

Special tool list

999 2810 - Lifting Yoke (Cherry Picker)
999 5428 - Lifting Yoke (Cherry Picker)
999 5459 - Lifting Eye
999 5462 - Lifting Eye
999 5464 - Lifting Eye
999 5474 - Radiator Protection
999 5488 - Drive Shaft hole plugs (2)
999 5533 - Injector valve Holder (5)

998 5972 - Jack
999 2520 - Engine Stand
999 5112 - FLYWHEEL-BLOCKING
999 5297 - Engine Stand
999 5429 - Lifting Eye
999 5463 - Gearbox Jack

21: Engine, lift in and out (left-hand drive), B5254FS M 4.4, L.H.D

V70 (-00), 1998, B5254FS M 4.4, AW50-42, L.H.D

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21: Engine, lift in and out (left-hand drive), B5254FS M 4.4, L.H.D

Removing engine (left-hand drive)

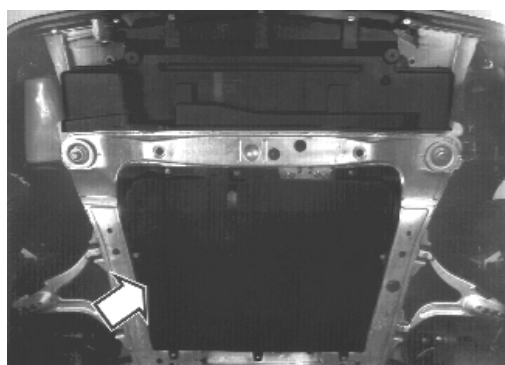
Special tools:

999 2810
999 5428
999 5459
999 5462
999 5464
999 5474
999 5488
999 5533

Note! Engines from 1994 model year onwards have reinforced front lifting eyelet. This means that lifting eyelet 999 5459, 999 5464 is withdrawn and replaced by lifting arm 998 9734 instead. From autumn of 1993 onwards this lifting arm is included in the kit for tool 999 2810.

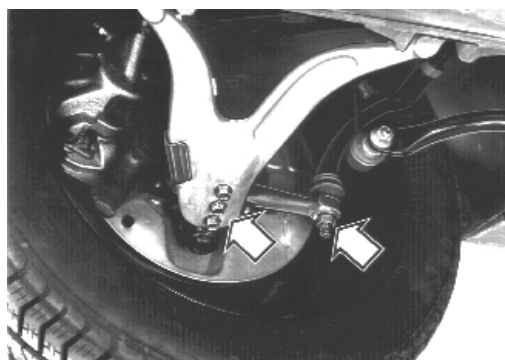
Drain coolant

Remove expansion tank cap.
Raise the car.
Remove engine splash guard and air baffle under the engine.
Open the engine and radiator nipples. Thread hoses onto the nipple to collect the coolant.
Close the nipples.

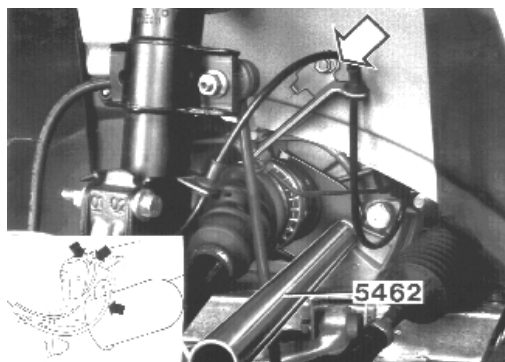


Remove:

- front wheels
- tie rod ends from stub axles
- the 2 x 3 screws holding the



ball joints to the control arms

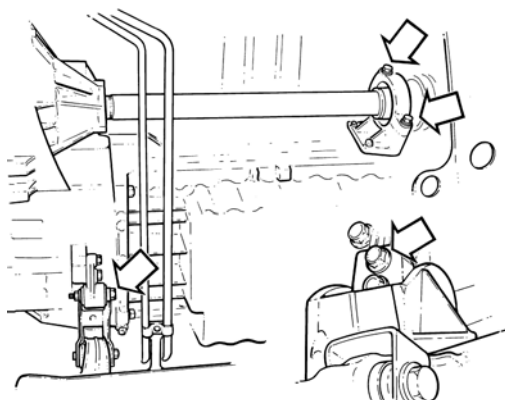


Remove:

- ABS cable and brake pipe/hose bracket screw
- left drive shaft, use jimmy bar 999 5462 , to release drive shaft
- the two thin black hoses to the EVAP canister
- the white hose from vacuum reservoir

Remove:

