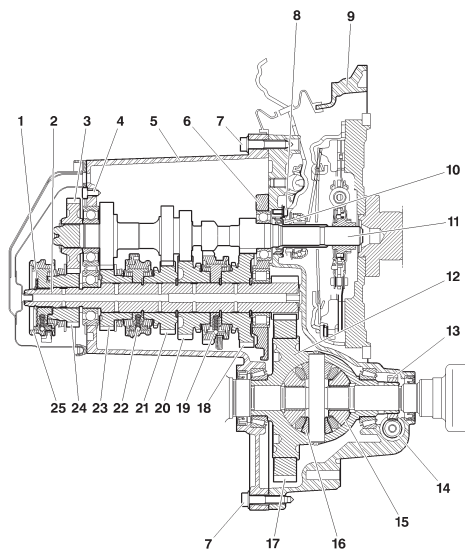
B2CP3SQC

CLUTCH
GEARBOX
TRANSMISSION

MA/5 GEARBOX

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - NFU - 8HX - 8HW



- (1) Retaining clip.
- (2) Secondary shaft.
- (3) Drive pinion (*5th gear*).
- (4) Bearing retaining clip screw.
- (5) Gearbox casing.
- (6) Intermediate plate.
- (7) Gearbox casing fixing screw.
- (8) Clutch bearing guide screw.
- (9) Clutch housing.
- (10) Bearing guide.
- (11) Primary shaft.
- (12) Differential housing.
- (13) Speedometer screw.
- (14) Counter drive.
- (15) Planet pinions.
- (16) Satellite pinions.
- (17) Differential gearwheel.
- (18) Driven pinion (*1st gear*).
- (19) 1st / 2nd gear synchroniser and reverse gear driven pinion.
- (20) Driven pinion (*2nd gear*).
- (21) Driven pinion (*3rd gear*).
- (22) 3rd / 4th gear synchroniser.

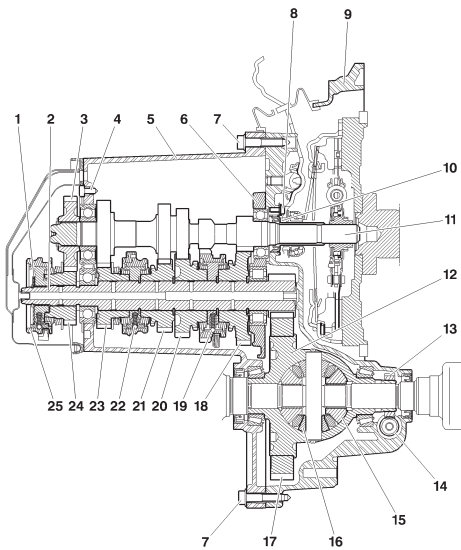
B2CP3SRP

CLUTCH
GEARBOX
TRANSMISSION

C2 - C3 - C3 PLURIEL

MA/5 GEARBOX

Engines: HFX - KFV - NFU - 8HX - 8HW



- (23) Driven pinion (4th gear).
- (24) Driven pinion (5th gear).
- (25) 5th gear synchroniser.

Tightening torques (m.daN).

- (4) Bearing retaining clip screw (x4) : **1,8 ± 0,2**
- (6) Intermediate plate (11 fixing screws) : **5 ± 0,5**
- (7) Gearbox casing (15 fixing screws) : **1,9 ± 0,2**
 16 fixing screws → RPO 9784
 17 fixing screws RPO 9786 →
- (8) Clutch bearing guide screw (3 fixing screws) : **0,6 ± 0,15**

B2CP3SRP

MA/5 GEARBOX

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - NFU - 8HX - 8HW

Tightening torques (m.daN).

(26) 5th gear cover fixing screw	(3 screws)	: 2,2 ± 0,2
(27) Reverse gear switch	(1 screw)	: 2,5 ± 0,5
(28) Drain plug	(1 screw)	: 3,3 ± 0,3
(29) Top-up plug	(1 screw)	: 3,3 ± 0,3 (*)

(*) = The oil top-up plug is discontinued from RPO 9919 →

Features.

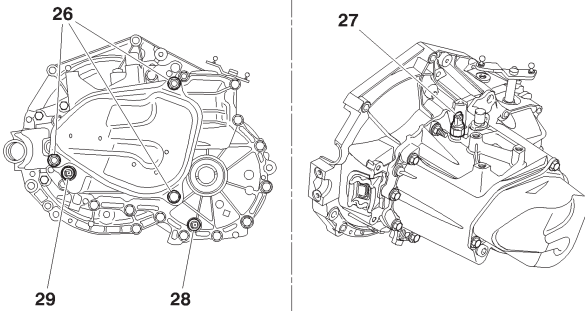
This gearbox:

- has no adjustment.
 - has a reverse gear braking device (*5th gear synchroniser*).
 - has a device for prohibiting a change from 5th gear into reverse gear.
- The clutch control has a ball-joint mounted declutch fork.

Lubrication.

Oil capacity	: 2 ± 0,15 Litres.
Checking the oil level	: No oil level check (*)
Lubrication interval	: Lubricated «for life».

NOTE: There should be a visual check on the sealing at each engine oil change.



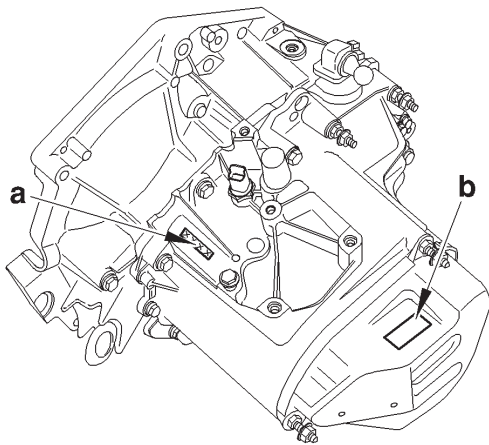
B2CP3SSD

CLUTCH
GEARBOX
TRANSMISSION

XSARA

MA/5 GEARBOX

Engines: KFW - NFU



«a» Identification label.

«b» Location for engraving of serial and gearbox nos.

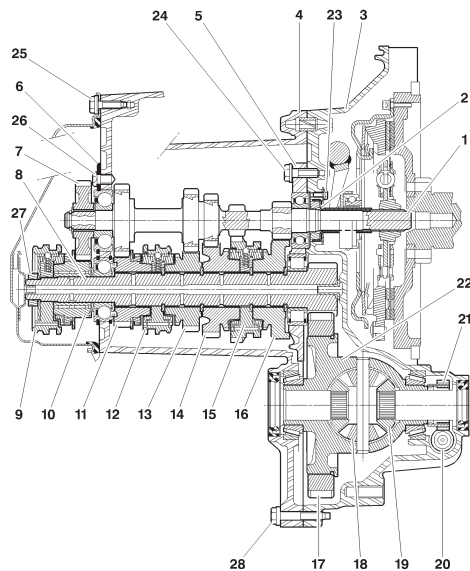
B2CP3HTC

CLUTCH
GEARBOX
TRANSMISSION

MA/5 GEARBOX

XSARA

Engines: KFW - NFU



- (1) Primary shaft.
- (2) Clutch bearing guide.
- (3) Clutch housing.
- (4) Gearbox casing.
- (5) Intermediate plate.
- (6) Bearing retaining clip.
- (7) Drive pinion (*5th gear*).
- (8) Secondary shaft.
- (9) 5th gear synchroniser.
- (10) Driven pinion (*5th gear*).
- (11) Driven pinion (*4th gear*).
- (12) 3rd / 4th gear synchroniser.
- (13) Driven pinion (*3rd gear*).
- (14) Driven pinion (*2nd gear*).
- (15) 1st / 2nd gear synchroniser and reverse gear driven pinion.
- (16) Driven pinions (*1st gear*).
- (17) Differential gearwheel.
- (18) Satellite pinions.
- (19) Planet pinions.
- (20) Counter drive.
- (21) Speedometer screw.
- (22) Differential housing.

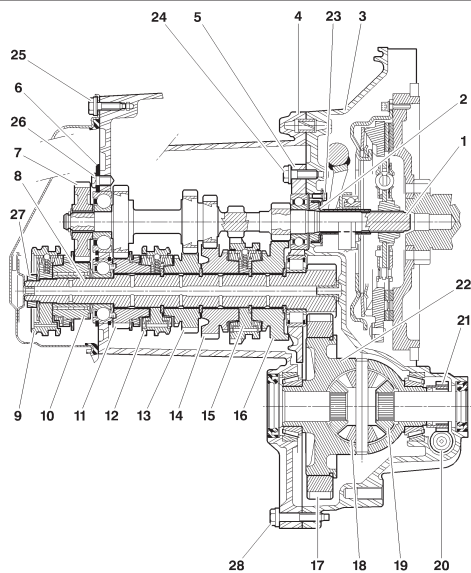
B2CP167P

CLUTCH
GEARBOX
TRANSMISSION

XSARA

MA/5 GEARBOX

Engines: KFW - NFU



Tightening torques (m.daN).

- | | |
|---|---------------|
| (23) Clutch bearing guide (3 fixing screws) | : 0,6 ± 0,15. |
| (24) Intermediate plate (11 fixing screws) | : 5 ± 0,5. |
| (25) Rear cover (3 fixing screws) | : 2,2 ± 0,2. |
| (26) Bearing retaining clip (4 fixing screws) | : 1,8 ± 0,2. |
| (27) Secondary shaft nut (1 nut) | : 14 ± 1. |
| (28) Gearbox casing (15 fixing screws) | : 1,8 ± 0,2. |

B2CP167P

CLUTCH
GEARBOX
TRANSMISSION

MA/5 GEARBOX**XSARA****Engines: KFW - NFU**

- (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.

Strengthened MA gearboxes are marked with the letter «**B**» or «**C**»:
 «**B**» = Differential diameter **77 mm** + strengthened bearings.
 «**C**» = Differential diameter **77 mm** + strengthened bearings + strengthened intermediate plate.

NOTE: All vehicles are equipped with clutch control by cable.

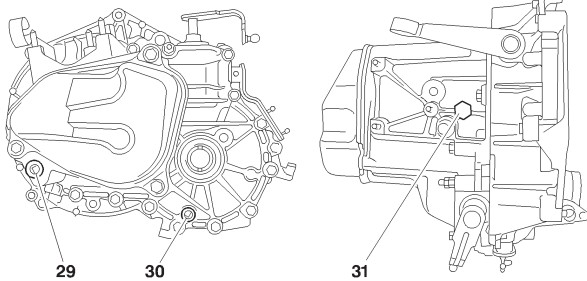
Features.

This gearbox:

- has no adjustment.
 - has a reverse gear braking device (*5th gear synchroniser*).
 - has a device for prohibiting a change from 5th gear into reverse gear.
- The clutch control has a ball-joint mounted declutch fork.

Lubrication.

- Oil capacity : **2 ± 0,15 Litres.**
 Checking the oil level : Every **37,500 miles.**
 Lubrication interval : Lubricated «**for life**».



B2CP169D

C2

RECOMMENDATIONS - PRECAUTIONS: MA PILOTED MANUAL GEARBOX

Engines: HFX - KFV - NFU - 8HX

Safety requirements.

ESSENTIAL: Given the special features of the MA type piloted manual gearbox, observe the requirements detailed below.

IMPERATIVE: Always disconnect the battery negative terminal before operating on the actuators.

NOTE: After disconnecting the battery, never try to remove the clutch actuator on the vehicle before having checked that it is in the closed position (*rod pushed in*).

IMPERATIVE: After Sales checks done with the engine running must be performed with «**Neutral**» engaged and the handbrake on (*unless there is a clear mention otherwise in the repair procedures*).

IMPERATIVE: The areas of movement of the clutch fork and of the gear engagement lever must always be kept free during the actuator operating phases.

IMPERATIVE: When initialising the clutch actuator and/or gearbox actuator, do not allow any person to walk or stand in front of the vehicle.

WARNING: When the engine is running, it is forbidden to perform repairs on the clutch and gearbox actuators on the vehicle (*whether manually or using a diagnostic tool*).

WARNING: Each time the driver's door is opened and each time the ignition is switched on, the gearbox ECU prompts the initialising of the clutch and gearbox actuators (*there is movement of the clutch fork and of the gear lever*).

WARNING: Whether the ignition is switched on or not, an action on the gear selector causes the clutch fork and the gear engagement lever to move on the gearbox.

RECOMMENDATIONS - PRECAUTIONS: MA PILOTED MANUAL GEARBOX**C2****Engines: HFX - KJV - NFU - 8HX****Operations on electrical components.**

Do not disconnect:

- The battery when the engine is running.
- The ECU with the ignition switched on.
- The clutch and gearbox actuators with the ignition switched on.

When carrying out electrical checks:

- The battery must be correctly charged.
- Never use a voltage source higher than 16V.
- Never use a lamp to supply an actuator directly.

Before disconnecting connector, check:

- The condition of the various contacts (*for deformation, corrosion, etc*).
- The presence and the status of the mechanical unlocking.

Driving the vehicle.**IMPERATIVE:** Never move the vehicle with the ignition switched off.Never push the vehicle to attempt to start it (*impossible with a piloted manual gearbox*).**Towing.****Conditions for towing.**

It is necessary to lift the front of the vehicle to tow it, after having positioned the gear lever in neutral. If there is a gearbox fault or malfunction, the vehicle can remain immobilised depending on the seriousness of the fault.

If a gear is engaged, the conditions for immobilisation of the vehicle are:

Combustion engine stopped (*the engine should not be started*).
The clutch is open (*clutched*).

In these conditions are met, you can lift the front of the vehicle to tow it.

If it should not be possible to lift the front of the vehicle, there are ways to unblock it:

- Engage «N», using a diagnostic tool.
- Engage «N», without using a diagnostic tool.

C2

RECOMMENDATIONS - PRECAUTIONS: MA PILOTED MANUAL GEARBOX

Engines: HFX - KFV - NFU - 8HX

Engaging of «N», using a diagnostic tool.

Preliminary operations:

- Battery voltage higher than 12.5 volts.
- Ignition switched on.
- Connect the diagnostic tool to the vehicle's diagnostic socket.

From the diagnostic tool menus, select:

«DIAGNOSIS»

MA type piloted manual gearbox.

Actuator test.

Gearbox actuator test.

Gear engagement test.

N (*neutral*).

NOTE: The letter «N» should appear on the instrument panel.

If not, see the following solution:

Engaging of «N», without using a diagnostic tool.

Engaging of «N», without using a diagnostic tool.

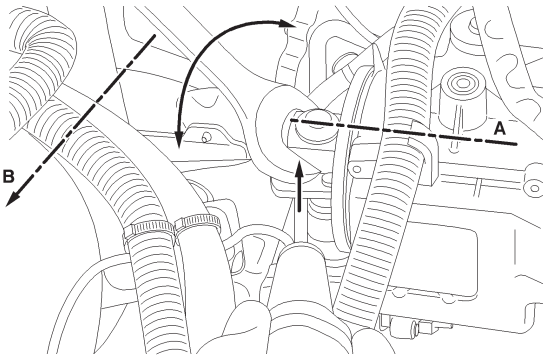
In this configuration, the gearbox actuator is blocked, gear engaged.

NOTE: This recovery solution is to be used solely in a case where the attempt to make the gearbox actuator engage b via the diagnostic tool has failed.

RECOMMENDATIONS - PRECAUTIONS: MA PILOTED MANUAL GEARBOX

C2

Engines: HFX - KFV - NFU - 8HX



Engaging of «N», without using a diagnostic tool (continued).

Preliminary operation:

- Disconnect the battery negative terminal.
- Remove the air filter.
- Use a **22 mm** spanner.

Use the spanner to lift the gear engagement lever the maximum possible until the axis «**A**» of the engagement lever is perpendicular to the axis «**B**» (*mid point of the gear engagement lever*).

When this position is attained, position «**N**» is engaged.

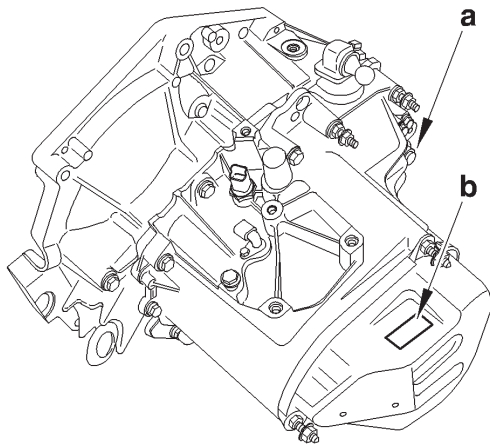
B2CP3L8D

CLUTCH
GEARBOX
TRANSMISSION

C2

MA/5 PILOTED MANUAL GEARBOX

Engines: KFV - 8HX



«a» Identification label.

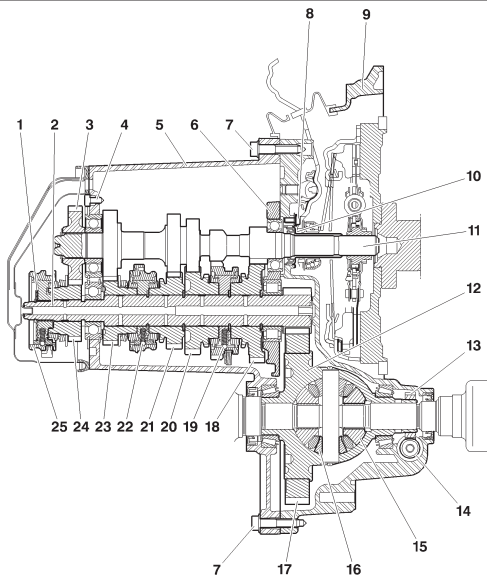
«b» Location for engraving of serial and gearbox nos.

B2CP3STC

MA/5 PILOTED MANUAL GEARBOX

C2

Engines: KFV - 8HX



- (1) Circlip.
- (2) Secondary shaft.
- (3) Drive pinion (*5th gear*).
- (4) Bearing stop screw.
- (5) Gearbox casing.
- (6) Intermediate plate.
- (7) Gearbox casing fixing screw.
- (8) Clutch bearing guide screw.
- (9) Clutch housing.
- (10) Bearing guide.
- (11) Primary shaft.
- (12) Differential housing.
- (13) Speedometer screw.
- (14) Counter drive.
- (15) Planet pinions.
- (16) Satellite pinions.
- (17) Differential gearwheel.
- (18) Driven pinion (*1st gear*).
- (19) 1st / 2nd gear synchroniser and reverse gear driven pinion.
- (20) Driven pinion (*2nd gear*).
- (21) Driven pinion (*3rd gear*).
- (22) 3rd and 4th gear synchroniser.

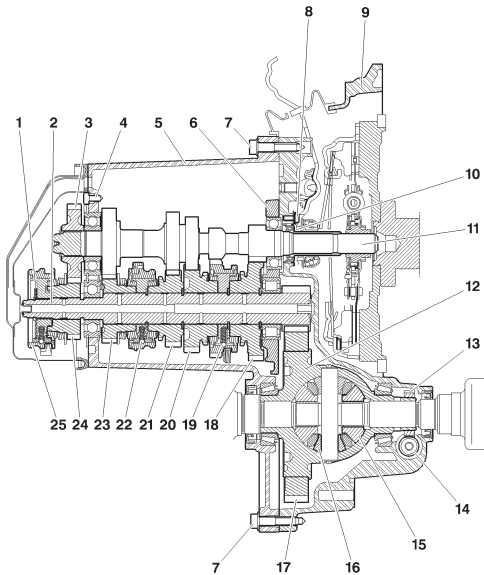
B2CP3SRP

CLUTCH
GEARBOX
TRANSMISSION

C2

MA/5 PILOTED MANUAL GEARBOX

Engines: KfV - 8HX



- (23) Driven pinion (4th gear).
- (24) Driven pinion (5th gear).
- (25) 5th gear synchroniser.

Tightening torques (m.daN).

- (4) Bearing stop screw (x4) : 1,8 ± 0,2
- (6) Intermediate plate (11 fixing screws) : 5 ± 0,5
- (7) Gearbox casing (15 fixing screws) : 1,9 ± 0,2
16 fixing screws → RPO 9784
17 fixing screws RPO 9786 →
- (8) Clutch bearing guide screw (3 fixing screws) : 0,6 ± 0,15

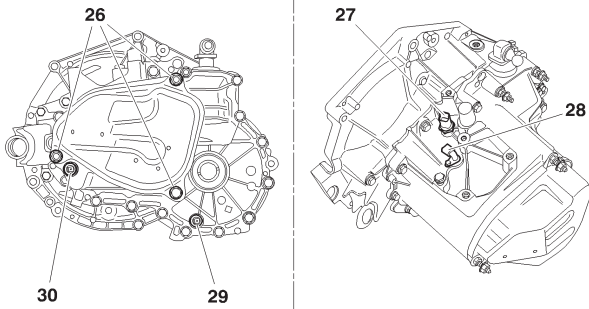
B2CP3SRP

MA/5 PILOTED MANUAL GEARBOX

C2

Engines: KFV - 8HX

Tightening torques (m.daN).



(26) 5th gear cover fixing screw	<i>(3 screws)</i>	: 2,2 ± 0,2
(27) Gearbox input speed sensor	<i>(1 screw)</i>	: 0,8 ± 0,2
(28) Reverse gear switch	<i>(1 screw)</i>	: 2,5 ± 0,5
(29) Drain plug	<i>(1 screw)</i>	: 3,3 ± 0,3
(30) Level plug	<i>(1 screw)</i>	: 3,3 ± 0,3

B2CP3SUD

**CLUTCH
GEARBOX
TRANSMISSION**

C2

MA/5 PILOTED MANUAL GEARBOX

Engines: KfV - 8HX

Features.

The piloted gearbox is a modern manual gearbox with technology that offers enhancements in every driving situation.

The piloted manual gearbox has two operating programmes:

- «**Sequential**» programme.
- «**Automatic**» programme.

The piloted manual gearbox has:

- A gearbox ECU (*supplier: SIEMENS*).
- A gearbox actuator with two electric motors (*supplier: SACHS*).

A clutch actuator with one electric motor (*supplier: SACHS*).

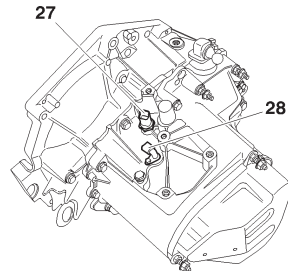
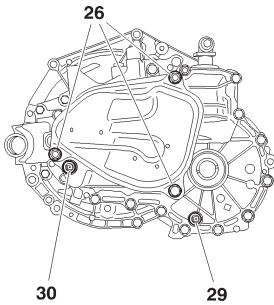
A gearbox input speed sensor.

The piloted manual gearbox has no gear control cable and no clutch cable. Changes of gear and clutching/declutching are activated by the gearbox actuator and the clutch actuator.

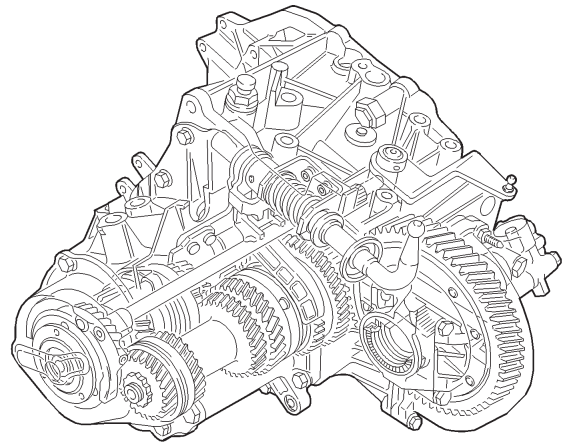
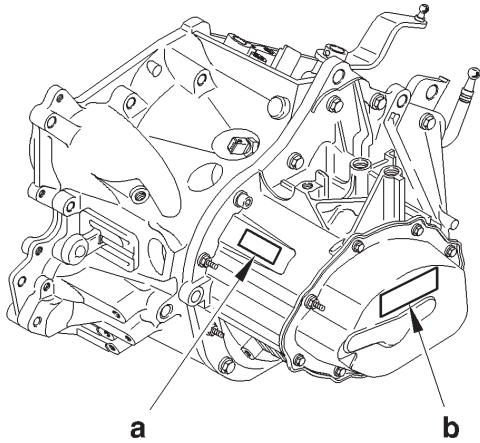
Lubrication.

Oil capacity	: 2 ± 0,15 litres.
Checking of oil level	: No oil level check. (*)
Lubrication intervals	: Lubricated «for life».

(*) = Only a visual check of the sealing at each engine oil change interval.



B2CP3SUD

BE4/5 GEARBOX**C3 - XSARA - XSARA PICASSO****Engines: NFV - 6FZ - RFN - RFS - 8HV - 8HY - 9HZ - 9HY - WJY - RHY - RHZ**

B2CP3BNC

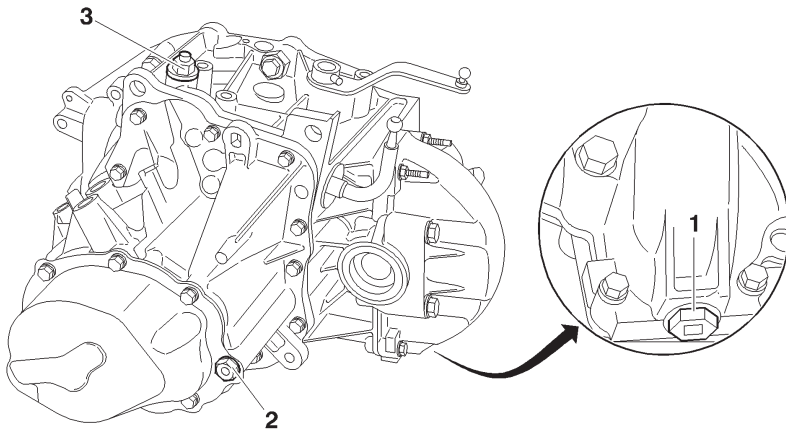
B2CP3BPD

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

C3 - XSARA - XSARA PICASSO

BE4/5 GEARBOX

Engines: NFV - 6FZ - RFN - RFS - 8HV - 8HY - 9HZ - 9HY - WJY - RHY - RHZ



- (1) Drain plug.
- (2) Filling and top-up plug.
- (3) Air vent.

NOTE: The air vent aperture can be used for filling.

Quality of oil.
Refer to the manufacturer's instructions.

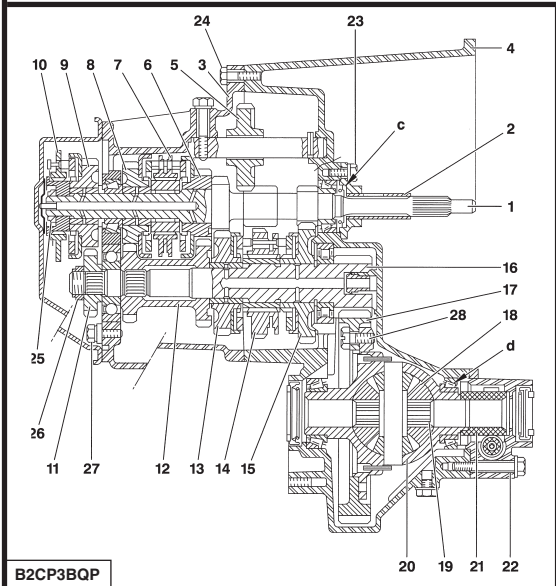
Quantity of oil.
Gearbox empty: **1,9 Litres.**
After draining: **2 Litres.**

B2CP3BLD

BE4/5 GEARBOX

C3 - XSARA - XSARA PICASSO

Engines: NFV - 6FZ - RFN - RFS - 8HV - 8HY - 9HZ - 9HY - WJY - RHY - RHZ



Description

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

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

«d» Adjusting shims: **0.7 to 2.4 mm**
(0.10 mm and increasing by 0.10 mm).

«c» Adjusting shims: **1.4 to 1.6 mm**
(0.10 mm and increasing by 0.10 mm).

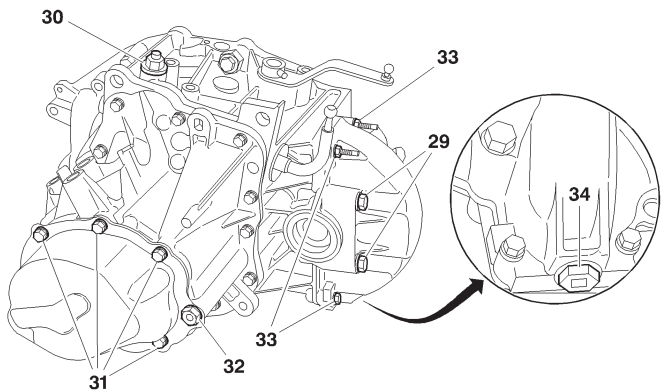
B2CP3BQP

CLUTCH
GEARBOX
TRANSMISSION

C3 - XSARA - XSARA PICASSO

BE4/5 GEARBOX

Engines: 6FZ - RFN - RFS - WJY - 8HV - 8HY - 8HZ - 9HZ - 9HY - RHY - RHZ



Tightening torques (m.daN).

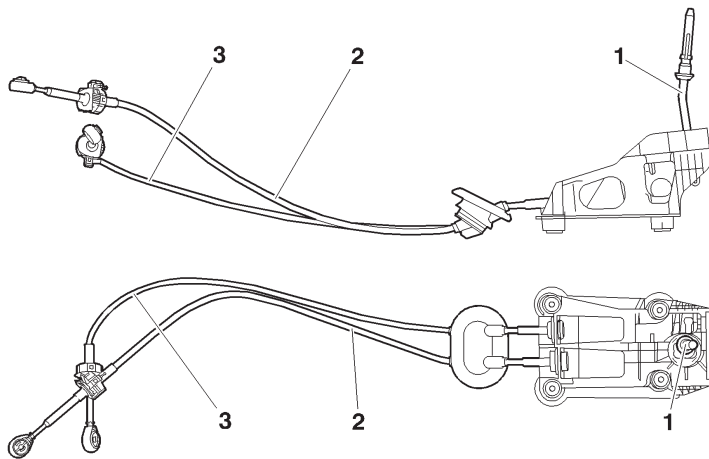
(23) Clutch bearing guide (3 screws)	: 1,25 ± 0,2
(24) Clutch housing (13 screws)	: 1,3 ± 0,2
(25) Primary shaft nut (1 screw)	: 7,25 ± 0,5
(26) Secondary shaft nut (1 screw)	: 6,5 ± 0,5
(27) Yoke retaining screw (2 screws)	: 1,5 ± 0,2
(28) Differential gearwheel screw (2 screws)	: 6,5 ± 0,5
Reverse 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

B2CP3BRD

MA/5 GEARBOX CONTROLS

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - KFU - NFU - 8HX - 8HW



(1) Gear control lever.

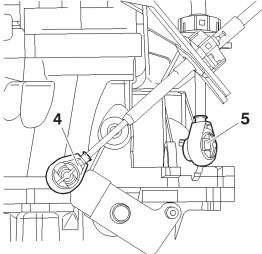
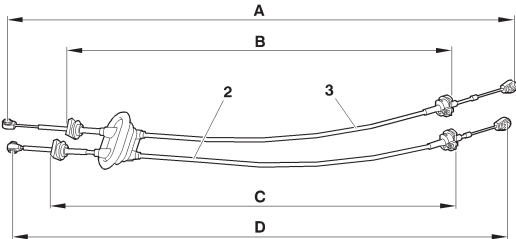
(2) Gear engagement control cable. (*)

(3) Gear selection control cable. (*)

(*) The two cables cannot be separated.

