

TOP AND FRONT OF ENGINE

Pressure at end of compression: Check

11A

K4M

Equipment required

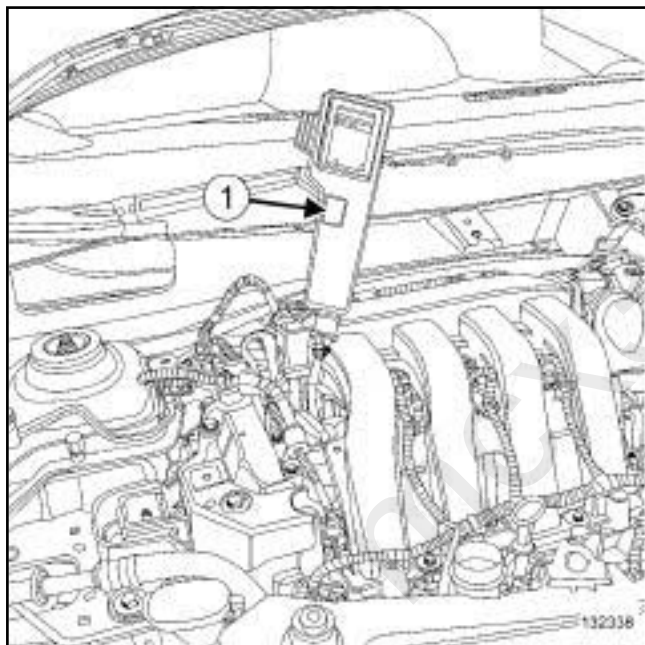
petrol compression gauge

Diagnostic tool

CHECK

I - PREPARATION OPERATION FOR CHECK

- ☐ Remove:
 - the coils (see **17A, Ignition, Coils: Removal - Refitting**, page **17A-2**) ,
 - the spark plugs (see **17A, Ignition, Plugs: Removal - Refitting**, page **17A-11**) .



132338

- ☐ Connect a **petrol compression gauge (1)** .
- ☐ Put the vehicle under starting conditions:
 - gear lever in neutral position for manual gearbox,
 - gear lever in position P (park) for an automatic gearbox.
- ☐ Disconnect the injector connectors.

II - TEST OPERATION

- ☐ Activate the starter until the needle of the petrol compression gauge stabilises.
- ☐ Measure the compression of the engine, cylinder by cylinder.

- ☐ Fully depress the accelerator pedal in order to open the throttle valve during the compression measurements.

Note:

It is necessary to wait for at least **10 seconds** before starting the engine each time (the starter will not run due to its thermal protection).

III - FINAL OPERATION

- ☐ Disconnect the **petrol compression gauge**.
- ☐ Refit:
 - the spark plugs (see **17A, Ignition, Plugs: Removal - Refitting**, page **17A-11**) ,
 - the coils (see **17A, Ignition, Coils: Removal - Refitting**, page **17A-2**) .
- ☐ Connect the injector connectors.
- ☐ Using the **Diagnostic tool**, check that there are no faults stored in the computer.
- ☐ Start the vehicle.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

Special tooling required	
Mot. 1638	Accessories belt tensioning tool. For engines fitted with mechanical tensioning roller.
Mot. 1715	Belt tension checking tool (frequency indicator).
Mot. 1505	Belt tension setting tool (frequency meter)

Tightening torques 	
tensioning roller bolts	30 N.m
auto tensioner bolts	40 N.m

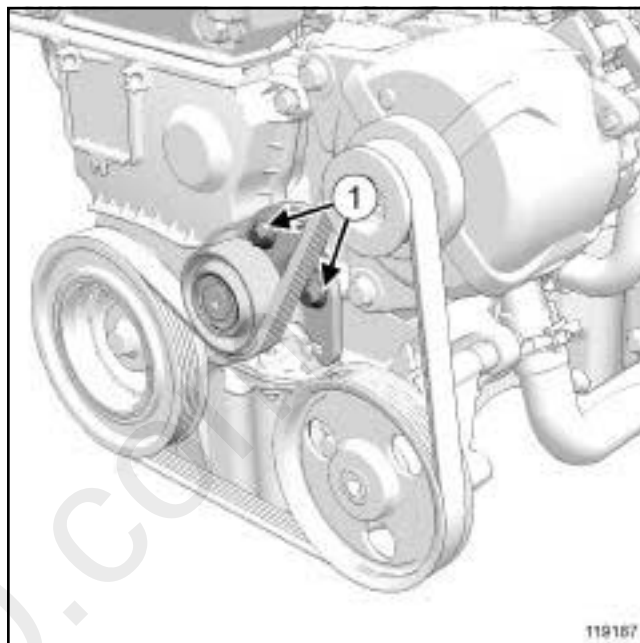
REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (80A, Battery).
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres),
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the engine undertray.

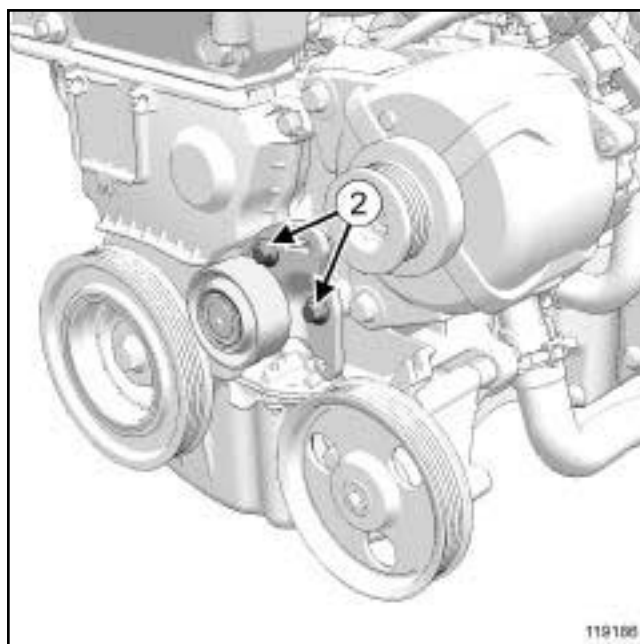
II - OPERATION FOR REMOVAL OF PART CONCERNED

1 - Removal preparation operation for the part concerned: mechanical tensioning roller and accessories belt (5V)



119187

- ☐ Loosen the tensioning roller bolts (1) .
- ☐ Remove the accessories belt.



119186

- ☐ Remove:
 - the tensioning roller bolts (2) ,
 - the tensioning roller.

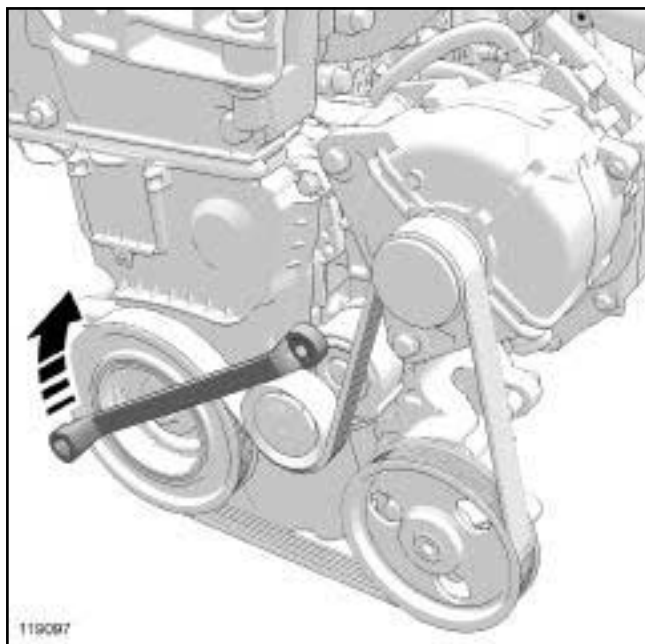
TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

2 - Removal preparation operation for the part concerned: auto tensioner and accessories belt (6V)



119097

- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.
- ☐ Remove:
 - the accessories belt,
 - the tensioning roller bolt,
 - the tensioning roller.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ **parts always to be replaced: Accessories belt (10,10,01,03).**
- ☐ **parts always to be replaced: Accessories belt tensioning roller (10,10,01,04).**
- ☐ **parts always to be replaced: Accessories tensioning roller bolt (10,10,01,09).**

Refitting preparation operation for the two fittings

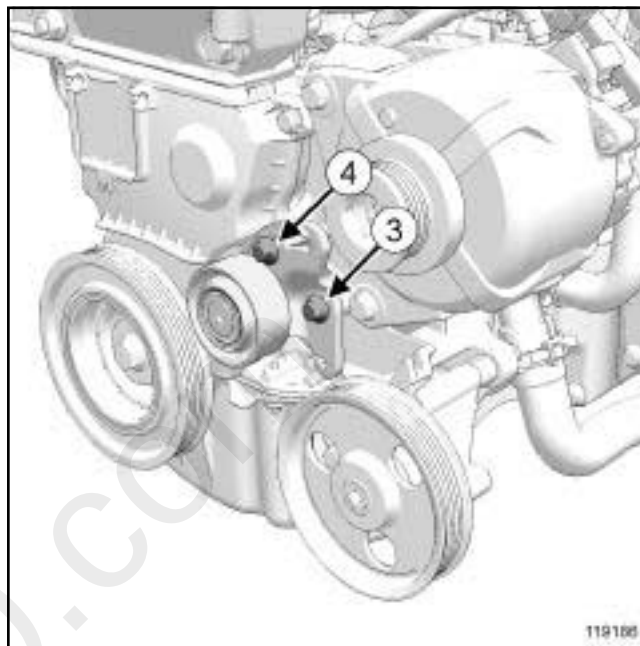
- ☐ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING

Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Refitting preparation operation for the part concerned: mechanical tensioning roller and accessories belt (5V)