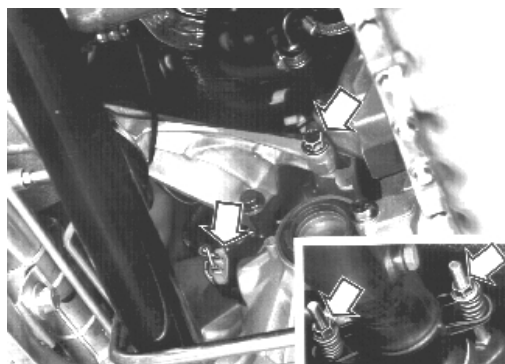
- right drive shaft and intermediate bearing cap from drive shaft, **carefully** place it on the steering servo pipes
- the two screws for the right engine mounting (bend the right fender liner to one side slightly first)
- the transmission torque rod screw



Caution! Apply sealing plugs 999 5488 in the holes left by the drive shafts.

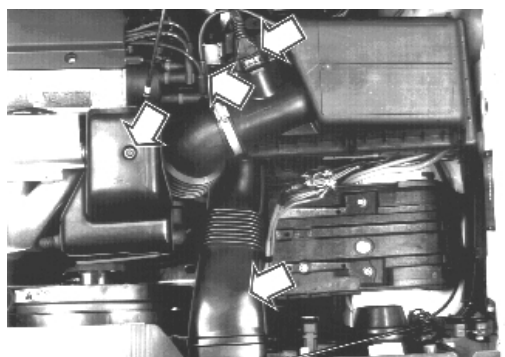
Remove:

- two front exhaust pipe nuts and springs
- carriage bolts (2 x)
- speedometer connector
- collision protection system screw, transmission/engine mounting



Lower the car.

Remove:



- Battery.
- battery shelf
- fresh air intake hose from air intake to air cleaner (ACL) housing
- mass air flow (MAF) sensor connector
- ignition cable between distributor/ignition coil
- throttle pulley cover

Note! If the car is equipped with cruise control disconnect the vacuum hose and wiring for the vacuum motor.

Disconnect hoses:

- Disconnect the throttle body (TB) intake hose and Idle air control valve (IAC) hose
- disconnect vacuum hose and crankcase ventilation hose on inlet hose



Remove the air cleaner (ACL) housing

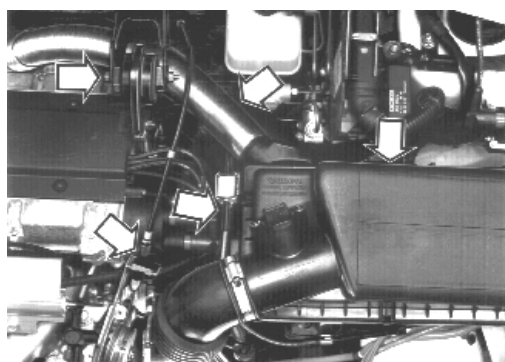
Disconnect the connector and vacuum hoses from the solenoid valve.

Remove preheating hose.

Lift up and remove the air cleaner (ACL) housing.

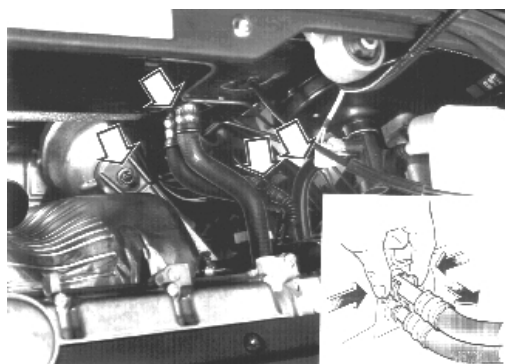
Remove the throttle cable from the throttle pulley.

Remove the torque rod.



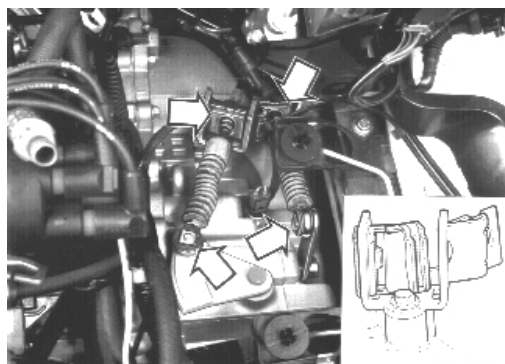
Remove:

- two heater hoses from the cowl panel
- brake servo hoses
- the two heated oxygen sensor (HO2S) connectors
- rear engine mounting upper nut



Remove:

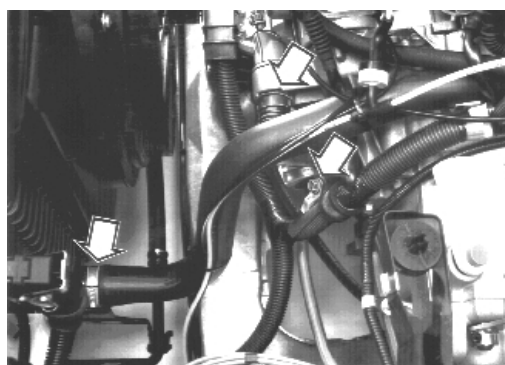
- the gear selector cables from mountings on the transmission
- the rubber mounted section of the gear selector cable mounting



Note! Automatic: Disconnect connector. Remove gear selector cable from the transmission. Disconnect the two oil cooler hoses from the radiator, using victory clip tool.

