

Engine 10

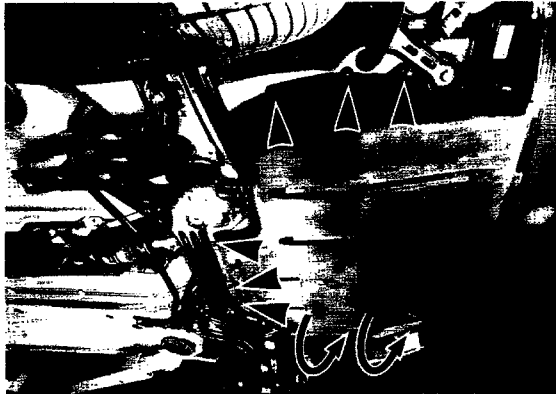
Engine unit: removal and refitting. 2.0 I 16 V engine

ENGINE UNIT Removal and refitting

Removal

To remove the engine unit, the vehicle must be placed on a lifter.

Disconnect the battery negative lead.

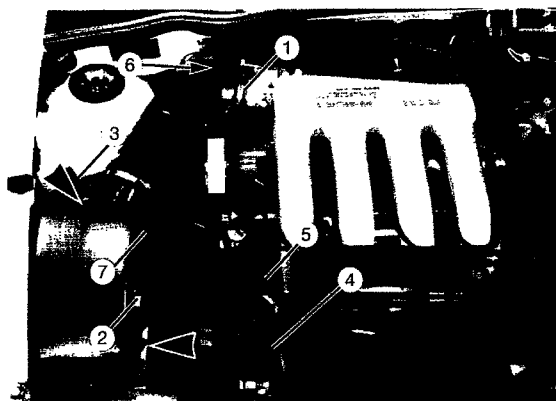


13D035

Raise the vehicle and remove the lower engine protection.

Remove the front panel as described in the Repair Group 51.

(In models with air conditioning, support the radiator-condenser assembly on brackets to avoid stretching or bending the tubes.)

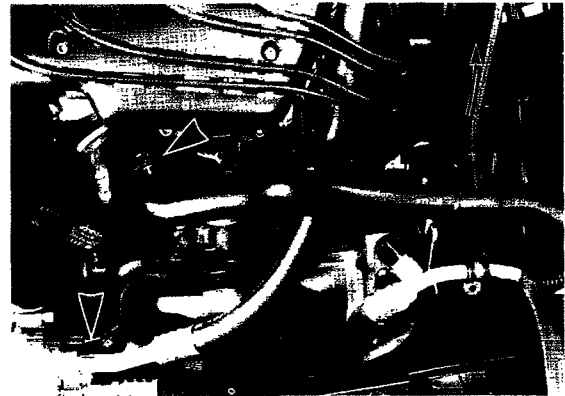


10B113

Remove the following items from the air filter/inlet tube assembly:

1. Junction clip between inlet tube and inlet manifold.
2. Suction take-off from its fixing to the inlet air thermo-regulator.
3. Inlet air temperature transmitter connector.
4. Sump gasses ventilation tube from its fixing to the pressure regulating valve.
5. Idling stabilizer valve tube from its fixing to the valve.
6. Hot air tube from its fixing to the exhaust manifold heat shield.
7. Intake air muffler bushing from housing to air filter assembly.

Remove the O-rings which connect the air filter assembly to the bodywork and remove the filter.



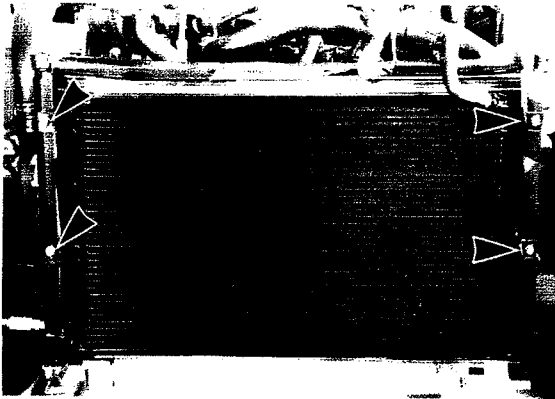
10B114

Remove the cap from the coolant liquid tank and remove the radiator tubes from their fixings to the engine block and to the tank; then drain the coolant liquid.

Remove the electrical connections to the radiator and remove the radiator.