B2CP3HXD

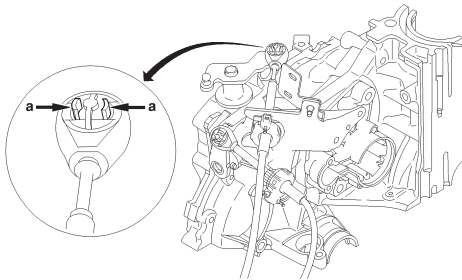
CLUTCH
GEARBOX
TRANSMISSION

C2 - C3 - C3 PLURIEL		CHECKS AND ADJUSTMENTS: MA/5 GEARBOX CONTROLS																										
Engines: HFX - KFV - KFU - NFU - 8HX - 8HW																												
		<p>(4) Gear engagement ball-joint \varnothing 10 mm.</p> <p>(5) Gear selection ball-joint \varnothing 10 mm.</p>																										
		<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">C2</th> <th colspan="2">C3</th> </tr> <tr> <th>Length D</th> <th>Length C</th> <th>Length D</th> <th>Length C</th> </tr> </thead> <tbody> <tr> <td>Gear engagement control cable (2)</td> <td>1040 mm</td> <td>815 mm</td> <td>1015 mm</td> <td>790 mm</td> </tr> <tr> <td rowspan="2">Gear selection control cable (3)</td> <td>Length A</td> <td>Length B</td> <td>Length A</td> <td>Length B</td> </tr> <tr> <td>1149 mm</td> <td>800 mm</td> <td>1093 mm</td> <td>775 mm</td> </tr> </tbody> </table>					C2		C3		Length D	Length C	Length D	Length C	Gear engagement control cable (2)	1040 mm	815 mm	1015 mm	790 mm	Gear selection control cable (3)	Length A	Length B	Length A	Length B	1149 mm	800 mm	1093 mm	775 mm
	C2		C3																									
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B2CP3HYC																												
B2CP3HZD																												

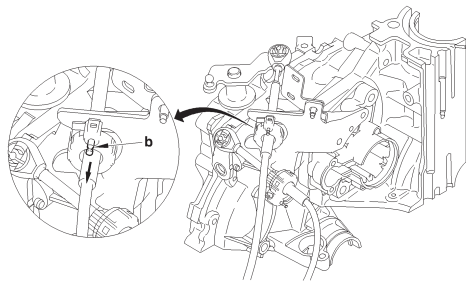
CHECKS AND ADJUSTMENTS: MA/5 GEARBOX CONTROLS

C2 - C3 - C3 PLURIEL

Engines: HFX - KFV - KFU - NFU - 8HX - 8HW



B2CP3J0D



B2CP3J1D

Adjustment.

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

The gear selection control and gear engagement control cables cannot be adjusted.

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

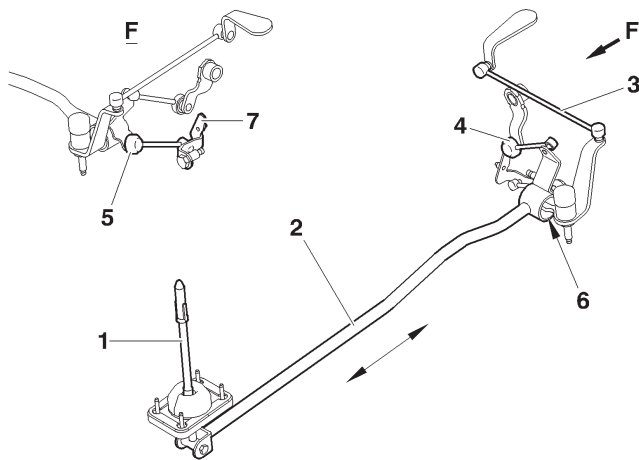
To release the sleeve stops, pull the needles «b», in the direction of the arrow, then disengage the sleeve stops from their supports.

CLUTCH
GEARBOX
TRANSMISSION

XSARA

CHECKS AND ADJUSTMENTS: MA/5 GEARBOX CONTROLS

Engines: KFW NFU 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".

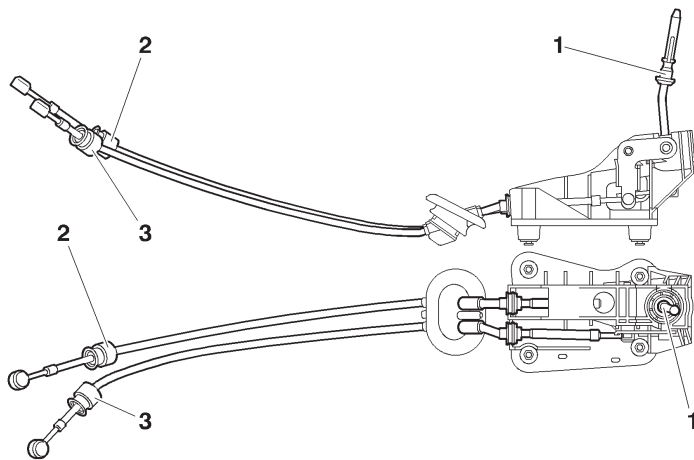
B2CP27WD

CLUTCH
GEARBOX
TRANSMISSION

BE4/5 GEARBOX CONTROLS

C3

Engines: 8HV - 8HY



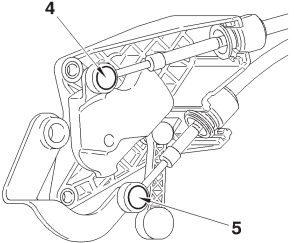
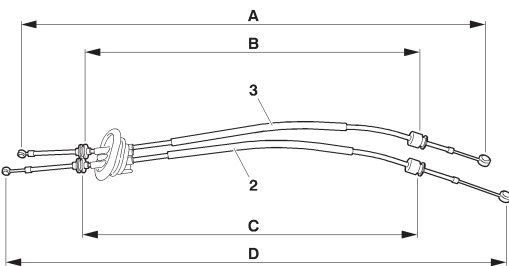
(1) Gear control lever.

(2) Gear engagement control cable. (*)

(3) Gear selection control cable. (*)

(*) These two cables cannot be separated.

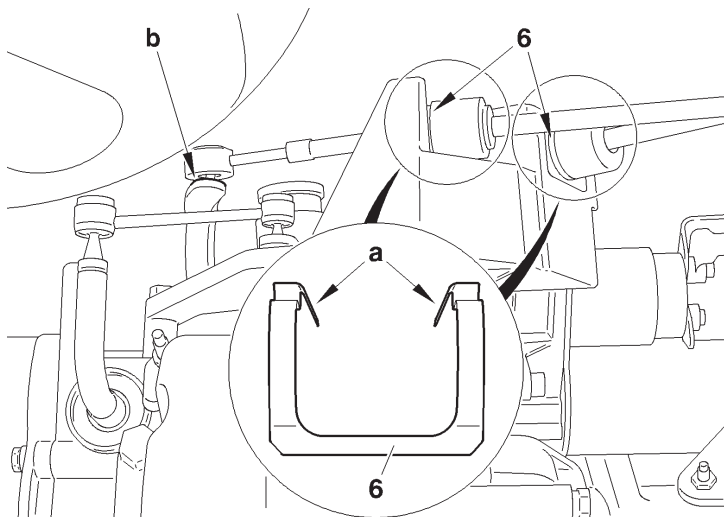
B2CP3J3D

C3	CHECKS AND ADJUSTMENTS: BE4/5 GEARBOX CONTROLS														
Engines: 8HV - 8HY															
	<p>(4) Gear engagement ball-joint Ø 10 mm.</p> <p>(5) Gear selection ball-joint Ø 10 mm.</p>														
	<table border="1"> <thead> <tr> <th></th> <th>Length A</th> <th>Length B</th> </tr> </thead> <tbody> <tr> <td>Gear selection cable (5)</td> <td>907 mm</td> <td>645 mm</td> </tr> <tr> <td></td> <th>Length D</th> <th>Length C</th> </tr> <tr> <td>Gear engagement cable (4)</td> <td>965 mm</td> <td>610 mm</td> </tr> </tbody> </table>		Length A	Length B	Gear selection cable (5)	907 mm	645 mm		Length D	Length C	Gear engagement cable (4)	965 mm	610 mm		
	Length A	Length B													
Gear selection cable (5)	907 mm	645 mm													
	Length D	Length C													
Gear engagement cable (4)	965 mm	610 mm													

CHECKS AND ADJUSTMENTS: BE4/5 GEARBOX CONTROLS

C3

Engines: 8HV - 8HY



Adjustment.

The gear selection control and gear engagement control cables cannot be adjusted.

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

To release sleeve stops:

- Press on the tabs of the clip (6) at «a».
- Disengage the sleeve stops from their supports.

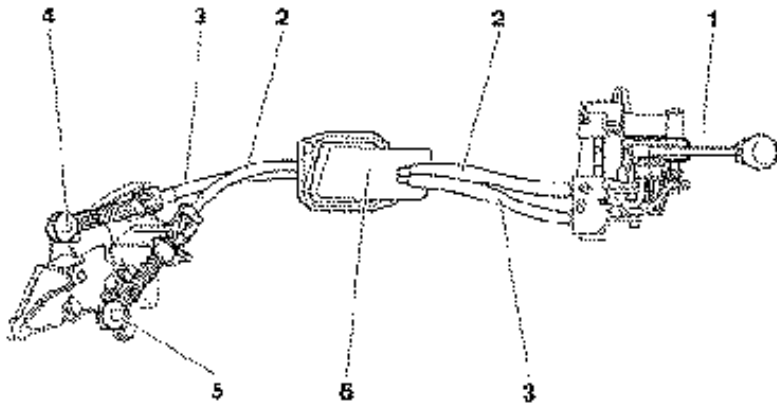
B2CP3J6D

CLUTCH
GEARBOX
TRANSMISSION

XSARA - XSARA PICASSO

BE4/5 GEARBOX CONTROLS

Engines: NFV - 6FZ - RFN - RFS - WJY - 8HZ - 9HZ - 9HY - RHY - RHZ



- (1) Gear control lever.
- (2) Gear engagement control cable. (*)
- (3) Gear selection control cable. (*)
- (4) Gear selection ball-joint \varnothing 10 mm.
- (5) Gear engagement ball-joint \varnothing 10 mm.
- (6) Flexible insulating grommet through the bulkhead.

(*) = These two cables cannot be separated.

B2CP3BWD

CLUTCH
GEARBOX
TRANSMISSION

CHECKS AND ADJUSTMENTS: BE4/5 GEARBOX CONTROLS**XSARA - XSARA PICASSO**

Engines: NFV - 6FZ - RFN - RFS - WJY - 8HZ - 9HZ - 9HY - 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.

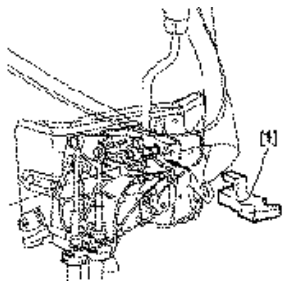
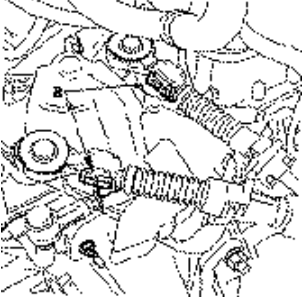
WARNING: Do not use any tool to unclip the ball-joints.

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

XSARA - XSARA PICASSO	CHECKS AND ADJUSTMENTS: BE4/5 GEARBOX CONTROLS			
	Engines: NFV - 6FZ - RFN - RFS - WJY - 8HZ - 9HZ - 9HY - RHY - RHZ			
	Adjusting the gear controls			
<p>[1] Tool for positioning the gear lever</p> <p style="text-align: center;">Adjustements.</p> <p>WARNING: Cables should be adjusted each time the gearbox, gear controls or power unit are removed.</p> <p>Inside the vehicle:</p> <ul style="list-style-type: none"> - Remove the trim under the gear lever. - Lock the gear lever in neutral position, using tool [1]. <p>Under the bonnet:</p> <ul style="list-style-type: none"> - 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. 	<p style="text-align: center;">Tools.</p> <p style="text-align: right;">: 9607-T.</p>	<p style="text-align: center;">Checks.</p> <ul style="list-style-type: none"> - 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. 		
		<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">B2CP3C6C</td> <td style="width: 50%;">B2CP3C0C</td> </tr> </table>	B2CP3C6C	B2CP3C0C
B2CP3C6C	B2CP3C0C			

RECOMMENDATIONS - PRECAUTIONS: AL4 AUTOMATIC GEARBOX**XSARA - XSARA PICASSO**

Engines: KFV - NFU - RFN - RHZ

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)*.

C3 - XSARA - XSARA PICASSO	RECOMMENDATIONS - PRECAUTIONS: AL4 AUTOMATIC GEARBOX
Engines: KFV - NFU - RFN - RHZ	
Precautions to be taken.	
<p>Towing.</p> <p>The front of the vehicle must be raised in order to be towed. If the front of the vehicle cannot be raised:</p> <p>IMPERATIVE:</p> <ul style="list-style-type: none"> - Put gear lever in position «N». - Do not add any oil. - Do not exceed 30 mph over a distance of 30 miles of maximum. <p>Driving.</p> <p>Never drive with the ignition switched off. Never push the vehicle to try to start it <i>(impossible with an automatic gearbox).</i></p> <p>NOTE: The automatic gearbox is only lubricated when the engine is running.</p>	<p>Repairs on electrical components.</p> <p>Do not disconnect:</p> <ul style="list-style-type: none"> - The battery when the engine is running. - The ECU when the ignition is switched on. <p>Before reconnecting a switch, check:</p> <ul style="list-style-type: none"> - The condition of the various contacts <i>(for deformation, corrosion etc).</i> - The presence and condition of the mechanical locking. <p>When performing electrical checks:</p> <ul style="list-style-type: none"> - The battery should be correctly charged. - Never use a voltage source higher than 16V. - Never use a test lamp.

RECOMMENDATIONS - PRECAUTIONS: AL4 AUTOMATIC GEARBOX		C3 - XSARA - XSARA PICASSO
Engines: KFV - NFU - RFN - RHZ		
Precautions to be taken.		
<p>Repairs on mechanical components.</p> <p>Never place the gearbox on the ground without protection.</p> <p>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.</p> <p>It is imperative to use the centring peg and the converter retaining bracket to couple the gearbox on the engine.</p> <p>After coupling the gearbox on the engine, remove the centring peg.</p>	<p>Modification of the oil usage counter value.</p> <p>Exchanging the gearbox ECU:</p> <ul style="list-style-type: none"> - Note down the gearbox counter value. - Transfer the value read into the the new gearbox ECU. <p>Exchanging the gearbox -:</p> <ul style="list-style-type: none"> - Initialise the oil usage counter to 0. <p>Draining the gearbox:</p> <ul style="list-style-type: none"> - Initialise the oil usage counter (<i>follow the diagnostic tool procedure</i>). 	

C3 - XSARA - XSARA PICASSO	RECOMMENDATIONS - PRECAUTIONS: AL4 AUTOMATIC GEARBOX
Engines: KFV - NFU - RFN - RHZ	
Procedure for initialising the automatic gearbox ECU	
<p>Downloading.</p> <p>Updating the gearbox ECU by downloading:</p> <ul style="list-style-type: none"> - Follow the procedure using the diagnostic tool. <p>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.</p> <p>After the downloading operation, carry out the following:</p> <ul style="list-style-type: none"> - A clearing of faults. - A pedal initialisation. - A re-initialisation of the auto-adaptives. - A programming (<i>if necessary</i>). - A writing of the value of the oil usage counter previously read. - A road test. <p>ESSENTIAL: Every update of the automatic gearbox ECU should be accompanied by an update of the engine ECU.</p>	

RECOMMENDATIONS - PRECAUTIONS: AL4 AUTOMATIC GEARBOX**C3 - XSARA - XSARA PICASSO**

Engines: KFV - NFU - RFN - RHZ

Procedure for initialising the automatic gearbox 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 or ELIT.

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.

Downloading.**ECU downloading procedure:**

- Follow the diagnostic tool procedure.

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

- SHIFT LOCK gear selection lever position.
- Without OBD outlet (*depollution L4*).

If the ECU is to be fitted to a vehicle with depollution **L4** or not equipped with gear lever locking safety:

- Perform a configuration operation.

Pedal initialisation.

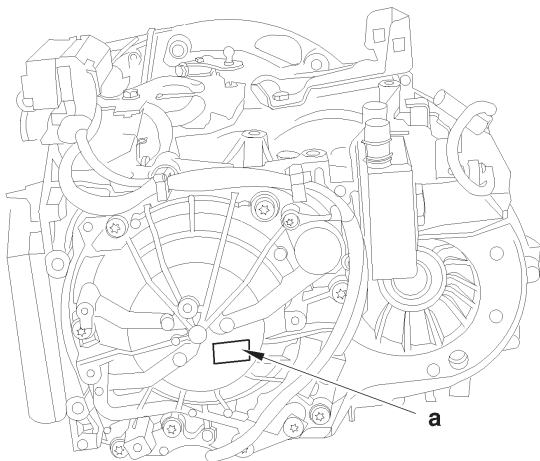
A pedal initialisation must be carried out in the following cases:

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

C3 - XSARA - XSARA PICASSO

AL4 AUTOMATIC GEARBOX

Engines: KFV - NFU - RFN - RHZ



Identification.

«a» Component reference.

WARNING: This gearbox benefits from a special CITROEN semi-synthetic oil, which cannot be mixed with any other oil.

The gearbox is lubricated for life.

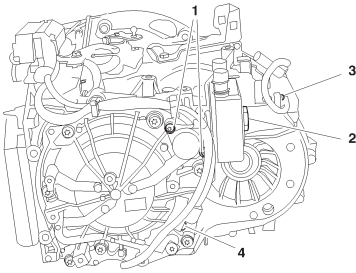
B2CP3ECD

CLUTCH
GEARBOX
TRANSMISSION

AL4 AUTOMATIC GEARBOX

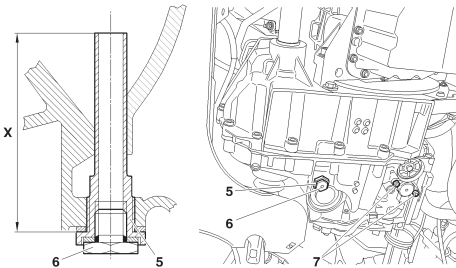
C3 - XSARA - XSARA PICASSO

Engines: KFV - NFU - RFN - RHZ



Tightening torques (m.daN).

(1) Oil flow modulation electrovalve fixing	: $1 \pm 0,2$
(2) Heat exchanger fixing	: 5 ± 1
(3) Output speed sensor fixing	: $1 \pm 0,2$
(4) Output speed sensor fixing	: $1 \pm 0,2$
(5) Oil overflow and drain fixing	: $4 \pm 0,2$
(6) Oil level plug	: $2,4 \pm 0,4$
(7) Oil pressure sensor fixing	: $0,8 \pm 0,1$



B2CP3EDD

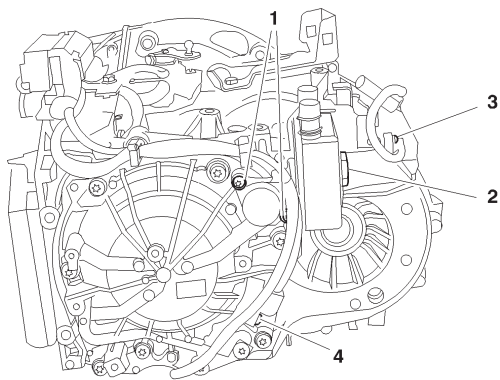
B2CP311D

CLUTCH
GEARBOX
TRANSMISSION

C3 - XSARA - XSARA PICASSO

AL4 AUTOMATIC GEARBOX

Engines: KFV - NFU - RFN - RHZ



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 : $5,2 \pm 1$

B2CP3EED

CLUTCH
GEARBOX
TRANSMISSION

AL4 AUTOMATIC GEARBOX

C3 - XSARA - XSARA PICASSO

Engines: KFV - NFU - RFN - RHZ

Tightening torques (m.daN).

A: EW7 and EW10 engines

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.

B: DW10 engine.

Hydraulic block fixing.

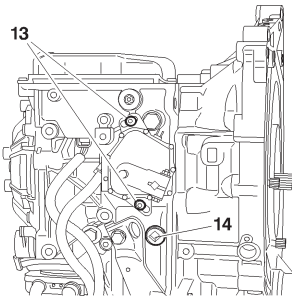
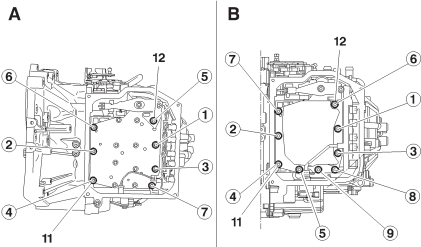
Centre the hydraulic block, using screws (11) and (12).

- Pre-tighten (no strict order) : 0,9
- Slacken : All 7 screws
- Tighten (respect the order indicated) : 0,75

NOTE: The screw (11) is shouldered.

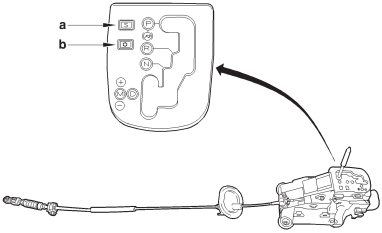
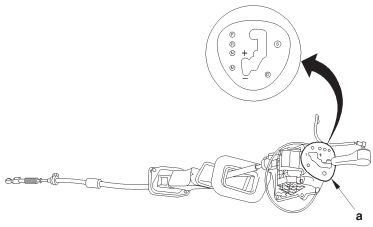
(13) Fixing of selector lever position switch : 1,5 ± 0,2

(14) Oil filler plug : 2,4 ± 0,4



B2CP3EFD B2CP3EGC

CLUTCH
GEARBOX
TRANSMISSION

C3 - XSARA PICASSO	AL4 AUTOMATIC GEARBOX
C3	Engines: KFV - RFN
	<p>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.</p> <p>The gear selector control has 5 positions:</p> <ul style="list-style-type: none"> - Position «P»: Park (<i>locking and immobilisation of the vehicle</i>). - Position «R»: Reverse gear. - Position «N»: Neutral. - Position «D»: Drive (<i>use of the 4 gears in their autoadaptive automatic function</i>). - Position «M»: Manual (<i>this position lets the driver select his own gears in sequential mode by pulling the gear selector to «M-» or pushing it to «M+»</i>).
XSARA PICASSO	
	<p>NOTE: Only the positions «P» or «N» authorise the starting of the engine.</p> <p>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.</p>

B2CP3H7D B2CP3MUD

AL4 AUTOMATIC GEARBOX

C3

Engine: KfV

In passenger compartment (continued).

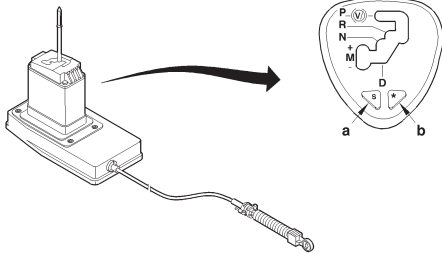
The information is transmitted to the gearbox ECU.

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**».

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

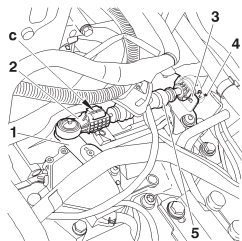
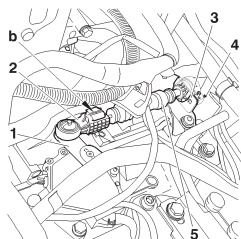
- **Normal programme:** Operates as the default programme (*eco law, autoadaptive mode*).
- **Sport programme (a):** Permits a more dynamic, sporty performance.
- **Snow programme (b):** Facilitates starting and adhesion on slippery surfaces.

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



B2CP3DKD

CLUTCH
GEARBOX
TRANSMISSION

C3 - XSARA PICASSO**AL4 AUTOMATIC GEARBOX****C3****Engines: KFV - RFN****XSARA PICASSO****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).

B2CP3H8C

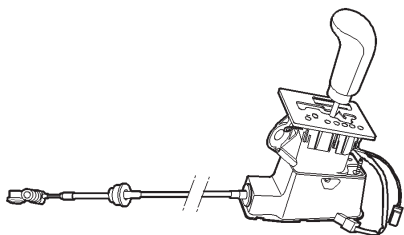
B2CP3N7C

AL4 AUTOMATIC GEARBOX

XSARA

XSARA

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.

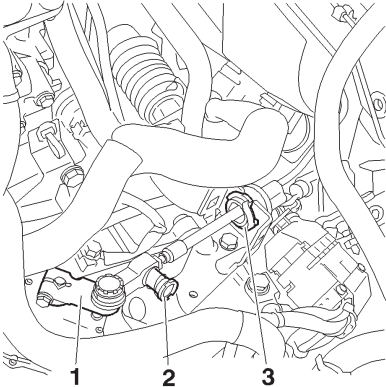
Sport: This programme favours performance.

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

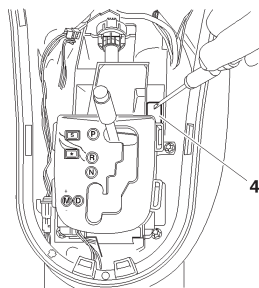
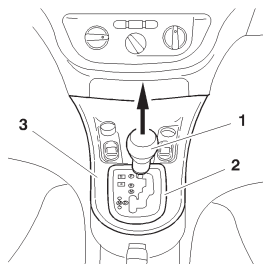
CLUTCH
GEARBOX
TRANSMISSION

XSARA	AL4 AUTOMATIC GEARBOX
XSARA	Engines: NFU - RFN - RHZ
 <p>The diagram shows a technical drawing of the AL4 automatic gearbox assembly. Three callouts are present: (1) points to the control lever, (2) points to the automatic adjustment mechanism, and (3) points to the sleeve stop. The drawing is a line drawing showing various components of the gearbox and its connection to the engine.</p>	<p>Gearbox end.</p> <p>(1) Control lever.</p> <p>(2) Automatic adjustment.</p> <p>(3) Sleeve stop.</p> <p>The automatic gearbox is controlled by a cable.</p>

AL4 AUTOMATIC GEARBOX

C3

Engine: KFV



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.

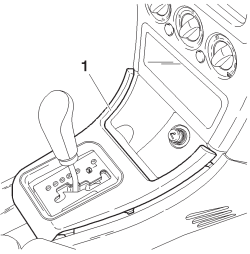
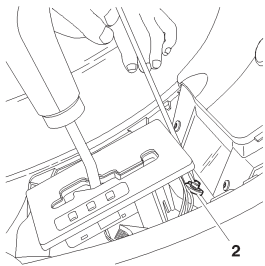
Remove:

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

C5FP0ETC

B2CP3GZC

CLUTCH
GEARBOX
TRANSMISSION

XSARA	AL4 AUTOMATIC GEARBOX	
 <p>C5FP06YC</p>	Engines: NFU - RFN - RHZ	
 <p>C5FP06ZC</p>	<p style="text-align: center;">SHIFT LOCK.</p> <p>NOTE: The «shift lock» is a system that locks the gear selection lever in position «P».</p> <p>Unlocking the «SHIFT LOCK» (normal operation).</p> <ul style="list-style-type: none"> - Switch on the ignition. - Press the brake pedal and keep it pressed. - Move the gear selection lever out of position «P». <p>Unlocking the «SHIFT LOCK» (with an operating fault).</p> <p>NOTE: It is impossible to unlock the «shift lock» with the «Normal operation» method. The fault may originate from one of the following components:</p> <ul style="list-style-type: none"> - «Shift lock». - Gear lever position switch. - Automatic gearbox ECU. - Electrical harnesses. - Battery voltage. <p>Remove:</p> <ul style="list-style-type: none"> - The cover (1). - Unlock the «shift lock» (2) with the aid of a screwdriver. - Move the gear selection lever out of position «P». 	

AL4 AUTOMATIC GEARBOX

XSARA PICASSO

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).

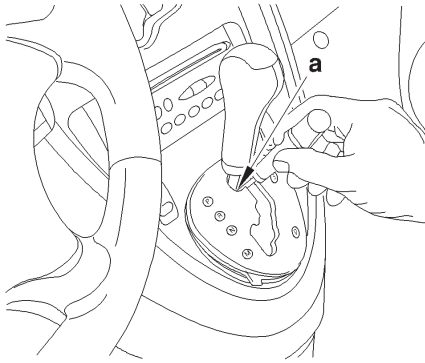
NOTE: It is impossible to unlock the «**shift lock**» with the «**Normal operation**» method.

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**».



B2CP3N8C

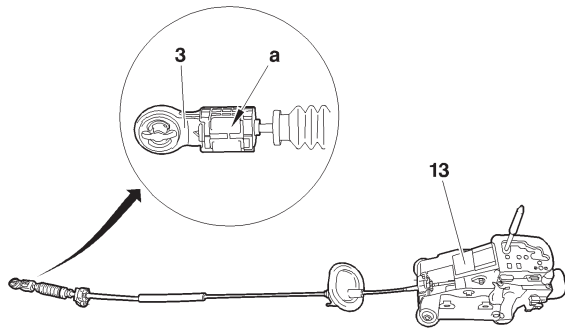
CLUTCH
GEARBOX
TRANSMISSION

C3

AL4 AUTOMATIC GEARBOX

Engine: KFV

C3



B2CP3GYD

Refitting the gearbox control.

New gear selection control

Couple the ball-joint (3).
Push in the component (a) without bending the cable.
Check all the gear selection control positions.

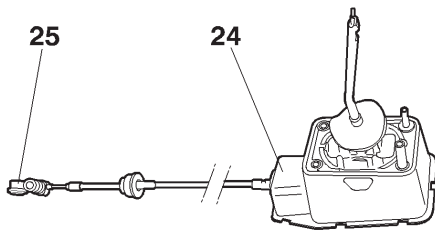
Re-used gear selection control.

Release the component (a).
Couple the ball-joint (3).
Push in the component (a) without bending the cable.
Check all the gear selection control positions.

AL4 AUTOMATIC GEARBOX

XSARA

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.

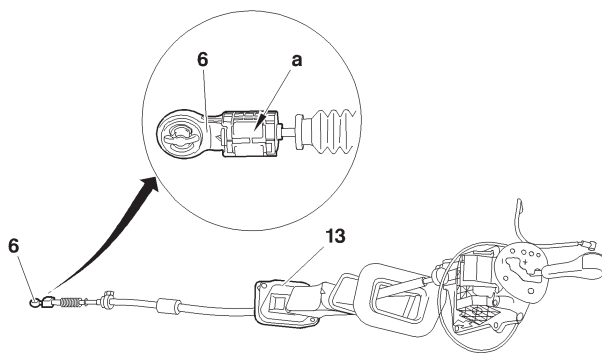
B2CP3AXC

CLUTCH
GEARBOX
TRANSMISSION

XSARA PICASSO

AL4 AUTOMATIC GEARBOX

Engine: RFN



B2CP3GYD

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.

CLUTCH
GEARBOX
TRANSMISSION

DRAINING / FILLING / TOP-UP: AL4 GEARBOX

C3 - XSARA - XSARA PICASSO

Engines: KFV - NFU - RFN - RHZ

Tools.

[1] Filling cylinder : (-).0341

Draining.

IMPERATIVE: The gearbox should be drained when the oil is warm (*at least 60°C*), to eliminate the impurities in suspension in the oil.

NOTE: Draining is partial, the converter cannot be completely emptied.

Remove the drain plug (1).

NOTE: Approx. 3 litres of oil should flow out.

Filling.

Refit the drain plug (1) (*equipped with a new seal*), tighten to **2,4 ± 0,2 m.daN**.

Remove the oil filler cap (2).

Use tool [1].

Oil capacity for dry gearbox:

- **EW engine: 5,85 litres.**

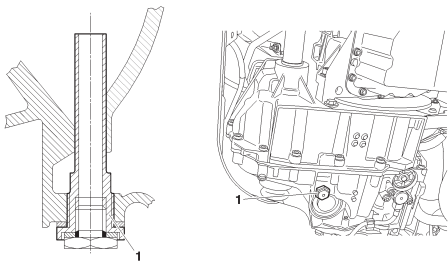
- **DW engine: 5,40 litres.**

Oil remaining after draining: **3 litres (approx.)**.

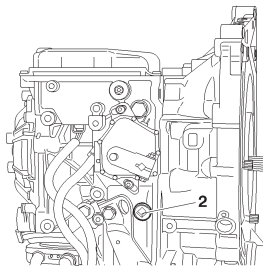
Quantity of oil to be put in : **3 litres (approx.)**.

Refit the oil filler cap (2) (*equipped with a new seal*), tighten to **2,4± 0,2 m.daN**.

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



B2CP3AYD

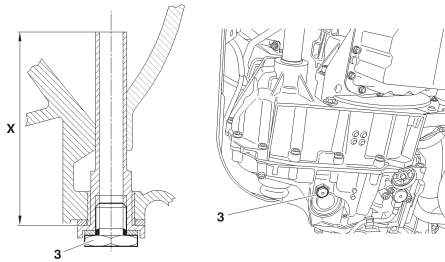


B2CP31GC

C3 - XSARA - XSARA PICASSO

DRAINING / FILLING / TOP-UP: AL4 GEARBOX

Engines: KFU - NFU - RFN - RHZ



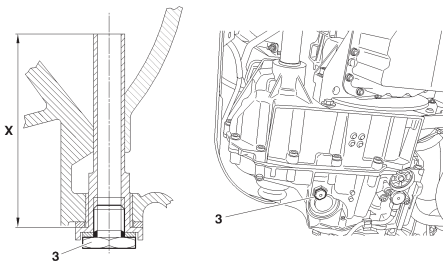
Checking the oil level.