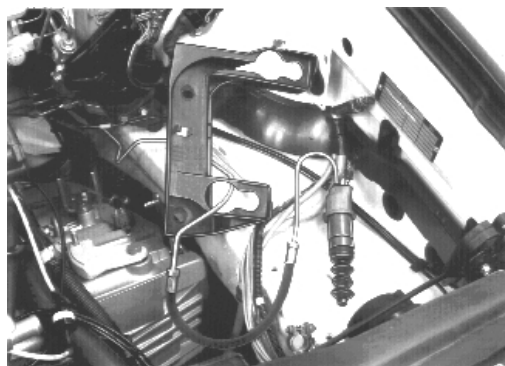
Remove:

- clutch slave cylinder snap ring
- slave cylinder from gear box
- battery negative lead from engine
- lower radiator hose from radiator



Remove and put air cleaner (ACL) bracket to one side

Remove air cleaner housing (ACL) rubber mounting from the bracket. Thread clutch slave cylinder out of the front hole in the bracket and put bracket and cylinder to one side.



Remove the engine



coolant fan (FC)

Remove both relays from the fan shroud, separate the connectors and put the wiring to one side.

Remove the two control module box cooling air ducts.

Remove the four screws from the radiator.

Move the fan shroud slightly backwards and disconnect air intake.

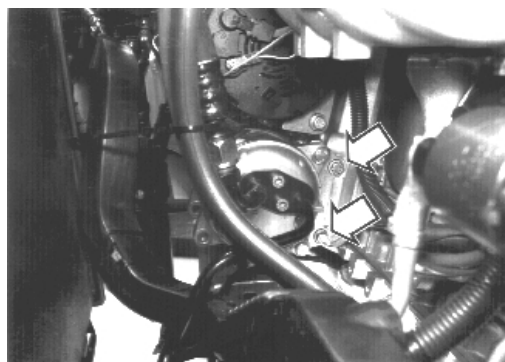
Remove the fan shroud with the fan.

Caution! Protect the radiator with a hard sheet or similar.

Alternative protection 999 5474

Remove the two long air conditioning (A/C) compressor mounting screws

Allow the compressor remain in place until the lift.

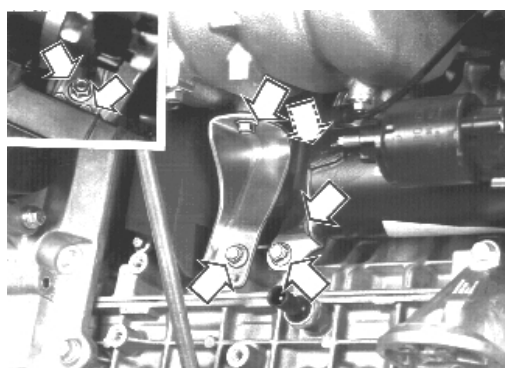


Remove front engine pad upper nut

Remove upper engine pad nut and screws for the cable duct bracket.

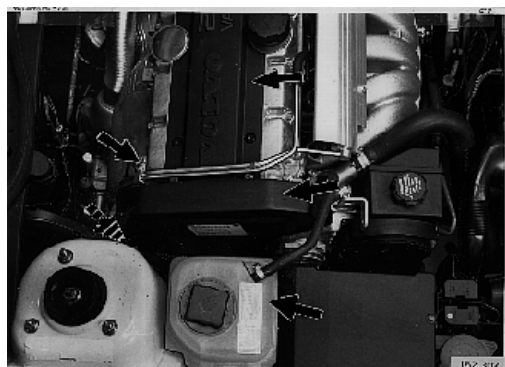
Remove the intake manifold support bracket.

Remove starter motor support bracket.



