CITROËN C5

2000

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

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

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PRESENTATION

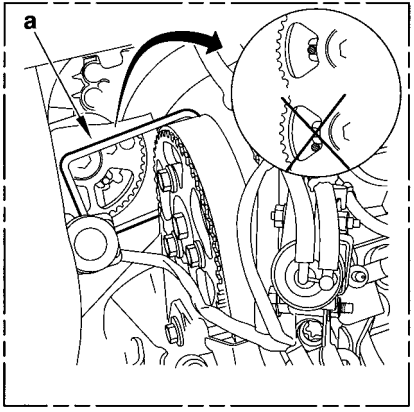
THIS HANDBOOK summarises the specifications, adjustments, checks and special features of the **CITROEN C5.**

The handbook is divided into the following sections representing the main functions :

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

INDEX

IDENTIFICATION OF VEHICLES



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(A) Chassis stamp
(cold stamp on bodywork).

(B) Manufacturer's data plate.
(under the rear bench seat)

(C) A-S / RP No. and RP paint code
(label on front pillar close to driver's door).

(D) Inflation pressures and tyre references.
(label on front pillar close to driver's door)

(E) Serial no. on bodywork.

(F) Gearbox reference – Factory serial no.

(G) Engine legislation type – Factory serial no.

IDENTIFICATION OF VEHICLES

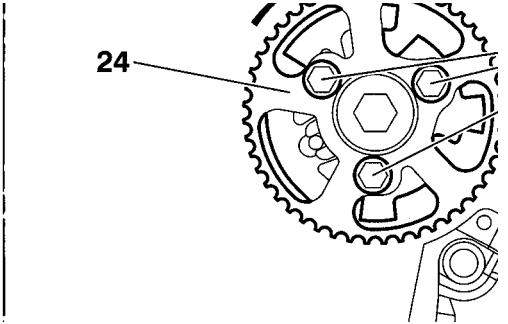
Engine families	Petrol							
	EW						ES	
	7			10			9	
	J4			J4		D	J4S	
	1.8i 16V			2 0i 16V		2.0 HPi	3.0i V6	
			Auto.		Auto.			Auto.
	X-SX			SX-Exclusive			Exclusive	
Emission standard	L4	IF/L5	L4	IFL5	L4-IF/L5	L4	IF/L5	
Type code	DC 6FZB	DC 6FZC/IF	DC 6FZE	DCRFNC/IF	DC RFNF/IF	DC RLZB	DC XFXC/IF	DC XFXF/IF
Engine type	6FZ			RFN		RLZ	XFX	
Cubic capacity (cc)	1749			1997			2946	
Fiscal rating (hp)	7		8	9			14	
Gearbox type	BE4/5		AL4	BE4/5	AL4	BE4/5	ML5/5	4 HP 20
Gearbox ident. plate	20 DL 29		20 TP 44	20 DL 30	20 TP 42	20 DL 31	20 LE 95	20 HZ 13

IDENTIFICATION OF VEHICLES

Engine families	Diesel				
	DW				
	10			12	
	TD	ATED		TED4	
	2.0 HDi			2.2 HDi	
			Auto.		Auto.
	X	X-SX		SX-Exclusive	
Emission standard	L4				
Type code	DC RHYB	DC RHZB	DC RHZE	DC 4HXB	DC 4HXE
Engine type	RHY	RHZ		4HX	
Cubic capacity (cc)	1997			2178	
Fiscal rating (hp)	5	6	7	8	9
Gearbox type	BE4/5	ML/5	AL4	ML/5	4 HP 20
Gearbox ident. plate	20 DL 32	20 LE 94	20 TP 43	20 LE 96	20 HZ 20

IDENTIFICATION OF VEHICLES

Manufacturer's plate



- **(a)** Type approval number **(*)**.
- **(b)** Type serial number.
- **(c)** Gross vehicle weight **(*)**.
- **(d)** Gross train weight **(*)**.
- **(e)** Maximum weight on the front axle **(*)**.
- **(f)** Maximum weight on rear axle **(*)**.

(*) = according to marketing country.

E1AP08SC

Factory code.

Structure.
Example : **D.C.6.F.Z.B.**

The factory code is composed of **6 figures** or letters.
- **D =** Vehicle family.
- **C =** Body shape.
- **6FZ =** Engine.
- **B =** Version.

Family

Ref.	Family
D	X4

Body shape

Ref.	Body shape
C	5- door saloon

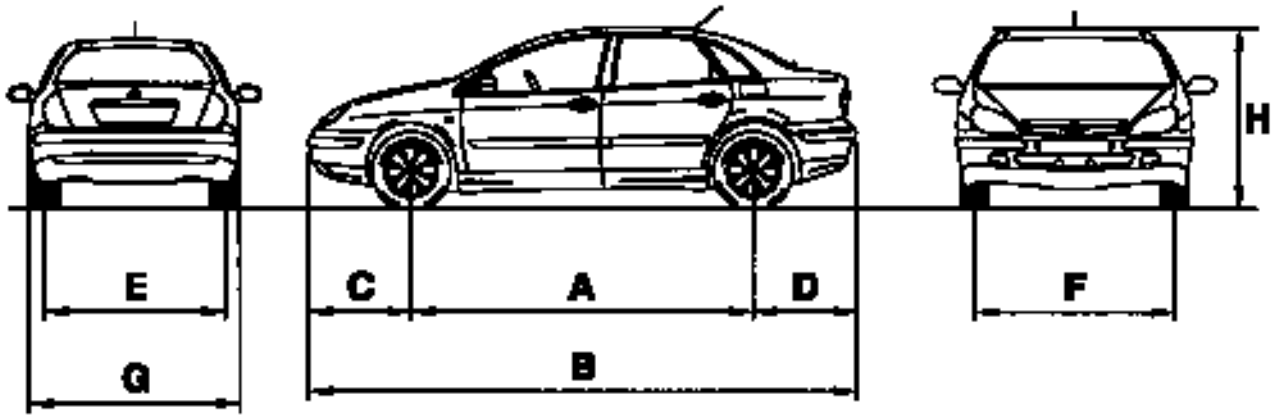
Engine

Ref.	Capacity	Type	Ref.	Capacity	Type
6FZ	1749	EW7	**RHY**	1997	DW10TD
RFN	1998	EW10J4	**RHZ**		DW10ATED
RLZ		EW10D	**4HX**	2179	DW12TED4
XFX	2946	ES9J4			

Version (Gearbox and emission standard)

Ref.	Gearbox	Emission standard
B	Manual 5 gears	L4
C		L5
E	Automatic 4 gears	L4
F		L5

GENERAL SPECIFICATION : DIMENSIONS



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GENERAL SPECIFICATION : DIMENSIONS

Exterior dimensions (mm)

Vehicles		All types (except 3.0i V6 and 2.2 HDi)	2.2 HDi	3.0i V6
Wheel base	**A**	**2750**		
Length (overall)	**B**	**4618**		
Rear track on the ground	**C**	**1509**	**1495**	**1493**
Front track on the ground	**D**	**1544**	**1530**	**1528**
Width (overall)	**E**	**1770**		
Height (overall) (*)	**F**	**1476**		
Front overhang	**G**	**971**		
Rear overhang	**H**	**897**		

(*) = Vehicle in running order (vehicle empty, levels topped up).

Dimensions and interior volumes (mm)

Elbow width, front	**1538**
Elbow width, rear	**1520**
Height of boot below parcel shelf	**554**
Minimum floor width	**1170**
Boot depth at floor level	**985**
Volume of boot below parcel shelf (dm^3)	**456**

GENERAL SPECIFICATION : WEIGHTS

Exterior dimensions (mm)

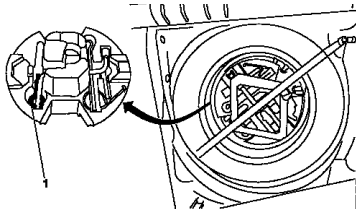
Versions	Manual gearbox				Automatic gearbox		
	1.8i16V	2.0i16V	2.0 HPi	3.0i V6	1.8i16V	2.0i16V	3.0i V6
	6FZ	RFN	RLZ	XFX	6FZ	RFN	XFX
Gearbox type	BE4/5			ML/5	AL4		4 HP 20
Payload	520	527	520	530	520	520	500
Unladen weight in running order	1290	1318	1325	1480	1315	1325	1520
Gross vehicle weight	1810	1845	1845	2010	1835	1845	2020
Gross train weight	3310	3345	3345	3610	3335	3345	3420
Maximum trailer weight without brakes	660	695	700	750	695	700	750
Maximum trailer weight with brakes							
Incline 12%	1500	1500	1500	1600	1500	1500	1400
Incline 10%	1550	1600	1600	1700	1550	1600	1700
Incline 8%	1800	1900	1900	2000	1800	1900	2000
Maximum nose weight	75						
Maximum roof rack load	75						

GENERAL SPECIFICATION : WEIGHTS

Exterior dimensions (mm)

Versions	Manual gearbox			Automatic gearbox	
	2.0 HDi	2 .0 HDi	2.2 HDi	2.0 HDi	2.2 HDi
	RHY	RHZ	4HX	RHZ	4HX
Gearbox type	BE4/5	ML/5		AL4	4 HP 20
Payload	520	520	500	500	500
Unladen weight in running order	1360	1385	1485	1410	1520
Gross vehicle weight	1880	1905	1985	1910	2020
Gross train weight	3380	3405	3485	3410	3120
Maximum trailer weight without brakes	715	730	750	740	750
Maximum trailer weight with brakes					
Incline 12%	1500	1500	1500	1500	1500
Incline 10%	1600	1600	1700	1600	1700
Incline 8%	2000	2000	2000	2000	1800
Maximum nose weight	75				
Maximum roof rack load	75				

GENERAL SPECIFICATION : TOWING THE VEHICLE



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WARNING : When the engine is not running, steering and braking are no longer power-assisted.

Towing eye

(1) Towing eye

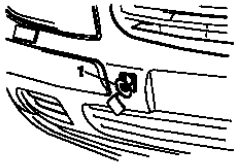
The towing eye is stowed in the jack protection box inside the spare wheel.

Vehicle with either manual or automatic gearbox.

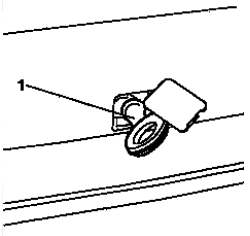
ESSENTIAL : Never tow the vehicles with wheels hanging (towing by the wheels).

E2AP01HC E2AP01JC

Remorquage avant



Remorquage arrière



GENERAL SPECIFICATION : TOWING THE VEHICLE

Vehicle towing : Precautions to be taken

AL4 automatic gearbox.	4 HP 20 automatic gearbox.
Towing. In the event of impossibility to raise the front of the vehicle : It is **ESSENTIAL** to place the selection lever in position **«N»**. Do not add oil. Do not exceed a speed of **30 mph** over a distance of **30 miles**.	**Towing.** In the event of impossibility to raise the front of the vehicle : It is **ESSENTIAL** to place the selection lever in position **«N»**. Do not add oil. Do not exceed a speed of **45 mph** over a distance of **60 miles**.

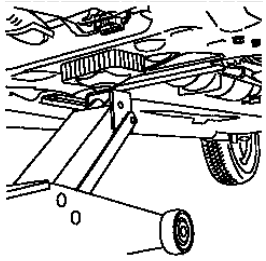
Moving the vehicle.

Never be towed with the ignition switched off.

Never attempt to push-start the vehicle. *(Impossible with an automatic gearbox).*

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

GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE

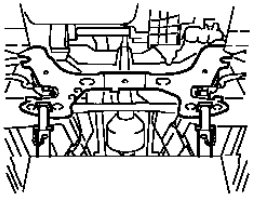


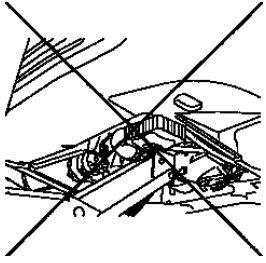
Lifting and supporting the vehicle

Front of the vehicle.

Position the jack to support the centre of the front subframe crossmember.

ESSENTIAL : Never attempt to lift by the front panel mounting or front panel crossmember.





Place axle stands under the front subframe.

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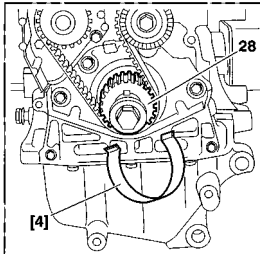
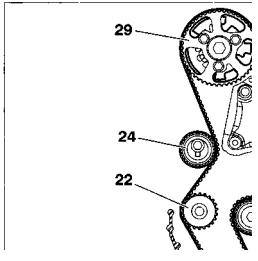
GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE

Lifting and supporting the vehicle (continued)



Side lifting.

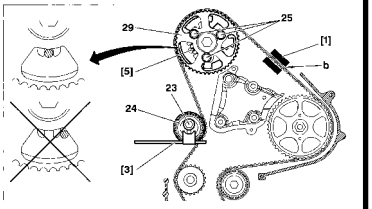
ESSENTIAL : Always ensure the jack is correctly positioned at the lifting points.

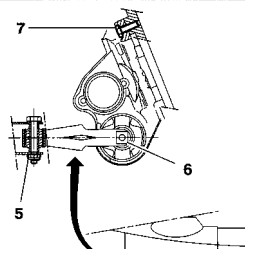


ESSENTIAL : Do not place the axle stands under the jack contact lugs.

Position of the axle stand.

E2AP017C | E2AP018C





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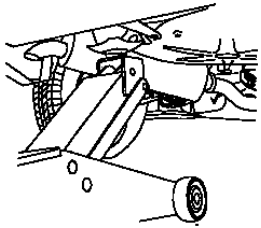
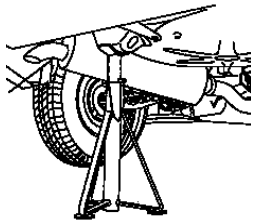




Lifting and supporting the vehicle (continued)

Lifting the rear of the vehicle.

ESSENTIAL : Never lift under the spare wheel (risk of deformation of the floor).
Do not lift under the rear subframe crossmember.

Lift under the strengthened rim of the spare wheel pan.

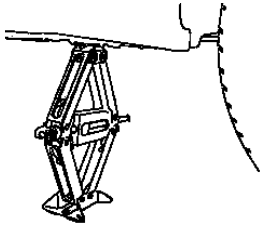
Positioning of the axle stand.

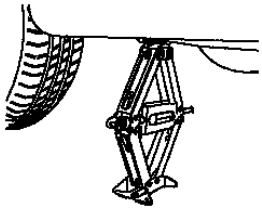
Lifting using the handle jack.

Front lifting.

Rear lifting.

NOTE : The handle jack is specific to the vehicle, do not use it for any other purposes.

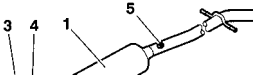




E2AP01AC | E2AP01BC | E2AP01CC | E2AP01DC

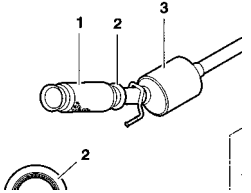
GENERAL SPECIFICATION: LIFTING AND SUPPORTING THE VEHICLE

Lifting and supporting the vehicle (continued)



Lifting on a platform.

Two-column lift.



Auxiliary lift with blocks.

E2AP01EC | E2AP01FC

CAPACITIES (in litres)

Draining method.

Oil capacities are defined as below.

1/ Vehicle on horizontal ground *(in the high position, if hydropneumatic suspension).*

2/ Engine warm *(oil temperature **80°C**).*

3/ Drain oil sump + remove filter cartidge *(time for draining to last drops = **15 minutes**).*

4/ Refit drain plug + filter cartridge.

5/ Refill the engine.

6/ Start the engine *(to allow the cartridge to fill).*

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

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

CAPACITIES (in litres)

	Vehicle without air conditioning									
	Petrol							Diesel		
	1.8i 16V			2.0i 16V			2.0 HPi	2.0 HDi		
		Auto.			Auto.					Auto.
Engine type	6FZ			RFN			RLZ	RHY	RHZ	
Engine with filter change	4.25							4.75		
Between Min. and Max.	1.7							1.5		
5-speed gearbox	1.8			1.8			1.8	1.8		
Automatic gearbox		6			6					8.3
After oil change		3			3					5.3
Braking circuit										
Hydraulic circuit	4.3									
Cooling system	8.8 – 9.3 (*)						8.8	10.7		
Fuel tank capacity	66							68		

(*) = With automatic gearbox

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

CAPACITIES (in litres)

	Vehicle with air conditioning							
	Petrol							
	1.8i 16V		2.0i 16V		2.0 HPi	3.0i V6		
		Auto.		Auto.				Auto.
Engine type	6FZ		RFN		RLZ	XFX		
Engine with filter change	4.25					5.25		
Between Min. and Max.	1.7					2		
5-speed gearbox	1.8		1.8		1.8			
Automatic gearbox		6		6				8.3
After oil change		3		3				5.3
Braking circuit								
Hydraulic circuit	4.3							
Cooling system	8.8 – 9.3 (*)				8.8	14		
Fuel tank capacity	66							

(*) = With automatic gearbox.
ESSENTIAL : Systematically check the oil level using the oil dipstick.

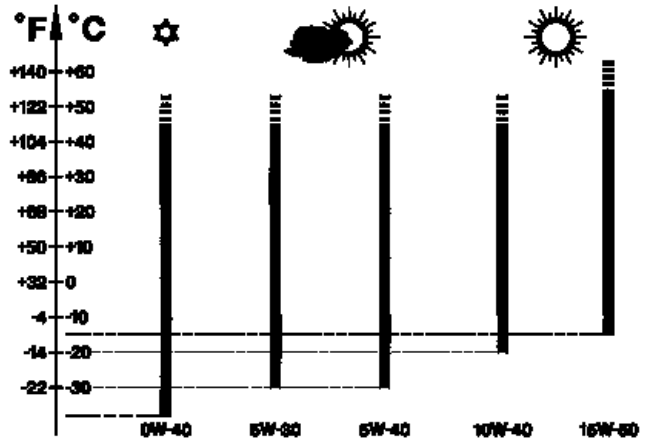
CAPACITIES (in litres)

	Vehicle with air conditioning					
	Diesel					
	2.0 HDi			2.2 HDi		
			Auto.			Auto.
Engine type	RHY	RHZ		4HX		
Engine with filter change	4.5			4.75		
EBetween Min. and Max.	1.7			1.5		
5-speed gearbox	1.8			1.8		
Automatic gearbox			6			8.3
After oil change			3			5.3
Braking circuit						
Hydraulic circuit	4.3					
Cooling system	**10.7 - 11.7 -** *(With additional heating)*.					
Fuel tank capacity	68					

ESSENTIAL : Systematically check the oil level using the oil dipstick

LUBRICANTS – TOTAL recommended oils

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



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Factory evolutions in 2000 model year

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%)*.

This oil is not used in the following engines :

- **XU10 4 RS – XSARA VTS 2.0i 16V** *(3-door)*
- **SOFIM – RELAY 2.8 D** and **2.8 TD**.

Engine oil norms

These engine oils have been classified by the following recognised organisations:

SAE : Society of Automotive Engineers.
API : American Petroleum Institute.
ACEA : Association des Constructeurs Européens d'Automobiles.

LUBRICANTS – TOTAL recommended oils

NOTE : See specific CITROËN C5 maintenance bulletins for oil recommendations by engine-type and by country.

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

ACEA Norms

The first letter corresponds to the type of engine concerned :

- **A : petrol and dual fuel petrol / LPG** engines.
- **B : diesel** engines.

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

- **1 :** highly fluid oils, for reducing friction and lowering fuel consumption.
- **3 :** high performance oils.

The number after that (**96** or **98**) corresponds to the year of creation of the norm.

NOTE : From **01/03/2000,** all engine oils must comply with **ACEA-98 norms.**

Example :
ACEA A1-98 / B1-98 : Blended oils for all engines, permetting fuel economy *(complying with **ACEA 98 norms).***

API Norms

The first letter corresponds to the type of fuel used by the engine :

- **S : petrol** and **dual fuel petrol / LPG** engines.
- **C : diesel** engines.

The second letter corresponds to the degree of evolution, in ascending order.
Example : The norm **SJ** is more severe than the norm **SH** and corresponds to a higher level of performance.
The adding of the letters **EC** indicates that the engine oil concerned is an oil which permits fuel economy.
EC : Energy Conserving, reduction in fuel consumption..
Examples :
API SJ / CF : Blended oils for **diesel** and dual fuel **petrol / LPG engines**.
API CF / EC : Oils specifically for **diesel** engines, permitting fuel economy.
API SJ / CF / EC : Blended oils for all engines, permetting fuel economy.

LUBRICANTS – TOTAL recommended oils

Recommendations.

Denominations of **TOTAL** oils, according to country of marketing :

TOTAL ACTIVA (France only).
TOTAL QUARTZ (Outside France).

IMPERATIVE : From 1999 model year, to preserve engine performance, all engines fitted in CITROEN vehicles must be lubricated with high quality oils (synthetic or semi-synthetic)

These oils must comply with the following norms :

Petrol and dual fuel petrol / LPG engines: **ACEA A3-98** and **API SJ**.
Diesel engines: **ACEA B3-98** and **API CF**.

WARNING : Engines fitted in CITROEN vehicles prior to 2000 model year must not be lubricated with oil complying with standards ACEA A1-98 / B1-98 and API SJ/CF EC.

Summary

Engine oil norms to be respected in **2001 model year**.

Model year	Types of engine	ACEA norms	API norms
2001 model year	Petrol and dual fuel petrol / LPG engines	**A3-98 or A1-98 (*)**	**SJ or SJ / EC (*)**
	Diesel engines	**B3-98 or B1-98 (*)**	**CF or CF / EC (*)**

(*) = It is essential not to use engine oils respecting these norms for the following engine-types :
XU10J4RS, 1580 SPI, SOFIM 2.8 D and SOFIM 2.8 TD.

LUBRICANTS – TOTAL recommended oils

	S.A.E. grades	SPI norms	ACEA norms
Blended oils for all engines (petrol, dual-fuel petrol / LPG and diesel)			
TOTAL ACTIVA 9000 TOTAL QUARTZ 9000	**5W-40**	**SJ / CF**	**A3-98 / B3-98**
TOTAL ACTIVA 9000. **(*)** TOTAL QUARTZ 9000. **(*)**	**5W-30**	**SJ / CF EC**	**A1-98 / B1-98**
TOTAL ACTIVRAC	**10W-40**	**SJ / CF**	**A3-98 / B3-98**
(*) = Blended oils for all engines, permitting fuel economy.			
Oils specifically for petrol and dual-fuel petrol / LPG engines			
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	**10W-40**	**SJ**	**A3-98**
TOTAL QUARTZ 9000	**0W-40**		
TOTAL ACTIVA 7000 TOTAL QUARTZ 7000	**15W-50**		
Oils specifically for diesel engines			
TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	**10W-40**	**CF**	**B3-98**
TOTAL ACTIVA DIESEL 7000 TOTAL QUARTZ DIESEL 7000	**15W-50**		
TOTAL ACTIVA 9000	**5W-40**		

LUBRICANTS – TOTAL RECOMMENDED OILS

	FRANCE		
	Blended oils for all engines		
Metropolitan FRANCE	**TOTAL ACTIVRAC**	**Norms S.A.E : 10W-40**	
	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 5W-40** **9000 5W-30 (*)**	**7000 10 W-40**	**7000 10W-40** **9000 5W-40**
New Caledonia Guadeloupe Saint-Martin La Réunion Martinique Guyana Tahiti Mauritius Mayotte	**9000 5W-40**	**7000 15W-50**	**7000 15W-50**

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

LUBRICANTS – TOTAL RECOMMENDED OILS

EUROPE

(*) = Blended oils for all engines, permitting fuel economy	**TOTAL QUARTZ**		**TOTAL QUARTZ DIESEL**
	Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol / LPG engines**	**Oils specifically for diesel engines**
Germany	**9000 5W-40 9000 5W-30 (*)**	**7000 10W-40 9000 0W-40**	**7000 10W-40**
Austria		**7000 10W-40**	
Belgium		**7000 10W-40 9000 0W-40**	
Bulgaria		**7000 10W-40 7000 15W-50**	
Cyprus			**7000 10W-40 7000 15W-50**
Croatia		**7000 10W-40**	**7000 10W-40**
Denmark		**7000 10W-40 9000 0W-40**	
Spain		**7000 10W-40 7000 15W-50**	**7000 10W-40 7000 15W-50**
Finland		**7000 10W-40 9000 0W-40**	**7000 10W-40**
Great Britain		**7000 10W-40**	

LUBRICANTS – TOTAL recommended oils

EUROPE (continued)

(*) = Blended oils for all engines, permitting fuel economy	**TOTAL QUARTZ**		**TOTAL QUARTZ DIESEL**
	Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol / LPG engines**	**Oils specifically for diesel engines**
Greece	**9000 5W-40** **9000 5W-30 (*)**	**7000 10W-40** **7000 15W-40**	**7000 10W-40** **7000 15W-40**
Holland		**7000 10W-40**	**7000 10W-40**
Hungary		**9000 0W-40**	
Italy		**7000 10W-40**	
Latvia		**7000 10W-40**	
Lithuania		**9000 0W-40**	
Macedonia		**7000 10W-40**	
Malta		**7000 10W-40** **7000 15W-40**	**7000 10W-40** **7000 15W-40**
Norway		**7000 10W-40** **9000 0W-40**	**7000 10W-40**
Poland		**7000 10W-40**	
Portugal			
Slovak Republic			

LUBRICANTS – TOTAL recommended oils

EUROPE (continued)

(*) = Blended oils for all engines, permitting fuel economy	**TOTAL QUARTZ**		**TOTAL QUARTZ DIESEL**
	Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol / LPG engines**	**Oils specifically for diesel engines**
Czech Republic	**9000 5W-40** **9000 5W-30 (*)**	**7000 10W-40** **9000 0W-40**	**7000 10W-40**
Romania		**7000 10W-40** **7000 15W-40**	**7000 10W-40** **7000 15W-40**
Russia		**7000 10W-40** **9000 0W-40**	**7000 10W-40**
Slovenia		**7000 10W-40**	
Sweden		**7000 10W-40** **9000 0W-40**	
Switzerland		**7000 10W-40**	
Turkey		**7000 10W-40** **7000 15W-40** **9000 0W-40**	**7000 10W-40** **7000 15W-40**
Ukraine		**7000 10W-40** **9000 0W-40**	**7000 10W-40**

LUBRICANTS – TOTAL recommended oils

		TOTAL QUARTZ		TOTAL QUARTZ DIESEL
		Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol / LPG engines**	**Oils specifically for diesel engines**
Australia New Zealand	**OCEANIA**	**9000 5W-40**	**7000 10W-40**	**7000 10W-40**
Angola - Ivory Coast Egypt - Ecuador - Gabon Madagascar - Morocco Dominican Republic Senegal - Tunisia	**AFRICA**	**9000 5W-40**	**7000 15W-50**	**7000 15W-50**
Argentina - Brazil - Chile Colombia - Cuba Guatemala- Paraguay Peru - El Salvador Uruguay	**SOUTH AMERICA**	**9000 5W-40**	**7000 15W-50**	**7000 15W-50**

LUBRICANTS – TOTAL recommended oils

		TOTAL QUARTZ		TOTAL QUARTZ DIESEL
		Blended oils for all engines	Oils specifically for petrol and dual-fuel petrol / LPG engines	Oils specifically for diesel engines
China	SOUTH & EAST ASIA	9000 5W-40	7000 10W-40 7000 15W-50	7000 15W-50
South Korea			7000 10W-40	
Hong Kong - India Indonesia			7000 15W-50	
Japan			7000 10W-40 7000 15W-50	
Malaysia			7000 15W-50	
Singapore				
Taiwan			7000 10W-40 7000 15W-50	
Thaïland			7000 15W-50	
Vietnam				

LUBRICANTS – TOTAL recommended oils

		TOTAL QUARTZ		TOTAL QUARTZ DIESEL
		Blended oils for all engines	**Oils specifically for petrol and dual-fuel petrol / LPG engines**	**Oils specifically for diesel engines**
Saudi Arabia Bahrain Dubai United Arab Emirates Israel Jordan Kuwaït Lebanon Qatar Yemen	**MIDDLE EAST**	**9000 5W-40**	**7000 15W-50**	**7000 15W-50**

LUBRICANTS – TOTAL recommended oils		
Gearbox oils		
Manual gearbox	Europe Overseas France Asia	TOTAL TRANSMISSION (new formula) Norms S.A.E 75W-80
Automatic gearbox MB3	All countries	TOTAL FLUIDE ATX ou TOTAL FLUIDE AT 42. Special oil distributed by CITROEN (Part No. : 9730 94).
Automatic gearbox 4 HP 14 et 4 HP 18		TOTAL FLUIDE AT 42 ou Special oil distributed by CITROEN (Part No. : 9730 94).
Automatic gearbox 4 HP 20 et AL4		Special oil distributed by CITROEN (Part No. : 9736 22).
Transfer box and differential		TOTAL TRANSMISSION X 4
C MATIC gearbox		TOTAL FLUIDE T
Oils for power-assisted steering		
Power-assisted steering	All countries	TOTAL FLUIDE ATX

LUBRICANTS – TOTAL recommended oils

Liquide de refroidissement moteur

		Packs	CITROEN reference	
			GLYSANTIN G 33	REVCOGEL 2000
All countries	CITROEN Fluid Protection : - 35°C	2 litres	**9979 70**	**9979 72**
		5 litres	**9979 71**	**9979 73**
		20 litres	**9979 76**	**9979 74**
		210 litres	**9979 77**	**9979 75**

Synthetic brake fluid

		Packs	CITROEN reference
All countries	CITROEN Fluid	0.5 litre	**9979 05**
		1 litre	**9979 06**
		5 litres	**9979 07**

CITROEN hydraulic circuit fluid

All countries	Orange-coloured synthetic fluid, for HYDRACTIVE 3 suspension and for steering		
	TOTAL LDS FLUID	**Packs**	**CITROEN reference**
		1 litre	**9979.69**
	Hydraulic circuit rinsing fluid – green colour		
	TOTAL HYDRAURINCAGE		

LUBRICANTS – TOTAL recommended oils

Wash/wipe fluid				
		CITROEN reference		
All countries	Concentrated : 250 ml	**9980 33**	**ZC 9875 953 U**	**9980 56**
	Liquid ready to use: 1 litre	**9980 06**	**ZC 9875 784 U**	
	Liquid ready to use: 5 litres	**9980 05**	**ZC 9885 077 U**	**ZC 9875 279 U**

Grease		
All countries		**Norms NLGI (1)**
	TOTAL MULTIS EP2	**2**
	TOTAL MULTIS COMPLEX EP2	**2**
	TOTAL MULTIS N4128	**1**
	TOTAL SMALL MECHANISMS	

(1) NLGI = National Lubrificating Grease Institute.

ENGINE OIL CONSUMPTION

I - Oil consumption depends on :

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

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

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

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

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

DO NOT WORK BELOW THESE VALUES.

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

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

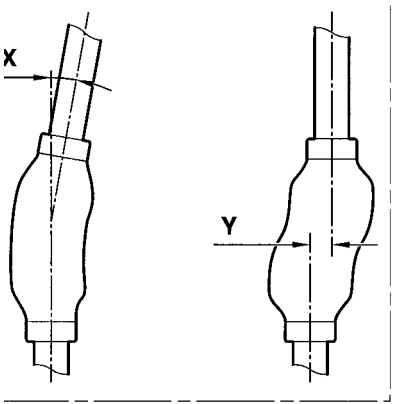
ENGINE SPECIFICATIONS

	Petrol			
	Engines : 6FZ - RFN -LZ - XFX			
	All Types			
	1.8i 16V	2.0i 16V	2.0i Hpi	3.0i V6
Engine type	**6FZ**	**RFN**	**RLZ**	**XFX**
Cubic capacity (cc)	1749	1997	1998	2946
Bore / Stroke	82.7/81.4	85/88	85/88	87/82.6
Compression ratio	10.8/1	10.8/1	11.4/1	10.9/1
Power ISO or EEC KW - rpm	85-5500	99-6000	103-5500	152-6000
Power DIN (HP - rpm)	117-5500	136-6000	143-5500	21-6000
Torque ISO or EEC (m.daN - rpm)	16-4000	19-4100	19.2-4250	28.5-3750
Torque DIN (mkg-rpm)	16.5-4000	19.8-4100	20-4250	29.7-3750
Max. speed (rpm)				

ENGINE SPECIFICATIONS			
	Diesel		
	Engines : RHY - RHZ - 4HX		
	All Types		
	2.0 HDi		2.2 HDi
Engine type	**RHY**	**RHZ**	**4HX**
Cubic capacity (cc)	1997		2179
Bore / Stroke	85/88		85/96
Compression ratio	17.6/1		18/1
Power ISO or EEC KW - rpm	66-4000	80-4000	100-4000
Power DIN (HP - rpm)	90-4000	110-4000	13.8-4000
Torque ISO or EEC (m.daN - rpm)	20.5-1900	25-1750	31.5-2000
Torque DIN (mkg-rpm)	24.1-1900	26-1750	32.8-2000
Max. speed (rpm)	5300	5300	

ENGINE SPECIFICATIONS

Engines : 6FZ-RFN-RLZ



B1BPWMD

Compulsory engine plate :

"a" Engine legislation type.

"b" Component reference.

"c" Factory serial no.

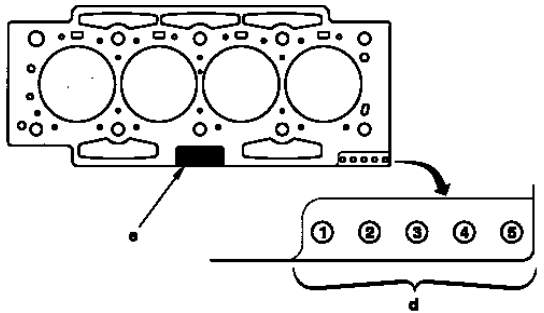
CYLINDER HEAD

Engines : 6FZ-RFN-RLZ

Cylinder head gasket identification

	Nominal dimension		Repair dimension	
	6FZ	RFN-RLZ		
Marking zone "d"	4.5	1.4	2-4-5	
Marking zone "e"			R1	R2
Gasket thickness			1.1 mm	1.4 mm
Supplier	MEILLOR			

Multilayer metallic cylinder head gasket.