119186

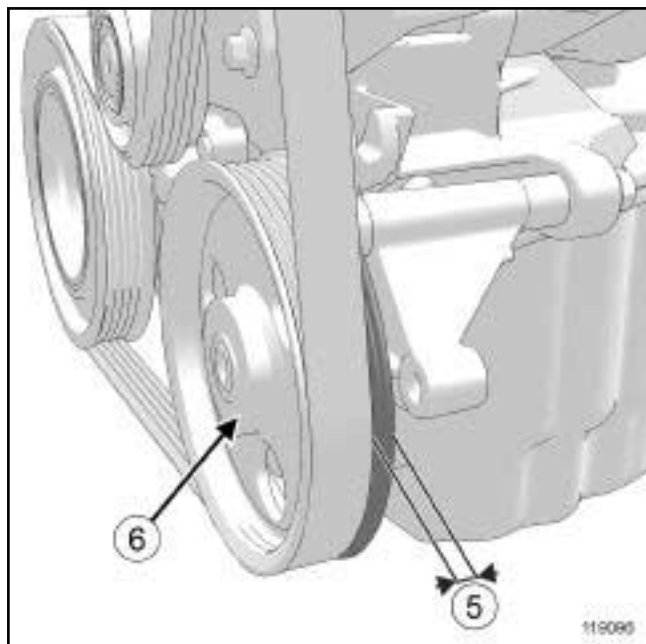
- ☐ Refit:
 - a new tensioning roller,
 - a new tensioning roller bolt (3) ,
 - a new tensioning roller bolt (4) .
- ☐ Fit a new accessories belt.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

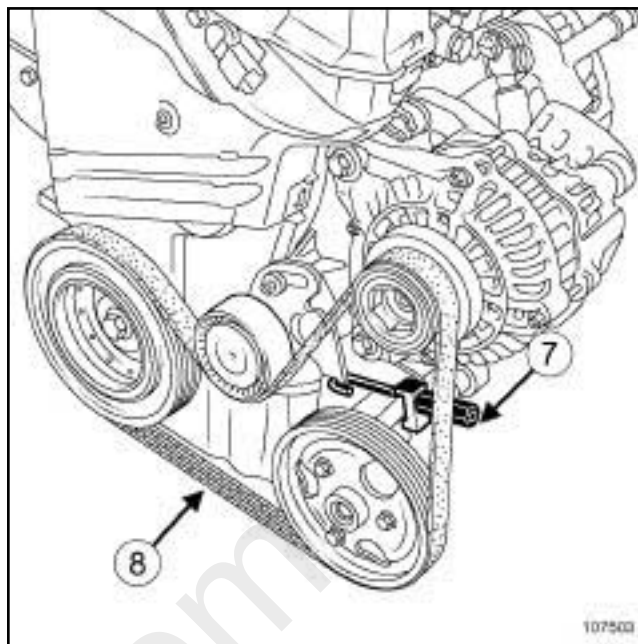


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Note:

Check that the inner tooth (5) of the pulley (6) remains free.



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- ☐ Position the **(Mot. 1638)**.
- ☐ Tension the accessories belt using the **(Mot. 1638)**, tightening nut (7) .
- ☐ Use the **(Mot. 1715)** or **(Mot. 1505)** to measure the accessories belt tension **234 Hz $\pm$ 10 Hz**.
- ☐ Torque tighten the **tensioning roller bolts (30 N.m)**.
- ☐ Rotate the engine through two revolutions to position the accessories belt correctly.
- ☐ Use the **(Mot. 1715)** or **(Mot. 1505)** at (8) to measure the accessories belt tension again **234 Hz $\pm$ 10Hz**.

2 - Refitting preparation operation for the part concerned: auto tensioner and accessories belt (6V)

- ☐ Refit a new tensioning roller.
- ☐ Torque tighten the **auto tensioner bolts (40 N.m)**.
- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.
- ☐ Refit a new accessories belt.
- ☐ Rotate the engine through two revolutions to position the accessories belt correctly.

III - FINAL OPERATION

- ☐ Refit:
 - the engine undertray,

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

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K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (35A, Wheels and tyres).
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (80A, Battery).

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques 	
tensioning roller bolt	40 Nm
the fuel filter interior protector nuts	21 Nm
fuel filter exterior protector nuts	21 Nm

❑

WARNING

The belt must be replaced with a new one if it has been removed.

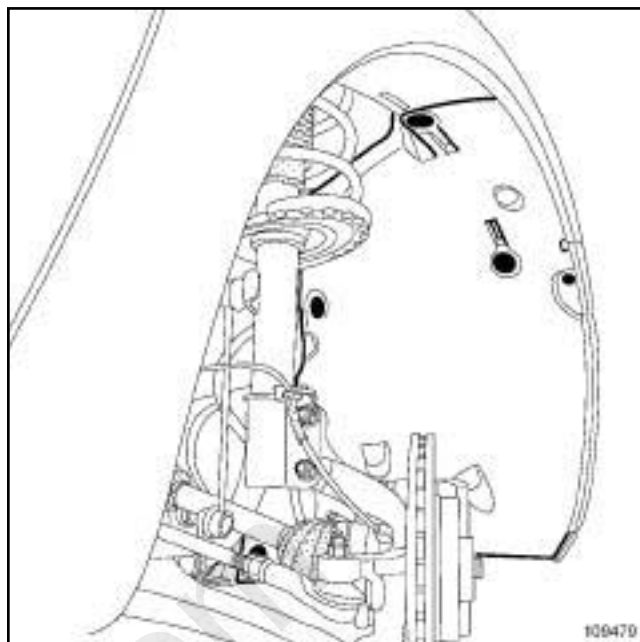
The tensioning roller must be replaced when the belt is replaced.

Do not run the engine without the accessories belt, to avoid irreparable damage to the crankshaft accessories pulley.

REMOVAL

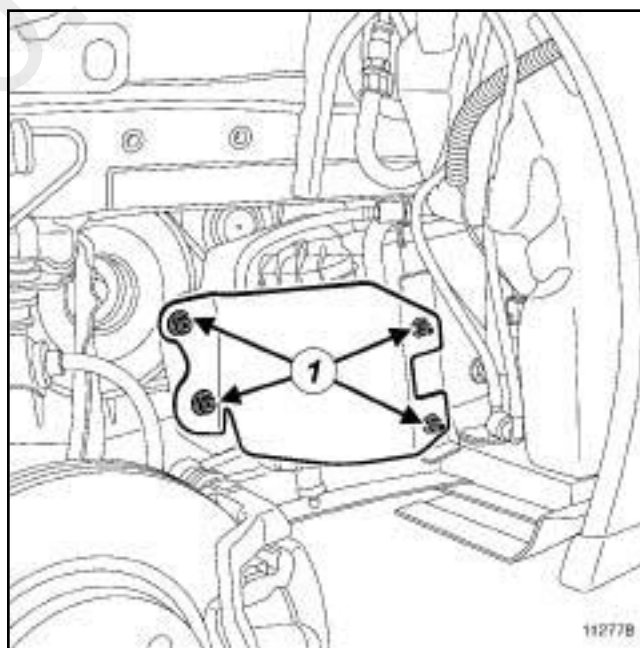
I - REMOVAL PREPARATION OPERATION

- ❑ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ❑ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ❑ Remove:
 - the engine undertray,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



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- ❑ Remove the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



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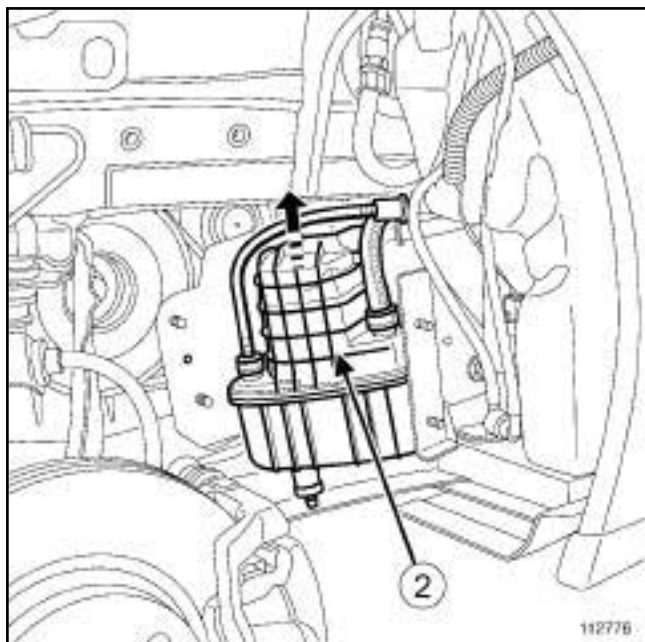
- ❑ Remove:
 - the fuel filter exterior protector nuts (1) ,
 - the fuel filter exterior protector.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

