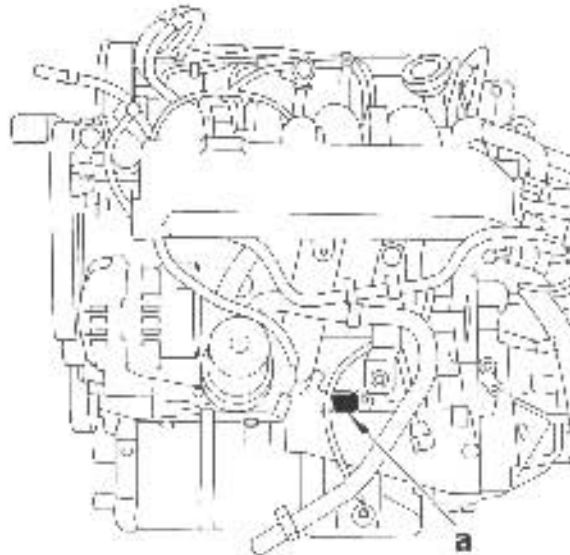


data : motor

1 Identification



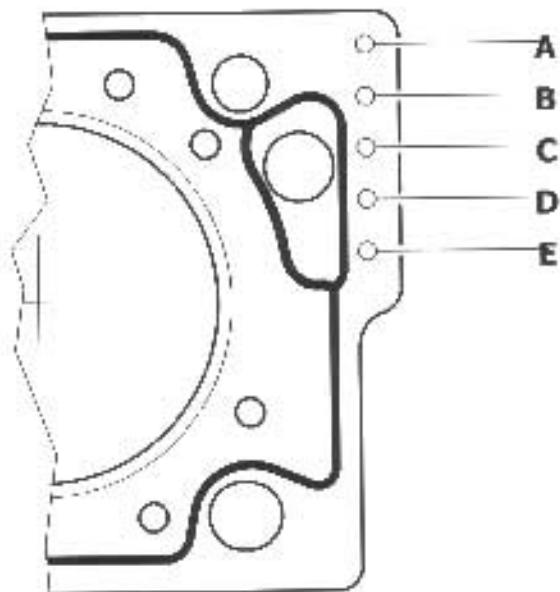
- Fig : 1 -

(a) identification plate.

2 Data

Engine code.	XU10J4RS.
Legislation type.	RFS.
Capacity (cc).	1998.
Bore x stroke (mm).	86 x 86.
Compression ratio.	10,8/1.
Max. power (E.E.C).	120 kW at 6500 rpm.
Max. power (DIN).	167 hp.
Max. torque (E.E.C.).	19,3 m.daN at 5500 rpm.
Max. torque (DIN).	20 m.kg.
Emission standard.	L3.
Fuel.	Unleaded premium 95 and 98 RON.
Catalytic converter.	Yes.
Injection system.	Multipoint injection.
Supplier.	MAGNETI MARELLI 1AP10.

3 Cylinder head gasket

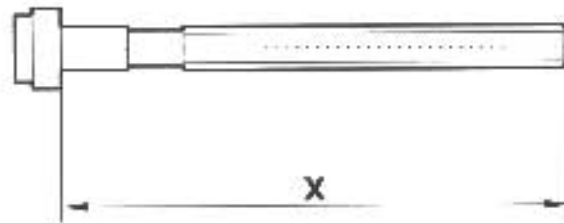


- Fig. : 2 -

Cylinder head gasket without asbestos.

Supplier.	MEILLOR.
Thickness (standard size).	1,4 mm.
Thickness (repair size).	No.
Thickness identification.	A.E.

3.1 Cylinder head bolt



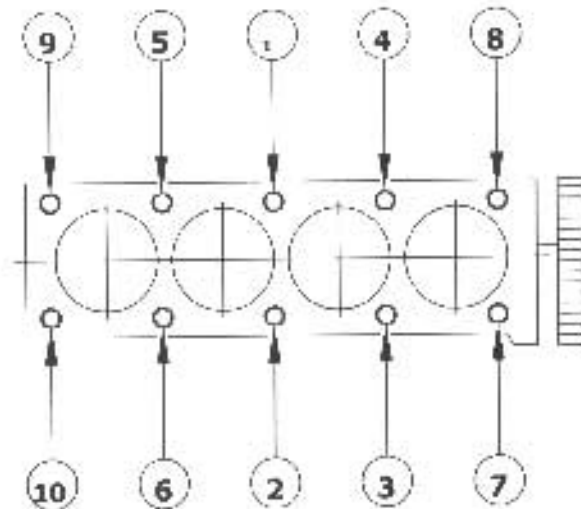
- Fig. : 3 -

X = length under head.

New bolt length below heads = $110 \pm 0,5$ mm.

URGENT : The bolts, washers and gaskets must never be reused.

3.2 Cylinder head tightening



- Fig. : 4 -

Tighten the screws, observing the order and the tightening torque.

