

STARTING - CHARGING

Charge circuit: Check

16A

D4F or F4R or K4J or K4M or K9K or M4R

|

Alternator speed (rpm) F4R	Alternator
	BOSCH LIE6 0124425055
1500	40A
2500	95A
4000	113A
6000	120A
8500	123A

|

Alternator speed (rpm) M4R	Alternator
	BOSCH LIE6 0124425038
1500	40A
2500	95A
4000	113A
6000	120A
8500	123A

STARTING - CHARGING

Alternator: Removal - Refitting

16A

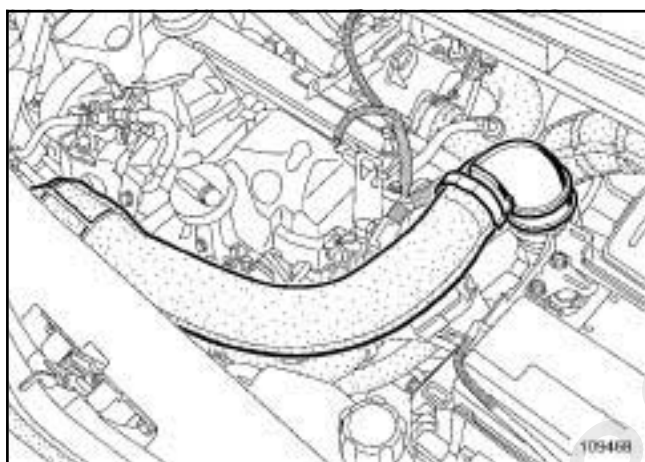
K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

Tightening torques 		
alternator bolts	mounting	21 N.m

REMOVAL

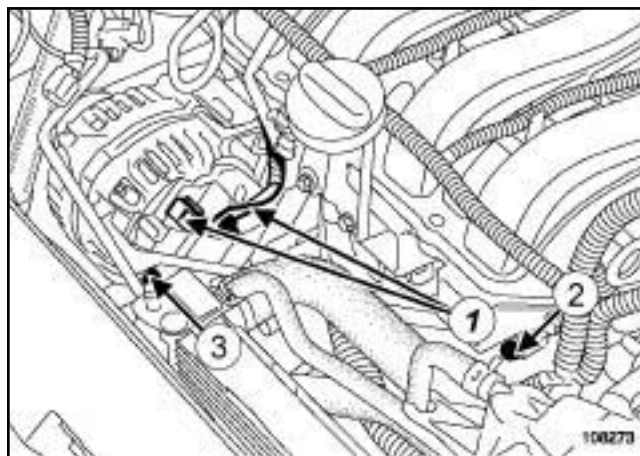
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) .



109468

- ☐ Remove the air inlet duct.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) .
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**) ,
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**) ,
 - the front left-hand wheel arch liner partially (see **Front wheel arch liner: Removal - Refitting**) ,
 - the bumper (see **Front bumper: Removal - Refitting**) ,
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**) .



108273

- ☐ Disconnect the electrical connections from the alternator (1) .
- ☐ Undo the strut mounting bolt on the cylinder block (2) .
- ☐ Remove the strut mounting bolt on the alternator (3) .
- ☐ Separate the mounting strut from the alternator.
- ☐ Remove the front right-hand air deflector.

II - REMOVAL OF PART CONCERNED

- ☐ Remove the upper mounting bolt from the alternator.
- ☐ Undo the lower alternator mounting bolt.
- ☐ Remove the alternator with its lower mounting bolt through the front of the vehicle.

STARTING - CHARGING

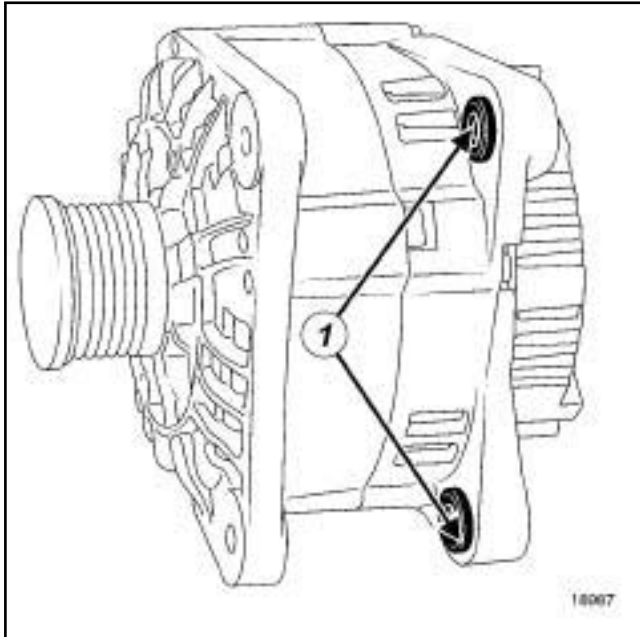
Alternator: Removal - Refitting

16A

K4J, and STANDARD HEATING – K4M, and STANDARD HEATING

REFITTING

I - REFITTING PREPARATION OPERATION



18987

- ☐ Push in the rings (1) to make fitting easier.

II - REFITTING PART CONCERNED

- ☐ Refit the alternator.
- ☐ Torque tighten the **alternator mounting bolts (21 N.m)**.

III - FINAL OPERATION.

- ☐ Reconnect the alternator electrical connections.
- ☐ Refit:
 - Refit the front right-hand air deflector,
 - the new accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**),
 - the bumper (see **Front bumper: Removal - Refitting**),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**),
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**).
- ☐ Reconnect the battery (see **Battery: Removal - Refitting**).
- ☐ Refit the air inlet duct.

STARTING - CHARGING

Alternator: Removal - Refitting

16A

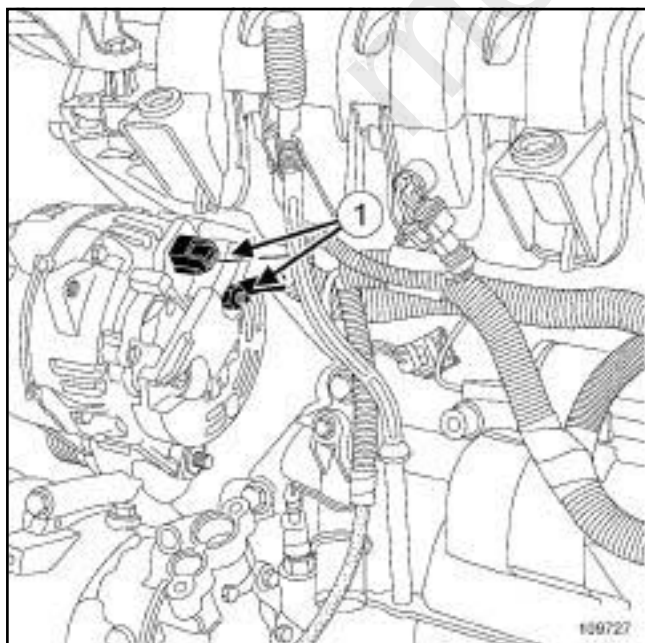
D4F, and 740 or 742 or 764, and STANDARD HEATING

Tightening torques 		
alternator mounting bolts		25 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 bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front right-hand deflector,
 - 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),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**).



