

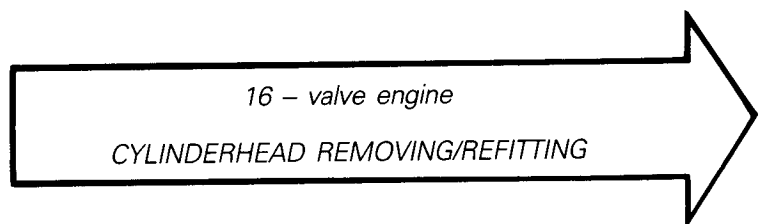


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# ENGINE

**XB 16**  
**112-1 a**

1





## REMOVING

Support the front of the vehicle on stands and remove the RH front wheel.

Disconnect the battery.  
Drain the engine.

**Withdraw:**

- the alternator drive belt,
- the wheelarch shield.

Support the engine with a sling placed towards the valve gear.

**Remove** the upper part from the engine mounting bracket. Raise the engine by 30 to 40 mm.

**Take off, Fig. I:**

- the two screws (1) situated on top of the timing cover; pull out centre sliding lug (2),
- the timing cover from above.

Use the crankshaft screw to rotate the engine.

**Insert, Fig. II :**

- locating peg **7014-T-N** in the crankshaft pinion,
- locating peg **7014-T-M** in the camshaft gear wheel.

Slacken the tensioner roller screws with a 6 mm 6 face spanner and an 8 mm square spanner from tool box **AX 4507-T**.

**Remove** the camshaft gear wheel drive belt. Refit the engine support bracket temporarily.

**Remove: Fig. III and IV**

- oil ramp (5).
- the cylinderhead cover,
- camshaft gear wheels (4)
- interior timing cover (3)
- the HP pump driving pulley.

**Uncouple: (➡) Fig. V and VI.**

- air supply hoses
- water connection hoses
- fuel connecting pipes
- the return hoses from the engine breather,
- the water supply pipes from the throttle butterfly housing,
- the oil gauge attachment,
- the accelerator cable.

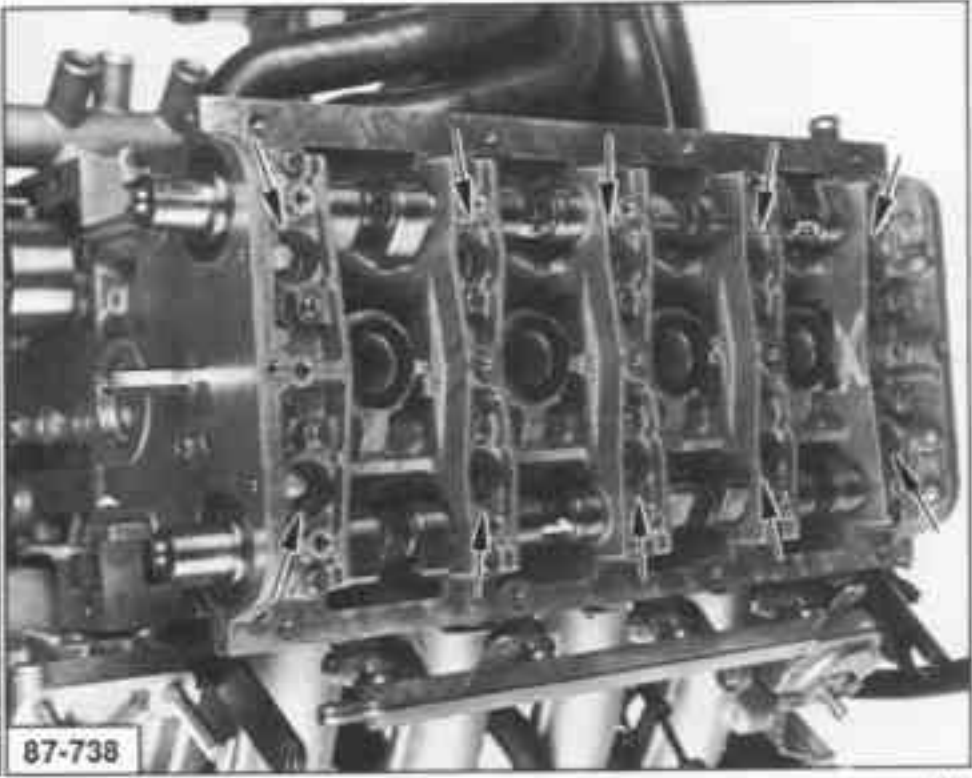
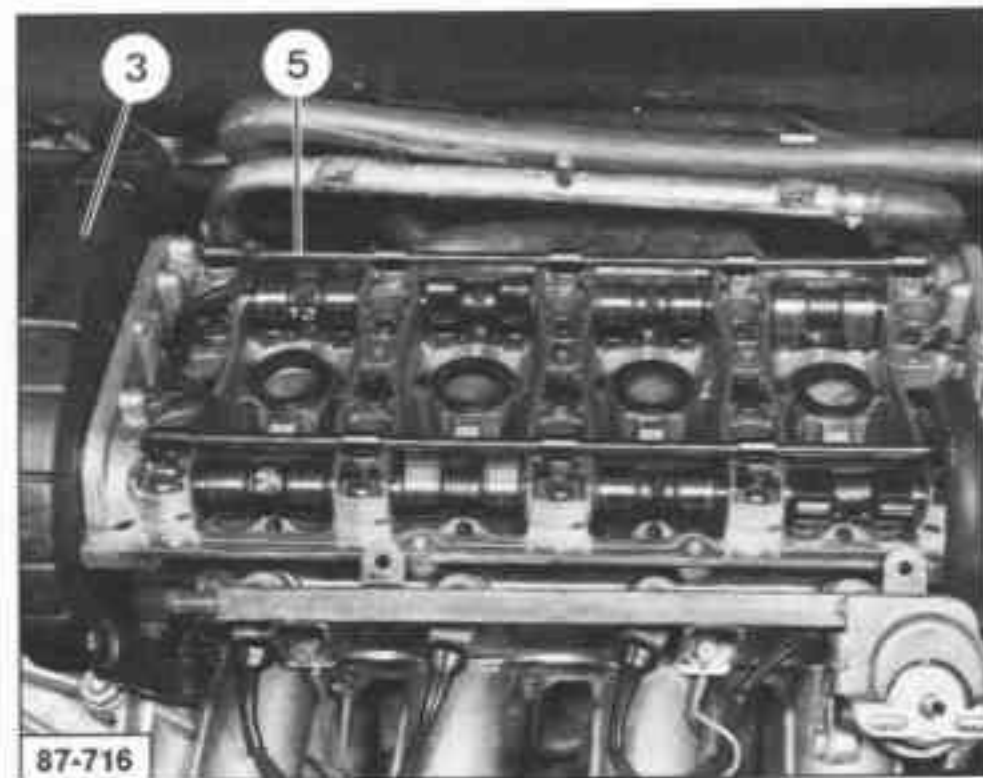
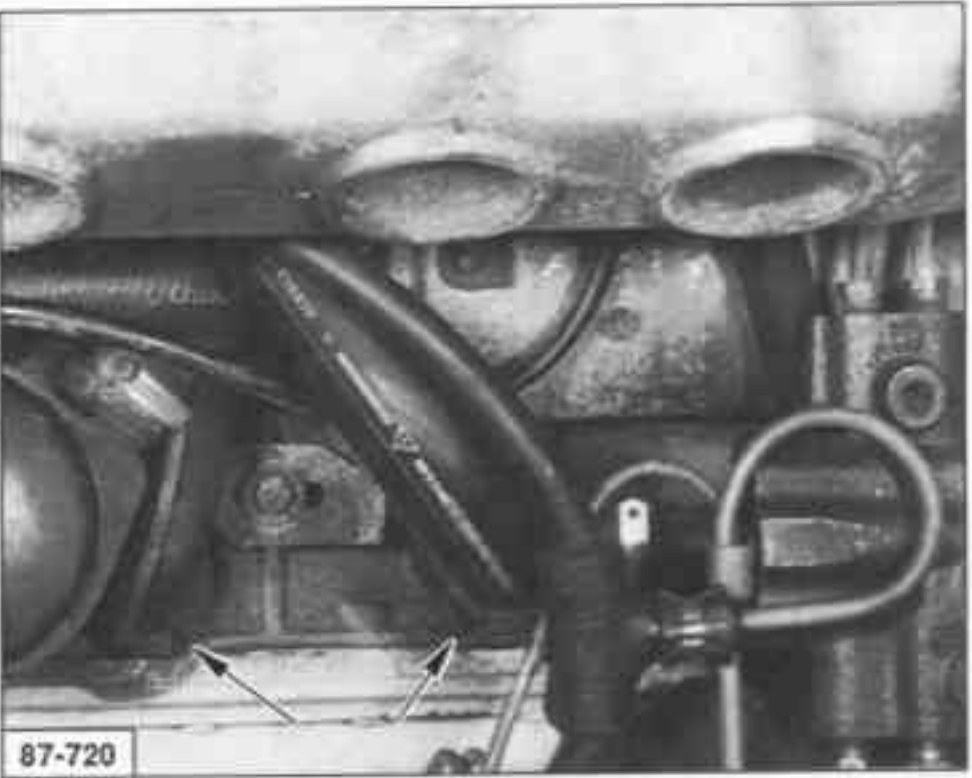
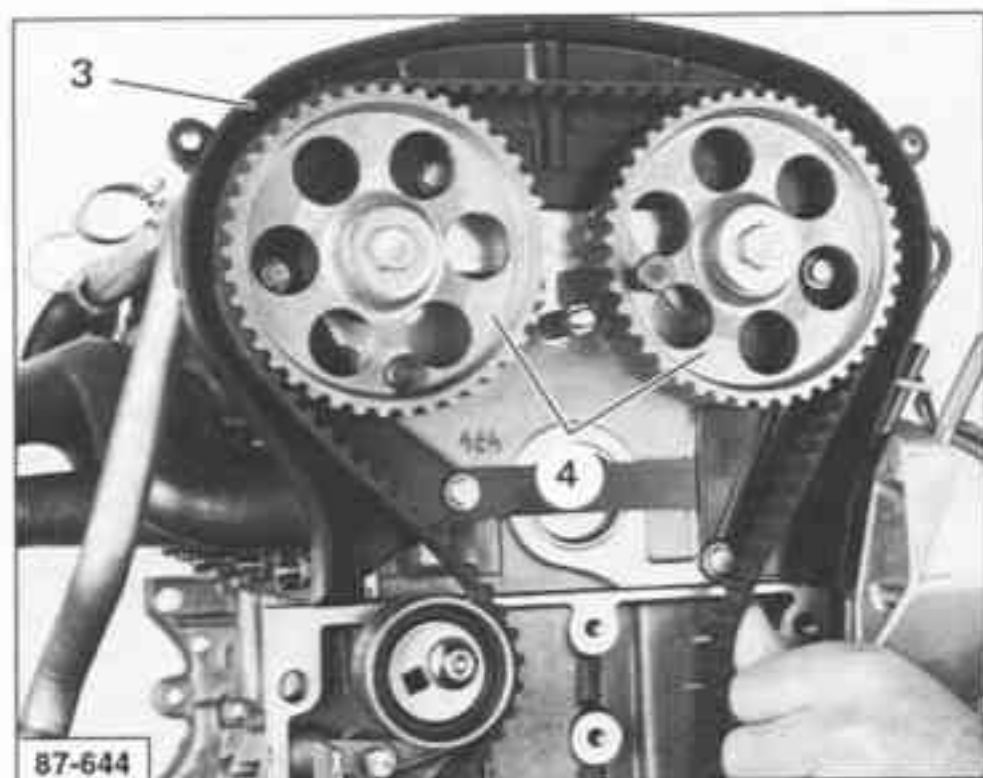
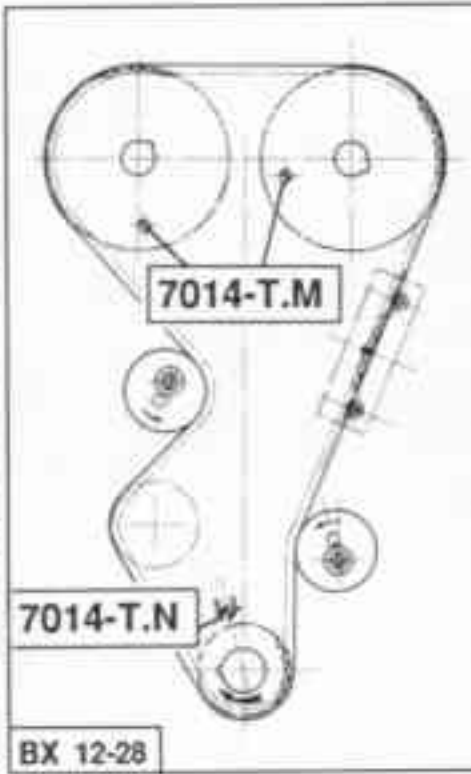
**Disconnect:**

