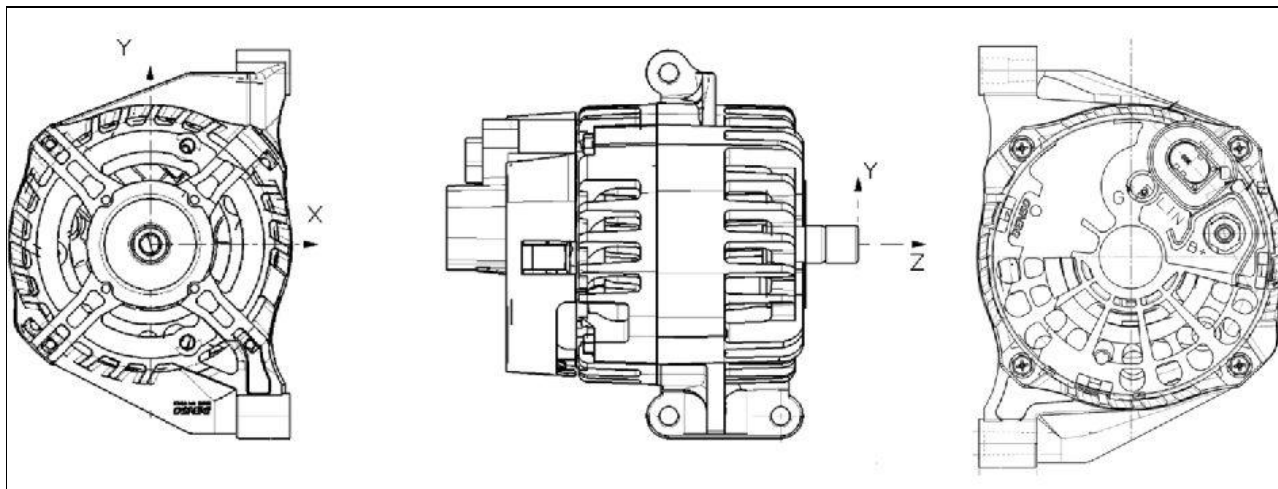


Service Manual: CHARGING - SERVICE INFORMATION

DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The vehicle may be equipped with two types of generators: intelligent or conventional. The petrol engines of NAFTA version vehicles are equipped with generators with conventional voltage adjustment. The petrol and diesel engines of EMEA version vehicles are equipped with intelligent generators.

Fig 1: Denso Intelligent Alternator

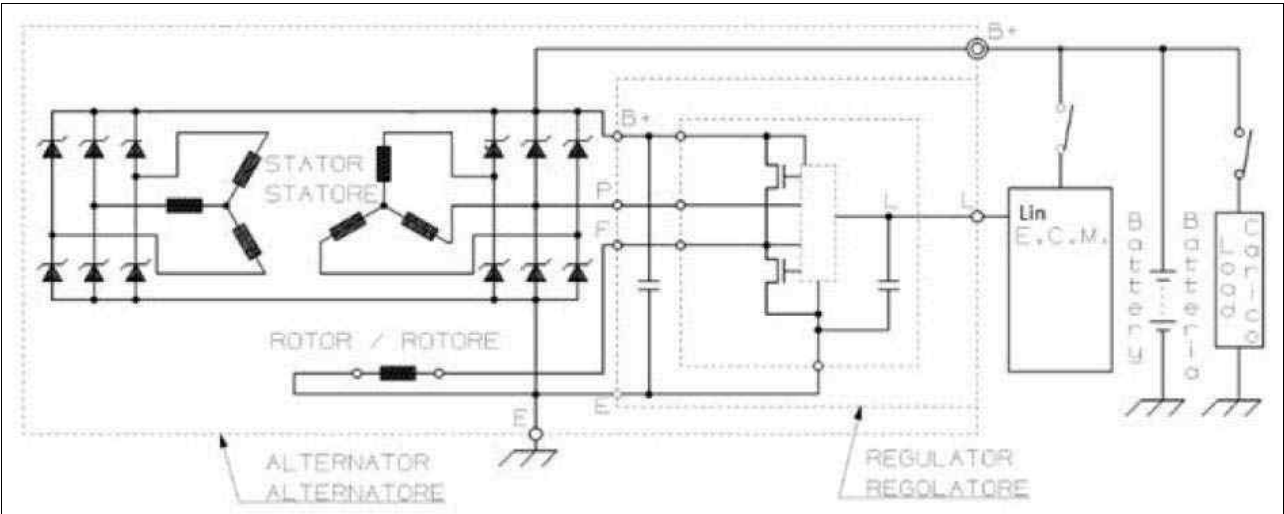


Courtesy of CHRYSLER GROUP, LLC

DENSO intelligent alternator - This alternator is available on the 120 A and 150 A versions in accordance with the type of engine it is fitted on. This graphic is the alternator fitted on the 1.4 MultiAir 140 HP.

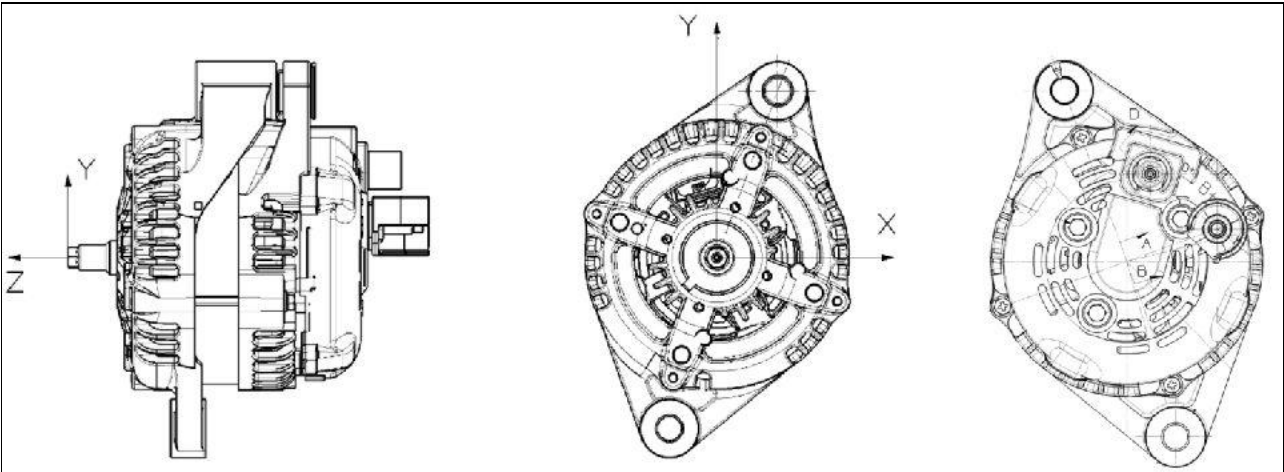
Adjustment voltage	10.6 V-16 V
Rated voltage	13.8 V
Rated current (1800-6000 rpm)	105 A-120 A
Max. speed	18, 000 rpm
Voltage regulator	Electronic type (connected with PCM via LIN)

Fig 2: Denso Intelligent Alternator Recharging Wiring Diagram



Courtesy of CHRYSLER GROUP, LLC

Fig 3: Denso Conventional Alternator

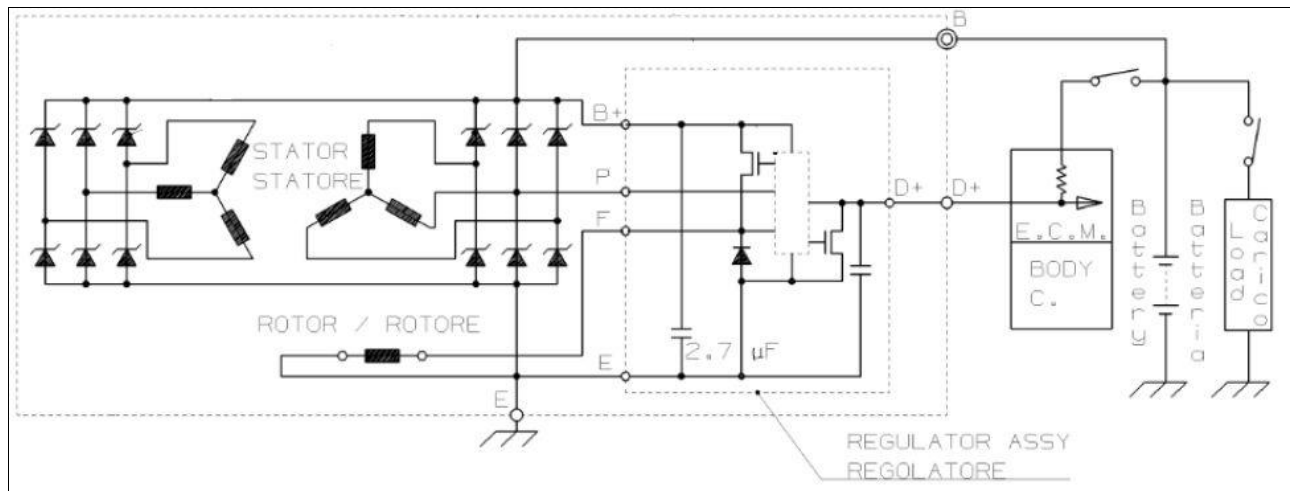


Courtesy of CHRYSLER GROUP, LLC

Denso conventional alternator - This alternator is fitted on the 1.4 MultiAir 160 HP engine of NAFTA version vehicles.

Adjustment voltage	10.6 V-16 V
Rated voltage	14 V
Rated current (1800-6000 rpm)	85 A-150 A
Maximum continuous speed	18, 000 rpm
Voltage regulator	Conventional electronic type

Fig 4: Denso Conventional Alternator Recharging wiring diagram.



Courtesy of CHRYSLER GROUP, LLC

DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

1.4L / 2.4L

The starting and charging system comprises the battery, starter motor and the generator.

The starter consists of a DC motor powered by the battery and an electromagnet exciter.

With the ignition key in the ON position, the generator indicator light (LED) on the instrument panel turns on and power is transmitted to the voltage regulator in the generator.

In these conditions, the exciter circuit (rotor) is enabled to ground provided by the Powertrain Control Module (PCM).

With the generator in rotation, a magnetic field is generated on the electric circuit (stator) that allows a three phase AC voltage to be delivered by the diode bridge to the B+ terminal.

The battery is then charged and the PCM receives voltage from the generator when it reaches the calibrated specification (13.7 - 14.2 V).

The efficiency of the charging system is controlled by the Body Control Module (BCM):

- The PCM sends the voltage signal to the BCM which controls the efficiency of the generator charging by detecting two parameters: the voltage signal coming from the generator itself, and the starter motor signal which is also received on the CAN network by the PCM.
- The BCM signals the cluster to turn on the insufficient charging warning when the ignition is switched ON until the voltage is above 5.5 volts. If the voltage drops below 4.5 volts with the engine above 700 RPMs, the indicator will turn on accompanied by a display message in the information center of the cluster.

The startup logic is also implemented by PCM located in the engine compartment.

1.6L / 2.0L With STOP / START

The starting and charging system comprises the battery, starter motor and the generator.

The starter consists of a DC motor powered by the battery and an electromagnet exciter.

With the ignition key in the ON position, the generator indicator light (LED) on the instrument panel turns on and power is transmitted to the voltage regulator in the generator.

In these conditions, the exciter circuit (rotor) is enabled to ground provided by the Powertrain Control Module (PCM).

With the generator in rotation, a magnetic field is generated on the electric circuit (stator) that allows a three phase AC voltage to be delivered by the diode bridge to the B+ terminal.

The battery is then charged and the PCM receives voltage from the generator when it reaches the calibrated specification (13.7 - 14.2 V).

This engine uses an electronically controlled generator, equipped with a controller that receives commands from the PCM: in this way you get the best performance in terms of:

- Reduction in fuel consumption and emissions
- Improvement of powertrain performance and vehicle dynamics

The Start & Stop system automatically shuts down the engine whenever the vehicle is stationary and restarts it when the driver intends to resume driving.

The system is essentially based on a starter system (battery and starter) being able to perform, quickly and relatively quiet, the restarting of the engine and to support a number of starts much higher than that required for a traditional system.

Strategies for implementation and monitoring of the shutdown and restart of the system is managed by the PCM and the Body Control Module (BCM) directly or via the CAN network.

The starter is upgraded to a heavy duty cycle starter, and the generator is also upgraded increasing the capabilities of current delivery.

Besides the changes on the battery, in order to incorporate Start & Stop strategies, an Intelligent Battery Sensor (IBS) is used. The IBS has the function to monitor the status of the battery and communicate it to the network nodes or to enable an optimal management of the battery in the framework of the Start & Stop strategies.

The IBS is located on the negative battery terminal.

A Neutral Position Sensor is mounted on the gearbox providing output from the sensor to a controller concerning gear range position.

Automatic shutdown and restart of the motor are marked by a specific indicator on the instrument cluster. If the indicator is flashing, this indicates a possible fault with the Start & Stop system.

The device is activated / deactivated manually via the switch between the controls next to the gear lever.

The startup logic is also implemented by PCM located in the engine compartment.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - CHARGING SYSTEM

The following procedures may be used to diagnose the charging system if:

- the check gauges lamp (if equipped) is illuminated with the engine running
- the voltmeter (if equipped) does not register properly
- an undercharged or overcharged battery condition occurs.

Remember that an undercharged battery is often caused by:

- accessories being left on with the engine not running
- a faulty or improperly adjusted switch that allows a lamp to stay on. Refer to the IGNITION-OFF DRAW TEST for more information.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - CHARGING SYSTEM > DIAGNOSIS AND TESTING - ON-BOARD DIAGNOSTIC SYSTEM

The Body Control Module (BCM) monitors critical input and output circuits of the charging system, making sure they are operational. A Diagnostic Trouble Code (DTC) is assigned to each input and output circuit monitored by the OBD system. Some circuits are checked continuously and some are checked only under certain conditions.

If the OBD system senses that a monitored circuit is bad, it will put a DTC into electronic memory. The DTC will stay in electronic memory as long as the circuit continues to be bad. The BCM is programmed to clear the memory after 40 good trip if the problem does not occur again.

The following procedures may be used to diagnose the charging system if:

- the check gauges lamp or battery lamp is illuminated with the engine running
- the voltmeter (if equipped) does not register properly
- an undercharged or overcharged battery condition occurs.

Remember that an undercharged battery is often caused by:

- accessories being left on with the engine not running
- a faulty or improperly adjusted switch that allows a lamp to stay on. Refer to Ignition-Off Draw Test, see BATTERY, STANDARD PROCEDURE .
- loose generator belt.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - CHARGING SYSTEM > INSPECTION

The Body Control Module (BCM) monitors critical input and output circuits of the charging system, making sure they are operational. A Diagnostic Trouble Code (DTC) is assigned to each input and output circuit monitored by the On-Board Diagnostic (OBD) system. Some charging system circuits are checked continuously, and some are checked only under certain conditions.

Refer to the DTC INDEX article for more DTC information. This will include a complete list of DTC's including DTC's for the charging system.

To perform a complete test of the charging system, refer to the appropriate Diagnostic Service Procedures and the scan tool. Perform the following inspections before attaching the scan tool.

1. Inspect the battery condition. Refer to BATTERY for procedures.
2. Inspect condition of battery cable terminals, battery posts, connections at engine block, starter solenoid and relay. They should be clean and tight. Repair as required.
3. Inspect all fuses in both the Body Control Module (BCM) and Power Distribution Center (PDC) for tightness in receptacles. They should be properly installed and tight. Repair or replace as required.
4. Inspect generator mounting bolts for tightness. Replace or tighten bolts if required, refer to SPECIFICATIONS .
5. Inspect generator drive belt condition and tension.
6. Inspect automatic belt tensioner (if equipped). Refer to the ENGINE COOLING SYSTEM for more information.
7. Inspect generator electrical connections at generator field, battery output, and ground terminal (if equipped). Also check generator ground wire connection at engine (if equipped). They should all be clean and tight. Repair as required.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - CHARGING SYSTEM > DIAGNOSTIC TROUBLE CODES

A DTC description can be read using the scan tool. Refer to the appropriate Diagnostic Service Information .

A DTC does not identify which component in a circuit is bad. Thus, a DTC should be treated as a symptom, not as the cause for the problem. In some cases, because of the design of the diagnostic test procedure, a DTC can be the reason for another DTC to be set. Therefore, it is important that the test procedures be followed in sequence, to understand what caused a DTC to be set.

DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - CHARGING SYSTEM > ERASING DIAGNOSTIC TROUBLE CODES

The Scan Tool must be used to erase a DTC.

SPECIFICATIONS > GENERATOR

	1.4 Turbo MultiAir	2.4 MultiAir	1.6 16V Multijet	2.0 16V Multijet
Rated voltage (V)	13.8	-	13.8 (**)	13.8

Rated current (A)	120	-	120 (**) 150 (****)	LIN HS100 (**)
Voltage regulator (type)	LIN HS100	-	LIN HS100 (**)	LIN HS100
Regulation voltage at 20 ° C (V)	-	-	-	-

(*) 170hp and 140HP Start & Stop to light tropic market

(**) Start & Stop versions

(***) Four-wheel drive versions with Start Stop market & tropic light

(****) Versions for Cold Countries

SPECIFICATIONS > TORQUE SPECIFICATION

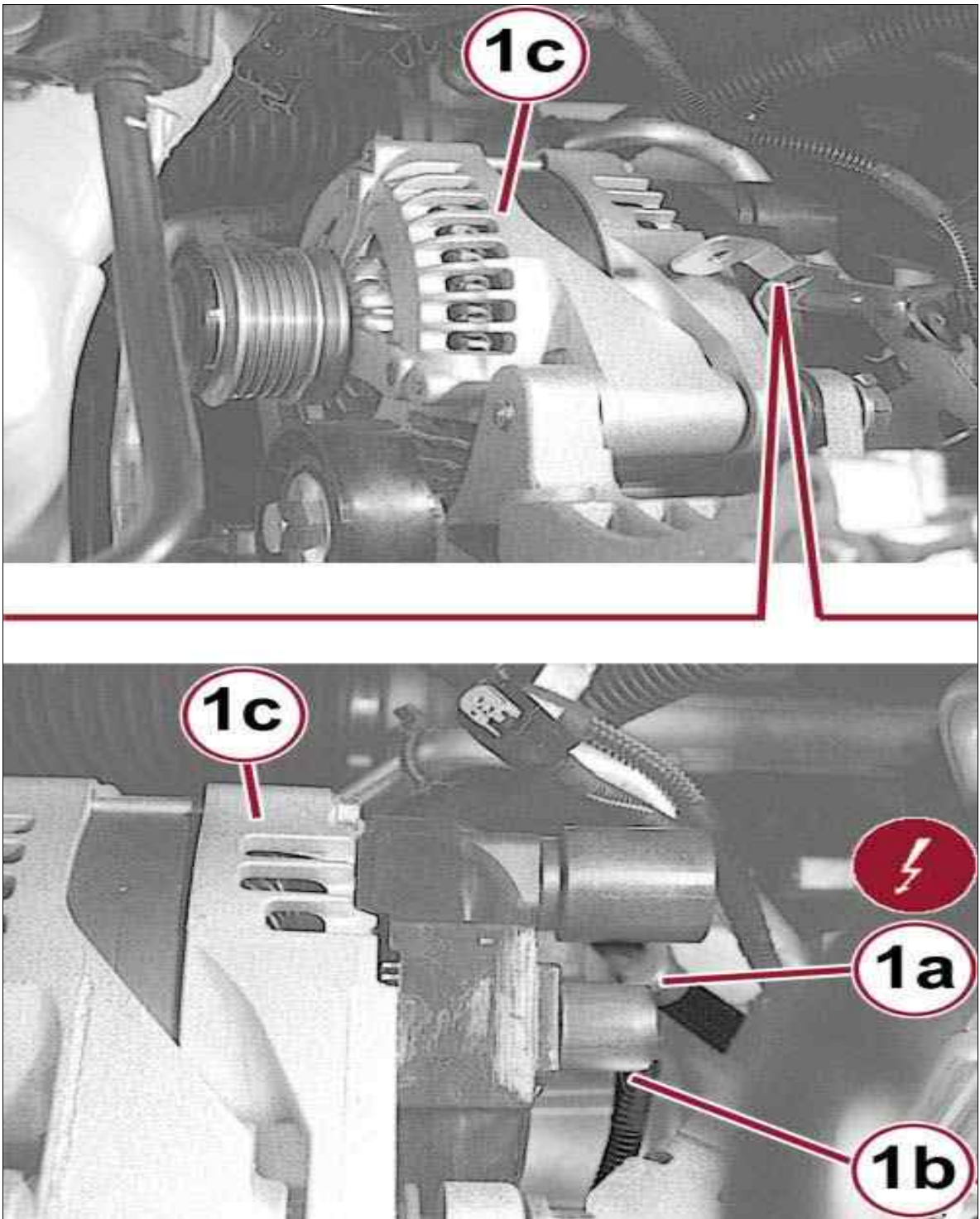
TORQUE SPECIFICATION

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.	NEW FASTENER*
Generator M12	70	52		
Generator M8	25	18.5		
Battery Nut M8	14	10.5		
Battery Box Screw M8	20	15		
Ground Cable	14	10.5		
Ground Cable Side Post	16	12		
* NEW FASTENER: Do not reuse these fasteners. If removed, a new fastener must be installed and tightened to specifications.				

GENERATOR > REMOVAL AND INSTALLATION > 1.4L REMOVAL AND INSTALLATION > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the air conditioner compressor. Refer to COMPRESSOR, A/C, REMOVAL AND INSTALLATION .

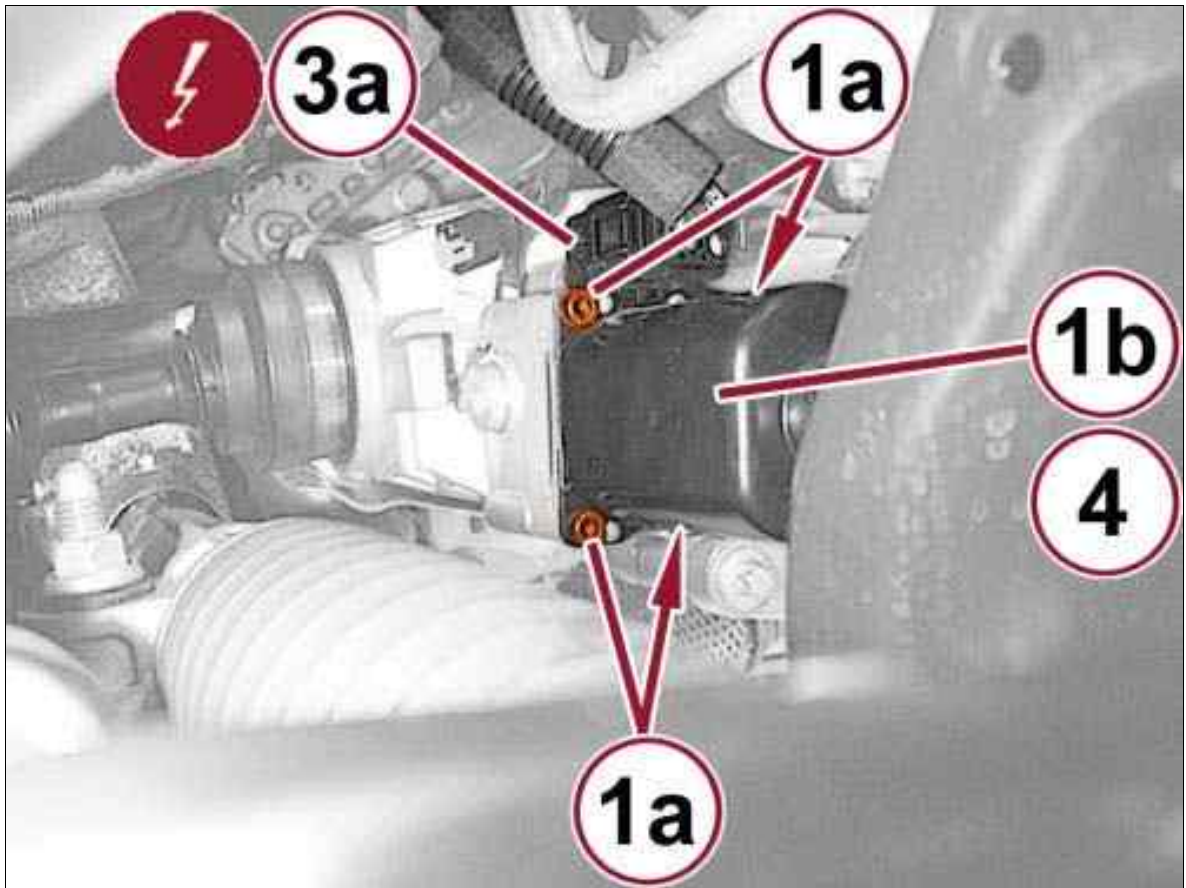
Fig 1: Electrical Connections & Generator



Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the electrical connections (1a) and (1b) from the generator (1c) after removing the nuts.

Fig 2: PTU Motor, Screws & Electrical Connection



Courtesy of CHRYSLER GROUP, LLC

4. Drain the oil from the gearbox to rear wheel drive.
5. Remove the four screws (1a) of PTU motor (1b).
6. Remove the motor from the PTU.
7. Disconnect the electrical connection (3a) from the PTU motor.
8. Remove the PTU.

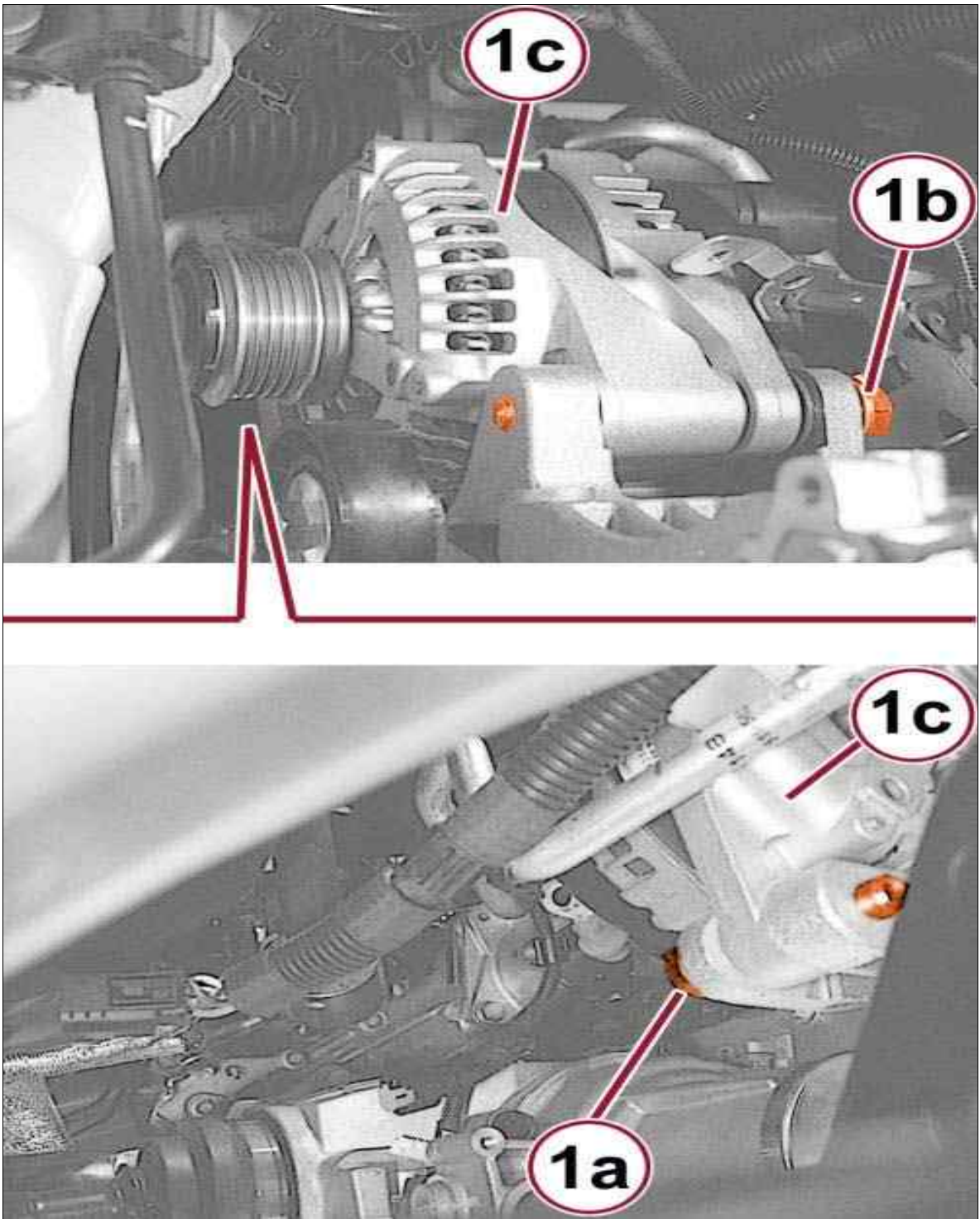
 NOTE:

Replace the PTU motor o-ring whenever the motor is removed / replaced.