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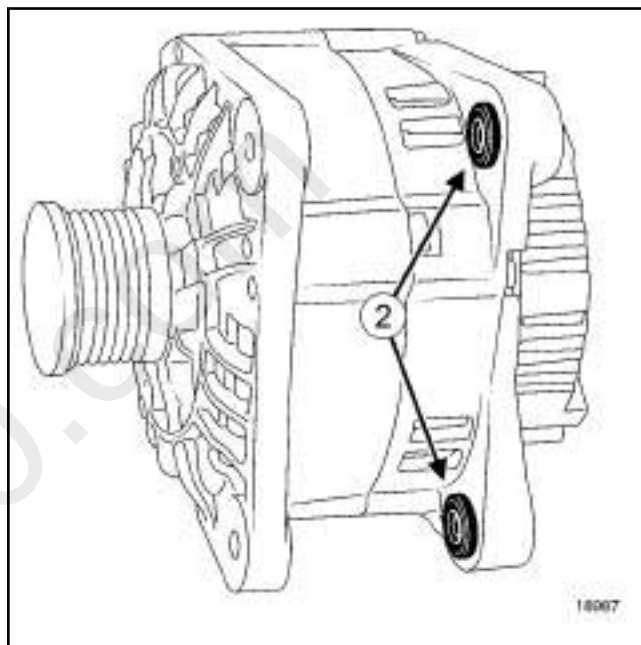
- ☐ Disconnect the alternator's electrical connections (1)

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove:
 - the alternator mounting bolts,
 - the alternator.

REFITTING

I - REFITTING PREPARATION OPERATION



18987

- ☐ Press in the rings (2) using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit the alternator.
- ☐ Torque tighten the **alternator mounting bolts (25 N.m)**.

III - FINAL OPERATION.

- ☐ Connect the alternator electrical connections.
- ☐ Refit:
 - the front right-hand deflector,
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**),

STARTING - CHARGING

Alternator: Removal - Refitting

16A

D4F, and 740 or 742 or 764, and STANDARD HEATING

- 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).

STARTING - CHARGING

Alternator: Removal - Refitting

16A

D4F, and 740 or 742 or 764, and AIR CONDITIONING

Tightening torques 		
alternator mounting bolts		25 N.m

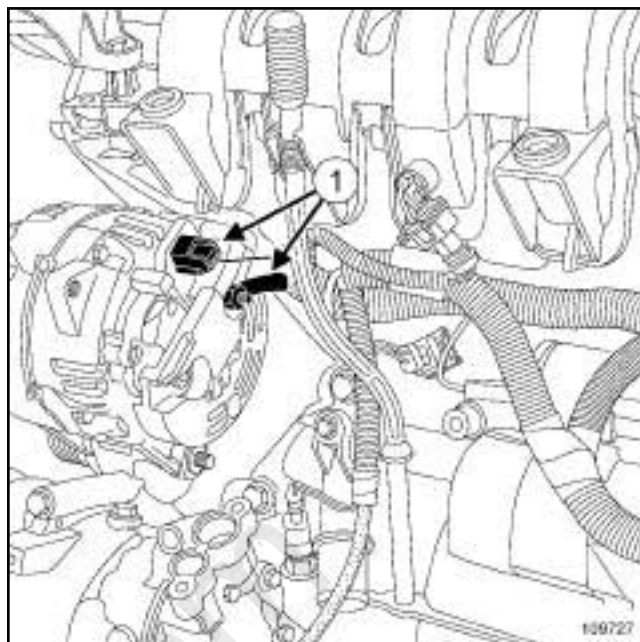
REMOVAL

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 bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the front right-hand deflector,
 - 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),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**),
 - the air conditioning compressor mounting bolts.
- ☐ Fit the air conditioning compressor on the radiator front cross member.

Note:

Do not drain the air conditioning circuit.



109727

- ☐ Disconnect the alternator's electrical connections (1)

II - OPERATION FOR REMOVAL OF PART CONCERNED

- ☐ Remove:
 - the alternator mounting bolts,
 - the alternator.

STARTING - CHARGING

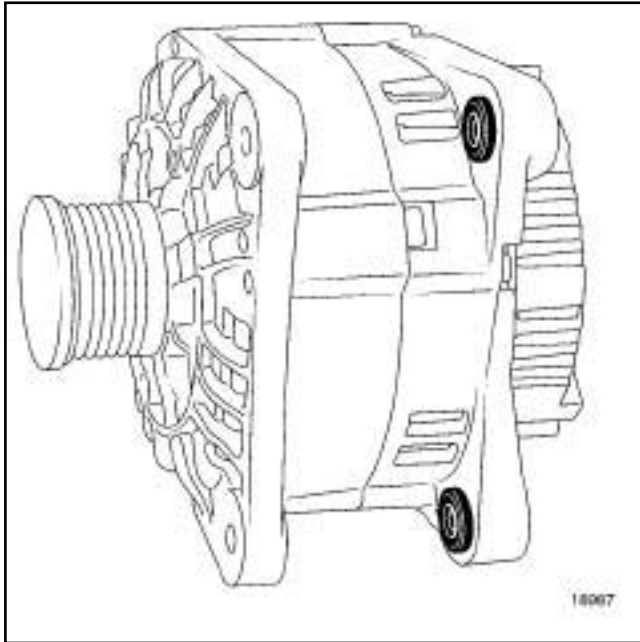
Alternator: Removal - Refitting

16A

D4F, and 740 or 742 or 764, and AIR CONDITIONING

REFITTING

I - REFITTING PREPARATION OPERATION



18987

- ☐ Press in the rings using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit the alternator.
- ☐ Torque tighten the **alternator mounting bolts (25 N.m)**.

III - FINAL OPERATION.

- ☐ Connect the alternator electrical connections.
- ☐ Refit:
 - the air conditioning compressor (see **Compressor: Removal - Refitting**) (MR 392, 62A, Air conditioning),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**),
 - the front right-hand deflector,
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - 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).

