

Service Manual: EMISSIONS CONTROL

SPECIFICATIONS > EMISSION CONTROL SYSTEM**CO2 EXHAUST EMISSIONS**

EMISSION CONTROL SYSTEM		
CO2 emissions (according to European directive in force (g / km)	140	1.4L MultiAir Turbo
CO2 emissions (according to European directive in force (g / km)	-	2.4L MultiAir
CO2 emissions (according to European directive in force (g / km)	120	1.6L Turbo Diesel
CO2 emissions (according to European directive in force (g / km)	134	2.0L Turbo Diesel 120/140CV
CO2 emissions (according to European directive in force (g / km)	155	2.0L Turbo Diesel 170hp

SPECIFICATIONS > TORQUE SPECIFICATIONS**TORQUE SPECIFICATIONS**

COMPONENT	FASTENER	Ø	VALUE (daNM)	VALIDITY
Retaining bolt catalytic converter to the turbocharger	Screw	M6	0.7-1.0	1.4L Turbo MultiAir
Catalytic Converter	Screw	M8	2.3-2.7	1.4L MultiAir
Catalytic Converter Support Bracket	Screw	M8	2.3-2.7	1.4L MultiAir
Oxygen Sensor		M18	4.0-5.0	1.4L Turbo MultiAir 1.6L Turbo Diesel 2.0L Turbo Diesel
Oxygen Sensor		M18	4.1	2.4L MultiAir

EGR Complete Assembly Connecting Pipes	Nut and Screw	M8	2.3-2.8	1.6L Turbo Diesel 2.0L 120 / 140HP Turbo Diesel
EGR Cooler	Screw		1.0	1.6L Turbo Diesel 2.0L 120 / 140HP Turbo Diesel
EGR Solenoid	Screw		Primary Reduction 0.6 Final Tightening 1.0	1.6L Turbo Diesel 2.0L 120 / 140HP Turbo Diesel
Exhaust Temperature Sensor	Junction	M14	4.0-5.0	1.6L Turbo Diesel 2.0L Turbo Diesel
Retaining Nut - Particulate filter to the turbocharger	Nut	M10	2.2-2.6	1.6L Turbo Diesel 2.0L Turbo Diesel
Low Pressure EGR Valve Support	Screw	M6	0.8-1.0	2.0L Turbo Diesel
Low Pressure EGR Valve	Screw	M6	0.8-1.0	2.0L Turbo Diesel
Low Pressure EGR Valve Cooler	Nut	M6	0.8-1.0	2.0L Turbo Diesel
High Pressure EGR Valve Support	Nut	M8	2.3-2.8	2.0L Turbo Diesel
High Pressure EGR Solenoid	Screw	M8	2.3-2.8	2.0L Turbo Diesel
High Pressure EGR Solenoid	Screw	-	Primary Reduction 0.6 Final Tightening 1.0	2.0L Turbo Diesel
Duplex Pipe	Screw and Nut	M6	0.8-1.0	2.0L Turbo Diesel

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > EMISSIONS DIAGNOSIS > EMISSIONS CO OR HC TOO HIGH

If the detected percentage of CO and / or HC are higher than prescribed.

0		EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the condition of the air filter	Continue to Step 1	Filter element dirty or damaged	Replace the filter element

1. CHECK FOR FAULTS IN ECU

1	CHECK WITH DIAGNOSTIC TOOL	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Connect the diagnostic scan tool Check for the absence of faults in the engine control unit.	Proceed to step 2	Presence of faults. Failure to communicate with the control unit	Proceed as indicated by the diagnostic tool. Check PCM / ECM for power, ground and communications. Correct as needed.

2. CHECK SOLENOID VAPOR RECOVERY AND INJECTOR

2	CHECK WITH DIAGNOSTIC TOOL	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Using the diagnostic scan tool, perform the solenoid vapor recovery test and injector test.	Proceed to step 3	Failed test results	Restore connection of the injectors and solenoid valve with the PCM / ECM replace solenoid if faulty replace injectors if faulty

3. CHECK UPSTREAM OXYGEN SENSOR

3	CHECK UPSTREAM OXYGEN SENSOR	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the upstream oxygen sensor for proper function	Proceed to step 4	Oxygen sensor defective	Replace the oxygen sensor

4. CHECK DOWNSTREAM OXYGEN SENSOR

4	CHECK DOWNSTREAM OXYGEN SENSOR	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the downstream oxygen sensor for proper function	Proceed to step 5	Oxygen sensor defective	Replace the oxygen sensor

