

# Workshop Manual Audi Quattro

## Provisional repair instructions

2.2 litre fuel injection engine (K-Jetronic, turbocharger)  
5-speed manual gearbox 016 4wd  
Running gear  
Body repair work  
Electrical system

## May 1980 edition

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The Workshop Manual is divided into three booklets which can also be ordered separately and used individually at the different workbays as required. The booklets are valid for the Audi Quattro as from the start of production (May 1980). They contain repair notes for the repair groups listed on the inside front cover.

This booklet contains provisional repair notes for repair groups 10 to 97, as listed in the Contents on pages II and III, and describes important tests, adjustments and repair work. These instructions will be supplemented later either by Workshop Bulletins or a new edition of the booklet.

Where certain repair operations are not described, e.g. dismantling and assembling the gearbox or certain work on the engine, the repair groups concerned include notes on how to proceed in such cases.

## Workshop Bulletins

Workshop Bulletins will be allocated to the individual booklets and should be filed at the back of the booklet concerned. To remind you that bulletins have been published, please mark the bulletin number by hand on the page of the manual given in the bulletin.

## Fault finding

General fault finding instructions are incorporated in the Workshop Manual.

Further instructions on tracing and repairing likely faults are given in the "Fault Finding Handbook".

**Technical information should always be made available to all foremen and mechanics because compliance with the instructions given is essential to ensure vehicle roadworthiness and safety. In addition, the normal safety precautions to be observed when working on motor vehicles are also applicable.**

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# List of engine data and information sources

The following table is based on the engine code letters and contains information on the engine installed in Audi Quattro vehicles and the publications which cover this engine.

Code letters		WR
<b>Engine data</b>		
Manufactured	from up to	5.80
Capacity	litres	2.2
Output	kW at rpm	147/5500
Torque	Nm at rpm	285/3500
Bore	mm	79.5
Stroke	mm	86.4
Compression ratio		7.0
Valve timing		
at 1 mm valve lift and 0 mm valve clearance		
	intake opens before TDC	3°
	intake closes after BDC	47°
	exhaust opens before BDC	43°
	exhaust closes after TDC	7°
RON	min.	98
Fuel injection		K-Jetronic
Distributor		035 905 206 E
Turbocharger		X
<b>Publications</b> Order No. <sup>1)</sup>		
Workshop Manual Audi Quattro		
Provisional repair instructions	0.97.538.699 . .	x
Audi 100, Audi 200		
2.2 l fuel injection engine (K-Jetronic/turbocharger)	0.97.533.973 . .	x
Maintenance	0.97.537.503 . .	x
<b>Fault finding chart:</b>		
K-Jetronic	000.530.423 . .	x
<b>Current defects:</b>		
Service Handbook <sup>2)</sup>		
Fault Finding Handbook <sup>3)</sup>	000.530.300 . .	x

The Audi Quattro has a 2.2 litre fuel injection engine with K-Jetronic and a turbocharger. This is the same basic engine as the 2.2 litre fuel injection engine of the Audi 200 turbo. Engine repairs not described in this booklet can therefore be carried out using the Audi 100/200 Workshop Manual, June 1980 edition. However, it is then essential to refer to the Audi Quattro technical data published in this manual.

The engine also has an all-electronic ignition system which is described on page 33.

The K-Jetronic system and the turbocharger are basically the same as on the Audi 200. But the various components are modified to suit the installation on the Audi Quattro. The turbocharger also has a charge air intercooler, which increases engine power.

<sup>1)</sup> See catalogue of publications for language index

<sup>2)</sup> Only supplied in West Germany

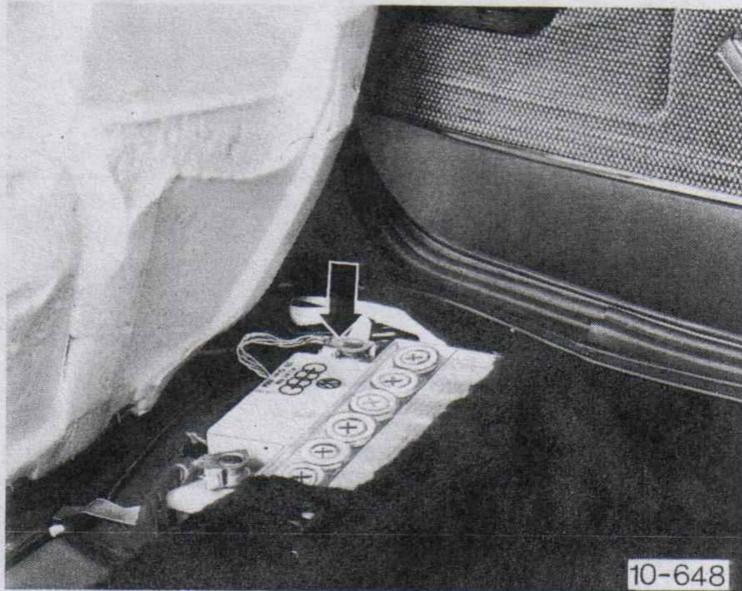
<sup>3)</sup> Only supplied in export countries

# 10 Removing and installing engine

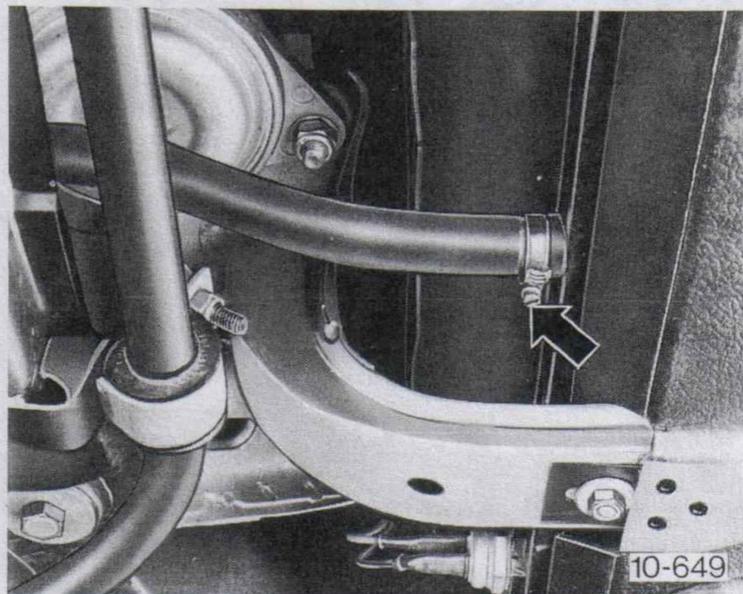
## REMOVING AND INSTALLING ENGINE

### Removing:

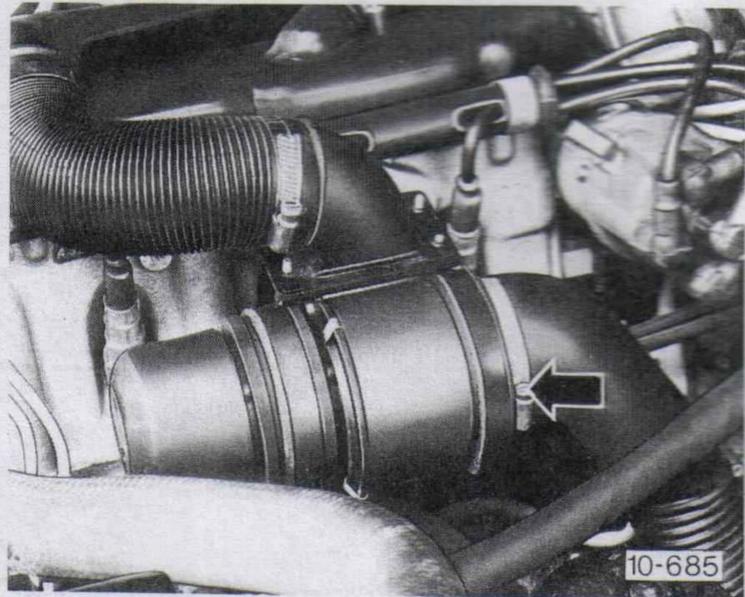
The engine is removed together with the gearbox by lowering it out with a workshop crane.



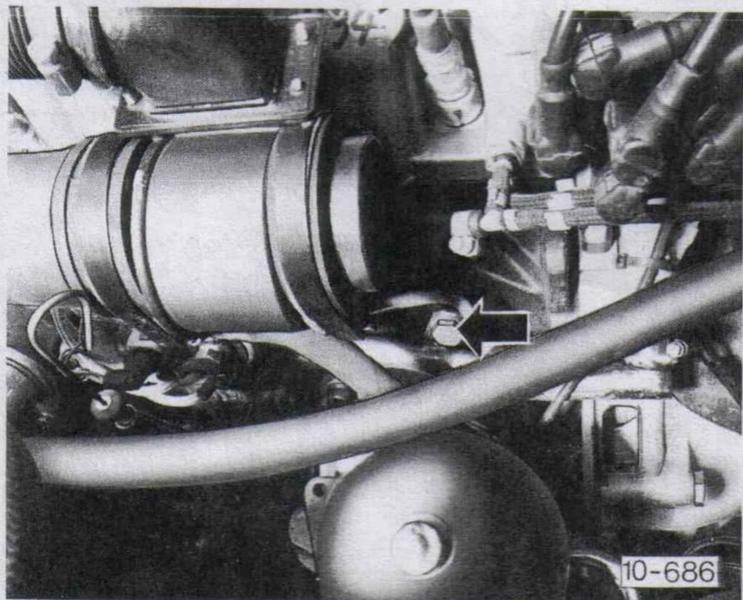
- Disconnect battery earth strap: lift up rear seat and remove battery cover.
- Set heater control to - warm -.
- Unscrew cap on radiator expansion tank.



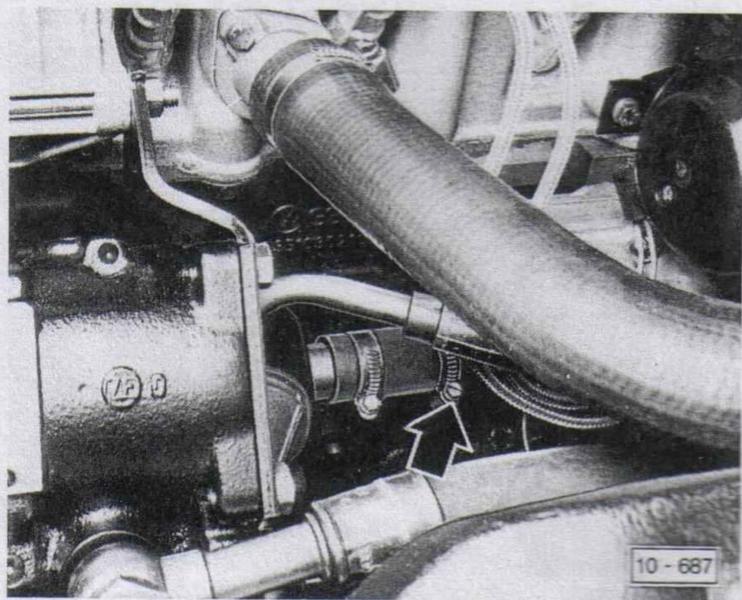
- Drain off coolant by detaching bottom hose at radiator.



- Remove intake hose for injector cooling fan.



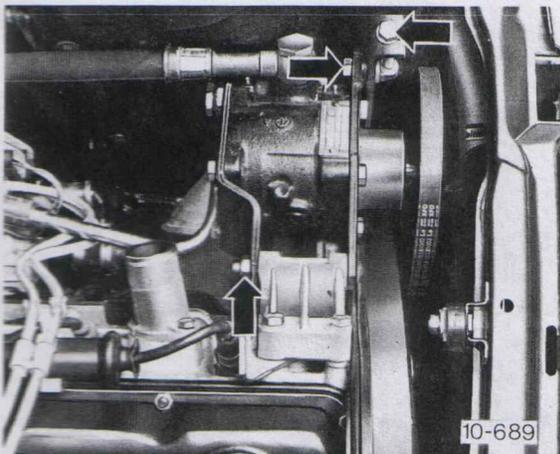
- Remove bolt holding coolant pipe.



- Detach coolant hose from coolant pipe.

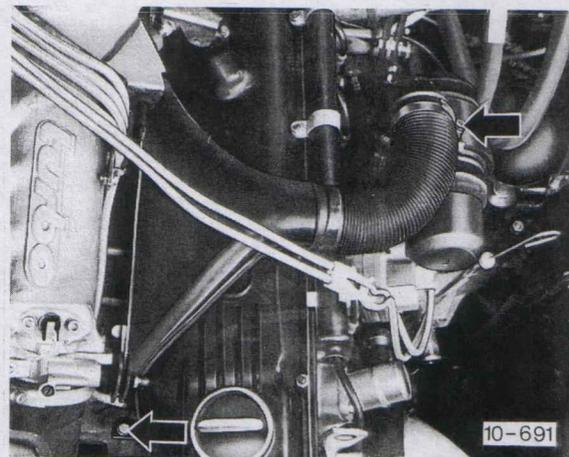


- Remove upper radiator cowling
- Detach top coolant hose from engine.

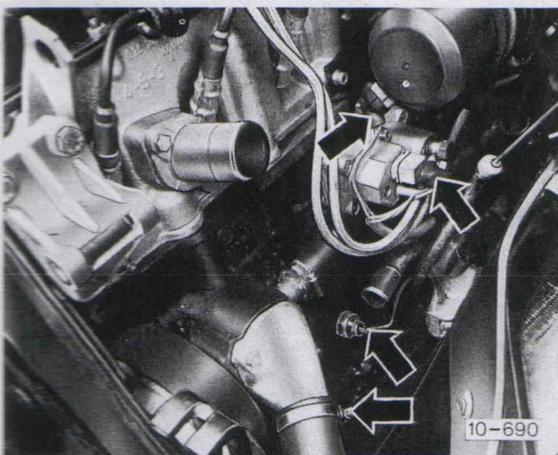


- Remove impeller pump for power assisted steering after slackening and removing V-belt. Leave hydraulic lines connected.
- Place pump clear on one side.

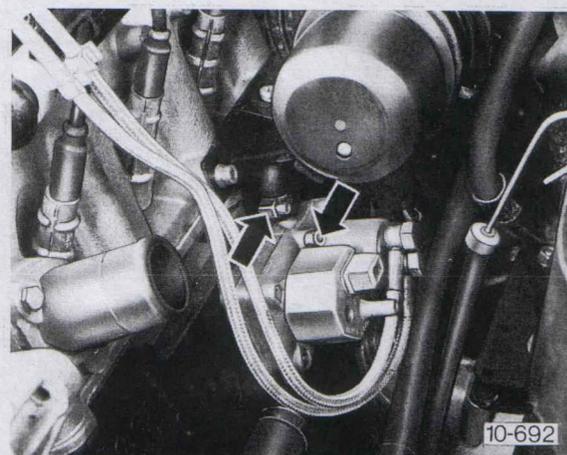
- Disconnect plug from radiator fan.
- Detach coolant hose going to radiator expansion tank.
- Detach breather hose going to auxiliary radiator.
- Detach coolant hoses from auxiliary radiator.
- Disconnect plug from radiator fan switch and place wiring harness clear to one side.
- Detach radiator mounting.
- Detach right hand cowling from radiator.
- Detach lower radiator cowling.
- Lift out radiator after lifting out windshield and headlight washer reservoir.



- Remove air guide and hose between cooling fan and injectors.

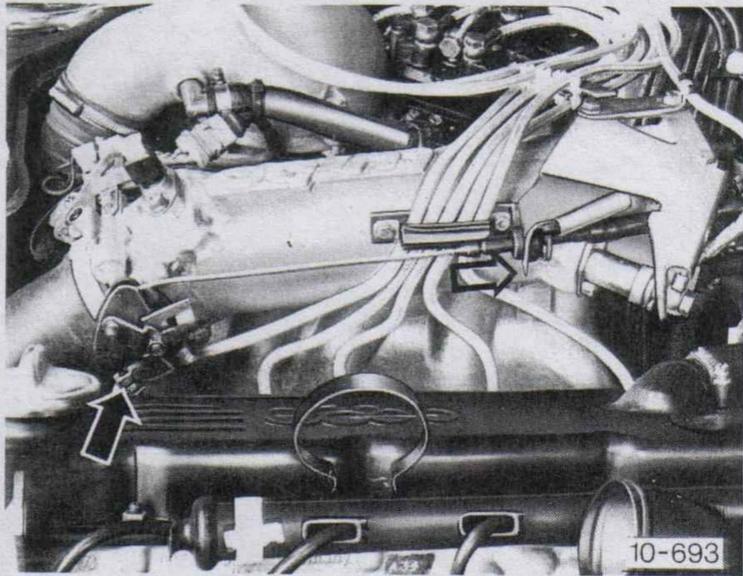


- Detach coolant hose from thermostat housing.
- Disconnect wiring from oil pressure switch, warm-up valve, cooling fan for injectors and sender unit for engine cold indicator light, and place wiring harness clear to one side.



