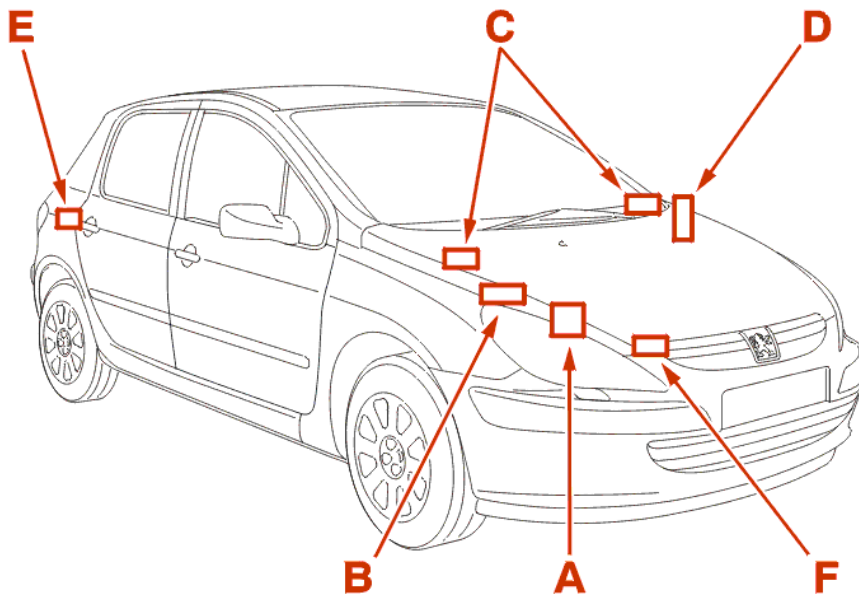


AXXB25K1 - 307

IDENTIFICATION VEHICLES

1 - IDENTIFICATION



(A) Vehicle manufacturer's plate .

(B) Build code - Sequence code - Paint code .

(C) VIN number .

(D) Tyre pressures - Dimension of approved tyres (Front left door aperture) .

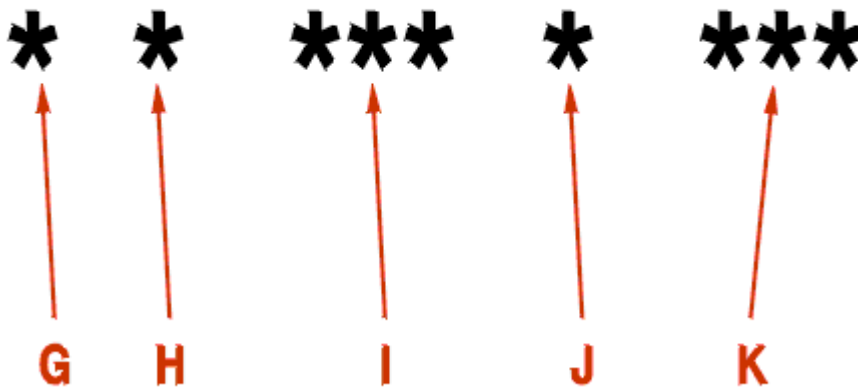
(E) Recommendation regarding fuels .

(F) Recommended lubricant label .

2 - MODEL CODES

The vin always consists of 17 characters and comprises the model and the version (additional description variant or model code) .

2 - 1 - MODEL CODE CODING STRUCTURE



Type :

- (G) 1st character = family (vehicle)

- (H) 2nd character = vehicle
- (I) 3rd, 4th, 5th characters = engine (legislation type)

Version :

- (J) 6th character = type of gearbox + level of emission control

Variant :

- (K) remaining characters = additional description

2 - 2 - MEANING OF MODEL CODE CODING METHOD

Type :

- family : 3 = T50 - T51
- shape : A = 3 door saloon - C = 5 door saloon

Engine (Legislation type) :

- KFW = TU3JP/L5/L4/US94 petrol engine(s)
- K6C = TU3JP/K petrol engine(s)
- NFU = TU5JP4/L5/L4/US94T petrol engine(s)
- RFN = EW10J4/L5/L4/US94TW petrol engine(s)
- RHY = diesel engines DW10TD/L3/L4/K/W3

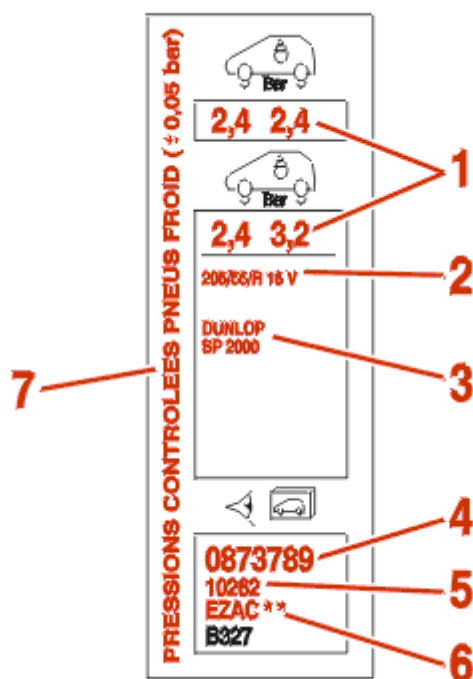
versions	L3 W3	L4	L5	US83/87
manual gearbox (5 gears)	A	B	C	P
automatic gearbox (4 gears)	D	E	F	R
manual gearbox (6 gears)	-	G	H	S
final drive and / or gearbox ratios which are different from the basic ones	J	K	L5	T
other combination possiblity(ies)	-	M	N	U
no gearbox	Z			

versions	other	Taiwan	K/K'	alcohol L3/L4
manual gearbox (5 gears)	V	1	5	8
automatic gearbox (4 gears)	W	2	6	9
manual gearbox (6 gears)	X	3	7	-
final drive and / or gearbox ratios which are different from the basic ones	Y	4	-	0
other combination possiblity(ies)	-			
no gearbox	Z			

variations	code	code
company vehicles which can be	T	

modified		
LPG dual-fuel	LPG (cylindrical tank)	GL (cylindrical tank)
less strict emission control	D (private vehicle or non transformable van utility vehicle)	TD (transformable utility vehicle)
tax incentive	IF	

3 - TYRE PRESSURE LABEL



- (1) : Tyre pressures .
- (2) : Tyre dimensions .
- (3) : Approved tyres .
- (4) : Build code .
- (5) : Sequence code .
- (6) : Paint code .
- (7) : Tyre inflation pressure checking tolerance .

B1BB19K1 - 307 DV4TD ENGINE

PRESENTATION ENGINE

1 - DESCRIPTION

Diesel engine with direct injection .

4 cylinders in line, turbocharging by variable nozzle turbocharger without exchanger .

Integral intake including the inlet manifold, the air filter, the cylinder head cover and the oil separator (recirculation of the oil vapours) .

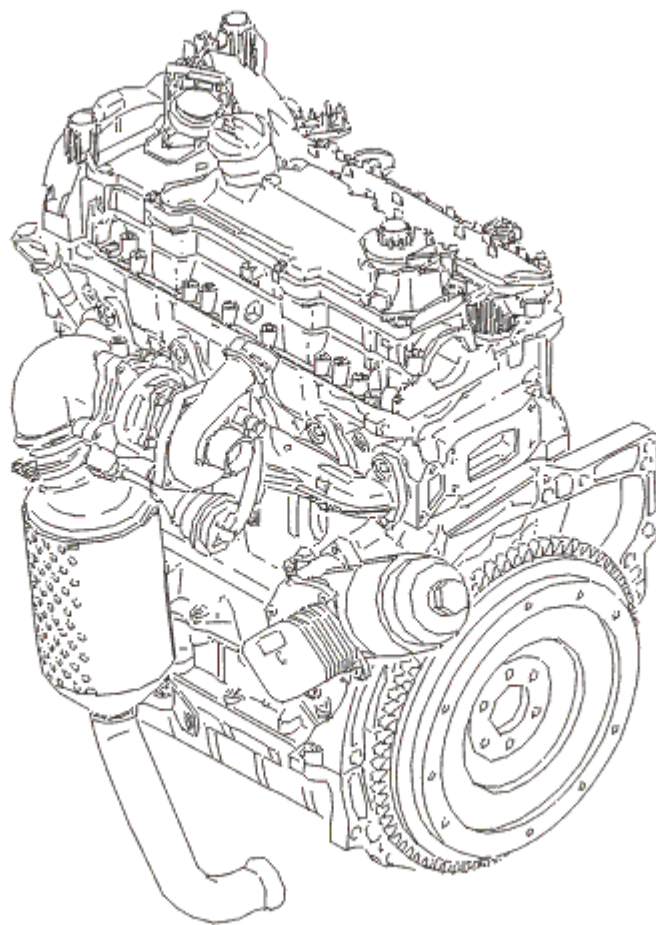
Cross flow type aluminium alloy cylinder head with 2 valves per cylinder, with overhead camshaft .

Cylinder head gasket of grooved metal sheets .

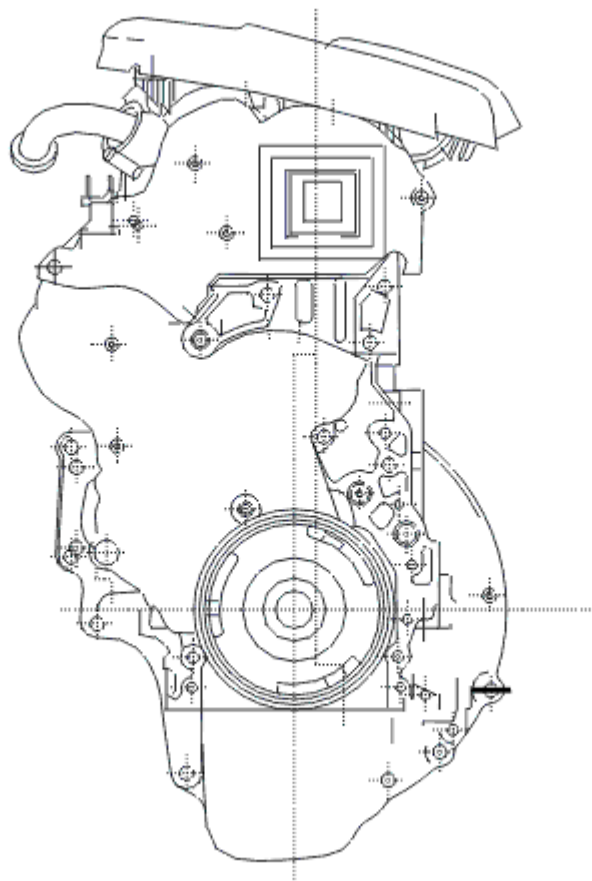
Valve control by roller cam follower and hydraulic tappets .

Aluminium alloy cylinder block with cast iron liners inserted at the foundry .
Aluminium alloy main bearing cap casting with cast iron main bearing caps inserted during casting .
Duo-centric oil pump on the timing side driven by the crankshaft .
Forged steel crankshaft with 8 counterweights and 5 bearings .
Forged steel connecting rod with split big end, securing of the cap with 2 bolts .
Injection system COMMON RAIL BOSCH EDC 16 with high pressure pump driven by the timing belt .
Timing with notched belt synchronous with the automatic tensioner roller .
Coolant pump driven by a toothed timing belt .
Driving of the accessories by a pulley having a vibration damper with flexible coupling .
Emission control conforming to standard EURO 3 .
Oxidation catalytic converter secured to the exhaust manifold outlet .
Cloche oil filter with paper filter (environmentally friendly type) .

2 - ENGINE INTRODUCTION



Engine assembly .

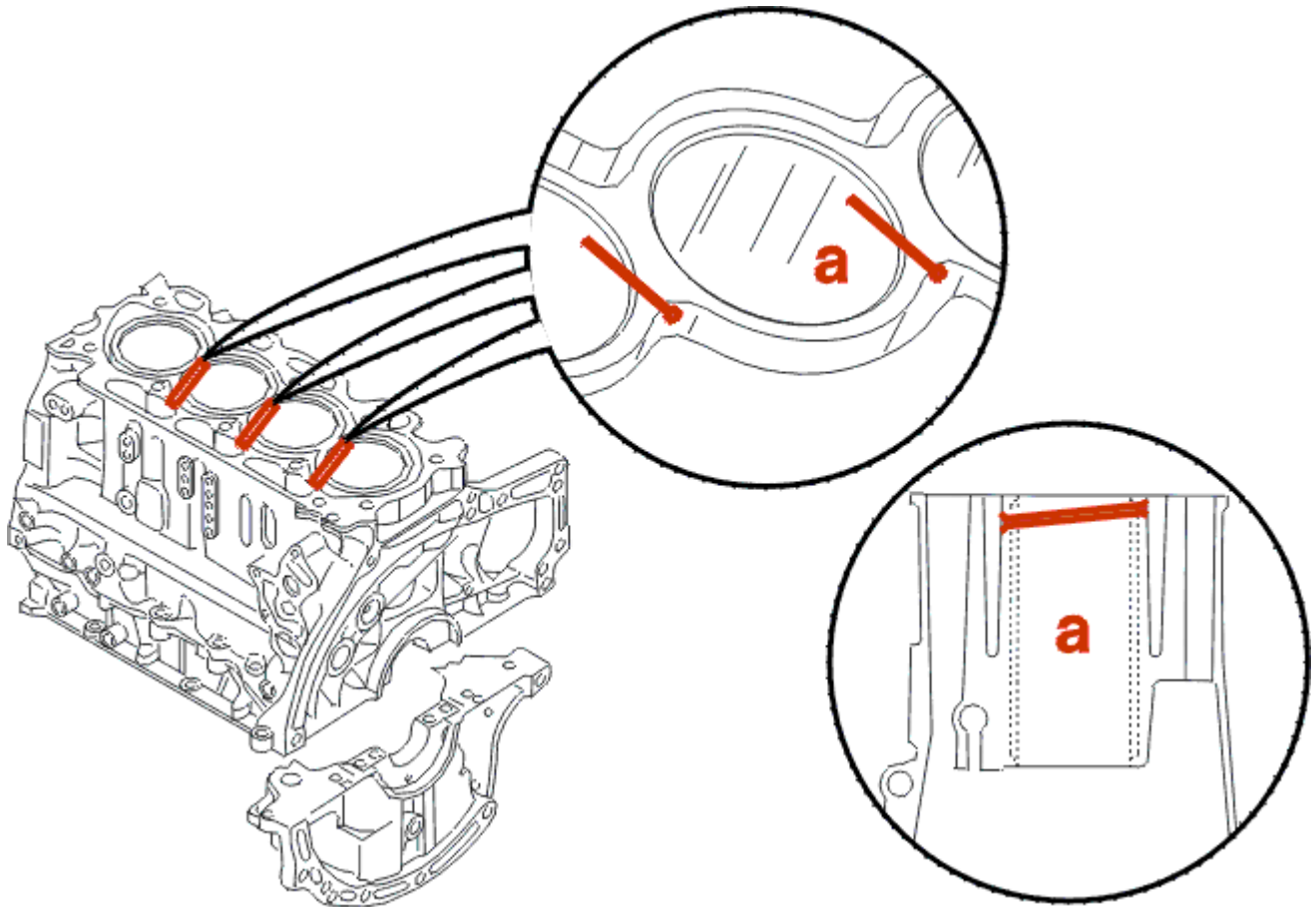


3 - DATA

engine type	DV4TD
engine code	8HZ
special features	without
unit reference	-
number of cylinders	4
bore x stroke (mm)	73.7 x 82
capacity (cm3)	1398
compression ratio	18
maximum power : KW : EC	50
maximum power : HP DIN	69
engine speed at max. power (r.p.m.)	4000
maximum torque : da.Nm : EC	16
engine speed at max. torque (r.p.m.)	2000
turbocharger	yes
exchanger	no
turbocharger pressure : bar(s)	1
fuel system	H.D.I. (*)
make	BOSCH
type	EDC16

(*) high pressure direct injection

4 - CYLINDER BLOCK ASSEMBLY



The aluminium alloy cylinder block incorporates the cast iron liners, inserted during casting .

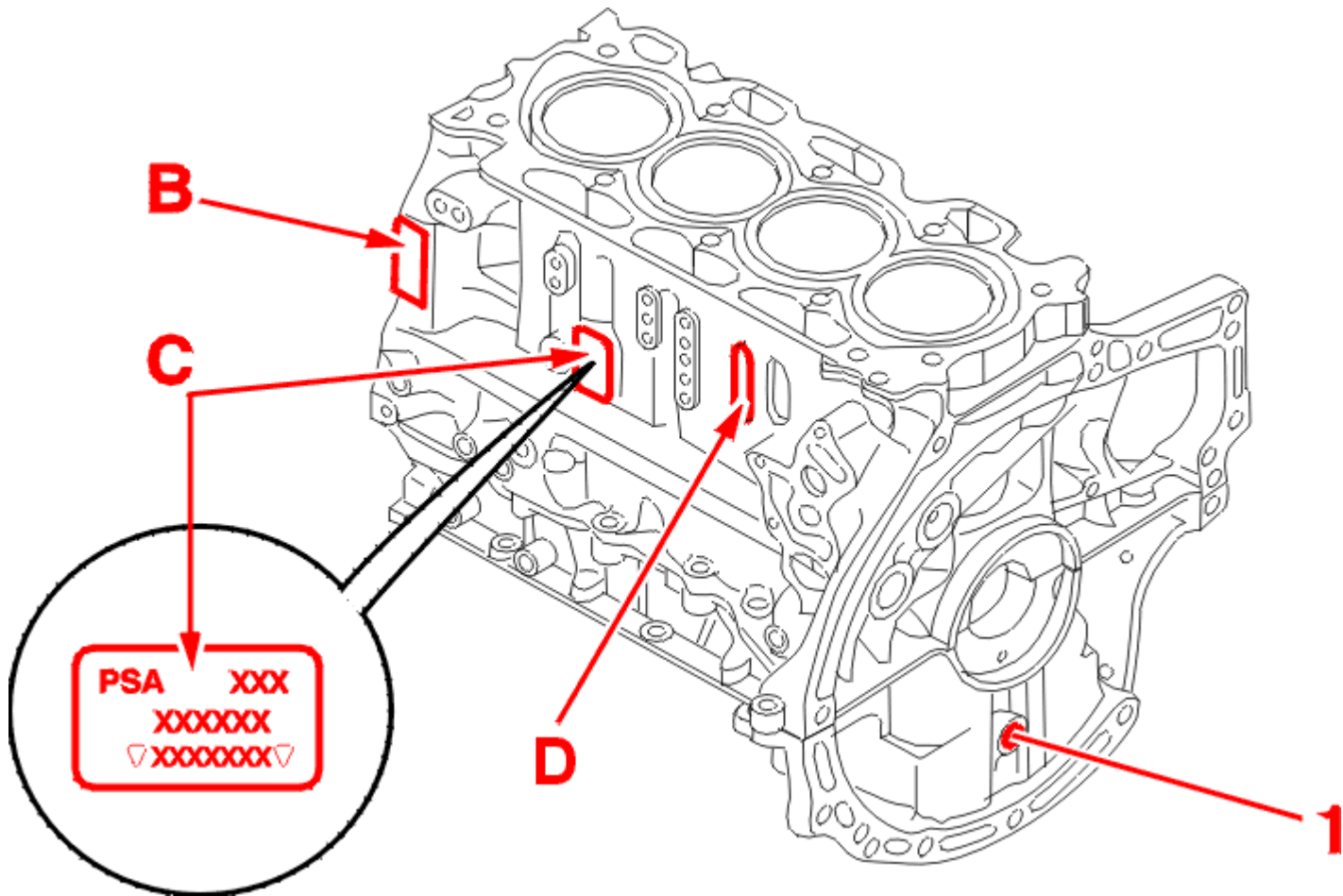
Boring of the barrel to a diameter of $\varnothing 73.7$ mm .

Inter-barrel cooling by transverse bore (a) with a diameter of $\varnothing 3.6$ mm .

Aluminium alloy main bearing cap casting with 5 cast iron main bearing caps inserted during casting .

Securing of the main bearing cap casting by 26 bolts (10 M9 x 125 for the caps and 16 M6 x 100 securing the main bearing cap casting on the seam) and 10 plain dowels .

5 - AREA OF MARKING



Pinning hole (1) for maintaining the engine flywheel .

(B) Reference :

- engraving of the crankshaft bearings diameter category
- direction of the bearings (clutch towards timing)
- crankshaft bearing diameters category

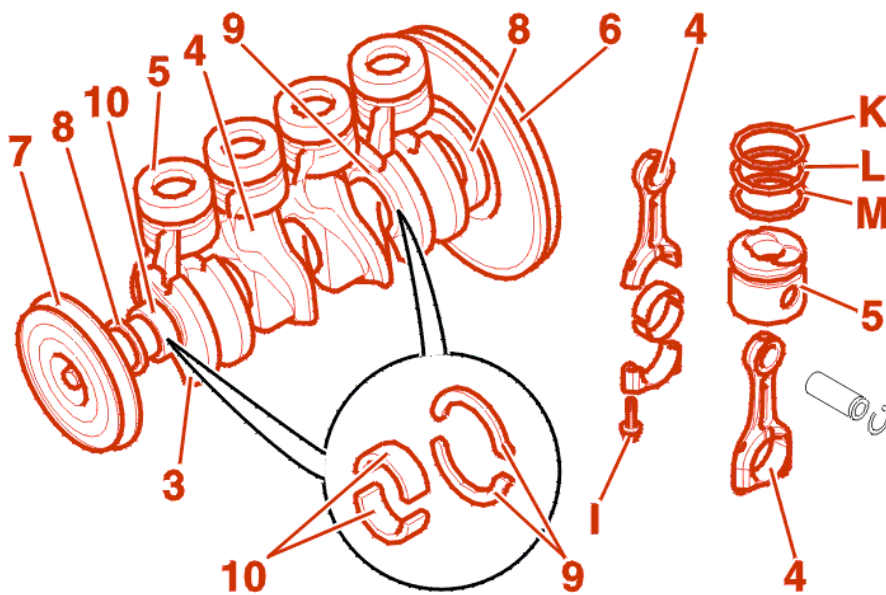
(C) Reference Engine identification :

- manufacturer's identification
- legislation type (307 / 8HZ - 206 / 8HX)
- unit reference
- serial number

(D) Reference :

- machining mark
- year of manufacture

6 - CRANKSHAFT AND CONNECTING RODS



Crankshaft .

(4) Connecting rods .

(5) Pistons .

(6) Flywheel .

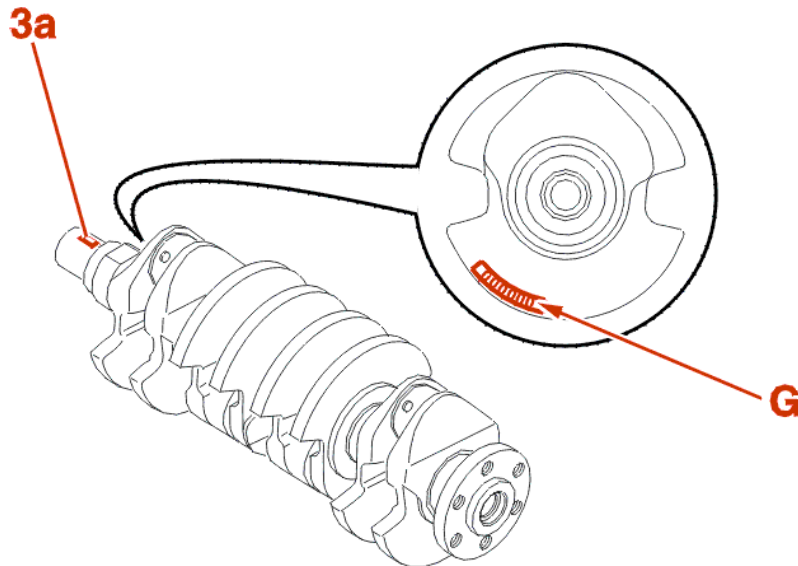
(7) Vibration damper pulley .

(8) Sealing rings .

(9) Half-shim for adjustment of the crankshaft side clearance .

(10) Crankshaft half-shell .

7 - CRANKSHAFT



Crankshaft :

- number of main bearings : 5
- number of counterweights : 8
- securing of the engine flywheel with 6 equidistant bolts

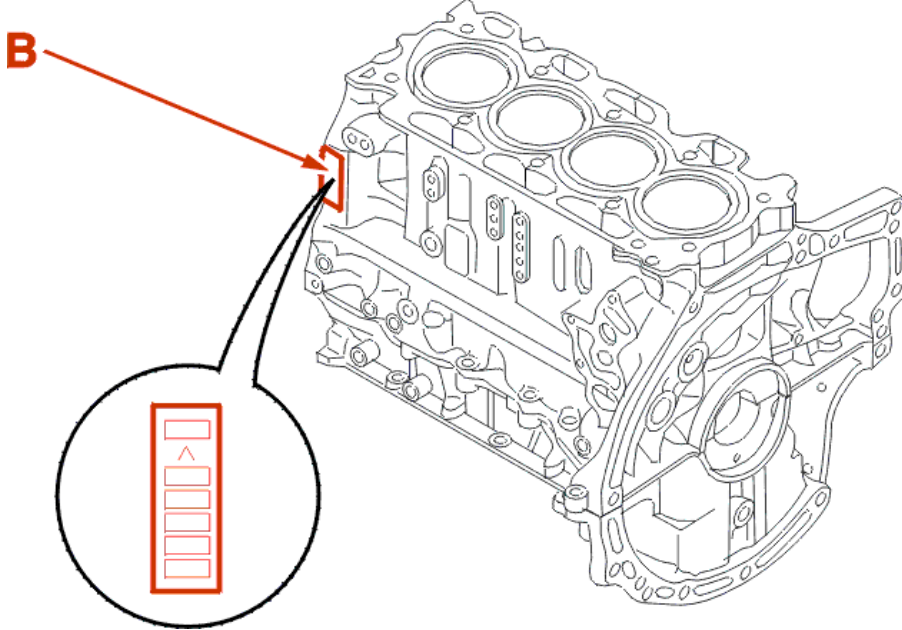
The sealing on the crankshaft is provided by a sealing ring on the timing side and on the engine flywheel side .

Cotter pin securing of the timing pinion at (3a) .

The end float is determined by 2 half washers on main bearing no. 2 (A single thickness category) .

The crankshaft bearings (cylinder block + main bearing caps) and the crankshaft journals are matched by references on the cylinder block and the crankshaft .

Ink jet marking of the bearing categories at (G) .



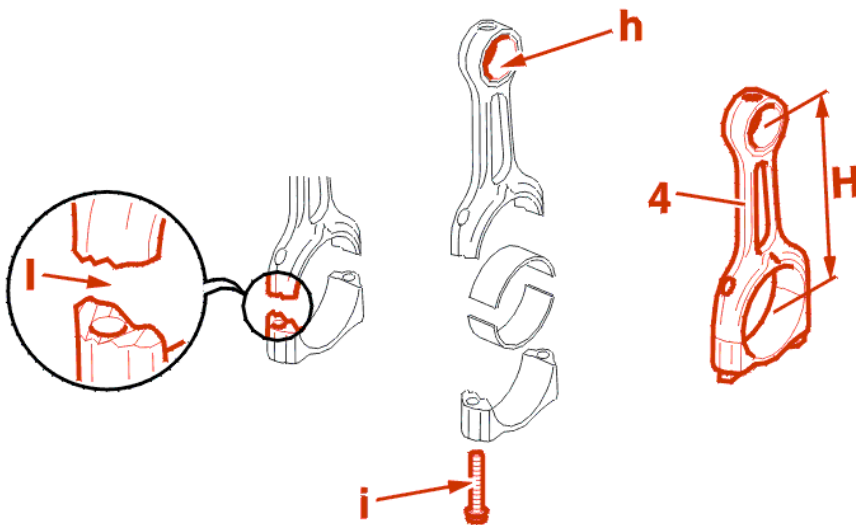
Marking of the bearing categories on the cylinder block (micro-impact) at (B) .

The pairing is carried out using 3 categories of smooth half-shells without centring lug .

The selection of the appropriate half-shell must be carried out using a pairing table with the marks (G) and (B) .

On the cylinder block side, there is only one category of grooved half-shells with centring lug .

8 - CONNECTING RODS



(4) Split end connecting rod .

(h) Little end socket .

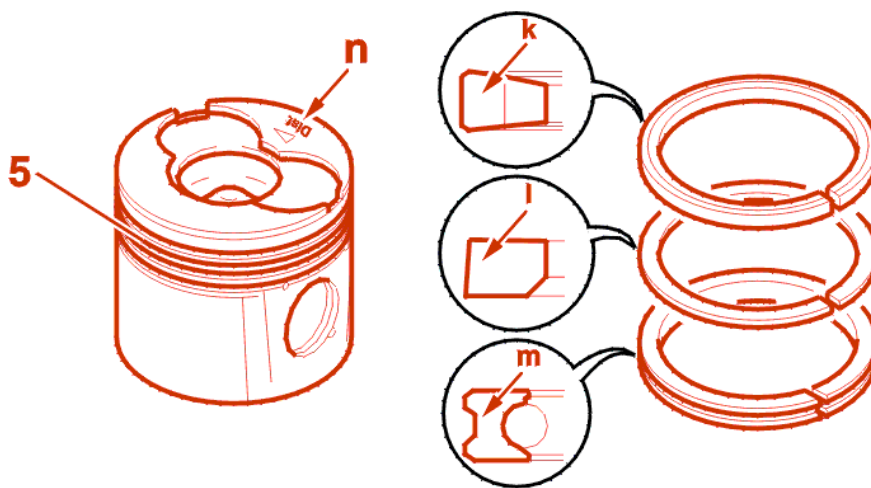
Connecting rods :

- forged steel
- (H) distance between centres 126.8 mm
- the connecting rod half-shells do not have a positioning lug
- connecting rod/cap assembly with bolt (i)

The little ends bushing is bored at (j) .

The connecting rods are split at (I) after being marked by ink jet .

9 - PISTONS, PISTON RINGS



(5) Aluminium alloy piston .

(k)Trapezoidal upper compression ring : With top mark : Thickness 2.5 .

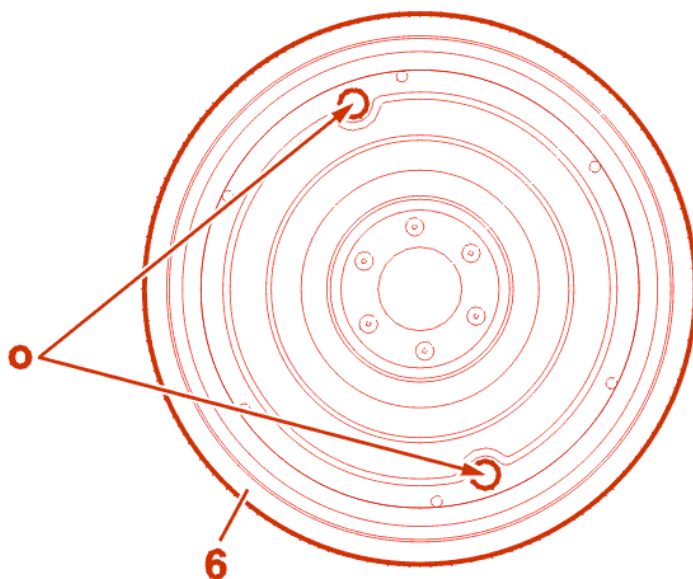
(l)Conical lower compression ring : With top mark : Thickness 1.95 .

Scraper ring with spiral spring (expander) : Thickness 2.5 .

Marking (n) by cold forming (DIST) on the piston or by directing of the valve recesses towards the exhaust manifold .

The gudgeon pins are immobilised in translatory motion by two stop rings .

10 - FLYWHEEL



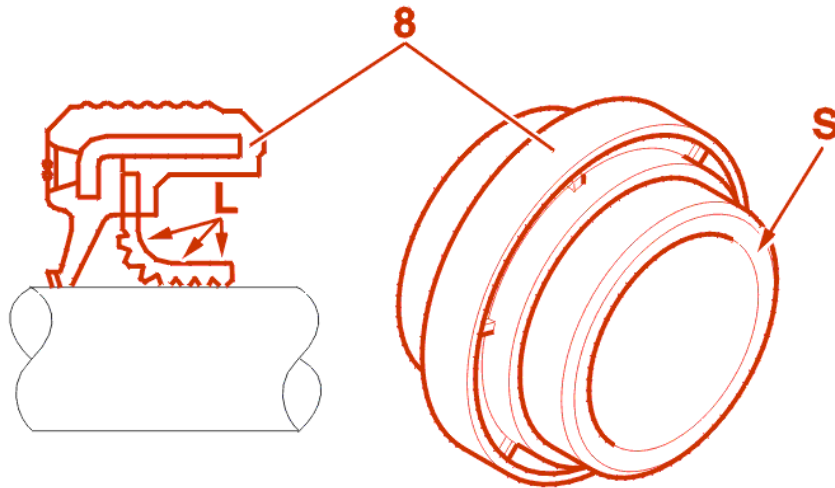
Cast iron engine flywheel with a steel starter ring gear .

Securing of the engine flywheel with 6 equidistant bolts .

(o) Blind holes to prevent rotation of the crankshaft (necessary for tightening and slackening of the crankshaft pulley) .

WARNING : the holes (o) are not holes for pinning when removing the timing gear .

11 - SEALING RINGS



The sealing rings provide sealing on the crankshaft on the oil pump side and on the engine flywheel side, as well as at the end of the camshaft on the timing pinion side; they consist of a pre-formed teflon lip .

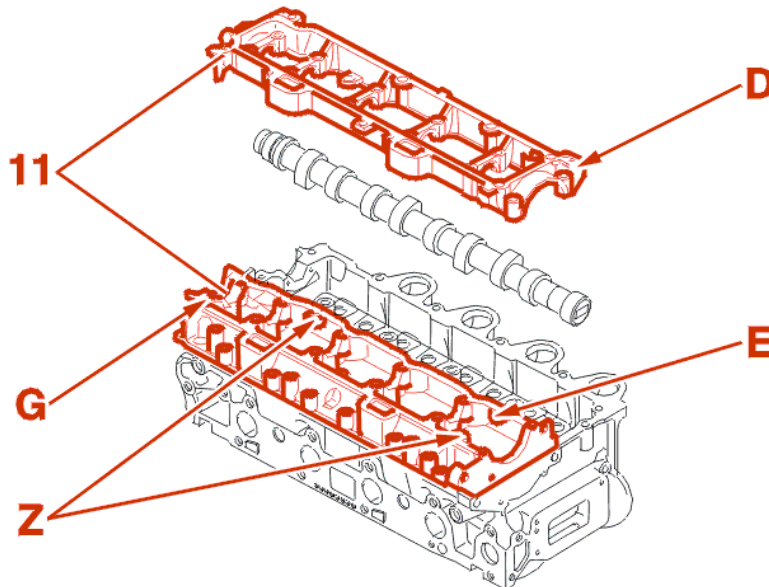
When the engine is started, the oil pressure exerts a force on the lip (L) which makes contact leaving a film of oil on the shaft thus creating sealing .

WARNING : leave the sealing ring on its fitting support (S); in the event of handling, refit the ring on its support and leave the assembly for 30 minutes before refitting .

If the lip is deformed, replace the sealing ring .

12 - CYLINDER HEAD ASSEMBLY

12 - 1 - CAMSHAFT BEARING CASTING



Camshaft bearing casting : Aluminium alloy .

(D) Upper camshaft bearing casting .

(E) Lower camshaft bearing casting .

The sealing between the castings (D) and (E) and the housing (11)/cylinder head is provided by single-element silicon jointing compound .

The two bearing castings are positioned one on the other by 2 pins at (Z) and are assembled by 10 bolts .

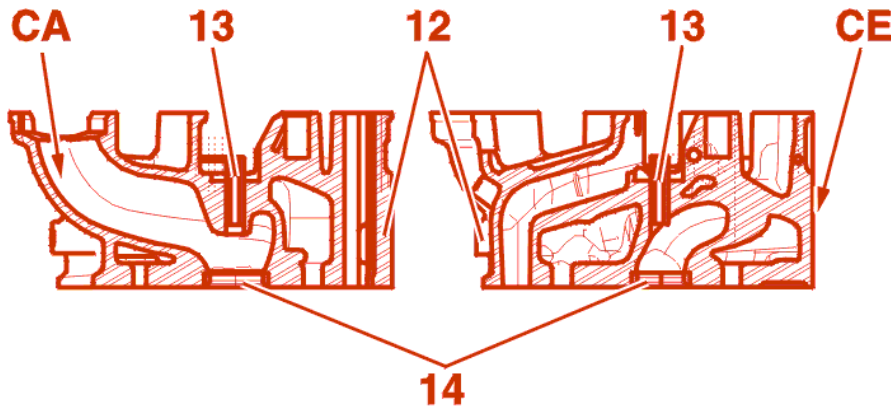
The securing of the integral intake system is by 8 bolts on the main bearing cap casting (D) .

The casting (11) is positioned on the cylinder head by 2 cotter pins and secured by 13 bolts (M6 x 100) .

The adjustment of the side clearance of the camshaft in the main bearing cap casting is by means of a groove (g) next to the bearing on the timing side .

The camshaft sealing is provided by a ring with a lip on the camshaft pulley side .

12 - 2 - CYLINDER HEAD



(12) Cylinder head .

(13) Valve guides .

(14) Valve seats .

(CE) Exhaust ducts .

(CA) Inlet ducts .

Cross flow aluminium alloy cylinder head with 2 valves per cylinder with the inlet manifold on the common rail side and the exhaust manifold on the oil filter side .

Sintered steel valves guides and seats .

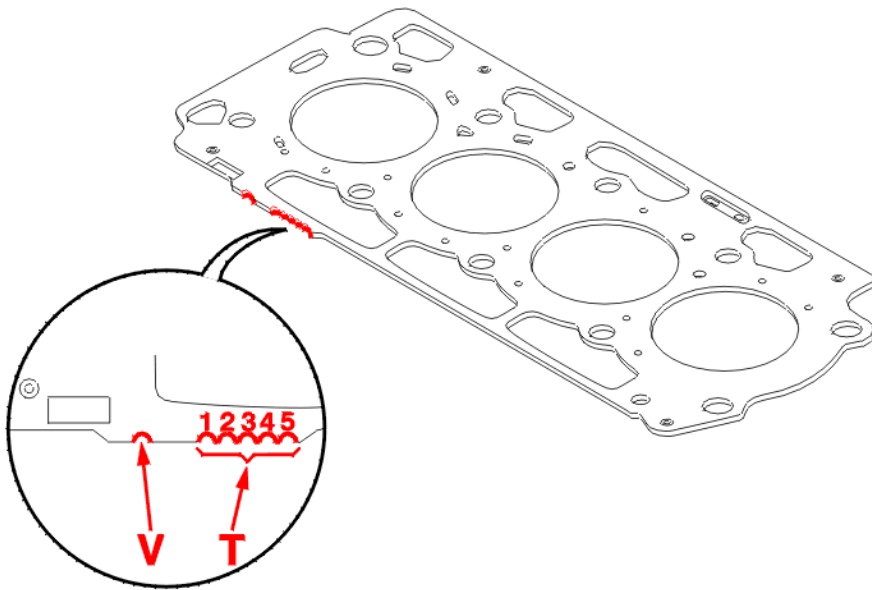
Height of the cylinder head 88 ± 0.05 mm .

Securing of the cylinder head on the cylinder block by 10 torx bolts .

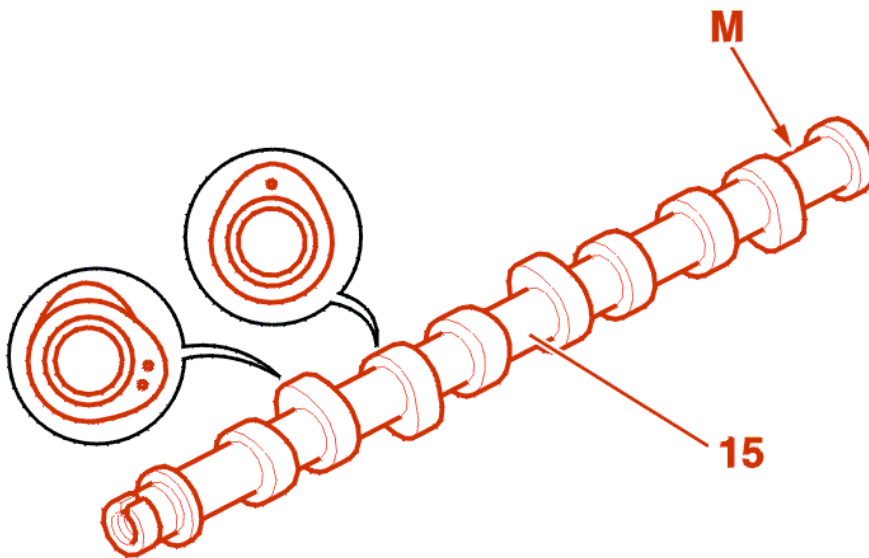
The glow plugs protrude by 3 mm, and the valves by 1.25 mm from the surface of the cylinder head .

The exhaust manifold is retained by 10 studs and 10 copper-plated nuts with spacers .

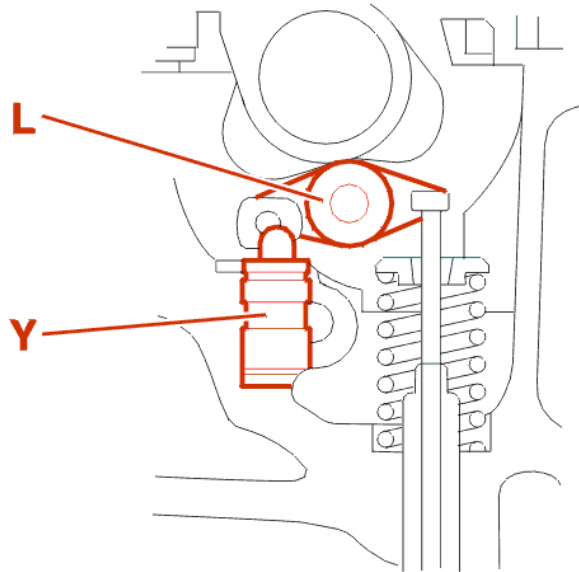
12 - 3 - CYLINDER HEAD GASKET



(V) Identification mark corresponding to this engine (1 notch) .
 The cylinder head gaskets can be identified by the combination of notches (T) .
 13 - TIMING ASSEMBLY
 13 - 1 - CAMSHAFT



(15) Camshaft with sintered cams fitted on a steel tube .
 Sealing provided by a ring with lips on the timing side .
 Driving of the vacuum pump on the engine flywheel side .
 Identification mark at (M) at the end of the camshaft on the vacuum pump side .
 13 - 2 - VALVES CONTROL

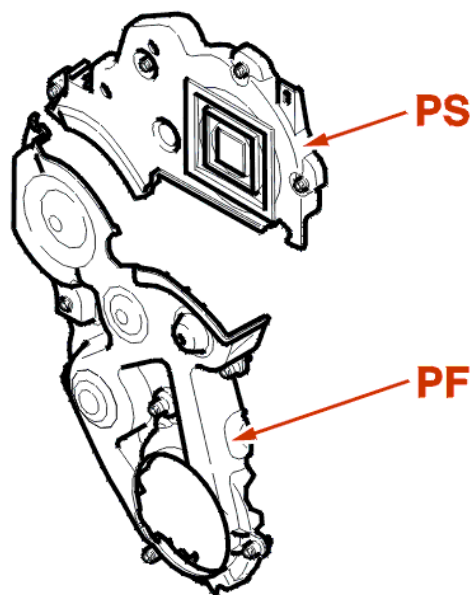


(L) Roller cam followers .

(Y) Hydraulic tappet with automatic clearance adjustment .

13 - 3 - TIMING

Timing cover .



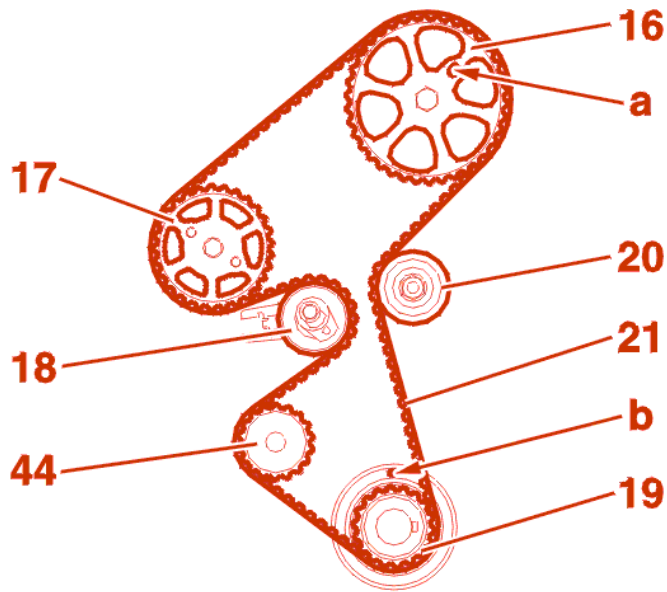
(PS) Upper part .

(PF) Lower part .

Plastic housings .

Group of 2 housings secured by 10 captive bolts .

13 - 4 - KINEMATICS OF THE TIMING BELT



(16) Camshaft pulley .

(17) Fuel high pressure pump pulley .

(18) Dynamic tensioner roller .

(19) Crankshaft gear .

(20) Roller tensioner .

(44) Coolant pump .

(21) Timing belt .

The timing assembly is synchronised by 2 pinning holes (a) - (b) .

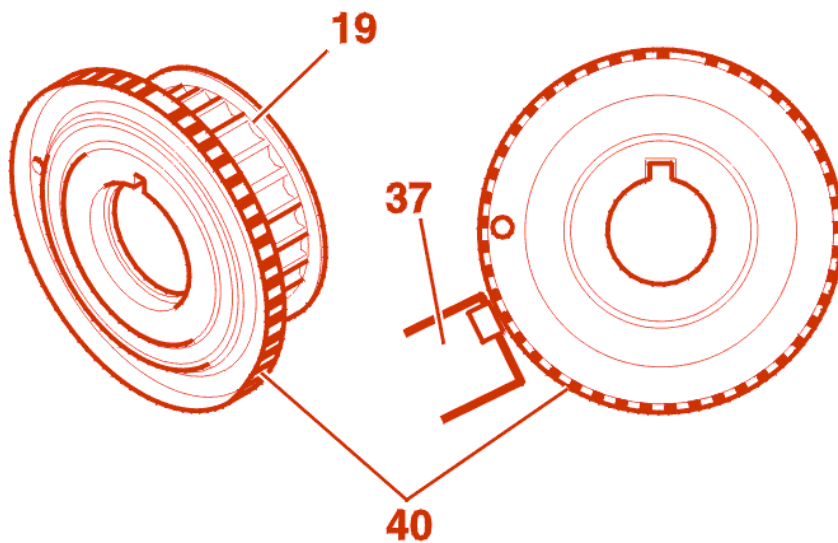
Data :

- belt width 25.4 mm
- number of teeth : 144

Replacement interval for normal use : 240 000 km, 149 160 miles or 10 year(s) .

Replacement interval for arduous conditions of use : 180 000 km, 112 000 miles or 10 year(s) .

13 - 5 - TIMING GEAR ON CRANKSHAFT



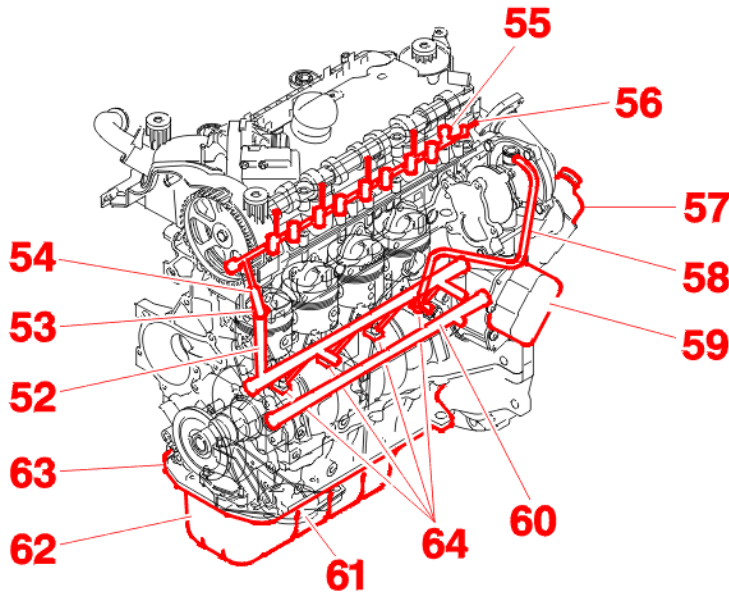
The engine speed information is obtained by the sensor (37) on the pinion (40) fitted with an electromagnetic track .

Safety recommendations :

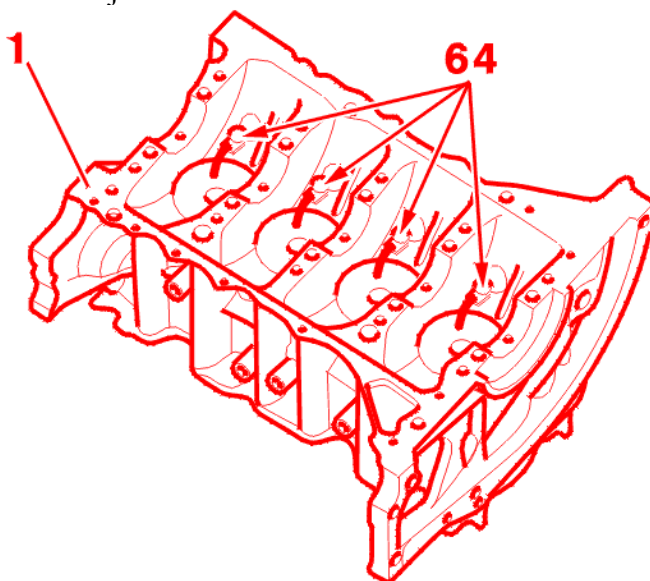
- wash your hands before handling the pinion
- avoid any impact on the magnetic track; the use of projecting tools is prohibited

- do not place any magnetic equipment near the pinion
- do not press on the magnetic track 40 and do not exert any force on the fibre ring frame

14 - LUBRICATION



- (52) Oil rise channel .
- (53) Anti-return valve .
- (54) High pressure oil rail in cylinder head .
- (55) Engine top feed channels .
- (56) Vacuum pump channel .
- (57) Filter cartridge .
- (58) Turbocharger lubrication .
- (59) Oil/coolant cooler .
- (60) Oil pressure switch .
- (61) Filter gauze .
- (62) Oil sump .
- (63) Oil pump .
- (64) Piston base jet .



Installation of the piston head jets (64) on the cylinder block (1) .
 The lubrication circuit has a capacity of 3.75 dm³ .
 3.6 dm³ for the oil sump with 0.2 dm³ residue .

0.4 dm³ for the oil filter .

Difference between the minimum and the maximum 1.8 dm³ .

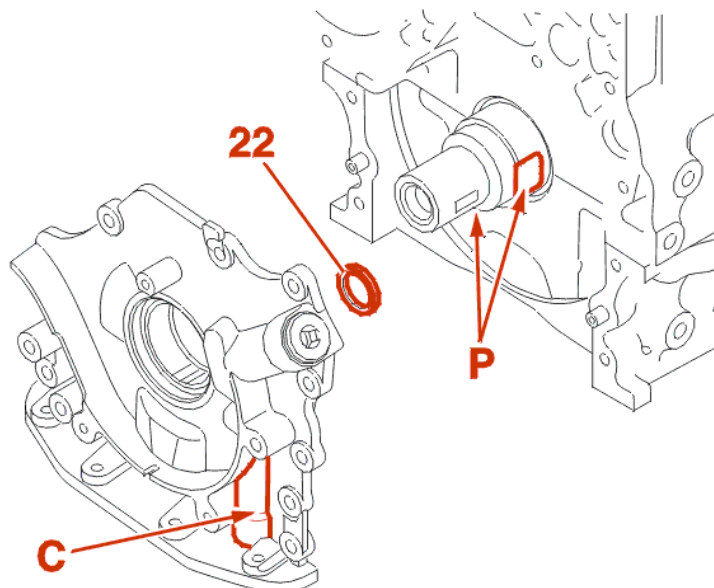
Recommended engine oils .

engine code	8HZ
grade	5W30 5W40 10W40
API standards	SJ/SH EC-II SJ/SH EC-I SJ/SH EC-I
ACEA standards	B1specific to Peugeot B3 B3

The oil pump is positioned on the timing side on the cylinder block by 2 pins and is driven by 2 flat sections .

The sealing between the oil pump and the cylinder block is provided by single-element silicon jointing compound .

The sealing between the oil pump outlet and the cylinder block channel is provided by an elastomer o-ring with a square cross-section 22 .



The oil pressure relief valve is located at (c) .

Presence of an oil pressure regulator on the camshaft bearings lubrication channel to limit the pressure on the top of the engine .

The oil non-return valve is located in the cylinder head at the oil rise channel, thus maintaining an oil reserve in the top of the engine for the hydraulic tappets .

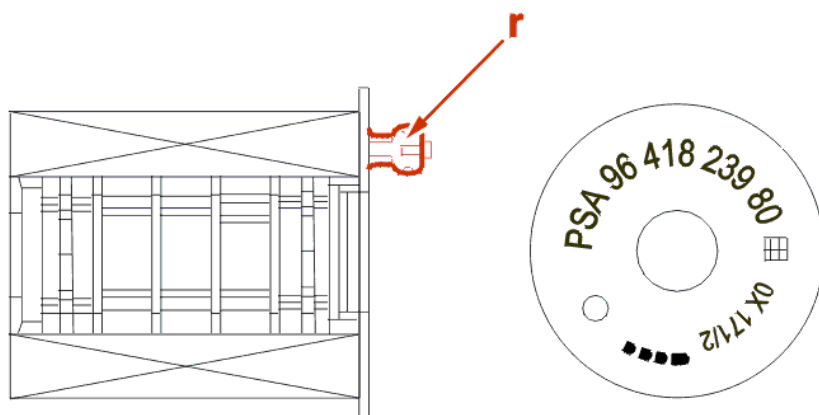
The oil pressure switch is located on the exhaust face of the engine to the left of the engine identification plate .

The electric gauge is positioned at the oil sump on the intake side in the cylinder block .

The cloche paper oil filter (environmentally friendly type) is fitted on a water/oil exchanger support .

Replacement intervals :

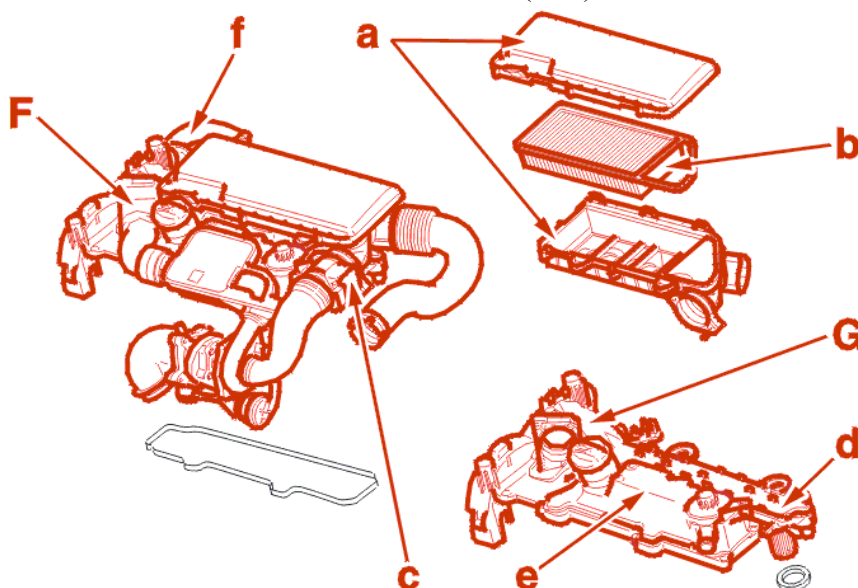
- normal servicing : 20 000 km, 12 430 miles or 2 year(s)
- arduous conditions maintenance : 15 000 km, 9 320 miles or 2 year(s)



Fitting mark (r) .

15 - SUPPLY CIRCUIT

15 - 1 - INTEGRAL INTAKE SYSTEM (SAI)



This engine is fitted with an integral intake system made of a composite material consisting of (2) parts .