 NOTE:

Ensure dust and dirt from getting into the box of the transfer case.

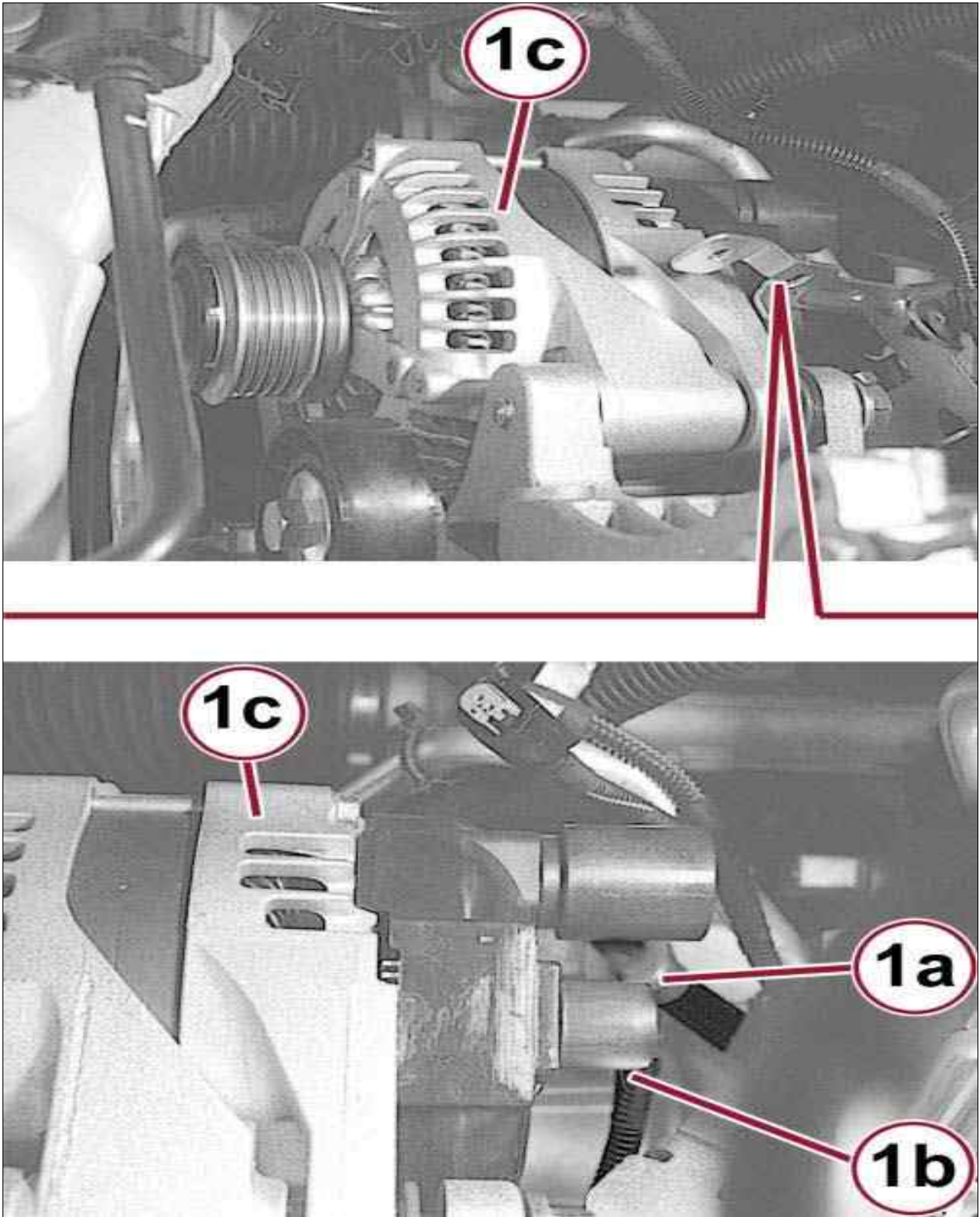
Fig 3: Upper & Lower Generator Bolts



Courtesy of CHRYSLER GROUP, LLC

9. Remove the upper (1b) and Lower (1a) generator (1c) bolts.

Fig 4: Electrical Connections & Alternator



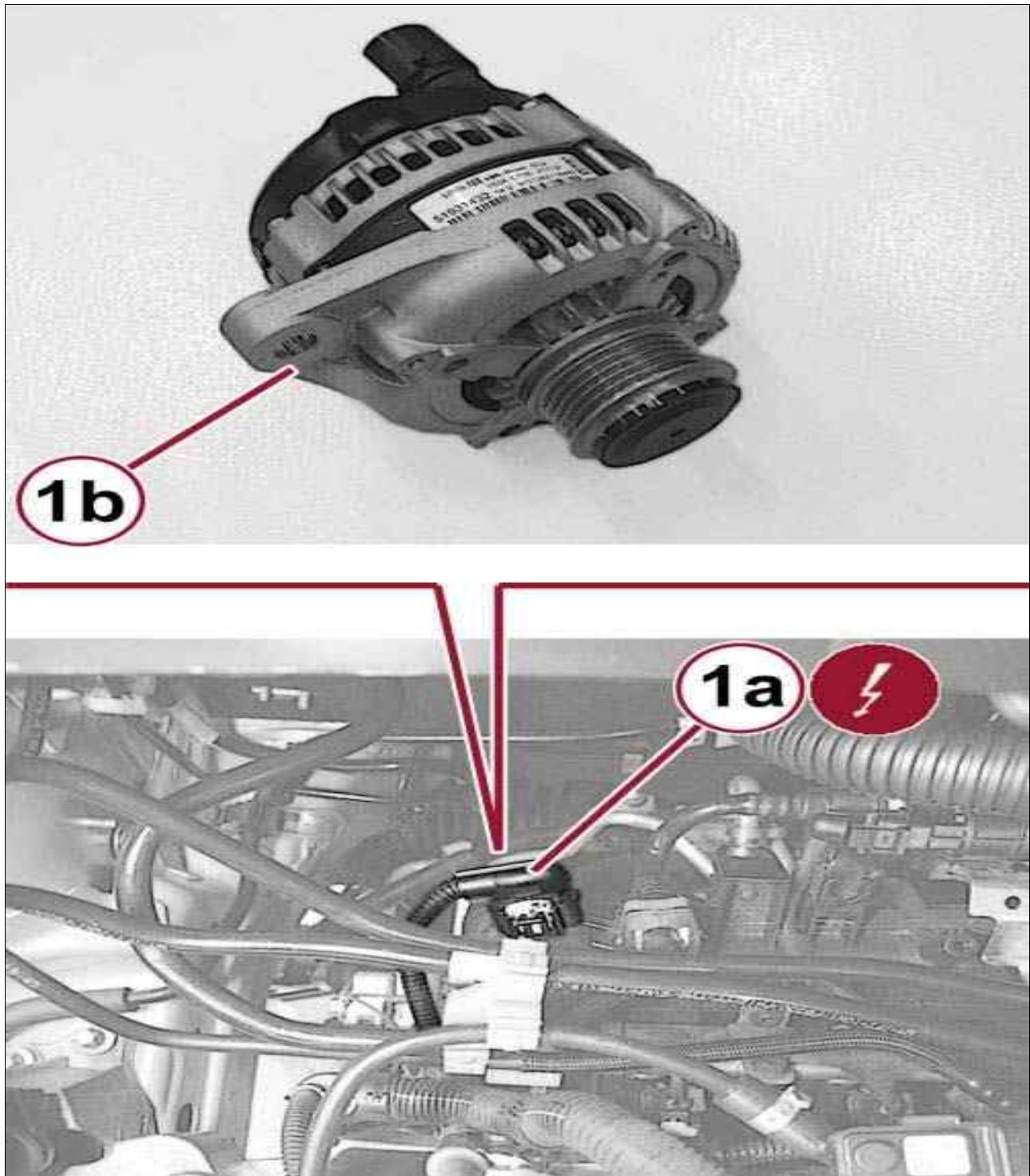
Courtesy of CHRYSLER GROUP, LLC

10. Disconnect the electrical connections then remove the alternator (1c).
11. Check that the alternator is not damaged.

GENERATOR > REMOVAL AND INSTALLATION > 1.4L REMOVAL AND

INSTALLATION > INSTALLATION

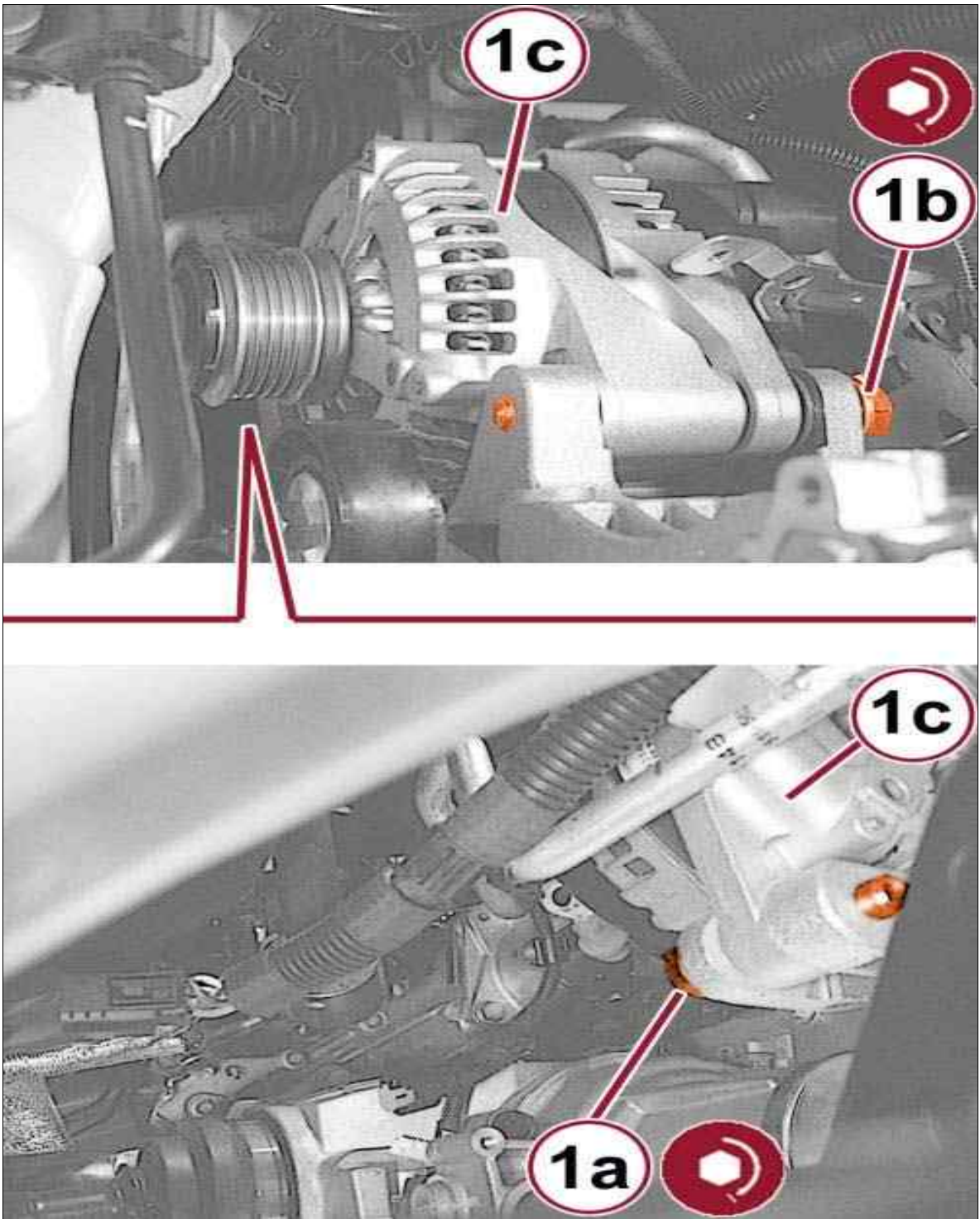
Fig 1: Alternator & Electrical Connection



Courtesy of CHRYSLER GROUP, LLC

1. Enter in the alternator (1b), and connect the electrical connection (1a).

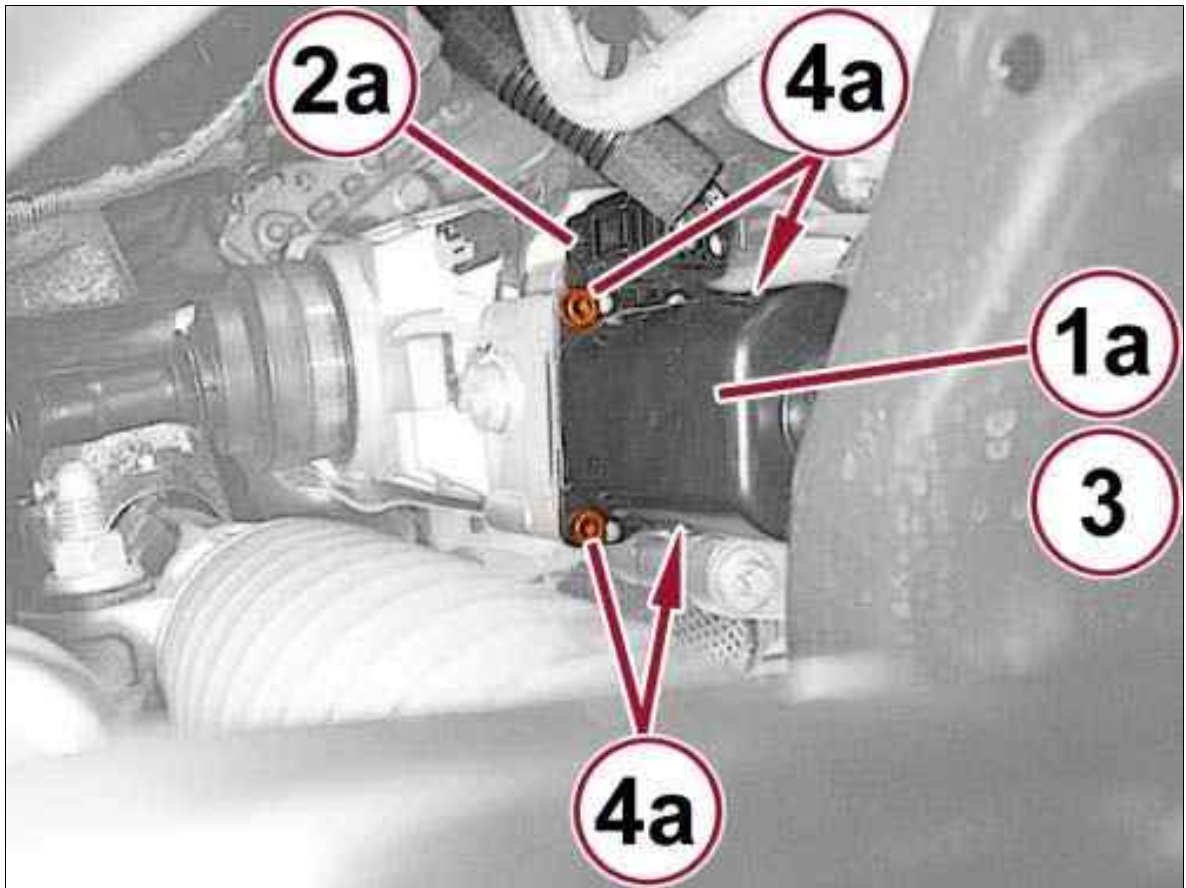
Fig 2: Top & Lower Alternator Mounting Screws



Courtesy of CHRYSLER GROUP, LLC

2. Tighten the screw at the top (1b) and the lower mounting screw (1a) of the alternator (1c), and tighten them to the specified torque.

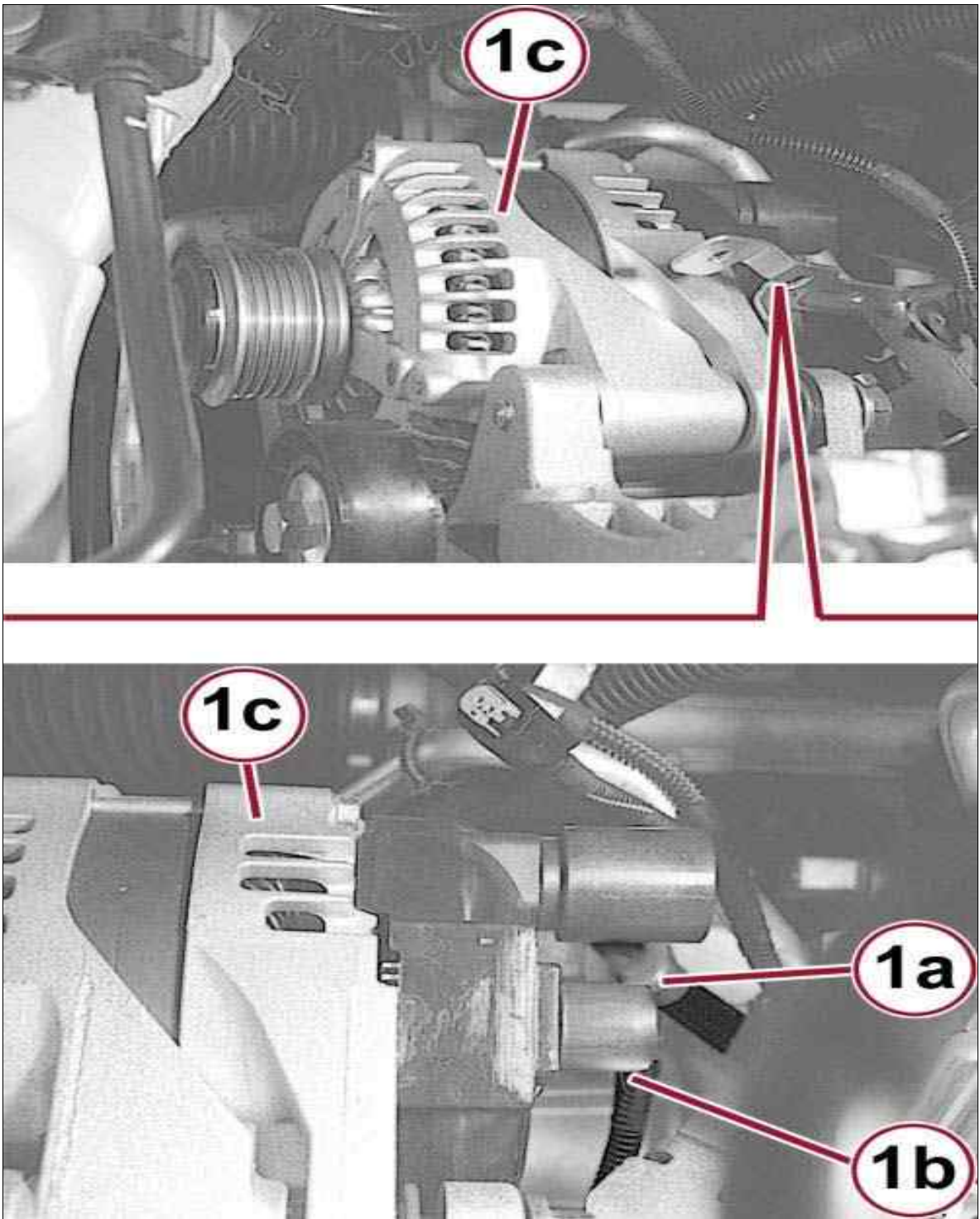
Fig 3: PTU Motor, Electrical Connection & Screws



Courtesy of CHRYSLER GROUP, LLC

3. Replace the o-ring motor PTU (1a) before reinstalling it in place.
4. Connect the electrical connection (2a) of the motor PTU.
5. Plug in the motor PTU (1a) by engaging its connecting shaft.
6. Tighten the four screws (4a) of motor fixing PTU (1a).
7. Add oil to the gearbox rear-wheel drive.

Fig 4: Alternator & Electrical Connections



Courtesy of CHRYSLER GROUP, LLC

8. Connect the electrical connections (1a) and (1b) of the alternator (1c) and tighten the relevant nuts.
9. Charge the AC system. Refer to COMPRESSOR, A/C, REMOVAL AND INSTALLATION .

GENERATOR > REMOVAL AND INSTALLATION > 1.4L REMOVAL AND INSTALLATION > INSTALLATION > EMEA 1.4L PROGRAMMING

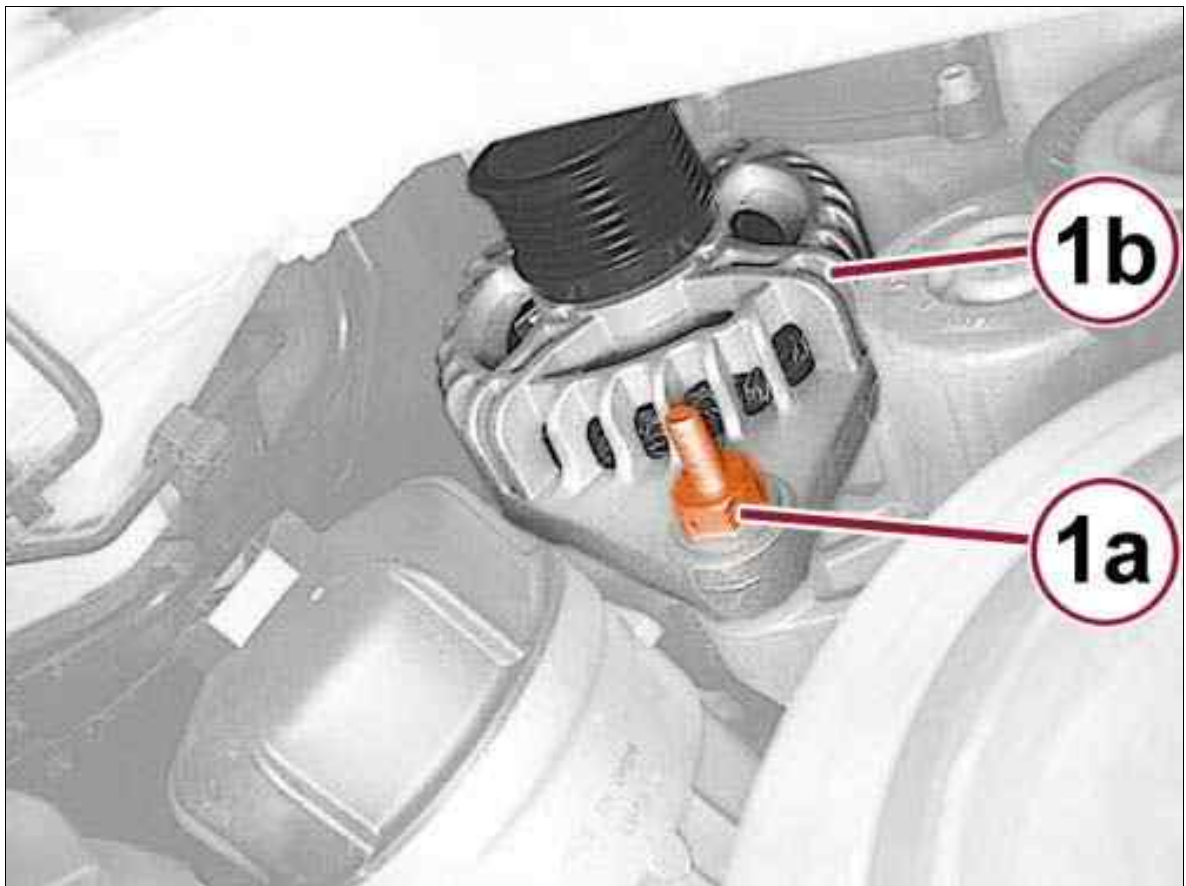
Using the diagnostic scan tool, perform the following procedure once a new generator has been installed:

1. Select **ECM View**
2. Select **MISC FUNCTIONS**
3. Select the **Intelligent Alternator (IAM) replacement** routine and follow the prompts on the scan tool.