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10B116

The following operations are necessary to remove the radiator on models with air conditioning:

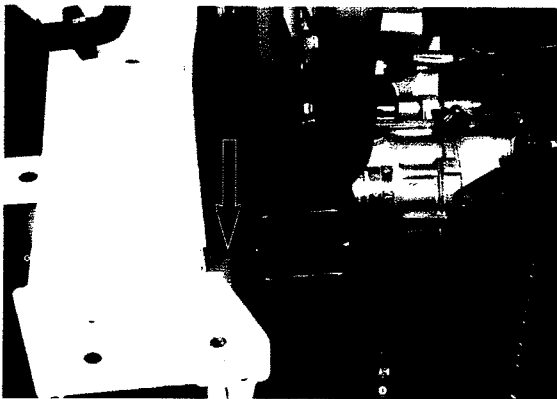
- Remove the brackets holding the condenser to the radiator and to the front cross member.
- Remove the channels and the brackets holding the air conditioning system.

After removing the radiator, hold the condenser taking care not to bend or twist the pipes.

Note

Opening the air conditioning system to remove the engine unit is not necessary.

When removing the radiator from the vehicle, take care not to damage any air conditioning system part.



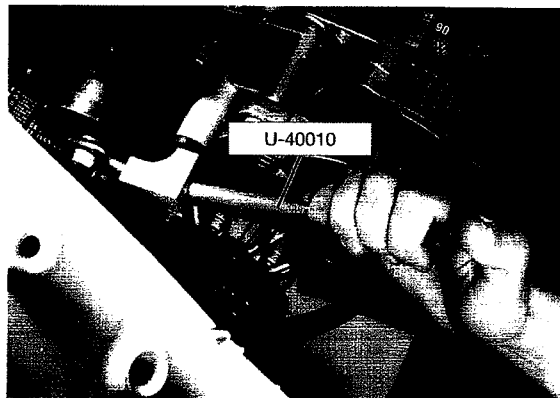
10B127

Remove the air intake muffler tank, pressing the tank in the direction of the arrow.



10B004

For vehicles with air conditioning, unhang the dehydrator filter.



10B005

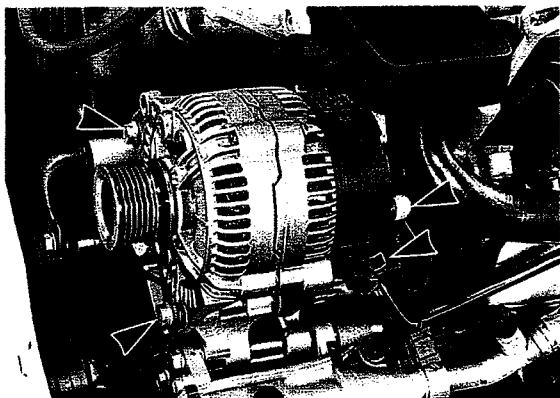
Remove the Poly-V belt using the appropriate tool:

- Models with tensioning roller **U-40010.**
- Models without tensioning roller **U-40050.**

When removing the belt, mark the turning direction; this mark should be taken into account when re-assembling.

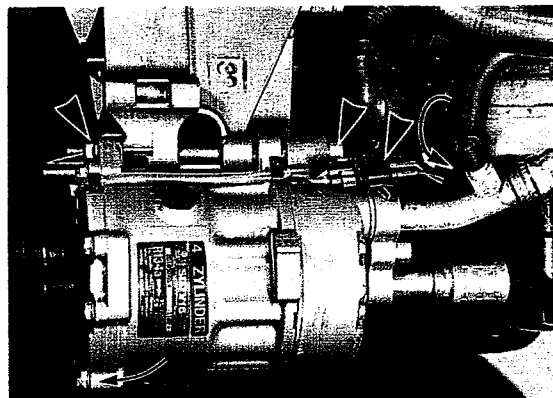
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10B092

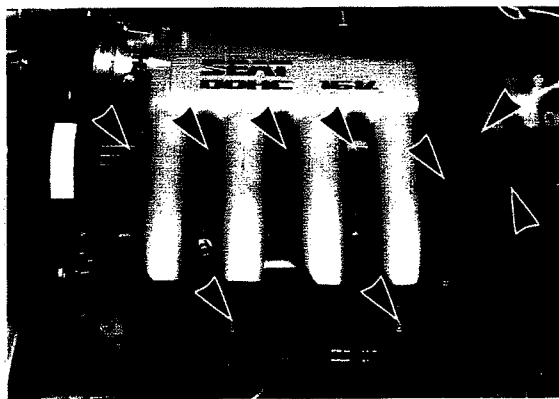
Remove the alternator's electrical connections and fixing bolts and remove the alternator.