Prior conditions:

- Vehicle in horizontal position.
- Check gearbox is not in back-up mode.
- Remove the oil filler cap (2).
- Add **0.5 litres extra oil** into the gearbox.
- Foot on the brake, change through all the gears.
- Selection lever in position "P".
- Engine running, at idle.
- Oil temperature: **60°C (+8°C; -2°C)**.
- Remove the oil level plug (3).

C3	TU3 engines	Dimension «X» = 81 mm
XSARA	TU5 and EW10 engines	Dimension «X» = 81 mm
XSARA	DW10 engines	Dimension «X» = 77 mm
XSARA PICASSO	EW10 engines	Dimension «X» = 81 mm

B2CP3AZD

DRAINING / FILLING / TOP-UP: AL4 GEARBOX**C3 - XSARA - XSARA PICASSO****Engines: KFV - NFU - RFN - RHZ****Thread of oil then "drip-drip".**Refit the plug (3), Tighten to **2,4± 0,2 m.daN**.**"Drip-drip" or nothing.**

Refit the oil level plug (3).

Stop the engine.

Add **0.5 litres** extra oil into the gearbox.

Repeat the oil level procedure.

NOTE: The level is correct at the moment the thread of oil becomes "drip-drip".Refit the oil level plug (3) (*equipped with a new seal*), tighten to **2,4± 0,2 m.daN**.**Checking the oil level (continued).**Refit the oil filler plug (3) (*equipped with a new seal*), tighten to **2,4± 0,2 m.daN**.

An excessive level of oil can lead to the following consequences:

- Oil heating up abnormally,
- Oil leaks.

A level that is too low will result in the destruction of the gearbox.

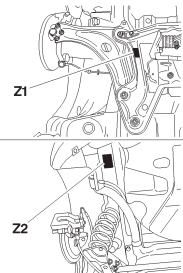
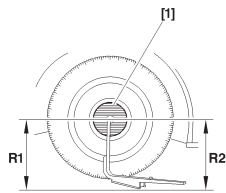
B2CP3AZD

C2 - C3 - C3 PLURIEL - XSARA - XSARA PICASSO			DRIVESHAFTS - GEARBOX				
			Tightening torques (m.daN)		Gearbox oil seal mandrels		
Vehicles	Gearbox	Engines	Driveshaft bearing	Driveshaft nut	RH side	LH side	Tool kit
C2 C3 C3 Pluriel	MA/5	HFX - KFV - KFU 8HX - 8HW	NO	24,5 ± 0,5	7114-T.W	7114-T.X	7116-T
		NFU	2 ± 0,2				
XSARA	BE4/5	KFW - NFU	1,8 ± 0,1	32 ± 1,5			
XSARA XSARA PICASSO		NFV - RFS - RFN - 6FZ - WJY 8HZ - 9HZ - 9HY - RHY- RHZ					
C3		8HV - 8HY	2 ± 0,2				
C3 XSARA PICASSO	AL 4	NFU - RFN - RHZ	1,8 ± 0,1	32,5 ± 2,5	Seal extractor RH / LH (-) 0338 C		(-) 0338
		XSARA	KFV		1 ± 0,1	(-) 0338 J1 + (-) 0338 J3	
					(-) 0338 J1 + (-) 0338 J2	(-) 0338 H1 + (-) 0338 H2	
Tightening torque (m.daN) for wheel bolts: XSARA = 8,5 ± 0,8 XSARA PICASSO = 10 ± 1 C2 C3 C3 PLURIEL = 9 ± 1							

AXLE GEOMETRY		C2
Conditions for checking and adjusting		
Tyres inflated to correct pressures. Vehicle at reference height. Steering rack locked at mid point (<i>see corresponding operation</i>).		
Vehicle heights at reference height		
E1APOBZD		
Front height	Rear height	
L1	L2	
H1 = R1 - L1	H2 = R2 + L2	
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.	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.	

C2

AXLE GEOMETRY



B3CP07SD

Measuring front height

Measuring rear height

[1] Gauge for measuring the wheel radius, 4 bolts, tool 8006-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 + L2

Value at reference
height
(+ 6 - 8 mm)

Except CRD (*)

HFX - KfV - 8HX

NFU

L1 = 142,5 mm

L1 = 152,5 mm

Value at reference
height
(+ 10 - 6 mm)

Except CRD (*)

HFX - KfV - 8HX

NFU

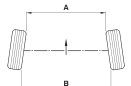
L2 = 52 mm

L2 = 42 mm

Compress the suspension to obtain the calculated values.

The height difference between the two axle dimensions should be less than 10 mm.

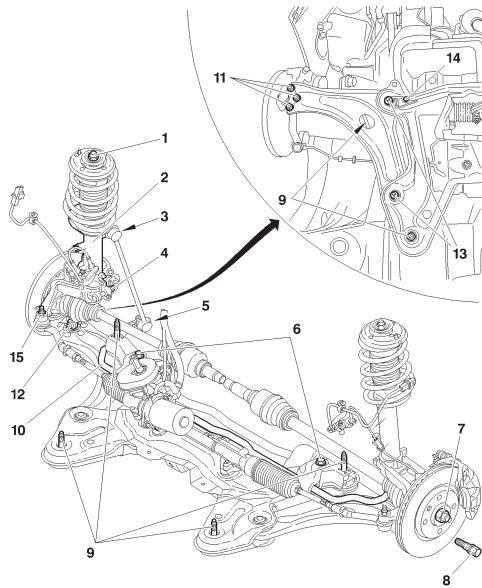
(*) = CRD: Difficult road conditions.

AXLE GEOMETRY							C2	
Front axle					Rear axle			
Dissymmetry of lower castor at 0° 30'. DISSYMMETRY OF LOWER CAMBER 0° 18'. Distribute symmetrically, LH / RH wheel, the total tracking value.					Dissymmetry of lower camber 0° 18'.			
All types (except CRD)								
HFX - KVV - 8HX					HFX - KVV - 8HX			
Vehicle		Tracking	Castor (± 0°18')	Camber (± 0°30')	Pivot angle ± 0°30'	Tracking		Camber
		ADJUSTABLE	Non adjustable			Non adjustable		
All Types	mm	2 ± 1				5,5 ± 1		
	0°	0°18' ± 0°09'	3°58'	- 0°31'	11°26'	0°53' ± 0°09'		- 1°30'
NFU					NFU			
Vehicle		Tracking	Castor ± 0°18'	Camber ± 0°30'	Pivot angle ± 0°30'	Tracking		Camber
		ADJUSTABLE	Non adjustable			Non adjustable		
All Types	mm	2 ± 1				5,8 ± 1		
	0°	0°18' ± 0°09'	4°	- 0°32'	11°35'	0°49' ± 0°09'		-1°31'
							WARNING	
							A < B = Positive figure:	
B3CP02UC		A > B = Negative figure:		- =	TOE-OUT			

AXLES
SUSPENSION
STEERING

C2

FRONT AXLE



B3CP07RP

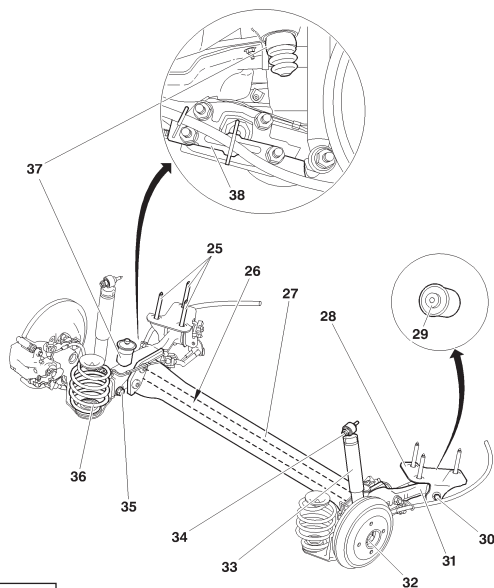
Tightening torques (m.daN).

- (1) Nut fixing suspension leg on body : 6,5 ± 0,6
- (2) Damper :
- (3) Anti-roll bar link rod upper ball-joint : 3,2 ± 0,3
- (4) Suspension leg pivot : 5,4 ± 0,5
- (5) Anti-roll bar link rod lower ball-joint : 3,2 ± 0,3
- (6) Anti-roll bar bearing fixing on subframe : 8 ± 0,8
- (7) Hub nut : 24,5 ± 0,5
- (8) Wheel bolt : 9 ± 1
- (9) Subframe to bodyshell fixing screw : 10 ± 1
- (10) Anti-roll bar :
- (11) Pivot lower ball-joint fixing on lower arm : 5,5 ± 0,5
- (12) Pivot lower ball-joint fixing : 4 ± 0,4
- (13) Lower arm front and rear mounting fixing : 14 ± 0,4
- (14) Stabiliser bar screw : 6,6 ± 0,7
- (15) Steering ball-joint fixing : 3,5 ± 0,3

Private vehicles	Anti-roll bar	
Europe	Diameter (mm)	Colour
HFX - KFV	18	Violet
NFU	20	Green
8HX	19	Blue
Entreprise vehicles	Diameter (mm)	Colour
HFX - 8HX	18	Violet
CRD vehicles	Diameter (mm)	Colour
KFV - 8HX	18	Violet
NFU	20	Green

REAR AXLE

C2



Tightening torques (m.daN).

(25) Rear axle fixing screw	: 10 ± 1
(26) Anti-roll bar	:
(27) Rear axle crossmember	:
(28) Rear suspension arm silentblock yoke	:
(29) Rear suspension arm silentblock	:
(30) Yoke / suspension arm fixing screw	: 7 ± 0,5
(31) Rear suspension arm	:
(32) Stub axle bearing nut	: 20 ± 2
(33) Damper	:
(34) Damper upper fixing	: 4,5 ± 0,4
(35) Damper lower fixing	: 9,3 ± 0,9
(36) Suspension springs	:
(37) Travel stop	:
(38) Secondary brake cable guide support	:

Private vehicles Europe

Anti-roll bar

Diameter (mm)

HFX - KFV

20,5 (*tubular*)

8HX

23,5 (*tubular*)

NFU

25 (*solid*)

Vehicle entreprise

Diameter (mm)

8HX

20,5 (*tubular*)

CRD vehicles

Diameter (mm)

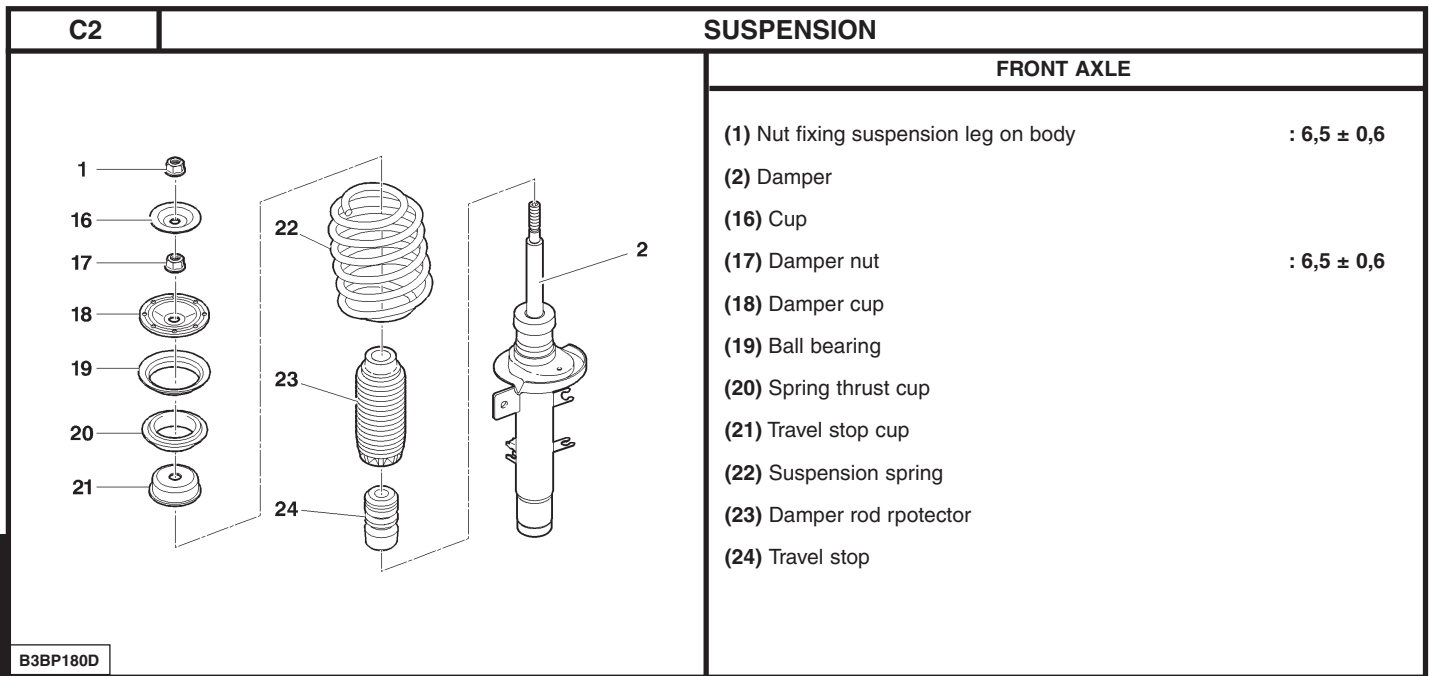
8HX

20,5 (*tubular*)

NFU

25,5 (*tubular*)

B3DP09UP

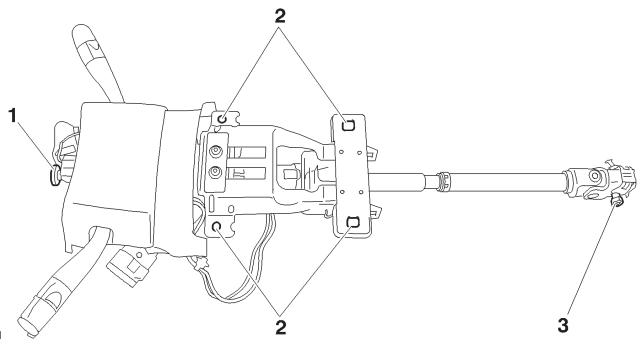


FEATURES OF ELECTRIC POWER STEERING

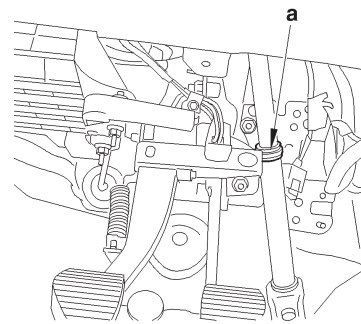
C2

Engines: HFX - KFV - NFU - 8HX

Steering column



B3EP13GD



B3EP13HC

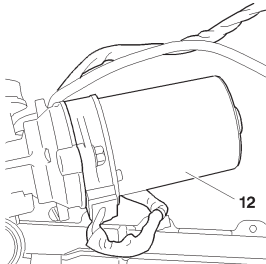
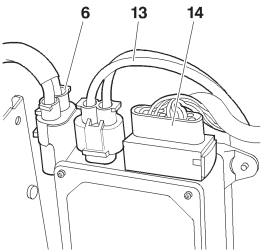
Tightening torques (m.daN.).

- | | |
|---------------------------------------|-----------------|
| (1) Steering wheel fixing | : $2 \pm 0,3$ |
| (2) Steering column fixing on support | : $2,2 \pm 0,5$ |
| (3) Steering cardan fixing | : $2,2 \pm 0,2$ |

Identification.

- Identified by the colour of the ring at «a».
- | | |
|------------------|----------------------|
| Left hand drive | : BLUE ring. |
| Right hand drive | : WHITE ring. |

C2		FEATURES OF ELECTRIC POWER STEERING	
Engines: HFX - KFV - NFU - 8HX			
Steering mechanism			
		<p>Tightening torques (m.daN.).</p> <p>(4) Ball-joint fixing on pivot : $3,5 \pm 0,3$</p> <p>(5) Steering rod lock-nut : $5 \pm 0,5$</p> <p>(8) Threaded washer</p> <p>(9) Stud : $0,8 \pm 0,1$</p> <p>(10) Flat washers</p> <p>(11) Fixing of mechanism on subframe : $8 \pm 0,8$</p>	
B3EP13JD			
	HFX - KFV - 8HX	NFU	<p>Connectors.</p> <p>(6) Supply of electric assistance motor</p> <p>(7) Torque sensor signals</p>
Electric motor	60 A	65 A	
Steering rack travel	2x72	2x64	
Steering ratio	45,6/1		
Number of rotations of steering wheel	3,2	2,8	
Outer angle of lock	32°24'	28°42'	
Inner angle of lock	38°	32°30'	

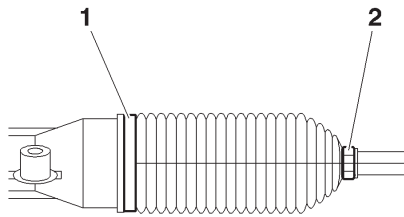
FEATURES OF ELECTRIC POWER STEERING		C2
Engines: HFX - KFV - NFU - 8HX		
Steering assistance	Electric power steering ECU	
 <p>B3EP13KC</p>	 <p>B3EP13LC</p>	
<p>Supplier: KOYO.</p> <p>The steering assistance is provided by the assistance motor (12), controlled by the ECU.</p> <p>Power delivered to the assistance motor (12) depends on:</p> <ul style="list-style-type: none"> - Speed of the vehicle. - Torque applied on the steering wheel. 	<p>Only one ECU version, whatever the engine-type.</p> <p>The electric power steering ECU is linked to the following connectors:</p> <ul style="list-style-type: none"> - (6) Assistance motor supply. - (13) Electric power steering ECU supply. - (14) Control signals. <p>After changing the electric power steering ECU, it is necessary to perform a configuration.</p>	

C2

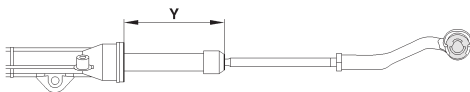
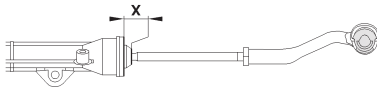
SPECIAL FEATURES: STEERING

Engines: HFX - KFV - NFU - 8HX

Centring the steering rack



B3EP13UC



B3EP13VD

Preliminary operation.

Raise and support the vehicle on a two-column lift.
Remove, on the RH side of the steering rack:
- Clip (1).
- Clip (2).

Release 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: $L = (Y - X) : 2$.

Refit:

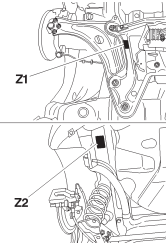
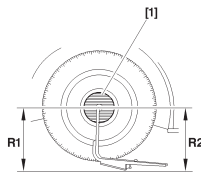
- The steering rack protection gaiter.
- New clips (1) and (2).

AXLE GEOMETRY		C3
Conditions for checking and adjusting		
Tyres inflated to correct pressures.		Vehicle at reference height.
Steering rack locked at mid point (see corresponding operation).		
Vehicle heights at reference height		
C3		
E1AP09MD	Front height	Rear height
	L1	L2
	H1 = R1 - L1	H2 = R2 + L2
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.		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.

C3

AXLE GEOMETRY

Checks at reference height



B3CP07SD

Measuring front height

Measuring rear height

[1] Gauge for measuring the wheel radius, 4 bolts, tool **4003-T** or **8006-T** (according to version).

Z1 = Measuring zone underneath the front subframe.

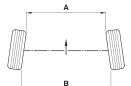
Z2 = Measuring zone underneath the rear sill.

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 + L2**Value at reference
height
(+ 6 - 8 mm)All types Except CRD (*)
**Raised suspension
Sports**
L1 = 142,5 mmVehicle CRD (*)
**Raised suspension
Sports**
L1 = 132,5 mmValue at reference
height
(+ 10 - 6 mm)All types Except CRD (*)
**Raised suspension
Sports**
L2 = 52 mmVehicle CRD (*)
**Raised suspension
Sports**
L2 = 62 mm

(*) = CRD : Difficult road conditions.

Definition for a type of vehicle whose axles and suspensions are adapted 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							C3
Front axle				Rear axle			
Dissymmetry of lower castor at 0° 30'. Dissymmetry of lower camber at 0° 18'. Distribute symmetrically, LH / RH wheel, the total tracking value.				Dissymmetry of lower camber at 0° 18'.			
All types (except CRD) Raised suspension - Sports							
Vehicle	Tracking	Castor (± 0°18')	Camber (± 0°30')	Pivot angle (± 0°30')	Tracking	Camber (± 0°18')	
	Adjustable	Non adjustable			Non adjustable		
All	mm	- 2 ± 1			5,5 ± 1		
Types	0°	- 0°19' ± 0°10'	3°57'	- 0°28'	11°26'	0°50' ± 0°10'	- 1°30'
Vehicle CRD Raised suspension - Sports							
Vehicle	Tracking	Castor (± 0°18')	Camber (± 0°30')	Pivot angle (± 0°30')	Tracking	Camber	
	Adjustable	Non adjustable			Non adjustable		
All	mm	- 2 ± 1			5,2 ± 1		
Types	0°	- 0°19' ± 0°10'	3°53'	- 0°26'	11°14'	0°47' ± 0°10'	-1°28'
					WARNING		
					A < B = Positive figure:	+ =	TOE-IN
B3CP02UC					A > B = Negative figure:	- =	TOE-OUT

AXLES
SUSPENSION
STEERING

C3 PLURIEL

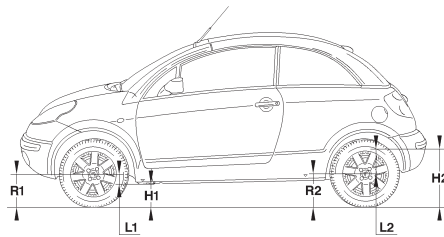
AXLE GEOMETRY

Conditions for checking and adjusting

Tyres inflated to correct pressures. Vehicle at reference height.
Steering rack locked at mid point (see corresponding operation).

Vehicle heights at reference height

C3 Pluriel



E1AP0AUD

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

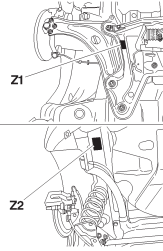
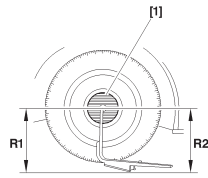
$H2 = R2 + L2$

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.

AXLE GEOMETRY

C3 PLURIEL

Checks at reference height



B3CP07SD

Measuring front height

Measuring rear height

[1] Gauge for measuring the wheel radius, 4 bolts, tool **4003-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 + L2**

Value at reference height
(+ 6 - 8 mm)

All Types

L1 = 132,5 mm

Value at reference height
(+ 10 - 6 mm)

All Types

L2 = 47 mm

(*) = **CRD** : Difficult road conditions.

Definition for a type of vehicle whose axles and suspensions are adapted 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**.

C3 PLURIEL

AXLE GEOMETRY

Front axle

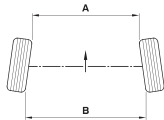
Rear axle

Dissymmetry of lower castor at $0^{\circ} 30'$.
 Dissymmetry of lower camber at $0^{\circ} 18'$.
 Distribute symmetrically, LH / RH wheel, the total tracking value.

Dissymmetry of lower camber at $0^{\circ} 18'$.

All types

Vehicle		Tracking	Castor ($\pm 0^{\circ}18'$)	Camber ($\pm 0^{\circ}30'$)	Pivot angle ($\pm 0^{\circ}30'$)	Tracking	Camber ($\pm 0^{\circ}18'$)
		Adjustable	Non adjustable			Non adjustable	
All	mm	- 2 \pm 1				5,7 \pm 1	
Types	0°	- 0°18' \pm 0°09'	3°53'	- 0°26'	11°14'	0°51' \pm 0°09'	- 1°30'



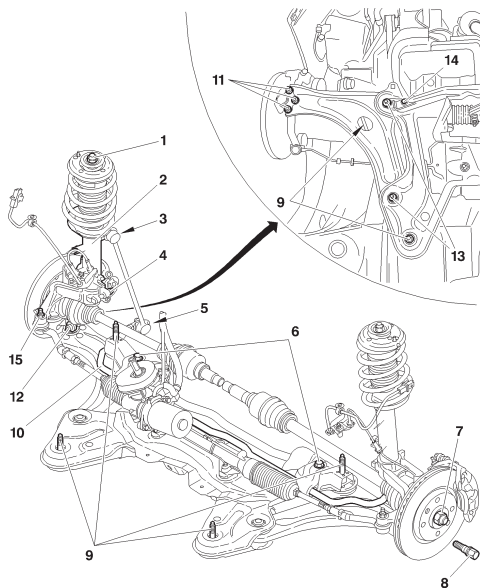
WARNING

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

B3CP02UC

FRONT AXLE

C3 - C3 PLURIEL



Tightening torques (m.daN).

- (1) Nut fixing suspension leg on body : 6,5 ± 0,6
- (2) Suspension leg :
- (3) Anti-roll bar link rod upper ball-joint : 3,2 ± 0,3
- (4) Suspension leg pivot : 5,4 ± 0,5
- (5) Anti-roll bar link rod lower ball-joint : 3,2 ± 0,3
- (6) Anti-roll bar bearing fixing on subframe : 8 ± 0,8
- (7) Hub nut : 24,5 ± 0,5
- (8) Wheel bolt : 9 ± 1
- (9) Subframe to bodysell fixing screw : 10 ± 1
- (10) Anti-roll bar :
- (11) Pivot lower ball-joint fixing on lower arm : 5,5 ± 0,5
- (12) Pivot lower ball-joint fixing : 4 ± 0,4
- (13) Lower arm front and rear mounting fixing : 14 ± 0,4
- (14) Stabiliser bar screw : 6,6 ± 0,7
- (15) Steering ball-joint fixing : 3,5 ± 0,3

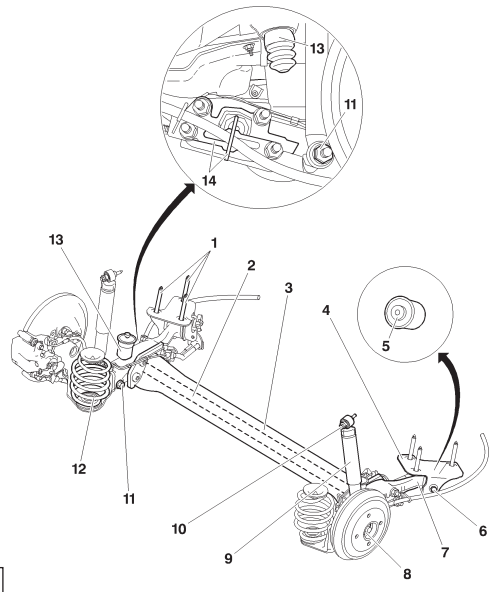
Anti-roll bar

		Diameter (mm)	Colour
C3	HFX - KFV	19	Blue
	KFU - NFU - 8HX		
	8HW - 8HV - 8HY		
C3 Pluriel	KFV - NFU - 8HX	20	Green

B3CP07RP

C3 - C3 PLURIEL

REAR AXLE



Tightening torques (m.daN).

- (1) Rear axle fixing screw : **10 ± 1**
- (2) Anti-roll bar :
- (3) Rear axle crossmember :
- (4) Rear suspension arm rubber mounting yoke :
- (5) Rear suspension arm rubber mounting :
- (6) Yoke / suspension arm fixing screw : **7,6 ± 0,5**
- (7) Rear suspension arm :
- (8) Stub axle bearing nut : **20 ± 2 greased**
- (9) Damper :
- (10) Damper upper fixing : **4,5 ± 0,4**
- (11) Damper lower fixing : **9,3 ± 1**
- (12) Suspension spring :
- (13) Travel stop :
- (14) Secondary brake cable guide and its support :

		Anti-roll bar
		Diameter (mm)
C3	HFX - KFV KFU - NFU - 8HX 8HW - 8HV - 8HY	25,5 (tubular)
C3 Pluriel	KFV - NFU - 8HX	26 (tubular)

B3CP0AFP

SUSPENSION

C3 - C3 PLURIEL

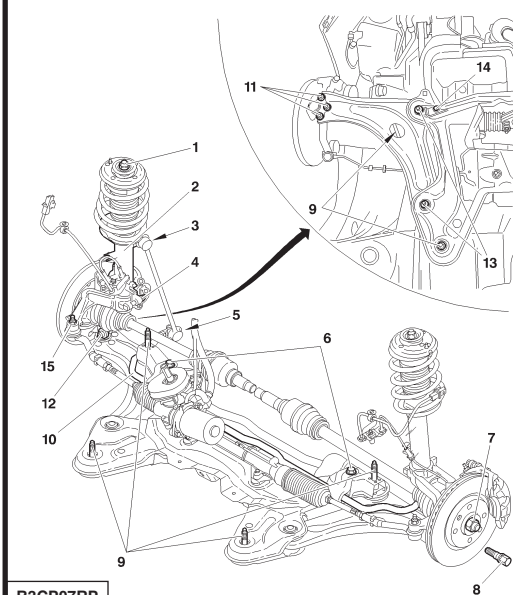
Front axle

(1) Nut fixing suspension leg on body	: 6,5 ± 0,6
(2) Damper	:
(3) Anti-roll bar link rod upper ball-joint	: 3,2 ± 0,3
(4) Suspension leg pivot	: 5,4 ± 0,5
(5) Anti-roll bar link rod lower ball-joint	: 3,2 ± 0,3
(6) Anti-roll bar bearing fixing on subframe	: 8 ± 0,8
(7) Hub nut	: 24,5 ± 0,5
(8) Wheel bolt	: 9 ± 1
(9) Subframe to bodyshell fixing screw	: 10 ± 1
(10) Anti-roll bar	:
(11) Pivot lower ball-joint fixing on lower arm	: 5,5 ± 0,5
(12) Pivot lower ball-joint fixing	: 4 ± 0,4
(13) Lower arm front and rear mounting fixing	: 14 ± 0,4
(14) Stabiliser bar screw	: 6,6 ± 0,7
(15) Steering ball-joint fixing	: 3,5 ± 0,3

Anti-roll bar

	Engines	Diameter (mm)	Colour
C3	AllTypes	19	Blue
C3 Pluriel	AllTypes	20	Green

Pivot		Diameter of bearing	Type
C3	Engines	72	In U (cast iron)
C3 Pluriel	AllTypes	72	In U (cast iron)

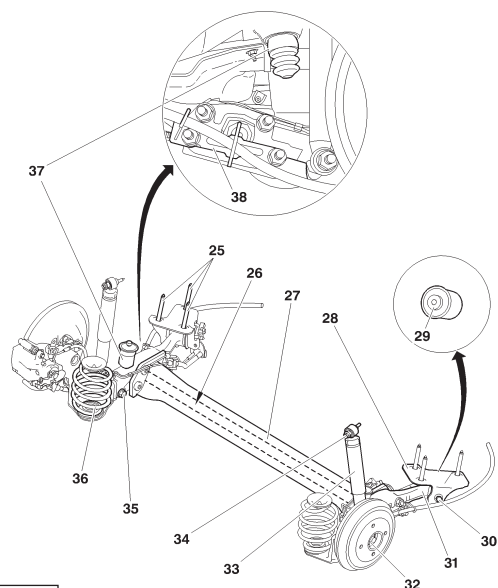


C3 - C3 PLURIEL		SUSPENSION	
		Front axle	
		(1) Nut fixing suspension leg on body	: 6,5 ± 0,6
(16) Cup		(17) Damper nut.	: 6,5 ± 0,6
(18) Damper cup		(19) Ball bearing	
(20) Spring thrust cup		(21) Travel stop cup	
(22) Suspension spring		(23) Damper rod rpotector	
(24) Travel stop			

B3BP180D

SUSPENSION

C3 - C3 PLURIEL



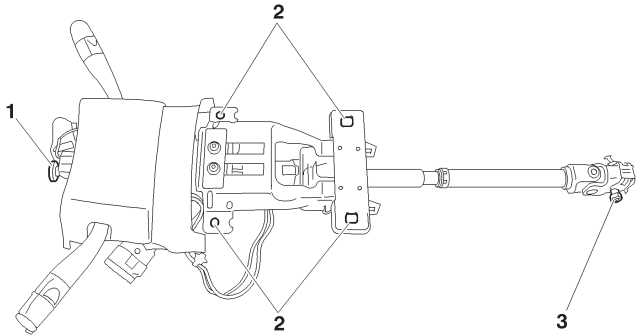
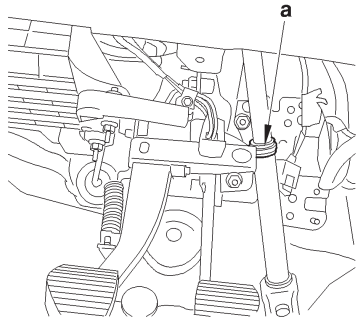
Rear axle

(25) Rear axle fixing screw	: 10 ± 1
(26) Anti-roll bar	:
(27) Rear axle crossmember	:
(28) Rear suspension arm silentblock mounting yoke	:
(29) Rear suspension arm silentblock	:
(30) Suspension arm fixing screw on yoke	: 7,6 ± 0,5
(31) Rear suspension arm	:
(32) Stub axle bearing nut	: 20 ± 2 greased
(33) Damper	:
(34) Damper upper fixing screw	: 4,5 ± 0,4
(35) Damper lower fixing screw	: 9,3 ± 0,9
(36) Suspension spring	:
(37) Travel stop	:
(38) Secondary brake cable guide support	:

Anti-roll bar

	Engines	Diameter (mm)
C3	AllTypes	25,5 (tubular)
C3 Pluriel		26 (tubular)

B3CP09UP

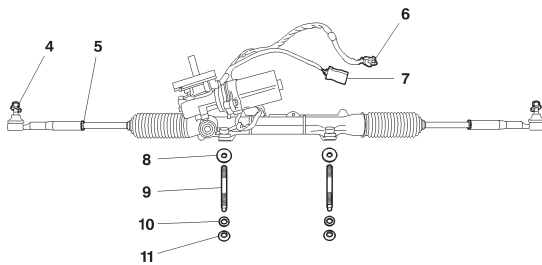
C3 - C3 PLURIEL	FEATURES OF ELECTRIC POWER STEERING	
Engines: HFX - KFV - KFU - NFU - 8HX - 8HW - 8HV - 8HY		
Steering column		
 <p>B3EP13GD</p>	 <p>B3EP13HC</p>	
<p style="text-align: center;">Tightening torques m.daN.</p> <p>(1) Steering wheel fixing : $2 \pm 0,3$</p> <p>(2) Steering column fixing on support : $2,2 \pm 0,5$</p> <p>(3) Steering cardan fixing : $2,2 \pm 0,2$</p>		<p style="text-align: center;">Identification.</p> <p>Identified by the colour of the ring at «a».</p> <p>Left hand drive : BLUE ring.</p> <p>Right hand drive : WHITE ring.</p>

FEATURES OF ELECTRIC POWER STEERING

C3 - C3 PLURIEL

Engines: HFX - KFV - KFU - NFU - 8HX - 8HW - 8HV - 8HY

Steering mechanism

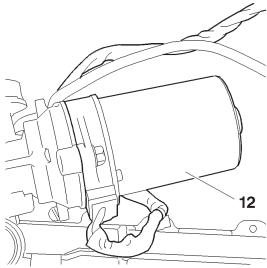
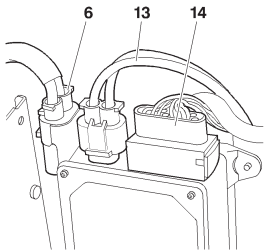


Tightening torques m.daN.