GENERATOR > REMOVAL AND INSTALLATION > 1.6L REMOVAL AND INSTALLATION > REMOVAL

1. Hoist the vehicle.
2. Disconnect the negative battery terminal.
3. Drain the engine coolant

Fig 1: Generator & Bolt

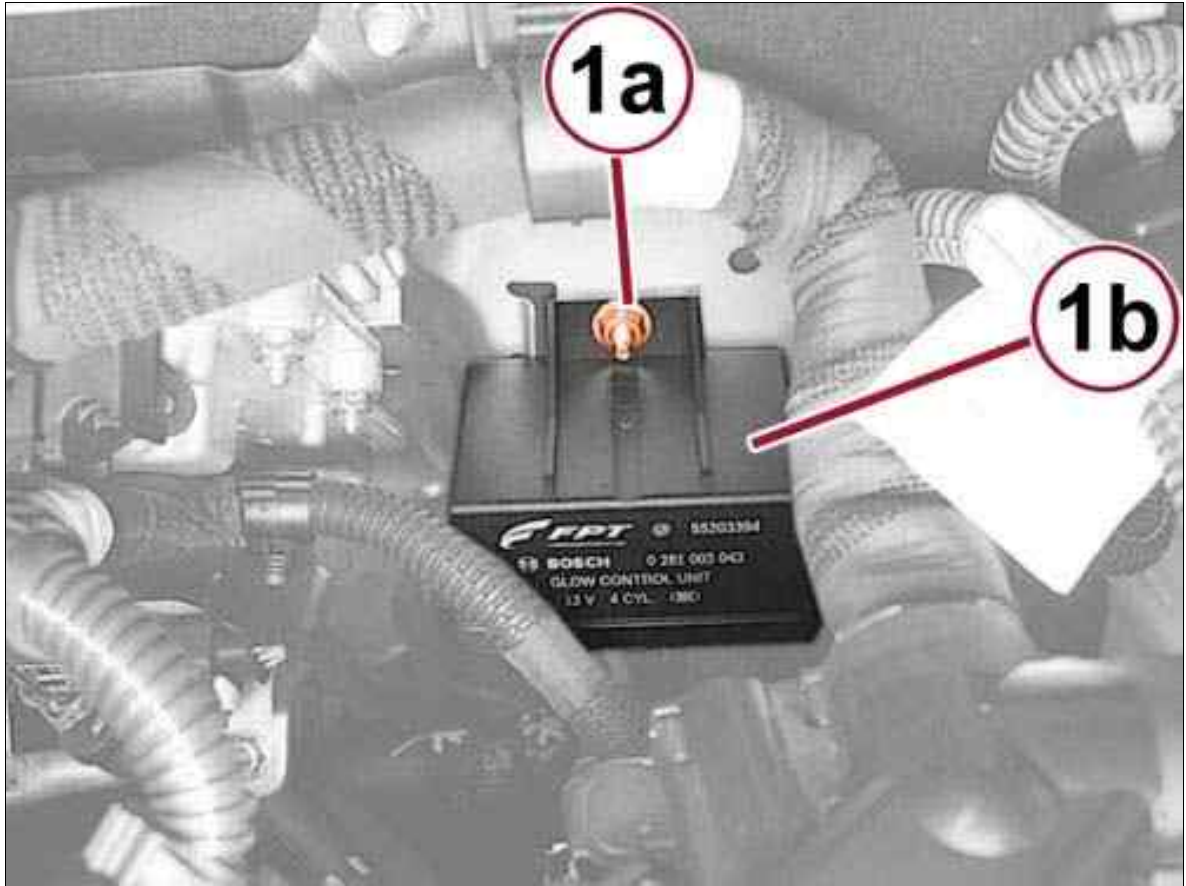


Courtesy of CHRYSLER GROUP, LLC

4. Remove the lower generator bolt (1a).

5. Lower the vehicle on the hoist.

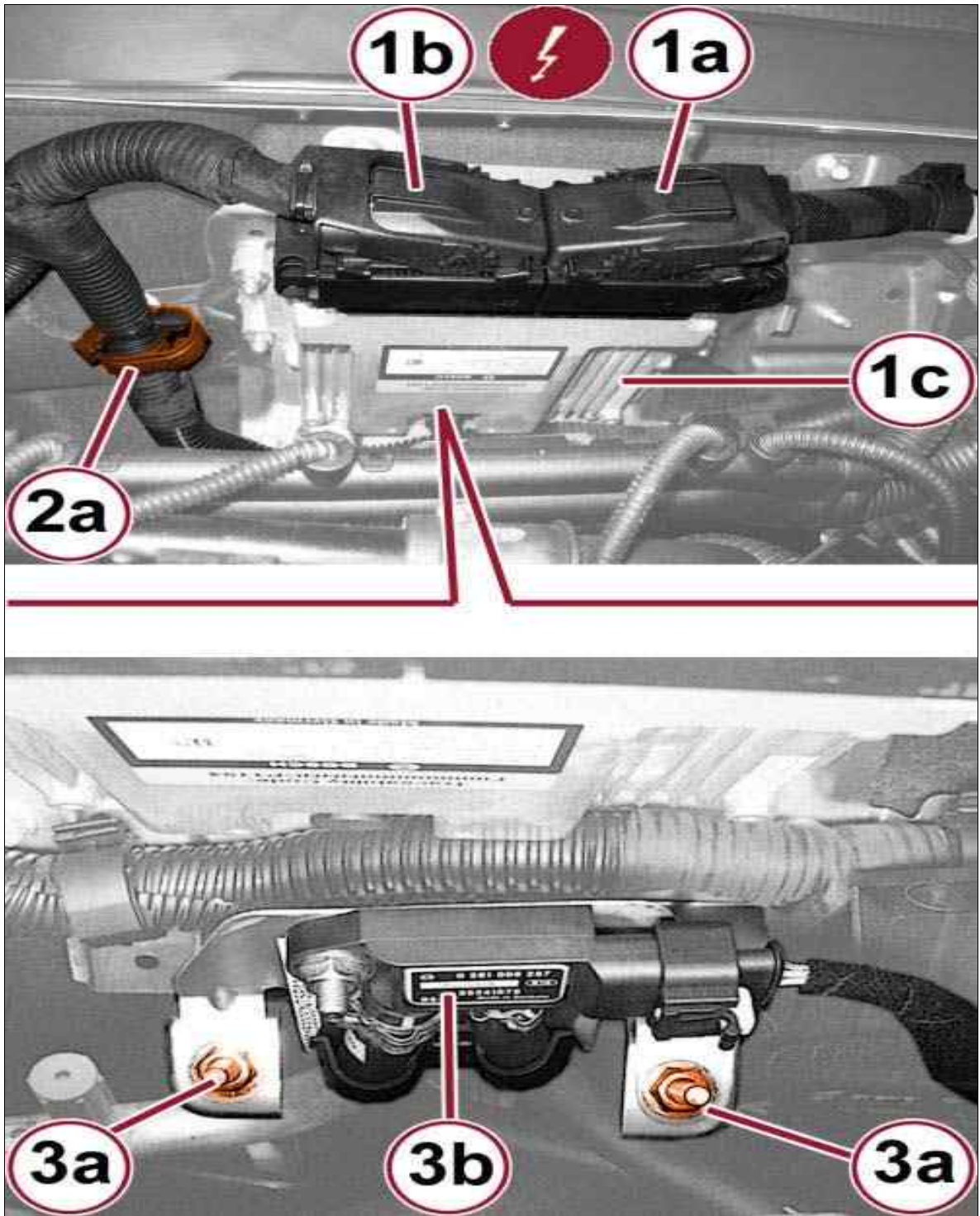
Fig 2: Plug Control Unit & Nut



Courtesy of CHRYSLER GROUP, LLC

6. Working behind the engine, remove the nut (1a) and move the plug control unit (1b) out of the way.

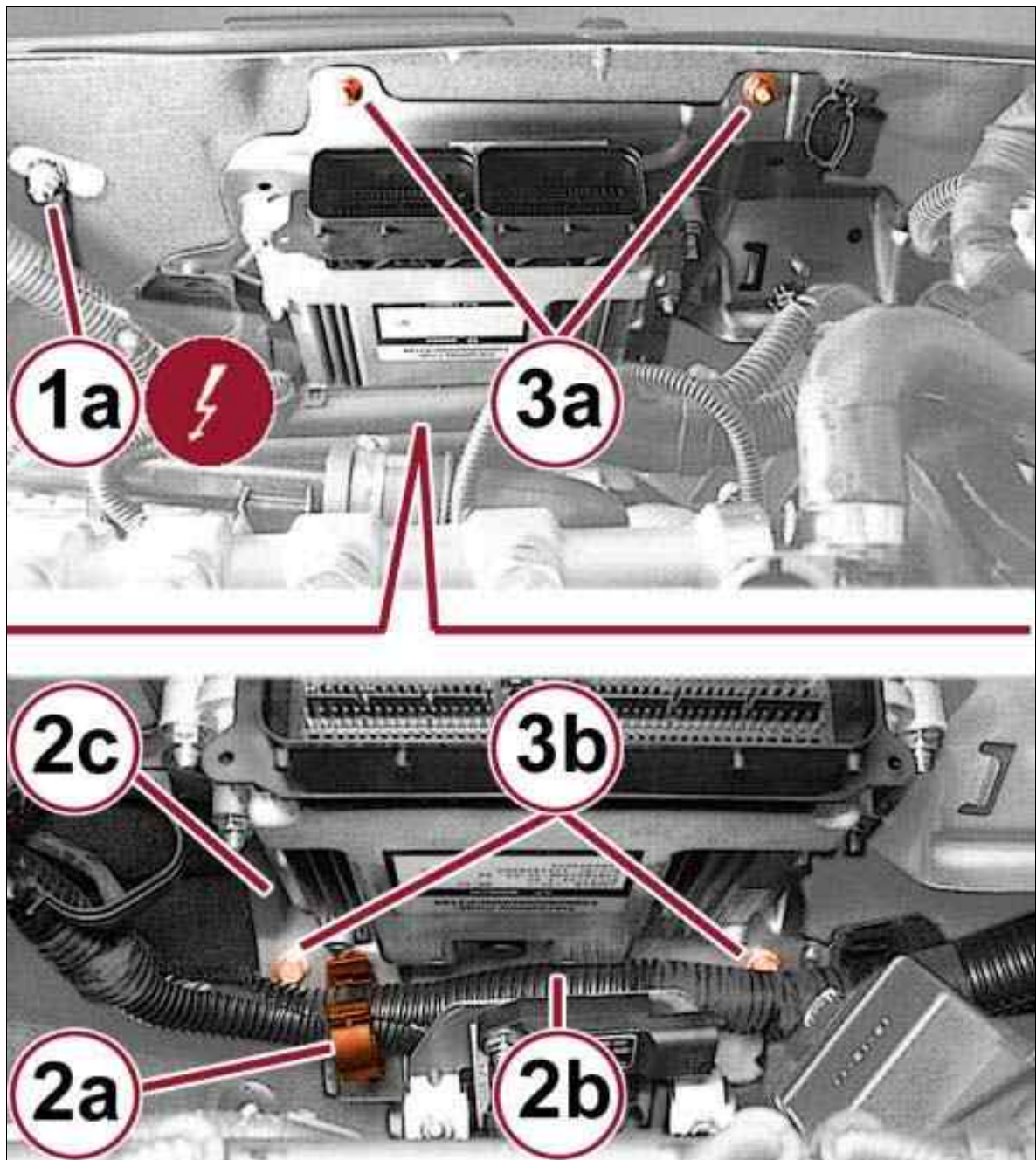
Fig 3: Injection ECU, Wiring Clamp & Electrical Connections



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the injection ECU (1c) electrical connections (1a, 1b).
8. Open the wiring clamp (2a).

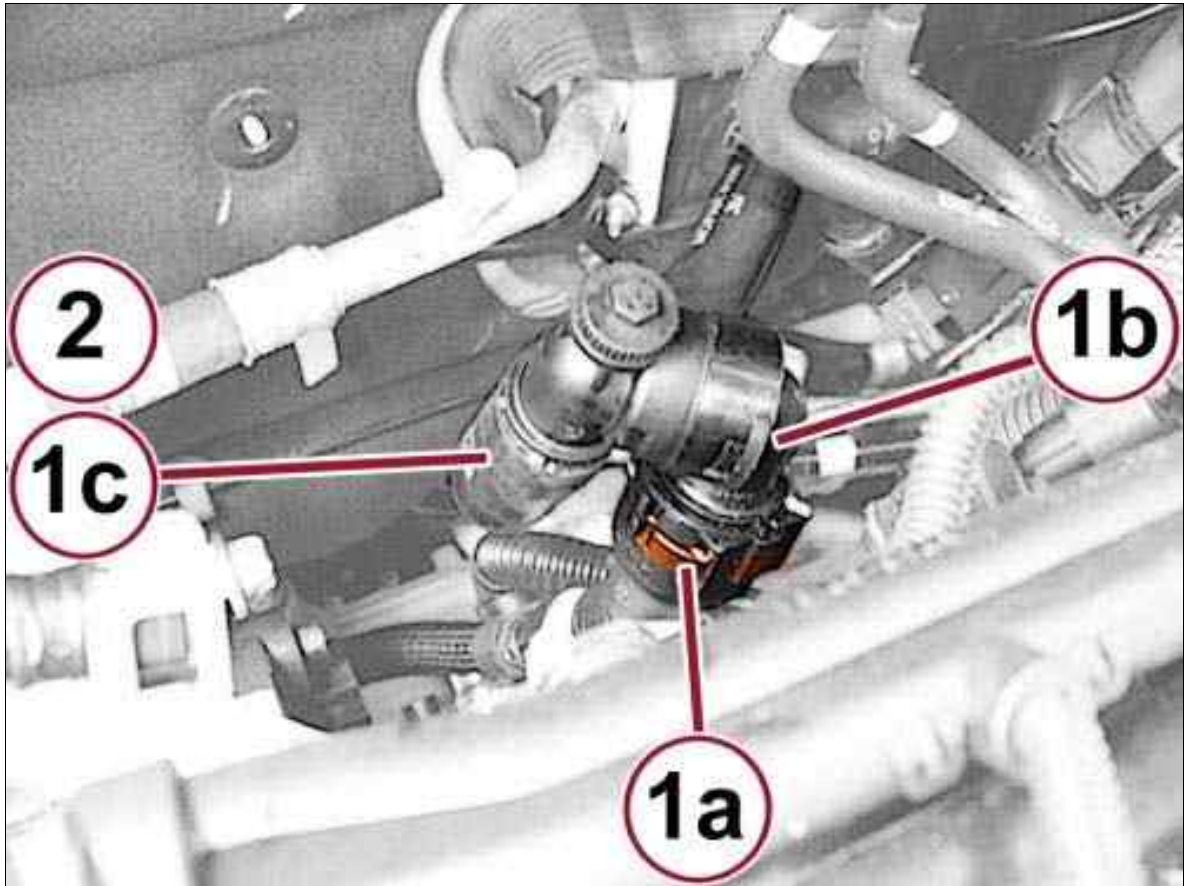
Fig 4: Pressure Sensor, Nuts, Ground Wire Terminal, Clips, Screws & Injection Control Unit



Courtesy of CHRYSLER GROUP, LLC

9. Remove the nuts (3a) and move the particulate filter pressure sensor (3b) out of the way, complete with bracket.
10. Remove the nut and disconnect the ground wire terminal (1a).
11. Open the various retainer clips (2a) and free the wiring (2b) from the support (2c) of the injection control unit.
12. Remove the nuts (3a) and screws (3b), then remove the injection control unit media (2c).

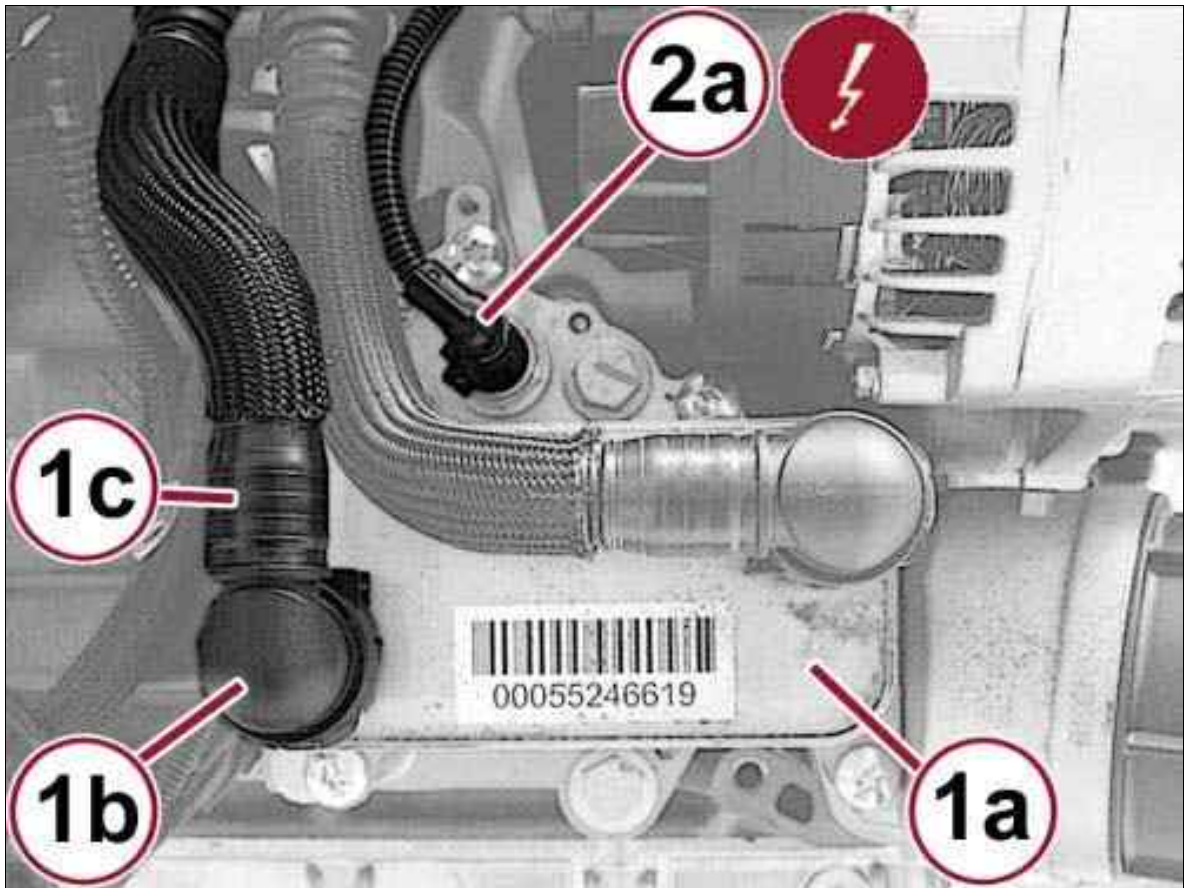
Fig 5: Spring Retainer, Quick Coupling & Coolant Pipe



Courtesy of CHRYSLER GROUP, LLC

13. Operating in the compartment of the injection control unit, disengage the spring retainer (1a) and disconnect the quick coupling (1b) of the return engine coolant pipe (1c) from the heater.
14. Move the pipe (1c) out of way.

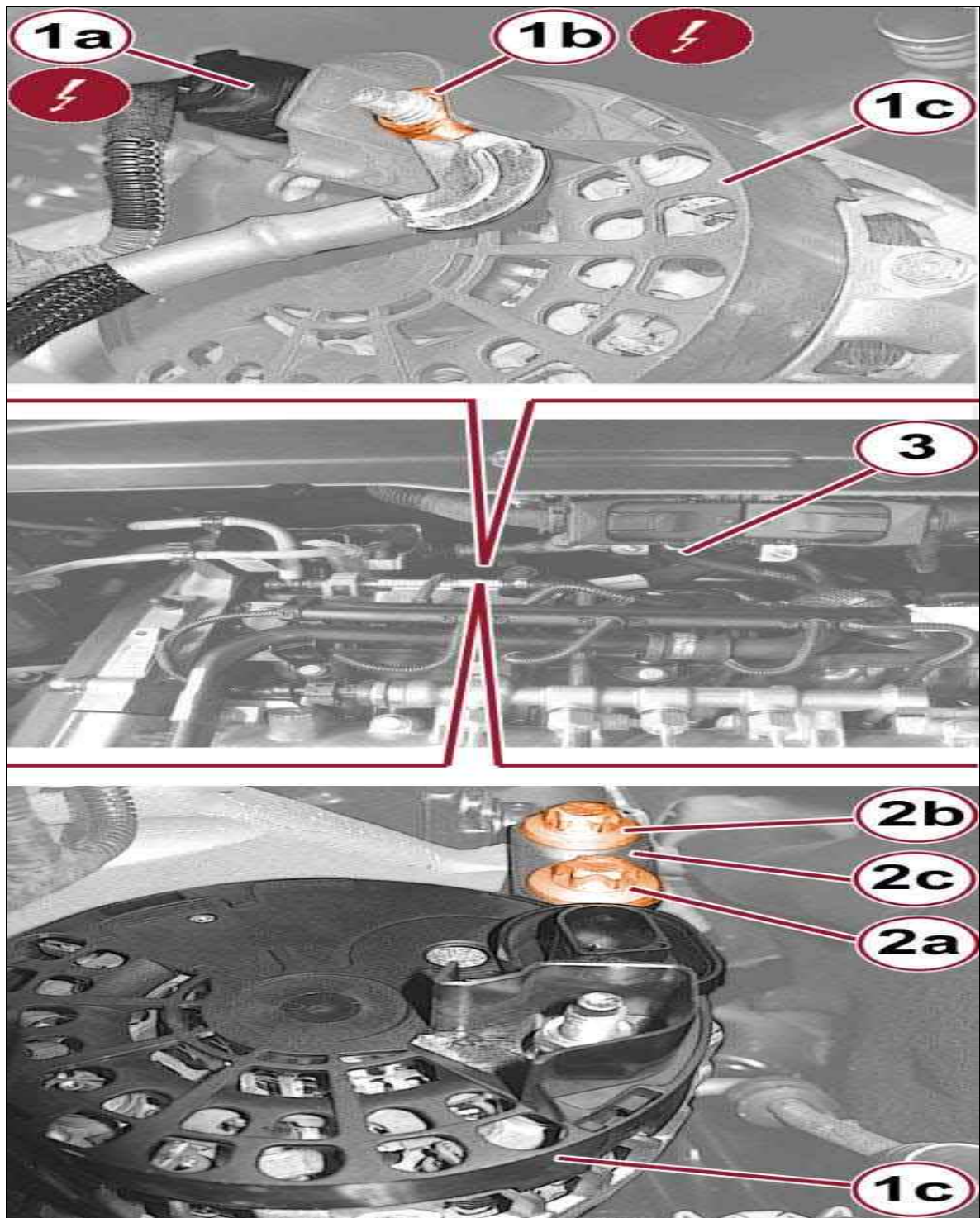
Fig 6: Heat Exchanger, Quick Coupling, Pipe & Electrical Connector



Courtesy of CHRYSLER GROUP, LLC

15. Working from the top of the engine, the heat exchanger motor oil (1a), disengage the spring retainer and disconnect the quick coupling (1b) of the pipe (1c).
16. Disconnect the electrical connection (2a) of the pressure sensor on the engine oil heat exchanger.

Fig 7: Generator, Electrical Connections, Screws & Spacer



Courtesy of CHRYSLER GROUP, LLC

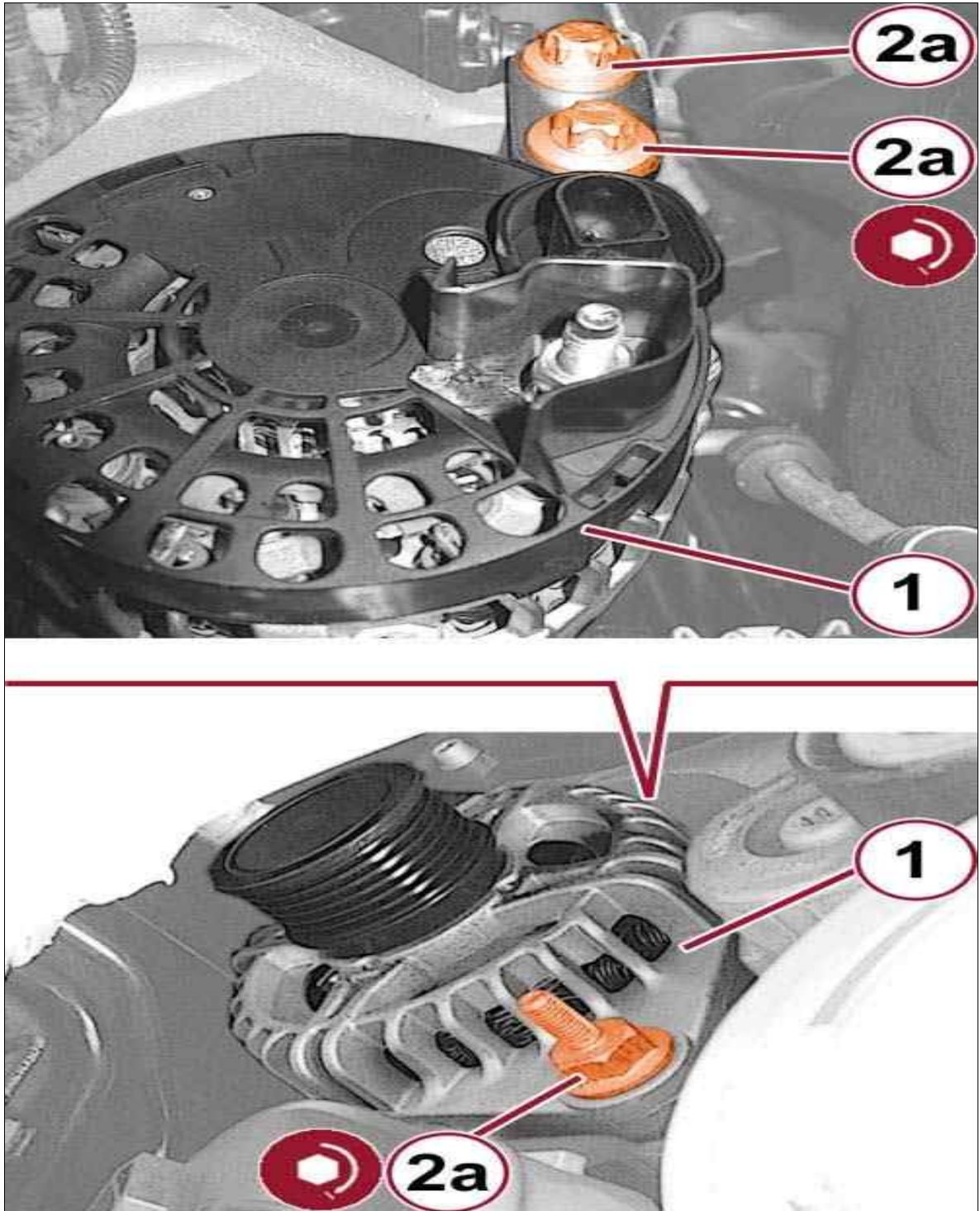
17. Working behind the right rear of the engine, disconnect the electrical connections (1a, 1b) of the generator (1c).
18. Working on the left side of the generator (1c) unscrew its top screw (2a) and loosen the screw (2b) of the spacer (2c).
19. Remove the generator (1c) out of the compartment of the injection control unit.

20. Check that the generator is not damaged.

GENERATOR > REMOVAL AND INSTALLATION > 1.6L REMOVAL AND INSTALLATION > INSTALLATION

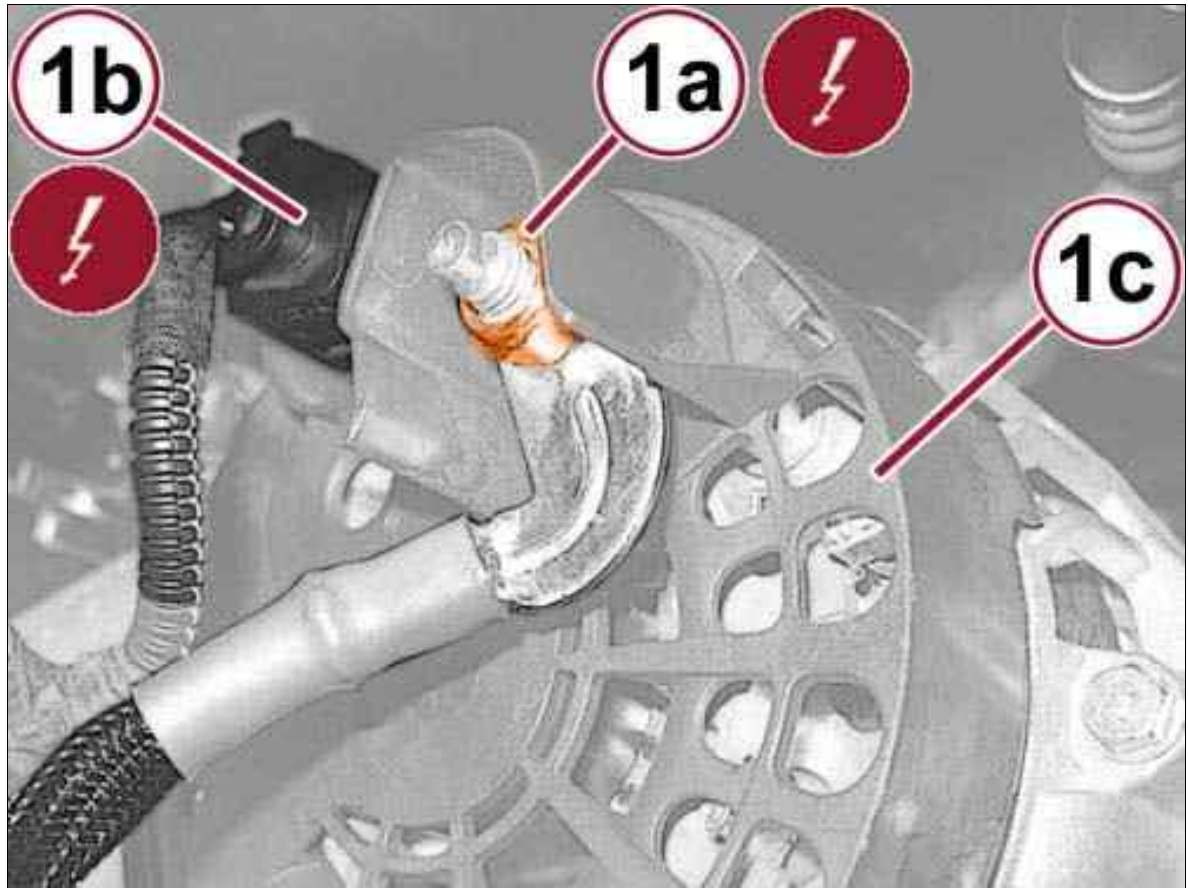
1. Place the generator for installation.