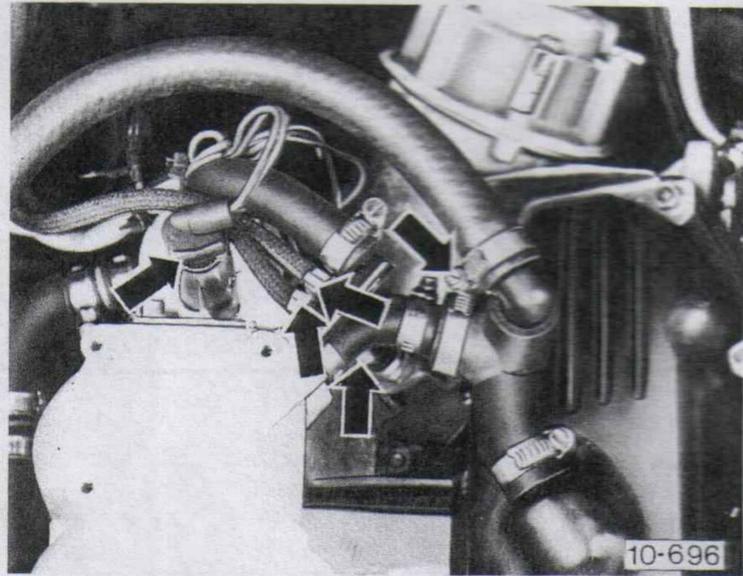
- Remove warm-up valve, do not disconnect fuel lines.

# 10 Removing and installing engine



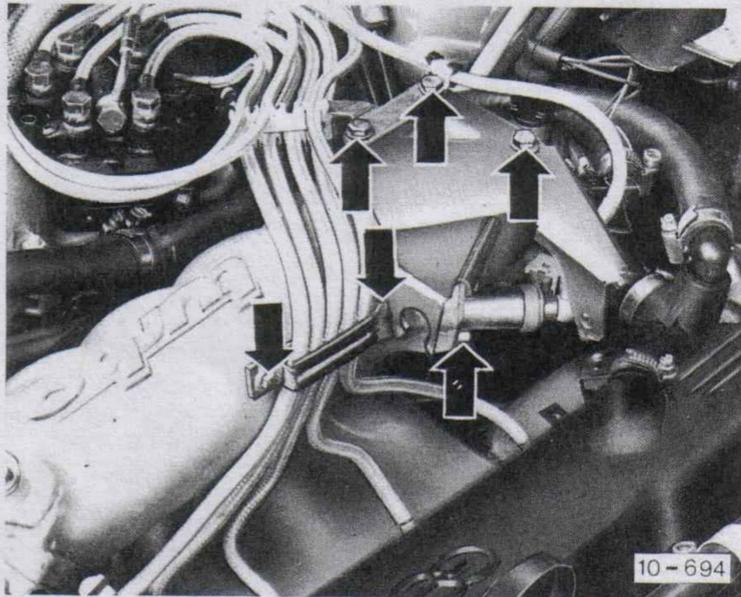
10-693

- Disengage accelerator cable after releasing lock clip. Pull accelerator cable through bracket.



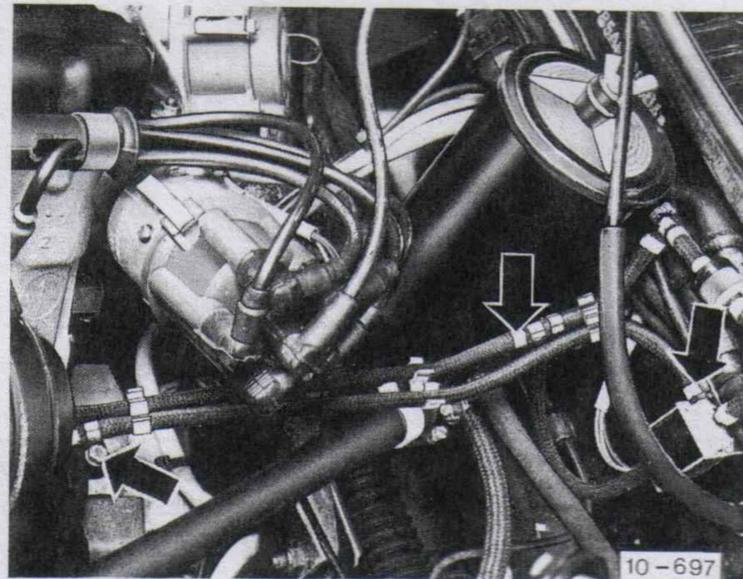
10-696

- Disconnect plug from auxiliary air valve.
- Disconnect both vacuum hoses.
- Disconnect crankcase breather hose.
- Disconnect plug for cooling fan for injectors.
- Lay wiring harness clear to one side.



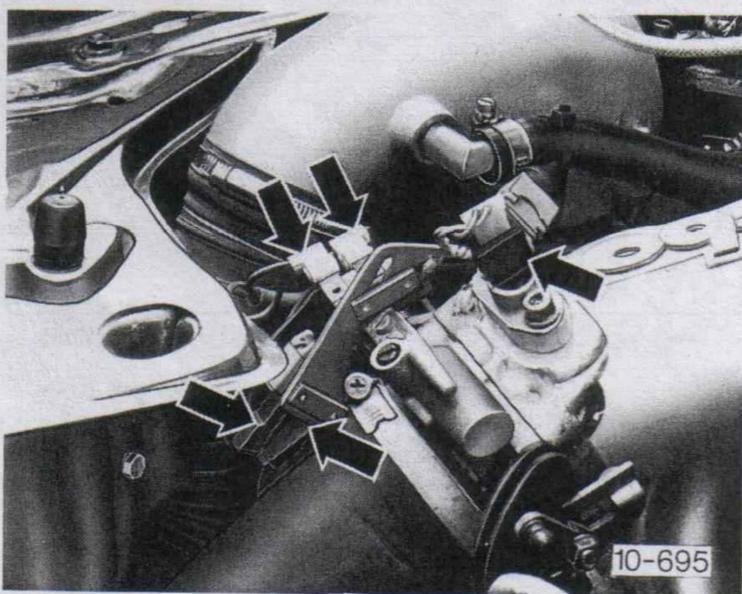
10-694

- Remove bracket holding fuel lines.
- Pull injectors out of their seats.
- Remove cold start valve, disconnect plug, but leave fuel line connected.



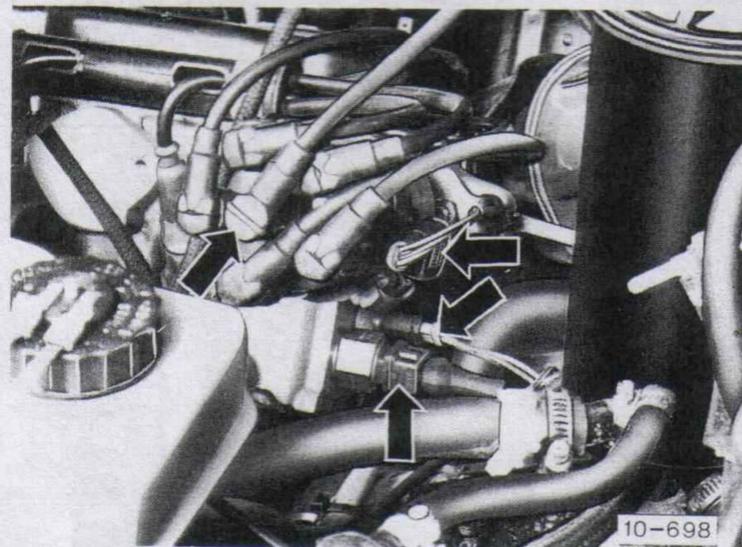
10-697

- Disconnect vacuum lines (two-way valve).
- Unscrew thermopneumatic valve. Do not disconnect vacuum lines.
- Remove ignition timing sender unit.
- Disconnect speedo cable from gearbox.



10-695

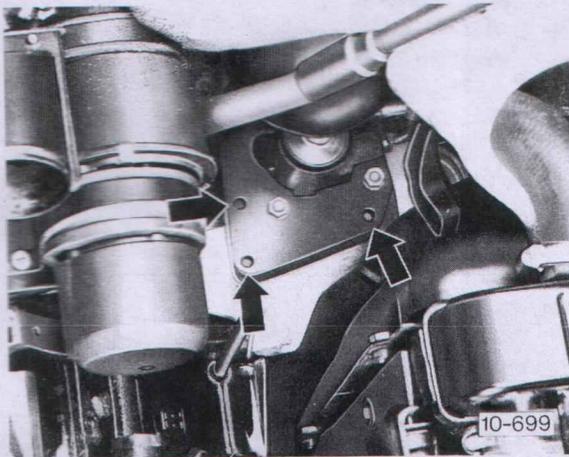
- Disconnect plugs from both throttle switches and sender unit for intake air temperature.
- Detach intake hose.
- Place wiring harness clear to one side.



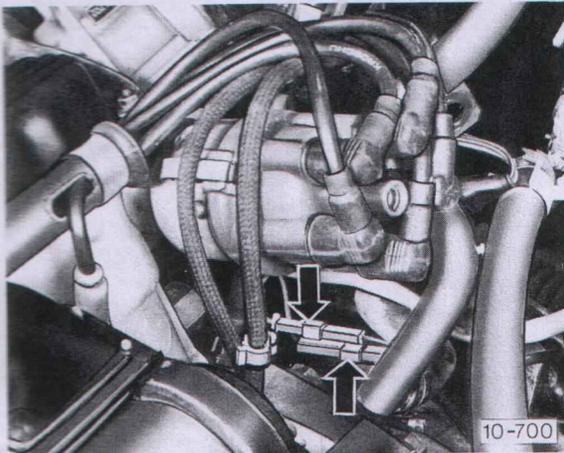
10-698

- Take off distributor cap.
- Disconnect lead from terminal 4 on distributor.
- Disconnect plug from Hall pick-up on distributor.

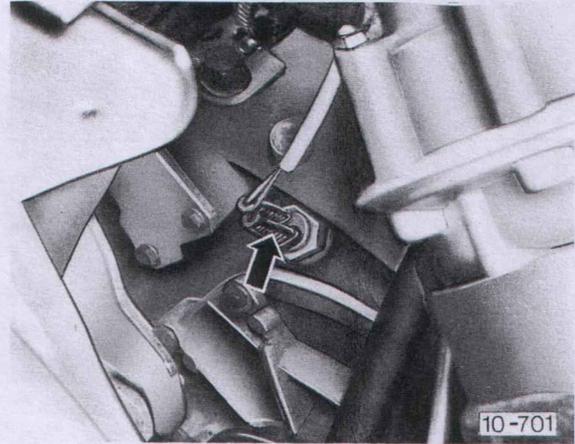
- Disconnect plug from thermo-time switch and engine hot indicator light.
- Disconnect heater hose from engine.



- Detach hydraulic brake servo with accumulator from engine bearer. Leave hydraulic lines connected.



- Disconnect plug for differential lock indicator.

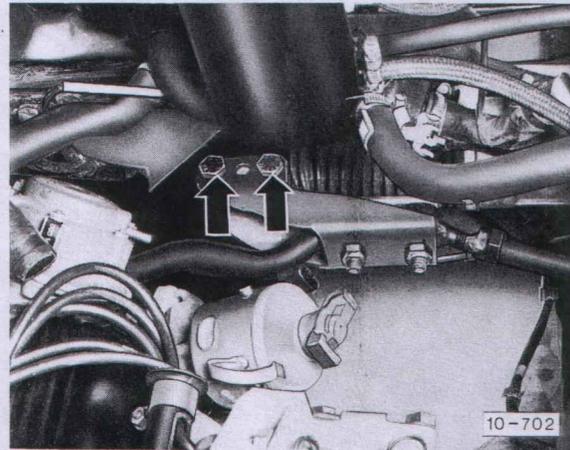


- Disconnect plug from reversing light switch.
- Disengage gearshift linkage.
- Remove clutch slave cylinder by disengaging retaining bar and knocking out retaining key (underneath retaining bar in gearbox). Leave hydraulic line connected.

**Important**

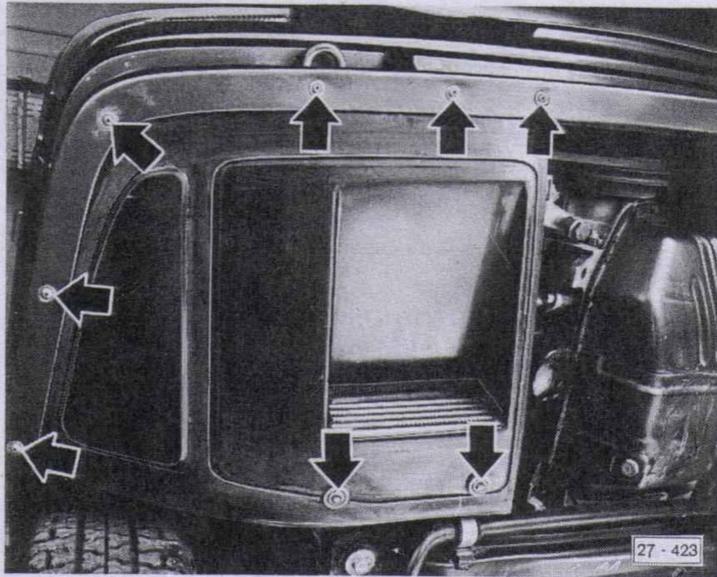
Do not operate the clutch pedal after the slave cylinder is removed.

- Detach earth strap from left engine bearer.

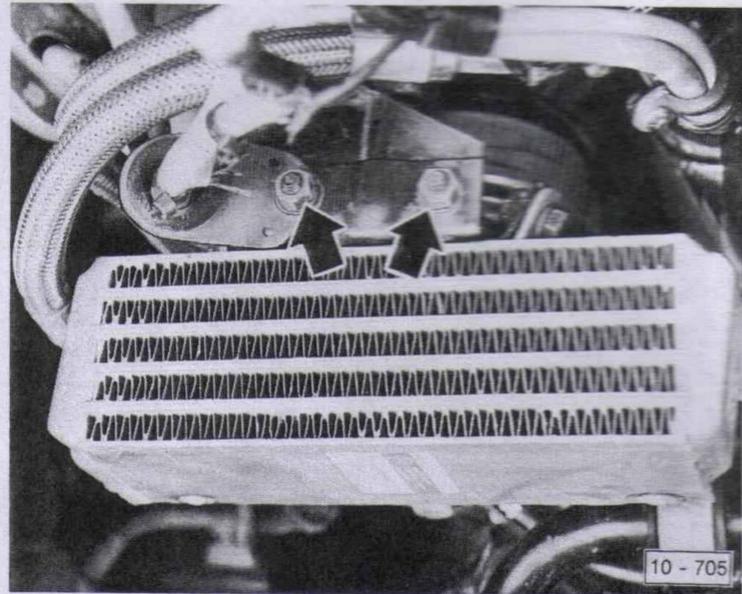


- Detach tie rod from steering rack.
- Detach vacuum hose from auxiliary air valve.