10B079

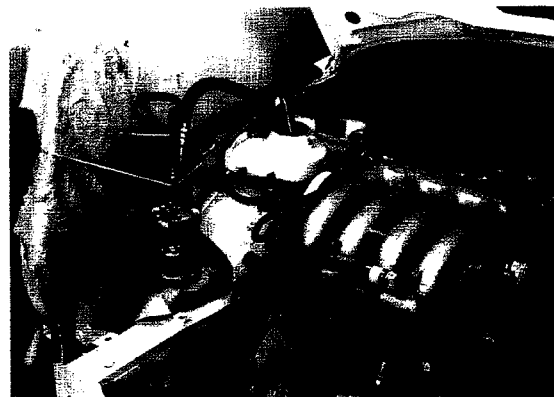
For vehicles with air conditioning, disconnect the electrical cables and remove the fixing bolts of the air conditioning compressor.

Remove the air conditioning compressor and place it where the air filter assembly was fitted (opening the system is not necessary).



10B117

Remove the spark plug cables shield together with the cables and the ignition distributor cap.



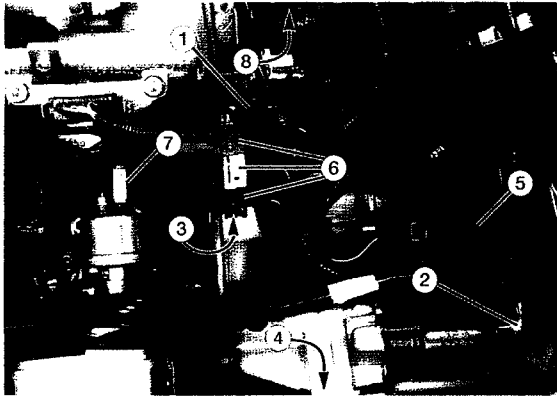
10B118

In models with air conditioning, position the condenser, compressor and tubes assembly on the right hand side and support it there (remove the fixing brackets).

Care must be taken to protect the components when carrying out this operation to prevent damage to the bodywork or to any of the air conditioning installation components.

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10B119

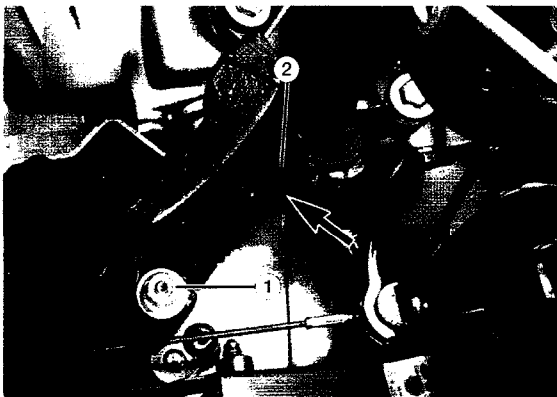
Disconnect:

1. The electrical system central connector.
2. The starter motor electrical cables.
3. The engine unit ground connection.
4. The support fixing the power steering pipe to the starter motor.
5. The reverse switch connector.
6. The engine speed transmitter connector and the pink sensor connectors, located next to the central connector.

Take the colours of the sensors connectors into account when installing:

Sensor connect. **1 brown** - install. connect. **brown**.
Sensor connect. **2 black** - install. connect. **white**.

7. The contact connector G, in the oil pressure switch.
8. The control thermal switch for the 3rd electric fan speed, in the cooling liquid distributor pipe.



10B120

Remove the control and selector cables from their fixing point to the gearbox:

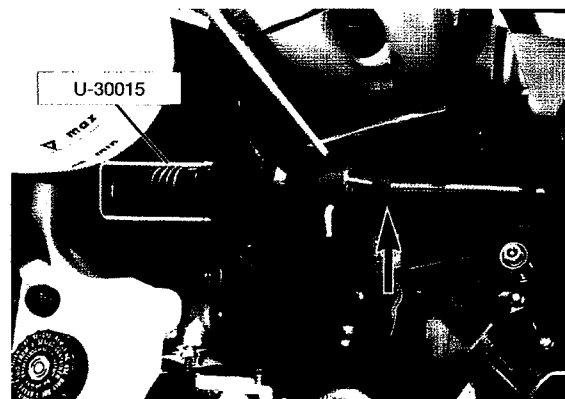
1. The bolt with collar must be removed in order to remove the control cable.
2. The lug marked with the arrow must be moved in order to remove the selector cable from its fixing to the drive element.



10B121

Remove the bracket holding the control and selector cables.

Detach the connector from the speedometer.