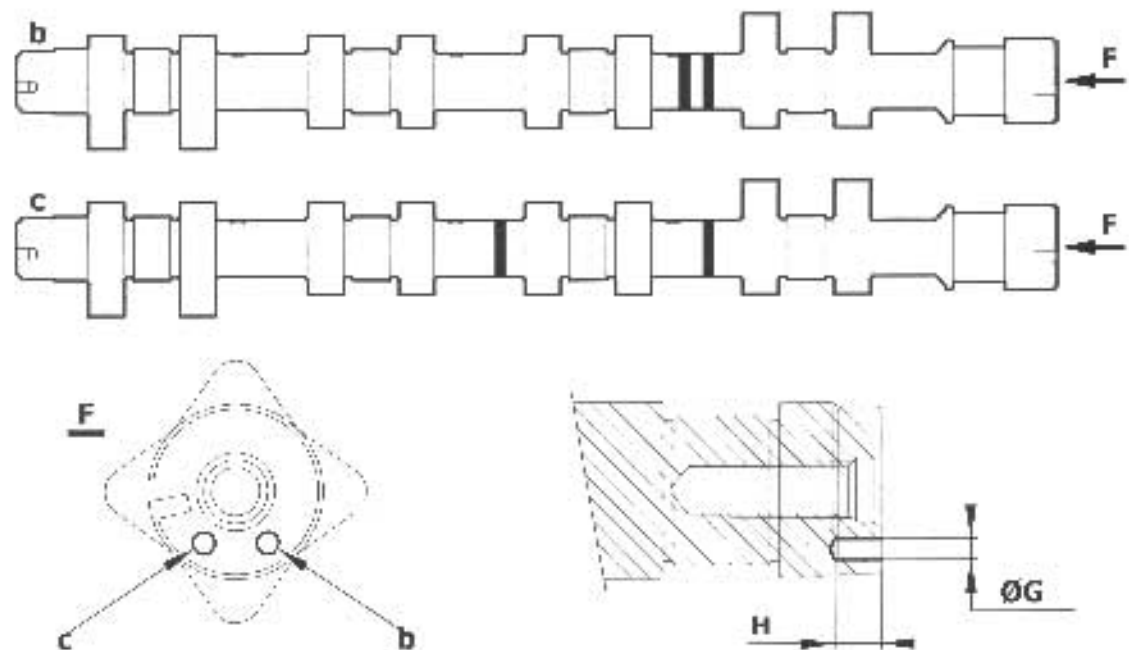
Tightening :

- pretighten to a torque of 3,5 to 4 m.daN
- tighten to a torque of 7 to 7,5 m.daN
- finish with an angular tightening of $180 \pm 5^\circ$

CAUTION : No cylinder head retightening is required at the 1st service (1500 miles).

4 Timing

4.1 Camshaft



- Fig. : 5 -

Marking of the camshafts.

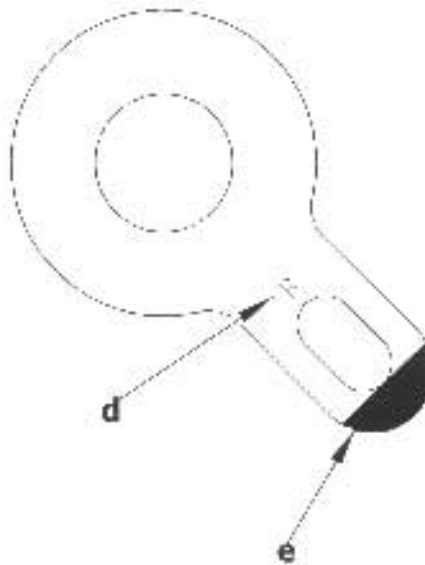
Marking " b ".	Inlet camshaft.
Marking " c ".	Exhaust camshaft.
1st case.	Painted white rings.
2nd case.	G = 4 mm Ø hole, H = 10 mm deep.

4.2 Timing table

Theoretical valve timing with a 1 mm valve clearance

	B.T.D.C.	-9° 5'
	B.B.D.C.	39°
Motor.	A.B.D.C.	43° 5'
	A.T.D.C.	-3° 5'

4.3 Identification marks of the camshaft hubs



- Fig. : 6 -

* d * marking : B.

* e * colour identification : black.

N.B. : The hubs of the camshafts are identical.

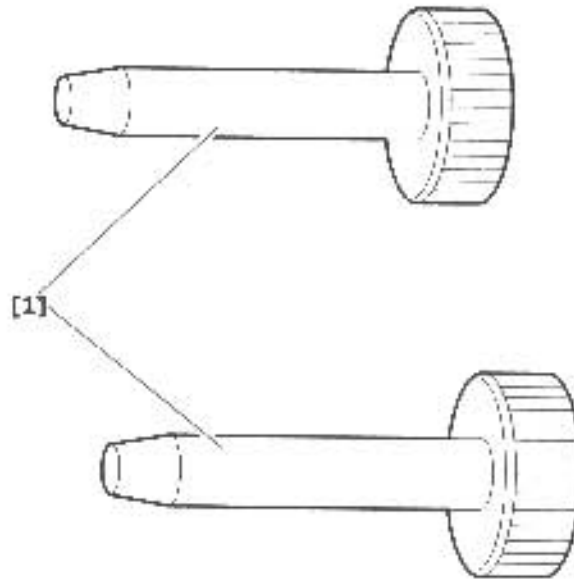
4.4 Valve clearances when cold

Hydraulic tappets with automatic adjustment.

remove - refit : timing belt

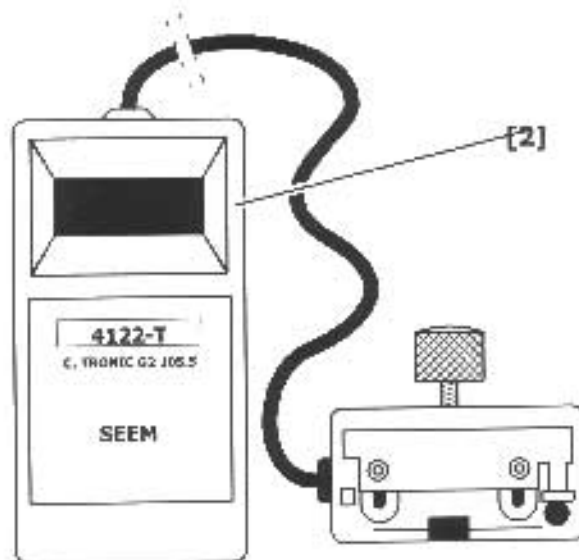
1 Recommended tools

Engine kit : 7004-T.