Remove:

- upper radiator hose from thermostat housing
- radiator hose, expansion tank/thermostat housing cover
- lower expansion tank hose, from the engine pipe coupling



- auxiliaries belt

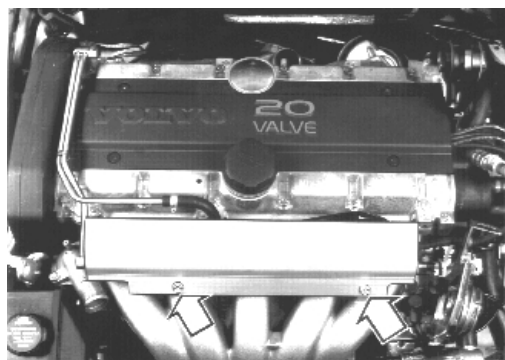
Remove the six power steering pump screws, (disconnect temperature sensor cables from the bracket on the power steering pump).

Hint:

Allow power steering pump to remain on hose.

Remove:

- the protective cover over the fuel rail
- fuel line clip (upper/lower)
- fuel rail screws
- engine ground strips

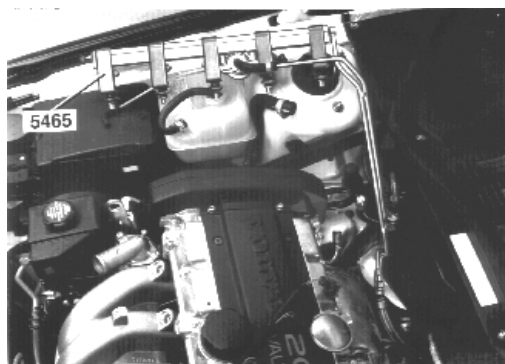


Remove the fuel rail

Install holder 999 5533 (5 x) on the injectors.

Lift up and put fuel rail with injectors to one side.

Caution! Take care not to damage the injector nozzles and fuel needles.

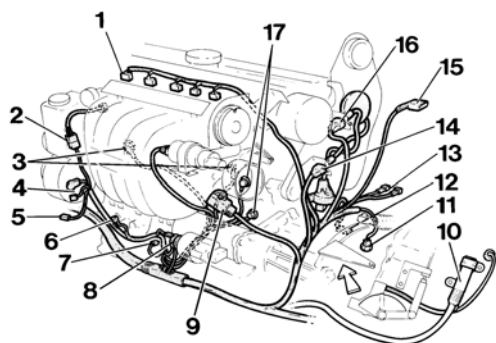


Remove the engine cable harness

Disconnect all connectors from the engine.

Hint:

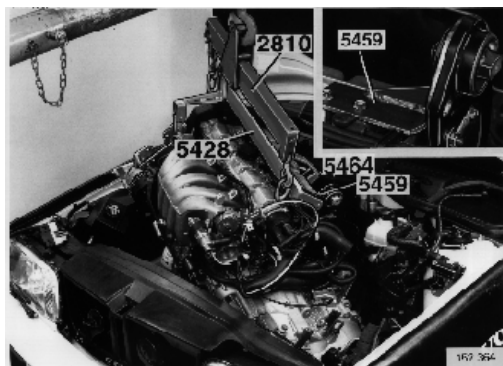
Note all the cable harness mountings positions.



1. Injectors
2. Temperature sensor
3. Knock sensors (KS)
4. Generator (GEN)
5. A/C compressor
6. Engine cooling fan (FC).
7. Starter motor
8. Oil pressure switch

9. Potentiometer, throttle spindle
10. Automatics
11. Back-up (reversing) lamp
12. Vehicle speed sensor (VSS)
13. Heated oxygen sensor (HO2S).
14. Camshaft position (CMP) sensor
15. Mass air flow (MAF) sensor
16. Engine speed (RPM) sensor
17. Ground terminals

Remove engine with transmission



Remove spark plugs cover and install lifting eyelets 999 5459 and 999 5464 .

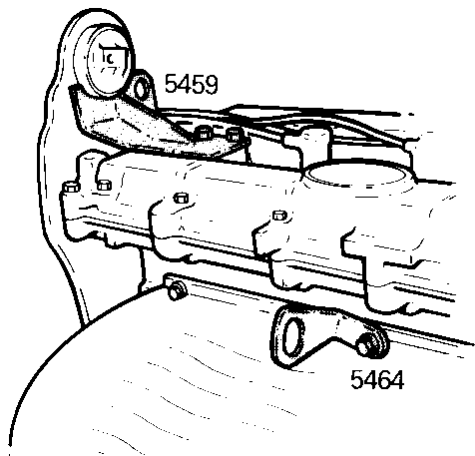
Lift power steering pump and put it to one side.

Remove air conditioning (A/C) compressor without removing hoses and put onto sub-frame

Remove engine, use lift yokes 999 2810 and 999 5428 .

Adjust lift angle **during** lift.

Caution! Check carefully that the driveline is clear of the bodywork and other optional extra.