(F) Upper section, incorporating :

- the air cleaner housing (a)
- the air filter cartridge (b)
- the air flow meter(c)

(G) Lower section, incorporating :

- the cylinder head cover with oil vapours recirculation system (blow by) (e)
- the intake distributor (plenum) (d)
- the egr connection pipe (f)
- the fuel filter support

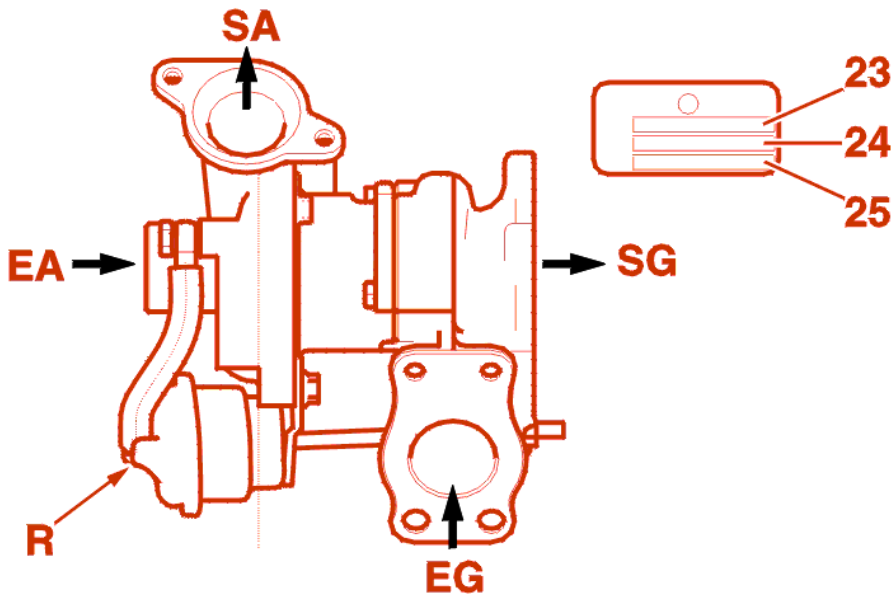
The intake system is secured by 8 bolts on the camshaft main bearing cap casting and 2 bolts on the cylinder head .

The sealing between the intake system and the engine assembly is provided by a pre-formed, replaceable seal .

Filter cartridge maintenance interval :

- normal servicing : 60 000 km, 37 290 miles or 2 year(s)
- arduous conditions maintenance : 15 000 km (9 322 miles) for the first cartridge then every 30 000 km (18 645 miles) or 2 years

16 - TURBOCHARGER



(EA) Intake air inlet .

(SA) Intake air outlet .

(EG) Exhaust gas inlet .

(SG) Exhaust gas outlet .

(R) Turbocharging pressure regulator .

(23) Type of turbocharger .

(24) Date of manufacture .

(25) Supplier's Part No. .

The turbocharger supplied by KKK has a variable nozzle and develops a turbocharging pressure of 0.5 bar(s) at idle and 1 bar(s) at full load .

It is located on the exhaust manifold above the oxidation catalytic converter covered by a heat shield .

17 - EXHAUST GAS RECIRCULATION

The egr valve is positioned on the cylinder head on the face of the common rail on the engine flywheel side .

The connection between the intake and the valve is provided by an aluminium alloy pipe retained by click clips .

The egr valve is controlled by a solenoid valve located on the exhaust face of the cylinder head .

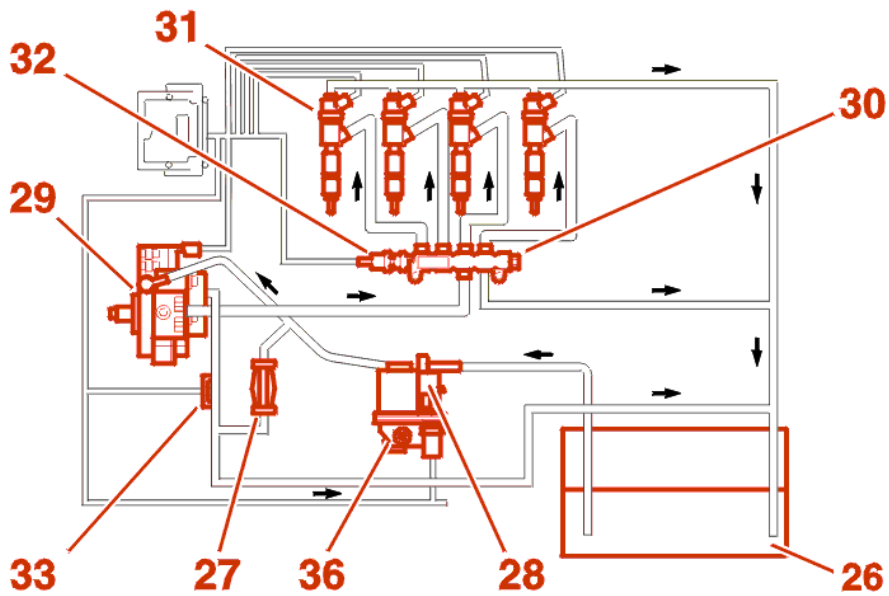
The solenoid valve is controlled by the engine management ecu .

18 - FUEL SYSTEM

18 - 1 - PRESENTATION

This engine is fitted with a common rail direct injection system BOSCH EDC16 .

This system differs by the absence of a scavenge pump .



Fuel supply system .

(26) Fuel tank .

(27) Priming pump fitted in parallel on the fuel supply circuit .

(28) Diesel filter with integral heater water detector .

(36) Water bleed screw .

(29) High pressure pump .

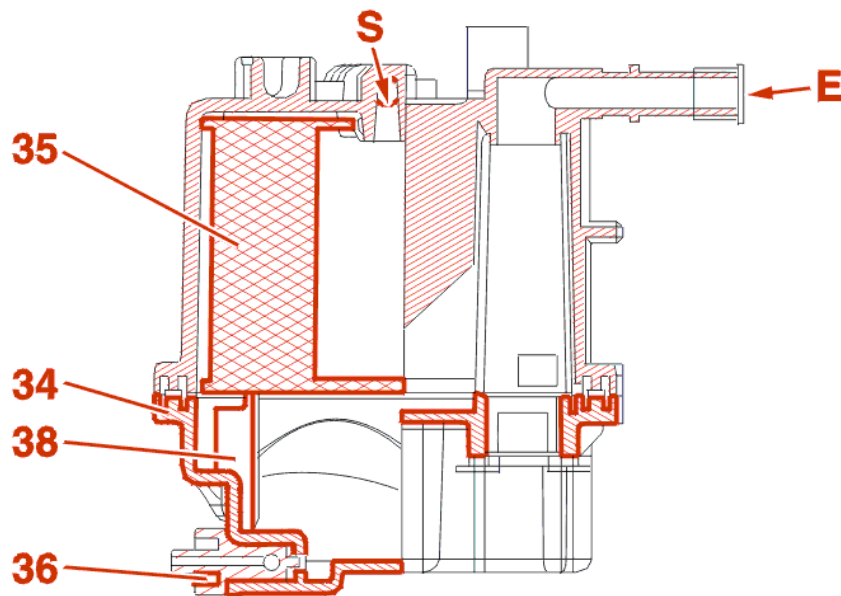
(30) Common rail with integral high pressure regulator .

(31) Injectors .

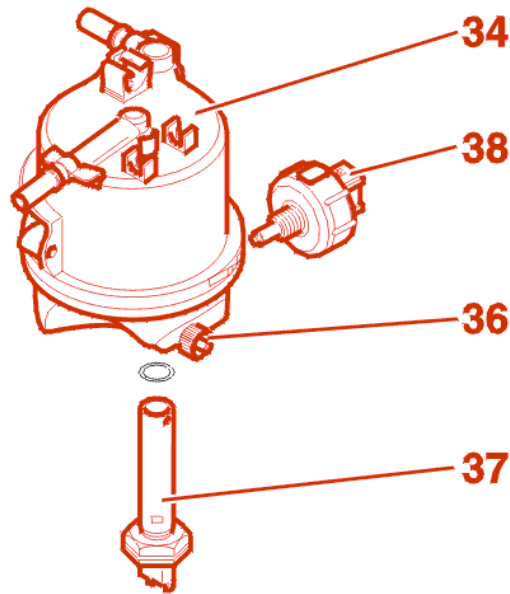
(32) Inlet and outlet valves .

(33) Fuel temperature sensor .

18 - 2 - MONOBLOC DIESEL FILTER



(34) Monobloc diesel filter .



(E) Intake of fuel from the tank .

(S) Fuel outlet towards the high pressure pump .

(35) Filtering element .

(36) Water bleed screw .

(37) Electric diesel heater (removable) .

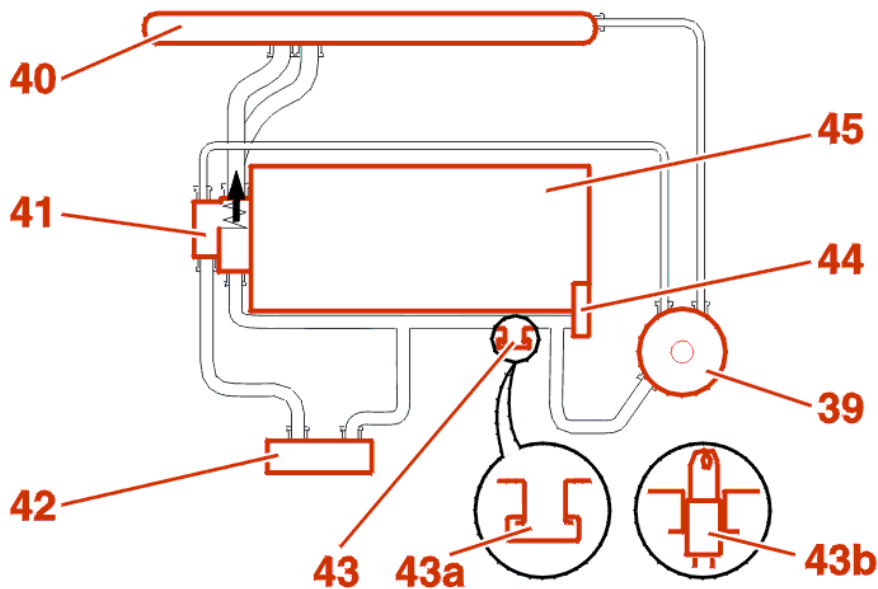
(38) Position of the water in diesel detector (removable) .

Filtration of impurities larger than 5 microns .

Fuel filter replacement interval (without heater or water detector) :

- normal servicing : 60 000 km (37 290 miles)
- arduous conditions maintenance : 45 000 km (27 967 miles)

19 - COOLING SYSTEM



(39) Expansion chamber .

(40) Cooling radiator .

(41) Water outlet housing with integral thermostatic valve .

(42) Heater matrix .

(43) Water inlet manifold with drain screw (for very cold countries, the rod is fitted in place of the drain plug) .

(43a) Fitting with drain plug (for all countries except very cold countries) .

(43b) Fitting of a heating rod .

(44) Coolant pump .

(45) Oil/coolant cooler .

The coolant is of the "lifetime" type .

The coolant pump is driven by the timing belt .

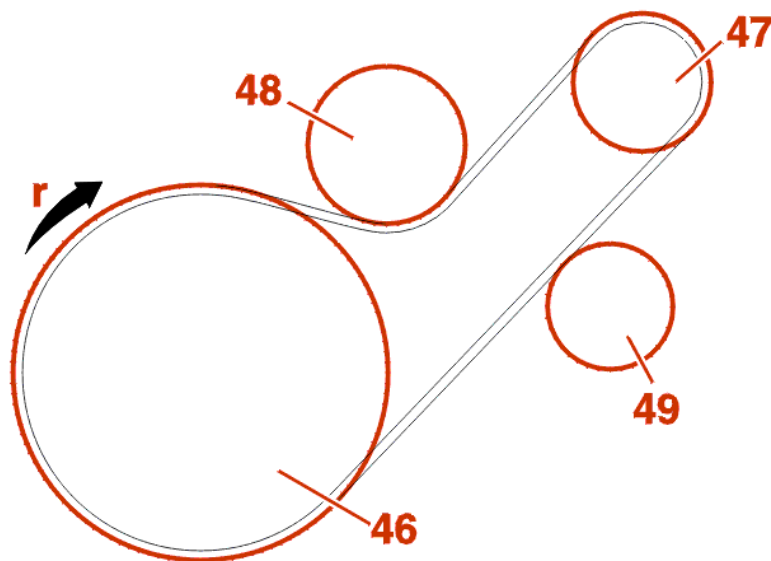
The connection between the pump and the water outlet housing is provided by a rigid pipe with sealing provided by an o-ring on the pump side and by a click-on seal on the upper pipe and by crimping on the lower pipe on the water outlet housing side .

The water outlet housing is secured on the cylinder head on the engine flywheel side by 4 bolts, the sealing is provided by an elastomer o-ring .

20 - DRIVING OF THE BELTS

The ancillary drive belt is of the polyvee type .

There are 2 possibilities (depending on the vehicle and the level of specification) .



(46) Crankshaft pulley .

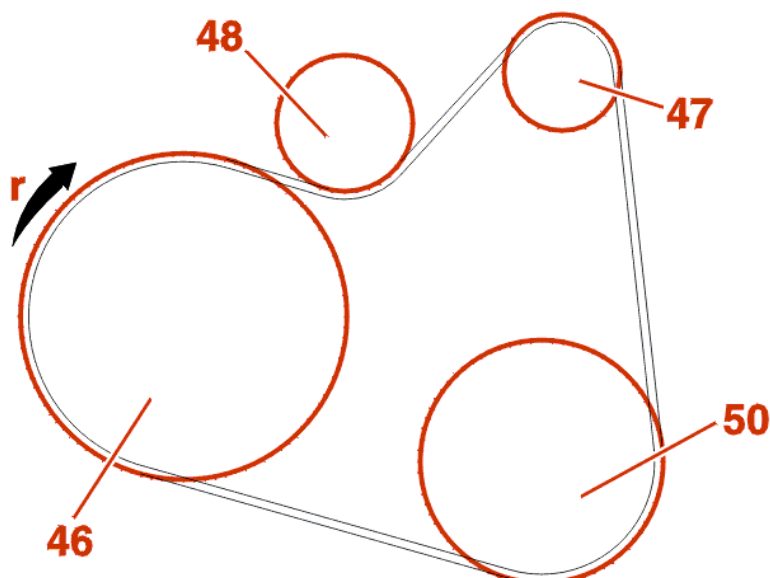
(47) Alternator pulley .

(48) Automatic roller tensioner .

(49) Roller tensioner .

(r) Direction of running of engine .

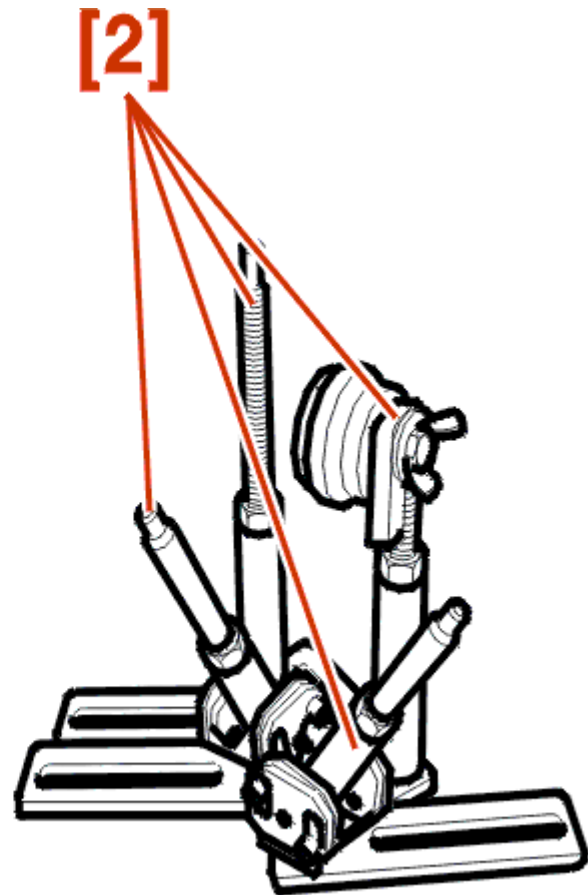
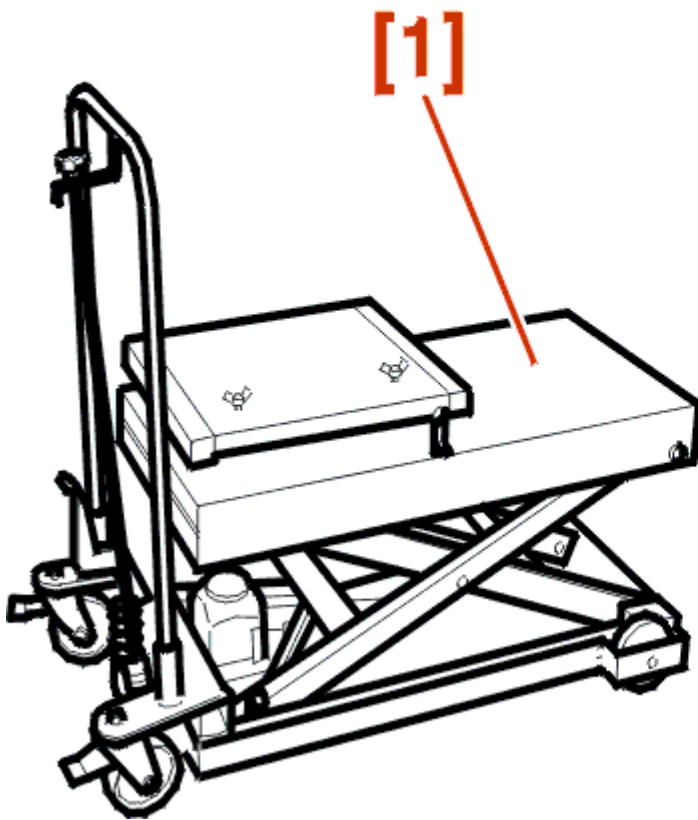
AIR CONDITIONING



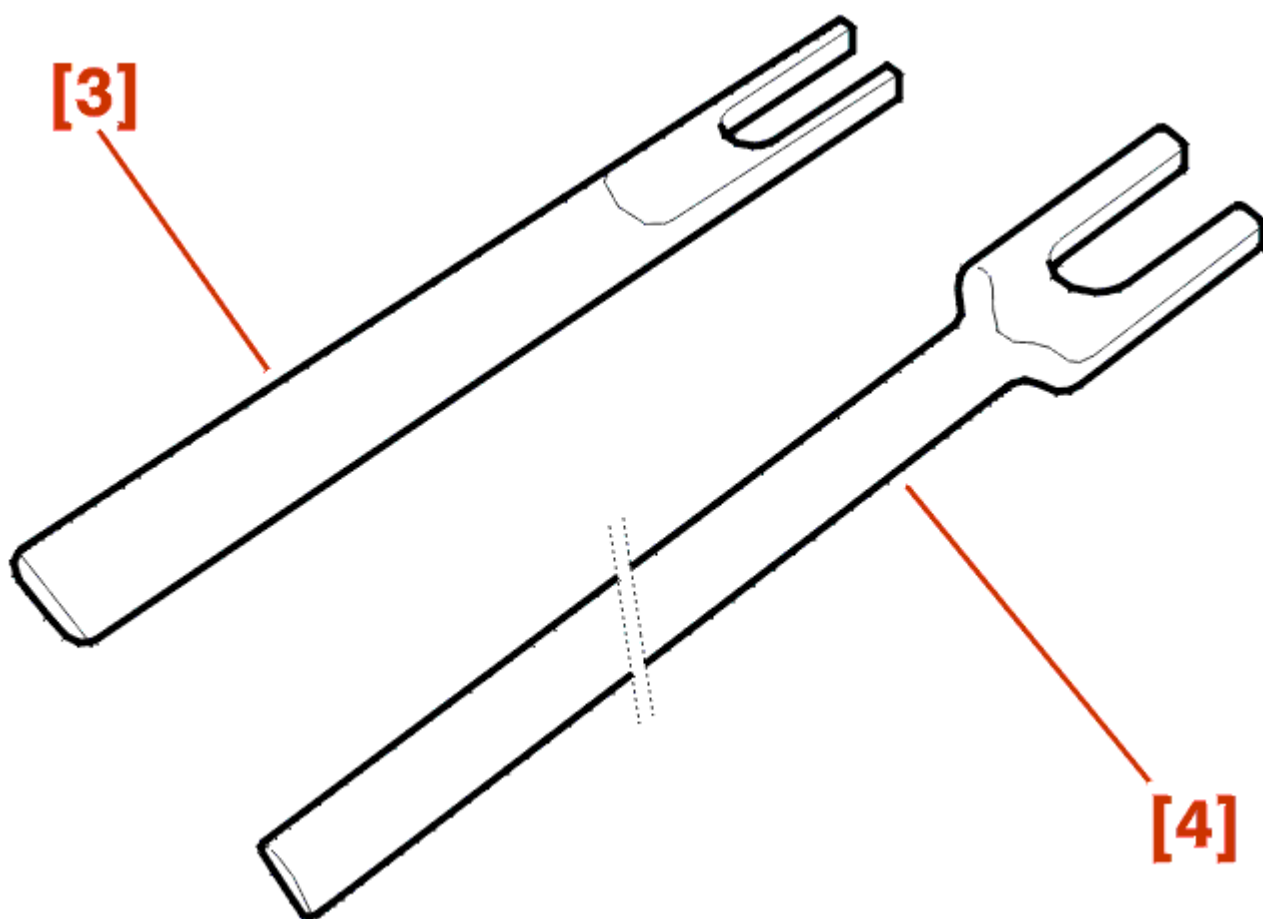
(46) Crankshaft pulley .

- (47) Alternator pulley .
- (48) Automatic roller tensioner .
- (50) Compressor .
- (r) Direction of running of engine .

B1BG28K1 - 307 DW10TD ENGINE
REMOVAL - REFITTING POWER UNIT
1 - SPECIAL TOOLS

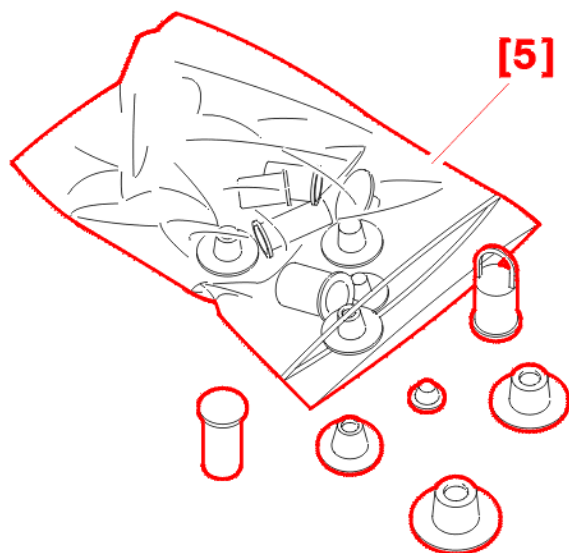


- [1] Lifting table (-).0004 .
[2] Set of brackets for retaining power train (-).0005 .

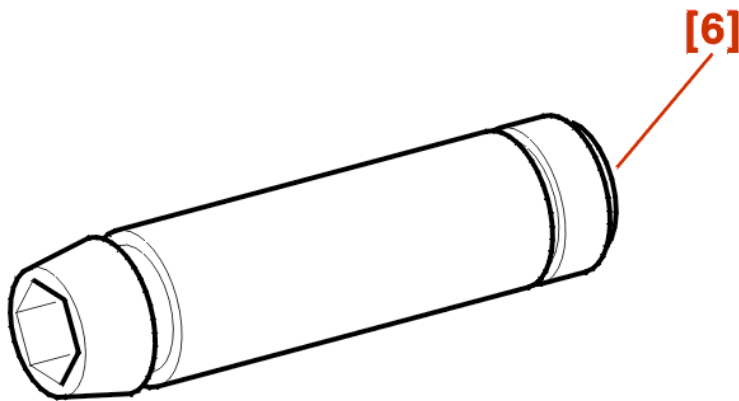


[3] Tool for unclipping \varnothing 10 mm ball joints (-).0216-G1 .

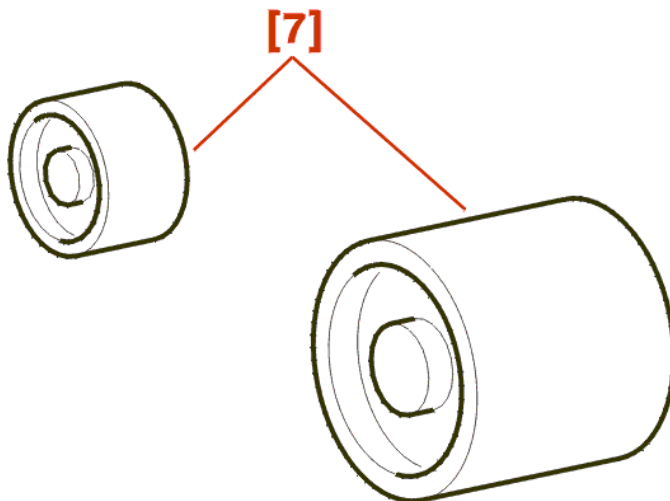
[4] Tool for unclipping \varnothing 13 mm ball joints (-).0216-G2 .



[5] Set of plugs (-).0188-T .



[6] Socket for the removal of the gearbox shaft(-).0317-AB .



[7] Final drive output oil seal fitting drifts (-).0317-T / (-).0317-U .

2 - REMOVAL

Place the vehicle on a two-post ramp .

WARNING : the power unit is removed via the front of the vehicle .

Disconnect the battery .

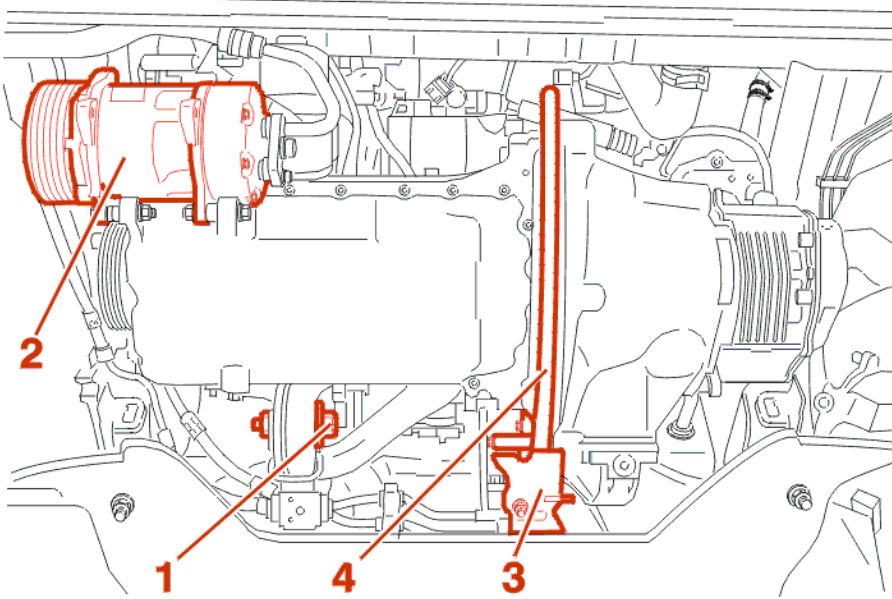
Remove the shield under the power train .

Drain :

- [THE COOLING SYSTEM](#)
- [THE GEARBOX](#)
- the engine (if necessary)

Remove :

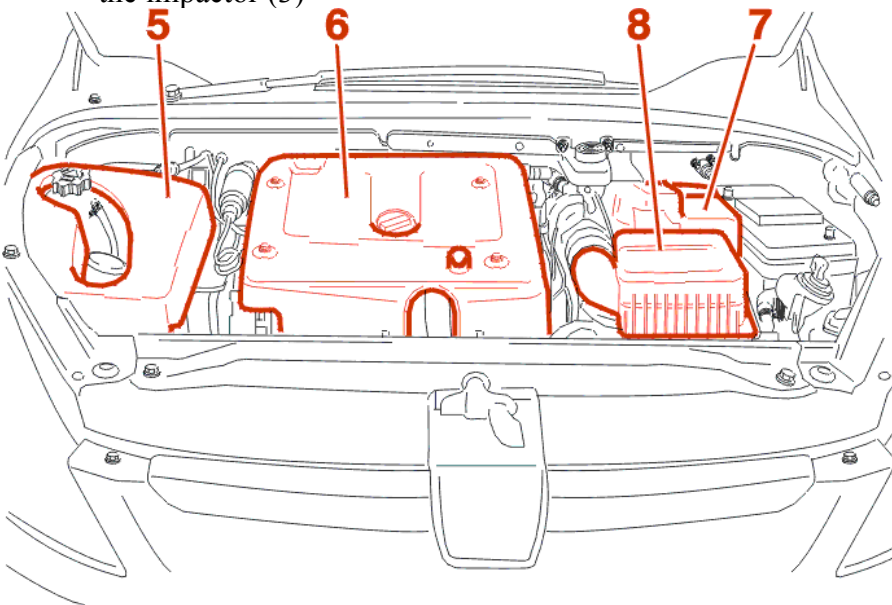
- the front wheels
- the front mud guards
- the drive shafts
- [THE ANCILLARY DRIVE BELT](#)



Disconnect the exhaust pipe from the turbocharger .

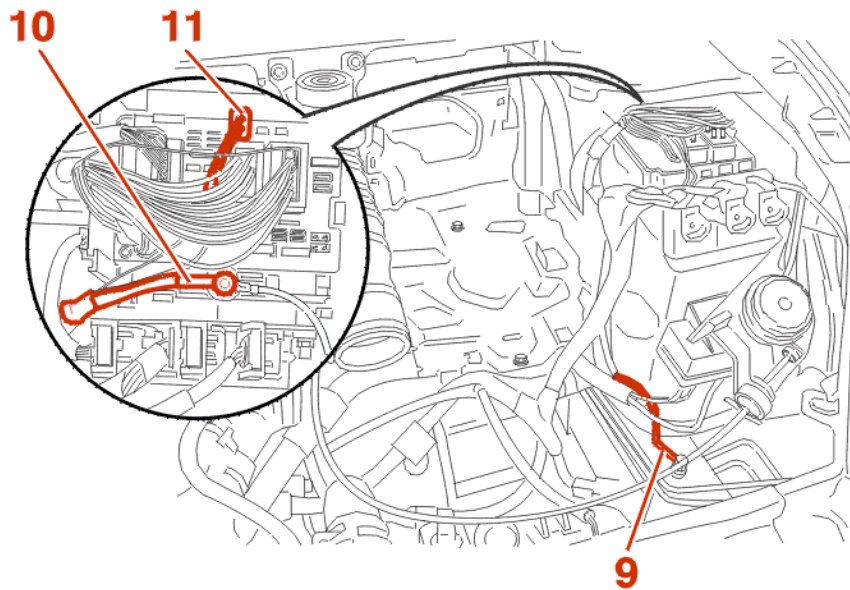
Remove :

- the torque reaction link (1)
- the subframe impactor reinforcer (4)
- the impactor (3)



Remove :

- the style covers (5) - (6)
- the battery (7) and its bracket ; access to a bolt via the left side wheel arch
- the air cleaner (8)



Disconnect the 32 way grey connectors and the 48 way brown connectors from the ecu .
 Disconnect the cables (9) - (10) and the black 2 way connector (11) .

Remove :

- the headlamp washes ; [\(ACCORDING TO SPECIFICATION\)](#)
- [THE FRONT BUMPER](#)
- [THE HEADLAMPS](#)
- the front panel upper crossmember
- the accelerator cable and the pedal sensor
- the pre-heater unit

Remove and move aside the bonnet lock .

Using the tool [3] -[4], unclip the gear shift control ball joints .

Move aside :

- the brake servo vacuum pipe
- the heater matrix hoses
- the priming pump

WARNING : cover the fuel connectors so that they are adequately sealed .

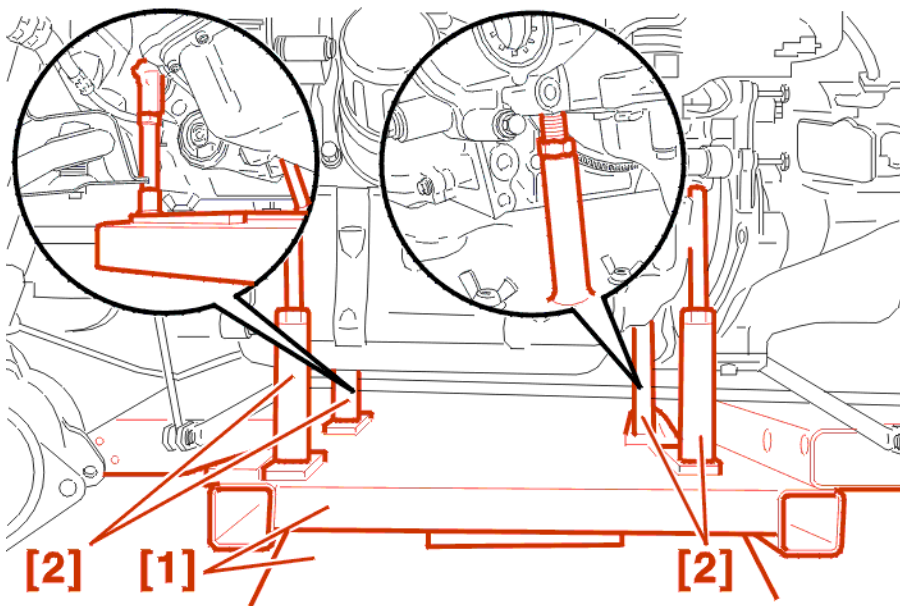
Disconnect the electric supply from the fan unit .

Remove :

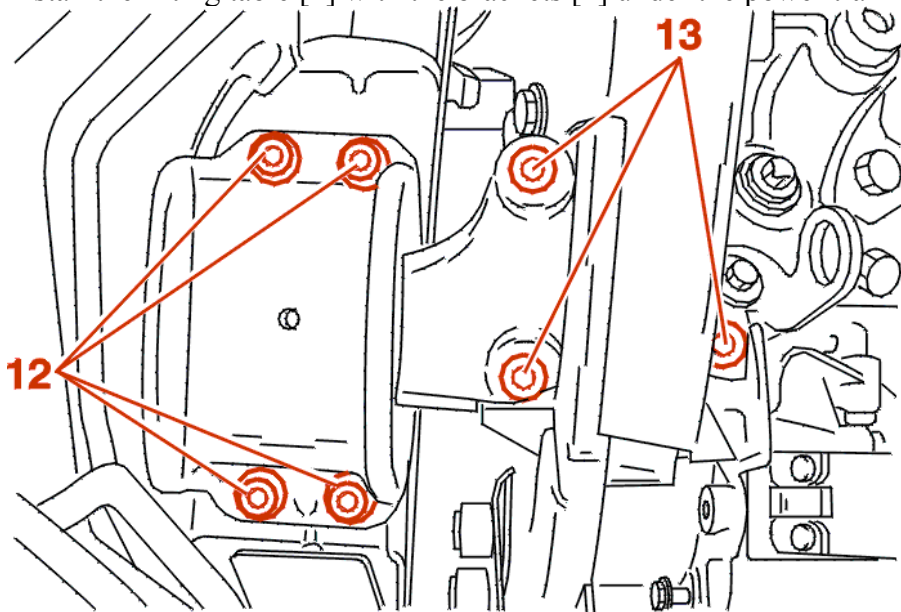
- the cooling radiator
- the front panel
- the lower crossmember of the front panel

Without disconnecting the pipes, move aside and clamp :

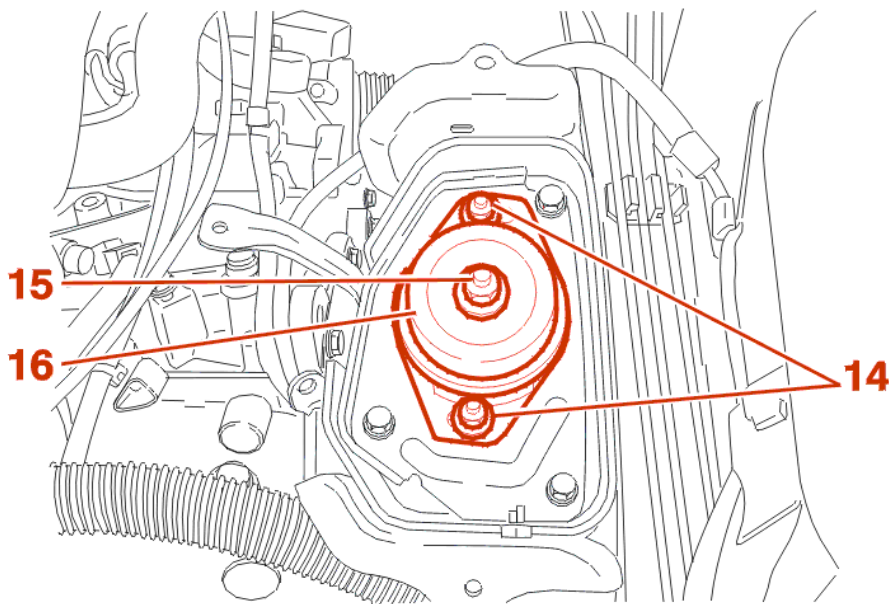
- the air conditioning capacitor
- [THE AIR CONDITIONING COMPRESSOR \(2\)](#)
- the clutch slave cylinder



Install the lifting table [1] with the brackets [2] under the power train .



Slacken the bolts (12) - (13) .
Remove the right-hand engine mounting .



Slacken the nuts (14) - (15) .

Remove the flexible shim from the left bracket (16) .

Using the tool [6], remove the pin from the left bracket .

Remove the power train .

3 - REFITTING

Always renew :

- the Nyloc nuts
- the exhaust clip

Use the drifts [7] to fit the final drive oil seals, having greased the space between the seal lips .

Introduce the power train with the lifting plate into the vehicle .

Refit the right-hand engine mounting .

Tighten :

- the bolts (12) by hand
- the bolts (13) to 6 da.Nm

Replace the left bracket and its washer using the tool [6] .

Tighten the shaft to 5 da.Nm .

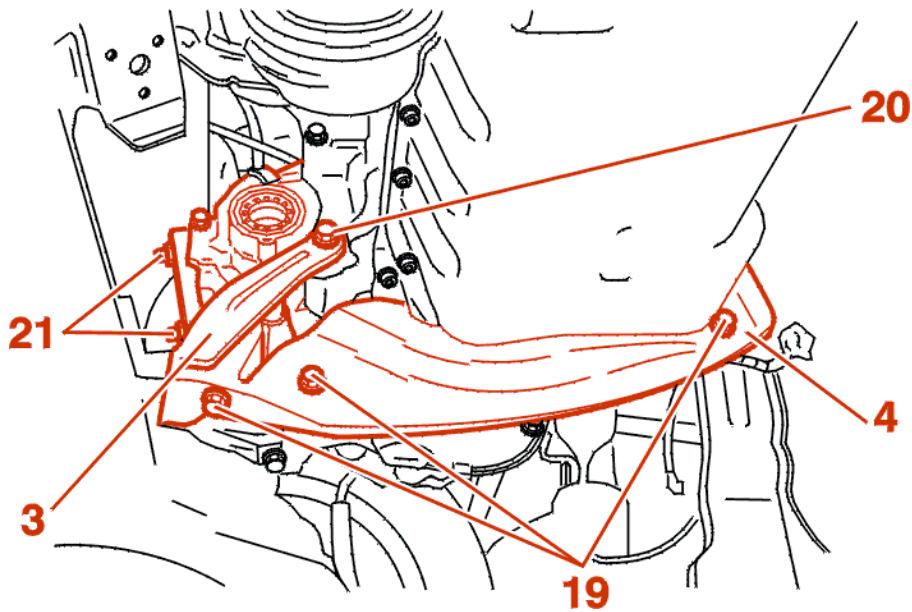
Replace the flexible shim from the left bracket (16) .

WARNING : centralise the power train before tightening the flexible mounting securing bolts .

Tighten :

- the nuts (14) to 3 da.Nm
- the nut (15) to 6.5 da.Nm
- the bolts (12) to 6 da.Nm

Remove the lifting table and the brackets from the power train .

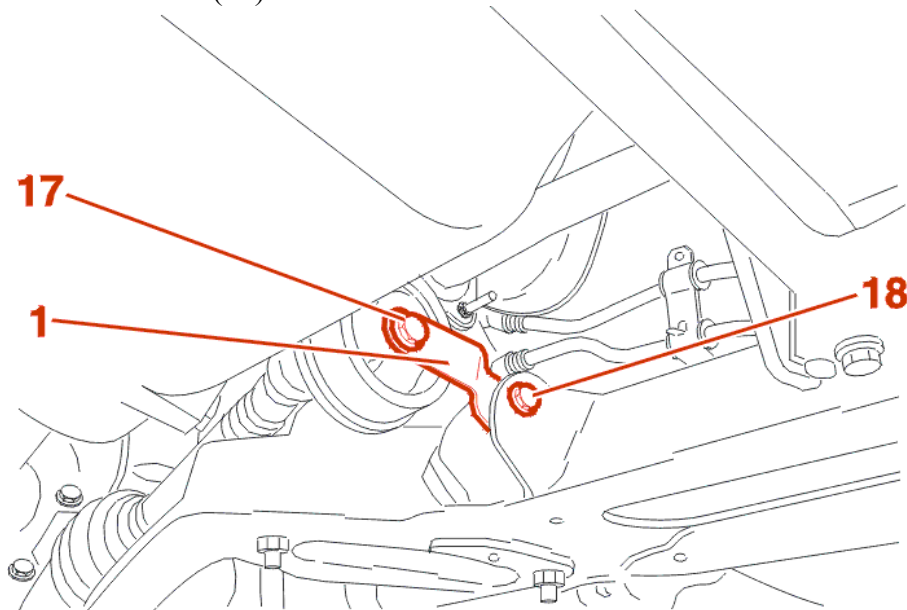


Fit :

- the subframe impactor reinforcer
- the impact device tilting the bottom of the power train towards the front

Tighten :

- the bolts (19) to 4 da.Nm
- the bolt (20) to 6 da.Nm
- the nuts (21) to 4 da.Nm



Refit the torque reaction link (1) .

Tighten :

- the bolt (17) to 5.5 da.Nm
- the bolt (18) to 4 da.Nm

AIR CONDITIONING

[REFIT THE COMPRESSOR](#) .

ALL MODELS

Refit the drive shafts .

Continue the fitting operations in the reverse order to removal .

Fill or top up :

- the gearbox

- the engine (if necessary)

Tighten the wheel bolts to 9 da.Nm .

[DRAIN AND RE-PRIME THE DIESEL CIRCUIT](#) .

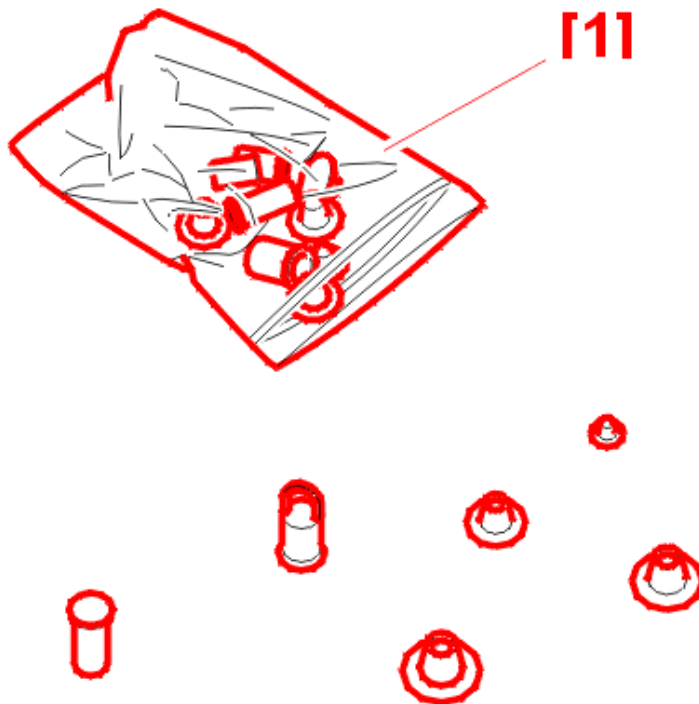
Initialise the various ECUs .

[FILL AND BLEED THE COOLING SYSTEM](#) .

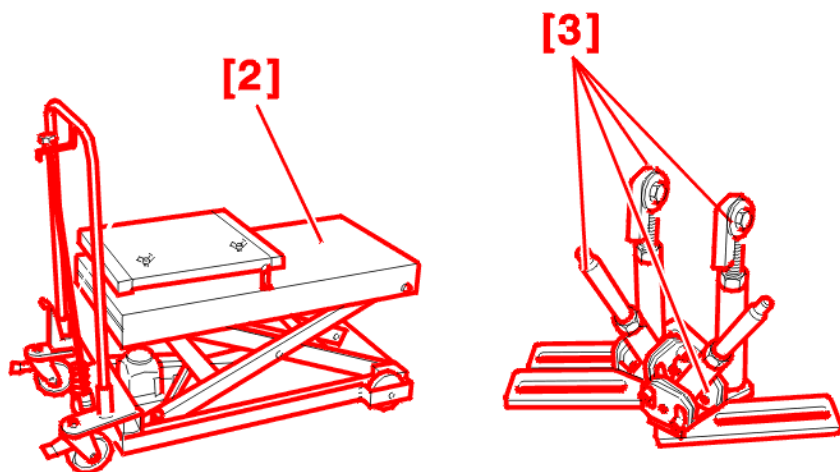
B1BG4HK1 - 307 DV4TD ENGINE

REMOVAL - REFITTING POWER UNIT

1 - RECOMMENDED TOOLS

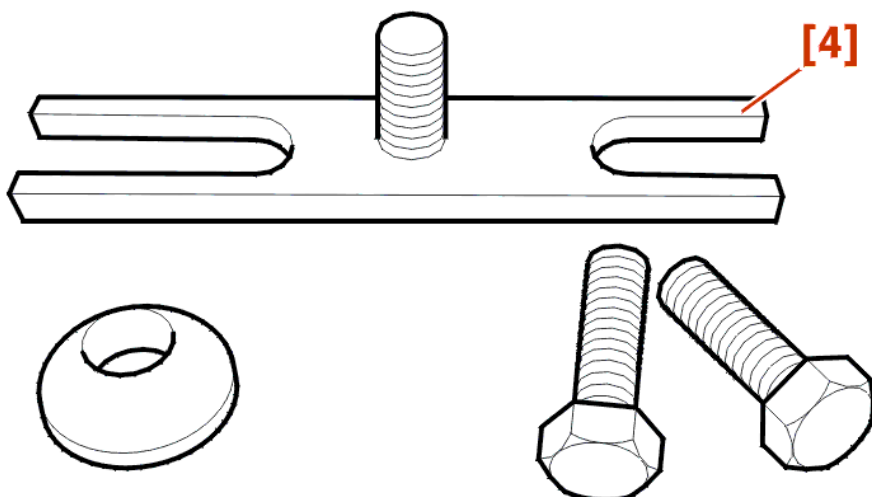


[1] Plugs kit (-).0194-T .

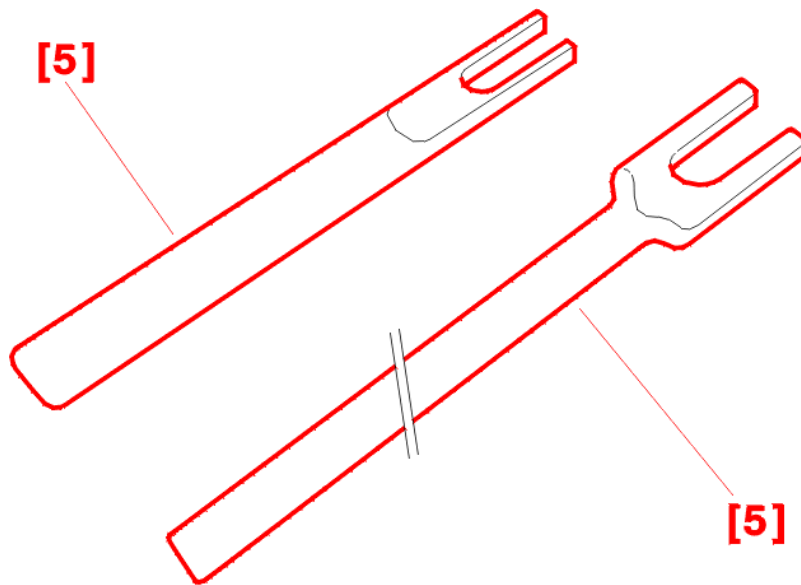


[2] Lifting table .

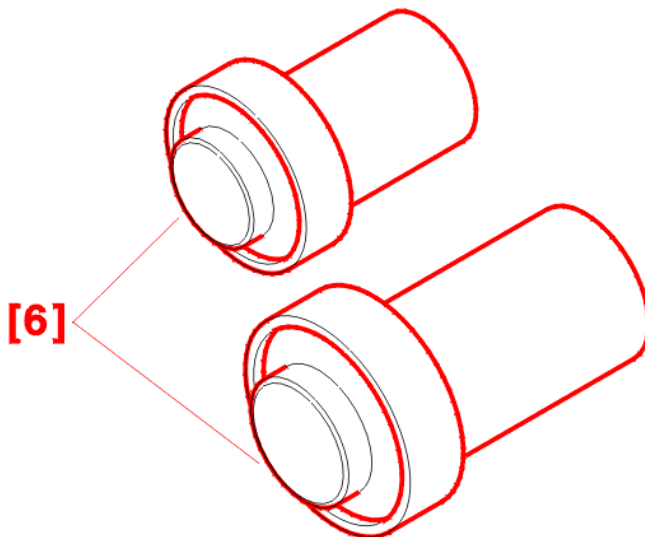
[3] Power train/elevating platform connecting rod (-).0005 .



[4] {{N13387}} adaptateur de support GMP (-).0005-H .



[5] Ball joints unclipping tool (-).0216-G1/G2 .



[6] {{N13388}} tampon de montage des joints de sortie de boîte .

2 - REMOVAL

Place the vehicle on a two-post ramp .

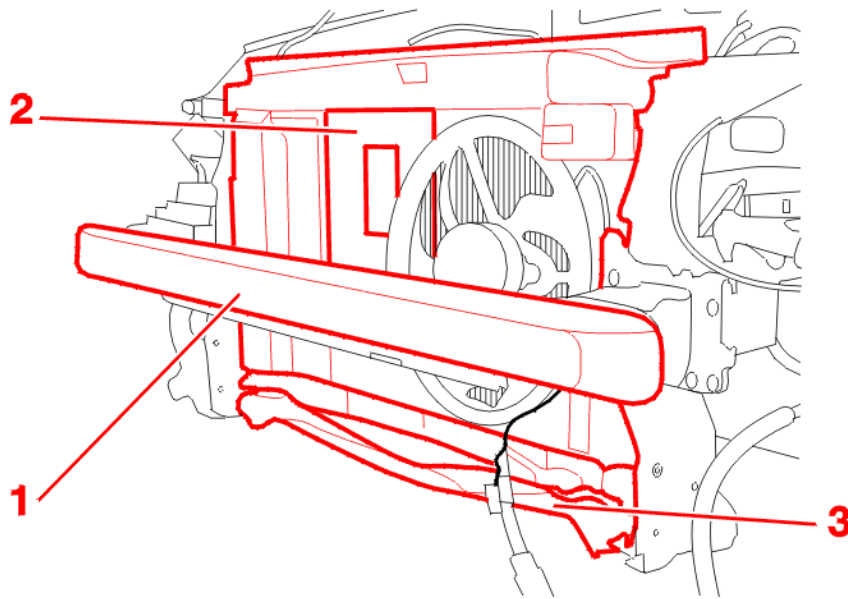
WARNING : the power unit is removed via the front of the vehicle ; open the bonnet to the workshop position and support it using a bolt/nut assembly .

Remove :

- the shield under the power train
- disconnect the battery
- the style covers
- {{n13389}} les plaques d'insonorisation du compartiment moteur
- the plastic reinforcing crossmember
- {{n13390}} les 2 pare-boue des passages de roue
- the battery and its support

Drain :

- the cooling system
- the gearbox
- the engine (if necessary)



Remove :

- the front bumper
- the headlamps
- the front panel crossmember (1)
- the complete cooling box (2) with the radiator

Without disconnecting the pipes : {{N13391}} écarter et brider le compresseur et le condenseur de réfrigération .

Remove the panel lower crossmember (3) .

Do not allow the horn to hang at the end of its harness .

{{N13392}} déposer l'écran thermique avant du catalyseur d'oxydation .

WARNING : {{n13393}} le flexible d'échappement ne doit pas subir de flexion supérieure à 15° entraînant sa détérioration et donc son remplacement .

Disconnect the connectors :

- gearbox oil pressure sensor
- {{n13394}} alimentation de l'alternateur

{{N13395}} débrider et écarter le faisceau du carter de distribution .

{{N13396}} débrancher l'arrivée et le retour carburant .

{{N13397}} bouchonner le circuit pour respecter les règles de propreté et de sécurité des moteurs HDI en utilisant le kit [1] .

{{N13398}} débrancher le faisceau moteur sur la boîte à fusibles .

Uncouple :

- {{n13399}} les durits de l'aérotherme
- {{n13400}} les commandes de boîte de vitesses à l'aide des outils [5]

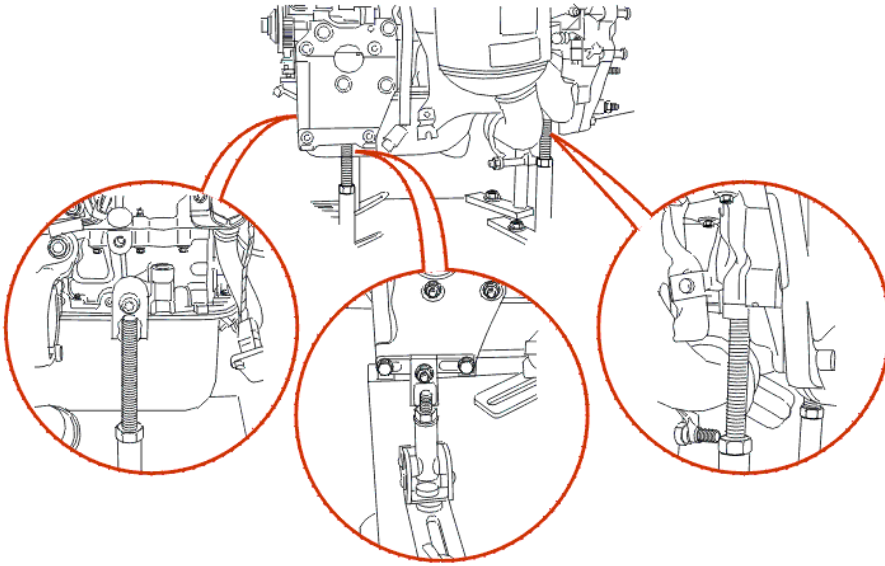
{{N13401}} écarter et brider le récepteur d'embrayage .

Remove :

- the drive shafts
- the torque reaction link

{{N13402}} placer la table élévatrice [2] sous le groupe motopropulseur .

{{N13403}} brider le moteur sur la table élévatrice à l'aide des liaisons [3] - [4] .



Remove :

- {{n13404}} le support moteur superieur droit
- {{n13405}} l'ecrou de support de boite de vitesses

{{N13406}} lors du dégagement de l'axe de support, veiller à ne pas endommager celui-ci, ni le silentbloc .

{{N13407}} sortir le groupe motopropulseur en veillant à ne pas rencontrer d'interférences .

3 - REFITTING

{{N13408}} remplacer les joints d'étanchéité de sortie de boîte de vitesses à l'aide de l'outil [6] .

{{N13409}} remettre le groupe motopropulseur en position .

{{N13410}} monter les supports supérieurs moteur .

Tightening :

- right-hand side (6 da.Nm)
- at the gearbox end (6 da.Nm)

{{N13411}} débrider le groupe motopropulseur de la table élévatrice .

{{N13412}} retirer la table élévatrice .

{{N13413}} serrer la biellette anticouple à 5.5 m.daN .

refit the drive shafts .

{{N13414}} clipper les commandes de boîte de vitesses .

{{N13415}} raccorder les durits de l'aérotherme .

{{N13416}} connecter le faisceau moteur au boîtier fusibles .

Connect the connectors :

- gearbox oil pressure sensor
- {{n13394}} alimentation de l'alternateur

Clip the fuel supply and return pipes .

Top up the gearbox and engine oil (If necessary) .

{{N13417}} reposer l'écran thermique avant de catalyseur .

{{N13418}} positionner et fixer le condenseur et le compresseur de réfrigération .