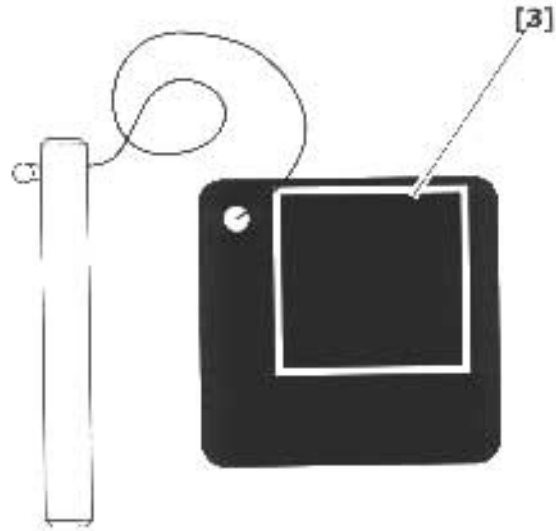
- Fig. : 1 -

[1] camshaft setting rod 9041-T.Z.



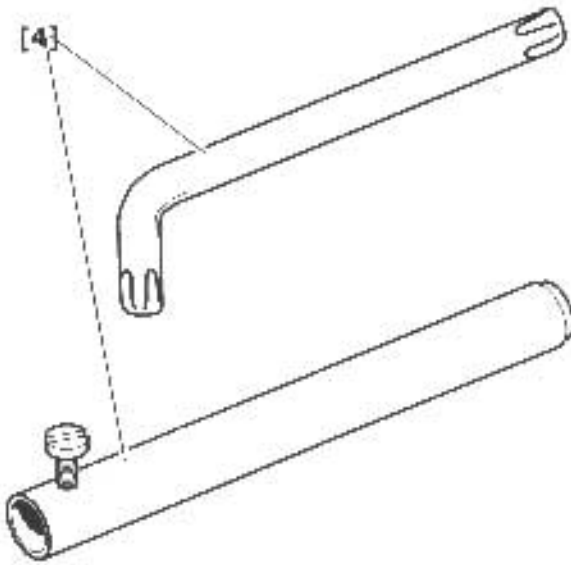
- Fig. : 2 -

[2] 4122-T SEEM timing belt tightening equipment.



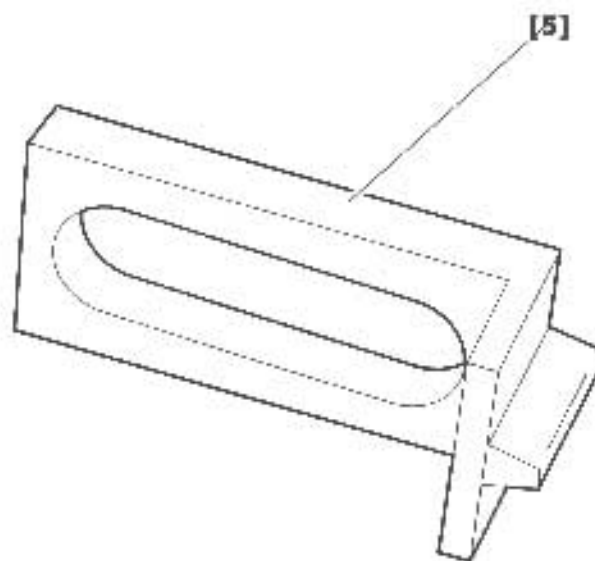
- Fig. : 3 -

[3] crankshaft setting rod 7014-T.N.



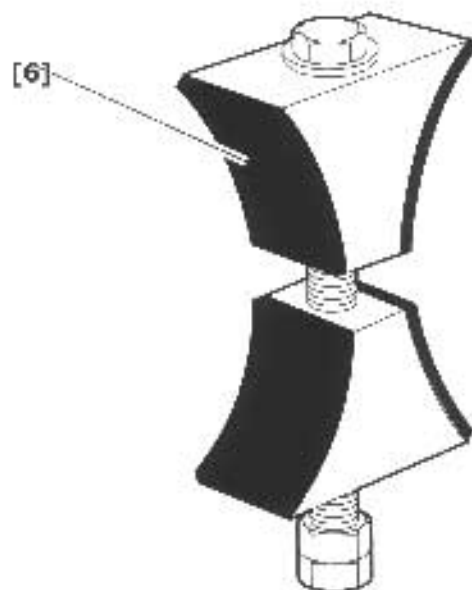
- Fig. : 4 -

[4] tensioning spanner 7017-T.W.



- Fig. : 5 -

[5] flywheel stop 9044-T



- Fig. : 6 -

[6] camshaft pulley locking tool 4200-T.G.

2 Additional tools

Pliers for removing plastic pegs 7504-T.