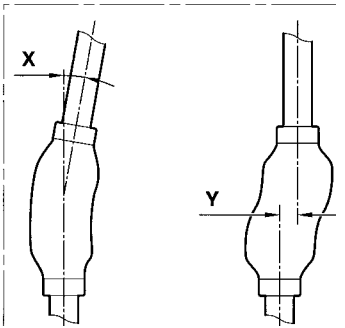
(d) Marking zone
(e) Marking zone

B1DP183D

CYLINDER HEAD

Engines : 6FZ - RFN - RLZ

Cylinder head tightening (m.daN)



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

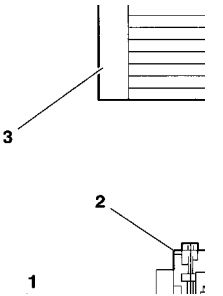
B1BP05BC

6FZ - RFN - RLZ	
- Pre-tightening	**1.5 ± 0.1**
- Tightening	**5 ± 0.1**
- Untightening	**360° ± 2°**
- Tightening	**2 ± 0.2**
- Angular tightening	**285° ± 5°**

(in the order 1 to 10)

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

Cylinder head bolts



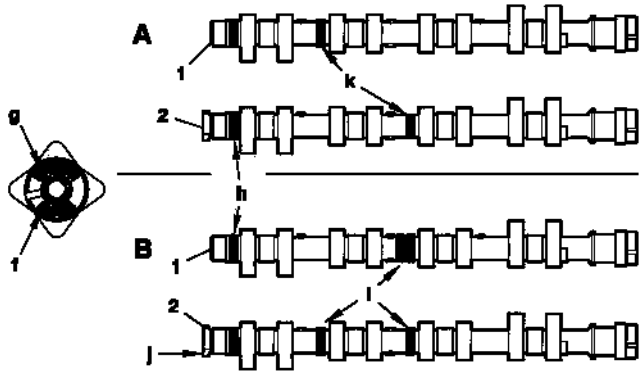
A = Washer thickness : **4 ± 0.2 mm.**
X = Length under heads of the new bolts = **144.5 ± 0.5 mm.**

B1DP16FC

X = MAXI reusable
6FZ - RFN - RLZ
X= 147 mm

CYLINDER HEAD (Continued)

Engines : 6FZ - RFN - RLZ



Camshafts

The camshafts are identified by the following markings :

- Paint rings.
- Cold stamp at the camshaft extremity *(Distribution end)*.

(1) Inlet camshaft.
(2) Exhaust camshaft.

"j" Camshaft position sensor target.
"h" Paint rings : repair reference.

Valve clearances when cold :
Hydraulic followers with clearance

B1EP15YD

	Inlet camshaft		Exhaust camshaft	
	6FZ	RFN-RLZ	6FZ	RFN-RLZ
Marking at «g»	9630426980	9624727280	9630426680	9624728080
Lifting law marking at «f»	D1269	D1149	D5016	D1148
Paint rings	Blue at «k»		Green at «i»	

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

	Engines : 6FZ-RFN-RLZ-RHY-RHZ-4HX					
Crankshaft	**Petrol**			**Diesel**		
	6FZ	**RFN**	**RLZ**	**RHY**	**RHZ**	**4HX**
Bearing cap screws. - Pre-tightening - Angular tightening	**2 ± 0.1** **60° ± 6°**			**2.5 ± 0.2** **60°**		
Con-rod cap screws. - Tightening - Untightening - Tightening - Angular tightening	**2.3 ± 0.2** **46° +2° -4°**					**1** **180°** **2.3 ± 0.1** **46° ± 5°**
Con-rod nuts. - Pre-tightening - Angular tightening				**2 ± 0.2** **70°**		
Accessories drive pulley - Tightening - Angular tightening	**2.1 ± 0.1**			**4 ± 0.4** **51°**		**7 ± 0.25** **60°**
Accessories drive pulley hub - Pre-tightening - Angular tightening *(Sintered washer)* Angular tightening *(Steel washer)*	**4 ± 0.4** **40° ± 4°** **53° ± 5°**					

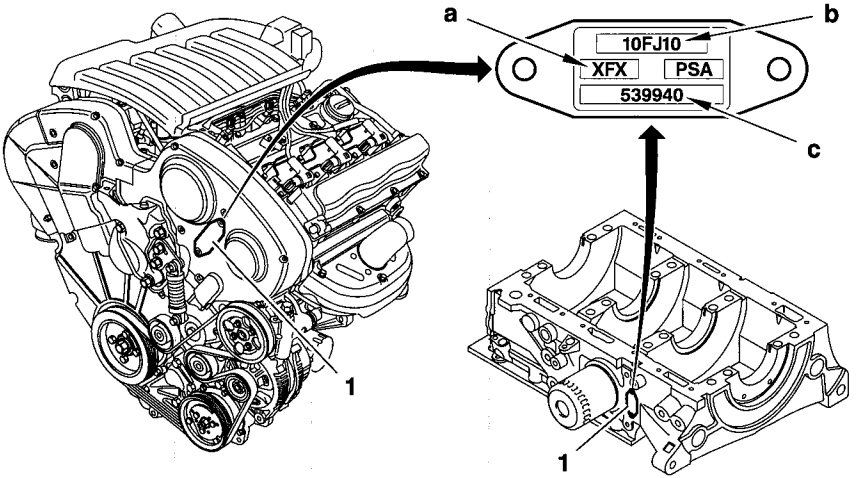
SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)						
	Engines : 6FZ-RFN-RLZ-RHY-RHZ-4HX					
Cylinder block	**Petrol**			**Diesel**		
	6FZ	**RFN**	**RJZ**	**RHY**	**RHZ**	**4HX**
Piston skirt spray jet				**1 ± 0.1**		
Sump - Pre-tightening - Tightening	**0.8 ± 0.2**			**1.6 ± 0.2**		**1** **1.6 ± 0.3**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

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

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

ENGINE SPECIFICATIONS

Engine : XFX



B1BP27CD

Compusory engine plate :

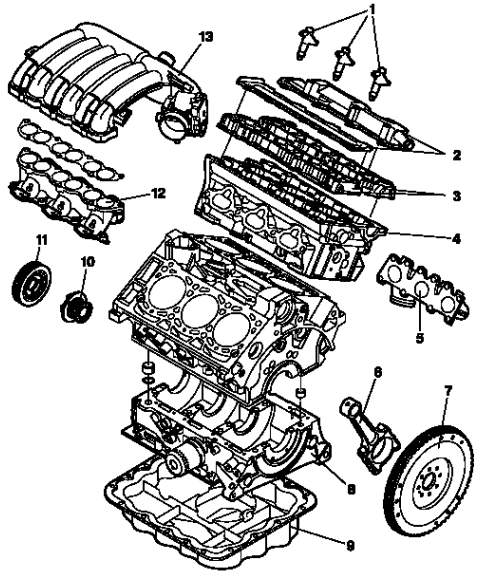
(1) Identification plate

"a" Engine legislation type.

"b" Component reference.

"c" Factory serial no.

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

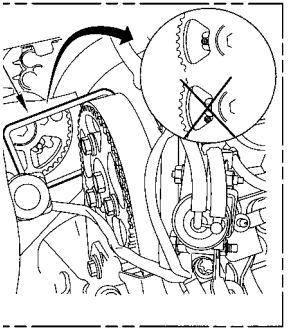


B1BP27DP

Engine : XFX

(1) Pencil type ignition coil	**0.8 ± 0.3.**
(2) Valve cover	
- Pre-tightening	**0.5 ± 0.1**
- Tightening	**1 ± 0.1**
(3) Camshaft bearing cap cover	
- Pre-tightening	**0.2 ± 0.1**
- Tightening	**1 ± 0.1**
(4) Cylinder head	
- Pre-tightening	**2 ± 0.2**
- Untightening	**YES**
- Tightening	**1.5 ± 0.2**
- Angular tightening	**225°**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

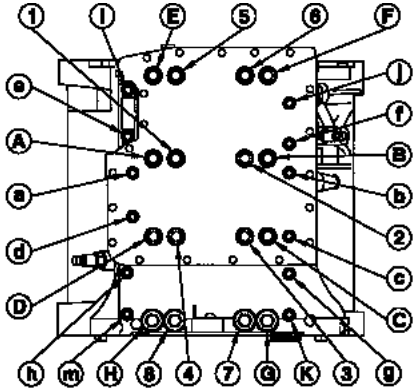


B1JP02LD

Engine : XFX

(5) Exhaust manifold	
(Equipped with a new seal).	
- Pre-tightening	**1 ± 0.1**
- Tightening	**3 ± 0.3**
(6) Con-rod caps	
- Tightening	**2 ± 0.2**
- Angular tightening	**74°**
(7) Flywheel.	
- Tightening	**2 ± 0.2**
- Angular tightening	**60°**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)



B1BP1GYD

Engine : XFX

(8) Crankshaft bearings

Carry out the following operations :
- Clean the threads of the screws with a brush.
- Refit the screws with a coating of grease, on threads and under heads **"MOLYKOTE G RAPID PLUS"**.
- Check that the 8 centring pins are in place.

Tightening :

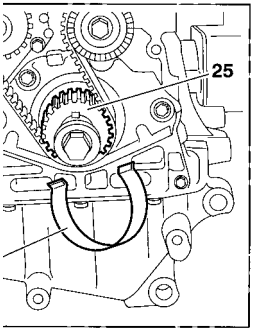
- Pre-tightening	**M11** to **3 ± 0.3** *(Order from **1** to **8**)*
- Pre-tightening	**M8** to **1 ± 0.1** *(Orer from **A** to **H**)*
- Tightening	**M6** to **1 ± 0.1** *(Order from **a to m**)*
- Untightening	**M11** to **M8**

Proceed screw by screw :

- Tightening	**M11** to **3 ± 0.3** *(order from **1** to **8**)*, then One angular tightening of **180°**
- Tightening	**M8 to 1 ± 0,1** *(Order from **A** to **H**)*, then One angular tightening of **180°**

Max. length under heads of the screws **M11 = 131.5 mm**.
Max. length under heads of the screws **M8 = 119 mm**.

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

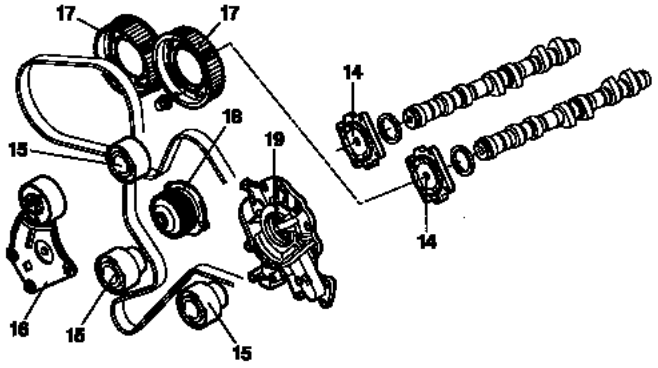


B1BP1GZD

Engine : XFX

(9) Oil sump.	
- Pre-tightening	**0.5 ± 0.1**
- Tightening	**0.8 ± 0.1**
(10) Crankshaft hub.	
- Tightening	**4 ± 0.4**
- Angular tightening	**80°**
(11) Crankshaft pulley	**2.5 ± 0.6**
(12) Inlet distibutor *(Equipped with a new seal)*	
- Pre-tightening	**0.4 ± 0.1**
- Tightening	**0.8 ± 0.1**
(13) Air inlet manifold.	
- Pre-tightening	**0.4 ± 0.1**
- Tightening	**0.8 ± 0.1**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)

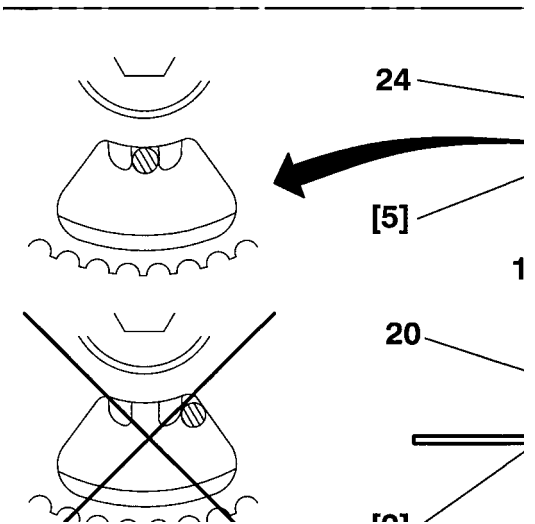


B1EP151D

Engine : XFX

(14) Camshaft hubs :	
1st method *(Advised method).*	
- Tightening	**2 ± 0.2**
- Angular tightening	**57°**
2nd method	
- Tightening	**8 ± 0.8**
(15) Guide roller	
(16) Timing belt tensioner roller	**8 ± 1.2**
(17) Camshaft pulley	**8 ± 1.2**
(18) Water pump.	
- Pre-tightening	**0.5 ± 0.1**
- Tightening	**0.8 ± 0.1**

SPECIAL FEATURES : TIGHTENING TORQUES (m.daN)



B1FP04KC

Engine : XFX

In the order indicated

(19) Oil pump.	
- Pre-tightening	**0.5 ± 0.1**
- Tightening	**0.8 ± 0.1**

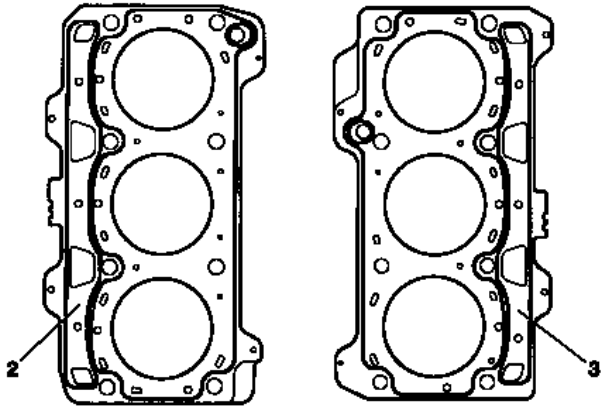
CYLINDER HEAD

Engine : XFX

Cylinder head gasket identification

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

Multilayer metallic cylinder head seal.



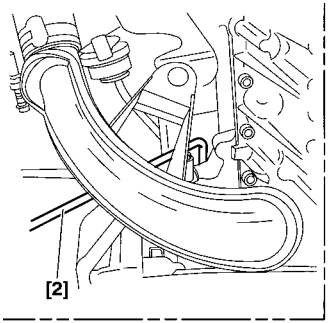
(1) LH cylinder head gasket.
(2) RH cylinder head gasket.

B1DP18YD

CYLINDER HEAD

Engine : XFX

Cylinder head tightening (m.daN)



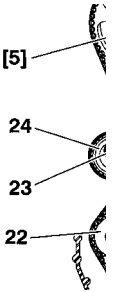
B1DP18ZD

In the order indicated

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

Cylinder head bolts

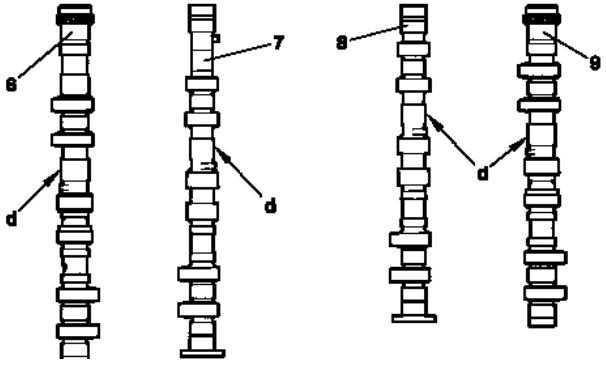
B1DP09VC



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

X = MAXIMUM reusable length
XFX
149.5 mm.

CYLINDER HEAD



B1EP150D

Engine : XFX

Camshafts

Marking of the camshafts at «d».

(6) Exhaust camshaft (front cylinder head)	**A 389**
(7) Inlet camshaft (front cylinder head)	**A 423**
(8) Inlet camshaft (rear cylinder head)	**E 422**
(9) Exhaust camshaft (rear cylinder head)	**E 388**

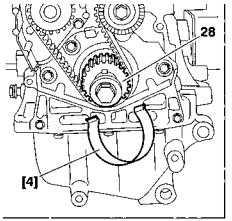
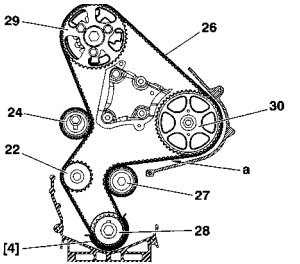
Valve clearances when cold.

Hydraulic followers with automatic clearance adjustment.

ENGINE SPECIFICATION

Engines : RHY - RHZ - 4HX

Engine identification

Engines : RHY-RHZ	Engine : 4HX	References
 B1CP046D	 B1CP07YD	Compulsory engine plate : **"a"** Engine legislative type. **"b"** Component reference. **"c"** Factory serial no.

CYLINDER HEAD

Engines : RHZ - RHY

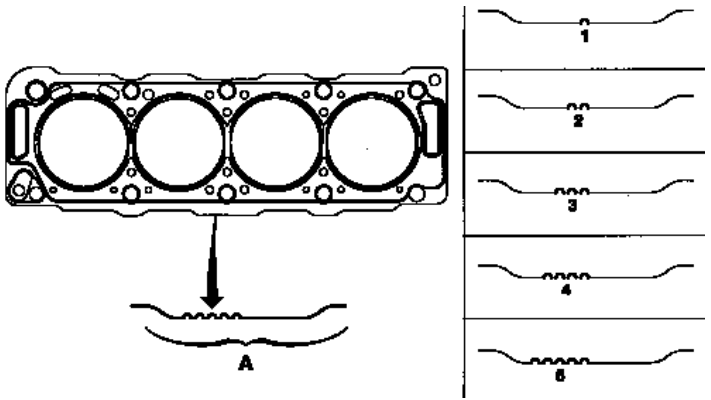
Cylinder head gasket identification

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

Cylinder head.
- New cylinder head height = **133 mm.**
- Maximum permitted deformation = **0.03 mm.**

Cylinder head gasket.
Multilayer cylinder head gasket.
Select seal thickness as a function of the piston stand-proud.

Hydraulic followers.
The hydraulic followers have automatic clearance adjustment.



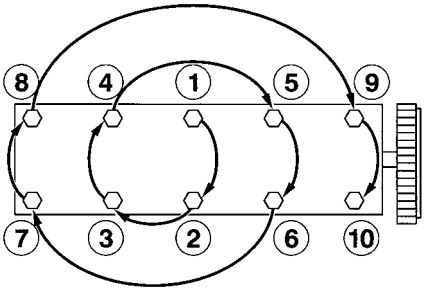
B1DP15AD

CYLINDER HEAD

Engines : RHY - RHZ

Cylinder head gasket identification

Cylinder head tightening (m.daN)



B1DP05BC

ESSENTIAL :

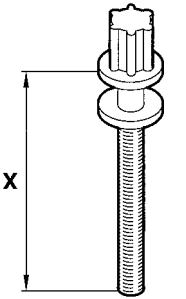
Tighten screw by screw in the order indicated.

Pre-tightening	**2 ± 0.2**
Tightening	**6 ± 0.6**
Angular tightening	**220° ± 5°**

(Order from **1 to 10**)

B1DP13PC B1DP15EC

Cylinder head bolts



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

X = MAXIMUM reusable length

RHY - RHZ

X = 133.3 mm

CYLINDER HEAD

Engine : 4HX

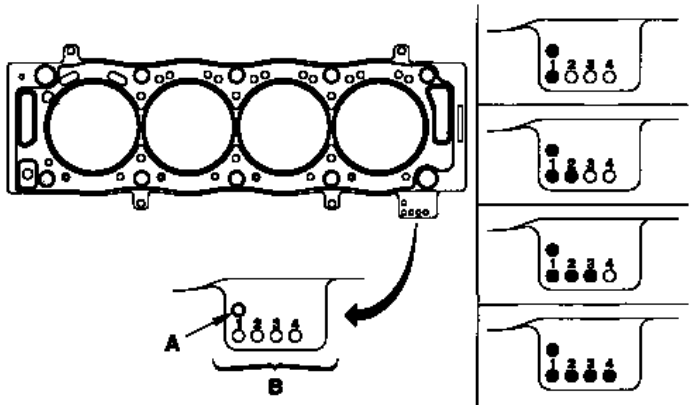
Cylinder head gasket identification

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

Cylinder head.
- New cylinder head height = **133 mm**.
- Maximum permitted deformation = **0,03 mm**.

Cylinder head gasket.
Multilayer cylinder head gasket.
Select seal thickness as a function of the piston stand-proud.

Hydraulic followers.
The hydraulic followers have automatic clearance adjustment.



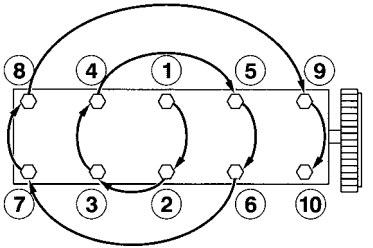
B1DP18XD

CYLINDER HEAD (Continued)

Engine : 4HX

Cylinder head gasket identification

Cylinder head tightening (m.daN)



B1DP05BC

4HX

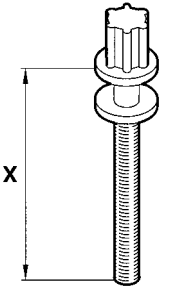
ESSENTIAL : Tighten screw by screw and in the order indicated.

Pre-tightening	**2 ± 0.2**	*(Order 1 to 10)*
Tightening	**6 ± 0.6**	*(Order 1 to 10)*
Untightening	**360°**	***(Order 10 to 1)***
Pre-tightening	**2 ± 0.2**	*(Order 1 to 10)*
Tightening	**6 ± 0.6**	*(Order 1 to 10)*
Angular tightening	**220°±5°**	*(Order 1 to 10)*

(In 2 attempts max.)

B1DP15EC

Cylinder head bolts



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

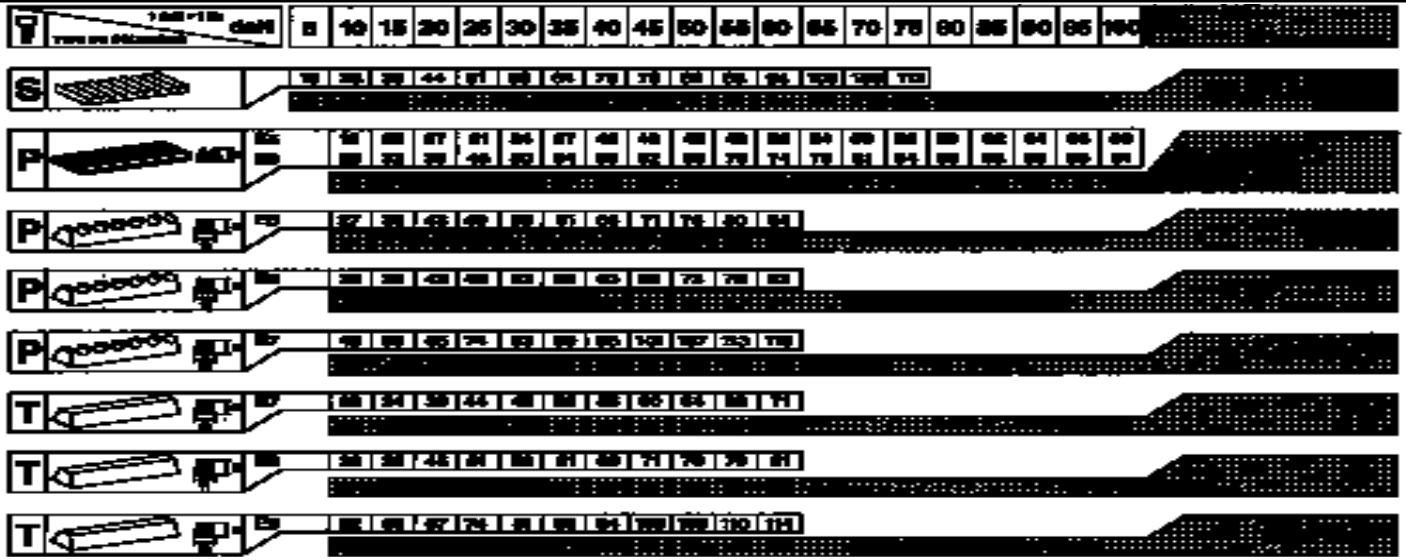
X = MAXIMUM reusable length

4HX

X = 134.5 mm

BELT TENSION/SEEM UNITS CORRESPONDENCE TABLE

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



B1EP135D

AUXILIARY EQUIPMENT DRIVE BELT

Engines : all types Petrol and Diesel

TOOLS

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

WARNING : If using tool 4099-T (C.TRONIC 105), refer to the correspondence table on page 59.

ESSENTIAL:

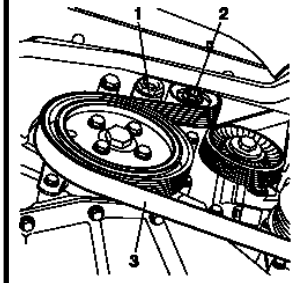
Before refitting the auxiliary equipment drive belt, check that:

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

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

AUXILIARY EQUIPMENT DRIVE BELT

Engines : 6FZ-RFN-RLZ



B1BP23PC

TOOLS

[1] Pliers for removing plastic pegs **7504-T**

Remove the belt.

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

WARNING: the screw **(2)** has a left hand thread.
- Remove the belt **(3)**, while keeping the tensioner roller **(1)** tensioned.

Refit the belt.

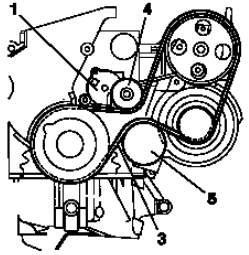
- Compress the tensioner roller **(1).**
- Fit the belt **(3)**.
- Release the tensioner roller **(1).**

Tightening torques m.daN.

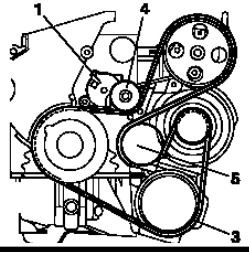
Tensioner roller screw **(4)**	**2 ± 0.2**
Guide roller screw **(5)**	**3.5 ± 0.3**

B1BP23QC B1BP23RC

Without Aircon

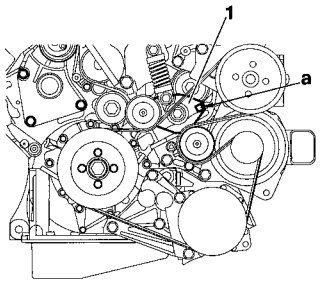


With Aircon



AUXILIARY EQUIPMENT DRIVE BELT

Engine : XFX



B1BP27EC

Tools

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

Remove.

Remove the engine cover.

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

Remove the auxiliary equipment drive belt.

ESSENTIAL : Check that the guide rollers are turning freely.

(No play and no tightness).

Refit.

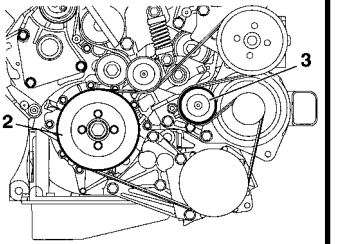
Refit the auxiliary equipment drive belt:

Respect the following order of assembly:

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

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

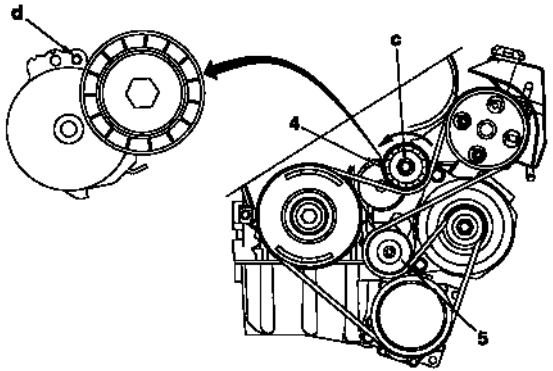
ESSENTIAL : Make sure that the belt is correctly positioned in the grooves of the various pulleys.



B1BP27FC

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHY - RHZ



B1BP1YKD

Without air conditioning

TOOLS

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

Remove
Re-use of belt

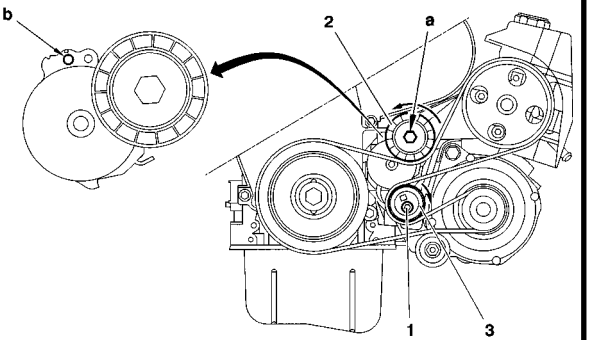
WARNING : Mark the direction the belt was fitted in case of re-use of the same belt.
- Compress the tensioner roller **(2)** by action at **«a»** *(in anti-clockwise direction)*, tool **[4]**.
- Keep the tensioner roller **(2)** compressed and remove the belt.

No re-use of belt.

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

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHY - RHZ



B1BP1YMD

Without air conditioning (continued)

Refit.
Re-used belt.

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

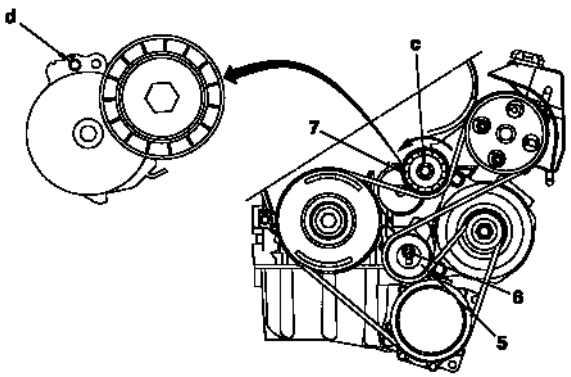
WARNING : Respect the direction in which the belt is fitted.
- Remove the tool **[4].**

New belt.

- Refit the belt.
- Turn the eccentric roller **(3)**, tool **[1]** *(clockwise)* to free the tool **[2]** from its pegging at **«b»**.
- Hold the eccentric roller **(3)**, tool **[1]**, and tighten the screw **(1)** to **4.3 ± 0.4 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

Engines : RHY - RHZ



B1BP1YLD

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**

Remove

Re-use of belt

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

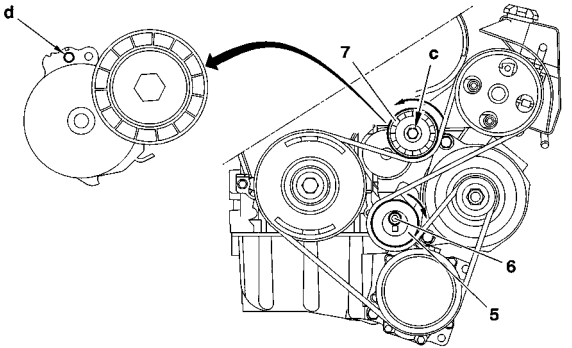
- Compress the tensioner roller **(7)** by moving it at **«c»** *(in anti-clockwise direction)*, tool **[4]**.
- Hold the tensioner roller **(7)** compressed and remove the belt.

No re-use of belt.

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

AUXILIARY EQUIPMENT DRIVE BELT

Engines : RHY - RHZ



B1BP1YND

With air conditioning (continued)

Refit.
Re-used belt.

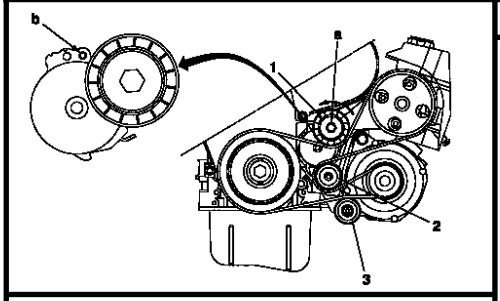
- Compress the tensioner roller **(7)** by action at **«c»** *(in anti-clockwise direction)*, tool **[4]**.
- Refit the belt.

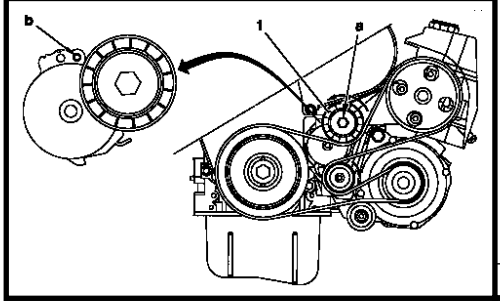
WARNING : Respect the direction in which the belt is fitted.
- Remove the tool **[4].**

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

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HX





Without air conditioning

TOOLS

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

Remove.

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

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

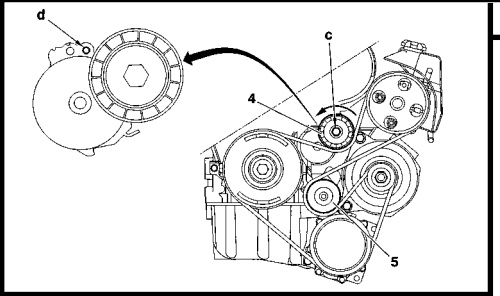
Refit.

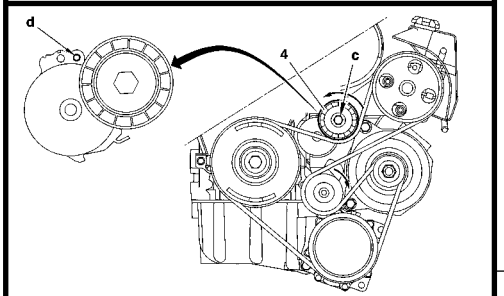
- Refit the auxiliaries drive belt.
- Compress the tensioner roller **(1)** by action at **«a»** *(anti-clockwise)*, using tool **[1]**.
- Remove the tool **[2]** at **«b»**.

B1BP270D | **B1BP272D**

AUXILIARY EQUIPMENT DRIVE BELT

Engine : 4HX





With air conditioning

TOOLS

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

Remove.

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

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

Refit.

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

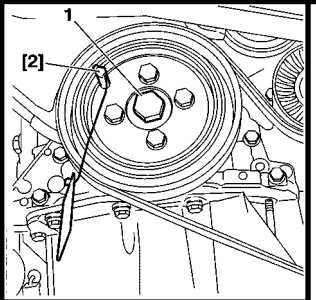
B1BP271D **B1BP273D**

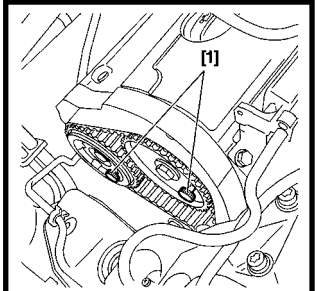
CHECKING AND SETTING THE VALVE TIMING

	Petrol				Diesel		
	EW			ES	DW		
	7	10		9	10		12
	J4		J4D	J4	TD	ATED	TED4
	1.8i 16V	2.0i 16V		3.0i V6	2.0 HDi		2.2 HDi
Engine plate	6FZ	RFN	RLZ	XFX	RHY	RHZ	4HX
CITROËN C5	X	X	X	X	X	X	X
See pages	70 to 73			74 to 79	80 to 84		85 to 90

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ





TOOLS

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

Checking the valve timing.

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

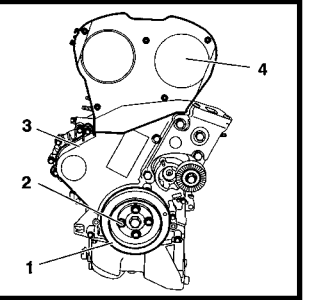
NOTE : The pegs **[1]** should engage without effort.