STARTING - CHARGING

Alternator: Removal - Refitting

16A

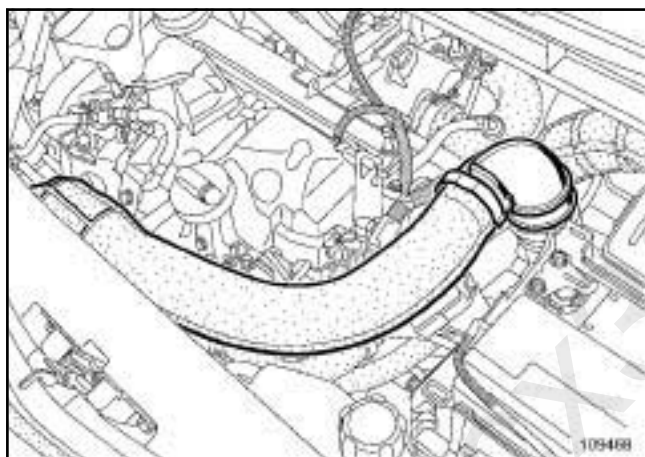
K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL

Tightening torques 		
alternator mounting bolts		21 N.m
air conditioning compressor mounting bolts		21 N.m

REMOVAL

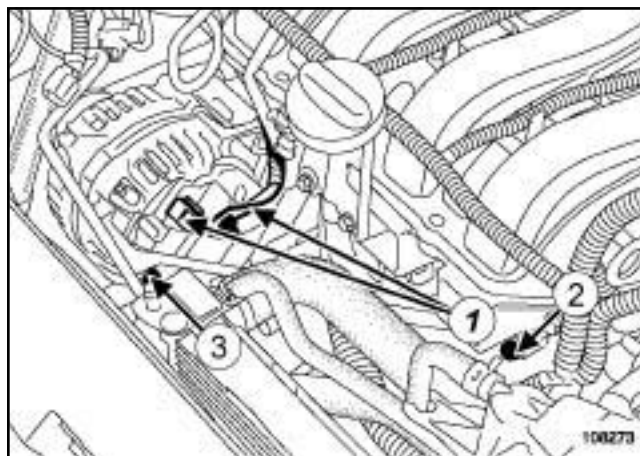
I - REMOVAL PREPARATION OPERATION

- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**).



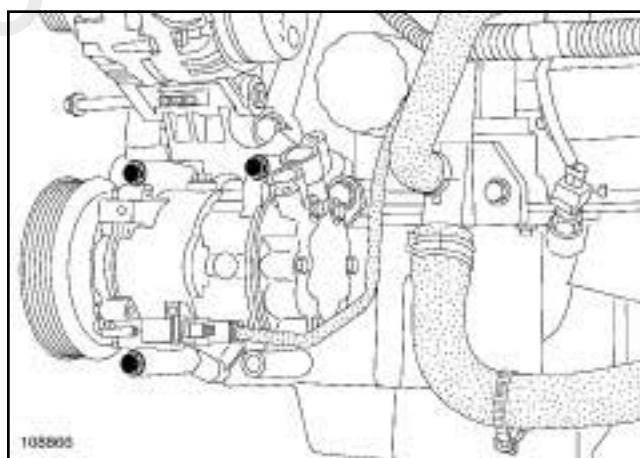
109468

- ☐ Remove the air inlet duct.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**).
- ☐ Remove:
 - the front right-hand wheel (see **Wheel: Removal - Refitting**),
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**),
 - the front left-hand wheel arch liner partially (see **Front wheel arch liner: Removal - Refitting**),
 - the bumper (see **Front bumper: Removal - Refitting**),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**).



108273

- ☐ Disconnect the electrical connections from the alternator (1).
- ☐ Undo the strut mounting bolt on the cylinder block (2).
- ☐ Remove the strut mounting bolt on the alternator (3).
- ☐ Separate the mounting strut from the alternator.
- ☐ Remove the front right-hand air deflector.



108866

- ☐ Remove the air conditioning compressor mounting bolts.
- ☐ Fit the air conditioning compressor on the front radiator cross member.

Note:

This operation does not require the air conditioning system to be drained.

II - REMOVAL OF PART CONCERNED

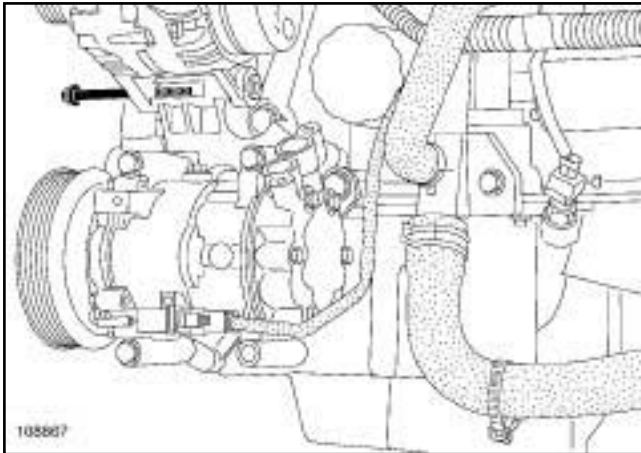
- ☐ Remove the upper mounting bolt from the alternator.

STARTING - CHARGING

Alternator: Removal - Refitting

16A

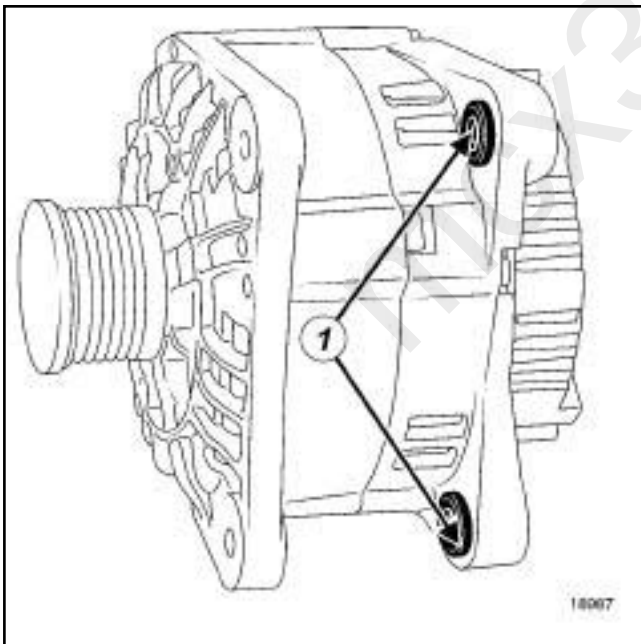
K4J or K4M, and AIR CONDITIONING or CLIMATE CONTROL



- ☐ Undo the lower alternator mounting bolt.
- ☐ Remove the alternator with its lower mounting bolt through the front of the vehicle.