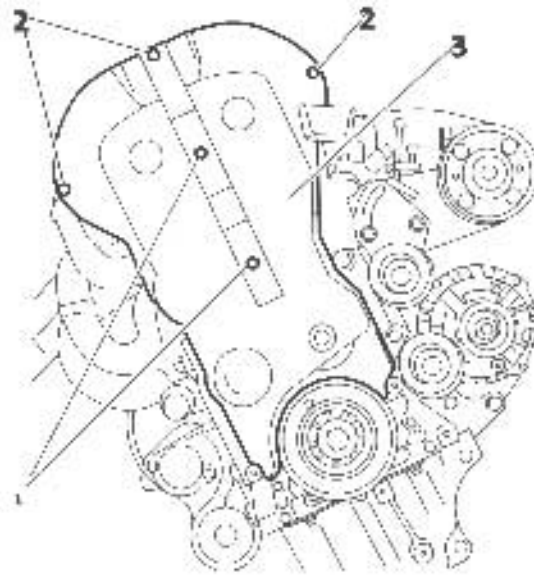
3 Removing

Disconnect the battery negative terminal.

Lift and support the vehicle with the front wheels suspended.

Remove the accessories drive belt (see the relevant operation).

Unclip and release the fuel supply and return pipes (near the timing cover).

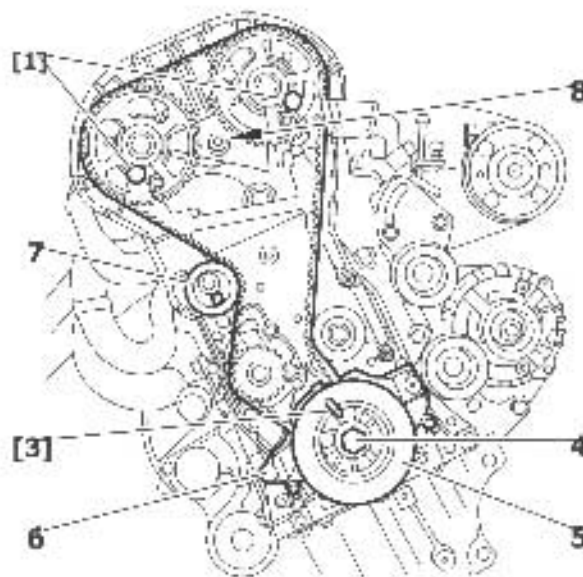


- Fig. : 7 -

Loosen screws (2).

Remove :

- the nuts (1)
- the timing cover (3)



- Fig : 8 -

Turn the engine by means of the crankshaft pulley bolt to bring it to the setting position.

Peg the camshaft pulleys using the tools [1].

Peg the crankshaft using the setting rod [3].

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

Lock the flywheel by means of tool [5].

Remove :

- the setting rod [3]
- the crankshaft pulley bolt (4)

Brush the thread of screw (4).

Remove :

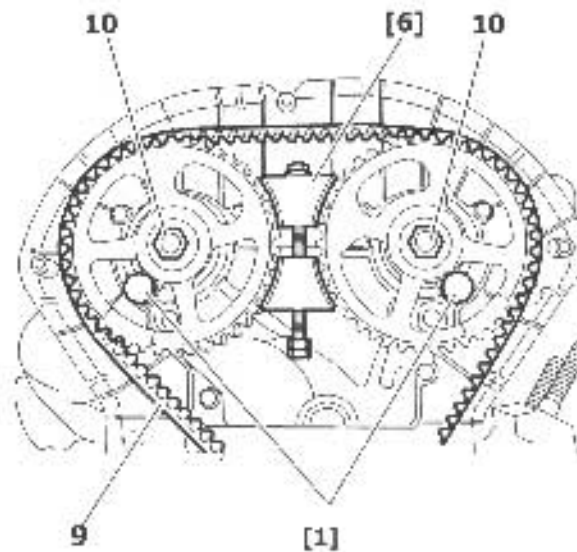
- the pulley (5)
- the lower timing cover (6)

Fit :

- the pulley (5)
- the crankshaft pulley bolt (4) (tighten moderately)
- the tool [3]

Remove :

- the tool [5]
- the stud (8)



- Fig. : 9 -

Fit tool [6].

Loosen screws (10).

Remove tool [8].

Slacken the tensioner roller (7).

Remove the timing belt (9).

4 Refitting

4.1 Preliminary tensioning and positioning of the belt

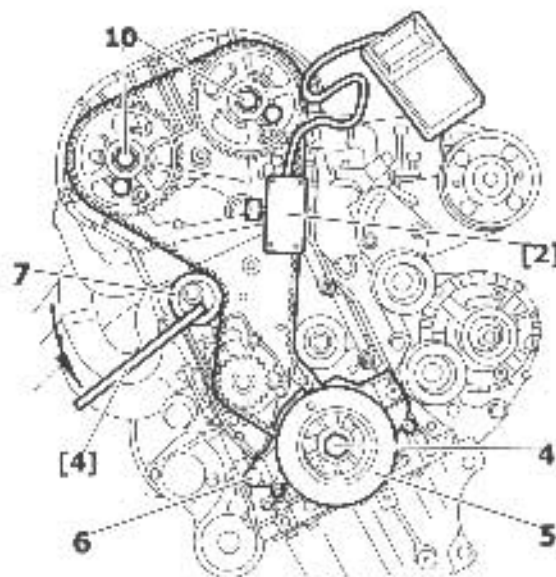
Peg the crankshaft using the setting rod [3].

Peg the camshaft pulleys using the tools [1].

N.B. : Make sure that the camshaft pulleys move freely around the hubs . Clean the contact surfaces of the camshaft pulleys and hubs.

Turn the camshaft pulleys fully clockwise to abut the ends of the elongated holes.

Refit the timing belt (9).



- Fig. : 10 -

Place instrument [2] on the timing belt ; avoiding contact with other components.

Rotate the roller tensioner with tool [4] to reach a tension of 55 SEEM units (28 daN) (slackened pulleys).

Tighten the roller tensioner (7) fixing bolt to 2,1 m.daN.