5. CHECK AIR SUPPLY CIRCUIT

5	CHECK AIR SUPPLY CIRCUIT	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the integrity of the air supply circuit	Proceed to step 6	Circuit components damaged	Replace the affected component

6. CHECK FUEL PRESSURE

6	CHECK FUEL PRESSURE	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the fuel pressure supply	End diagnosis	Incorrect pressure.	Replace the fuel pump

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > EMISSIONS DIAGNOSIS > EMISSIONS CO LOW / NOX HIGH

It detects a very low percentage of CO, which corresponds to a percentage of NOX higher than prescribed.

1. CHECK FOR FAULTS IN ECU

1	CHECK WITH DIAGNOSTIC TOOL	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Connect the diagnostic scan tool	Proceed to step 2	Presence of faults.	Proceed as indicated by the diagnostic tool.
	Check for the absence of faults in the engine control unit.		Failure to communicate with the control unit	Check PCM / ECM for power, ground and communications. Correct as needed.

2. CHECK INJECTORS

2	CHECK WITH DIAGNOSTIC TOOL	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	With the Diagnosis equipment perform the diagnosis of the injectors	Proceed to step 3	Failed test results	Restore connection of the injectors and solenoid valve with the PCM / ECM replace injectors if faulty

3. CHECK UPSTREAM OXYGEN SENSOR

3	CHECK UPSTREAM OXYGEN SENSOR	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the upstream oxygen sensor for proper function	Proceed to step 4	Oxygen sensor defective	Replace the oxygen sensor

4. CHECK DOWNSTREAM OXYGEN SENSOR

4	CHECK DOWNSTREAM OXYGEN SENSOR	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the downstream oxygen sensor for proper function	Proceed to step 5	Oxygen sensor defective	Replace the oxygen sensor

5. CHECK AIR SUPPLY CIRCUIT

5	CHECK AIR SUPPLY CIRCUIT	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the integrity of the air supply circuit	Proceed to step 6	Circuit components damaged	Replace the affected component

6. CHECK CIRCUIT BLOW-BY

6	CHECK CIRCUIT BLOW-BY	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
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	Check the integrity of the suction circuit of gas blow-by: in particular verify the absence of obstructions in the separator or in the pipes.	Proceed to step 7	Fault in the circuit Fault in the separator	Restore the functionality of the circuit Replace the separator.
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7. CHECK FUEL PRESSURE

7	CHECK FUEL PRESSURE	EVERYTHING OK	PROBLEMS ENCOUNTERED	OPERATION
	Check the fuel pressure supply	End diagnosis	Incorrect pressure.	Replace the fuel pump

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 1.4 TURBO MULTIAIR

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. Wait for the exhaust gas analyzer indices to stabilize.

CO2 emissions (according to European Directive in force) (g / km)	139	1.4 Turbo MultiAir
CO2 emissions (according to European Directive in force) - Versions with low environmental impact for specific markets (lower emissions) (g / km)	137	1.4 Turbo MultiAir

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 1.4 TURBO MULTIAIR AUTOMATIC TRANSMISSION

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzers into the end of the exhaust pipe for at least 30 cm.

3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. With the engine idling, check that the CO2 level is within specified limits.

CO2 emissions (according to European Directive in force) (g/km)	157	1.4 Turbo MultiAir Automatic Transmission
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EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 1.4 TURBO MULTIAIR TCT TRANSMISSION

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. With the engine idling, check that the CO2 level is within specified limits.

CO2 emissions (according to European Directive in force) (g/km)	133	1.4 Turbo MultiAir TCT Transmission
CO2 emissions (according to European Directive in force) - Versions with low environmental impact for specific markets (lower emissions) (g/km)	133	1.4 Turbo MultiAir TCT Transmission
Emissioni CO2 (secondo direttiva europea vigente) - Versioni a basso impatto ambientale per mercati specifici (emissioni ridotte) (g/km)	131	1.4 Turbo MultiAir Cambio TCT

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 1.6 E-TORQUE

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.

5. With the engine idling, check that the CO₂ level is within specified limits.

CO ₂ emissions (according to European Directive in force) (g/km)	147	1.6 E-Torque
CO ₂ emissions (according to European Directive in force) (g/km)	139	1.6 E-Torque with Start/Stop

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 1.6 TURBO DIESEL

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. With the engine idling, check that the CO₂ level is within specified limits.