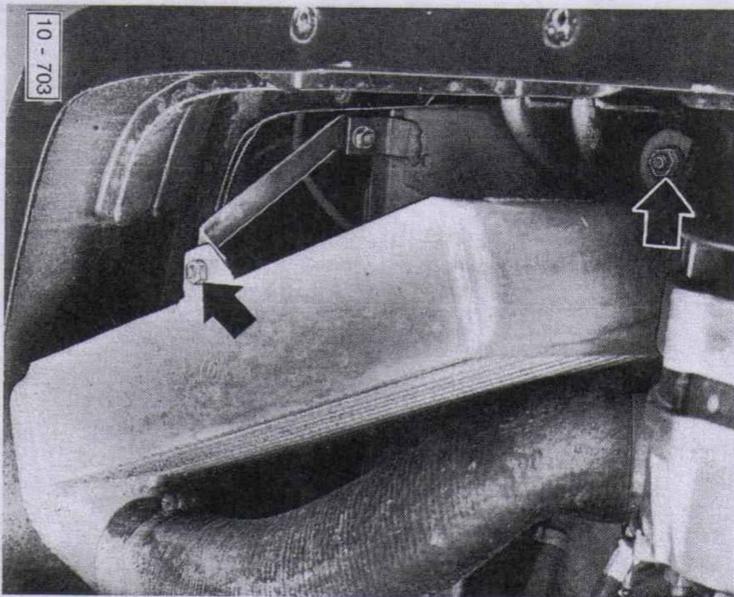
# 10 Removing and installing engine



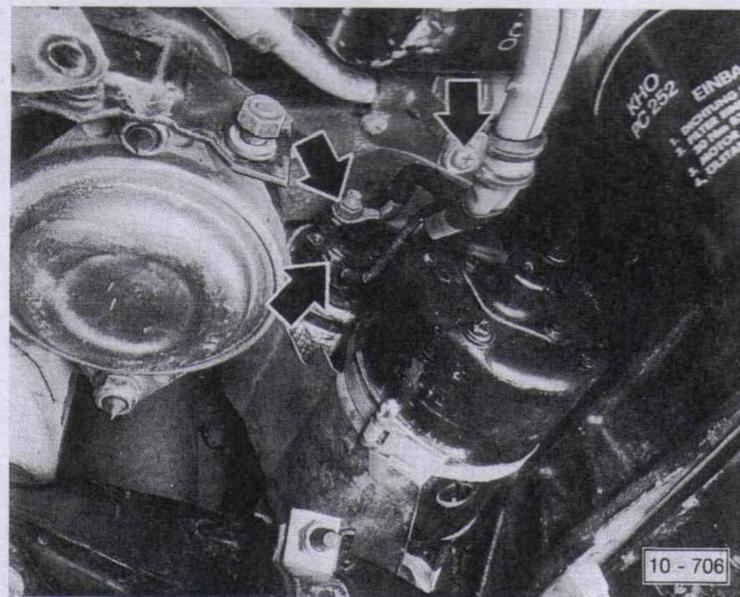
– Remove air guide for oil cooler.



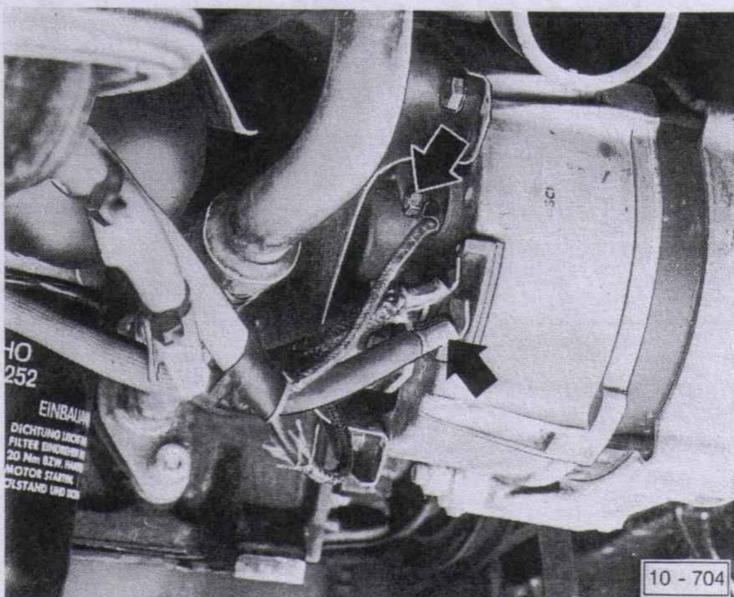
– Detach oil cooler. Do not disconnect oil lines.



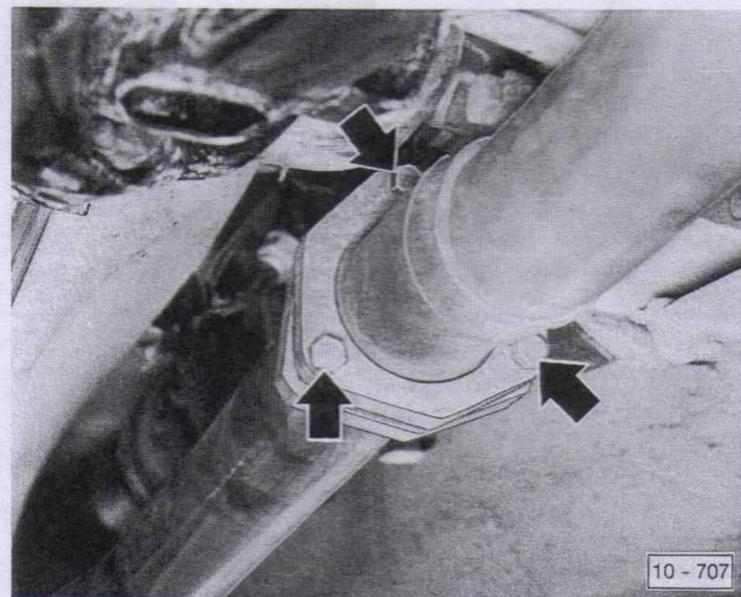
– Remove charge air intercooler.



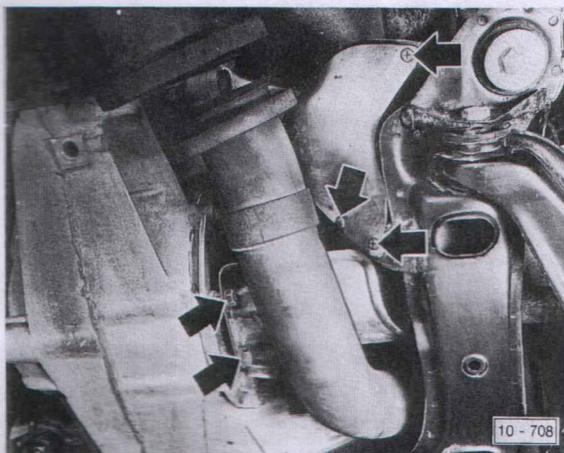
– Disconnect wires from starter motor.



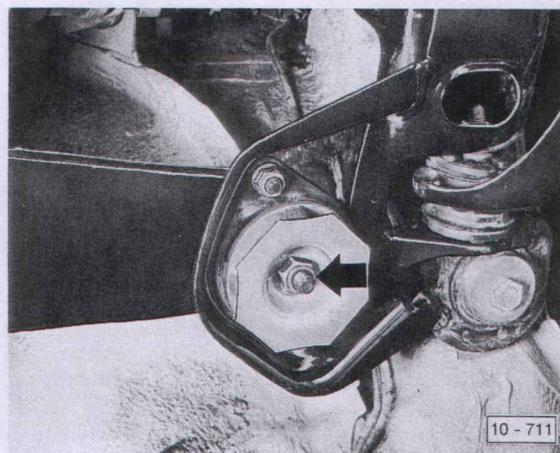
– Detach wiring from alternator.



– Detach exhaust pipe at flange.



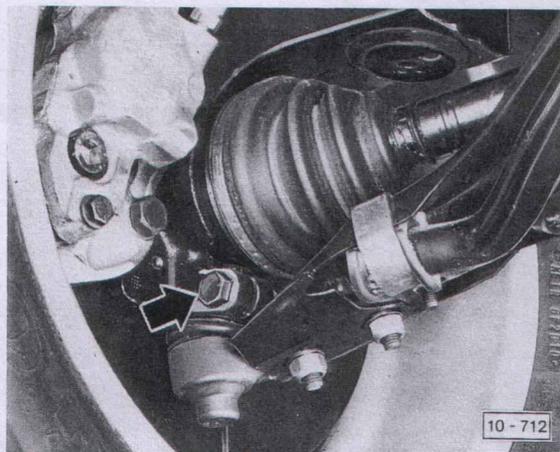
- Remove guard plate on gearbox and on right gearbox mount.
- Detach left and right drive shafts from gearbox.



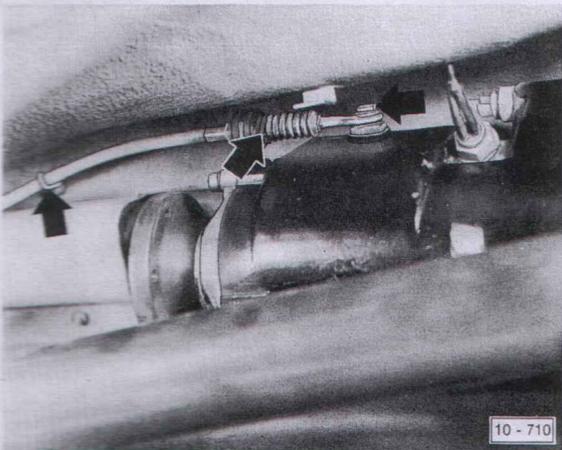
- Unscrew bolts holding left and right gearbox mounts to gearbox bearers.



- Detach propellor shaft from gearbox.



- Unscrew mounting bolts on left and right wish-bone joints.

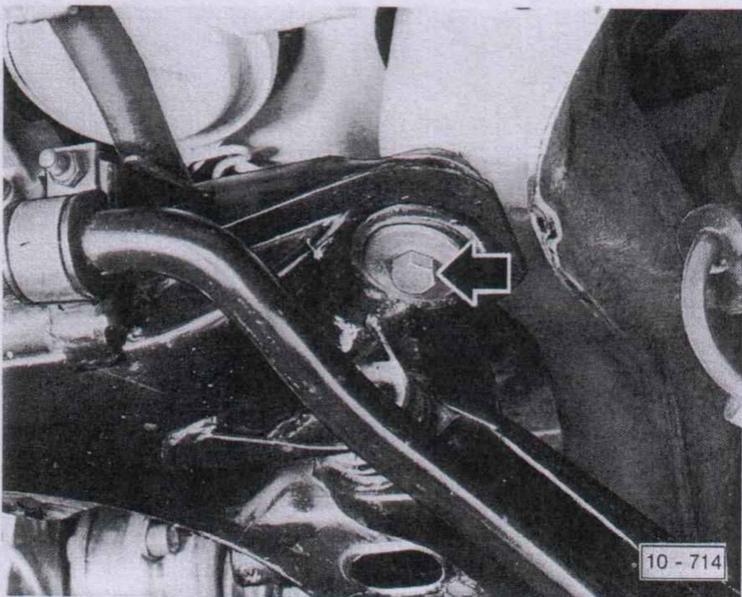


- Disengage cable for rear differential lock by taking out front and rear lock clips, pushing back sleeve and disengaging cable from bar.

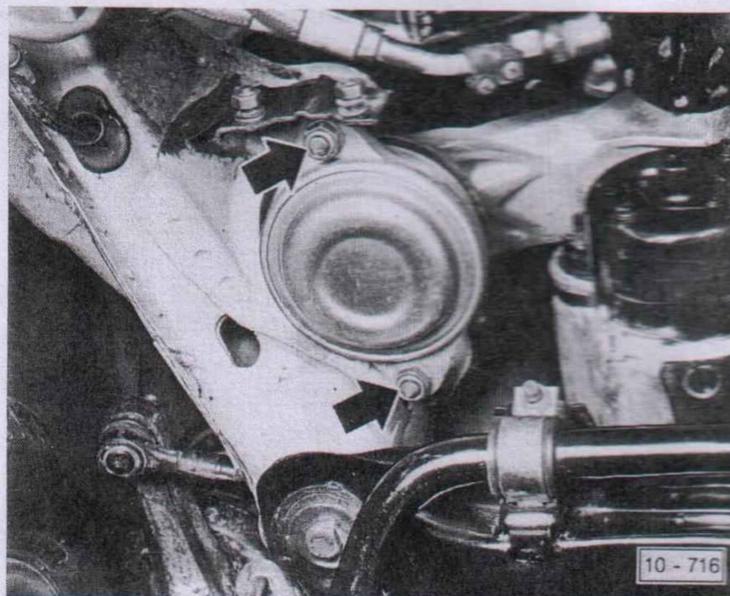


- Unscrew rear mounting bolts on subframe, left and right.

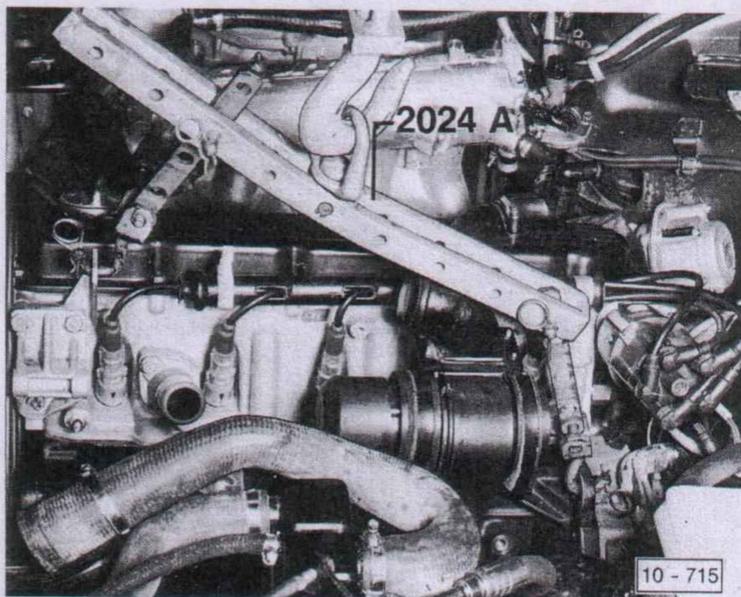
# 10 Removing and installing engine



– Unscrew front mounting bolts on subframe and detach subframe, pressing wishbone joint out of suspension strut.



– Detach front left and right engine bearers.



– Attach lifting bracket:

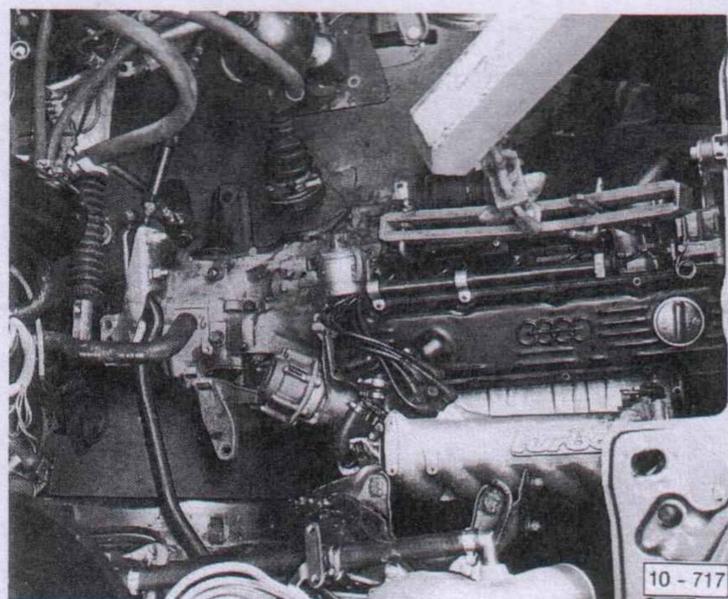
position 3 – 3rd hole  
position 8 – 4th hole

**Note:**

To balance the weight of the engine/gearbox assembly the vertical bars must be set at the correct length and in the correct positions on the horizontal sling bracket.

The positions marked 1 – 4 on the horizontal sling bracket must face towards the pulley end. The holes in the vertical bars are counted upwards from the hooks.

– Raise engine slightly.



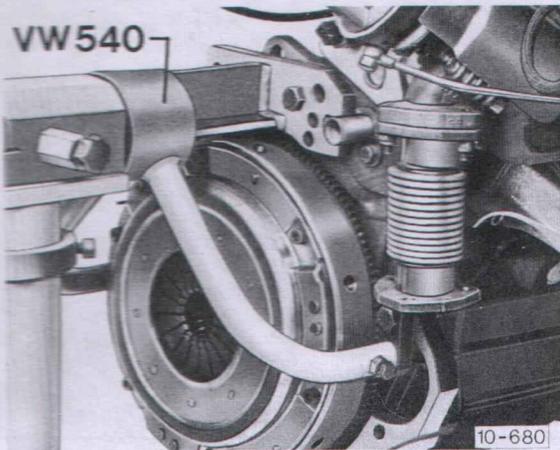
– Lower engine with gearbox.

**Important**

The assembly must be guided carefully when it is lowered out to prevent damage to the body and engine.

- Raise vehicle on hoist and remove engine.
- Separate engine and gearbox.