(4) Ball-joint fixing on pivot	: 3,5 ± 0,3
(5) Steering rod lock-nut	: 5 ± 0,5
(8) Threaded washer	
(9) Stud	: 0,8 ± 0,1
(10) Flat washers	
(11) Fixing of mechanism on subframe	: 8 ± 0,8

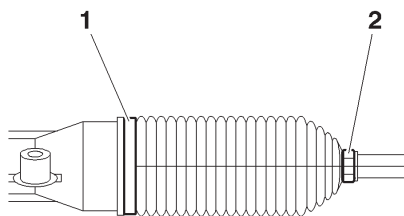
B3EP13JD

	HFX - KFV - 8HX - 8HW	KFV (BVA) NFU - 8HY - 8HV	
Electric motor	60 A	65 A	Connectors. (6) Supply of electric assistance motor (7) Torque sensor signals
Steering rack travel	2x72	2x64	
Steering ratio	45,6/1		
Number of rotations of steering wheel	3,2	2,8	
Inner angle of lock	38°	32°30'	
Outer angle of lock	32°24'	28°42'	

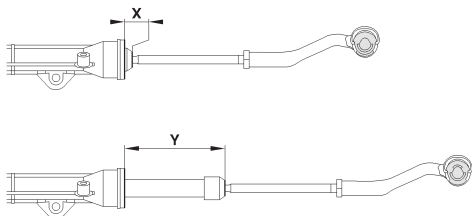
C3 - C3 PLURIEL	FEATURES OF ELECTRIC POWER STEERING	
Engines: HFX - KFV - KFU - NFU - 8HX - 8HW - 8HV - 8HY		
Steering assistance		
		
B3EP13KC	B3EP13LC	
<p>Supplier: KOYO.</p> <p>The steering assistance is provided by the assistance motor (12), controlled by the ECU.</p> <p>Power delivered to the assistance motor (12) depends on:</p> <ul style="list-style-type: none"> - Speed of the vehicle. - Torque applied on the steering wheel. 	<p style="text-align: center;">Electric power-assisted steering ECU.</p> <p>Only one ECU version, whatever the engine-type.</p> <p>The electric power steering ECU is linked to the following connectors:</p> <ul style="list-style-type: none"> - (6) Assistance motor supply. - (13) Electric power steering ECU supply. - (14) Control signals. <p>After changing the electric power steering ECU, it is necessary to perform a configuration (<i>see corresponding operation</i>).</p>	

SPECIAL FEATURES: STEERING**C3 - C3 PLURIEL**

Engines: HFX - KFV - KFU - NFU - 8HX - 8HW - 8HV - 8HY

Centring the steering rack

B3EP13UC



B3EP13VD

Preliminary operation.

Raise and support the vehicle on a two-column lift.

Remove, on the RH side of the steering rack:

- Clip (1).
- Clip (2).

Release 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**.

Refit:

- The steering rack protection gaiter
- New clips (1) and (2).

XSARA

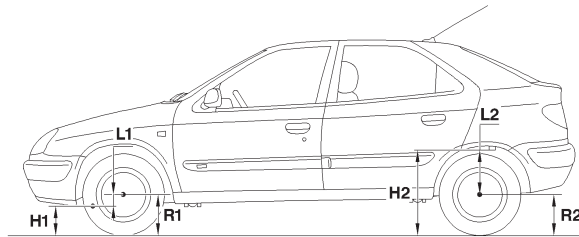
AXLE GEOMETRY

Front and rear measuring points

XSARA ALL TYPES N°RPO 8667 →

Front height

Rear height



B3CP06ZD

H1 = Dimension between the centre of the front suspension arm mounting and the ground.

H2 = Dimension between the contact face of the rear mounting and the ground.

R1 = Front wheel radius under load.

R2 = Rear wheel radius under load.

L1 = Distance between the centre of the wheel and the centre of the front suspension arm mounting.

L2 = Distance between the centre of the wheel and the contact face of the rear mounting on the bodyshell.

AXLE GEOMETRY				XSARA					
Reference heights									
Tools.		[1] Gauge for measuring the radius of wheels with 4 bolts		: 4300-T N°RPO 9429 →					
				Setting the reference height.					
				Front		Front			
				Measure the dimension «R1». Calculate the dim. H1 = R1 - L1.		Measure the dimension «R2». Calculate the dim. H2 = R2 + L2.			
				Compress the suspension until the values (H1) and (H2) are obtained.					
				NOTE: The difference in height between the two sides should be less than 10 mm.					
B3CP04AD									
		Front axle			Rear axle				
Engines	2.0i 16V (RFS)	All engines (except 2.0 i 16V and CRD)	All CRD engines	2.0i 16V (RFS)	All Saloon (except 2.0i 16V and CRD)	Estate	All CRD engines		
Reference heights (in mm)	115,5	90,5	75,5	73	83	88	103		

XSARA

AXLE GEOMETRY

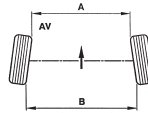
Values of the front and rear suspensions, at reference height

ESSENTIAL: When checking the suspensions, the vehicle should be at reference height.

Tools.

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



WARNING

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

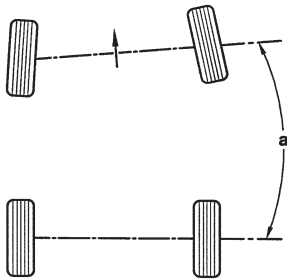
B3CP04LC

AXLE GEOMETRY							XSARA
Values of the front and rear suspensions, at reference height							
Front axle							
	Tolerances	Adjustable	Saloon or entreprise KFW	Saloon all engine types except KFW Estate all engine types except CRD (*)	Saloon CRD (*) KFW	2.0i 16V (RFS)	Saloon CRD (*) all engine types except KFW Estate CRD (*) all engine types
Tracking	± 1 mm	YES	- 1,5 ± 1 mm				
			- 0°15' ± 10' (<i>toe-out</i>)				
Castor	± 18'	NO	3°		2°55'	3° ± 07'	2°55'
Pivot angle	± 30'		10°40'	10°44'	10°22'	11° ± 07'	10°26'
Camber	± 30'		0°	0°12'	- 0° ± 07'	0°07'	
Rear axle							
	Tolerances	Adjustable	Saloon all engine types Saloon entreprise	2.0i 16V (RFS)	Estate all engine types	Saloon CRD (*) all engine types Estate CRD (*) all engine types	
Tracking	± 1,3 mm	YES	4,54 ± 1,3 mm	5,1 ± 1,3 mm	4,27 ± 1,3 mm	3,45 ± 1,3 mm	
			0°41' ± 11'	0°46' ± 11'	0°39' ± 11'	0°31' ± 10'	
Camber	± 15'	NO	- 0°57'		- 0°58'	- 0°59'	

(*) CRD = Difficult road conditions.

XSARA

AXLE GEOMETRY



a = Angle which defines the tracking between the front and rear axles.

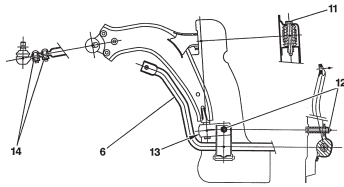
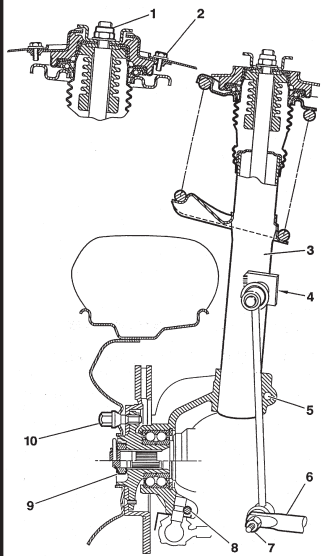
Its value must not exceed **12'**.

B3CP04UC

AXLES
SUSPENSION
STEERING

FRONT AXLE

XSARA



Vehicles RPO 8667 → are all equipped as standard with ventilated discs.

Tightening torques (m.daN).

(1) Damper nut	: 4,5 ± 0,4
(2) Cup screw	: 2,5 ± 0,3
(3) Suspension leg	
(4) Anti-roll bar link rod upper ball-joint	: 3,7 ± 0,3
(5) Suspension leg pivot (hollow pivot)	: 4,5 ± 0,5
(5) Suspension leg pivot (pivot «H»)	: 5,5 ± 0,5
(6) Anti-roll bars	
(7) Anti-roll bar link rod lower ball-joint	: 3,7 ± 0,3
(8) Pivot lower ball-joint	: 4 ± 0,4
(9) Driveshaft nut	: 32,5 ± 2,5
(10) Wheel bolt	: 9 ± 1
(11) Lower arm front mounting	: 7,6 ± 0,7
(12) Lower arm rear mounting and anti-roll bar bearing	: 6,8 ± 0,6
(13) Screw under rear mounting	: 3,1 ± 0,3
(14) Ball-joint fixing on lower arm	: 5 ± 0,5
Subframe to bodyshell fixing screw	: 8,5 ± 0,8

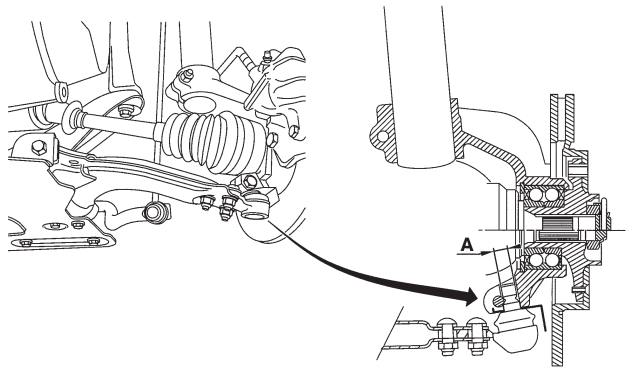
B3CP040P

B3CP041D

XSARA

FRONT AXLE

Evolution: Suspension arm ball-joint



Application from RPO: 7968.

New components:

- Suspension arm ball-joint.
- Pivot.

Old fitting
New fitting

$\text{ØA} = 16 \text{ mm.}$
 $\text{ØA} = 18 \text{ mm.}$

Repair requirements.

ESSENTIAL: Swapping of old and new components is forbidden.

It is permitted to fit a new pivot/ball-joint assembly on one side of an old vehicle.

Replacement Parts.

The old components are still available from Replacement Parts.

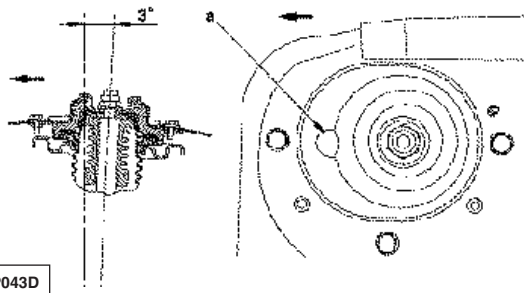
B3CP054D

AXLES
SUSPENSION
STEERING

FRONT AXLE		XSARA	
		Anti-roll bar	
Engine versions		Diameter	colour reference
1.6i - 1.6i 16V - 1.9 D	Saloon	19	Blue
2.0i 16V (RFV) - 1.4 HDi - 2.0 HDi	Estate	20	Yellow
2.0i 16V (RFS)	Saloon	21	White

XSARA

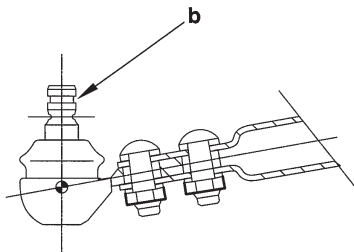
FRONT AXLE



B3CP043D

Pivot ball-joint:

- Manual steering, groove at «b».
- Power steering, groove at «b».

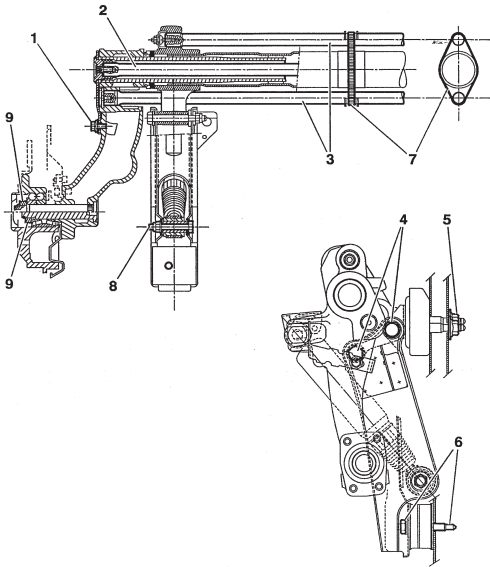


B3CP049C

Tongue «a» towards the front.

REAR AXLE

XSARA



Tightening torques (m.daN).

(1) Anti-roll bar lever	: 3,2 ± 0,3
(2) Anti-roll bar	
(3) Transversal torsion bars	
(4) Rear crossmember flanges	: 8,3 ± 0,8
(5) Front silentblocks	: 5,5 ± 0,5
(6) Rear silentblocks	: 4,5 ± 0,4
(7) Anti-vibration clamp	
(8) Damper pin	: 9,6 ± 0,9
(9) Stub axle nuts (<i>lubricated</i>)	: 18,5 ± 1

NOTE:

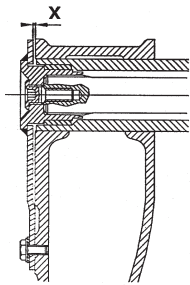
- The **RH** torsion bar is identified by **1 paint line**.
- The **LH** torsion bar is identified by **2 paint lines**.

B3DP04SP

XSARA	REAR AXLE				
	Vehicles	Torsion bars (mm)		Anti-roll bar (mm)	
Engines		Diameter	colour reference	Diameter	colour reference
1.9 D	3-door Entreprise	19,3	Violet	19	Orange
	3- and 5-door TT exc. Entreprise	18,7	yellow	18	Blue
	Estates All types	20	Grey	20	Green
1.6i 16V - 2.i 16V 1.4 HDi - 2.0 HDi	3- and 5-door TT	19,3	Violet	19	Orange
	Estates All types	20	Grey	20	Green
2.0i 16V	3-door VTS	21	Light green	23	Without colour, or white sticker
Grand Export «CRD»	3- and 5-door TT	19,3	Violet	19	Orange
	Estates All types	20	Grey	20	Green

REAR AXLE

XSARA

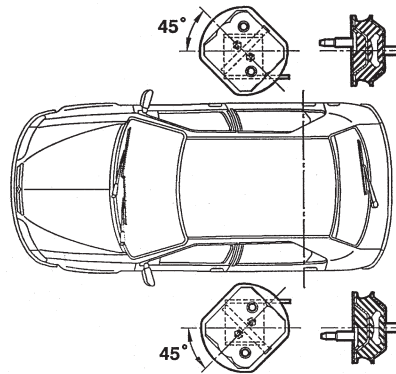


B3DP04TC

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:

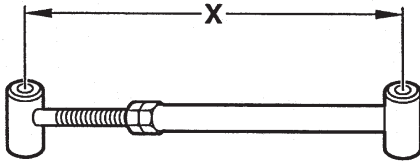
- **RBT**, identified by a Green or Yellow painted dot on the side of the mounting.
- **PAULSTRA**, identified by a **Black** painted dot on the side of the mounting.

It is **FORBIDDEN** to swap components of different suppliers.

XSARA

REAR DAMPER

Adjusting the rear dummy damper



Engines

Lengths of the rear dummy damper (mm)

Normal driving

Grand export

1.9 D

346

1.6i 16V 3-door

339

1.6i 16V 5-door
2.0i 16V (RFN) - 1.4 HDi
2.0 HDi

339

346

2.0i 16V (RFS)

318

Estates and
Entreprise all types

336

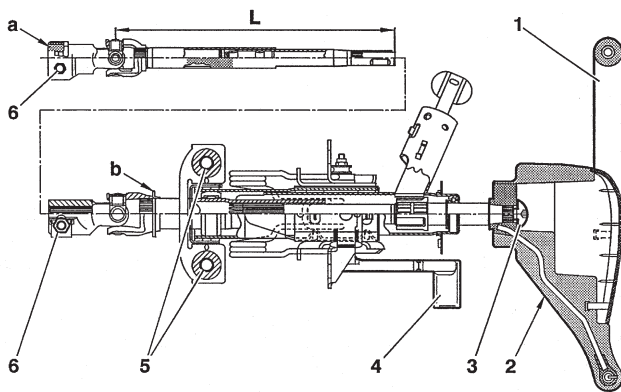
342

E5AP14WC

MANUAL STEERING SPECIFICATIONS

XSARA

Steering wheel - Manual steering



- (a) : LHD/RHD = White.
- (L) : Shaft length = 311 ± 1.5 mm.
- (1) Steering wheel fitted with AIRBAG
(according to equipment).
- (4) Steering column adjustment lever.

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
- (b) = Locating bush.

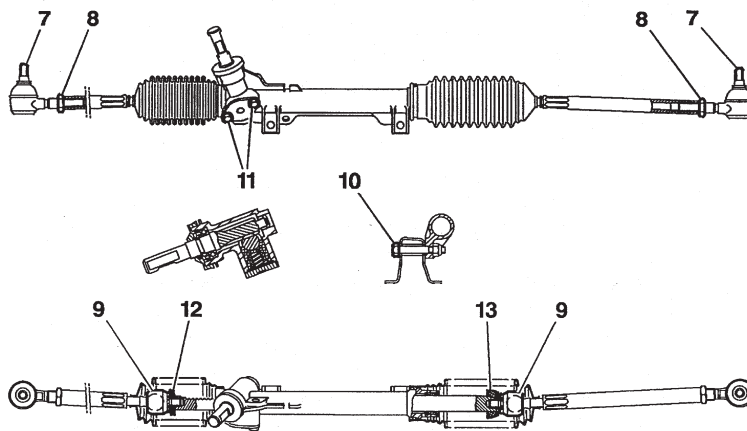
The locating bush must be centred in the reference window before tightening the cardan bolts (6).

B3EP08PD

XSARA

MANUAL STEERING SPECIFICATIONS

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 screw : 1.2

B3EP042D

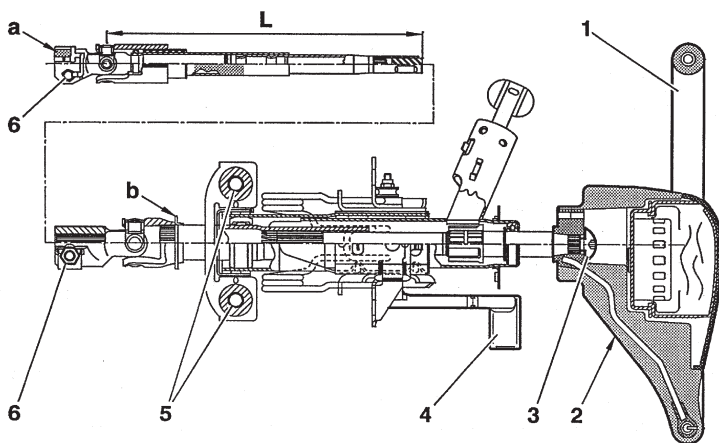
AXLES
SUSPENSION
STEERING

MANUAL STEERING SPECIFICATIONS					XSARA	
Manual steering (continued)						
	Steering rack travel (mm)	Number of teeth		Steering stop colour code	Number of steering wheel turns	Steering ratio
		Pinion	Steering rack			
Left hand drive	73,5	6 teeth <i>(RH helix)</i>	29	(13) Yellow thickness mm	4,3	22/1
<p>- Length of the steering track rods (<i>Pre-adjustment</i>) = 371 mm (<i>Between ball-joint centres</i>) or 391 mm (<i>Between the centre of the pivot ball-joint and the contact face of the steering rack ball-joint</i>).</p>						

XSARA

POWER-ASSISTED STEERING SPECIFICATIONS

Steering wheel - Power-assisted steering



- (a) : LHD = **Blue**.
: RHD = **White**.
- (L): Shaft length = **311 ± 1.5 mm**.
- (1) Steering wheel fitted with **AIRBAG**
(according to equipment).
- (4) Steering column adjustment lever.

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**

- (b) = **Locating bush**.

The locating bush must be centred in the reference window before tightening the cardan bolts (6).

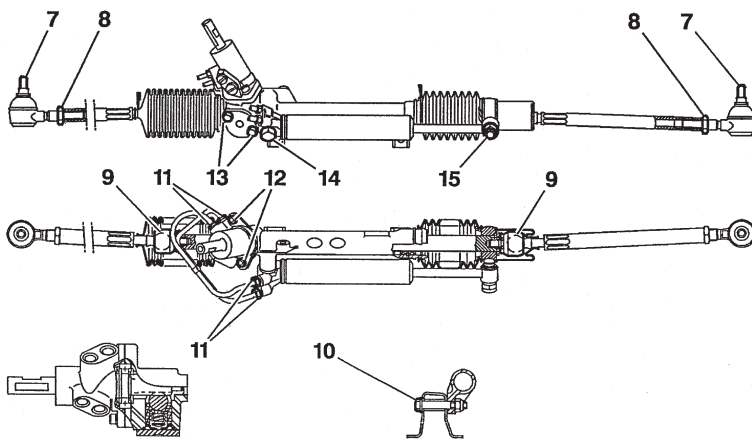
B3EP08QD

AXLES
SUSPENSION
STEERING

POWER-ASSISTED STEERING SPECIFICATIONS

XSARA

Power-assisted 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

XSARA

POWER-ASSISTED STEERING SPECIFICATIONS

Power-assisted steering (Continued)

	Steering rack	Number of teeth		Number of	Steering
	travel (mm)	Pignon	Steering rack	steering wheel turns	ratio
LHD	71,7	(*) (RH helix)	28	3,3	18,8/1

Steering valve

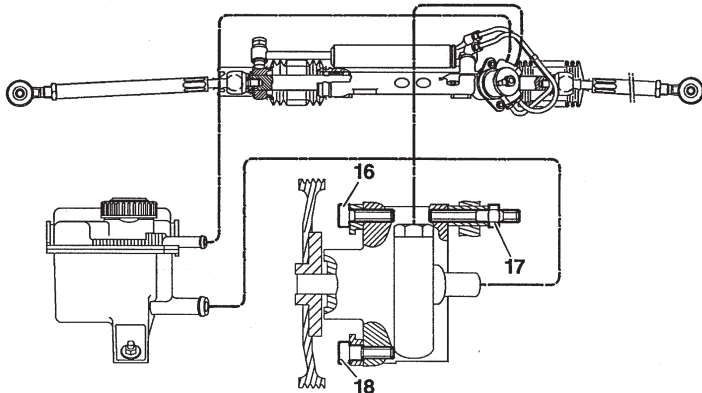
Vehicles	Protector colour	Number of teeth (*)
All Types (except 1.6i 16V - 1.9 TD)	BLACK	7
1.6i 16V - 1.9 TD	ORANGE	8

- Length of the steering link rods (*Pre-adjustment*) = 371 mm (*Between ball-joint centres*) or 391 mm (*Between the centre of the pivot ball-joint and the contact face of the steering rack ball-joint*).

POWER-ASSISTED STEERING SPECIFICATIONS

XSARA

Power-assisted steering assembly



Power-assisted steering system capacity = 1 litre.
 Oil type: **TOTAL FLUIDE ATX.**
 SAGINAW Pump adjustment = **100 Bars ± 5.**
 Pump shaft threading **3/8 - 16 threads per inch.**

B3EP045D

Tightening torques (m.daN).

- High pressure tube (*Rubber seal pump side*)
- Power-assisted valve and pump union : **2.5**
- 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.**

XSARA PICASSO

AXLE GEOMETRY

Checks at reference height

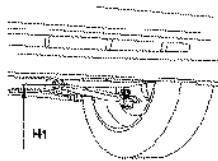
WARNING: The values shown should only be used as guides. In case of doubt, check the settings at reference height

Conditions for checking and adjusting: Tyres inflated to correct pressures. Vehicle at reference height. Steering rack locked at mid point (see corresponding operation).

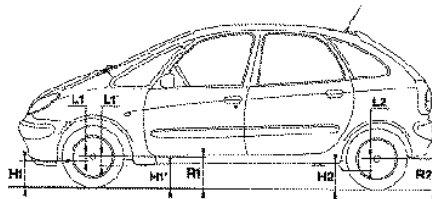
NOTE: To make the setting of reference height easier, it is acceptable to take the measurement from the flange of the jacking point.

Front height

Rear height



B3CP05BC



B3CP058D



B3DP079C




H1 = R1 - L1 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.

**AXLES
SUSPENSION
STEERING**

AXLE GEOMETRY		XSARA PICASSO
Checks at reference height <i>(the reference height of the vehicle is set as per the table below).</i>		
Front axles		Rear axle
 B3CP05BC	 B3CP05AC	 B3DP079C
NO - CRD Vehicle <i>(CRD = Difficult road conditions)</i>		
Engines: NFV - 6FZ - RFN - 9HZ - 9HY - RHY		
Front axles		Rear axle
$H1 = R1 - L1$ ou $H1' = R1 - L1'$		$H2 = R2 + L2$
$L1 = 90,5 \text{ mm}$		$L2 = 8,5 \text{ mm}$
Value at reference height (-8/+3 mm)		Value at reference height (+10/-3 mm)
Measure the radius of the front wheel: R1 . Calculate dimension H1 or H1' .		Measure the radius of the rear wheel: R2 . Calculate dimension H2 .
Compress the suspension to obtain the calculated values.		
NOTE: The difference in height between the two sides should be less than 10 mm .		

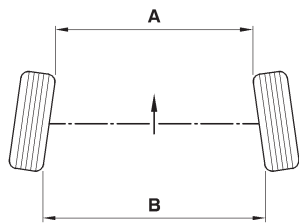
XSARA PICASSO

AXLE GEOMETRY

Checks at reference height (the reference height of the vehicle is set as per the table below).

NO - CRD Vehicle (CRD = Difficult road conditions)

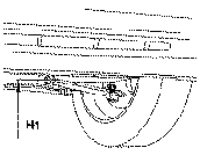


Front axle					Rear axle	
Vehicle	Tracking	Castor	Pivot angle	Camber	Tracking	Camber
Adjustable	Yes	No				
All types	0 ± 1 mm - 0°09' at + 0°09'	3° ± 18'	10°43' ± 30'	0° ± 30'	4,8 ± 1,3 mm - 0°43' ± 0°12'	- 1°13' ± 18'



WARNING

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

B3CP02UC

AXLE GEOMETRY		XSARA PICASSO
Checks at reference height <i>(the reference height of the vehicle is set as per the table below).</i>		
Front axle		Rear axle
 B3CP05BC	 B3CP05AC	 B3DP079C
NO - CRD Vehicle <i>(CRD = Difficult road conditions)</i>		
Engines: NFV - RFN - RHY		
Front axle		Rear axle
$H1 = R1 - L1$ or $H1' = R1 - L1'$		$H2 = R2 + L2$
$L1 = 75,5 \text{ mm}$		$L2 = 23,5 \text{ mm}$
Measure the radius of the front wheel: R1 . Calculate dimension H1 or H1' .		Measure the radius of the rear wheel: R2 . Calculate dimension H2 .
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

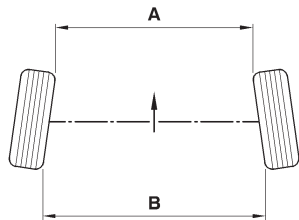
AXLE GEOMETRY

Checks at reference height (the reference height of the vehicle is set as per the table below).

CRD Vehicle (CRD = Difficult road conditions)

Engines: NFV - RFN - RHY

Front axle				Rear axle		
Vehicle	Tracking	Castor	Pivot angle	Camber	Tracking	Camber
Adjustable	Yes	No				
All types	- 1 ± 1 mm - 0°18' at 0°0'	2°56' ± 18'	10°25' ± 30'	0°07' ± 30'	3,7 ± 1,3 mm - 0°33' ± 0°12'	- 1°14' ± 18'



WARNING

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

B3CP02UC

FRONT AXLE

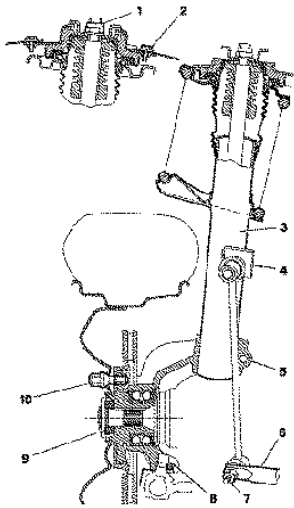
XSARA PICASSO

Tightening torques m.daN.