Fit tool [6]

Tighten the screws (10) to 4 m.daN.

Remove tools [1], [2], [3] and [6].

Turn the crankshaft 6 turns in the normal direction of rotation.

4.2 Setting the timing and carrying out the final fitting tensioning

Peg the crankshaft using the setting rod [3].

Peg the camshaft pulleys using the tools [1].

N.B. : If it proves difficult to peg the camshaft hubs ; slacken the tensioner roller (7) ; turn the camshafts using the bolts (10).

Fit tool [6].

Loosen screws (10).

Remove tool [6].

Slacken the tensioner roller (7).

Place instrument [2] on the timing belt ; avoiding contact with other components.

Rotate the roller tensioner with tool [4] to reach a tension of 35 SEEM units (15 daN) (slackened pulleys).

Tighten the roller tensioner (7) fixing bolt to 2,1 m.daN.

Fit tool [6].

Tighten the screws (10) to 7,5 m.daN.

Remove tools [1], [2], [3] and [6].

Turn the crankshaft 2 turns in the normal direction of rotation.

Check the pegging of the crankshaft and camshafts using the tools [1] and [3].

N.B. : It should be possible to easily insert tools [1], [3] and into the holes.

Remove tools [1] and [3].

4.3 Refitting (continued)

Remove :

- the screw (4)
- the pulley (5)

Fit :

- the tool [5]
- the lower timing cover (6)
- the pulley (5)
- the screw (4) . Tighten to 13 m.daN

Remove tool [5].

Fit :

- the stud (8)
- the timing cover (3)
- the nuts (1)

Tighten screws (2).

Clip the fuel supply and return piping.

Refit the auxiliary equipment drive belt (see the relevant operation).

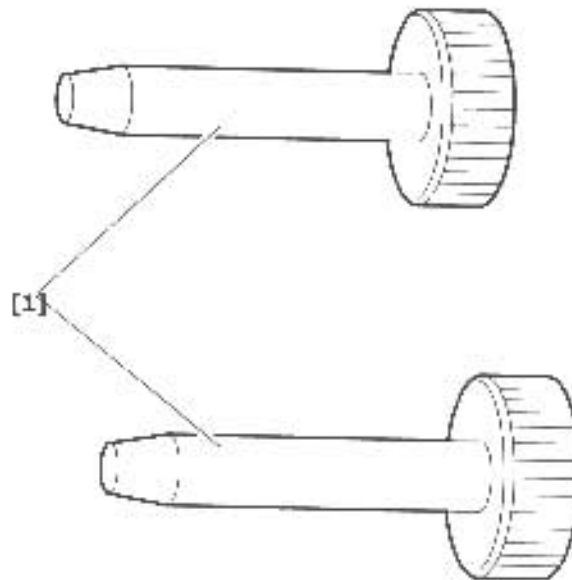
Return the vehicle to its wheels.

Reconnect the battery negative terminal.

removing - refitting : cylinder head on the vehicle

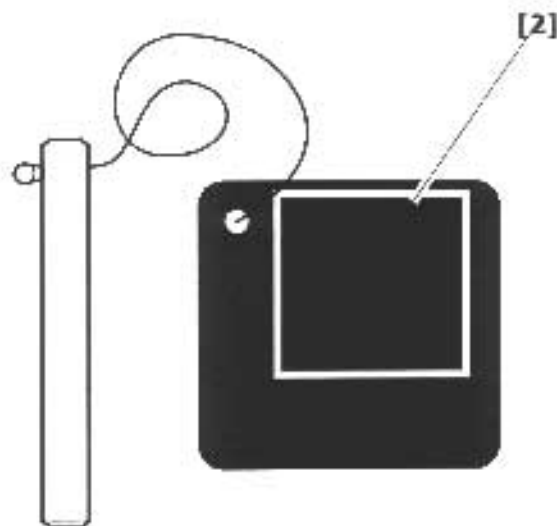
1 Recommended tools

Engine kit XU : 7004-T.



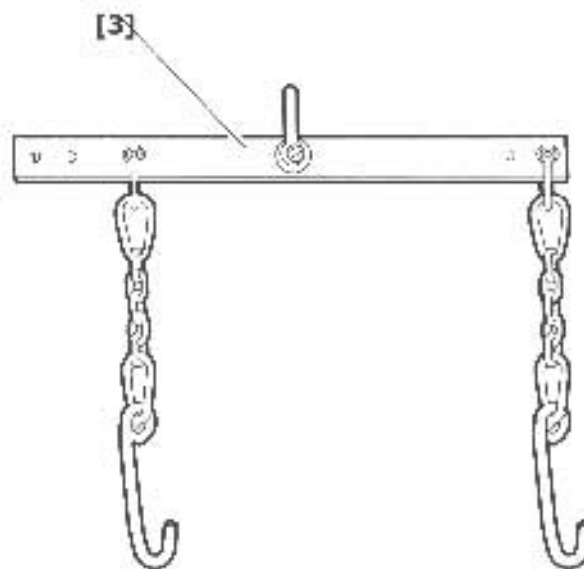
- Fig. : 1 -

[1] 9041-T.Z camshaft setting rod.