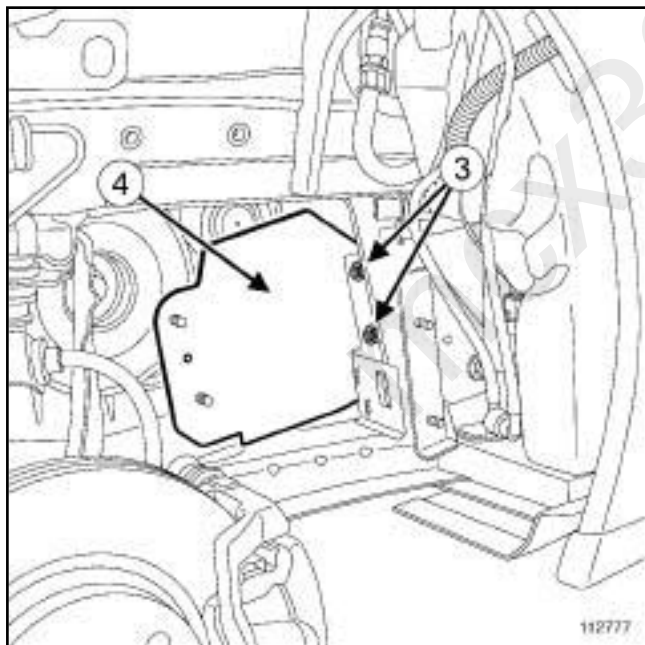
11A

K9K, and AIR CONDITIONING or CLIMATE CONTROL



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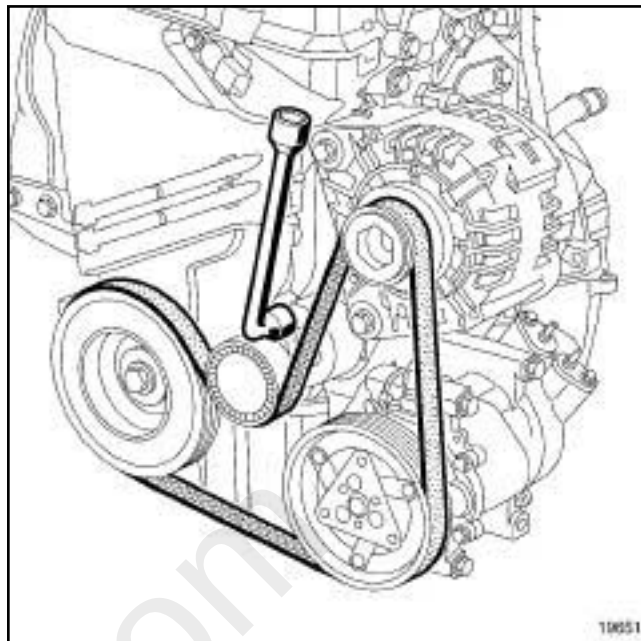
- ☐ Lift the "fuel filter - pipe" assembly (2) .
- ☐ Fasten the "fuel filter - pipe" assembly to the vehicle.



112777

- ☐ Remove:
 - the fuel filter interior protector nuts (3) ,
 - the fuel filter interior protector (4) .

II - REMOVAL OF PART CONCERNED



19651

- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.
- ☐ Remove the accessories belt.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ Use a brush to remove any deposits from the crankshaft pulley V-grooves.
- ☐ Replace the tension wheel.
- ☐ Torque tighten the **tensioning roller bolt (40 Nm)**.

II - REFITTING PART CONCERNED

- ☐ Turn the auto tensioning roller anti-clockwise using a **16 mm** spanner.
- ☐ Refit the accessories belt.

III - FINAL OPERATION.

- ☐ Refit:
 - the fuel filter interior protector,
 - the fuel filter interior protector nuts,
- ☐ Torque tighten the **the fuel filter interior protector nuts (21 Nm)**.
- ☐ Reinstall the "fuel filter - pipe" assembly.
- ☐ Refit:
 - the fuel filter exterior protector,

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and AIR CONDITIONING or CLIMATE CONTROL

- the fuel filter exterior protector nut.
- ☐ Torque tighten the **fuel filter exterior protector nuts (21 Nm)**.
- ☐ Refit:
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the engine undertray.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K4J, and AIR CONDITIONING or CLIMATE CONTROL – K4M, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques

tensioning roller mounting bolt	40 Nm
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IMPORTANT

Wear gloves throughout the operation.

WARNING

Never turn the engine in the opposite direction to its normal operating direction.

WARNING

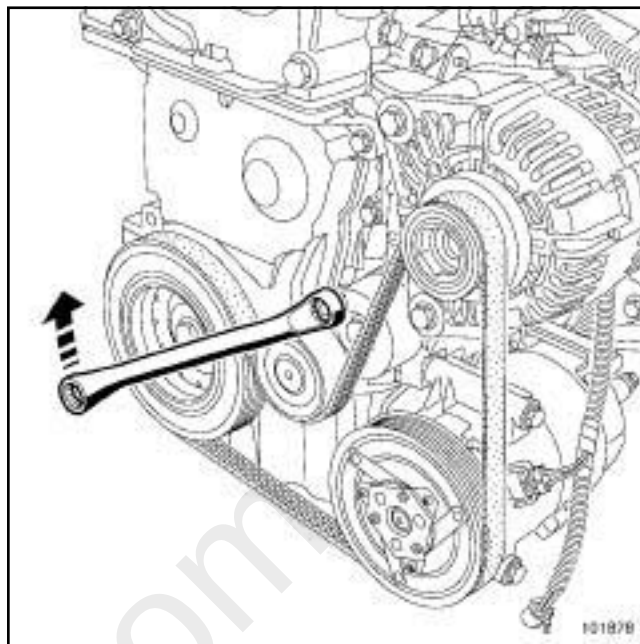
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - REMOVAL OF PART CONCERNED



101878

- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.
- ☐ Remove:
 - the accessories belt,
 - the tensioning roller mounting bolt,
 - the tensioning roller.

REFITTING

I - REFITTING PREPARATIONS OPERATION

- ☐ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING

It is essential to replace the accessories belt and the tensioning roller.

- ☐ Refit the tensioning roller.
- ☐ Tighten to torque the **tensioning roller mounting bolt (40 Nm)**.

II - REFITTING PART CONCERNED

- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner.
- ☐ Refit the accessories belt.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K4J, and AIR CONDITIONING or CLIMATE CONTROL – K4M, and AIR CONDITIONING or CLIMATE CONTROL

III - FINAL OPERATION.

☐ Refit:

- the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and STANDARD HEATING

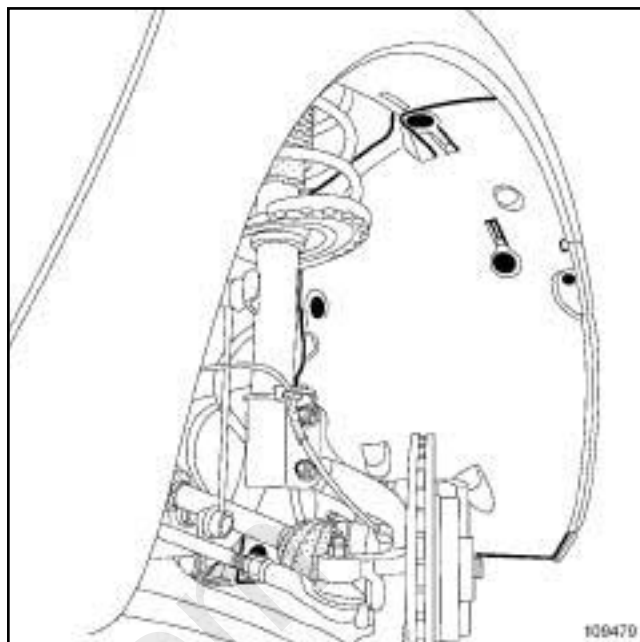
Special tooling required	
Mot. 1638	Accessories belt tensioning tool. For engines fitted with mechanical tensioning roller.
Mot. 1505	Belt tension setting tool (frequency meter)
Mot. 1715	Belt tension checking tool (frequency indicator).

Tightening torques 	
mechanical tensioning roller bolts	35 N.m
auto tensioner bolts	40 N.m
the fuel filter interior protector nuts	21 N.m
fuel filter exterior protector nuts	21 N.m

REMOVAL

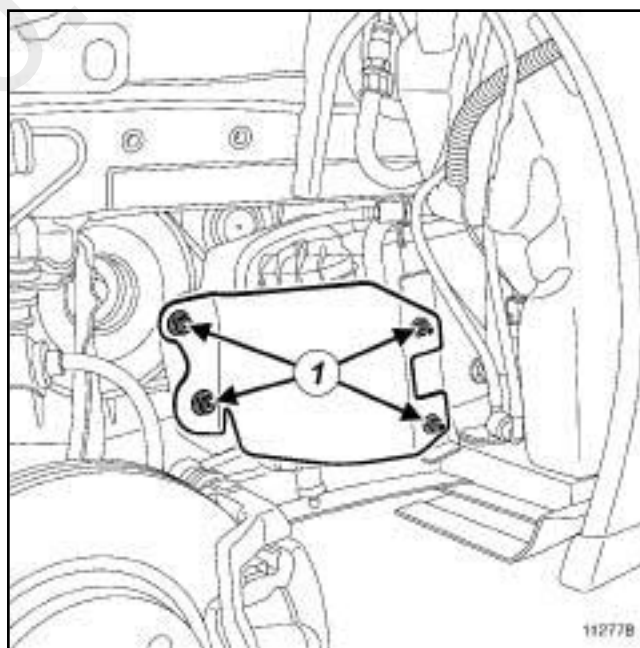
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the engine undertray,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).



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- ☐ Remove the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).



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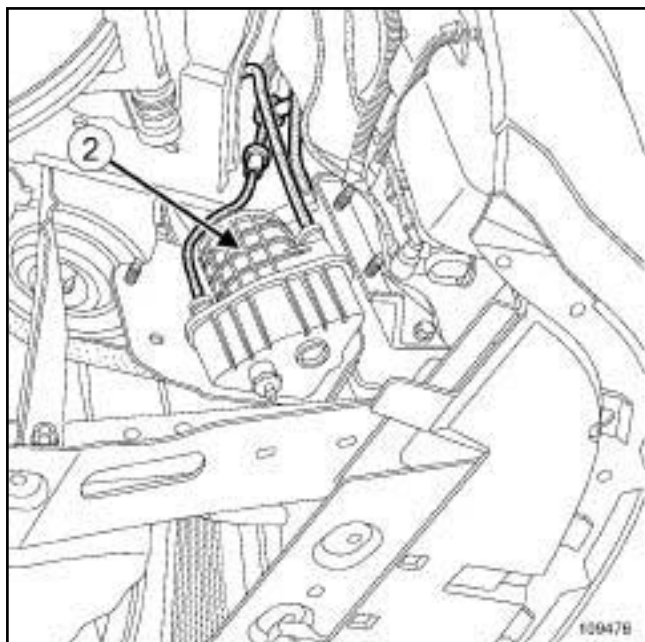
- ☐ Remove:
 - the fuel filter exterior protector nuts (1) ,
 - the fuel filter exterior protector.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