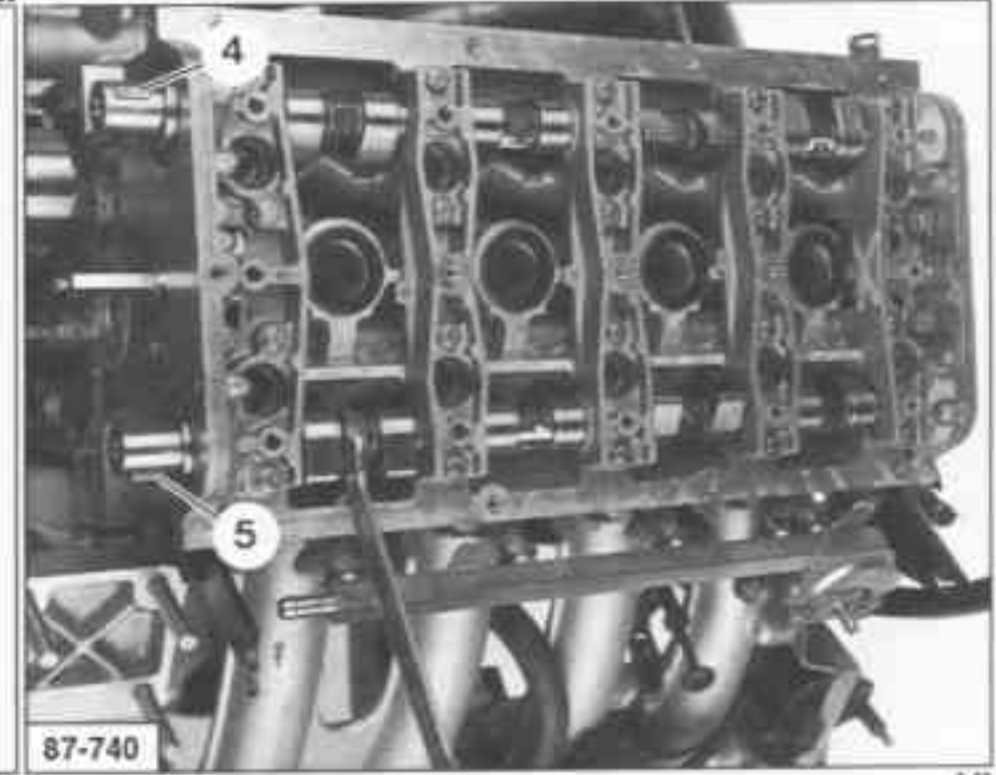
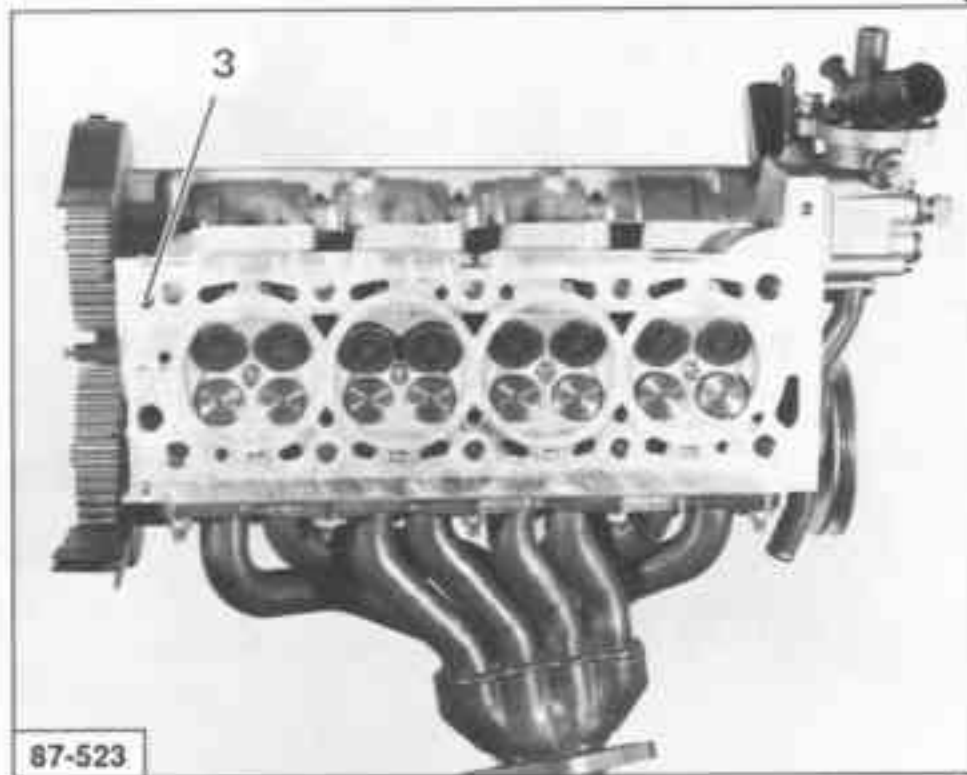
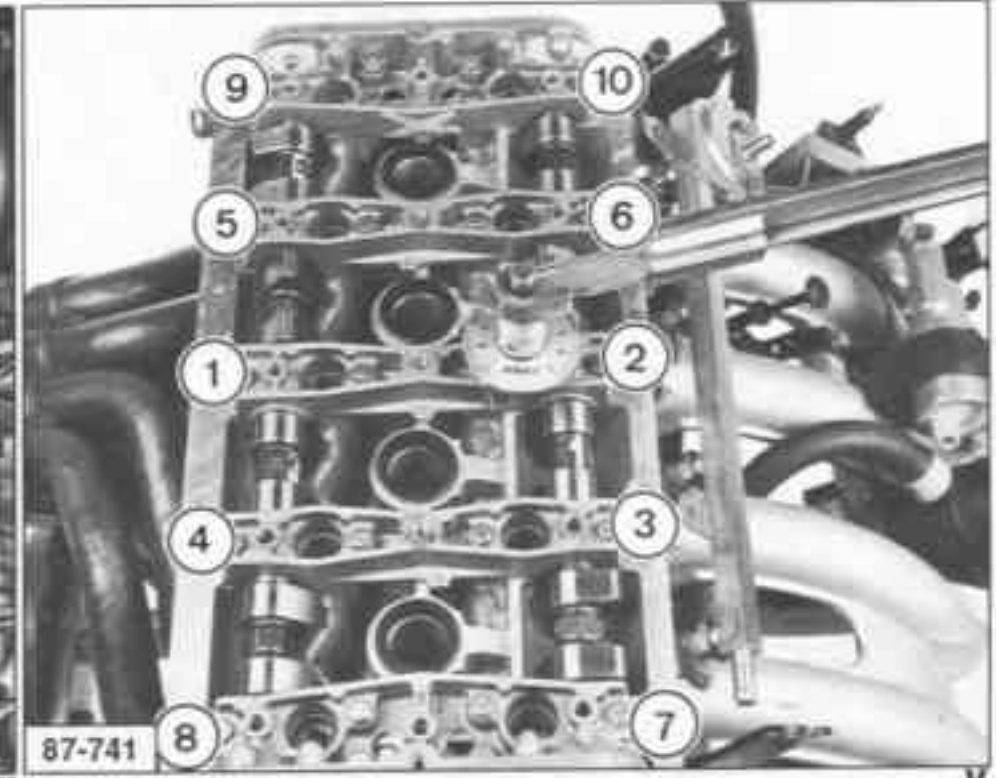
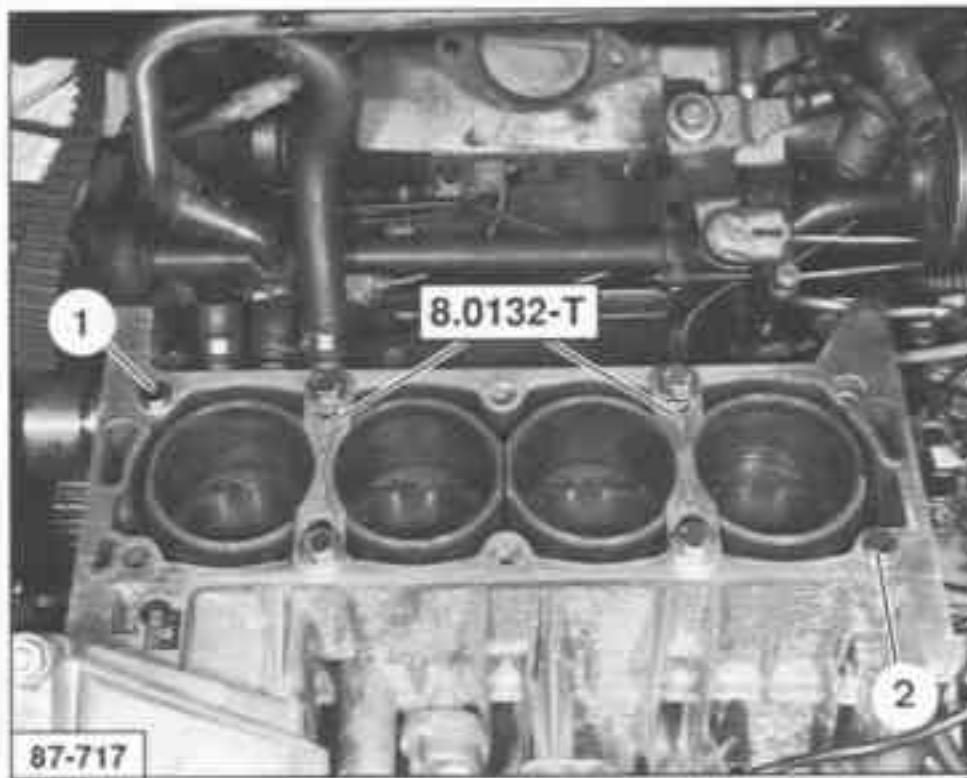