REFITTING

I - REFITTING PREPARATION OPERATION



- ☐ Push in the rings (1) to make fitting easier.

II - REFITTING PART CONCERNED

- ☐ Refit the alternator.
- ☐ Torque tighten the **alternator mounting bolts (21 N.m)**.

III - FINAL OPERATION.

- ☐ Reconnect the alternator electrical connections.
- ☐ Refit the air conditioning compressor.
- ☐ Torque tighten the **air conditioning compressor mounting bolts (21 N.m)**.
- ☐ Refit:
 - Refit the front right-hand air deflector,
 - the new accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**),
 - the bumper (see **Front bumper: Removal - Refitting**),
 - the front left-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**),
 - the front right-hand wheel arch liner (see **Front wheel arch liner: Removal - Refitting**),
 - the front right-hand wheel (see **Wheel: Removal - Refitting**).
- ☐ Reconnect the battery (see **Battery: Removal - Refitting**).
- ☐ Refit the air inlet duct.

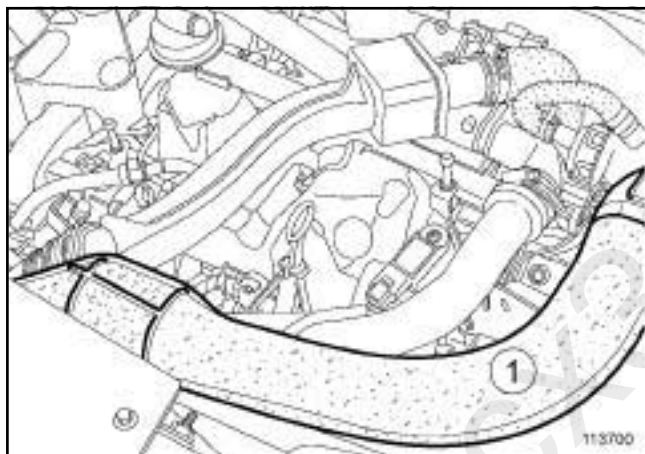
K9K

Tightening torques 	
alternator bolts	21 Nm
intercooler outlet air pipe clip	5.5 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

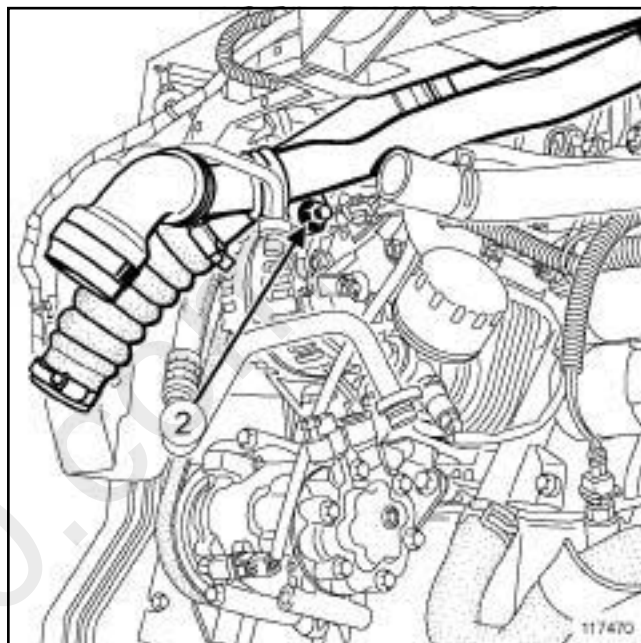
- ☐ Position the vehicle on a two-post lift (see **Vehicle: Towing and lifting**) (MR 392, 02A, Lifting equipment).
- ☐ Remove the front engine cover.



113700

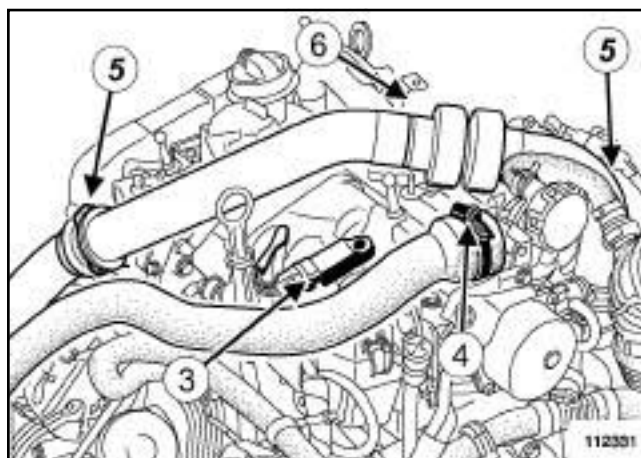
- ☐ Remove the air filter inlet air pipe (1) .
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).
- ☐ Remove:
 - the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres),
 - the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the headlights (see **Halogen headlight: Removal - Refitting**) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
 - the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),

- the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-21) ,
- the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
- the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page 11A-5) .



117470

- ☐ Remove the bolt (2) from the intercooler inlet and outlet pipes.



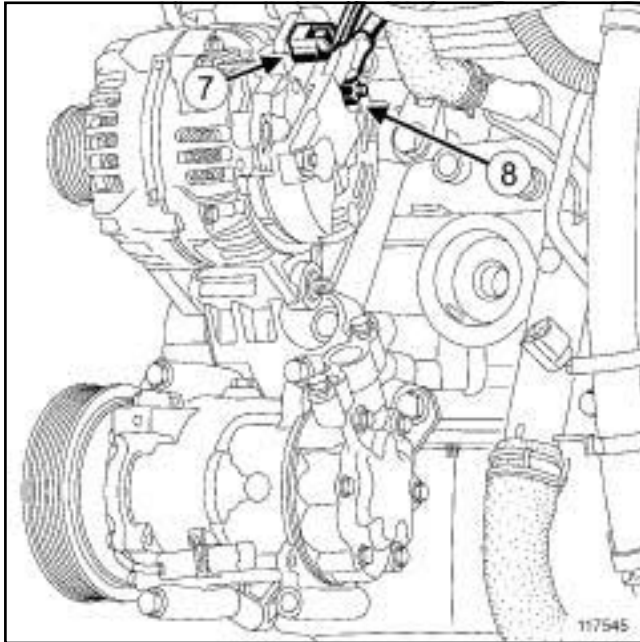
112331

- ☐ Disconnect the connector (3) from the inlet air pressure sensor.
- ☐ Undo the clip (4) from the intercooler outlet air pipe.
- ☐ Remove:
 - the intercooler outlet air pipe,
 - the clips (5) from the intercooler inlet air pipe,