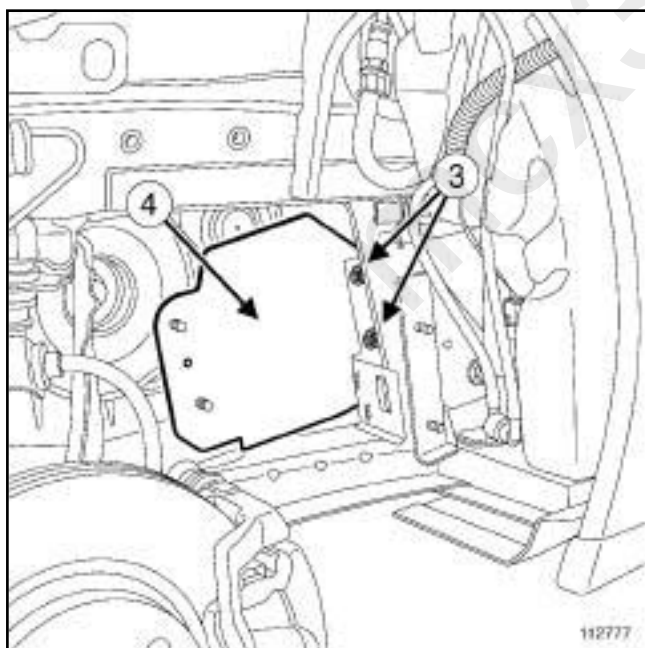
11A

K9K, and STANDARD HEATING



109476

- ☐ Move the « fuel filter - pipe » assembly (2) to one side.
- ☐ Attach the « fuel filter - pipe » assembly to the vehicle.

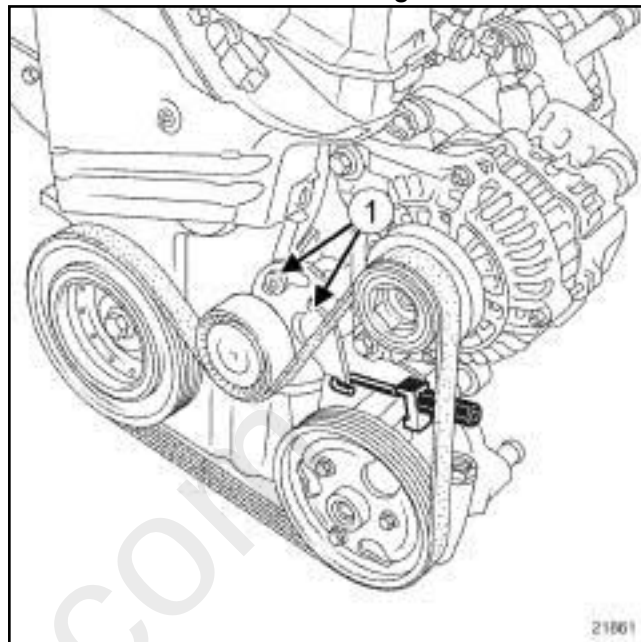


112777

- ☐ Remove:
 - the fuel filter interior protector nuts (3) ,
 - the fuel filter interior protector (4) .
- ☐ Loosen the accessories belt tensioning roller nuts.

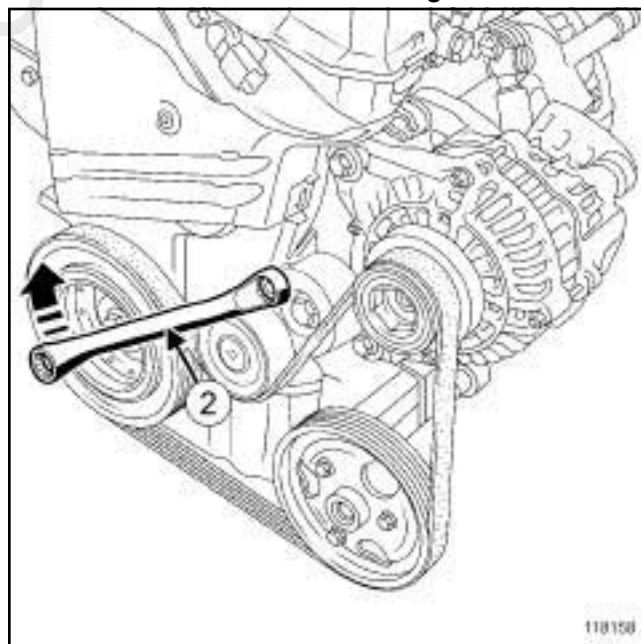
II - OPERATION FOR REMOVAL OF PART CONCERNED

Version with manual tensioning roller



21861

Version with automatic tensioning roller



118158

- ☐ Undo the manual tensioning roller bolts (1) or pivot the auto tensioner using a spanner (2) to slacken the belt (depending on the version).
- ☐ Remove:
 - the accessories belt then discard it in the waste bin,
 - the accessories belt tensioning roller then discard it in the waste bin as well as its bolt.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and STANDARD HEATING

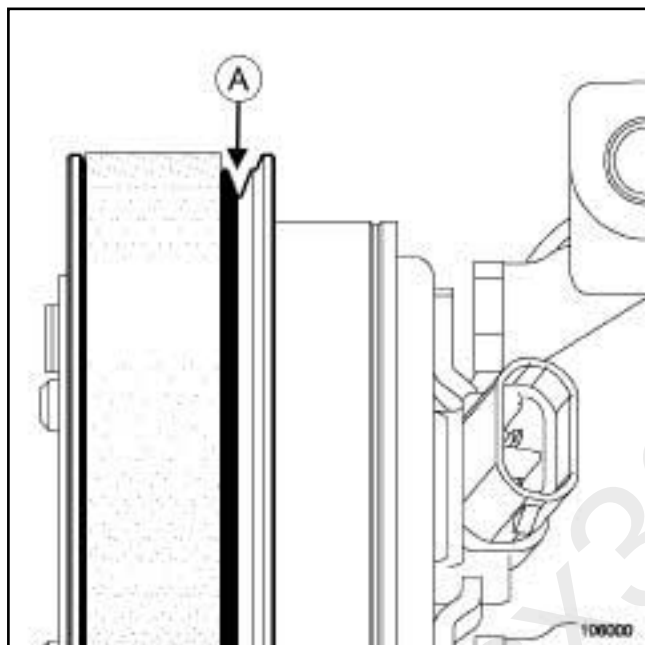
REFITTING

I - REFITTING PREPARATION OPERATION

- ❑ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

WARNING

It is essential to replace the accessories belt and the tensioning roller.

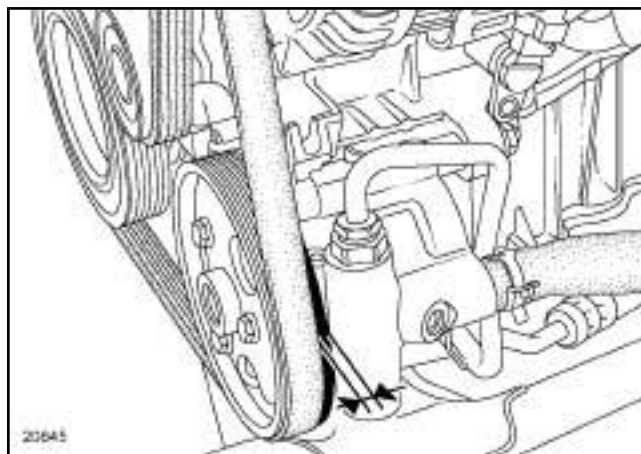


- ❑ It is essential to leave the inner tooth (A) of the pulleys free for engines fitted with an accessories belt with **5 teeth** for pulleys with **6 teeth**.

II - REFITTING OPERATION FOR PART CONCERNED

1 - Accessories belt fitted with a manual tensioning roller

- ❑ Refit:
 - the tensioning roller,
 - the new tensioning roller bolts.



- ❑ It is essential to leave the inner tooth free for engines fitted with an accessories belt with **5 teeth** on pulleys with **6 teeth**.
- ❑ Refit the accessories belt.

Note:

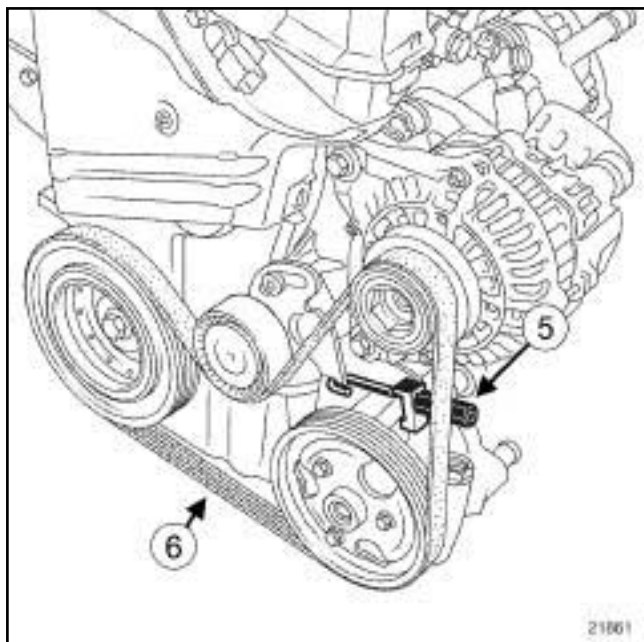
Ensure that the 2 bolts of the tensioning roller are not tightened, in order to be able to pivot the roller when tensioning the belt.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and STANDARD HEATING



21861

- ☐ Position the tool (**Mot. 1638**) in the notch of the tensioning roller.
- ☐ Tension the accessories belt using the tool Mot.1638 by tightening the nut (**5**) .
- ☐ Check the accessories belt tension at point (**6**) using the tools (**Mot. 1505**) or (**Mot. 1715**).