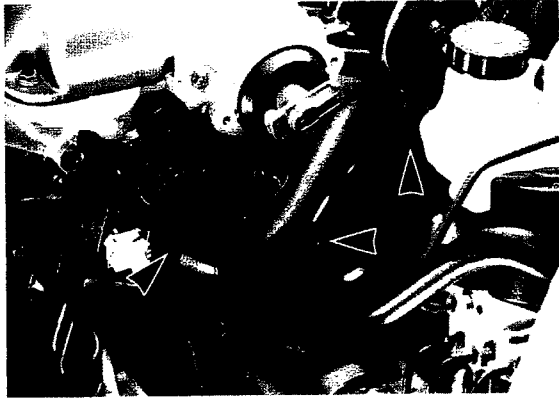


10B122

Detach the clutch control cable. If there is no holding strip on the cable, use tool **U-30015**. To place both the tool and the strip, the control cable must be compressed (refer to Volume II, Repair Group 30, for additional information).

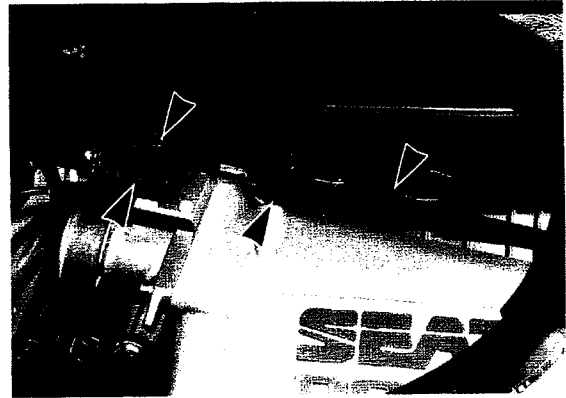
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10B123

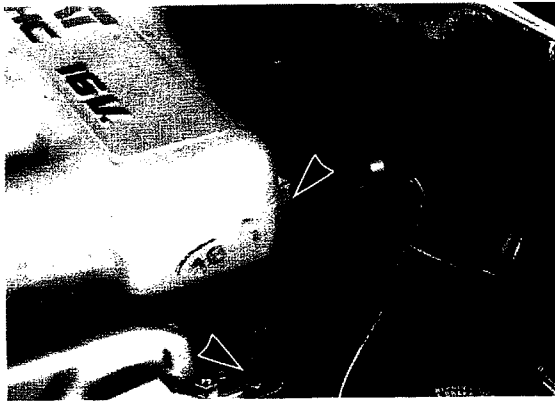
Detach the cooling liquid hoses to the heating system and to the expansion tank from the engine unit.



10B125

Detach the accelerator cable from the throttle valve assembly and from the support on the intake manifold (do not remove the fixing clamp).

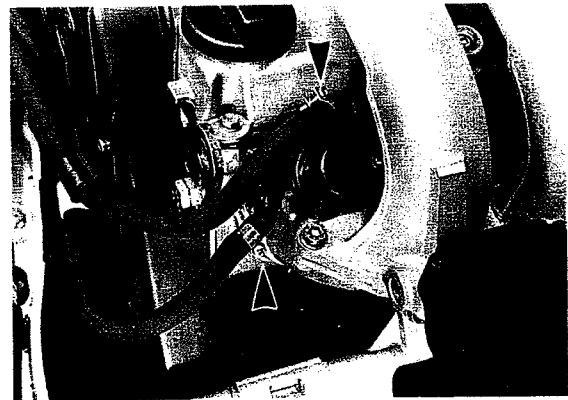
Remove the pressure reduction tubes and the activated carbon tank gas uptake tube from their fastening to the butterfly assembly.



10B124

Remove the suction take-off for the servo-assisted brakes from its fixing point on the inlet manifold.

Detach the earth connection from its fastening to the cylinder head.

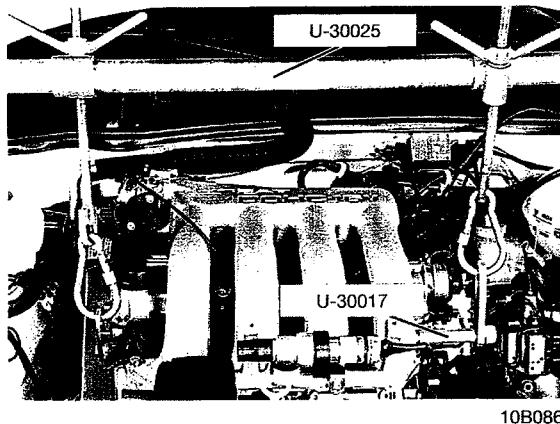


10B085

Disconnect the fuel inlet (black) and return (blue) pipes and plug properly the system.