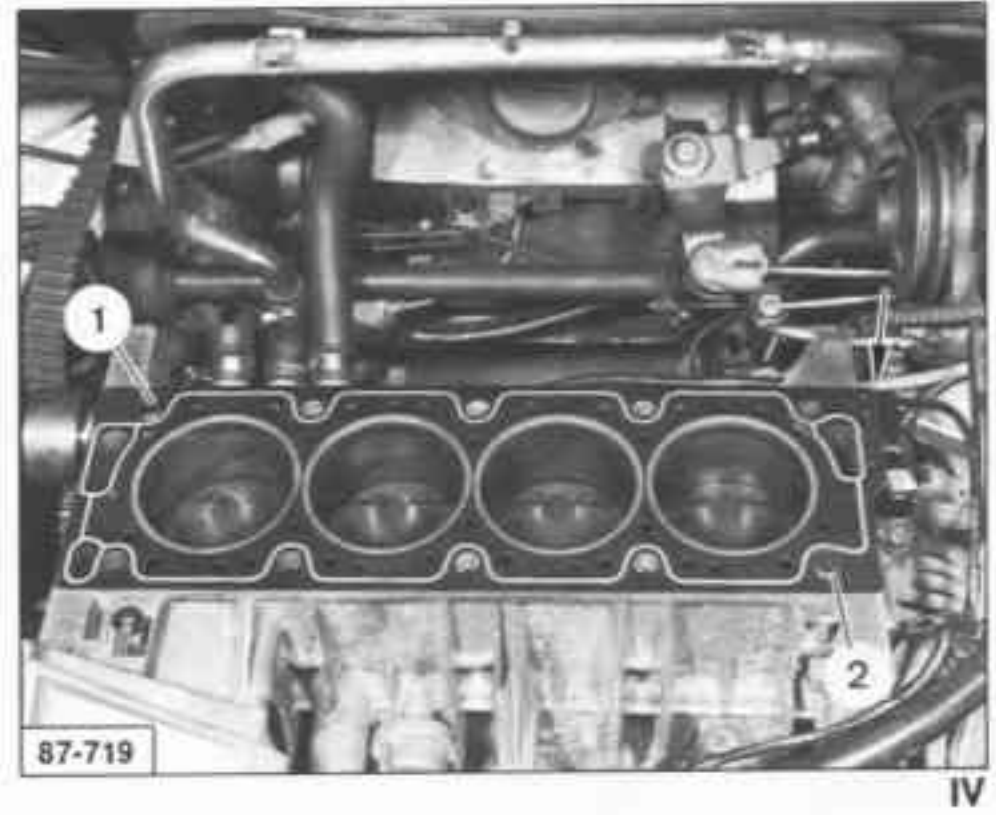
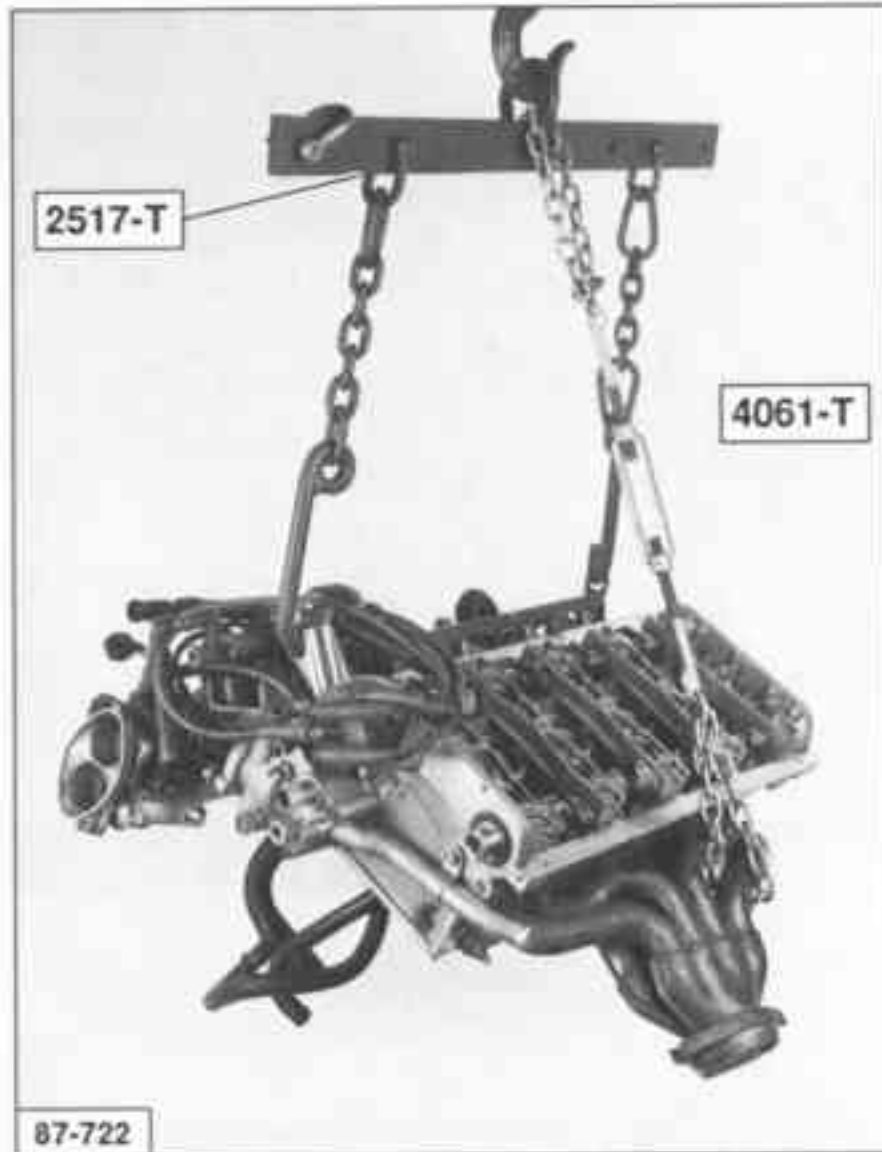
- the set of injector pipes,
- the sensors from the coolant outlet housing,
- the throttle butterfly housing switch.