Fit :

- the complete cooling box with the radiator
- the front panel crossmember
- the headlamps
- the front bumper

Check the coolant level .

Fit :

- {{n13389}} les plaques d'insonorisation du compartiment moteur

- the plastic reinforcing crossmember
- the battery and its support
- the style covers
- {{n13390}} les 2 pare-boue des passages de roue
- the wheels (tightening torque 8.5 da.Nm)

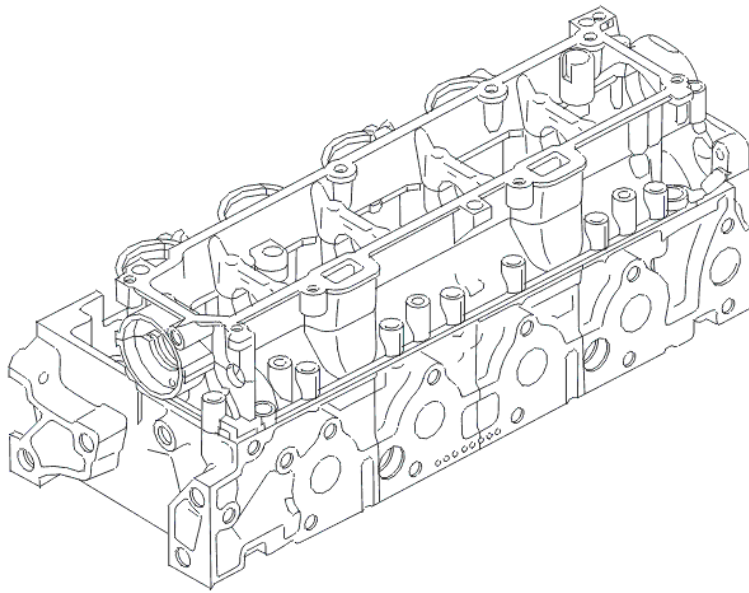
Connect the battery .

B1DB3GK1 - 307 DV4TD ENGINE

IDENTIFICATION, DATA, TIGHTENING TORQUE(S) CYLINDER HEAD

1 - IDENTIFICATION

1 - 1 - CYLINDER HEAD



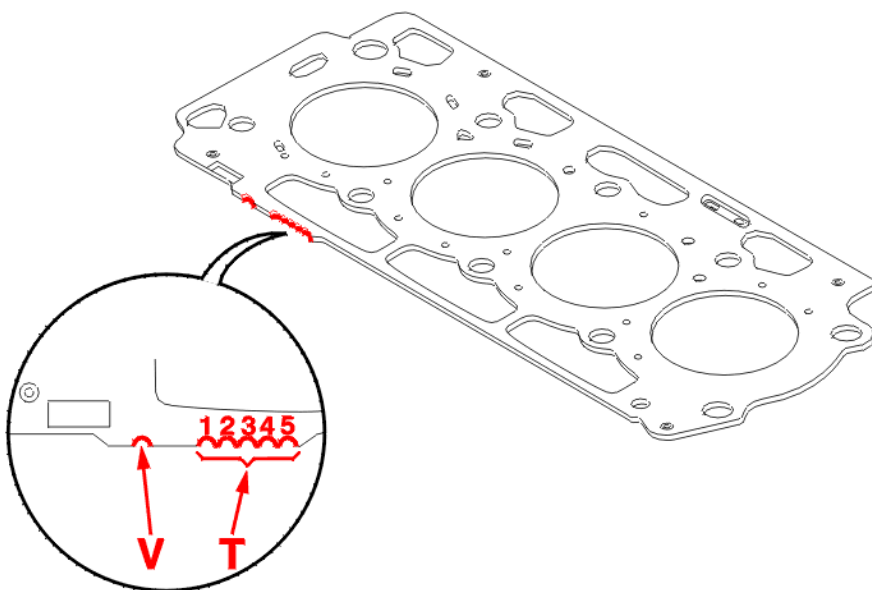
Aluminium cylinder head with camshaft holder bearing cap :

- fixing on the cylinder block with 10 bolts (tightening in the plastic area)
- fixing of the injectors with forks
- plastic cylinder head cover with integral filling and breather pipe for exhaust fumes incorporated

1 - 2 - CYLINDER HEAD GASKETS

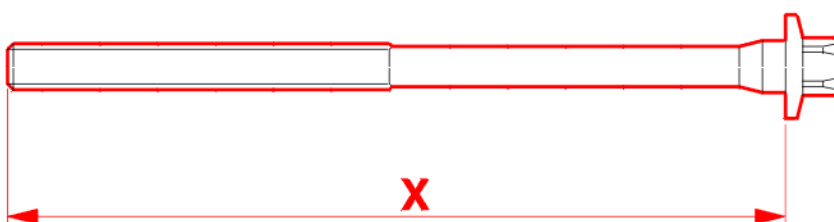
Cylinder head seals as stainless steel flange .

There are 5 thicknesses possible at first build .



engine code	8HZ
engine type	DV4TD
special features	without
thickness 1 notch(es) (T1) mm	1.35
thickness 2 notch(es) (T1 + T2) mm	1.25
thickness 3 notch(es) (T1 + T2 + T3) mm	1.3
thickness 4 notch(es) (T1 + T2 + T3 + T4) mm	1.4
thickness 5 notch(es) (T1 + T2 + T3 + T4 + T5) mm	1.45

1 - 3 - CYLINDER HEAD BOLT



Max. permissible (X) .
2 - DATA

engine code	8HZ
engine type	DV4TD
special features	without

length of cylinder head securing bolt (X) mm nominal	147
length of cylinder head securing bolt (X) mm max.	149
position: valve - cylinder head surface (inlet) mm	recess 1.25
position: valve - cylinder head surface (exhaust) mm	recess 1.25
maximum cylinder head bow mm	0.05

3 - TIGHTENING TORQUE(S)

3 - 1 - CYLINDER HEAD

engine code	8FZ
engine type	DV4TD
special features	without
pre-tightening : da.Nm	2
slackening	without
tightening : da.Nm	4
1st angular tightening (°)	180°

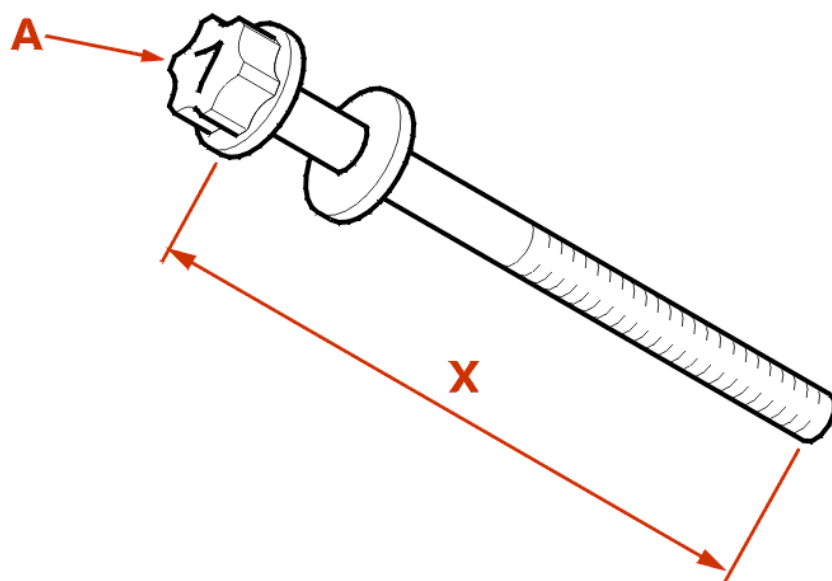
3 - 2 - CAMSHAFT HOUSING

engine code	8FZ
engine type	DV4TD
special features	without
lower camshaft holder fixing (pre-tightening)	0.5
lower camshaft holder fixing (tightening)	1
upper camshaft holder fixing (pre-tightening)	0.5
upper camshaft holder fixing (tightening)	1

B1DG0MK1 - 307 DW10TD ENGINE DW10ATED ENGINE

REASSEMBLY ENGINE (CYLINDER HEAD)

1 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE



A : Cylinder head bolt identification mark (DW10 engine) .

Measure the length (X) of the cylinder head bolts .

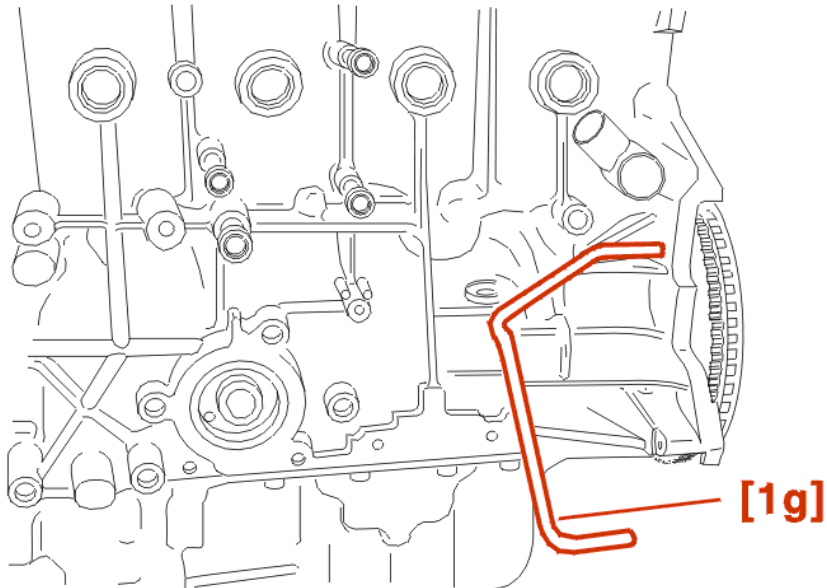
IMPERATIVE : the length x must be less than 133,4 mm .

Brush the threads of the cylinder head bolts .

2 - REASSEMBLY

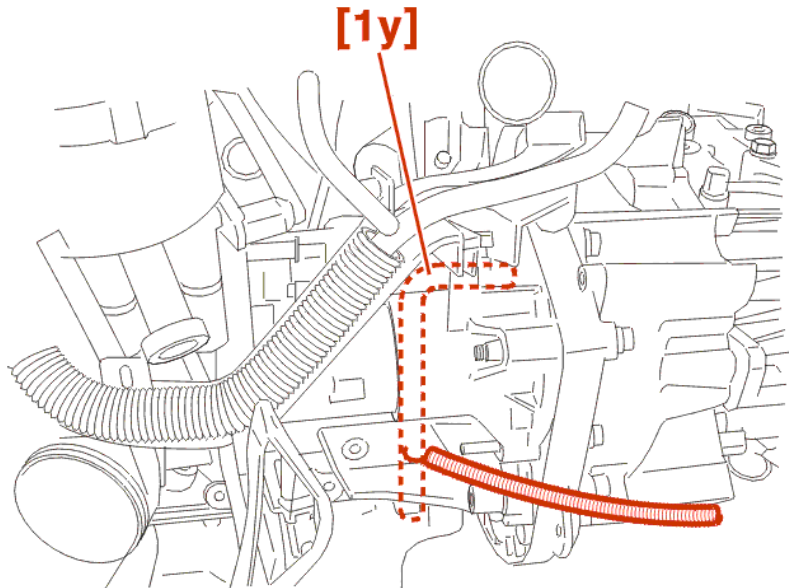
remove the flywheel stop [1i] .

2 - 1 - 1ST FITTING : WITH SINGLE ENGINE FLYWHEEL

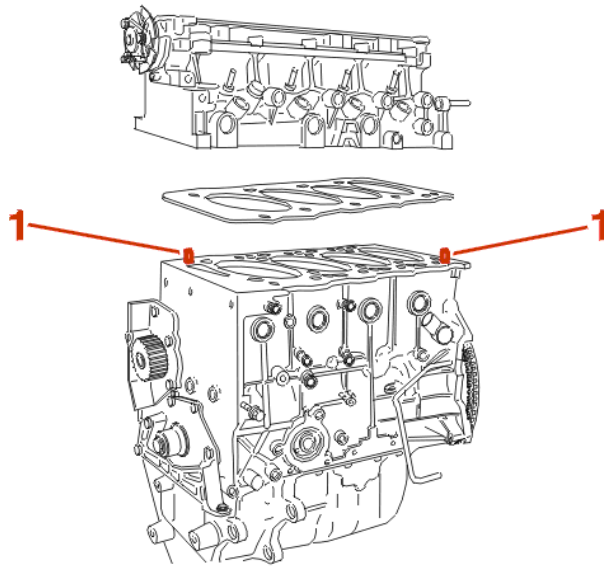


peg the flywheel using the rod [1g] .

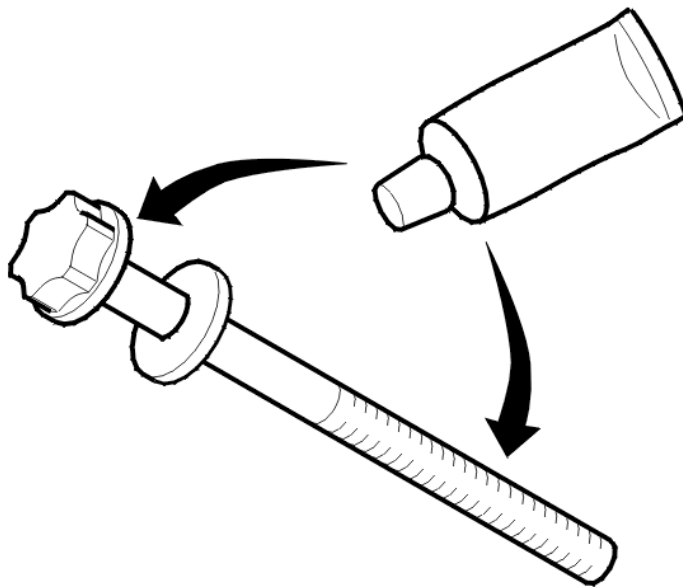
2 - 2 - 2ND FITTING : WITH DOUBLE ENGINE FLYWHEEL



peg the flywheel using the rod [1y] .

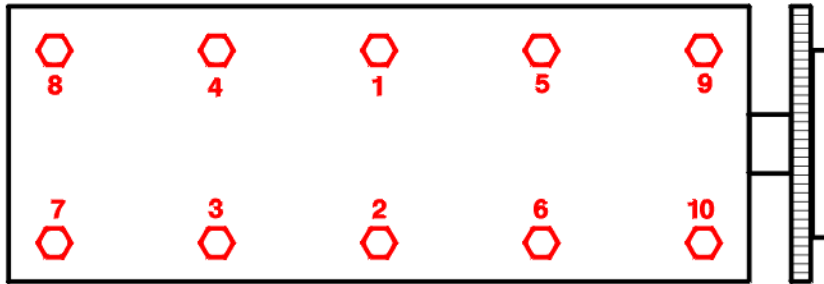


Check that the pins are present (1) .
 Fit a new cylinder head gasket Following the direction of fitting .
 Ensure that the camshaft is pinned .
 Refit the cylinder head .



Brush the threads of the cylinder head bolts .
 fit the cylinder head bolts coated with MOLYKOTE G RAPID PLUS on the threads and under the bolt heads .

2 - 3 - CYLINDER HEAD TIGHTENING



Tighten the cylinder head bolts in the order shown (using the tool [4]) .

Stage 1 :

- proceed bolt by bolt in the order shown
- tightening torque of bolts : 2 da.Nm

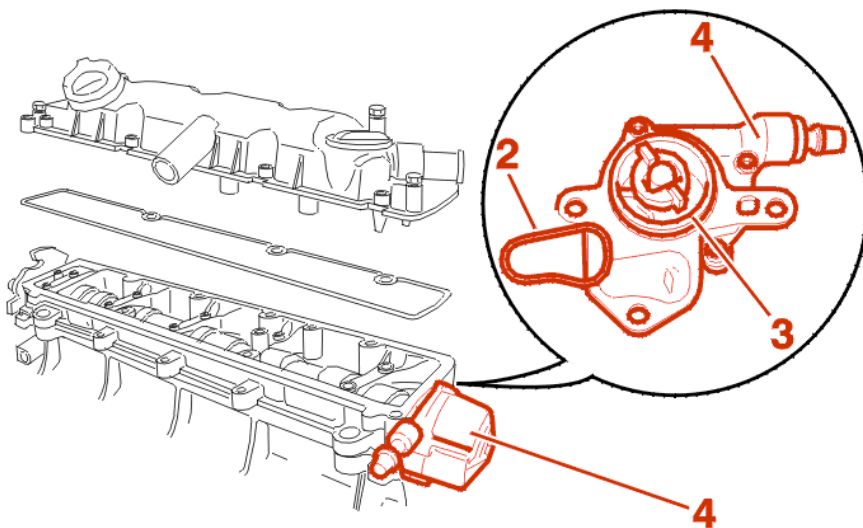
Stage 2 :

- proceed bolt by bolt in the order shown
- tightening torque of bolts : 6 da.Nm

Stage 3 :

- proceed bolt by bolt in the order shown
- angular tightening to 220 ° (using the tool [3])

NOTE : it is not necessary to retighten the cylinder head after bringing the engine up to operating temperature .



IMPERATIVE : oil the O-rings before refitting .

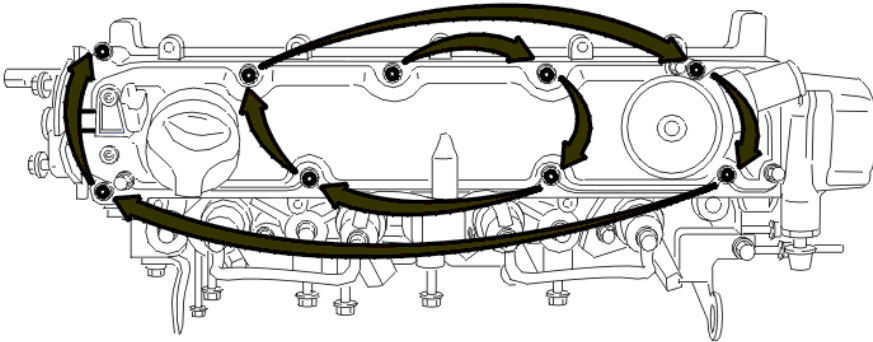
Fit :

- a new seal (2)
- a new seal (3)
- the vacuum pump (4)

Tighten: The bolts to 2 da.Nm/The nut to 2 da.Nm .

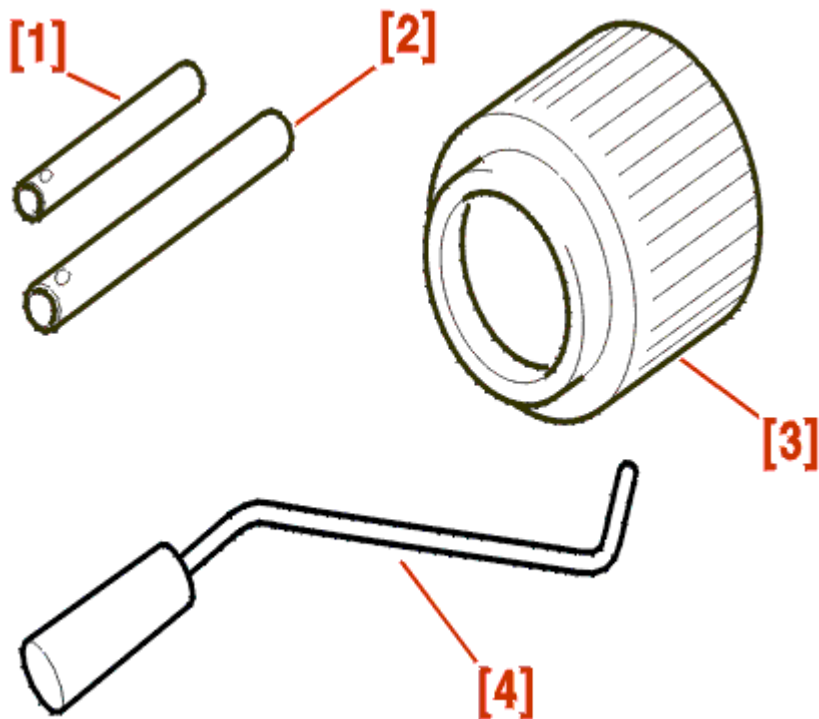
Fit the cylinder head cover using a new gasket .

Run up the bolts .

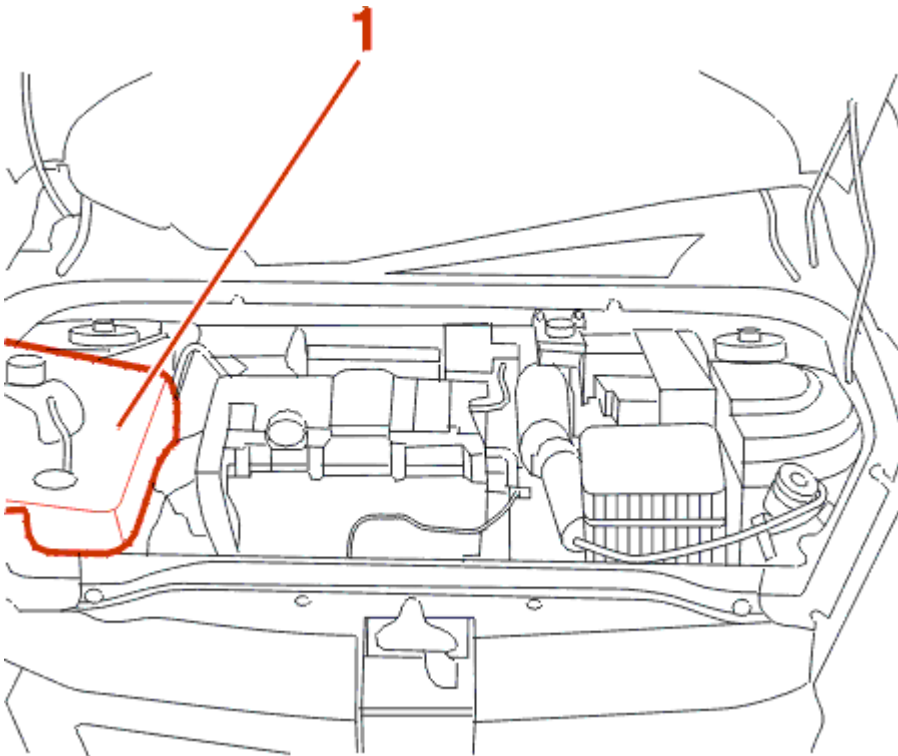


Gradually tighten the cylinder head cover bolts in a spiral starting from the inside .
Tightening torque: 1 da.Nm .

B1DG13K1 - 307 TU5JP4 ENGINE
REMOVAL - REFITTING CAMSHAFT
1 - SPECIAL TOOLS



- [1] Camshaft setting rod (Inlet) (-).0132 AJ2 .
 - [2] Camshaft setting rod (Exhaust) (-).0132 AJ1 .
 - [3] Camshaft oil seal fitting drift (-).0132 AG .
 - [4] flywheel setting rod (-).0132 QY .
- 2 - REMOVAL

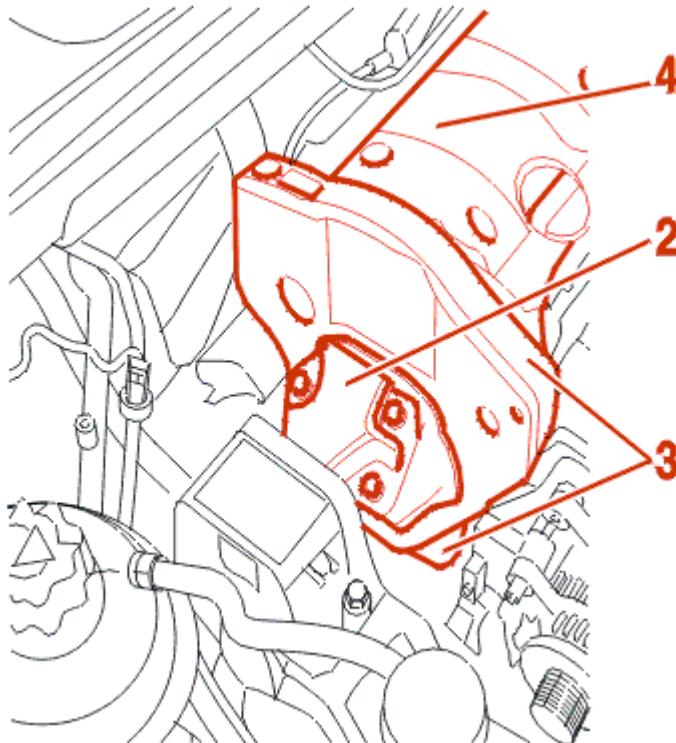


Remove the style cover (1) .

Remove :

- the ancillary drive belt
- the crankshaft pulley

Support the power train assembly by sliding a stand under the engine .



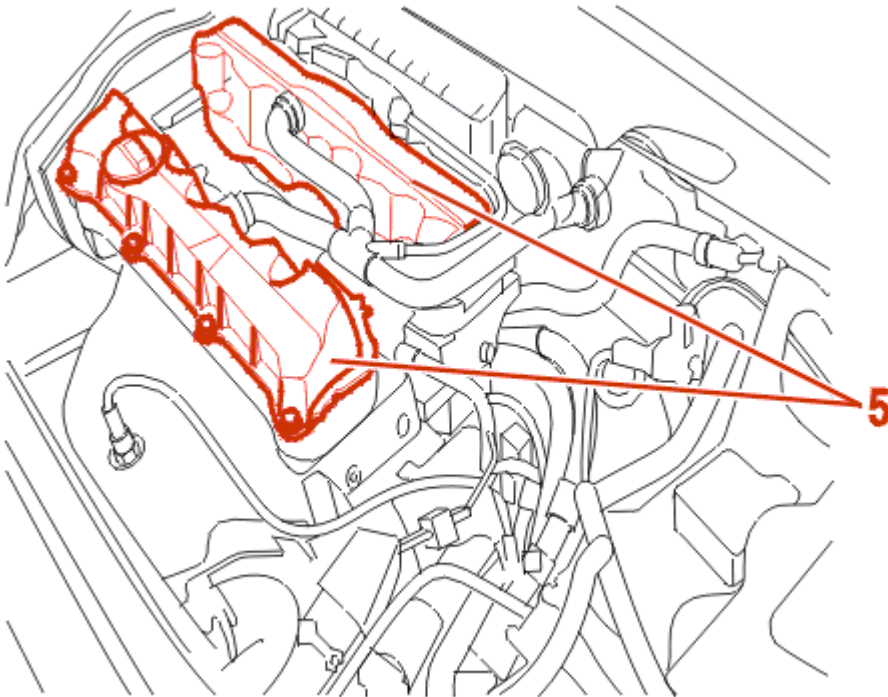
Remove :

- the complete left engine store (2)
- the top timing cover (3)
- the bottom timing cover (3)
- the style cover (4)

Peg the flywheel using the rod [4] .

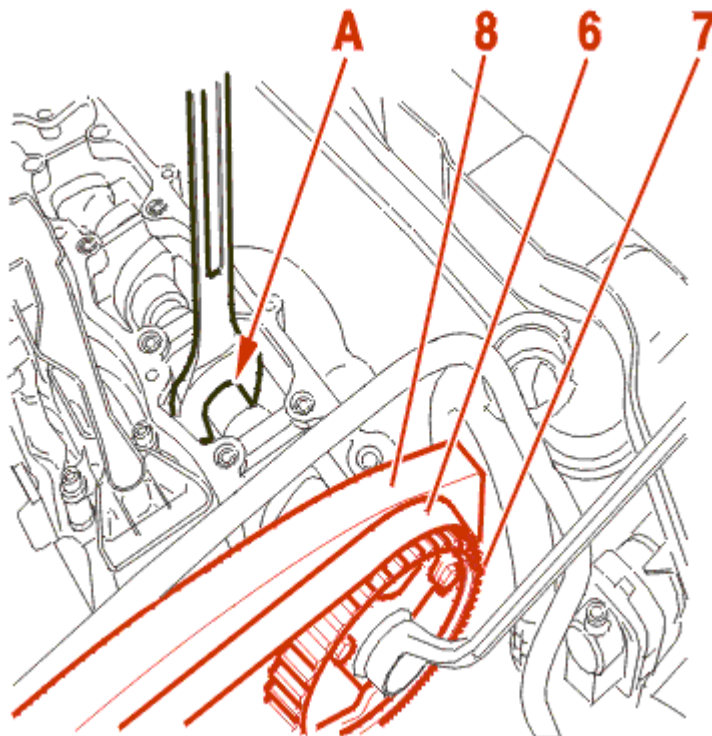
Remove the tool [4] .

Turn the engine 1/4 of a revolution in reverse .



Progressively slacken in a spiral sequence the bolts of each cylinder head cover (5), starting from the outside .

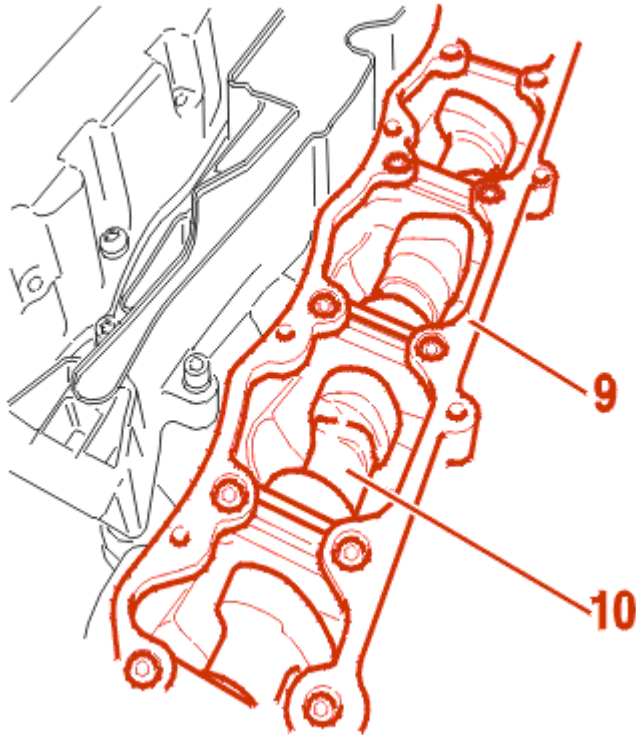
Remove the cylinder head covers .



Slacken the camshaft hub securing bolts, immobilizing the camshafts by means of a spanner at (A) .

Remove :

- the timing belt (6)
- the hub-pulley assembly (7)
- the timing cover (8)
- the camshaft oil seals

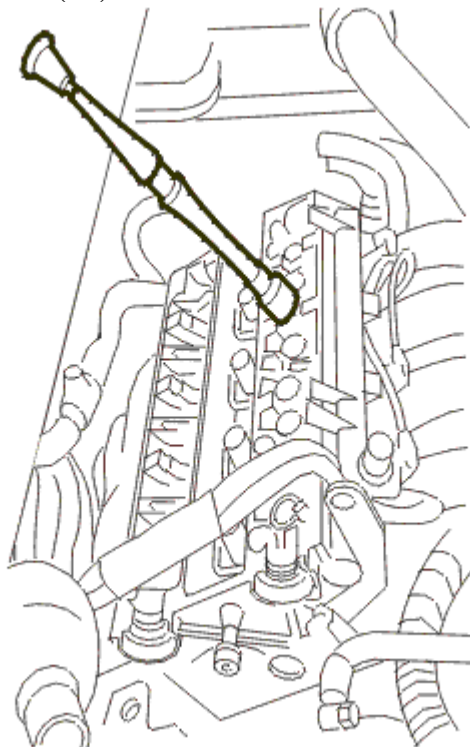


WARNING : slacken the camshaft bearing cap cover (9) securing bolts, progressively and in a spiral sequence starting from the outside, so as to separate the mating surfaces by a few millimetres .

Disengage the camshaft from its bearings by tapping lightly with a mallet from the pulley side .

Remove :

- the main bearing cap casting (9)
- the camshaft (10)



If the tappets are removed :

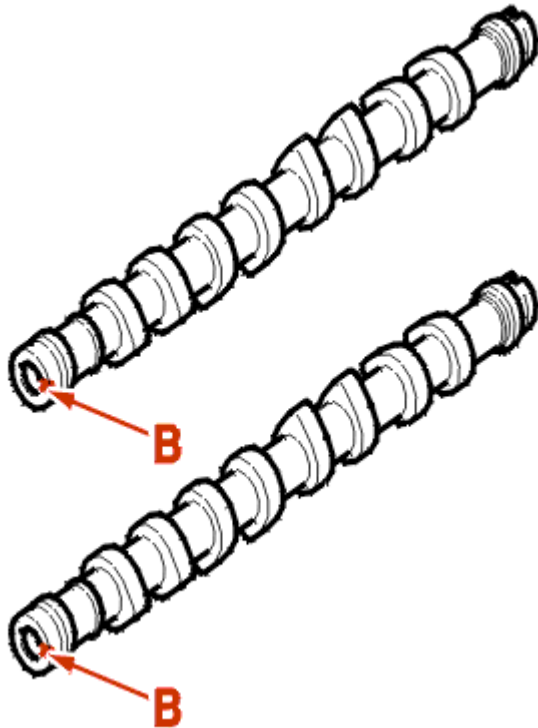
- mark the positions of the tappets before removal
- use a valve grinding type suction cup tool

Remove oil from the threads receiving the camshaft bearing housing securing bolts .

3 - REFITTING

Refitting the tappets :

- lubricate the tappet bodies (MOLYDAL GB SP 370G)
- refit the tappets in their original positions
- check that the tappets rotate freely in the cylinder head

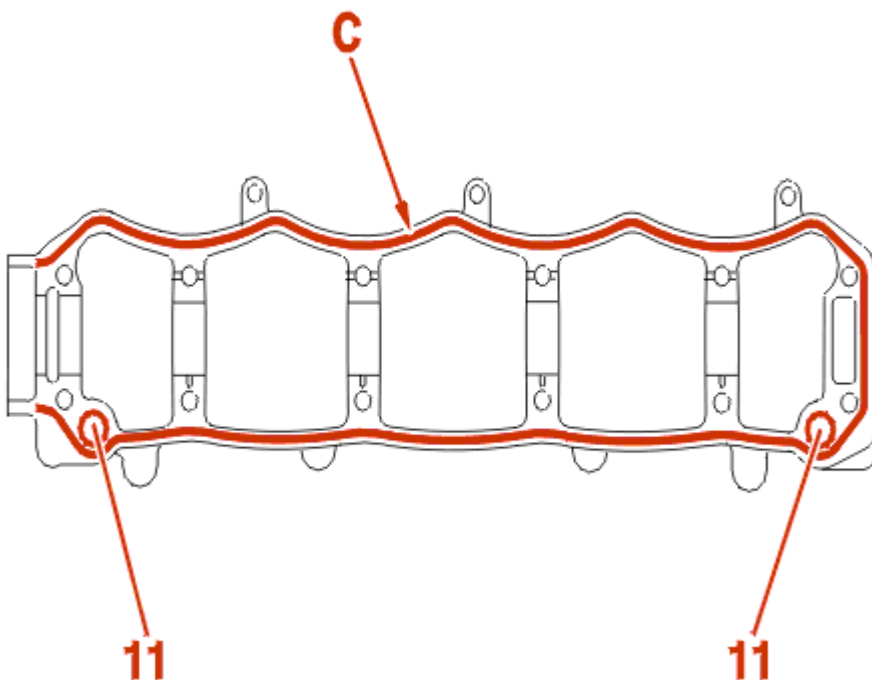


Lubricate the cams and the bearings (MOLYDAL GB SP 370G) .

Refit the camshafts in the cylinder head, positioning the notches (B) :

- 7h : inlet side
- 8h : exhaust side

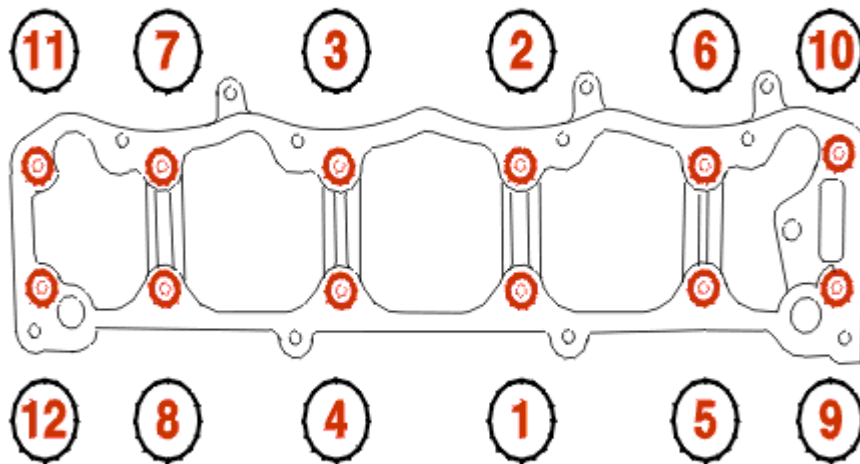
Carefully clean the mating surfaces of the cylinder head and camshaft bearing cap cover .



Check that the pins (11) are present .

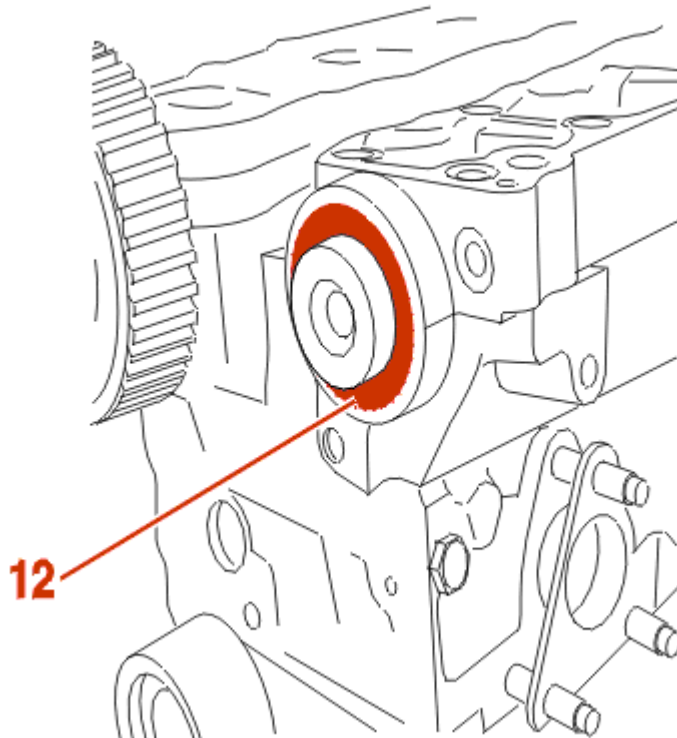
Deposit a line of sealing compound AUTOJOINT OR at (C) around the edge of the mating surfaces .

Refit the camshaft bearing cap covers .

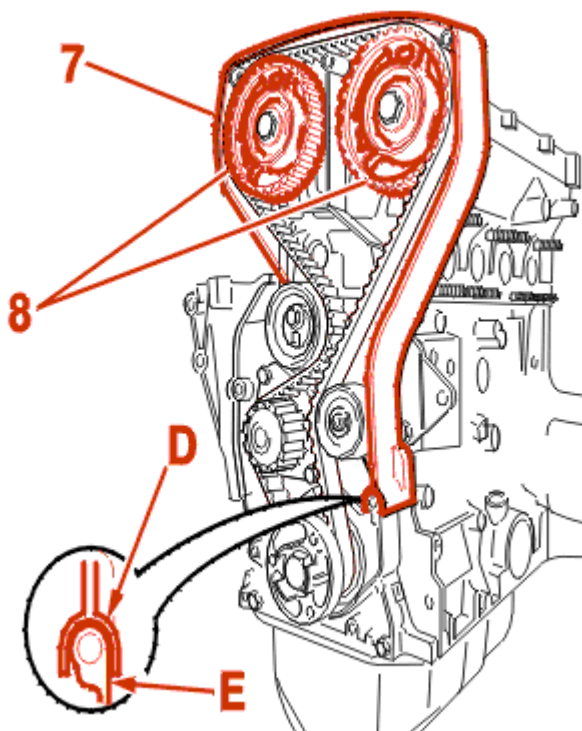


Finger tighten then progressively tighten the securing bolts in the order shown ; 1 to 12 :

- pre-tighten : 0.2 da.Nm
- tightening torque: 0.8 da.Nm

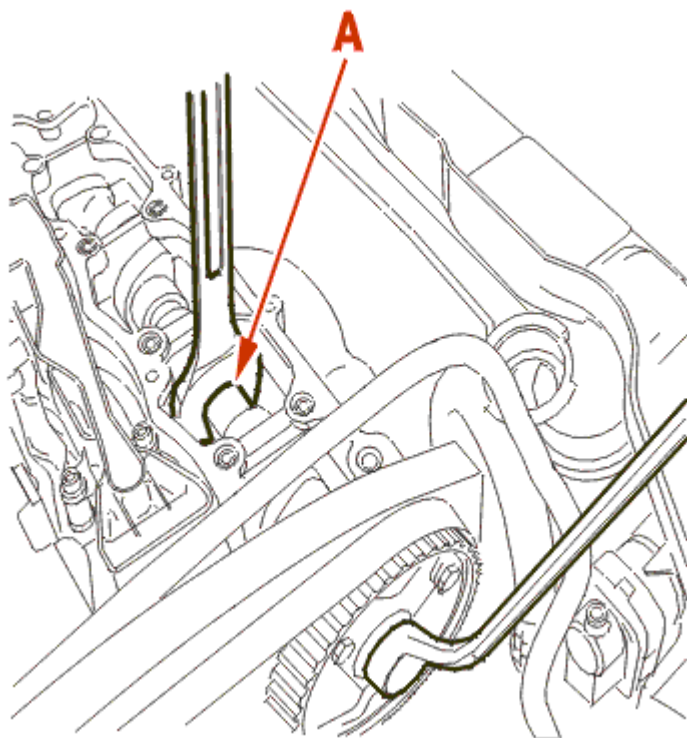


Refit the camshaft seals (12) using the tool [3] .



Refit the timing cover (7), engaging the notch (D) of the timing cover correctly on the rib (E) of the seal carrier plate .

Refit the hub-pulley assemblies (8) .



Tighten the camshaft hub securing bolts to 8 da.Nm immobilizing the camshaft by means of a spanner at (A) .

WARNING : ensure that the camshaft pulley turns freely on its hub .

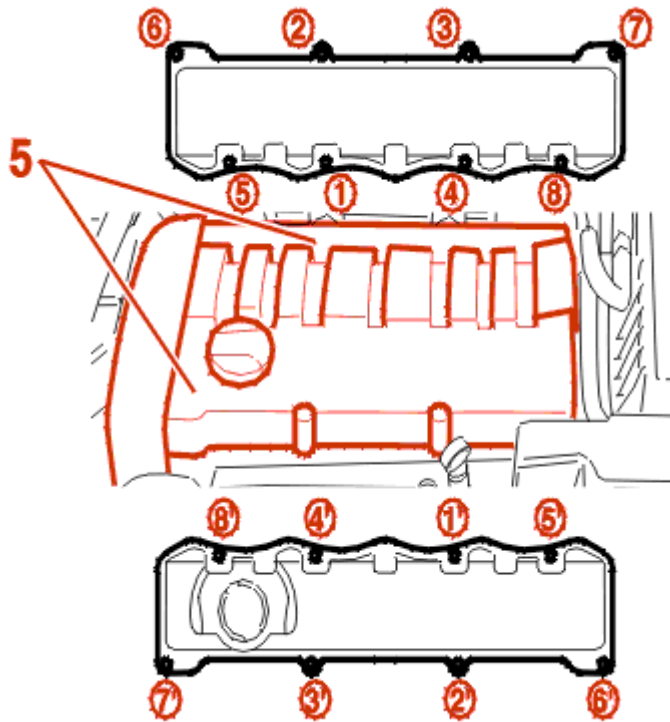
Peg :

- the camshaft hubs, using the rods [1] - [2]
- the engine flywheel using tool [4]

Fit :

- the timing belt

- the timing cover



Refit the cylinder head covers (5) after cleaning the seals and joint faces .

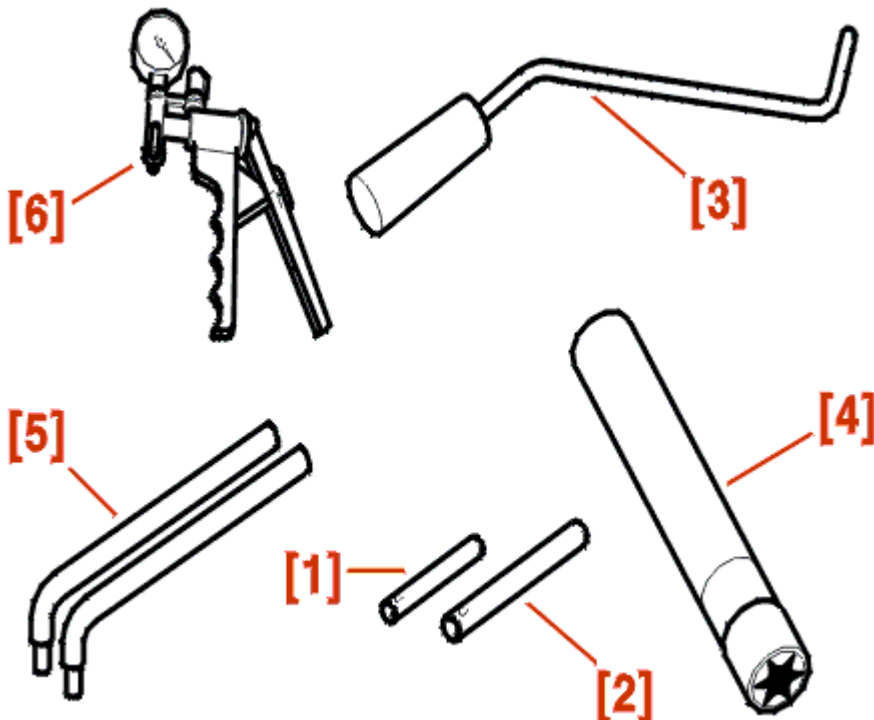
NOTE : the cylinder head covers have composite gaskets which can be used several times ; if the gasket is damaged, it can be partially repaired with SILICONE CATEGORIE 2 jointing paste .

Continue the fitting operations in the reverse order to removal .

B1DG14K1 - 307 TU5JP4 ENGINE

REMOVAL - REFITTING CYLINDER HEAD

1 - SPECIAL TOOLS



[1] Camshaft setting rod(Inlet) (-). 0132 AJ2 .

[2] Camshaft setting rod(Exhaust) (-). 0132 AJ1 .

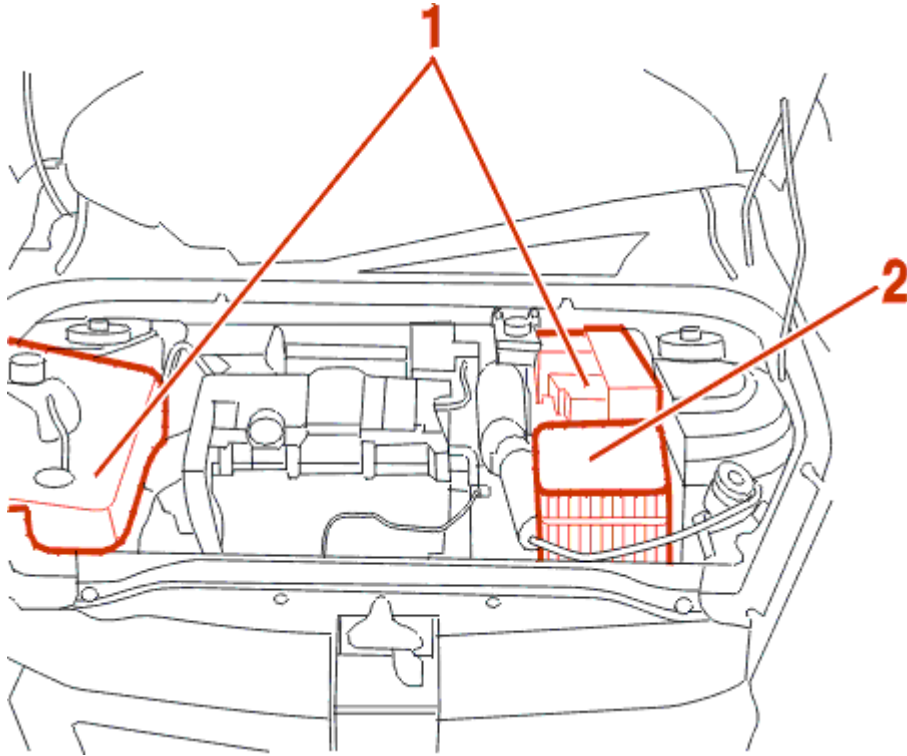
[3] flywheel setting rod (-).0132 QY .

[4] Cylinder head bolt socket (-).0185 .

[5] Levers (-). 0149 .

[6] Vacuum pump DA - 16 .

2 - REMOVAL



Remove :

- the style covers (1)
- the air filter assembly, air inlet neck and expansion chamber (2)

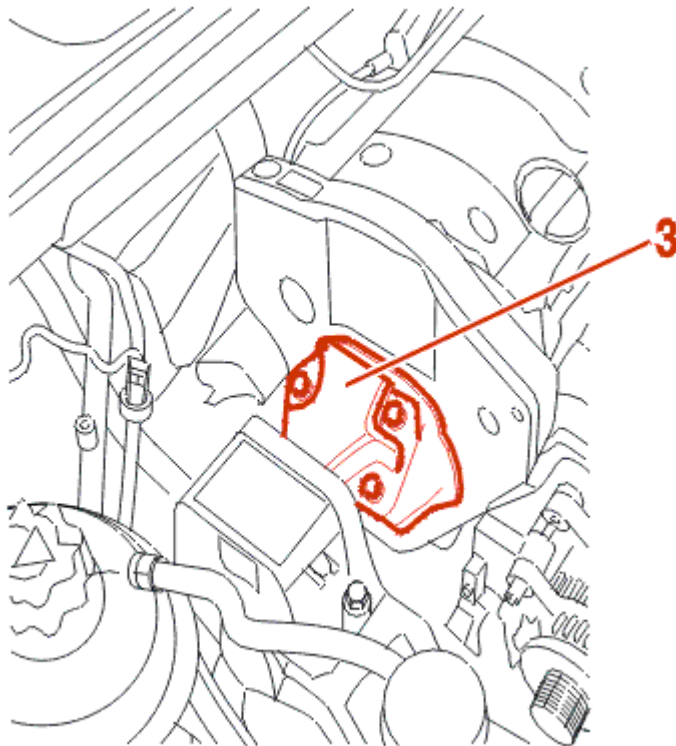
Disconnect the battery .

Drain the cooling system .

Remove :

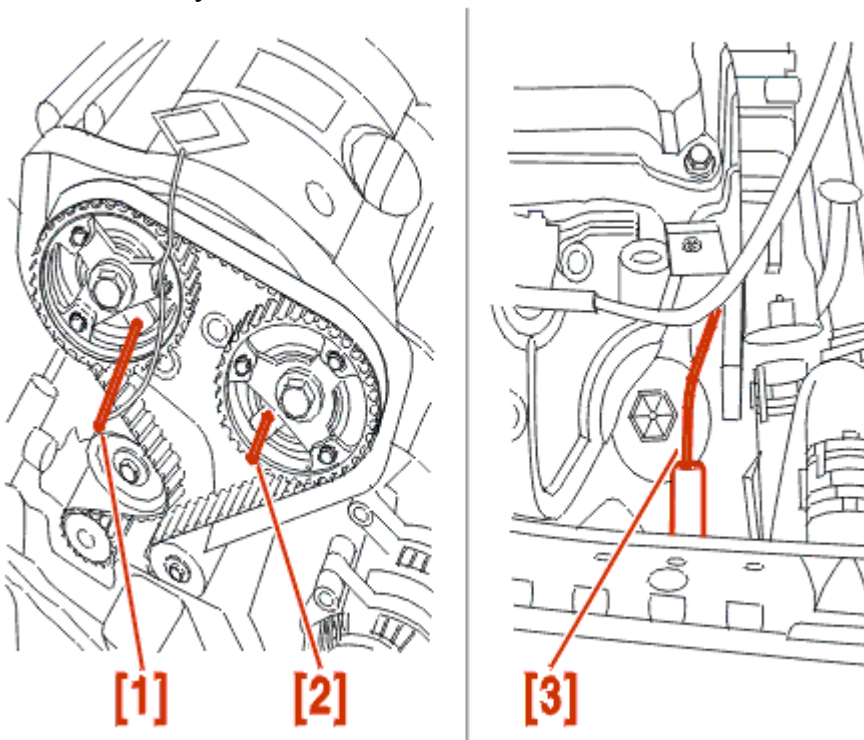
- the ancillary drive belt
- the crankshaft pulley

Support the power train assembly by sliding a stand under the engine .

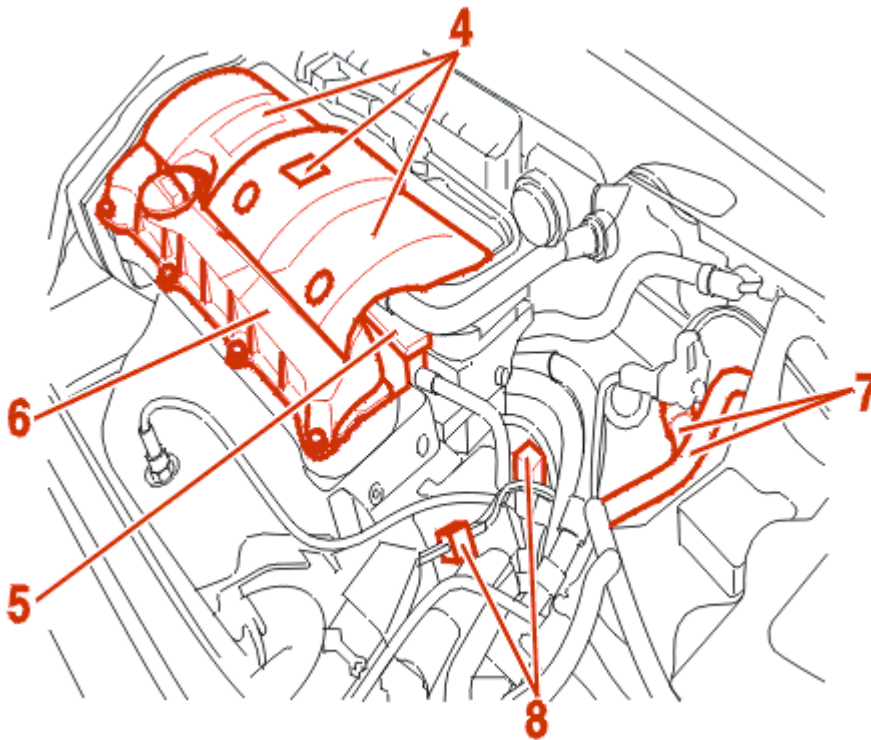


Remove :

- the complete left engine store (3)
- the top timing cover
- the lower timing cover
- the upper section of the dipstick guide tube
- the catalytic converter



Put the tools in place [1] - [2] - [3] .



Remove :

- the style cover (4)
- the compact coil unit (5)

Progressively slacken in a spiral sequence the bolts of each cylinder head cover starting from the outside .

Remove the cylinder head covers (6) .