CO ₂ emissions (according to European Directive in force) (g/km)	109	1.6 Turbo Diesel
CO ₂ emissions (according to European Directive in force) - Versions with low environmental impact for specific markets (lower emissions) (g/km)	107	1.6 Turbo Diesel

EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 2.0L TURBO DIESEL

1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. With the engine idling, check that the CO₂ level is within specified limits.

CO ₂ emissions (according to European Directive in force) (g / km)	130	2.0 Turbo Diesel
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EVAPORATIVE EMISSIONS > DIAGNOSIS AND TESTING > CHECKING C.O. LEVEL > 2.0L TURBO DIESEL AUTOMATIC TRANSMISSION

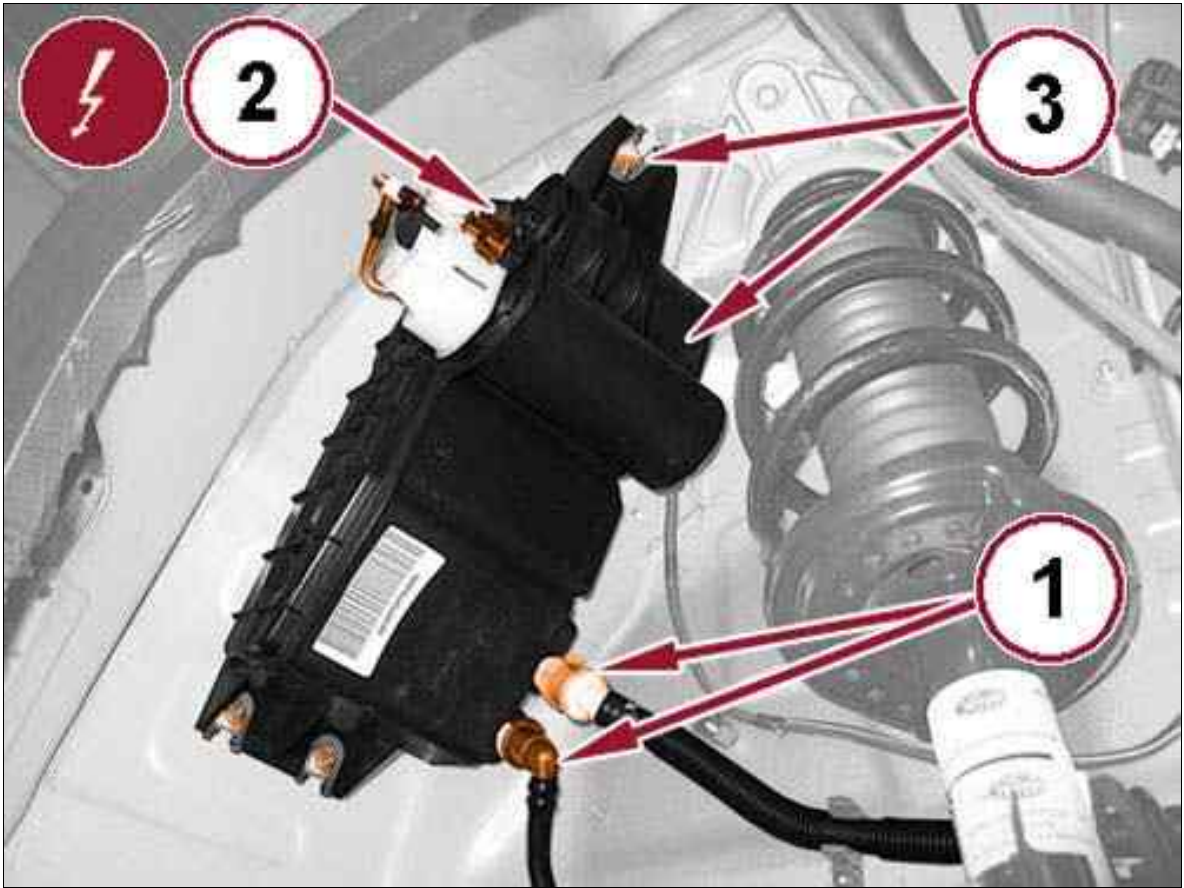
1. Carry out the measurement with all the emission control devices active and at the specified idle speed.
2. Insert the probe of an exhaust gas analyzer into the end of the exhaust pipe for at least 30 cm.
3. If the shape of the exhaust tailpipe will not allow the probe to be fully introduced, add an extension that ensures a seal in the join area.
4. Wait for the exhaust gas analyzer indices to stabilize.
5. With the engine idling, check that the CO2 level is within specified limits.