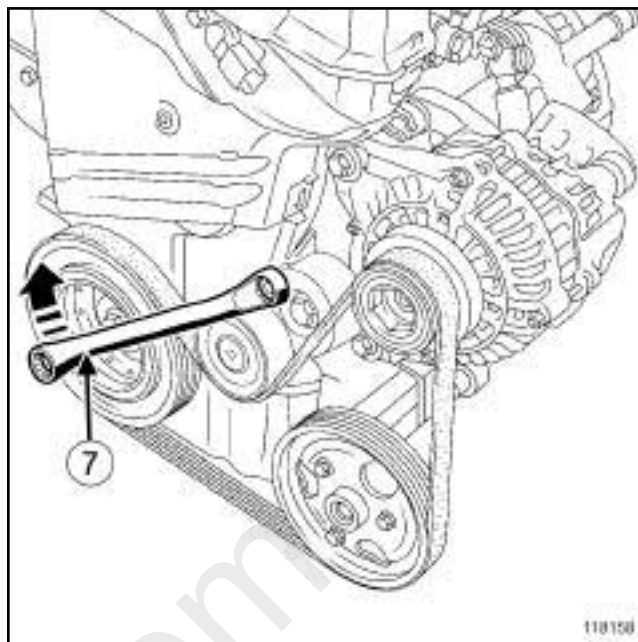
Note:

The accessories belt tension should be **254 Hz ± 11 Hz**.

- ☐ It is essential to turn the engine through 2 revolutions to position the accessories belt correctly.
- ☐ At the measuring point (**6**) , check that the belt tension is **254 Hz ± 11 Hz**.
- ☐ Adjust the accessories belt tension, if necessary, by turning the bolts of the tensioning roller then check again.
- ☐ Torque tighten the **mechanical tensioning roller bolts (35 N.m)**.
- ☐ Remove tool Mot.1638.

2 - Accessories belt fitted with an auto tensioner

- ☐ Refit:
 - the auto tensioner,
 - the new tensioning roller bolt.
- ☐ Torque tighten the **auto tensioner bolts (40 N.m)**.



118158

- ☐ Turn the accessories belt auto tensioner clockwise using a **16 mm** spanner (**7**) .
- ☐ Refit the accessories belt then release the tensioning roller.
- ☐ It is essential to turn the engine through 2 revolutions to position the accessories belt correctly.

III - FINAL OPERATION

- ☐ Refit:
 - the fuel filter interior protector,
 - the fuel filter interior protector nuts.
- ☐ Torque tighten the **the fuel filter interior protector nuts (21 N.m)**.
- ☐ Detach the « fuel filter - pipe » assembly from the vehicle.
- ☐ Refit:
 - the « fuel filter - pipe » assembly,
 - the fuel filter exterior protector,
 - the fuel filter exterior protector nuts.
- ☐ Torque tighten the **fuel filter exterior protector nuts (21 N.m)**.
- ☐ Refit:
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

K9K, and STANDARD HEATING

- the engine undertray.

- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

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TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

M4R

Special tooling required

Mot. 1672 Lower engine support.

Tightening torques

auto tensioner mounting bolt **22 Nm**

engine cover mounting bolts **62 Nm**

bolts mounting the rubber mounting bush on the body **62 Nm**

bolts mounting the rubber mounting bush on the engine **105 Nm**

upper engine tie-bar mounting bolts **105 Nm**

bolt mounting the engine tie-bar on the subframe **105 Nm**

bolt mounting the engine tie-bar on the engine **180 Nm**

lifting eye mounting bolts **33 Nm**

radiator mounting cross member right-hand mounting bolt **105 Nm**

subframe tie-rod left-hand mounting bolt **105 Nm**

exhaust bracket mounting bolts **21 Nm**

WARNING

Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Remove the engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the engine undertray,
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front section of the right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

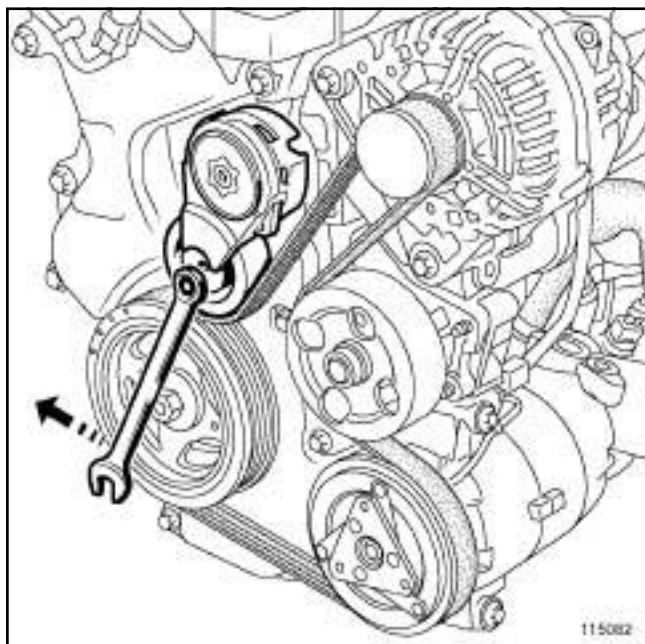
TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

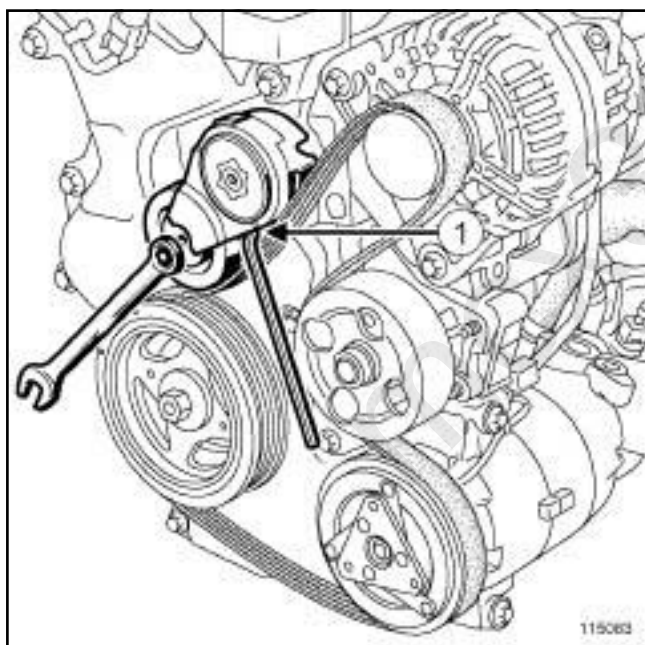
11A

M4R

II - REMOVAL OF PART CONCERNED



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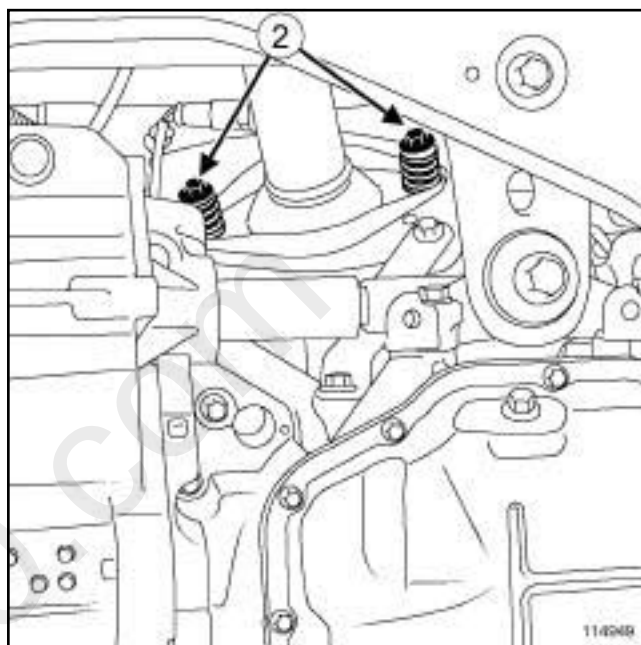
- ☐ Turn the accessories belt auto tensioner clockwise using a **14 mm** spanner.
- ☐ Lock the auto tensioner using a **6 mm** Allen key at **(1)**.
- ☐ Remove the accessories belt.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ Use a brush to remove any deposits from the crankshaft pulley V-grooves.

Replacing the auto tensioner



114949

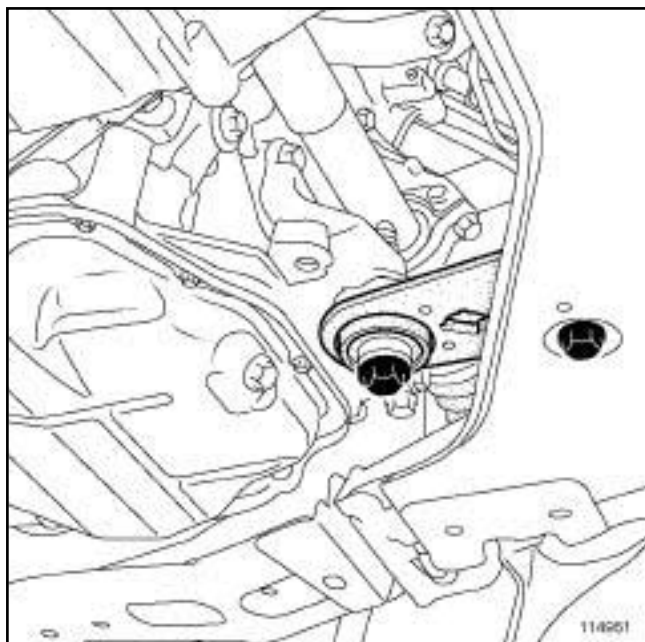
- ☐ Remove:
 - the exhaust bracket mounting bolts **(2)**,
 - The exhaust bracket seal.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

M4R



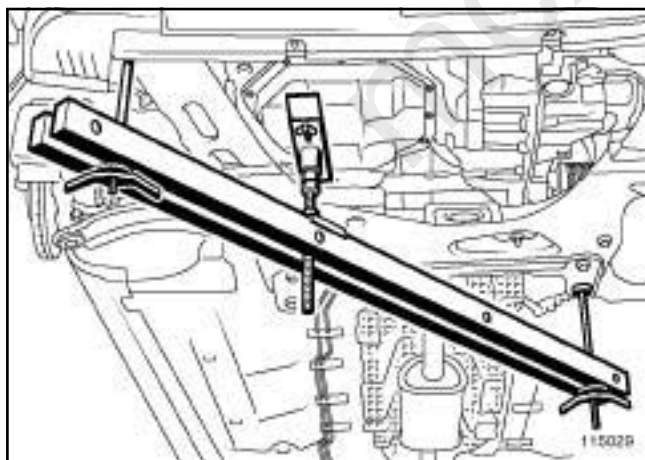
114951

❑ Remove:

- the mounting bolts from the engine tie-bar,
- the engine tie-bar.