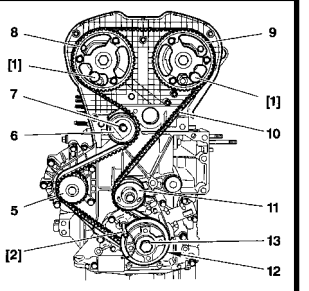
WARNING : If the pegs do not engage without effort, restart the fitting and tensioning of the timing belt (see below).

Setting the valve timing.

Remove.

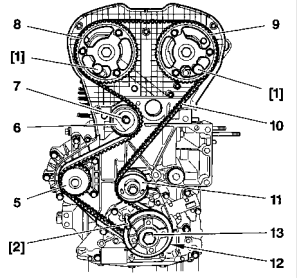
- Remove the screws **(2)**, the pulley **(1)**, upper valve cover **(4)**, lower valve cover **(3)**.
- Turn the engine by the screw **(13)** of the pinion **(12)** to bring it to pegging position.
- Peg the pulleys **(8)** and **(9)** using tools **[1]**.
- Peg the pinion **(12)** using tool **[2]**.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

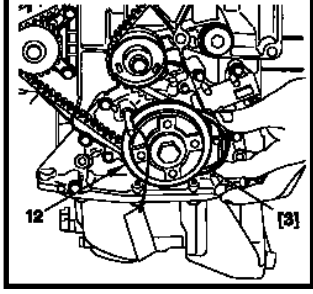




CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ





Refit (continued)

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

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

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

Timing belt.

Adjusting the tension.

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

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

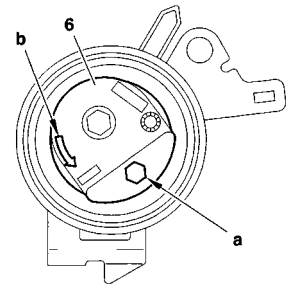
Bring the index **«c»** to its adjusting position **«f»** by turning the tensioner roller **(6)** in the direction of the arrow **«e»**.

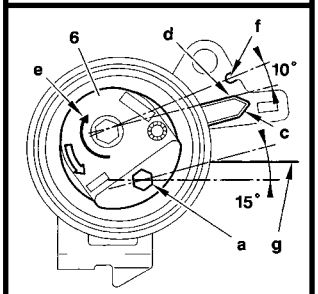
WARNING: The index **«c»** must not stand proud of the notch **«f»** : if it does, restart the timing belt tensioning operation.

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

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ





Adjusting the tension (continued).

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

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

Refit (continued).

- Remove the tools **[1]** et **[2]**.
- Turn the crankshaft **10 times** in the normal direction of rotation.

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

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

Checks.

Timing belt tension.

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

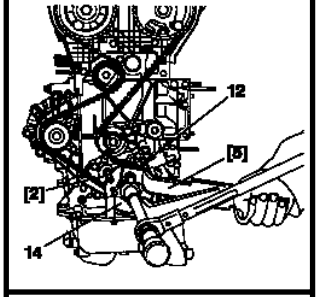
Positioning of the crankshaft.

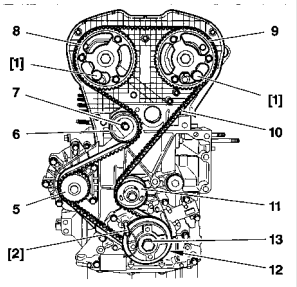
- Fit tool **[2]**.
- As long as it is possible to fit tool **[2]**, continue with the refit operations.

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

CHECKING AND SETTING THE VALVE TIMING

Engines : 6FZ - RFN - RLZ





Checks (continued)

Repositioning the flange.

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

using the tool **[4].**

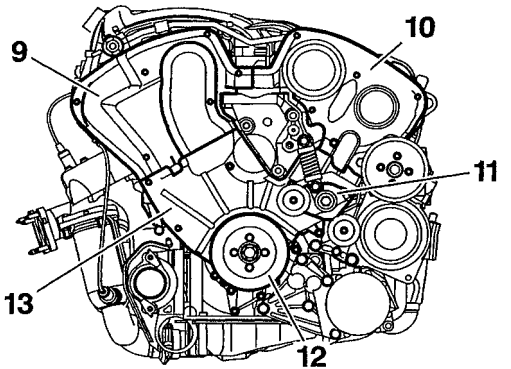
- Remove tools **[1]. [2]** and **[5].**

Refit :

- The lower valve cover **(3)**.
- The upper valve cover **(4)**.
- The crankshaft pulley **(1)**.
- The screws **(2)**.
- Pretighten the screws **(2)** to **1.5 m.daN**.
- Tighten the screws **(2)** to **2.1 ± 0.5 m.daN**.

B1EP14PC | B1BP23XC

CHECKING AND SETTING THE VALVE TIMING



B1BP2BKC

Engine : XFX

TOOLS

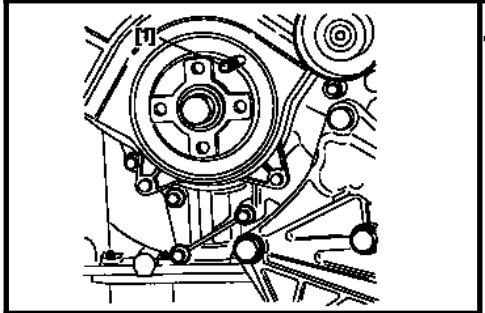
[1] Camshaft setting pegs	**(-).0187.B**
[2] Crankshaft setting peg	**(-).0187.A**
[3] Fuel pressure take-off union	**4192-T**
[4] Belt retaining pin	**(-).0187.J**
[5] Exhaust camshaft hubs immobilising tool	**(-).0187.F**
[6] Inlet camshaft hubs immobilising tool	**(-).0187.F**

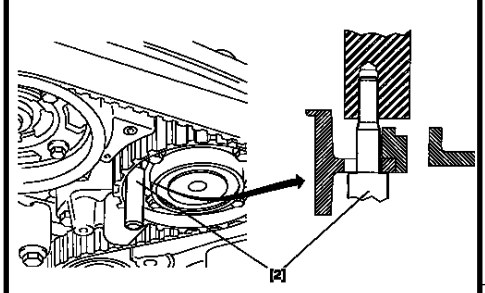
Remove the auxiliaries drive belt *(See corresponding operation).*

Checking the valve timing setting.

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

CHECKING AND SETTING THE VALVE TIMING





Engine : XFX

Checking the valve timing setting (continued).

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

Refit :

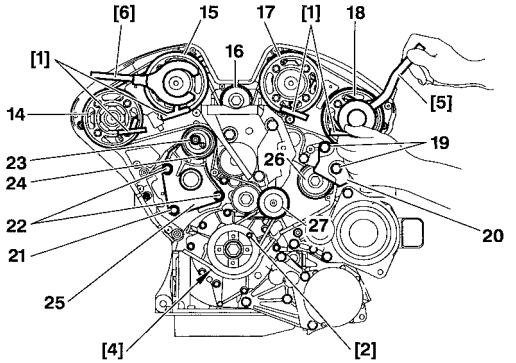
- The lower timing cover **(13)**.
- The upper timing covers **(9)** and **(10)**.
- The crankshaft pulley **(12)**.
- The roller / dynamic tensioner assembly **(11)**.
- The power steering pulley.

- Complete the refitting of components.

- Initialise the ignition injection ECU.

B1EP08TC | B1EP15UD

CHECKING AND SETTING THE VALVE TIMING



B1EP15VD

Engine : XFX

Setting the valve timing

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

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

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

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

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

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

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

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

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

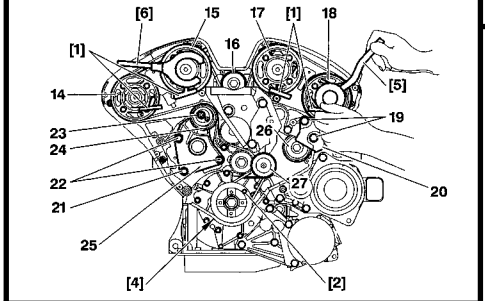
Untighten the screws **(22)** of the panel **(25)**.

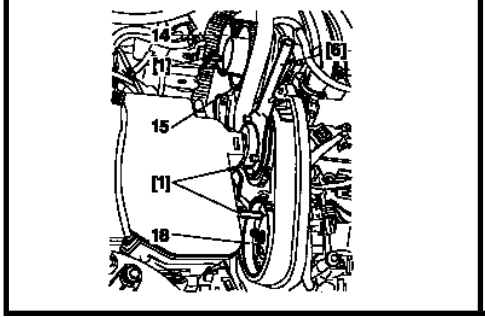
Remove the guide roller **(16)**.

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

- Remove the timing belt.

CHECKING AND SETTING THE VALVE TIMING





Engine : XFX

Setting the valve timing (continued)

Refit.

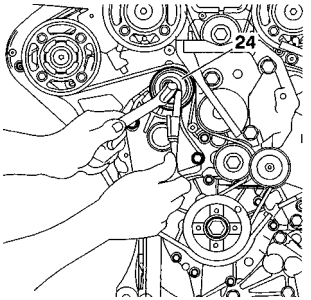
- Check that the camshafts and the crankshaft are correctly pegged.
- Check that the rollers and the water pump pulley are turning freely. (No tightness)
- Loosen the camshaft pulley screws by a **1/4 turn**.
- Make sure that the pulleys are turning freely on the camshaft hub.
- Turn the camshaft pulleys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

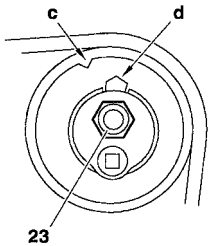
WARNING : Respect the direction of fitting of the belt : facing the timing, the inscriptions on the belt should be readable the correct way up.

- Fit the timing belt on the crankshaft pinion.
- Position the tool **[6].**
- Position the timing belt in the following sequence : *(Belt well tensioned).*
- The roller **(26)**, the pulley **(18)**, the pulley **(17)**,
- Keep the timing belt well tensioned :
- Refit the guide roller **(16)**, **tighten to 8 ± 0.8 m.daN.**
- Position the timing in the following sequence :
- The camshaft pulley **(15)**, the camshaft pulley **(14)**, the tensioner roller **(24)**, the water pump pulley, and the guide roller **(27)**.

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

CHECKING AND SETTING THE VALVE TIMING





Engine : XFX

Setting the valve timing (continued)

Adjusting the timing belt tension.

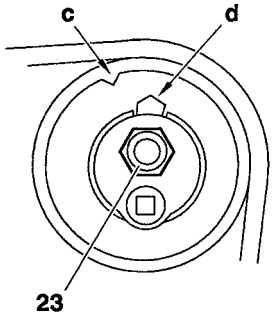
- Pivot the plate **(25)** of the tensioner roller **(24)**, using a spanner *(type FACOM S.161).*
- Engage the screw **(21)** on the plate **(25)**.
- Tighten the screws **(21)** and **(22)**, tighten to **2,5 ± 0,1 m.daN**.
- Position the belt under maximum tension ; pivot the tensioner roller **(24)**,using a spanner *(type FACOM R 161).*
- **Tighten the nut (23) of the tensioner roller (24) , tighten to 1 ± 0,1 m.daN.**
- Check that the camshaft pinion screws are not at the end of slots. *(By loosening one screw).*
- Otherwise, restart the operation of positioning the timing belt.
- Tighten at least **2 screws** per camshaft pulley to **1 ± 0,1 m.daN**.
- Remove the tools **[1]**, **[2]** and **[4]**.
- Rotate the crankshaft **2 turns** in a clockwise direction.

IMPERATIVE : Never turn it back.

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

CHECKING AND SETTING THE VALVE TIMING

Engine : XFX



B1EP15XC

Setting the valve timing (continued)

- Align the marks «c» and «d», without detensioning the timing belt.

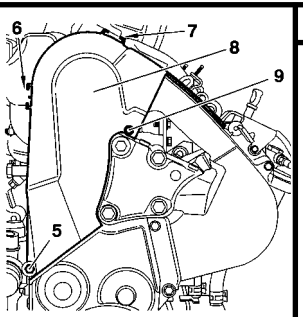
(Failing this, restart the operation of adjusting the belt tension).

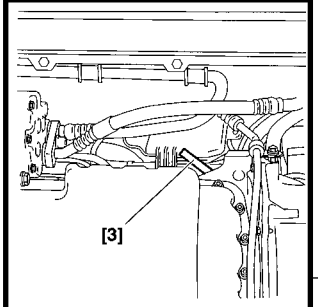
- Hold the tensioner roller **(24)**.
- Tighten the nut **(23)**, tighten to **1 ± 0,1 m.daN**.
- Check the position of the tensioner roller.
- Remove the tools **[1]**, **[2]** and **[4]**.
- Turn the crankshaft **2 rotations** in the direction of engine rotation.

IMPERATIVE : Never turn it back.

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

CHECKING AND SETTING THE VALVE TIMING





Engines : RHY - RHZ

Tools

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

Checking the setting of the valve timing.

Peg :

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

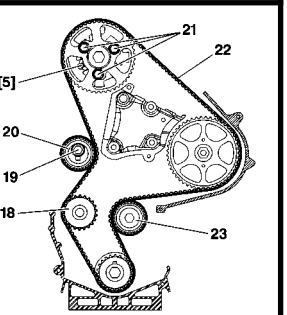
WARNING : On removing screws **(6), (7), (9),** and **(5)** of the timing cover, refit the screw **(5)** equipped with a spacer (thickness : **17 mm).**

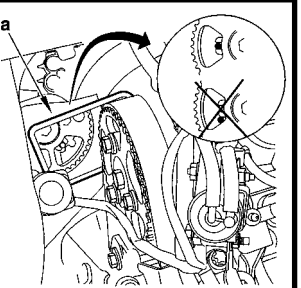
Tighten to 1,5 ± 0,1m.daN.

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

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

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

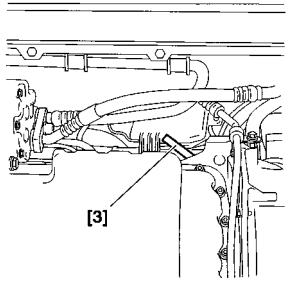


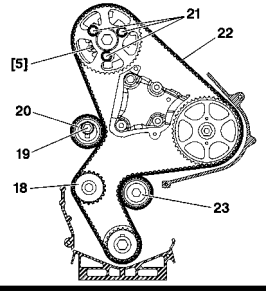


B1EP14AC | B1BP282C | B1EP152D | B1BP1YSC

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHZ





Setting the valve timing.

Peg :

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

Loosen :

- The three screws **(21)**.
- The screw **(19)** of the tensioner roller **(20)**.
- Remove the timing belt **(22)**.

Checks.

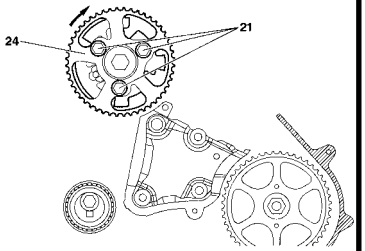
IMPERATIVE : Just before refitting, carry out the checks below:

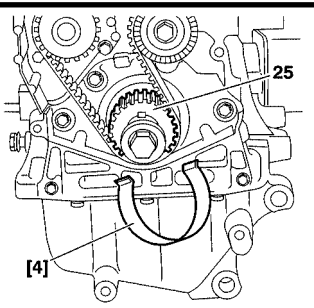
Check that :

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

CHECKING AND SETTING THE VALVE TIMING

Engines : RHY - RHZ





Setting the valve timing (continued).

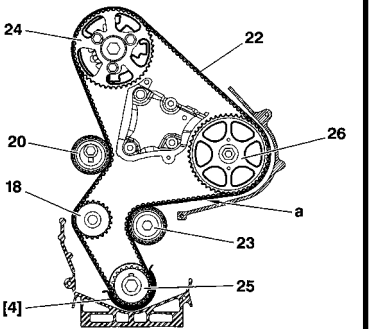
- Retighten the screws **(21)** by hand.
- Turn the pinion **(24)** *(clockwise)* to the bottom of the buttonhole.
- Refit the belt on the crankshaft **(25)**.
- Hold the belt, using tool **[4]**.

Reposition the timing belt, keeping the belt tight at **«a»**,
in the following order :
- Guide roller **(23)**.
- Fuel high pressure pump pinion **(26)**.
- Camshaft pinion **(24)**.
- Water pump pinion **(18)**.
- Tensioner roller **(20)**.

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

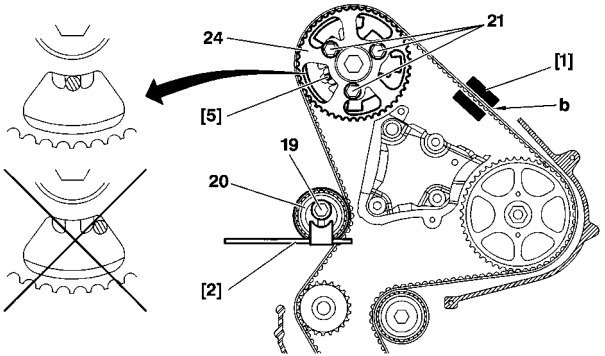
- Remove the tool **[4].**

B1EP153D | B1EP154C



B1EP155D

CHECKING AND SETTING THE VALVE TIMING



B1EP156D

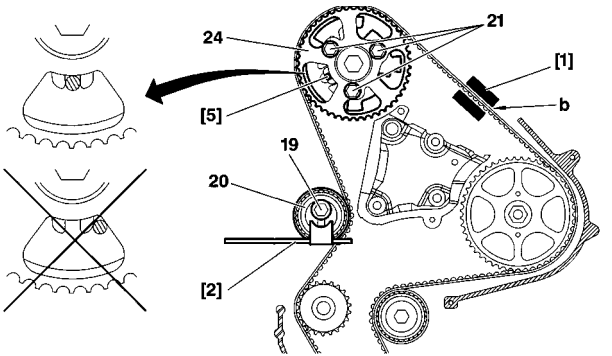
Engines : RHY - RHZ

Setting the valve timing (continued).

- Position tool **[1]** on the belt at **«b»**.
- Turn the roller **(20)** *(anti-clockwise)* using tool **[2]** to attain a tension of :
  98 ± 2 SEEM units.

- Tighten the screw of the roller **(19)**, tighten to **2.5 m.daN.**
- Remove one screw **(21)** from the pinion **(24).**
  (to check that the screws are not against the end of the buttonhole).
- Tighten the screws **(21)** to **2.m daN.**
- Remove tools **[1], [2], [3]** and **[5].**
- Rotate the crankshaft **8 times** *(normal direction of rotation).*
- Fit the tool **[3].**
- Loosen screws **(21).**
- Fit tool **[5].**
- Loosen screw **(19)** *(to free the roller).*
- Fit tool **[1].**
- Turn the roller **(20)** *(anti-clockwise),* tool **[2]**, to attain a tension of :
  54 ± 2 SEEM units.

CHECKING AND SETTING THE VALVE TIMING



B1EP156D

Engines : RHY - RHZ

Setting the valve timing (continued).

Tighten :
- The screw of the roller **(19)** to **2.5 ± 0.2 m.daN.**
- The screws **(21)** to **2. ± 0.2 m.daN.**
- Remove the tool **[1].**
- Refit the tool **[1].**
- Tension value should be :

54 ± 3 SEEM units.

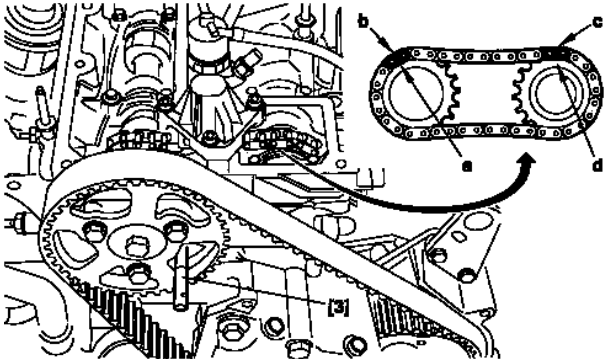
IMPERATIVE : If value is incorrect, restart the operation

- Remove tools **[1], [3]** and **[5].**
- Rotate the crankshaft **2 times** *(normal direction of rotation).*
- Fit the tool **[3].**

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

- Remove the tool **[3].**
- Complete the refitting of components.

CHECKING AND SETTING THE VALVE TIMING



B1EP159D

Engine : 4HX

TOOLS

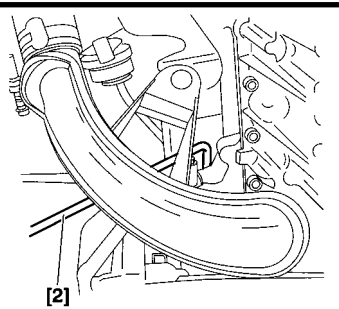
[1] Belt tension measuring instrument	**: 4122-T**
[2] Engine flywheel peg	**: (-).0188.X.**
[3] Tension lever	**: (-).0188.Y.**
[4] Belt compression spring	**: (-).0188.K.**
[5] Camshaft pinion peg	**: (-).0188.M.**
[6] Engine flywheel lock	**: (-).0188.F.**
[7] Set of blocking plugs	**: (-).0188.T.**

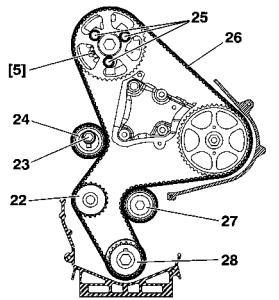
IMPERATIVE : Respect the safety and cleanliness recommendations specific to high pressure diesel injection (HDi) engines.

Checking the setting of the valve timing.

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

CHECKING AND SETTING THE VALVE TIMING





Engine : 4HX

Checking the setting of the valve timing (continued).

IMPERATIVE : If it is impossible to line up the marks on the chain and on the camshaft drive pinions, restart the camshaft setting.
(See operation for removing and refitting camshafts).

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

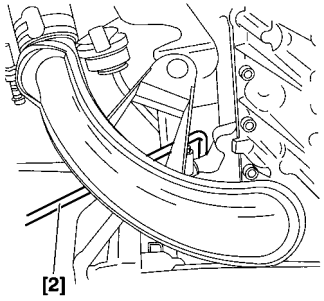
Peg :
- The crankshaft, using tool **[3].**
- The camshaft pinion, using tool **[5]**

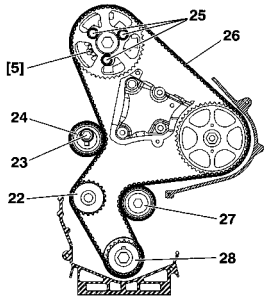
IMPERATIVE : Should it be impossible to peg the camshaft, check that the offset between the camshaft pinion hole and the pegging hole is not more than 1 mm *(use a screw 7 mm in dia.).*

If the offset is more than **1 mm**, restart the setting of the valve timing
(See corresponding operation).
- Remove the tools **[3]** and **[5].**

B1BP298C | B1EP15AD

CHECKING AND SETTING THE VALVE TIMING





Engine : 4HX

Setting the valve timing.

- Turn the crankshaft to bring camshaft to its pegging point.
- Peg the crankshaft, using tool **[3]**.
- Peg the camshaft, using tool **[5]**.

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

Checks.

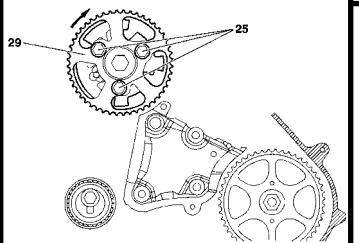
IMPERATIVE : just prior to refitting, carry out the checks below:

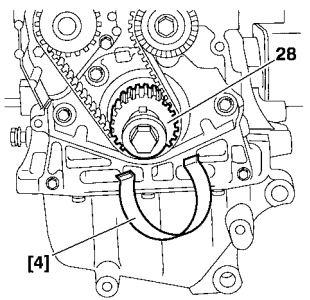
Check :
- That the rollers **(24)** and **(27)** and the water pump **(22)** are turning freely. *(Without play and without tightness).*
- Absence of traces of oil leaks *(Crankshaft and camshaft sealing rings).*
- Absence of leaks of coolant fluid *(Water pump).*

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

B1BP298C | **B1EP15AD**

CHECKING AND SETTING THE VALVE TIMING





Engine : 4HX

Setting the valve timing (continued).

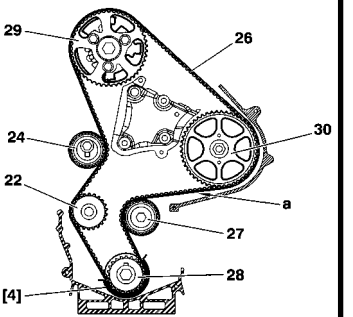
Refit

- Retighten the screws **(25)** by hand.
- Turn the pinion **(29)** *(clockwise)* to the bottom of the buttonhole.
- Refit the belt on the crankshaft **(28)**.
- Hold the belt, using tool **[4]**.
- Reposition the timing belt, keeping the belt tight at **«a»**, in the following order :
- Guide roller **(27).**
- Fuel high pressure pump pinion **(30).**
- Camshaft pinion **(29).**
- Water pump pinion **(22).**
- Tensioner roller **(24).**

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

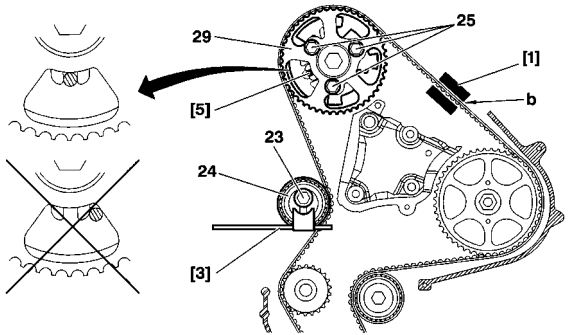
- Remove the tool **[4].**

B1EP15BD | B1EP15CC



B1EP15DD

CHECKING AND SETTING THE VALVE TIMING



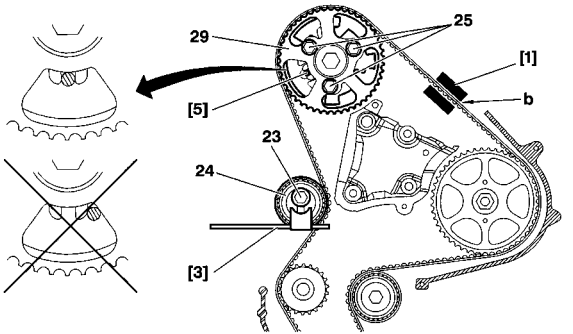
B1EP15ED

Engine : 4HX

Setting the valve timing (continued)

- Position tool **[1]** on the belt at **«b»**.
- Turn the tensioner roller **(24)** *(anti-clockwise)* using tool **[2]** to attain a tension of :
  106 SEEM units.
- Tighten screw **(23)** of the tensioner roller, tighten to **2.5 m.daN**.
- Remove one screw **(25)** from the pinion **(29)**.
  (to check that the screws are not against the end of the buttonhole).
- Tighten the screws **(25)** to **2 m.daN**.
- Remove tools **[1]. [2]. [3]** and **[5]**.
- Rotate the crankshaft **8 times** *(normal direction of rotation).*
- Fit the tool **[3].**
- Loosen screws **(25).**
- Fit tool **[5].**
- Loosen screw **(23)** *(to free the tensioner roller* ***(24).***
- Fit tool **[1]**.
- Turn the tensioner roller **(24)** *(anti-clockwise)*,using tool **[2]**, to attain a tension of :
  51 SEEM units.
- Tighten :
- The screw **(23)** of the tensioner roller **(24)** to **2.5 ± 0.2 m.daN**.
- The screws **(25)** to **2 ± 0.2 m.daN**.

CHECKING AND SETTING THE VALVE TIMING



B1EP15ED

Engine : 4HX

Setting the valve timing (continued)

- Remove the tool **[1].**
- Refit the tool **[1].**
- Tension value should be :
  51 ± 3 SEEM units.

IMPERATIVE : If value is incorrect, restart the operation.

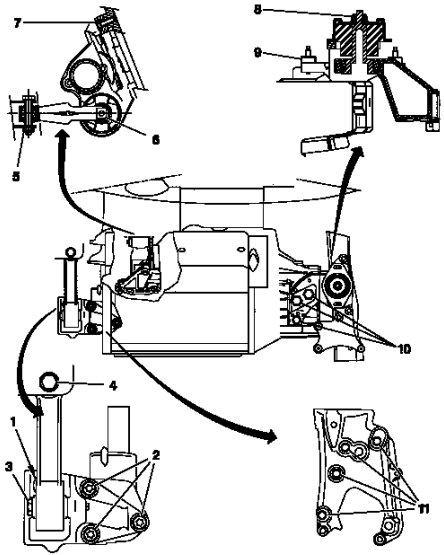
- Remove tools **[1]. [2]** and **[5].**
- Rotate the crankshaft **2 times** *(normal direction of rotation).*
- Fit the tool **[3].**

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

- Remove the tool **[2].**
- Complete the refitting of components.

SPECIAL FEATURES : POWER UNIT SUSPENSION

Engines : 6FZ-RFN- RLZ



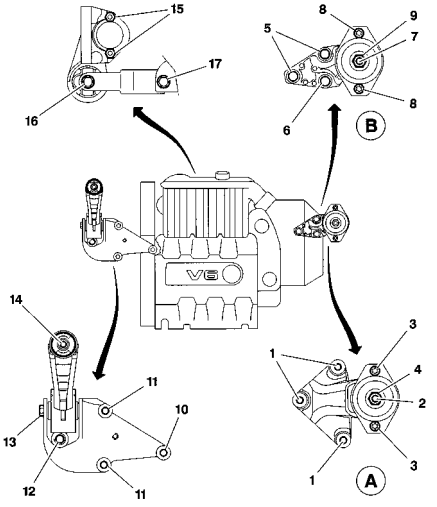
B1BP2BSP

Tightening torques (m.daN)

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

SPECIAL FEATURES : POWER UNIT SUSPENSION

Engine : XFX



B1BP27GP

A - Manual gearbox: (LH mounting):

(1) Bolt	**4.5 ± 0.5**
(2) Pin	**5 ± 0.5**
(3) Bolt	**3 ± 0.3**
(4) Nut	**6.5 ± 0.6**

B - Automatic gearbox:

(5) Bolt	**6 ± 0.6**
(6) Bolt	**5.5 ± 0.5**
(7) Pin	**0.8 ± 0.1**
(8) Bolt	**2.7 ± 0.3**
(9) Nut	**2.8 ± 0.1**

Upper RH engine mounting:

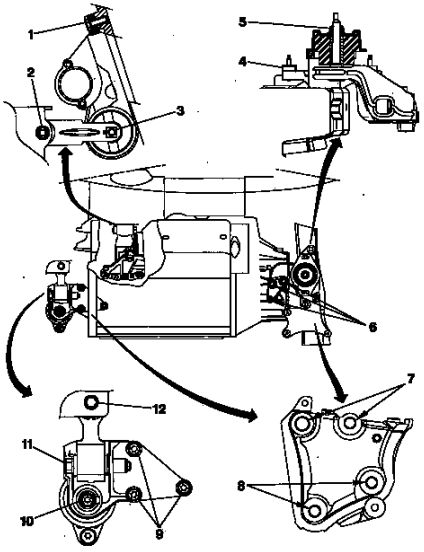
(10) Bolt	**6.1 ± 0.6**
(11) Bolt	**6.1 ± 0.6**
(12) Bolt	**4.5 ± 0.5**
(13) Nut	**5 ± 0.5**
(14) Nut	**5 ± 0.5**

Lower RH engine mounting - Torque reaction rod:

(15) Nut	**1 ± 0.1**
(16) Bolt	**5 ± 0.5**
(17) Bolt	**5 ± 0.5**

SPECIAL FEATURES : POWER UNIT SUSPENSION

Engine : RHY



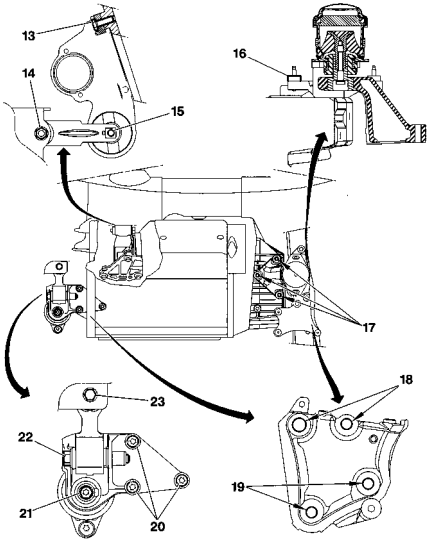
B1BP27KP

Tightening torques (m.daN)

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

SPECIAL FEATURES : POWER UNIT SUSPENSION

Engine : RHZ



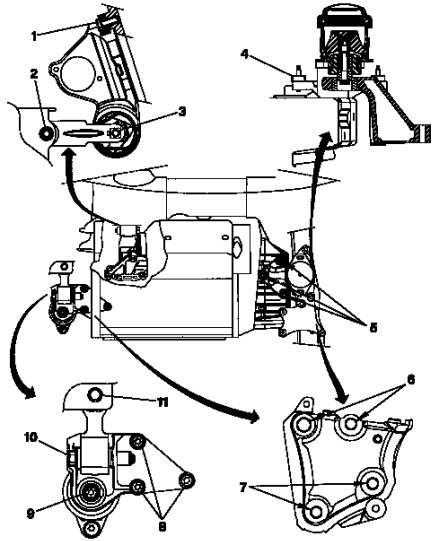
B1BP27LP

Tightening torques (m.daN)

(13)	4.5 ± 0.5
(14)	5 ± 0.5
(15)	5 ± 0.5
(16)	2.7 ± 0.3
(17)	4.5 ± 0.5
(18)	2.1 ± 0.2
(19)	4.5 ± 0.5
(20)	61. ± 0.6
(21)	4.5 ± 0.5
(22)	5 ± 0.5
(23)	5 ± 0.5

SPECIAL FEATURES : POWER UNIT SUSPENSION

Engine : 4HX



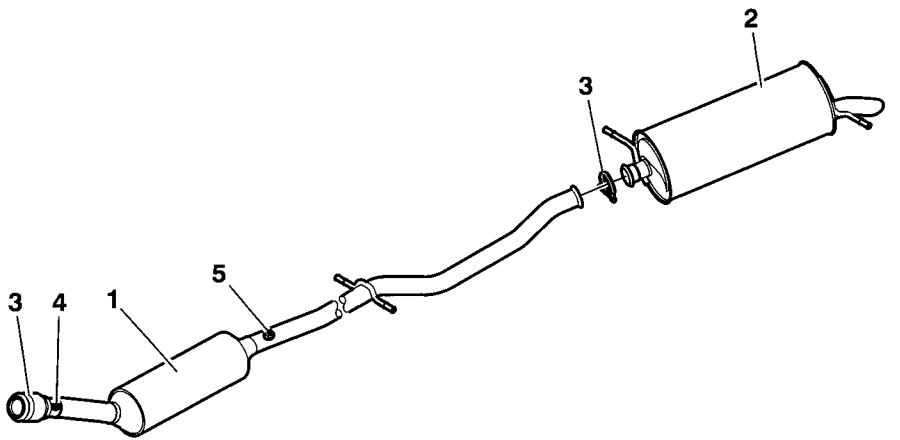
B1BP284P

Tightening torques (m.daN)

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

EXHAUST SPECIFICATIONS

Engines : 6FZ - RFN



B1JP02RD

Tightening torques (m.daN)

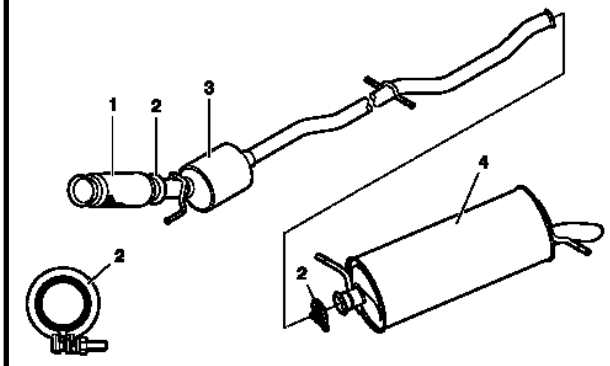
(3) Collars **2.5 ± 0.3**

6FZ	RLZ
(4) Oxygen sensor	
4.5 ± 0.5	**5 ± 1**
(5) Oxygen sensor	
4.5 ± 0.5	**5 ± 1**

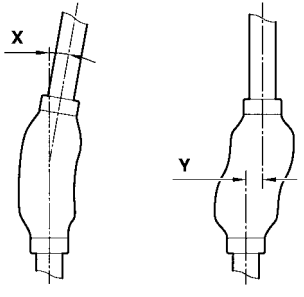
Engines	Catalytic converter (1)	Rear silencer (2)
6FZ - RFN	TR PSA K183	PSA K 4156

EXHAUST SPECIFICATIONS

Engine : RLZ



B1JP02HD



B1JP02JC

Tightening torques (m.daN).