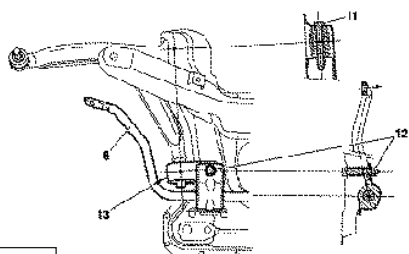
- (1) Damper nut : 4.5 ± 0.4
- (2) Cup screw : 2.5 ± 0.2
- (3) Suspension leg : 4.5 ± 0.4
- (4) Anti-roll bar link rod ball-joint : 3.7 ± 0.3
- (5) Suspension leg swivel : 4.5 ± 0.4
- (6) Anti-roll bar : 4.5 ± 0.4
- (7) Anti-roll bar link rod ball-joint : 3.7 ± 0.3
- (8) Lower swivel ball-joint : 4 ± 0.4
- (9) Hub nut (*greased*) : 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 (*plate steel*) : 4.5 ± 0,4

Anti-roll bar

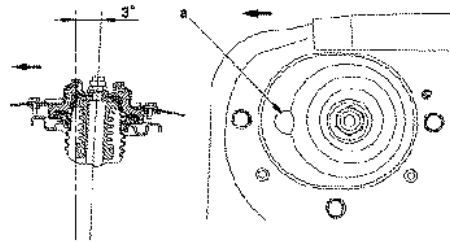
Engine	Diameter	colour reference
All Types	21	WHITE



B3CP056P



B3CP057D

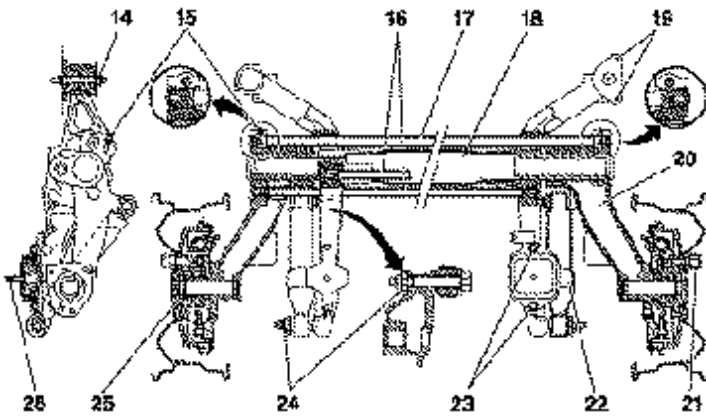


B3CP043D

Suspension leg angle :
Tab «a» towards the front.

XSARA PICASSO

REAR AXLE



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 (*face and threads not lubricated*) : 9 ± 1
- (22) Damper
- (23) Rear silentblock on subframe : 5.4 ± 0.5
- (24) Damper pin nut : 11 ± 1
- (25) Stub axle nuts (*lubricated*) : 25 ± 2
- (26) Rear silentblock on bodyshell : 6.5 ± 0.6

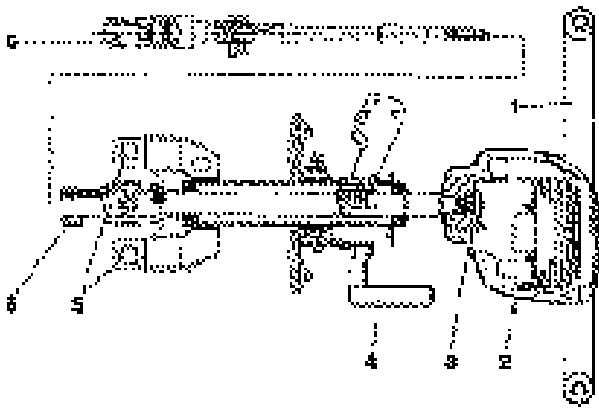
Engine	Torsion bar		Anti-roll bar	
	Ø (mm)	Colour reference	Ø (mm)	Colour reference
All Types	19,6	PINK	21	ORANGE

NOTE: The RH torsion bar can be identified by **1 paint line**.
The LH torsion bar can be identified by **2 paint lines**.

B3DP078D

STEERING COLUMN SPECIFICATIONS

XSARA PICASSO



Left hand drive = **Green** marking.
Right hand drive = **White** marking.

- (1) Steering wheel
- (4) Steering column adjustment

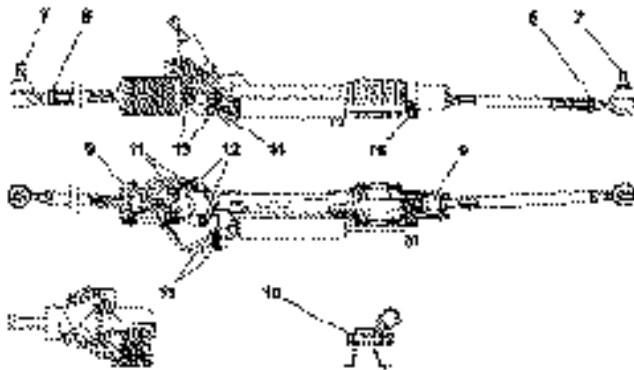
Tightening torques m.daN.

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

B3EP116D

XSARA PICASSO

STEERING COLUMN SPECIFICATIONS



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

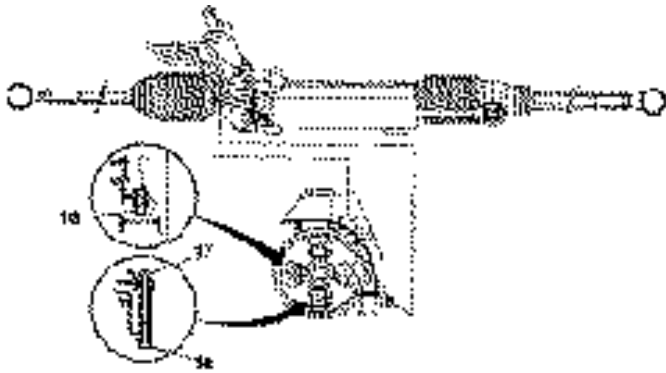
STEERING COLUMN SPECIFICATIONS					XSARA PICASSO	
	Steering rack travel	Rack pinion	Number of teeth in rack	Number of steering wheel turns	Turning circle between walls	Turning circle between kerbs
Left hand drive	71,7 x 2	LH helix	28 Teeth	3,22	12 m	11,48 m
Right hand drive		RH helix				
Engines			Steering valve			
NFV - 6FZ - RFN - RHY			number of teeth : 7			

Length of the steering link rods (*pre-adjustment*):

- Between ball-joint centres = **392 mm**.
- Between the centre of the pivot ball-joint and the contact face of the steering rack ball-joint = **412 mm**.

XSARA PICASSO

POWER-ASSISTED STEERING SPECIFICATIONS



Capacity of power steering circuit = **1 Litre**.
 Oil quality = **TOTAL FLUIDE ATX**.
 Power steering pump: Supplier **SAGINAW**.
 Pump adjustment = **100 ± 5 Bars**.
 Pump shaft threading **3/8 - 16 threads per inch**.

B3EP118D

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

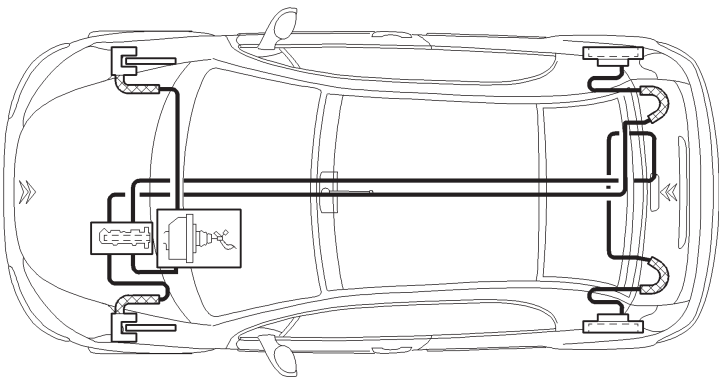
NOTE: Coat the threads with product «E3».

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**.

BRAKE SPECIFICATIONS (WITHOUT ABS)			C2		
			1.1i	1.4i	1.4 HDi
Engine type			HFX	KFV	8HX
FT	Ø mm	Master cylinder	20,6		
		Master vac	203,2		
		Caliper/piston makes	LUCAS.TRW-/-C 48/13-/-48		
		Disc	Plain	266	
	Disc thickness/minimum thickness		13/11		
	Maximum run-out (mm)		0,05		
	Difference in max. thickness on same circumference (mm)		0,01		
	Supplier / Brake pad grade		TEXTRR-/-T 4144		
Original thickness/minimum thickness		13/3			
RR	Ø mm	Original drum/maximum	203/205		
		Width	38		
	Supplier / grade		DON-/-8259/1		

C2		BRAKE SPECIFICATIONS (WITH ABS)				
		1.1i	1.4i	1.6i 16V	1.4 HDi	
Engine type		HFX	KFV	NFU	8HX	
FT	Ø mm	Master cylinder		22,2 (*)		
		Master vac		228,6		
		Caliper/piston makes		LUCAS.TRW-/-C 48/13-/-48	LUCAS.TRW C 54/22-/-54	LUCAS.TRW-/-C 48/13-/-48
	Disc	Plain	266			
		Ventilated		266		
	Disc thickness/minimum thickness		13/11		22/20	13/11
	Supplier / Brake pad grade		TEXTRR-/-T 4144			
RR	Ø mm	Disc	Plain	247		
	Disc thickness/minimum thickness			9/7		
	Supplier / Brake pad grade			LUCAS.TRW C 38 HR 9/13		
	Ø mm	Original drum/ maximum/Width		203/205-/-38	203/205-/-38	
	Supplier / Lining grade		DON 8259/1	GALFER G 4554	DON 8259/1	

(*) = With emergency braking assistance (AFU).

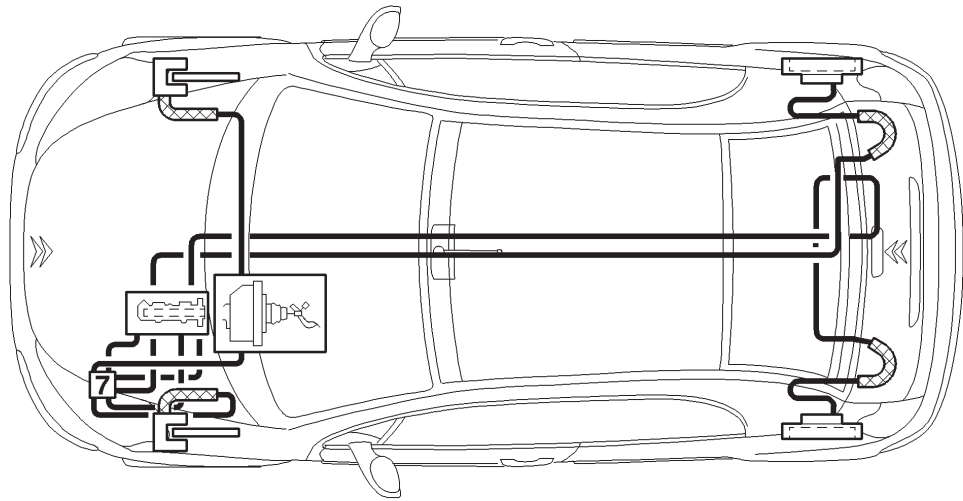
BRAKE SPECIFICATIONS		C2
Braking circuit without ABS - REF (drum brakes at the rear)	Braking system specifications	
	<ul style="list-style-type: none"> - Braking circuit at «X». - Front brakes with ventilated discs (*). - Rear brakes with either drums or discs (*). - Handbrake lever controlling cables acting on the rear wheels. - The compensator and main brake limiter functions are assured by the ABS EBD system. <p>NOTE: REF = Electronic Brakeforce Distribution.</p> <p>(*) = according to version.</p>	

B3FP7BSD

C2

BRAKE SPECIFICATIONS

Braking circuit with ABS - REF (drum brakes at the rear)

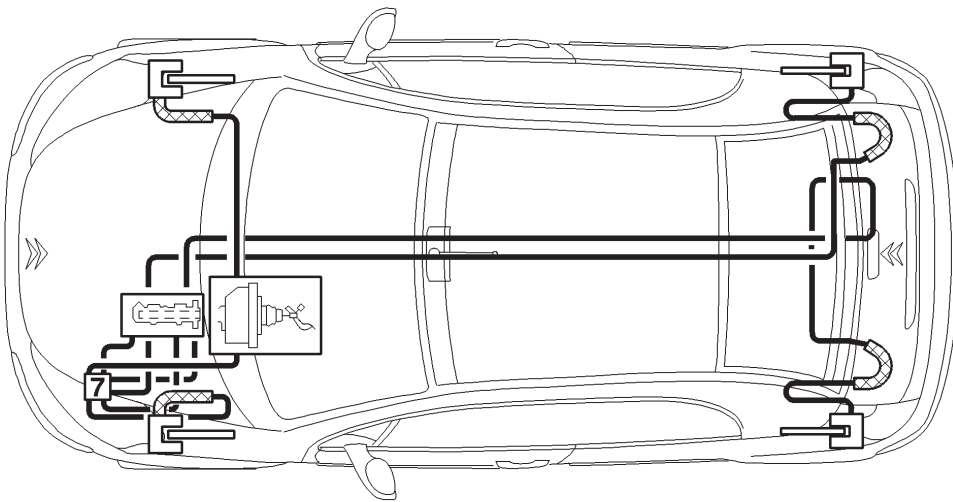


B3FP7BTD

BRAKE SPECIFICATIONS

C2

Braking circuit with ABS - REF (disc brakes at the rear)

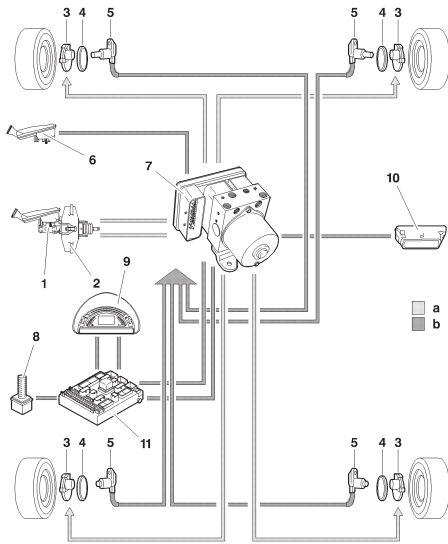


B3FP7BUD

C2

BRAKE SPECIFICATIONS

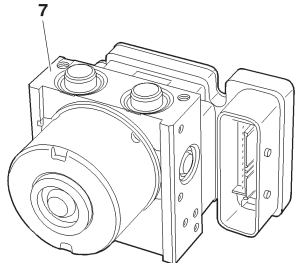
Braking circuit with ABS - REF



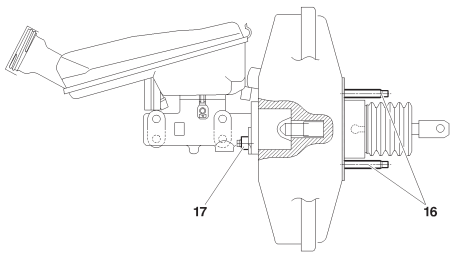
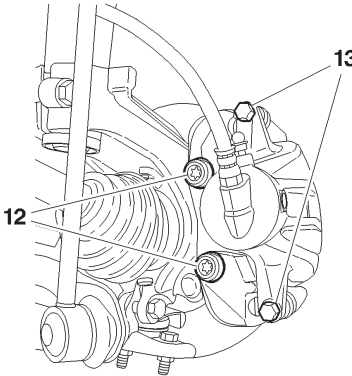
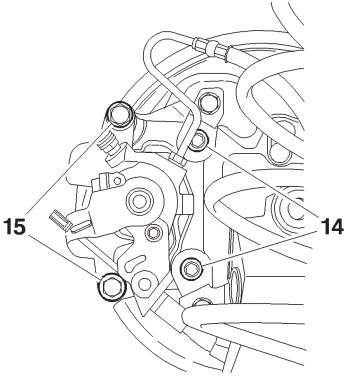
- (a) Hydraulic circuit
(b) Electrical circuit

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

B3GP02RP

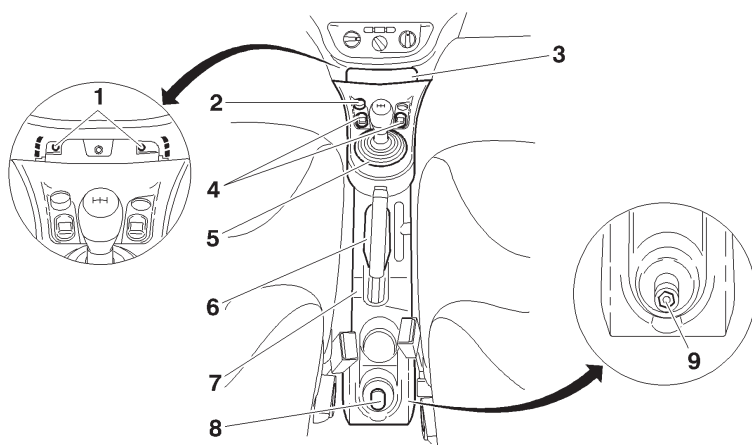
BRAKE SPECIFICATIONS						C2
(7) Hydraulic block	Ref.	Components	Supplier	Part no.	Observations	
	7	Hydraulic block	TEVES	ABS MK 70 96 514 120 80	Mounted on the front LH chassis member. 4 adjustment channels.	
						ESP -ABS MK.60 96 490 288 80
		ECU			ABS MK.70 ESP -ABS MK 60	26-way connector. Integral to the hydraulic block.
	5	Front wheel sensor			96 387 201 80	2-way blue connector. The sensors are inductive-type. Mounted on the pivot Non-adjustable airgap: 0.16 to 1.6 mm. Tightening torque: 0.8 ± 0.2 m.daN.
		Rear wheel sensor				2-way blue connector. The sensors are inductive-type Mounted on the suspension arm. Non-adjustable airgap: 0,35 à 1,6 mm. Tightening torque: 0,8 ± 0,2 m.daN.
	4	Hub bearing		SNR		Hub equipped with a bearing with an integral magnetic wheel (48 pairs of poles).

B3FP7BVC

C2	BRAKE SPECIFICATIONS		
Brake pedal	Front brakes	Rear brakes	
			
B3FP166D	B3FP164C	B3FP165C	
Tightening torques (m.daN).			
(16) Servo fixing : $2,2 \pm 0,3$ (17) Fixing on master cylinder : $2 \pm 0,5$	(12) Yoke fixing on caliper : $10,5 \pm 1$ (13) Yoke fixing on caliper : $3 \pm 0,3$	(14) Rear caliper fixing on arm : $5,3 \pm 0,5$ (15) Yoke fixing on caliper : $3,8 \pm 0,3$	

HANDBRAKE (Adjustment)

C2



Adjustment.

Lift and chock the vehicle.

Remove:

- The rear cover (8).
- The nut (9).
- The handbrake trim (6).
- The gear lever gaiter (5).
- The front cover (3).
- The screws (1).

Disconnect the connectors of the following components:

- The cigar lighter (2).
- The electric window buttons (4).

Remove the central console (7).

WARNING: Check that the brake cables are correctly routed under the vehicle.

Slacken the handbrake lever.

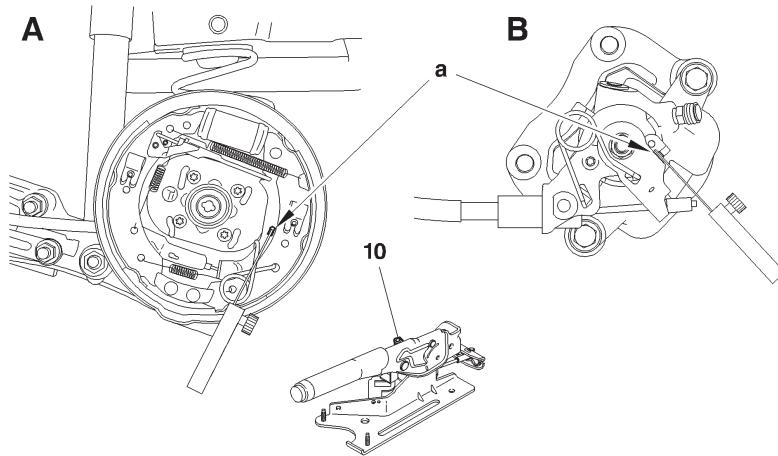
Press gently on the brake pedal (*Then repeat the operation 3 times*).

Pull vigorously on the handbrake lever **4 or 5 times**.

C5FP0ELD

C2

HANDBRAKE (Adjustment)



B3FP16ED

Adjustment (continued).

A: Drum brakes.

B: Disc brakes.

(10) Nut for adjusting cable tensions.

Remove:

- The rear wheels.
- The drums (*according to version*).

Release the handbrake.

Use a gauge set to measure at «**a**» the travel of the lever from its stop.

Adjust the nut **(10)** to obtain a travel of less than or equal to **1 mm** at «**a**».

Refit the brake drums without tightening them (*according to version*).

Action the handbrake lever **8 times** with an effort of **40 m.daN**.

With the handbrake released, check the travel of the lever at «**a**», using a gauge set.

NOTE: The travel should be less than **1 mm** and more than **0,05 mm**.

Refit:

- The brake drums.
- The wheels.
- The central console.

Check the operation of the handbrake.

BLEEDING AND FILLING THE BRAKING SYSTEM

C2

Tools.

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

Bleeding, refilling.**Draining.**

Drain the brake fluid reservoir (1) to the maximum (*if necessary, use a clean syringe*).
 Disconnect the connector (4).
 Uncouple the pipe (2).
 Unscrew the shaft (3).
 Remove the reservoir (1).
 Empty the brake fluid reservoir (1).
 Clean the brake fluid reservoir (1).

Refit:

- The brake fluid reservoir (1).
- The shaft (3).

Couple the pipe (2).

Reconnect the connector (4).

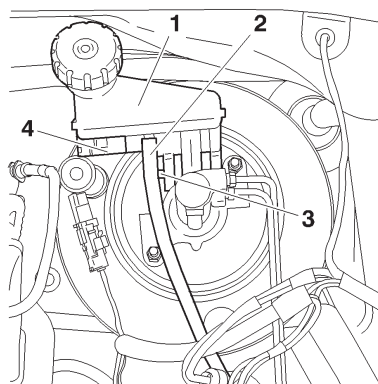
Filling the braking system.

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

- Fill the brake fluid reservoir (1).

Bleeding the braking system.

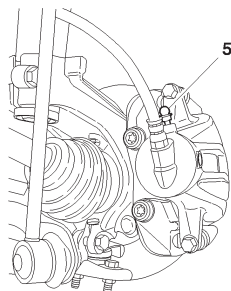
WARNING: During the bleeding operation, take care to maintain the level of brake fluid in the reservoir and to top it up, using only brake fluid that is clean and clear.



B3FP15XC

C2

BLEEDING AND FILLING THE BRAKING SYSTEM (Continued)

**Bleeding the primary braking circuit.**

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

Front brake caliper, Bleed screw (5).

A: Rear brake caliper

B: Rear brake drum

Bleed screw (6).

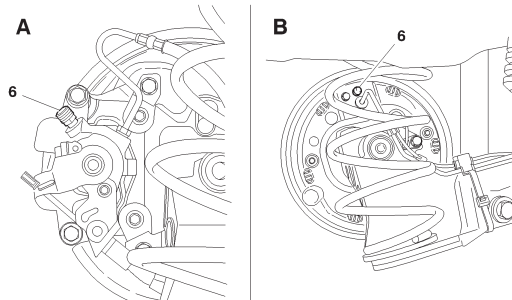
Bleed each wheel cylinder, proceeding in the following order:

Front LH wheel.

Front RH wheel.

Rear LH wheel.

Rear RH wheel.

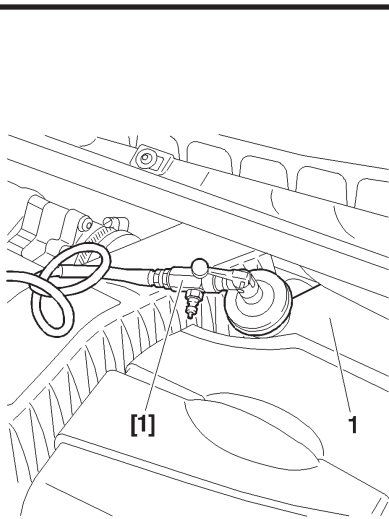


B3FP15YC

B3FP15ZD

BLEEDING AND FILLING THE BRAKING SYSTEM (Continued)

C2



B3FP160C

With the bleeding apparatus.

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

For each circuit:

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

Without the bleeding apparatus.**NOTE:** Two operators are necessary.**For each circuit:**

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

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

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

C3		BRAKE SPECIFICATIONS (WHITHOUT ABS REF)				
		1.1i	1.4i	1.4i 16V	1.4 HDi	
Engine type		HFX	KFV	KFU	8HX	8HW
FT	Ø mm	Master cylinder		20,6		
		Master vac		203,2		
	Caliper/piston makes		LUCAS/TRW C48/13 48			
		Disc	Plain	266		266
	Disc thickness/minimum thickness		13/11			13/11
	Ø mm	Disc	Ventilated		266	
	Disc thickness/minimum thickness		22/20			
	Brake pad grade		TEXTRR T 4144			
RR	Ø mm	Drum / Max. thickness Width		203/205/38		
	Make		DON			
	Brake lining grade		8259			
Braking compensator (Vehicle without ABS) - (CICR = Compensator integral to the wheel cylinder). - REF = Electronic brakeforce distribution. Supplier/Type/Cut-off pressure (Bar) → RPO 9666 LUCAS LUCAS/CICR/35 Supplier/Type/Cut-off pressure (Bar) RPO 9667 LUCAS → LUCAS/CICR/27						

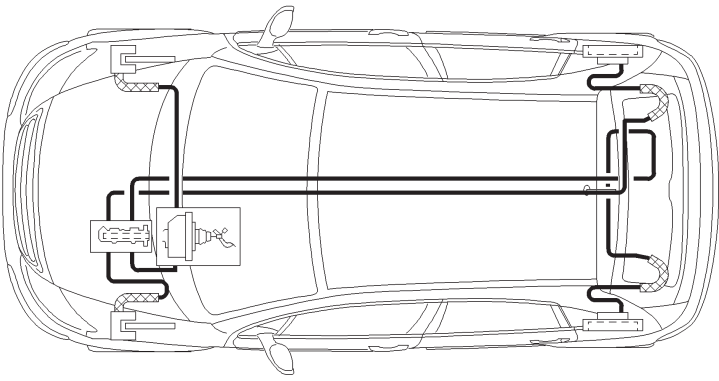
BRAKE SPECIFICATIONS (WITH ABS REF)							C3				
Engine type		1.1i	1.4i	1.4i 16V	1.6i 16V	1.4 HDi		1.4 HDi 16V			
		HFX	KFV	KFU	NFU	8HX	8HW	8HV	8HY		
FT	Ø mm	Master cylinder		22,2 (*)							
		Master vac		228,6							
	Caliper /piston makes		LUCAS/TRW C 48/13 48		LUCAS/TRW C 54/22 54		LUCAS/TRW C 48/13 48		LUCAS/TRW C 54/22 54		
	Disc		Plain		266		266				
	Disc thickness/minimum thickness		13/11				13/11				
	Ø mm	Disc		Ventilated		266		266			
		Disc thickness/minimum thickness				22/20				22/20	
	Brake pad grade		TEXTRR T 4144								
RR	Ø mm	Cylinder or caliper		LUCAS C38 HR 9/13							
		Disc		Plain		247		247			
	Disc thickness/minimum thickness				9/7				9/7		
	Ø mm	Drum / Max. thickness / Width		203/205/38				203/205/38			
		Make		DON		GALFER		DON		GALFER	
Brake lining grade		8259		G 4554		8259		G 4554			

(*) = With emergency braking system.

REF = Electronic brakeforce distribution.

NOTE: Braking compensators = The compensator and limiter functions for the main brakes are assured by the ABS REF system.

C3 PLURIEL		BRAKE SPECIFICATIONS (WITH & WITHOUT ABS REF)				
		Sans ABS REF		Ftec ABS REF		
		1.4i	1.4 HDi	1.4i	1.6i 16V	1.4 HDi
Engine type		KFV	8HX	KFV	NFU	8HX
FT	Ø mm	Master cylinder		20,6		
		Master vac		203,2		
	Makes /piston makes		LUCAS/TRW C38 HR 9/13			
	Disc	Ventilated	266			
	Disc thickness/minimum thickness		22/20			
	Brake pad grade		TEXTRR T 4144			
RR	Ø mm	Cylinder or caliper		LUCAS/TRW C 38/13 38		
		Disc	Plain		247	
	Disc thickness/minimum thickness				9/7	
	Ø mm	Drum / Max. thickness / Width		203/205/38		203/205/38
		Make		DON		GALFER
Brake lining grade		8259/1		G 4554	8259/1	
(*) = With emergency braking system.		(CICR = Compensator integral to the wheel cylinder)				
Braking compensator (Vehicle without ABS)		REF = Electronic brakeforce distribution.				
Supplier/Type/Cut-off pressure (Bar)		: LUCAS/CICR/27				
Braking compensator (Vehicle with ABS)						
NOTE: Braking compensators = The compensator and limiter functions for the main brakes are assured by the ABS REF system.						