## ATTACHING ENGINE TO ASSEMBLY STAND



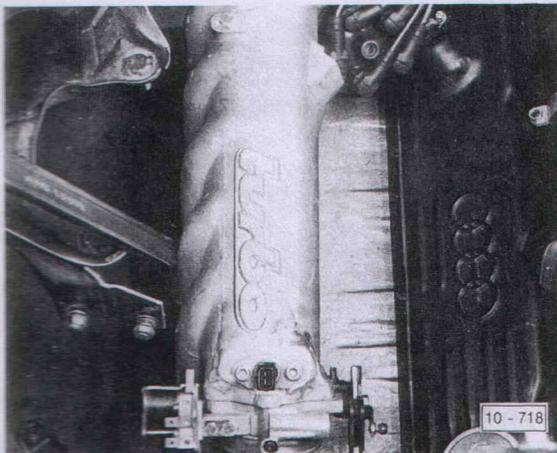
- If work is to be carried out on the engine it should be secured to the assembly stand using the support.

### Important

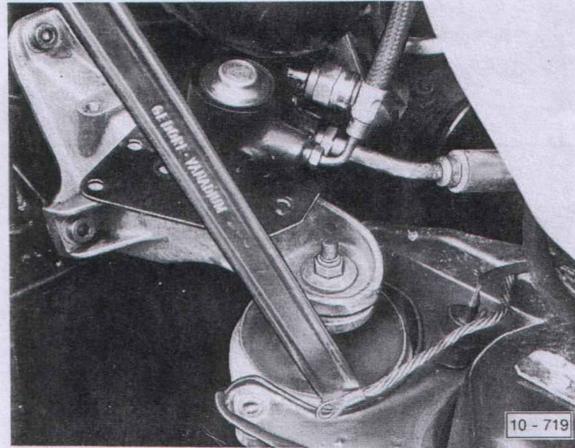
Do not measure the cylinder bores with the engine attached to the assembly stand because this may cause a certain amount of distortion.

### Installing:

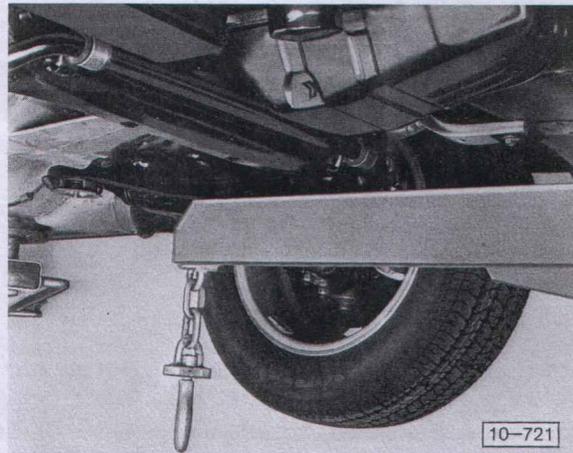
Engine installation should be carried out in reverse sequence; note the following points:



- Lift engine/gearbox assembly and guide engine past side member.
- Run in jack underneath gearbox and lift assembly using workshop crane and jack at the same time.



- Insert left engine mount into support and ensure that the rubber stop of the front engine mount seats in the stop shell.



- Insert subframe, lifting into position with workshop crane.

Keep to correct sequence when tightening bolts:

1. rear left
2. rear right
3. front left
4. front right

# 10 Removing and installing engine



- Connect starter motor lead on correct side.

**Important**

If the lead -1- is connected on the wrong side it can come into contact with the engine or engine bearer. **This could cause a short circuit and risk of fire!**

- Adjusting accelerator cable, repair group 25
- Filling cooling system - repair group 19

**Tightening torques:**

Engine to gearbox

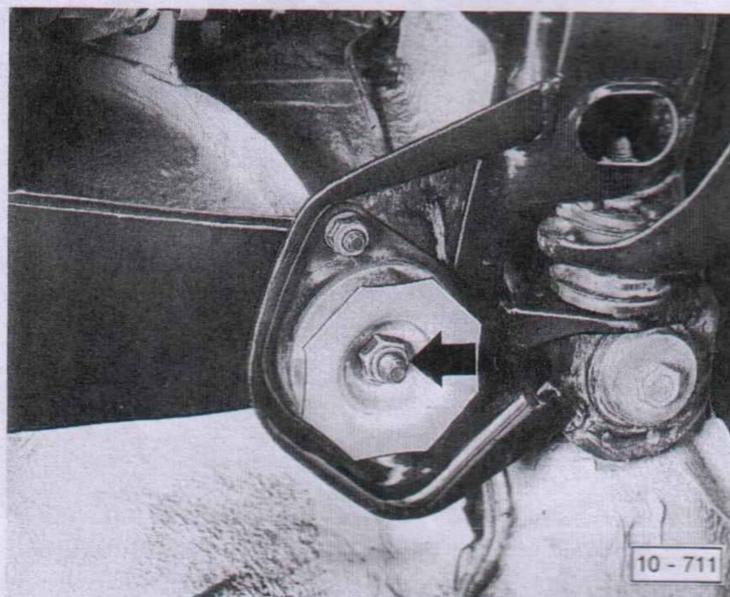
M 8	30 Nm
M 10	45 Nm
M 12	60 Nm

Exhaust pipe to gearbox bearer	30 Nm
Subframe to body	70 Nm
Warm-up valve	20 Nm
Cold start valve	10 Nm
Hydraulic brake servo to engine bearer	20 Nm
Earth strap to engine bearer	20 Nm
Tie rod bracket to steering rack	40 Nm
Charge air cooler to body	
M 8	20 Nm
M 6	10 Nm
Oil cooler to body	30 Nm
Exhaust pipe to flange	25 Nm
Drive shaft to gearbox	55 Nm
Prop shaft to gearbox	45 Nm
Gearbox carrier to gearbox mount	45 Nm
Wishbone joint to suspension strut	50 Nm
Engine mount to body	40 Nm

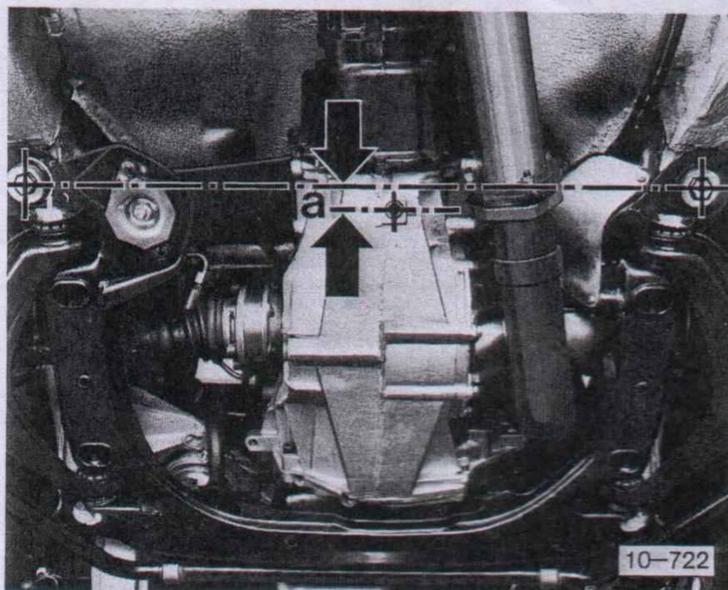
## ALIGNING ENGINE AND GEARBOX

**Note:**

The position of the engine and gearbox must always be checked and aligned if necessary after removing and installing the engine.



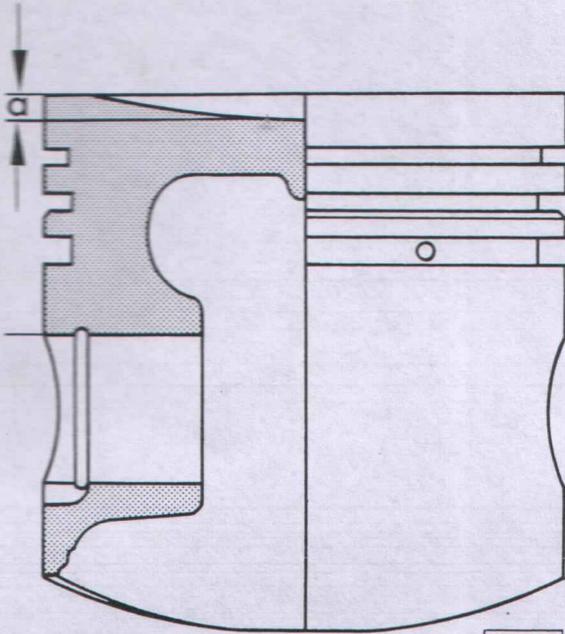
- Loosen both mounting bolts on left and right gearbox bearers/mounts.
- Loosen both mounting nuts on left and right engine bearers.



- Shake engine and gearbox on their mounts to move into correct longitudinal position. Distance a = 17.9 mm ± 1 mm.

**Note:**

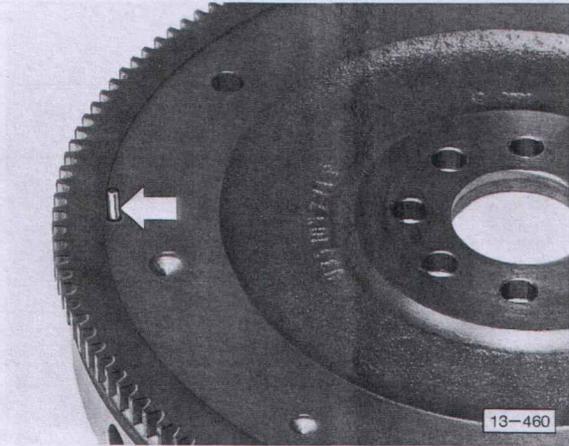
The transverse position and height of the engine/gearbox are not adjustable.



**Fig. 1 Piston — depth of combustion recess**

Engine code letters: WR  
 Dimension —a—: 12.5 mm

13-434



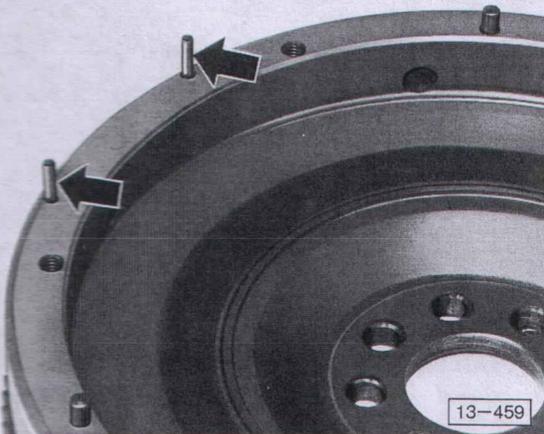
**Fig. 3 Installing pin for ignition timing**

Do not bend pin when renewing flywheel.

13-460

**Important**

If the pin for ignition timing is not installed (forgotten) when the flywheel is renewed, the electronic ignition system will receive no control signals and the engine will not start.



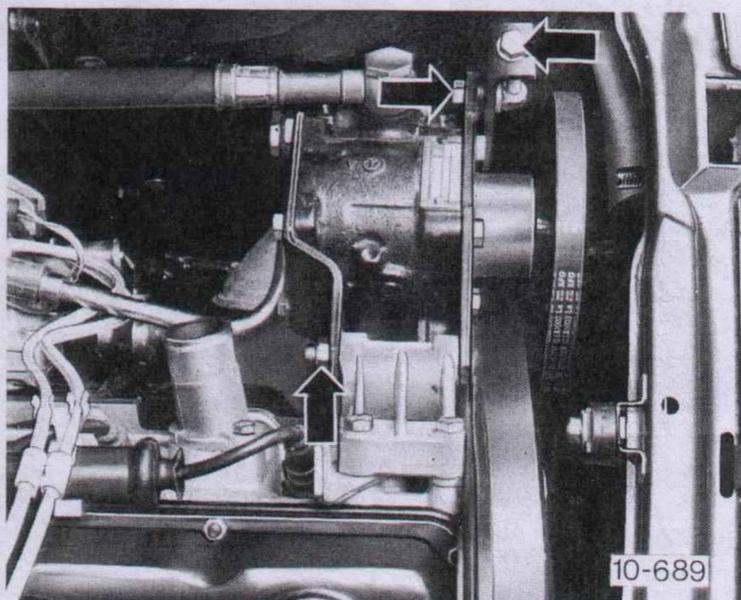
**Fig. 2 Installing pins for dwell angle**

Do not bend pins when renewing flywheel.

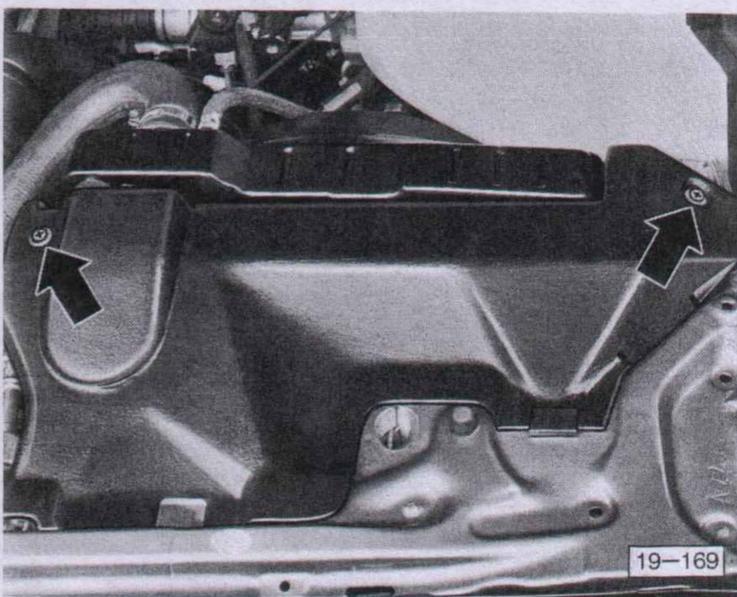
13-459

# 15 Cylinder head, valve gear

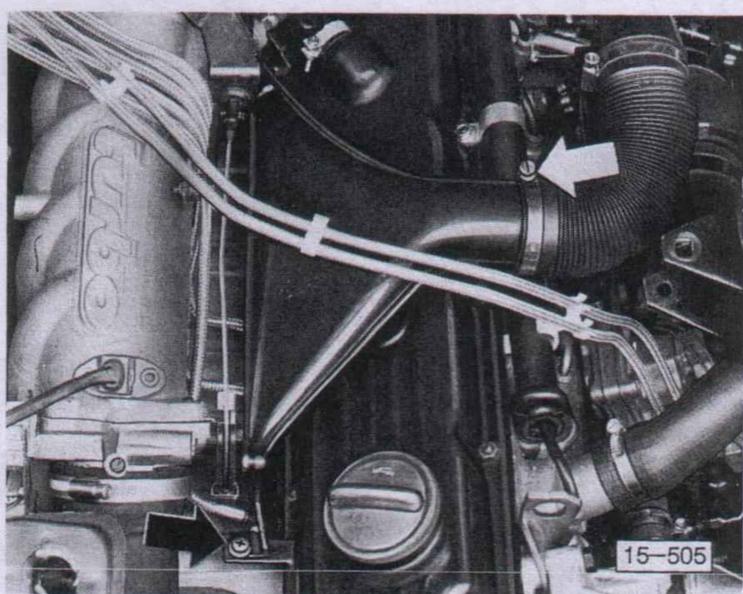
## REMOVING AND INSTALLING CAMSHAFT OIL SEAL



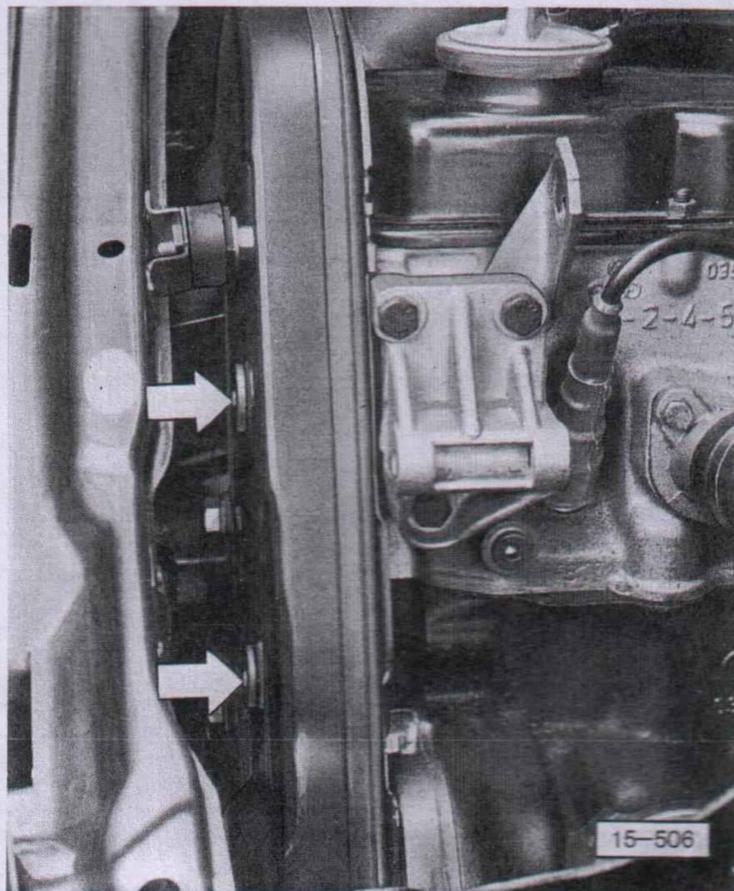
- Remove impeller pump for power assisted steering after slackening and removing V-belt. Leave hydraulic lines connected.
- Place impeller pump clear to one side.