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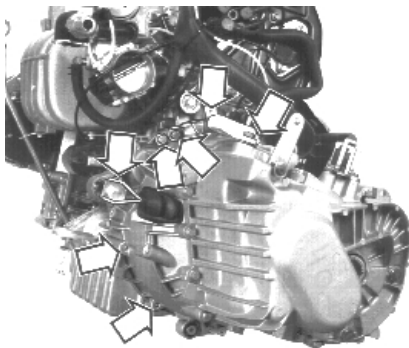
Engine replacement, transferring components

Special tools:

998 5972
999 2520
999 2810
999 5112
999 5297
999 5428
999 5429
999 5463

Exposing engine

Remove transmission

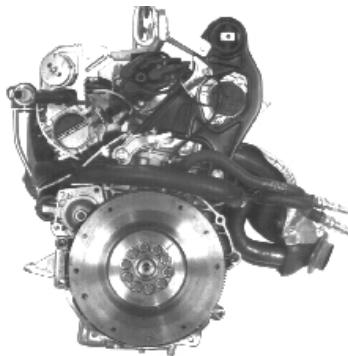


Automatic: Slacken off torque converter screws.
Remove 12 transmission screws from the engine at the flywheel mounting in the cylinder block.

Warning! When the transmission is released use the mobile jack 998 5972 with transmission fixture 999 5463 as a support to avoid damage.

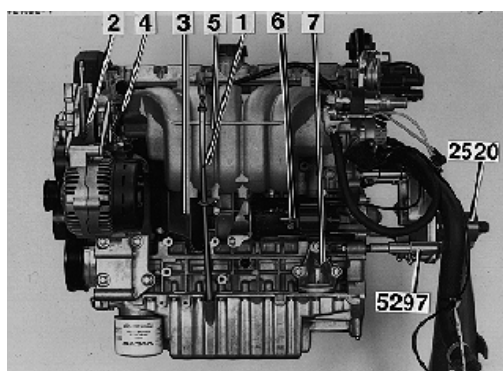
Remove carrier plate/flywheel

Use gear sector 999 5112 .
Remove carrier plate
Remove flywheel.



Install engine in stand

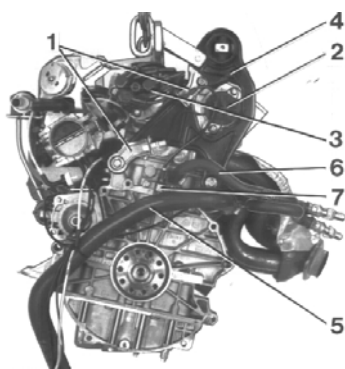
Use stand 999 2520 and fixture 999



5297 .

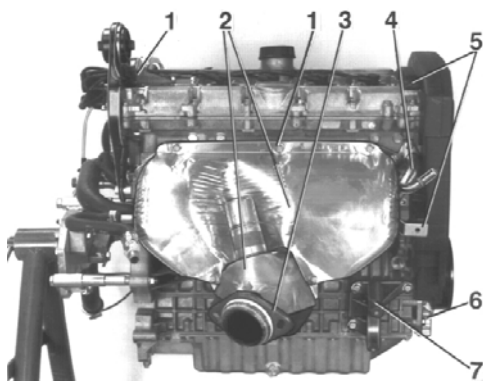
Remove lifting tools (

Transferring rear components



1. Connector brackets
2. Torque control arm use new screws. Tighten screws in two stages:
Stage 1, **50 Nm**
Stage 2, **90° angle**
3. Camshaft position (CMP) sensor
4. Distributor and ignition cables
5. Radiator hoses
6. Engine speed (RPM) sensor
7. Lower radiator hose (with vacuum hoses)

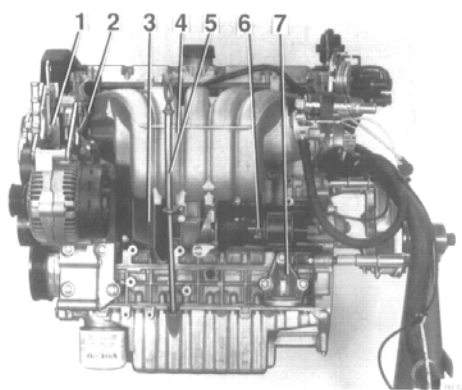
Transferring exhaust side components



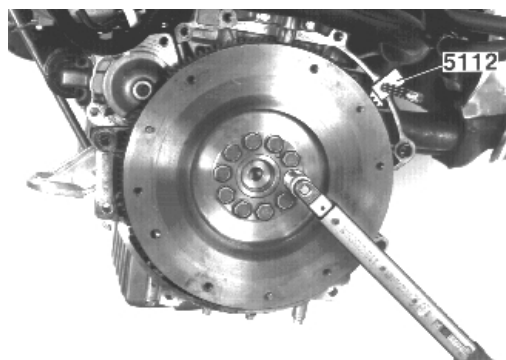
1. Lifting eyelets (2 x)
2. Heat deflector plate and pre heating plate
3. Exhaust manifold
4. Coolant pipe
5. Fuel line mounting brackets
6. Right engine mounting
7. Bearing bracket