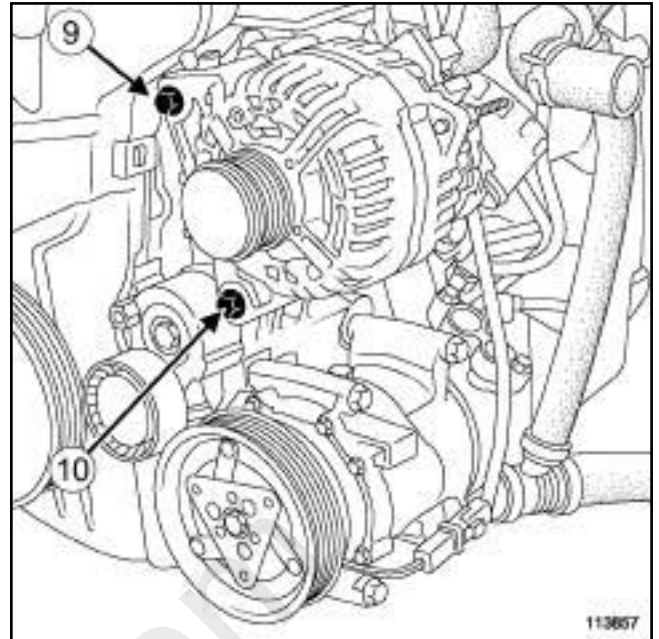
K9K

- the nut (6) from the intercooler inlet air pipe,
- the intercooler inlet air pipe.

II - OPERATION FOR REMOVAL OF PART CONCERNED



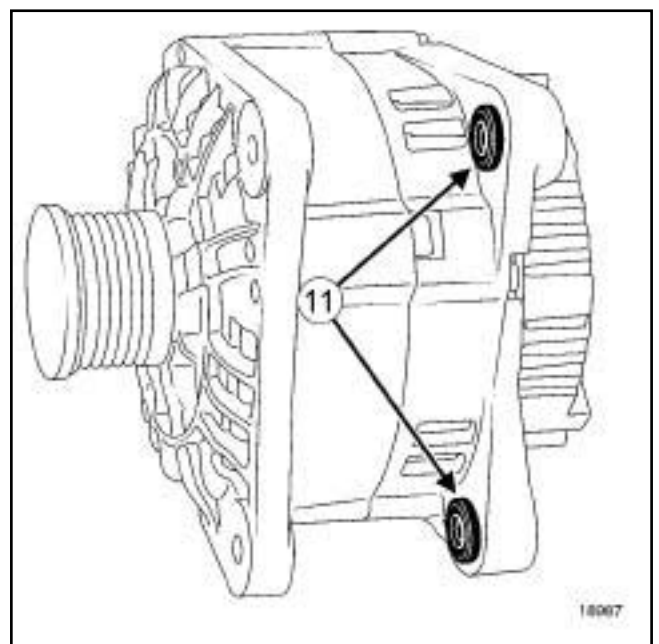
- ❑ Disconnect the alternator connector (7) .
- ❑ Remove the nut (8) from the alternator positive terminal.
- ❑ Disconnect the alternator positive terminal wire.



- ❑ Remove the alternator upper bolt (9) .
- ❑ Loosen the alternator lower bolt (10) .
- ❑ Remove the alternator with its lower bolt.

REFITTING

I - REFITTING PREPARATION OPERATION



- ❑ Refit the rings (11) using pliers or a vice.

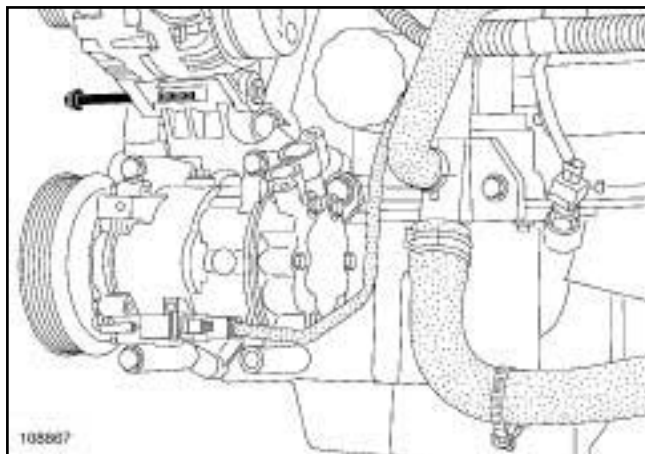
STARTING - CHARGING

Alternator: Removal - Refitting

16A

K9K

II - REFITTING OPERATION FOR PART CONCERNED



- ☐ Refit the alternator with its lower bolt.
- ☐ Screw in the alternator bolts, without tightening them.
- ☐ Torque tighten the **alternator bolts (21 Nm)**.
- ☐ Connect the wire to the alternator positive terminal.
- ☐ Refit the alternator positive terminal nut.
- ☐ Connect the alternator connector.

III - FINAL OPERATION.

- ☐ Refit:
 - the intercooler air inlet pipe,
 - the nut to the intercooler inlet air pipe,
 - the clips to the intercooler inlet air pipe,
 - the intercooler outlet air pipe.
- ☐ Torque tighten the **intercooler outlet air pipe clip (5.5 Nm)**.
- ☐ Connect the inlet air pressure sensor connector.
- ☐ Remove:
 - the intercooler inlet and outlet pipe bolts,
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**),
 - the front end panel (see **Front end panel: Removal - Refitting**) (MR 393, 42A, Upper front structure),
 - the frontal impact cross member (see **Front impact cross member: Removal - Refitting**) (MR 393, 41A, Front lower structure),
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting, page 12B-21**),

- the headlights (see **Halogen headlight: Removal - Refitting**) (MR 392, 80B, Headlights) or (see **Xenon headlight: Removal - Refitting**) (MR 392, 80C, Xenon bulbs),
- the bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front section of the front wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (MR 393, 55A, Exterior protection),
- the front wheels (see **Wheel: Removal - Refitting**) (MR 392, 35A, Wheels and tyres).

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

- ☐ Refit:

- the air filter inlet air pipe,
- the engine cover.