CO2 emissions (according to European Directive in force) (g km)	144	2.0 Turbo Diesel Transmission 948TE
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EVAPORATIVE EMISSIONS > CANISTER, VAPOR > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the right rear wheel and splash shield. Refer to SHIELD, SPLASH, REAR WHEELHOUSE, REMOVAL AND INSTALLATION .

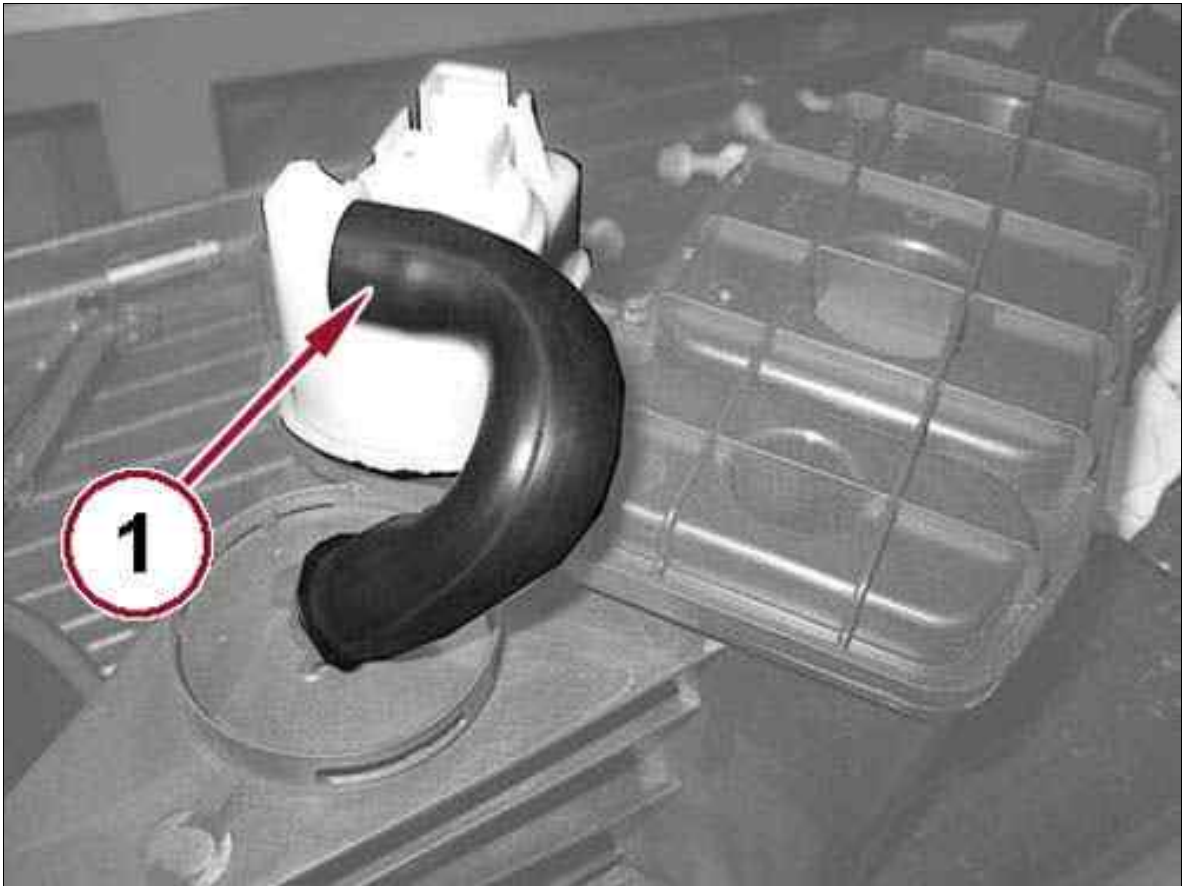
Fig 1: Fuel Vapor Quick-Connect Hose, Carbon Filter & Connector



Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the fuel vapor quick-connect hose (1).
4. Disconnect the fuel vapor solenoid electrical connection (2).
5. Remove the nuts and remove the fuel vapor carbon filter (3).