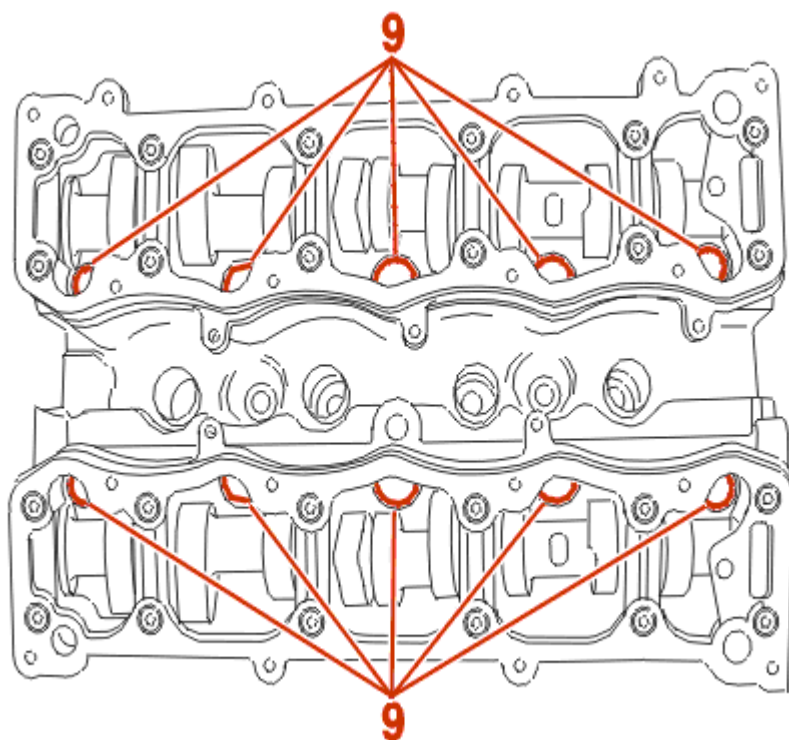
Disconnect :

- the heater matrix hose (7)
- the connectors (8) (and disconnect them from their support)

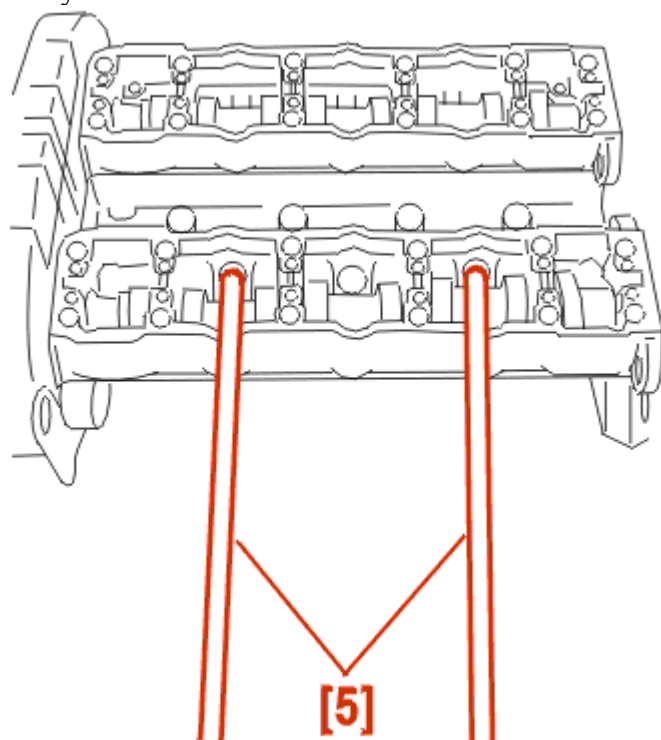
Lower the pressure in the injector supply pipe by means of the pump [6] .

On the inlet rail, disconnect :

- the inlet pressure sensor
- the fuel supply and return pipes
- the accelerator cable



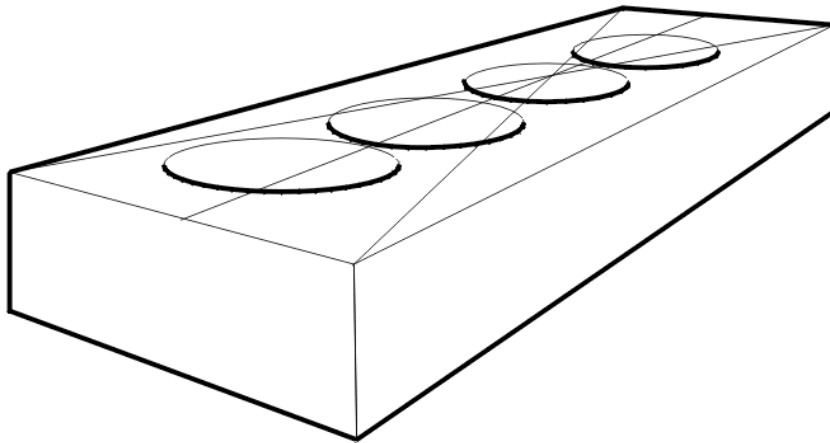
*IMPERATIVE : slacken the bolts (9) progressively in a spiral sequence, starting from the outside .
Remove the cylinder head bolts .*



Tilt and separate the cylinder head using the levers [5], taking care not to damage the timing cover .
Remove the cylinder head and gasket .
Clean the joint faces with an approved descaling product .
Do not use sharp or abrasive tools .

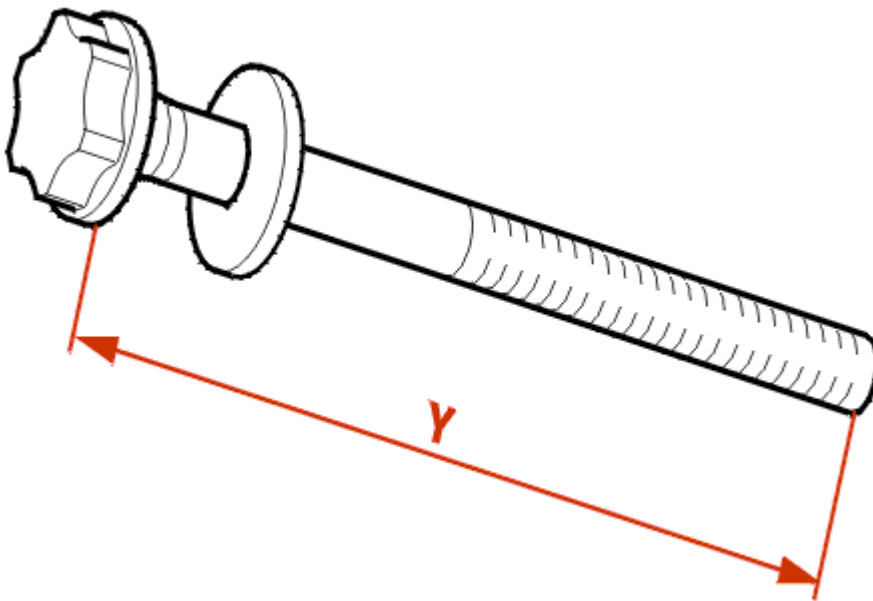
3 - REFITTING

3 - 1 - CHECKING THE FLATNESS

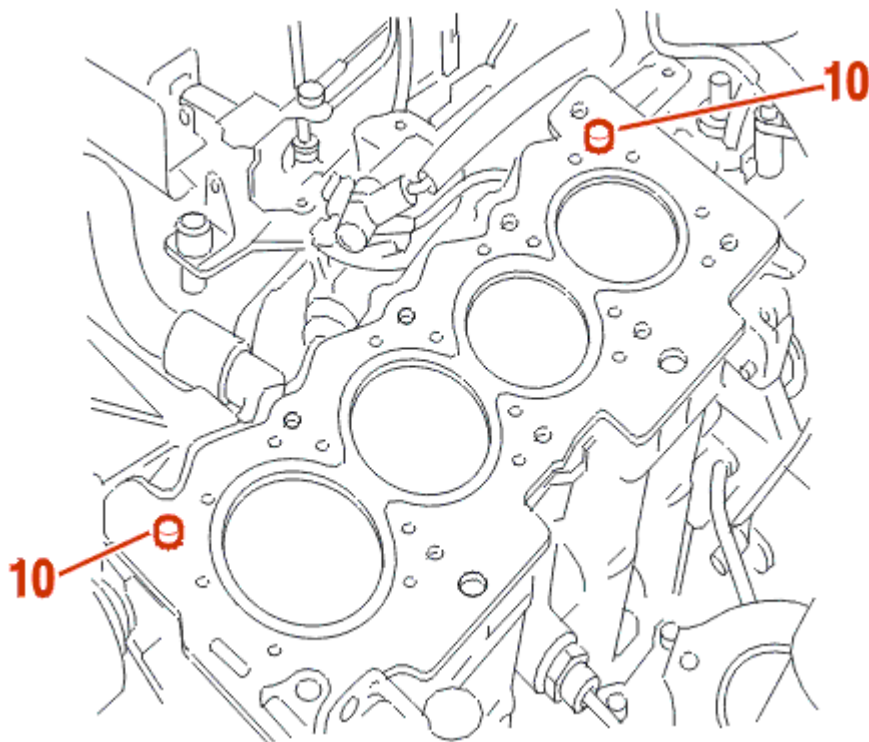


Maximum permissible bow = 0.05 mm .

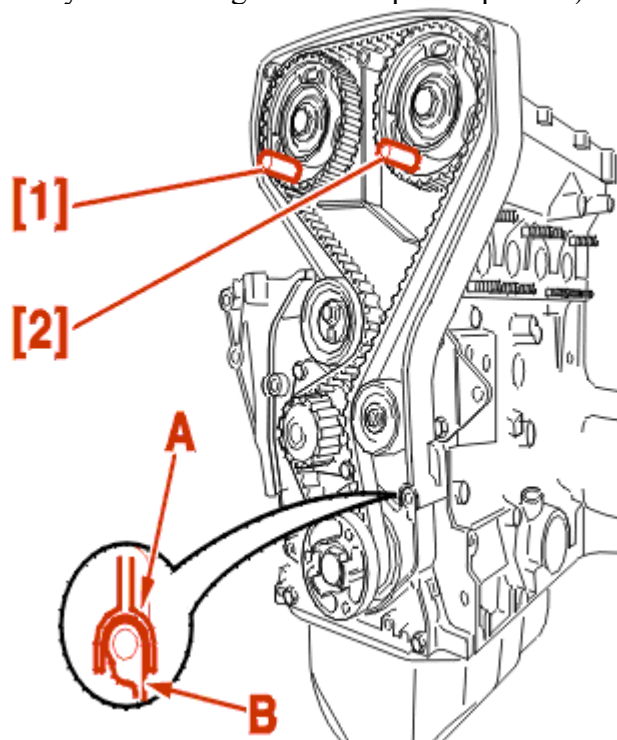
3 - 2 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE



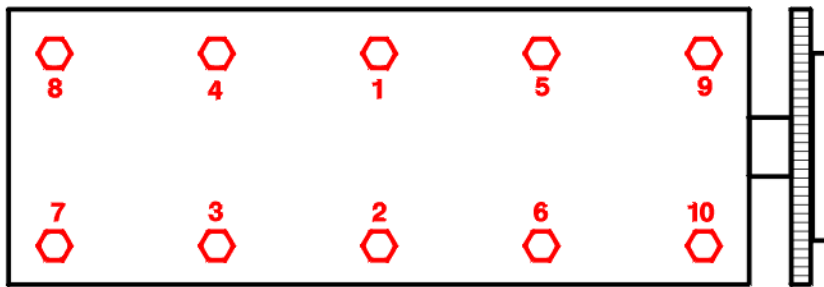
(Y) must be less than 122.6 mm (TORX head) .



Clean the cylinder head bolt threads in the cylinder block using a tap .
 Check that the pins (10) are present .
 Fit a new cylinder head gasket (inscription upwards) .



Fit the cylinder head, with the camshaft sprockets pegged .
 Engage the end (A) of the timing cover correctly on the rib (B) of the seal carrier plate .
 Lubricate the threads and contact surfaces under the head of the cylinder head bolts with engine oil .

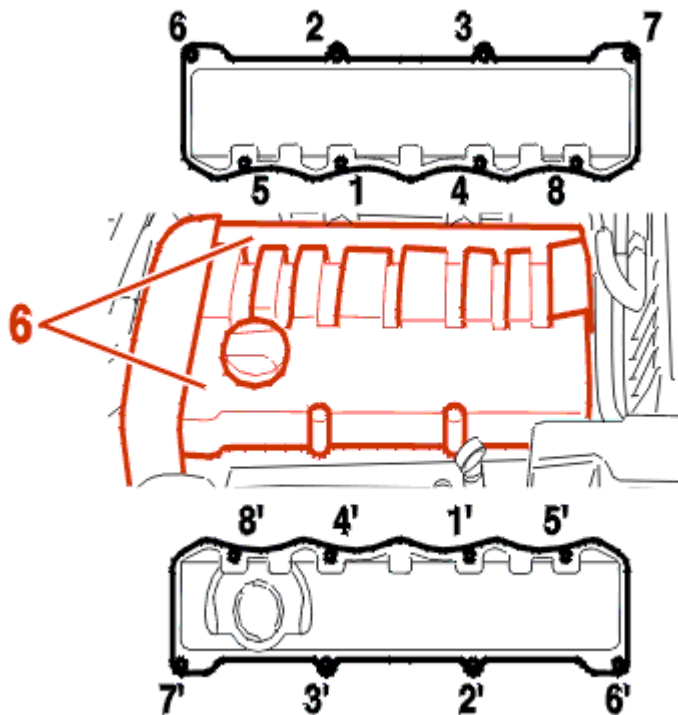


IMPERATIVE : tighten the cylinder head bolts in the order shown .

Pre-tighten : 2 da.Nm .

Tightening using an angular torque wrench to 260° .

IMPERATIVE : fill with oil the cups above the hydraulic tappets .



Refit the cylinder head covers (6) after cleaning the gaskets and joint surfaces .

NOTE : the cylinder head covers have composite gaskets which can be used several times ; if the gasket is damaged, it can be partially repaired with AUTOJOINT OR jointing paste .

Continue the fitting operations in the reverse order to removal .

WARNING : observe the tightening torque values .

WARNING : strictly follow the fastening and routes of the various harnesses and pipes .

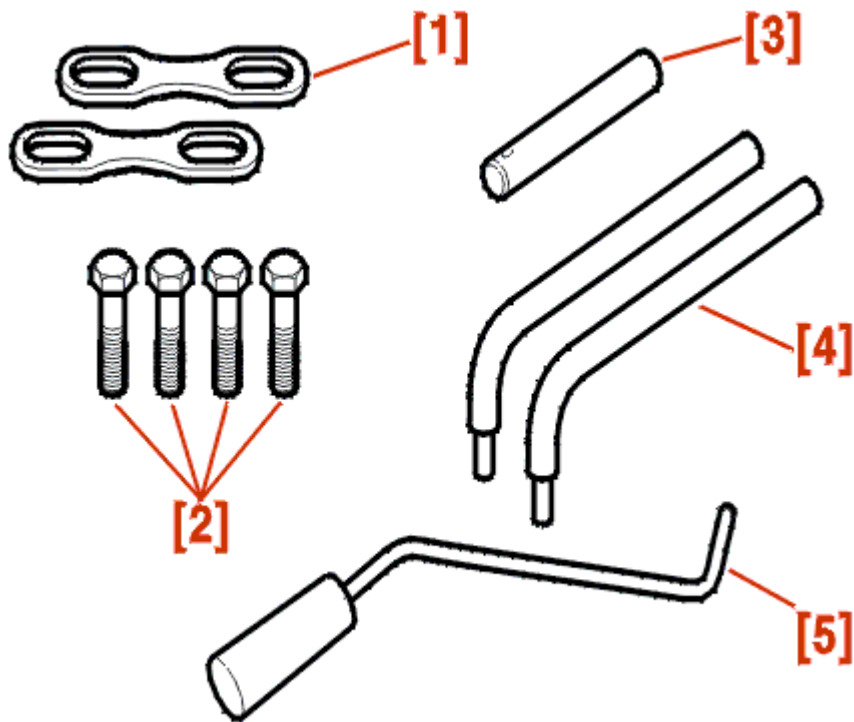
Connect the battery .

Place in contact for 10 seconds .

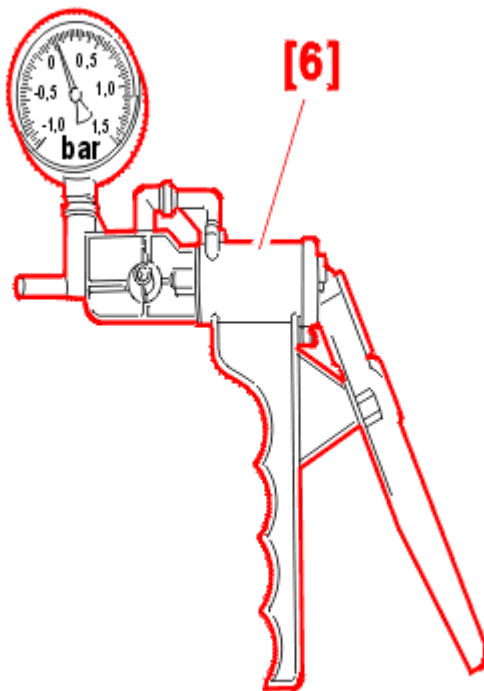
Fill and bleed the cooling system .

Carry out the initialisation procedure for the injection ignition control unit .

B1DG18K1 - 307 TU3JP ENGINE
REMOVAL - REFITTING CYLINDER HEAD
1 - SPECIAL TOOLS



- [1] Liner retaining clamp(-).0132-A1Z .
- [2] Bolt(s) M10 X 150 (-).0132-A3Z .
- [3] camshaft gear setting rod (5) (-).0132-RZ .
- [4] Levers(-).0153-Q .
- [5] flywheel setting rod (-).0153-QY .

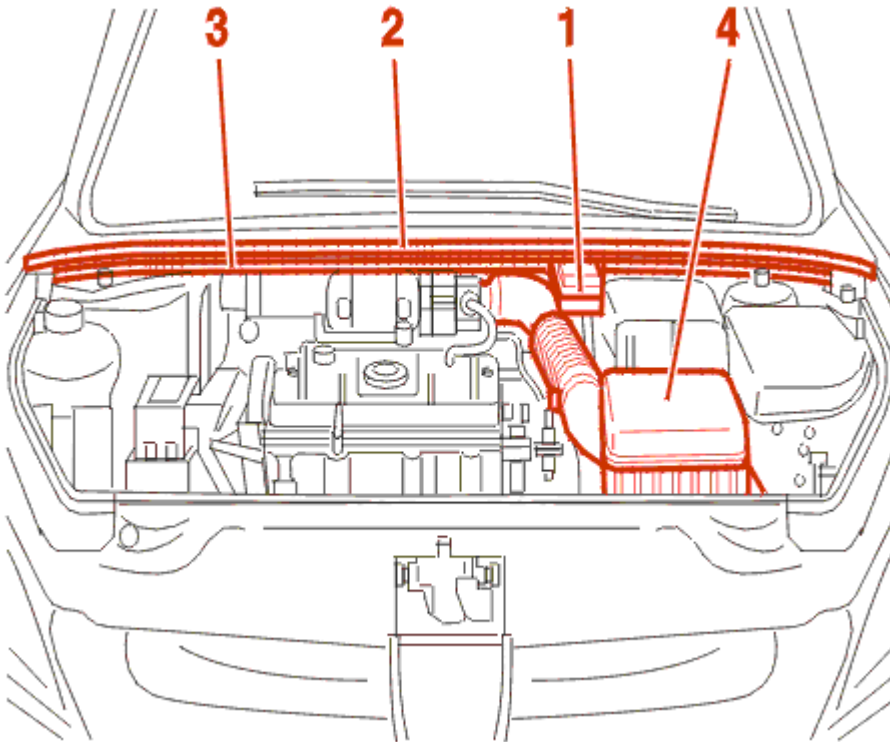


- [6] Vacuum pump FACOM DA-16 .

2 - REMOVAL

Disconnect the battery .

drain the cooling system .



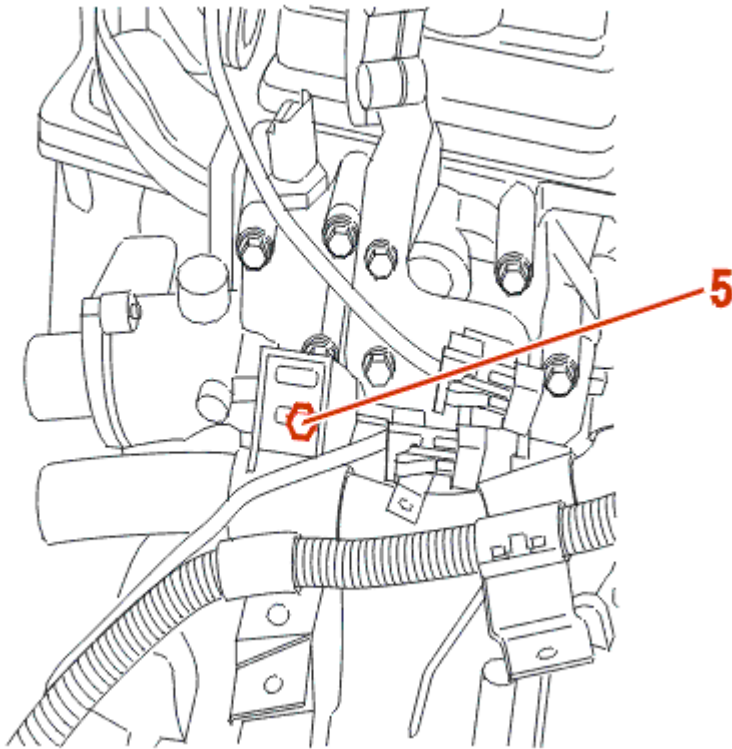
Move aside the brake fluid reservoir (1) .

Remove :

- the windscreen wipers
- the plastic windscreen deflector (3)
- the plastic windscreen crossmember (2)
- the air filter and its duct (4)
- the ancillary drive belt

Protect the lower edge of the windscreen overhang using a piece of door seal .

Disconnect, unclip and separate the harnesses, hoses and cables connected to the cylinder head .



Remove the bolt (5) .

Disconnect the heater matrix pipe .

Bleed the injection rail using the tool [6] .

Disconnect the fuel supply pipes adjoining the cylinder head .

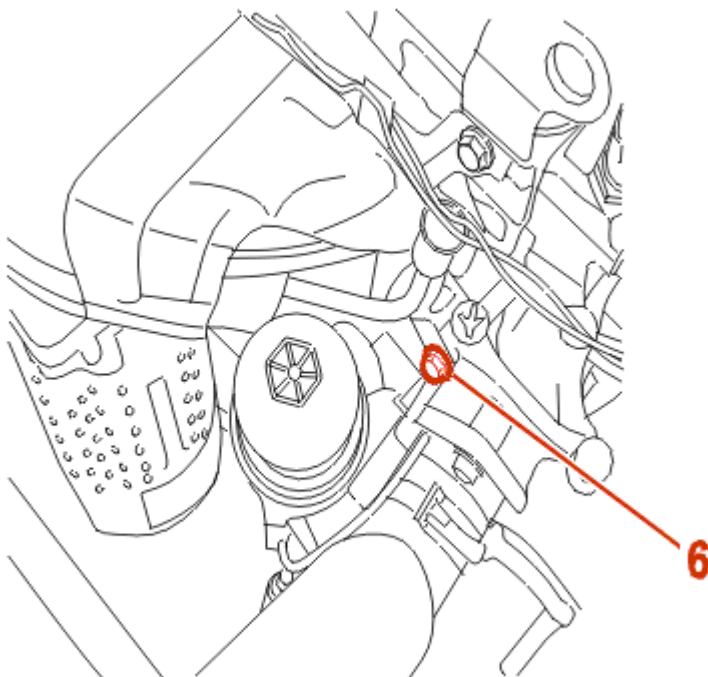
These hoses are of the click fit type .

Peg :

- the camshaft ; using the tool [3]
- the flywheel ; using the tool [5]

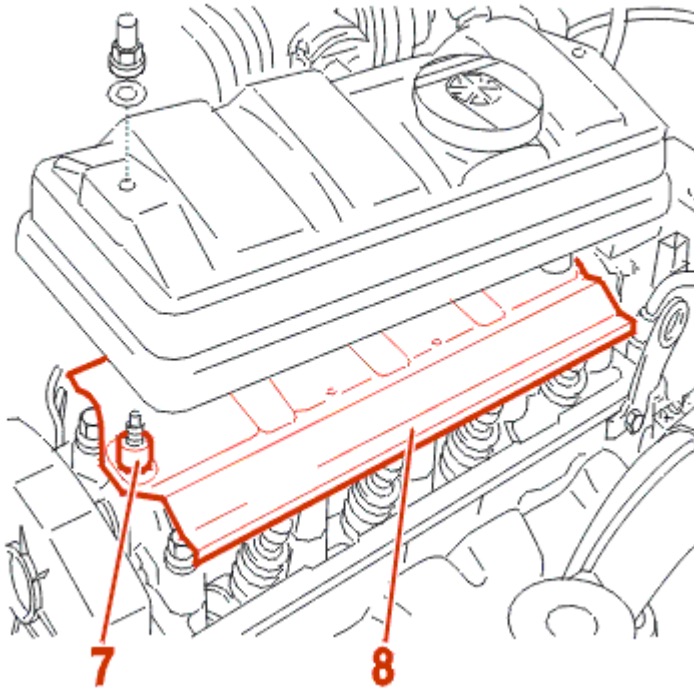
Remove :

- the front exhaust pipe
- the timing belt



Remove :

- the dipstick tube mounting bolt (6)
- the upper section of the dipstick guide tube



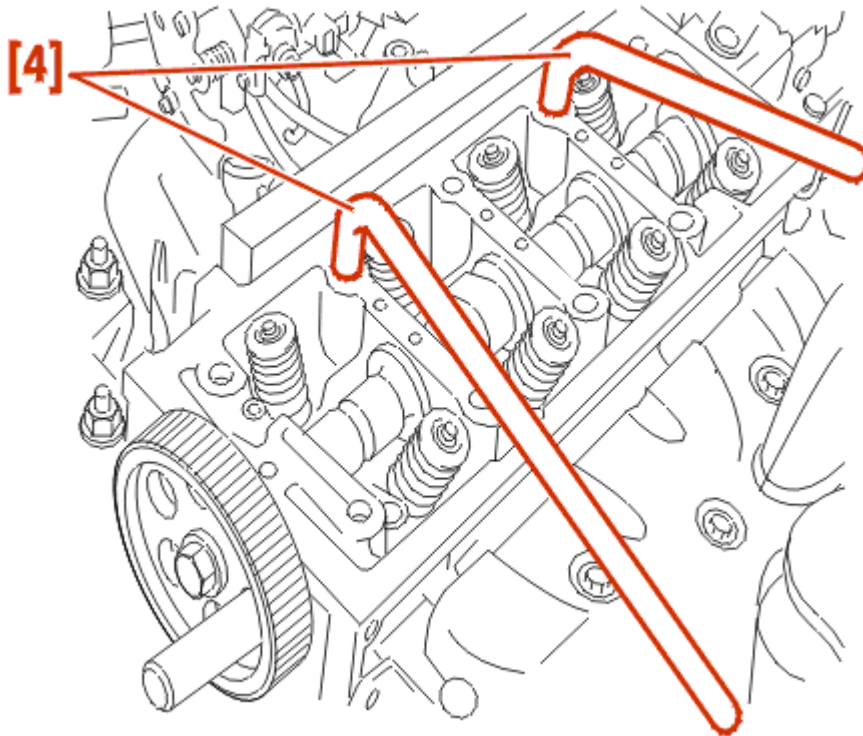
Remove :

- the cylinder head cover
- the spacers (7)
- the deflector plate (8)

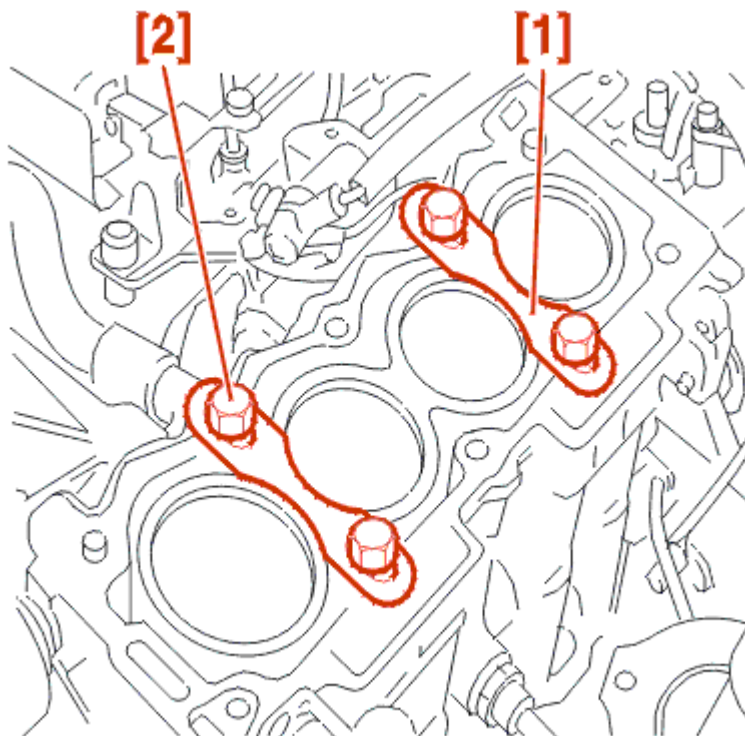
Starting at the outside and working in a spiral sequence progressively slacken the cylinder head bolts .

Remove :

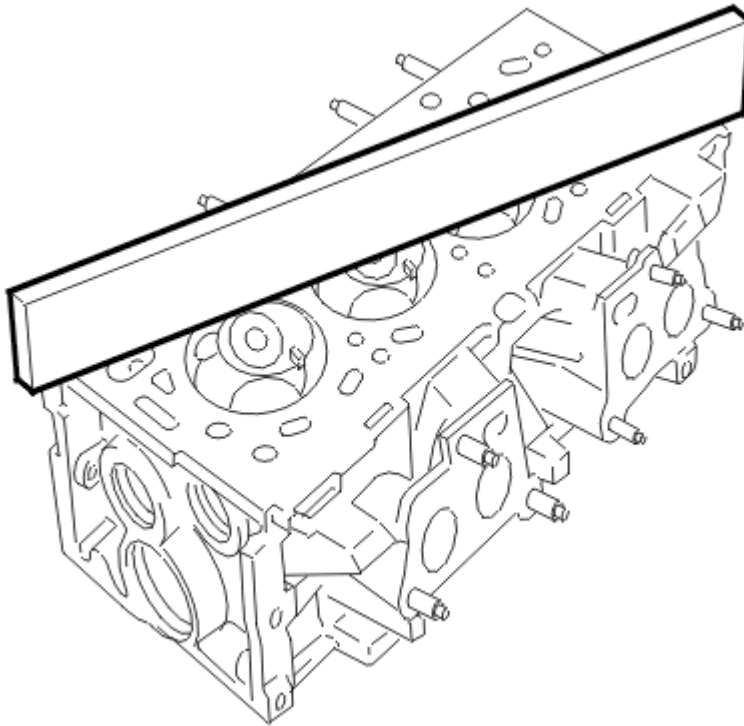
- the cylinder head bolts
- the rocker shaft



Rock and free the cylinder head using levers [4] .
 Remove the cylinder head and gasket .
 TU3JP ENGINE ALUMINIUM CYLINDER BLOCK

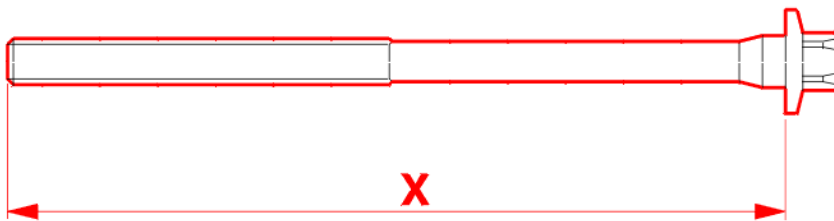


Fit the liner retaining clamps [1] with the bolts [2] .
 ALL MODELS
 3 - REFITTING
 3 - 1 - CHECKING THE FLATNESS



Maximum permissible bow = 0.05 mm .

3 - 2 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE



Length under head 176.5 mm .

Check that the camshaft turns freely in its bearings .

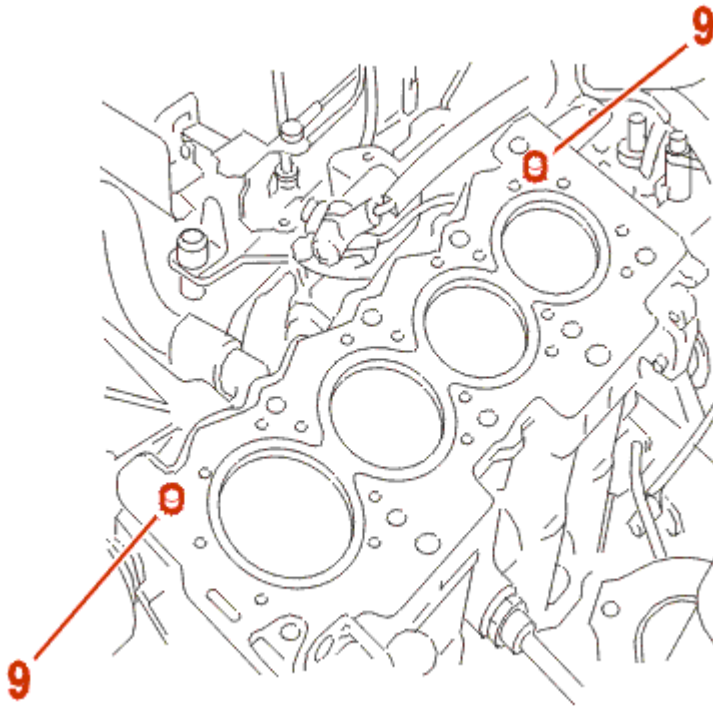
TU3JP ENGINE ALUMINIUM CYLINDER BLOCK

Remove the liner retaining clamps [1] .

ALL MODELS

Clean the threads of the cylinder head bolts in the cylinder block using a thread cutter M10 X M150

.



Check that the 2 centralising studs are present (9) .

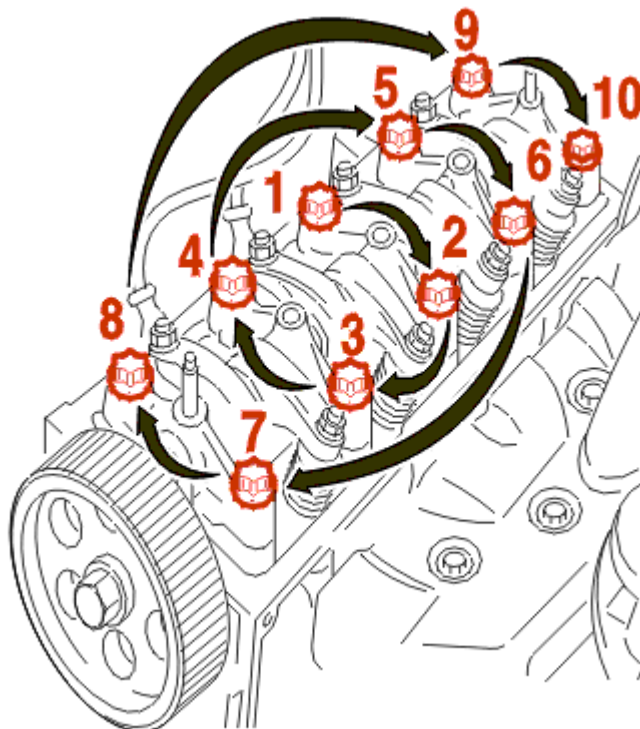
Fit a new cylinder head gasket, with the maker's name to the top .

Fit the cylinder head with the camshaft gear pinned .

Fit :

- the rocker shaft
- the cylinder head bolts coated with MOLYKOTE G RAPID PLUS grease

3 - 3 - CYLINDER HEAD TIGHTENING



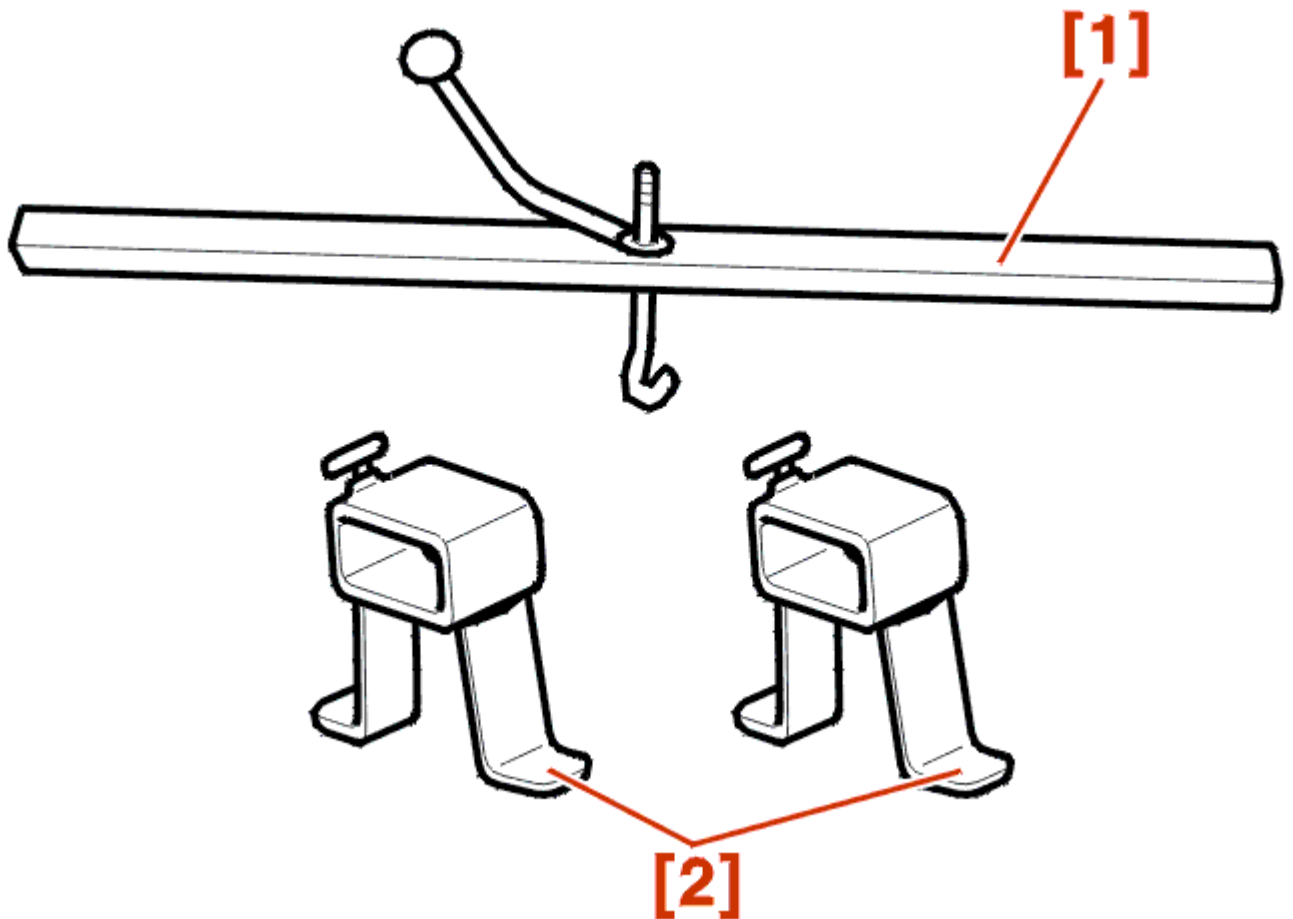
This operation is performed in (2) stages :

- pre-tighten to 2 da.Nm
- tighten a further 240 degrees using a FACOM D 360 type tool

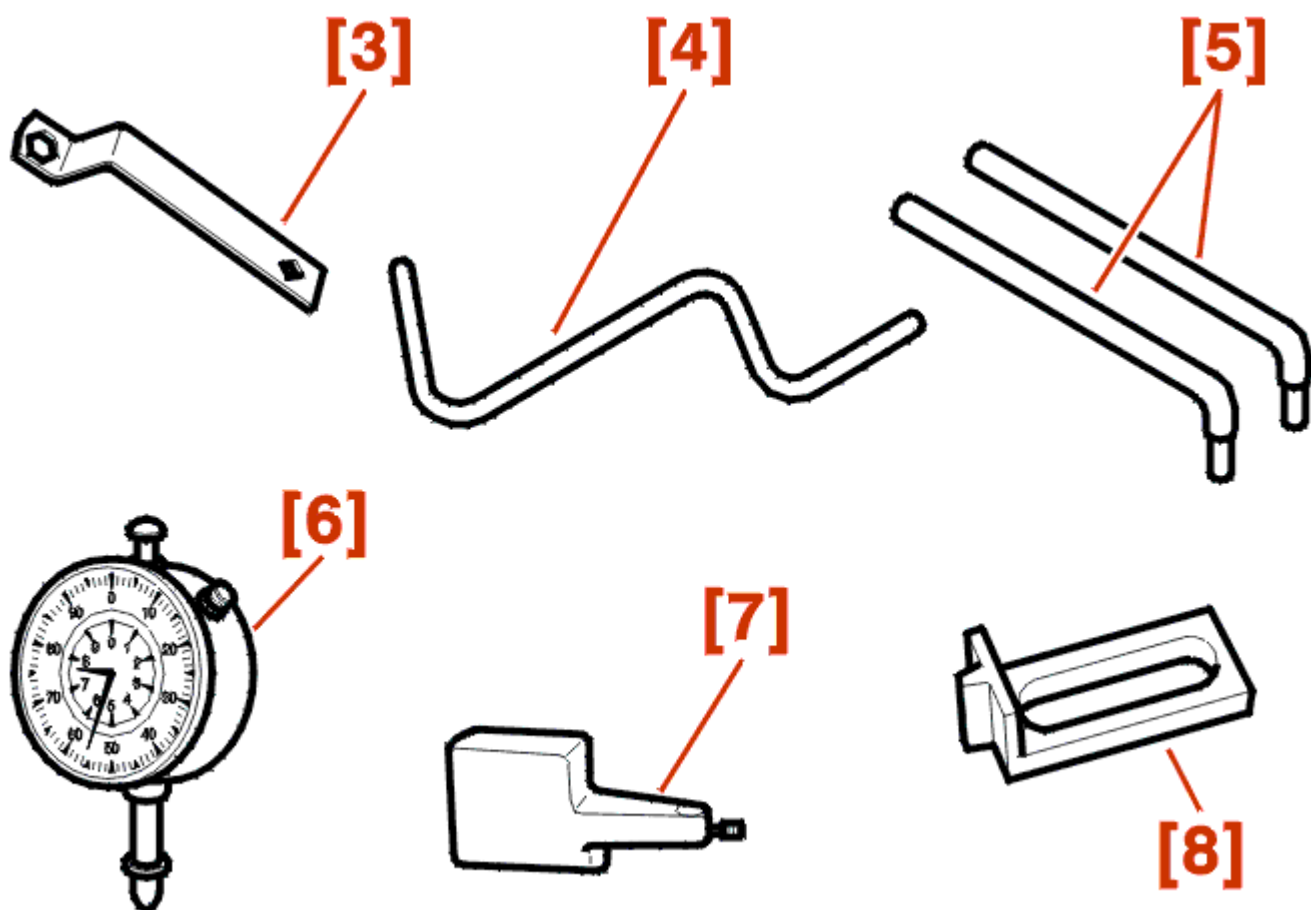
refit the timing belt .

fit the ancillary drive belt .
Adjust the valve clearances .
fill and bleed the cooling system .
Proceed in the reverse order to removal .

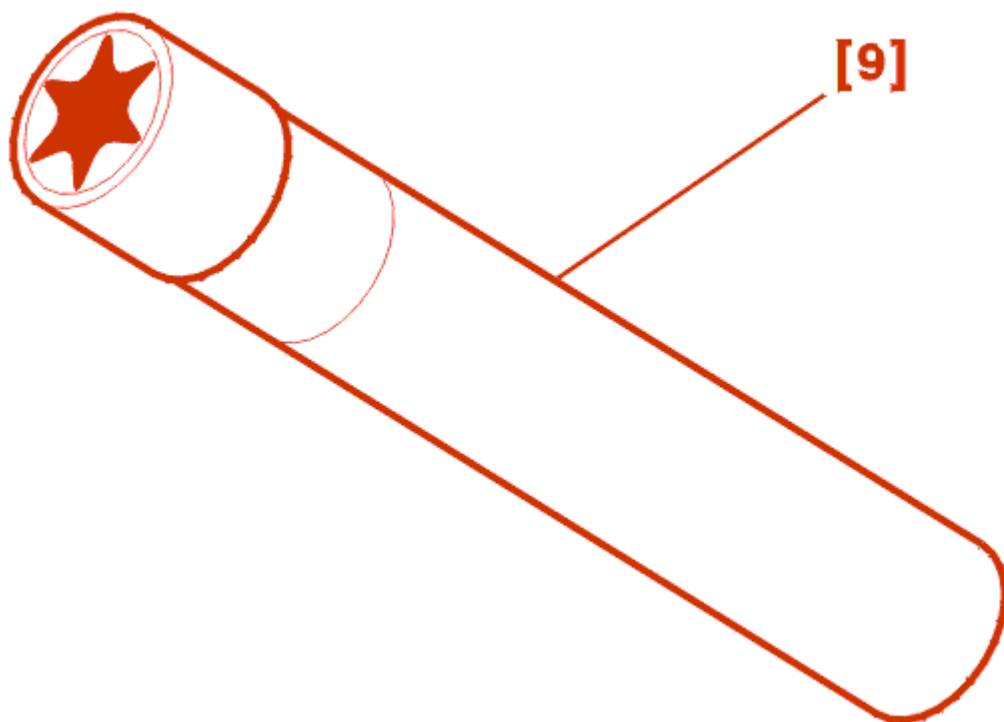
B1DG19K1 - 307 DW10TD ENGINE
REMOVAL - REFITTING CYLINDER HEAD
1 - SPECIAL TOOLS



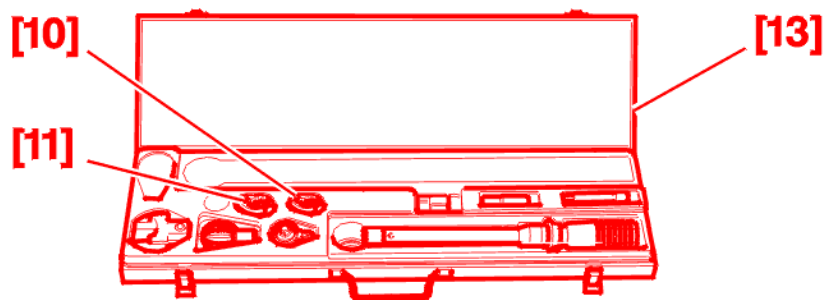
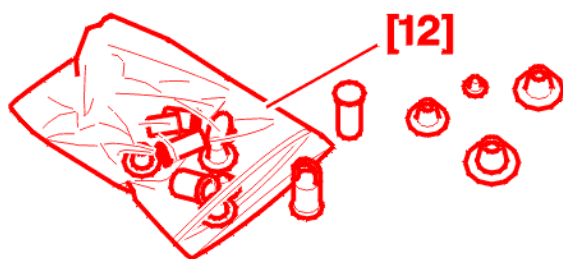
[1] Cross member (-).0911-AY .
[2] Brackets (-).0911-A2 .



- [3] Crankshaft spanner(-).0117-EZ .
- [4] flywheel setting rod (-).0188-Y .
- [5] cylinder head releasing levers (-).0188-L .
- [6] Dial gauge (-).1504 .
- [7] dial gauge support (-).0110-H .
- [8] flywheel stop (-).0188-F .



[9] Cylinder head bolt socket (-).0185 .



[10] Pipe spanner (-).1603-G .

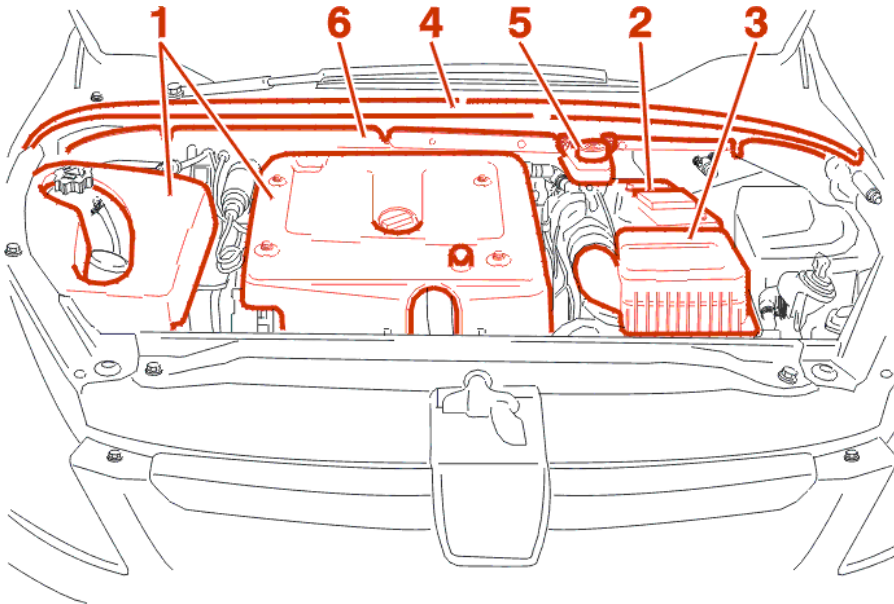
[11] Pipe spanner (-).1603-F .

[12] Set of plugs (-).0188-T .

[13] Tightening kit (-).1603-A/B/D/E .

2 - REMOVAL

drain the cooling system .



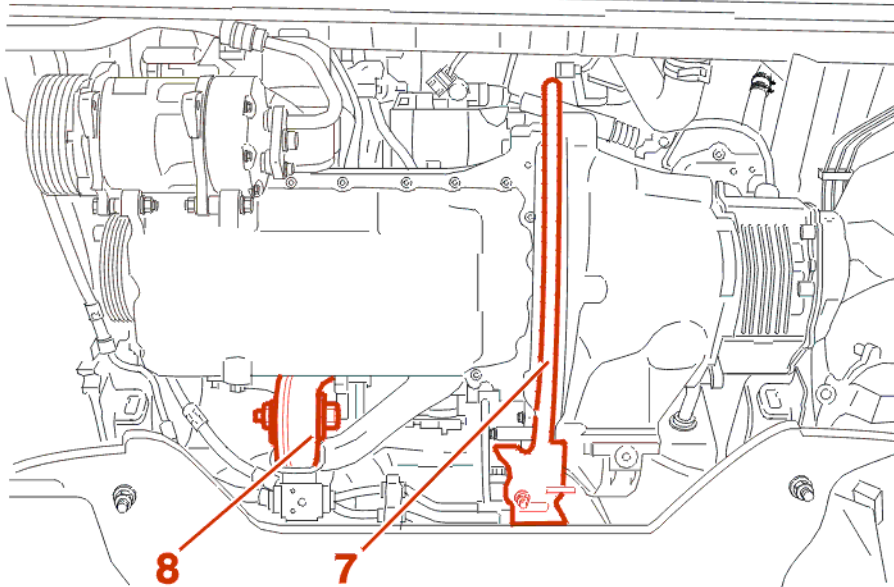
Remove :

- the front wheels
- the front mud guards

Remove :

- the style covers (1)
- the air cleaner (3)
- the battery and its support (2)
- the scuttle crossmember (4)
- the soundproofing (6)

Move aside the brake fluid reservoir (5) .



Remove :

- the torque reaction link (8)
- the impactor and its bracket (7)
- the exhaust rear silencer

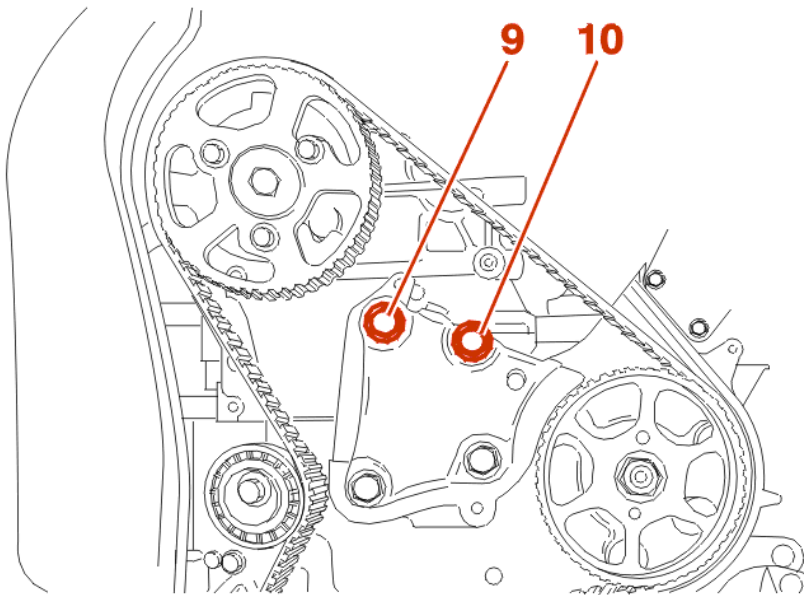
Remove the exhaust line .

IMPERATIVE : uncouple the exhaust line to avoid destroying the hose; this cannot withstand the torsion, traction or bending stresses caused by the removal of one of the power train supports .

Remove :

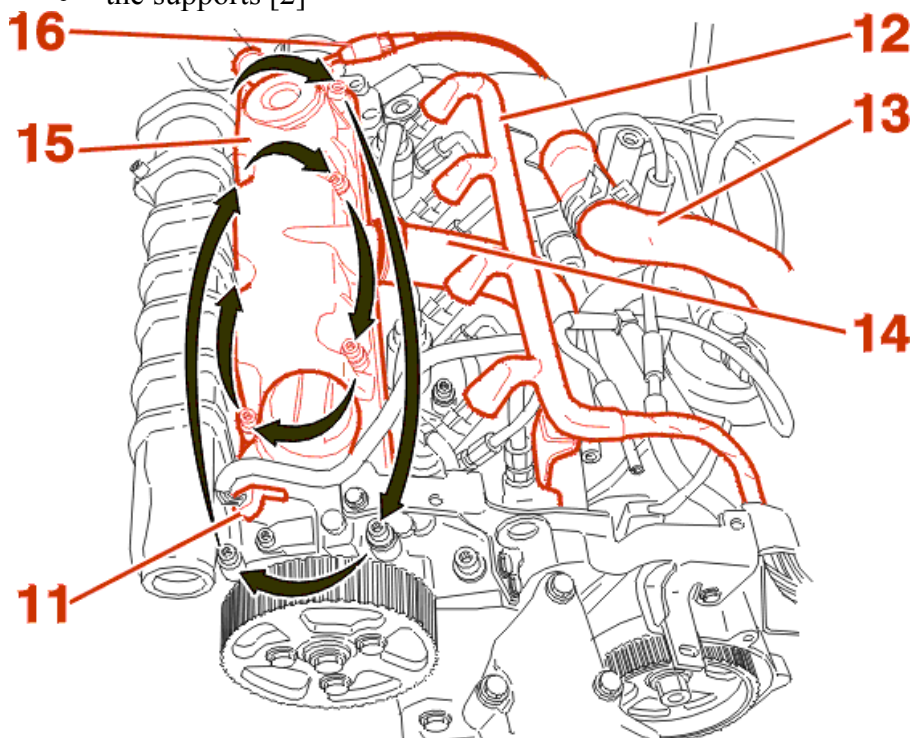
- the ancillary drive belt

- the timing belt



Remove the bolts (9) - (10) .
 Refit the right-hand engine mounting .
 Slightly tighten the bolts .
 Remove :

- cross member [1]
- the supports [2]



Disconnect :

- the connector (11)
- the electrical harness (12)
- the hose (13)
- the brake servo vacuum pipe
- the priming bulb
- the pre/post-heat plugs supply

Disconnect and move aside :

- the crankcase breather hoses (14)
- the harnesses and pipes of the cylinder head
- the heater matrix hoses

Remove :

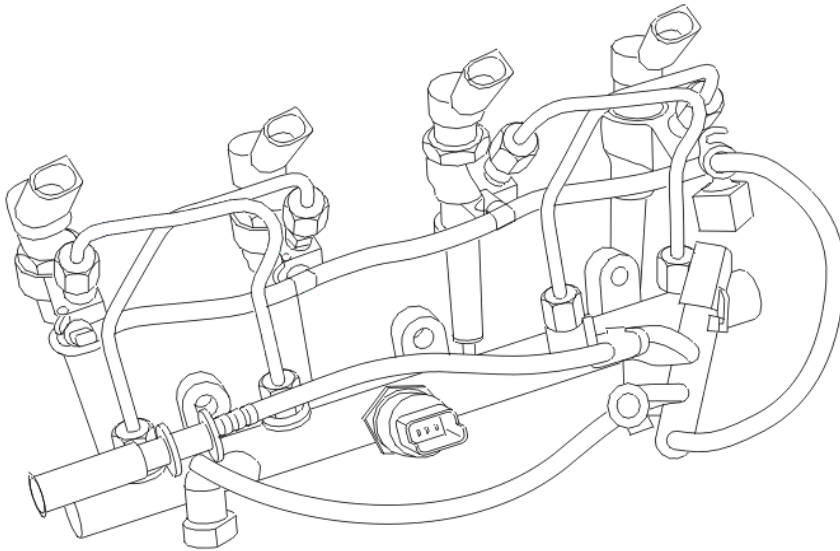
- the cylinder head cover (15)
- move aside the water outlet housing from the cylinder head
- the bolt of the dipstick bracket

IMPERATIVE : clean the fuel unions before slackening .