(2) Collars **2.5 ± 0.3**

Repair

Respect the precautions to be taken when operating on a vehicle.

The flexible pipe must not come into contact with corrosive products.

Do not distort the flexible pipe by more than **20°** angular **(X)**, **20mm** axial, **25 mm** shear **(Y)** *(flexible pipe not fitted).*

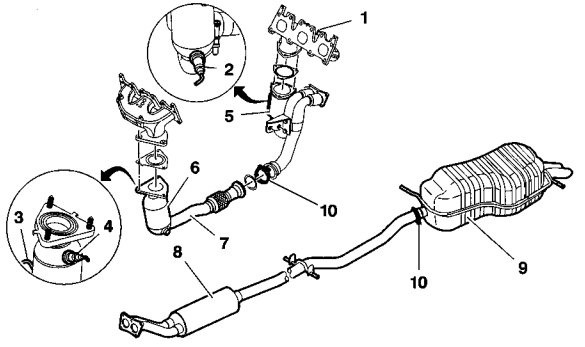
Do not distort the flexible pipe by more than **3°** angular **(X)**, **0 mm** axial, **3 mm** shear **(Y)** *(flexible pipe in place).*

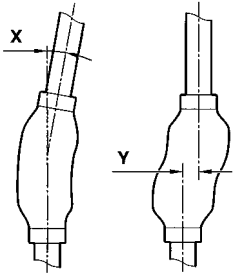
WARNING : Non-respect for these precautions will result in a reduction in the lifetime of the flexible pipe. It is thus essential to disconnect or remove the exhaust line in any operation necessitating the lifting of the power unit.

Engine	Front flexible pipe (1)	Catalytic converter (3)	Rear silencer (4)
RLZ		PSA K185	PSA 4157

EXHAUST SPECIFICATIONS

Engine : XFX





B1JP02MD | B1JP02JC

Tightening torques (m.daN)

(10) Collars **2.5 ± 0.3**

Repair

Respect the precautions to be taken when operating on a vehicle.

The flexible pipe must not come into contact with corrosive products.

Do not distort the flexible pipe by more than **20°** angular **(X)**, **20mm** axial, **25 mm** shear **(Y)** *(flexible pipe not fitted).*

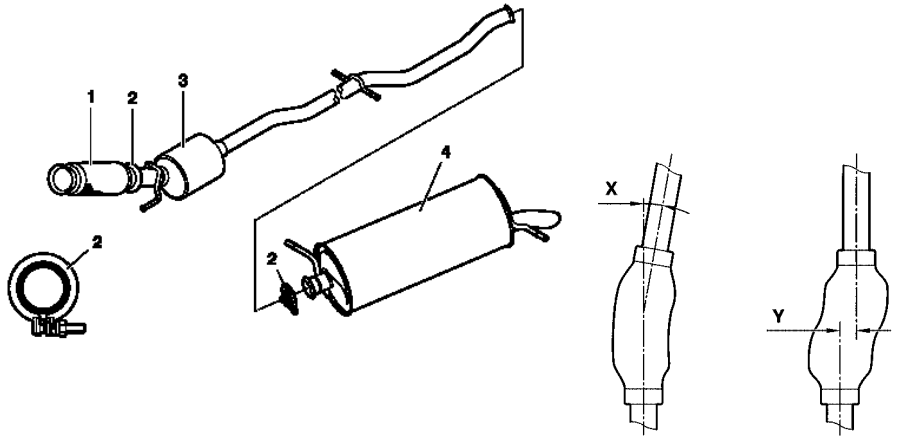
Do not distort the flexible pipe by more than **3°** angular **(X)**, **0 mm** axial, **3 mm** shear **(Y)** *(flexible pipe in place).*

WARNING : Non-respect for these precautions will result in a reduction in the lifetime of the flexible pipe. It is thus essential to disconnect or remove the exhaust line in any operation necessitating the lifting of the power unit..

	Oxygen sensor								
Engine	**Upstream Rear (1)**	**Downstr. Rear (2)**	**Downstr. Front (3)**	**Upstream Front (4)**	**Pre-catalyser Rear (5)**	**Pre-catalyser Front (6)**	**Flexible Pipe (7)**	**Catal. conv. (8)**	**Rear Silencer (9)**
XFX	A 258 040 232				TR PSA K 160	TR PSA K 159		TRPSAK 175	PSA 4143
Tightening	**5 ± 1 m.daN**				**3.3±0.5 m.daN**			**3.3±0.5mdaN**	

EXHAUST SPECIFICATIONS

Engines : RHY- RHZ



B1JP02HD | B1JP02JC

Tightening torques (m.daN)

(2) Collars **2.5 ± 0.3**

Repair

Respect the precautions to be taken when operating on a vehicle.

The flexible pipe must not come into contact with corrosive products.

Do not distort the flexible pipe by more than **20°** angular **(X)**, **20mm** axial, **25 mm** shear **(Y)** *(flexible pipe not fitted).*

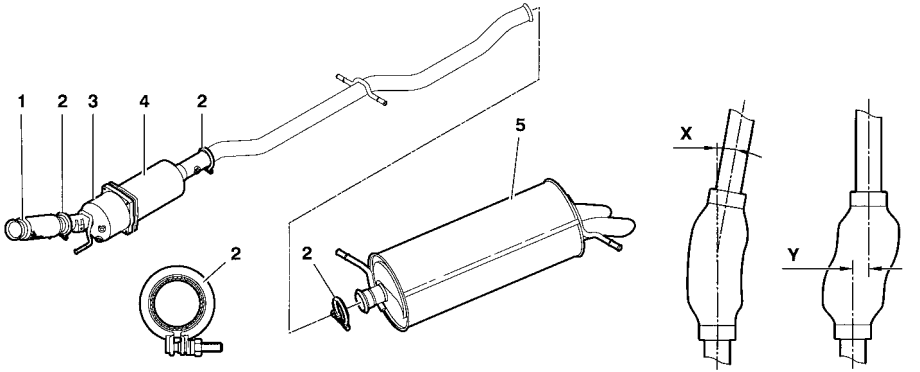
Do not distort the flexible pipe by more than **3°** angular **(X)**, **0 mm** axial, **3 mm** shear **(Y)** *(flexible pipe in place).*

WARNING : Non-respect for these precautions will result in a reduction in the lifetime of the flexible pipe. It is thus essential to disconnect or remove the exhaust line in any operation necessitating the lifting of the power unit.

Engines	Front pipe (1)	Catalytic converter (3)	Rear silencer (4)
RHY - RHZ	Flexible	PSA K 185	PSA 4157

EXHAUST SPECIFICATIONS

Engine : 4HX



Tightening torques (m.daN)

(2) Collars **2.5 ± 0.3**

Repair

Respect the precautions to be taken when operating on a vehicle.

The flexible pipe must not come into contact with corrosive products.

Do not distort the flexible pipe by more than **20°** angular **(X)**, **20mm** axial, **25 mm** shear **(Y)** *(flexible pipe not fitted).*

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

WARNING : Non-respect for these precautions will result in a reduction in the lifetime of the flexible pipe. It is thus essential to disconnect or remove the exhaust line in any operation necessitating the lifting of the power unit.

Engine	Front pipe (1)	Pre-catalyser (3)	Particle filter (4)	Rear silencer (5)
4HX	Flexible	PSA K 186	PSA F 002	PSA 4158

COOLING SYSTEM SPECIFICATIONS

Vehicle without air conditioning

Engines : 6FZ – RFN - RLZ - RHY - RHZ

	1.8i 16V	2.0i 16V	3.0i 16V	2.0 HDi	
Engine plate	**6FZ**	**RFN**	**RLZ**	**RHY**	**RHZ**
Capacity	**8.8 - 9.3 (*)**			**8.8**	
Radiator surface	**21dm²**				
Pressurisation	**1.4 bar**				
Opening of thermostatic regulator	**89°C**			**83°C**	
Cooling fan	**1x250W (1-speed)**			**1x350 W (2-speed)**	
1st speed	**91°C**			**97°C**	
2nd speed				**105°C**	
Warning	**118°C**				
Post-cooling	**6 mn (Max.)**				

(*) = With automatic gearbox

COOLING SYSTEM SPECIFICATIONS

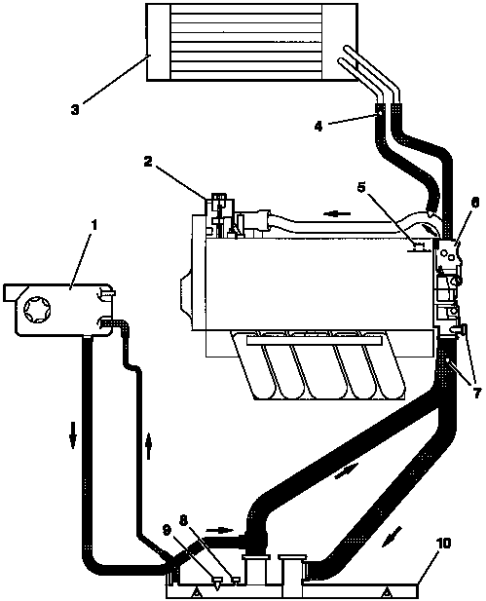
Vehicle with air conditioning

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

	1.8i 16V	2.0i 16V	2.0 HPi	3.0i 16V	2.0 HDi		2.2 HDi
Engine plate	**6FZ**	**RFN**	**RLZ**	**XFX**	**RHY**	**RHZ**	**4HX**
Capacity	**8.8 - 9.3 (*)**		**8.8**	**14**	**10.7 (*)**		
Radiator surface	**27 dm²**				**21 dm²**		
Pressurisation	**1.4 bar**						
Opening of thermostatic regulator	**89°C**			**78°C**	**89°C**		
Cooling fan	**1x500 W 3-speed**						
1st speed	**1 = 97°C 10 Bars**						
2nd speed	**2 = 101°C 17 Bars**						
3rd speed	**3 = 105°C 22 Bars**						
Aircon cut-out	**115°C**			**112°C**	**115°C**		
Warning	**118°C**						
Post-cooling	**6 minutes (Max.)**						

(*) = With automatic gearbox

COOLING SYSTEM SPECIFICATIONS



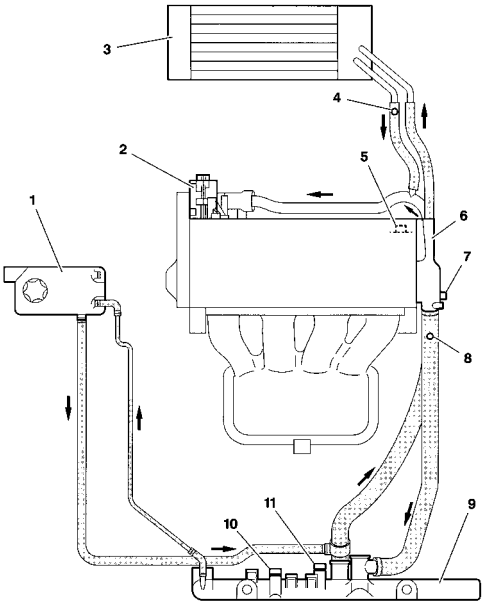
B1GP08VP

Engines : 6FZ - RFN

(1) Venting chamber.
(2) Water pump.
(3) Heater matrix.
(4) Bleed screw, heater matrix.
(5) Drain screw, cylinder cover.
(6) Water outlet housing.
(7) Bleed screw, water outlet housing.
(8) Drain screw, cooling radiator.
(9) Plug, cooling radiator.
(10) Cooling radiator.

Thermostat tightening : **1.7 ± 0.2 m.daN**

COOLING SYSTEM SPECIFICATIONS



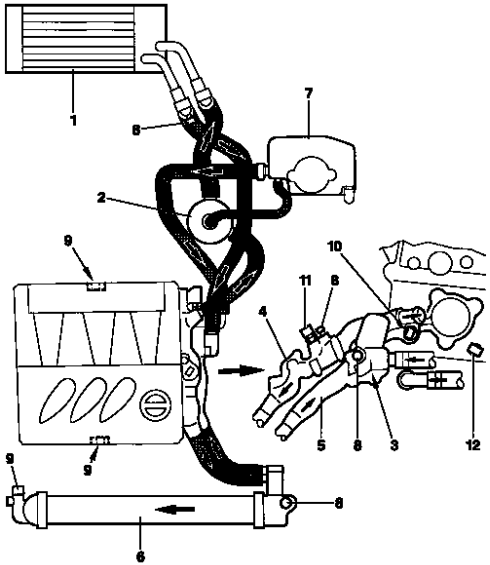
B1GP08JP

Engine : RLZ

(1) Venting chamber
(2) Water pump
(3) Heater matrix
(4). Bleed screw, heater matrix
(5) Drain screw, cylinder block
(6) Coolant outlet housing
(7) Bleed screw, coolant outlet housing
(8) Bleed screw, top hose.
(9) Cooling radiator.
(10) Drain screw, cooling radiator
(11) Drain screw, cooling radiator.

Thermostat tightening : **1.7 ± 0.2m.daN**

COOLING SYSTEM SPECIFICATIONS



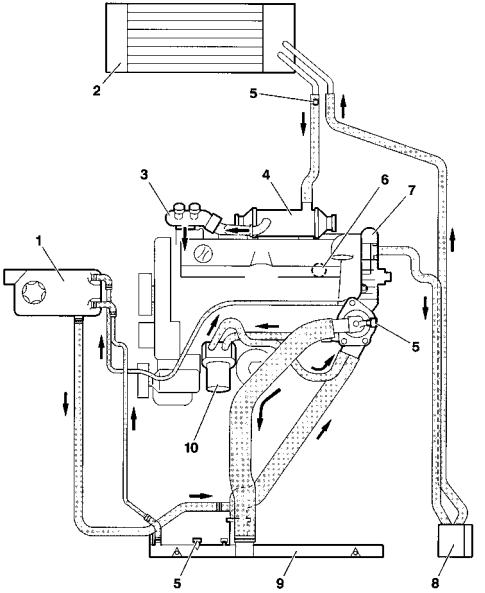
B1GP041P

Engine : XFX

(1) Heater matrix
(2) Venting chamber
(3) Thermostat.
(4) Coolant outlet housing
(5) Coolant inlet housing
(6) Engine cooling radiator
(7) Venting chamber
(8) Bleed screw
(9) Water / oil exchanger
(10) Thermostat
(11) Thermostat *(Coolant outlet housing)*
(12) Thermal switch

(10). (11) and **(12)** : Tightening **1.7 ± 0.4 m.daN**

COOLING SYSTEM SPECIFICATIONS

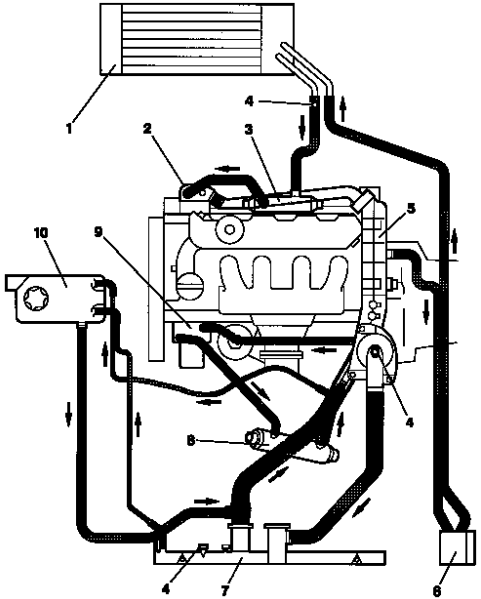


B1GP08EP

Engines : RHY-RHZ

(1) Venting chamber
(2) Heater matrix
(3) Coolant inlet housing
(4) Exhaust gas / coolant heat exchanger
(5) Bleed screw
(6) Cylinder block drain plug
(7) Coolant outlet housing
(8) Additional heating *(Option or according to version)*
(9) Radiator
(10) Coolant / oil heat exchanger

COOLING SYSTEM SPECIFICATIONS



B1GP08HP

Engine : 4HX

(10) Heater matrix
(2) Coolant inlet housing.
(3) Exhaust gas / coolant heat exchanger
(4) Bleed screw
(5) Coolant outlet housing.
(6) Additional heating *(Option or according to version)*
(7) Radiator
(8) Air / coolant heat exchanger
(9) Coolant / oil heat exchanger
(10) Venting chamber

CHECKING THE OIL PRESSURE

Tools Tool kit 4103-T	Petrol engines							
	1.8i 16V		2.0i 16V		2.0 HPi		3.0i V6	
Engine type	6FZ		RFN		RLZ		XFX	
Temperature (°C)	90°C							
Pressure (Bars)	1.5	5	1.5	5	1.5	5	7	8
Rpm	1000	3000	1000	3000	1000	3000	900	3000
	Diesel engines							
	2.0 HDi						2.2 HDi	
Engine type	RHY			RHZ			4HX	
Temperature (°C)	90°							
Pressure (Bars)	2	4	2	4	2	4		
Rpm	1000	2000	1000	2000	1000	2000		

ESSENTIAL : Respect the safety and cleanliness recommendations.

OIL FILTERS

To be read together with the Petrol and Diesel correspondence tables

		6FZ	RFN	RLZ	XFX	RHY	RHZ	4HX
PURFLUX	LS 304	**X**	**X**	**X**		**X**	**X**	**X**
	LS 880				**X**			

		Dia. (mm)	Height (mm)
Specifications	LS 304	76	89
	LS 880		

FILLING AND BLEEDING THE COOLING CIRCUIT

TOOLS

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

ESSENTIAL : Respect the safety and cleanliness recommendations.

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

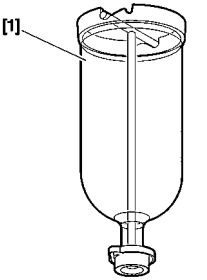
Filling and bleeding

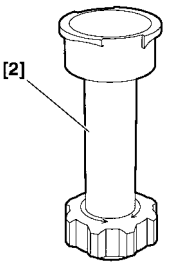
- Fit the cylinder adaptor **[2] 4222-T** and the filling cylinder **[1] 4520 -T**.
- Use the coolant to ensure protection between **- 15°C** and **- 37°C**.
- Slowly fill the system.

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

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

B1GP00AC | E5AP1GNC





IDLING - ANTI-POLLUTION

Vehicles		Engine type	Emission standard	Make - Injection type	Idling speed (± 50 rpm)		% Content	
					Manual gearbox	Auto. gearbox: N gear engaged	CO	CO2
C5	1.8 i 16V	6FZ	L4	SAGEM S2000	7000		< 0.5	> 9
			IF/L5					
	2.0 i 16V	RFN	IF/L5	MAGNETTI MARELLI 48P	900			
	2.0 i 16V	RLZ	L4	SIEMENS SIRIUS 81	900			
	3.0 i V6	XFZ	IF/L5	BOSCH ME 7.4.6.	650	600		

PETROL INJECTION				
	Petrol			
	1.8i 16V	2.0i 16V		3.0i V6
Engine type	**6FZ**	**RFN**	**RLZ**	**XFX**
Emission standard	L4 - IF/L5	IF/L5	L4	IF/L5
Make **Injection type**	SAGEM S2000	MAGNETTI MARELLI MM. 48P	SIEMENS SIRIUS 81	BOSCH ME 7.4.6.
Fuel pressure (bars)	3.5	3.5	5	3.5
Overspeed cut-off (rpm)				6520
Injection cut-in during deceleration (rpm)				1100
Injector resistive value (ohms)	12.2	14.5	1.88	16
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

EMISSION STANDARDS

STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
ECE R 15.04	K K'	15.04 15.04	Petrol Diesel	Private vehicles : > 2 litres • new cyl. < 2 litres • existing cyl. < 2 litres	→ 06/89 → 06/92 → 12/92	Brussels directive 83/351 → except special derogations for certain private vehicles cyl. > 2 litres	With oxygen sensor, without catalytic converter
				Utility vehicles : All Types	→ 10/89 en cours	→ 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	

EMISSION STANDARDS

STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
ECE R 15.05	W vu	15.05	Petrol Diesel	Utility vehicles : All Types • new models • existing models	 01/10/88 → 01/10/89 → → 10/94	Brussels directives 88/76 and 88/436 → Utility vehicle limits = private vehicle limits of Brussels directive 88/436 7 classes of limits by vehicle weight	
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

EMISSION STANDARDS

STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
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	
US 84 LDT	X1	US 84	Petrol Diesel	Utility vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard standard for light utility vehicles	
US 87 LDT	X2	US 87	Petrol Diesel	Utility vehicles : • certain non-EEC European countries • certain Export countries	Current	→ Adoption of U.S. standard standard for light utility vehicles	

EMISSION STANDARDS

STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
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	
EURO 1 **(EURO 93)**	L1	CEE 19.5	Petrol Diesel	Private vehicles : < 1.4 litres • new models • existing models	 07/92 → → 01/07/93 → 31/12/94	Brussels directive 89/458 → Possible alternative to emission standard L from 1992 to 1994	
EURO 1 **(EURO 93)**	L	CEE 19.5	Petrol Diesel	Private vehicles : All Types • new models • existing models • new models • existing models	 07/92 → 01/93 → → 01/96 → 01/97	EU Brussels Directive 93/59 (91/441)	With oxygen sensor and catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles.

All Types	EMISSION STANDARDS						
STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
EURO 1 **(EURO 93)**	W2	CEE W2	Petrol Diesel	Utility vehicles : < 3.5 tonnes • new models • existing models Class 1 : • new models • existing models Class 2/3 : • new models • existing models	 01/10/93 → 01/10/94 → → 01/97 → 10/97 → 01/98 → 10/98	Brussels Directive 93/59 → 3 classes depending on vehicle weight : Class 1 < 1250 kg Class 2 : 1250/1700 kg Class 3 > 1700 kg	With oxygen sensor and catalytic converter for petrol vehicles
EURO 2 **(EURO 96)**	L3	CEE 95	Petrol Diesel	Private vehicles : < 6 seats and < 2.5 tonnes • new models • existing models	 01/96 → 01/97 →	Brussels Directive 94/12 → EURO 93 standard made stricter	With oxygen sensor and reinforced catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles.

EMISSION STANDARDS

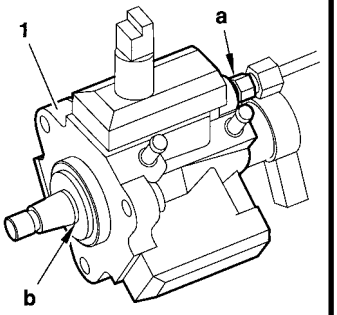
STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
EURO 2 **(EURO 96)**	W3	CEE 95	Petrol Diesel Gaz	Utility vehicles : < 3.5 tonnes Class 1 : • new models • existing models Class 2/3 : • new models • existing models	 01/97 → 10/97 → 01/98 → 10/98 →	Brussels 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.
EURO 3 **(EURO 2000)**	L4	CEE 2000	Petrol Diesel Gaz	Private vehicles : All Types • new models • existing models	 → 01/2000 → 01/2001	Brussels Directive 98/69 → EURO 2 standard (L3) made stricter → Fiscal incentives	With 2 oxygen sensors and catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles. With EOBD on-board diagnosis.

EMISSION STANDARDS

STANDARD				APPLICATION		NOTES	CHARACTERISTICS
E.E.C.	PSA		Engines	Vehicles	Applicable		
	A-S	RP					
EURO 3 **(EURO 2000)**	W3		Petrol Diesel Gaz	Utility vehicles : < 3.5 tonnes Class 1 : • new models • existing models Class 2/3 : • new models • existing models	 → 01/2000 → 01/2001 → 01/2001 → 01/2002	Brussels Directive 98/69 → EURO 2 standard (L3) made stricter → Fiscal incentives → 3 classes depending on vehicle weight : Class 1 < 1305 kg Class 2 : 1305/1760 kg Class 3 : 1760 kg	With 2 oxygen sensors and catalytic converter for petrol vehicles. With catalytic converter and EGR for diesel vehicles. With EOBD on-board diagnosis.
EURO 4	IF / L5		Petrol	Private vehicles : All Types • new models • existing models	 → 01/2001 → 01/2003	Brussels Directive 98/69 → EURO 3 standard (L4) made stricter → Fiscal incentives	With 2 oxygen sensors and catalytic converter for petrol vehicles. With EOBD on-board diagnosis.

PROHIBITED OPERATIONS: HDi DIRECT INJECTION SYSTEM

Engines : RHY - RHZ - 4HX



B1HP19LC

Cleaning.

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

Fuel supply circuit.

- Required fuel : diesel.

Electric circuit.

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

High pressure fuel pump.

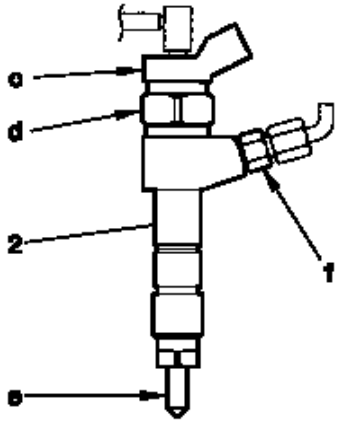
Do not separate the following components from the high pressure fuel pump **(5)** :

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

PS : HDi = High pressure diesel injection.

PROHIBITED OPERATIONS: HDi DIRECT INJECTION SYSTEM

Engines : RHY - RHZ - 4HX



B1HP19NC

Diesel injectors.

WARNING: <u>Diesel and ultrasonic cleaners are prohibited.</u>

Do not separate the following components from the diesel injector carrie**r (2)** :
- Diesel injector **(e)** *(no replacement parts).*
- Electromagnetic element **(c)** *(no replacement parts).*

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

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

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

SAFETY REQUIREMENTS : HDi DIRECT INJECTION SYSTEM

Engines : RHY - RHZ - 4HX

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 : RHY - RHZ - 4HX

CLEANLINESS REQUIREMENTS.

Preliminary operations

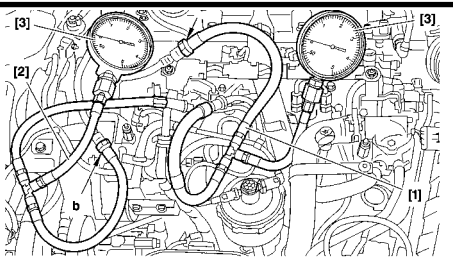
IMPERATIVE : The technician should wear clean overalls.
Before working on the injection system, it may be necessary to clean the apertures of the following sensitive components :
(refer to corresponding procedures).
- Fuel filter.
- High pressure fuel pump.
- Third piston deactivator.
- High pressure regulator.
- High pressure sensor.
- High pressure fuel injection common rail.
- High pressure fuel pipes
- Diesel injector carriers.

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

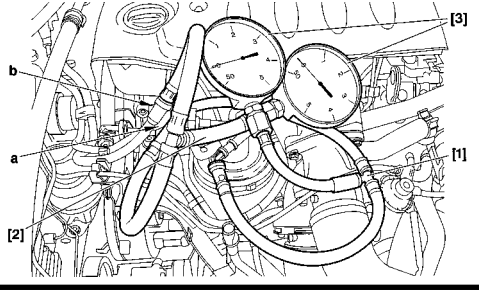
Work area.
- The work area must be clean and free of clutter.
- Components being worked on must be protected from dust contamination.

CHECKS : LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines : RHY - RHZ



Engine : 4HX



Engines : RHY - RHZ - 4HX

TOOLS

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

Connect the tool **[1]** Between the booster pump and the fuel filter *(white mark at **"a"** on the fuel supply pipe).*
Connect the tool **[2]** downstream of the diesel injectors, Between the high pressure fuel pump and the fuel filter *(green mark at "**b"** on the fuel return pipe).*

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

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

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

B1BP20JD | **B1BP27BD**

CHECKS : LOW PRESSURE FUEL SUPPLY CIRCUIT

Engines : RHY - RHZ - 4HX (continued)

Checks on pressure : dynamic.
Engine running, at idle (normal functioning):
- Fuel supply pressure shown by the pressure gauge **[3] = 2 ± 0.4 Bar**.
- Fuel return pressure shown by the pressure gauge **[3] = 0.8 ± 0.4 Bar**.

Abnormal functioning

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

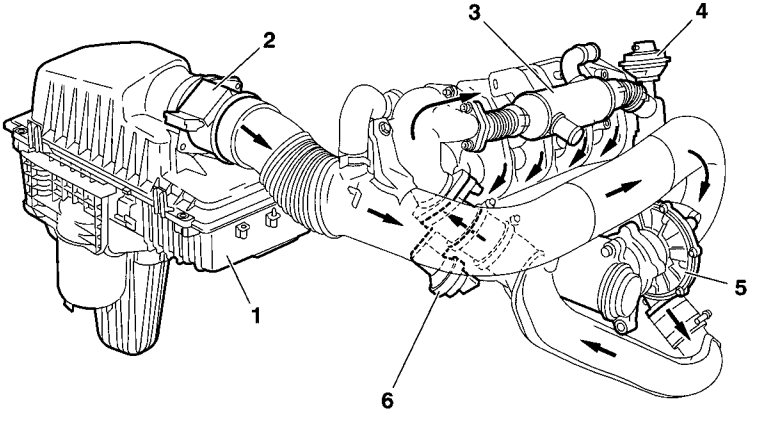
Impossible to start the engine :
Fuel supply pressure less than **0.8 Bar** :
- Check the low pressure regulator incorporated in the filter *(locked open)*
- Check the high pressure pump distribution valve *(locked shut)*

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

Uncouple the diesel injector return pipe.

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

AIR SUPPLY CIRCUIT SPECIFICATION

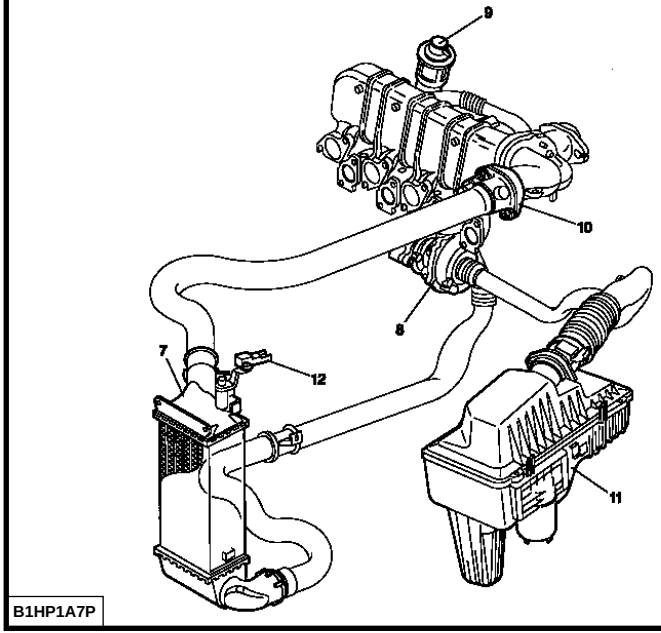


B1HP1A6D

Engine : RHY

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

AIR SUPPLY CIRCUIT SPECIFICATION

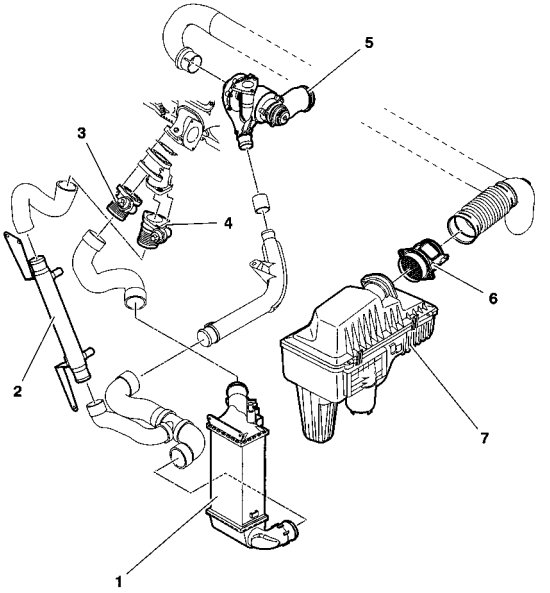


B1HP1A7P

Engine : RHZ

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

AIR SUPPLY CIRCUIT SPECIFICATION



B1HP1BYP

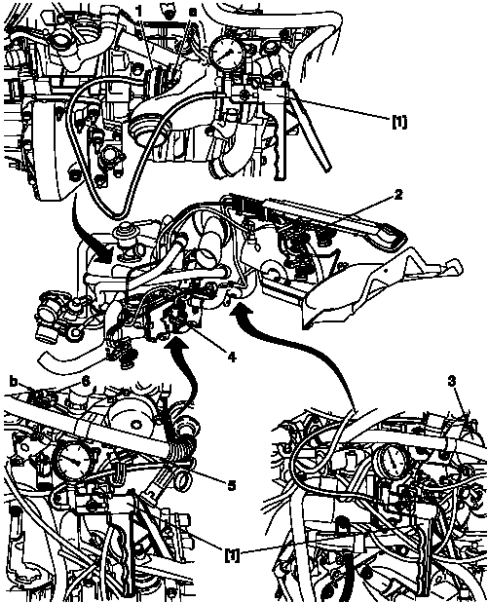
Engine : 4HX

(1) Air / air exchanger

(2) Air / water exchanger

(3) Warm air metering device	**BOSCH.**
(4) Cold air metering device	**BOSCH.**
(5) Turbocharger	**ALLIEDSIGNAL GT1549P.**
(6) Flowmeter	**SIEMENS.**
(7) Air filter	**PSA 7885.**

AIR SUPPLY CIRCUIT SPECIFICATION



B1HP1ARP

Engine : 4HX

ESSENTIAL : Respect the safety and cleanliness recommendations.