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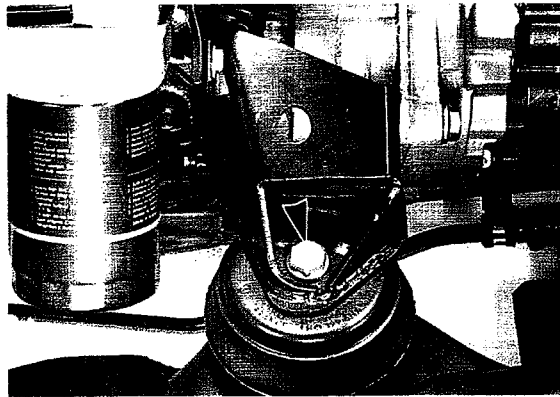
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10B086

Place the crossmember **U-30025** to hold the engine unit for the following operations.

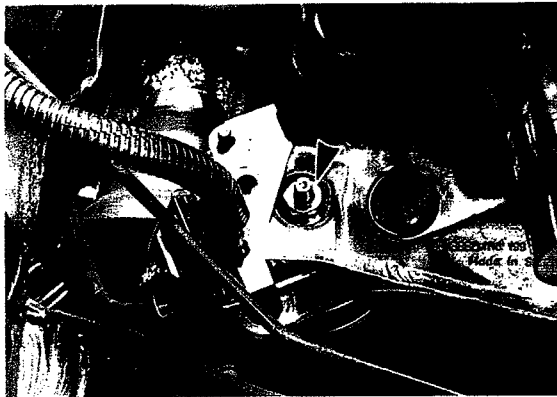
The **U-30017** adaptor tool must be used to place the cross member.



10A196

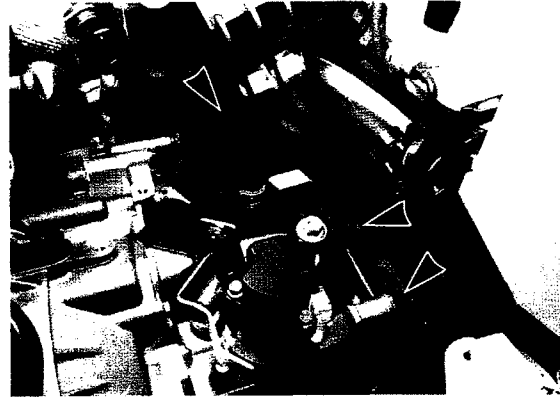
Remove front engine unit support fixing bolt.

Remove the power steering fluid tank support assembly without detaching the pipes and properly attach the assembly to the bodywork.



10A195

Remove the engine support bracket bolt at the rear of the engine; the fixing bracket must be removed with the lambda probe connector.



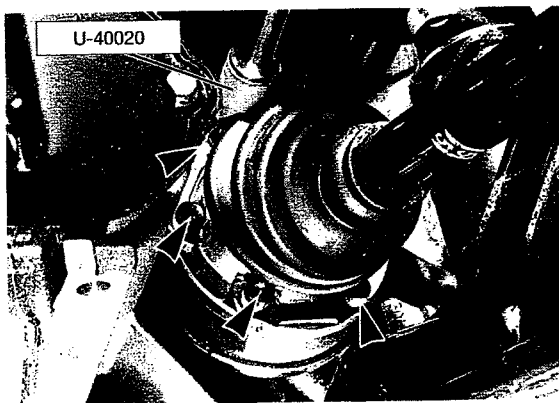
10B126

Remove the bolt fixing the rear engine unit support, gearbox side.

Remove the bolt fixing the gearbox holding flange and remove the flange.

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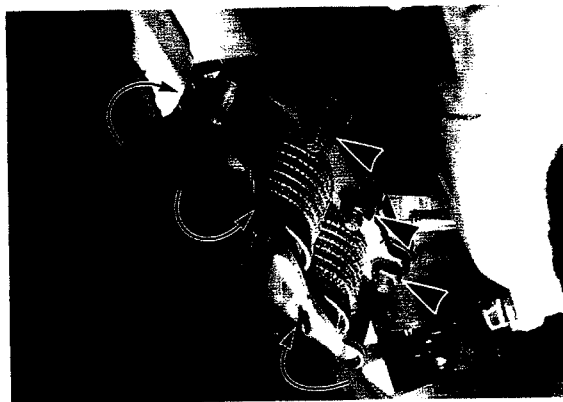
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10A198