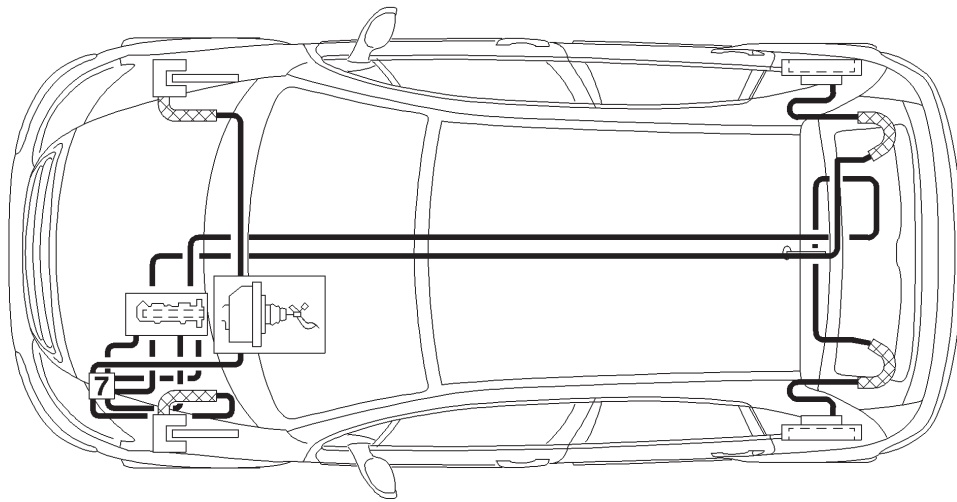
BRAKE SPECIFICATIONS		C3 - C3 PLURIEL
Braking circuit without ABS - REF (drum brakes at the rear)	Braking system specifications	
	<ul style="list-style-type: none"> - Braking circuit at «X». - Front brakes with ventilated discs (*). - Rear brakes with either drums or discs (*). - Handbrake lever controlling cables acting on the rear wheels. <p>The compensator and main brake limiter functions are assured by the ABS EBD system.</p> <p>NOTE: REF = Electronic Brakeforce Distribution.</p> <p>(*) = according to version.</p>	

B3FP161D

C3 - C3 PLURIEL

BRAKE SPECIFICATIONS

Braking circuit with ABS - REF (drum brakes at the rear)

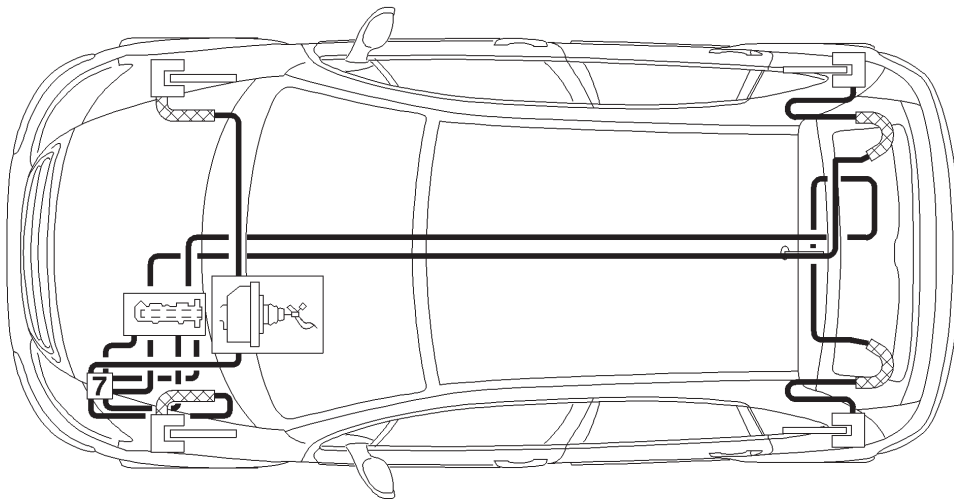


B3FP162D

BRAKE SPECIFICATIONS

C3 - C3 PLURIEL

Braking circuit with ABS - REF (disc brakes at the rear)

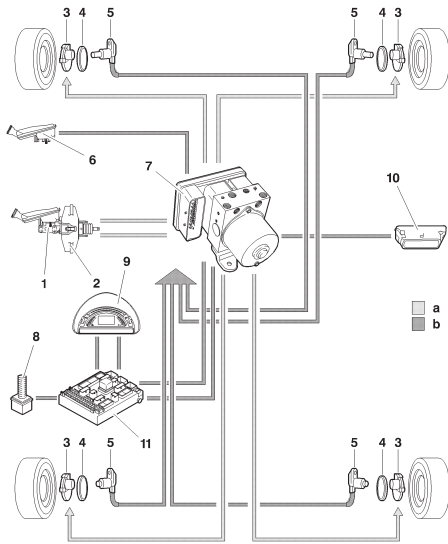


B3FP163D

C3 - C3 PLURIEL

BRAKE SPECIFICATIONS

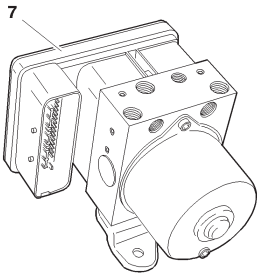
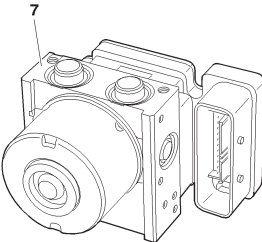
Braking circuit with ABS - REF

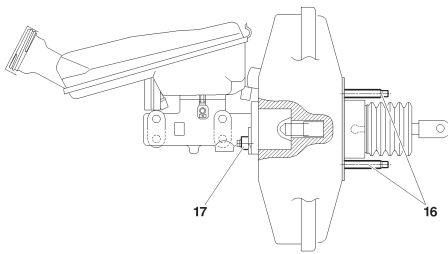
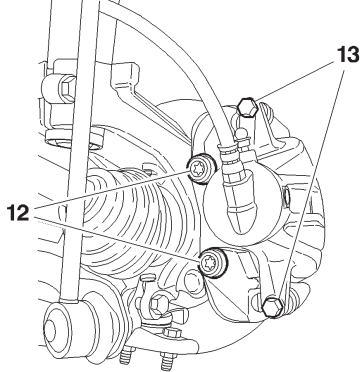
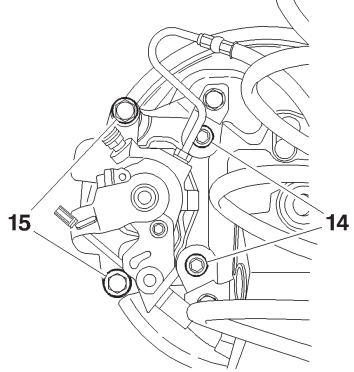


B3GP02RP

(a) Hydraulic circuit
 (b) Electrical circuit

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

BRAKE SPECIFICATIONS				C3 - C3 PLURIEL			
C3				C3 Pluriel			
ABS hydraulic block: → N°RPO 9423				ABS hydraulic block: N°RPO 9424 →			
							
B3FP12XC				B3FP7BVC			
Components	Supplier	Part no.	Observations	Components	Supplier	Part no.	Observations
ABS hydraulic block	TEVES	ABS MK 60 : 96 394 937 80	Installed on the front LH chassis member: 4 adjustment channels	ABS hydraulic block	TEVES	ABS MK 70 : 96 419 653 80	Installed on the front LH chassis member: 4 adjustment channels
		ESP - ABS MK 60 : 96 418 772 80				ESP - ABS MK 60 : 96 418 772 80	
NOTA : ESP = Electronic Stability Program							

C3 - C3 PLURIEL		BRAKE SPECIFICATIONS	
Brake pedal gear		Front brakes	Rear brakes
			
B3FP166D		B3FP164C	B3FP165C
Tightening torques (m.daN).			
(16) Servo fixing : $2,2 \pm 0,3$ (17) Fixing on master cylinder : $2 \pm 0,5$		(12) Yoke fixing on caliper : $10,5 \pm 1$ (13) Yoke fixing on caliper : $3 \pm 0,3$	(14) Rear caliper fixing on arm : $5,3 \pm 0,5$ (15) Yoke fixing on caliper : $2,7 \pm 0,5$

BRAKE SPECIFICATIONS**C3 - C3 PLURIEL**

Evolution: rear wheel cylinder (applies from RPO 9667)

C3 - C3 Pluriel**Evolution.**

New wheel cylinders at the rear, with cut-off pressure 27 bars instead of 35 bars.

Assembly.

(1) Rear wheel cylinder.

Repair.

IMPERATIVE: The mixing of the old and new components is STRICTLY FORBIDDEN.

WARNING: Identify the type of assembly prior to starting a repair.

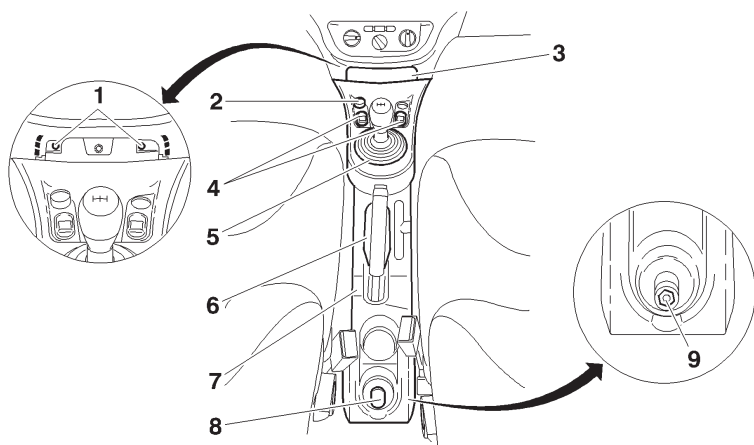
ESSENTIAL: Systematically replace the wheel cylinders on both sides on the same axle.

Replacement parts.

Replacement Parts will market only the components for the new assembly.

C3 - C3 PLURIEL

HANDBRAKE (Adjustment)

**Adjustment.**

Lift and chock the vehicle.

Remove:

- The rear cover (8).
- The nut (9).
- The handbrake trim (6).
- The gear lever gaiter (5).
- The front cover (3).
- The screws (1).

Disconnect the connectors of the following components:

- The cigar lighter (2).
- The electric window buttons (4).

Remove the central console (7).

WARNING: Check that the brake cables are correctly routed under the vehicle.

Slacken the handbrake lever.

Press gently on the brake pedal (*Then repeat the operation 3 times*).

Pull vigorously on the handbrake lever **4 or 5 times**.

C5FP0ELD

HANDBRAKE (Adjustment)

C3 - C3 PLURIEL

Adjustment (continued).

(10) Nut for adjusting cable tensions

Remove:

- The rear wheels.
- The drums (*according to version*).

Release the handbrake.

Use a gauge set to measure at «a» the travel of the lever from its stop.

Adjust the nut (10) to obtain a travel of less than or equal to 1 mm at «a».

Refit the brake drums without tightening them (*according to version*).

Action the handbrake lever 8 times with an effort of 40 m.daN.

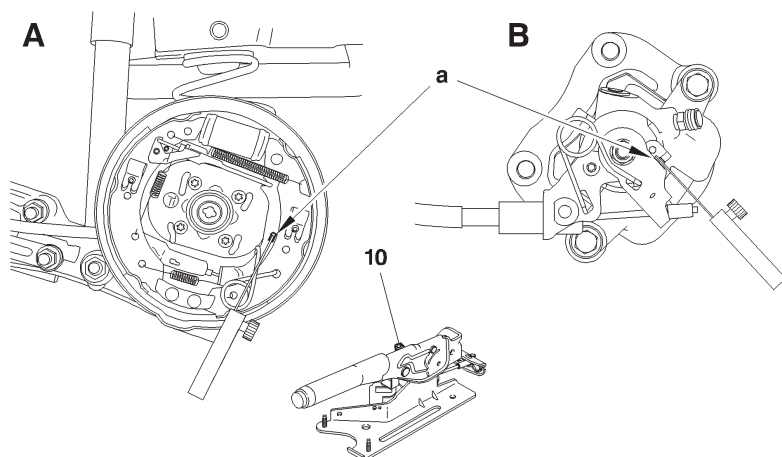
With the handbrake released, check the travel of the lever at «a», using a gauge set.

NOTE: The travel should be less than 1 mm and more than 0,05 mm.

Refit:

- The brake drums.
- The wheels.
- The central console.

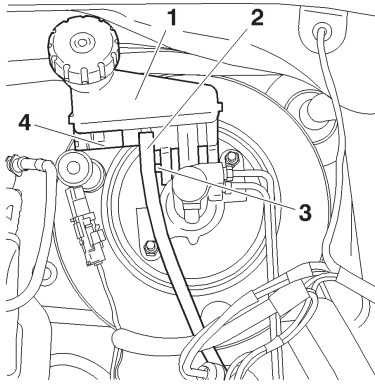
Check the operation of the handbrake.



B3FP16ED

C3 - C3 PLURIEL

BLEEDING AND FILLING THE BRAKING SYSTEM



B3FP15XC

Tools.

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

Bleeding, refilling.

Draining.

Drain the brake fluid reservoir (1) to the maximum (if necessary, use a clean syringe).

Disconnect the connector (4).

Uncouple the pipe (2).

Unscrew the shaft (3).

Remove the reservoir (1).

- Empty the brake fluid reservoir (1).

- Clean the brake fluid reservoir (1).

Refit:

- The brake fluid reservoir (1).

- The shaft (3).

Couple the pipe (2).

Reconnect the connector (4).

Filling the braking system.

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

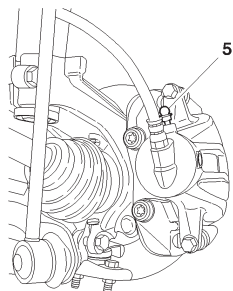
- Fill the brake fluid reservoir (1).

Bleeding the braking system.

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

BLEEDING AND FILLING THE BRAKING SYSTEM (Continued)

C3 - C3 PLURIEL

**Bleeding the primary braking circuit.**

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

Front brake caliper, Bleed screw (5).

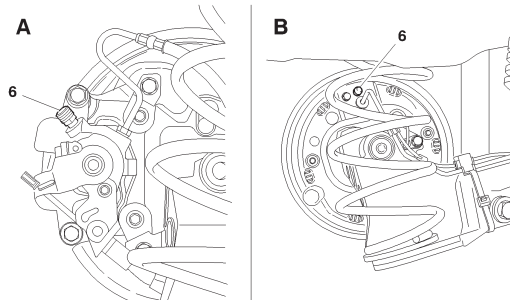
A: Rear brake caliper

B: Rear brake drum

Bleed screw (6).

Bleed each wheel cylinder, proceeding in the following order:

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

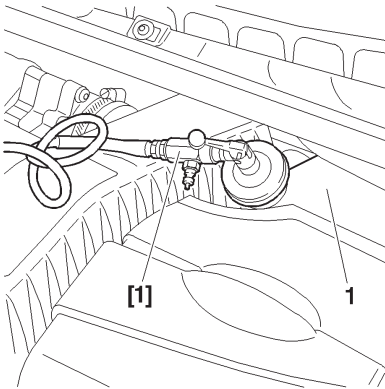


B3FP15YC

B3FP15ZD

C3 - C3 PLURIEL

BLEEDING AND FILLING THE BRAKING SYSTEM (Continued)



B3FP160C

With the bleeding apparatus.

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

For each circuit:

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

Without the bleeding apparatus.**NOTE:** Two operators are necessary.**For each circuit:**

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

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

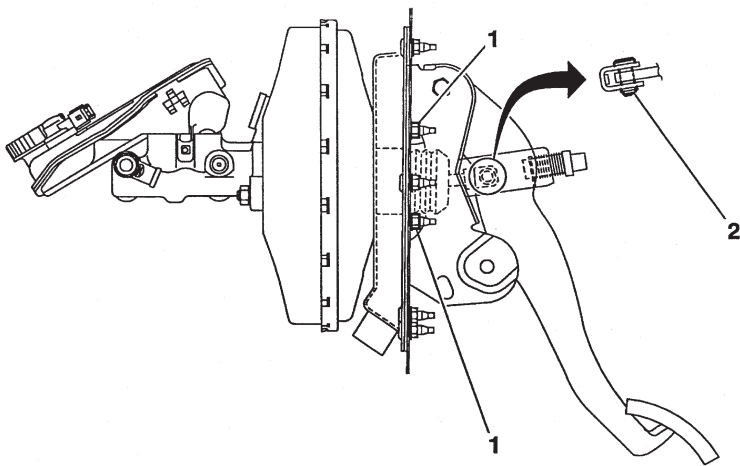
- Check the brake fluid level (*should be between «MINI» level and «MAXI» level*).
- Fill if necessary with the approved and recommended synthetic brake fluid.

BRAKE SPECIFICATIONS							XSARA		
		Saloons							
		1.4i	1.6i 16V	2.0i 16V		1.9 D	1.4 HDi	2.0 HDi	
Engine type		KFW	NFU	RFN	RFS	WJY	8HZ	RHY	RHZ
FT	Ø mm	Master cylinder		Without ABS 23,8 (<i>expansion holes</i>)			Ftec ABS 23,8 (<i>valve</i>)		
		Master vac		228,6					
	Caliper/piston makes		BOSCH 54		LUCAS 57		BOSCH 54		
	Disc		266		283		266		
	Ventilated								
	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.		203/205			203/205		
		Disc non-ventilated			247			247	
	Disc thickness/min. thickness			8/6			8/6		
	Make		BENDIX	JURID		TEXTRR	BENDIX	JURID	
	Brake lining grade		D 8259	519		428	D 8259	E 558	519
	Make/Type		BOSCH/Load-sensitive compensator						
	Cut-off pressure in Bars		32						
Ramp/Paint reference		0,3 - White							

XSARA		BRAKE SPECIFICATIONS					
		Estates					
		1.4i	1.6i 16V	2.0i 16V	1.9 D	1.4 HDi	2.0 HDi
Engine type		KFW	NFU	RFN	WJY	8HZ	RHY RHZ
FT	Ø mm	Master cylinder	Without ABS 23,8 (expansion holes)			Ftec ABS 23,8 (valve)	
		Master vac	228,6				
		Caliper/piston makes	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					

BRAKE SPECIFICATIONS

XSARA



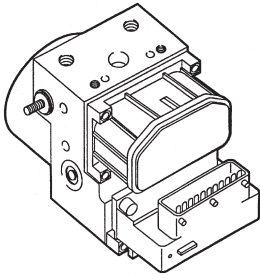
- Tighten the nuts (1) to 2.3 m.daN.
- The clevis pin (2) is held in place by a plastic clip.

B3FP10YD

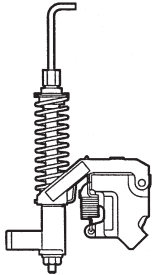
XSARA

BRAKE SPECIFICATIONS

1



2



Braking system specifications

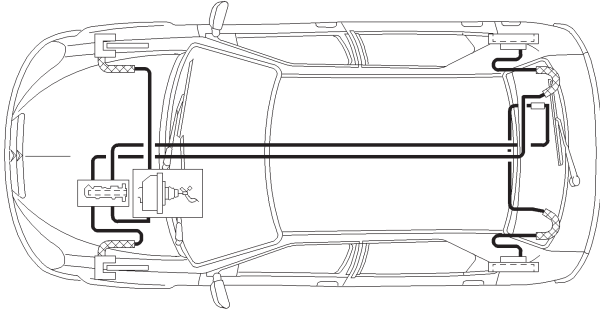
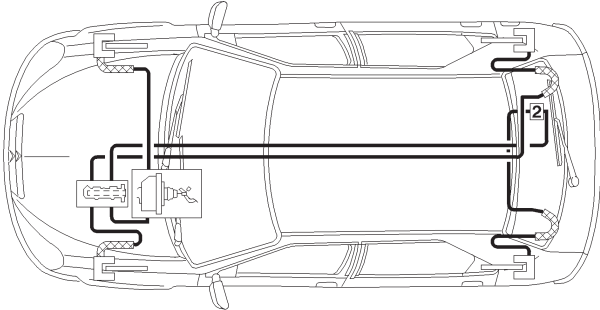
- "X" braking circuit.
- Front: disc brakes, ventilated (*according to model*).
- Rear: drum brakes with automatic adjustment.
- Cable operated handbrake acting on the rear wheels.

- (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*).

B3FP09HC

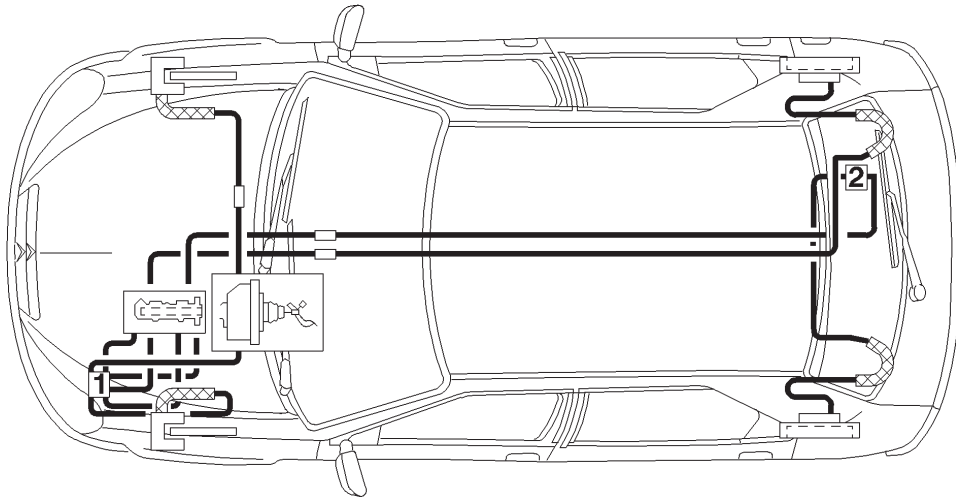
B3FP09JC

BRAKE SPECIFICATIONS		XSARA
Braking system without ABS (<i>rear drum brakes</i>) Up to → OPR 8687	Braking system without ABS (<i>rear disc brakes</i>)	
		
B3FP14FD	B3FP14GD	

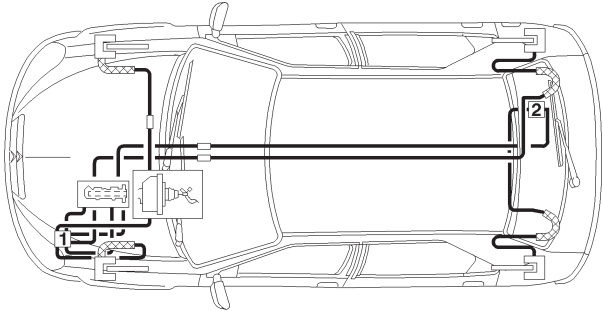
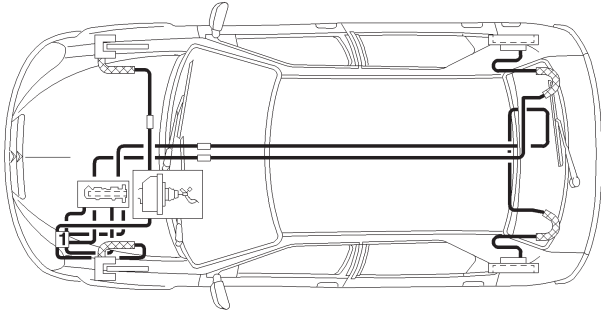
XSARA

BRAKE SPECIFICATIONS

Braking system with ABS (rear drum brakes)



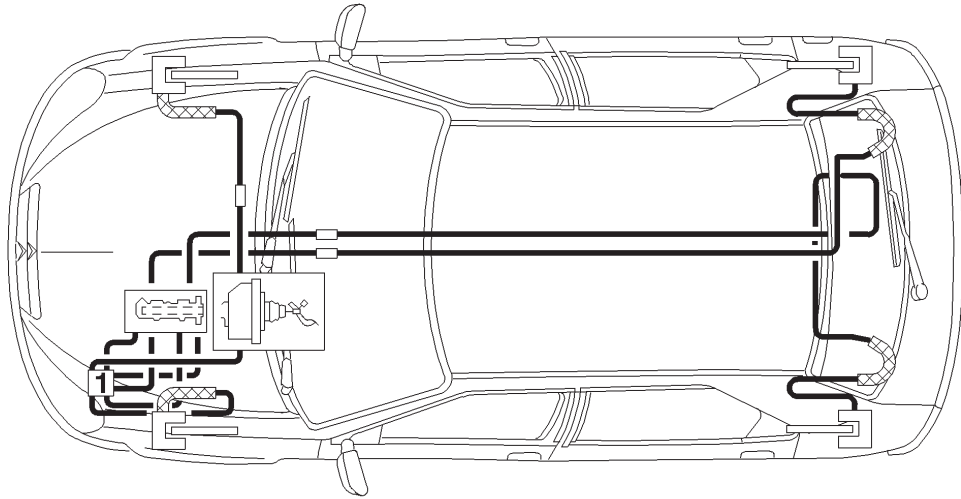
B3FP14HD

BRAKE SPECIFICATIONS		XSARA
Braking system with ABS REF (<i>rear disc brakes</i>)	Braking system with ABS REF (<i>rear drum brakes</i>)	
		
B3FP14JD	B3FP14KD	

XSARA

BRAKE SPECIFICATIONS

Braking system with ABS REF (*rear drum brakes*)

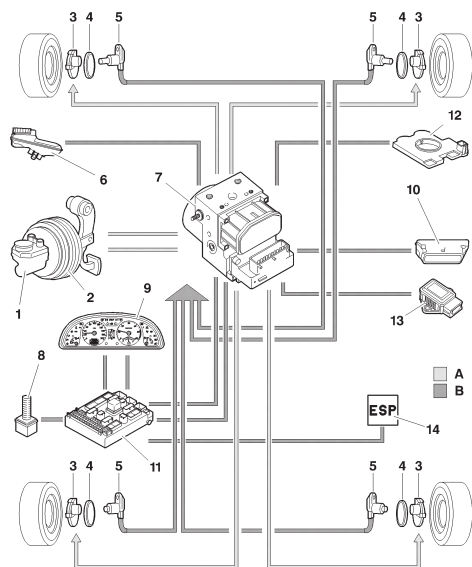


B3FP14LD

BRAKE SPECIFICATIONS

XSARA

Braking circuit with ESP (BOSCH 5.7)

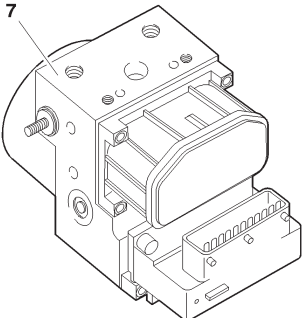
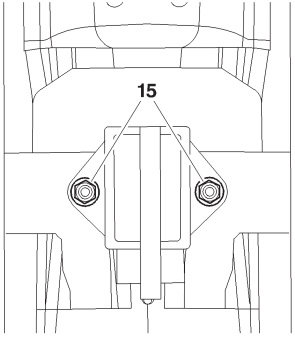


(A) Hydraulic circuit
(B) Electrical circuit

- (1) Master cylinder in tandem
- (2) Braking servo
- (3) Brake caliper (or drum at the rear)
- (4) Toothed wheel
- (5) Wheel sensor
- (6) Brake fluid level sensor
- (7) Hydraulic block plus ECU
- (8) Stoplamp switch
- (9) Instrument panel
- (10) Diagnostic socket
- (11) Built-in systems interface (BSI)
- (12) Steering angle sensor
- (13) Gyrometer/accelerometer sensor
- (14) Switch

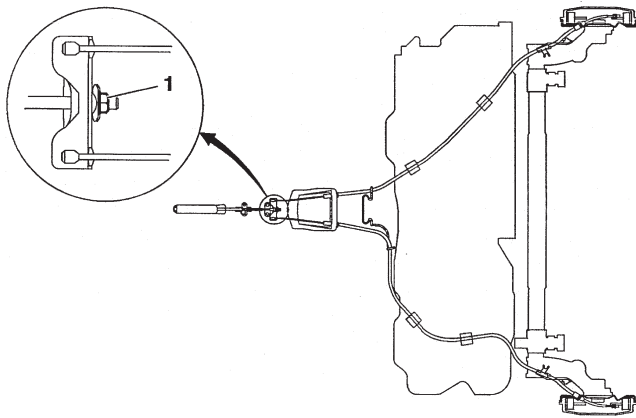
B3HP004P

XSARA		BRAKE SPECIFICATIONS			
Electrical circuit					
Components	Ref.	Supplier	Part no.	Observations	
Electronic ECU	7	BOSCH	5.7 ESP	42-way connector. Integral to the hydraulic block. Changing only the ECU is prohibited.	
Front wheel sensor	5		0 265 006 389	2-way grey connector. The sensors are inductive-type. Tightening torque: 0,8 ± 0,2 m.daN.	
Rear wheel sensor (disc brakes)			0 265 006 202	2-way grey connector. The sensors are inductive-type. Mounted on the brake caliper support. Non-adjustable airgap: 0,3 to 1,2 mm. Tightening torque: 0,8 ± 0,2 m.daN.	
Rear wheel sensor (Saloon: drum brakes)			0 265 006 203	2-way grey connector. The sensors are inductive-type. Mounted on the suspension arm. Non-adjustable airgap: 0,3 to 1,2 mm. Tightening torque: 0,8 ± 0,2 m.daN.	
Rear wheel sensor (Estate: drum brakes)			0 265 006 441		
Steering angle sensor	12	VALEO		Incorporated in the COM 2000. 6-way blue connector.	
Gyrometer/accelerometer sensor	13	BOSCH		Located on the central console. 6-way connector.	
Toothed wheel	4	GKN		Toothed wheel: 48 teeth. Integral with the driveshaft stub housing for the front wheels, joined to the hub bearing for the rear wheels.	

BRAKE SPECIFICATIONS				XSARA
(7) Hydraulic block			Gyrometer sensor	
				
			B3HP002C	C4AP17YC
Components	Supplier	Part no.	Observations	IMPERATIVE: Respect the direction of fitting of the gyrometer/accelerometer sensor (<i>connector towards the rear of the vehicle</i>). WARNING: The gyrometer/accelerometer sensor should not be subjected to any impact. Any gyrometer/accelerometer sensor having suffered an impact must be replaced. Tightening torque (15) : $0,6 \pm 0,1$ m.daN.
ESP hydraulic block	BOSCH	5.7 ESP	Located on the front LH wheelarch: 4 adjustment channels.	

XSARA

HANDBRAKE



B3FP095D

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.

BLEEDING THE BRAKES**XSARA****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 **CITROEN Replacement Parts**.

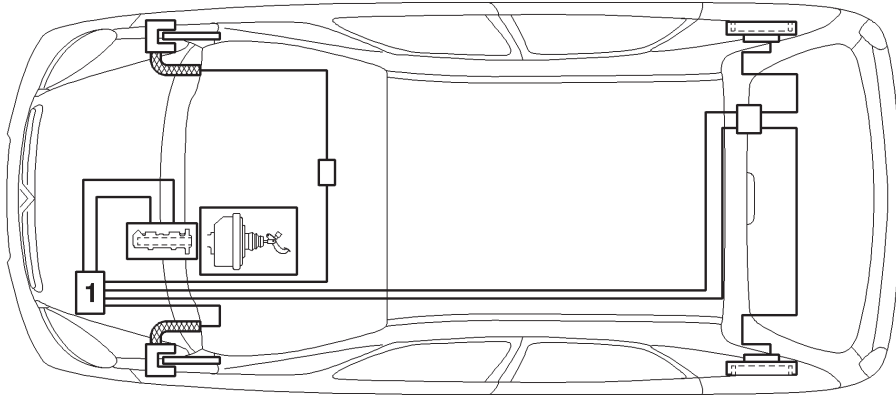
XSARA PICASSO		BRAKE SPECIFICATIONS					
		Mercosur		Europe			
		Without ESP (*)					
		2.0i 16V	2.0 HDi	1.6i	1.8i 16V	2.0i 16V	2.0 HDi
Engine type		RFN	RHY	NFV	6FZ	RFN	RHY
FT	Ø	Master cylinder		23,8			
		Master vac					
	mm	Master cylinder travel		254/34			
		Caliper piston makes		LUCAS C54/54		BOSCH 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		LUCAS/ENERGIT/C52980				
	Supplier/Type						
	Ø	Cylinder or caliper		22,2			
		Drum/Ø maxi		228,6/230			
	Make		ABEX				
	Brake lining grade		4930/2				
Compensator/Supplier/Type		TEVESITTA (load-sensitive rear braking compensator)					
Cut-off pressure in Bars		20/61,6					
(*) ESP + Electronic Stability Program							

BRAKE SPECIFICATIONS				XSARA PICASSO		
		All types				
		Ftec ESP (*)				
		1.8i 16V	2.0i 16V	1.4 HDi	2.0 HDi	
Engine type		6FZ	RFN	9HZ	9HY	RHY
FT	Ø	Master cylinder	23,8			
		Master vac				
	mm	Master cylinder travel	254/35			
		Piston Makes/Caliper	BOSCH ZOH54/54			
	Disc	Ventilated	283			
		Disc thickness/minimum thickness	26/24			
Makes/Brake pad grade		FERODO/769 (37)				
RR	Ø	Rear brake caliper				
		Supplier/Type	TRW C38			
	mm	Disc	plain			
		Disc thickness/minimum thickness	247			
	Make		9/7			
	Brake lining grade		GALFER			
Compensator – cut-off in Bars		G 4554				
		On versions with ABS, there is no load-sensitive rear braking compensator.				
(*) ESP = Electronic Stability Program.						

XSARA PICASSO

BRAKING SYSTEM SPECIFICATIONS

Without ABS



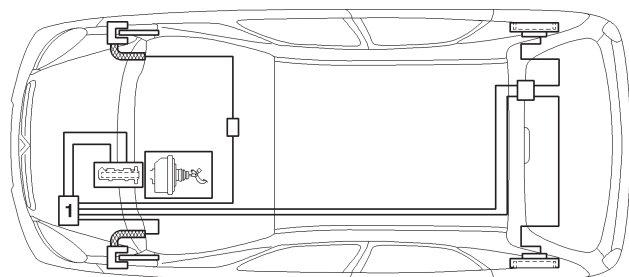
B3FP7B9D

BRAKING SYSTEM SPECIFICATIONS

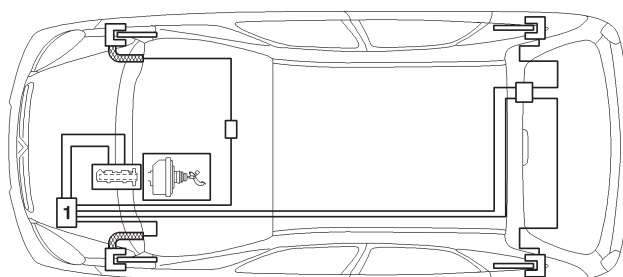
XSARA PICASSO

With ABS

With EPS (Electronic Stability Program)



B3FP7B9D

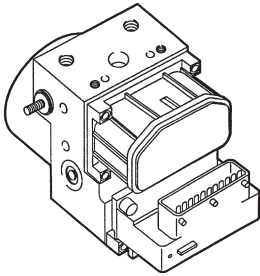


B3FP7BRD

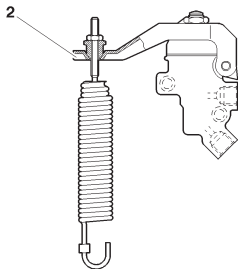
XSARA PICASSO

BRAKE SPECIFICATIONS

1



2



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*).