Tool.

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

Checks.

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

CHECKS : AIR SUPPLY CIRCUIT

Engine : 4HX

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

Boost vacuum regulation electrovalve.
- Connect the tool **[1]** between the electrovalve **(2)** and the valve **(1)**.

Compare readings with the values in the table below.

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

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

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

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

«Swirl» control diaphragm.
- Connect the tool **[1**] on the control diaphragm of the **«Swirl» (5)**.
- Apply a vacuum of approx. **0,6 Bar** ; the pin **(6)** should be at the end stop, at **«b»**.

CHECKS : EXHAUST GASES RECYCLING CIRCUIT

Engines : RHZ - RHY

(1) Butterfly housing
(2) EGR valve *(tube with blue marking)*
(3) Electrovalve *(black connector)*
(4) Electrovalve *(blue connector)*

TOOL

[1] Manual vacuum pump : FACOM DA 16.

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

EGR electrovalve

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

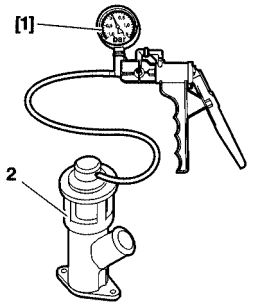
Butterfly housing electrovalve.

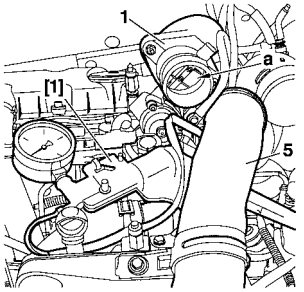
- Check, not under load, between the electrovalve **(3)** and the butterfly housing **(1)**.
- Connect the tool **[1]** between the electrovalve **(3)** and the butterfly housing **(1)**.
- Compare readings with the values in the table below.

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

B1HP1BVD

CHECKS : EXHAUST GASES RECYCLING CIRCUIT





Engines : RHZ – RHY

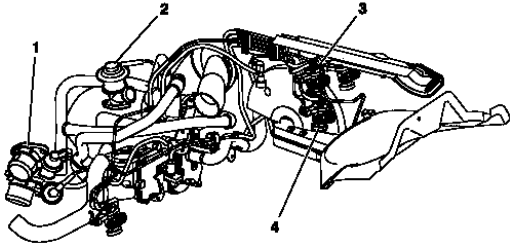
EGR valve

- Connect tool **[1]** on the **EGR** valve capsule take-off **(2)**.
- Apply a vacuum of approx. **0,6 bar** to activate the **EGR** valve.
- In abruptly suppressing the vacuum, the valve should click and lock itself back on its seating.
- Repeat the operation several times.

Butterfly housing

- Remove the air duct between the air/air exchanger and the butterfly housing **(5)**, **(1)**.
- Connect tool **[1]** on the butterfly housing vacuum capsule **(1)**.
- Apply a vacuum of approx. **0,8 bar**, the flap **(a)** of the butterfly housing **(1)** should be closed.

CHECKS : EXHAUST GASES RECYCLING CIRCUIT



B1HP1B8D

Engine : 4HX

TOOL

[1] Manual vacuum pump : FACOMM DA 16.

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

Electrovalve (EGR).

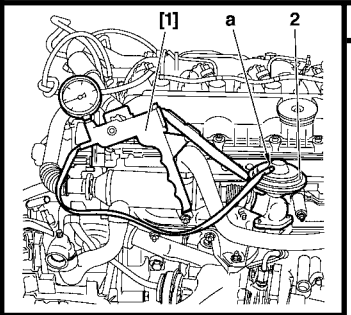
- Check, not under load, between the electrovalve **(3)** *(blue connector)* and the **EGR** valve **(2)** *(tube with blue marking).*
- Connect the tool **[1]** between the electrovalve **(3)** and the **EGR** valve **(2)**.
- Compare readings with the values in the table below.

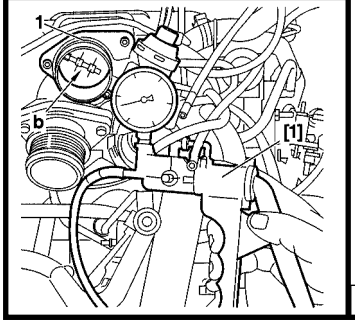
Butterfly housing electrovalve

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

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

CHECKS : EXHAUST GASES RECYCLING CIRCUIT





Engine : 4HX

EGR valve

- Connect tool **[1]** on the take-off **(a)** of the **EGR** valve capsule **(2)**.
- Apply a vacuum of approx. **0,6 bar** to activate the **EGR** valve.
- In abruptly suppressing the vacuum, the valve should click and lock itself back on its seating.
- Repeat the operation several times.

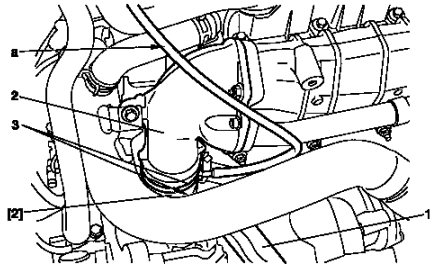
Butterfly housing

- Remove the air duct between the air/air exchanger and the butterfly housing **(1)**.
- Disconnect the tube *(white marking)* on the electrovalve **(4)** *(black connector).*
- Connect tool **[1]** on the tube with the white marking.
- Apply a vacuum of approx. **0,8 ba**r, the flap **(b)** of the butterfly housing **(1)** should be closed.

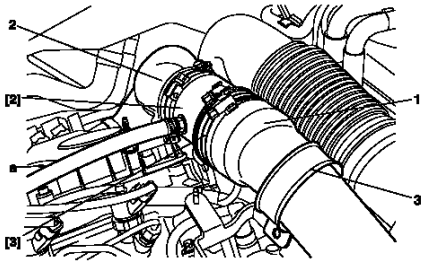
B1BP29NC | **B1BP29PC**

CHECKS : TURBO PRESSURE

Engine RHY



Engine RHZ



Engines : RHY - RHZ

TOOLS.

[1] Pressure gauge for checking boost pressure **: 4073-T.A Tool kit 4073-T**
[2] Sleeve for checking boost pressure **: 4185-T**
[3] Adaptor sleeve **: 4219-T**

Checks.

Preparation for RHY engine

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

Checks.

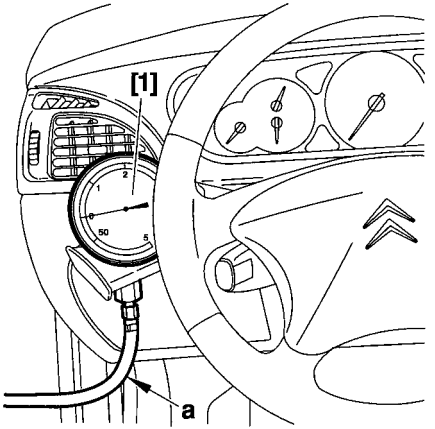
Preparation for RHZ engine

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

B1BP1ZXD | **BHP12JD**

INJECTION

CHECKS : TURBO PRESSURE



C5FP0ACC

Engines : RHY - RHZ

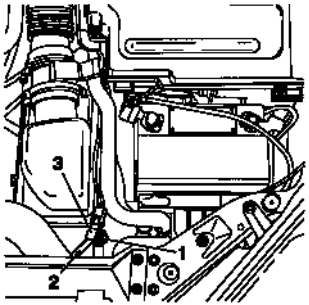
Procedure.

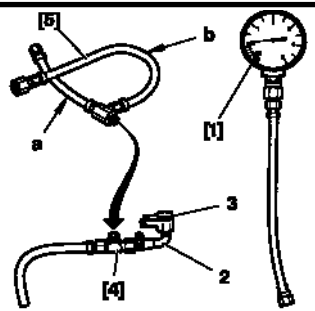
ESSENTIAL : Observe the following checking requirements :
- Engine at running temperature.
- Vehicle in running order.
- Engine at full load.

- Start the engine.
- Engage first gear and start the vehicle.
- Engage the gears up to third gear.
- Decelerate to **2000 rpm**.
- Gradually accelerate.
- Check the pressure : **0.95 ± 0.05 Bar**.
- Remove the tools **[1]** and **[2]**.

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

CHECKS : TURBO PRESSURE





Engine : 4HX

TOOL

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

Checks.

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

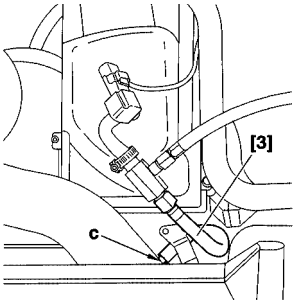
Preliminary operations.

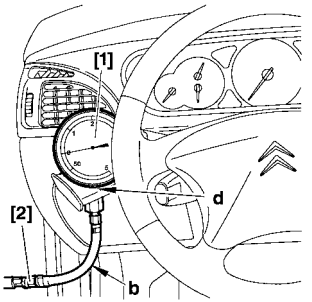
Carry out the following operations:
Remove the screw **(1)**.
Disconnect the tube **(2)**.
Move aside the pressure sensor **(3)**.

Preparation of tools : in position on the vehicle.

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

CHECKS : TURBO PRESSURE





Engine : 4HX

Preparation of tools : in position on the vehicle (continued).
Screw the tool **[3]** on the take-off of the turbo air radiator at **«c»**.
Place the pressure gauge on the cup holder at **«d»**.
Connect the extension **[2]** on the hose **«b»** and tool **[5]**.

ESSENTIAL : Observe the following checking requirements.

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

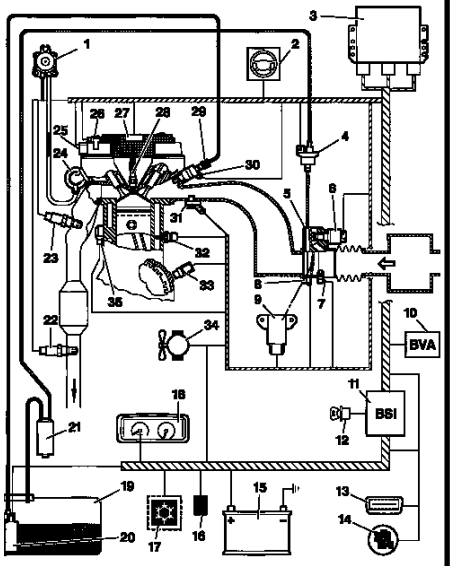
Accelerate gradually : the pressures should be the following :

1,1 ± 0,05 b at 2000 rpm
1,2 ± 0,05 b at 3000 rpm.

Return the vehicle to normal.
Remove the tools **[1]**, **[2]**, **[3]**, **[4]** and **[5]**.
Reposition the pressure sensor **(3)**.
Couple the tube **(2)**.
Refit and tighten the screw **(1)**.

FEATURES OF MULTIPOINT INJECTION SYSTEM

Summary



(1) Air pump
(2) Power steering pressure sensor
(3) Engine management ECU
(4) Canister purge electrovalve
(5) Butterfly housing
(6) Idle regulation stepper motor
(7) Inlet air temperature sensor
(8) Inlet housing heater element
(9) Butterfly potentiometer
(10) Automatic gearbox (Option)
(11) Built-in systems interface
(12) Transponder
(13) Diagnostic connector
(14) Ignition injection test warning lamp
(15) Battery
(16) Immobiliser unit
(17) Air conditioning
(18) Instrument panel
(19) Fuel tank
(20) Fuel pump, gauge and filter assembly
(21) Canister reservoir
(22) Downstream oxygen sensor
(23) Upstream oxygen sensor
(24) Air inlet valve
(25) EGR electrovalve
(26) Camshaft position sensor
(27) Ignition coil
(28) Sparking plug
(29) Injector supply rail
(30) Injectors
(31) Air inlet pressure sensor
(32) Engine coolant temperature sensor
(33) Engine speed sensor
(34) Cooling fan unit
(35) Knock sensor

B1HP1C5P

FEATURES OF MULTIPOINT INJECTION SYSTEM

(diagr.)	Component	Supplier	Reference	Observations
	Fuel circuit			
	Recommended fuel			Unleaded 95 RON or 98 RON
30	Petrol injector	**SAGEM**		2 way black connector. Resistance : 12,2 ohms
4	Canister purge electrovalve	**BOSCH SAGEM (1)**	**280520274**	2 way brown connector. Installation : between the engine fusebox and the brake amplifier
19	Fuel tank	**SOLVAY**		Capacity = 66 Litres
21	Canister reservoir	**MGI**		Installation : in the rear LH wheelarch
20	Fuel pump and gauge assembly with integral fuel filter	**MARWAL**		6 way black connector. Pressure : 3,5 Bars.
	Air inlet circuit			
7	Air temperature sensor	**MAGNETI MARELLI**	**IAT S04**	2 way grey connector, fixed on the butterfly housing
31	Air inlet pressure sensor	**BOSCH**	**0261230034**	3 way grey connector integral with the inlet manifold.
6	Idle regulation stepper motor	**MGI MAGNETI MARELLI (1)**	**B13 (1)**	4 way black connector, fixed on the butterfly housing
5	Butterfly housing	**MGI MAGNETI**		The butterfly housing comprises the inlet air temperature sensor, the butterfly potentiometer, the electric motor.
9	Potentiometer	**MARELLI**		3 way black connector, installed on the butterfly housing.

(1) = **RFN** engine

FEATURES OF MULTIPOINT INJECTION SYSTEM

Electrical circuit

(diagr.)	Component	Supplier	Reference	Observations
3	Engine management ECU with «FRIC»	**SAGEM MAGNETI MARELLI**	**S2000 MM 48.P2 (1)**	«Flash» eprom (reprogrammable eprom), sequential injection, 112 way connector.
26	Camshaft position sensor	**ELECTRIFIL**	**144323**	3 way grey connector, fixed on the cylinder head
35	Knock sensor	**SIEMENS SAGEM (1)**	**F 207 326 257 603 2A**	2 way black connector, fixed on the front part of the engine block, tightening torque **2 ± 0.5 m.daN.**
32	Engine coolant temperature sensor	**ELECTRIFIL**	**14 43 32**	2 way green connector, fixed on the coolant outlet housing, tightening torque **1.8 ± 0.1 m.daN.**
		DAV	**402 244 03**	
33	Engine speed sensor	**ELECTRIFIL**	**14 43 27**	2 way black connector, fixed on the clutch casing. 2 way blue connector, fixed on the power steering high pressure pump outlet tube, tightening torque **2 ± 0.2 m.daN.**
2	Power steering pressure sensor	**BITRON**	**280 291**	

(1) = Engine **RFN**

Ignition circuit

28	Sparking plug	**SAGEM**	**RFN52HZ**	Electrode gap = 1mm.
		BOSCH	**FR8ME**	Tightening torque **2.5 ± 0.2 m.daN.**
27	Ignition coil	**SAGEM**	**BBC2.2NDE 2 526 118**	4 way black connector.

FEATURES OF MULTIPOINT INJECTION SYSTEM

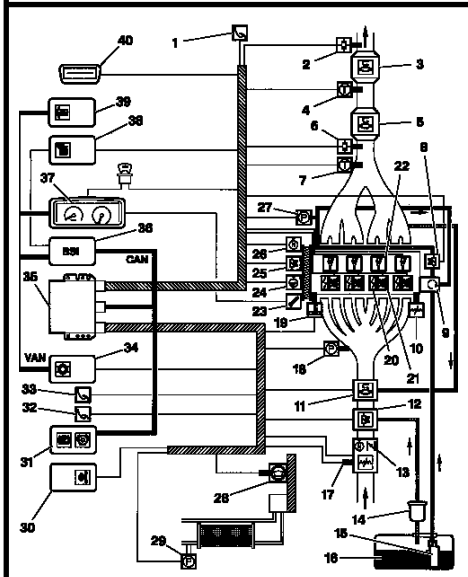
Exhaust system

(diagr.)	Component	Supplier	Reference	Observations
	EGR electrovalve	**DELPHI**	**97097 A**	5 way black connector, installed on the cylinder head.
23	Upstream oxygen sensor	**NGK BOSCH (1)**	**OZA 495-PG2**	4 way blue connector, length of wire : 555 mm, Tighten to **4.5 ± 0.4 m.daN.**
22	Downstream oxygen sensor	**NGK BOSCH (1)**	**OZA 341-PG7**	6 way black connector, length of wire : 1500 mm, Tighten to **4.5 ± 0.4 m.daN.**
1	Air pump	**SAGEM**	**2 590 004**	2 way black connector, located under the battery.
2	Air inlet valve	**SAGEM**	**2 580 034**	Installed on the cylinder head.

(1) = Engine **RFN**

FEATURES OF MULTIPOINT INJECTION SYSTEM

Summary



B1HP1C6P

1) Accelerator pedal position sensor
(2) Denox catalyser downstream oxygen sensor
(3) Denox catalyser
(4) Downstream exhaust gas temperature sensor
(5) 3-function precatalyser
(6) Precatalyser upstream oxygen sensor
(7) Upstream exhaust gas temperature sensor
(8) Petrol pressure regulator
(9) Petrol high pressure pump
(10) Knock sensor
(11) EGR electrovalve
(12) Canister purge electrovalve
(13) Motorised butterfly housing
(14) Canister reservoir
(15) Fuel pump and tank assembly
(16) Fuel tank
(17) Inlet air temperature sensor
(18) Inlet air pressure sensor
(19) Engine coolant temperature sensor
(20) Sparking plug
(21) Ignition coil block
(22) High pressure injector
(23) Engine oil temperature sensor
(24) Engine speed sensor
(25) Inlet camshaft dephaser electrovalve
(26) Camshaft position sensor
(27) Petrol high pressure sensor
(28) Power steering pressure sensor
(29) Aircon fluid pressure sensor
(30) Cooling fan unit
(31) ABS block
(32) Clutch pedal sensor
(33) Brake pedal sensor
(34) Air conditioning ECU
(35) Engine management ECU
(36) Built-in systems interface BSI
(37) Rev counter
(38) Coded immobiliser
(39) Vehicle cruise control
(40) Diagnostic connector

FEATURES OF MULTIPOINT INJECTION SYSTEM

(diagr.)	Component	Supplier	Reference	Observations
Fuel circuit				
8	Petrol pressure regulator	**SIEMENS**	**5403**	2 way brown connector, located on the petrol injection common rail.
22	Petrol injector		**5048**	2 way orange connector, resistance : 1,88 ohms.
27	Petrol high pressure sensor		**5402**	3 way black connector, located on the petrol injection common rail.
11	Canister purge electrovalve	**BOSCH**	**280520274**	2 way brown connector.
16	Fuel tank	**SOLVAY**		Capacity = 66 Litres.
14	Canister reservoir	**MGI**		Installed inside the rear LH wheelarch.
15	Fuel pump and gauge assembly	**MARWAL**		6 way black connector, pressure : 5 bars, integrated fuel filter.
Air inlet circuit				
17	Air temperature sensor	**MAGNELI MARELLI**	**IAT S04**	2 way grey connector, resistance : 2,05 kohms
13	Butterfly housing	**MGI**	**98023100**	The butterfly housing comprises : Inlet air temperature sensor, butterfly potentiometer, electric motor.
13	Butterfly housing motor	**MAGNELI MARELLI**		
13	Butterfly potentiometer			6 way black connector.
18	Inlet air pressure sensor	**BOSCH**		3 way grey connector, fixed under the air inlet manifold.

FEATURES OF MULTIPOINT INJECTION SYSTEM

Electrical circuit

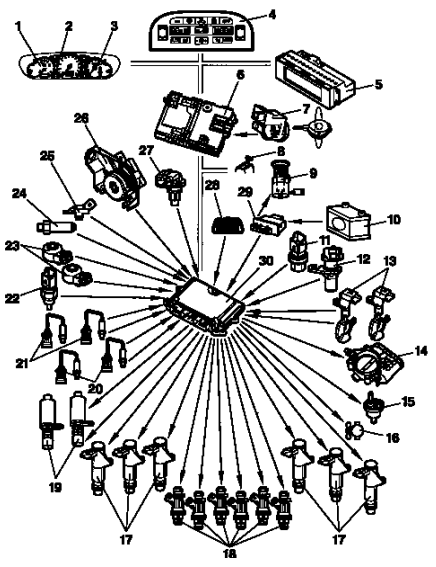
(diagr.)	Component	Supplier	Reference	Observations
35	Engine management ECU with «FRIC»	**SIEMENS**	**SIRIUS 81**	112 way connector.
26	Camshaft position sensor	**ELECTRIFIL**	**F207 326**	3 way grey connector, fixed on the cylinder head.
10	Knock sensor	**SIEMENS**		2 way black connector, fixed on the front part of the engine block. **ESSENTIAL:Respect the tightening torque 2,5±0,5 m.daN.**
9	Engine coolant temperature sensor	**ELECTRIFIL**		2 way green connector, fixed on the coolant outlet housing.
1	Accelerator pedal position sensor			4 way black connector, fixed on the pedal carriage.
24	Engine speed sensor			2 way black connector, fixed on the clutch casing.
28	Power steering pressure sensor	**BITRON**		2 way blue connector, fixed on the power steering high pressure pump outlet tube, **tighten to 2 ± 0,2 m.daN**.
25	Inlet camshaft dephaser electrovalve.	**UNISIA**		2 way green connector, fixed on the upper part of the cylinder head.

FEATURES OF MULTIPOINT INJECTION SYSTEM

(diagr.)	Component	Supplier	Reference	Observations
Ignition circuit				
20	Sparking plug	**BOSCH**	**BNA - R13-318**	Electrode gap = 1 mm. **Tighten to 2,5 ± 0,2 m.daN.**
21	Ignition coil block	**DELPHI**	**BBC 4.1 HP**	6 way black connector.
Exhaust system				
12	EGR electrovalve	**SAGEM**	**2580105A**	6 way grey connector, installed on the cylinder head.
4 and 7	Exhaust gas temperature sensor	**HERAEUS**	**TS-200**	2 way brown connector, length of wire : 250 mm. **Tighten to 4,5 ± 0,4 m.daN.**
6	Precatalyser upstream proportional oxygen sensor	**NGK**	**LZA-A06-U1**	6 way black connector, length of wire : 250 mm. **Tighten to 4,5 ± 0,4 m.daN.**
2	Catalytic converter downstream oxygen sensor		**OZA 538-PG1**	4 way blue connector.

FEATURES OF BOSCH ME 7.4.6 MULTIPOINT INJECTION SYSTEM

Summary

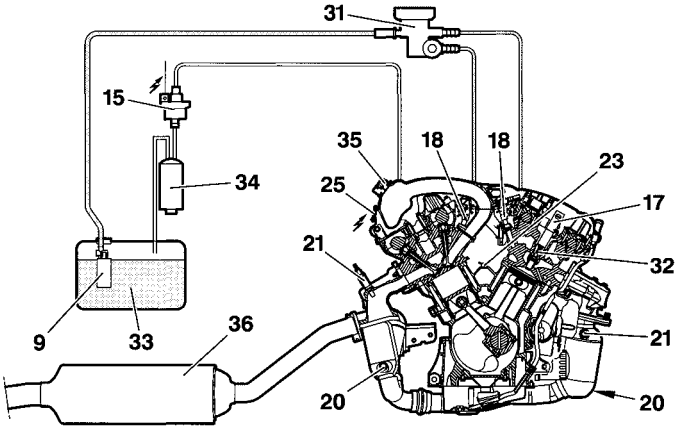


(1) Rev counter
(2) Consumption information
(3) Ignition injection test warning lamp
(4) Air conditioning ECU *(according to equipment)*
(5) Multifunction screen
(6) Built-in systems interface (BSI)
(7) Transponder
(8) Automatic gearbox ECU*(according to equipment)*
(9 Pump, fuel filter and pressure regulator assembly
(10) Battery
(11) Pressostat
(12) Engine speed sensor
(13) Camshaft position sensors (x2)
(14) Motorised butterfly housing
(15) Canister purge electrovalve
(16) Cooling fan unit
(17) Pencil type ignition coils (x2)
(18) Petrol injectors (x6)
(19) Variable timing electrovalves (x2)
(20) Upstream oxygen sensors (x2)
(21) Downstream oxygen sensors (x2)
(22) Engine coolant thermal sensor
(23) Knock sensors (x2)
(24) Power steering pressure sensor
(25) Integral pressure sensor
(26) Accelerator pedal position sensor
(27) Inlet air thermal sensor
(28) Diagnostic connector
(29) Multifunction double relay
(30) Ignition injection ECU

B1HP1B2P

FEATURES OF BOSCH ME 7.4.6 MULTIPOINT INJECTION SYSTEM

Summary



B1HP1B3D

(31) Pulse damper

(32) Sparking plugs (x6)

(33) Fuel tank

(34) Canister reservoir

(35) Discharge valve

(36) Exhaust line

FEATURES OF BOSCH ME 7.4.6 MULTIPOINT INJECTION SYSTEM

(diagr.)	Component	Supplier	Reference	Observations
	Fuel circuit			
	Recommended fuel			Super unleaded 95 RON or 98 RON
33	Fuel tank			Capacity = 66 Litres, polyethylene.
9	Pump, fuel filter and pressure regulator assembly	**MARWAL**		Electric pump immersed in the tank, voltage = 12 V, Bars, Flow = 115 at 120 l/h, regulation pressure = 3,5 Bars.
34	Canister reservoir	**PURFLUX**	**PPGF 30**	Located under front LH wing.
15	Canister purge electrovalve	**BOSCH**	**0 280142 317**	Electrovalve normally closed. 2 way brown connector, located under the front LH wing, resistance = 24 ohms.
18	Petrol injector		**EV 8 E 0280155613**	Group of injectors 1.2.3: 2 way brown connector. Group of injectors 4.5.6 : 2 way yellow connector, injector with 4 jets. Resistance = 16 ohms.
31	Pulse damper		**0280161500**	Installed on the timing cover, equipped with a SCHRAEDER valve.
	Air circuit			
25	Integral pressure sensor	**BOSCH**	**DS-S2 0261260140**	2 way black connector, incorporated in the air inlet manifold.
14	Motorised butterfly housing			
26	Accelerator pedal position sensor			Double potentiometer, supply = 5 Volts, fixed on the engine compartment.

FEATURES OF BOSCH ME 7.4.6 MULTIPOINT INJECTION SYSTEM

Electrical circuit

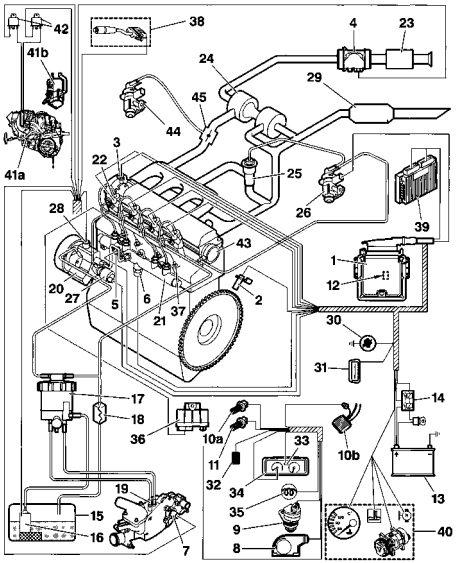
(diagr.)	Component	Supplier	Reference	Observations
30	Ignition injection ECU	**BOSCH**	**ME 7.4.6 0261206418**	128 way connector, flash eprom type sequential injection (reprogrammable eprom). Installed in the ECU compartment.
29	Multifunction double relay (incorporated in the engine fusebox)	**SIEMENS**	**S210500000**	Main relay 1, 16 way grey connector. Main relay 2, 16 way green connector Power relay 3, 16 way black connector Installed in the ECU compartment.
24	Power steering pressure sensor	**BITRON**		2 way blue connector, switch opens at 20 Bars, for ECU information (steering wheel on full lock). Ring seal marked violet, fixed on the power steering 4 way hydraulic union, beneath the vehicle.
27	Inlet air thermal sensor	**JAEGER**	**402 084 01**	2 way grey connector, fixed on the air filter inlet duct.
13	Camshaft position sensor	**ELECTRIFIL**	**14 43 25**	3 way grey connector, fixed on the inlet camshaft bearing cap cover.
23	Knock sensor	**BOSCH**	**026123125**	3 way green connector, fixed on the central part of the engine block V. **ESSENTIAL : respect the tightening torque 2 ± 0,2 m.daN.**
22	Engine coolant thermal sensor	**DAV**	**402 243 03**	2 way green connector, fixed on the coolant outlet housing. Tighten to **2 ± 0.2 m.daN**
		ELECTRIFIL	**14 43 32**	
12	Engine speed sensor	**ELECTRIFIL**	**14 43 28**	2 way black connector, fixed on the gearbox clutch casing.

FEATURES OF BOSCH ME 7.4.6 MULTIPOINT INJECTION SYSTEM

(diagr.)	Component	Supplier	Reference	Observations
Ignition circuit				
32	Sparking plug	**BOSCH**	**FGR8MQPE**	Electrode gap = 1 mm. Tightening torque **2.5 ± 0.1 m.daN.**
17	Pencil type ignition coils	**SAGEM**	**BAC 1 2526140**	4 way black connector Static type ignition.
Exhaust system				
20	Upstream oxygen sensors	**BOSCH**	**258040232**	4 way green connector. Front fixing : On the exhaust manifold. Rear fixing : On the front precatalyser.
21	Downstream oxygen sensors			4 way blue connector. Fixed on the precatalyser. Tightening torque **5 ± 0,1 m.daN**.

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Summary



B1HP1BTP

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit

Component	(diagr.)	Supplier	Reference	Observations
Diesel injection ECU	**1**	BOSCH	EDC 15C2	88 way connector. Flash eprom type sequential injection (reprogrammable eprom). Installed in the ECU compartment.
Engine speed sensor	**2**	ELECTRIFIL		
Camshaft position sensor	**3**	ELECTRIFIL		Air gap value : 1,2 mm.
Coolant temperature sensor	**7**	ELECTRIFIL	962859028A	Fixed on the coolant housing.
Accelerator pedal sensor	**8**	PHILIPS		
Vehicle speed sensor	**9**	EATON		On the gearbox.
Brake pedal switch	**10a**			Open at rest.
	10b			Closed at rest.
Clutch pedal switch	**11**			
Atmospheric pressure sensor	**12**	BOSCH		Integrated in the injection ECU.
Battery	**13**	FULMEN	058426 – 12 Volt 400 amps	Under the bonnet.
Injection double relay	**14**	BITRON	240 109	15 way black connector. Installed in the ECU compartment.
Inertia switch	**30**	FIRST INERTIA SWITCH	Type 505	3 way black connector. Installed in the front RH wheelarch, fixed on the suspension mounting. Manual rearming in the event of the cut-out system being activated.

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit (continued)

Component	(diagr.)	Supplier	Reference	Observations
Diagnostic warning lamp	**31**			Incorporated in the dashboard instrument panel.
Central diagnostic socket	**32**			In the passenger compartment.
Electronic immobiliser	**33**			
Consumption information	**34**			Incorporated in the dashboard instrument panel.
Rev counter	**35**			Incorporated in the dashboard instrument panel.
Preheater warning lamp	**36**			Incorporated in the dashboard instrument panel.
Pre-postheating unit	**37**	NAGARES	960411P	
		CARTIER	735068	
Preheater plugs	**38**	CHAMPION	CH170	
		BOSCH	0250202032	
Cruise control switch	**39**			
Automatic gearbox ECU	**40**			
Air conditioning compressor	**41**	SANDEN	SD7V16	
Additional heating by heating elements in boiler	**42 a** **42 b**			
Additional heating control relay	**43**			

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Fuel circuit

Component	(diagr.)	Supplier	Reference	Observations
Recommended fuel				Diesel
Fuel temperature sensor	**5**	ELTH		On the injection rail
Fuel high pressure sensor	**6**	BOSCH	D281022093	On the injection rail
Fuel tank	**15**			Capacity = 68 litres. Composition : Polyethylene.
Fuel pump	**16**	VDO		Electric pump immersed in the tank. Voltage 12V. Pressure : 7 Bars.
Fuel filter	**17**	BOSCH	0450907	Fixing : on the engine.
Low pressure regulator				Adjustment : 2,5 bars.
Fuel cooler	**18**	LON		Fixed under the bodyshell.
Fuel heater	**19**			Integral with the coolant outlet housing.
Fuel high pressure pump	**20**	BOSCH	CP	The fuel high pressure pump is driven by the timing belt
Fuel high pressure injection common rail	**21**	BOSCH	86313	On the engine (18 cc).

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Fuel circuit (continued)

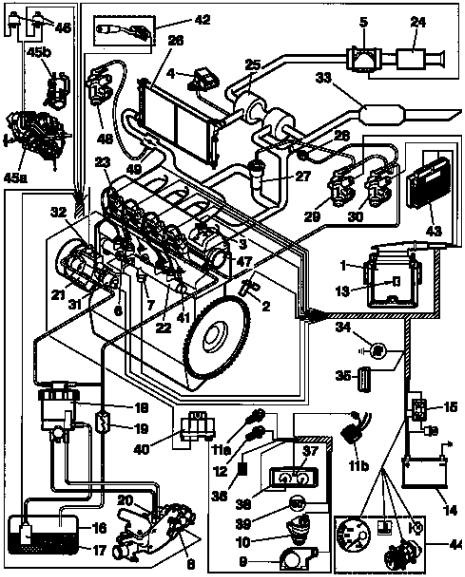
Component	(diagr.)	Supplier	Reference	Observations
Diesel injectors	**22**	BOSCH	9625542580	Reference 1 –Blue marking : injector Class 1. Reference 2 – Green marking : injector Class 2. If changing a diesel injector-carrier, order a component of the same class.
Fuel high pressure regulator	**27**	BOSCH		Fixed on the fuel high pressure pump.
Fuel high pressure pump 3rd piston deactivator	**28**	BOSCH		Fixed on the fuel high pressure pump.

Air circuit

Component	(diagr.)	Supplier	Reference	Observations
Air flowmeter	**4**	SIEMENS		
Air filter	**23**		PSA 7899	
Turbocompressor	**24**	KKK /		
Exhaust gas recycling valve (EGR)	**25**	PIERBURG		Shim reference: violet.
Recycling regulation electrovalve (EGR)	**26**	BOSCH		
Exhaust line	**29**			
Vacuum pump	**44**			
EGR butterfly housing	**46**	MARK IV		
EGR butterfly housing electrovalve	**45**	BOSCH		

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Summary



B1HP1BUP

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit

Component	(diagr.)	Supplier	Reference	Observations
Ignition injection ECU	**1**	BOSCH	EDC 15C2	88 way connector. Flash eprom type sequential injection (reprogrammable eprom). Installed in the ECU compartment.
Inertia switch	**34**	FIRST INERTIA SWITCH	Type 505	3 way black connector. Installed in the front RH wheelarch, fixed on the suspension mounting. Manual rearming in the event of the cut-out system being activated.
Injection double relay	**15**	BITRON	240 109	15 way black connector. Installed in the ECU compartment.
Battery	**14**	VARTA	L2 – 12 volts 400 amps	Engine compartment..
Atmospheric pressure sensor	**13**	BOSCH		Incorporated in the injection ECU.
Central diagnostic socket	**36**			In the passenger compartment.
Diagnostic warning lamp	**35**			Incorporated in the dashboard instrument panel.
Vehicle speed sensor	**10**	EATON		On the gearbox.
Preheater warning lamp	**40**			Incorporated in the dashboard instrument panel.
Rev counter	**39**			Incorporated in the dashboard instrument panel.
Consumption information	**38**			Incorporated in the dashboard instrument panel.
Engine speed sensor	**2**	ELECTRIFIL		
Camshaft position sensor	**3**	ELECTRIFIL		Airgap value : 1,2 mm.