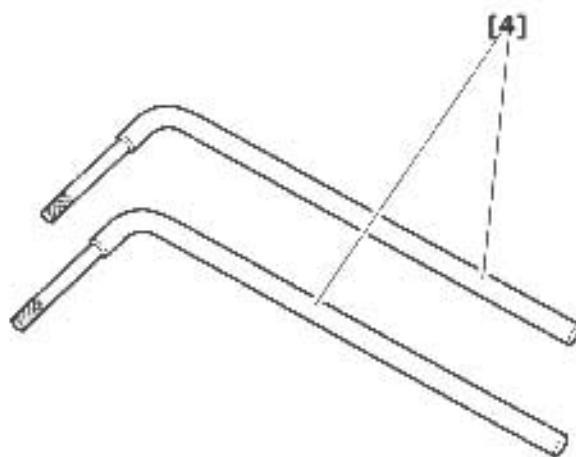
- Fig. : 2 -

[2] crankshaft setting rod 7014-T.N.



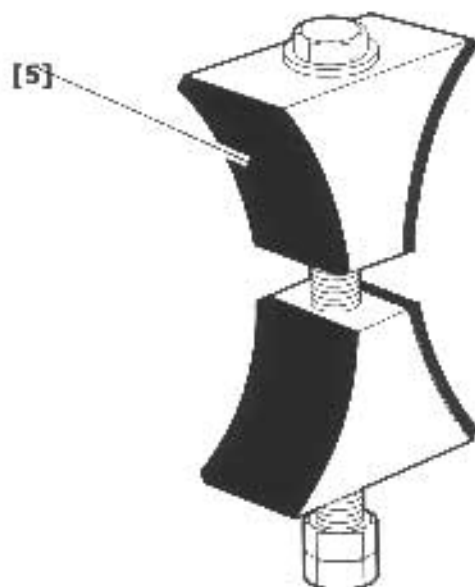
- Fig. : 3 -

[3] lifting beam 2517-T.B.



- Fig. : 4 -

[4] set of levers for releasing the cylinder head 149-T.



- Fig. : 5 -

[5] camshaft pulley locking tool 4200-T.G.

2 Additional tools

Tensioning spanner 7017-T.W (tool box 7004-T).

Belt tension measuring instrument with digital read-out (SEEM) 4122-T.

Adaptor for angular tightening 4069-T.

Pliers for removing " CLIC " clips 4145-T.

Pliers for removing and refitting the spring clips 9029-T.

Pliers for removing plastic pegs 7504-T.

Manually-operated pressurising-vacuum pump FACOM DA 16 4530-T.G.

3 Removing

Lift and support the vehicle with the front wheels suspended.

Disconnect the battery negative terminal.

Drain the cooling system (see the relevant operation).

Remove :

- the RH front road wheel
- the engine block
- the splash shield

- the timing belt cover

Peg :

- the crankshaft ; using tool [2]
- the camshafts ; using tool [1]

Fit tool [5].

N.B. : When the crankshaft is pegged, the pistons are at mid-stroke.

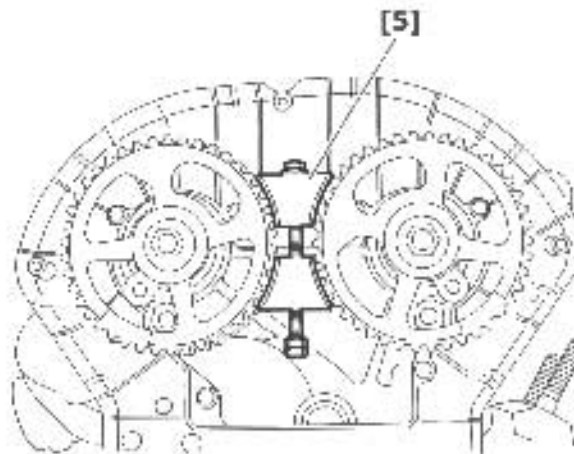
Loosen the fixing screws of the camshaft pulley/hub assemblies.

Loosen the drive belt by operating the tensioner roller.

Withdraw the timing belt from the camshaft pulleys.

Check visually the condition of the timing belt.

N.B. : If the belt has any cracks or traces of oil, it must be renewed (see the relevant operation).



- Fig. 6 -

Remove :

- the tool [5]
- the camshaft pulley-hub assemblies
- the inner timing cover

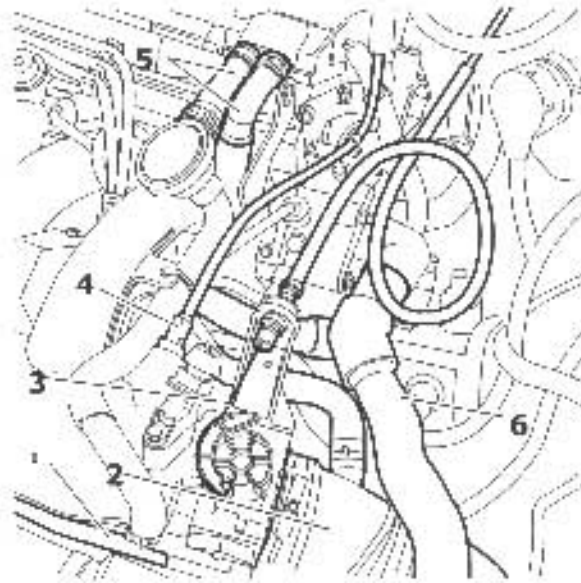
Uncouple exhaust ball-joint.

Remove the torque reaction link.

Release the metal link pipe on the cylinder head (pipe between the heater and the coolant

housing).

Release the pressure in the injector fuel rail.