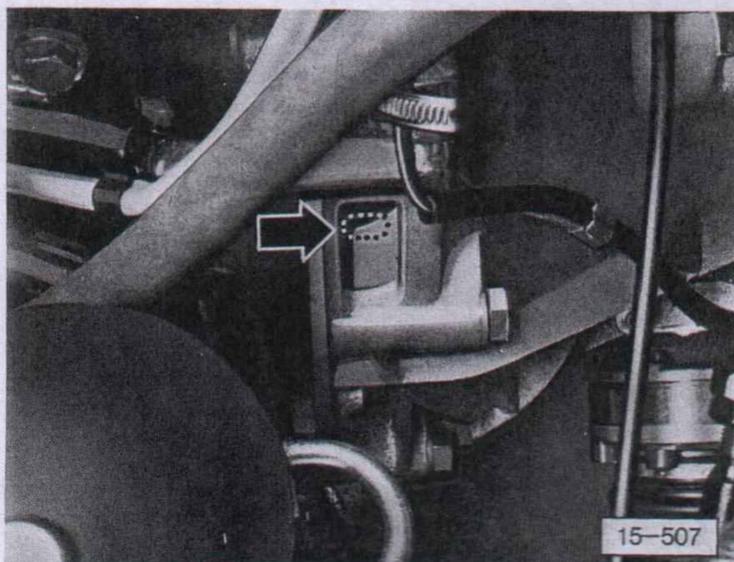
- Remove upper radiator cowling.



- Remove air duct and hose for cooling fan for injectors.



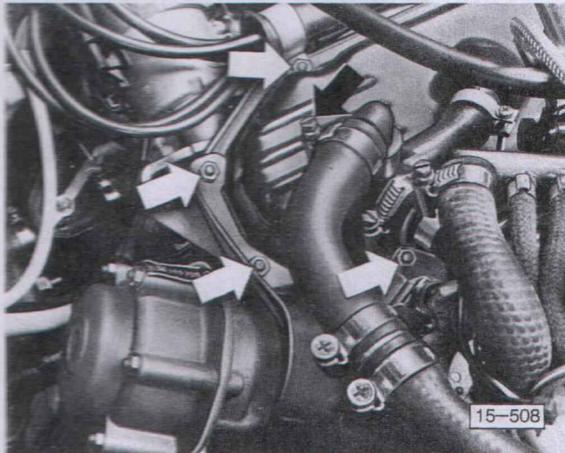
- Remove upper toothed belt guard.



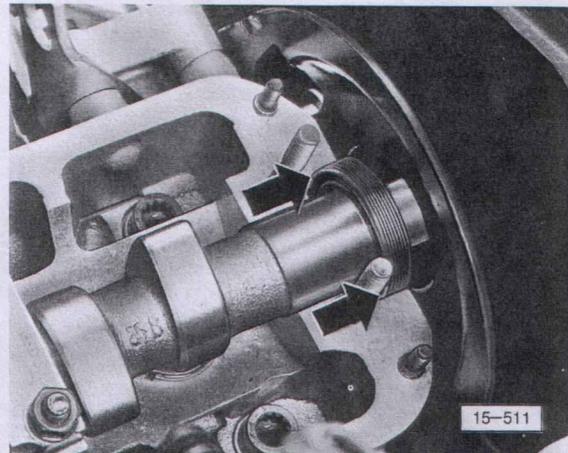
- Set crankshaft to TDC by engaging 4th gear and pushing vehicle.



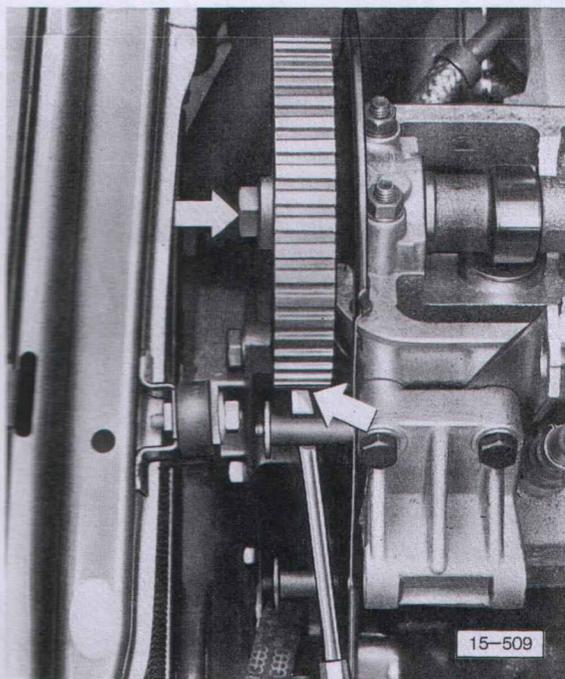
- Slacken toothed belt and remove: to do this slacken water pump mountings and turn pump downwards by inserting screwdriver through opening for hose in radiator cowling.



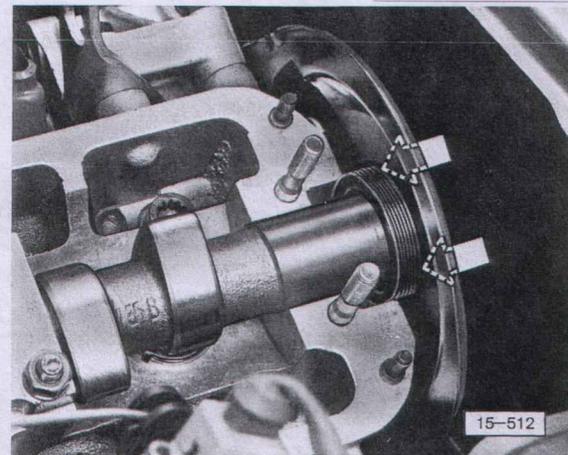
– Remove cover from waste gate.



– Press out oil seal by hand.

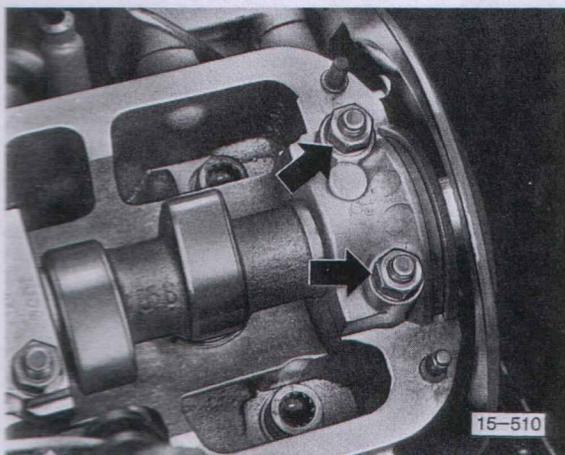


- Loosen camshaft sprocket mounting by holding sprocket against pin.
- Remove camshaft sprocket and woodruff key.



– Press in new oil seal by hand.

**Note:**  
When installing the camshaft sprocket the part number on the sprocket must face the cylinder head.



– Detach no. 1 camshaft bearing cap.

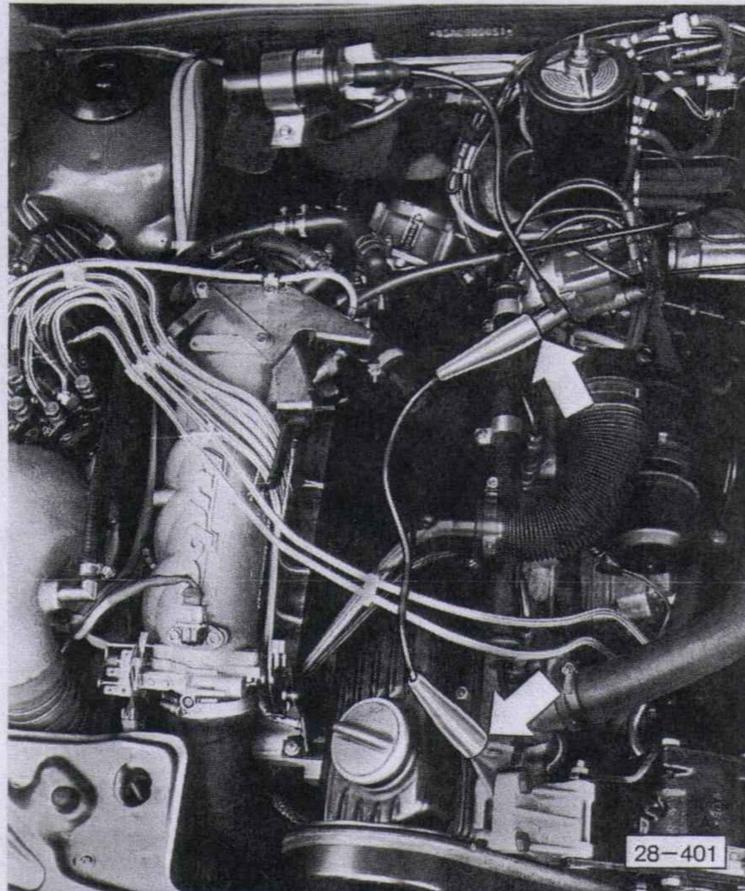
WR. 23.

# 15 Cylinder head, valve gear

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## MEASURING COMPRESSION PRESSURES

- Engine oil temperature at least 30° C.



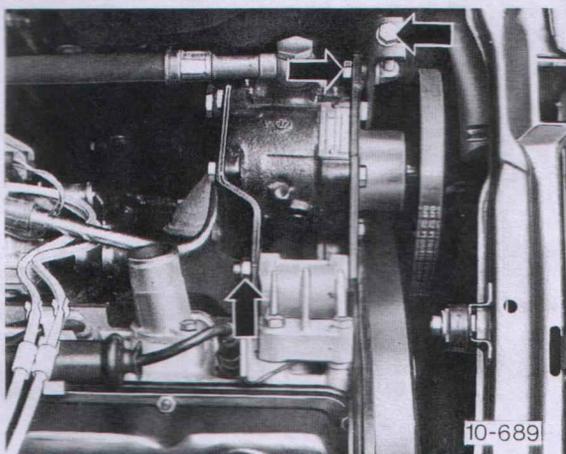
- Disconnect high tension lead from terminal 4 on distributor and earth it with a length of wire.
- Measure compression at starter cranking speed with throttle fully open.

Specified compression pressure: 7 – 9 bar

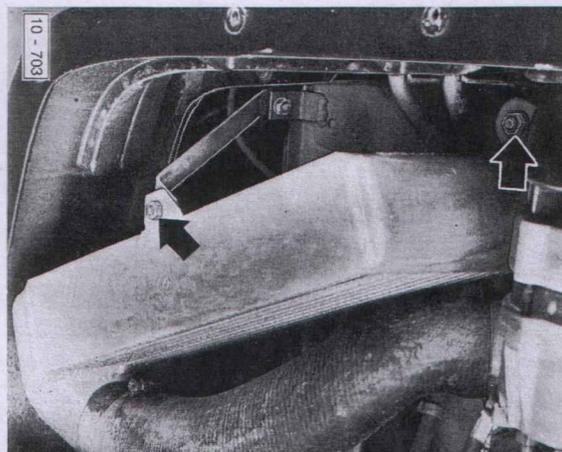
Wear limit: 5.0 bar

Maximum difference between cylinders: 2.0 bar

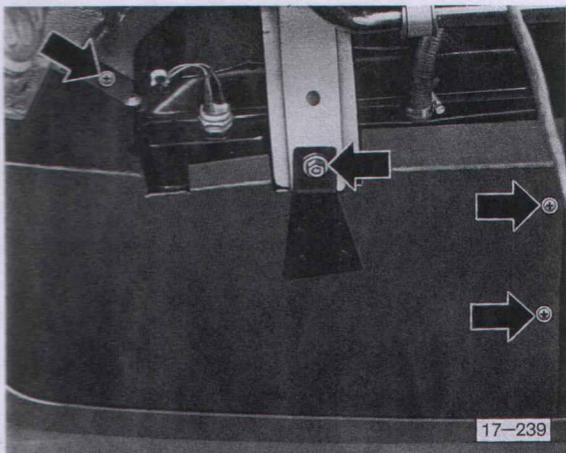
REMOVING AND INSTALLING CRANKSHAFT OIL SEAL – PULLEY END



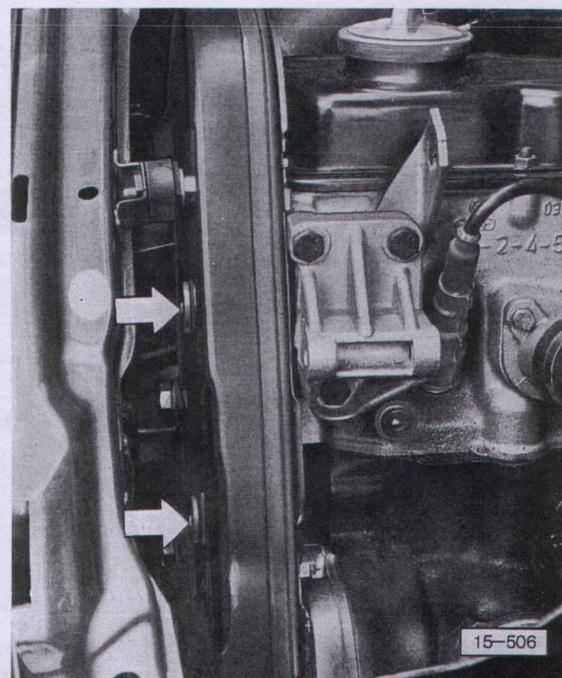
- Remove impeller pump for power assisted steering after slackening and removing V-belt. Leave hydraulic lines connected.
- Place impeller pump clear to one side.
- Remove upper radiator cowl.



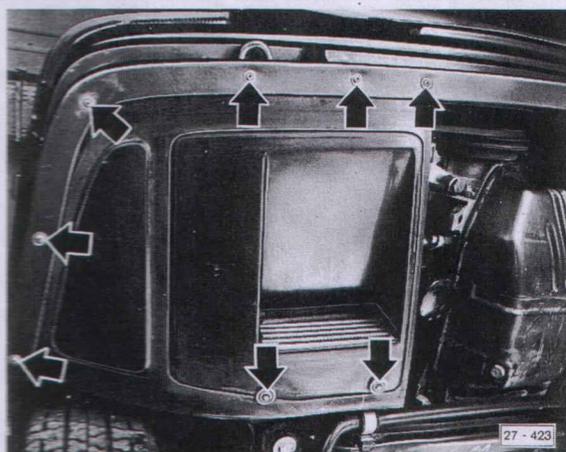
- Remove charge air cooler.
- Remove front spoiler, see page 113.



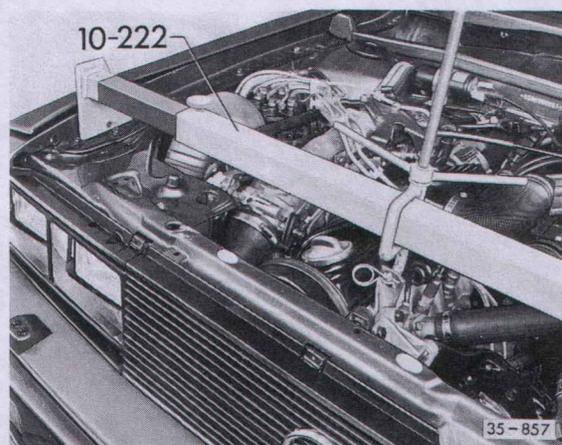
- Remove lower radiator cowl.