Fig 1: Generator & Screws



2. Tighten the screws (2a) to the specified torque.

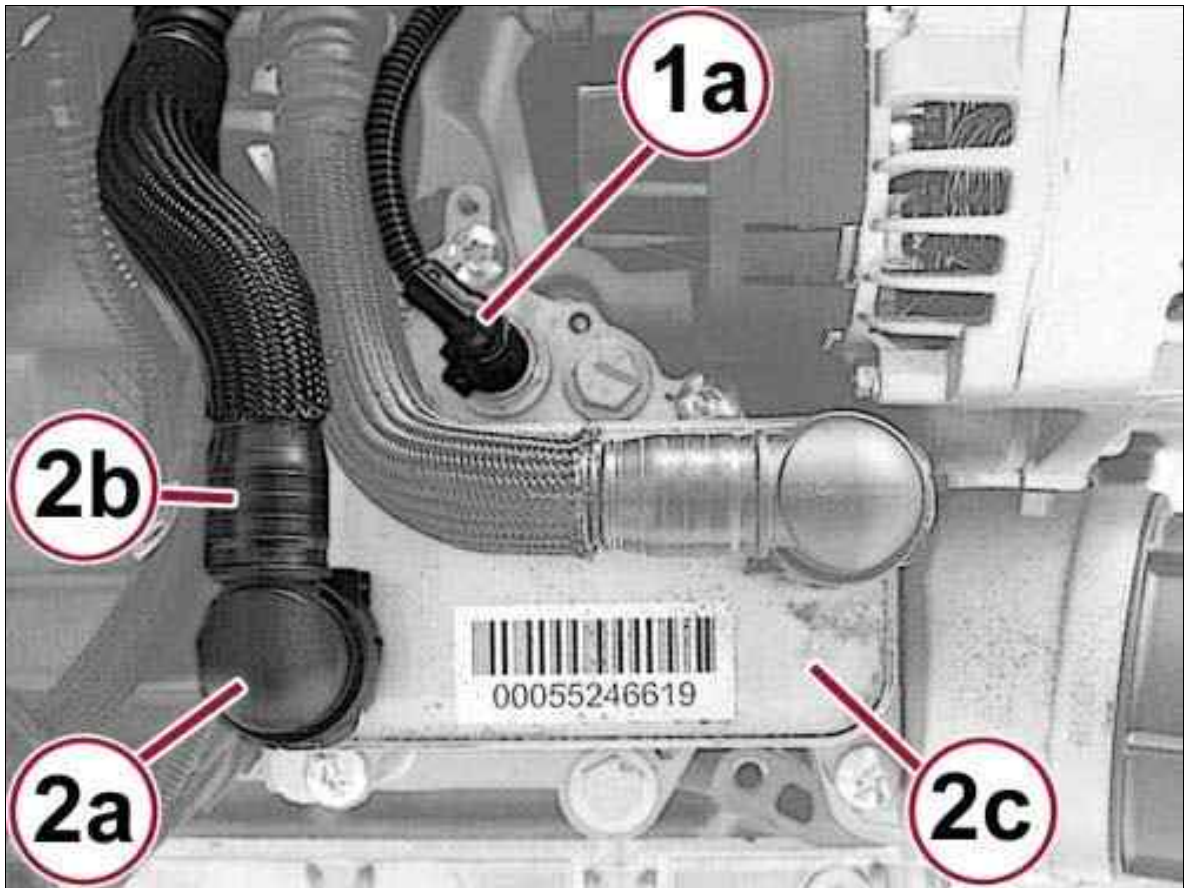
Fig 2: Electrical Connections & Generator



Courtesy of CHRYSLER GROUP, LLC

3. Connect the electrical connections (1a, 1b) to the generator (1c).

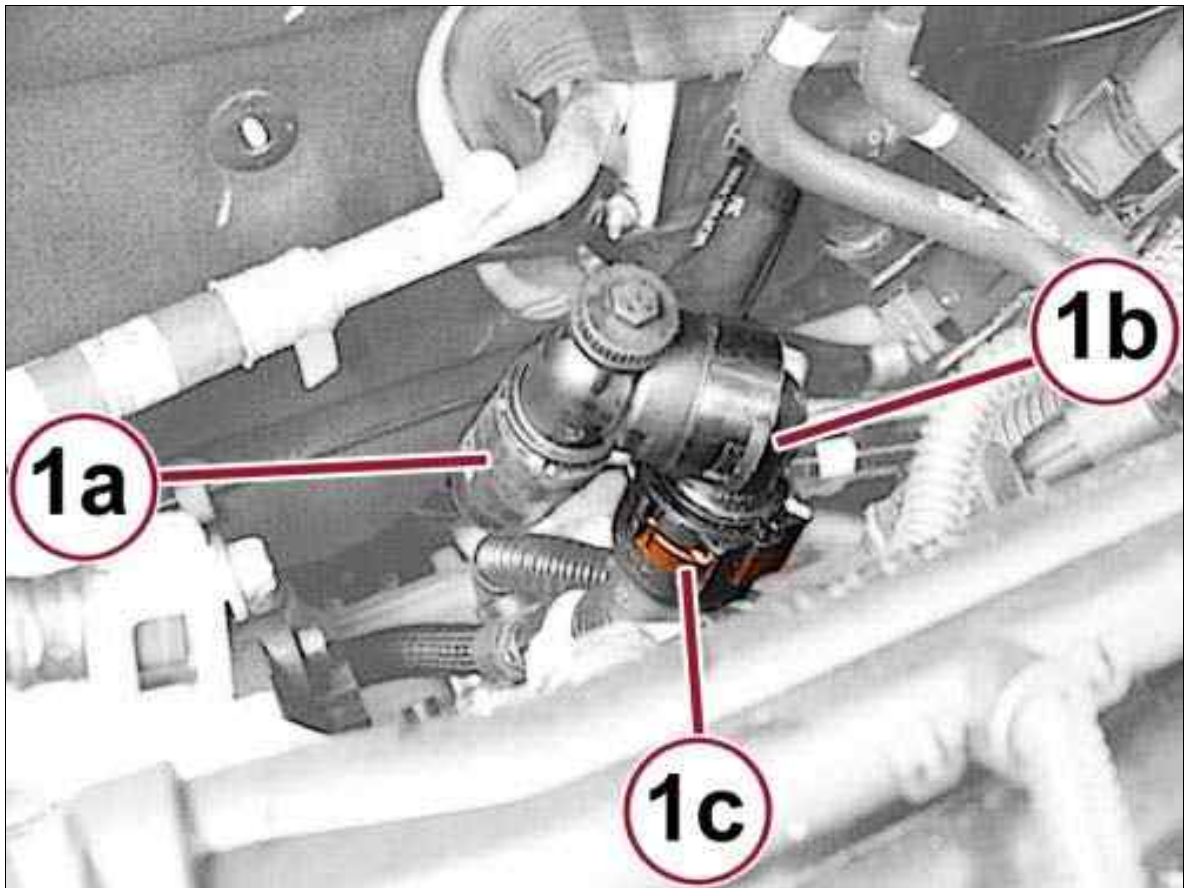
Fig 3: Electrical Connection, Quick Coupling, Pipe & Heat Exchanger



Courtesy of CHRYSLER GROUP, LLC

4. Connect the electrical connection (1a) of the pressure sensor on the engine oil heat exchanger.
5. Connect the quick coupling (2a) of the pipe (2b) to the heat exchanger motor oil (2c) and then bind the spring retainer.

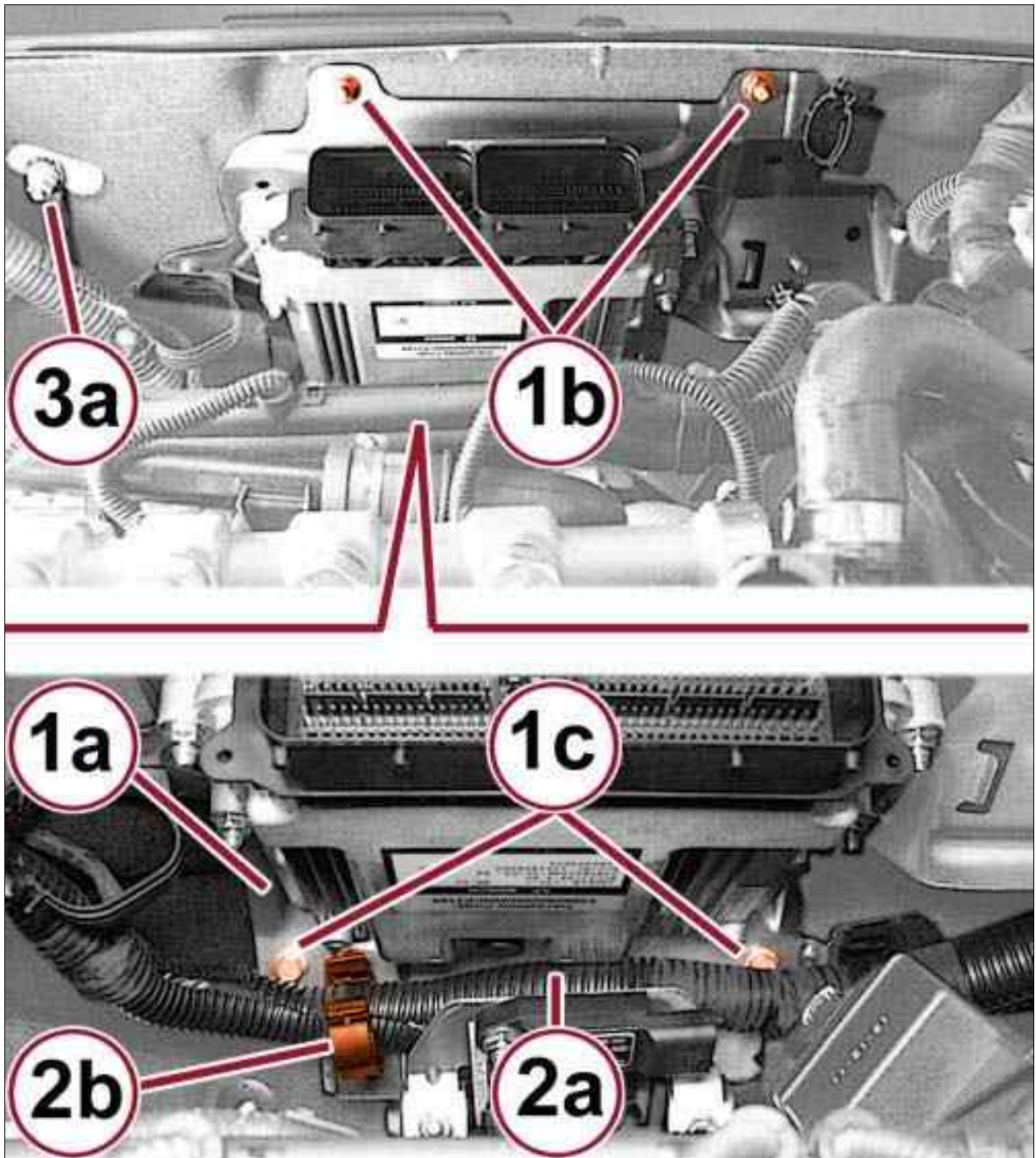
Fig 4: Coolant Pipe, Quick Coupling & Spring Retainer



Courtesy of CHRYSLER GROUP, LLC

6. Position the return engine coolant pipe (1a) from the heater and connect the quick coupling (1b) and then bind the spring retainer (1c).

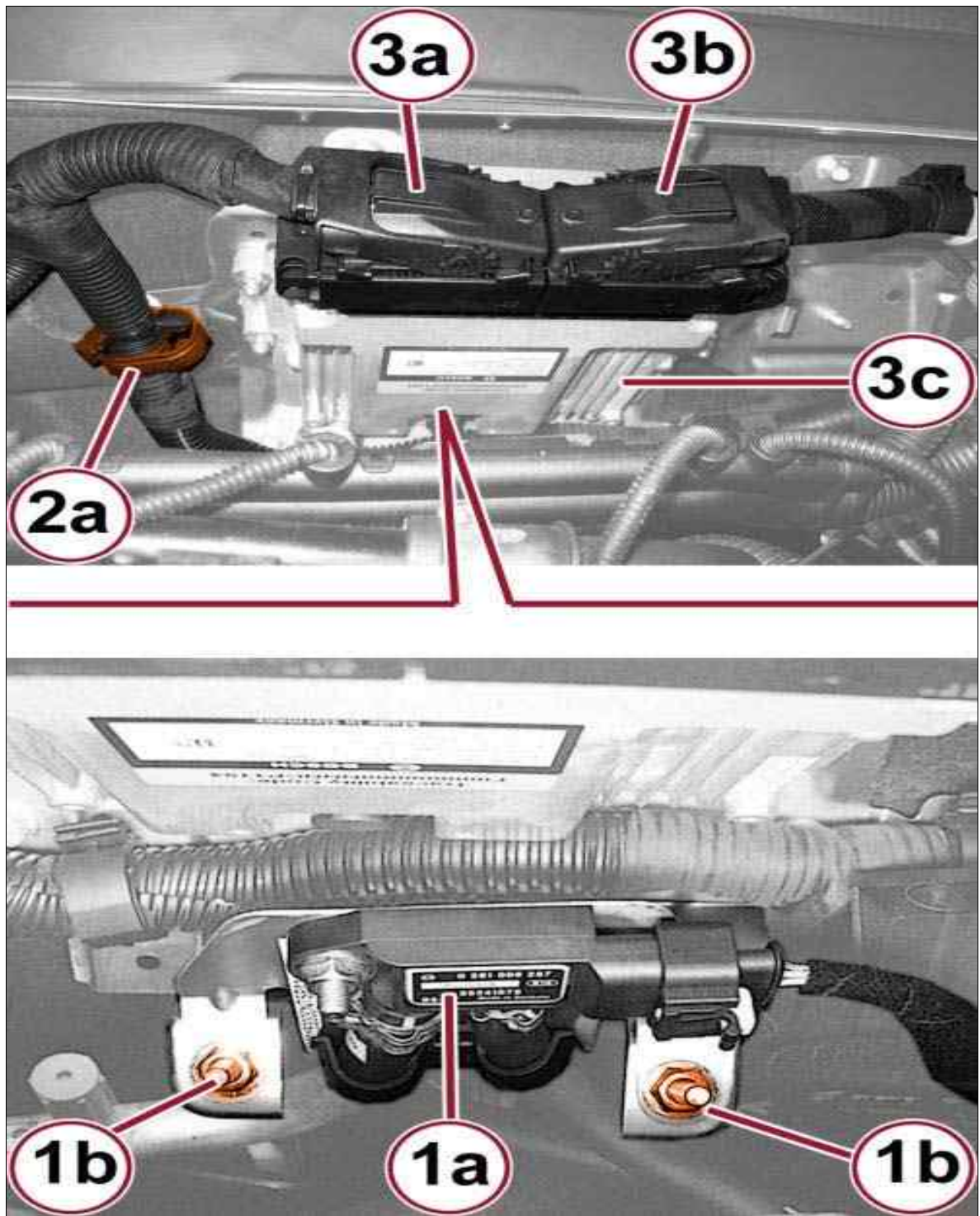
Fig 5: Support, Nuts, Screws, Wiring & Retaining Straps



Courtesy of CHRYSLER GROUP, LLC

7. Place the injection control unit support (1a) and tighten the nuts (1b) and screws (1c).
8. Connect the wiring (2a) to the injection ECU support (1a) and apply various retaining straps (2b).
9. Connect the ground wire and screw the nut (3a).

Fig 6: Pressure Sensor, Nuts & Retaining Clip



Courtesy of CHRYSLER GROUP, LLC

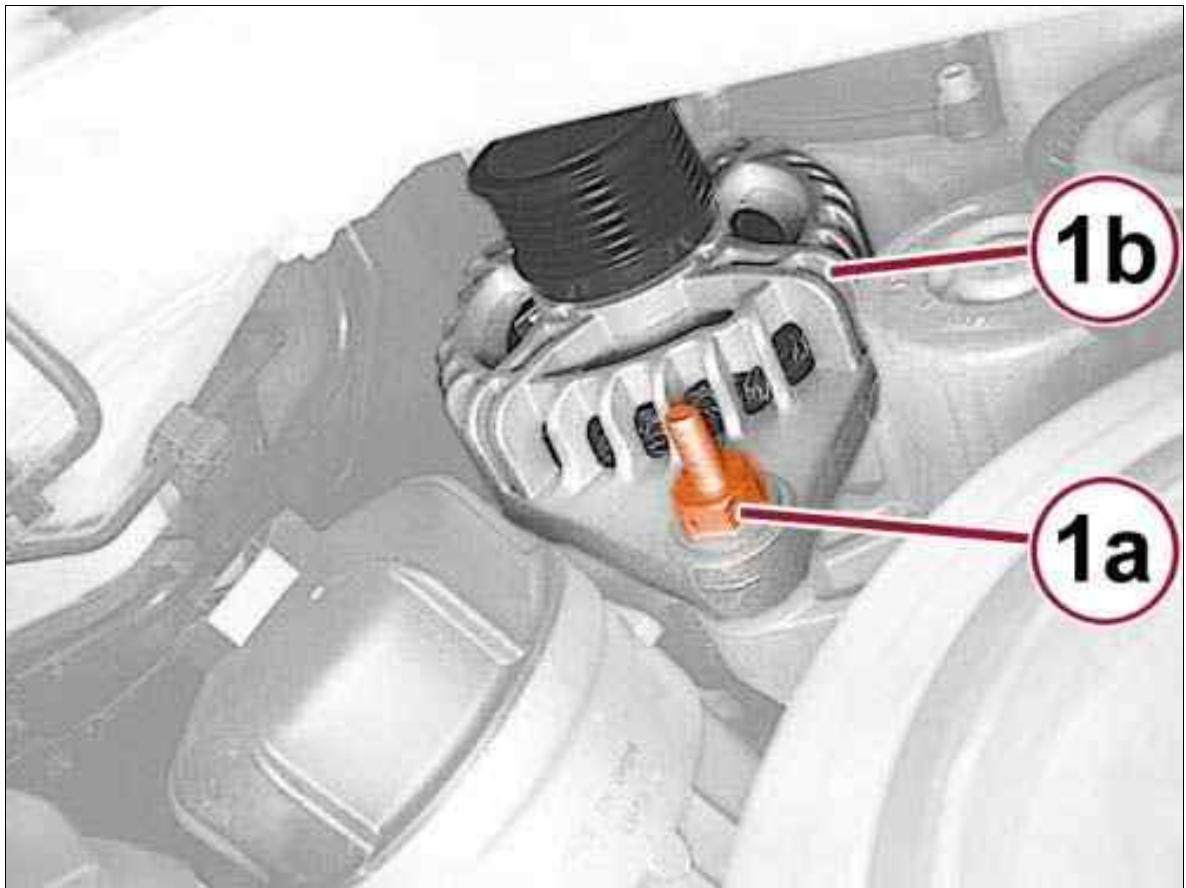
10. Place the particulate filter pressure sensor (1a), complete with bracket, then screw the nuts (1b).
11. Place the harness and apply the retaining clip (2a).
12. Place the unit plugs and screw the nut.
13. Refill the engine cooling circuit.

14. Connect the battery.
15. Remove the car from the bridge lifting.

GENERATOR > REMOVAL AND INSTALLATION > 2.0L REMOVAL AND INSTALLATION > REMOVAL

1. Hoist the vehicle.
2. Disconnect the negative battery terminal.
3. Drain the engine coolant

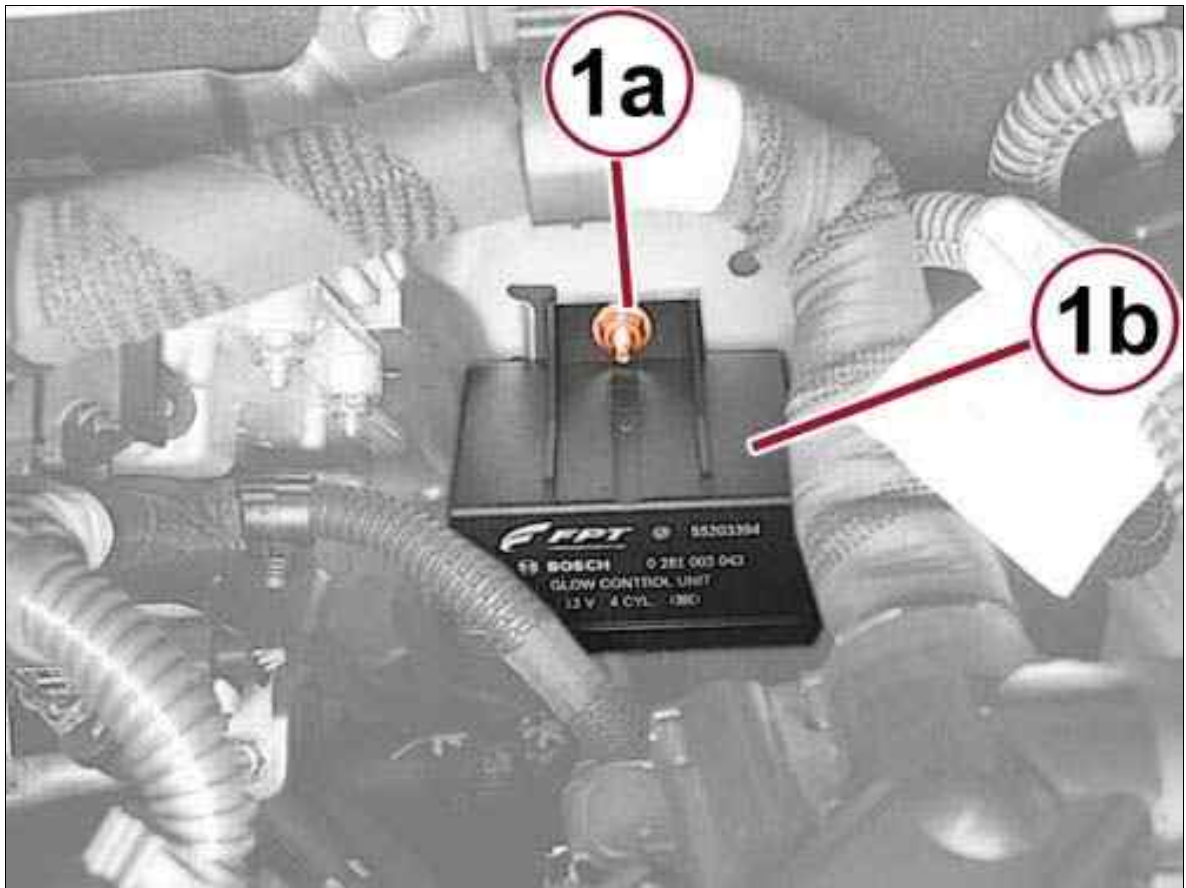
Fig 1: Generator & Bolt



Courtesy of CHRYSLER GROUP, LLC

4. Remove the lower generator bolt (1a).
5. Lower the vehicle on the hoist.

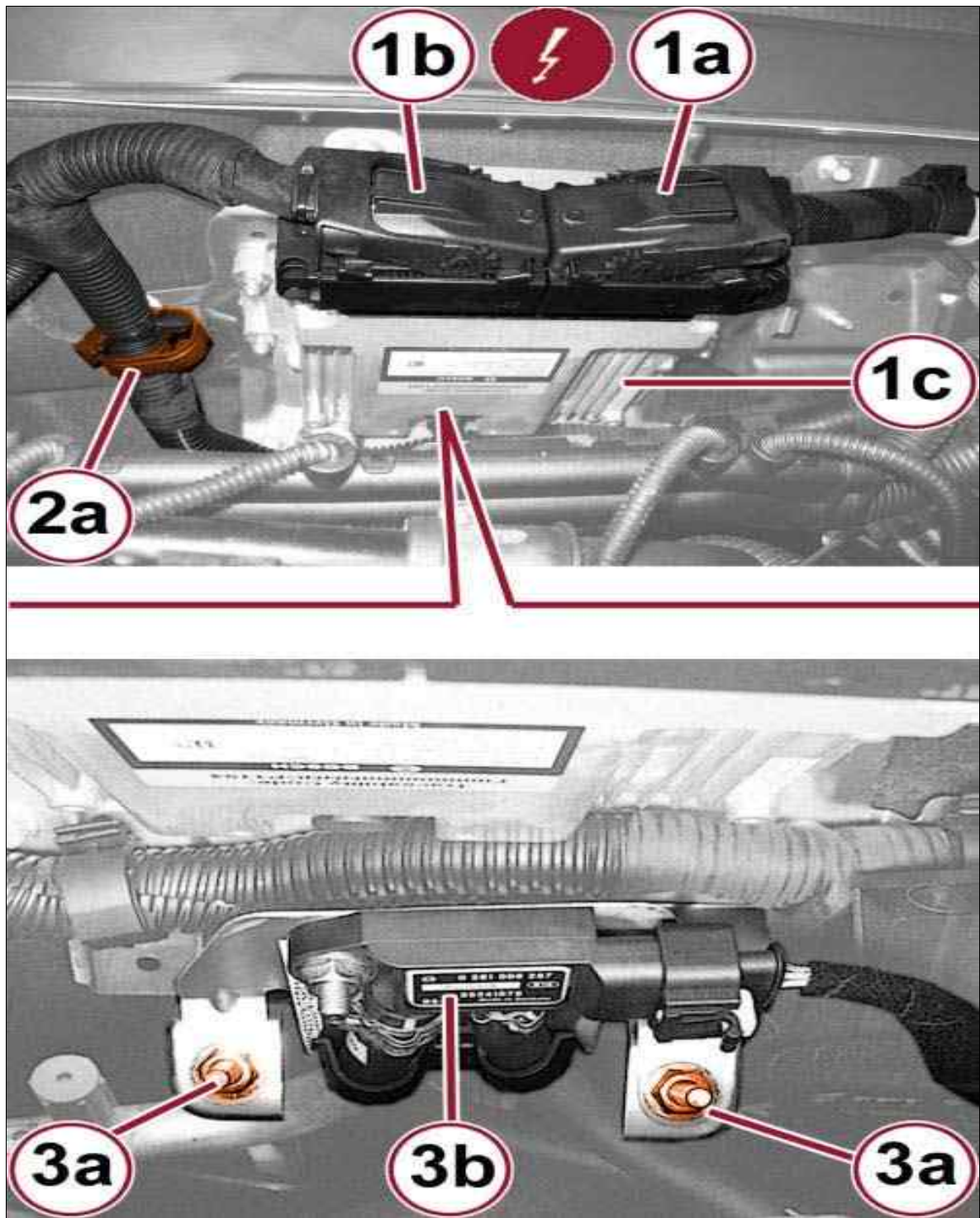
Fig 2: Plug Control Unit & Nut



Courtesy of CHRYSLER GROUP, LLC

6. Working behind the engine, remove the nut (1a) and move the plug control unit (1b) out of the way.

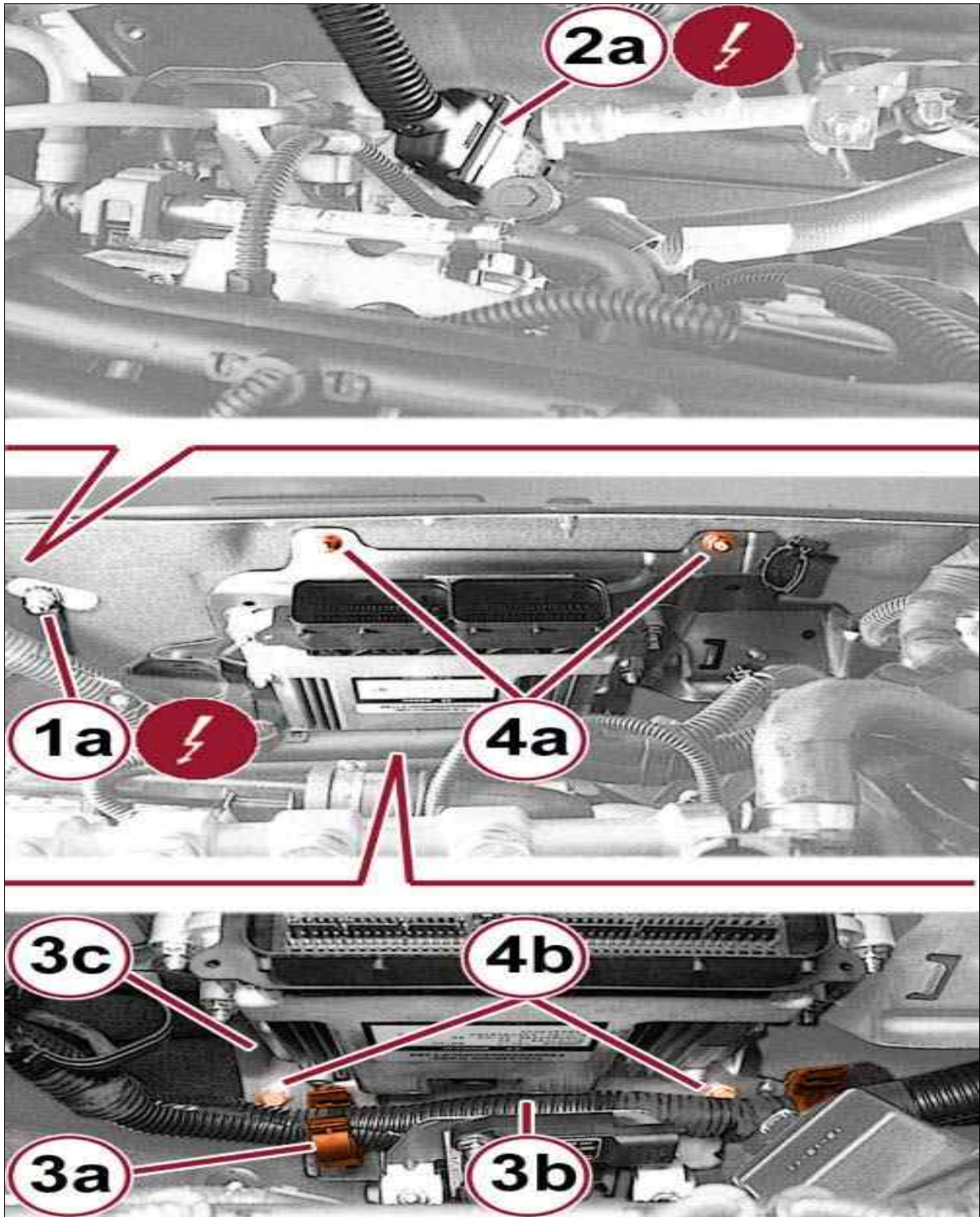
Fig 3: Injection ECU, Electrical Connections, Nuts, Clamp & Pressure Sensor



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the injection ECU (1c) electrical connections (1a, 1b)
8. Open the wiring clamp (2a).
9. Remove the nuts (3a) and move the particulate filter pressure sensor (3b) out of the way, complete with bracket.