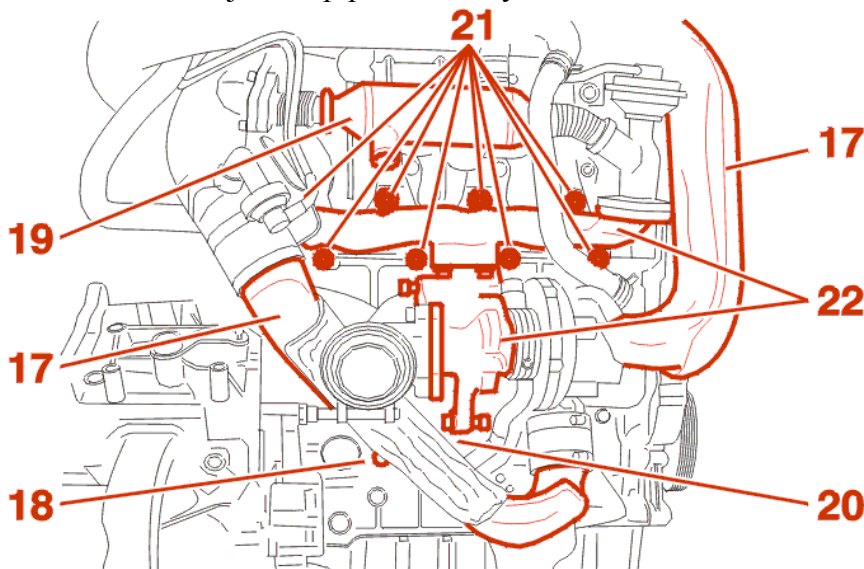
IMPERATIVE : cover the holes of the high pressure pump and the rail using caps [12] .

Remove :

- the high pressure diesel pipe between the high pressure pump and the rail
- the pre/post heat plugs



Remove the rail/injectors/pipes assembly .



Remove :

- the steering rack heat shield
- the air ducts (17) for the turbo intake

Disconnect the oil return pipe (18) from the cylinder cover .

Remove :

- the egr device (19)

- the turbo lower fixing bracket (20)
- the nuts (21) of the exhaust manifold

Move aside the exhaust manifold and turbocharger assembly (22) .

IMPERATIVE : starting at the outside and working in a spiral sequence progressively slacken the cylinder head bolts ; using the tool [9] .

Rock and free the cylinder head using levers [5] .

Remove the cylinder head and gasket .

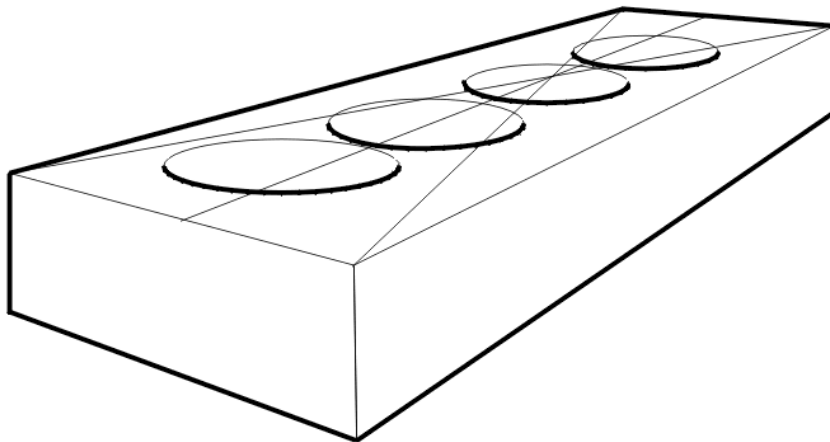
NOTE : protect the bottom of the windscreen with a snapon type door seal ; the joint faces must not have any trace of knocks or scores ; clean the threads in the cylinder block with a M12 X 150 tap .

Check the condition :

- of the mating surface
- of the valves
- of the valve springs and their cups
- of the camshaft
- of the various tapped holes
- of the hydraulic tappets
- of the valve rockers

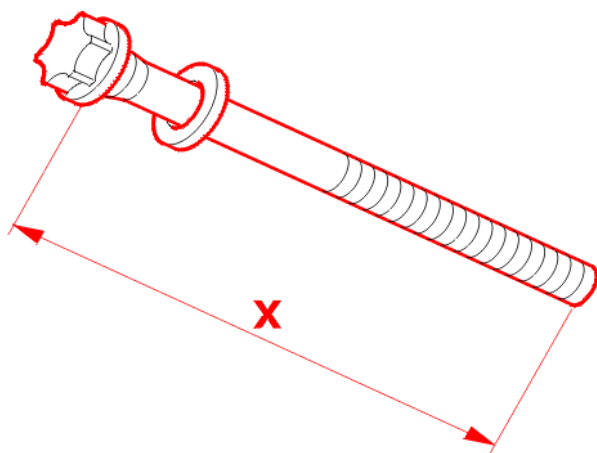
3 - REFITTING

3 - 1 - CHECKING THE FLATNESS



Maximum permissible bow = 0.05 mm .

3 - 2 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE

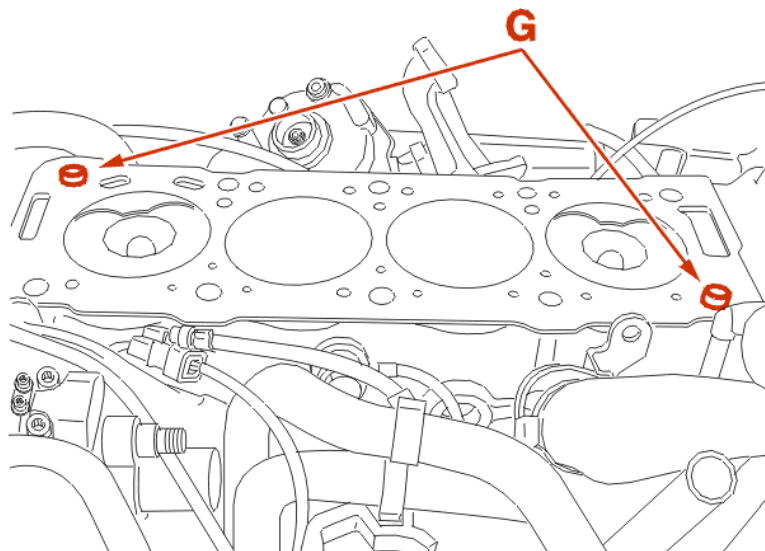


(X) must be less than 133.4 mm .

Clean the surface of the water outlet housing joint .

Turn the crankshaft with the tool [3] .

Peg the flywheel using the rod [4] .



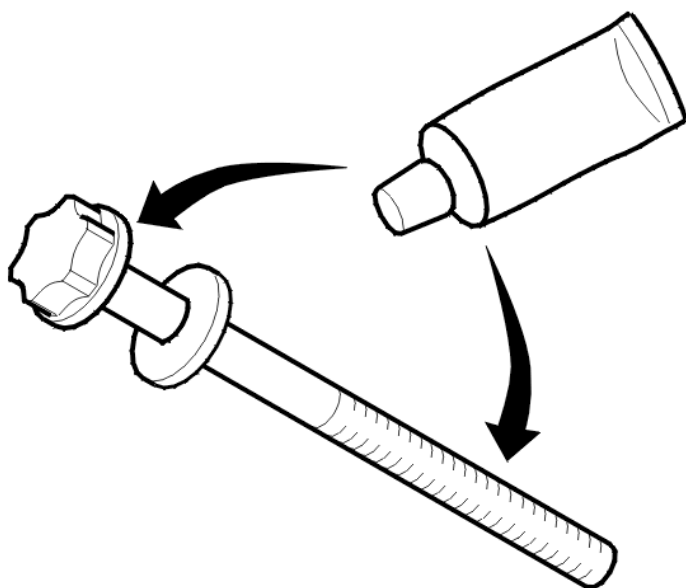
Check that the pins (G) are present .

Fit a new cylinder head gasket ; Following the direction of fitting .

Ensure that the camshaft is pinned .

Refit the cylinder head .

NOTE : protect the bottom of the windscreen with a snapon type door seal .



Brush the bolt threads .

fit the cylinder head bolts coated with MOLYKOTE G RAPID PLUS on the threads and under the bolt heads .

3 - 3 - CYLINDER HEAD TIGHTENING



Tighten the cylinder head bolts in the order shown .

cylinder head tightening	
engine type	DW10TD
special features	without
pre-tightening (da.Nm)	2
slackening	without
tightening (da.Nm)	6
1st angular tightening (°)	220°

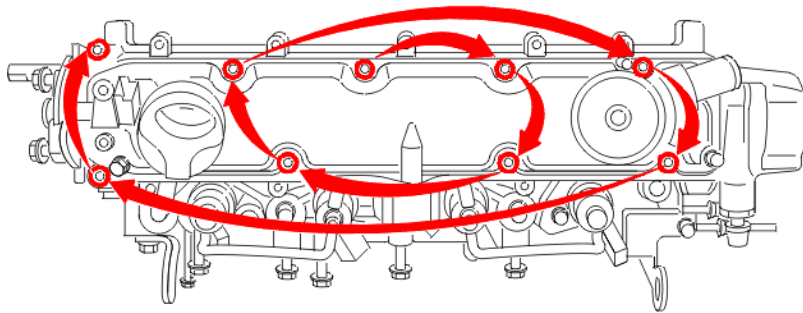
NOTE : it is not necessary to retighten the cylinder head after bringing the engine up to operating temperature .

Fit :

- the injectors
- the fuel high pressure common injection rail
- glow plugs

Fit the cylinder head cover using a new gasket .

Run up the bolts .

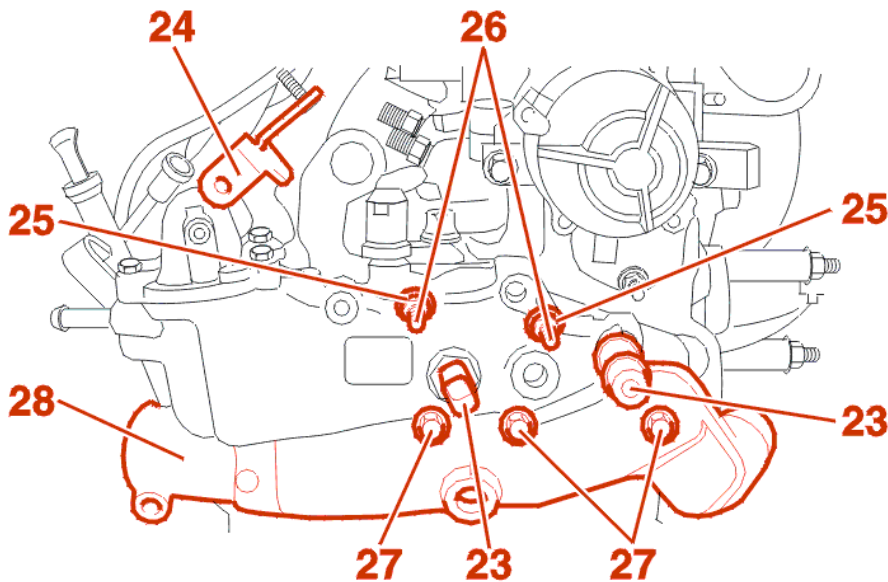


Gradually tighten the cylinder head cover bolts in a spiral starting from the inside ; Tightening torque 1 da.Nm .

Fit :

- the exhaust manifold moving the bottom part of the engine towards the front
- the turbo fixing bracket
- the egr device

Reconnect the heat exchanger pipe .



Refit the coolant outlet manifold (28) fitted with a new seal .

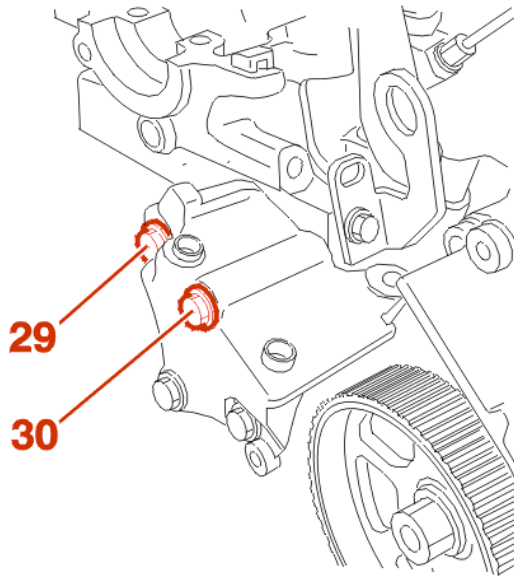
Tighten :

- the studs (26) to 2.5 dan.m + LOCTITE FREIN FILET
- the nuts (25) to 2 da.Nm
- the bolts (27) to 2 da.Nm

Connect the connector (23) .

Refit the support (24) .

Position the cross beam [1] fitted with its chains [2] and take the weight .
Remove the right-hand engine mounting .



Refit the bolts (29) - (30) .

Tighten :

- the bolt (30) to 4.5 da.Nm LOCTITE FREINETANCH
- the bolt (29) to 2 da.Nm

Fit :

- timing belt
- ancillary drive belt

Continue the fitting operations in the reverse order to removal .

Re-prime the fuel circuit .

Initialise the various ECUs .

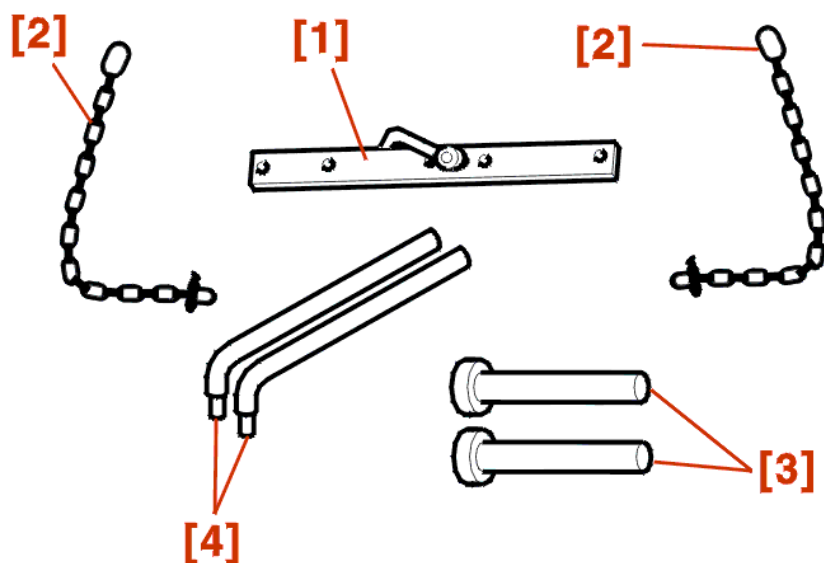
fill and bleed the cooling system .

Carry out the following road test :

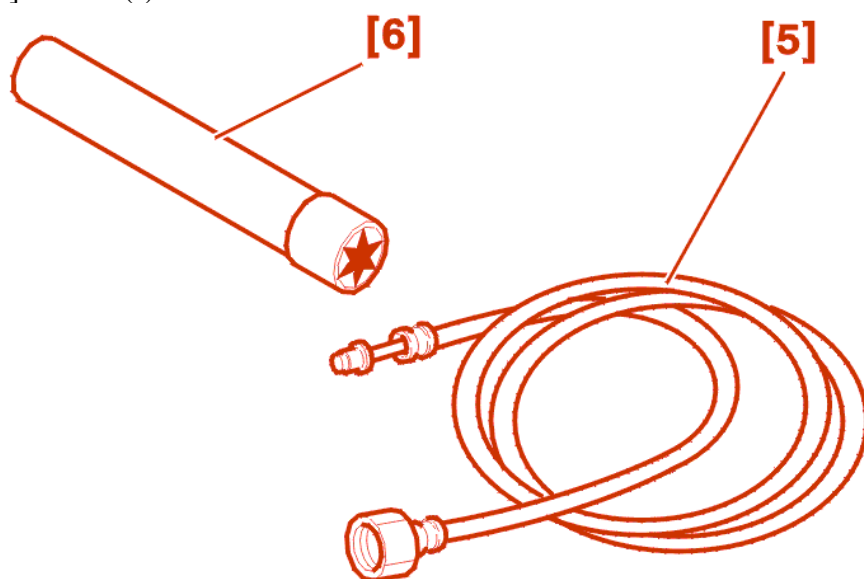
- engage 3rd gear ; stabilise the engine speed at 1000 rpm
- accelerate fully up to 3500 rpm

Check the sealing of the various unions .

B1DG1AK1 - 307 EW10J4 ENGINE
REMOVAL - REFITTING CYLINDER HEAD
1 - SPECIAL TOOLS



- [1] Cross beam (-).0102-D .
 [2] Lifting chain (-).0102-M .
 [3] Camshaft hub setting rods (-).0189-A .
 [4] Levers (-).0189-F .

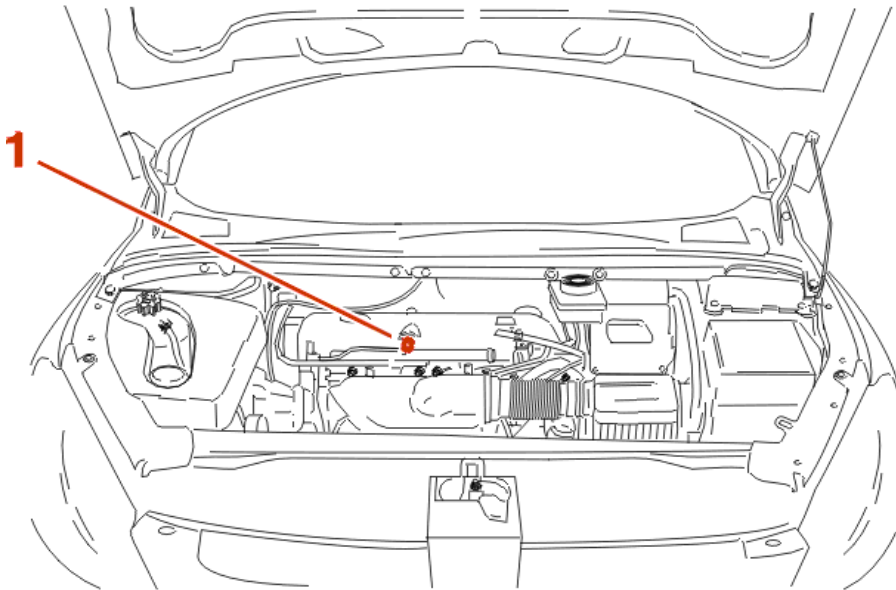


- [5] Pipe with adapter for valve SHRADER (-).0141-T1 .
 [6] Cylinder head bolt socket (-).0185 .

2 - REMOVAL

drain the cooling system .

Detach the exhaust pipe from the manifold .



Remove the style cover .

Lower the fuel pressure by connecting the end of the tool [5] to the valve SHRADER (1); catch the fuel in a receptacle .

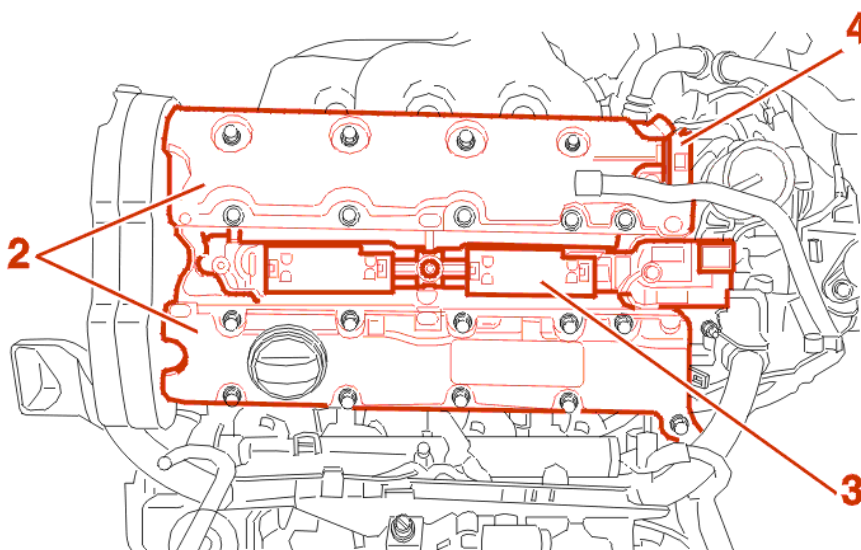
Disconnect :

- the battery
- the connectors (on the throttle housing)
- the fuel breather unions
- the accelerator cable
- the EGR union

Remove :

- the bolt from the dipstick tube
- inlet manifold
- the ancillary drive belt
- the timing belt
- the timing belt tensioner roller

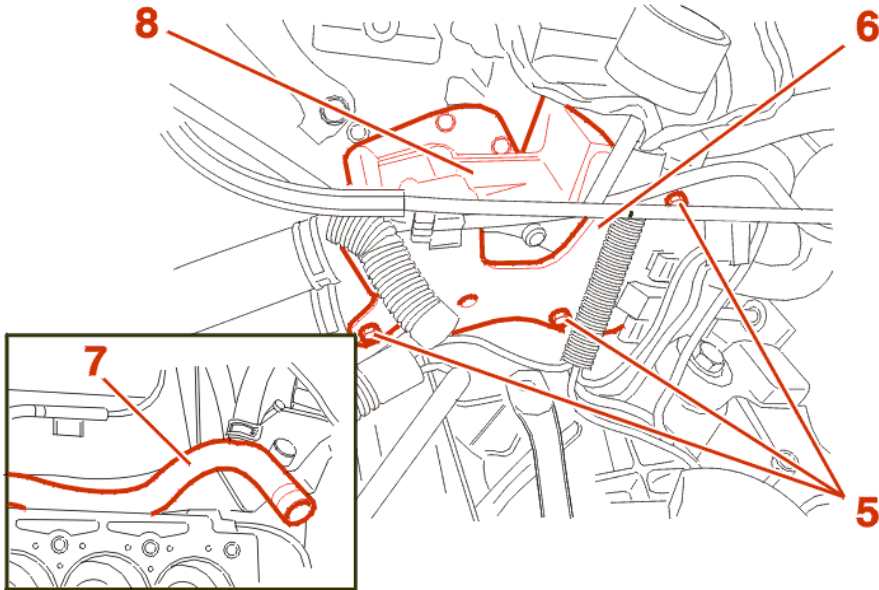
Fit ; The intermediate right engine mounting .



Remove :

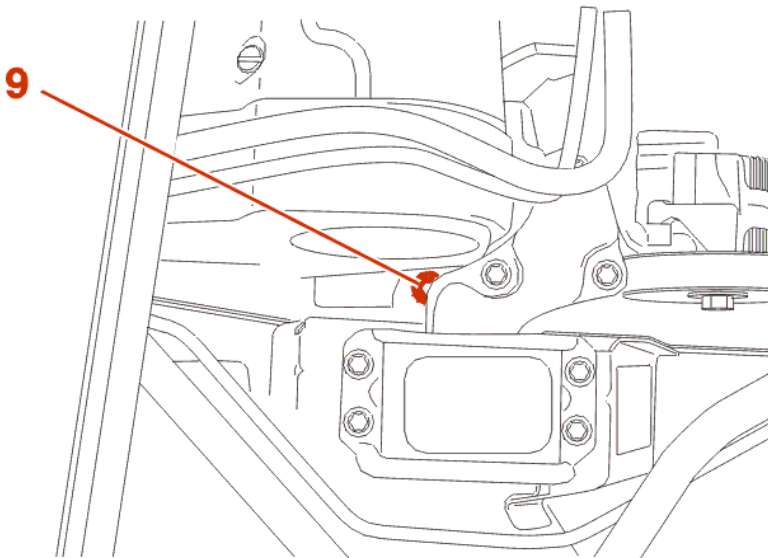
- the sensor (4)
- the cylinder head covers (2)

- the compact coil unit (3)



Flywheel end :

- slacken the bolts (5)
- move aside the harness bracket (6)
- remove the rigid pipe (7) connecting the coolant pump to the water outlet housing
- move aside the water outlet housing (8) from the cylinder head



Unscrew the bolt (9) to the maximum .

Gradually slacken the cylinder head bolts spirally, using the tool [6] .

Remove the cylinder head bolts .

Position the tools [1] - [2] .

Tilt and detach the cylinder head using the tool [4] .

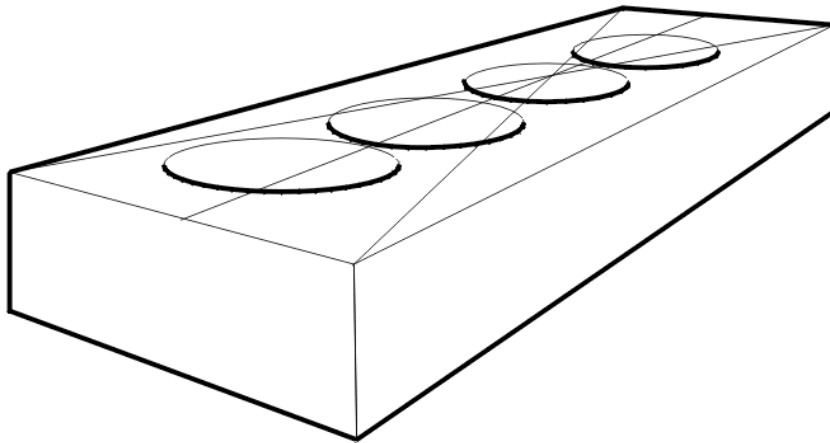
Raise the cylinder head and exhaust manifold assembly using the tools [1] and [2] .

Remove the cylinder head and gasket .

WARNING : clean the joint faces with an approved descaling product ; do not use sharp or abrasive tools ; the joint faces must not have any trace of knocks or scores .

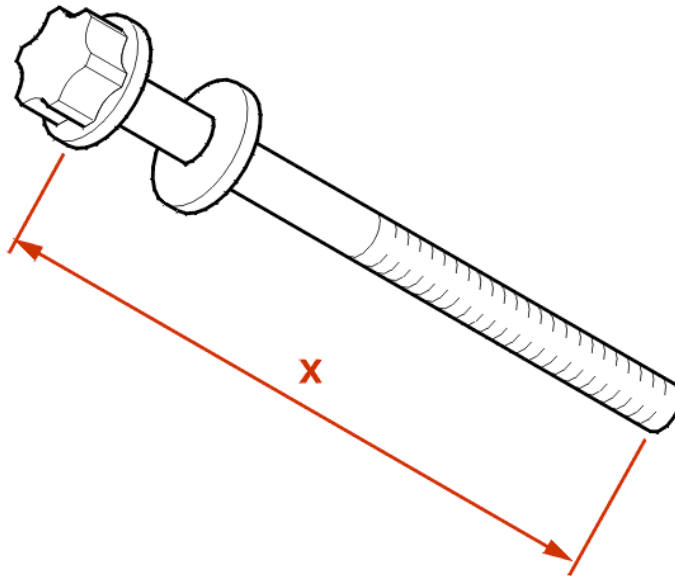
3 - REFITTING

3 - 1 - CHECKING THE FLATNESS



Maximum permissible bow = 0.05 mm .

3 - 2 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE



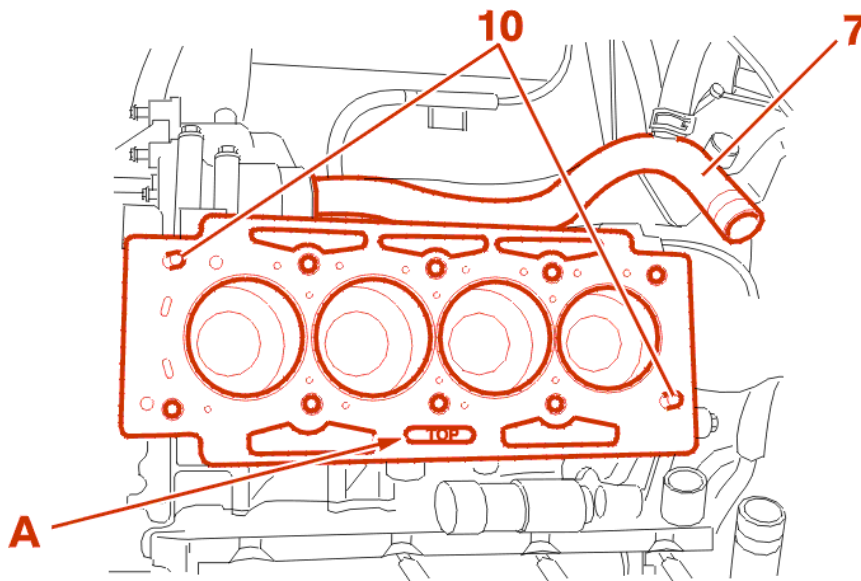
Nominal length (X) 144.5 mm .

Reuse length (X) \leq 147 mm .

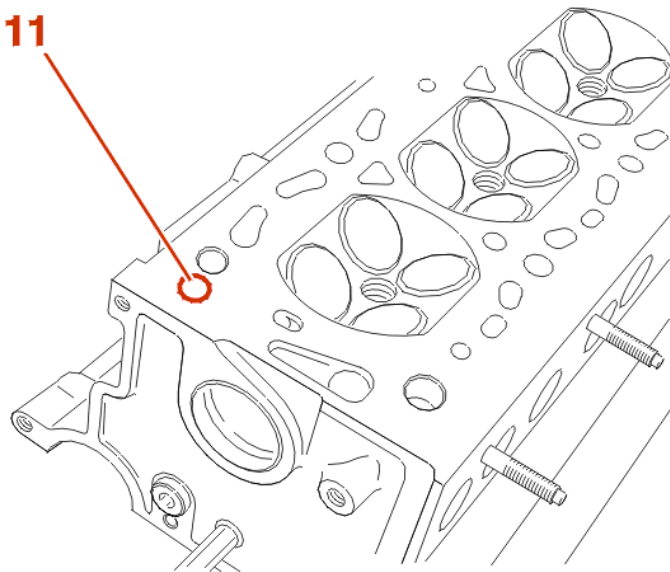
WARNING : do not use cylinder head bolts longer than 129 mm .

Fit the cylinder head bolts coated with MOLYKOTE G RAPID PLUS on the threads and under the bolt heads .

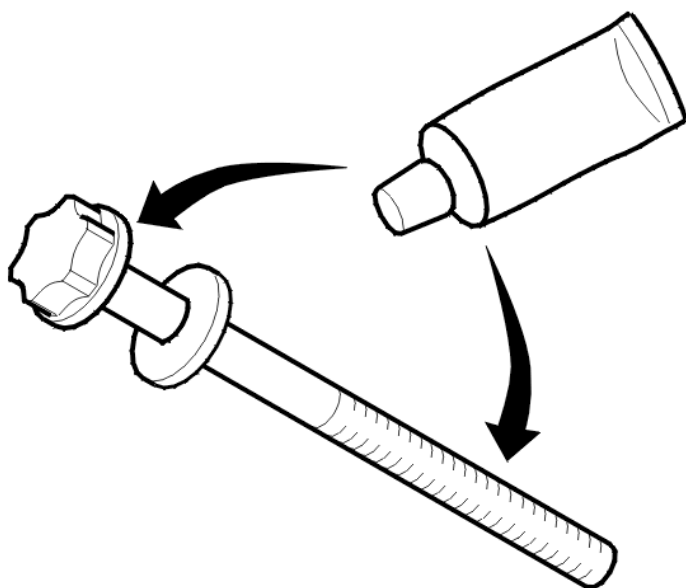
Clean the threads of the cylinder head bolts in the cylinder block using a thread cutter .



Check that the pins (10) are present .
 Fit a new cylinder head gasket (TOP (A) inscription upwards) .
 Check the condition of the joints in the rigid pipe (7) .
 Position the pipe (7) on the coolant pump .

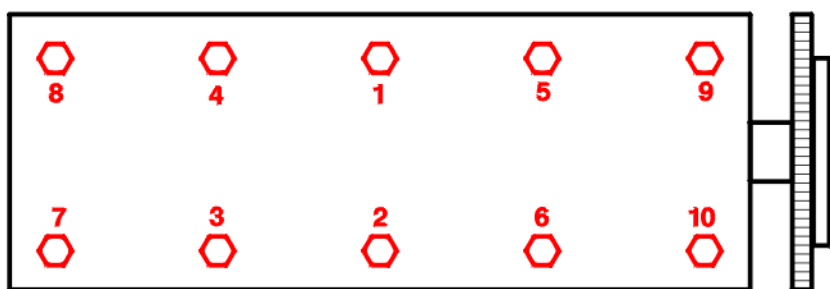


WARNING : *replace the valve (11) .*
 Position the water outlet housing on the cylinder head .
 Position the pipe (7) in the coolant outlet housing .
 Fit the cylinder head with the camshaft gear pinned .



Fit the cylinder head bolts coated with MOLYKOTE G RAPID PLUS on the threads and under the bolt heads .

3 - 3 - CYLINDER HEAD TIGHTENING



IMPERATIVE : tighten the cylinder head bolts in the order shown (using the tool [6]) .

cylinder head tightening	
engine type	EW10J4
special features	without
pre-tightening (da.Nm)	1.5
tightening (da.Nm)	5
slackening	360°
tightening (da.Nm)	2
angular tightening (°)	285°

Continue the fitting operations in the reverse order to removal .

IMPERATIVE : fill with oil the cups above the hydraulic tappets .

Tighten the bolt (9) to 4.5 da.Nm .

IMPERATIVE : always replace the gaskets of the cylinder head cover .

refit the cylinder head covers .

Fit :

- the compact coil unit (3)
- the sensor (4)

Install the tools [1] - [2] on the sling hooks of the cylinder head .

Remove the right side intermediate engine bracket .

refit the timing belt .

fit the ancillary drive belt .

Remove the tools [1] - [2] .

Continue the fitting operations in the reverse order to removal .

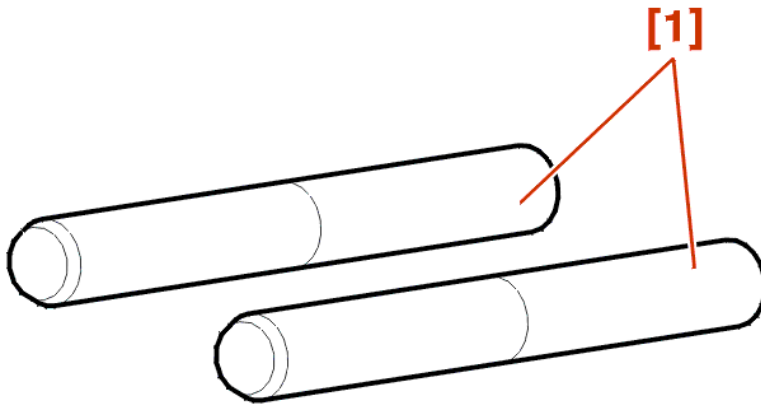
WARNING : strictly follow the fastening and routes of the various harnesses and pipes .

fill and bleed the cooling system .

B1DG1CK1 - 307 DV4TD ENGINE

REMOVAL - REFITTING CAMSHAFT HOUSING

1 - SPECIAL TOOLS



[1] Camshaft carrier (-).0194-N positioning tool .

2 - REMOVAL

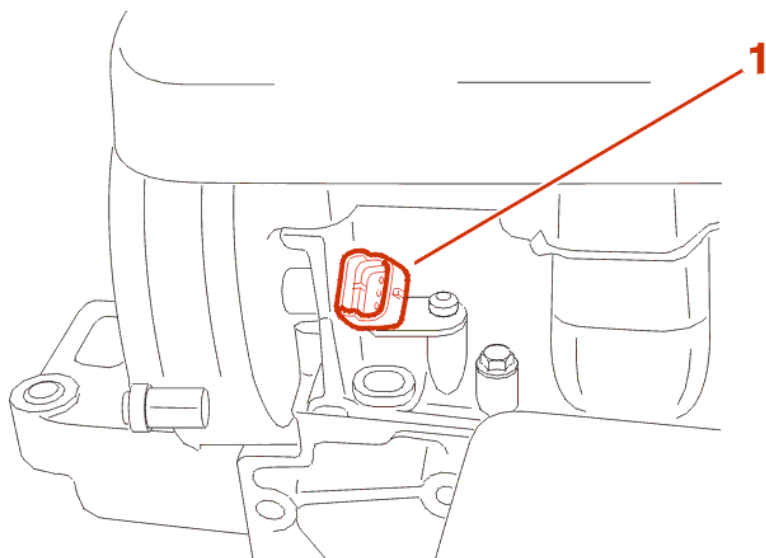
Remove :

- the style cover
- the timing belt

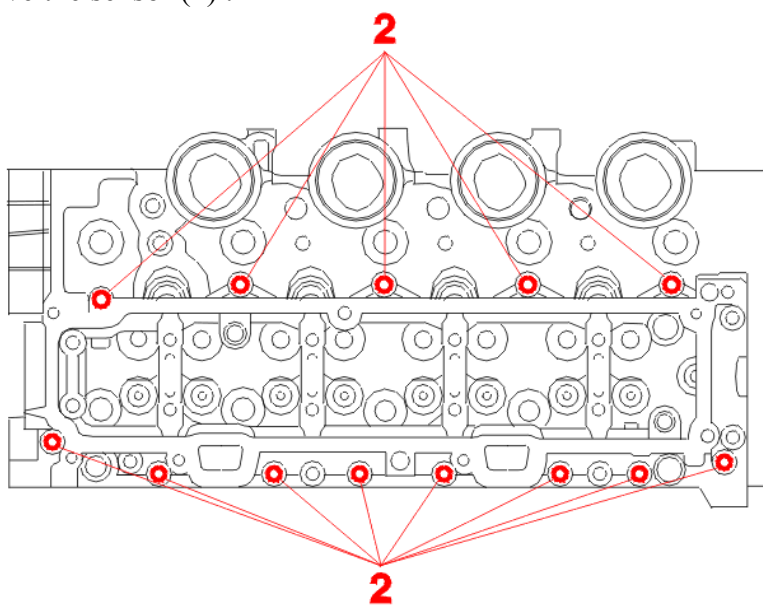
Fit :

- the intermediate right engine mounting
- the engine mounting

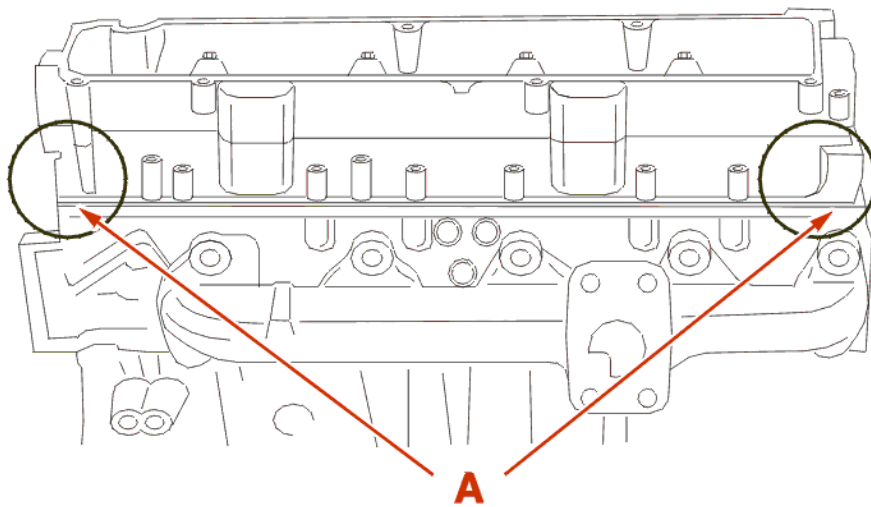
remove the integral intake system .



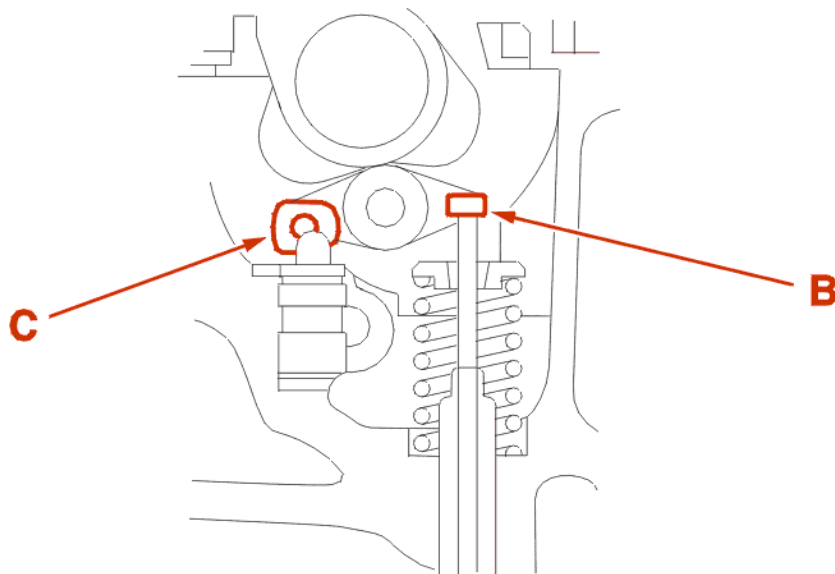
Remove the sensor (1) .



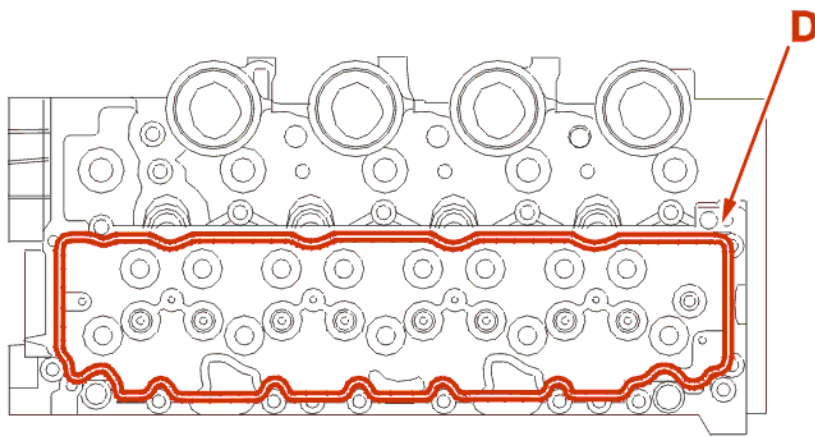
The bolts (2) of the camshaft holder .
Disconnect the vacuum pipe from the vacuum pump .



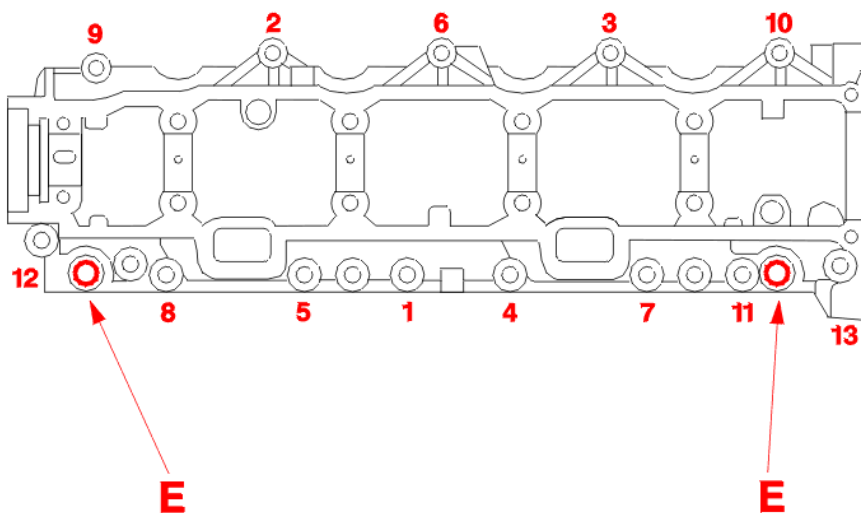
Remove the camshaft holder using the release areas (A) .
 Clean the joint face with scouring agent .
 Do not use sharp or abrasive tools .
 3 - REFITTING



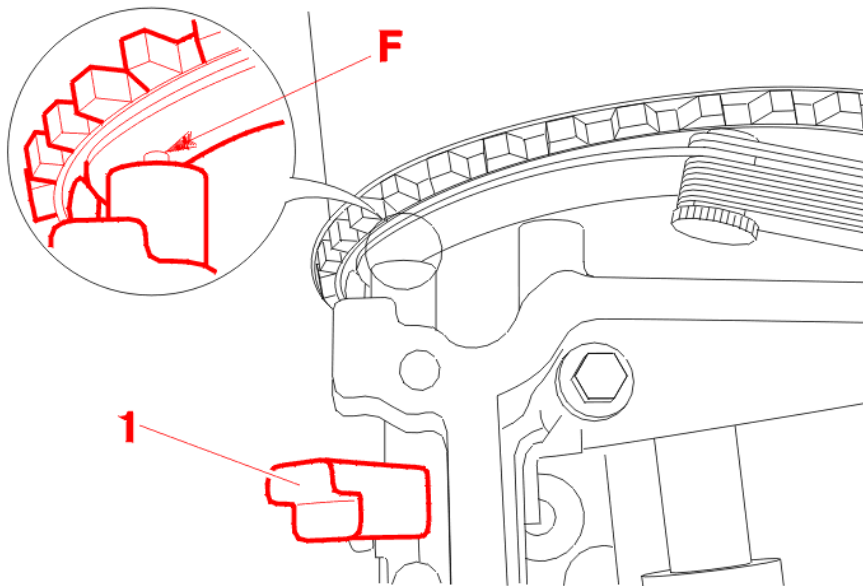
Ensure that the cam followers (B) - (C) are in the correct position .



Deposit a line of sealing compound SILICONE CATEGORIE 2 (Autojoint OR) at (D) around the edge of the mating surfaces .



Position the tools [1] in the holes (E) of the camshaft holder and refit it .
 Finger tighten then progressively tighten the securing bolts in the order shown .
 Remove the tools [1] .
 Tighten the bolts to 1 da.Nm .



Fit the sensor (1) .

Adjust the air gap between the pulley and the sensor to 1.2 mm .

If the sensor is new, to adjust the air gap, place the sensor tab (F) in contact with one of the three fibre rings of the camshaft pulley .

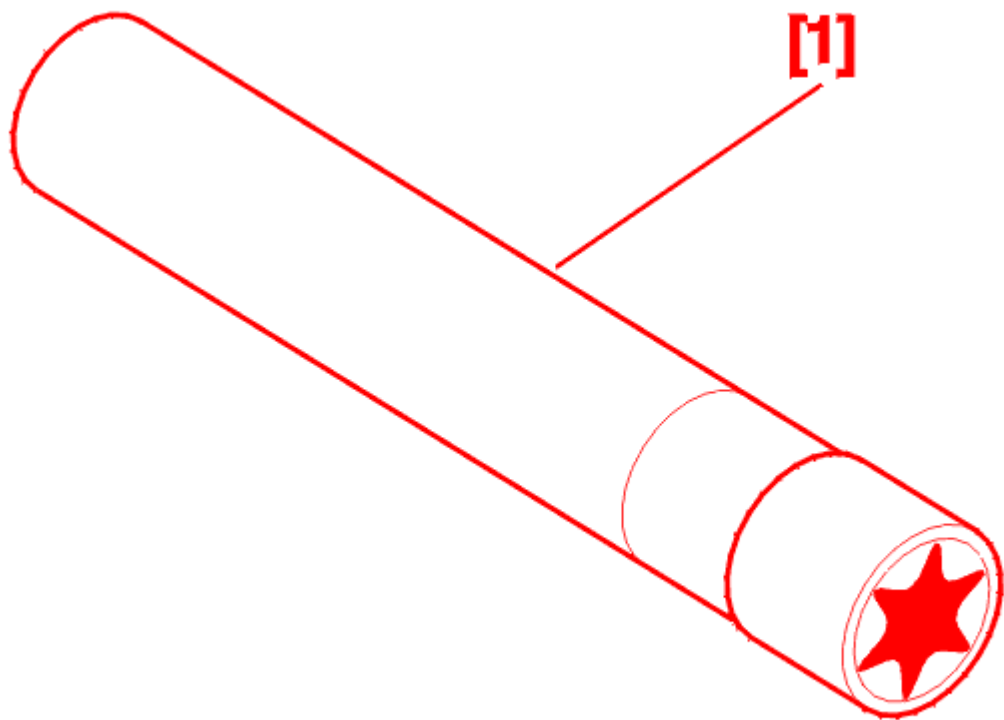
Reconnect the vacuum pipe of the vacuum pump .

Fit :

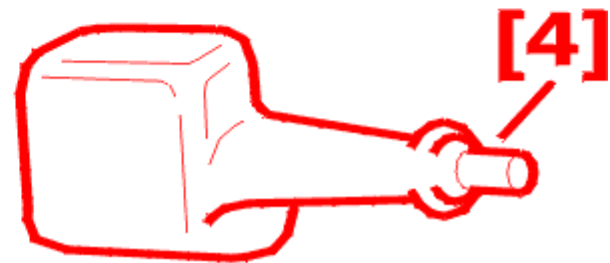
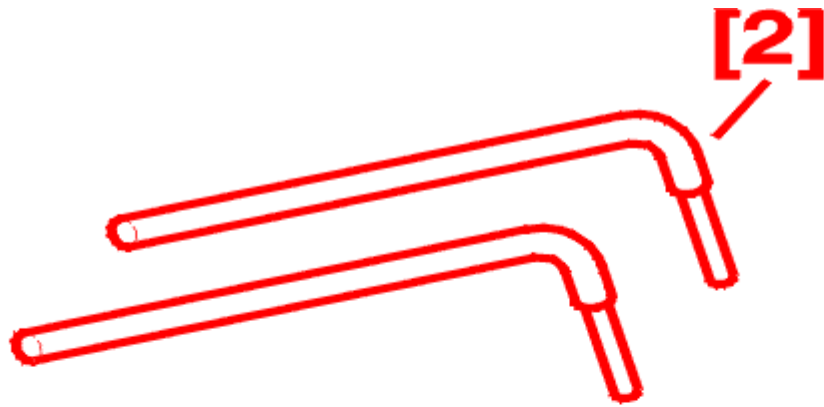
- the integral intake system
- the timing belt

The style cover .

B1DG1DK1 - 307 DV4TD ENGINE
REMOVAL - REFITTING CYLINDER HEAD
1 - SPECIAL TOOLS



[1] Cylinder head bolt socket (-).0185 .



[2] cylinder head releasing levers (-).0188-L .

[3] dial gauge (-).1504 .

[4] dial gauge support (-).0110 .

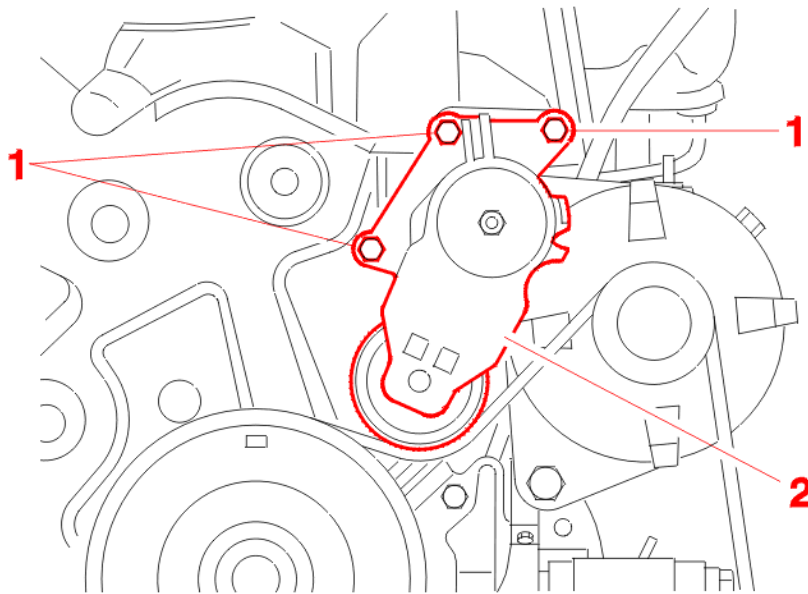
2 - REMOVAL

Disconnect the battery .

drain the cooling system .

Remove :

- the ancillary drive belt
- the timing belt
- the integral intake system
- the heat shield
- the catalytic converter
- the EGR valve
- {{n13479}} la barrette de connexion des bougies de prechauffage
- the glow plugs



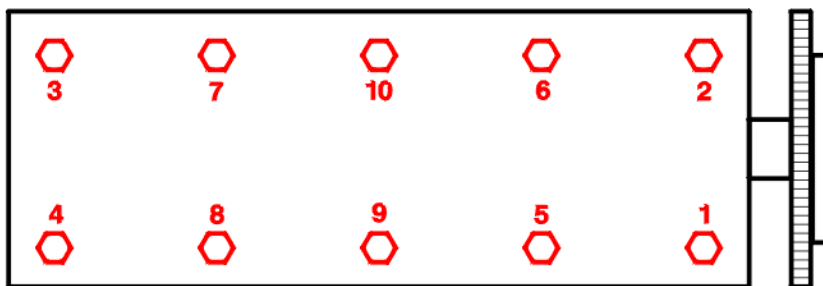
Remove :

- the bolts (1)
- the tensioner roller (2)
- the alternator
- {{n13480}} le support alternateur superieur
- {{n13481}} les vis superieures du support de pompe haute pression
- the injectors

{{N13482}} déposer le boîtier de sortie d'eau et l'écartier .

Remove :

- the camshaft housing
- {{n13483}} les linguets (reperer leur position)



Slacken the cylinder head mounting bolts (In the order shown) Using the tool [1] .

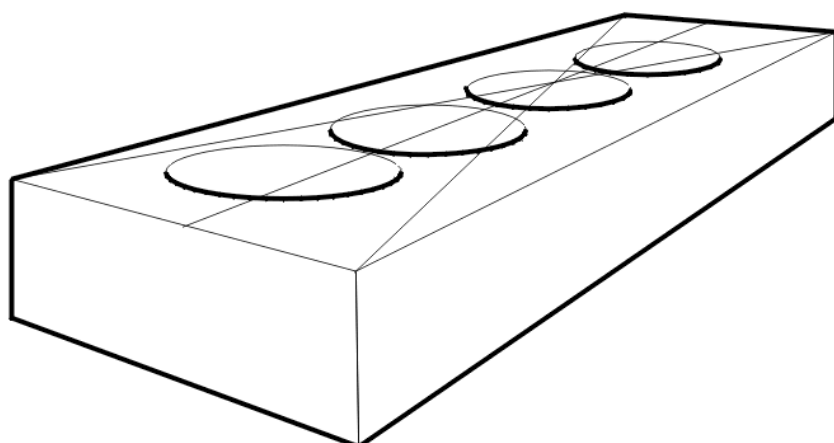
{{N13484}} décoller la culasse à l'aide des outils [2] .

Remove the cylinder head .

3 - REFITTING

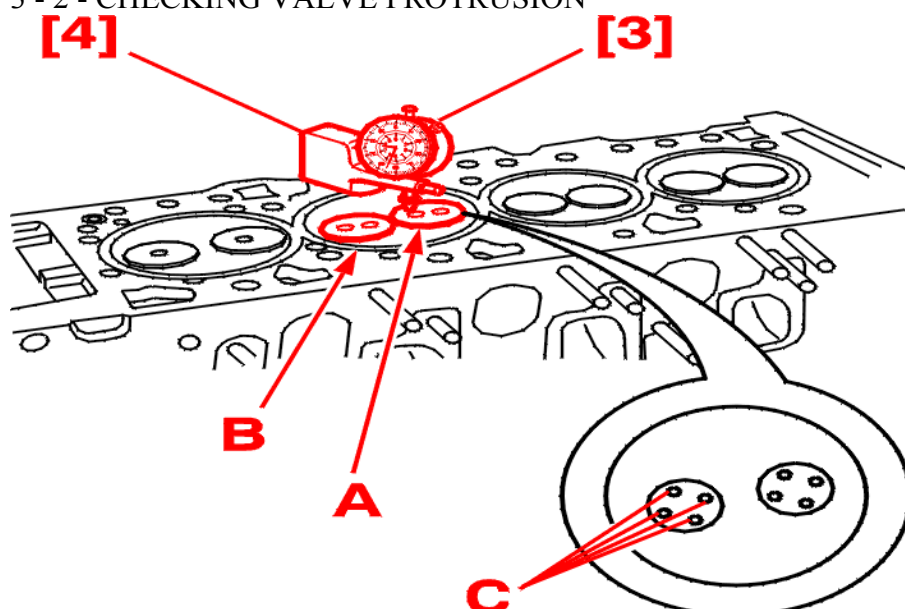
WARNING : clean the checking surfaces .