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit (continued)

Component	(diagr.)	Supplier	Reference	Observations
Preheater unit	**41**	NAGARES	960411P	
		CARTIER	735068	
Preheater plugs	**42**	CHAMPION	CH170	
		BOSCH	0250202032	
Coolant temperature sensor	**8**	ELECTRIFIL		Fixed on the coolant outlet housing
Electronic immobiliser	**37**			
Accelerator pedal sensor	**9**	PHILIPS		
Brake pedal switch	**11 a**			Open at rest
	11 b			Closed at rest
Clutch pedal switch	**12**			
Additional heating control relay	**47**			
Additional heating	**46 a**			
Boiler heater elements	**46 b**			
Air conditioning compressor	**45**			
Automatic gearbox ECU	**44**			
Cruise control switch	**43**			

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Fuel circuit

Component	(diagr.)	Supplier	Reference	Observations
Recommended fuel				Diesel
Fuel tank	**16**			Capacity = 65 Litres – Polyethylene.
Fuel tank	**17**	VDO		Electric pump immersed in the tank. Voltage: 12 volts – Pressure : 2 Bars
Fuel filter	**18**	BOSCH	0450907	Fixing : on the engine.
Low pressure regulator				Adjustment : 2,5 Bars
Fuel cooler	**19**	NOBEL PLASTIQUE		Fixed under the bodyshell.
Fuel high pressure pump	**21**	BOSCH	CP1	The high pressure pump is driven by the timing belt.
Diesel injectors	**23**	BOSCH	9625542580	
Fuel high pressure regulator	**31**	BOSCH		Fixed on the fuel high pressure pump.
Fuel high pressure pump 3rd piston deactivator	**32**	BOSCH		Fixed on the fuel high pressure pump.
Fuel high pressure injection common rail	**22**	BOSCH	86313	On the engine (18 cc)
Fuel high pressure sensor	**7**	BOSCH	D281022093	On the injection rail
Fuel temperature sensor	**6**	ELTH		On the injection rail
Fuel heater	**20**			Integral with the coolant outlet housing.

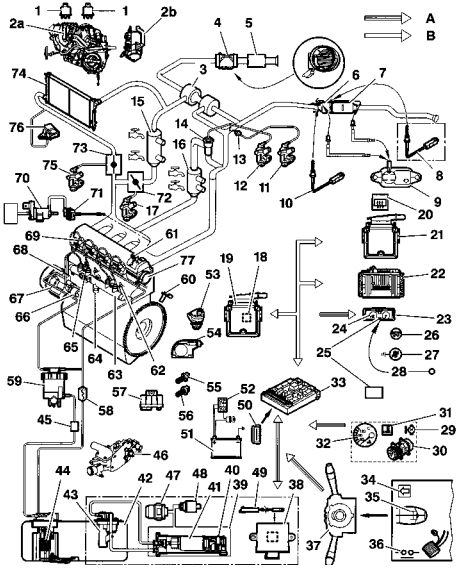
FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Air circuit

Component	(diagr.)	Supplier	Reference	Observations
Air filter	**24**			
Air flowmeter	**5**	SIEMENS		
Turbocompressor	**25**	KKK		
Inlet manifold pressure sensor	**4**	NIPPON DENSON		
Air/air heat exchanger	**26**			
EGR exhaust gas recycling valve	**27**	PIERBORG		Shim reference: violet
Turbo valve adjustment control capsule	**28**			Integral with the turbocompressor
EGR recycling regulation electrovalve	**29**	BOSCH		
Turbo pressure regulation electrovalve	**30**	BOSCH		
Exhaust line	**33**			
Vacuum pump	**48**			
EGR butterfly housing electrovalve	**49**			
EGR butterfly housing	**50**	MAGNETI MARELLI		

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Summary



B1HP1BXP

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit

Component	(diagr.)	Supplier	Reference	Observations
Ignition injection ECU	**19**	BOSCH	EDC 15C2	88 way connector. Flash eprom type sequential injection (reprogrammable eprom). Installed in the electronic ECUs compartment.
Injection double relay	**52**	BITRON	240 109	15 way black connector. Installed in the electronic ECUs compartment.
Battery	**51**	VARTA	L2 – 12 volts 400 amps	Engine compartment.
Atmospheric pressure sensor	**18**	BOSCH		Incorporated in the injection ECU.
Central diagnostic socket	**50**			In the passenger compartment.
Diagnostic warning lamp	**27**			Incorporated in the dashboard instrument panel.
Vehicle speed sensor	**53**	EATON		On the gearbox.
Preheater warning lamp	**26**			Incorporated in the dashboard instrument panel.
Rev counter	**24**			Incorporated in the dashboard instrument panel.
Trip computer	**23**			Incorporated in the dashboard instrument panel.
Engine speed sensor	**60**	ELECTRIFIL		
Camshaft position sensor	**61**	ELECTRIFIL		Airgap value : 1,2 mm.
Preheater unit	**57**	NAGARES CARTIER	960411P 51299011	
Preheater plug	**62**	CHAMPION	CH170	
		BERU	0100226344	

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit (continued)

Component	(diagr.)	Supplier	Reference	Observations
Coolant temperature sensor	**46**	ELECTRIFIL	962859028A	Fixed on the coolant outlet housing
Accelerator pedal sensor	**54**			
Brake pedal switch	**36**	PHILIPS		
	56			
Clutch pedal switch	**55**			
Additional heating control relay	**1**			
Additional heating	**2 a**			Open at rest
Boiler elements	**2 b**			Closed at rest
Air conditioning compressor	**30**			
Automatic gearbox ECU	**22**			
Cruise control switch	**34**			
Heated rear screen	**20**			
ESP ECU	**21**			
«Service» warning lamp	**25**			
Cooling fan	**29**			
Fuel cap warning lamp	**28**			
Coolant temperature alert warning lamp	**31**			
Coolant temperature indicator	**32**			

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Electrical circuit (continued)

Component	(diagr.)	Supplier	Reference	Observations
Built-in systems interface (BSI)	**33**			
Cruise control safety switch	**35**			
Switching module (under the steering wheel)	**37**			
Fuel cap presence sensor	**49**			

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Fuel circuit

Component	(diagr.)	Supplier	Reference	Observations
Recommended fuel				Diesel
Fuel temperature sensor	**65**	MAGNETI MARELLI		On the injection rail
Fuel high pressure sensor	**64**	BOSCH		On the injection rail
Fuel tank	**42**			Capacity = 68 Litres – Polyethylene
Fuel pump	**44**	VDO		Electric pump immersed in the tank Voltage : 12 V – Pressure : 2 Bars
Fuel filter	**59**	BOSCH		Fixing on the engine
Low pressure regulator				Adjustment : 2,5 Bars
Fuel cooler	**58**	NOBEL PLASTIQUE		Fixed under the boyshell

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Fuel circuit (continued)

Component	(diagr.)	Supplier	Reference	Observations
Fuel heater	**45**			Integral with the coolant outlet housing.
Fuel high pressure pump	**67**	BOSCH		The fuel high pressure pump is driven by the timing belt
Fuel high pressure common injection rail	**63**	BOSCH		On the engine (18 cc).
Diesel injector	**69**	BOSCH	963727798	Reference 1 on injector-carrier (Class 1 injector) Reference 2 on injector-carrier (Class 2 injector) Reference 3 on injector-carrier (Class 3 injector) When changing a diesel injector-carrier, order a component of the same class.
Fuel high pressure regulator	**66**	BOSCH		Fixed on the fuel high pressure pump.
Fuel high pressure pump 3rd piston deactivator	**68**	BOSCH		Fixed on the fuel high pressure pump.

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Air circuit

Component	(diagr.)	Supplier	Reference	Observations
Air filter	**5**		PSA 7895	
Air flowmeter	**4**	SIEMENS		
Turbocompressor	**3**	ALLIED SIGNAL		
Inlet manifold pressure sensor	**76**	NIPPON DENSEN		
Air/air heat exchanger	**74**			
EGR exhaust gas recycling valve	**14**	PIERBURG		Shim reference: violet
Turbo valve adjustment control capsule	**13**			Integral with the turbocompressor
EGR recycling regulation electrovalve	**12**	BOSCH		
Turbo pressure regulation electrovalve	**11**	BOSCH		
Catalytic converter	**6**			
Vacuum pump	**48**	PIERBURG		
EGR butterfly housing	**73**			
Butterfly housing electrovalve	**75**	BOSCH		
«SWIRL» electrovalve	**70**	EATON		
«SWIRL» control diaphragm	**71**	MECAPLAST		
EGR exhaust gas/coolant exchanger	**16**			

FEATURES OF BOSCH HDi DIRECT INJECTION SYSTEM

Particle filter circuit

Component	(diagr.)	Supplier	Reference	Observations
Particle filter	**7**	WIMETAL TR PSA F002		
Catalyser downstream temperature sensor	**8**			
Differential pressure sensor	**9**	KAVLICO		
Catalyser upstream temperature sensor	**10**			
Additive ECU	**38**	MARWAL		
Additive reservoir	**39**			
Additive minimum level sensor	**40**			
Additive injection pump	**41**	MARWAL		
Cap (too full)	**47**			
Additive injector	**43**	MARWAL		
Safety valve	**48**			
Inlet air heater butterfly	**72**			

SPARKING PLUGS

Vehicles - Models		Engine type	BOSCH	CHAMPION	EYQUEM	Electrode gap	Tightening torque
C5	**1.8i 16v**	6FZ	FR8ME		RFN52HZ	1 mm	2.5 m.daN
	2.0i 16v	RFN	FR8ME		RFN52HZ		
	2.0i HPi	RLZ	ZR8TPP15				

SPEEDOMETER

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

This decree stipulates :

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

VR < VL < 1.10 VR + 4 Km/h

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

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

Any of these components can be checked without removing them from the vehicle. (See information note **N° 78-85 TT of 19 October 1978**).
NOTE : Before replacing the speedometer, check the conformity of the following points :
- The tyres fitted to the vehicle.
- The gearbox final drive ratio.
- The speedometer drive ratio.

CLUTCH SPECIFICATION

	Petrol			
	1.8i 16V	**2.0i 16V**	**2.0 HPi**	**3.0i V6**
Engine type	**6FZ**	**RFN**	**RLZ**	**RHY**
Gearbox type	BE4/5			ML/5
Supplier	VALEO			
Mechanism / type	230 DNG 4700		230 DNG 4700 R	242 T 6500
Clutch disc	11 R 10X	12 R 14X	11 R 14X	11 A 14X
Identification of springs	4 Outer 4 Inner	4 Red 4 Grey / Blue	4 Blue	4 Blue 4 Green
No. of splines	18			
Ø of lining. Ext/Int	228/155			242/162
Quality of lining	F 410	F 808 DS	F 410	F 808

CLUTCH SPECIFICATION

	Diesel		
	2.0 HDi		2.2 HDi
Engine type	**RHY**	**RHZ**	**4HX**
Gearbox type	BE4/5	ML/5	
Supplier	LUK		
Mechanism / type	230 P 4700	225 T 5700	242 T 6500
Clutch disc		Damping performed by engine flywheel	
Identification of springs	4 outer 2 Inner	Damping performed by engine flywheel	
No. of splines	18		
Ø of lining. Ext/Int	228/155	225/150	242/162
Quality of lining	F 408	F 808	

GEARBOX AND TYRE SPECIFICATIONS

	Petrol				
	18i 16V	Automatic	2.0i 16V	Automatic	2.0 HPi
Engine type	6FZ		RFN		RLZ
Tyres-Rolling circumference	195/65 R15 – 1.93 m		195/65 R15 – 1.93 m		
Gearbox type	BE4/5	AL4	BE4/5	AL4	BE4/5
Gearbox ident. plate	20 DL 29	20 TP 44	20 DL 30	20 TP 42	20 DL 31
Reduction box torque	19x79	21x73	19x79	23x73	19x77
Speedometer ratio	22x18	52x67	22x18	52x67	None

	Petrol	
	3.0i V6	Automatic
Engine type	XFX	
Tyres-Rolling circumference	215/55 R16 – 1.96 m.	
Gearbox type	ML/5	4 HP 20
Gearbox ident. plate	20 LE 95	20 HZ 13
Reduction box torque	16x65	20x69
Speedometer ratio	None	59x68

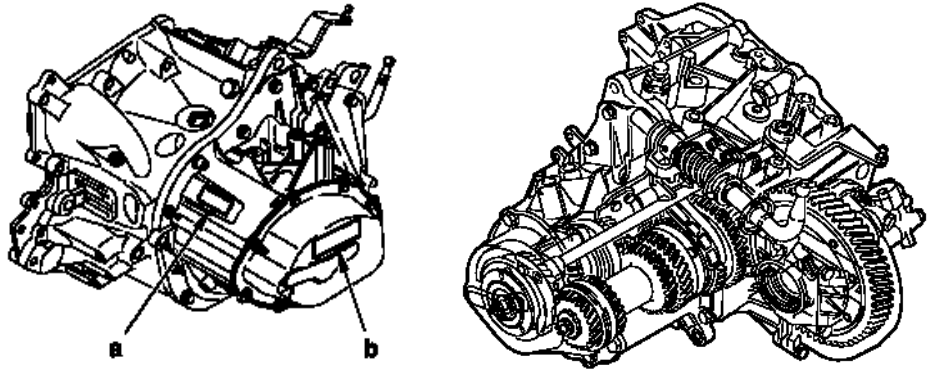
GEARBOX AND TYRE SPECIFICATIONS

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

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ-RFN-RLZ-RHY

Identification.



B2CP3BNC | B2CP3BPD

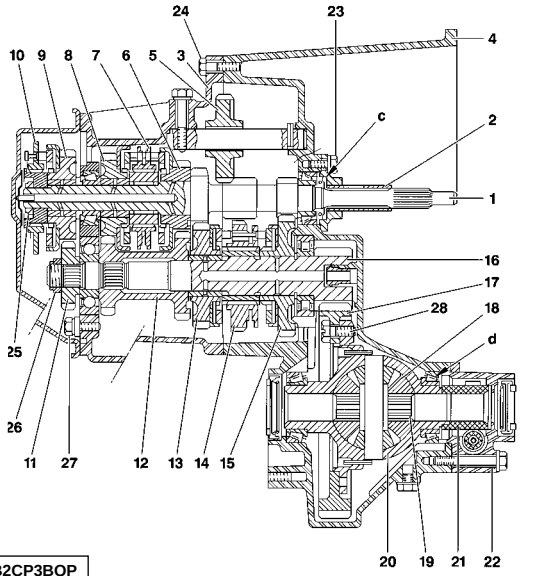
Identification.

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

(b) Location of identification label.

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ - RFN - RLZ - RHY



B2CP3BQP

Identification (continued)

(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 (3rd / 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.

«c» Adjusting shims : **0,7 to 2,4 mm. (From 0,10 to 0,10 mm)**

«d» Adjusting shims:**1,4 à 1,6 mm. (From 0,10 to 0,10 mm)**

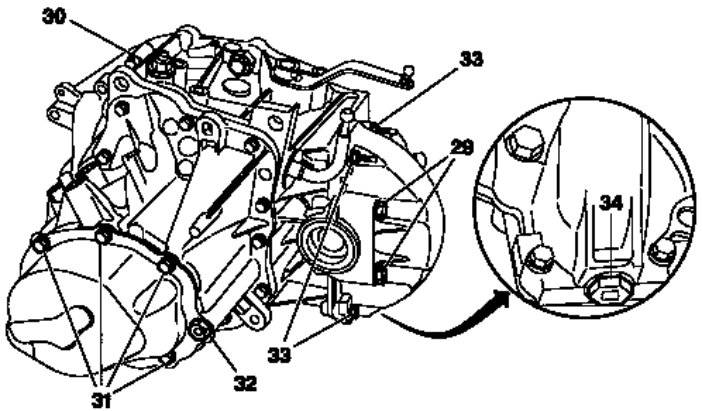
Tightening torques m.daN.

(23) Clutch bearing guide	**1.25**
(24) Clutch housing	**1.3**
(25) Secondary shaft nut	**7.25**
(26) Yoke retaining screw	**6.5**
(27) Reverse gear screw	**1.5**
(28) Reverse gear switch	**6.5**
Reverse gear switch	**2.5**

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ - RFN - RLZ - RHY

Identification (continued)



B2CP3BRD

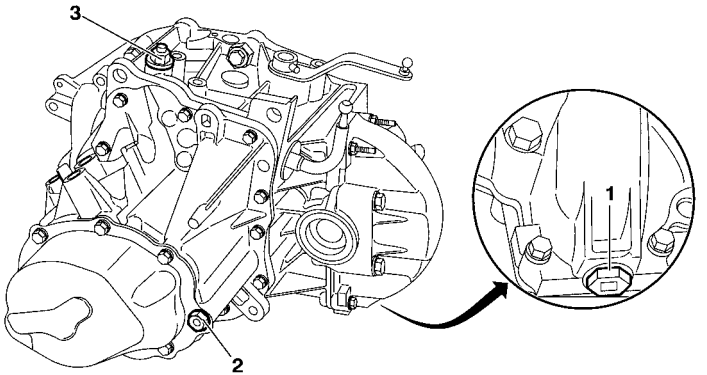
Tightening torques m.daN.

(29) Differential housing	**5**
(30) Breather pipe	**1.7**
(31) Rear housing cover screws	**1.25**
(32) Top-up plug	**2.2**
(33) Differential housing screws	**1.25**
(34) Drain plug screw	**3.5**

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ - RFN - RLZ - RHY

Recommendations - Precautions



B2CP3BLD

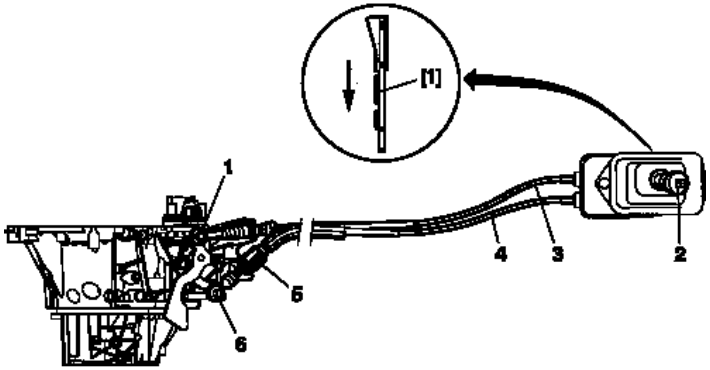
(1) Drain plug.
(2) Filling and top-up plug.
(3) Air vent.

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

Quality of oil.
- See chapter on lubrication page **19.**

Quantity of oil.

- Gearbox empty	**= 1.9 litres.**
- After draining	**= 1.8 litres.**



B2CP3CJD

Gear controls

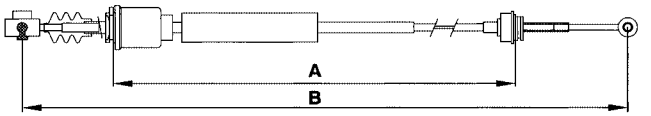
[1] Gear lever positioning tool **8605-T.**

(1) Gear engagement ball-joint **Ø 10 mm**.
(2) Gear control lever
(3) Gear engagement control cable.
(4) Gear selection control cable.
(5) Cable selection locking ley.
(6) Gear selection ball-joint **Ø 10 mm**.

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ - RFN - RLZ - RHY

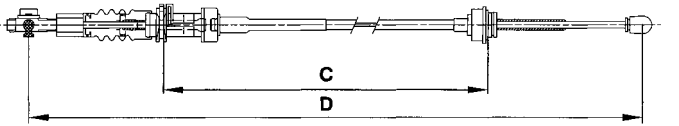
Gear selection control cable.



B2CP3CKD

	Left hand drive	Right hand drive
Length A	730 ± 3 mm	
Length B	937.5 ± 7.5 mm	

Gear engagement control cable.



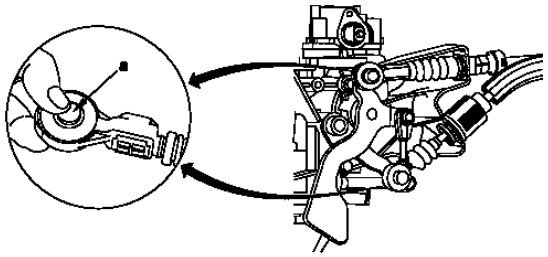
B2CP3CLD

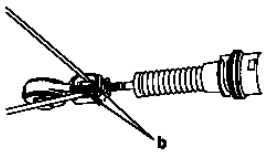
	Left hand drive	Right hand drive
Length G	700 ± 3 mm	
Length H	983 ± 7.5 mm	

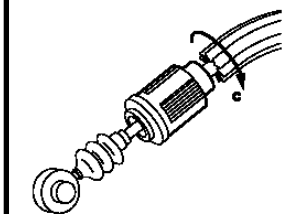
Note : See adjustments: page **181**

BE4/5 GEARBOX SPECIFICATION

Engines : 6FZ - RFN - RLZ - RHY







Adjustments.

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

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

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

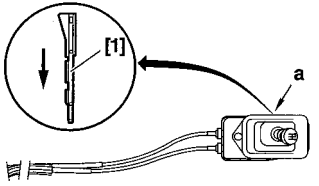
Ball-joints alone can be changed by removing the unlocking key with the aid of two thin screwdrivers, unclip at **«b»**.

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

B2CP3CVD	B2CP3CWC	B2CP3CXC

BE4/5 GEARBOX CONTROLS

Engines : 6FZ - RFN - RLZ - RHY



B2CP3E7C

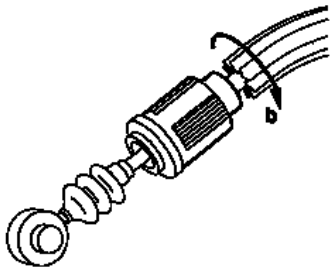
Tools.

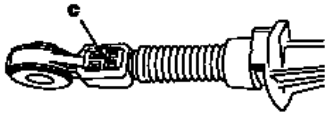
[1] Tool for positioning the gearbox control lever **8605-T Tool kit 9040-T**

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

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

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





B2CP3E8C B2CP3E9C

Adjustments (continued)

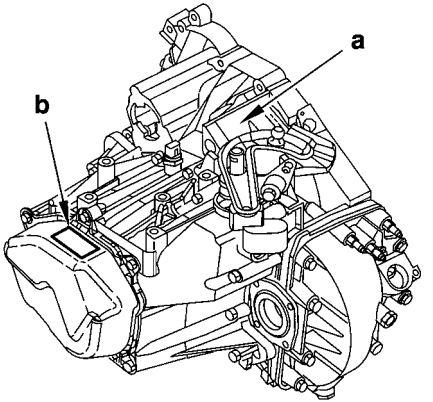
Under the bonnet.
- Remove the air filter assembly.
- Unlock the gear engagement cable ball-joint **(b)**.
- Unlock the gear selection cable ball-joint **(c)**.
- Make sure the gear levers *(engagement and selection)* are in neutral position.
- Lock the cable lengths with the ball-joint locking keys.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

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

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX

Identification.



B2CP3CMC

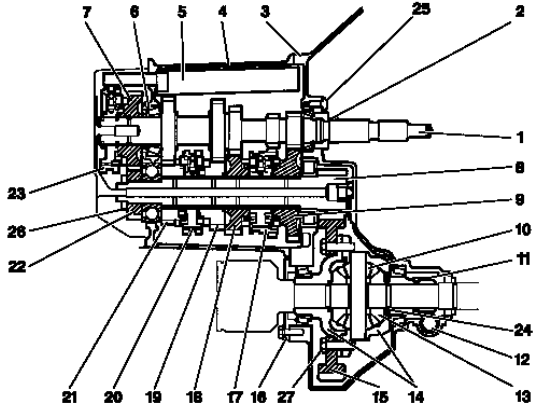
Identification.

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

(b) Location of identification label.

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX



B2CP3CNP

Identification (continued)

(1) Primary shaft.
(2) Clutch bearing guide.
(3) Clutch housing
(4) Gearbox casing.
(5) Oil channel
(6) Primary shaft bearing adjustment shim.
(7) Drive gear (5th)
(8) Secondary shaft.
(9) Driven gear (1st)
(10) Satellite gears.
(11) Speedometer screw.
(12) Speedometer drive.
(13) Planet gears.
(14) Differential housing
(15) Differential gearwheel.
(16) Differential bearing stop plate.
(17) 1st/2nd gear synchroniser and reverse gear driven gear.
(18) Driven gear (2nd)
(19) Driven gears (3rd)
(20) 3rd/4th gear synchroniser.
(21) Driven gears (4th)
(22) Driven gears (5th)
(23) 5th gear synchroniser.
(24) Planet gear adjustment shim.

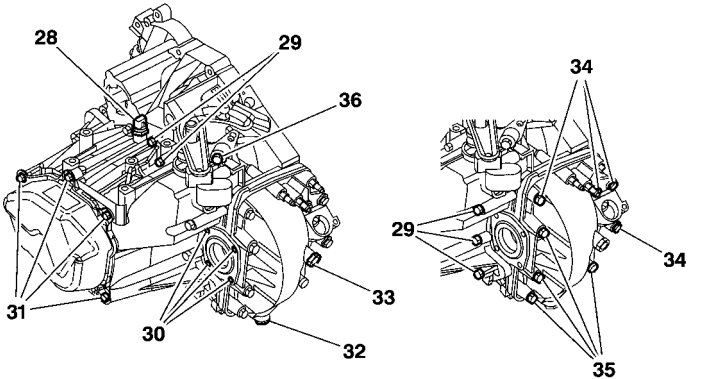
Tightening torques m.daN.

(25) Clutch bearing guide	**2 ± 0,2**
(26) Secondary shaft nut	**17 ± 1,5**
(27) Differential screw	**7,5 ± 0,5**

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX

Identification (continued)



B2CP3CPD

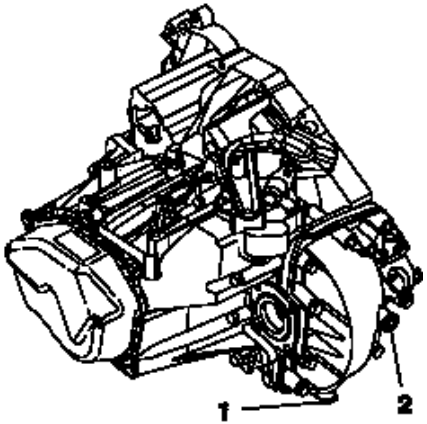
Tightening torques m.daN.

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

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX

Recommendations - Precautions



B2CP3CUC

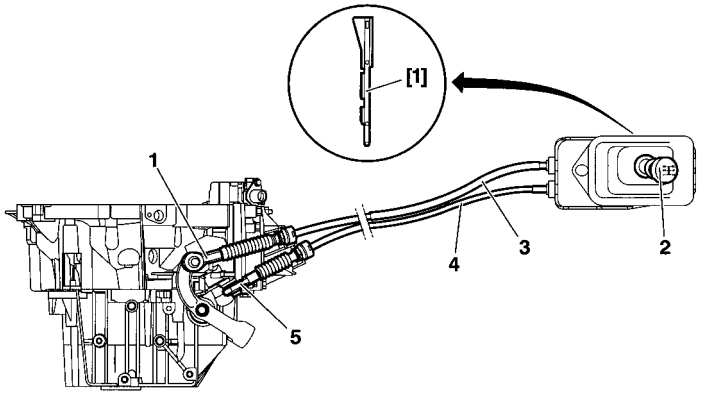
(1) Drain plug.
(2) Filler and top-up plug.

Oil quality.
- See chapter on lubricants: page **19**.

Oil quantity.
- After draining **= 1.8 litres**

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX



B2CP3CQD

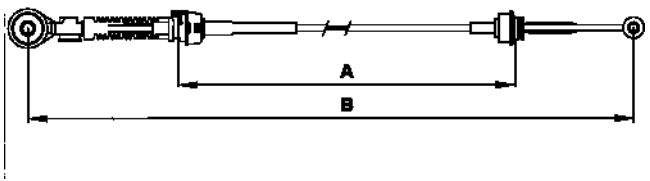
[1] Gear lever positioning tool **8605-T.**

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

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX

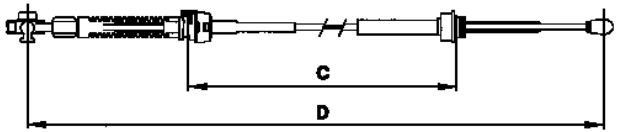
Gear selection control cable.



B2CP3CRD

	Left hand drive	Right hand drive
Length A	750 ± 3 mm	
Length B	1012 ± 7.5 mm	

Gear engagement control cable.



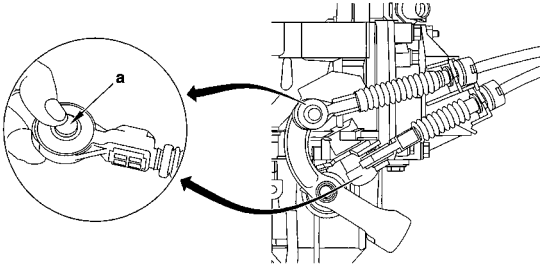
B2CP3CSD

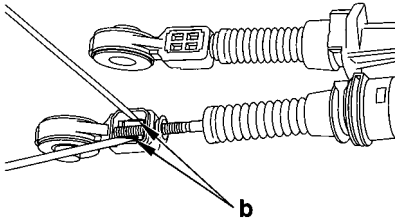
	Left hand drive	Right hand drive
Length C	771 ± 3 mm	
Length D	1094 ± 7.5 mm	

Note : See adjustment page **190**.

ML/5 GEARBOX SPECIFICATION

Engines : XFX – RHZ – 4HX





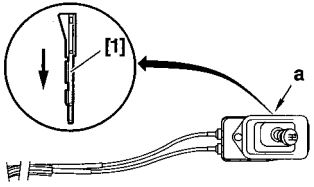
Adjustments.

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

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

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

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



B2CP3E7C

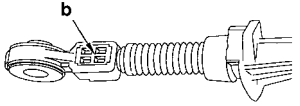
Tools.

[1] Tool for positioning the gearbox control lever **8605-T Tool kit 9040-T**

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

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

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



Adjustments (continued)

Under the bonnet.

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

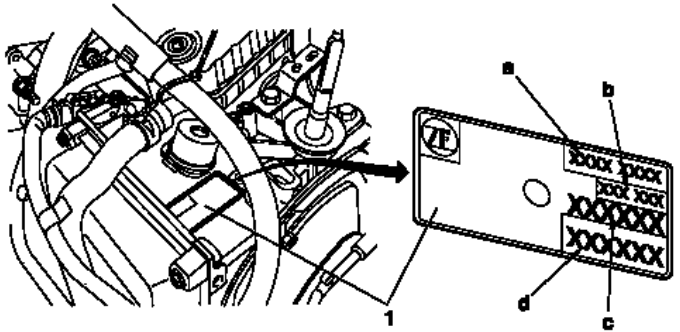
Checks.

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

B2CP3EBC

4 HP 20 AUTOACTIVE GEARBOX SPECIFICATION

Engines : XFX - 4HX



B2CP3CYD

Identification.

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

(a) Serial no.

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

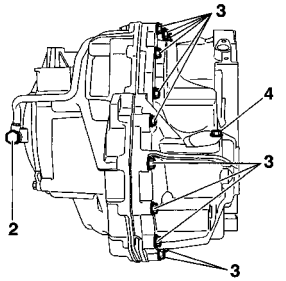
(c) Type of automatic gearbox.

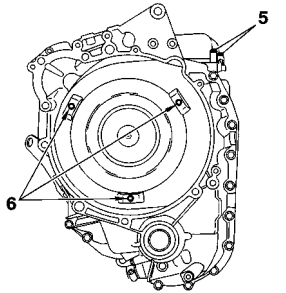
(d) Component reference.

Oil quality and quantity
(See chapter, page **19**).

4 HP 20 AUTOACTIVE GEARBOX SPECIFICATION

Engines : XFX - 4HX



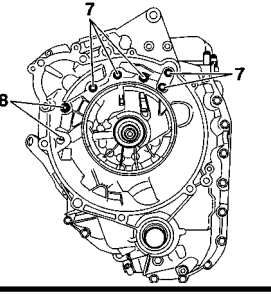


Tightening torques m.daN.

Gearbox exterior.

(2) Oil channel union fixing Exteror fixing of	**2.5 ± 0.5**
(3) Exterior fixing of converter cover on clutch housing	**2.3 ± 0.5**
(4) Speedometer take-off aperture plug	**1 ± 0.1**
(5) Steel casing fixing	**0.6 ± 0.1**
(6) Converter fixing on engine	**6 ± 1**
(7) Interior fixing of converter cover on clutch housing	**2.3 ± 0.5**
(8) Torx fixing of converter cover on clutch housing	**2.3 ± 0.5**
Drain plug	**4.5 ± 0.8**
Heat exchanger fixing	**3.5 ± 0.5**
Selector lever position switch fixing	**1 ± 0.2**
Converter cover fixing on engine cover **(XFX engine)**	**6.5 ± 1**
Converter cover fixing on engine cover **(4HX engine)**	**5.8 ± 1**

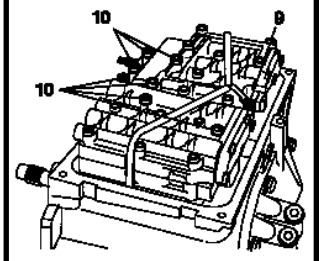
B2CP3CZC **B2CP24BC**

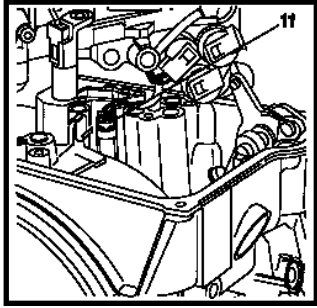


B2CP24CC

4 HP 20 AUTOACTIVE GEARBOX SPECIFICATION

Engines : XFX - 4HX





Tightening torques m.daN.

Gearbox interior.

(9) Input speed sensor fixing	**0.8 ± 0.1**
(10) Hydraulic block fixing *(Large head)*	**0.8 ± 0.1**
(11) Output speed sensor fixing	**1 ± 0.2**

B2CP24DC | **B2CP24EC**

RECOMMENDATIONS - PRECAUTIONS (AL 4 and 4 HP 20 AUTOMATIC GEARBOXES)

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

Precautions to be taken

Towing

The front of the vehicle must be raised in order to be towed.
If the front of the vehicle cannot be raised :
IMPERATIVE : - Put gear lever in position «N».
- Do not add any oil.