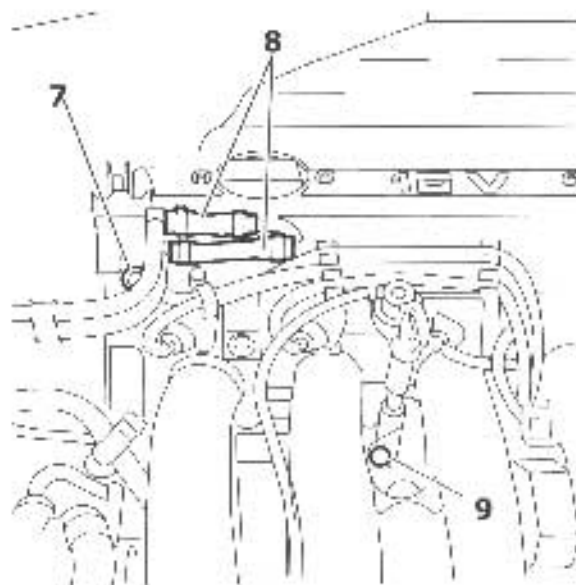
- Fig : 7 -

Uncouple :

- the oil fume recycling pipes (5)
- the vacuum pump click-fit connector (4)
- the coolant outlet click-fit connector (6)
- the hoses of the coolant outlet housing
- the canister hose (1)
- the accelerator cable (3)
- the air filter duct (2)

Remove the throttle housing.

Remove the retaining clamps located under the air manifold.



- Fig. : 8 -

Uncouple the hoses (8) from the fuel injection rail.

N.B : Mark the position of each injector connector.

Disconnect and unclip the following components :

- the camshaft position sensor (7)
- the injectors

Remove the screw (9) .

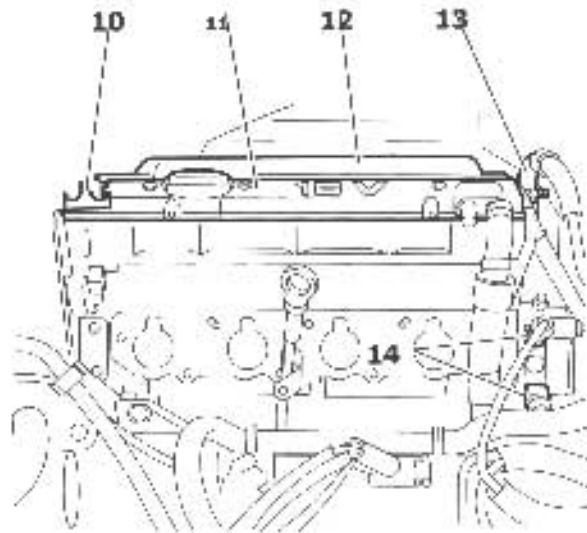
Release the dipstick guide tube assembly.

Remove the air manifold fixings (6 bolts and 2 nuts).

Disconnect all the manifold sensors.

Remove :

- the air manifold
- the exhaust manifold heat shield



- Fig. : 9 -

Disconnect the temperature sensors (14).

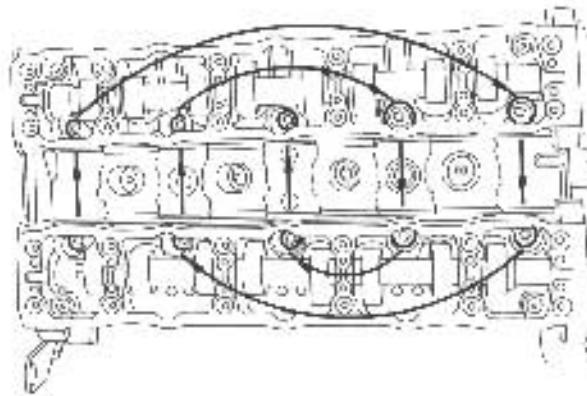
Disconnect the hose (13).

Remove :

- the cylinder head's 2 earth wires
- the HT coils housing (12)
- the 4 HT coils and their wiring harness
- the mounting bracket (10)
- the camshaft bearing caps covers (11)

Support the engine with a jack (interpose a wooden block).

Remove the right engine mounting from the body.

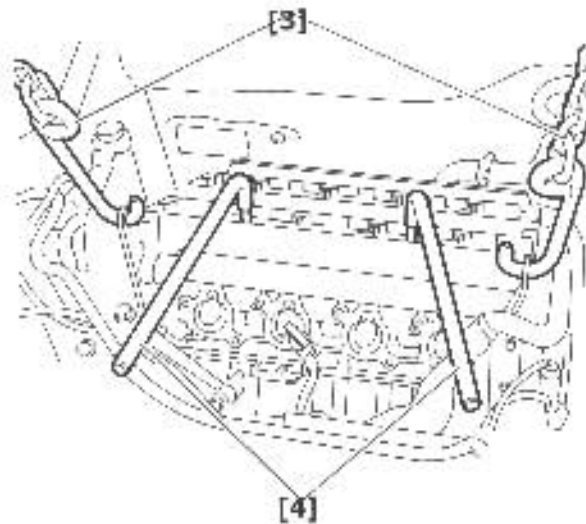


- Fig. : 10 -

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

Remove the cylinder head bolts.

Slowly lower the engine and gearbox assembly.



- Fig. : 11 -

Position a workshop lifting bracket.

Fit tools [3] and [4].

Support the cylinder head and manifold assembly with a lifting beam.

Rock and free the cylinder head using levers [4] (if necessary).

Raise the cylinder head and manifold assembly using a lifting beam.

Remove the cylinder head and gasket.