3 - 1 - CHECKING THE FLATNESS



Maximum permissible bow = 0.05 mm .

3 - 2 - CHECKING VALVE PROTRUSION

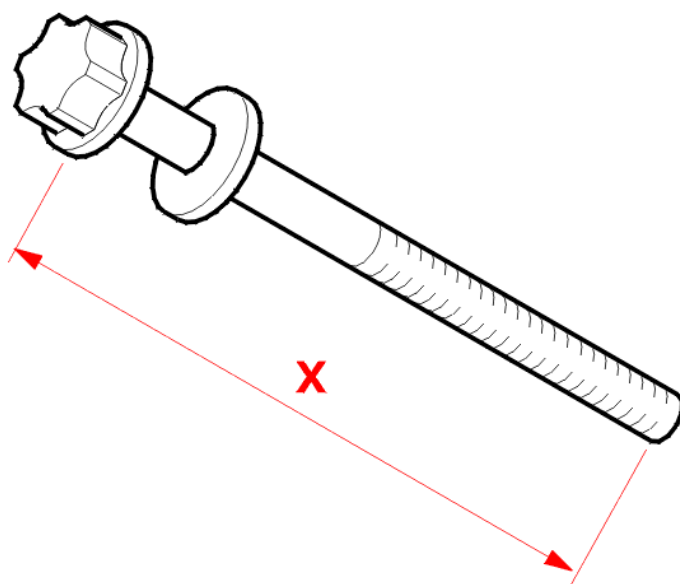


Check the protrusion of the valves in relation to the cylinder head surface : {{N13485}} points de contrôle (C) :

- exhaust valve(A) = 1.25 mm
- repair procedure(B) = 1.25 mm

NOTE : calculate the average of the 4 values measured .

3 - 3 - CHECKING CYLINDER HEAD BOLTS BEFORE RE-USE

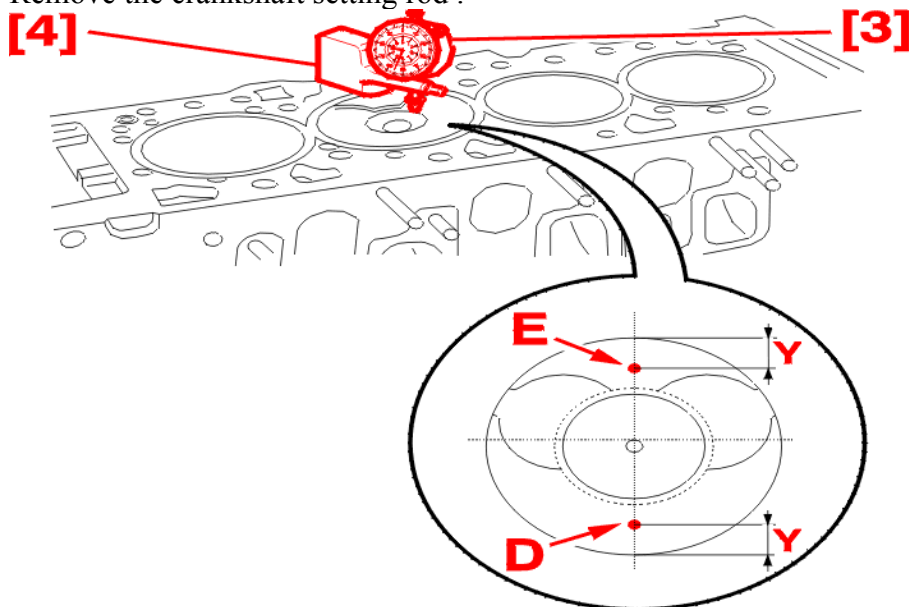


(X) must be less than 149 mm .

3 - 4 - CHOICE OF CYLINDER HEAD GASKET

Fit the tools [3] - [4] .

Remove the crankshaft setting rod .



{{N13486}} placer l'extrémité du comparateur sur la face supérieure du carter-cylindres .

Zero the dial gauge .

{{N13487}} placer l'extrémité du comparateur sur l'un des points de contrôle (point de contrôle (D)) .

{{N13488}} tourner le vilebrequin jusqu'au point mort haut du piston sans le dépasser .

Read the value .

{{N13487}} placer l'extrémité du comparateur sur l'un des points de contrôle (point de contrôle (E)) .

Read the value .

Calculate the average of the 2 values measured .

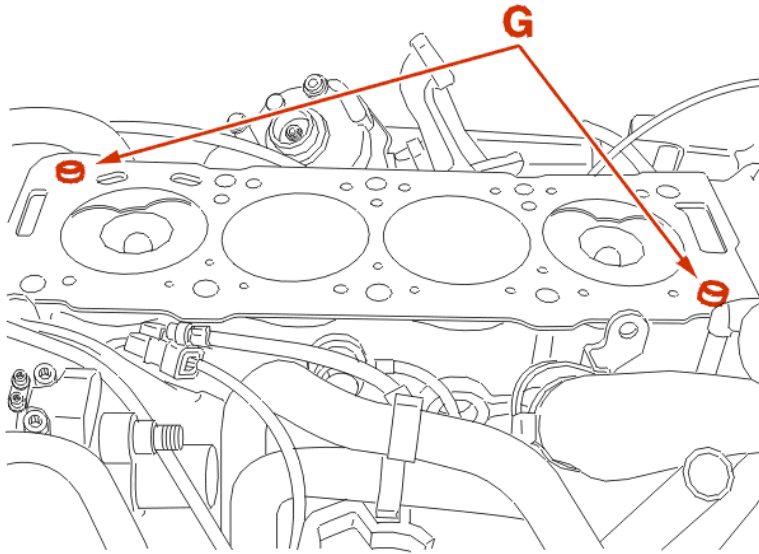
Repeat the procedure for the remaining pistons .

NOTE : maximum gap between 2 pistons = 0.10mm .

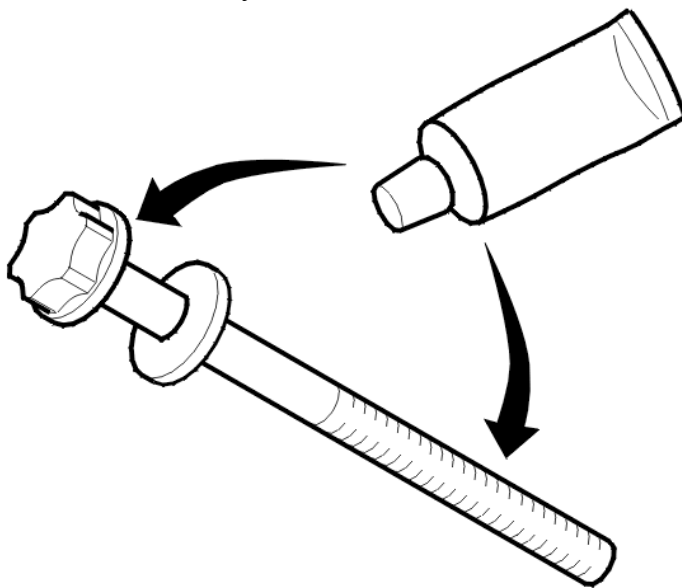
IMPERATIVE : if the value measured does not correspond to the values indicated, investigate the origin of the fault (measurement error, handling error etc.) .

WARNING : the highest average value determines the thickness of the gasket .

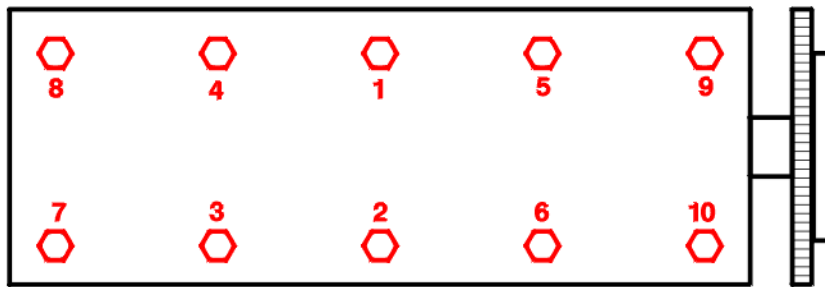
{{N13489}} passer un taraud dans les trous de fixation culasse .
Clean the surfaces of the coolant housing outlet .
Peg the flywheel using the rod [6] .



Check that the pins (G) are present .
{{N13490}} reposer un joint de culasse neuf d'épaisseur précédemment déterminée (en respectant le sens de montage) .
Refit the cylinder head .
Brush the threads of the cylinder head bolts .



Fit the cylinder head bolts coated with MOLYKOTE G RAPID PLUS on the threads and under the bolt heads .



Tighten the cylinder head bolts in the order shown ; Using the tool [1] .

cylinder head tightening	
engine type	DV4TD
special features	without
pre-tightening (da.Nm)	2
slackening	without
tightening (da.Nm)	4
1st angular tightening (°)	230°

Fit the thermostat with a new joint .

{{N13491}} serrer les vis du boîtier de sortie d'eau à 1 m.daN .

Fit :

- the camshaft housing
- the injectors
- the pump rear fastening
- {{n13492}} la vis de fixation du support de pompe haute pression sur culasse

Tighten the bolts to 2 da.Nm .

{{N13493}} reposer le support alternateur supérieur .

Tighten the bolts to 2 da.Nm .

{{N13494}} reposer l'alternateur en fixant d'abord les fixations avant ; Tightening torque 4 da.Nm .

Refit the roller tensioner .

Tighten the bolts to 2 da.Nm .

Fit the glow plugs .

Tightening torque 0.9 da.Nm .

{{N13495}} reposer la barrette de connexion des bougies de préchauffage .

Tighten the nuts to 0.5 da.Nm .

Fit :

- the EGR valve
- the catalytic converter
- the heat shield
- the integral intake system
- the ancillary drive belt
- fill and bleed the cooling system

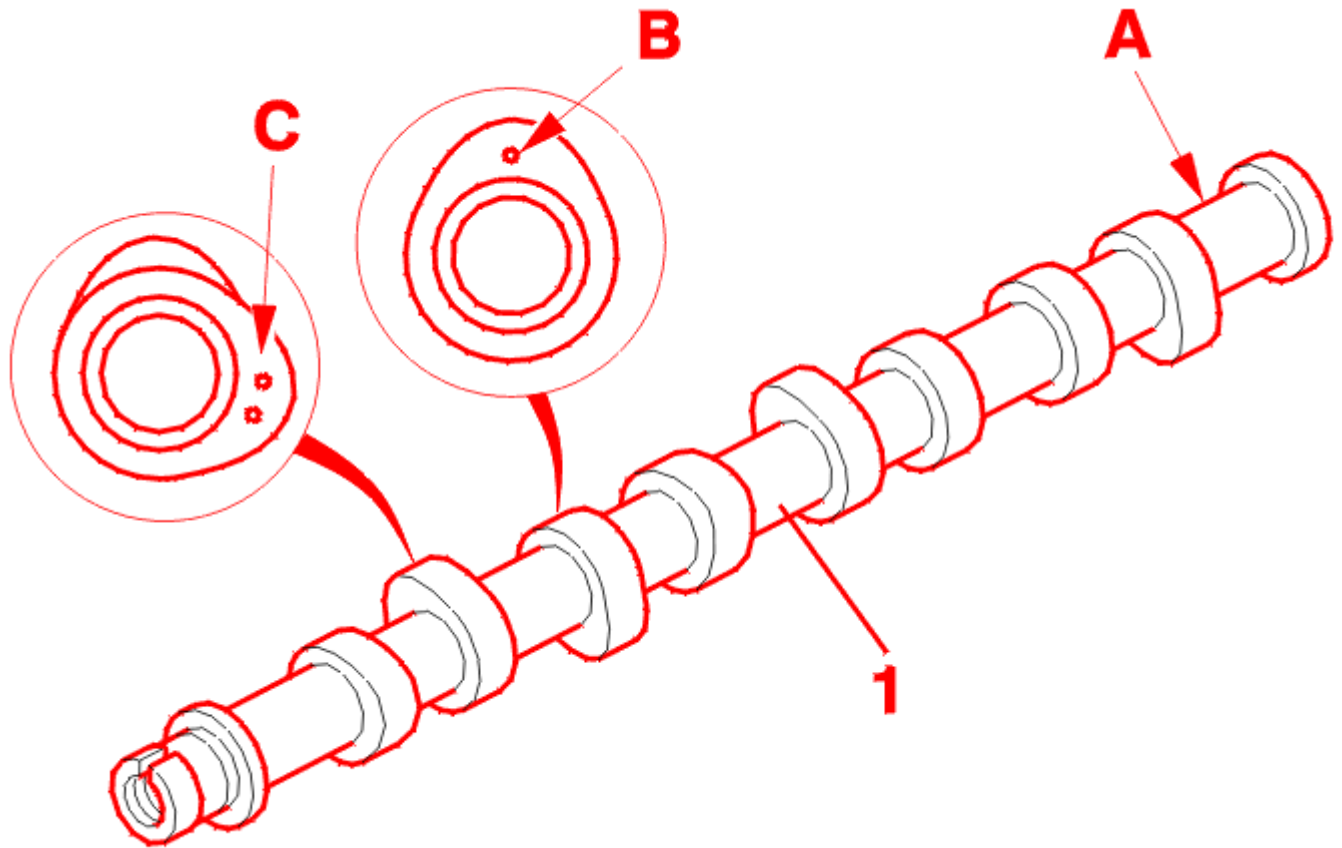
- connect the battery

B1EB0LK1 - 307 DV4TD ENGINE

IDENTIFICATION, DATA, TIGHTENING TORQUE(S) TIMING

1 - IDENTIFICATION

1 - 1 - CAMSHAFT



(1) Hollow camshaft with connected sintered cams .

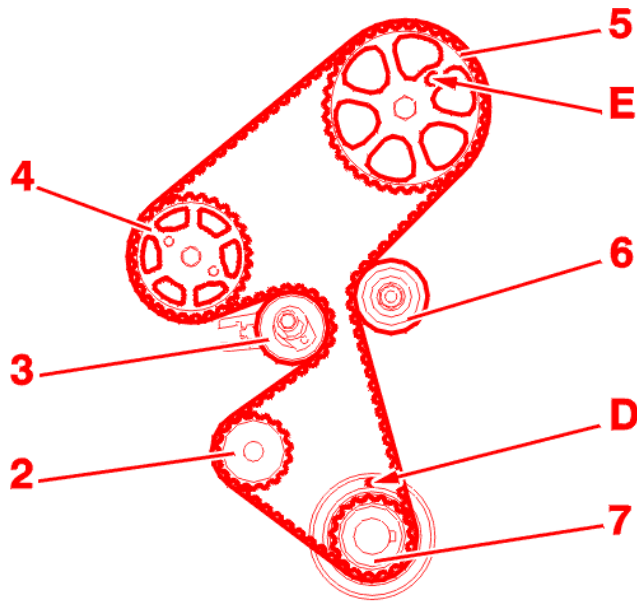
Marking on cams :

- (A) engine identification (DV4TD) = AA
- (B) 1 point = exhaust
- (C) 2 points = inlet

Driving by synchronous belt .

Driving of the vacuum pump on the engine flywheel side .

1 - 2 - TIMING BELT



(D) Positioning .

(E) Positioning .

(2) Coolant pump .

(3) Dynamic tensioner .

(4) High pressure pump .

(5) Camshaft pulley .

(6) Roller tensioner .

(7) Crankshaft gear .

2 - DATA

engine code	8HZ
engine type	DV4TD
width mm	25.4
number of teeth	144
material	H S N
supplier(s)	GATES
replacement interval (Km) normal	240 000
replacement interval (Km) arduous use	180 000

Valve clearances cold : Not adjustable (Hydraulic tappet) .

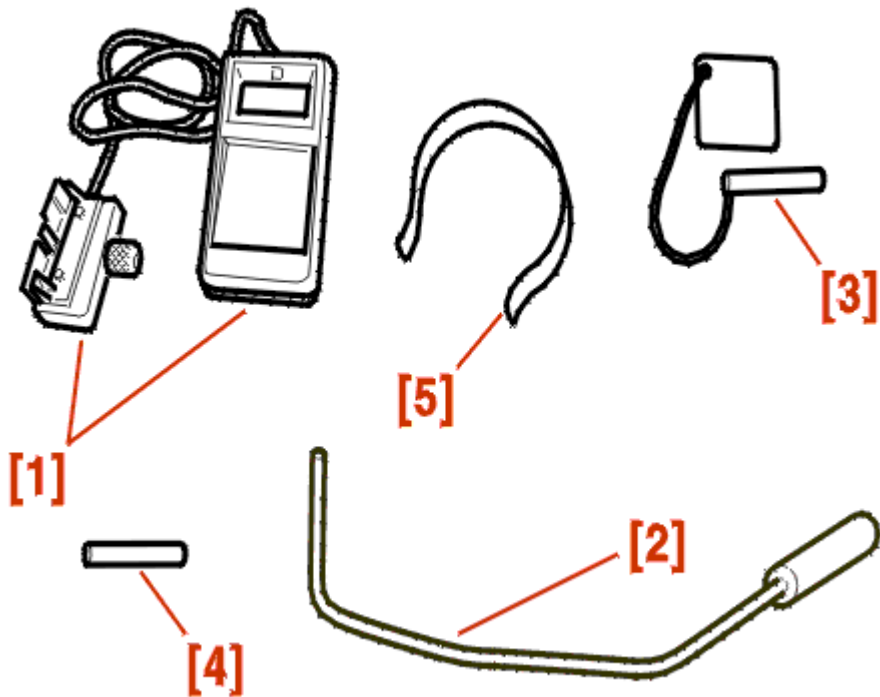
3 - TIGHTENING TORQUE(S)

Camshaft pulley (5) : 4.5 da.Nm .

B1EG1XK1 - 307 TU5JP4 ENGINE

REMOVAL - REFITTING TIMING BELT

1 - TOOLING



[1] S.0192 tension measuring equipment .

[2] flywheel setting rod (-).0132-QY .

[3] Camshaft setting rod : Exhaust(-).0132-AJ1 .

[4] Camshaft setting rod : Inlet (-).0132-AJ2 .

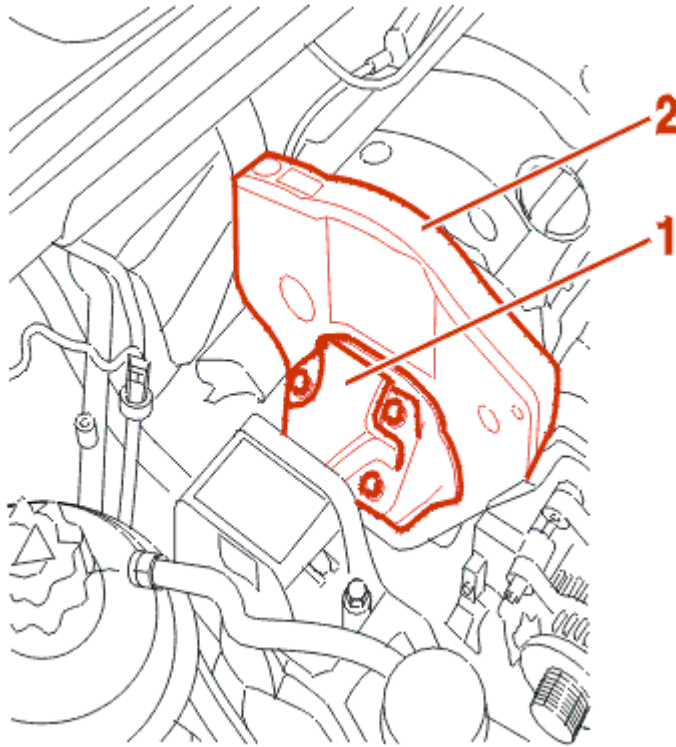
[5] Belt retaining clip (-).0132-AK .

2 - REMOVAL

Remove :

- the front right-hand wheel
- the mud shield
- the ancillary drive belt
- the ancillary drive pulley (to crankshaft)

Support the power train using a stand .

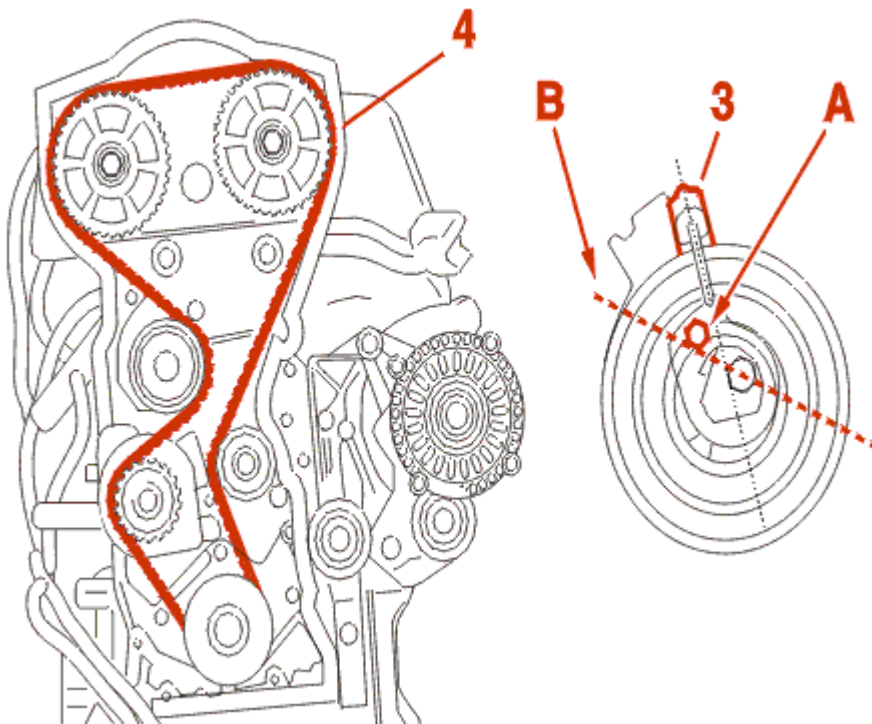


Remove :

- the complete left engine store (1)
- the bottom timing cover
- the top timing cover (2)

Peg :

- the engine flywheel at tdc cylinder 1 ; using the tool [2]
- the camshafts ; using the tools [3] - [4]

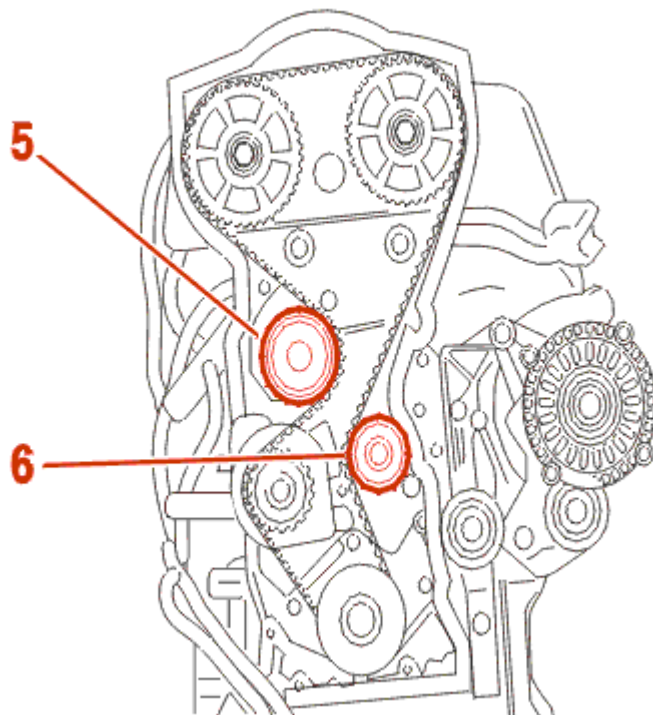


Using the hexagonal recess (A), turn the roller in the direction of the arrow to bring the index (3) to position (B) to slacken the belt fully .
Pin the tensioner roller in the position .

IMPERATIVE : never turn the roller by one full turn .

Remove the timing belt (4) .

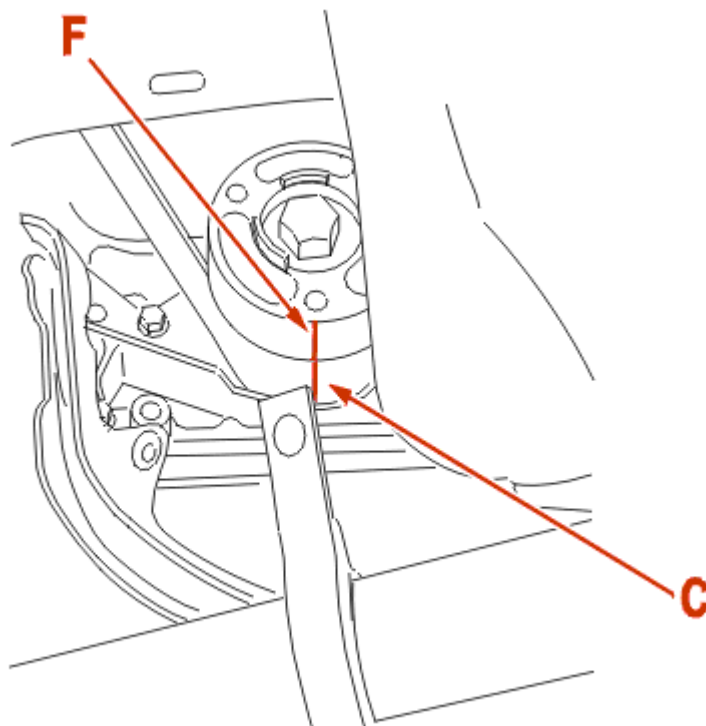
3 - REFITTING



Check that the rollers (5) and (6) turn freely (no play and no tight spots) .

The belt has 3 marks (C) - (D) - (E), which go opposite the corresponding teeth (1) and (52) - (72) on the belt .

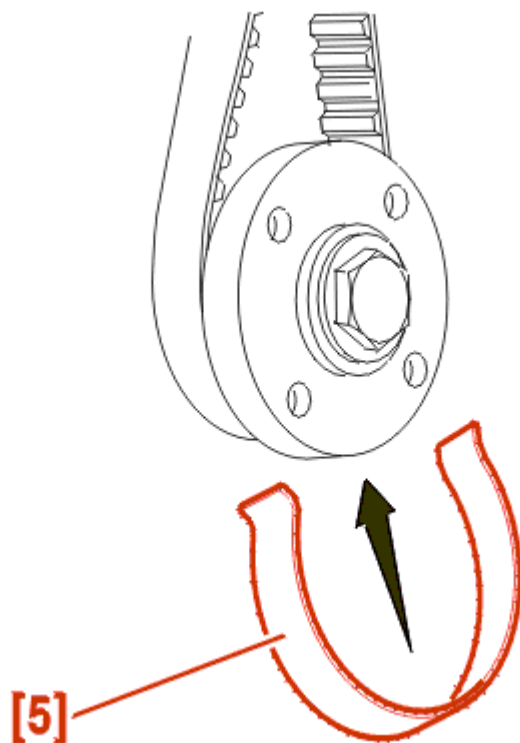
These marks are lines of white paint on the back of the belt opposite the corresponding teeth .



Fit the belt .

Align mark (C) on the belt with groove (F) on the crankshaft pinion .

It is possible to turn the camshafts using a wrench to make it easier to fit the belt on the pulleys .



Position tool [5] on the crankshaft pulley to hold the belt in place .

3 - 1 - EXCESS VOLTAGE

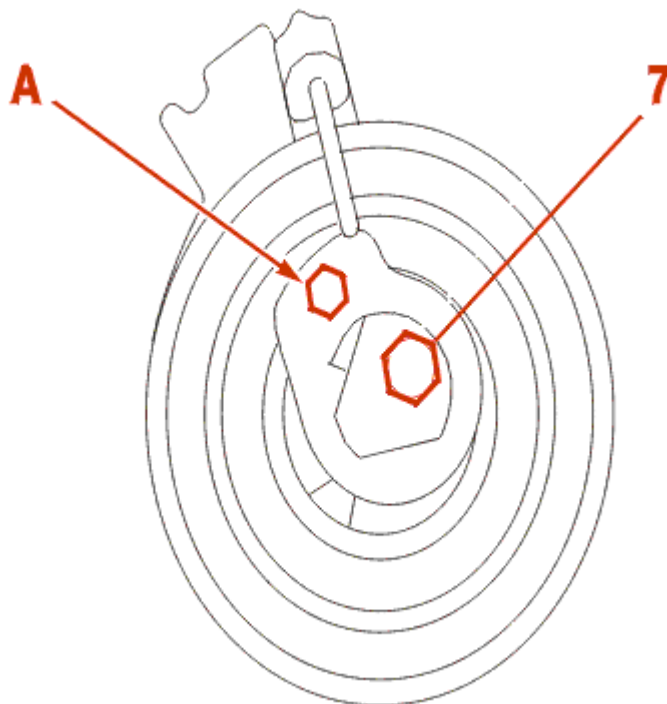
Turn the tensioner roller anti-clockwise to its maximum position minus 2 mm .

Tighten the tensioner roller bolt to dan.m .

Remove the pin from the crankshaft .

Turn the engine over 4 times in the normal direction of rotation .

3 - 2 - NORMAL TENSION



Peg the crankshaft .

Unscrew the bolt (7) to slacken the tensioner roller .

Tension the roller clockwise to the point of over-tension .

Using the hexagonal recess (A), move the index by turning clockwise so that it is positioned opposite the mark .

IMPERATIVE : the index must not descend again to the minimum point for correct setting of the timing .

Tighten the dynamic tensioner roller : 2.2 da.Nm .

Remove the pins :

- of the crankshaft
- of the camshafts

Turn the engine over (2) times in the normal direction of rotation .

Check the position of the roller: it should be ± 2 mm from the position in which it was tightened, if it is not, repeat the fitting procedure .

Check the setting by pinning the camshafts again. if the result is not correct, repeat the fitting procedure .

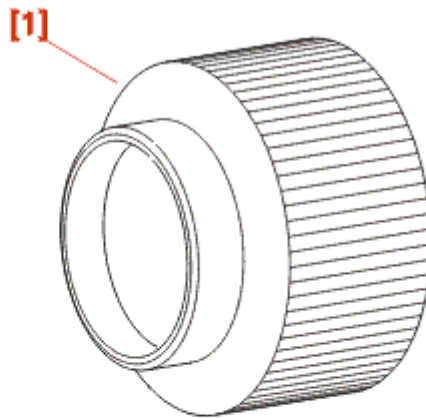
Remove the pin(s) from the engine .

fit the ancillary drive belt .

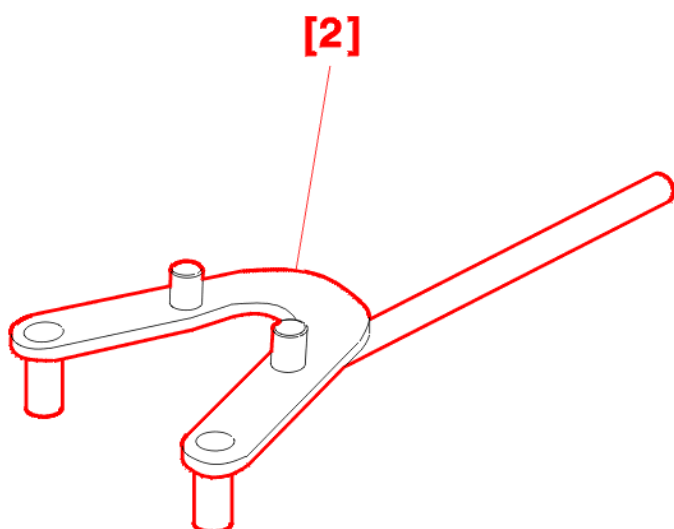
B1EG1YK1 - 307 TU3JP ENGINE

REMOVAL - REFITTING CAMSHAFT

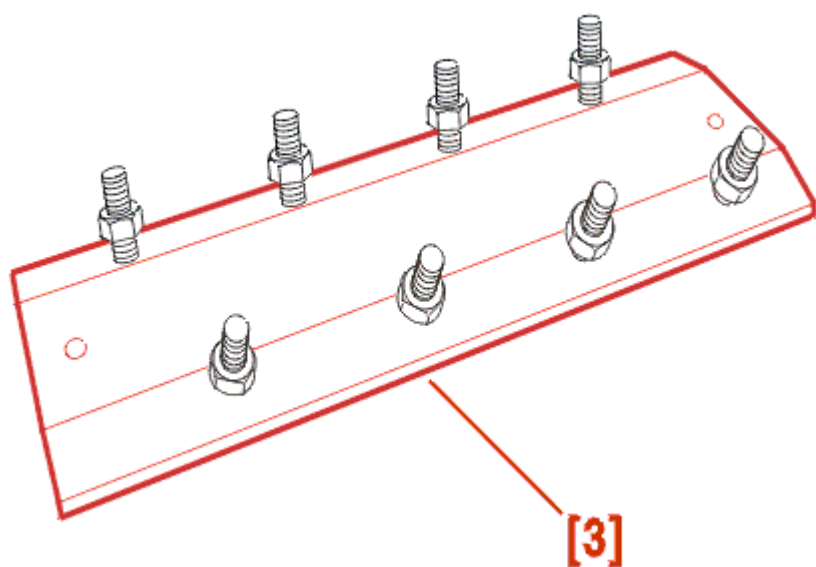
1 - SPECIAL TOOLS



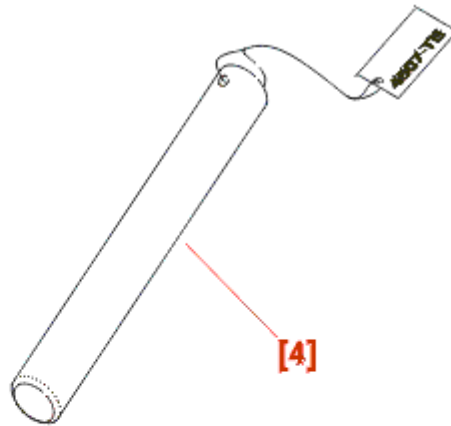
[1] Fitting drift for camshaft seal (-).0132-T (4507-TE) .



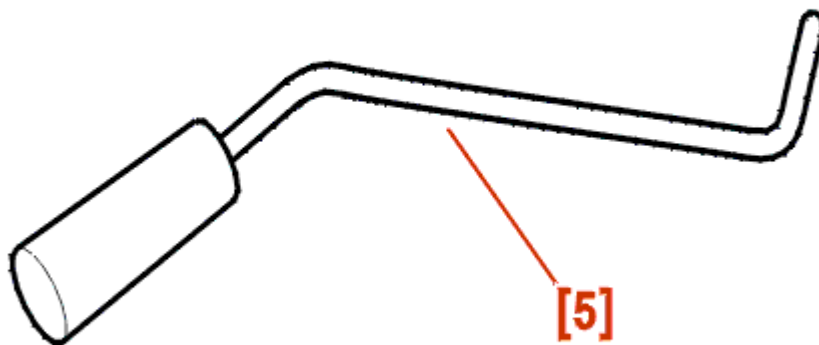
[2] Camshaft pinion key (-).0132-AA (6016-T) .



[3] Valve rocker contact plate (-).0132-AE .



[4] Camshaft gear setting rod (-).0132-RZ (4707-TB) .



[5] Camshaft gear setting rod (-).0132-QZ .

2 - REMOVAL

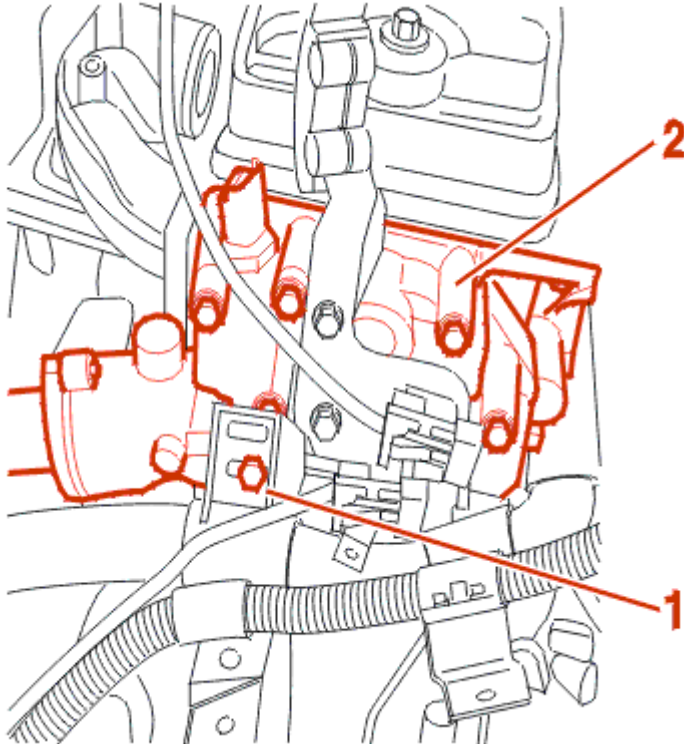
Disconnect the battery .

Drain the cooling system .

Remove :

- the windscreen wipers
- the plastic windscreen deflector
- the plastic windscreen crossmember
- the ancillary drive belt
- the air cleaner and air intake pipe

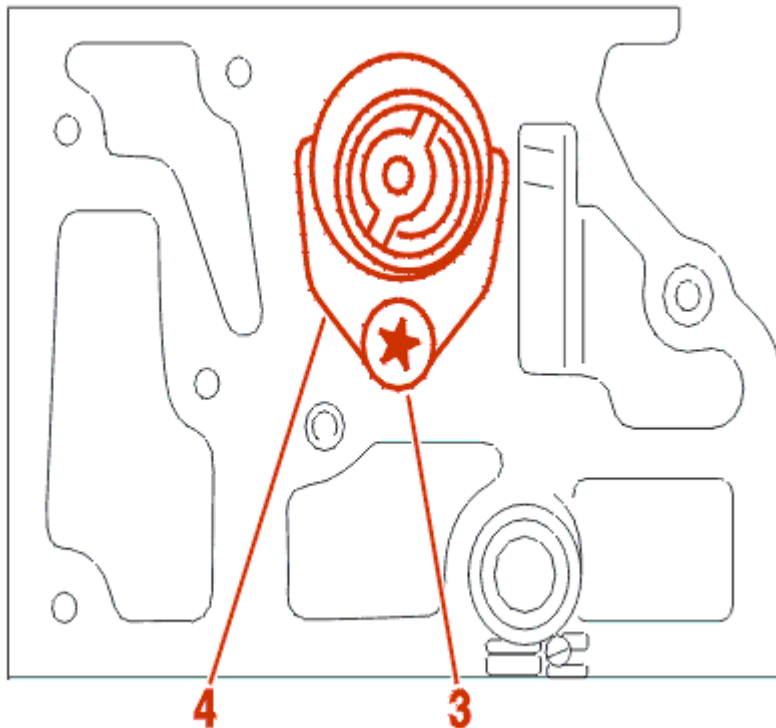
- the battery and its support



Disconnect the harnesses adjoining the water outlet housing .

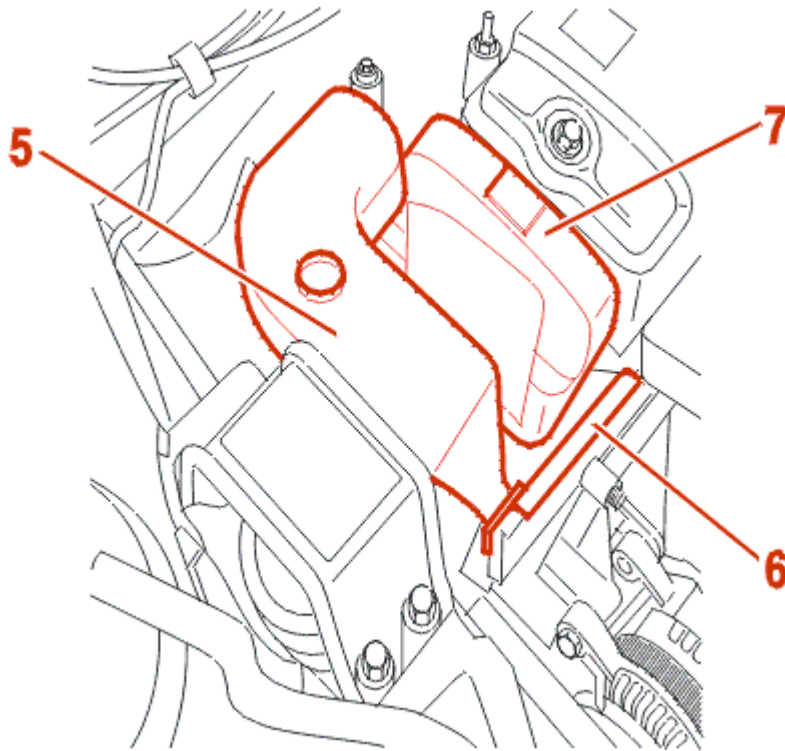
Remove :

- the harness support (1) mounting bolt
- the thermostat (2)



Remove :

- the bolt (3)
- the fork (4)



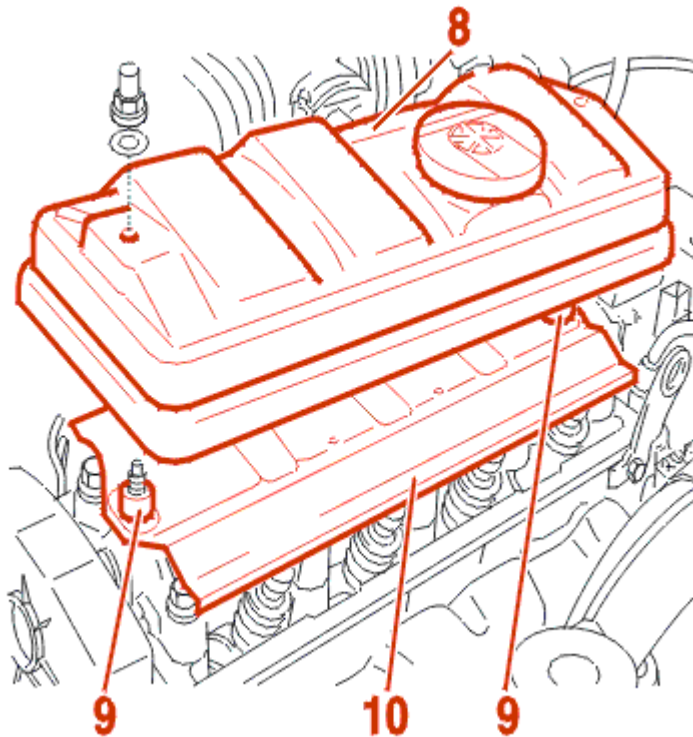
Remove :

- the right engine mounting (5) and its angle bracket (6)
- the timing covers (7)
- the timing belt

WARNING : protect the lower edge of the windscreen overhang using a piece of door seal .

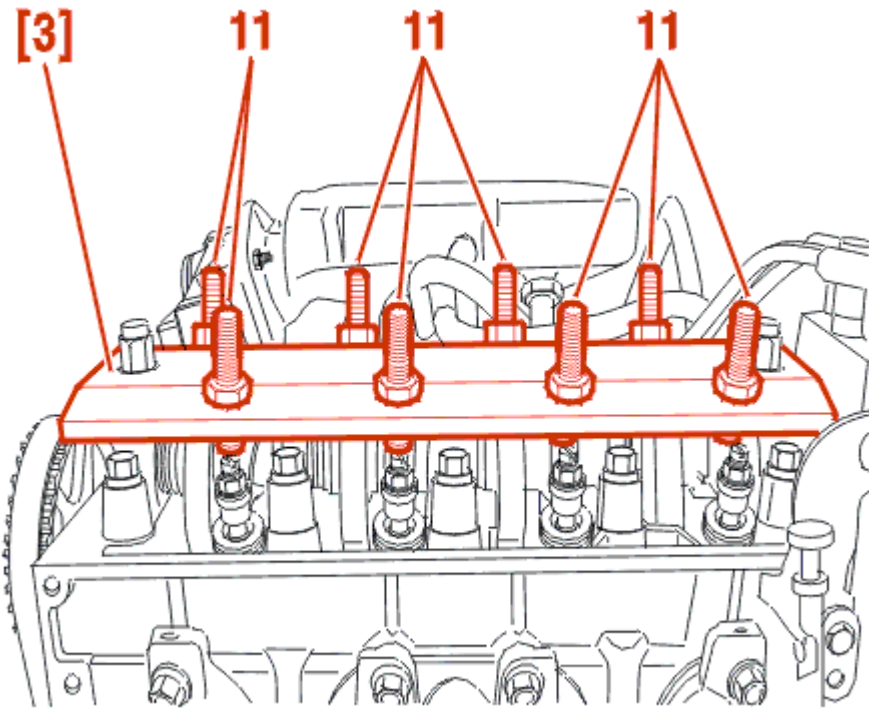
Place the engine in a sling .

Immobilise the camshaft gear using tool [2] to slacken the bolt .



Remove :

- the cylinder head cover (8)
- the two spacers (9)
- the deflector plate (10)



Remove the crankshaft pin then rotate it through a quarter turn .

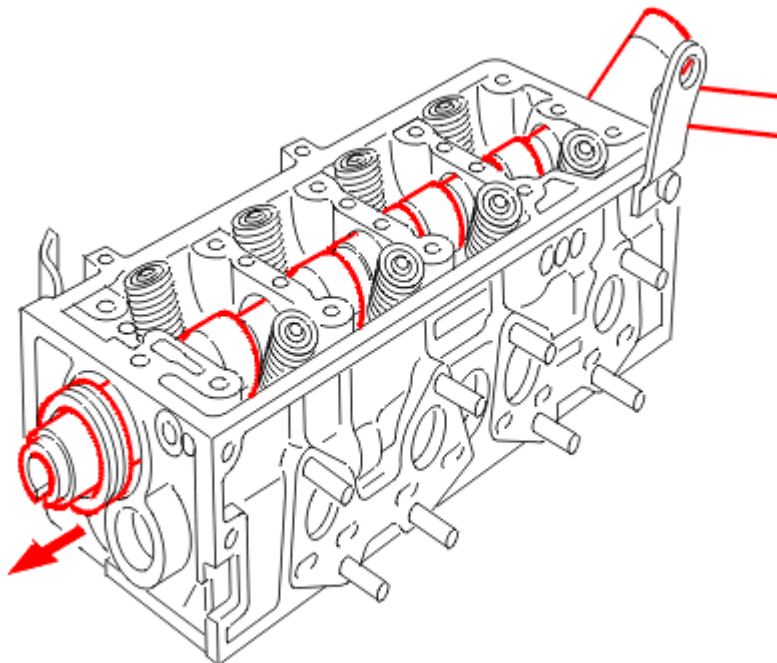
Slacken the bolts (11) .

Position the valve rocker contact plate [3] observing its fitting direction in relation to the timing gear .

Tighten the bolts (11) (Ensure that all of the cams are free) .

WARNING : tighten the bolts (11) to free the cams but do not place the valves in contact with the pistons .

Lift the left-hand side of the engine slightly .



Tap with the mallet to release the oil seal .

Remove the camshaft .

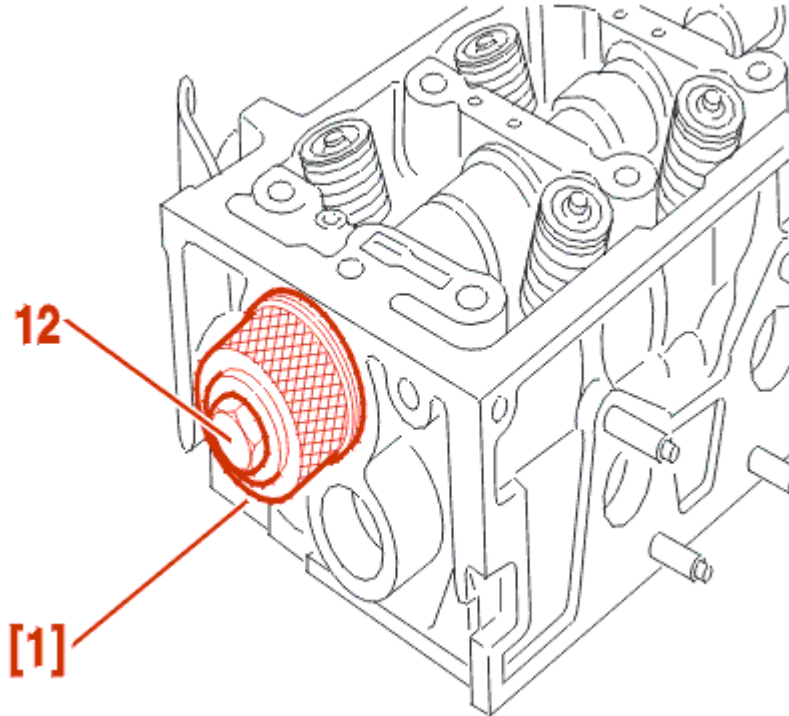
3 - REFITTING

Oil the camshaft bearings .

Fit :

- the camshaft
- the fork (4)

Tighten the bolt (3) to 1.5 da.Nm .



Fit a new oil seal using tool [1] and the bolt (12) .

Proceed in the reverse order to removal .

Clean the seal faces :

- water outlet housing
- cylinder head

Apply category 2 silicon jointing compound to the water outlet housing joint face (2) .

refit the timing belt .

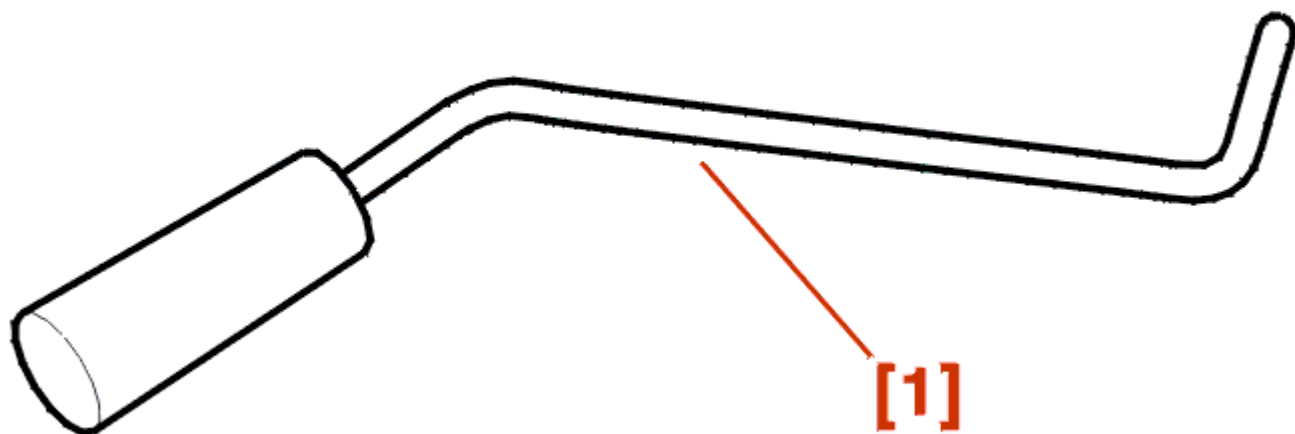
fit the ancillary drive belt .

Fill and bleed the cooling system .

B1EG1ZK1 - 307 TU3JP ENGINE

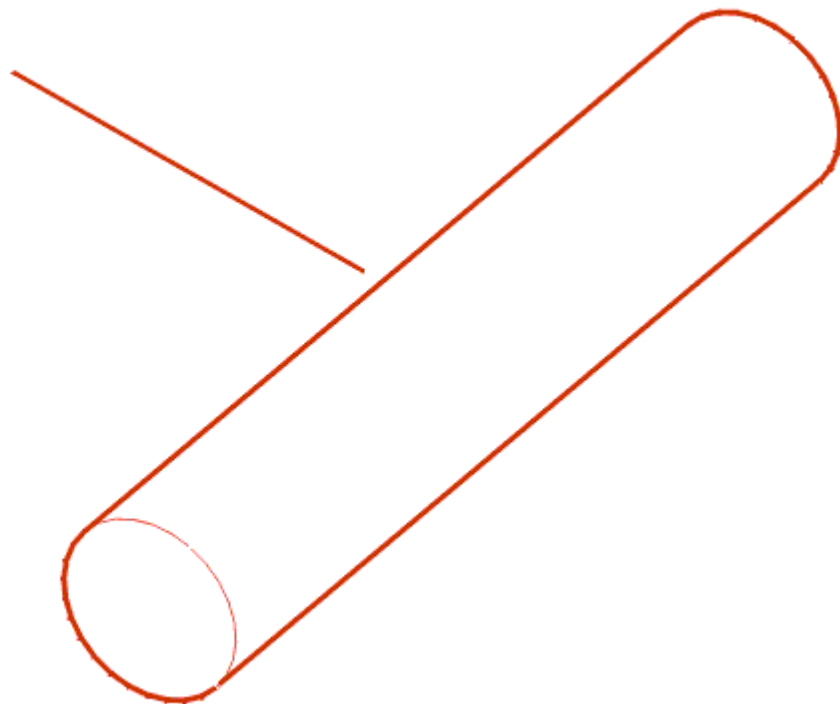
REMOVAL - REFITTING TIMING BELT

1 - SPECIAL TOOLS

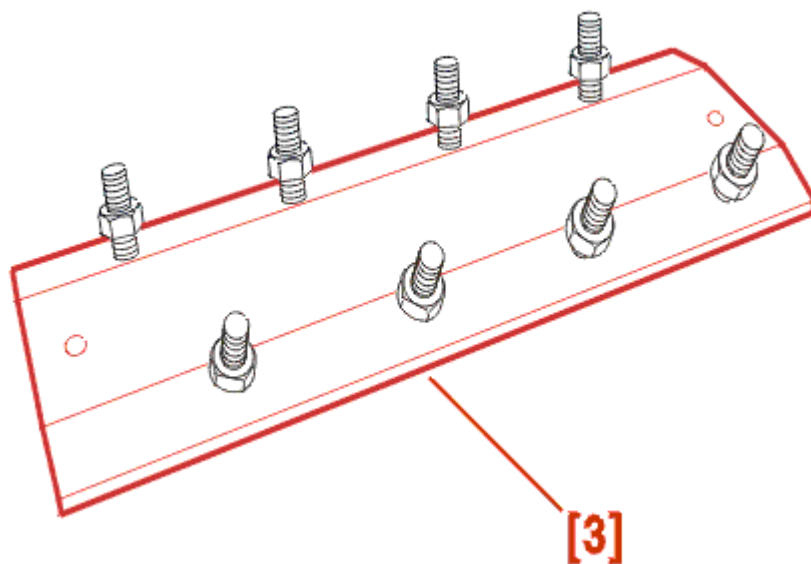


[1] Flywheel setting rod (-).0132-QY .

[2]

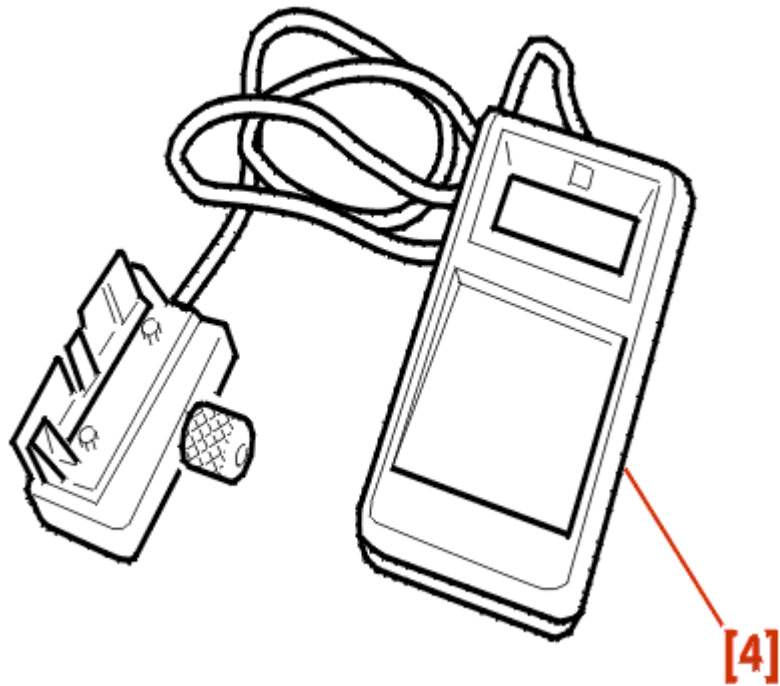


[2] Camshaft gear setting rod (-).0132-RZ .