Transferring intake side components

1. Auxiliaries bracket with generator (GEN)
2. Temperature sensor
3. Intake manifold knock sensors (KS) (torque **20 Nm**)
4. Flame trap with hose
5. Dipstick and pipe
6. Starter motor
7. Front engine mounting



Reinstall flywheel/carrier plate



Use gear sector 999 5112 and special screws 999 5593 .

Install flywheel with three special screws and tighten (crosswise) to: **45 Nm**

Install the other standard screws, using new screws, and tighten to **45 Nm**. Replace the three special screws with new standard screws and tighten diagonally to: **45 Nm**
Angle-tighten: **65°**

Automatic:

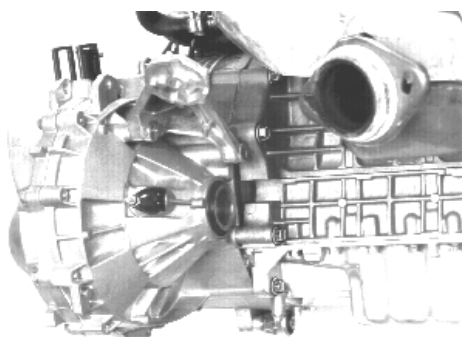
Reinstall the carrier plate, tighten in two stages:

1. Tighten to: **45 Nm**
2. Angle-tighten: **50°**

Install transmission

Automatic: Tighten torque converter to: **50Nm**.

Manual: Torque clutch driven plate and pressure plate to: **30 Nm**



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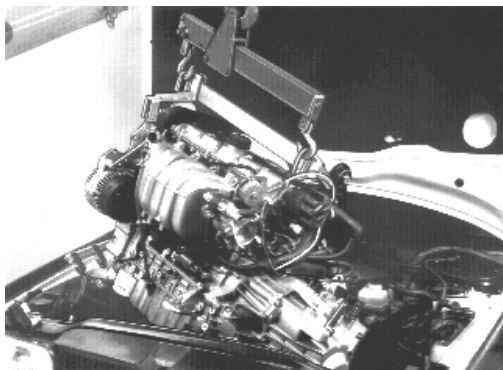
Installing engine (left-hand drive)

Special tools:

999 2810
999 5428
999 5459
999 5464
999 5533

Note! Engines from 1994 model year onwards have reinforced front lifting eyelet. This means that lifting eyelet 999 5459, 5464 is withdrawn and replaced by lifting arm 998 9734 instead. From autumn of 1993 onwards this lifting arm is included in the kit for tool 9992810.

Lift in engine with transmission



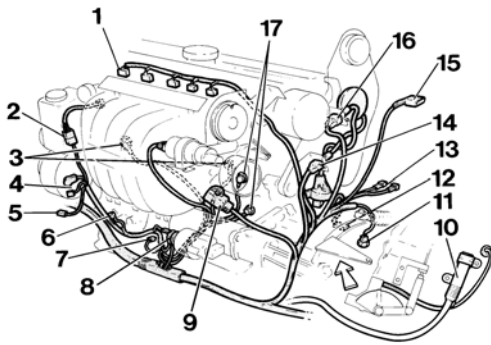
Use lifting yoke 999 2810 , 999 5428 and lifting eyelet 999 5459 and 999 5464 .

Locate lifting yoke so that the engine is balanced.
Adjust lift angle **during** lift.

Caution! Check that the driveline is clear of the bodywork and other equipment.

Install the engine cable harness

Remove lifting eyelet (999 5459 , 999 5464) and install torque control arm mounting and spark plugs cover.
Connect all mounting as marked



1. Injectors
2. Temperature sensor
3. Knock sensors (KS)
4. Generator (GEN)
5. A/C compressor
6. Engine cooling fan (FC).
7. Starter motor
8. Oil pressure switch
9. Potentiometer, throttle spindle
10. Automatics
11. Back-up (reversing) lamp
12. Speedometer
13. Heated oxygen sensor (HO2S)
14. Camshaft position (CMP) sensor
15. Mass air flow (MAF) sensor
16. Engine speed (RPM) sensor
17. Ground terminals