**Uncouple** the exhaust system.

**Remove** the cylinderhead screws (➡), **Fig. VII** using the TORX socket **EX 55** from tool box **AX 4501-T.G** for the front axle.

**Tilt** the cylinderhead to disengage it.







### Remove the cylinder-head

The use of sling **2517-T** together with tensioner **4061-T** as shown on **Fig. I** may facilitate the operation and help maintain the cylinderhead fitted.

Retain the barrels by means of clamps **8.0132-T**.

Clean the gasket contact surfaces with a joint contact face stripper. **Never utilise cutting or abrasive tools.**

Should it be necessary to check the liners protrusion.  
- Extract locating dowels (1) and (2), and place the clamps **either side** of the first barrel so as to compress the o-ring-seal.  
- Using plate **B** and the support **C** for the dial-gauge from tool box **8.0132-T**, check the stand proud. It should be between **0.03 mm and 0.10 mm**.  
- Proceed as above with all other liners.

Make sure that the cylinder head gasket contact surface permissible bow does not exceed **0.05 mm**.

Clean out the threads in the cylinder block with a M 11 x 150 tap.

**Fit** a new filter (3) to the lubricating system of the cylinder-head, **Fig. III**.

### REFITTING

**Ascertain** that the two locating dowels are in position, **Fig. III**.

**Place** the cylinderhead gasket, dry, with the mark **➔** next to the flywheel.

**Fit the cylinderhead.**

**Re-place** the screws with the faces and threads previously lubricated, plus the spacers.

**Tighten** the cylinder-head following the order indicated in **Fig. V**:

1st/ Pretighten the screws to **6 m.daN**

2nd/ Slacken then retighten each bolt in turn to **2 m.daN**, and tighten by a further angle of **300°**.

Use graduated quadrant **4069-T**.

### Recouple:

- the exhaust system,
- breather, air, water and fuel hoses.

**Position** camshaft drive keys (4) and (5) as on **Fig. VI** without forcing to prevent the valves from overlapping.

**Refit** the interior timing cover.

**Fit** the camshaft gear wheels (identical on inlet and exhaust).

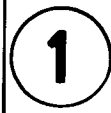
**Tighten to 4.5 m.daN.**

Reinstall the HP pump drive pulley.  
Tightening torque: **3.5 m.daN**.