Fig 4: Ground Wire Terminal, Electrical Connector, Clips, Wiring, Support, Screws, Nuts & Injection Control Unit

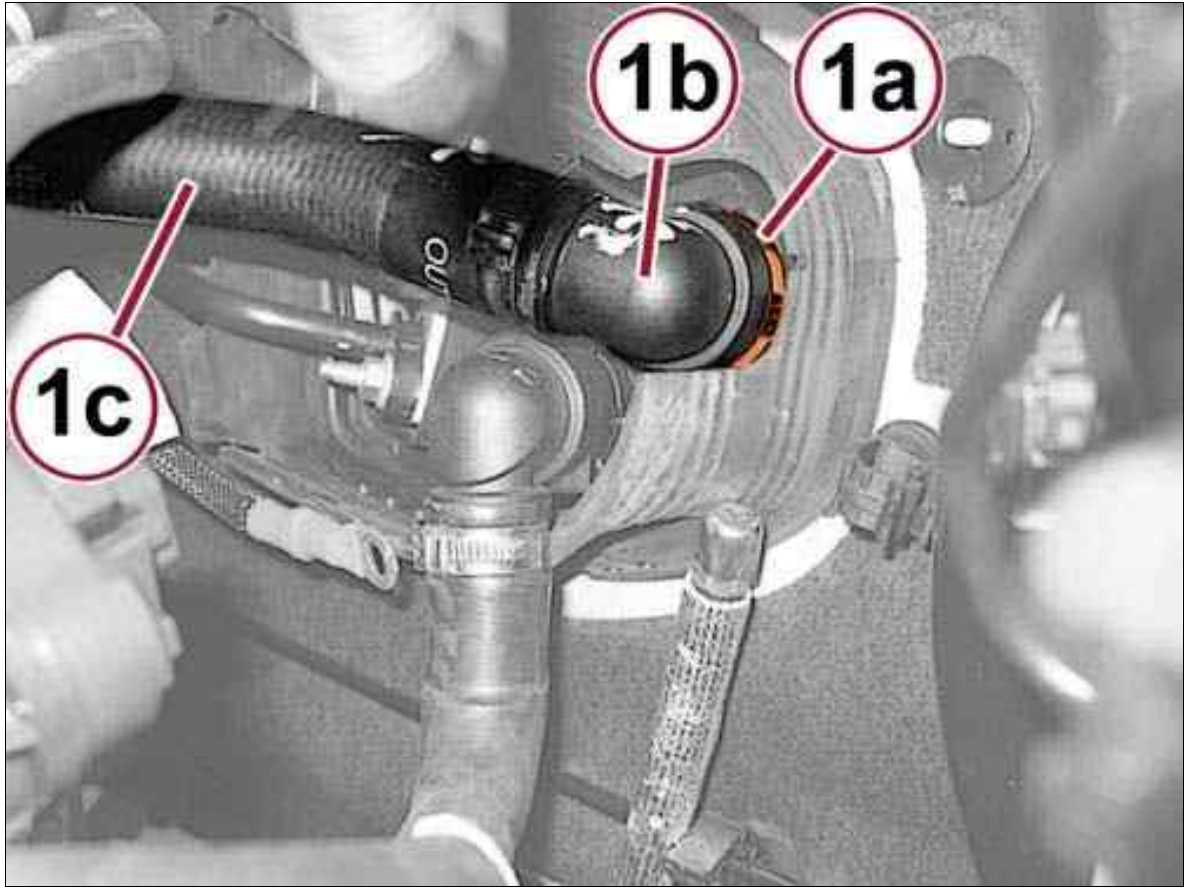


Courtesy of CHRYSLER GROUP, LLC

10. Remove the nut and disconnect the ground wire terminal (1a).
11. Disconnect the PTU electrical connector (2a).
12. Open the various retainer clips (3a) and free the wiring (3b) from the support (3c) of the injection control unit.

13. Remove the nuts (4a) and screws (4b), then remove the injection control unit media (3c).

Fig 5: Spring Retainer, Quick Coupling & Coolant Pipe

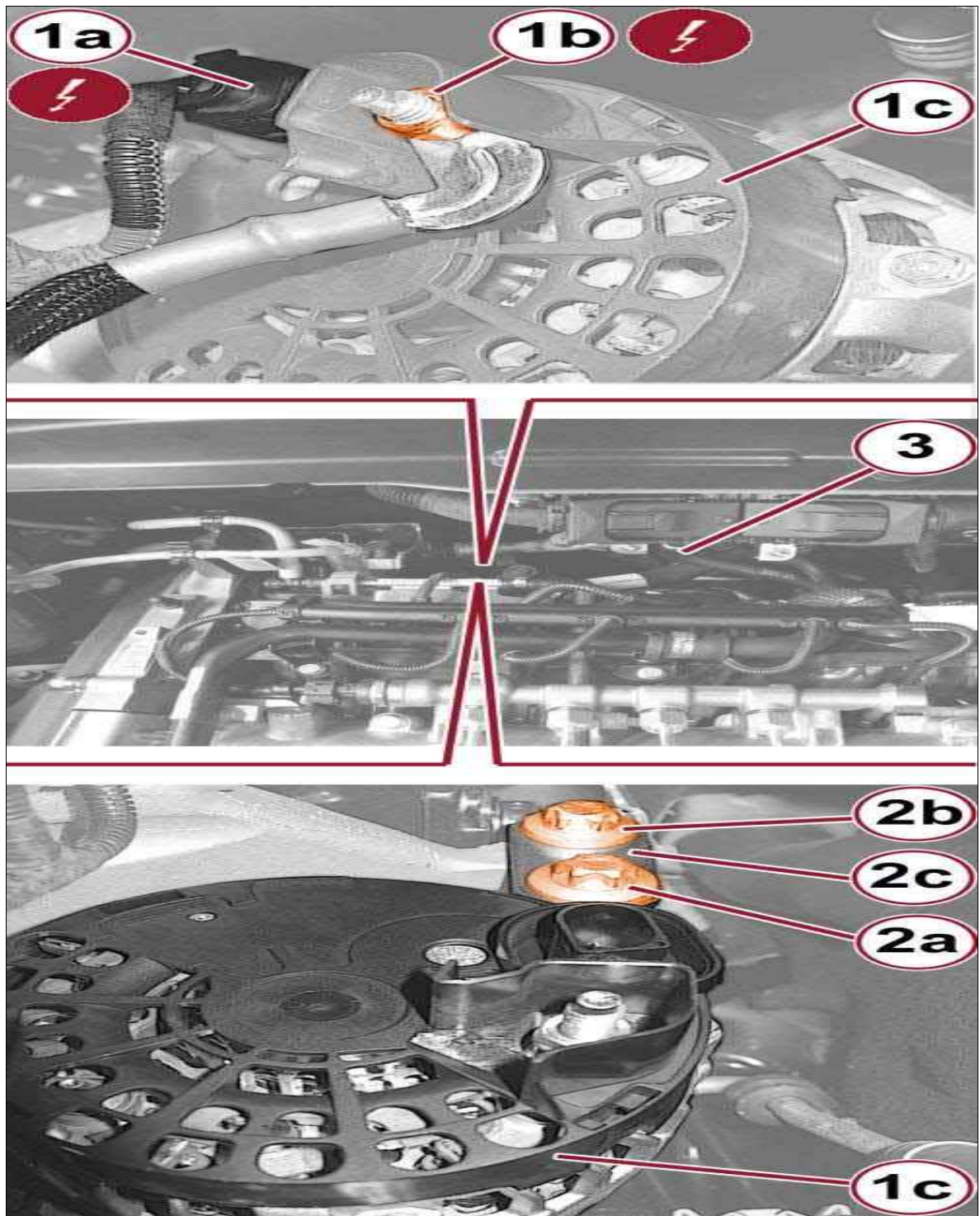


Courtesy of CHRYSLER GROUP, LLC

14. Operating in the compartment of the injection control unit, disengage the spring retainer (1a) and disconnect the quick coupling (1b) of the return engine coolant pipe (1c) from the heater.

15. Move the pipe (1c) out of way.

Fig 6: Electrical Connections, Generator, Screws & Spacers



Courtesy of CHRYSLER GROUP, LLC

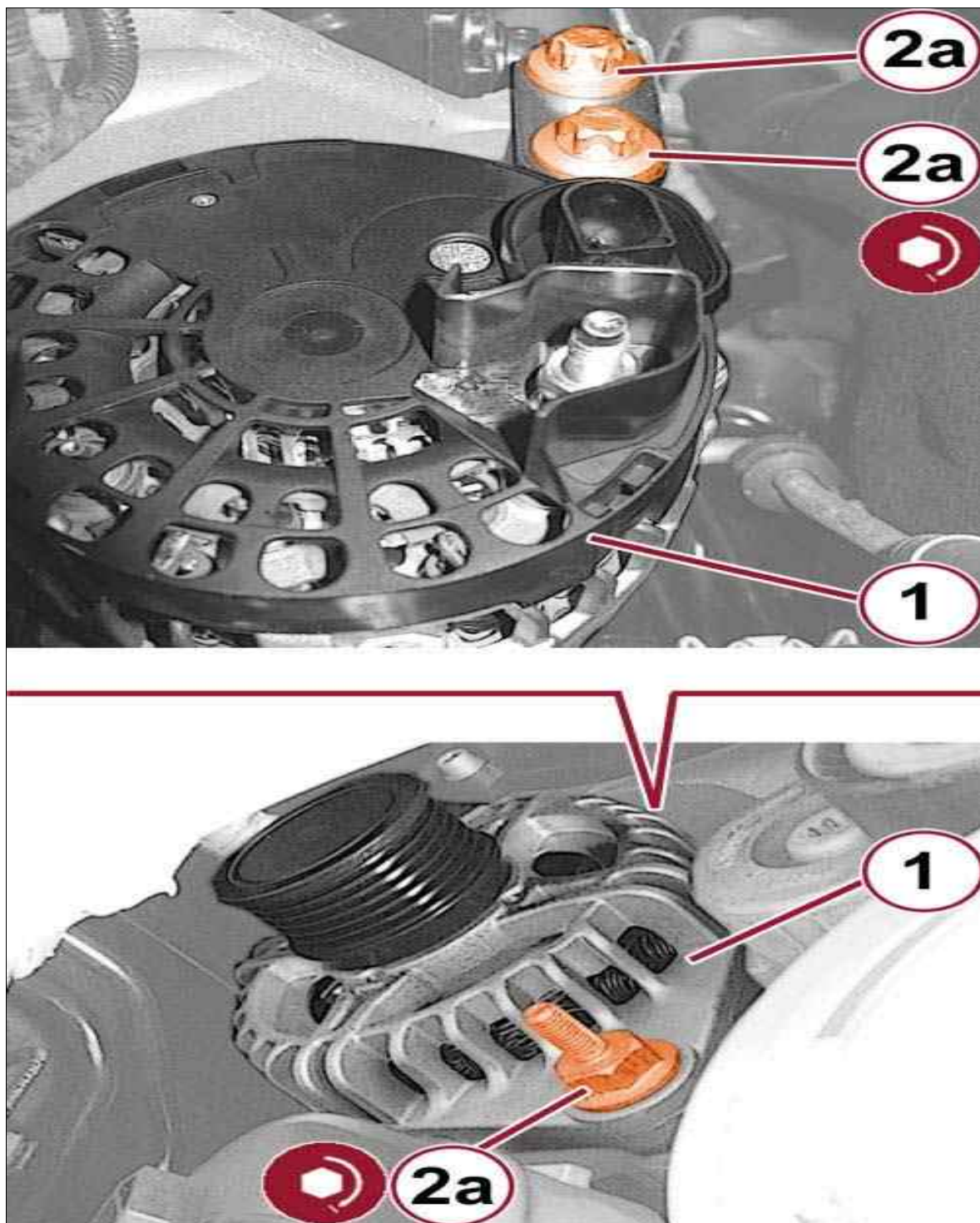
16. Working behind the right rear of the engine, disconnect the electrical connections (1a, 1b) of the generator (1c).
17. Working on the left side of the generator (1c) unscrew its top screw (2a) and loosen the screw (2b) of the spacer (2c).
18. Remove the generator (1c) out of the compartment of the injection control unit.

19. Check that the generator is not damaged.

GENERATOR > REMOVAL AND INSTALLATION > 2.0L REMOVAL AND INSTALLATION > INSTALLATION

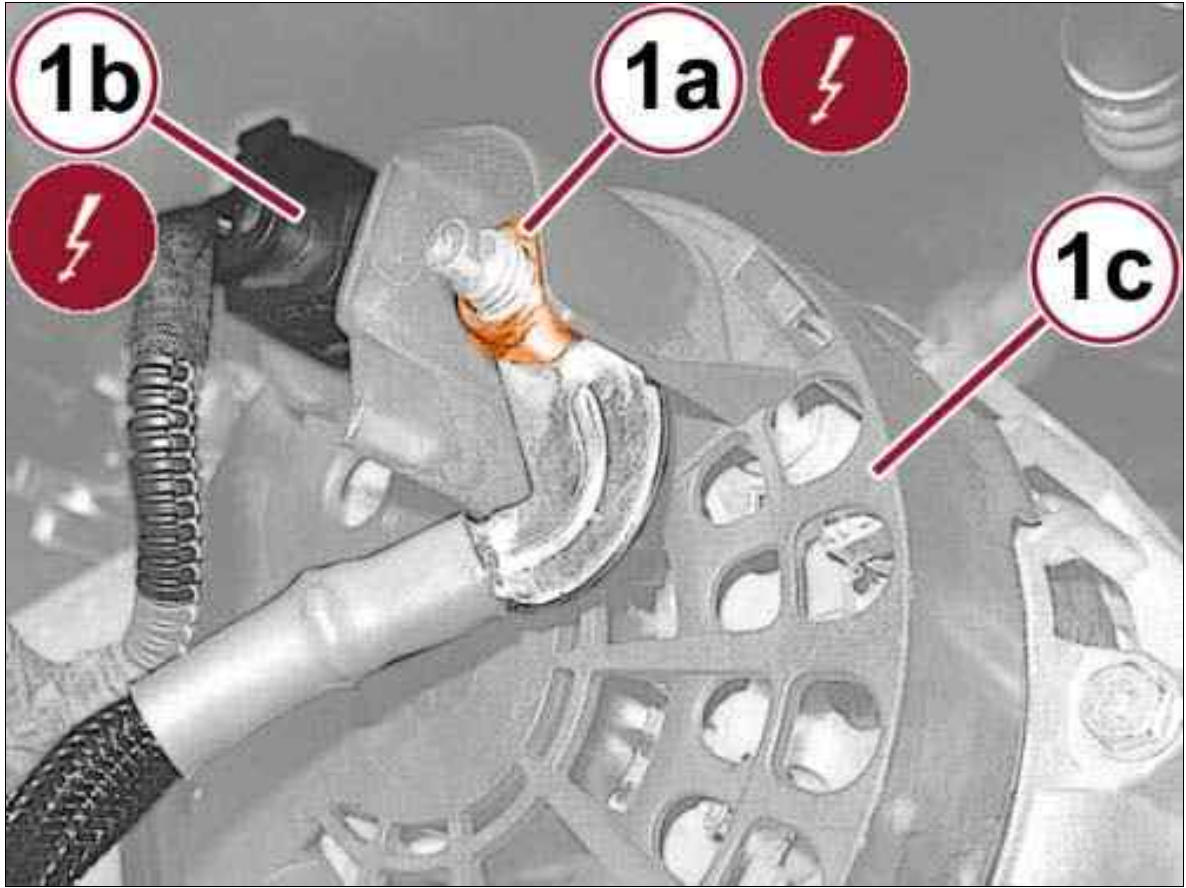
1. Place the generator for installation.

Fig 1: Generator & Screws



2. Tighten the screws (2a) to the specified torque.

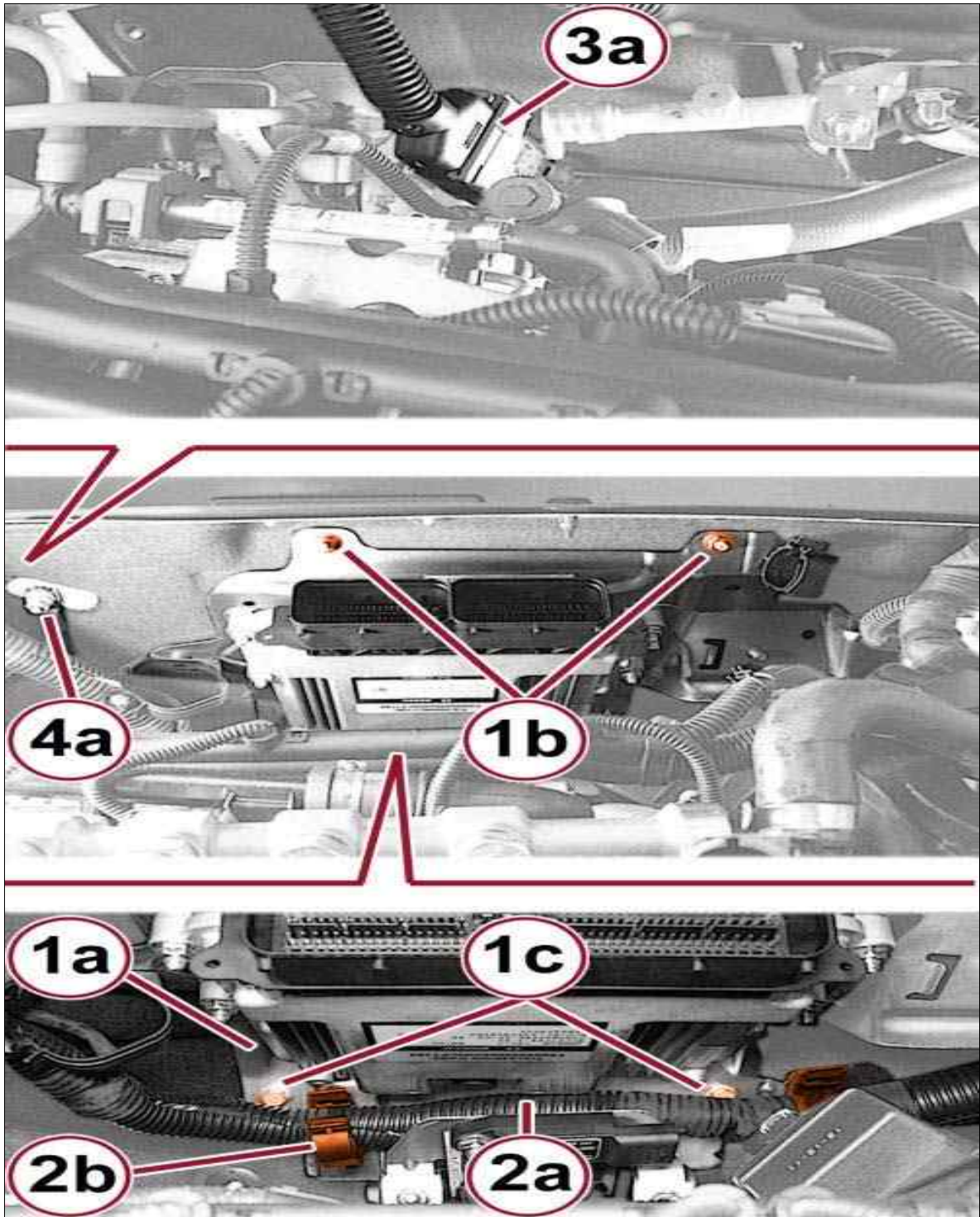
Fig 2: Generator & Electrical Connections



Courtesy of CHRYSLER GROUP, LLC

3. Connect the electrical connections (1a, 1b) to the generator (1c).

Fig 3: Injection Control Unit Support, Nuts, Screws, Wiring, Retaining Straps, Electrical Connector & Ground Wiring



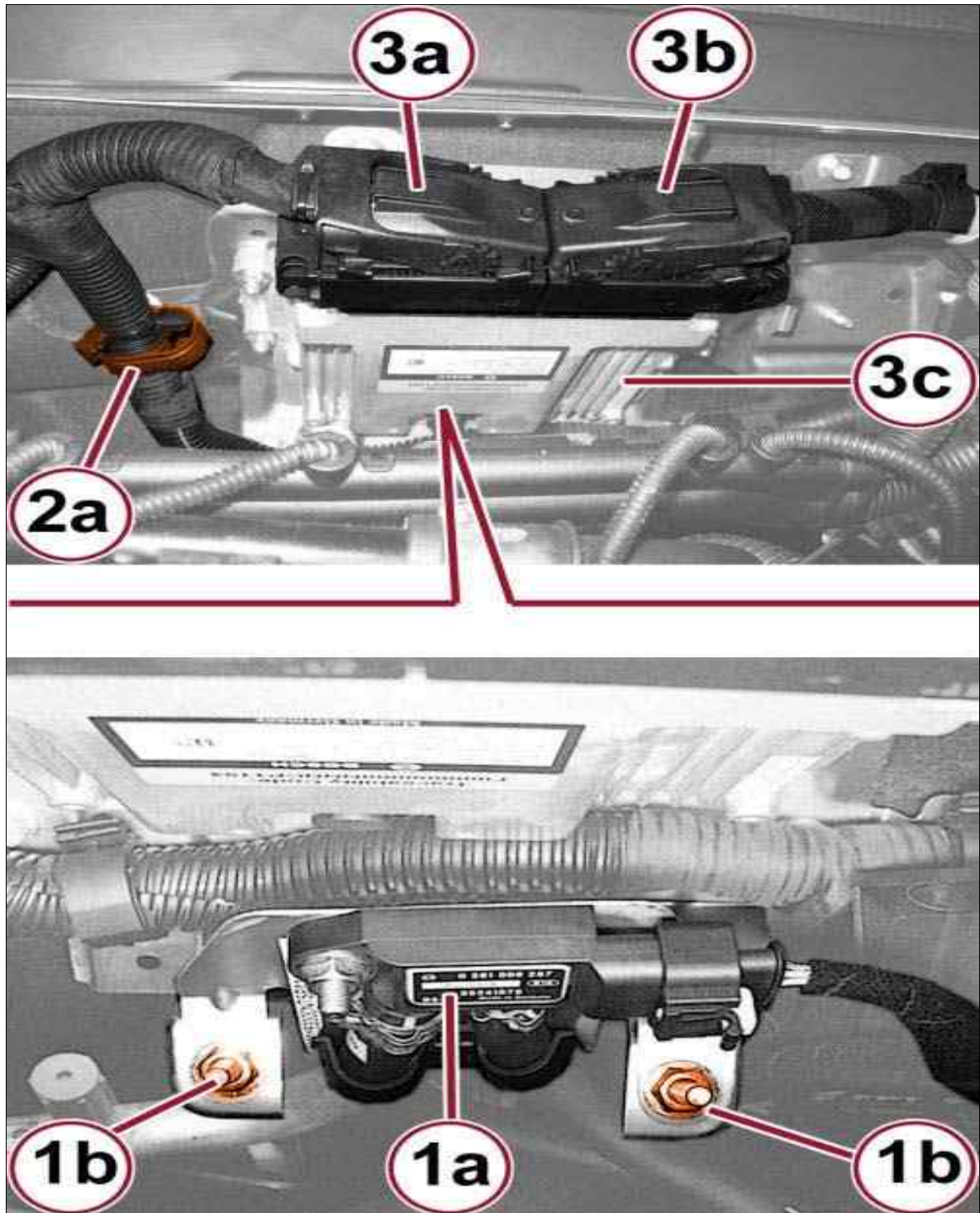
Courtesy of CHRYSLER GROUP, LLC

4. Connect the quick return line from the heater and air conditioning to engage the retainer.
5. Place the injection control unit support (1a) and tighten the nuts (1b) and screws (1c).
6. Connect the wiring (2a) to the injection control unit support (1a) and apply various retaining straps (2b).

7. Connect the PTU power cord electrical connector (3a), and then engage it to its support.

8. Connect the ground wire (4a) and screw the nut.

Fig 4: Pressure Sensor, Nuts & Retaining Clip



Courtesy of CHRYSLER GROUP, LLC

9. Place the particulate filter pressure sensor (1a), complete with bracket, then screw the nuts (1b).

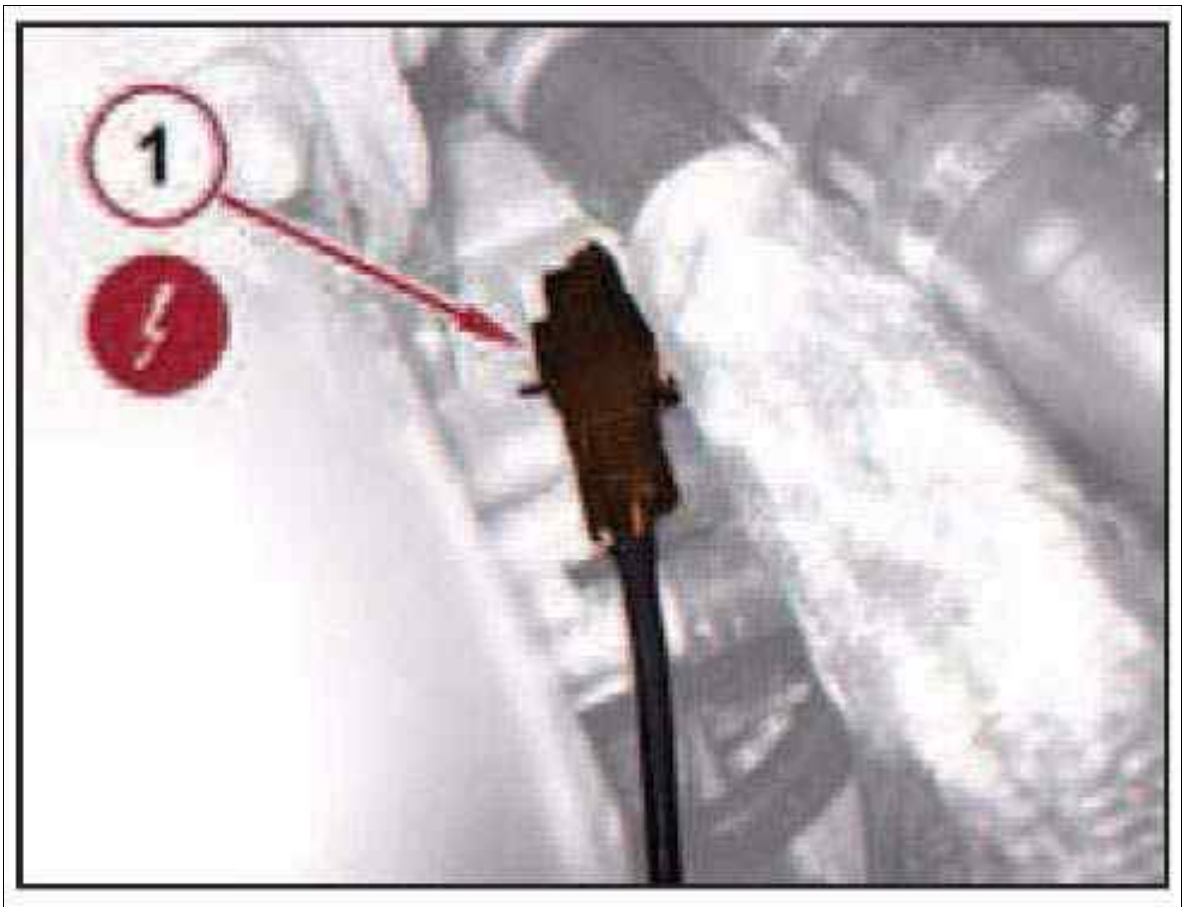
10. Place the harness and apply the retaining clip (2a).