STARTING - CHARGING

Alternator: Removal - Refitting

16A

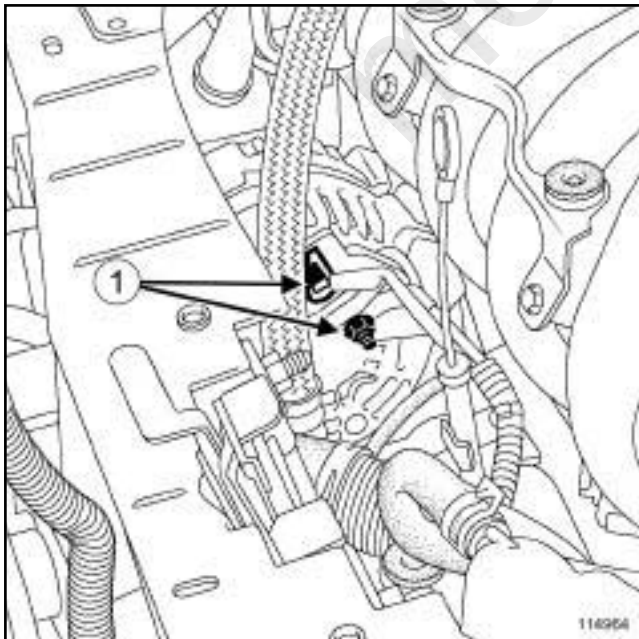
M4R

Tightening torques 		
alternator bolts	mounting	25 Nm

REMOVAL

I - REMOVAL PREPARATION OPERATION

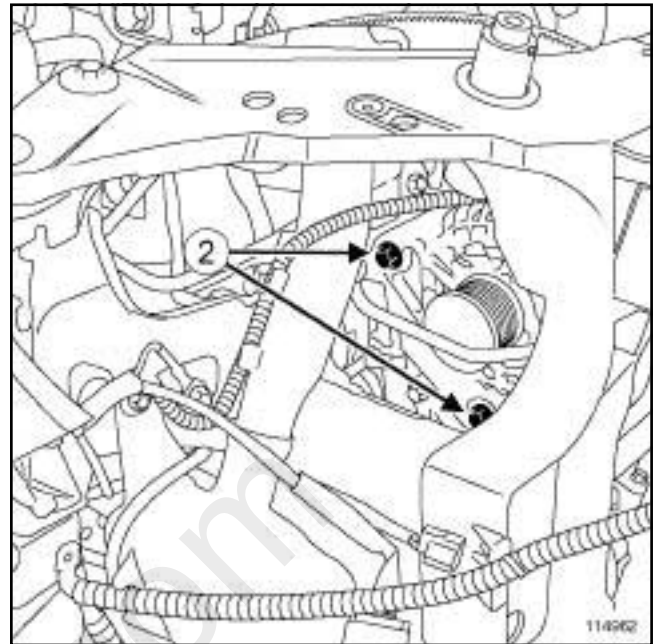
- ☐ Position the vehicle on a lift (see **Vehicle: Towing and lifting**) .
- ☐ Remove the engine cover.
- ☐ Disconnect the battery (see **Battery: Removal - Refitting**) .
- ☐ Remove:
 - the air resonator in the front end panel (see **12A, Fuel mixture, Air resonator: Removal - Refitting**, page **12A-10**) ,
 - the right-hand headlight (see **Halogen headlight: Removal - Refitting**) ,
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**) .



114964

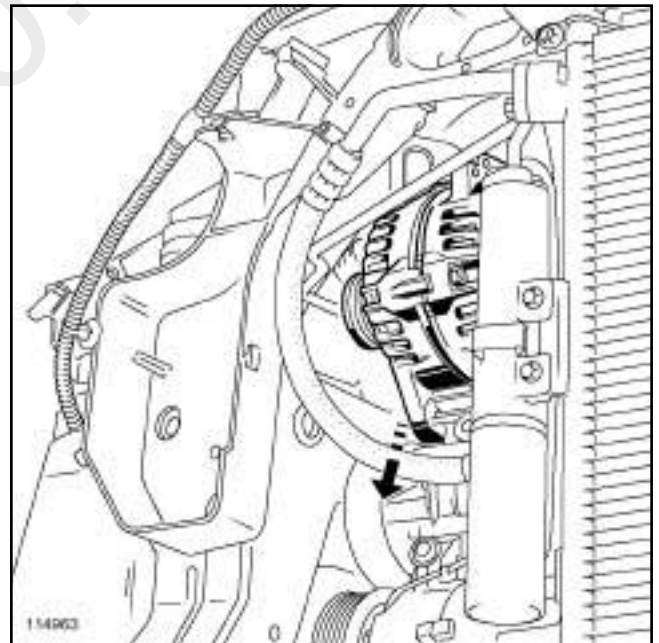
- ☐ Disconnect the alternator's electrical connections (1)

II - OPERATION FOR REMOVAL OF PART CONCERNED



114962

- ☐ Remove the alternator mounting bolts (2) .



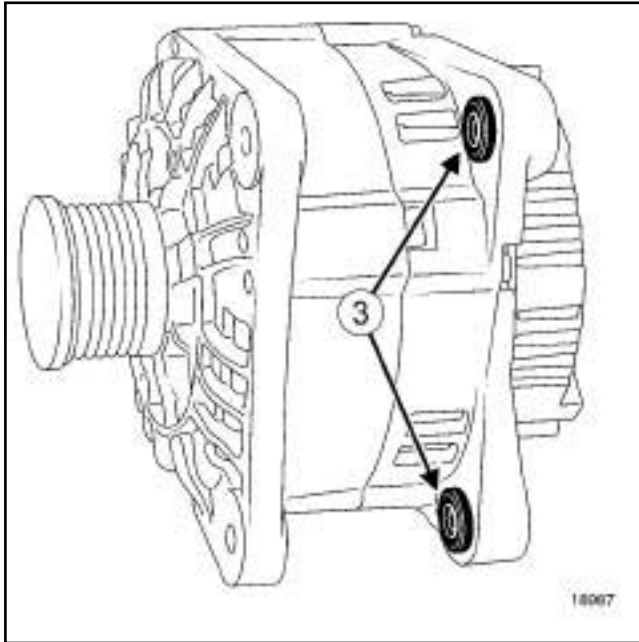
114963

- ☐ Remove the alternator using a screwdriver.

M4R

REFITTING

I - REFITTING PREPARATION OPERATION



18987

- ☐ Push in the rings (3) , using pliers or a vice to make the fitting operation easier.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit the alternator.
- ☐ Tighten to torque the **alternator mounting bolts (25 Nm)**.

III - FINAL OPERATION

- ☐ Connect the alternator electrical connections.
- ☐ Refit:
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**) ,
 - the right-hand headlight (see **Halogen headlight: Removal - Refitting**) ,
 - the air resonator in the front end panel (see **12A, Fuel mixture, Air resonator: Removal - Refitting, page 12A-10**) .
- ☐ Connect the battery (see **Battery: Removal - Refitting**) .
- ☐ Refit the engine cover.