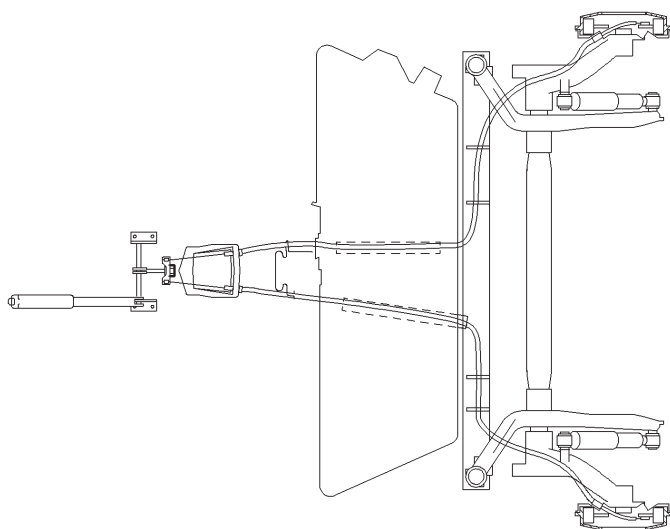
- (1) Hydraulic valve block «**ABS Bosch 5.3**» or
- (1) Hydraulic valve block + ECU.
- (2) Load sensitive braking compensator (*according to version*).

B3FP09HC

B3FP08ND

HANDBRAKE (Adjustment)

XSARA PICASSO

**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)**.

B3FP11XD

XSARA PICASSO

BLEEDING THE BRAKES

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.

STARTER MOTORS		ALL TYPES
Abbreviations and definitions		
<p>Coding of climates is as follows:</p> <p>CLIMATES:</p> <p>C Hot : Starting possible as low as -18°C. T Temperate : Starting possible as low as -18°C. F Cold : Starting possible as low as -25°C. GF Very cold : Starting possible as low as -30°C.</p>		<p>Meaning of abbreviations:</p> <p>BV : Gearbox. M : Manual gearbox. A : Automatic gearbox. MAP : Piloted manual gearbox. DA : Power-assisted steering. REFRI : Air conditioning.</p>

ALL TYPES		STARTER MOTORS			
Vehicles/models	Starter type			Class	Climate
Table of class of starter motors					
CLASS	CLASS 2	CLASS 3	CLASS 4	CLASS 5	CLASS 6
Torque C	5.5 Nm	6 Nm	10 Nm	11.5 Nm	11.5 Nm
Maximum power for a speed of 1200 rpm	$I \leq 275 \text{ A}$	$I \leq 300 \text{ A}$	$I \leq 430 \text{ A}$	$I \leq 470 \text{ A}$	$I \leq 500 \text{ A}$

STARTER MOTORS				C2	
Vehicles/models		Gearboxes	Class	Climate	
C2	1.1i	M	1	C	
				T	
				F	
			3	GF	
				1	C
					T
	1.1i Réfri	M	3	F	
				GF	
				1	C-T
			F		
			GF		
			1.4i	M-MAP	1
T					
F					
3	GF				
	1	C			
		T			
1.4i Réfri	M-MAP	3	F		
			GF		
			1	C	
		T			
		F			

ELECTRICAL
SYSTEM

C2	STARTER MOTORS				
Vehicles/models		Gearboxes		Class	Climate
C2	1.6i 16V	M-MAP-A		3	C
					T
					F
					GF
	1.4 HDi	M-MAP		4	C
					T
1.4 HDi	M-MAP		5	F	
				GF	

STARTER MOTORS				C3
Vehicles/models	Gearboxes	Class	Climate	
C3	1.1i	M	1	C
				T
				F
	1.1i Réfri	M	3	GF
			1	C
				T
	1.4i	M-MP	3	F
				GF
			1	C
		A	2	T
				F
			3	GF
1.4i Réfri	M-MP	3	C	
		1	T	
			F	
			GF	

ELECTRICAL SYSTEM

C3		STARTER MOTORS		
Vehicles/models		Gearboxes	Class	Climate
C3	1.4i 16V	M-MAP	1	C
				T
			3	F
				GF
			3	C
				T
	F			
	1.6i 16V		4	C
				T
			5	F
	1.4 HDi		4	C
				T
5		F		
1.4 HDi 16V	4	C		
		T		
	5	F		
		GF		
1.4 HDi 16V	M	4	C	
		5	T	
			4	F
			5	GF

STARTER MOTORS			C3 PLURIEL	
Vehicles/models		Gearboxes	Class	Climate
C3 Pluriel	1.4i	M-MAP	1	C
				T
			2	F
				3
			1	C
				T
	3	F		
		GF		
	1.4i Réfri	M-MAP-A	3	C
				T
				F
				GF
1.6i 16V	M	4	C	
			T	
1.4 HDi		5	F	
			GF	

ELECTRICAL SYSTEM

XSARA		STARTER MOTORS			
Vehicles/models		Gearboxes	Class	Climate	
XSARA	1.4i	M	1	C	
				T	
			2	F	
	3		GF		
	1.4i Réfri		1	C	
				T	
			3	F	
					GF
	1.4i Réfri + DA		2	C	
		T			
3		F			
			GF		

STARTER MOTORS			XSARA		
Vehicles/models	Gearboxes	Class	Climate		
XSARA	1.6i 16V	M	3	C	
				T	
				F	
				GF	
	2.0i 16V	A	3	C	
				T	
		M		F	
				GF	
				A	C
					T
4	F				
	GF				

ELECTRICAL SYSTEM

XSARA		STARTER MOTORS		
Vehicles/models		Gearboxes	Class	Climate
XSARA	2.0i 16V	M	3	C
				T
	4		F	
			GF	
	4		C	
			T	
	5		F	
	6		GF	
	2.0 HDi		4	C
		T		
6	F			
	GF			

STARTER MOTORS			XSARA	
Vehicles/models		Gearboxes	Class	Climate
XSARA	2.0 HDi	M	5	C
				T
		6	F	
			GF	
	1.4 HDi	A	6	C
				T
		6+	F	
			GF	
M	4	C		
		T		
	5	F		
		GF		

ELECTRICAL SYSTEM

XSARA PICASSO		STARTER MOTORS		
Vehicles/models		Gearboxes	Class	Climate
XSARA PICASSO	1.6i	M	1	C
				T
			2	F
				3
			1	C
				T
	3		F	
			GF	
	2		C	
			T	
	3		F	
			GF	
	1.8i 16V		3	C
				T
3	F			
	GF			
4	3	C		
		T		
3	F			
	GF			

STARTER MOTORS			XSARA PICASSO	
Vehicles/models		Gearboxes	Class	Climate
XSARA PICASSO	2.0i 16V	M-A	3	C
				T
			4	F
				GF
	1.6 HDi 16V		5	C
				T
			6	F
				GF
	2.0 HDi		M	4
				T
6				F
				GF

ELECTRICAL SYSTEM

ALL TYPES	ALTERNATORS	
Abbreviations and definitions		
<p>Coding of climates is as follows:</p> <p>CLIMATES:</p> <p>C : Hot (<i>45°C/37°C</i>).</p> <p>T : Temperate (<i>37°C/17°C</i>).</p> <p>F : Cold (<i>17°C/-25°C</i>).</p> <p>GF : Very cold (<i><-25°C</i>).</p>	<p>Meaning of abbreviations:</p> <p>BV : Gearbox.</p> <p>BVM : Manual gearbox.</p> <p>BVA : Automatic gearbox.</p> <p>BVMP : Piloted manual gearbox.</p> <p>NON REFRI : Without air conditioning.</p> <p>REFRI : With air conditioning.</p> <p>DA : Power-assisted steering.</p> <p>GEP : Electro-pump motor.</p> <p>DP : Double lug.</p> <p>3 Pts : 3-Point.</p> <p>NC : Not marketed.</p> <p>TT : All Types.</p> <p>N : Level.</p> <p>SOP : Without Option.</p> <p>TOP : All Options.</p> <p>L.C. : Heated rear screen.</p> <p>DAG : Left hand drive.</p> <p>DAD : Right hand drive.</p>	

ALTERNATORS												C2																									
Allocation of alternator classes																																					
Engine Gearbox	Climate	Without aircon						With aircon																													
		Without cold pack			With cold pack			Without cold pack			With cold pack																										
		Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3																								
1.1i BVM	C	7						8	8			8	8																								
	T							7						7	7			7	7																		
	F														7						7			7													
	GF													7							7			7													
1.4i BVMP	C	7	7	7			9																														
	T			7			8			8																											
	F			8			7	7			8																										
	GF			8				8			8																										
1.6i 16V BVM	C	7	7	7			9																														
	T			7			8			8																											
	F			8			7	7			8																										
	GF			8				8			8																										
1.4 HDi BVM	C	15																																			
	T													15																							
	F																									15											
	GF																																				

Meaning of abbreviations, see page: 472.

C3 - C3 PLURIEL		ALTERNATORS														
Allocation of alternator classes																
Engine Gearbox	Climate	Without aircon						With aircon								
		Without cold pack			With cold pack			Without cold pack			With cold pack					
		Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3			
1.1i BVM	C	7						8								
	T	7						7								
	F	8						9								
	GF	8						9								
1.4i BVM	C	7						7			8			8		
	T	7						7			7			7		
	F	8						8			8			9		
	GF	8						8			8			9		
1.4i BVA	C	7						8			9			8		
	T	7						8			8			8		
	F	8						7			7			8		
	GF	9						9			9			9		
1.4i 16V BVMP	C	7						8								
	T	7						7								
	F	8						9								
	GF	8						9								

Meaning of abbreviations, see page: 472.

ALTERNATORS											C3 - C3 PLURIEL		
Allocation of alternator classes													
Engine Gearbox	Climate	Without aircon						With aircon					
		Without cold pack			With cold pack			Without cold pack			With cold pack		
		Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3	Base	RT3 N1 or N2	RT3 N3
1.6i 16V BVM	C	7						8					
	T	7						7					
	F	8						9					
	GF	8			9			8			9		
1.6i 16V BVMP	C	7						8					
	T	7						7					
	F	8						9					
	GF	8			9			8			9		
1.4 HDi 1.4 HDi 16V	C	15											
	T	15											
	F	15											
	GF	15											

Meaning of abbreviations, see page: 472.

XSARA		ALTERNATORS															
Allocation of alternator classes																	
		Without aircon				With aircon											
		Without cold pack		With cold pack		Without cold pack		With cold pack									
Engine Gearbox	Climate	Base	RT2	Base	RT2	Base	RT2	Base	RT2								
1.4i 1.6i 16V BVM	C	8				9											
	T					8				8							
	F													9			
	GF																
1.6i 16V BVA	C	8			8					9							
	T				8												
	F								8								
	GF												9				
2.0i 16V BVM	C					12	12	12	12								
	T					8											
	F									8							
	GF													8			

Meaning of abbreviations, see page: 472.

ALTERNATORS								XSARA	
Allocation of alternator classes									
		Without aircon				With aircon			
		Without cold pack		With cold pack		Without cold pack		With cold pack	
Engine Gearbox	Climate	Base	RT2	Base	RT2	Base	RT2	Base	RT2
2.0i 16V BVA	C					12			
	T								
	F								
	GF								
2.0i 16V BVM	C					8			
	T								
	F								
	GF								
1.9 D BVM	C	8		8		9		9	
	T					8			
	F					9			
	GF	9		9		9			

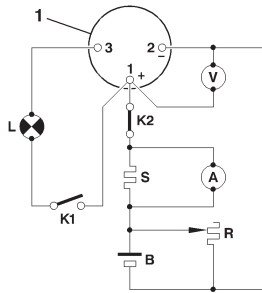
Meaning of abbreviations, see page: 472.

XSARA		ALTERNATORS							
Allocation of alternator classes									
		Without aircon				With aircon			
		Without cold pack		With cold pack		Without cold pack		With cold pack	
Engine Gearbox	Climate	Base	RT2	Base	RT2	Base	RT2	Base	RT2
1.4 HDi BVM	C	15							
	T								
	F								
	GF								
2.0 HDi BVM	C								
	T								
	F								
	GF								
2.0 HDi BVA	C								
	T								
	F								
	GF								
Meaning of abbreviations, see page: 472.									

ALTERNATORS						XSARA PICASSO			
Allocation of alternator classes									
Engine Gearbox	Climate	Without aircon				With aircon			
		Base	Heated seat	Nav.	Nav. + Heated seat	Base	Heated seat	Nav.	Nav. + Heated seat
1.6i BVM	C					8+			
	T	7							
	F	8+							
	GF								
1.8i 16V BVM	C					12			
	T	8+							
	F								
	GF								
2.0i 16V BVA	C					12			
	T	8+							
	F								
	GF								
1.6 HDi 16V 2.0 HDi	C					15			
	T								
	F	15							
	GF								

Meaning of abbreviations, see page: 472.

CHARGING CIRCUIT - ALTERNATOR WITH MONO-FUNCTION REGULATOR



D1AP025C

A : Ammeter.
B : Battery.
G : Generator.
L : Warning lamp.
K1 and **K2** : Switch.
R : Electric charge.
S : Shunt 200mV/200A.
V : Voltmeter.
1 : Alternator.

Checking the alternator output.

Connect as shown in the diagram opposite, using an ammeter (**A**), a voltmeter (**V**), and a rheostat (**R**) or a Volt/Ammeter/Rheostat combination.

Referring to the vehicle's equipment specification (*see table opposite*), adjust the engine speed and rheostat charge to obtain **U = 13.5 V**.

Reminder: The excitation energising current will flow through the warning lamp; check that the warning lamp comes on when the ignition is switched on. It should go out when the engine has started (*accelerate slightly*).

Checking the voltage regulator.

Set the rheostat to zero and disconnect all the electrical consumers.

Display **3000** alternator **rpm**. If **U alternator is > 14.7 V**, the regulator is faulty.

Note: These tests should be performed with the engine hot and the battery fully charged.

Method of reading the alternator speed.

Fit a reflecting shim on the pulley of the alternator.

Adjust a stroboscope to the frequency equivalent to the control speed.

(e.g. $2000 \text{ rpm} = 2000/60 = 83 \text{ Hz}$).

Adjust the engine speed so that the shim appears fixed.

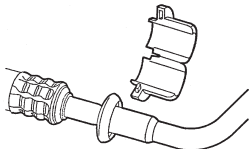
CHARGING CIRCUIT - ALTERNATOR WITH MONO-FUNCTION REGULATOR								
MINIMUM OUTPUTS (in A)								
Alternator speed	Min. output	Class						
		6	7	8	9	12	15	18
1800 rpm	11	27	39	46	61	73	89	108
2000 rpm	12	34	46	54	68	80	105	123
3000 rpm	13	47	60	68.5	84	100	139	164
4000 rpm	14	55	65	75	92	110	145	176
6000 rpm	15	61	69	78.5	96	120	151	183
8000 rpm	16	63	70	80	97	123	157	188
15000 rpm	17	64	73	82	97	124	157	188

MINIMUM YIELDS (in %)								
Alternator speed	Class							
	6	7	8	9	12	15	18	
1800 rpm	49	50	52	57	58	60	61	
2000 rpm	48	49	51	54	55	57	60	
3000 rpm	45	46	48	51	52	54	56	
4000 rpm	43	44	46	48	50	52	53	
6000 rpm	39	40	42	43	48	50	50	
8000 rpm	26	37	39	40	45	48	48	
15000 rpm	24	25	27	29	34	38	38	

TOUS TYPES			PRE-HEATING AND STARTING SYSTEMS			
Vehicles - models			Pre-heater plugs	Pre-heater control unit	Pre/Post heating (pre-heating duration at 20°C)	
C2	1.4 HDi	8HX	NGK YE04	NAGARES 960411-P	Controlled by the diesel injection ECU.	
				CARTIER 735068		
C3	1.4 HDi	8HW 8HX	NGK YE04	NAGARES 960411-P		
				CARTIER 735068		
	1.4 HDi 16V	8HV 8HY	NGK YE04	NAGARES 960411-P		
			NAGARES 960411-P			
XSARA	1.9 D	WJY	BERU 0 100 226 371	CARTIER 735068		10s / 150s
			CHAMPION CH 185	NAGARES 960411-P		
	1.4 HDi	8HZ	NGK YE04	NAGARES 960411-P		Controlled by the diesel injection ECU.
				CARTIER 735068		
	2.0 HDi	RHY	CHAMPION CH170	CARTIER 735068		
				NAGARES 960411-P		
	2.0 HDi	RHZ	CHAMPION CH 170	CARTIER 735068		
			NAGARES 960411-P			
PICASSO	2.0 HDi	RHY	CHAMPION CH 170	CARTIER 735068		
				NAGARES 960411-P		

AIR CONDITIONING R 134 a (HFC)						
Vehicle	Engines	Date	Refrigerant refill	Compressor		
				Variable Capacity	Oil quantity cc	Oil reference
C2	ALL TYPES	05/2003 →	600 + 0 - 50 gr	SD 6 V 12	135	SP 10
C3 C3 Pluriel	ALL TYPES	11/2001 →	625 + 0 - 50 gr			
XSARA	TU EW	09/2000 →	590 gr + 0 - 50 gr	SD 7 V 16		
	DW		725 gr + 0 - 50 gr			
	XU10					
XSARA PICASSO	TU	12/1999 →	675 gr ± 50 gr	SD 6 V 12		
	EW7 - DW10		775 gr ± 25 gr	SD 7 V 16		
	BRESIL ALL TYPES	03/2001 →				

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

			Click-fit connector removing/fitting tool		
	Vehicle		Ø Inch	Ring colour	Tool kit 4164-T
	XSARA	TT	5/8	Black	8005-T.A
	XSARA PICASSO	BP HP			

C5HP073C

Tightening torques (m.daN).

Aircon compressor fixings.

ESSENTIAL: Tighten the front part of the compressor (*timing belt end*), before the rear part of the compressor.

Ø Pipes	Unions	
	Steel/Steel	Aluminium/Steel
M 06	1,7 ± 0,3	1,3 ± 0,3
M 08	3,8 ± 0,3	2 ± 0,2
M 10	4 ± 0,3	2,5 ± 0,3

NOTE: Tighten the union to the recommended torque using a retaining spanner whenever possible.

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

WARNING: For R 134.a quantities (see table on preceding page: 483).

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

C2 - C3 - XSARA PICASSO

«EUROCLIM»

Compressor (MANULLI seal)

Tools.

Tool for removing-refitting air conditioning seals : **FACOM (-).1702**

IMPERATIVE: Removing-refitting the MANULLI seal
(see corresponding operation).

MANULLI seal.

C2 C3 : All engine-versions

XSARA

(Compressor and condenser end) : 08/2000 →

XSARA PICASSO

(Compressor end) : 11/2002 →

Engine-versions:

- NFV : 10/12/2001 →

- 6FZ : 01/04/2002 →

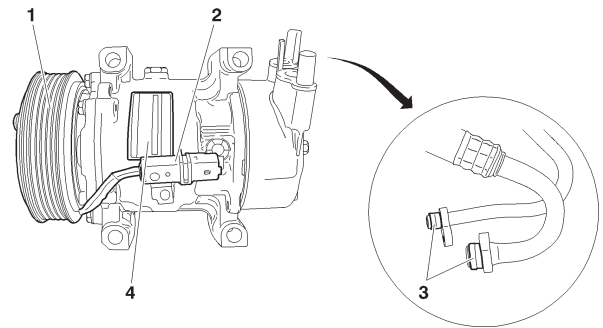
- RHY : 04/11/2002 →

Aircon compressor.

XSARA PICASSO engine versions : 6FZ and RHY

Discontinuation of compressor **SD 6 V 12**

Replaced by compressor **SD 7 V 16** : 04/11/2002 →



C5HP18UD

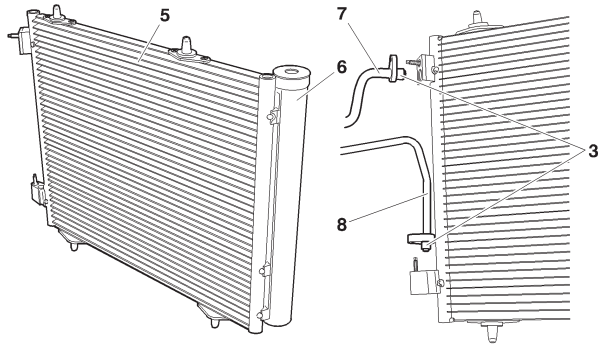
The drive plate (1) is held on the aircon compressor shaft by ribs.
New wiring (2).
New seals (3) (MANULLI).
Identification label (4) for aircon compressor.

AIRCON

C2 - C3 - XSARA PICASSO

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

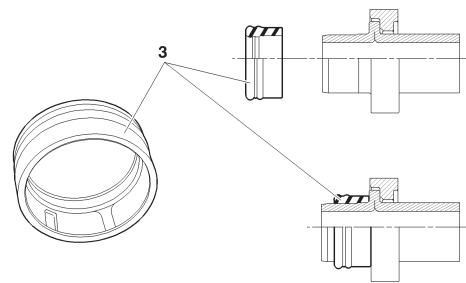
Condenser (MANULLI seal)



C5HP18VD

The condenser (5) has a cylinder (6) incorporating the function of aircon fluid reservoir and with integral filtering cartridge.
The inlet (7) and the outlet (8) of the condenser (5) are equipped with new seals (3) (MANULLI).

Seals (MANULLI seal)



C5HP18XD

MANULLI calibrated seal (3).
Direction of fitting of the seal (3).
Before fitting the seal, amply lubricate the seal with air conditioning compressor oil (SP10).

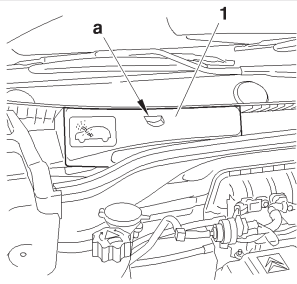
SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)				
Presence of pollen filter				
Vehicle	Equipment	RPO No.	Presence of filter	Observations
SAXO	ALL TYPES		NO	
C2 - C3			YES	
XSARA XSARA PICASSO	Without aircon		YES (<i>Behr</i>)	Except driving school
	Base aircon		YES (<i>Larger</i>)	
	Regulated aircon		YES (<i>Valéo</i>)	
BERLINGO	Without aircon		NO (<i>Valéo</i>)	
	Base aircon		YES (<i>Valéo</i>)	

AIRCON

C2

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

Pollen filter

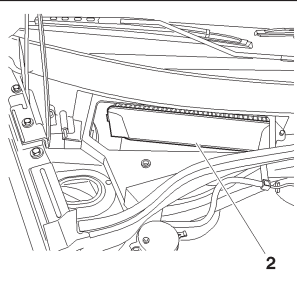
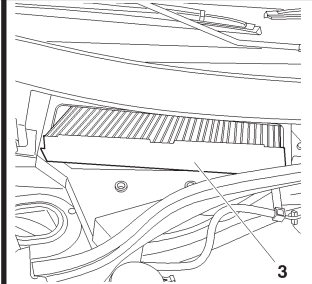


Note: The pollen filter is located in the engine compartment on the RH side.

Removing.

To remove:

- Pull on the tab of the plastic cover (1), at «a».
- Tilt the flap (2).
- Remove the pollen filter (3).

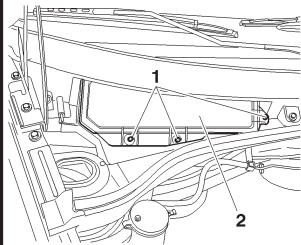
**Refitting.**

Proceed in reverse order.

C4AP1BRC

C4AP1BSC

C4AP1BTC

SPECIAL FEATURES: AIR CONDITIONING SYSTEM (R 134.a)**C3 - C3 PLURIEL****Pollen filter**

Note: The pollen filter is located in the engine compartment on the RH side.

Removing.

Remove:

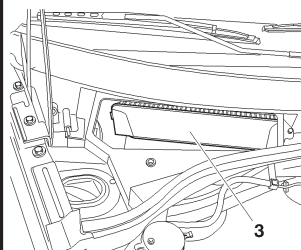
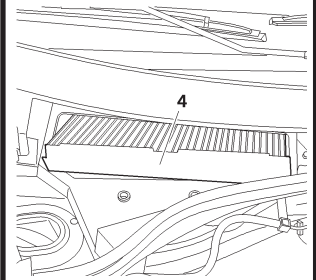
- The three screws **(1)**.
- The plastic cover **(2)**.

Tilt the flap **(3)**.

Remove the pollen filter **(4)**.

Refitting.

Proceed in reverse order.



C4AP169C

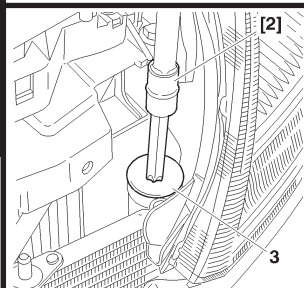
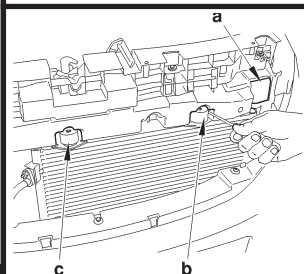
C4AP16AC

C4AP16BC

C2 - C3 - C3 PLURIEL

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

Changing the filtering/drying cartridge



- [1] Charge station
- [2] TORX adaptor
- [3] Inertia extractor
- [4] Endpiece Ø 20
- [5] Set of plugs
- [6] Circlip pliers

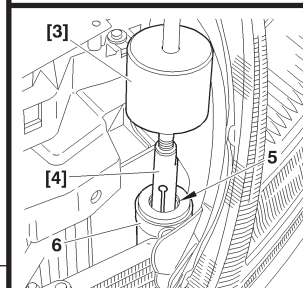
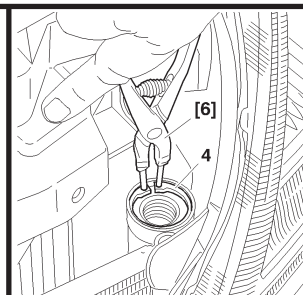
Tools.

- : (according to workshop equipment)
- : **TORX 70 FACOM**
- : 1671-T
- : 1671-T.D20
- : (-).0188.T
- : **FACOM**

Tool kit 4114-T

Removing.

Depressurise the aircon circuit, using tool [1].
 Remove the grille.
 At «a», remove the pin and the plastic cover.
 Unclip the condenser at «b» and «c», using a screwdriver.
 Tilt the condenser towards the front.
 Lift and release the condenser.
 Clean the area around the cap (3).
 Remove the plastic cap (3), using tool [2].
 Remove the safety circlip (4), using tool [6].
 Position the tool [3] and [4] in the aperture of the cartridge (5).
 Extract the cartridge from the reservoir (6), using tool [3] and [4].
 Block the reservoir (6), using tool [5].



C4AP163C

C4AP164C

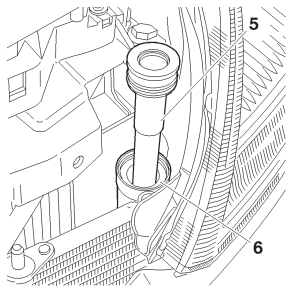
C4AP165C

C4AP166C

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

C2 - C3 - C3 PLURIEL

Changing the filtering/drying cartridge



Refitting.

Remove the new cartridge from its packaging.
Do not expose the cartridge, the filter and seals to pollutants.
Lightly oil the seals (*compressor oil*).
Remove tool [5] from the reservoir (6).
Insert the new cartridge (5) into the reservoir (6).
Refit the safety circlip (4), using tool [6].
Make sure that the circlip (4) is correctly positioned in its location.

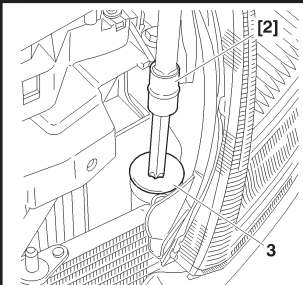
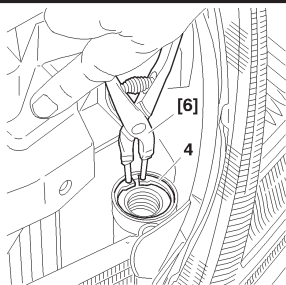
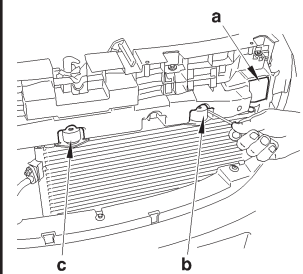
WARNING: Not more than 5 minutes should elapse between the removal of the cartridge (6) from its packaging and its being fitted.

Refit:

- The plastic cap (3), using tool [5] - Tighten to $1,2 \pm 0,1$ m.daN.
- The condenser (*reclip, pushing at «b» and «c»*).
- The plastic cover and the pins at «a».
- The grille (2).
- The screws (1).

Proceed to:

- Recharge the circuit (*see corresponding operation*).
- Check the operation of the air conditioning (*see corresponding operation*).



C4AP167C C4AP165C

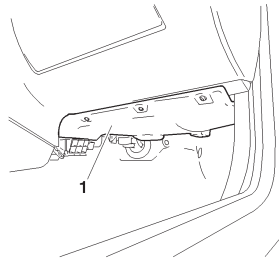
C4AP163C C4AP164C

AIRCON

XSARA

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

Pollen filter



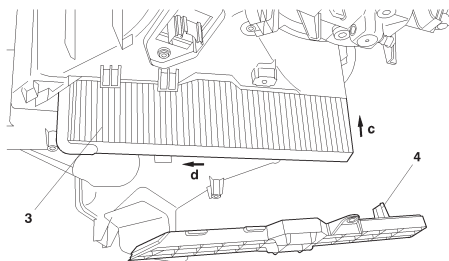
C5HP07JC

Removing-refitting.

Remove:

- The interior trim (1).
- The cover (4).
- The pollen filter (3).

Concerns vehicles equipped with aircon without temperature regulation.



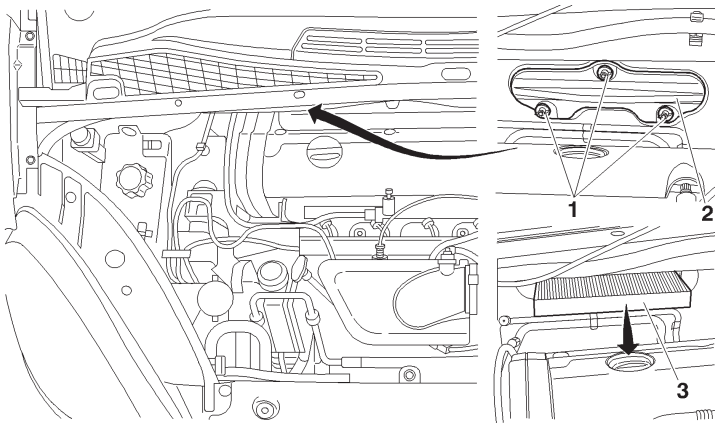
C5FP075D

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*).

AIRCON

Pollen filter

**Remove:**

- The three screws (1).
- The cover (2).

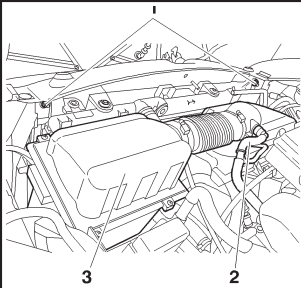
Remove the pollen filter.

B1BP23ED

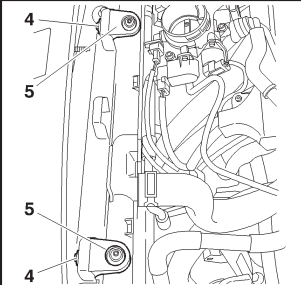
XSARA PICASSO

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

Changing the filtering/drying cartridge



3 2



4

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

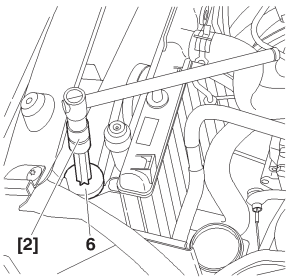
B1BP23GC

AIRCON

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

XSARA PICASSO

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.

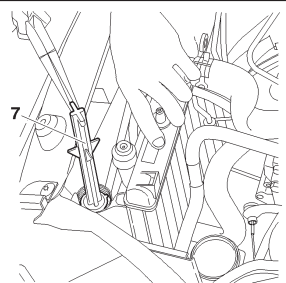
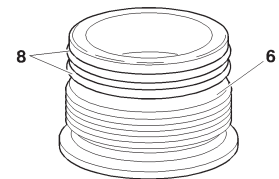
Refit the filtering/drying cartridge (7).
 Clean the threads of the plug (6).
 It is essential to change the O-ring seals (8).
 Lubricate the O-ring seals (8) with aircon compressor oil.

Refit:

- The plug (6), using tool [2], tighten to $1,4 \pm 0,2$ 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

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 system.