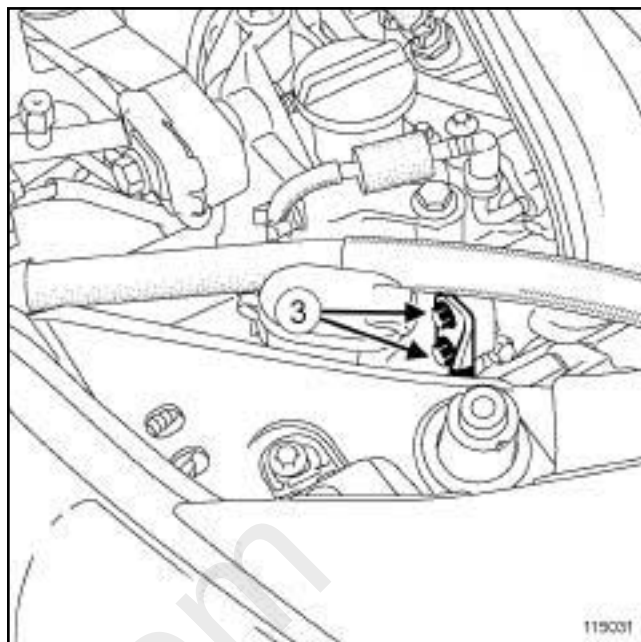
❑ Remove:

- the right-hand mounting bolt from the radiator support cross member,
- the left-hand mounting bolt from the sub-frame tie-rod.



115029

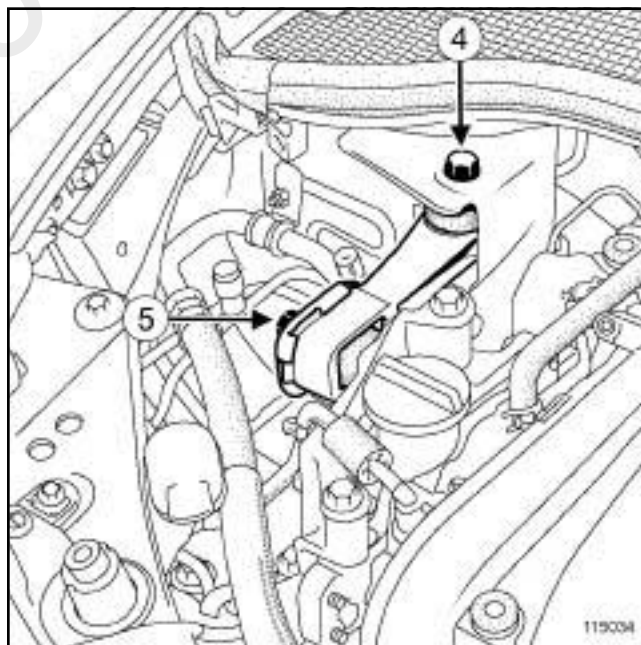
❑ Fit the lower engine support tool (**Mot. 1672**).



115031

❑ Remove:

- the lifting eye mounting bolts (3) ,
- the lifting eye.



115034

❑ Undo the upper engine tie-bar mounting bolt (4) .

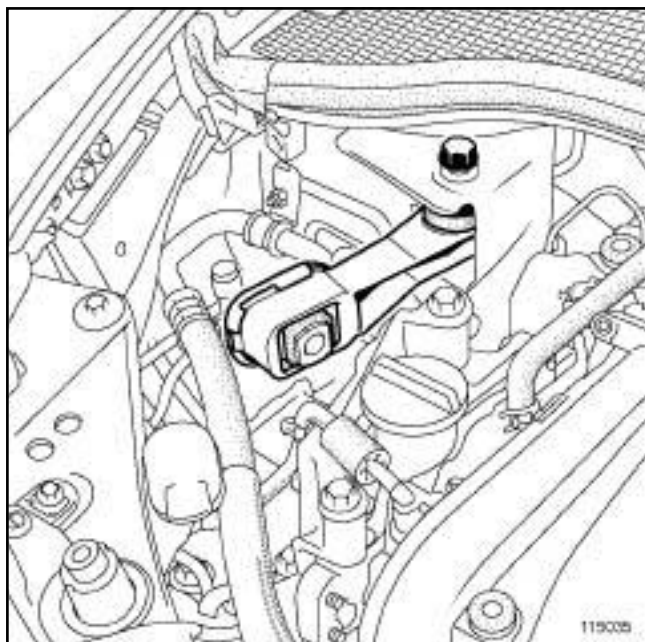
❑ Remove the upper engine tie-bar mounting bolt (5) .

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

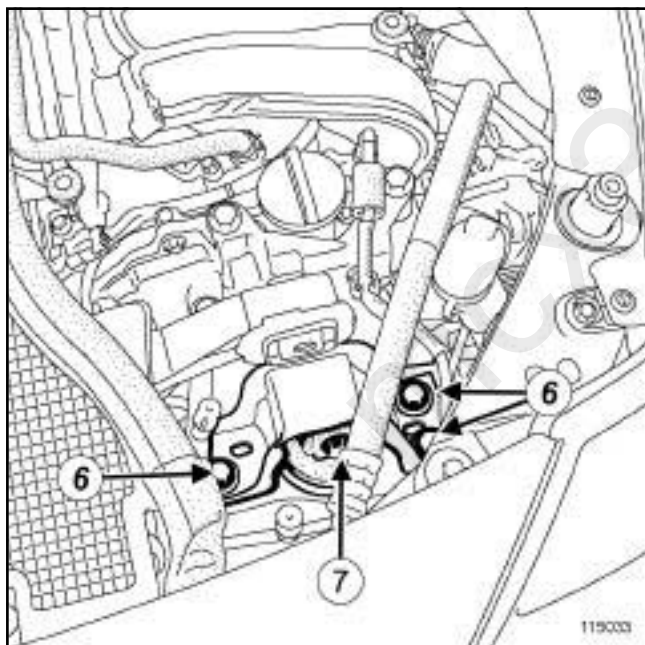
11A

M4R



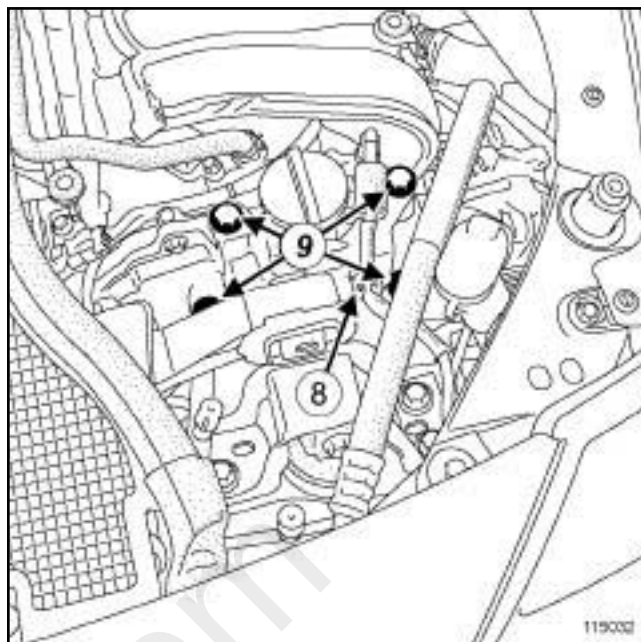
115035

- ❑ Remove the upper engine tie-bar.



115033

- ❑ Remove:
 - the engine cover rubber mounting bush mounting bolt (6)
 - the rubber mounting bush mounting bolts (7) on the body,



115032

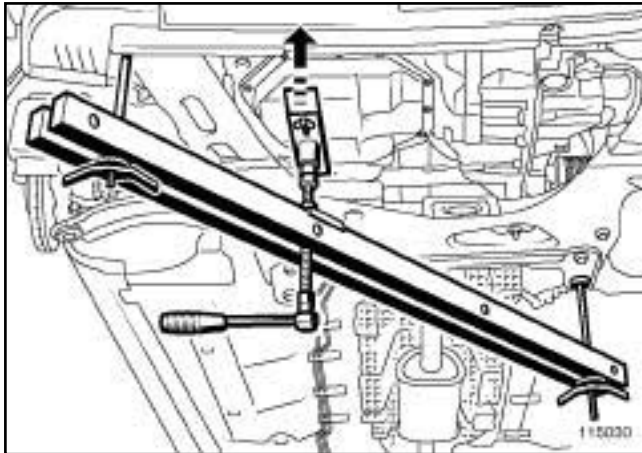
- ❑ Unclip the fuel supply pipe at (8) .
- ❑ Remove:
 - the engine cover mounting bolts (9) ,
 - the engine cover,
 - the rubber mounting bush.