STARTING - CHARGING

Alternator: Removal - Refitting

16A

F4R

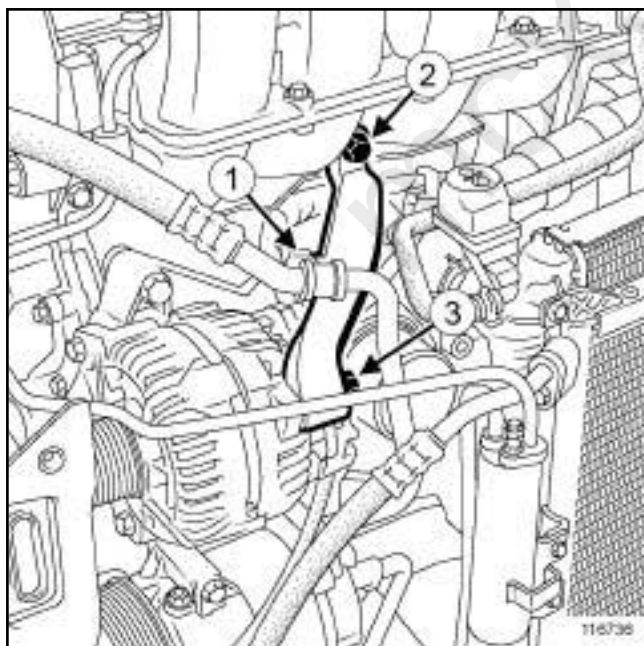
Tightening torques 		
alternator bolts	mounting	25 Nm

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 accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page **11A-5**) ,
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),

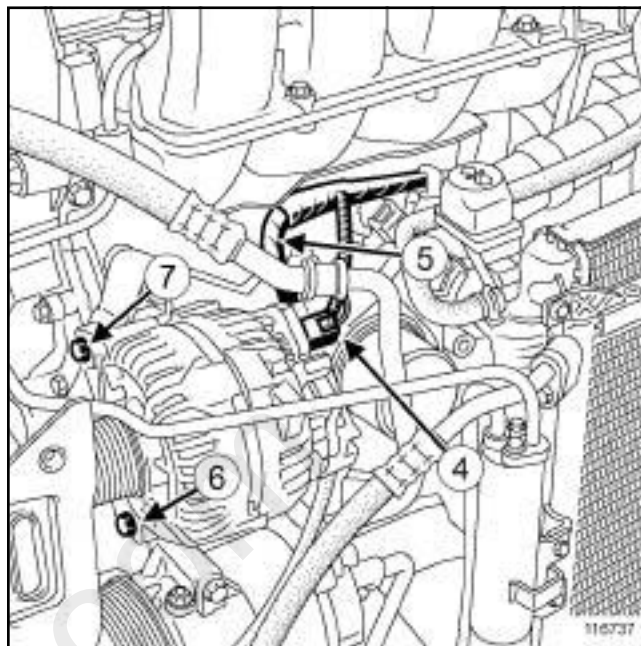
II - OPERATION FOR REMOVAL OF PART CONCERNED



116736

- ☐ Remove:
 - the bolt (1) mounting the air conditioning pipe on the reinforcing bracket.
 - the bolt (2) mounting the reinforcing bracket on the injector holder plate,

- the bolts (3) mounting the reinforcing bracket on the alternator,
- the reinforcing bracket.



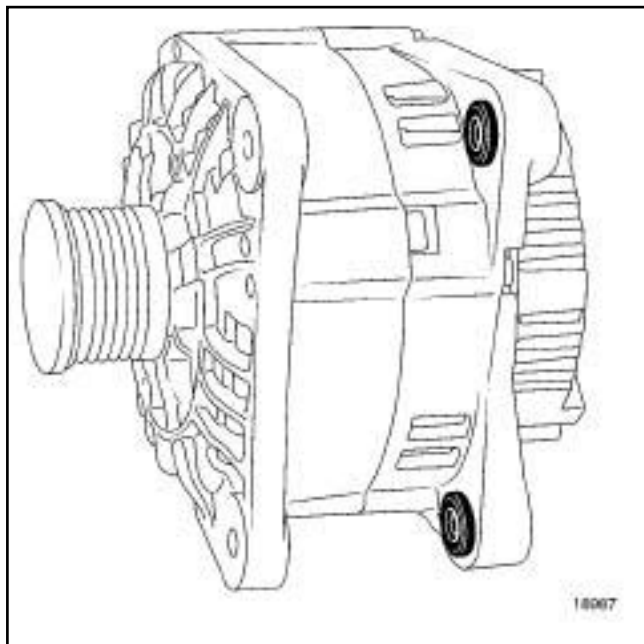
116737

- ☐ Disconnect the alternator connector (4) .
- ☐ Remove:
 - the wiring harness nut (5) on the alternator,
 - the lower mounting bolt (6) from the alternator,
 - the upper mounting bolt (7) from the alternator,
 - the alternator.

F4R

REFITTING

I - REFITTING PREPARATION OPERATION



18987

- ☐ Refit the rings using pliers or a vice to facilitate fitting.

II - REFITTING OPERATION FOR PART CONCERNED

- ☐ Refit:
 - the alternator,
 - the alternator upper mounting bolt,
 - the alternator lower mounting bolt.
- ☐ Torque tighten the **alternator mounting bolts (25 Nm)**.
- ☐ Refit the nut to the wiring harness **(5)** on the alternator.
- ☐ Connect the alternator connector **(4)**.
- ☐ Refit:
 - the reinforcing bracket,
 - the bolt **(3)** mounting the reinforcing bracket on the alternator.
 - the bolt **(2)** mounting the reinforcing bracket on the injector holder plate,
 - the bolt **(1)** mounting the air conditioning pipe on the reinforcing bracket.

III - FINAL OPERATION.

- ☐ Refit:
 - the front bumper (see **Front bumper: Removal - Refitting**) (MR 393, 55A, Exterior protection),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting, page 11A-5**).
- ☐ Connect the battery (see **Battery: Removal - Refitting**) (MR 392, 80A, Battery).