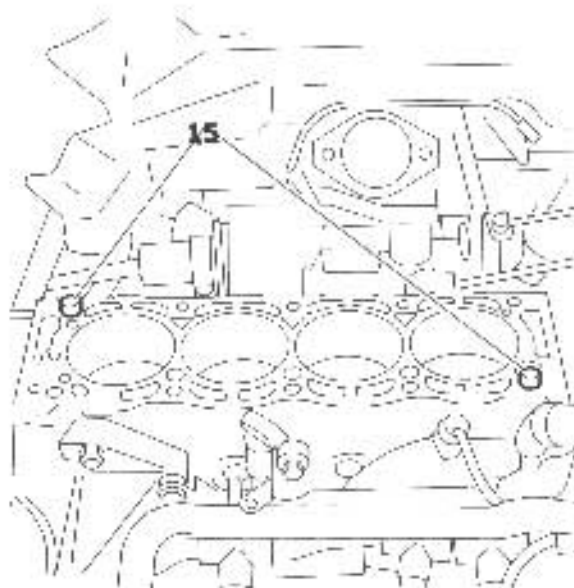
Clean the joint faces (do not use a sharp or abrasive tool).

CAUTION : The gasket faces must not have any traces of knocks or scores.

Oil the cylinders.

Peg the crankshaft using the setting rod [2].

4 Refitting



- Fig. : 12 -

Check that centring pins (15) are present.

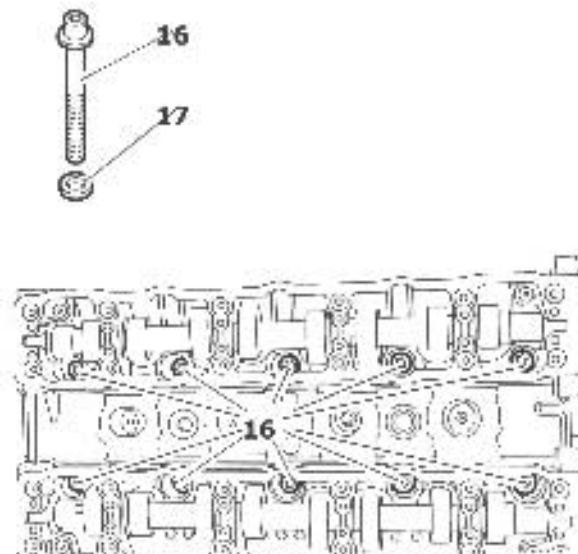
Prepare the cylinder head :

- check the flatness of the cylinder head
- peg the camshaft hubs

N.B. : The identification tab of the cylinder head gasket must be placed on the flywheel side.

Fit :

- the cylinder head gasket
- the cylinder head and manifold assembly using a lifting beam



- Fig. : 13 -

URGENT : The bolts, washers and gaskets must never be reused.

N.B. : Fill the thrust washers (16) to the cylinder head bolts (17).

Fit cylinder head screws (16).

Raise the engine using the jack.

Refit the right-hand engine mounting.

4.1 Cylinder head tightening

See : engine characteristics.

N.B. : Fill with oil the cups situated under the cams.

CAUTION : No. cylinder head retightening is required at the 1st service (1500 miles).

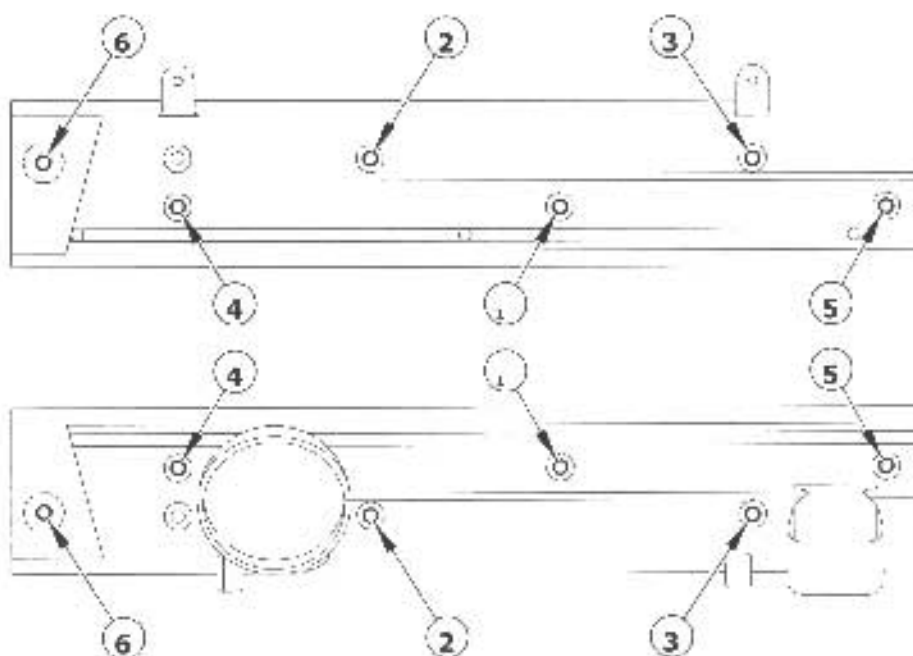
4.2 Reinstalling the timing belt

See the relevant operation.

4.3 Refitting (continued)

Refit the camshaft bearing carrier covers (11).

N.B. : The covers of the camshaft carrier bearings are equipped with a seal made of composite material which can stand several dismantling operations . If the seal is damaged, it can be partially repaired with sealing product E10 (AUTO-JOINT OR).



- Fig. 14 -

CAUTION : The cover is tightened onto the bolt shoulders and not on its outer edge.

Observing the correct tightening order : tighten the screws to 1 m.daN.

Continue the fitting operations in the reverse order to removal.

Refit the air manifold fixings (6 bolts and 2 nuts) (tightening torque 2 m.daN).

Fill and bleed the cooling system.

Reconnect the battery negative terminal.

Return the vehicle to its wheels.