Install fuel rail

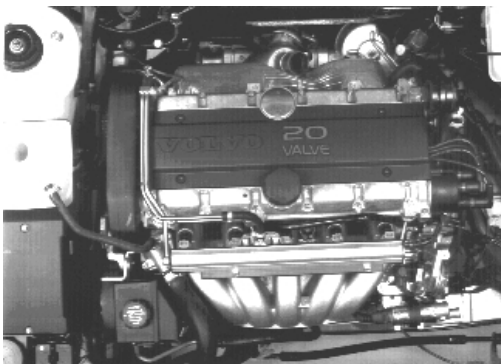
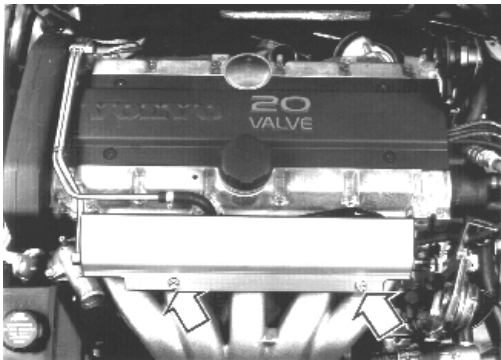
Grease O-rings for injectors.
 Tighten fuel rail.
 Remove holder 999 5533 .
 Install fuel rail cover
 Install fuel line mounting screws
 (upper and lower).

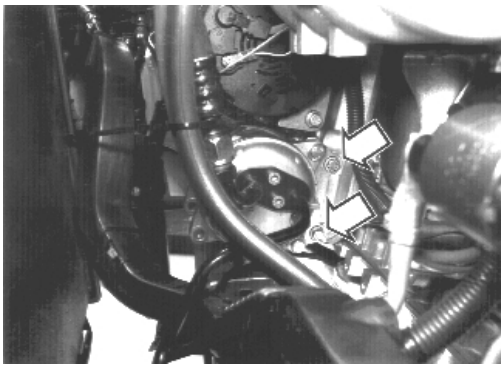
Note! Engines from 1994 model year onwards have reinforced front lifting eyelet. This means that the lifting eyes 999 5459 , 999 5464 are withdrawn and that lifting arm 998 9734 is used instead. From autumn 1993 onwards the lifting arm is included in the kit for tool 999 2810 .

Install:

- servo pump
- three radiator hoses
- auxiliaries belt

Install air conditioning (A/C) compressor and two long screws in bracket

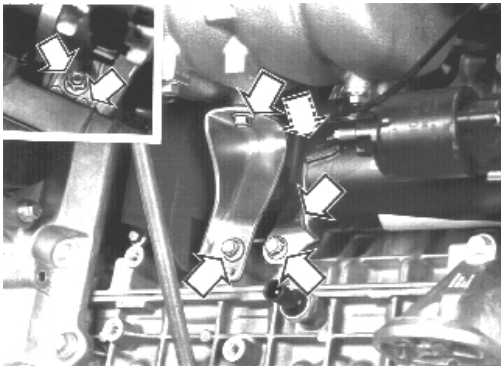




Lift the A/C compressor and install in the bracket with the screws.

Install:

- intake manifold bracket
- starter motor bracket
- front engine pad nut
- cable duct bracket



Install the engine cooling fan (FC)

(Remove radiator cover)
Lift in engine cooling fan (FC) with cover
Install the air intake.
Tighten the fan shroud in radiator
Install the air ducts for cooling the control module box. Install both relays on the fan shroud and connect connectors. Clamp the wiring

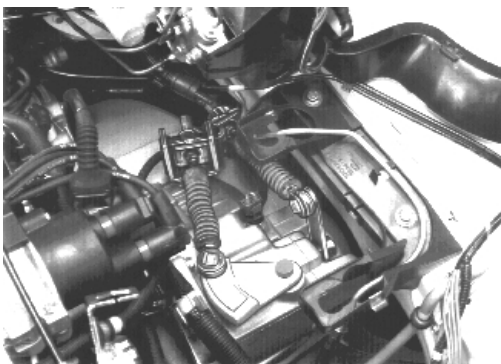


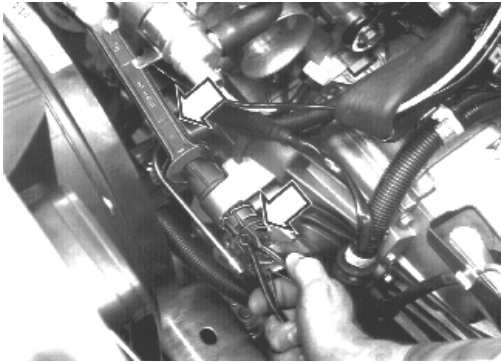
Install the air cleaner (ACL) bracket

Install the gear selector cables rubber mounting.
Install gear selector cables into mountings on transmission.
Thread the clutch slave cylinder through the front hole in the bracket.
Install the air cleaner (ACL) bracket rubber pads and tighten the bracket.