[3]

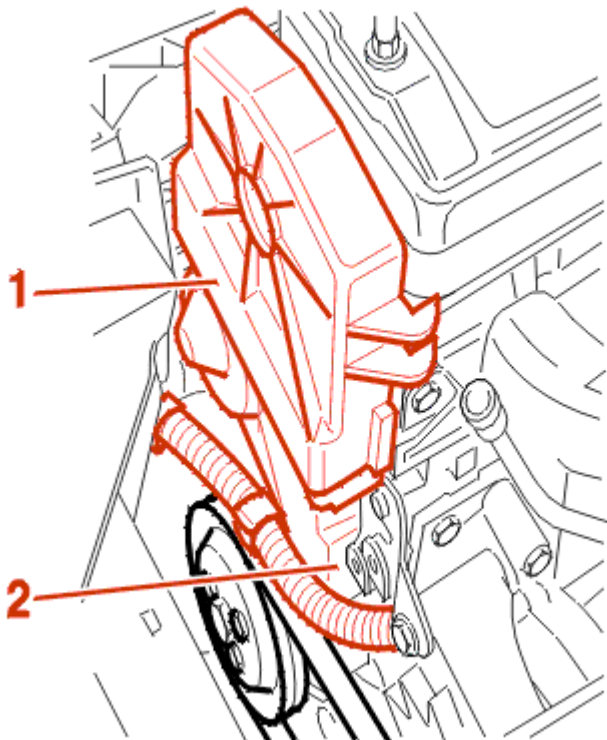
[3] Valve rocker contact plate (-).0132-AE .



[4] (-).0192 tension measuring equipment .

2 - REMOVAL

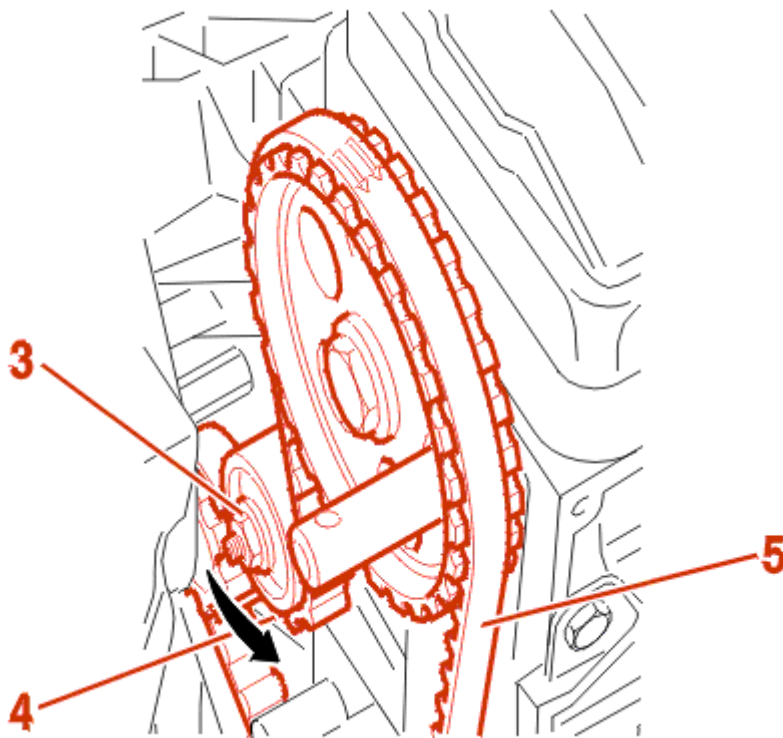
Disconnect the battery negative terminal .
remove the ancillary drive belt .



Remove :

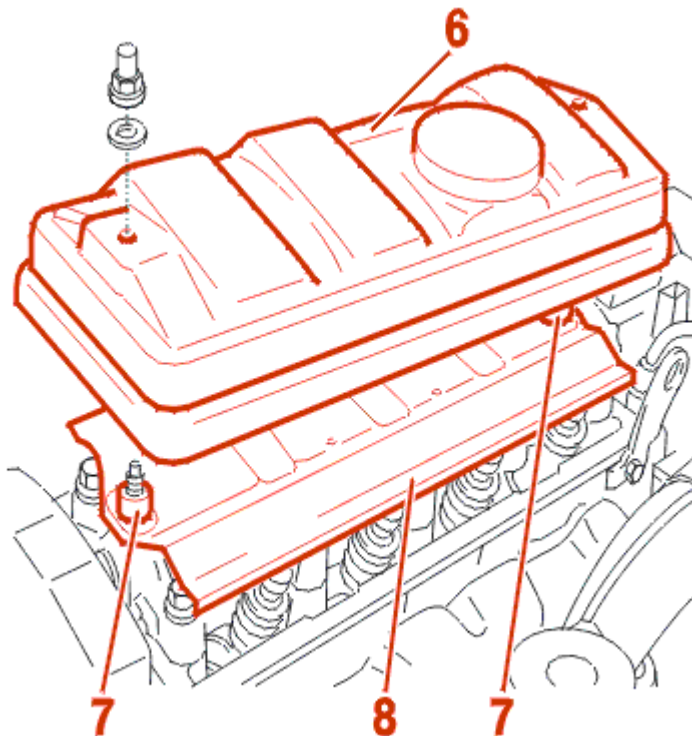
- the engine suspension tie bars
- the crankshaft pulley
- the top cover (1)
- the intermediate cover (2)
- the sump

Peg the flywheel using the rod [1] .
Peg the camshaft using tool .



Slacken the nut (3) retaining the roller tensioner (4) to slacken the belt (5) .
Remove the timing belt (5) .

3 - REFITTING

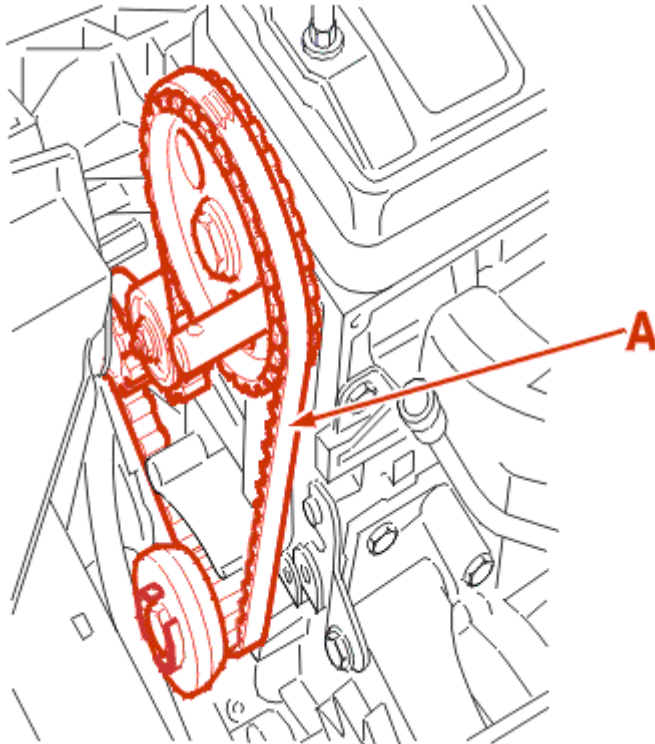


Remove :

- the cylinder head cover (6)
- the two spacers (7)
- the deflector plate (8)

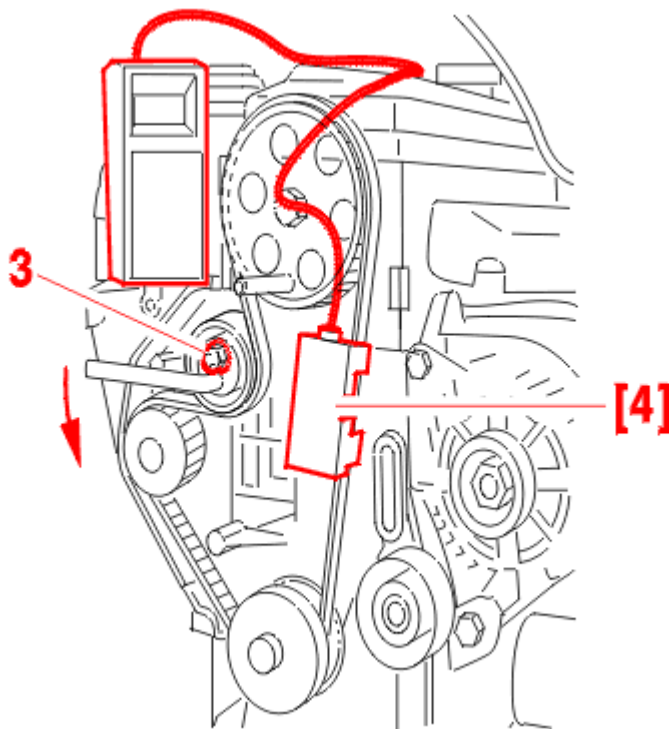
IMPERATIVE : check that the roller (4) turns freely (no play or tight spot) .

Flywheel and camshaft set .



Fit the timing belt, run (A) well tensioned, in the following order :

- the crankshaft pulley
- the camshaft pulley
- the coolant pump drive pulley
- the tensioner roller



Position the belt tension measuring equipment [4] .

Slacken the nut (3) .

Turn the roller tensioner (4) anti-clockwise to display 44 SEEM units .

Tighten the nut (3) .

Remove :

- the camshaft pulley rod [3]
- the engine flywheel rod [2]
- the belt tension measuring equipment [4]

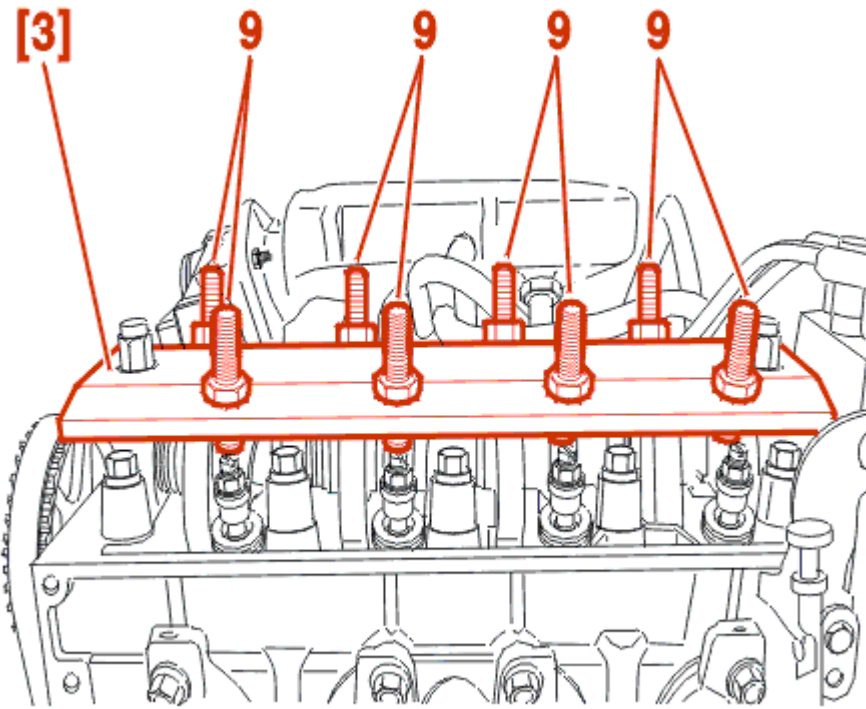
Turn the crankshaft 4 turn(s) in the direction of running .

Without moving it backwards, set the flywheel .

Check the timing adjustment (Possibility of pinning the camshaft) .

If the camshaft cannot be set : Restart tensioning operations for fitting the timing belt .

4 - CHECK



Slacken the bolts (9) .

Position the valve rocker contact plate [3] observing its fitting direction in relation to the timing gear .

Tighten the bolts (9) (Ensure that all of the cams are free) .

WARNING : tighten the bolts (9) to free the cams but do not place the valves in contact with the pistons .

Position the belt tension measuring equipment [4] .

Progressively slacken the roller tensioner to achieve a tension value between 29 and 33 SEEM units

Tighten the nut (3) .

Remove :

- the valve rocker contact plate [3] without disturbing its setting
- the engine flywheel rod [1]
- the belt tension measuring equipment [4]

Turn the crankshaft two turns in the direction of running .

Check that the flywheel and camshaft can still be pegged .

If the camshaft cannot be set : Restart tensioning operations for fitting the timing belt .

5 - REFITTING (CONTINUED)

Fit :

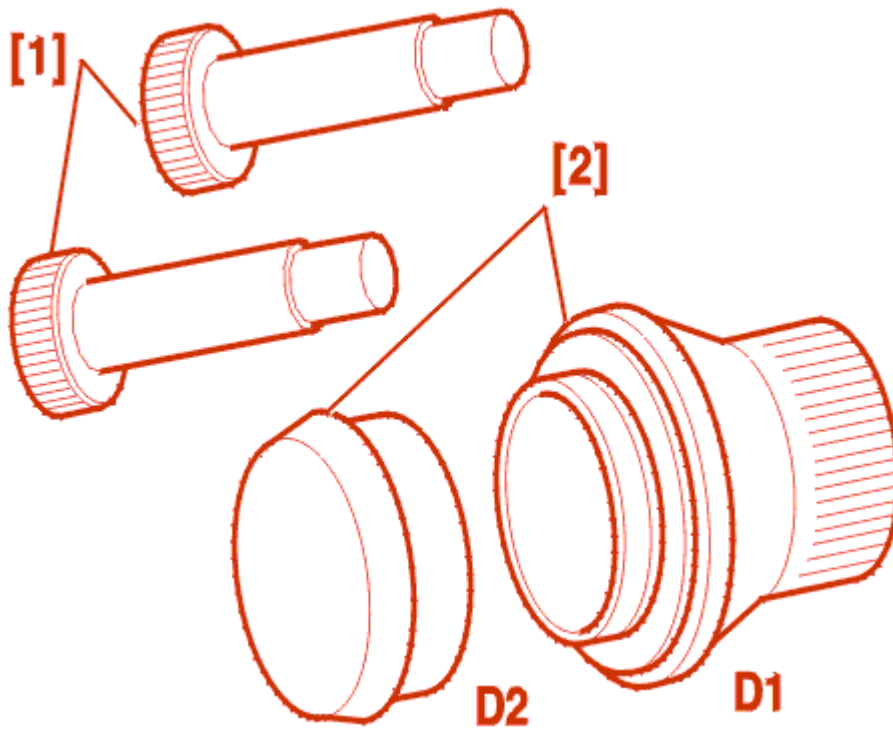
- the crankshaft pulley
- the sump
- the intermediate cover

- the top cover
- the cylinder head cover
- the ancillary drive belt

Place the gear lever in neutral .

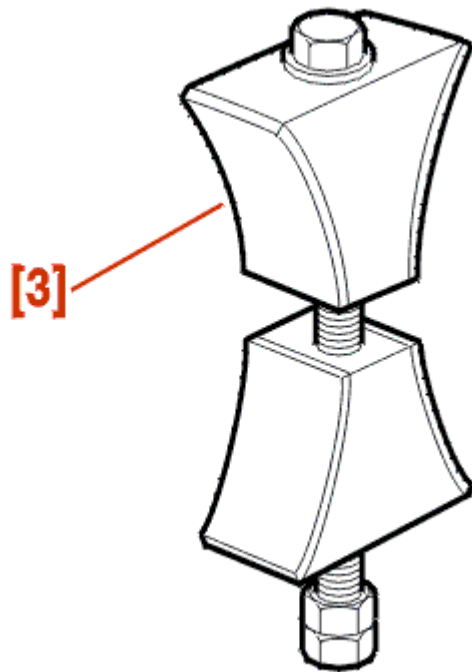
Return the vehicle to its wheels .

B1EG21K1 - 307 EW10J4 ENGINE
REMOVAL - REFITTING CAMSHAFT
1 - SPECIAL TOOLS



[1] Camshaft hubs setting rods (-).0189-A .

[2] Fitting drift for camshaft seal (-).0189-D1/D2 .

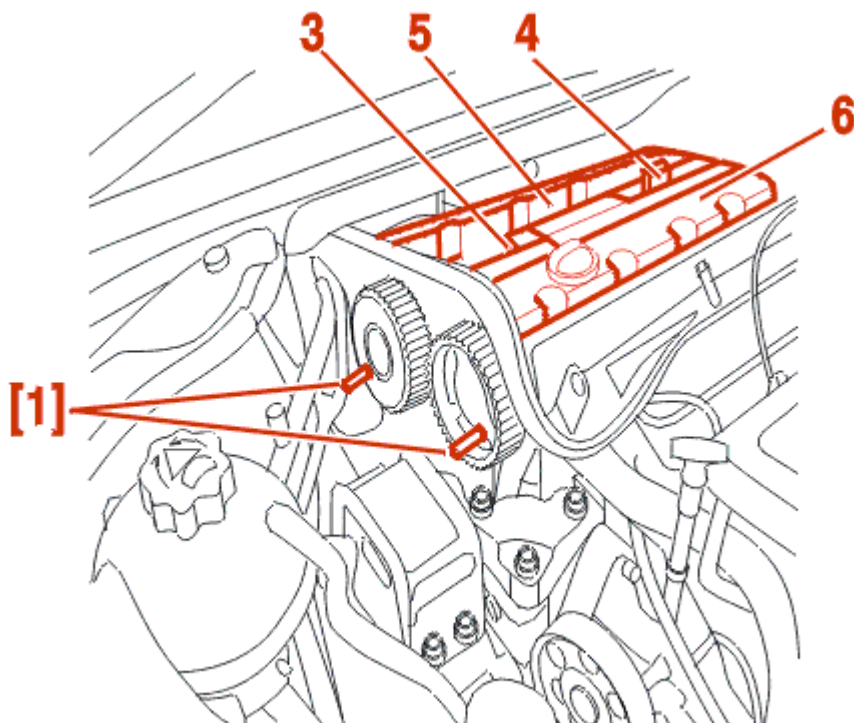


[3] Timing pulley braking tool (-).0153-AJ .

2 - REMOVAL

Remove :

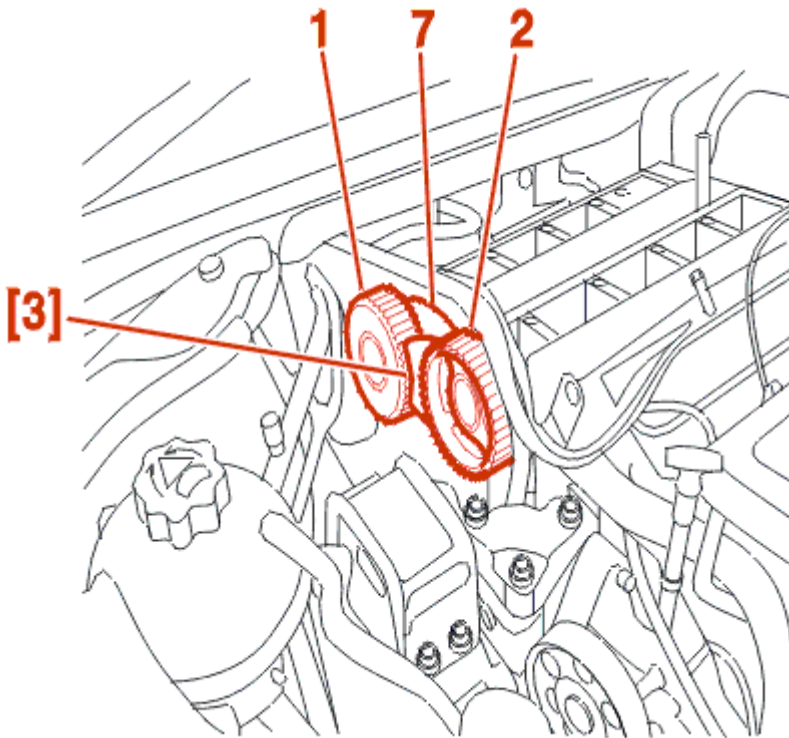
- the timing belt
- the style cover



Remove :

- the camshaft setting rods [1]
- the compact coil unit (3)
- the sensor (4)

- the cylinder head covers (5) - (6) (slacken the bolts progressively in a spiral sequence, starting from the outside)



Fit the tool [3] between the camshaft pulleys (1) - (2) .

Slacken the camshaft hub mounting bolts .

Remove the pulleys (1) - (2) .

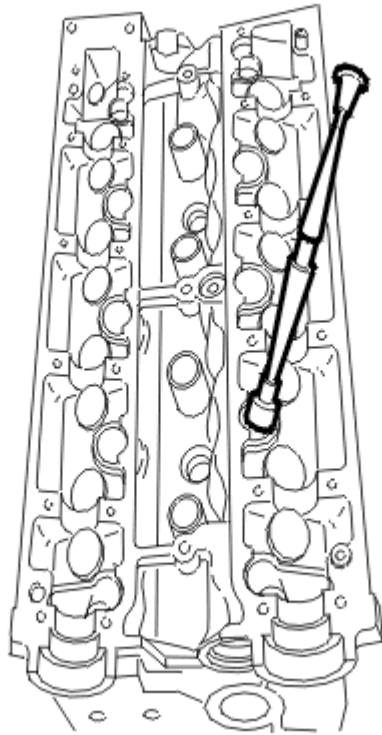
Remove the timing cover (7) .

Slacken the camshaft bearing cap cover securing bolts, progressively and in a spiral sequence starting from the outside, so as to separate the mating surfaces by a few millimetres .

Remove the camshaft bearing housings .

Remove the camshafts :

- tilt each camshaft by pressing on the end (clutch side) to release the centralising bearing (timing side)



If the tappets are removed :

- mark the positions of the tappets before removal
- use a valve grinding type suction cup tool

Remove oil from the threads receiving the camshaft bearing housing securing bolts .

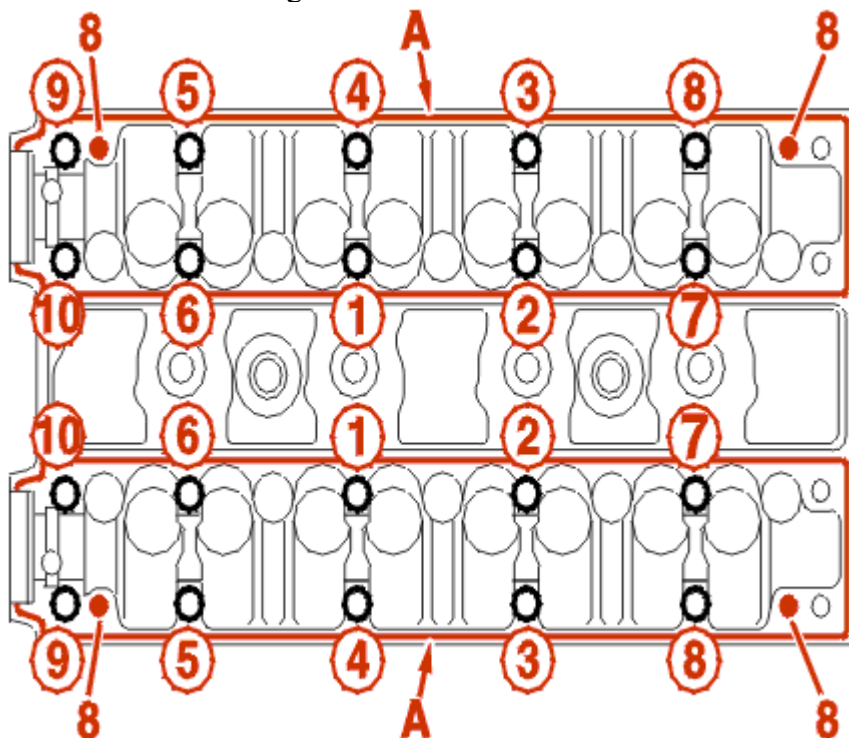
3 - REFITTING

Lubricate the tappet bodies .

Refit the tappets in their original positions .

Check that the tappets rotate freely in the cylinder head .

Oil the camshaft bearings .



Check that the pins (8) are present .

Position the camshaft fitted with the sensor ring (4) on the exhaust side .

Position the second camshaft .

apply a bead of E10 jointing paste at (A) round the perimeter of the joint faces and the tappings for the securing bolts .

Replace the bearing housing with the sensor hole (4) on the exhaust side .

Refit the second bearing housing .

Finger tighten then progressively tighten the securing bolts in the order shown (1 to 10) .

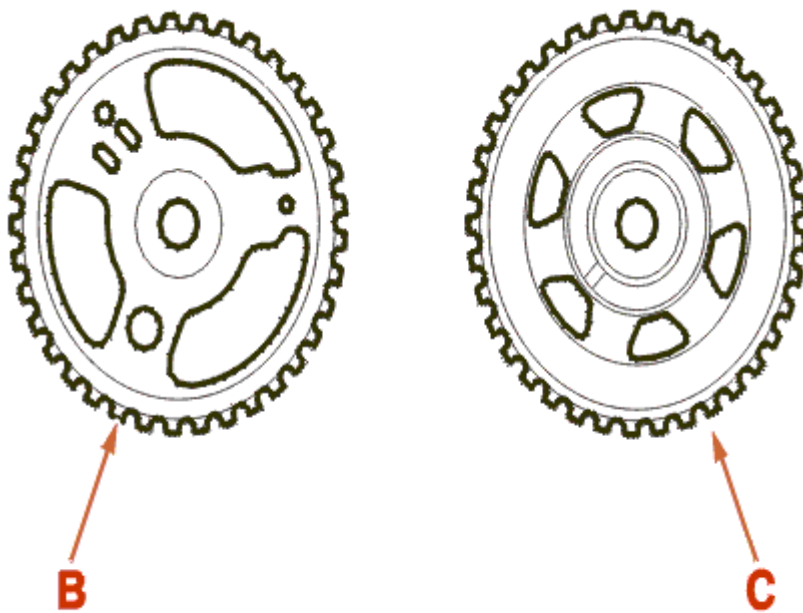
Pre-tighten : 0.5 da.Nm .

Tightening torque : 1 da.Nm .

Replace the timing gear cover (7) .

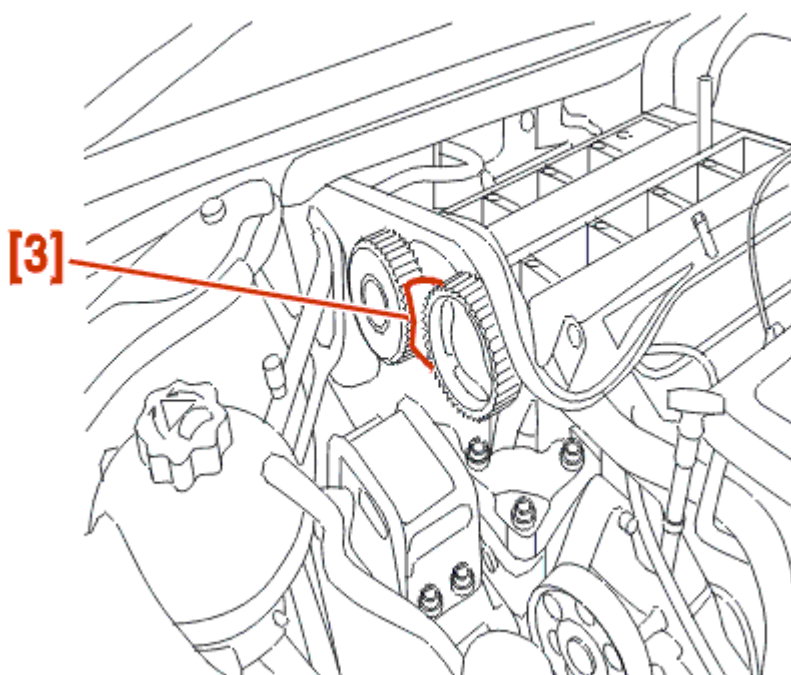
Before fitting the camshaft seal, ensure that the bottom of the seat is free of sealing compound .

Fit new seals using the tool [2] .

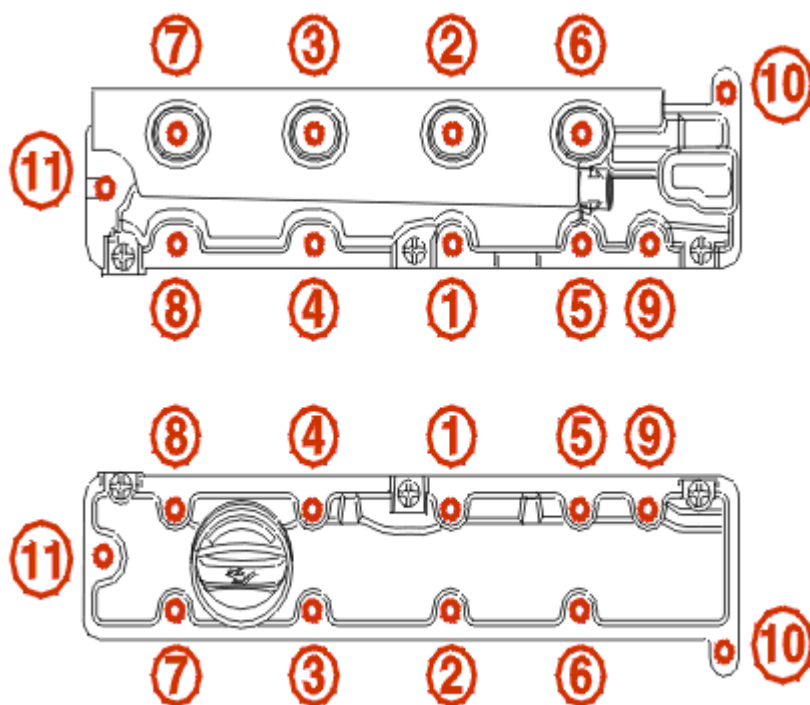


Identification Camshaft gears :

- B = inlet
- C = exhaust

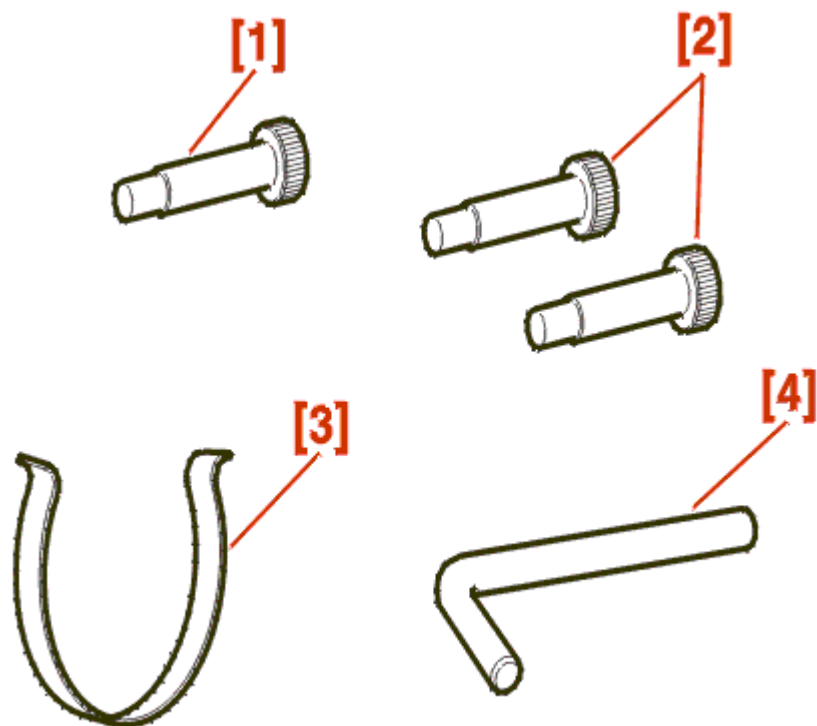


Fit the tool [3] between the camshaft pulleys .
Tighten the hub mounting bolts to 7.5 da.Nm .

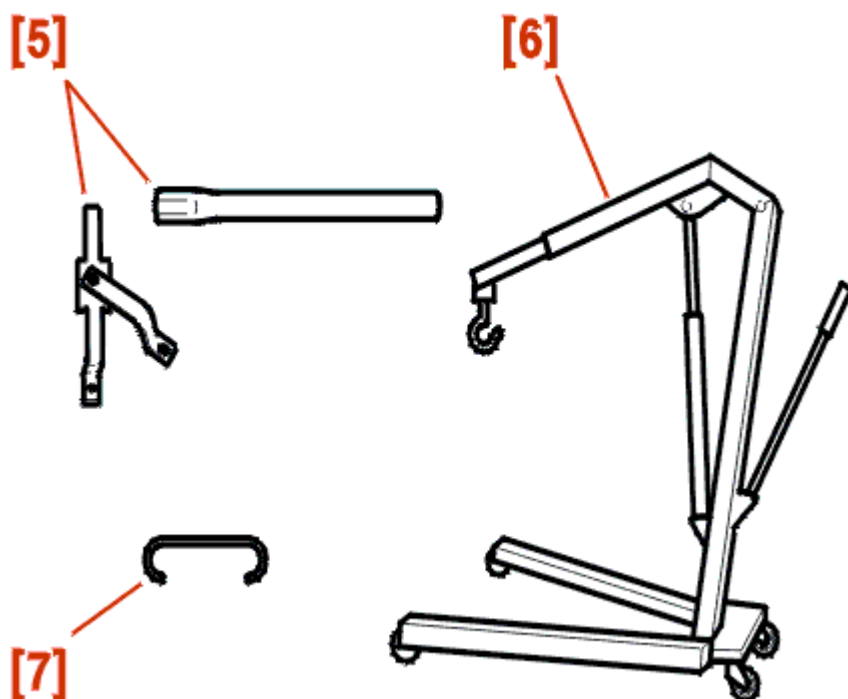


Refit the cylinder head covers fitted with new gaskets in the order indicated .
Proceed bolt by bolt in the order shown : 1 da.Nm .
Continue the fitting operations in the reverse order to removal .
refit the timing belt .

B1EG22K1 - 307 EW10J4 ENGINE
REMOVAL - REFITTING TIMING BELT
1 - SPECIAL TOOLS



- [1] crankshaft setting rod (-).0189-B .
 [2] Camshaft hubs setting rods (-).0189-A .
 [3] Belt retaining clip (-).0189-K .
 [4] Dynamic tensioner roller positioning rod (-).0189-J .



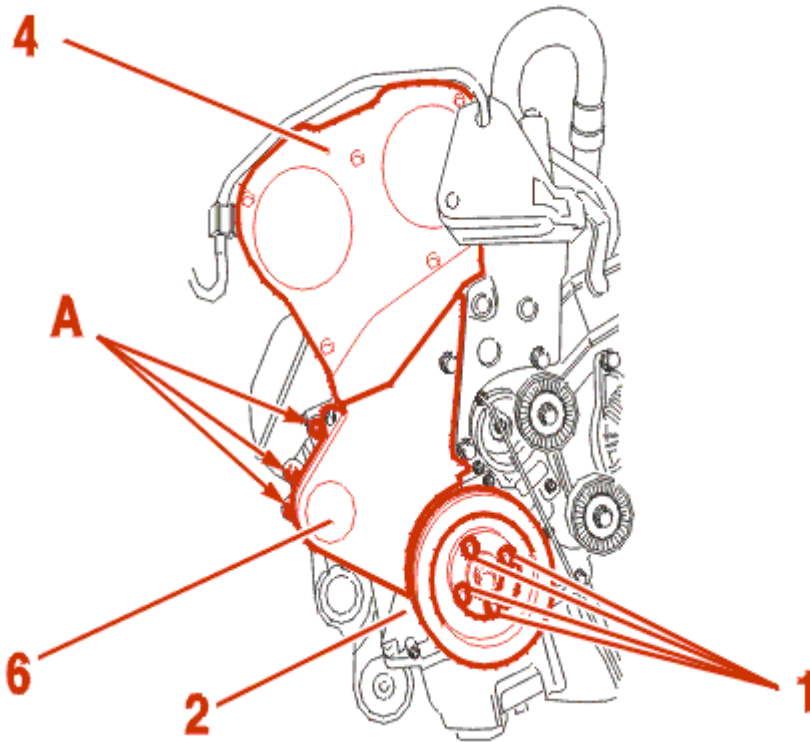
- [5] Camshaft hub immobilisation tool (-).0606-A1Y - (-).0606-A2 .
 [6] Engine lifting tool .
 [7] Engine hook (-).0102-ZV .

2 - REMOVAL

Remove :

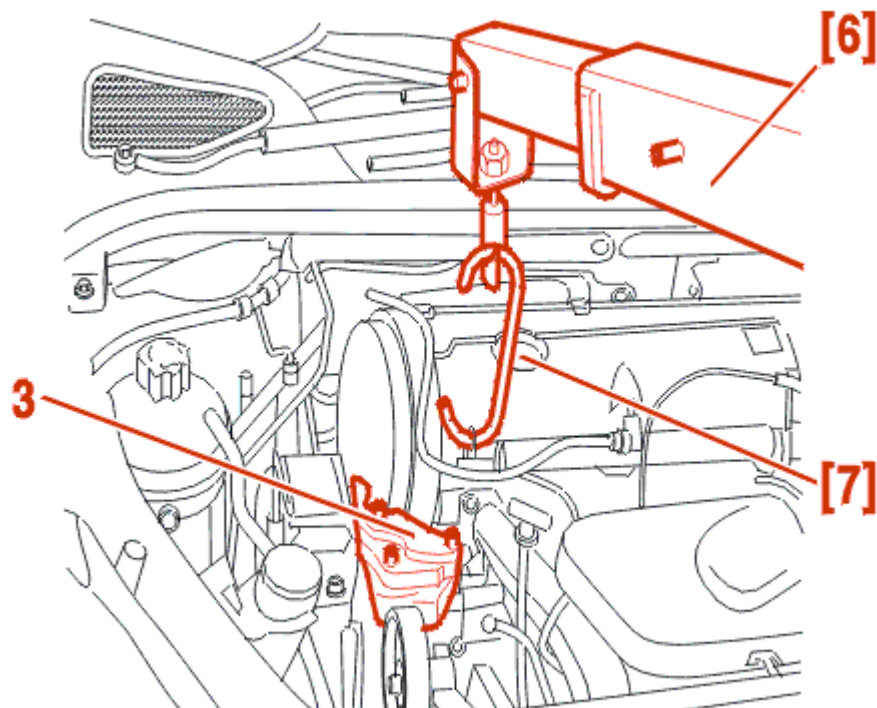
- the front right mud shield

- the ancillary drive belt

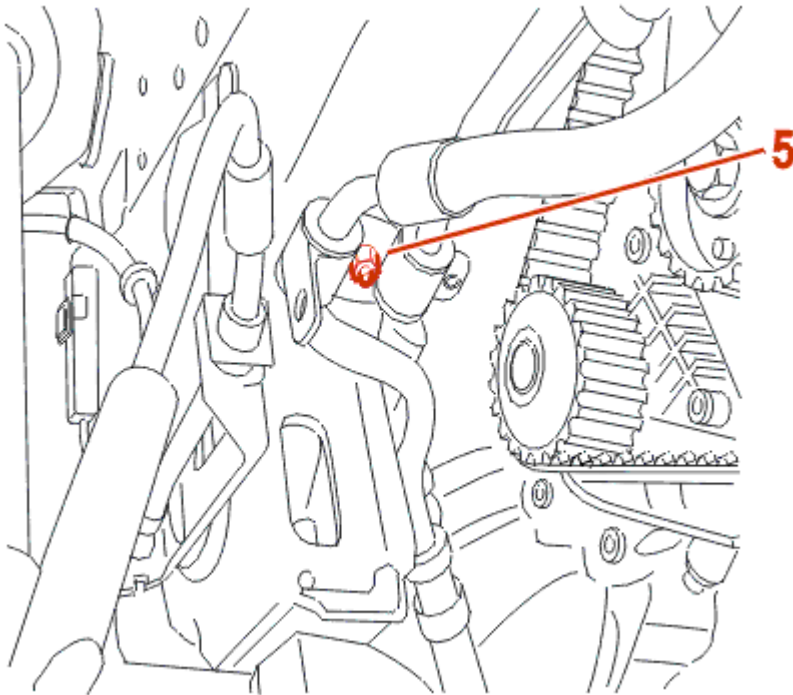


Remove :

- the bolts (1)
- the ancillary drive pulley (2)



Using the tools [6] and [7], secure on the sling hook .



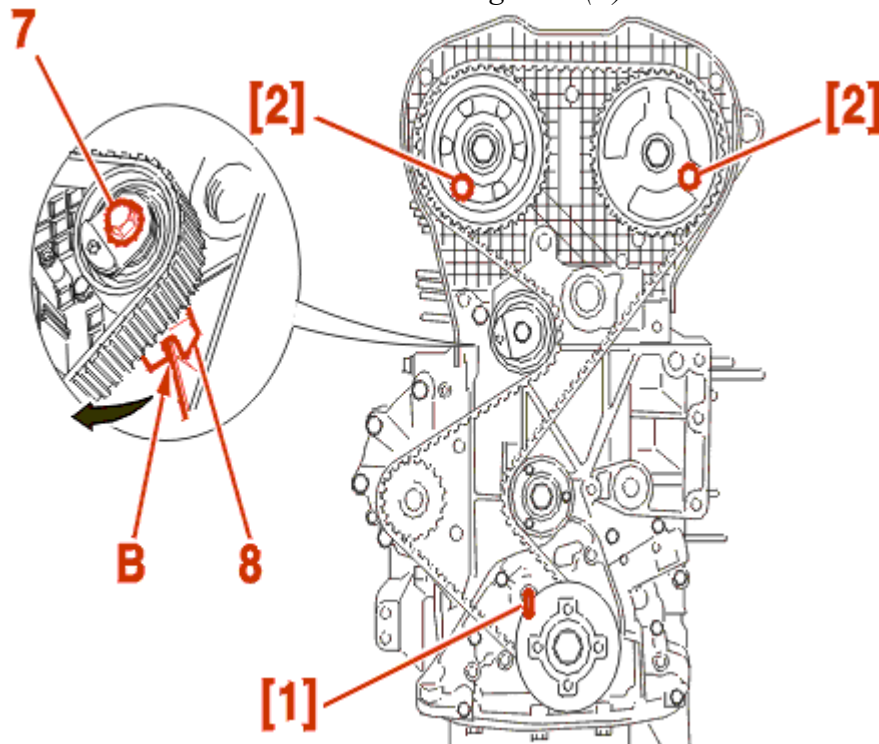
Remove :

- the intermediate right engine mounting (3)
- the top timing cover (4)
- the power steering pipes fixing bolt (5)

Move aside the power steering pipes .

Remove the lower timing cover (6) taking care not to damage it .

WARNING : do not slacken the securing bolts (A) .



Peg :

- the crankshaft (using the tool [1])
- the camshafts (using the tool [2])

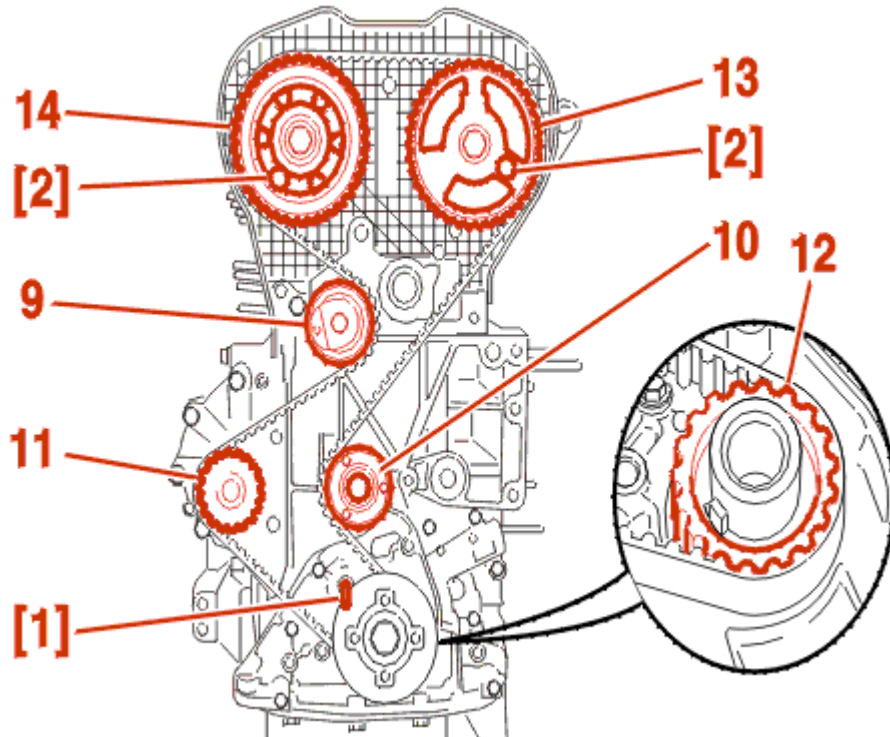
Slacken the bolt (7) (Fully) .

Remove the roller bracket (8) from the rib (B) of the cylinder block (to allow it greater movement) .

Remove the timing belt .

3 - REFITTING

Always replace the timing belt .



IMPERATIVE : check that the rollers (9) - (10) as well as the coolant pump (11) turn freely (no play or hard spots) ; also check that these rollers are not noisy and/or do not show traces of grease .

If the idler roller (10) is replaced, tighten to 3.5 dan.m .

Fit the belt on the crankshaft gear following the direction of fitting (12) .

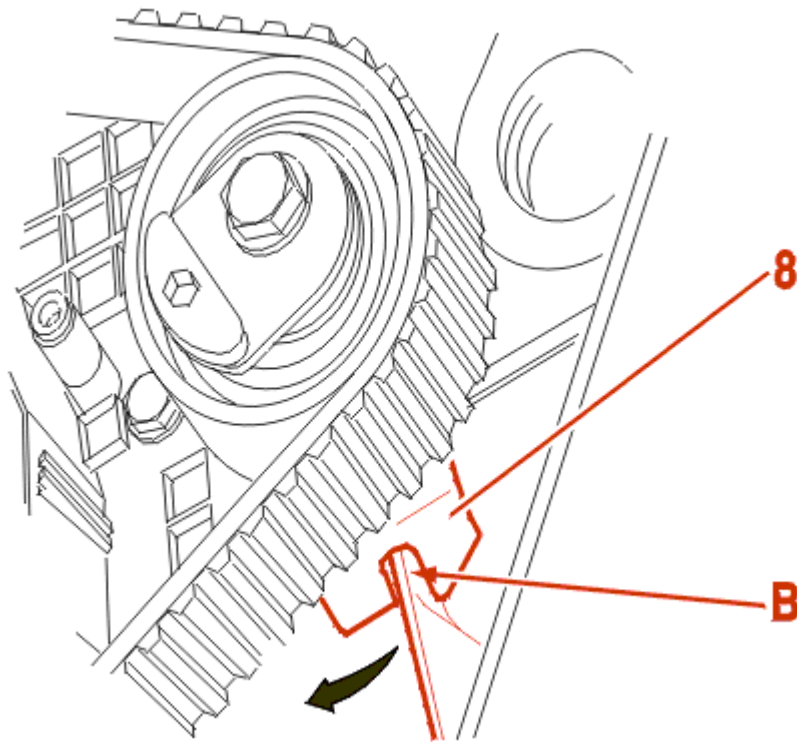
Immobilise the belt using the tool [3] .

Fit the timing belt, fully taut, in the following order :

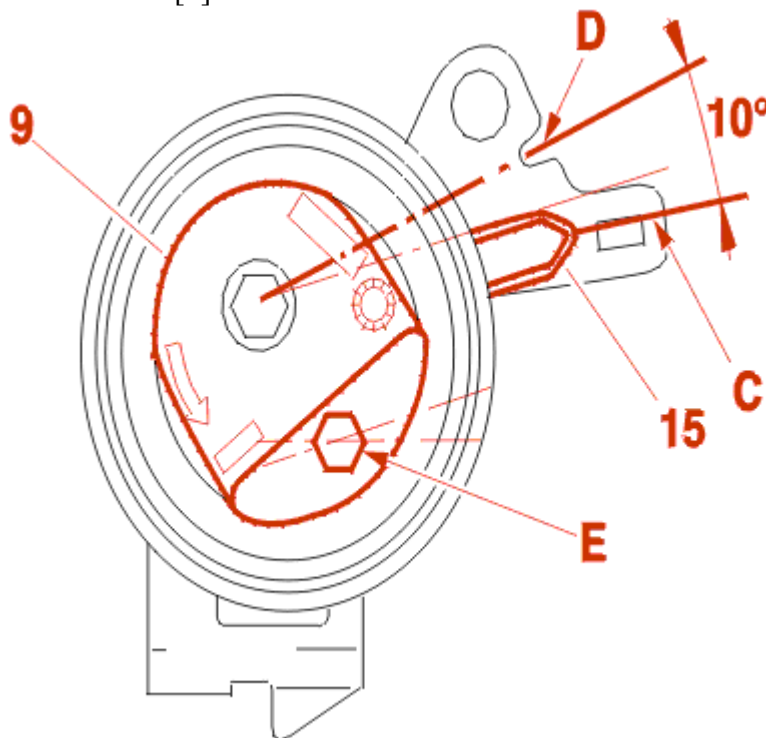
- the tensioning roller (10)
- the camshaft pulleys (13) - (14)
- the coolant pump (11)
- the tensioner roller (9)

4 - FITTING AND TENSIONING THE TIMING BELT

IMPERATIVE : operation(s) to be carried out with the engine cold .



Position the roller bracket (8) back on rib (B) of the cylinder block .
Remove the tool [3] .



C : Maximum position .

D : Nominal tensioning position .

Using the hexagonal socket (E), turn the roller in the direction of the arrow until the pointer (15) is in position (C) to tension the belt to the maximum .

Fit the tool [4] .

Turn the roller in the direction opposite to that shown on the roller arrow by means of the torx recess until cursor just makes contact with pin .

IMPERATIVE : never turn the roller (9) by one full turn .

NOTE : this operation allows the pointer (15) to be located in the nominal position (D) .

Tighten screw (7), supporting roller with torx recess (E) : Tightening torque 2 da.Nm .

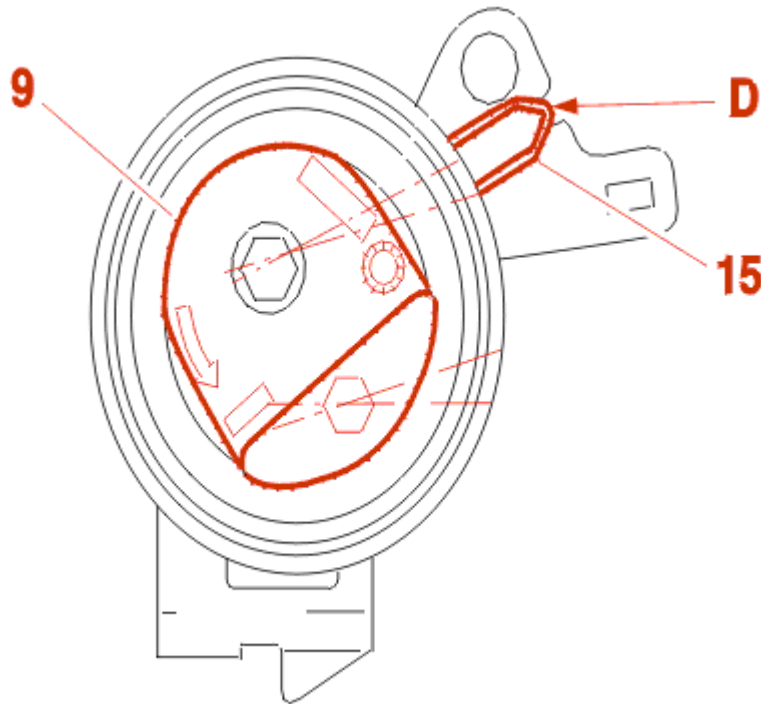
Remove setting rods [1] - [2] and [4] .

Turn the crankshaft 10 turn(s) in the direction of running .

IMPERATIVE : never turn the crankshaft in the reverse direction ; no pressure or outside force must be applied to the belt .

5 - CHECK

5 - 1 - TIMING BELT TENSION



Check position of tensioner index (15) .

If tensioner index (D) is not in its adjustment position : Restart tensioning operations for fitting the timing belt .

5 - 2 - POSITION OF THE CRANKSHAFT

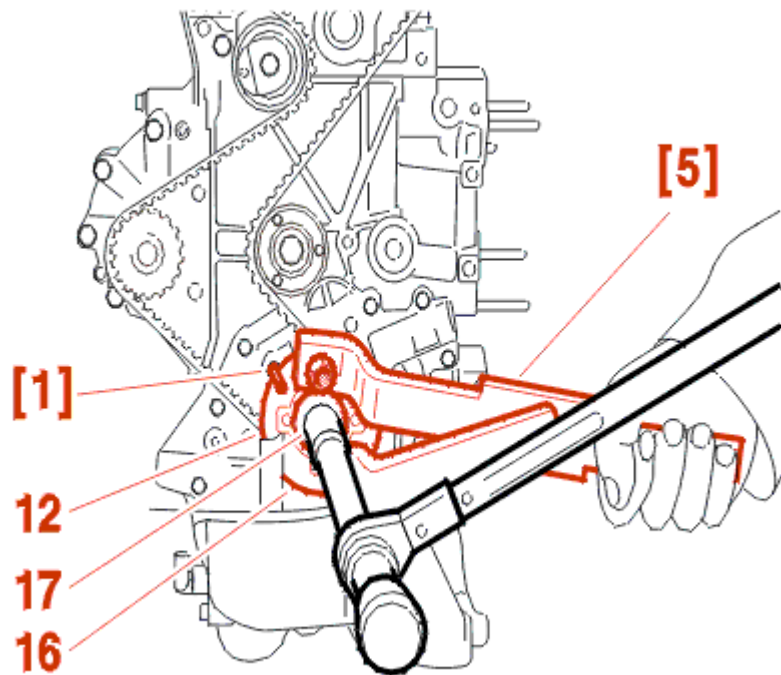
Insert pin to locate inlet camshaft pulley (Using the tool [2]) .

Peg the crankshaft (Using the tool [1]) .

If it is possible to fit tool [1], continue replacement operations .

If it is not possible to fit tool [1], reposition flange (16) .

5 - 3 - REPOSITIONING OF FLANGE



Immobilise crankshaft (Using the tool [5]) .

Loosen screw (17) to release pinion (12) from crankshaft .

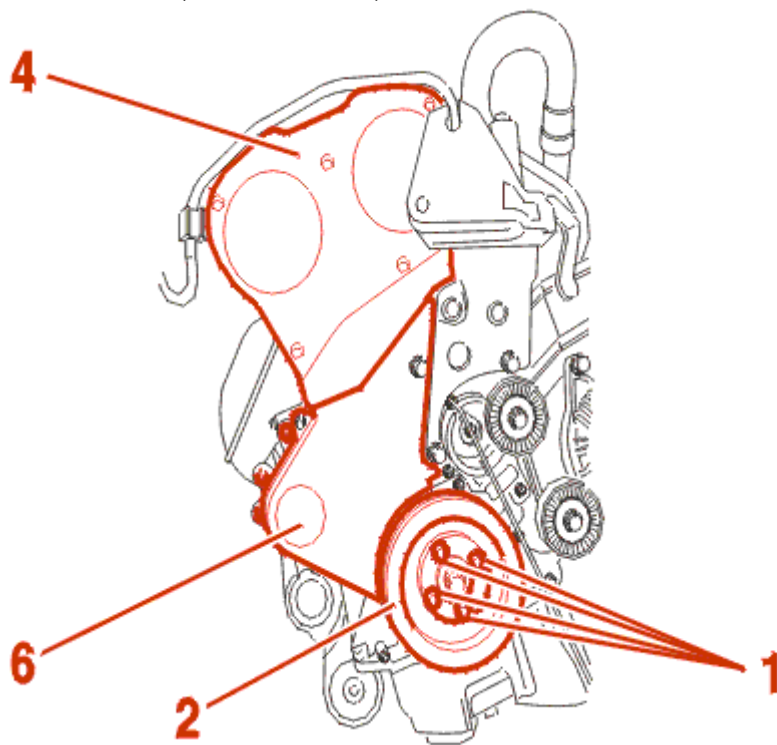
Position flange (16) at timing point (Using the tool [5]) .

Fit the tool [1] .

Tighten screw (17) to 4 ± 0.4 dan.m, then proceed with angular tightening of 53 ± 4 (Using a FACOM D.360 type tool) .

Remove the tools [1] - [2] - [5] .

6 - REFITTING (CONTINUED)



Fit :

- the bottom timing cover (6)

- the ancillary drive pulley (2)
- the bolts (1) to 2 da.Nm
- the top timing cover (4)
- the power steering pipes fixing bolts (5)
- the intermediate right engine mounting (3)

Tightening of the 7 bolts of the bracket to 6 dan.m .

Remove the tools [6] - [7] .

fit the ancillary drive belt .