11. Place the unit plugs and screw the nut.
12. Refill the engine cooling circuit.
13. Connect the battery.
14. Remove the car from the hoist.

GENERATOR > REMOVAL AND INSTALLATION > 2.4L REMOVAL AND INSTALLATION > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the engine beauty cover. Refer to REMOVAL AND INSTALLATION .
3. Remove the right front wheel. Refer to REMOVAL AND INSTALLATION .
4. Remove the accessory drive serpentine belt. Refer to REMOVAL AND INSTALLATION .

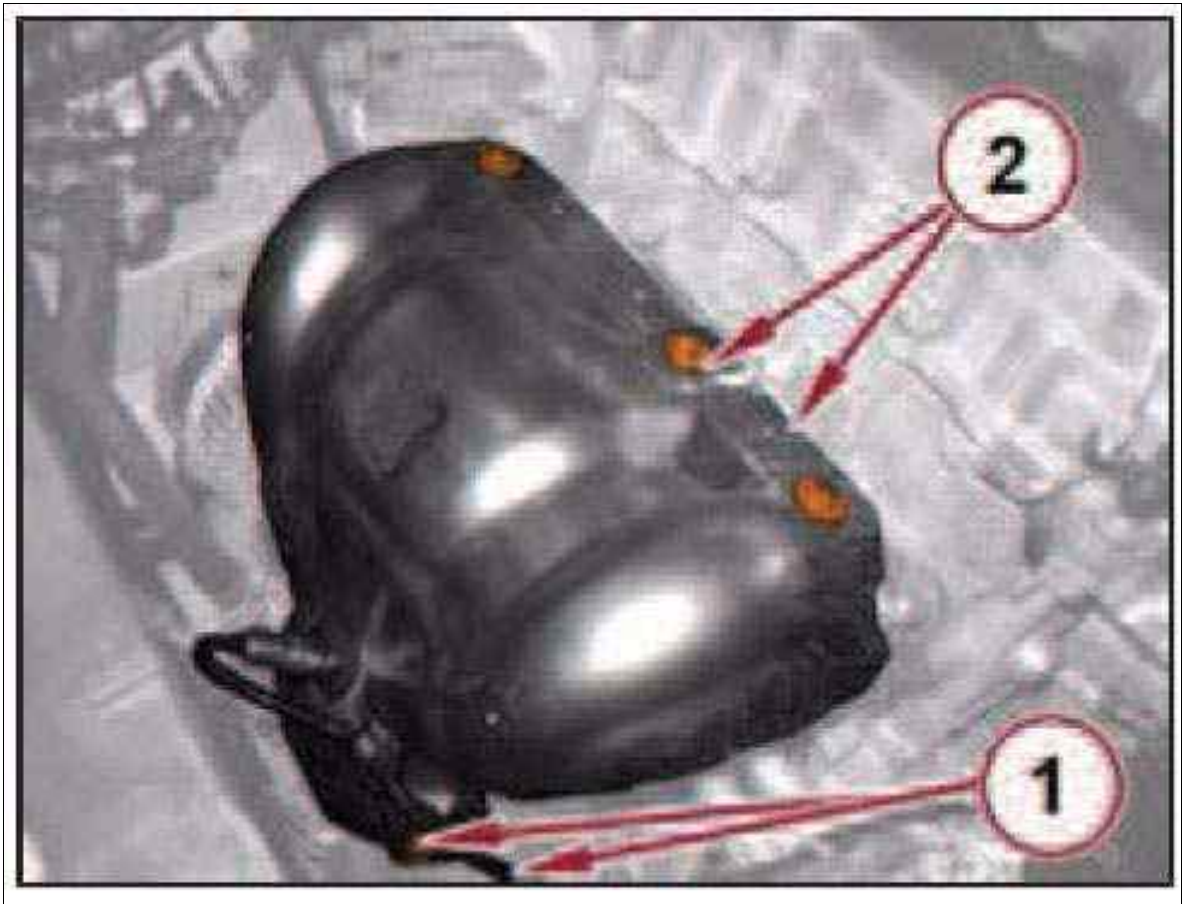
Fig 1: Upstream Oxygen Sensor Electrical Connection



Courtesy of CHRYSLER GROUP, LLC

5. Disconnect the upstream oxygen sensor electrical connection (1).

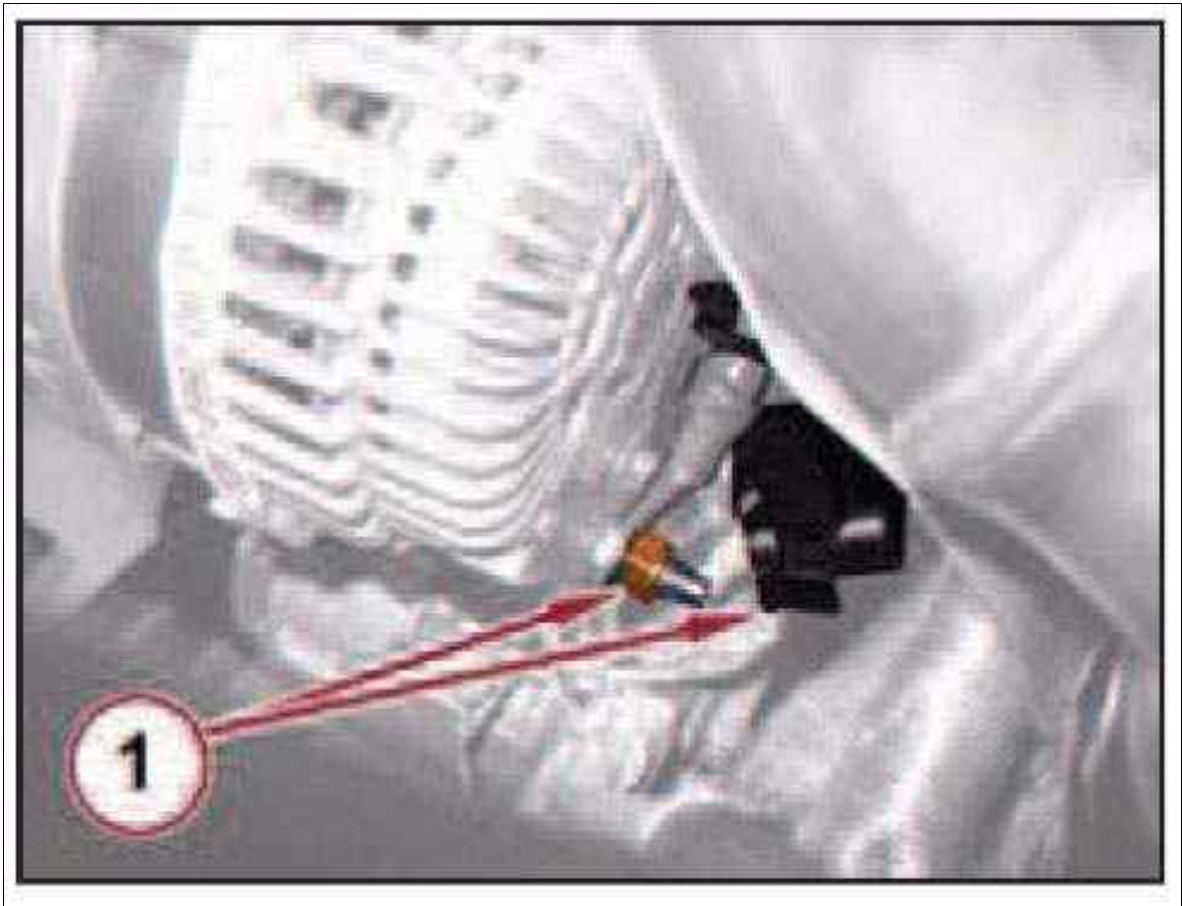
Fig 2: Exhaust Manifold Upper Heat Shield Bolts & Bracket



Courtesy of CHRYSLER GROUP, LLC

6. Disengage and oxygen sensor wiring and remove the bracket (1).
7. Remove the exhaust manifold upper heat shield bolts (2) and then remove the shield.

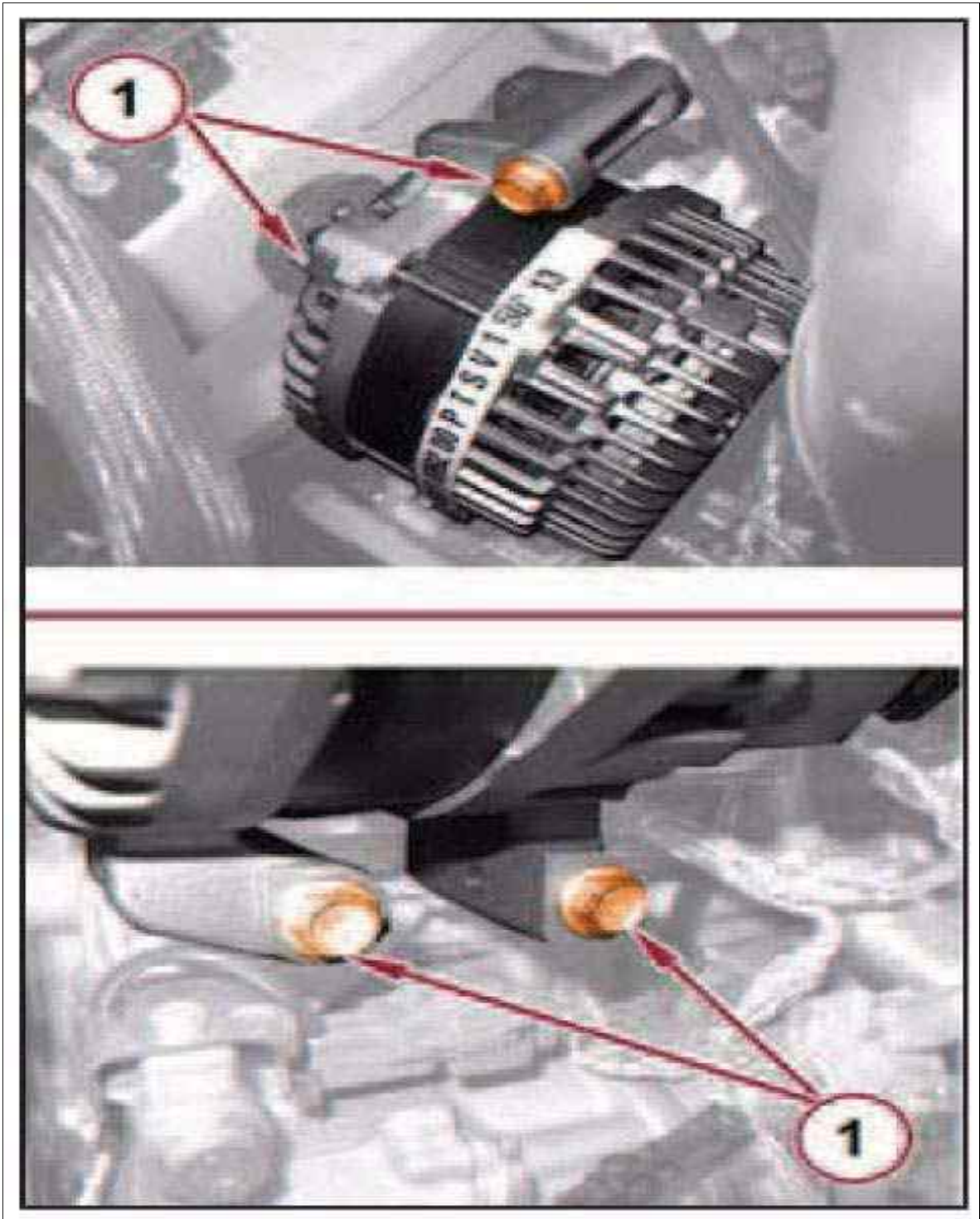
Fig 3: Generator Nut & Wiring



Courtesy of CHRYSLER GROUP, LLC

8. Remove the nut to disconnect the wiring (1) to the generator.

Fig 4: Upper And Lower Generator Mounting Bolts



Courtesy of CHRYSLER GROUP, LLC

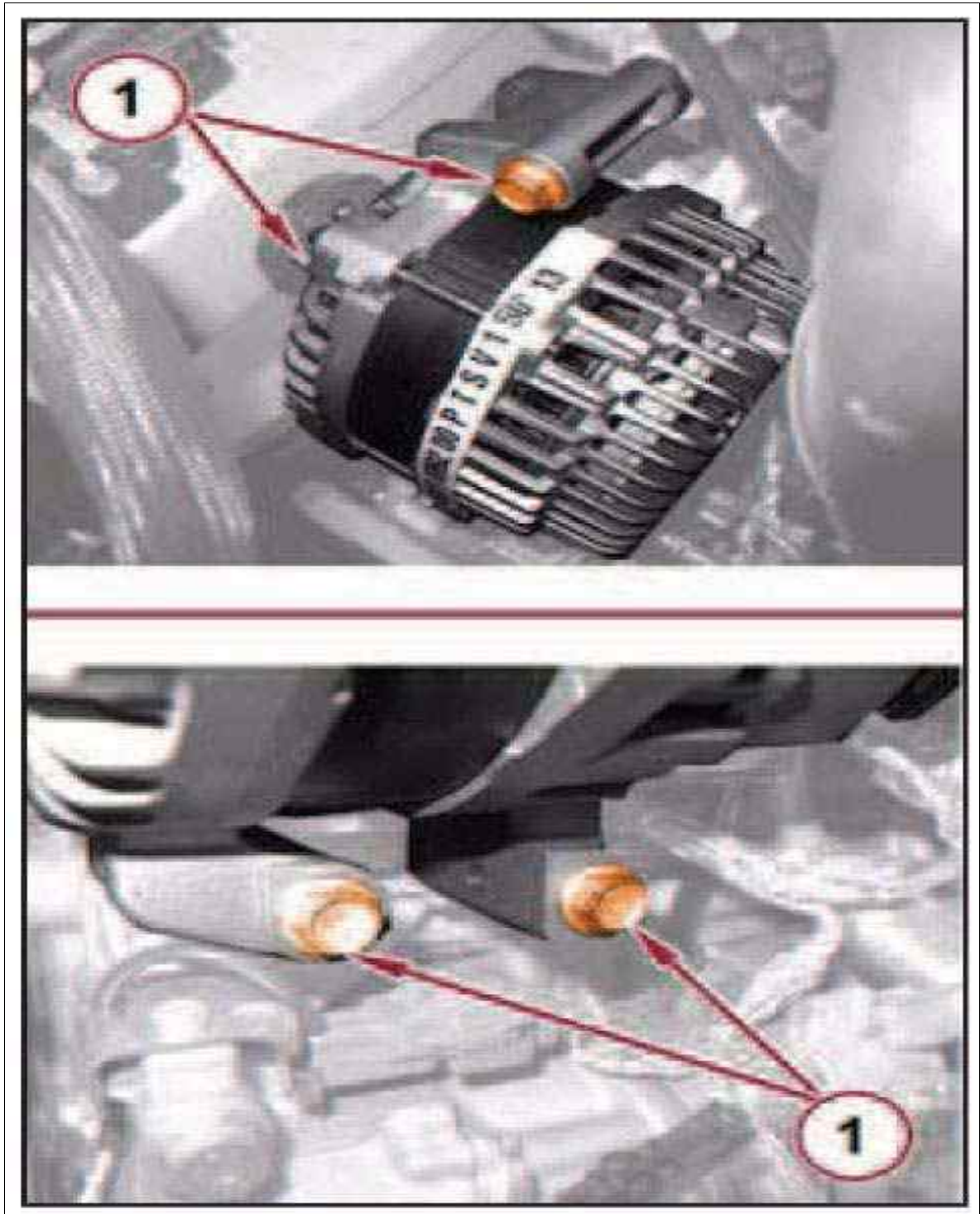
9. Remove the upper and lower generator mounting bolts (1).
10. Remove the generator from the engine compartment.

GENERATOR > REMOVAL AND INSTALLATION > 2.4L REMOVAL AND

INSTALLATION > INSTALLATION

1. Position the generator to the engine compartment for installation.

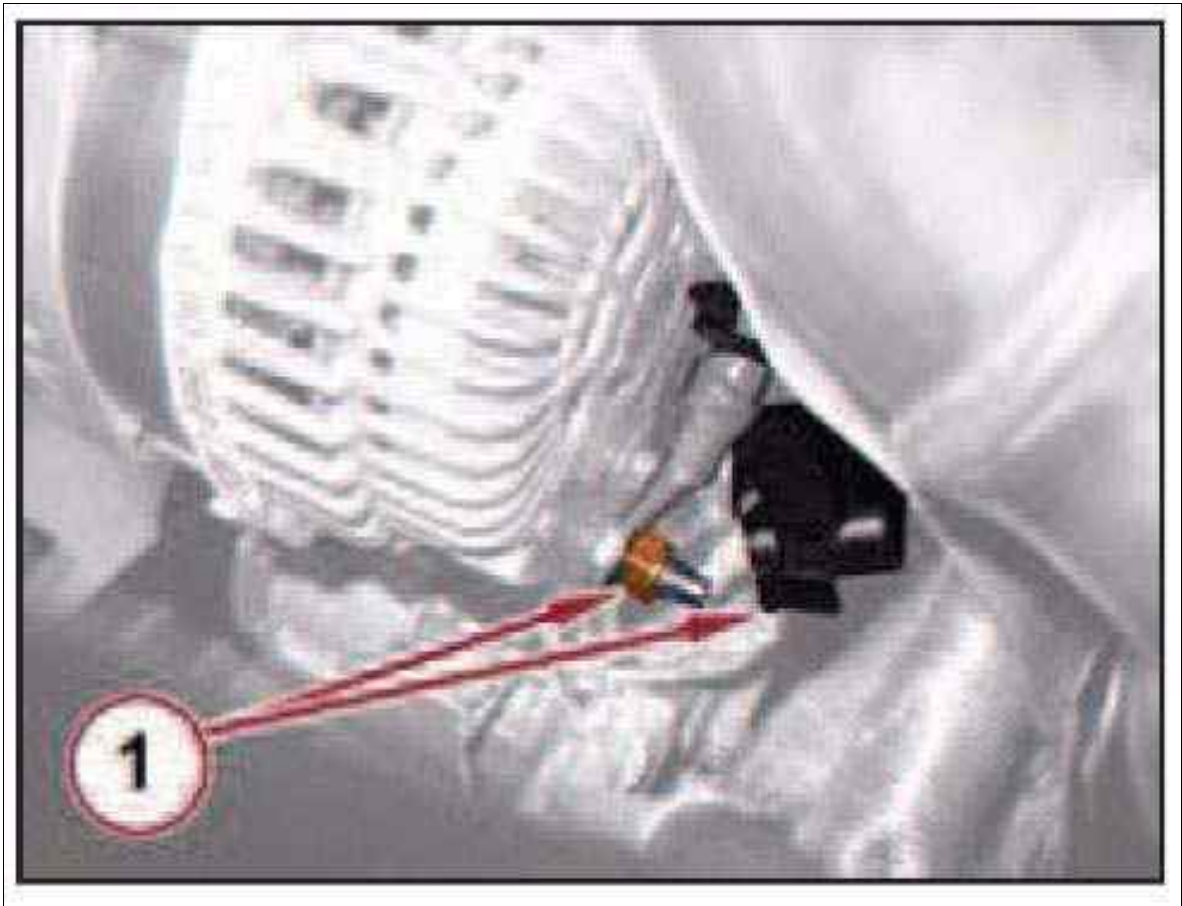
Fig 1: Upper And Lower Generator Mounting Bolts



Courtesy of CHRYSLER GROUP, LLC

2. Install the upper and lowers generator mounting bolts (1).

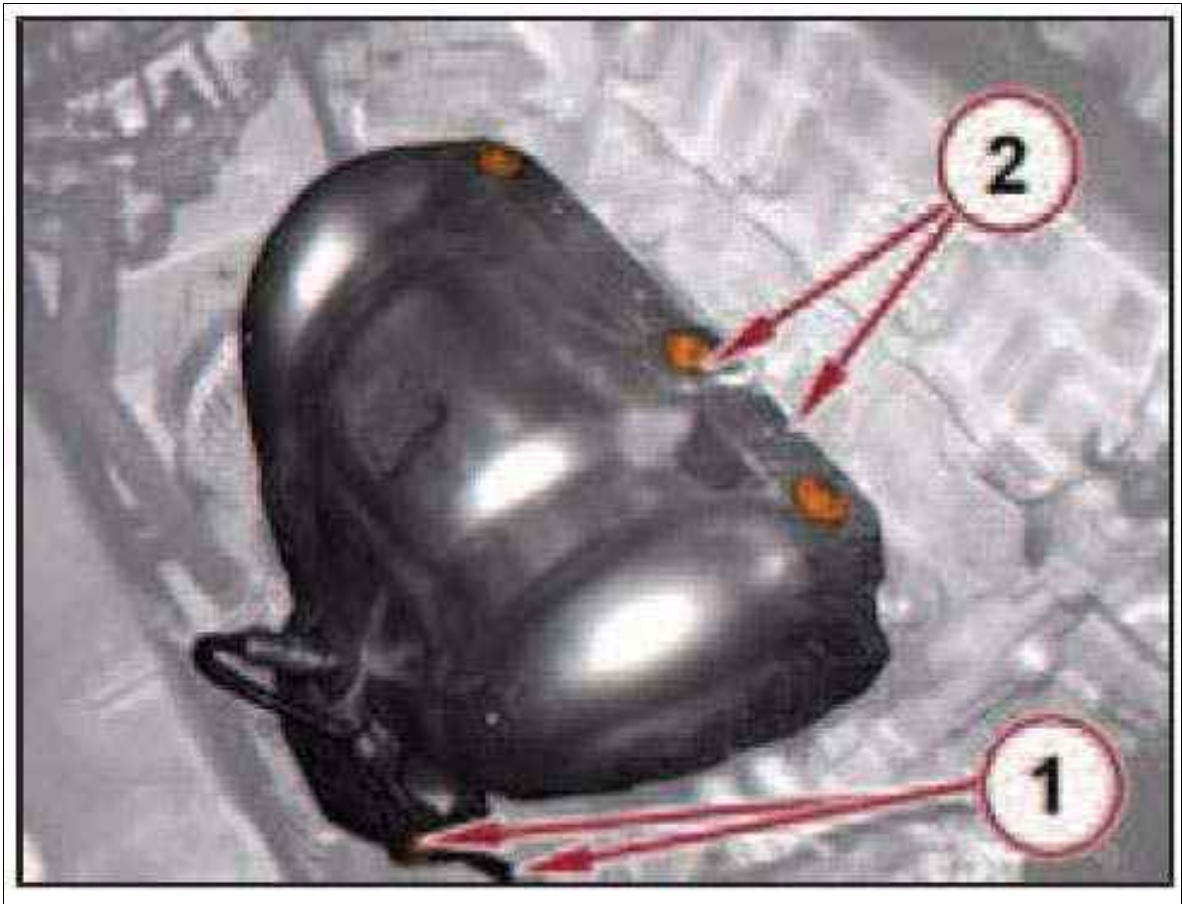
Fig 2: Generator Nut & Wiring



Courtesy of CHRYSLER GROUP, LLC

3. Connect the wiring harness to the generator stud and secure to the generator using a bolt (1).

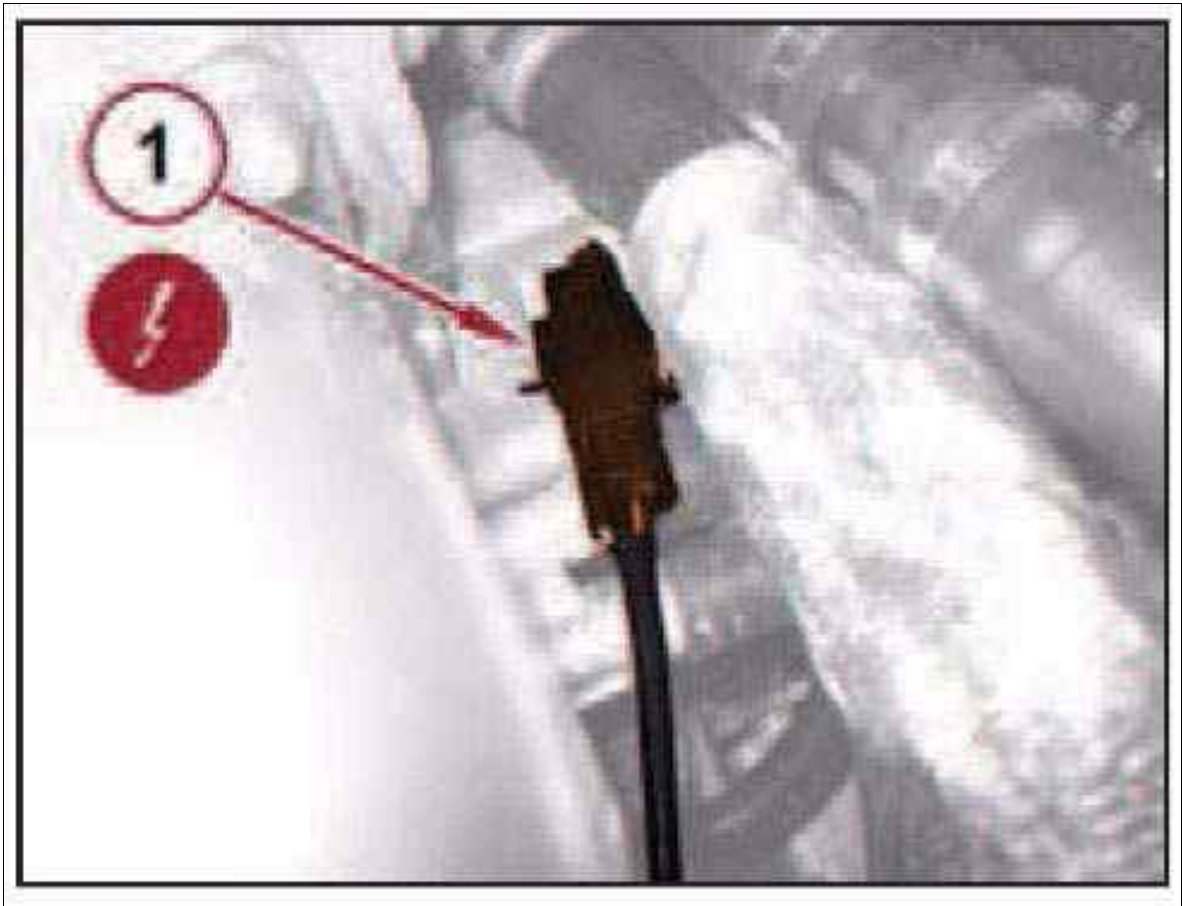
Fig 3: Exhaust Manifold Upper Heat Shield Bolts & Bracket



Courtesy of CHRYSLER GROUP, LLC

4. Install the exhaust manifold heat shield cover (2).
5. Install the oxygen sensor wiring bracket (1).
6. Connect the oxygen sensor wiring (1).