- Remove upper toothed belt guard.

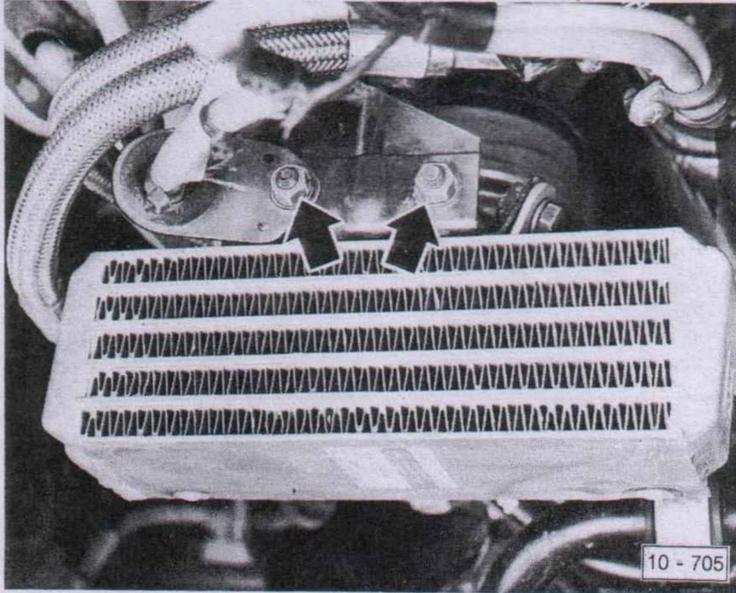


- Remove air guide for oil cooler.

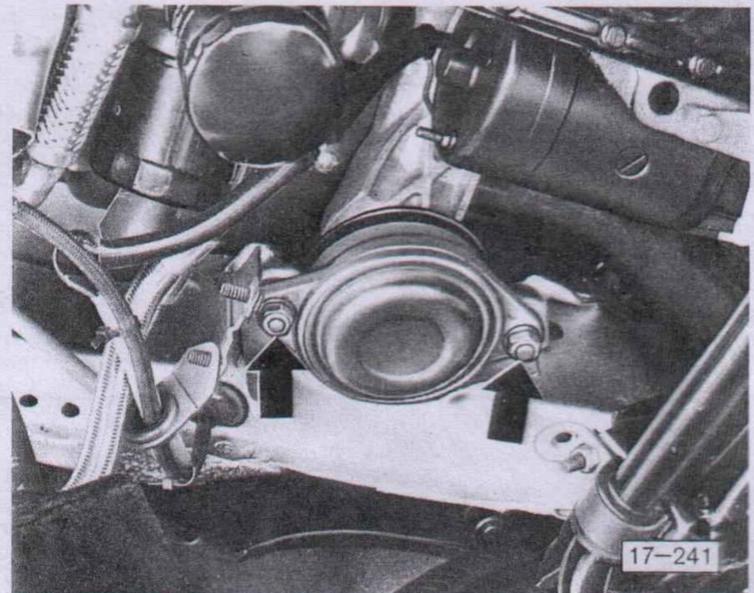


- Position engine support bracket 10-222.

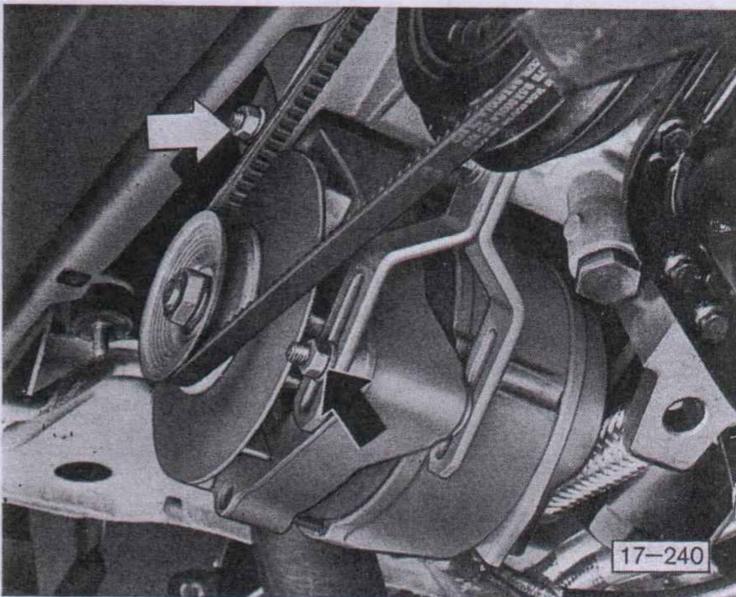
# 17 Lubrication



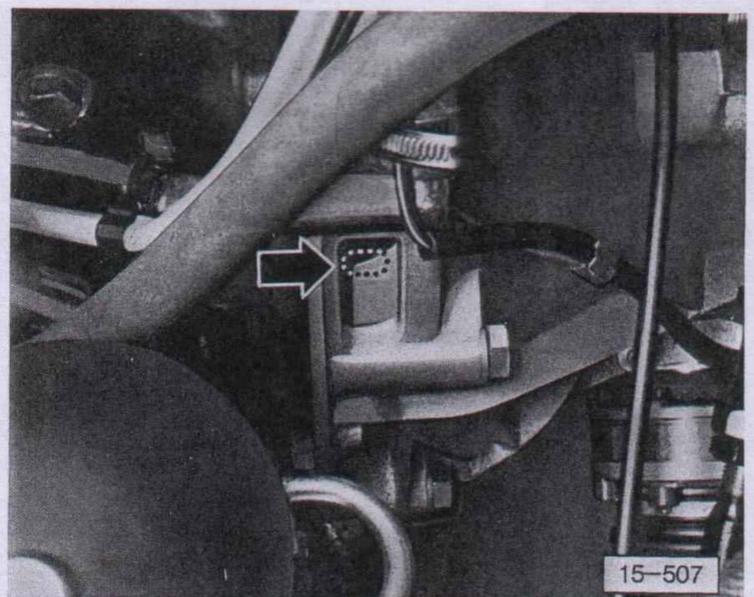
- Detach oil cooler.  
Leave oil lines connected.



- Detach front engine mounts left and right.
- Remove upper radiator cowling.



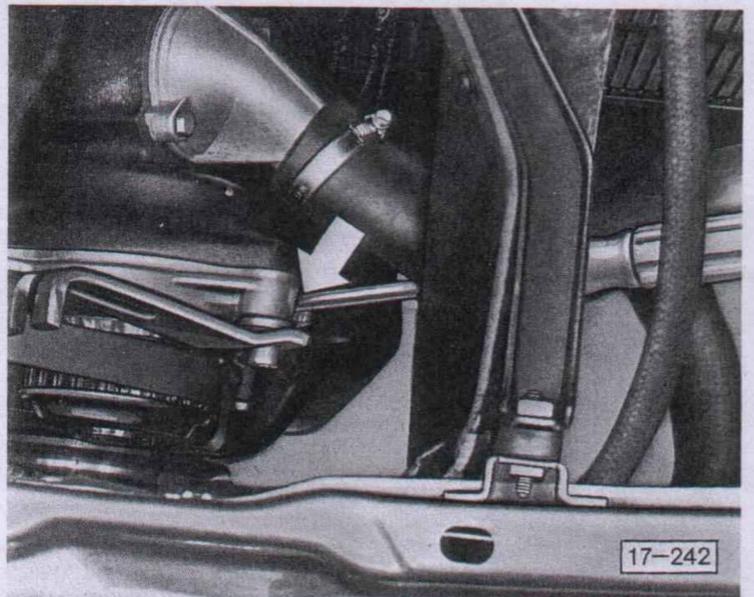
- Slacken and remove alternator V-belt.



- Set crankshaft to TDC marking.
- Remove lower toothed belt guard.

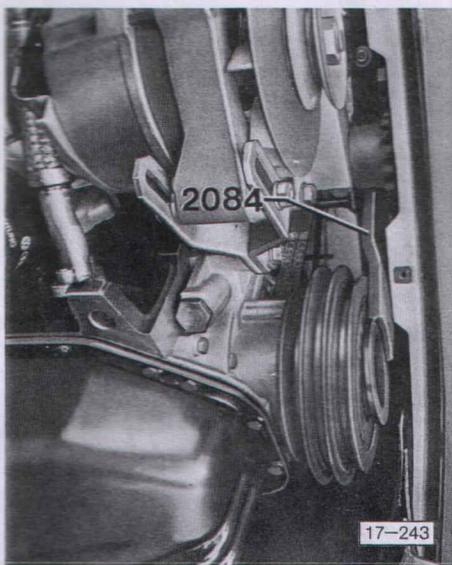


- Remove front subframe mounting bolts left and right.

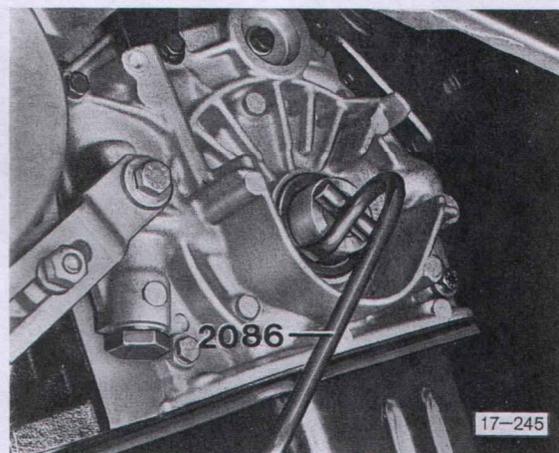


- Slacken toothed belt and remove from camshaft sprocket: to do this slacken water pump mountings and turn pump downwards by inserting screwdriver through opening for hose in radiator cowling.
- Lower engine.

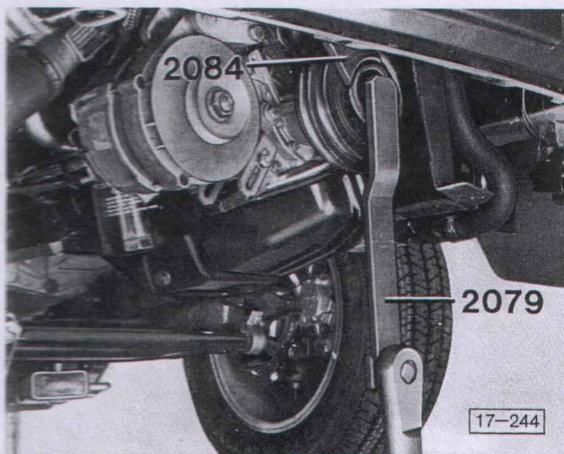
# 16 Removing and installing crankshaft oil seal – pulley end



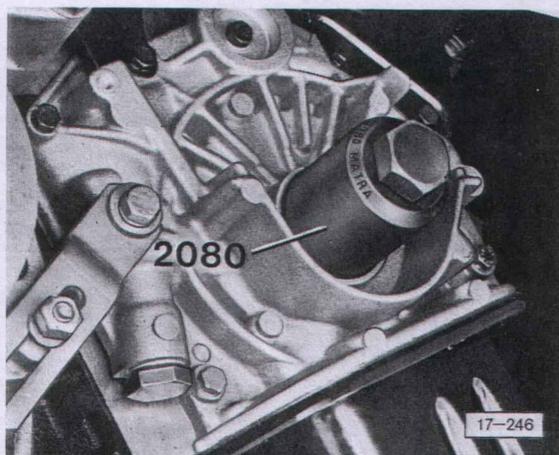
– Fit retaining plate. When tightening, reposition retaining plate against engine support accordingly.



– Extract crankshaft oil seal – pulley end.



– Remove vibration damper.



– Press in crankshaft oil seal – pulley end – until flush. Use vibration damper mounting bolt.

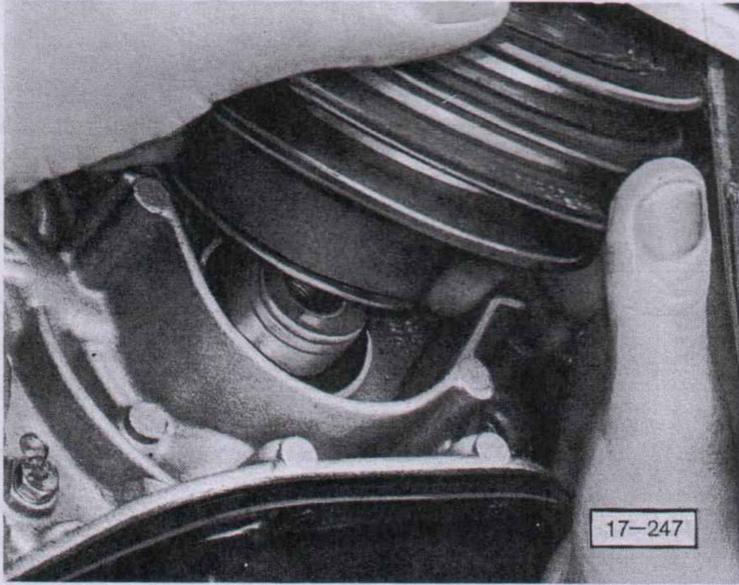
**Note:**  
Lightly oil the sealing lip and outer rim of the oil seal before pressing it in.

**Important**  
Tightening torque 350 Nm: this only applies when the extension 2079 is used. The extension must be in line with the torque wrench. Apply sealing compound, Part No. AMV 188 000 02, to the bolt threads, the seating surface on the bolt head and the seating surface of the sprocket.

**Important**  
If the crankshaft is scored, the oil seal should be pressed fully home.

## 17 Lubrication

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- Fit toothed belt on sprocket and fit sprocket with vibration damper on crankshaft.

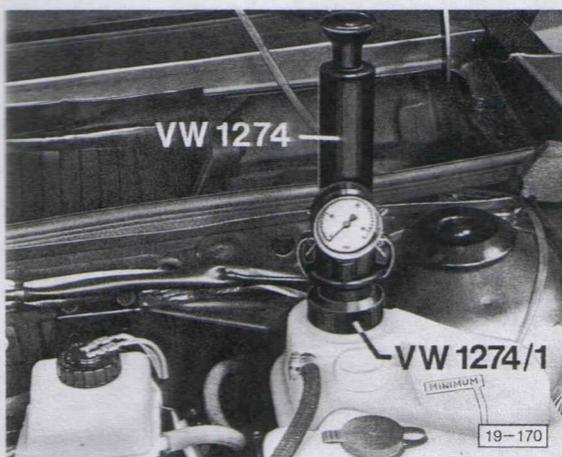
**Caution**

When fitting the vibration damper make sure that the toothed belt is not caught between the oil pump and the sprocket.

### OIL CAPACITIES

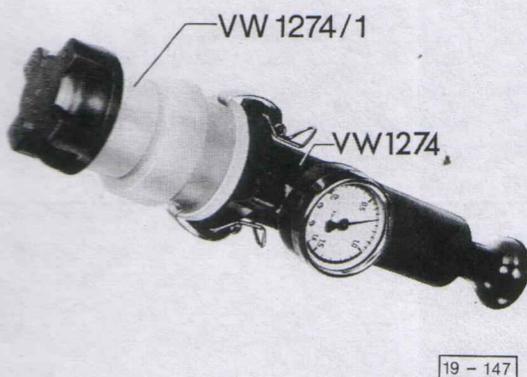
Without filter replacement = 3.5 litres

With filter replacement  
(both oil filters) = 4.0 litres



**Fig. 1 Cooling system – checking for leaks**

Always check with engine warm.  
Test pressure: 1.35 bar



**Fig. 2 Checking pressure relief valve in cap**

Valve opens at 1.20 – 1.35 bar.

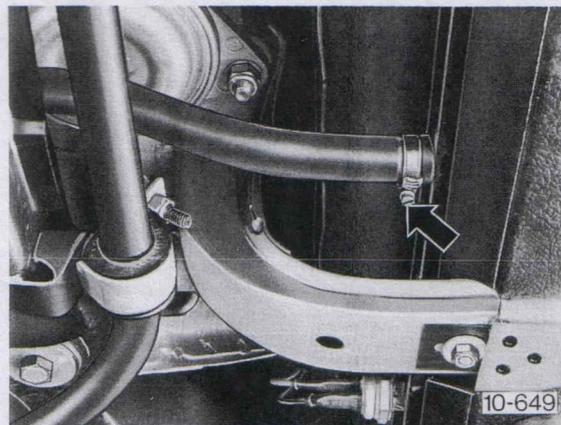
## DRAINING AND FILLING COOLING SYSTEM

### Draining:

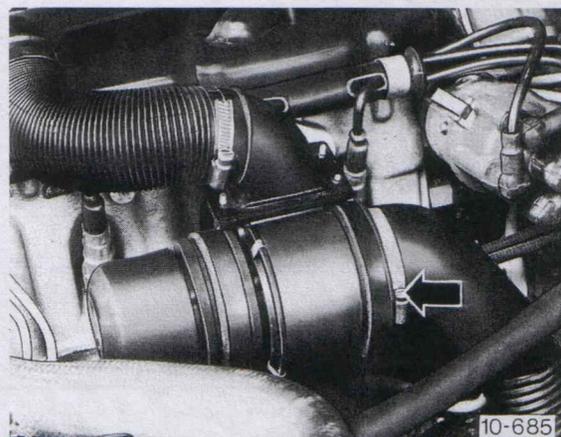
- Set heater control to – WARM –.
- Take cap off expansion tank.