ALL TYPES	AIR CONDITIONING SYSTEM R 134.a	
Testing procedure		
<p style="text-align: center;">Conditions inside the vehicle.</p> <p>Positions of the air conditioning controls: Maximum cold. Maximum blower power. Air distribution on «ventilation» with the air vents open. Position the air inlet flap to outside air.</p> <p>WARNING: For RFTA (1), disconnect the air inlet motor connector, first ensuring that it is in the outside air position. (1) RFTA = Fully automatic air conditioning.</p> <p>Test procedure. When all these conditions are met, proceed in the following order: - Measure the temperature in the workshop approx. one metre in front of the vehicle's air inlet grille. - Start the engine (<i>without the air conditioning, or the blower, operating</i>) and wait for the cooling fan slow speed to trigger (<i>should the engine temperature not rise sufficiently, it is permissible to increase the engine speed to 2000 rpm</i>). - Once it is sufficiently hot in the engine compartment, return the engine to idle and commence the test.</p>	<p>Switch on the air conditioning and adjust the engine speed to 2500 rpm. In an ambient temperature of 40°C, the engine speed will be brought down to 2000 rpm, in order for the pressure safety threshold to cut off the compressor.</p> <p>For further temperatures/pressures: see Tables and Graphs on following pages 221, 222 and 226.</p> <p>After 3 minutes of operation, note down the following 3 parameters: - The temperature of the blown air coming out of the 2 central air vents (<i>take the average</i>). - The high pressure, via the intermediary of the clickfit union (<i>at the pressure reducer inlet</i>). - The low pressure, via the intermediary of the clickfit union (<i>at the pressure reducer outlet</i>).</p> <p>NOTE: The low and high pressures are absolute pressures. When measuring the blown air temperatures, avoid any contact between the thermocouple and the air vents.</p> <p>At the conclusion of the test involving vehicles with «RFTA», do not forget to reconnect the air inlet motor connector.</p>	

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM						C3 - C3 PLURIEL KFV		
CHECKING TEMPERATURES (Continued)								
			Vehicle using R134.a fluid (Compressor with variable capacity)					
Ambient temperature in °C		40	35	30	25	20	15	
Temperature at the central air vents in °C	Vehicle	Engines						
	C3 C3 Pluriel	KFV	22 ± 2	17,6 ± 2	14,4 ± 2	11,5 ± 2	7,6 ± 2	7,2 ± 2
		NFU	18,5 ± 2	15 ± 2	12,5 ± 2	10 ± 2	8,5 ± 2	6,5 ± 2
		8HX - 8HW	22 ± 2	17,6 ± 2	14,4 ± 2	11,5 ± 2	7,6 ± 2	7,2 ± 2
	XSARA	TU	18 ± 2	17 ± 2	14,5 ± 2	11 ± 2	8,5 ± 2	8 ± 2
		EW	19 ± 2	18 ± 2	15 ± 2	12 ± 2	10 ± 2	
		DW	15 ± 2	15,5 ± 2	11 ± 2	9 ± 2	7 ± 2	5 ± 2
	XSARA PICASSO	All types	22 ± 3	16 ± 3	12,5 ± 3	10 ± 3	8 ± 3	6,5 ± 3

AIRCON

C3 - C3 PLURIEL - XSARA - XSARA PICASSO KFV | CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

Checking pressures

Tools. - 1 charging station. - 2 thermometers. - The temperature of the air coming from the central vents (*see table*).
 Once the preliminary conditions, vehicle equipment and checks have been fulfilled (*see table*). After the air conditioning has been on for three minutes, record the following parameters: - The High Pressure. - The Low Pressure. Compare the values recorded with the table below, or the graphs.

Ambient temperature in °C			Vehicle using R134.a fluid (<i>Compressor with variable capacity</i>)					
			40	35	30	25	20	15
	Vehicles	Engines						
High pressure (Bars)	C3	KFV	26 ± 2	23,2 ± 2	21 ± 2	19,2 ± 2	15,3 ± 2	15 ± 2
Low pressure (Bars)			4,3 ± 2	3,4 ± 2	3,1 ± 2	2,8 ± 2	2,7 ± 2	
High pressure (Bars)	C3	NFU	25,2 ± 2	23,6 ± 2	21,4 ± 2	20 ± 2	17,6 ± 2	14,5 ± 2
Low pressure (Bars)			3,5 ± 2	3 ± 2	2,8 ± 2	2,5 ± 2	2,4 ± 2	
High pressure (Bars)	C3 Pluriel	8HX - 8HW	26,2 ± 2	23,2 ± 2	21 ± 2	19,2 ± 2	15,3 ± 2	15 ± 2
Low pressure (Bars)			4,3 ± 2	3,4 ± 2	3,1 ± 2	2,8 ± 2	2,7 ± 2	

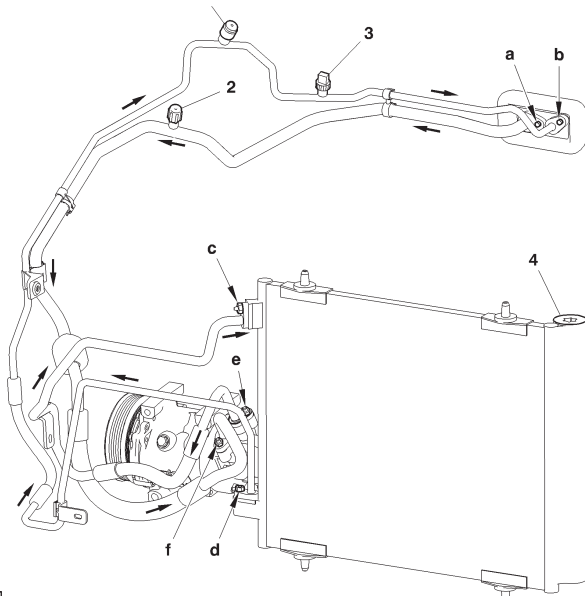
AIRCON

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM			XSARA - XSARA PICASSO					
Checking pressures								
Tools. - 1 charging station. - 2 thermometers. Once the preliminary conditions, vehicle equipment and checks have been fulfilled (<i>see table</i>). After the air conditioning has been on for three minutes, record the following parameters:			- The temperature of the air coming from the central vents (<i>see table</i>). - The High Pressure. - The Low Pressure. Compare the values recorded with the table below, or the graphs.					
Ambient temperature in °C			Vehicle using R134.a fluid (<i>Compressor with variable capacity</i>)					
			40	35	30	25	20	15
Vehicles	Engines							
XSARA	TU	High pressure (Bars)	23 ± 2	22,5 ± 2	20 ± 2	17 ± 2	15,5 ± 2	14,5 ± 2
		Low pressure (Bars)	3,8 ± 0,2	3,6 ± 0,2	3,5 ± 0,2	3,1 ± 0,2	3 ± 0,2	2,9 ± 0,2
	EW	High pressure (Bars)	24,5 ± 2		21,5 ± 2	18,5 ± 2	17 ± 2	15,5 ± 2
		Low pressure (Bars)	4 ± 0,2	3,8 ± 0,2	3,5 ± 0,2	3,2 ± 0,2	3 ± 0,2	
	DW	High pressure (Bars)	21,5 ± 2	22,5 ± 2	20 ± 2	18 ± 2	16,5 ± 2	15,6 ± 2
		Low pressure (Bars)	3,2 ± 0,2	3,3 ± 0,2	3 ± 0,2	2,8 ± 0,2	2,6 ± 0,2	
XSARA PICASSO	TU	High pressure (Bars)	25,5 ± 3	20,5 ± 3	18 ± 3	20 ± 3	13,5 ± 3	11 ± 3
		Low pressure (Bars)	4 ± 0,3	3,5 ± 0,3	3 ± 0,3			
	DW	High pressure (Bars)	25 ± 3	22,5 ± 3	20 ± 3		17 ± 3	15 ± 3
		Low pressure (Bars)	4 ± 0,3	3,5 ± 0,3	3 ± 0,3			

AIRCON

C2

AIR CONDITIONING SYSTEM R 134.a



- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Pressostat.
- (4) Filter.

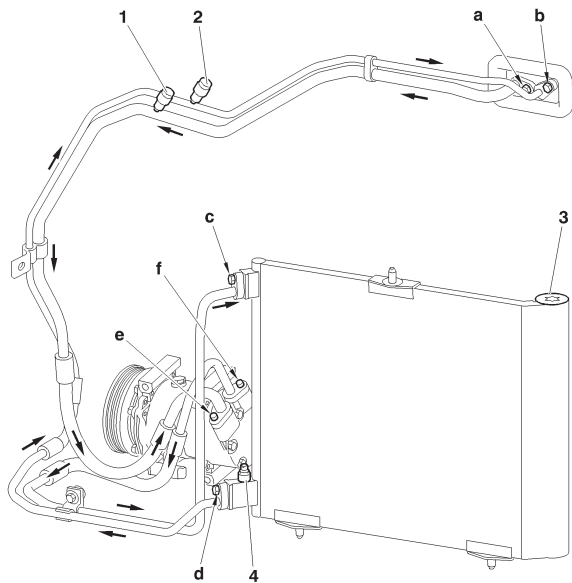
Tightening torques (m.daN).

(a)	: 0,6
(b)	: 0,6
(c)	: 0,6
(d)	: 0,6
(e)	: 0,6
(f)	: 0,7

C5HP19UP

AIR CONDITIONING SYSTEM R 134.a

C3 - C3 PLURIEL



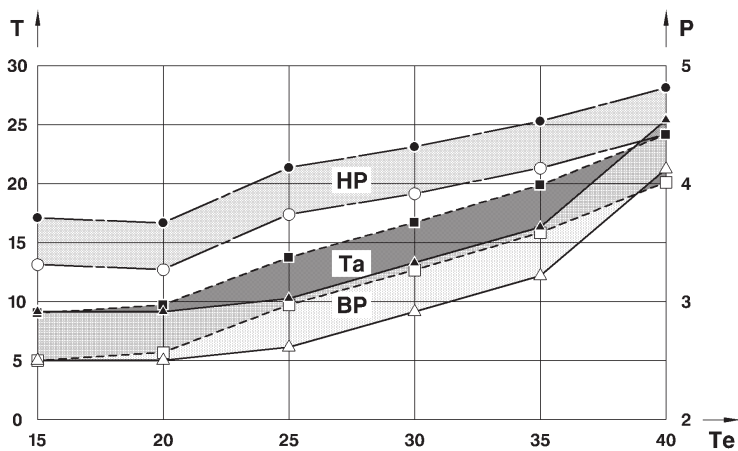
- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Filter.
- (4) Pressostat.

Tightening torques (m.daN).

(a)	: 0,6
(b)	: 0,6
(c)	: 0,6
(d)	: 0,6
(e)	: 0,6
(f)	: 0,6

C5HP17SP

Checks on the air conditioning circuit



Key.

T/P = Average temperature (°C) at the air vents/
high pressure (Bars).

P = Low pressure (Bars).

Te = Exterior temperature (C°).

HP = Pressure at compressor outlet (Bars).

BP = Pressure at compressor inlet (Bars).

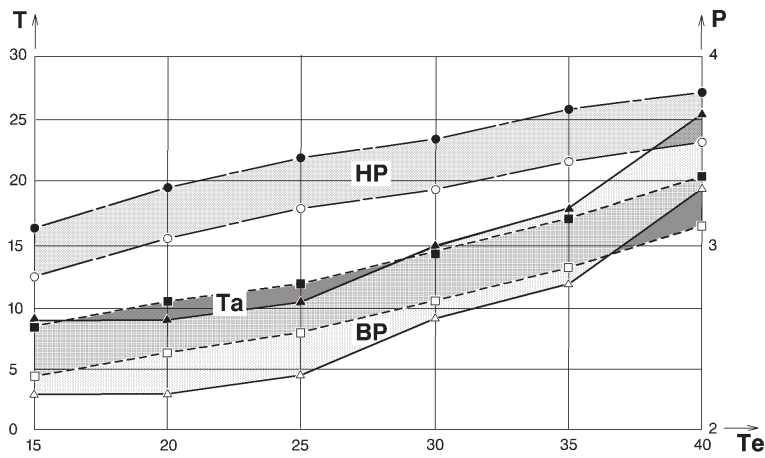
TA = Average temperature (°C) of air blown from the
central vents.

C5HP1A5D

AIR CONDITIONING SYSTEM R 134.a

C3 - C3 PLURIEL NFV

Checks on the air conditioning circuit



Key.

T/P = Average temperature (°C) at the air vents/
high pressure (**Bars**).

P = Low pressure (**Bars**).

TE = Exterior temperature (°C).

HP = Pressure at compressor outlet (**Bars**).

BP = Pressure at compressor inlet (**Bars**).

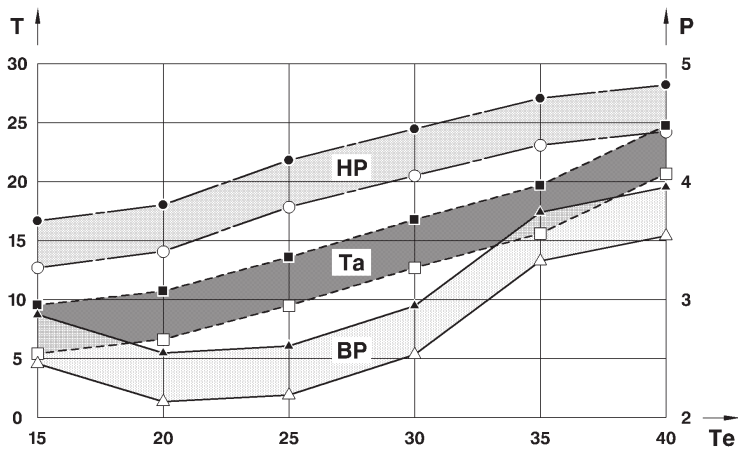
TA = Average temperature (°C) of air blown from
the central vents.

C5HP18GD

C3 - C3 PLURIEL BV MECANIQUE 8HX - 8HW

AIR CONDITIONING SYSTEM R 134.a

Checks on the air conditioning circuit



Key.

T/P = Average temperature (°C) at the air vents/
high pressure (Bars).

P = Low pressure (Bars).

TE = Exterior temperature (C°).

HP = Pressure at compressor outlet (Bars).

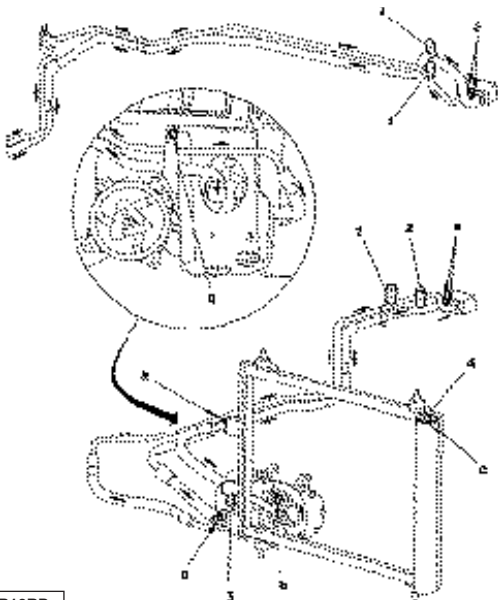
BP = Pressure at compressor inlet (Bars).

TA = Average temperature (°C) of air blown from
the central vents.

C5HP1A8D

AIR CONDITIONING SYSTEM R 134.a

XSARA KFW - NFU - TU - TT



Plan of air conditioning system.

Two solutions:

- 1/ «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).
- 2/ «EATON», with «EUROCLIM» compressor (*quadrilobe seals*).

- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Pressostat.
- (4) Dryer.

Tightening torques (m.daN).

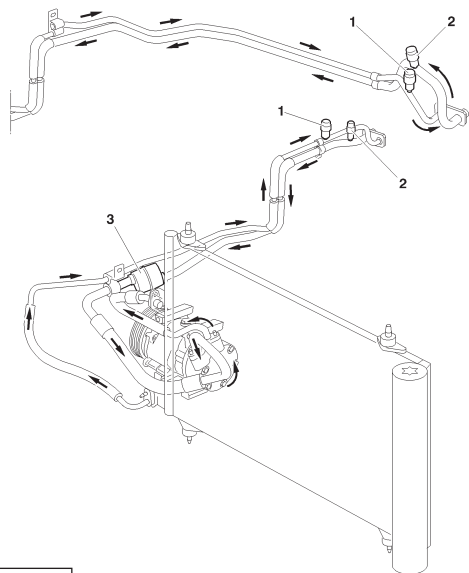
- (a) : 0,8
- (b) : 4 ± 0,4
- (c) : 0,8

A Right hand drive.

C5HP16RP

XSARA RFN

AIR CONDITIONING SYSTEM R 134.a



Plan of air conditioning system.

Solution:

1/ «EATON», with «EUROCLIM» compressor and buffer capacity (*quadrilobe seals*).

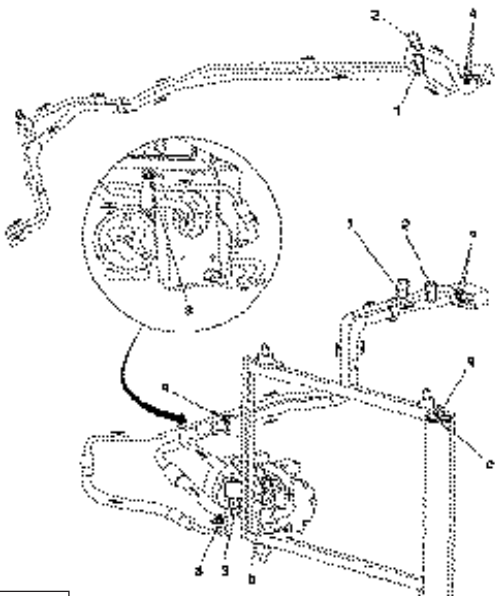
- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Buffer capacity.

Tightening torques (m.daN).

- (a) : 0,8
- (b) : 4 ± 0,4
- (c) : 0,8

A Right hand drive.

C5HP17WP



Plan of air conditioning system.

Two solutions :

1/ «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).

2/ «EATON», with «EUROCLIM» compressor (*quadrilobe seals*).

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Dryer.

Tightening torques (m.daN).

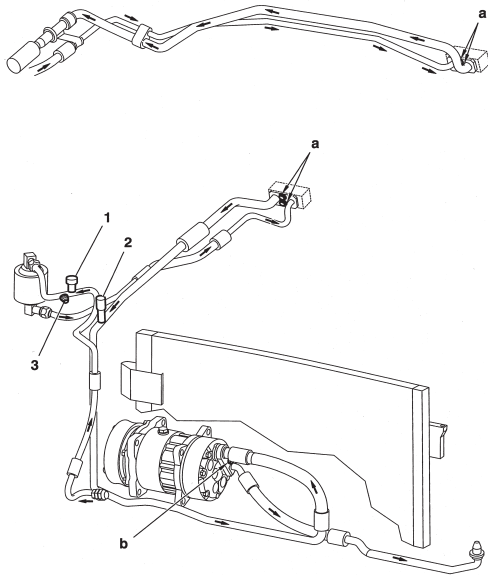
- | | |
|-----|-----------|
| (a) | : 0,8 |
| (b) | : 4 ± 0,4 |
| (c) | : 0,8 |

A Right hand drive.

C5HP16SP

XSARA RFS

AIR CONDITIONING SYSTEM R 134.a



C5HP16VP

Plan of air conditioning system.

Two solutions:

- 1/ «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).
- 2/ «EATON», with «EUROCLIM» compressor (*quadrilobe seals*).

- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Pressostat.
- (4) Dryer.

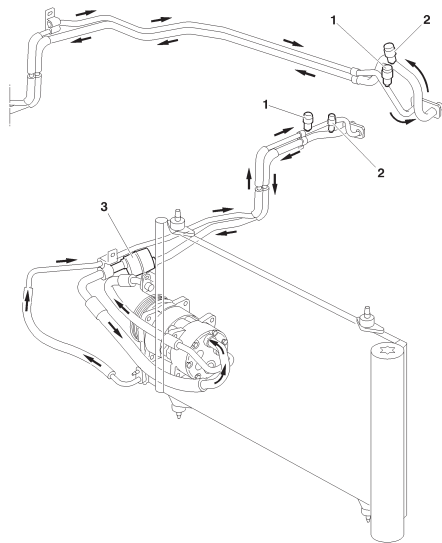
Tightening torques (m.daN).

- (a) : 0,8
- (b) : 4 ± 0,4
- (c) : 0,8

A Right hand drive.

AIR CONDITIONING SYSTEM R 134.a

XSARA WJY - RHY



Plan of air conditioning system.

Three solutions:

- 1) «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).
- 2) «EATON», with «EUROCLIM» compressor and buffer capacity (*quadrilobe seals*).
- 3) «EATON», with «NON EUROCLIM» compressor and buffer capacity (*O-ring seals*).

- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Buffer capacity.

Tightening torques (m.daN).

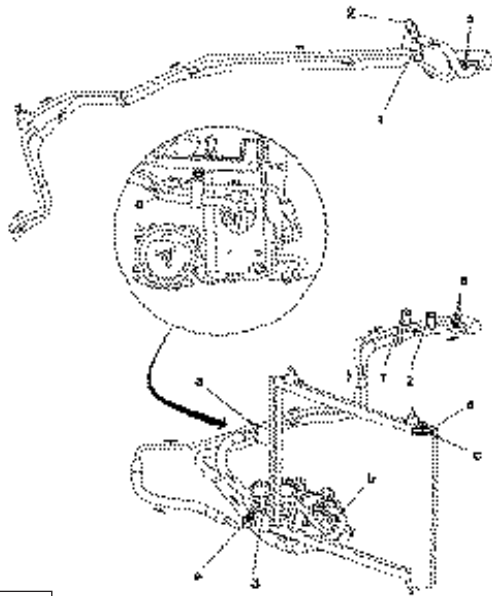
- (a) : 0,8
- (b) : 4 ± 0,4
- (c) : 0,8

A Right hand drive.

C5HP17XP

XSARA WJY - RHY

AIR CONDITIONING SYSTEM R 134.a



Plan of air conditioning system.

Two solutions:

1/ «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).

2/ «EATON», with «EUROCLIM» compressor (*quadrilobe seals*).

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Dryer.

Tightening torques (m.daN).

(a)	: 0,8
(b)	: $4 \pm 0,4$
(c)	: 0,8

A Right hand drive.

C5HP16TP

AIR CONDITIONING SYSTEM R 134.a

XSARA RHZ

Plan of air conditioning system.

Three solutions :

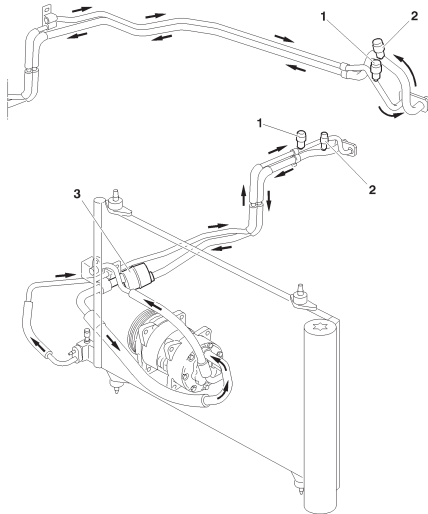
- 1) «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).
- 2) «EATON», with «EUROCLIM» compressor and buffer capacity (*quadrilobe seals*).
- 3) «EATON», with «NON EUROCLIM» compressor and buffer capacity (*O-ring seals*).

- (1) High pressure valve
- (2) Low pressure valve
- (3) Buffer capacity.

Tightening torques (m.daN).

- | | |
|-----|-----------|
| (a) | : 0,8 |
| (b) | : 4 ± 0,4 |
| (c) | : 0,8 |

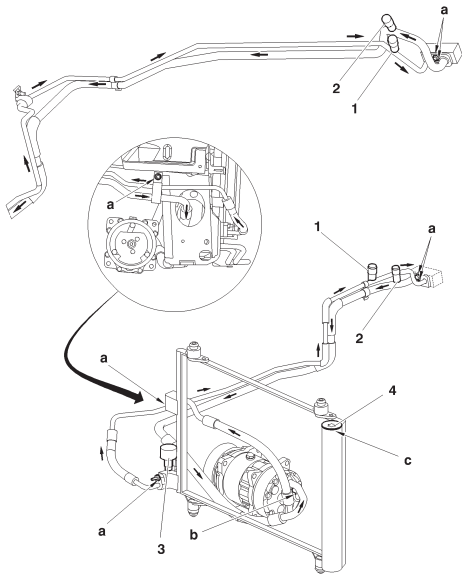
A Right hand drive.



C5HP17YP

XSARA RHZ

AIR CONDITIONING SYSTEM R 134.a



Plan of air conditioning system.

Two solutions:

1/ «MANULLI», with «NON EUROCLIM» compressor (*O-ring seals*).

2/ «EATON», with «EUROCLIM» compressor (*quadrilobe seals*).

- (1) High pressure valve.
- (2) Low pressure valve.
- (3) Pressostat.
- (4) Dryer.

Tightening torques (m.daN).

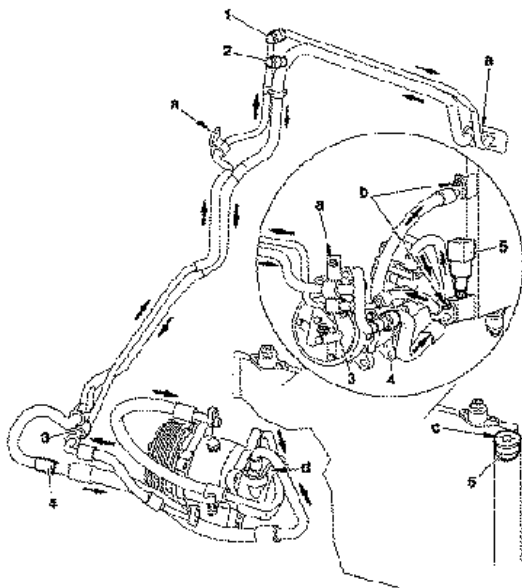
- (a) : 0,8
- (b) : 4 ± 0,4
- (c) : 0,8

A Right hand drive.

C5HP16UP

AIR CONDITIONING SYSTEM R 134.a

XSARA PICASSO NFV



- (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

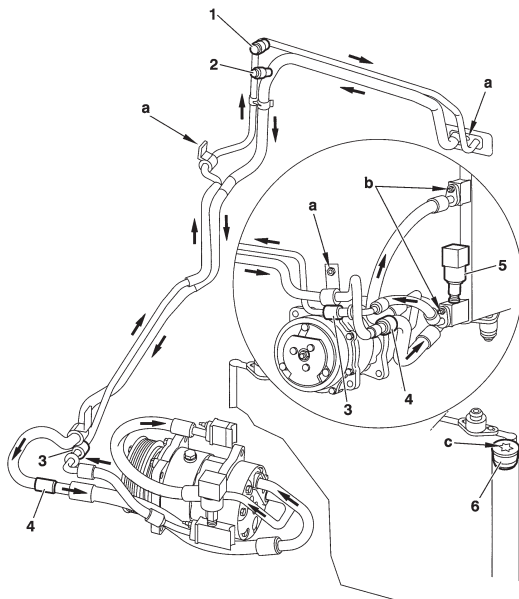
Tightening torques (m.daN).

- (a) : $0,8 \pm 0,1$
- (b) : $0,5 \pm 0,1$
- (c) : $1,4 \pm 0,2$
- (d) : $2,5 \pm 0,25$

C5HP13PP

XSARA PICASSO 6FZ

AIR CONDITIONING SYSTEM R 134.a



- (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) : $1,4 \pm 0,2$

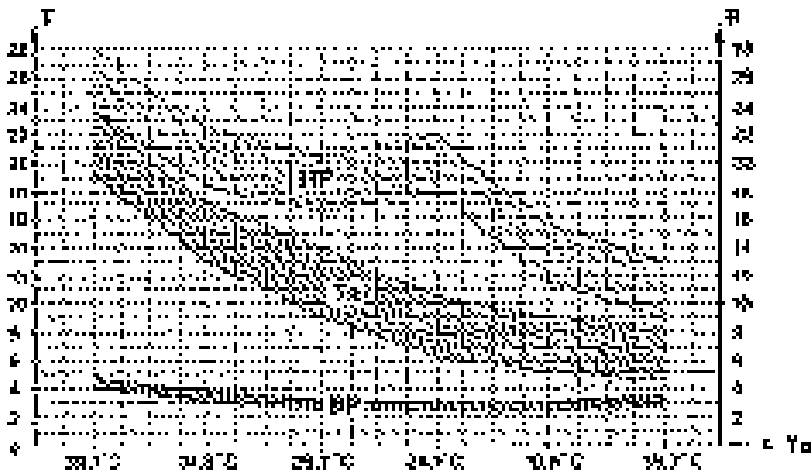
HP/LP compressor flange fixing : $2,5 \pm 0,25$

C5HP13QP

AIR CONDITIONING SYSTEM R 134.a

XSARA PICASSO NFV - 6FZ

Checks on the air conditioning circuit



Key.

- T/P = Scale of:
- Temperature (°C), average of air from the central vents.
 - Pressure High (Bars).
 - Pressure Low (Bars).

Te = Exterior temperature (°C).

HP = Pressure at compressor outlet (Bars).

Ta = Temperature (°C) of air blown from the vents.

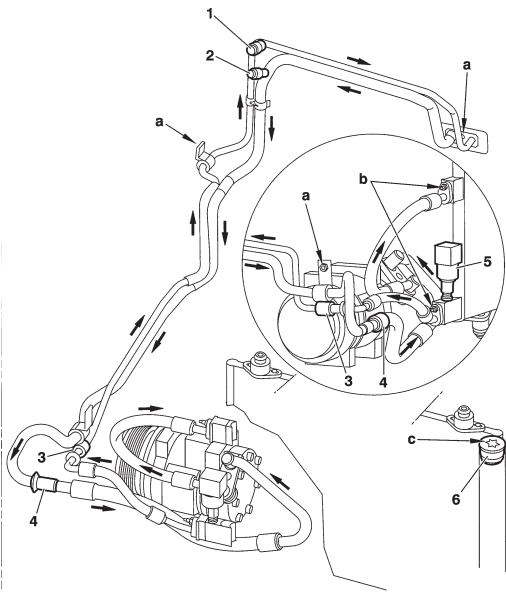
BP = Pressure at compressor inlet (Bars).

C5HP150D

AIRCON

XSARA PICASSO RHY - RHZ

AIR CONDITIONING SYSTEM R 134.a



C5HP13RP

- (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).

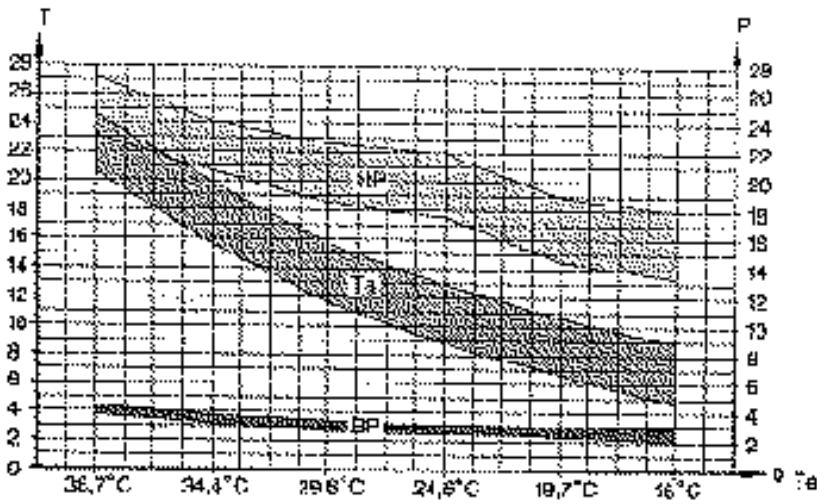
- (a) : $0,8 \pm 0,1$
- (b) : $0,5 \pm 0,1$
- (c) : $1,4 \pm 0,2$

HP/LP compressor flange fixing : $4,2 \pm 0,15$

AIR CONDITIONING SYSTEM R 134.a

XSARA PICASSO RHY - RHZ

Checks on the air conditioning circuit



Key.

T/P = Scale of:

- Temperature (°C), average of air from the central vents.
- Pressure High (Bars).
- Pressure Low (Bars).

Te = Exterior temperature (°C).

HP = Pressure at compressor outlet (Bars).

Ta = Temperature (°C) of air blown from the vents.

BP = Pressure at compressor inlet (Bars).

C5HP14ZD