Fig 4: Upstream Oxygen Sensor Electrical Connection

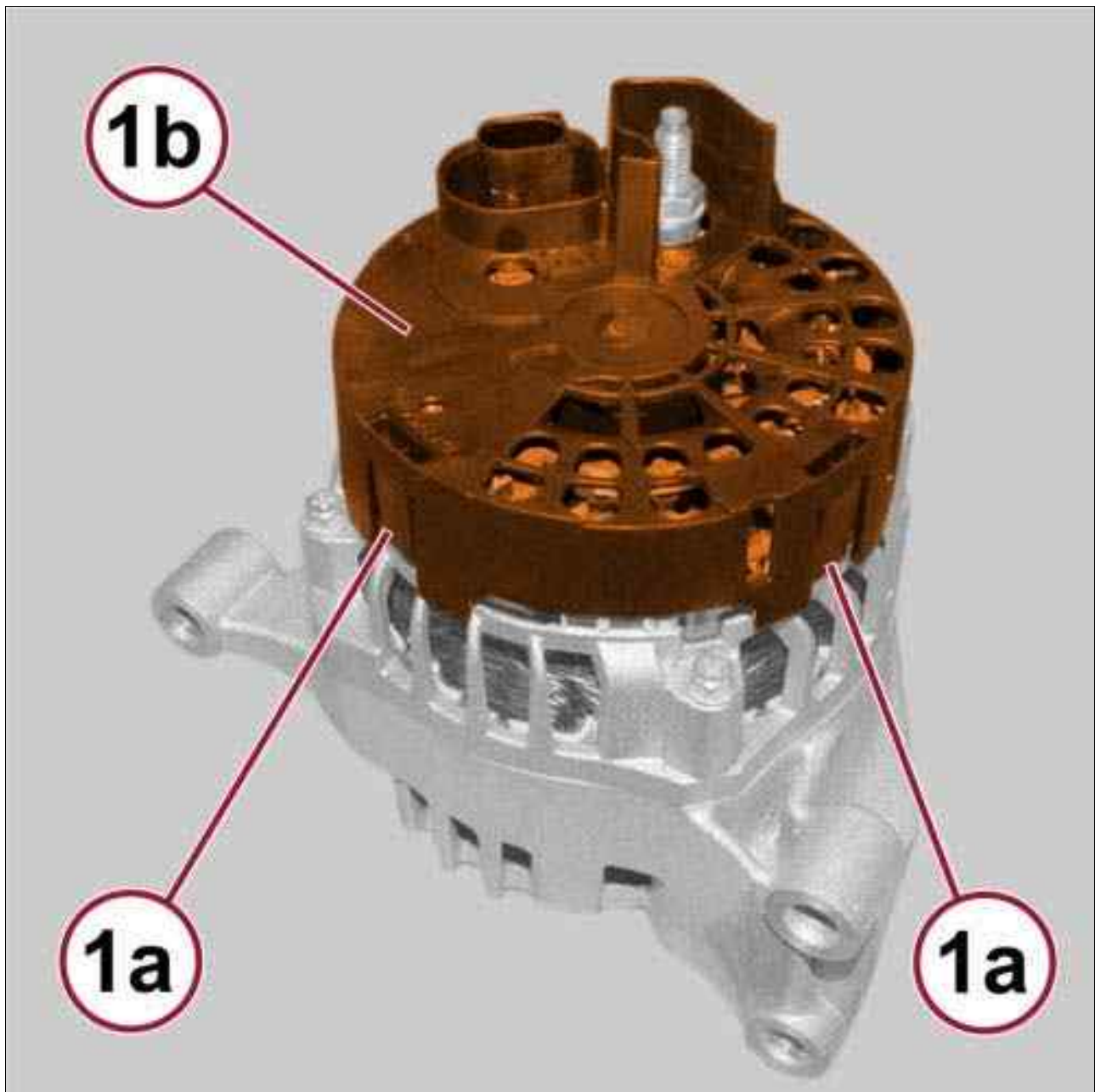


Courtesy of CHRYSLER GROUP, LLC

7. Connect the upstream oxygen sensor wiring harness connector to the sensor (1).
8. Install the accessory drive serpentine belt. Refer to REMOVAL AND INSTALLATION .
9. Install the right front wheel. Refer to REMOVAL AND INSTALLATION .
10. Install the engine beauty cover. Refer to REMOVAL AND INSTALLATION .
11. Connect the negative battery cable.

**REGULATOR, VOLTAGE > REMOVAL AND INSTALLATION > 1.6L - 2.0L DIESEL
REMOVAL AND INSTALLATION > REMOVAL**

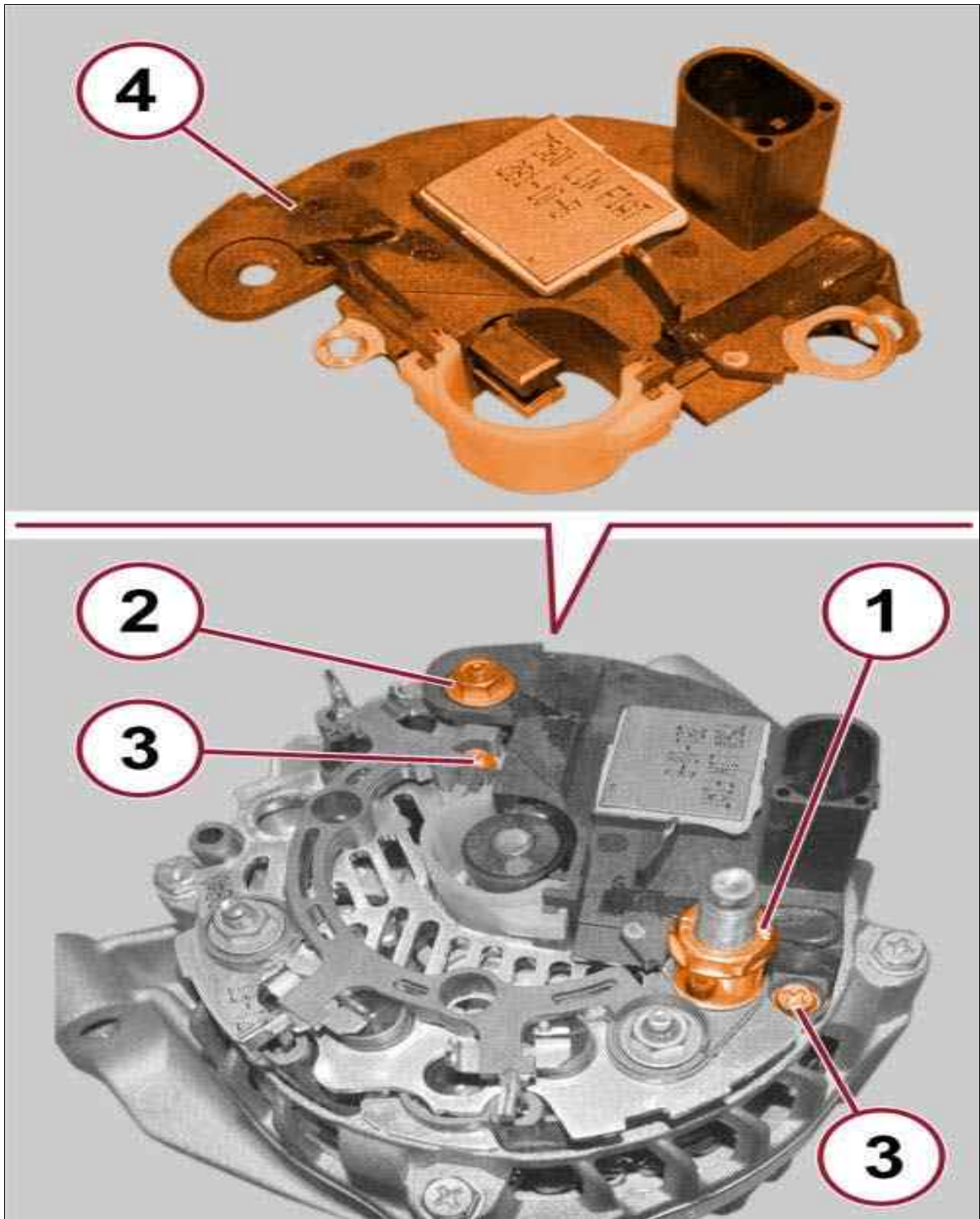
Fig 1: Retaining Clips & Cover



Courtesy of CHRYSLER GROUP, LLC

1. Raise and support the vehicle.
2. Disconnect the negative battery cable.
3. Remove the retaining clips (1a) and remove the cover (1b).

Fig 2: Spacer, Washer, Screws & Voltage Regulator



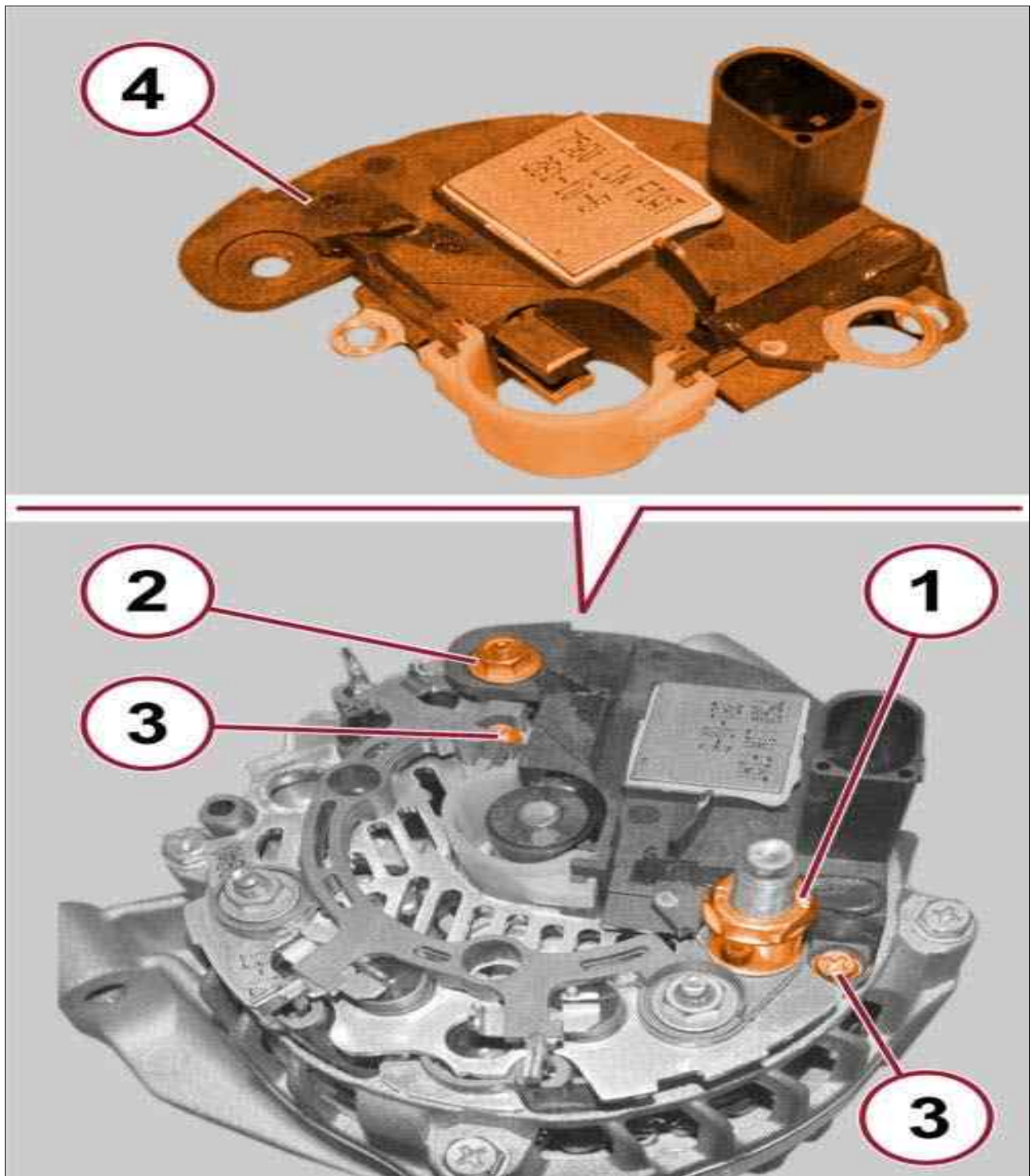
Courtesy of CHRYSLER GROUP, LLC

4. Remove the nut, washer and the spacer (1).
5. Remove the retaining nut and remove the washer (2).
6. Remove the screws (3).
7. Remove the voltage regulator (4).

8. Check that the voltage regulator is not damaged.

REGULATOR, VOLTAGE > REMOVAL AND INSTALLATION > 1.6L - 2.0L DIESEL REMOVAL AND INSTALLATION > INSTALLATION

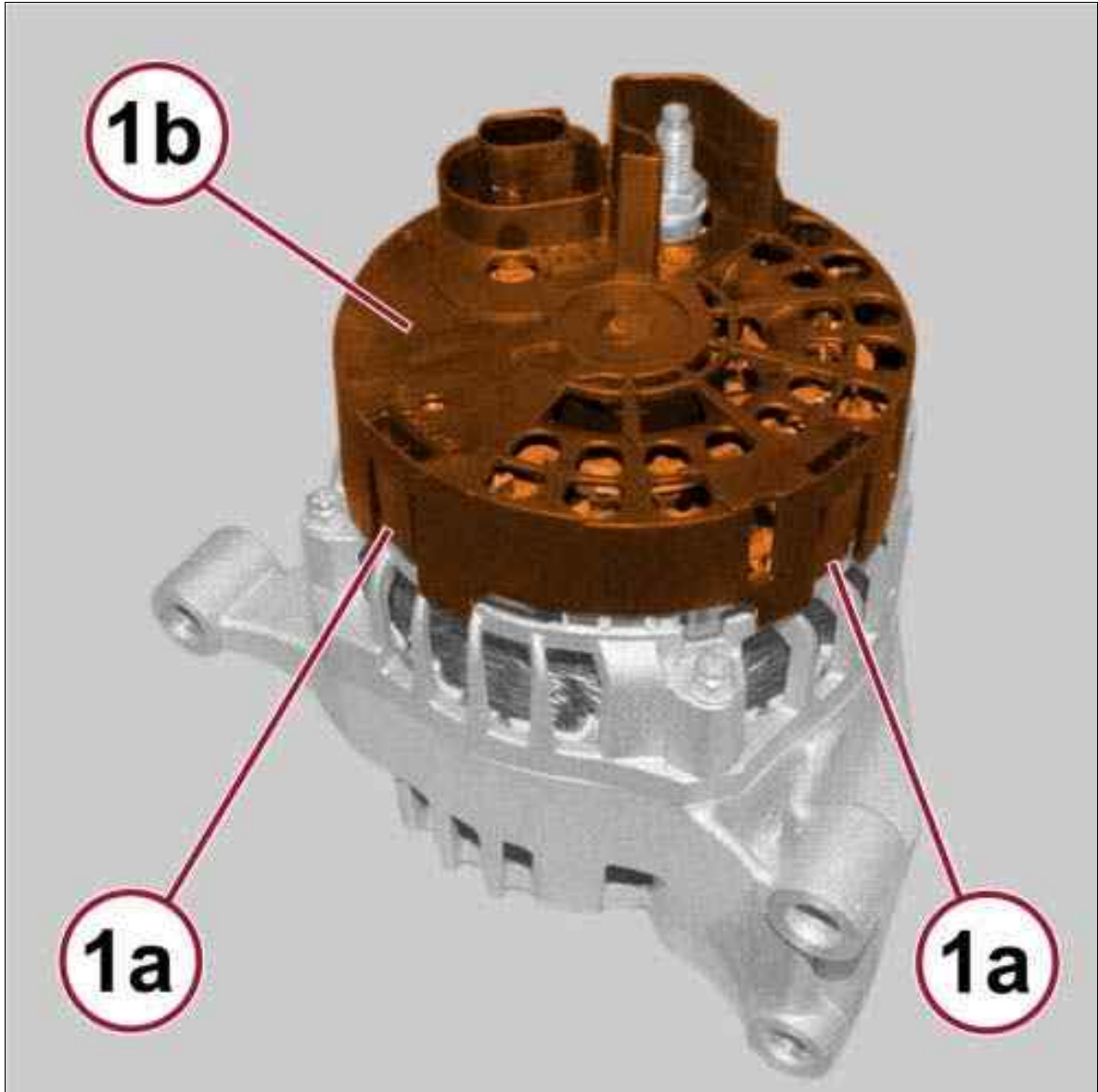
Fig 1: Spacer, Washer, Screws & Voltage Regulator



Courtesy of CHRYSLER GROUP, LLC

1. Press the brushes (brushes) (1a) and position the voltage regulator (1b) in place.
2. Tighten the screws.
3. Place the washer and tighten the nut.
4. Place the spacer and washer and tighten the nut.

Fig 2: Retaining Clips & Cover



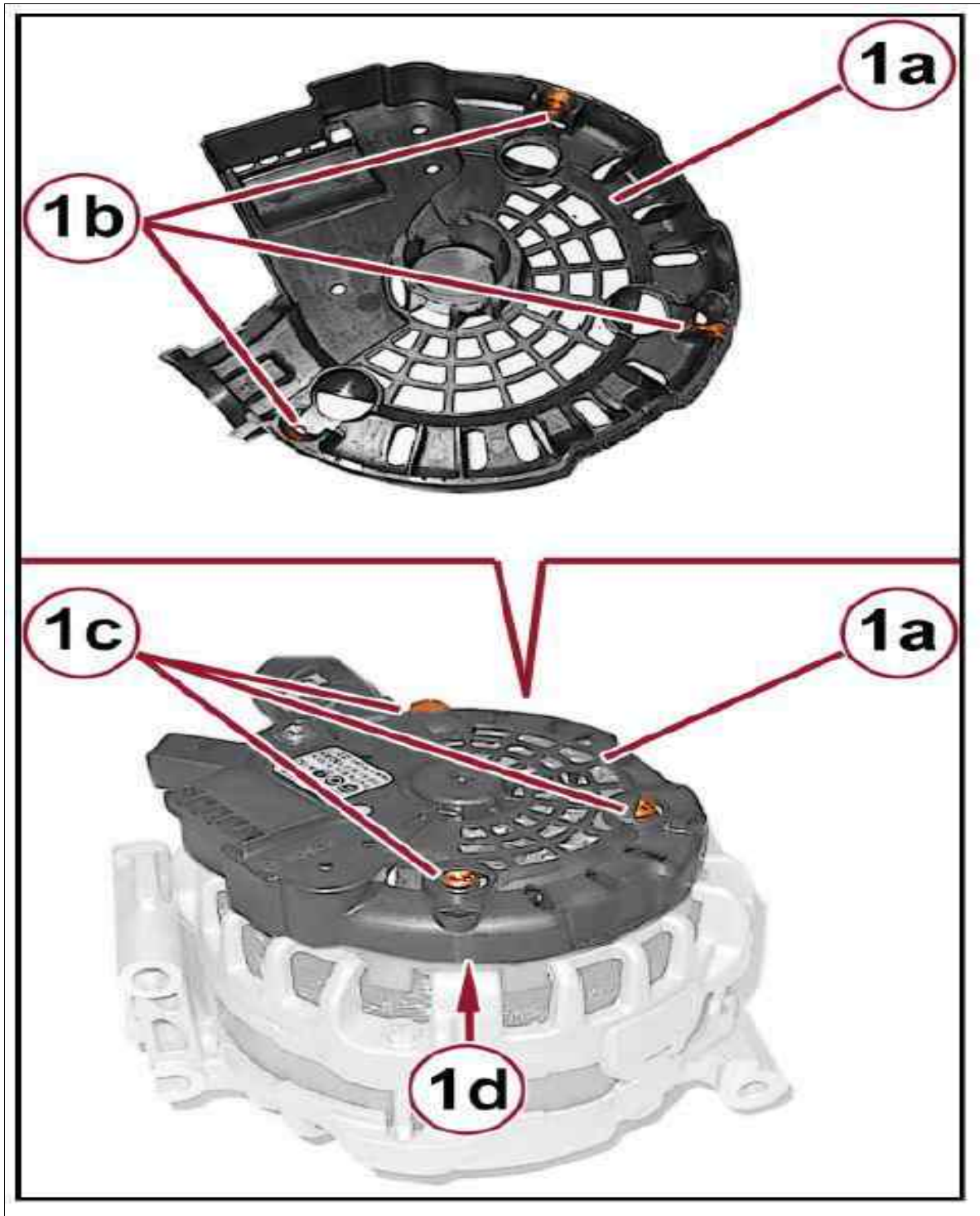
Courtesy of CHRYSLER GROUP, LLC

5. Position the cover and engage the retaining clips.
6. Connect the negative battery cable.

**REGULATOR, VOLTAGE > REMOVAL AND INSTALLATION > 1.6L GAS REMOVAL
AND INSTALLATION > REMOVAL**

1. Remove the generator. Refer to REMOVAL AND INSTALLATION .

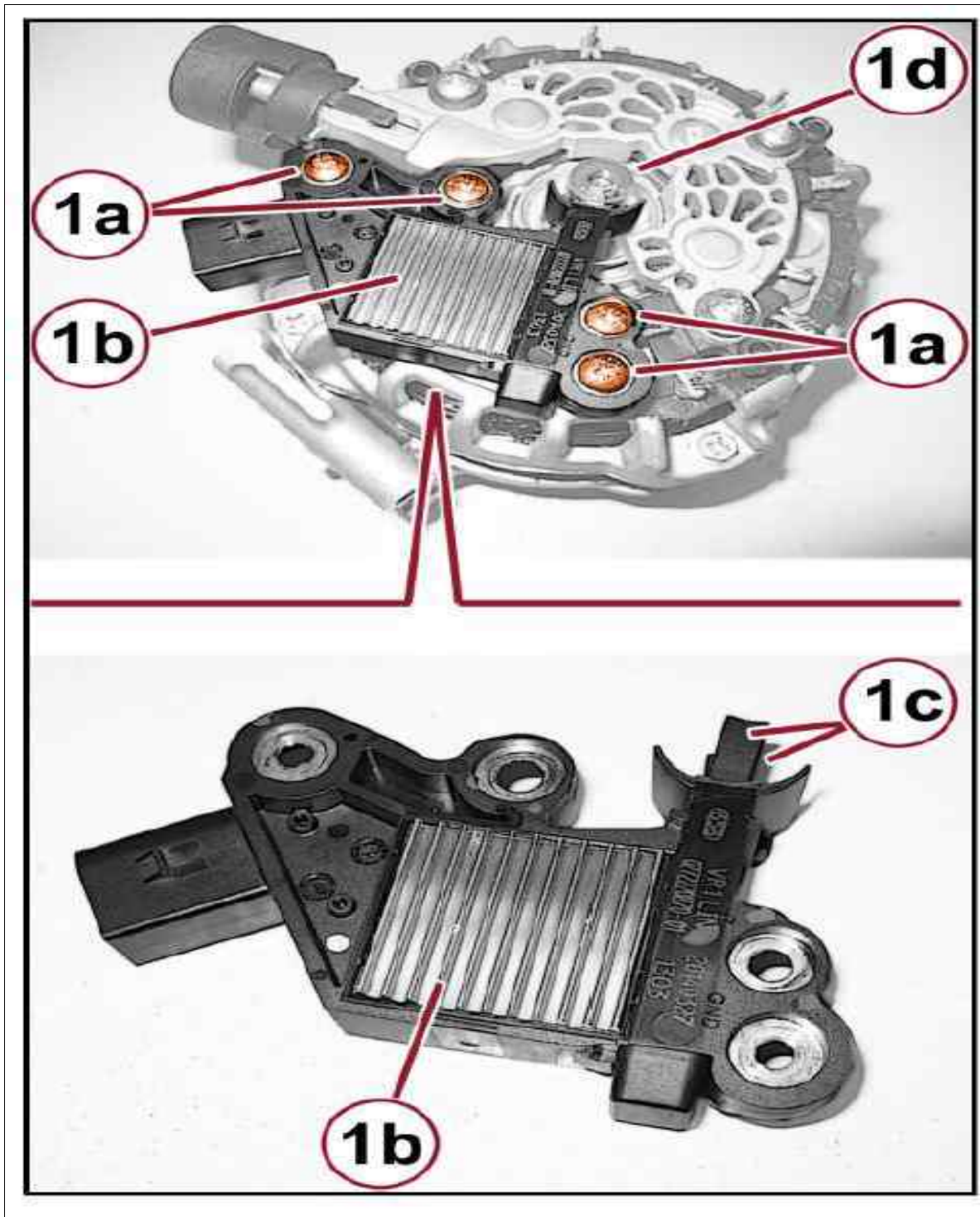
Fig 1: Alternator Cover, Internal Retainers & Screws



Courtesy of CHRYSLER GROUP, LLC

2. At bench, remove the alternator cover (1a), releasing its three internal retainers (1b) next to the three screws (1c). In order to disengage the cover retainers, use a blade tool under the areas (1d) and push outwards, then lift them.

Fig 2: Voltage Regulator, Armature, Blades & Screws



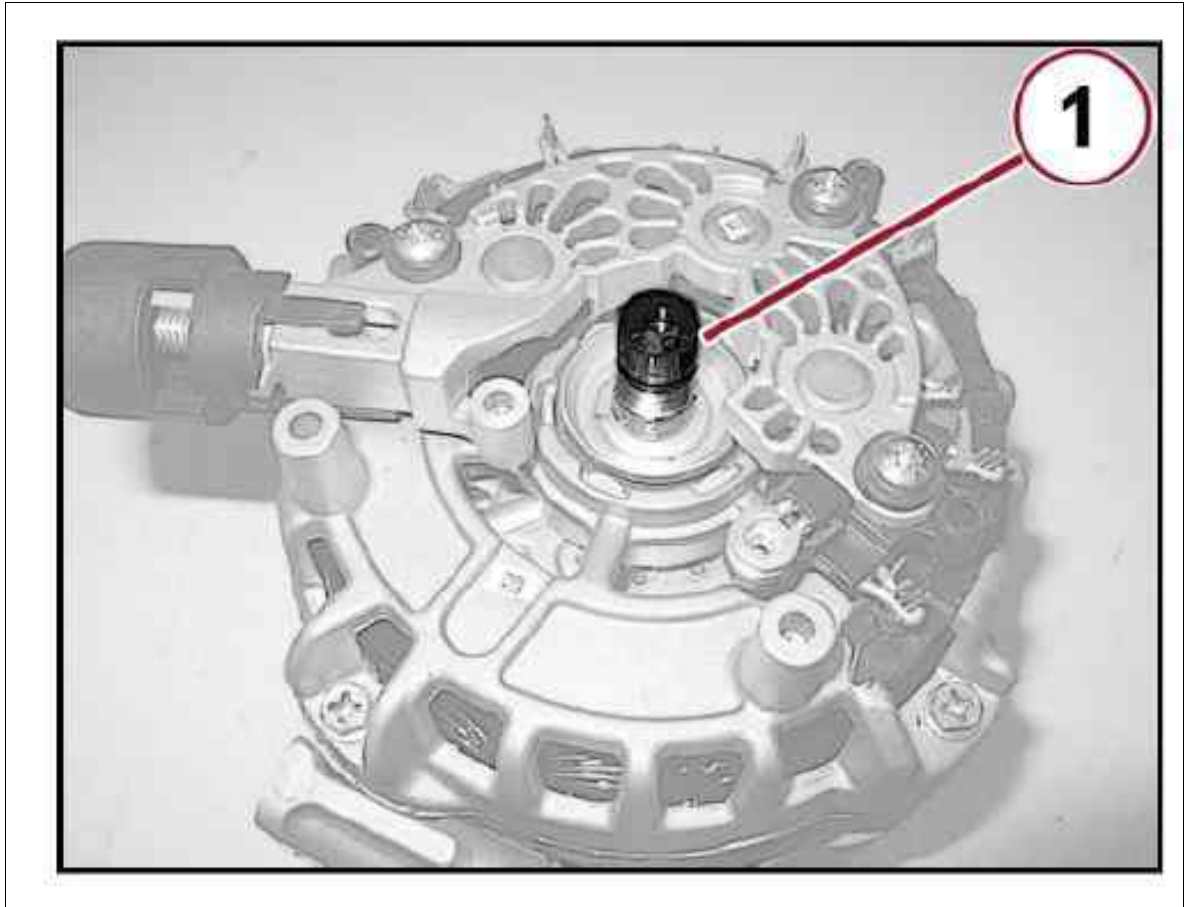
Courtesy of CHRYSLER GROUP, LLC

3. Remove the screws (1a) and remove the voltage regulator (1b) from its housing, releasing its blades (1c) from the armature (1d).