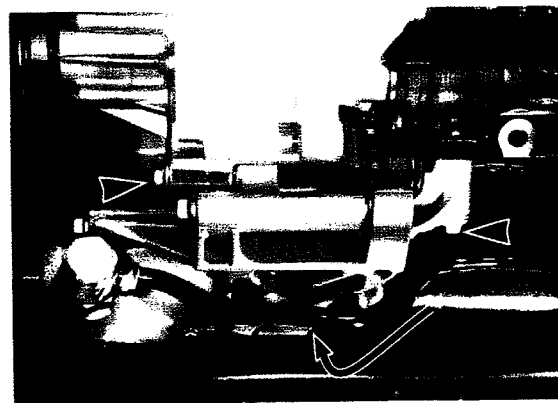
Raise the vehicle and remove the swivel half shafts from their fixings to the gearbox, using the M8 socket of the **U-40020** tool.

Conveniently fix the half shafts to the bodywork so that they do not interfere with the following operations.



10A086

Detach the exhaust pipe from the exhaust manifold.

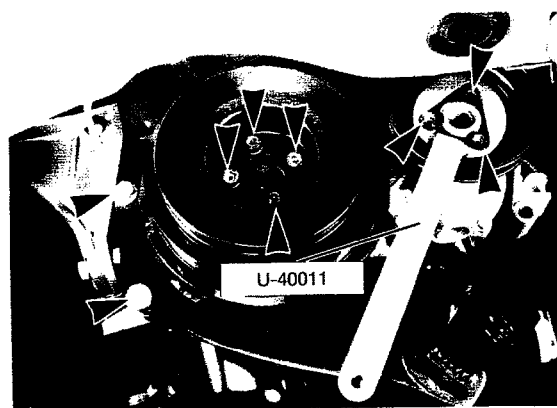


10D023

Remove the steering pump bracket and support it on the cross member, taking special care not to damage or bend the system's tubing.

Note

To carry this operation, do not open the power steering system.



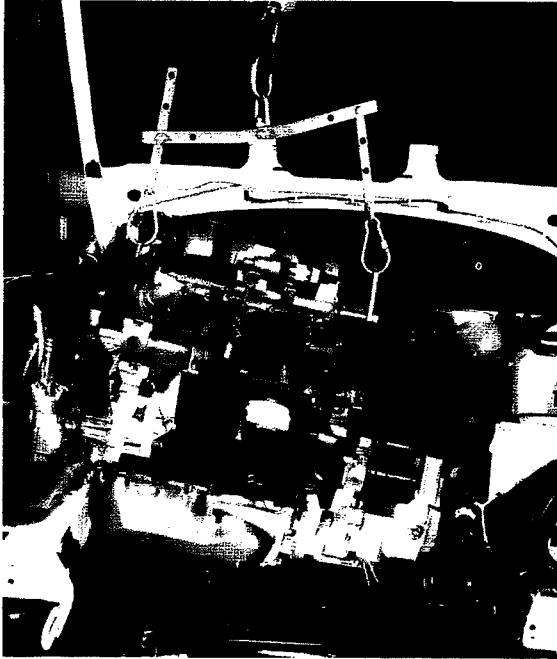
10D024

Remove the crankshaft drive pulleys and the cooling liquid pump. To carry out this operation, tool **U-40011** must be used.

Remove the power-assisted steering tension bracket.

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10B115

Remove the **U-30025** cross member and apply the **U-30034** lifting hook together with the **U-30017** adaptor, as shown in the photograph.

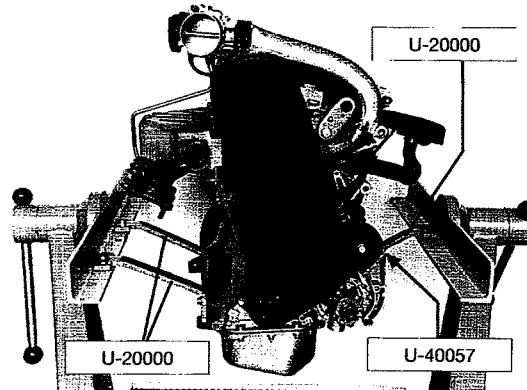
Raise and move the engine unit until it can be removed through the front of the vehicle, taking care not to damage the bodywork or the mechanical parts fixed to it.

Note

When lifting the engine unit, check that the exhaust manifold is loose from the front part of the exhaust pipe and the gearbox cables are not damaged.