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**XB 16**  
**112-1 a**

**16 valve engine**  
**CYLINDER-HEAD REMOVING-REFITTING**



**Insert** locating pins **7014-T.M** into the camshafts.

**Top up and bleed** the cooling system, using screw 

Sling the engine towards the valve gears.  
Remove the upper section of engine mounting bracket.  
Raise by 30 to 40 mm to be able to reach the timing belt tensioner.

Disconnecter the ignition coil harness and run the engine with the starter motor to build up the oil pressure.

**Fit and tension** the timing belt  
*as explained in Op. ① XB 16, 122-4a.*

**Operate** the engine cooling fans to warm up the cooling system.

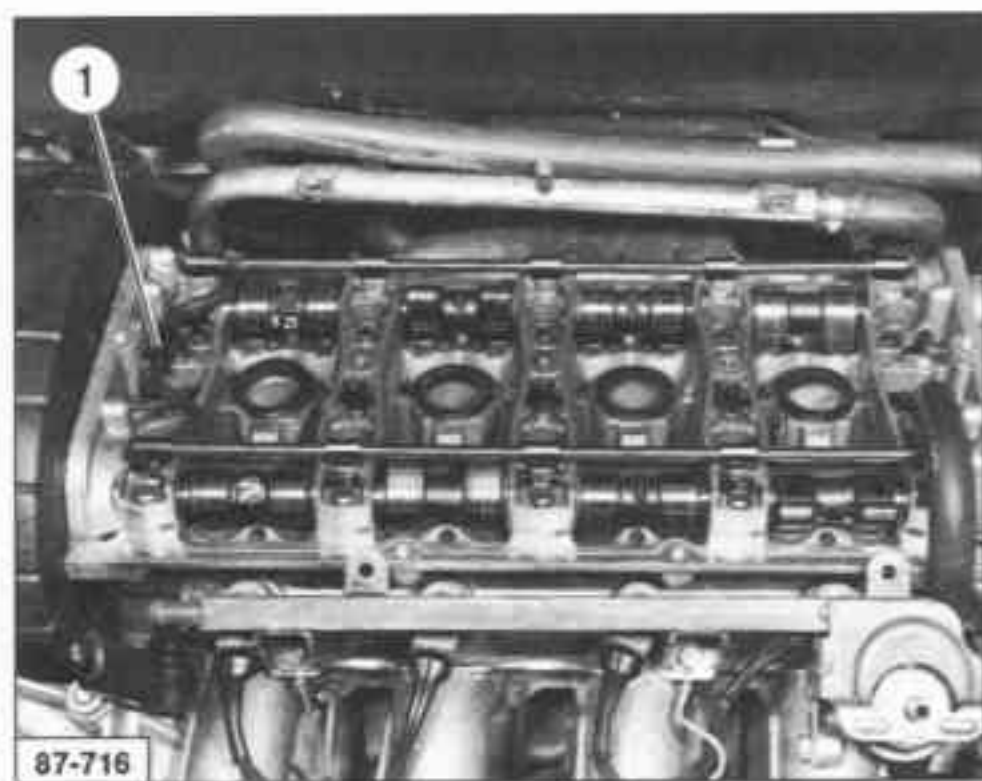
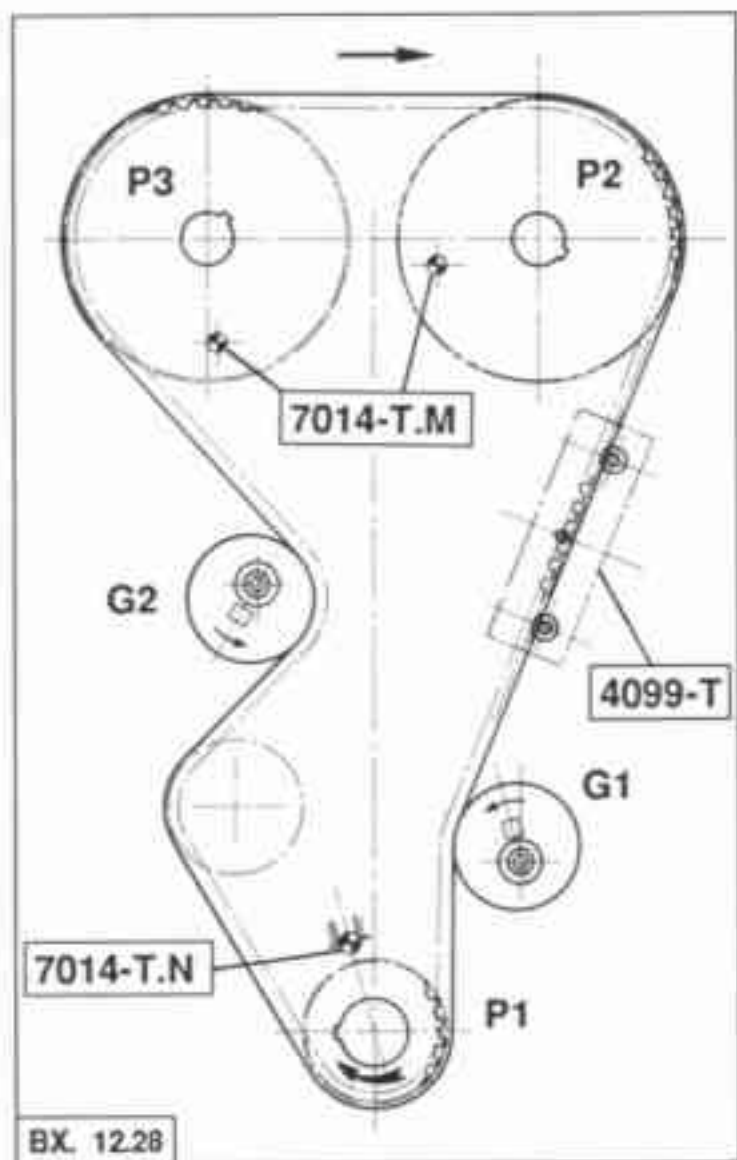
Lower the vehicle to the ground.

**Refit:**

- the timing cover,
- the engine support bracket,  
**tighten to 4.5 m.daN,**
- the alternator driving belt,
- the pump drive belt.

**Place** the camshaft bearing oil ramp (1) and the cylinder-head cover.







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# ENGINE

**XB 16**  
**112-3 a**

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*OVERHAULING THE CYLINDERHEAD  
OF A 16 Valve engine  
SPECIAL POINTS*





Camshaft bearings **oil ramp** (1) on inlet side, with lubrication holes in cams, **Fig. I**.  
On exhaust side, no lubrication holes in the cams (oil splashing).

**Cylinderhead bolt tightening, Fig. II:**

EX 55 TORX head bolts with threads and faces lubricated.

- Tighten the bolts to 6 m.daN.
- Slacken and retighten to **2 m.daN** each bolt in turn plus an angular deflection of **300°**

NOTE: The cylinderhead tightening is not required to be done after the engine has run.

When removing the cylinderhead, replace the oil filter (2), **Fig. III and IV**.

**To clean the oil circuit :**

remove one way valves (3) and (6), **Fig. IV**

– take out plugs (4) and (5),

– screw up a M 6 mm screw or a screw for wood in the valve inlet, while pushing back the ball, and pull out the screw to extract the valve.