STARTING - CHARGING

Alternator: Removal - Refitting

16A

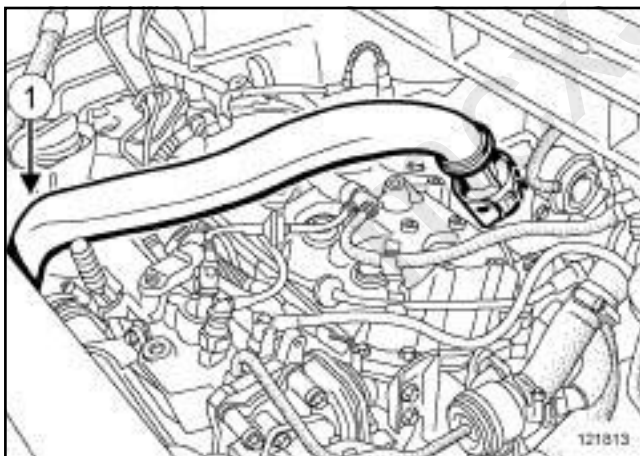
D4F, and 784

Tightening torques 	
alternator bolts	25 N.m
air conditioning compressor bolts	25 N.m

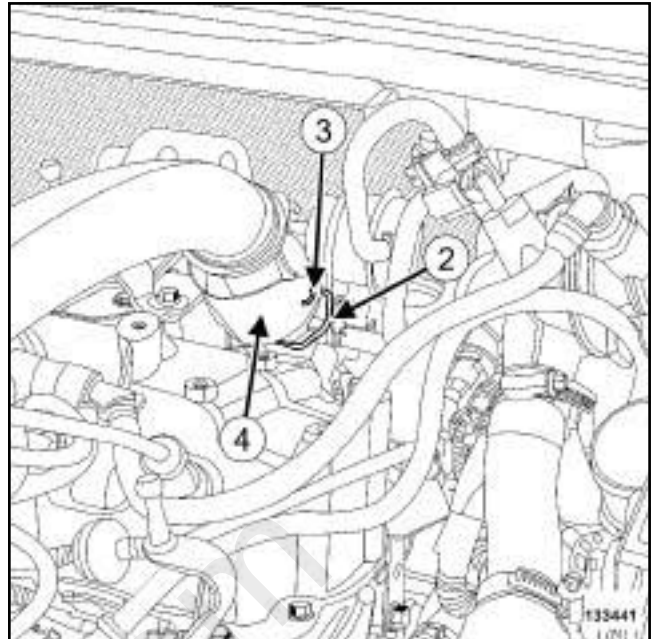
REMOVAL

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 wheel arch liners (see **Front wheel arch liner: Removal - Refitting**) (55A, Exterior protection),
 - the front bumper (see **Front bumper: Removal - Refitting**) (55A, Exterior protection),
 - the accessories belt (see **11A, Top and front of engine, Accessories belt: Removal - Refitting**, page 11A-5) .



- ☐ Remove the bolt (1) from the turbocharger air outlet pipe on the inlet distributor.



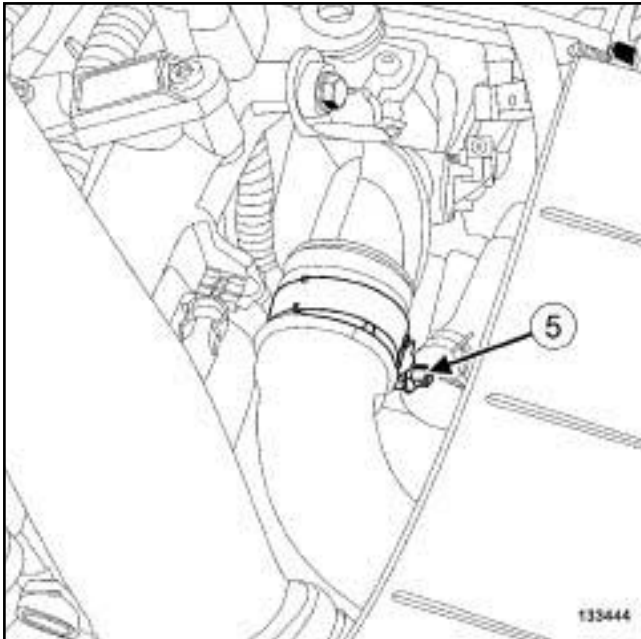
- ☐ Separate the clip (2) of the turbocharger air outlet pipe.

Note:

If the clip (3) is removed from the flexible heat shield (4) , the latter must be replaced.

- ☐ Move aside the turbocharger air outlet pipe.

D4F, and 784



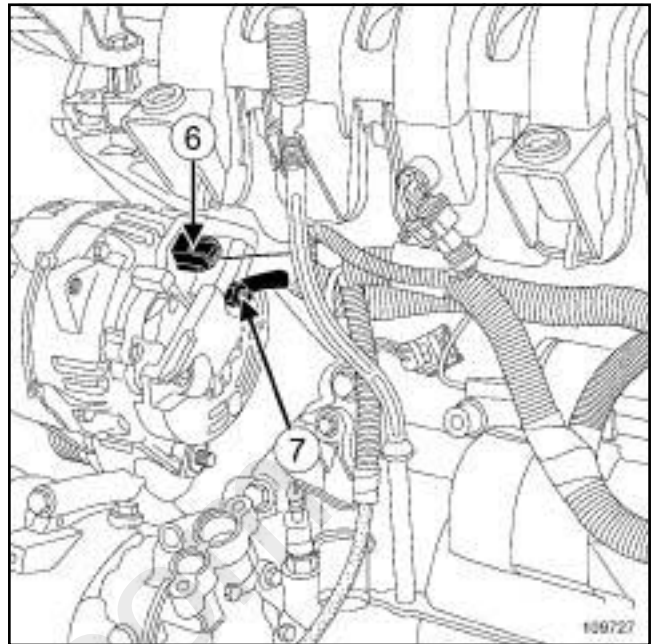
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- ☐ Loosen the clip (5) on the intercooler intermediate pipe.
- ☐ Remove:
 - the intercooler (see **12B, Turbocharging, Intercooler: Removal - Refitting**, page 12B-21) ,
 - the front impact cross member (see **Front impact cross member: Removal - Refitting**) (41A, Front lower structure).

AIR CONDITIONING

- ☐ Disconnect the air conditioning compressor clutch connector.
- ☐ Detach the air conditioning pipe from the body between the compressor and expansion valve.
- ☐ Remove the air conditioning compressor bolts.
- ☐ Position the air conditioning compressor on the radiator mounting cross member.

II - OPERATION FOR REMOVAL OF PART CONCERNED



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- ☐ Disconnect the alternator wiring connector (6) .
- ☐ Remove:
 - the alternator wiring nut (7) ,
 - the alternator bolts,
 - the alternator.

REFITTING

I - REFITTING PREPARATION OPERATION

- ☐ Clean the alternator pulley V-grooves to remove any deposits.