Note! Automatic: Connect connector. Release the two oil cooler hoses.

Install:





- the negative lead on the transmission
- clutch slave cylinder to the gearbox
- slave cylinder snap ring

Hint:

Use a 24 mm box wrench to hold the slave cylinder when installing the snap ring.

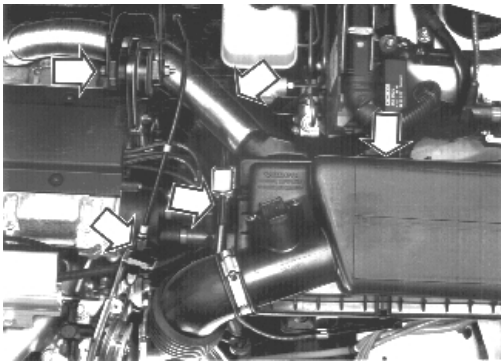
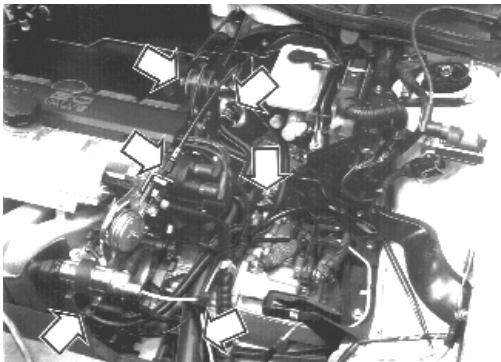
Install:

- lower radiator hose to radiator
- brake servo hoses
- two heater pipes to cowl panel
- upper torque rod to engine with new screws. Tighten to **50 Nm** and **90°** angle
- throttle cable to throttle pulley
- rear engine mounting upper nut

Connect the heated oxygen sensor (HO2S) electrical wiring.

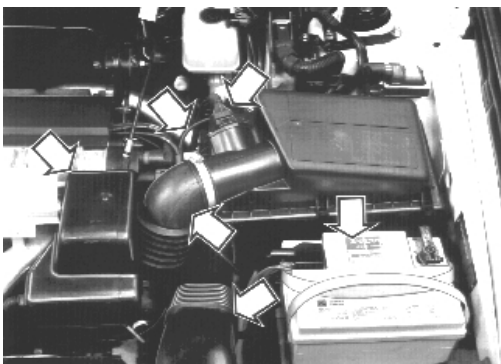
Install air cleaner (ACL) housing

Install the air cleaner (ACL) housing and preheating hose.
Connect connector and vacuum hoses to the solenoid valve.

**Install:**

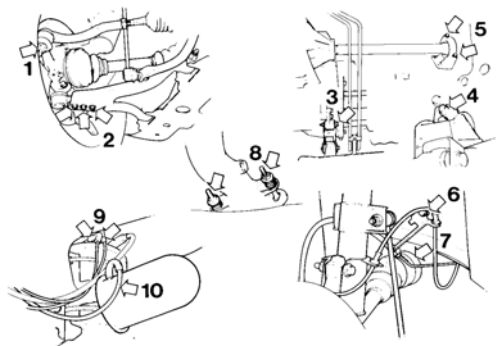
- all crankcase ventilation, throttle body (TB) and idle air control (IAC) valve hoses
- throttle pulley cover
- mass air flow (MAF) sensor connector
- ignition cable between distributor/ignition coil
- the battery shelf and battery with the cables

Note! If the car is equipped with a cruise control connect the vacuum



**hose and vacuum motor wiring
before the battery shelf is screwed
into place.**

**Reinstall the
following
components:**



1. Tie rod ends to stub axles
2. Nuts holding ball joints to control arms.
3. Torque control arm in transmission (new screw).
4. The two screws for the right engine mounting.
5. The right drive shaft and intermediate bearing cap to drive shaft in the cylinder block.
6. Brake pipe/cable body mounting screw.
7. Left drive shaft.
8. Exhaust pipe with seal, nuts and springs.
9. The two thin black hoses to the EVAP canister.
10. The white hose to the vacuum reservoir.
11. Right fender liner.
12. Left front wheel.

**Note! Install air baffle and
splash guard under the engine.**

**Top up coolant and
engine oil**

Coolant volume approximately: **7.20
liters**
Oil capacity: including oil filter **5.3
liters**



Test function

Start engine run until thermostat opens.
Check for leaks.
Check and if necessary adjust oil and coolant levels.
Automatic: Check automatic transmission oil level.



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