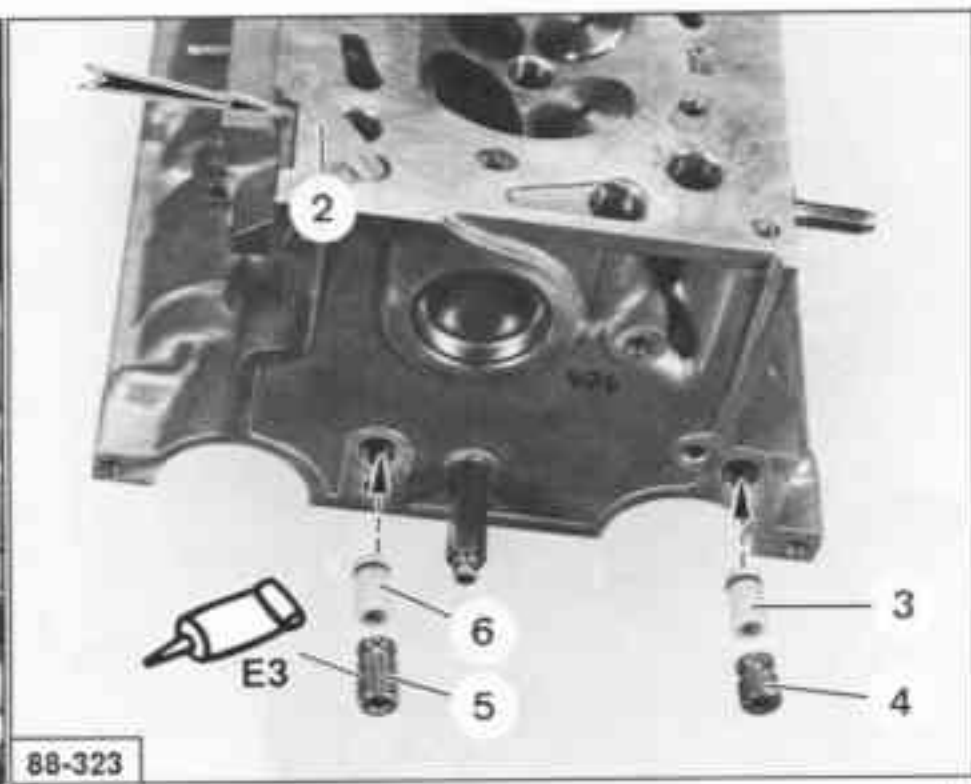
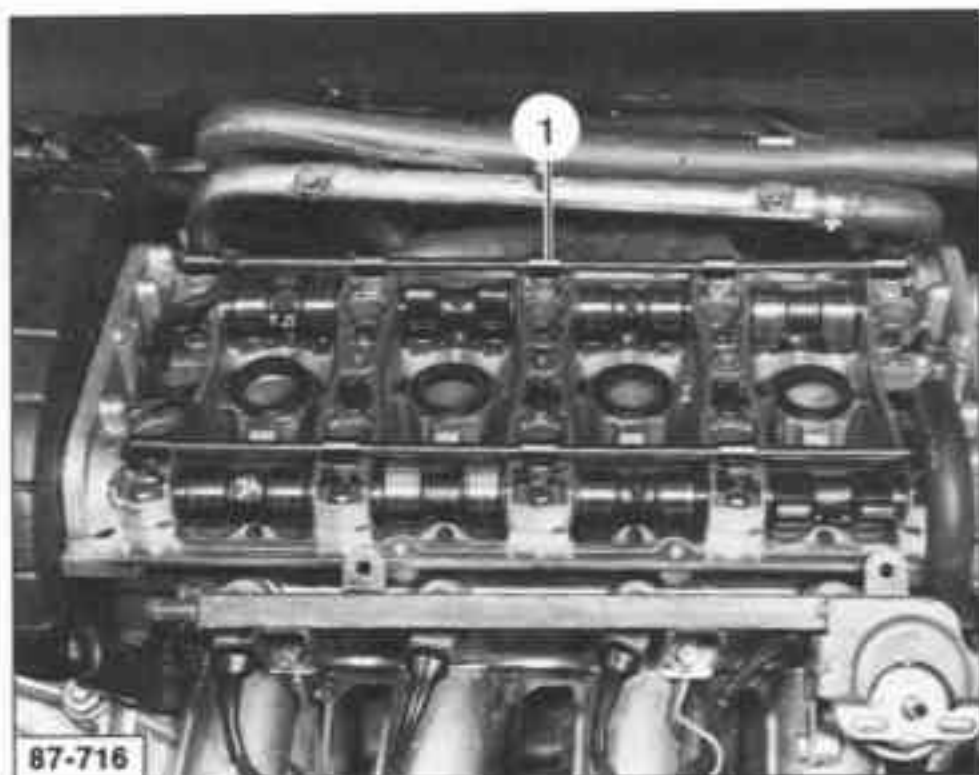
Once this operation has been carried out, refit NEW valves. **Do not reassemble the valves using a screw.** Check that the valves are in position before inserting the plugs.

Fit the short plugs (4) and long plugs (5) with the threads previously coated with LOCTITE FRENETANCH compound. Tighten the plugs to **1.2 mdaN**

**Utilize tool 4024-T** with a **30 mm dia.** head to remove or fit the valve springs. The tappet bore should be protected with a drive joint half-protector (7) located as per **Fig. V**.

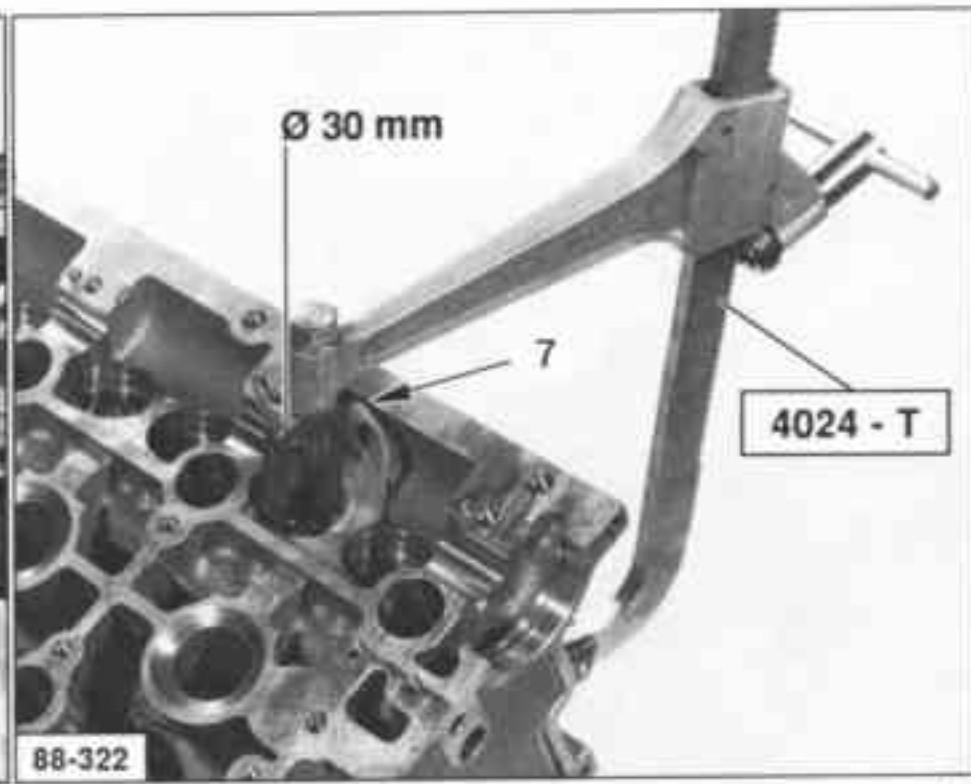
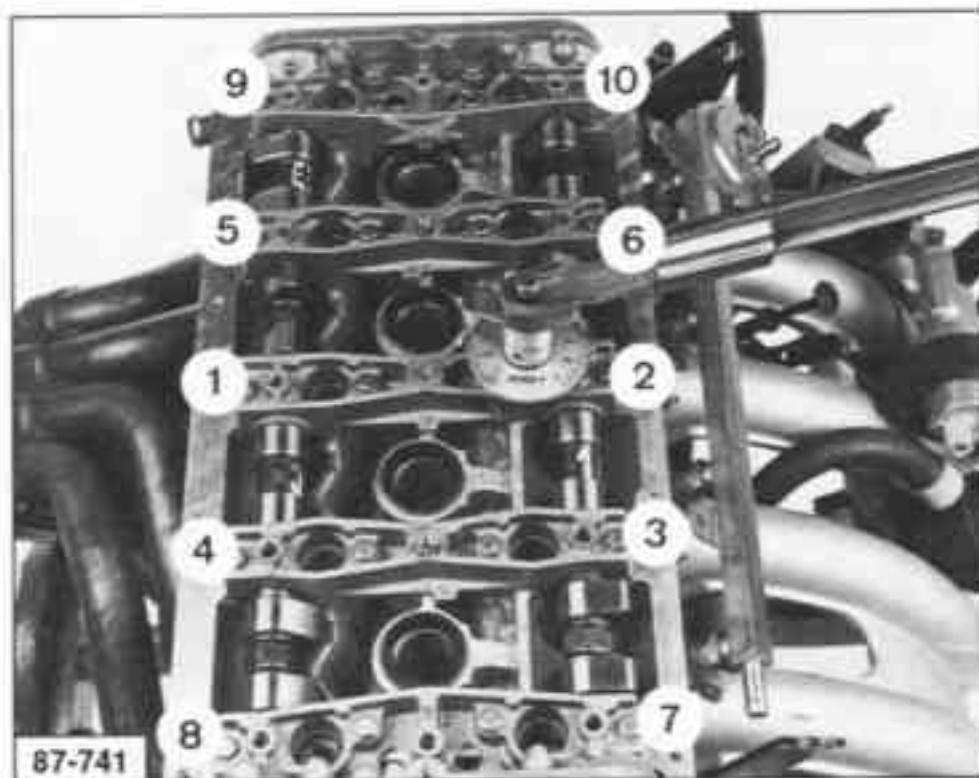
**Fit** the valve stem seals.