AL4 gearbox
- Do not exceed 50 km/h (30mph) over a distance of 50 km (30 m).
4 HP 20 gearbox
- Do not exceed 70 km/h (45mph) over a distance of 100 km (60 m).

Driving.
Never drive with the ignition switched off.
Never push the vehicle to try to start it;
(impossible with an automatic gearbox).

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

Removing - refitting. *(Automatic gearbox).*

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

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

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

RECOMMENDATIONS - PRECAUTIONS (AL 4 AUTOMATIC GEARBOX)

Engines : 6FZ - 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.
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 quality.
See corresponding operation.
An excessive oil level can result in the following consequences :
- Excessive heating of the oil.
- Oil leaks.

An insufficent level causes the destruction of the gearbox.
Top up the level of oil in the gearbox *(if necessary).*

Check using a diagnostic tool.
Read the fault codes *(engine and gearbox).*

Absence de codes défauts.
Carry out parameter measures, actuator tests and a road test.

Presence of fault codes.
Carry out the necessary repairs.
Delete the fault codes.
Carry out a road test to check the repair and, if need be, modify the gearbox ECU parameters *(this is essential after an initialisation of the ECU).*

RECOMMENDATIONS - PRECAUTIONS (AL 4 and 4 HP 20 AUTOMATIC GEARBOXES)

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

Procedure prior to carrying out repairs (continued)

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

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

There are two types of back-up modes :

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

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

Reading the fault codes.
Read the fault codes.

No fault codes present :
Carry out a measure of parameters.

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

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

RECOMMENDATIONS - PRECAUTIONS (AL 4 and 4 HP 20 AUTOMATIC GEARBOXES)

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

ECU : Downloading, Configuration, Initialisation *(Pedal).*

Downloading. ***(AL 4 and 4 HP 20)***

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

The operation of downloading is used to update the automatic gearbox ECU or to adapt it to evolutions of the engine ECU.
After downloading, carry out the following :
- Note down the value in the oil usage counter present in the automatic gearbox ECU.
- Delete the fault codes.
- Again note down the value in the oil usage counter and compare it with the value previously read.
- Pedal initialisation ***(AL 4)***
- Configuration (if needed) ***(AL 4)*** **Following the diagnostic tool procedure.**
- A reinitialisation of the autoadaptives ***(AL4 - 4 HP 20).***
- A road test ***(AL 4 - 4 HP 20)***.

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

RECOMMENDATIONS - PRECAUTIONS (AL 4 AUTOMATIC GEARBOX)

Engine : 6FZ-RFN-RHZ

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

Downloading (AL 4 only).

ECU downloading procedure :
- Follow the diagnostic tooling procedure.

A new ECU or downloaded update is always configured with the following options :
- SHIFT LOCK gear selection lever position.
- OBD outlet *(emission standard L4*).

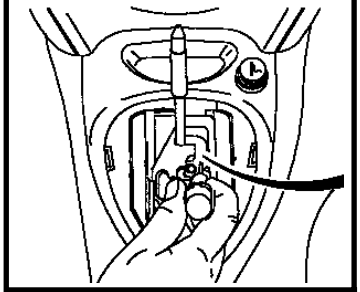
If the ECU is to be fitted to a vehicle without one or both of these options:
- Carry out a configuration which inhibits the diagnosis of the option(s) concerned.

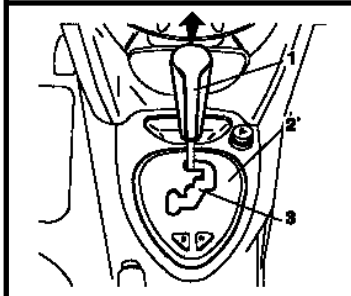
Pedal initialisation. (AL 4 only).

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

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

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





SHIFT LOCK

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

Unlocking the «shift lock» *(normal operation).*

Switch on the ignition.

Apply the brake pedal and keep it pressed.

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

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

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

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

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

Remove :

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

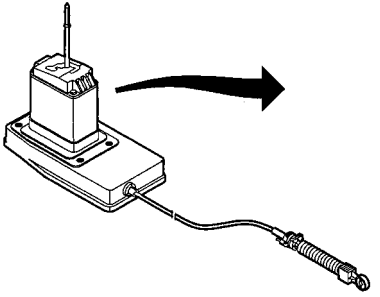
Unlock the **«shift lock» (4)** using a screwdriver.

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

C5FPOCUD | C5FPOCTC

4 HP 20 GEARBOX CONTROLS

Engines : XFX - 4HX



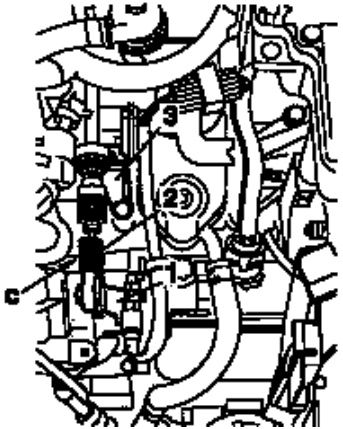
Selection control.

The gear selection control has **5 positions**.
The selection lever is guided by the shape of the stepped gate and by a retaining spring which holds it towards the left.
The gear selection control is equipped with the **«shift lock»**, so you have to switch on the ignition and apply the brake pedal to unlock the selection lever from the park position.
Selection (P) : Park *(locking and immobilisation of the vehicle).*
Selection (R) : Reverse gear.
Selection (N) : Neutral.
Selection (D) : Drive *(Use of the four gears in their autoadaptive automatic function).*
Selection (M) : **Manual (M + M -)** allowing the driver to select gears by pulling and pushing the gear lever.
In position **M**, selection is by an electronic sensor located close to the gear lever.
The variation of flux necessary to the movement of the sensor cells is obtained by a magnet located on the lever itself. This enables the change of status.

B2CP3DKD

4 HP 20 GEARBOX CONTROLS

Engines : XFX - 4HX



Selection control (continued).

In position **M**, selection is by an electronic sensor located close to the gear lever.
The variation of flux necessary to the movement of the sensor cells is obtained by a magnet located on the lever itself. This enables the change of status. The information is transmitted to the gearbox ECU.

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

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

To return to the normal programme, press a second time on the sport switch or snow switch.
Only when the selector is in position **(P)** or **(N)** can the engine be started.

(1) Control linkage with ball-joint.
(2) Automatic adjustment *(Push-button pressed in to lock the control adjustment, springs out for the adjustment to be made)* **«c»** Push-button locking clip in pressed-in position.
(3) Cable sleeve stop.
The automatic gearbox is controlled by cable.

B3CP3DLC

DRIVESHAFTS - GEARBOX

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

Tightening torques (m.daN) of the wheel bolts

CITROËN C5	Steel Alloy	9 ± 0.5

WHEELS AND TYRES

			1.8i 16 V (With or without Auto. gearbox) X-SX	2.0i 16V (With or without Auto. gearbox) X-SX	2.0i 16V (With or without Auto. gearbox) Exclusive
Engine type			**6FZ**	**RFN**	
Tyre Circumference		**S**	195/65 R15-HX1 ENERGY-1.920 m		
		O	195/65 R15-HX1 ENERGY-1.920 m		
Wheel		**T**	6 JX 15 H2-4.18		**(A)** 6JX15H2-4.18 SYLVESTONE
		A	6 JX 15 H264.18 SYLVESTONE		
Pressure (Bars)	**Front/ Rear**	**(1)**	2.3/2.3		
	Front/ Rear	**(2)**	2.3/2.7		
Spare wheel	**Tyre Circumference**	**S**	195/65 R15-HX1 ENERGY-1.920 m		
		O	195/65 R15-HX1 ENERGY-1.920 m		
	Wheel	**T**	6 JX 15 H2-4.18		
		T	6 JX 15 H2-4.18		
	Pressure (Bars)		2.7		
Electronic under-inflation detection					
			No (*)		

Symbols and abbreviations used **S =** Standard fitting **T =** Steel wheel **O =** Option fitting **A =** Alloy wheel
(1) = Normal operating pressure (Max. 4 persons and 40 kg in the boot).
(2) = Pressure under load (More than 4 persons and «MAXI» load in the boot).
(*) = Possibility of **«space saver»** type spare wheel option.

WHEELS AND TYRES

			2.0 HPi (Without Auto. gearbox) X-SX	2.0 HPi (Without Auto. gearbox) Exclusive	3.0i V6 (With or without Auto. gearbox) Exclusive
Engine type			**RLZ**		**XFX**
Tyre Circumference		**S**	195/65 R15 H XH1 ENERGY 1.920 m		215/55 R16W-PILOT PRIMACY 1.953 m
		O	195/65 R15 H XH1 ENERGY 1.920 m		
Wheel		**T**	6 JX 15 H2-4.18	**(A)** 6 JX 15-4.18 SYLVESTONE	**(A)** 6 JX 15-4.18 MONZA
		A	6 JX 15 H2-4.18 SYLVESTONE		
Pressure (Bars)	**Front/ Rear**	**(1)**	2.3/2.3		2.5/2.3
	Front/ Rear	**(2)**	2.3/2.7		2.5/2.7
Spare wheel	**Tyre Circumference**	**S**	195/65 R15 XH1 ENERGY 1.920 m		215/55 R16W-PILOT PRIMACY 1.953 m
		O	195/65 R15 XH1 ENERGY 1.920 m		
	Wheel	**T**	6 JX 15 H2-4.18		**(A)** 6.5 JX 16-4.26 MONZA
		T	6 JX 15 H2-4.18		
	Pressure (Bars)		2.7		2.6
Electronic under-inflation detection					Yes (except spare wheel) - (**)
			No (*)		

Symbols and abbreviations used **S =** Standard fitting **T =** Steel wheel. **O =** Option fitting **A =** Alloy wheel
(1) = Normal operating pressure (Max. 4 persons and 40 kg in the boot).
(2) = Pressure under load (More than 4 persons and «MAXI» load in the boot).
(*) = Possibility of **«space saver»** type spare wheel option. **(**)** = Fitting of tyre **«not suitable for chains»**.

WHEELS AND TYRES

			2.0 HDi (Without Auto. gearbox) X	2.0 HDi (With or without Auto. gearbox) X-SX	2.0 HDi (With or without Auto. gearbox) Exclusive
Engine type			**RHY**	**RHZ**	
Tyre Circumference		**S**	195/65 R15H XH1 ENERGY 1.920 m		
		O	195/65 R15H XH1 ENERGY 1.920 m		
Wheel		**T**	6 JX 15 H2-4.18		**(A)** 6JX 15-4.18 SYLVESTONE
		A	6 JX 15 H2-4.18 SYLVESTONE		
Pressure (Bars)	**Front/ Rear**	**(1)**	2.3/2.3		
	Front/ Rear	**(2)**	2.3/2.3		
Spare wheel	**Tyre circumference**	**S**	195/65 R15H XH1 ENERGY 1.920 m		
		O	195/65 R15H XH1 ENERGY 1.920 m		
	Wheel	**T**	6 JX 15 H2-4.18		
		T	6 JX 15 H2-4.18		
	Pressure (Bars)		2.7		
Electronic under-inflation detection					
			No (*)		

Symbols and abbreviations used **S =** Standard fitting **T =** Steel wheel. **O =** Option fitting **A =** Alloy wheel
(1) = Normal operating pressure (Max. 4 persons and 40 kg in the boot).
(2) = Pressure under load (More than 4 persons and «MAXI» load in the boot).
(*) = Possibility of **«space saver»** type spare wheel option.

WHEELS AND TYRES

			2.2 HDi (With or without Auto. gearbox)	
			SX	Exclusive
Engine type			4HX	
Tyre Circumference		**S**	205/65 R15H XH1 ENERGY-1.959m	215/55 R16W PILOT PRIMACY-1.953m
		O	215/55 R16W PILOT PRIMACY-1.953m	205/65 R15H XH1 ENERGY 1.959m
Wheel		**T**	6.5 JX 15 CH-4.25-IMOLA	6.5 JX 16-4.26-MONZA
		A	6.5 JX 16-4.26-MONZA	6.5 JX 15 CH-4.25-IMOLA
Pressure (Bars)	**Front/ Rear**	**(1)**	205/65-2.3/2.1 – 215/55-2.5/2.3	
	Front/ Rear	**(2)**	205/65-2.3/2.5 – 215/55-2.5/2.3	
Spare wheel	**Tyre circumference**	**S**	205/65 R15H XH1 ENERGY-1.959m	215/55 R16W PILOT PRIMACY-1.953m
		O	215/55 R16W PILOT PRIMACY-1.953m	205/65 R15H XH1 ENERGY-1.959m
	Wheel	**T**	6.5 JX 15 CH-4.25-IMOLA	6.5 JX 16-4.26-MONZA
		T	6.5 JX 16-4.26-MONZA	6.5 JX 15 CH-4.25-IMOLA
	Pressure (Bars)		205/65-2.5 – 215/22-2.6	
Electronic under-inflation detection			Yes (except spare wheel) **(O)** = (**)	

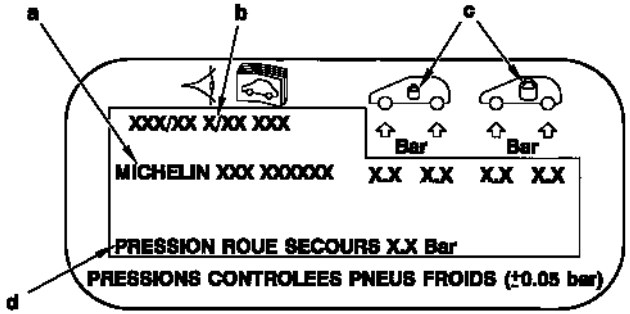
Symbols and abbreviations used **S =** Standard fitting **T =** Steel wheel**. O =** Option fitting **A =** Alloy wheel
(1) = Normal operating pressure (Max. 4 persons and 40 kg in the boot).
(2) = Pressure under load (More than 4 persons and «MAXI» load in the boot).
(**) = Fitting of tyre **«not suitable for chains»**.

WHEELS AND TYRES

Inflation pressures

The label giving the recommended inflation pressures is affixed to the front left hand door pillar.

a - Type of tyre.
b - Tyre specifications.
c - Recommended tyre inflation pressures *(unladen and laden)*
d - Recommended tyre inflation pressures for the spare wheel.



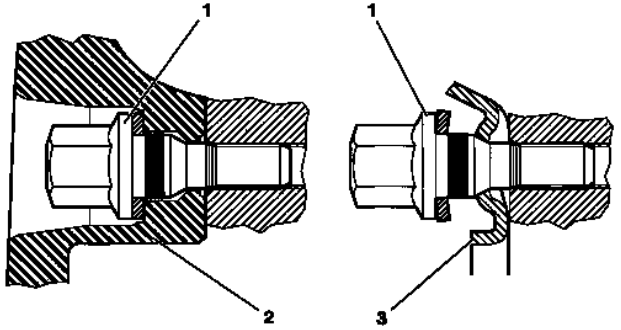
B2GPOOND

Wheel bolts

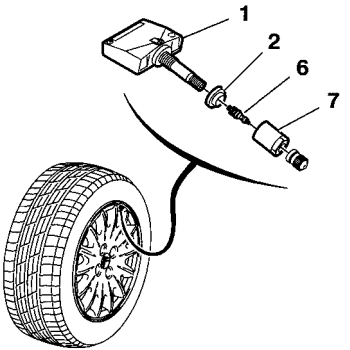
(1) Wheel bolt
(For all rim types).
(2) Wheel in light alloy or steel alloy
(3) Spare wheel (**«Space-saver»** type).

Tightening torque

9 ± 0.5 m.daN.



B2GPOOJD



B2GPOOUC

Special features.

- The contact faces of the fixing bolts on **«steel alloy»** wheels are flat.

- **Silverstone, Imola,** and **Monza** alloy wheels can be equipped with an under-inflation detection device.

- «Space-saver» type spare wheels are composed of :

- **4 JX 15 4,0** red-coloured rim on which is affixed a label indicating a speed limit of **80 km/h (50 mph)**.

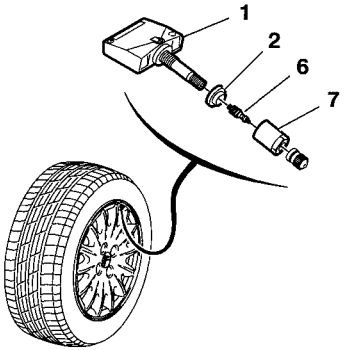
- A **MICHELIN 125/90 R15 TEX** tyre: pressure **3,5 ± 0,5 Bars**.

NOTE : These wheels are available only to replace the **195/65 R15 H** tyre fitting.

- For **2,2 HDi (4HX)** Exclusive, there is a special option called chain option for non-chainable versions.

- The vehicle therefore has identical **205/65 R 15** tyres, four **IMOLA** type rims and a steel alloy spare wheel.

- The bolts for fixing **SILVERSTONE** and **IMOLA** type alloy rims have chrome caps.



B2GPOOUC

Special features (continued)

Under-inflation detection device.

- Vehicles equipped with the under-inflation detection system are identifiable by the presence of aluminium valves.

- The under-inflation detection option is possible only on vehicles equipped with aluminium rims.

Composition :

- Four **HF** transmitter modules **(4)** incorporated in the wheels in place of the valves, each including a lithium battery with **10 years** guaranteed life.

- A **HF** receiver incorporated in the communication module under the steering wheel *(COM 2000).*

- The tightening torque for the nut **(5)** is **0.6 ± 0.1 m.daN**.

WARNING :
- Each time a tyre is replaced, the valve (6) must be replaced.
- Each time a rim is replaced, the seal (7) must be replaced.
- Each time a valve is replaced, it is necessary to have the transmitter recognised by the BSI, with the aid of a diagnostic tool.

AXLE GEOMETRY

General adjustment conditions

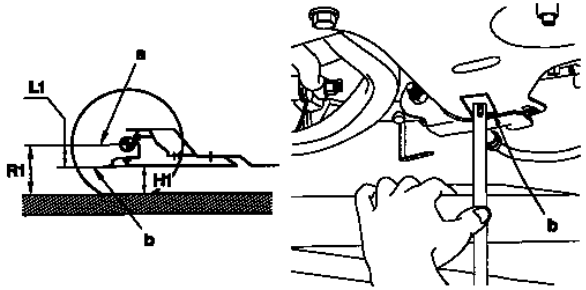
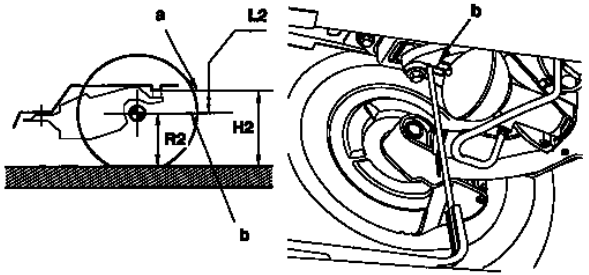
- Check the tyre pressures. - Release the handbrake. - Place the manual height control in the «NORMAL» position. - Engine running.	**NOTE :** After each movement of the vehicle body, and before each measurement : - Move the vehicle slightly forwards and backwards, by turning the road wheel by hand.
Front height	**Rear height**
L1	**L2**
The dimension **«L1»** for checking front height is between the level of the front subframe «b» and the wheel axis **«a».**	The dimension **«L2»** for checking rear height is between the measuring zone «b» and the wheel axis **«a»**.

This method eliminates all the variations in measurement due to :
Different wheel fiittings.
Vehicle loading.
Wear or incorrect inflation of tyres.

(Measuring from the wheel axis : tool 8006-T)

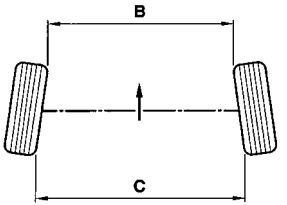
H1 = R1 - L1	**H2 = R2 + L2**
H1 = Front height **(± 6 mm).** **R1 =** Wheel radius **(mm).** **L1 =** Theoretical dimension between the level of the front subframe and the wheel axis.	**H2 =** Rear height **(± 6 mm).** **R2 =** Wheel radius **(mm).** **L2 =** Theoretical dimension between the measuring zone on the cross-member support and the wheel axis.

AXLE GEOMETRY

Measuring front height	Measuring rear height
The measurement of the front dimension **«H1»** is between ground level and the measuring zone on the front subframe *(to the rear of the front yokes fixing the suspension arm).*	
 B3BP166D	 B3BP168D
L1 (mm) **Theoretical dimension between the level of the front subframe and the wheel axis.**	**L1 (mm)** **Theoretical dimension between the measuring zone on the cross-member support and the wheel axis.**
140	**140**

AXLE GEOMETRY

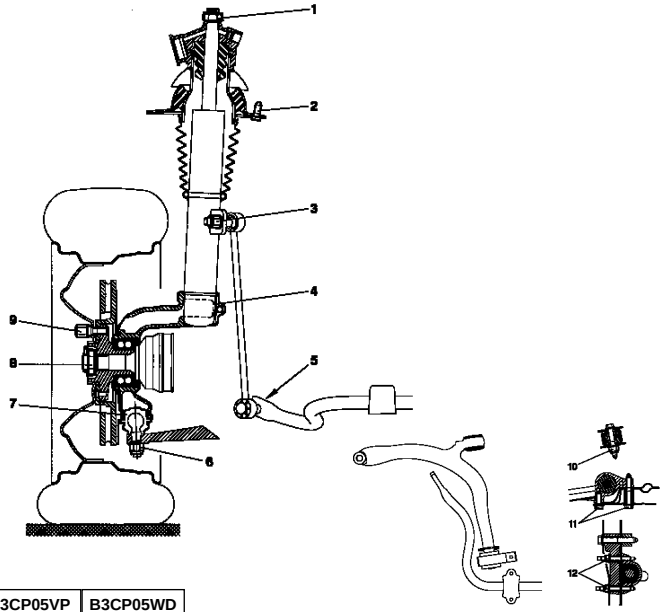
Front axle					Rear axle	
Vehicle	**Tracking**	**Castor**	**Camber**	**King pin inclination**	**Tracking**	**Camber**
	(Adjustable)	*(Non adjustable)*			*(Adjustable)*	*(Non adjustable)*
All types	**0 to - 3 mm 0° to - 0° 27'**	**3° 03' ± 30'**	**0° ± 30'**	**12° 56' ± 30'**	**5,4 ± 1,3 mm 0° 49' ± 0° 12'**	**- 1° ± 20'**



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

B3CP02UC

FRONT AXLE



B3CP05VP | B3CP05WD

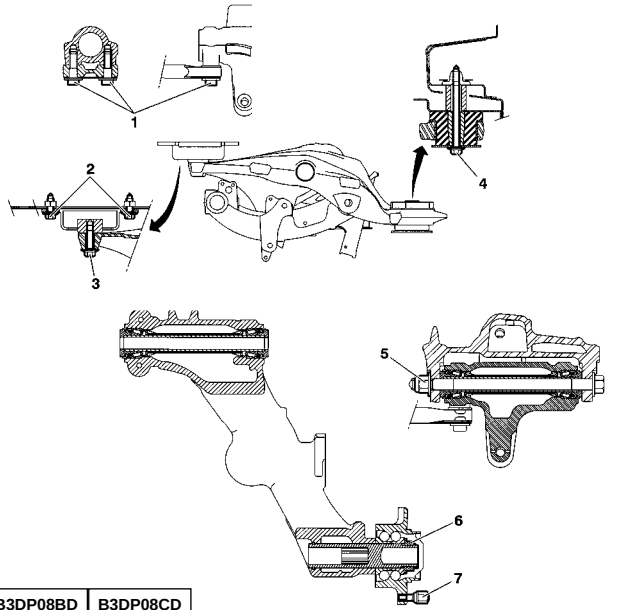
Tightening torques m.daN.

(1) Suspension leg upper fixing	**7 ± 0.7**
(2) Suspension leg fixing on bodyshell	**4.3 ± 0.6**
(3) Anti-roll bar link rod upper fixing	**6.4 ± 0.6**
(4) Anti-roll bar link rod upper fixing	**6.4 ± 0.6**
(5) Ball-joint fixing	**4.5 ± 0.4**
(6) Ball-joint fixing on pivot	**25 ± 2.5**
(7) Suspension leg upper fixing on pivot	**5.4 ± 0.5**
(8) Hub nut	**32.5± 2.6**
(9) Wheel fixing	**9 ± 1**
(10) Arm front fixing	**13 ± 1.3**
(11) Arm rear fixing	**8 ± 0.8**
(12) Anti-roll bar bearing fixing on subframe	**4.2 ± 0.6**
Stabiliser bar fixing on subframe	**6.6 ± 0.6**

	Anti-roll bar	
Engines	**Diameter (mm)**	**Colour ref.**
All types (exc. ES9J4)	23.5	Yellow
ES9J4	24.5	White

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

REAR AXLE



B3DP08BD | B3DP08CD

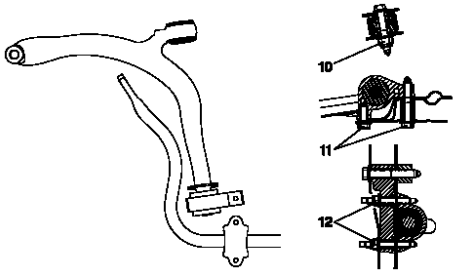
Tightening torques m.daN.

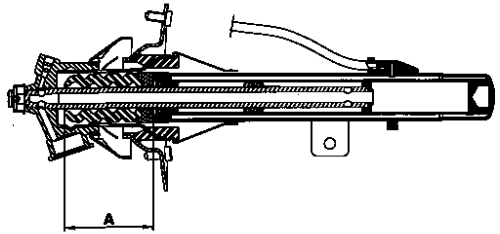
(1) Anti-roll bar fixing	**13.1± 1.4**
(2) Rear rubber mounting fixing on bodyshell	**8 ± 1.2**
(3) Rear subframe fixing	**11.5 ± 1.1**
(4) Front subframe fixing on bodyshell	**11.5 ± 1.1**
(5) Suspension shaft fixing	**14.9 ± 1.3**
(6) Hub nut	**25 ± 2.5**
(7) Wheel fixing	**9 ± 1**

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

	Anti-roll bar	
Engines	**Diameter (mm)**	**Colour ref.**
All Types (exc. ES9J4)	21.5	Blue
ES9J4	22	Yellow
All Types Estates		

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





B3CP05WD | B3BP167D

Front suspension

Tightening torques m.daN.

(10) Arm front fixing	**13 ± 1.3**
11) Arm rear fixing	**8 ± 0.8**
(12) Anti-roll bar bearing fixing on subframe	**4.2 ± 0.6**

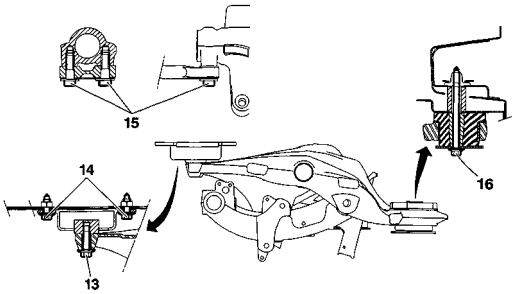
Hydractive 3+ hydraulic suspension *(Power steering)*

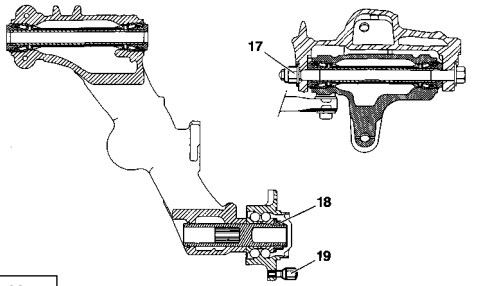
Suspension piston diameter	**= 35 mm.**
Anti-roll bar diameter	**= 23.5 mm.**
Anti-roll bar colour reference	**= Yellow.**

Suspension leg.

Bump stop, height	**"A" = 97 mm.**

SUSPENSION





B3DP08ND | B3DP08PD

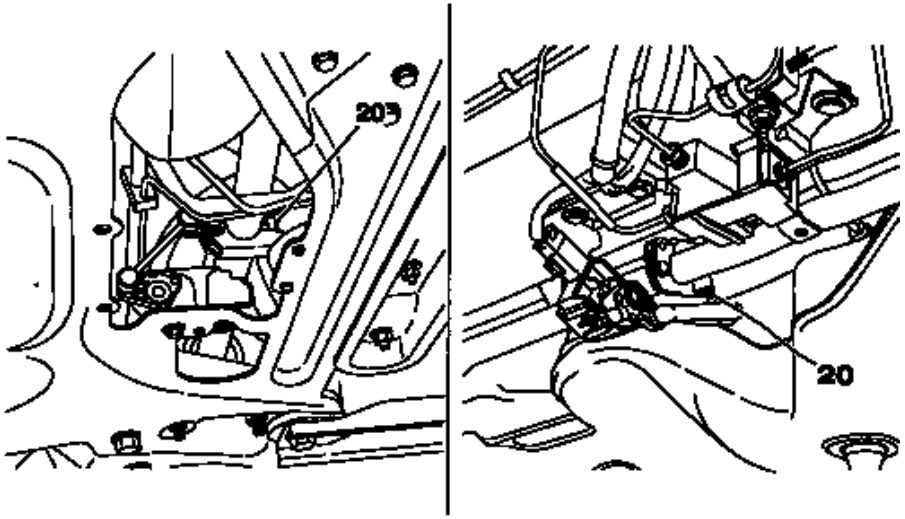
Rear suspension

Tightening torques m.daN.

(13) Subframe rear fixing	**11.5 ± 1.1**
(14) Rear rubber mounting fixing on bodyshell	**8 ± 1.2**
(15) Anti-roll bar fixing	**13.1 ± 1.4**
(16) Front fixing of subframe on bodyshell	**11.5 ± 1.1**
NOTE : (13) and **(16)** Face and threads greased.	
(17) Arm shaft fixing	**14.9 ± 1.3**
(18) Hub nut	**25 ± 2.5**
(19) Wheel fixing	**9 ± 1**

Hydractive 3+ hydraulic suspension *(Power steering)*

Suspension piston diameter	**= 37 mm.**
Anti-roll bar diameter	
- Saloon	**= 21.5 mm**
- Estate	**= 22 mm.**
Anti-roll bar colour reference	
- Saloon	**= Blue**
- Estate	**= Green**



B3CP06TD

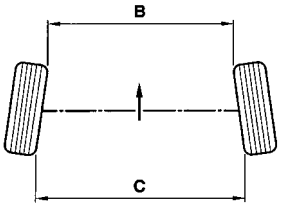
Height control

Tightening torques m.daN.

(20) Collars	**0.6**

AXLE GEOMETRY

Front axle					Rear axle	
Vehicle	**Tracking**	**Castor**	**Camber**	**King pin inclination**	**Tracking**	**Camber**
	(Adjustable)	*(Non adjustable)*			*(Adjustable)*	*(Non adjustable)*
All types	**0 to - 3 mm 0° to - 0° 27'**	**3° 03' ± 30'**	**0° ± 30'**	**12° 56' ± 30'**	**4 ± 1.5 mm 0° 41' ± 0° 13'**	**- 1° ± 20'**

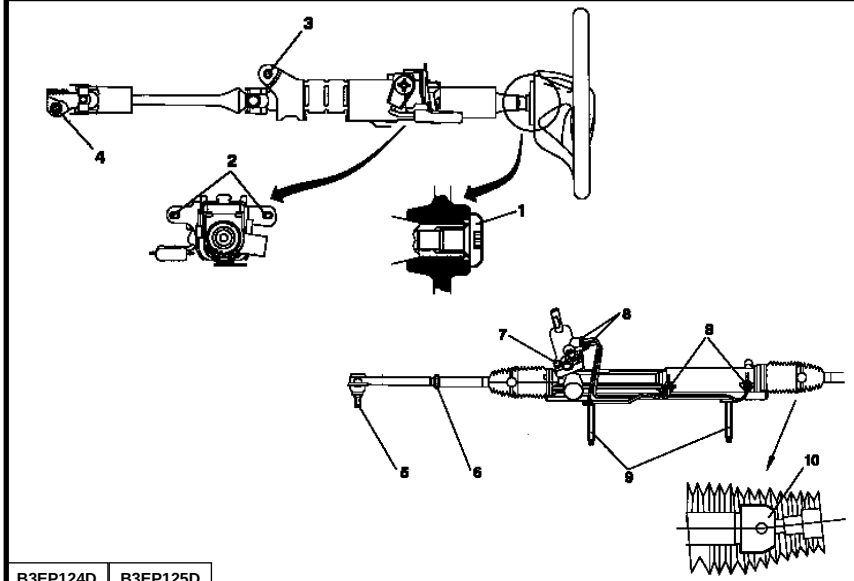


	NOTE	
A < B = Positive figure :	+ =	TOE-IN
A > B = Negative figure :	– =	TOE-OUT

B3CP02UC

SPECIFICATIONS OF POWER-ASSISTED STEERING

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



B3EP124D | B3EP125D

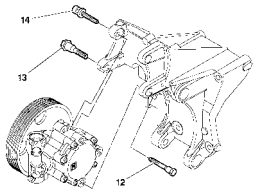
Tightening torques m.daN.

(1) Steering wheel fixing	**2 ± 0.3**
(2) Column fixing on mounting	**2.3 ± 0.4**
(3) Column fixing on mounting	**2.3 ± 0.2**
(4) Cardan fixing	**2.3 ± 0.3**
(5) Ball-joint fixing on pivot	**3.5 ± 0.6**
(6) Link rod lock nut	**6 ± 0.4**
(7) Valve fixing on cover	**2.3 ± 0.1**
(8) Piping fixing on ram	**0.8 ± 0.8**
(9) Mechanism fixing on subframe	**8 ± 0.9**
(10) Steering rack ball-joint	**9 ± 0.9**

Quantity of oil = **4,3 litres**
Quality of oil = **TOTAL FLUIDE LDS**

SPECIFICATIONS OF POWER-ASSISTED STEERING

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



B3EP127D

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

Engines	Supplier	Flow type	Adjustment pressure	Pulley diameter
6FZ RFR RJX RHY RHZ 4HX	ZF	Falling	100 bars	129 mm
XFX	SAGINAW	Constant		

Tightening torques m.daN		
Engines	EW-DW	ES9J4
(12) Vis **(13)** Vis **(14)** Vis	**2.2 ± 0.3**	**2.5 ± 0.6**

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

Engine XFX : A converter, integral with the valve, modulates the assistance according to the vehicle speed.
Length of steering rods *(Adjustment)* between ball-joints = **362 mm.**

Power-assisted steering hydraulic circuit.
The oil supplies both the steering circuit and the suspension circuit.