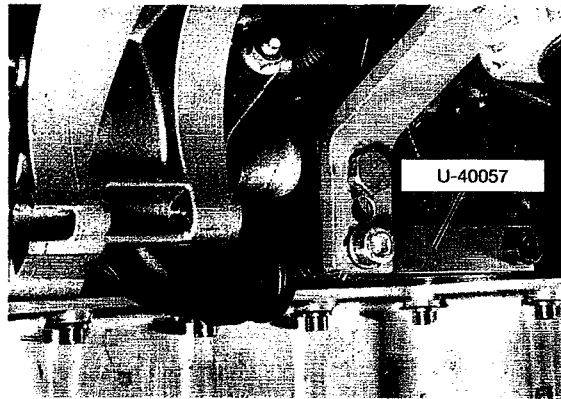
After removing the engine unit, if it is to be disassembled, fix the engine unit to an appropriate support and remove the following parts:

- Starter motor and front engine unit support.
- Rear engine unit support, engine side.
- Engine flywheel cover plates.
- The heat-resistant guard between the exhaust pipe and the engine block.
- The gearbox assembly.
- The rigid coolant tube, together with the flexible hoses joined to it.



10A204

To disassemble and reassemble the engine unit, it must be fitted to the rotary trestle **Ar-2204** or **Ar-2204 A** using the holding flanges **U-20000** and **U-40057**.



10A205

To support the engine on the oil filter side, the **U-40057** flange must be used; if necessary, remove the coolant pump hose.

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Refitting

To reassemble, reverse the above operations taking the following into account:

Check for excessive wear in the clutch assembly and replace it if necessary.
Apply a light coat of grease around the clutch bearing and on the primary shaft splines.

Check that the centering bushings between the engine and the gearbox are in place and in good condition.

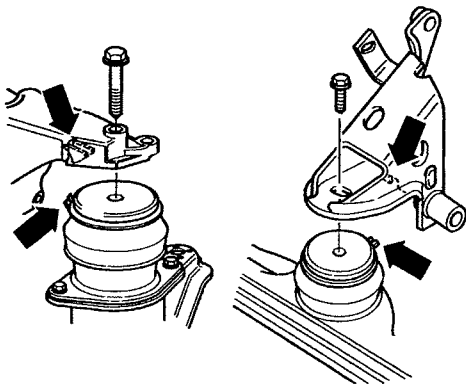
When lowering the engine unit, take special care not to damage the swivelled half shafts.

Check the ignition timing and idling speed (Repair group 24).

Check and, if necessary, adjust the headlamp alignment.

The tightening torques to be applied to the fasteners previously removed are the following:

- Gearbox to engine fixing bolts M10 60 Nm.
- Gearbox to engine fixing bolts M12 80 Nm.
- Bolts fixing brackets to engine block or gearbox 45 Nm.
- Articulated half shafts to gearbox flange .. 45 Nm.
- Bolts fixing brackets to bodywork..... 50 Nm.
- Exhaust pipe to exhaust manifold M10..... 40 Nm.



10BD01

When refitting the engine unit into the vehicle, check that the grooves on the front and rear right engine supports match with the rubber-metal bushing pins.

Refit the engine unit fasteners so that they are not subject to any tension. Align the fasteners by shaking the engine unit.

Adjust the vane pump V belt tension (Running gear, Repair Group 48).

Fit the gearbox control and selector cables and adjust if necessary (02A gearbox, Repair Group 34).

Refill the cooling system with cooling liquid.

Adjust the accelerator cable (Repair Group 20).

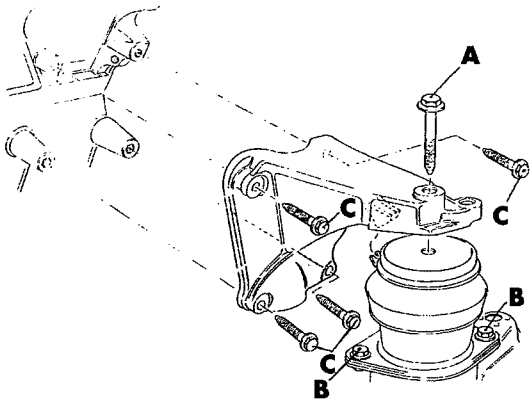
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RUBBER-METAL BUSHINGS Removal and refitting

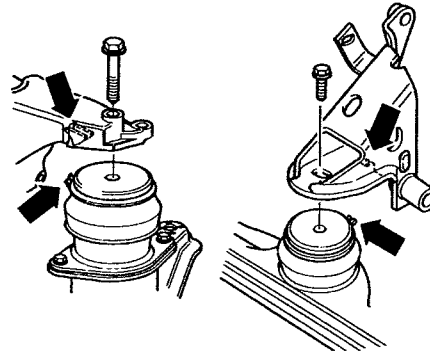
To reassemble, reverse the above operations taking the following into account:

Rear rubber-metal bushing, engine side



10BD02

- Fit the **U-30025** engine support cross-member, using the **U-30017** adaptor.
- Remove the bolt (A) fixing the engine support to the rubber-metal bushing by partially removing the intake pipe, if necessary.
- Remove the lambda probe fixing plate together with the connector.
- Loosen the fixing points for the rear gearbox and front engine side brackets to avoid tensions.
- Remove the bolts (B) fixing the rubber-metal bushing to the bodywork.
- Lift the engine using the crossmember **U-30025**.
- If the engine support is to be removed, remove first the bolts (C) fixing the support to the engine.
- Remove the elastic bushing through the vehicle underside.



10BD01

- Check that the grooves on the front and rear right engine supports match with the rubber-metal bushing pins.
- Refit the engine unit fasteners so that they are not subject to any tension. Align the fasteners by shaking the engine unit.

Tightening torque:

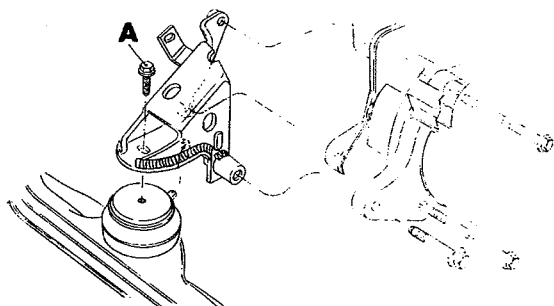
(A)	60 Nm.
(B)	30 Nm.
(C)	25 Nm.

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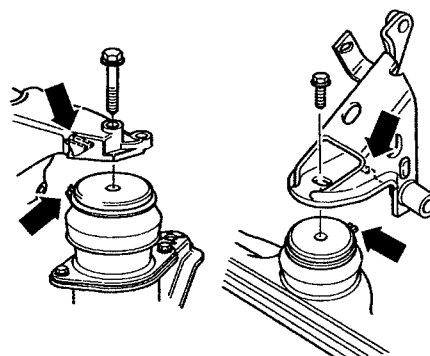
Front rubber-metal bushing, engine side

To reassemble, reverse the above operations taking the following into account:



10BD03

- Disconnect the battery negative lead.
- Remove the bolt (A) fixing the engine support to the rubber-metal bushing.
- Loosen the bolts fixing the engine rear supports, gearbox side and engine side, to avoid tensions.
- Remove the bolt holding the rigid anti-freeze liquid tube from the front engine support.
- Raise the vehicle and place a column jack under the engine unit (protect properly the contact area).
- Remove from the underside the bolt fixing the rubber-metal bushing to the front crossmember.
- Remove the bolts fixing the starter motor and hold the starter motor properly.
- Raise the vehicle using the jack and then remove the support and the rubber-metal bushing.



10BD01

- Check that the grooves on the front and rear right engine supports match with the rubber-metal bushing pins.
- Refit the engine unit fasteners so that they are not subject to any tension. Align the fasteners by shaking the engine unit.

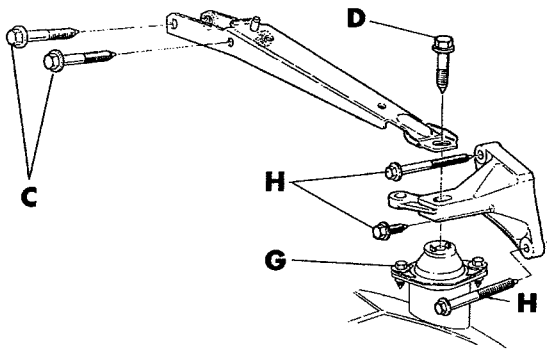
Tightening torque:

(A) 60 Nm.

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Rear rubber-metal bushing, gearbox side



10AD11

- Fit the **U-30025** engine support cross-member, using the **U-30017** adaptor.
- Remove the bolt (D) fixing the rear support, gearbox side, and loosen the bolts fixing the rear and front supports, engine side, to avoid tensions.
- Raise the engine unit using the crossmember **U-30025** and remove the bolts (H) fixing the support to the gearbox assembly.
- Remove the bolts (G) fixing the rubber-metal bushing to the bodywork and remove the bushing.

To reassemble, reverse the above operations taking the following into account:

- Refit the engine unit fasteners so that they are not subject to any tension. Align the fasteners by shaking the engine unit.

Tightening torque:

(C)	60 Nm.
(D)	60 Nm.
(G)	30 Nm.
(H)	35 Nm.