TOP AND FRONT OF ENGINE

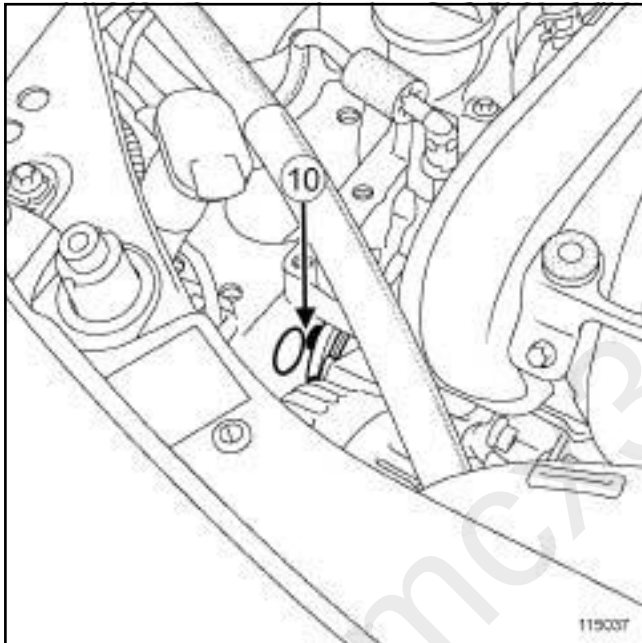
Accessories belt: Removal - Refitting

11A

M4R



115030

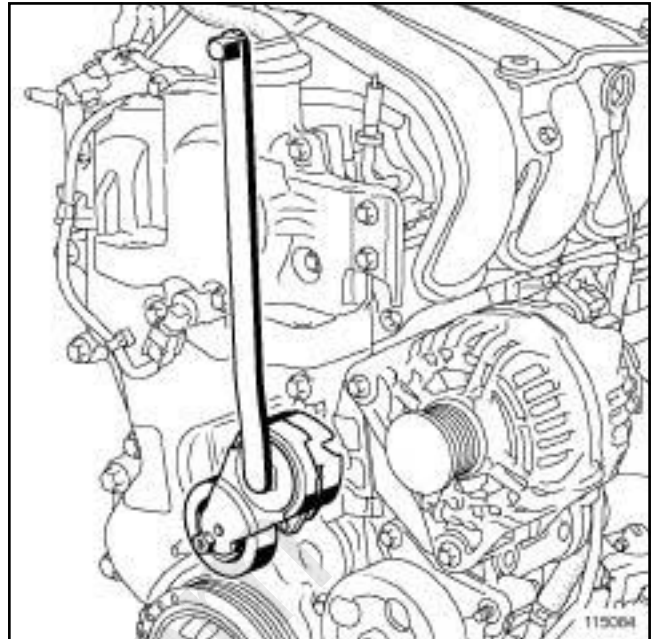


115037

- ❑ Fit the engine at approximately **25 mm** so that the auto tensioner mounting bolt is opposite the side member hole at **(10)** .

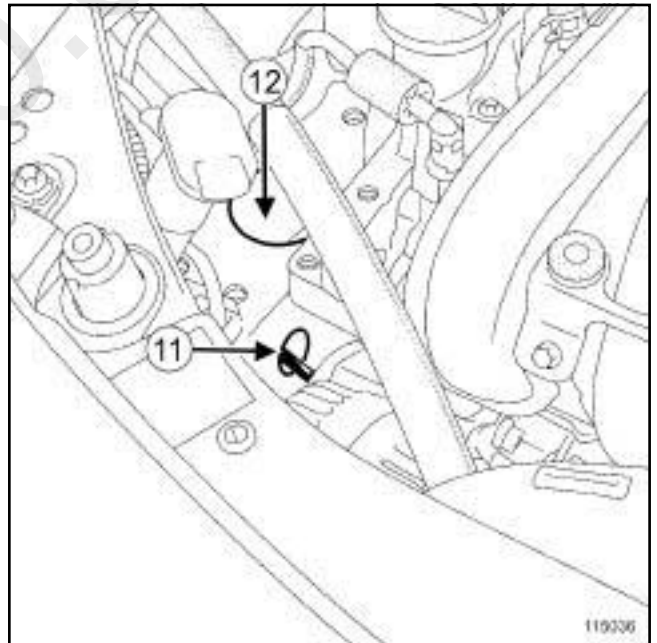
Note:

Before removing the auto tensioner, it is essential to retrieve the **6 mm** Allen key by unlocking the tensioning roller using a **14 mm** open-jawed spanner.



115084

- ❑ Undo the auto tensioner mounting bolt completely using the.



115036

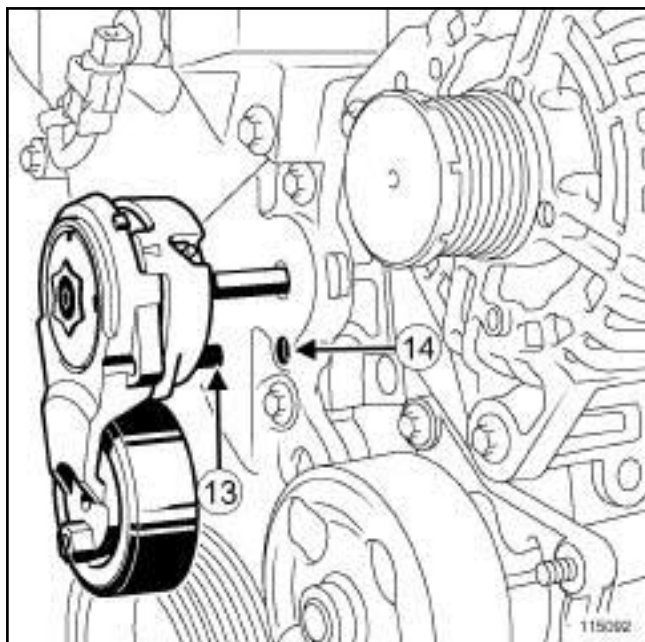
- ❑ Remove the auto tensioner by inserting the mounting bolt into the side member hole at **(11)** .
- ❑ Retrieve the auto tensioner mounting bolt via the side member hole at **(12)** .

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

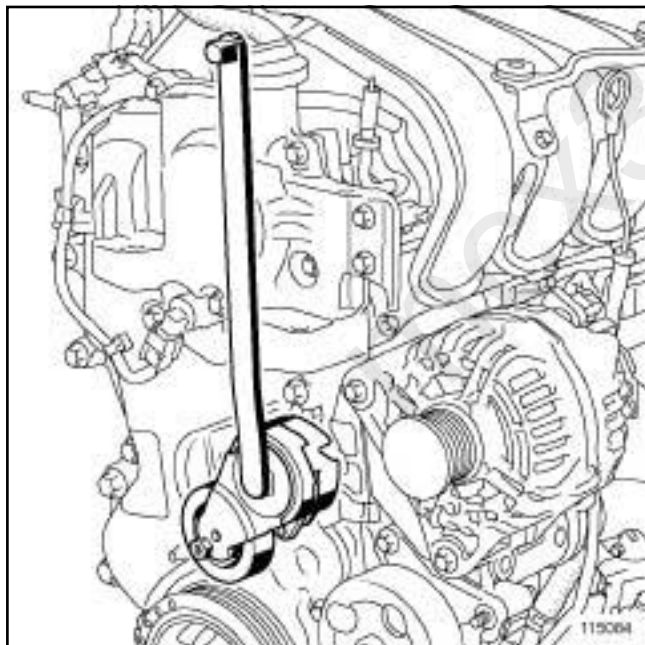
11A

M4R



115092

- ❑ Refit the new auto tensioner by inserting lug (13) into its housing (14) .



115084

- ❑ Torque tighten the **auto tensioner mounting bolt (22 Nm)** using the.

II - REFITTING PART CONCERNED

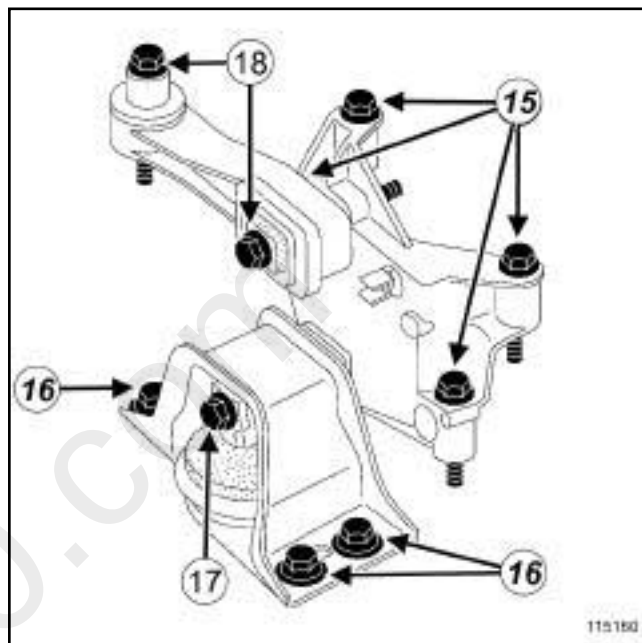
- ❑ Turn the accessories belt auto tensioner clockwise using a **14 mm** spanner.

Lock the auto tensioner using a **6 mm** Allen key.

- ❑ Refit the accessories belt.

- ❑ Retrieve the **6 mm** Allen key and gradually unlock the auto tensioner using a **14 mm** open-jawed spanner.
- ❑ Rotate the crankshaft clockwise twice to balance the accessories belt tension on every pulley.

III - FINAL OPERATION.



115160

- ❑ Fit:
 - the rubber mounting bush,
 - the engine cover.
- ❑ Without tightening, fit:
 - the engine cover mounting bolts (15) ,
 - the rubber mounting bush mounting bolts (16) on the body.

Note:

Allow the two parts to move freely.

- ❑ Lower the engine to fit the engine cover rubber mounting bush mounting bolt (17) .
- ❑ Torque tighten and in order:
 - the **engine cover mounting bolts (62 Nm)** at (15) ,
 - the **bolts mounting the rubber mounting bush on the body (62 Nm)** at (16) ,
 - the **bolts mounting the rubber mounting bush on the engine (105 Nm)** at (17) ,

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

M4R

- the **upper engine tie-bar mounting bolts (105 Nm)** at **(18)** .
- ☐ Remove the lower engine support tool (**Mot. 1672**).
- ☐ Refit the lifting eye.
- ☐ Torque tighten:
 - the **bolt mounting the engine tie-bar on the sub-frame (105 Nm)**,
 - the **bolt mounting the engine tie-bar on the engine (180 Nm)**,
 - the **lifting eye mounting bolts (33 Nm)**.
- ☐ The exhaust clamp seal must be replaced.
- ☐ Torque tighten:
 - the **radiator mounting cross member right-hand mounting bolt (105 Nm)**,
 - the **subframe tie-rod left-hand mounting bolt (105 Nm)**,
 - the **exhaust bracket mounting bolts (21 Nm)**.
- ☐ Refit:
 - the front section of the wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the engine undertray.
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Refit the engine cover.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

F4R

Tightening torques

tensioning roller mounting bolt	50 Nm
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WARNING

The belt must be replaced with a new one if it has been removed.