Place the half-round keys with the grooves filled with grease to hold them in position. Check if they are correctly located in the cups.



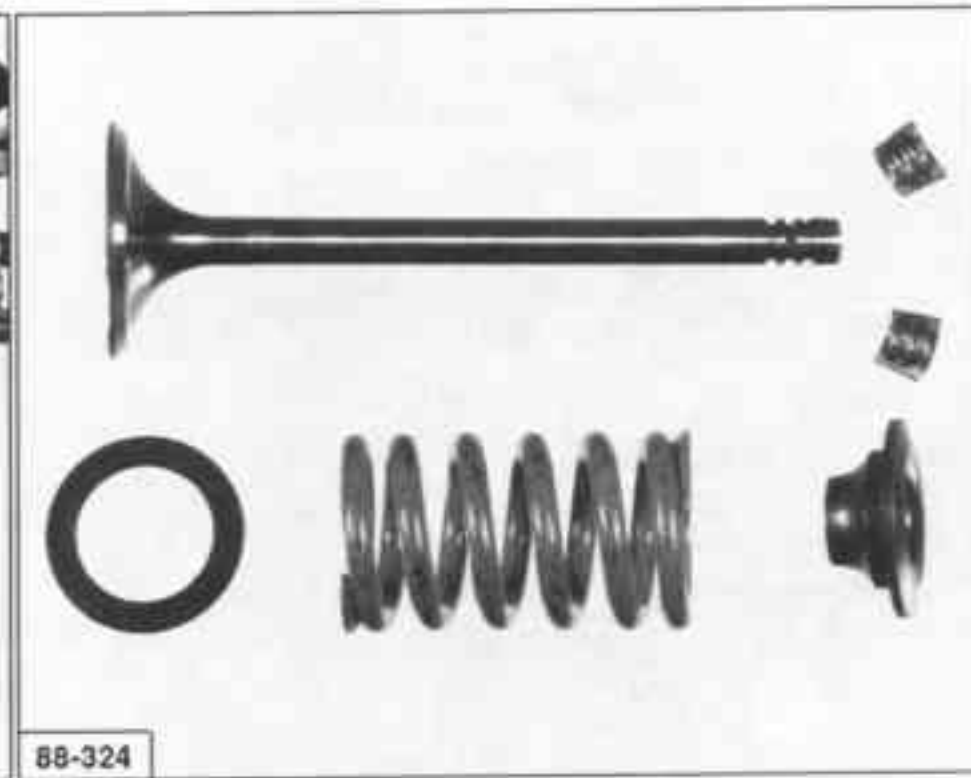
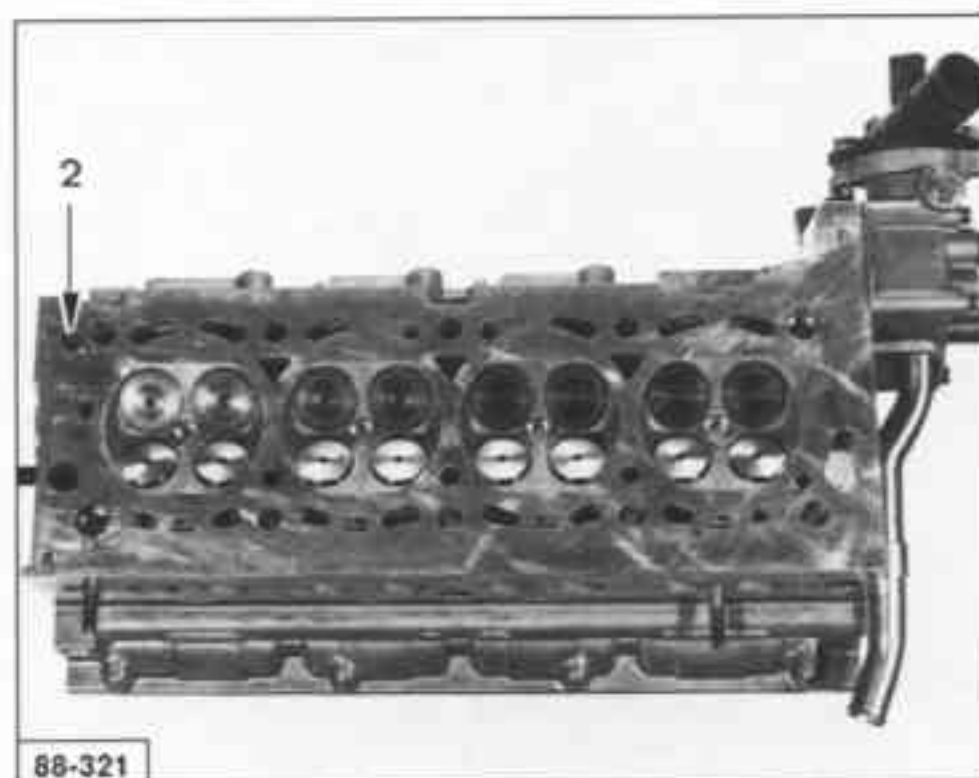
I