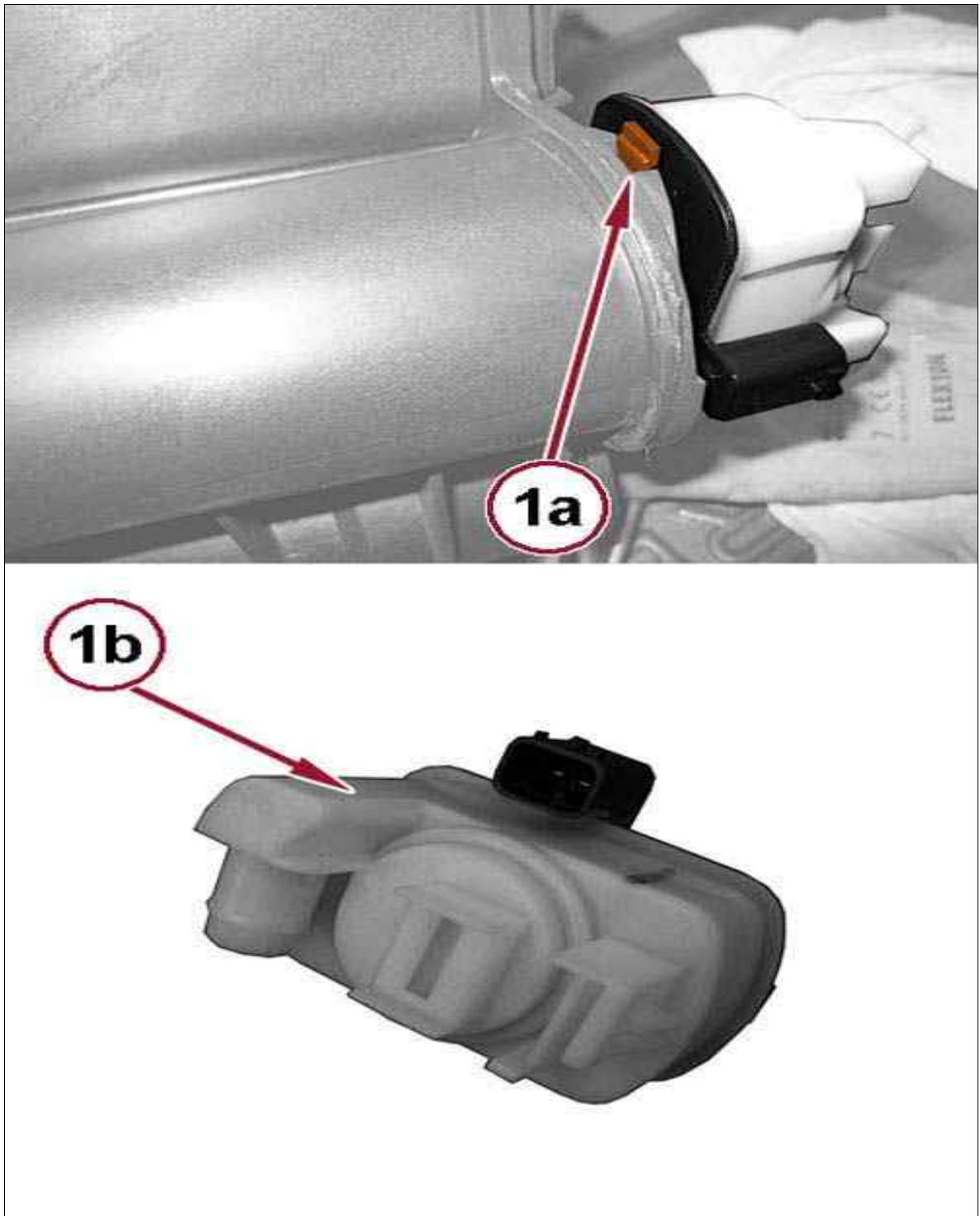
Fig 2: Fuel Vapor Solenoid Hose



Courtesy of CHRYSLER GROUP, LLC

6. If needed, proceed with the removal of the fuel vapors solenoid.
7. Disconnect the hose (1) from the fuel vapors solenoid.