WARNING

The tensioning roller must be replaced when the belt is replaced.

WARNING

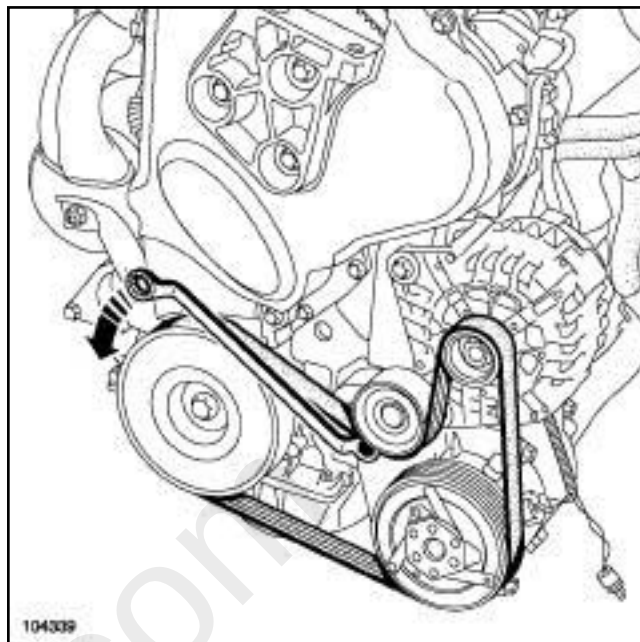
Do not run the engine without the accessories belt to avoid damaging the crankshaft accessories pulley.

REMOVAL

I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection).

II - OPERATION FOR REMOVAL OF PART CONCERNED



104339

- ☐ Turn the tensioning roller anti-clockwise using a **16 mm** spanner.
- ☐ Remove:
 - the accessories belt,
 - the tensioning roller mounting bolt,
 - the tensioning roller,

REFITTING

I - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit:
 - the new tensioning roller,
 - the tensioning roller new mounting bolt.
- ☐ Tighten to torque the **tensioning roller mounting bolt (50 Nm)**.
- ☐ Refit the belt by turning the tensioning roller anti-clockwise using a **16 mm** spanner.
- ☐ Rotate the crankshaft twice to position the accessories belt correctly.

II - FINAL OPERATION.

- ☐ Refit:
 - the front right-hand wheel arch liner on the front bumper side (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

F4R

- the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

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TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

D4F

Special tooling required

Mot. 1715 Belt tension checking tool (frequency indicator).

Mot. 1505 Belt tension setting tool (frequency meter)

Equipment required

repositioner

Tightening torques

tensioning roller bolt **50 N.m**

REMOVAL

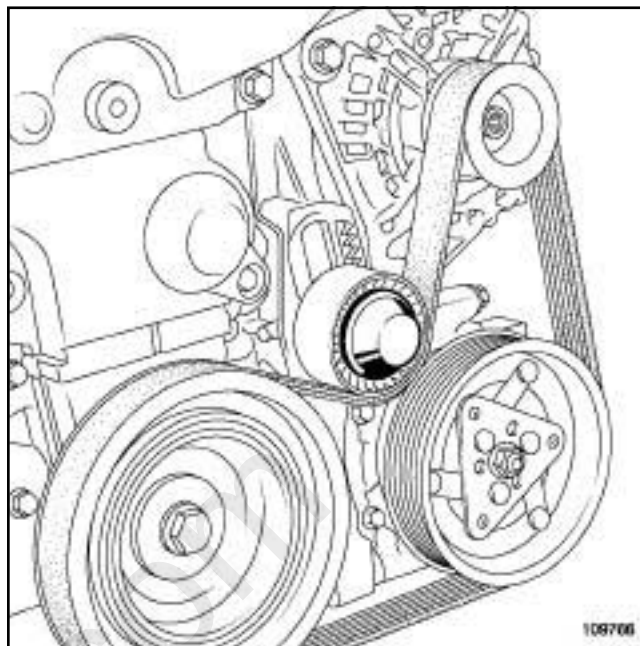
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front section of the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the engine undertray.

IMPORTANT

Wear protective gloves during the operation.

II - OPERATION FOR REMOVAL OF PART CONCERNED



109766

- ☐ Remove the accessories belt tensioning roller protector.
- ☐ Undo the accessories belt tensioning roller bolt.
- ☐ Remove:
 - the accessories belt,
 - the tensioner roller bolt,
 - the accessories belt tension wheel.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ parts always to be replaced: Accessories belt (10,10,01,03).
- ☐ parts always to be replaced: Accessories belt tensioning roller (10,10,01,04).
- ☐ It is essential to replace the tensioning roller torx bolt with a hexagonal-head bolt, part no. **77 03 101 075**.

II - REFITTING OPERATION FOR PART CONCERNED

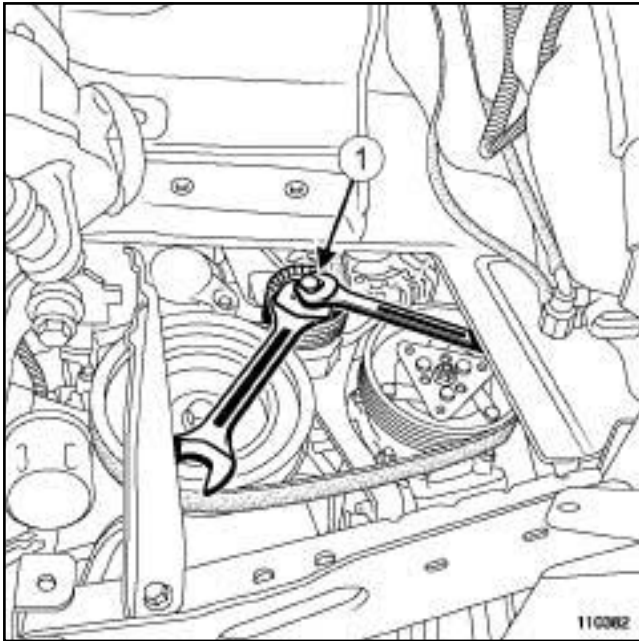
- ☐ Refit:
 - the accessories belt tensioning roller,
 - the accessories belt.

TOP AND FRONT OF ENGINE

Accessories belt: Removal - Refitting

11A

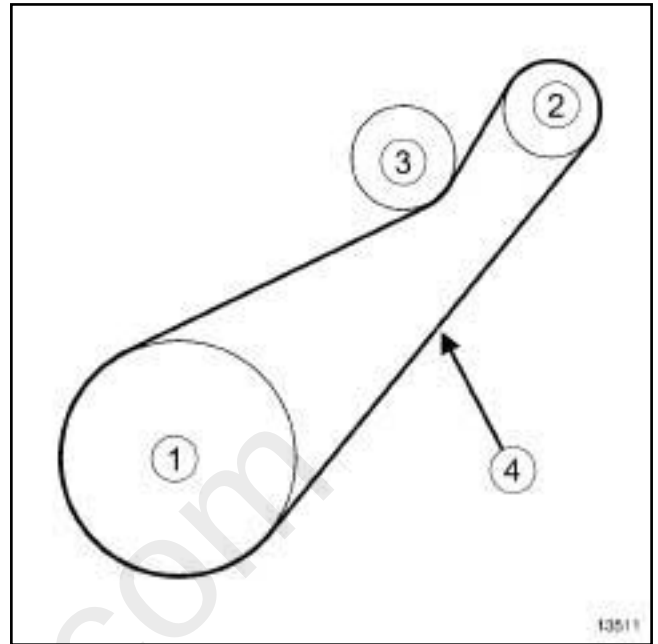
D4F



110382

- ❑ Tighten the accessories belt by turning the tensioning roller anti-clockwise, using a **20 mm** open-jawed spanner.
- ❑ Adjust the accessories belt tension using the **(Mot. 1715)** or **(Mot. 1505)**.
- ❑ Without locking, tighten the bolt **(1)** on the tensioning roller with a **16 mm** open-jawed spanner, while keeping the tensioning roller tension at the adjustment value using a **20 mm** open-jawed spanner.

STANDARD HEATING

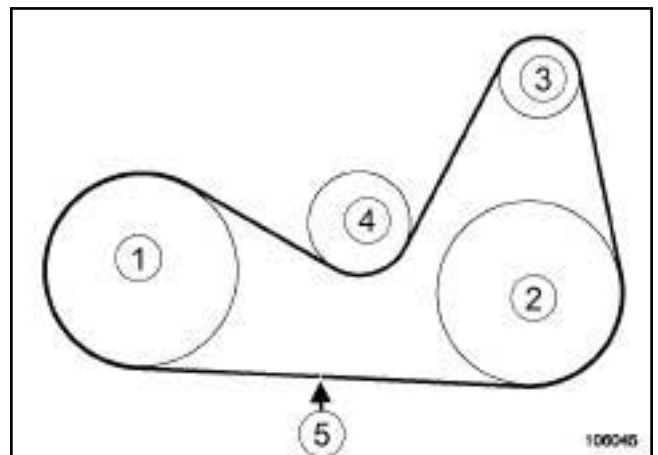


13511

- (1) Crankshaft
- (2) Alternator
- (3) Tensioning roller
- (4) Measuring point

- ❑ The accessories belt tension value is **210 Hz ± 10**.

AIR CONDITIONING



106045

- (1) Crankshaft
- (2) Air conditioning compressor