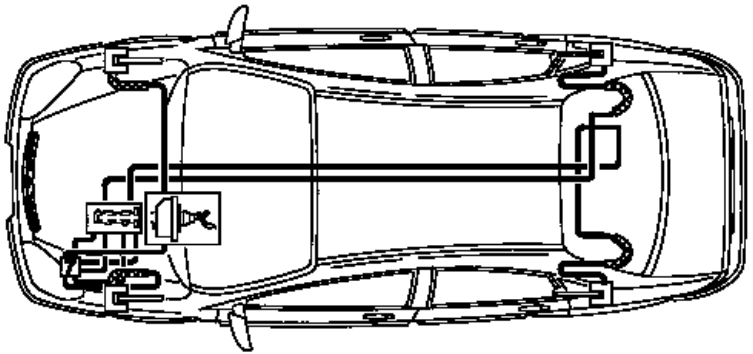
BRAKE SPECIFICATIONS

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

BRAKE SPECIFICATIONS

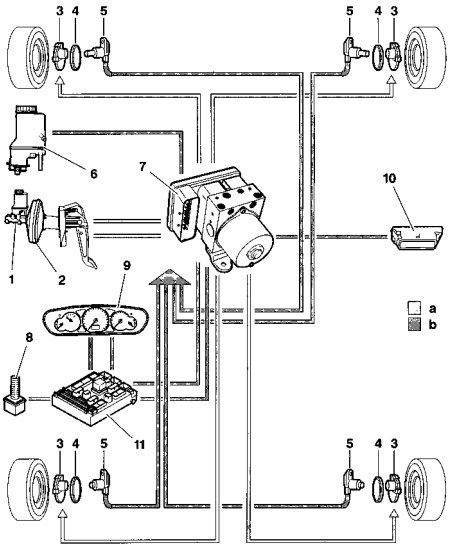
				2.0 HDi	2.2 HDi	
Engine type				**RHY**	**RHZ**	**4HX**
FR	**Ø mm**	**Master cylinder**		22.2 (Valve type)		
		Master-vac		254		
		Caliper/piston makes		BOSCH ZO 57/26 BIR 57	BOSCH ZO 57/28 BIR 57	
		Brake disc	**Non-ventilated**			
			Ventilated	283	288	
	Disc thickness/min. thickness			26/24	28/26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

BRAKE SPECIFICATIONS

Braking circuit	Braking system specifications
 B3FP12WD	- Braking circuit at **«X»**. - Front brakes with ventilated discs. - Rear brakes with non-ventilated discs. - Handbrake lever controlling cables acting on the front wheels. - The compensator and main brake limiter functions are assured by the ABS EBD system fitted as standard at the factory on all versions. **NOTE : EBD** = Electronic Brakeforce Distribution

BRAKE SPECIFICATIONS

Braking circuit diagram

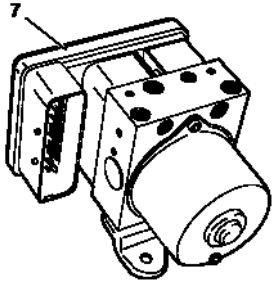


(a) Hydraulic circuit.
(b) Electrical circuit.
(1) Master cylinder in tandem.
(2) Braking servo.
(3) Brake caliper.
(4) Hub equipped with a bearing with an integral magnetic wheel *(**48** pairs of poles).*
(5) Wheel sensor.
(6) Brake fluid level sensor.
(7) Hydraulic block plus ECU.
(8) Stoplamp switch.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

B3GP02HP

BRAKE SPECIFICATIONS

(7) Hydraulic block

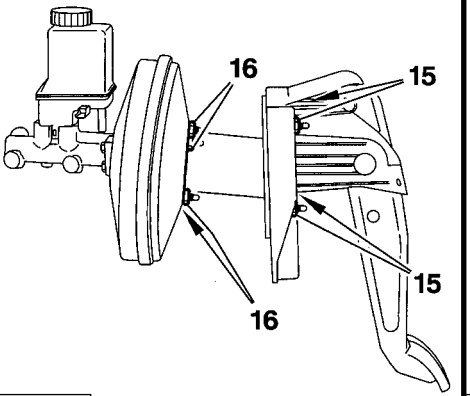


B3FP12XC

Elements	Ref.	Supplier	Part No.	Observations
Electronic ECU	7	ITT - A	ABS MK.60 BASR MK.60	**47** way connector. Alone on the hydraulic block. Changing only the ECU is prohibited.
Front wheel sensor	5	ITT - A	96 332 952 80	**2** way black connector. The sensors are inductive-type. Mounted on the pivot. Non-adjustable airgap : **0.2 à 1.5 mm.** Tightening torque : **0.8 ± 0.2 m.daN**
Rear wheel sensor			96 332 954 80	**2** way black connector. The sensors are inductive-type. Mounted on the brake caliper support. Non-adjustable airgap : **0.15 à 1.6 mm.** Tightening torque : **0.8 ± 0.2 m.daN**
Hub bearing	4	SNR		Hub equipped with a bearing with an integral magnetic wheel *(**48** pairs of poles).*
Hydraulic block	7	TEVES	ABS MK.60 96 371 711 80 BASK MK.60 96 371 712 80	Installed on the front LH wheelarch. **4** adjustment channels.

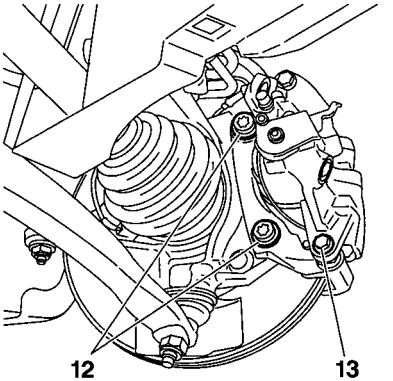
BRAKE SPECIFICATIONS

Brake pedal carriage



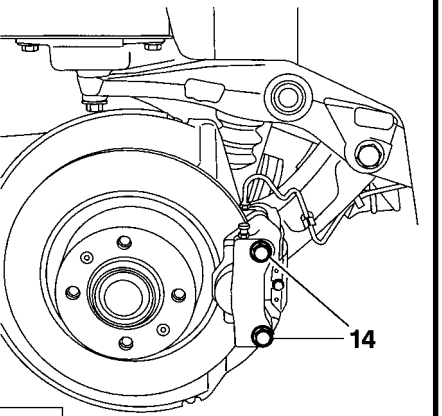
B3FP130C

Front brake



B3FP12YC

Rear brake

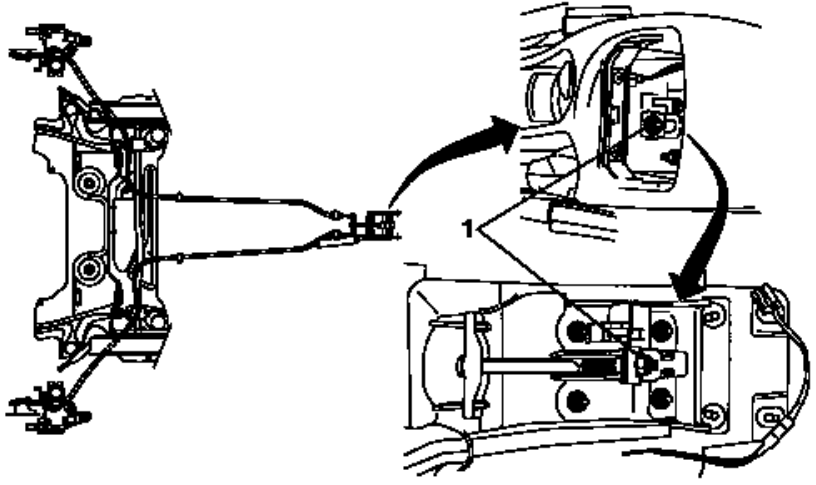


B3FP12ZC

Tightening torques (m.daN).

(15) Fixing on bodyshell	**1.8 ± 0.25**	**(12)** Caliper fixing on pivot	**12± 1.8**	**(14)** Rear caliper fixing on suspension arm	**7 ± 0.7**
(16) Servo fixing	**2.1 ± 0.1**	**(13)** Yoke fixing on caliper	**3.1± 0.1**		

HANDBRAKE (Adjustment)

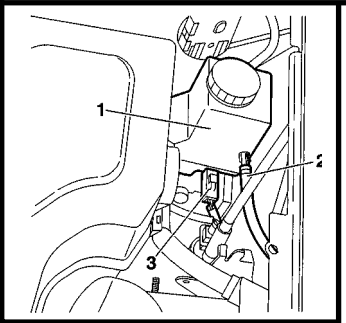


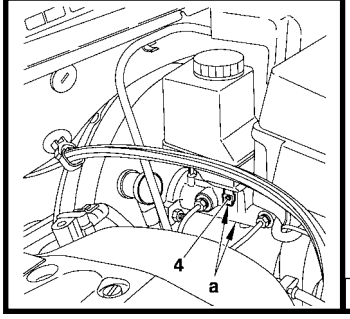
B3FP12JD

Adjustment

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

BLEEDING AND FILLING THE BRAKING SYSTEM





Tools.

[1] Generic bleeding apparatus	**: "LURO" or similar.**
[2] PROXIA station	**: 4165-T.**
[3] LEXIA station	**: 4171-T.**

Bleeding, filling.

Draining the brake fluid reservoir.

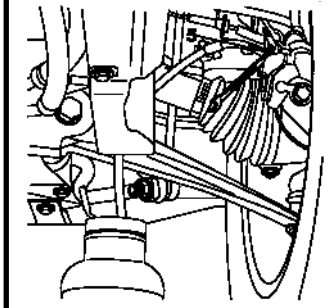
- Drain the brake fluid reservoir **(1)** to the maximum *(if necessary, use a clean syringe).*
- Disconnect the connector **(3)**.
- Uncouple the pipe **(2)**.
- Remove the reservoir **(1)** by separating the lugs **«a»** from the shaft **(4)**.
- Empty the brake fluid reservoir **(1)**.
- Clean the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

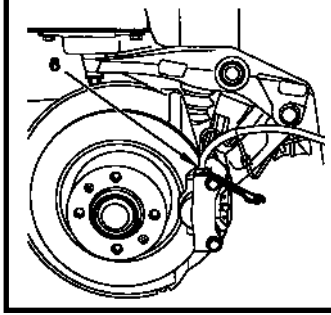
Remove :

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

B3FP139C | **B3FP13AC**

BLEEDING AND FILLING THE BRAKING SYSTEM





Bleeding, filling (continued).

Filling the braking system.

WARNING : Use only those hydraulic fluids that are approved and recommended.
- Fill the brake fluid reservoir **(1).**

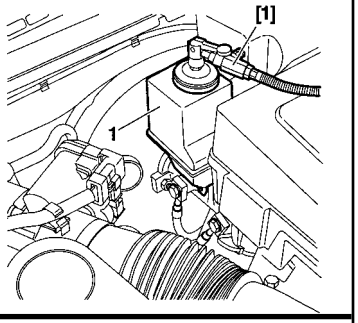
Bleeding the braking system.
WARNING: During the bleeding operation, take care to maintain the level of brake fluid in the reservoir and to top it up, using only brake fluid that is clean and clear.

Bleeding the primary circuit.
WARNING: The ABS should not be active during the bleeding operation.
- Front brake caliper: Bleed screw **(5)**.
- Rear brake caliper: Bleed screw **(6)**.
- Bleed each wheel cylinder, proceeding in the following order :

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

B3FP13BC | AB3FP13CC

BLEEDING AND FILLING THE BRAKING SYSTEM



B3FP13DC

Bleeding, filling (continued).

With the bleeding apparatus

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

For each circuit :

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

Without the bleeding apparatus.

NOTE : Two operators are necessary.

For each circuit :

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

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

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

BLEEDING AND FILLING THE BRAKING SYSTEM

Bleeding, filling (continued).

Bleeding the secondary circuit.

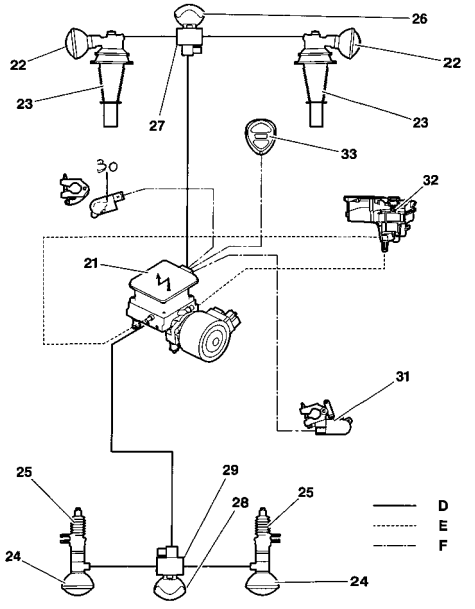
NOTE : The bleeding apparatus is connected on the brake reservoir.
- Use **LEXIA** or **PROXIA** diagnostic tools.

Select the menu corresponding to the vehicle :

- ABS menu.
- ESP menu.

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

HYDRAULIC SPECIFICATIONS

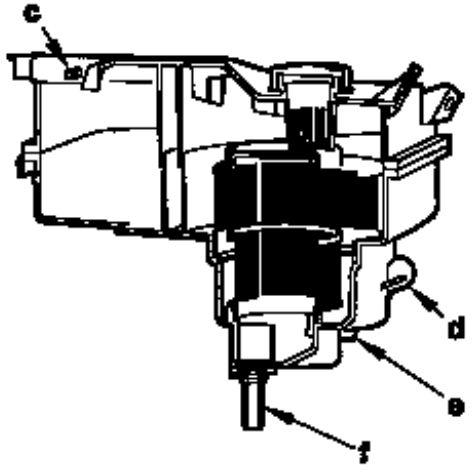


Location of components

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

B4CP01FP

HYDRAULIC SPECIFICATIONS



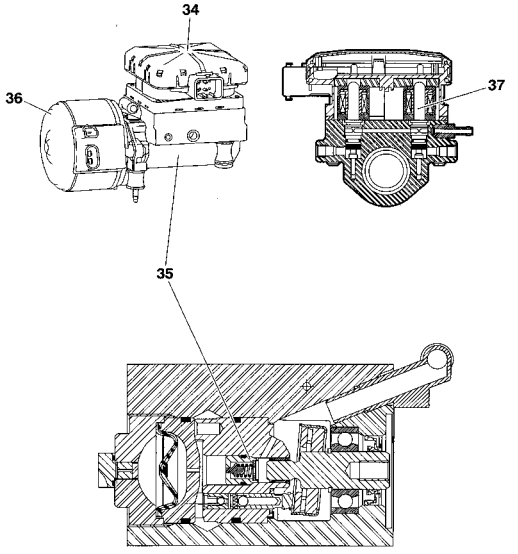
B4BP01BC

Reservoir

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

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

HYDRAULIC SPECIFICATIONS



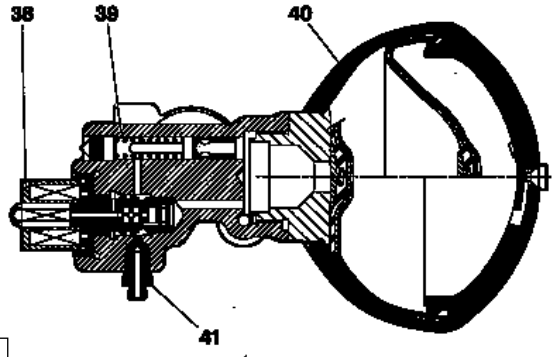
Built-in Hydro-electronic Interface (BHI).

Ref.	Component	Specifications
(36)	Electric motor	2350 ± 150 rpm
(35)	Hydraulic unit comprising : Pump with 5 axial pistons - Anti-pulse hydropneumatic accumulator A safety valve	Throughput = 0.7 l/min at 2300 rpm Diameters of the pistons = 6.35 mm Safety valve rating = 180 Bars
(34)	Electronic control unit	
(37)	4 electrovalves: Front suspension inlet Rear suspension inlet Front suspension exhaust Rear suspension exhaust	The vehicle's anti-sink function is assured by the exhaust electrovalves

B3BP169P

HYDRAULIC SPECIFICATIONS

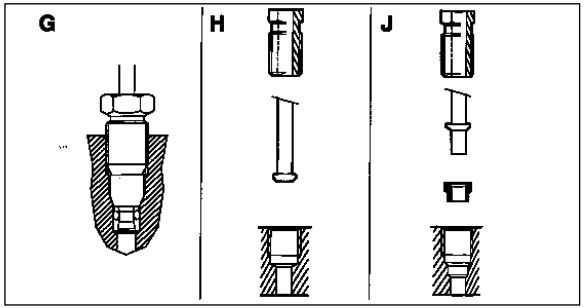
Hydractive 3+ regulator



B4BP01CD

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

Hydraulic unions



B4DP003D

Reference	Tube diameter (mm)	Tightening torque m.daN
G	3.5	1.5 ± 0.3
H	6.35	
J	10	2.5 ± 0.5

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES

Special features

Identification.

- Fitting of new slimline spheres with multilayer membranes, stone grey in colour.
- It is forbidden to recharge or overhaul this type of sphere.
- The number marked on the suspension sphere is the reference no. of the component and not the Part No.
- The two-figure number marked on the suspension sphere indicates the initial inflation pressure value.

Example :

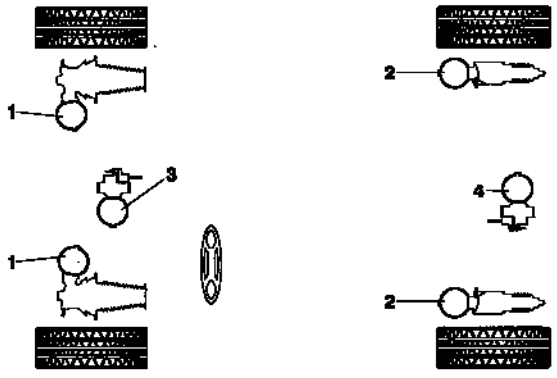
Suspension sphere marking	Batch of steel	Day of manufacture	Year of manufacture	Time of manufacture	Pressure rating (Bars)
96 420 906 80	AG2	066	0	13h59	57

- The pressure value of this type of suspension sphere is given merely as a guide.
- When checking, the value read could be higher than the nominal value.

NOTE : Suspension cylinders on the same axle should be equipped with the same type of membranes.

Tightening torques for these spheres : 2,7 ± 0,5 m.daN.

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES



B4BP01DD

(1) Front suspension sphere.

(2) Rear suspension sphere.

(3) Front hydractive 3+ regulator accumulator.

(4) Rear hydractive 3+ regulator accumulator.

SPECIFICATION - IDENTIFICATION : SUSPENSION SPHERES

Hydractive 3 suspension

Front suspension sphere (1)

WARNING : The number marked on the suspension sphere is the reference no. of the component and not the Part No.

Engines	Suspension sphere marking	Volume (cc)	Pressure (Bars)	Diameter of damper hole (mm)
6FZ	96 420 906 80	385	57	1.9/1.3
RHY-RHZ	96 420 907 80			1.75/1.3
	Rear suspension sphere (2)			
All Types	96 420 905 80	385	25	0.7/0.48

Hydractive 3+ suspension

	Front suspension sphere (1)			
RFN-RLZ	96 420 908 80	385	44	0.9/0.48
XFX-4HX	96 420 909 80		52	
	Rear suspension sphere (2)			
All Types	96 422 091 80	385	31	1.4/0.94

Hydractive regulator accumulator

Hydractive regulator	Suspension sphere marking	Volume (cc)	Pressure (Bars)
Front (3)	96 420 898 80	385	62
Rear (4)	96 373 373 80		45

STARTER MOTORS

Vehicles / models		Types of starter motor	Class	Climate
CITROËN C5	1.6i 16v	VALEO D6RA74	3	H,T,C
		MELCO M002T13081		
		MELCO 9625169680	4	VC
	1.6i 16v (Auto)	VALEO D6RA74	3	H,T
	2.0i 16v	MELCO M002T13081		
	2.0i HPi	MELCO 9625169680	4	VC
	3.0i V6	MELCO 9625169680	4	H,T,C,VC
	2.0 HDi	VALEO D7R26	5	H,T
		MELCO M001T80481		
		BOSCH 1236080	6	C,VC
		VALEO D7R27		
	2.2 HDi	BOSCH 1236080	6	H,T,C,VC

CLIMATE : H (Hot)**, T** (Temperate)**, C** (Cold)**, VC** (Very cold)

ALTERNATORS

		Classes and types					
Engine	**Gbox**	**Without aircon**		**Climate**	**Without aircon**		**Climate**
1.8i 16v **2.0i 16v** **2.0i 16v HPi** **Level 1**	**M**	**9**	VALEO A13 VI 204+	**H,T**	**15**	BOSCH A12051611	H
			MELCO A002TB2291	**C,VC**		VALEO A14 VI 27+	
						MELCO A004TF0091	
					12	MELCO A003TA6491	T
						MELCO A003TA0891	
					9	VALEO A13 VI 204+	C,VC
						MELCO A002TB2291	
	A	**9**	VALEO A13 VI 204+	**H,T**	**15**	BOSCH A12051611	H
			MELCO A002TB2291	**C**		VALEO A14 VI 27+	
		12	MELCO A003TA6491	**VC**		MELCO A004TF0091	
			MELCO A003TA0891		**12**	MELCO A003TA6491	T
						MELCO A003TA0891	
					9	VALEO A13 VI 204+	C,VC
						MELCO A002TB2291	

CLIMATE : H (Hot)**, T** (Temperate)**, C** (Cold)**, VC** (Very cold)

PRE-HEATING AND STARTING CIRCUITS

Vehicles / models		Pre-heater plugs	Pre-heater control unit	Pre-post-heating (Pre-heating time at 20°C)
CITROËN C5	2.0 HDi	CHAMPION CH170	NAGARES 735068	Managed by the diesel injection ECU
		BOSCH 0250202032	CARTIER 960411-P	
	2.2 HDi	CHAMPION CH170	NAGARES 735068	
		BERU 0100226344	CARTIER 960411-P	

AIR CONDITIONING R 134 a (HFC)

Vehicle	Engines	Date	Refrigerant refill	Compressor			
				Variable capacity	Number of valves	Oil quantity cc	Oil reference
CITROËN C5	6FZ RFN RLZ XFX 4HX	11/2000 →	650 +0 -50 gr	SD 7 V16	6	135	SP 10
	RHY RHZ			DELPHI V5 (1)		265 ± 15	PLANETELF 488

(1) HARRISON Division.

Tightening torques (m.daN).

	Unions	
Ø Pipes	**Steel / Steel**	**Aluminium / Steel**
M 06	1.7 ± 3	1.3 ± 3
M 08	3.8 ± 3	2 ± 2
M 10	4 ± 3	2.5 ± 3

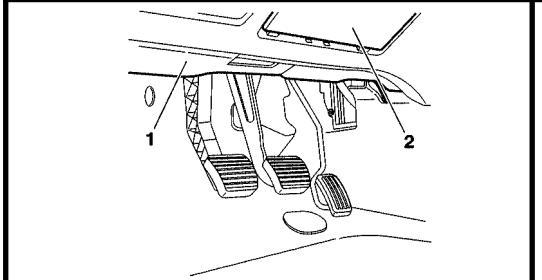
NOTE : : Tighten the unions to the recommended torques using a retaining spanner whenever possible

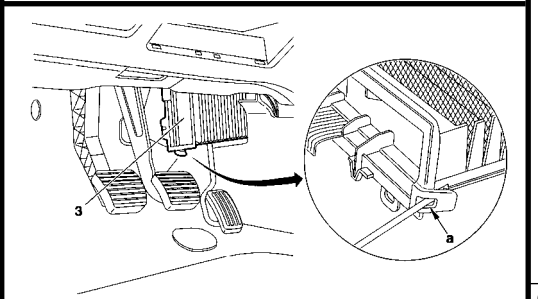
NOTE : For operations concerning draining, drying (empty), checking and refilling of a system: refer to BRE 0290.

WARNING : For R 134.a quantities : (see table on page: **250**).

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

Pollen filter





Remove :

- The trim **(1)** under the dashboard *(driver's side).*

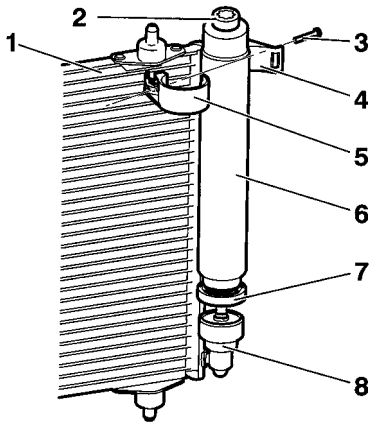
- The cover **(2).**

- Unclip at **«a»** and pull out the pollen filter **(3)**.

- Remove the pollen filter **(3).**

C5FPOC5C | C5FPOC6D

Drying cartridge



C5HP16EC

Tools

[1] Filling and recycling station	**MULLER - ECOTECHNICS**
[2] TORX adaptor	**70 FACOM**
[3] After Sales kit	**(Bottle /skirt / bottle nozzle /grease / compressor oil)**

Reminder : All repairs on an aircon circuit require the aircon circuit to be drained.

After carrying out the dismantling operations necessary to gain access to the condenser, proceed to clean the area of the skirt **(8)** of the reservoir **(6)** using a cloth, then replace the dryer reservoir **(6)**.

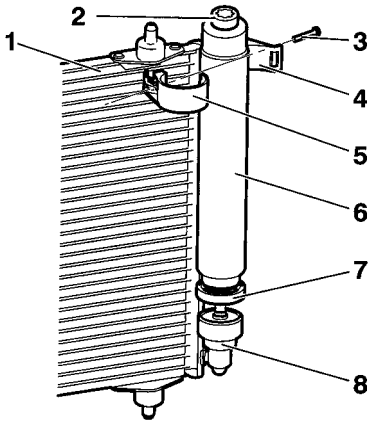
Removing the plastic bracket holding the reservoir (6) :

- Remove the screw **(3)** *(Torx 20)*, from the bracket assembly/plastic counter-bracket **(4)** and **(5)**.
- Remove the counter-bracket **(5)**. *(Rotate it round the hinge in a clockwise direction).*
- Disengage the bracket from the harness **(1)** *(Rotate it round the reservoir **(6)** anti-clockwise)*.
- Remove the bracket **(5)** from the reservoir body **(6)**.

Unscrewing the reservoir (6).

- Unscrew the reservoir **(6)** using the tool **[2]**.

Condenser with integral reservoir (continued)



C5HP16EC

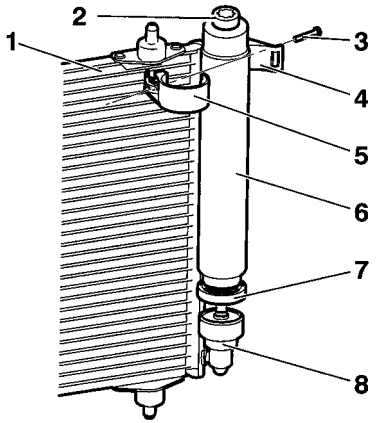
Removing the reservoir (6) from the base (8).

WARNING : This operation requires the greatest care, the base **(8)** should be kept clean prior to fitting the new reservoir.
- Remove the reservoir **(6)** and the protection skirt **(7)**, avoiding **WITHOUT FAIL** any contact or collision with other items under the bonnet *(Risk of impurities entering the base **(8)**).*
- Check before refitting the reservoir **(6)** that the base **(8)** is clean.
  *(If it is not, clean in and around the base **(8)** with a paper cloth.)*

Preparing the new dryer reservoir

- Remove the black plastic protection cap from the reservoir neck **(6)**, leaving in place the green protection at the other end, in order to keep the new reservoir **(6)** sealed when mounting it in the base **(8)** of the condenser.
- Use the grease sachet in the replacement kit, to lubricate the threads of the reservoir.
- Use the oil sachet in the replacement kit, to lubricate the two O-ring seals of the reservoir **(6)**.
- Position the reservoir **(6)**, with its new protection skirt **(7)** from the replacement kit, and engage the threads of the reservoir **(6)** in the base **(8)**.
- Check that the downward edge of the skirt **(7)**, covers the base **(8)** all around it.

Condenser with integral reservoir (continued)



C5HP16EC

WARNING : The reservoir **(6)** contains a drying agent. As soon as the black protection is removed, the reservoir must be mounted in the base **(8)**, otherwise there is a risk of damaging the air conditioning circuit.

Screwing the reservoir (6) into the base (8).

- Screw the reservoir **(6)** manually, until the neck of the reservoir **(6)** is in contact with the bottom of the base **(8)**.

- Tighten with a torque spanner and tool **[2]** at **(2)** to **1.3 ± 0.1 m.daN.**

Fitting the plastic bracket. ***(New, from the replacement parts kit).***

Proceed in the opposite order to removal, tighten the screw **(3)** to **0.15 m.daN.**

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

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.

Checking the compressor oil level (continued)

2/ Slow leak.

- Slow leaks do not lead to oil loss, therefore the same procedure should be followed as if there was no leak at all.

3/ Fast leak.

This type of leak causes both oil loss as well as allowing air to enter the system.

It is therefore necessary to :

- Replace the dryer.
- Drain as much oil as possible (when replacing the faulty component).

Either before or during filling of the system with R 134.a fluid, introduce **80 cc** of NEW oil into the system.

CHECKING THE EFFICIENCY OF THE AIR CONDITIONING SYSTEM

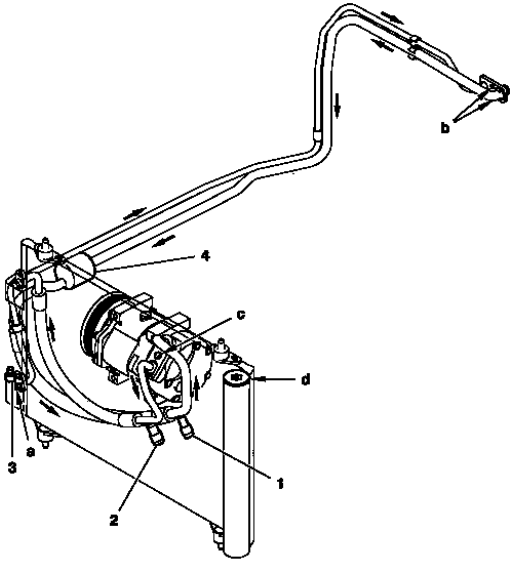
CHECKING PRESSURES (continued)

	Low pressure too low	Low pressure normal	Low pressure too high
High pressure too low	- Insufficient fluid charge. - Constriction of the HP system. - Dirty pressure control valve.	- Cooling fan speed unsuitable. - Faulty compressor.	- Faulty pressure control valve. - Faulty compressor.
High pressure normal	- Faulty compressor. - Dirty evaporator.	- Circuit normal.	- Cooling fan speed unsuitable.
High pressure too high	- Faulty pressure control valve. - System blocked. - Water in the system.	- Presence of solid matter in the system. - Dirty condenser.	- Excessive fluid charge. - Dirty condenser. - Faulty pressure control valve. - Cooling fan speed unsuitable.

Checking the pressure at temperatures between 15°C and 35°C for information only.
In general, the pressure should be approximately :
- for **R134.a** fluid, less than **2 Bars** *(Low pressure)*, and between **13** and **24 Bars** *(High pressure).*

AIR CONDITIONING SYSTEM R 134.a

Engines : 6FZ - RFN - RLZ



C5HP15QP

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket
Tighten to **0,8 m.daN**

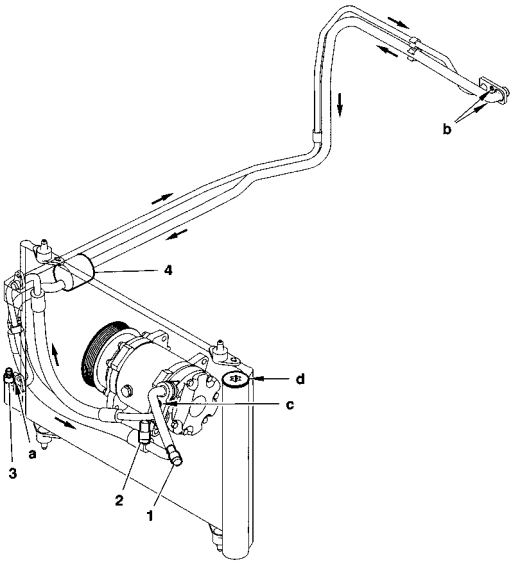
(b) Pressure control valve
Tighten to **0,8 m.daN**

(c) Compressor bracket
Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir
Tighten to **1,4 ± 0,2 m.daN.**

AIR CONDITIONING SYSTEM R 134.a

Engine : XFX



C5HP15RP

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket
Tighten to **0,8 m.daN**

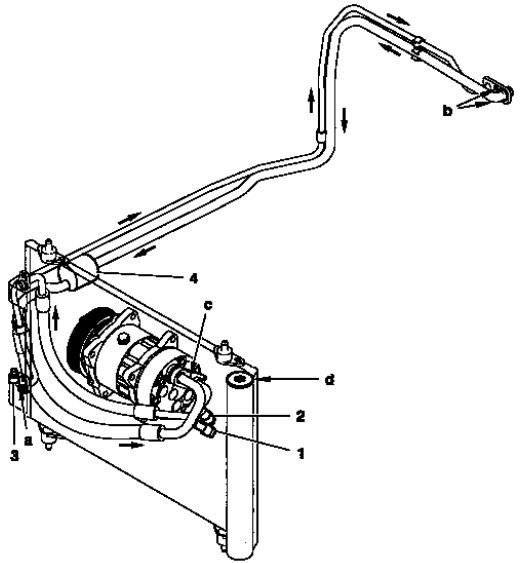
(b) Pressure control valve
Tighten to **0,8 m.daN**

(c) Compressor bracket
Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir
Tighten to **1,4 ± 0,2 m.daN.**

AIR CONDITIONING SYSTEM R 134.a

Engines : RHY - RHZ



C5HP15SP

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket
Tighten to **0,8 m.daN**

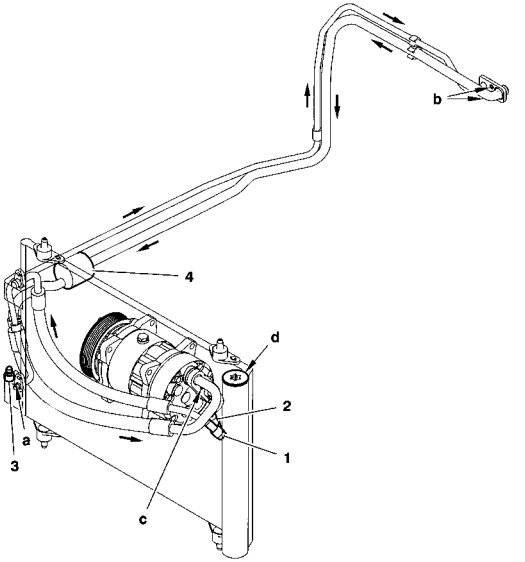
(b) Pressure control valve
Tighten to **0,8 m.daN**

(c) Compressor bracket
Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir
Tighten to **1,4 ± 0,2 m.daN.**

AIR CONDITIONING SYSTEM R 134.a

Engine : 4HX



C5HP15TP

(1) High pressure valve.

(2) Low pressure valve.

(3) Pressostat.

(4) Capacity.

(a) Condenser bracket
Tighten to **0,8 m.daN**

(b) Pressure control valve
Tighten to **0,8 m.daN**

(c) Compressor bracket
Tighten to **2,5 ± 0,1 m.daN**

(d) Condenser dryer reservoir
Tighten to **1,4 ± 0,2 m.daN.**