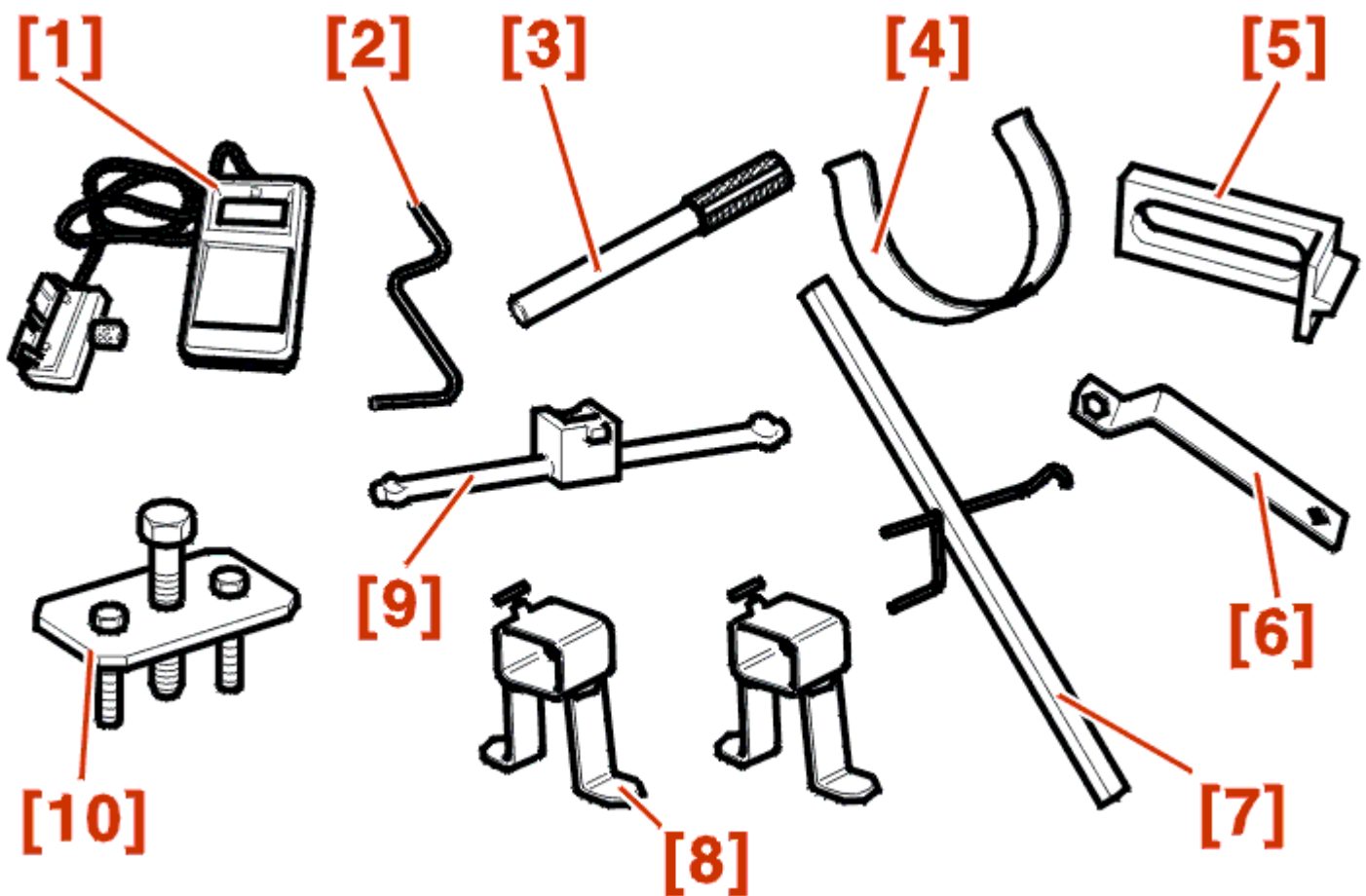
Continue the fitting operations in the reverse order to removal .

Tighten the wheels to 9 daN.m .

B1EG23K1 - 307 DW10TD ENGINE

REMOVAL - REFITTING TIMING BELT

1 - SPECIAL TOOLS



[1] (-).0192 tension measuring equipment .

[2] Crankshaft setting rod (-).0188-Y .

[3] Camshaft setting rod (-).0188-M .

[4] Belt retaining clip (-).0188-K .

[5] Engine flywheel lock ring (-).0188-F .

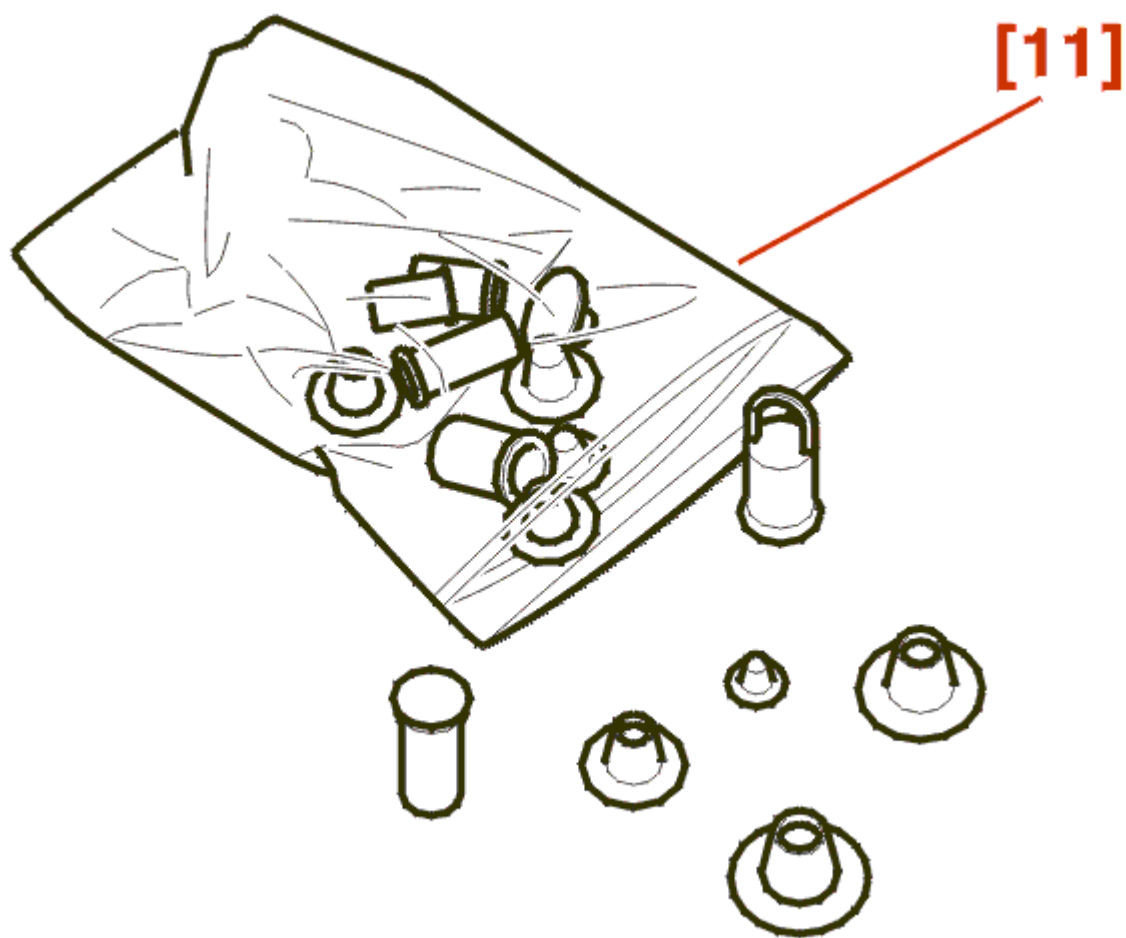
[6] Crankshaft spanner (-).0117-EZ .

[7] Cross member (-).0911-AY .

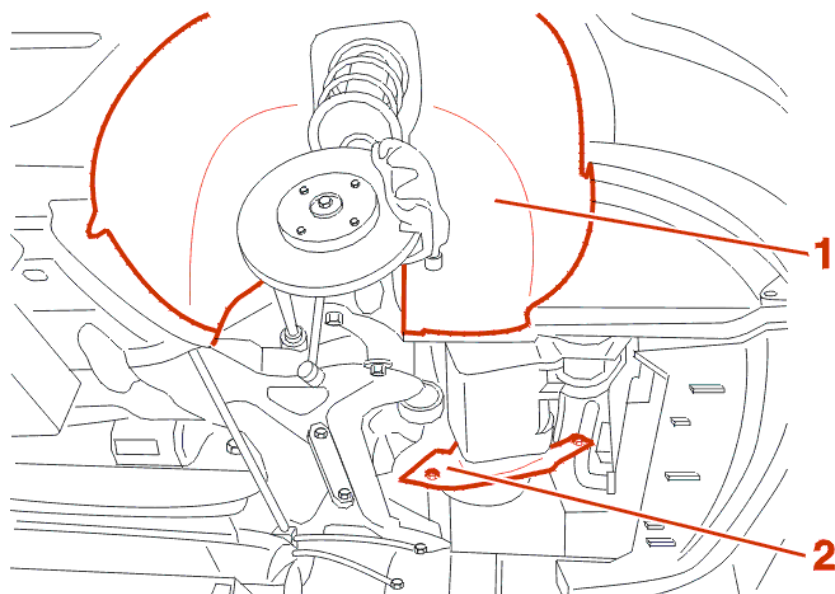
[8] Bracket (-).0911-A2 .

[9] Tension lever (-).0188-J2 .

[10] Pulley extractor (-).0188-P .



[11] Set of plugs (-).0188-T .
2 - REMOVAL



Remove :

- the front right-hand wheel
- the front right mud shield (1)
- the ancillary drive belt
- the style covers
- the impactor (2)

Lock the flywheel with the stop [5] .

Refit the screw of the pulley driving the accessories .

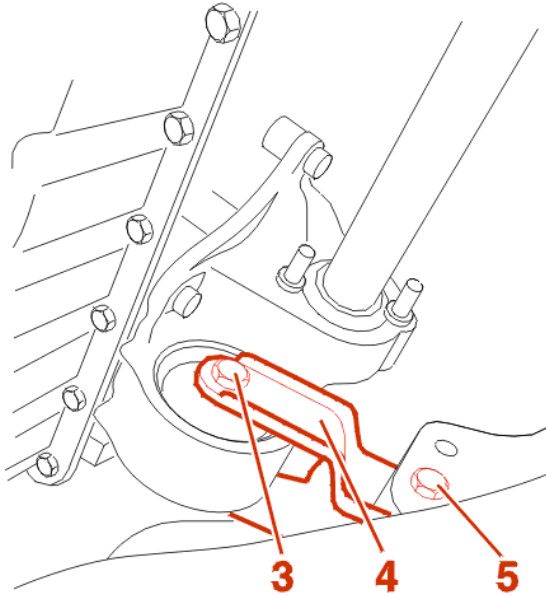
Refit the bolt without the washer .

Remove the tool [5] .

Remove the pulley driving the accessories using the tool [10] .

Loosen the exhaust line from the turbo .

IMPERATIVE : uncouple the exhaust line to avoid destroying the hose; this cannot withstand the torsion, traction or bending stresses caused by the removal of one of the power train supports .

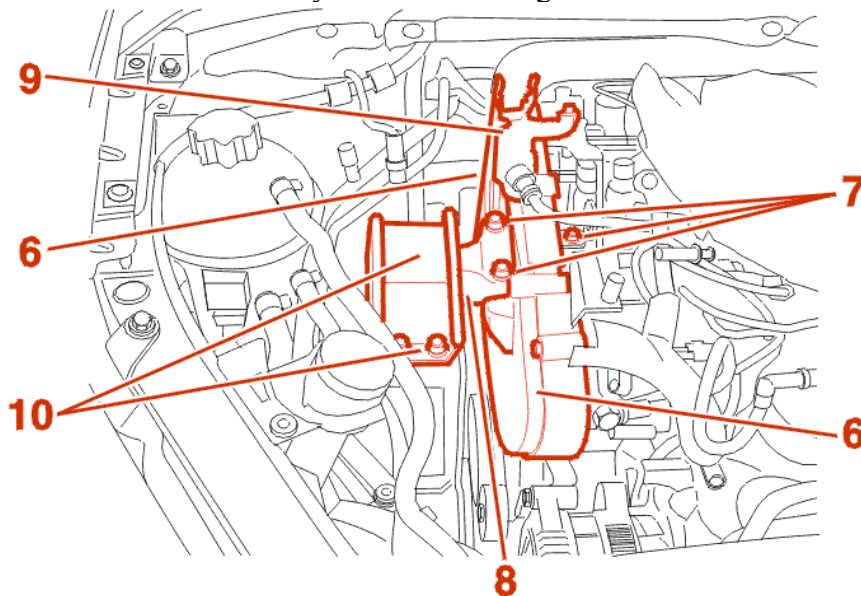


Remove :

- the fasteners (3) - (5)
- the lower torque reaction link (4)
- the fixings for the inlet air duct
- disconnect and move aside the priming cone

Support the engine with tool [7] - [8] .

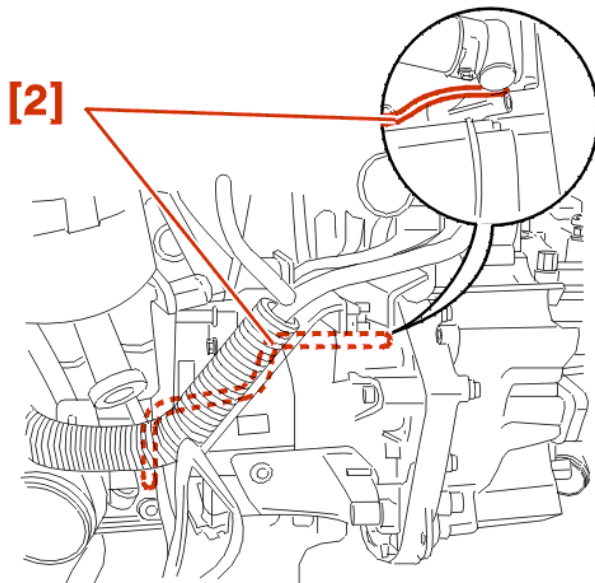
Protect the radiator honeycomb with strong cardboard cut to the dimensions of the radiator .



Remove :

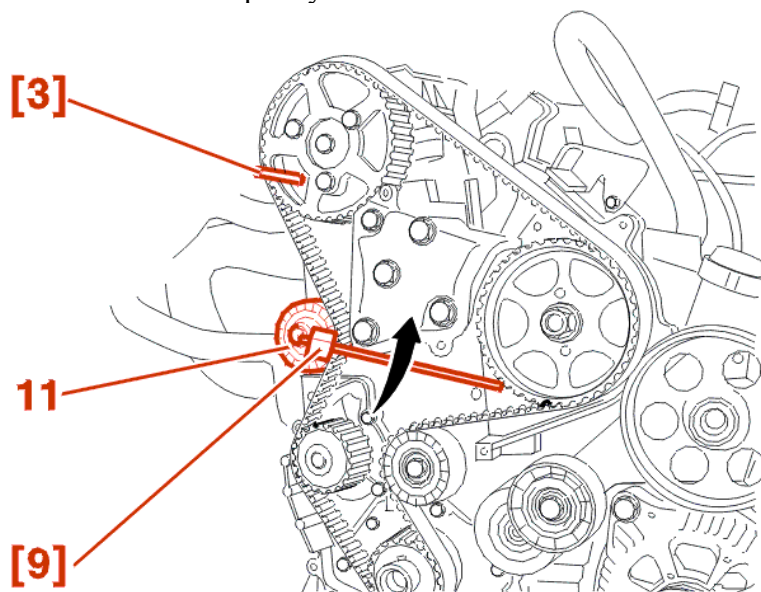
- the priming cone (9) bracket
- the 3 timing housings (6)
- the bolts (7)
- the right-hand engine mounting (8)

Turn the crankshaft with the tool [6] .



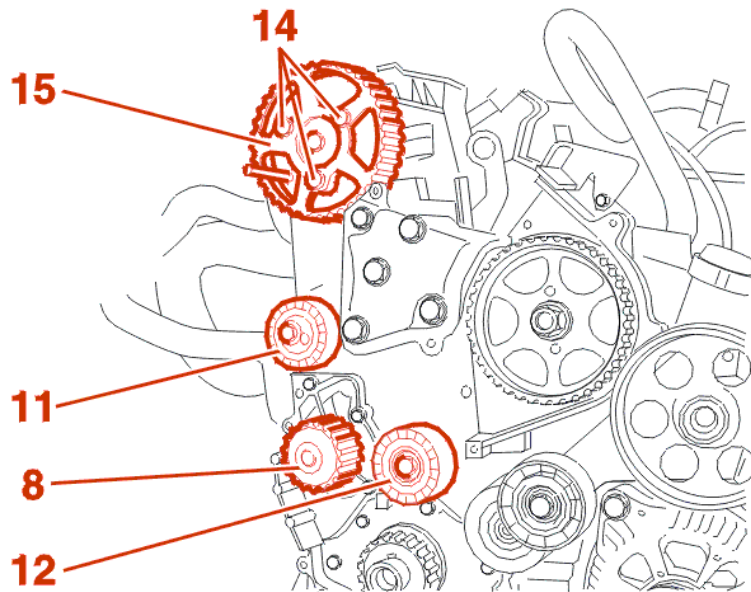
Peg :

- the engine flywheel using tool [2]
- the camshaft pulley



Unlock the nut from the tensioner roller (11) .
Retighten the fastener in the maximum slack position .
Remove the timing belt .

3 - REFITTING



IMPERATIVE : check that the rollers (11) - (12) as well as the coolant pump (8) turn freely (no play or hard spots) ; also check that these rollers are not noisy and/or do not show traces of grease .

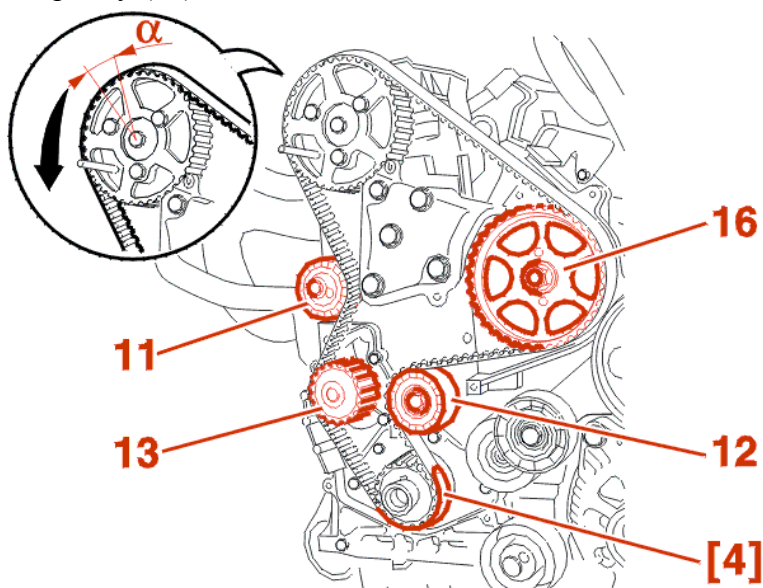
NOTE : in the event of replacement ; tighten the bolt (12) to 4.3 da.Nm .

Slacken the bolts (14) .

Check that the pulley (15) rotates freely on its hub .

Tighten the bolts (14) by hand .

Turn the pulley (15) clockwise to the limit at the end of the slots .



Fit the timing belt, fully taut, in the following order :

- crankshaft ; immobilise the belt using the tool [4]
- roller tensioner (12)

Lay the timing belt on the pulley (16) .

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

WARNING : the angular movement (α) of the pulley in relation to the belt must not be more than one tooth space .

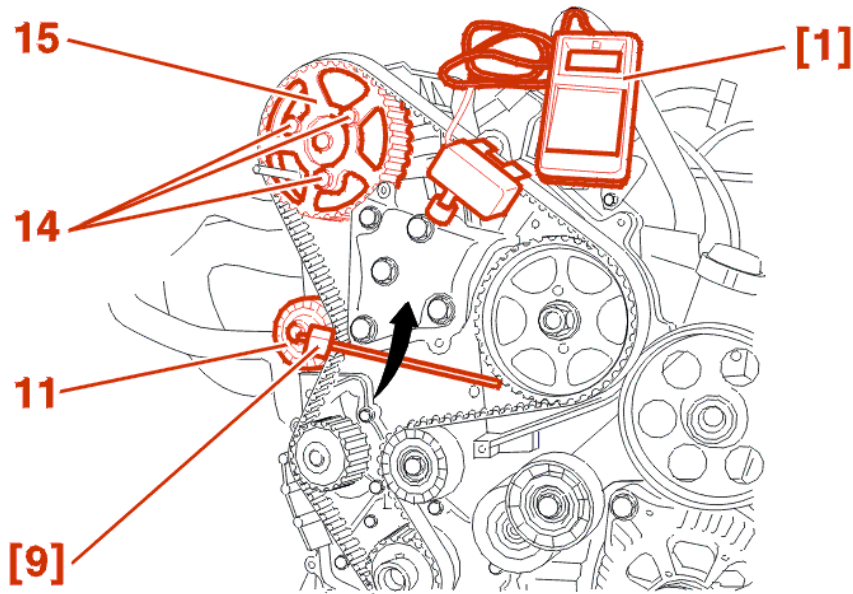
Engage the belt on the roller tensioner (12) and on the coolant pump gear (13) .

Place the tensioner roller (11) in contact with the belt .

Pre-tighten the tensioner roller securing bolt (11) to 0.1 daN.m .

Remove the tool [4] .

4 - PRE-TENSIONING AND FITTING THE TIMING BELT



Fit the tool [1] .

NOTE : check that the tool is not touching anything in the near vicinity .

Turn the roller tensioner (11) anti-clockwise, using tool [9] .

Display 98 ± 2 SEEM units .

Tighten the bolt (11) to 2.3 da.Nm. without altering the position of the roller .

Remove the tool [1].

IMPERATIVE : by removing a bolt (14) on the pulley (15), ensure that these bolts are not at the limit of the slot ; if this is the case, repeat the timing belt fitting operation .

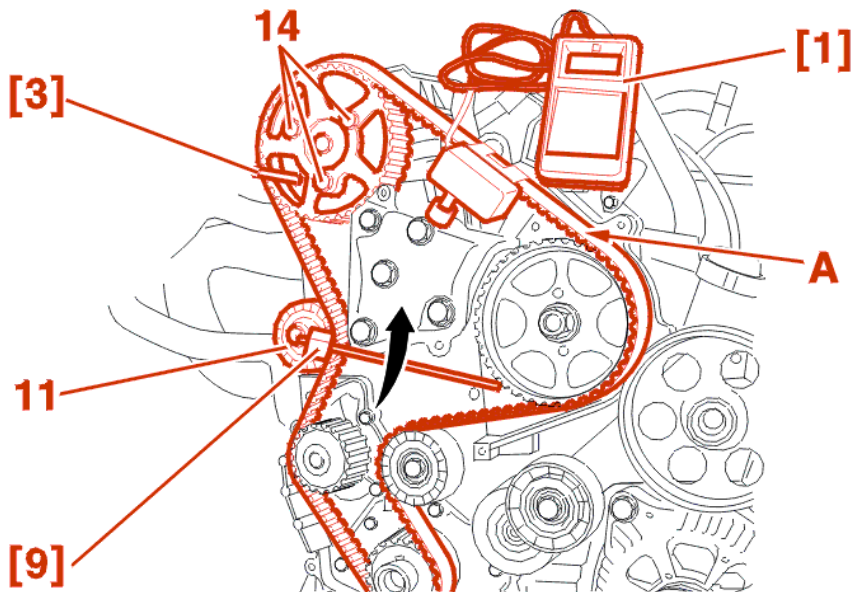
Tighten the bolts (14) to 2 daN.m .

Remove the setting pins [3] - [2] .

Turn the engine over 8 times in the normal direction of rotation .

IMPERATIVE : never turn the crankshaft in the reverse direction .

5 - FITTING AND TENSIONING THE TIMING BELT



Refit the rods [2] -[3] .

Slacken the bolts (14) .

Tighten the bolts (14) by hand .

Slacken the bolts (14) by 1/6 turn .

Slacken the bolt (17) .

Place the tool [1] on the span (A) .

Turn the roller tensioner anti-clockwise, using tool [9] .

Display 54 ± 2 SEEM units .

Tighten the bolt (17) to 2.3 da.Nm. without altering the position of the roller .

Tighten the bolts (14) to 2 daN.m .

Remove the tool [1] to release the internal forces .

Refit the tool [1] .

The tension value should be between 51 and 57 SEEM units .

IMPERATIVE : if the value read is outside the tolerance : slacken the belt and repeat the operation

Remove :

- the equipment [1]
- the pegs [2] - [3]

6 - CHECKING THE VALVE TIMING

Turn the crankshaft 2 revolutions in the direction of running without turning in the reverse direction .

Fit the rod [2] .

IMPERATIVE : visually check that the offset between the camshaft hub hole and the corresponding setting hole does not exceed 1 mm .

Remove the rod [2] .

Fit :

- the bottom timing cover
- the timing covers
- the engine mounting
- the bolts (14) ; 6.1 da.Nm
- the bolts ; 2 da.Nm
- the priming cone bracket

Refit the tool [5] .

Refit the torque reaction link (4) .

Tighten :

- the bolt (3) to 4.5 da.Nm
- the bolt (5) to 5 da.Nm

Refit the ancillaries drive pulley .

Clean the threads of the bolt of the pulley in the crankshaft by using a M16 X 150 tap .

Clean the thread of the bolt .

Tightening :

- pre-tighten to 4 danm+ LOCTITE FRENETANCH
- complete the tightening by rotating 51 degrees using a FACOM 360° type tool

Check the tightening :

- apply a torque of 19.5 danm using a torque wrench
- the wrench must trip before the screw rotates

If this is not the case :

- slacken the bolt
- recommence the entire tightening procedure

fit the ancillary drive belt .

Remove the tool [5] .

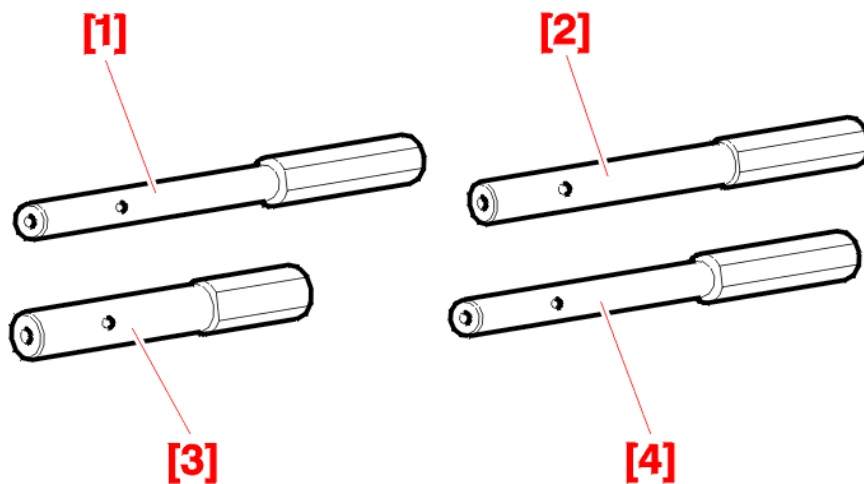
IMPERATIVE : always replace the exhaust clips .

Tighten the wheel bolts to 9 da.Nm .

Refit the various components in the reverse order to removal .

Initialise the various ECUs .

B1EG27K1 - 307 DV4TD ENGINE
REMOVAL - REFITTING TIMING BELT
1 - SPECIAL TOOLS

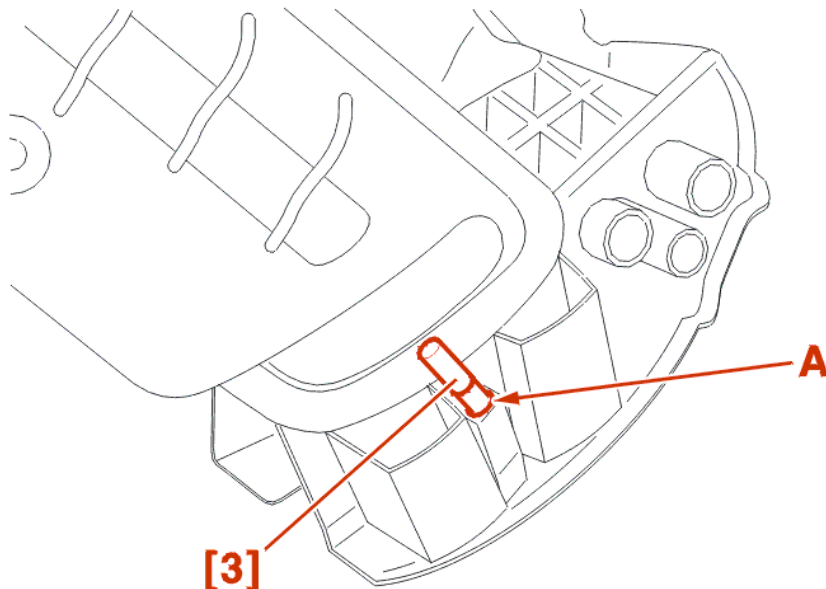


- [1] Crankshaft setting rod (-).0194-A .
[2] camshaft gear setting rod (-).0194-B .
[3] Timing tensioner roller pin (-).0194-F1 .
[4] Prevention of engine flywheel (-).0194-C rotation .

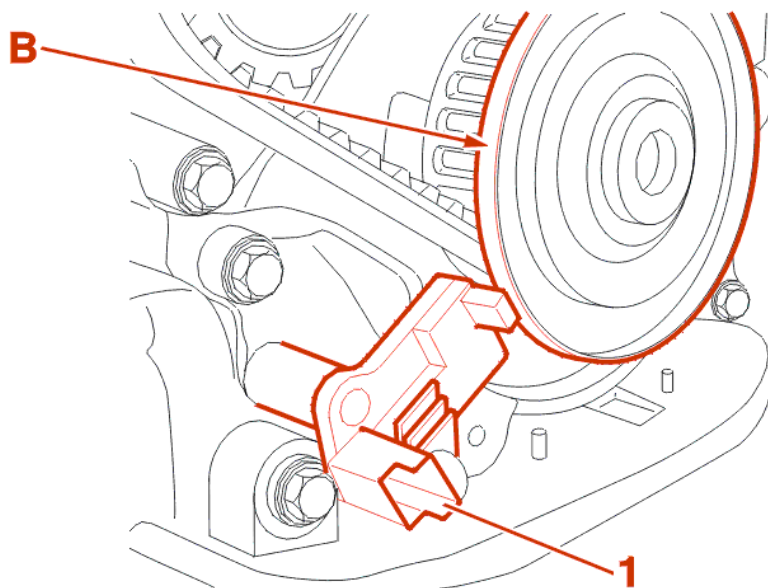
2 - REMOVAL

Remove :

- the front right-hand wheel
- the front right mud shield
- [THE ANCILLARY DRIVE BELT](#)



Place the tool [3] in the hole located in the crankshaft main bearing cap casting (A) .
Remove the ancillary drive pulley .
Move the electrical harness aside from the upper timing cover .
Remove the lower and upper timing covers .



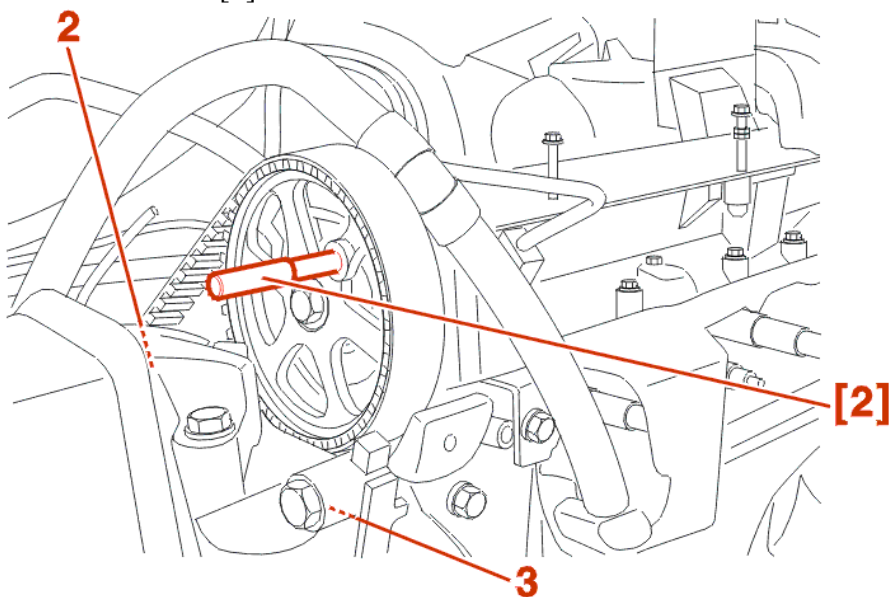
Remove the engine speed sensor (1) .

IMPERATIVE : the magnetic track (B) must not show any signs of damage and magnetic sources must be kept away from it ; otherwise, the crankshaft pinion will have to be replaced .

Remove the angle bracket which is to prevent shifting of position .

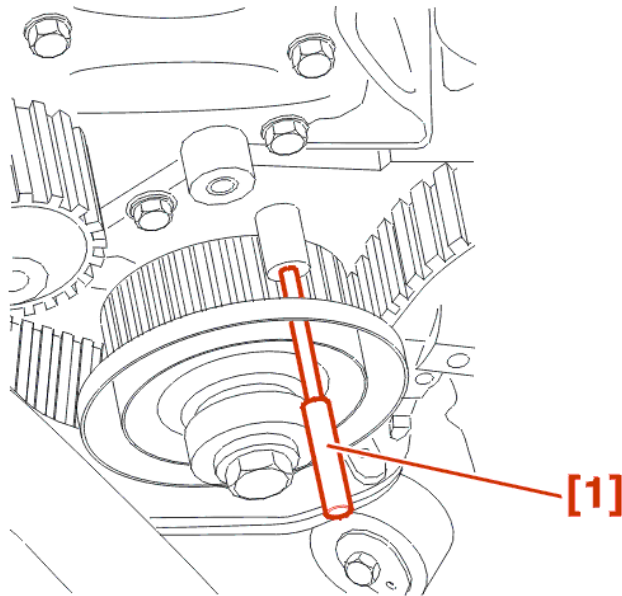
Refit the screw of the pulley driving the accessories .

Remove the tool [3] .



Turn the crankshaft clockwise using the ancillary drive bolt .

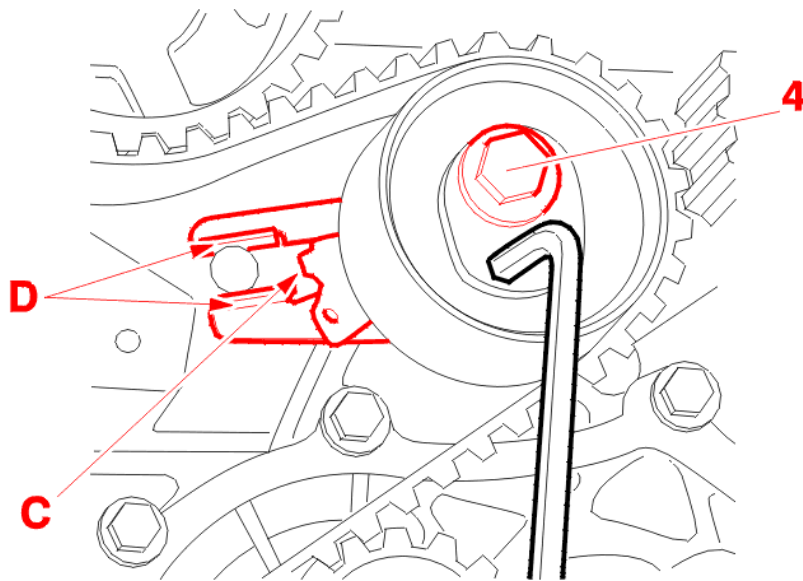
Peg the camshaft pulley with tool [2] .



Pin the crankshaft in the oil pump using the tool [1] .

Place a jack with a wooden shim under the oil sump to support the engine on removal of the right-hand engine mounting .

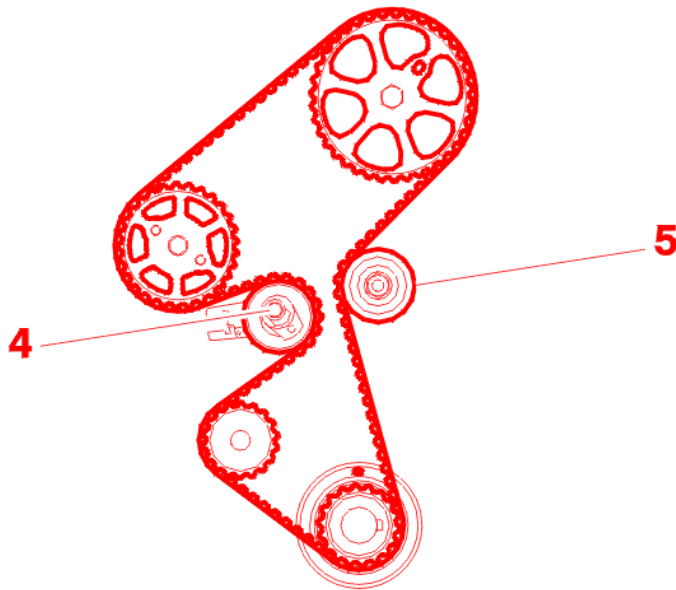
Remove the right-hand engine mounting (2) and its intermediate support (3) .



Slacken the tensioner roller mounting bolts (4) retaining slackness by using a hexagonal wrench .

Remove the timing belt .

3 - REFITTING



Check that the rollers as well as the coolant pump turn freely (no play or hard spots) .
Also check that these rollers are not noisy and/or do not show traces of grease .

Tighten :

- the bolt securing the roller ; 4.5 da.Nm
- the tensioner roller mounting bolt ; 1 da.Nm

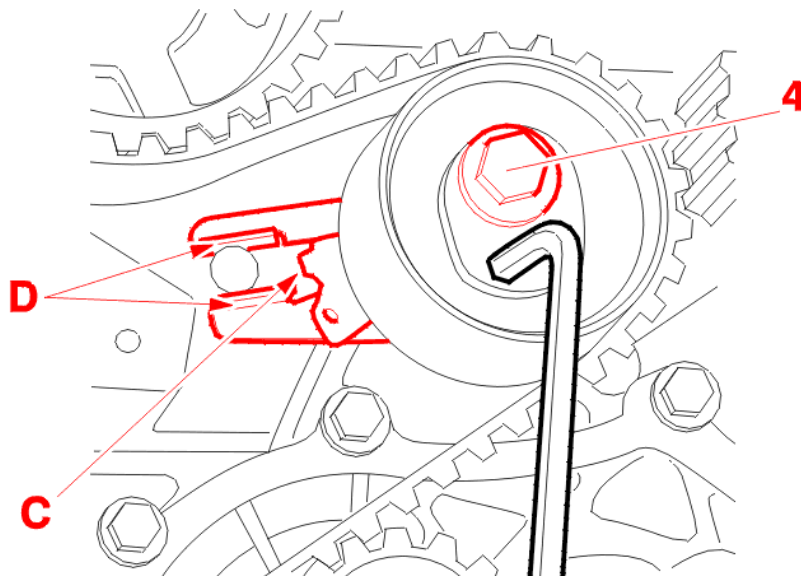
Check the sealing of the sealing rings at the oil pump and at the crankshaft .

Fit the timing belt, fully taut, in the following order :

- timing gear
- roller tensioner
- camshaft pulley (ensuring that the belt is placed correctly against the roller)
- high pressure pump
- coolant pump
- roller tensioner

Refit the anti-shift angle bracket and tighten it to 0.7 dan.m .

Slacken the tensioner roller (4) bolt .



Using a hexagonal wrench move the tensioner roller index C to the middle of checking zone D
turning the tensioner clockwise .

Tighten the bolt (4) to 3 da.Nm .

Remove the tools [1] - [2] .

Carry out 10 engine revolutions ensuring that the timing pinion is placed correctly on the crankshaft

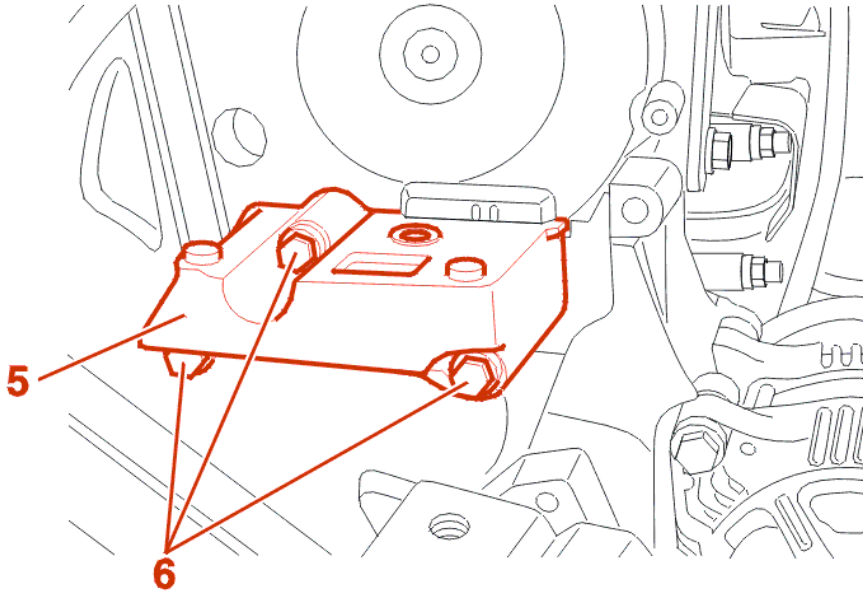
Put the tools in place [1] - [2] .

Check that the dynamic tensioner (C) index is positioned correctly ; If this is not the case, restart the belt fitting operation .

Remove the tools [1] - [2] .

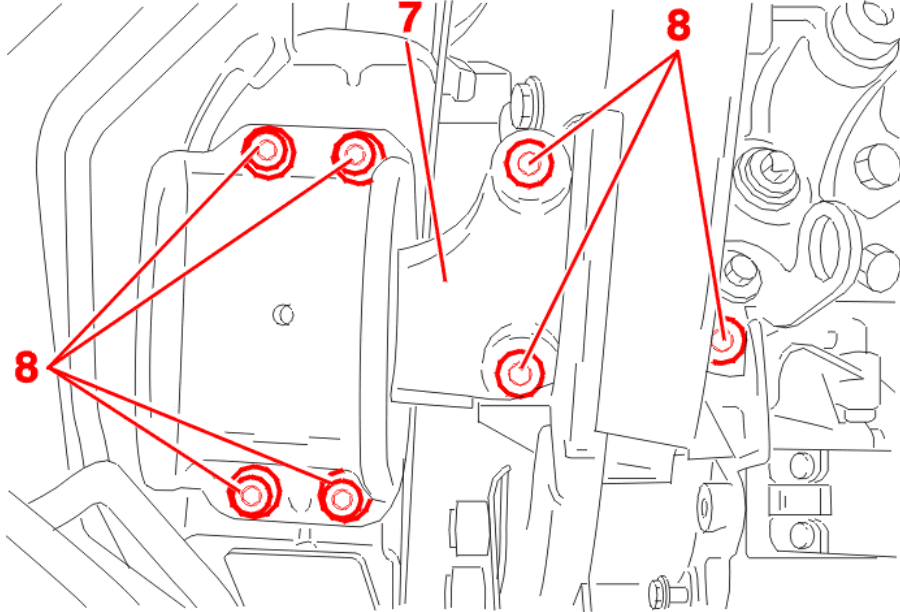
Refit the engine speed sensor on the oil pump .

Tightening torque 0.7 da.Nm .



Refit the intermediate engine mounting (5) .

Tighten the bolts (6) to 5.5 daN.m .



Fit :

- the right-hand engine mounting (7) ; tighten the bolts (8) to 6 daN.m
- the lower timing cover
- the tool [3] on the engine flywheel

Slacken the ancillary drive pulley mounting bolt .

Tightening torque 3 da.Nm + 180° .

Remove the tool [3] .

The ancillary drive belt .

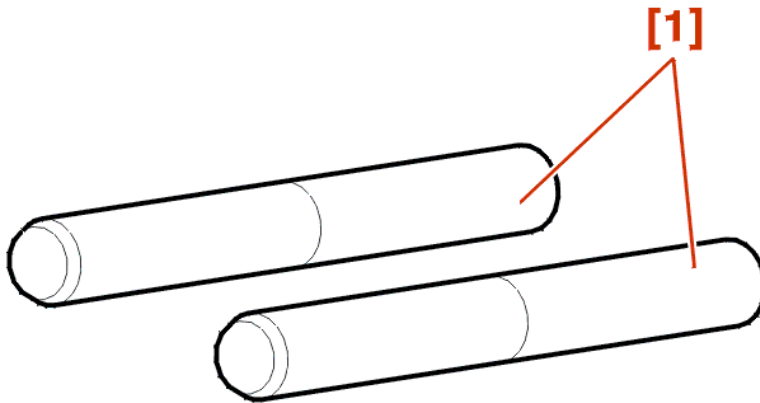
Fit :

- the front right mud shield
- the front right-hand wheel
- the top timing cover
- the electrical harness on the timing cover

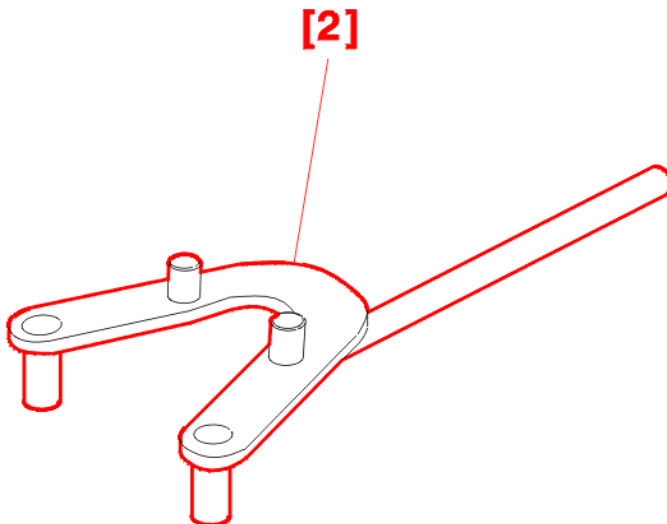
B1EG28K1 - 307 DV4TD ENGINE

REMOVAL - REFITTING CAMSHAFT

1 - SPECIAL TOOLS



[1] Camshaft carrier (-).0194-N positioning tool .



[2] Camshaft pinion key (-).0132-AA .

2 - REMOVAL

Remove :

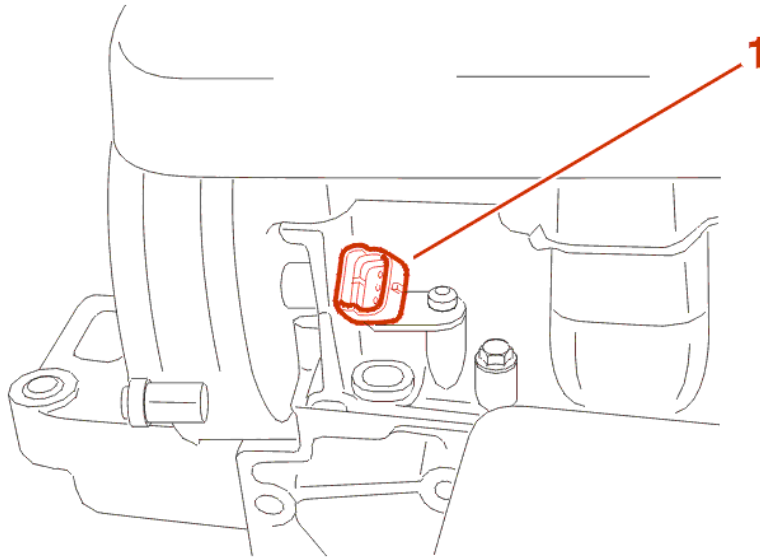
- the style cover
- the timing belt

Fit : The intermediate right engine mounting .

remove the integral intake system .

Disconnect the vacuum pipe from the vacuum pump .

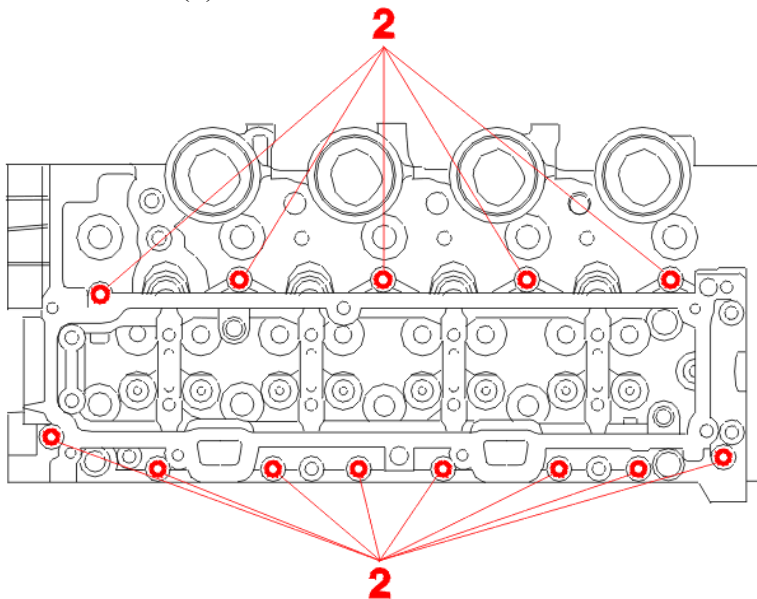
Remove the exhauster .



Remove :

- the sensor (1)
- the camshaft pulley ; using the tool [2]

Remove the sensor (1) .



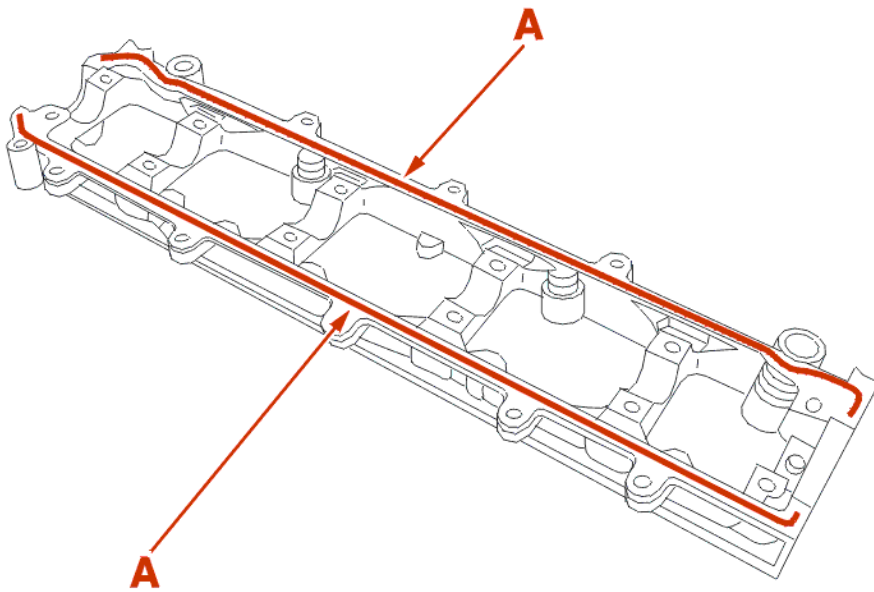
Remove :

- the camshaft upper main bearing cap casting bolts (2)
- the camshaft upper main bearing cap casting
- the camshaft
- the sealing ring

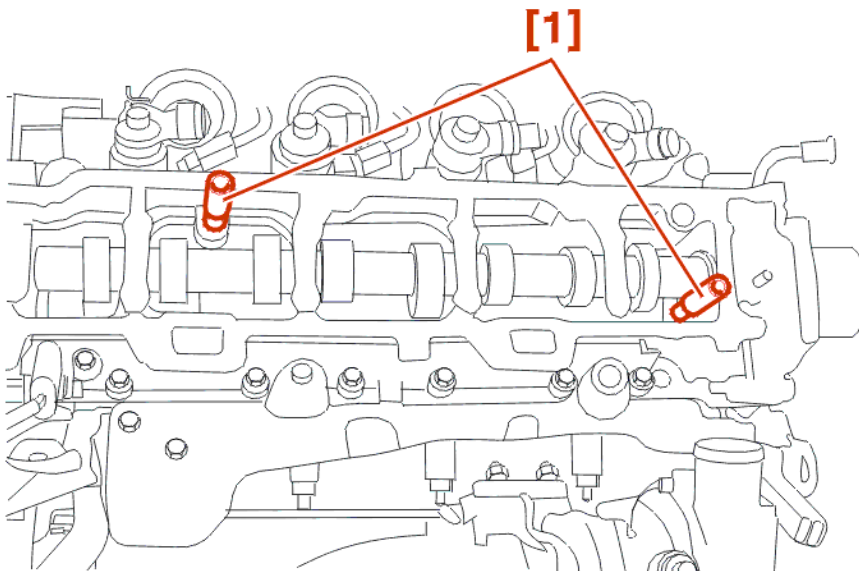
Clean the joint face with scouring agent .

Do not use sharp or abrasive tools .

3 - REFITTING

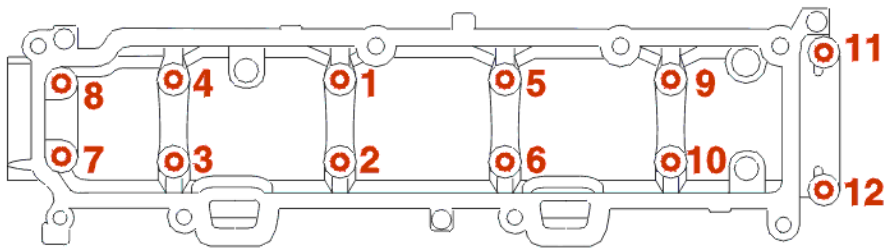


Deposit a line of sealing compound SILICONE CATEGORIE 2 (Autojoint OR) at around the edge of the mating surfaces (A) .



Fit :

- the camshaft
- the camshaft upper main bearing cap casting ; using the tool [1]



Finger tighten then progressively tighten the securing bolts in the order shown .

Tighten the bolts to 1 da.Nm .

Remove the tools [1] .

fit a new camshaft sealing ring .

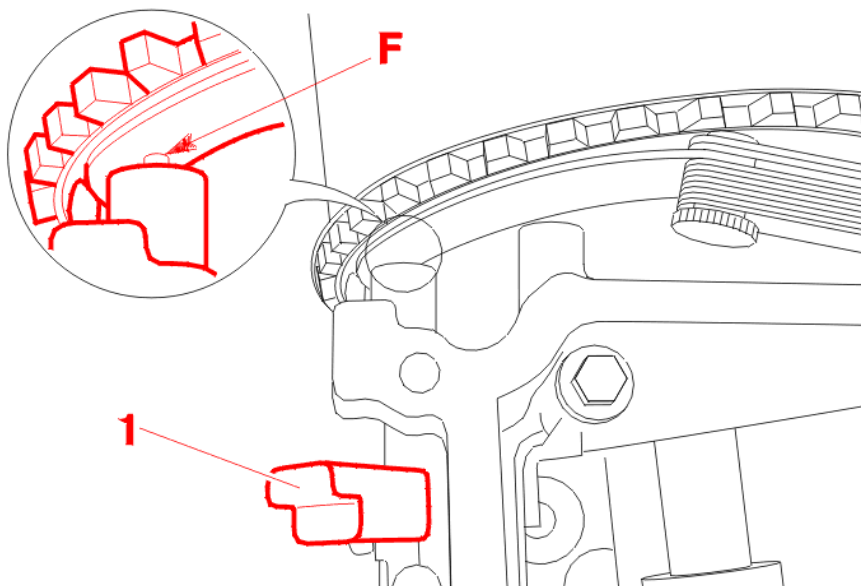
IMPERATIVE : the outer face of the lip seal must be free from all traces of oil .

Refit the vacuum pump on the camshaft carrier .

Tighten the bolts to 2 daN.m .

Refit the camshaft pulley and support it using the tool [2] .

Refit the bolt : Tightening torque 4.5 da.Nm .



Fit the sensor (1) .

Adjust the air gap between the pulley and the sensor to 1.2 mm .

If the sensor is new, to adjust the air gap, place the sensor tab (F) in contact with one of the three fibre rings of the camshaft pulley .

Fit :

- the integral intake system
- the timing belt