IV



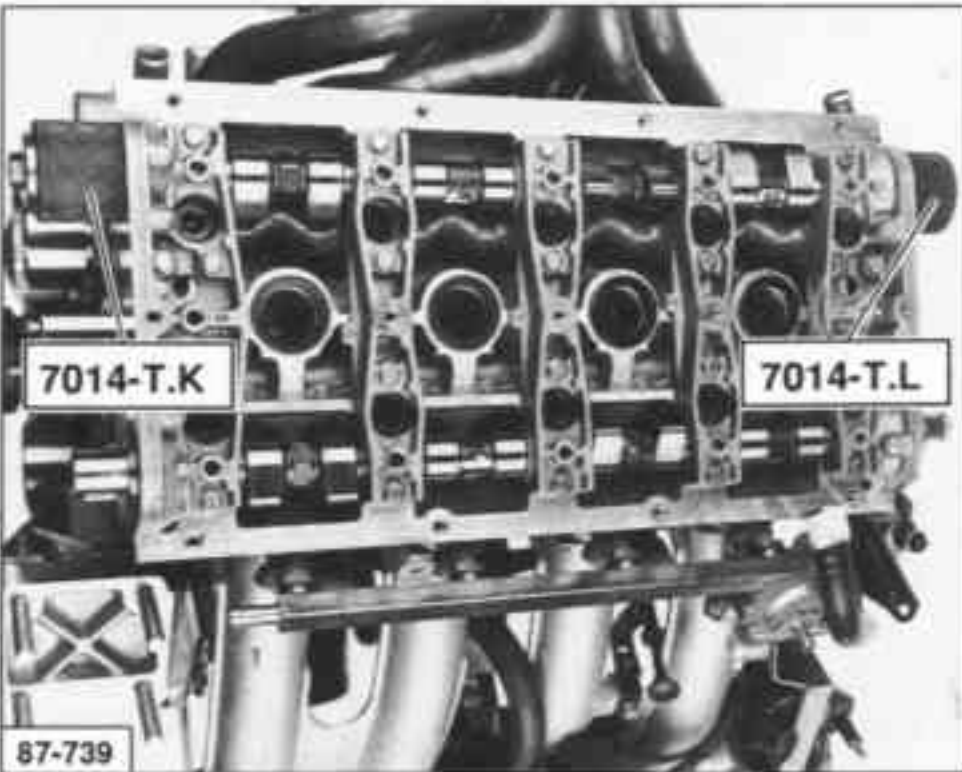
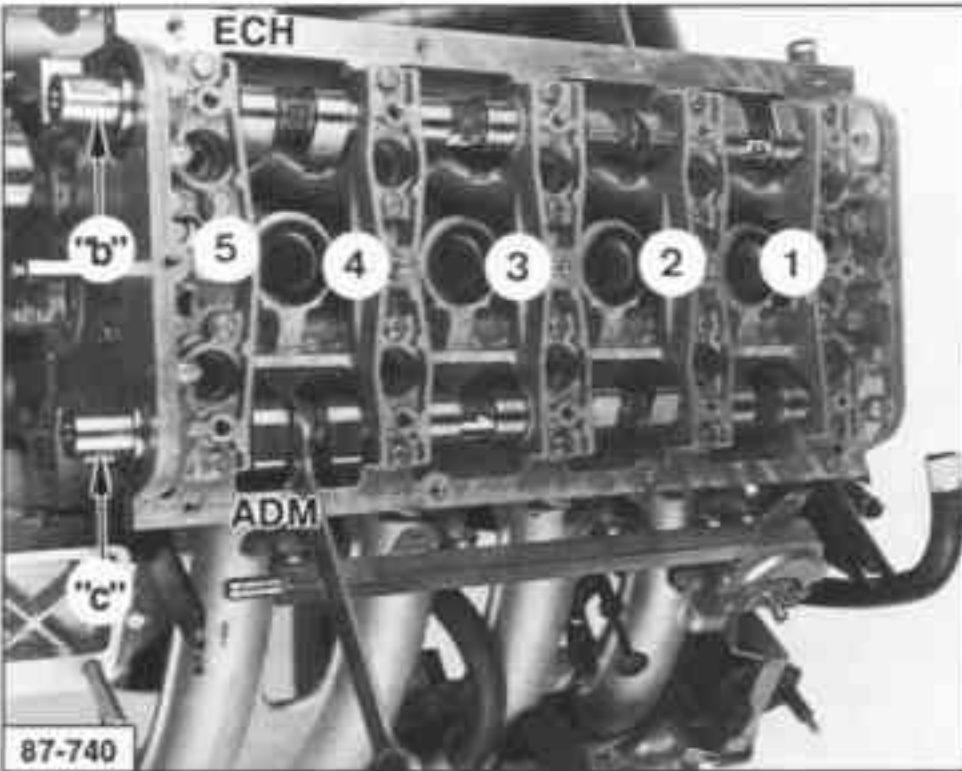
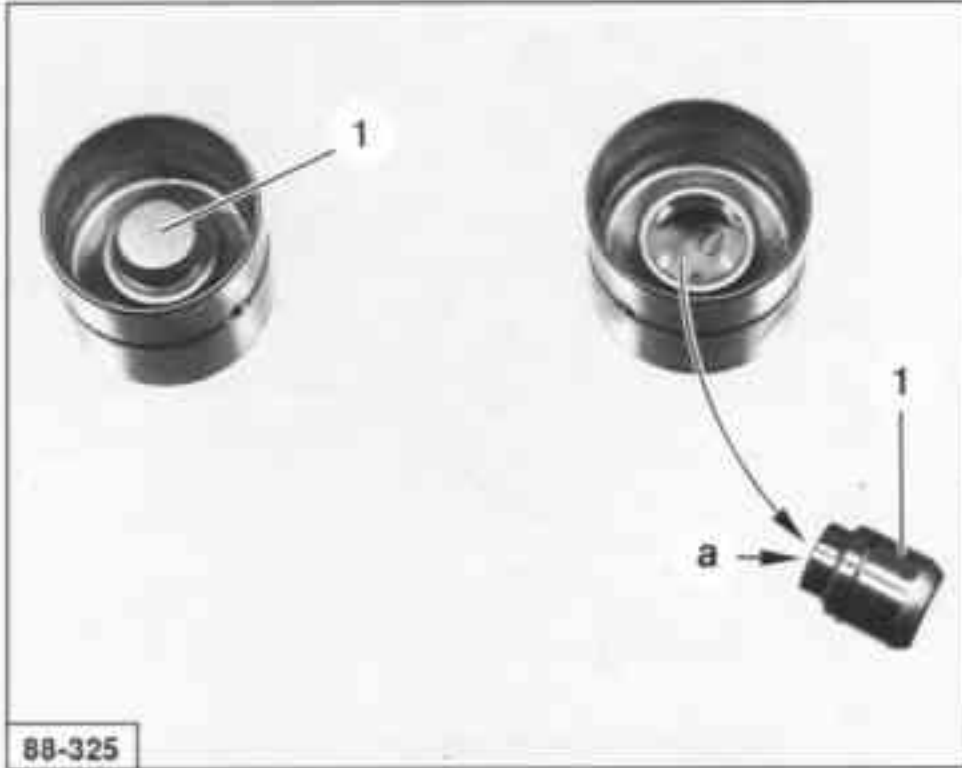
II

V



III

VI





### Hydraulic tappets, Fig. I

Mark their location when dismantling.

Refitting :

- When pressing the piston - sleeve assembly (1) with the thumb, the tappets should not become hard.
- Gently knock the tappet against a wood block to remove the piston and sleeve assembly,
- depress the ball "a" to empty the chamber.
- refit both the piston and sleeve, exerting a pressure on the assembly to cancel the circlip,
- smear the tappet with grease before replacing it in its original location.

Install the (identical type) camshaft gear wheels.  
**Tighten to 4.5 mdaN.**

Position the ignition distribution with the central screw previously coated with LOCTITE FRENETANCH compound **E3**.

**Tighten to 4 mdaN.**

### Camshafts :

Insert the camshafts as on **Fig. II** with bearings previously greased.

Exh. side : key "b" in the vertical position

Inl. side : key "c" positioned horizontally forward.

NOTE : The inlet camshaft can be identified by its key groove at ignition distributor end.

**Fit** the bearing caps in the following order, without tightening the screws :

- central cap (3), then caps (2) and (4)
- caps (1) and (5) coated with paste **E7**.

Apply a thin layer of FORMAJOINT compound over the joint contact surface so as not to blank off the lubrication holes.

Tighten the bearing screws gradually to **1 mdaN**.

Use tools **7014-T.K** and **L** to fit the seals.