### Note:

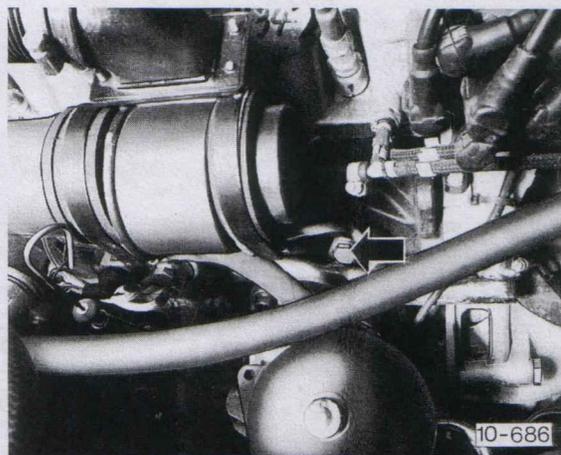
The coolant contains –G 10– additive so it should be drained into a container and kept for re-use.



- Drain coolant by detaching bottom hose from radiator.

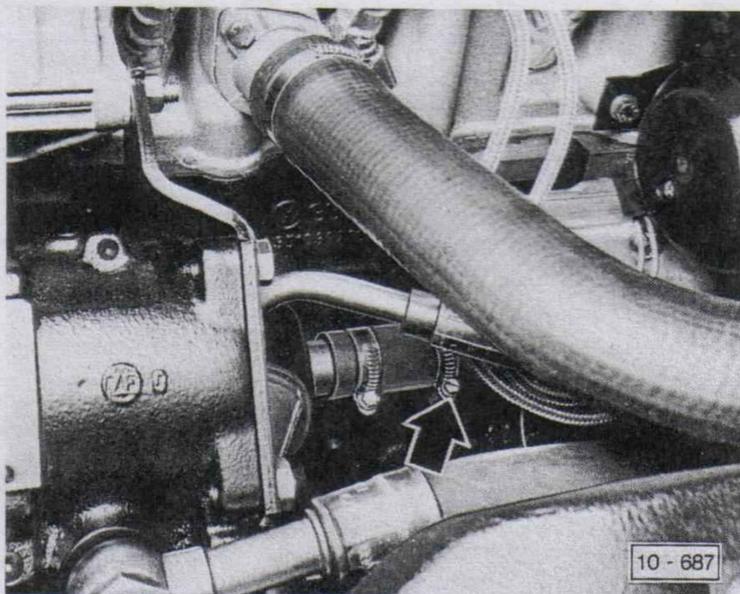


- Remove intake hose for cooling fan for injectors



- Remove mounting bolt on coolant pipe.

# 19 Cooling system



- Detach coolant hose from coolant pipe.

### Filling cooling system:

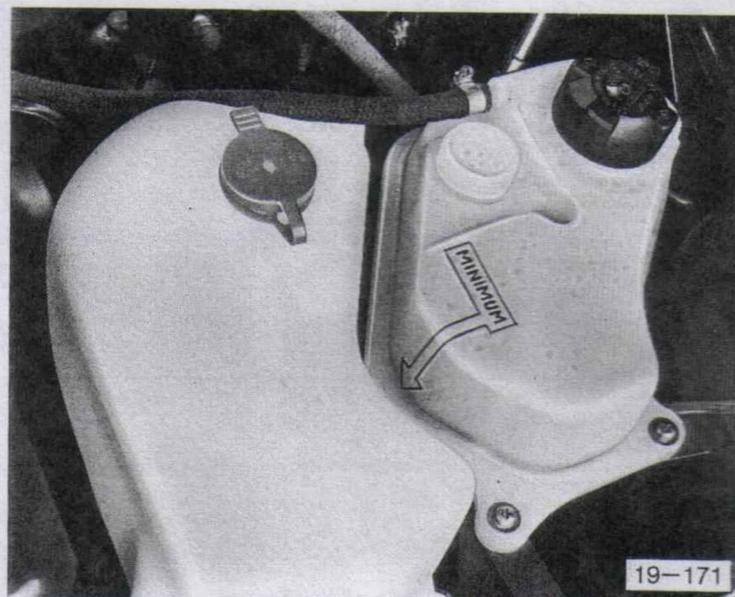
The cooling system is filled at the factory with a mixture of water and -G 10- antifreeze/corrosion inhibitor.

This protects the system from frost and corrosion and prevents scaling. The additive also raises the boiling point of the water.

In countries with a tropical climate the higher boiling point of the coolant mixture is an aid to reliability in service.

For these reasons the cooling system must always be filled throughout the year with -G 10- additive and water.

- Set heater control to - WARM -.
- Put coolant in until expansion tank is full.
- Fit cap on expansion tank.
- Run engine until radiator fan cuts in.

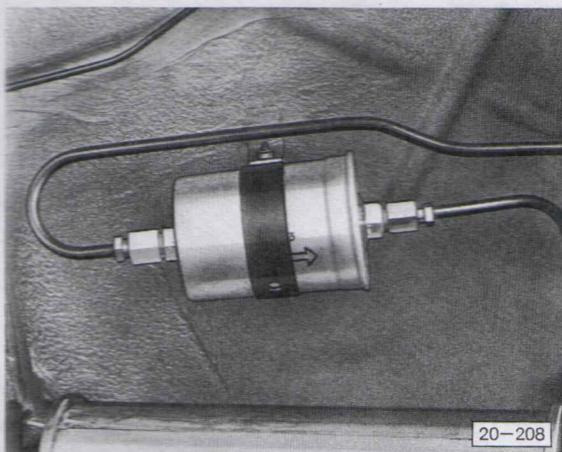


- Check coolant level in expansion tank and top up if necessary.

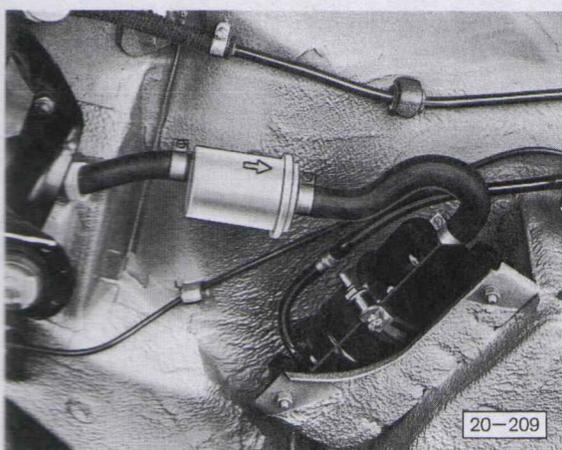
When the engine is warm the coolant level should be slightly over the "minimum" mark (above the tip of the arrow); when the engine is cold the level must be at least up to the "minimum" mark.

### ANTIFREEZE CONCENTRATIONS

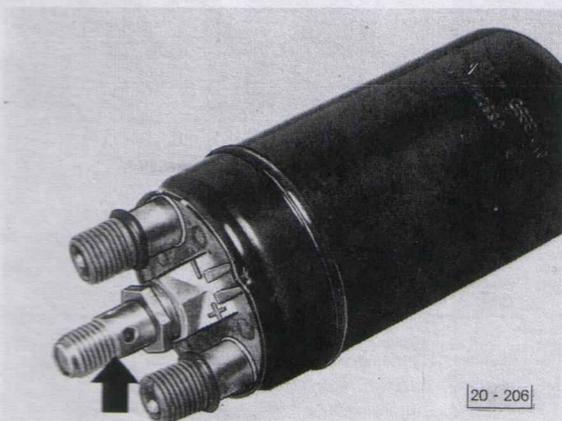
Frost protection down to °C	G 10 (amount in litres)	Water (amount in litres)
- 25	approx. 3.7	approx. 5.6
- 30	approx. 4.2	approx. 5.1
- 35	approx. 4.65	approx. 4.65



**Fig. 1 Position of fuel filter (for fuel distributor)**  
 On underside of vehicle, right hand side at the rear  
 Arrow points in direction of flow to fuel distributor.



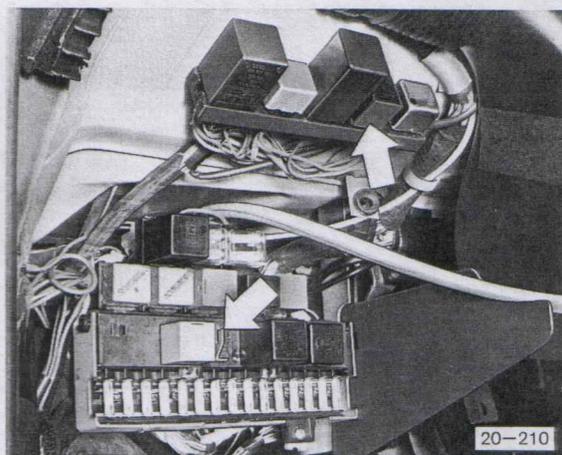
**Fig. 2 Position of fuel filter (for fuel pump)**  
 On underside of vehicle, left hand side at the rear  
 Arrow points in direction of flow to electric fuel pump.



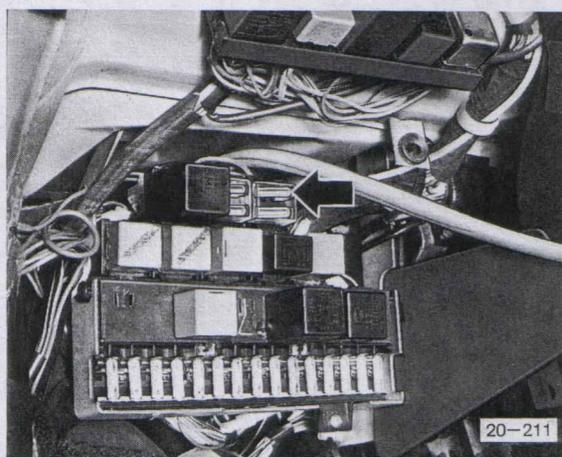
**Fig. 3 Renewing non-return valve**

**Important**  
 Do not clamp electric fuel pump in vice.

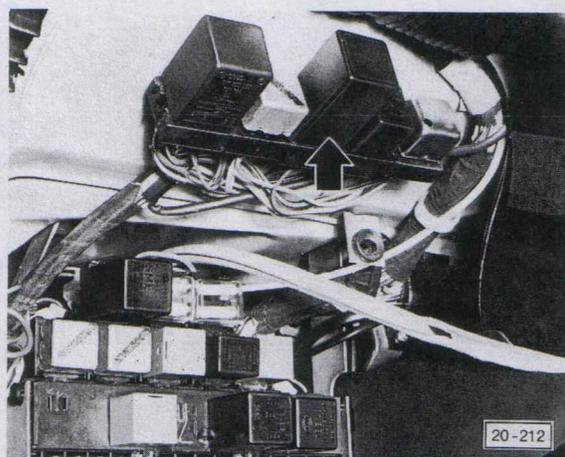
– Tightening torque: 20 Nm



**Fig. 4 Position of fuel pump relay**  
 In relay holder (arrow).  
 A contact bridge is fitted in socket L of the central relay plate. Do not remove this bridge.



**Fig. 5 Position of fuse (16 amps.) for electric fuel pump**



**Fig. 6 Position of timing relay**  
 This relay controls the injection pulses of the cold start valve.

# 21 Turbocharger

## CHECKING TURBOCHARGER AND WASTE GATE

This test involves measuring the boost pressure.

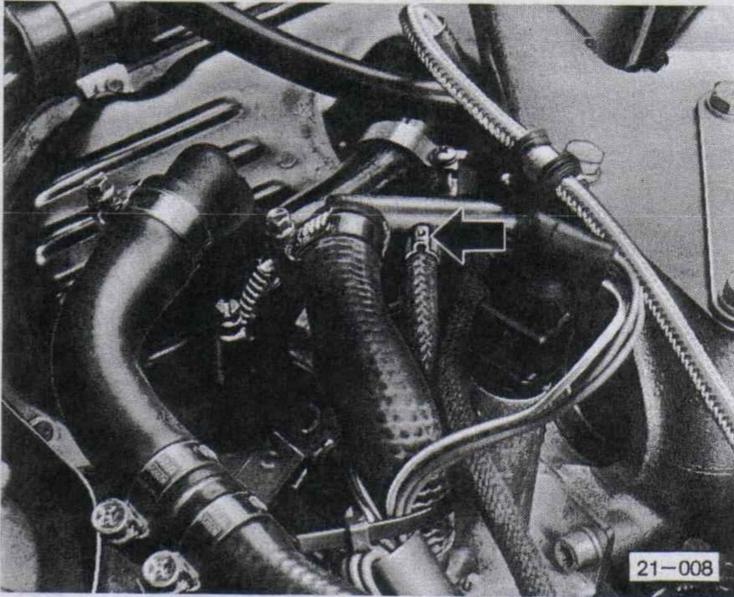
### Note:

The boost pressure is measured at full throttle with the vehicle on the road.

**Do not take longer than 10 secs. for each measurement.**

### Important

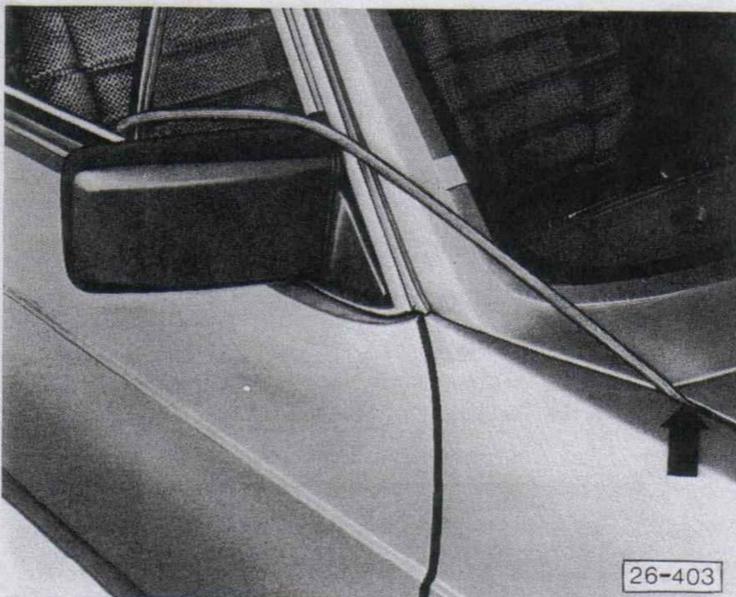
The boost pressure can also be measured on a chassis dynamometer, but the propellor shaft **must** be removed before the test.



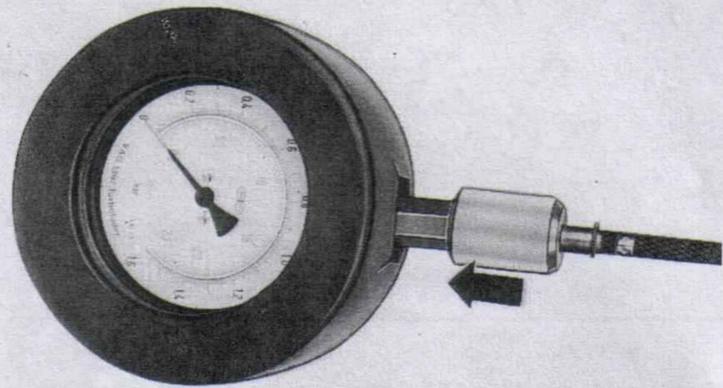
- Disconnect vacuum hose from connector on intake manifold.
- Connect pressure gauge - V.A.G 1397 - between disconnected vacuum hose and connector on intake manifold using T-adaptor.

### Caution

Do not use the boost pressure gauge fitted as standard as part of the vehicle's instrumentation. This gauge is not suitable for measuring boost pressure in order to test components.