**REGULATOR, VOLTAGE > REMOVAL AND INSTALLATION > 1.6L GAS REMOVAL
AND INSTALLATION > INSTALLATION**

1. Check that the voltage regulator is not damaged.

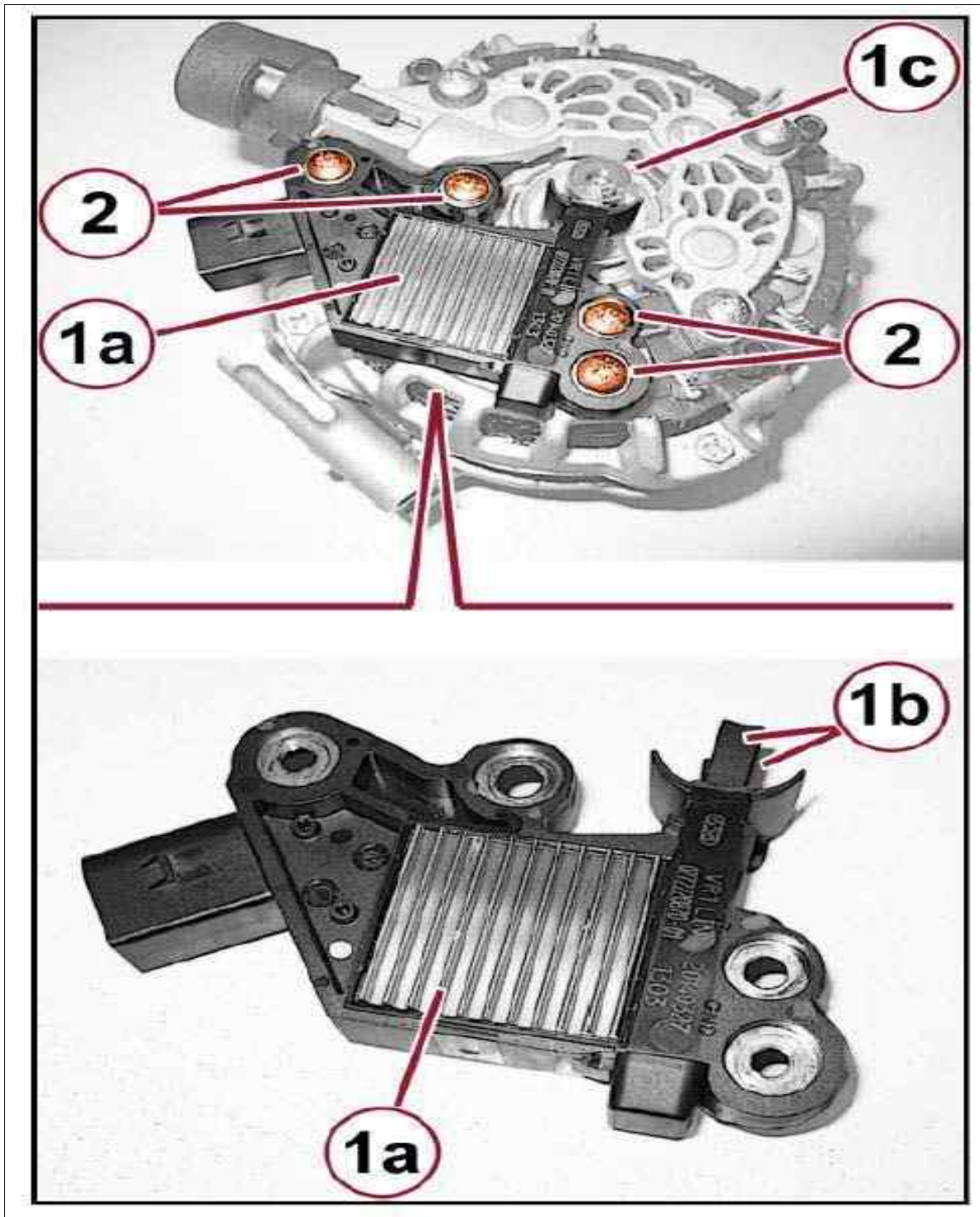
Fig 1: Generator Armature



Courtesy of CHRYSLER GROUP, LLC

2. Clean the generator armature (1).

Fig 2: Voltage Regulator, Brushes, Armature & Screws



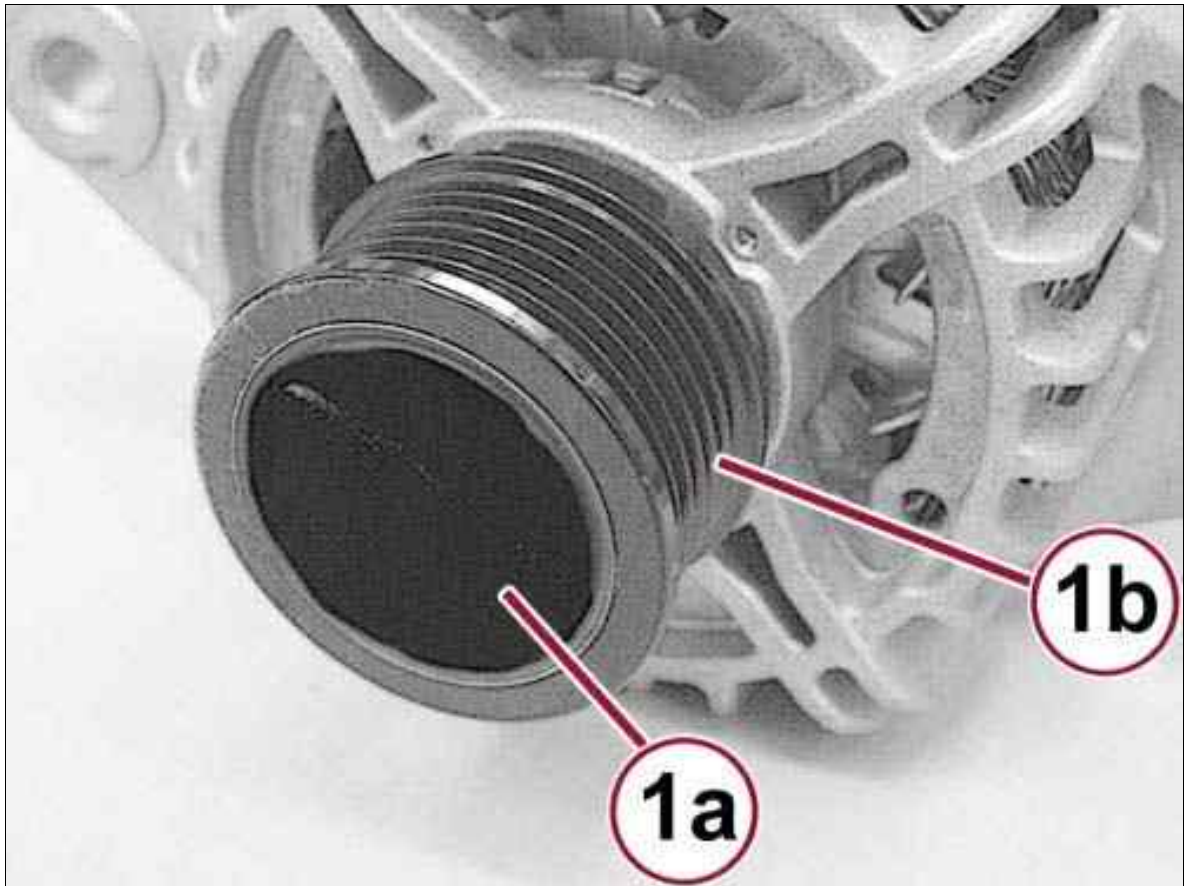
Courtesy of CHRYSLER GROUP, LLC

3. Place the voltage regulator (1a) in its housing and engage the brushes (1b) with the armature (1c).
4. Tighten the screws (2) securing the voltage regulator.
5. Position the cover on the generator and engage the three inner retainers.
6. Install the generator. Refer to REMOVAL AND INSTALLATION .

**PULLEY OR FAN, GENERATOR > REMOVAL AND INSTALLATION > 1.6L - 2.0L
DIESEL REMOVAL AND INSTALLATION > GENERATOR PULLEY OR FAN REMOVAL**

1. Raise and support the vehicle.
2. Disconnect the negative battery cable.
3. Remove the generator. Refer to GENERATOR, REMOVAL AND INSTALLATION .

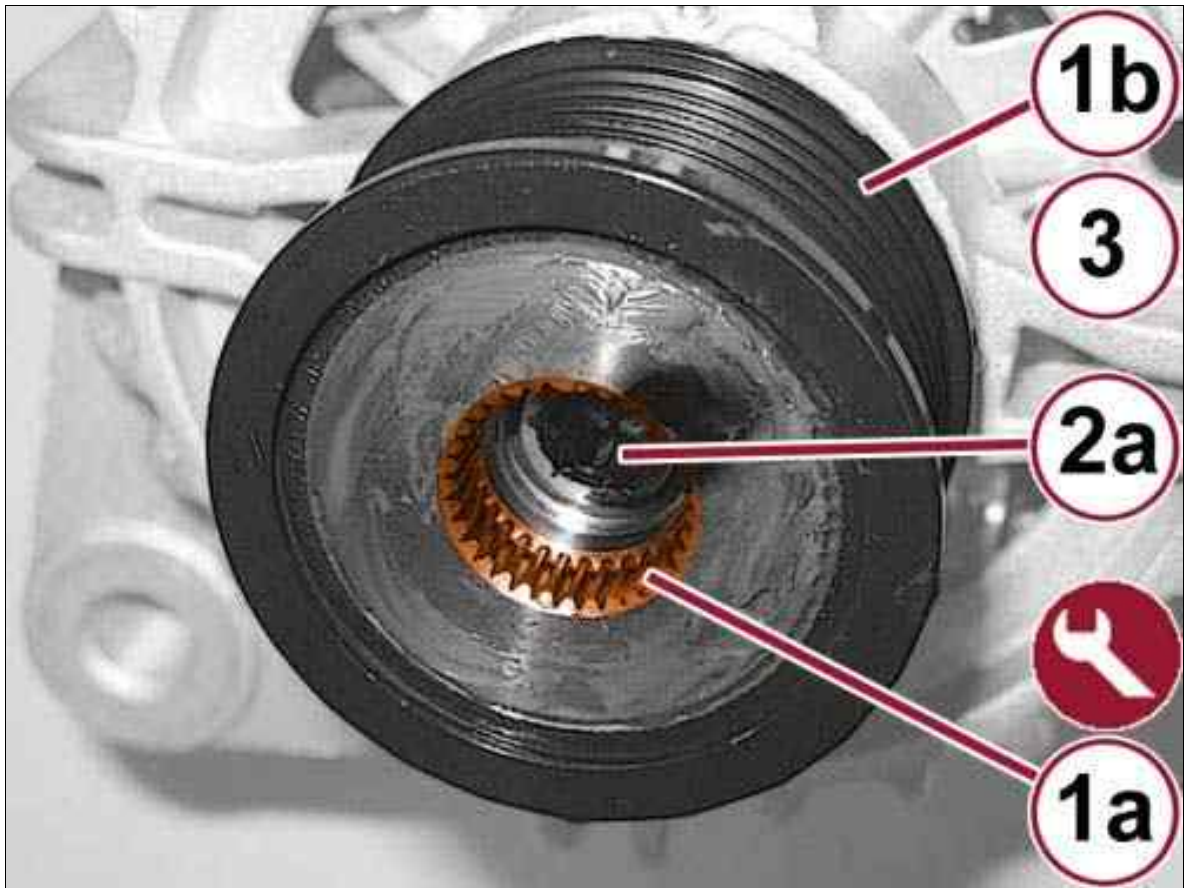
Fig 1: Cover & Pulley



Courtesy of CHRYSLER GROUP, LLC

4. With the proper tool, pry off the cover (1a) from the pulley (1b) on the generator.

Fig 2: Ribbed Socket, Pulley & Hexagonal Socket

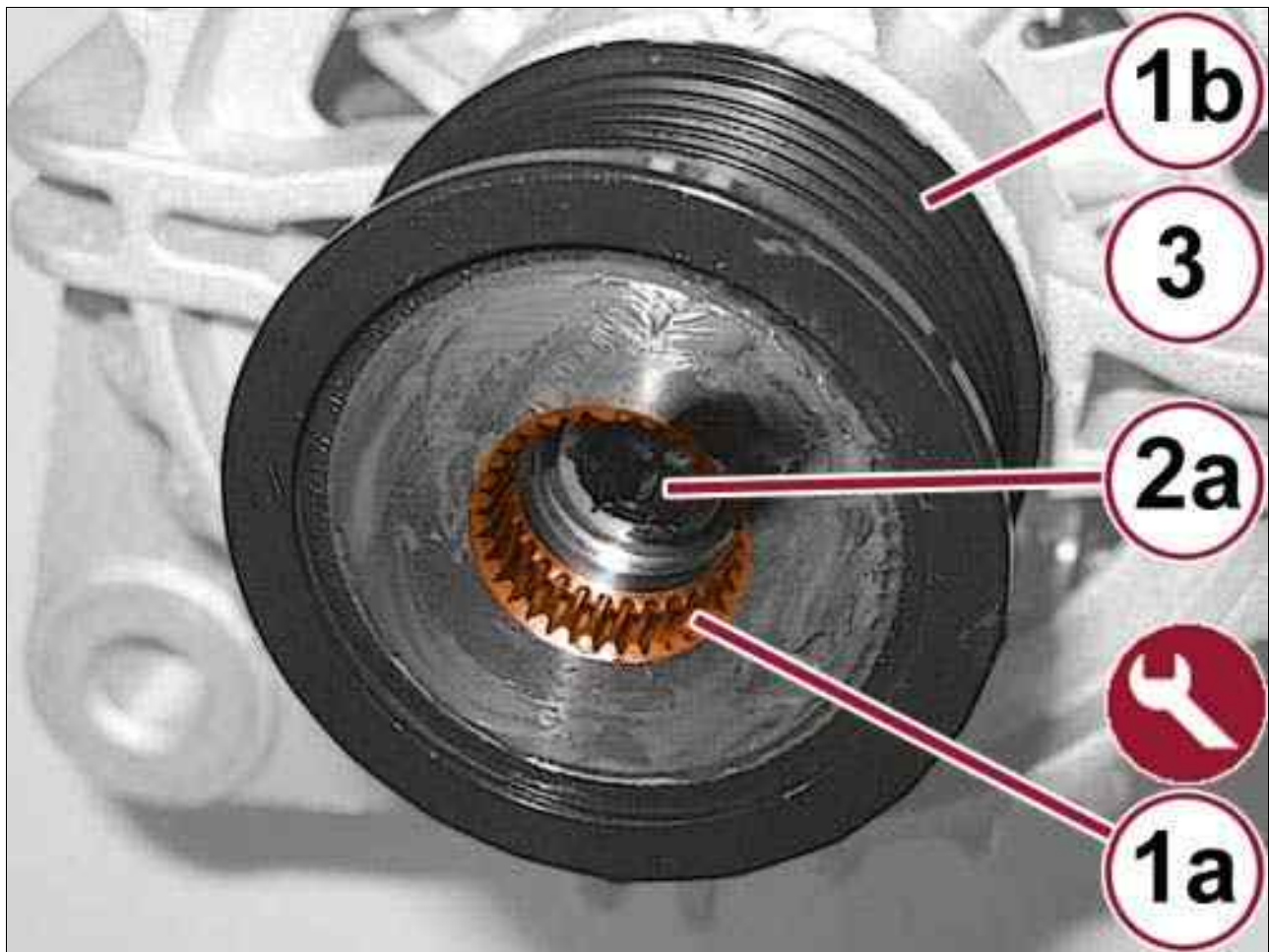


Courtesy of CHRYSLER GROUP, LLC

5. Insert the special tool into the ribbed socket (1a) of the pulley (1b).
6. Insert a wrench on the hexagonal socket (2a).
7. Lock the rotation of the alternator using the key in the socket (2a), then using a key on the tool, unscrew the pulley (1b) from the generator.
8. Check that the pulley is not damaged.

**PULLEY OR FAN, GENERATOR > REMOVAL AND INSTALLATION > 1.6L - 2.0L
DIESEL REMOVAL AND INSTALLATION > GENERATOR PULLEY OR FAN
INSTALLATION**

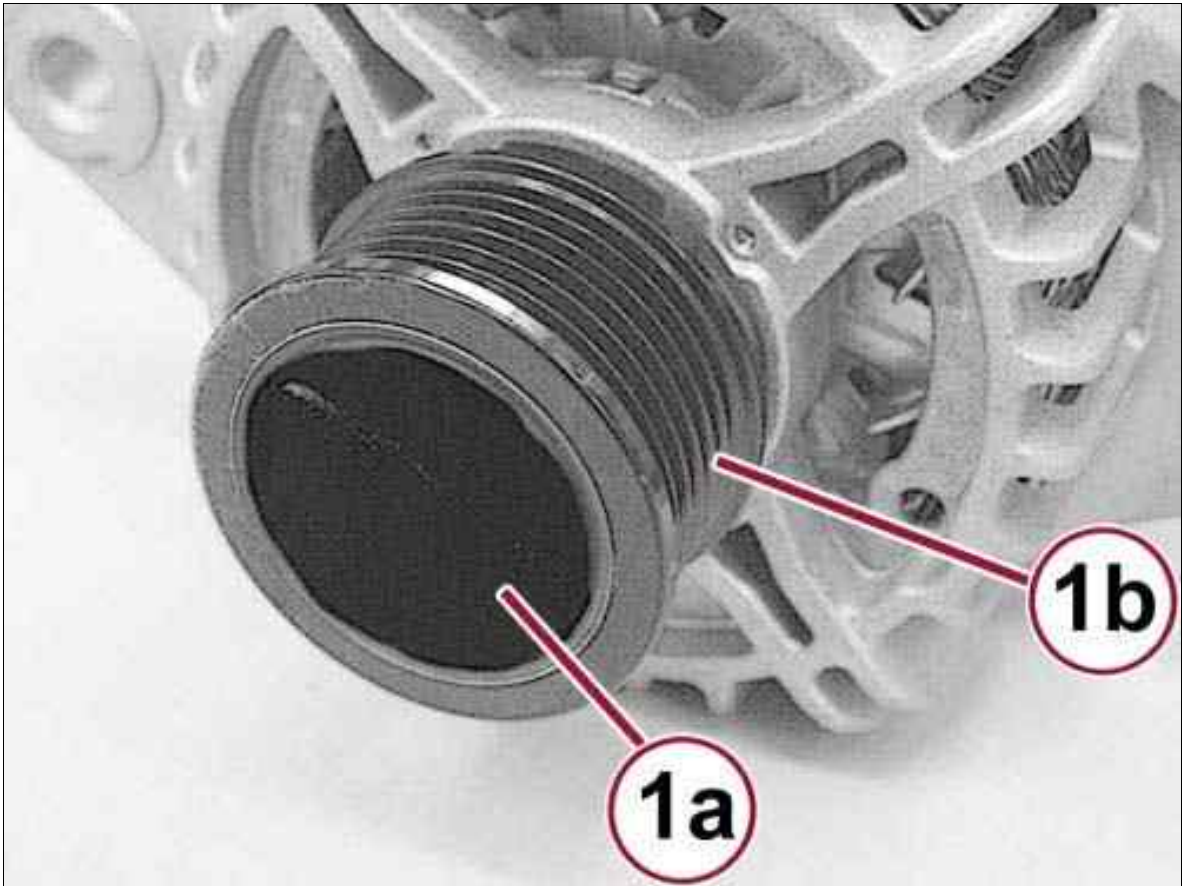
Fig 1: Ribbed Socket, Pulley & Hexagonal Socket



Courtesy of CHRYSLER GROUP, LLC

1. Position the pulley (1a) on the shaft of the generator, use the tool provided on the ribbed grip (1b) and a wrench on the hexagonal socket (1c), and tighten.

Fig 2: Cover & Pulley



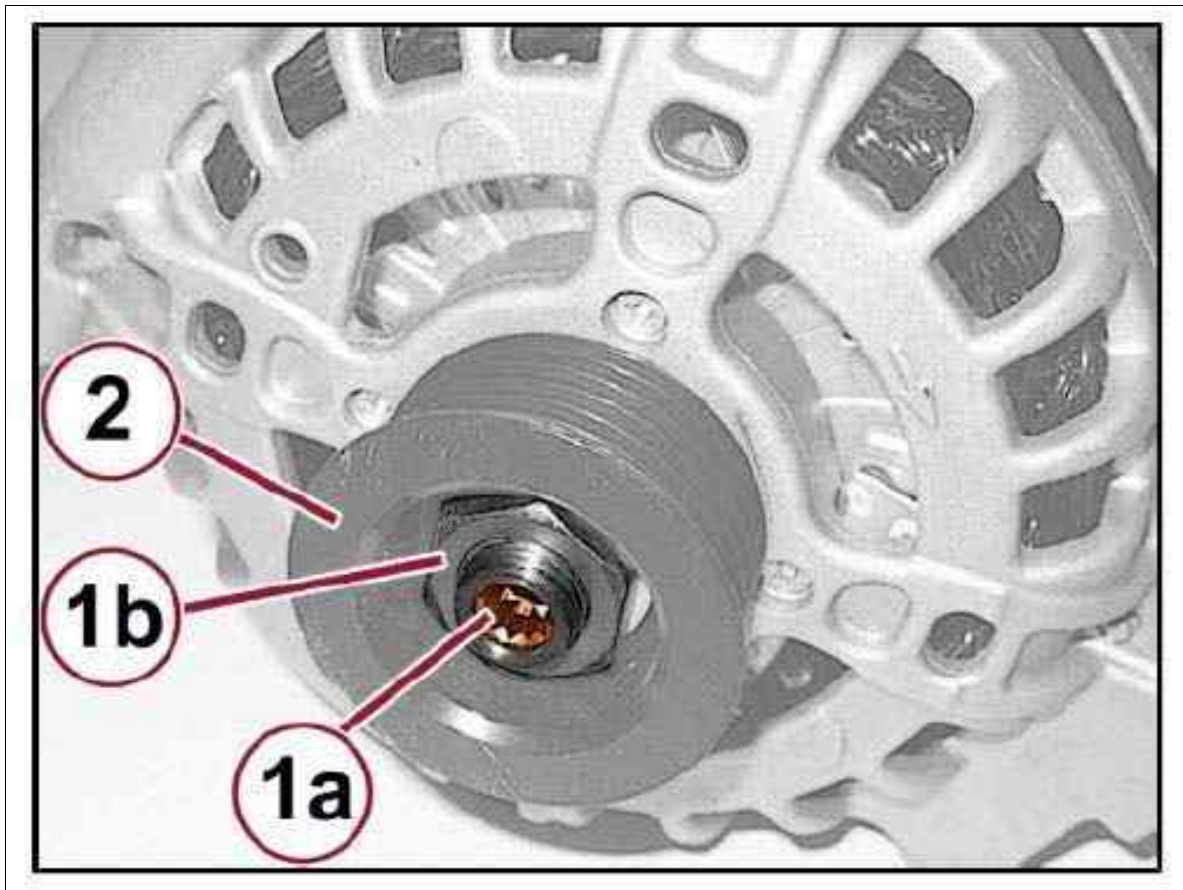
Courtesy of CHRYSLER GROUP, LLC

2. Install the pulley cover.
3. Install the generator. Refer to GENERATOR, REMOVAL AND INSTALLATION .

PULLEY OR FAN, GENERATOR > REMOVAL AND INSTALLATION > 1.6L GAS REMOVAL AND INSTALLATION > REMOVAL

1. Remove the generator. Refer to REMOVAL AND INSTALLATION .

Fig 1: Generator Pulley, Socket & Nut



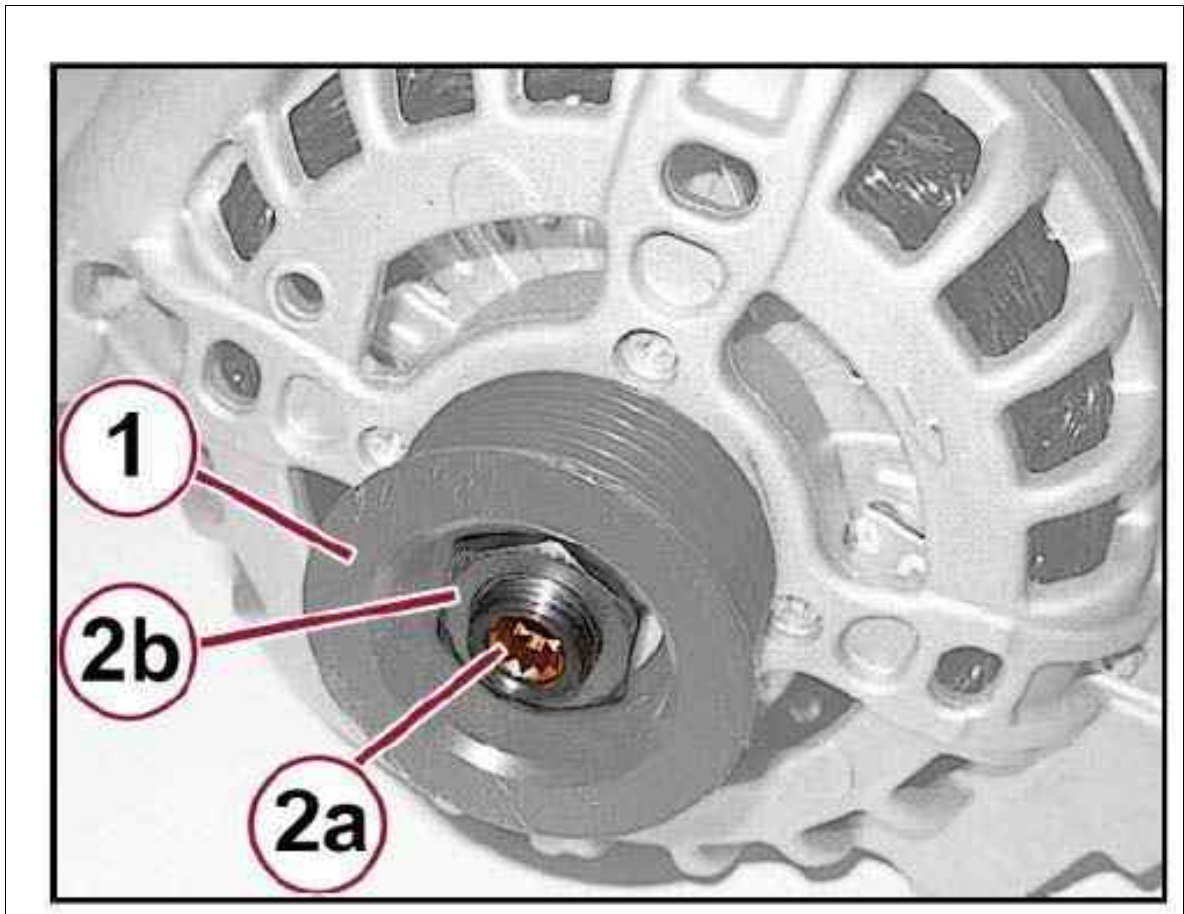
Courtesy of CHRYSLER GROUP, LLC

2. At bench, lock the rotation of the generator shaft placing a spanner in the socket (1a), then remove the nut (1b).
3. Extract the generator pulley.

PULLEY OR FAN, GENERATOR > REMOVAL AND INSTALLATION > 1.6L GAS REMOVAL AND INSTALLATION > INSTALLATION

1. Check that the generator pulley is not damaged.
2. Place the generator pulley in its housing.

Fig 1: Generator Pulley, Socket & Nut



Courtesy of CHRYSLER GROUP, LLC

3. Lock the rotation of the generator shaft placing a spanner in the socket (2a), then tighten the nut (1b).
4. Place the generator guard, then tighten the two fixing nuts.
5. Install the generator. Refer to REMOVAL AND INSTALLATION .