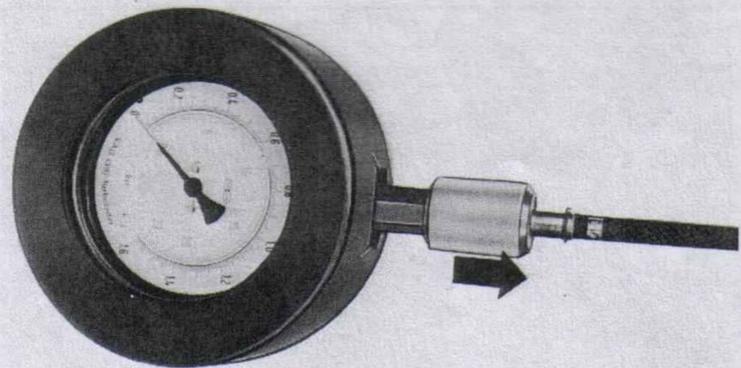


- Place pressure gauge - V.A.G 1397 - on front passenger's seat, making sure that the vacuum hose is not pinched where it comes out between the engine hood and body.



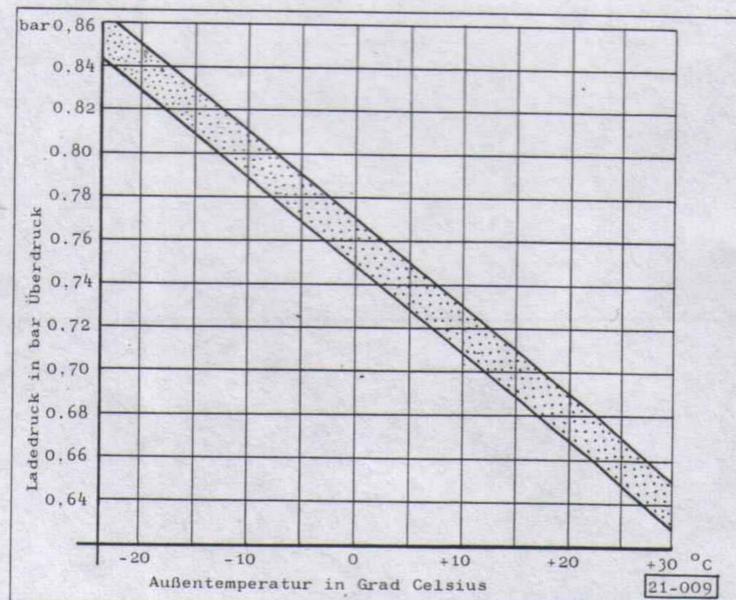
26-405

- Open cutoff valve by pushing towards pressure gauge - V.A.G 1397 -.
- With throttle wide open in 2nd gear apply brakes to bring engine speed down to 5500 rpm.



26-404

- Close cutoff valve on pressure gauge - V.A.G 1397 - by pulling valve.



21-009

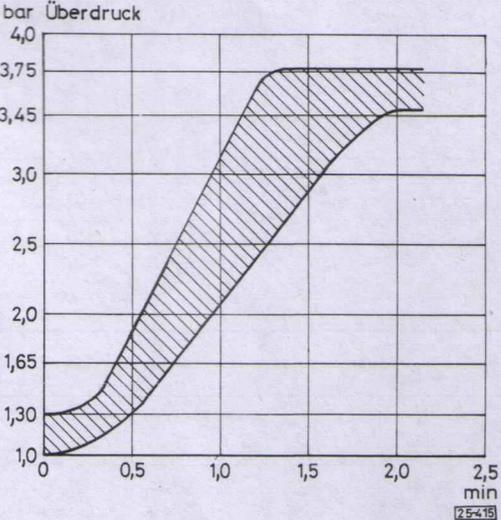
- The boost pressure must be in the specified range, depending on ambient temperature.  
If the **gauge readings are as specified**, rectify the fault in the K-Jetronic or ignition system.  
If the **gauge readings are not as specified**, try fitting a new waste gate as a test measure.  
If the readings are then still not as specified when the boost pressure test is repeated, fit a new turbocharger.

# 22

## Checking turbocharger and waste gate

wb 13.

TECHNICAL DATA – K-JETRONIC FUEL INJECTION

Engine code letters	WR	
Control pressure – cold (vacuum hose on warm-up valve connected) (in bar at 20° C ambient temperature)		
Control pressure – warm (Engine oil temperature at least 50° C)		
Vacuum hose on warm-up valve connected      bar	3.40 – 3.80	
Vacuum hose on warm-up valve disconnected      bar	2.75 – 3.05	
System pressure      bar	5.2 – 6.0	
Holding pressure minimum pressure after approx. 10 minutes      bar	2.8	
minimum pressure after approx. 20 minutes      bar	2.6	
Residual pressure 5 seconds after switching off      bar	3.0	

## TECHNICAL DATA – K-JETRONIC FUEL INJECTION

Engine code letters	WR	
Thermo-time switch Switch-on time	seconds	<p style="text-align: right;">25-143</p>
Cold start valve – injection time	seconds	See diagram for switch-on time of thermo-time switch
Warm-up valve Heater coil resistance	$\Omega$	16 – 22
Injectors Maximum variation in delivery rate within one set at idle at full throttle Opening pressure Maximum scatter within one set	max. ml max. ml bar bar	3.0 8.0 3.6 – 4.0 0.6
Fuel distributor Delivery rate at idle: test duration, fuel quantity, at full throttle: test duration, fuel quantity	minutes ml seconds ml	2 33 30 84
Idle speed* Oil temperature at least 60° C	rpm	900 ± 50
CO content* measured at rear silencer at idle speed and at least 60° C oil temperature	% by volume	1.0 ± 0.2
Fuel octane requirement (DIN 51600)	min. RON	98

\*Note adjustment procedures – pages 25,26

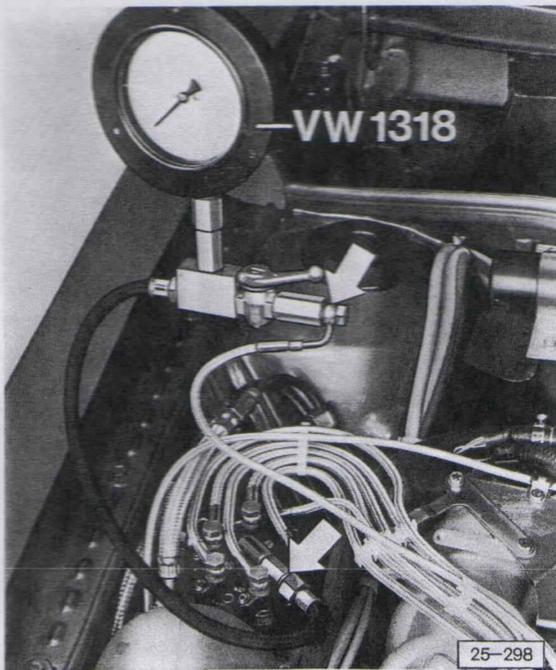


Fig. 1 Connecting pressure gauge

Connect VW 1318 pressure gauge between fuel distributor and control pressure line going to warm-up valve: screw pressure gauge connector into fuel distributor and connect control pressure line to pressure gauge with banjo bolt.

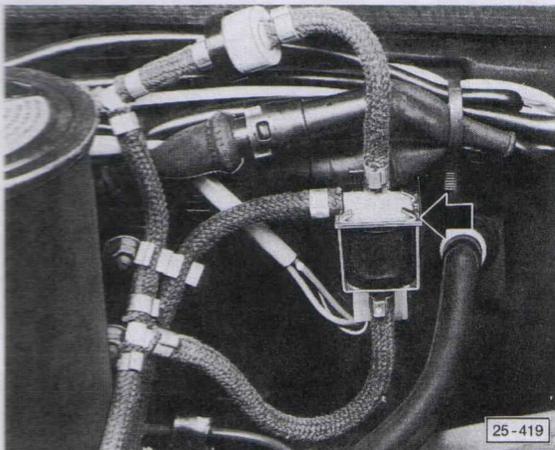
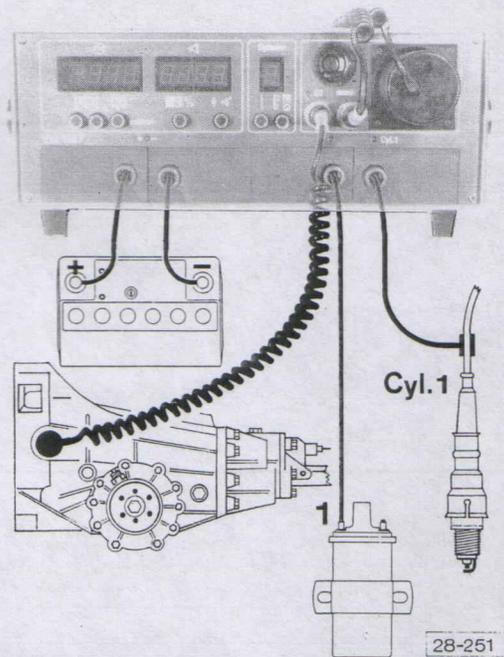


Fig. 2 Position of two-way valve

— The valve is controlled electrically by the switch for full throttle enrichment on the throttle unit, and passes on vacuum to the warm-up valve.

ADJUSTING IDLE SPEED

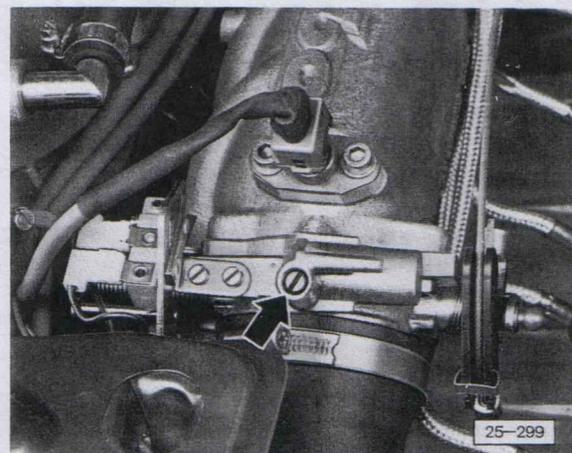


— Connect tester according to operating instructions.

**Note:**

Use adaptor for connection to terminal 1 on ignition coil.

- Engine oil temperature at least 60° C.
- High beams switched on, air conditioner switched off.
- Pressure gauge not connected.
- If injector lines have been detached or renewed, the engine must be revved up several times to 3000 rpm and allowed to idle for at least 2 minutes before carrying out the adjustment.



— Adjust idle speed.  
Specified idle speed: 900 ± 50 rpm.

**Note:**

Radiator fan must not be running when idle speed is being adjusted.

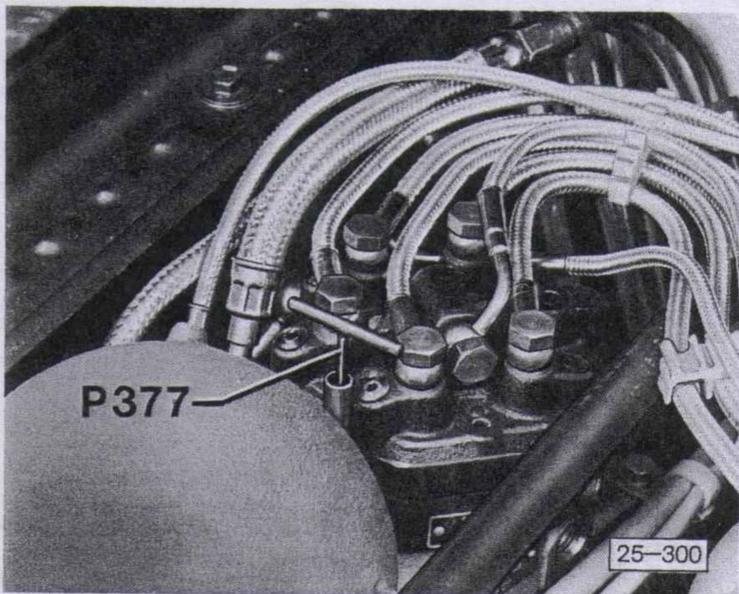
If the idle speed is too high and cannot be adjusted, check idle switch for electronic ignition — page 43

# 25 Fuel injection, K-Jetronic

## ADJUSTING CO CONTENT



- Connect tester according to operating instructions.
- Engine oil temperature at least 60° C.
- High beams switched on.
- Air conditioner switched off.
- Check idle speed and adjust as required.



- Adjust CO content, first remove plug/lock cap. Turn to the right to increase CO content  
Turn to the left to decrease CO content  
Specification: 1.0 ± 0.2 % by volume measured at rear silencer

### Note:

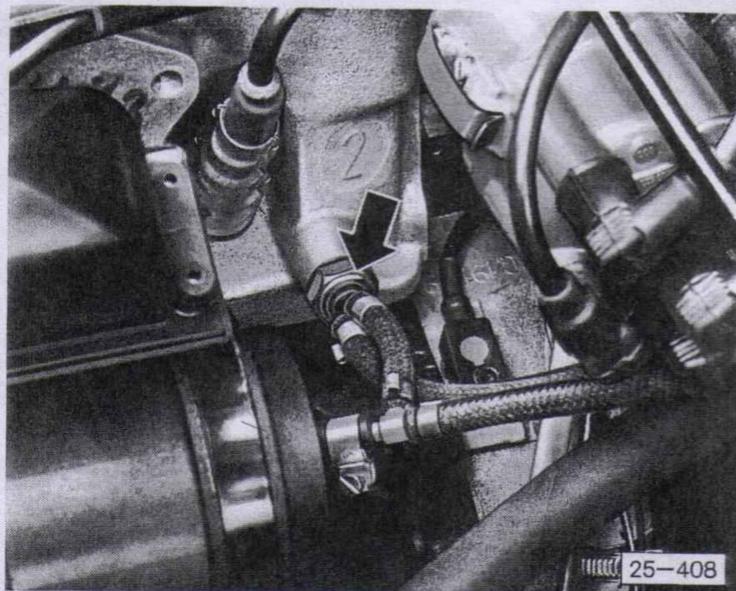
The radiator fan should not be running when carrying out the measurement.

### Important

Do **not** press down or lift up the adjusting screw with the key when carrying out the CO adjustment.  
Do **not** accelerate the engine when the adjusting key is inserted (risk of bending components).  
Remove the key immediately after each adjustment and accelerate the engine briefly.

## CHECKING THERMOPNEUMATIC VALVE

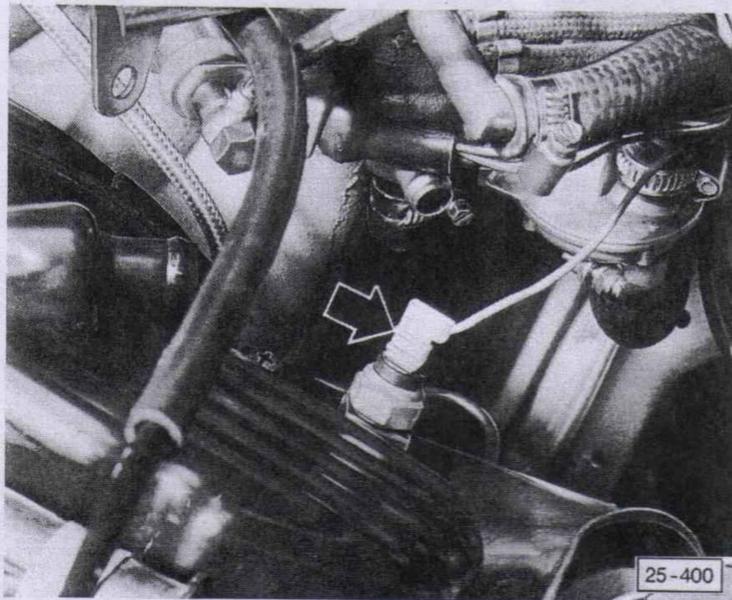
- Engine cold



- Up to 58 ± 3° C - open
- Above 58 ± 3° C - closed

## CHECKING SWITCH FOR COOLING FAN FOR INJECTORS

- Engine cold.



- Disconnect plug from switch for cooling fan for injectors.
- Connect ohmmeter between earth and disconnected terminal on switch.
- Check continuity
  - open circuit up to 100° ± 4° C = ∞ Ω
  - continuity at temperatures above 100° ± 4° C = 0 Ω

# 26

Repairing K-Jetronic fuel injection system  
Adjusting CO content  
Checking thermopneumatic valve  
Checking switch for cooling fan for injectors