Fig 3: Fuel Vapor Solenoid & Clip

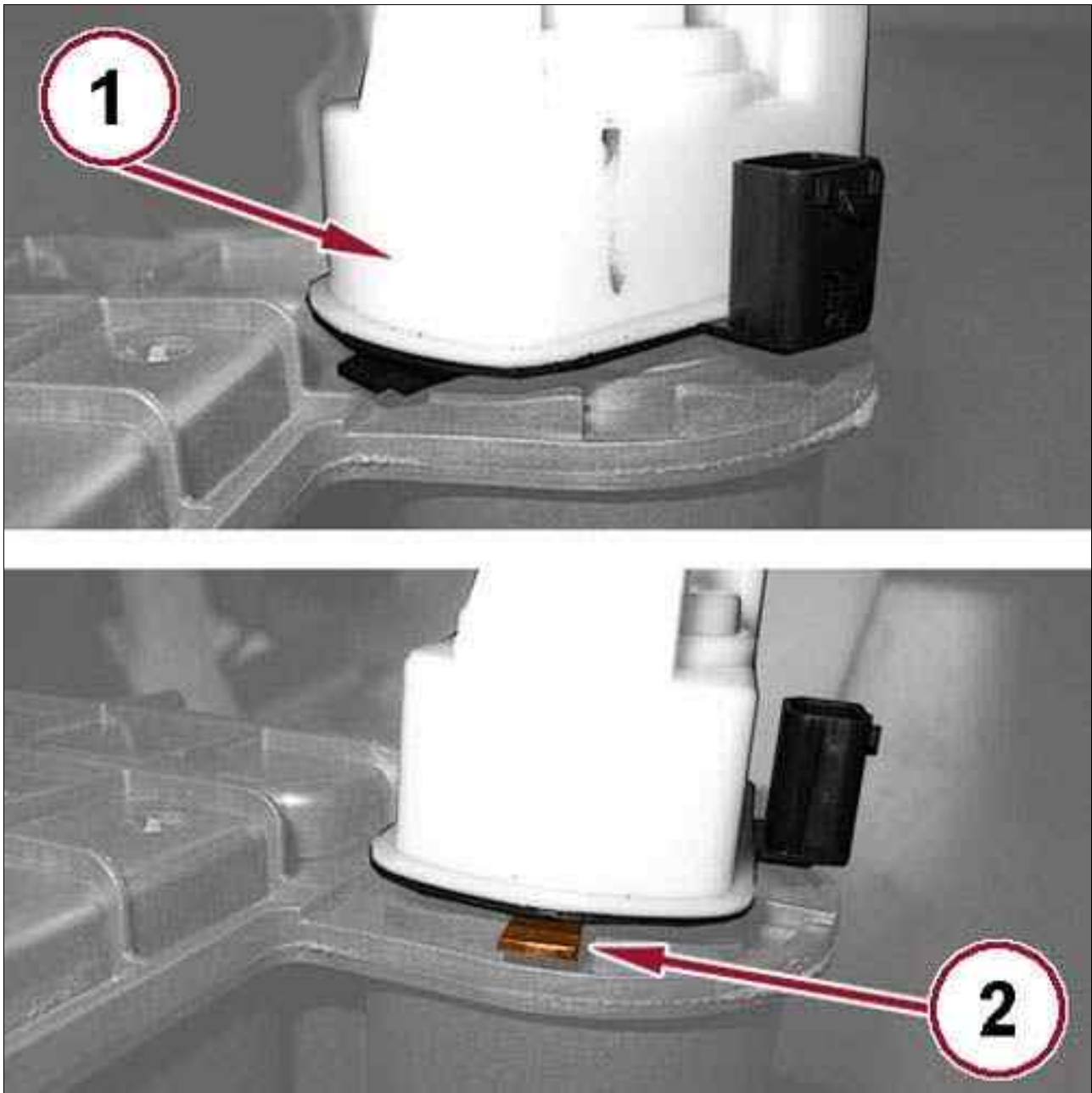


Courtesy of CHRYSLER GROUP, LLC

8. Act on the clip (1a) and twist and remove the fuel vapors solenoid (1b).

**EVAPORATIVE EMISSIONS > CANISTER, VAPOR > REMOVAL AND INSTALLATION >
REMOVAL AND INSTALLATION > INSTALLATION**

Fig 1: Fuel Vapor Solenoid & Clip



Courtesy of CHRYSLER GROUP, LLC

1. Insert the fuel vapors solenoid in its seat as shown in illustration (1).
2. Turn the fuel vapors solenoid up to engage the clip (2) into place.
3. Connect the hose to the fuel vapors solenoid.
4. Install the fuel vapors carbon filter and tighten the nuts.
5. Connect the fuel vapors solenoid electrical connection.
6. Connect the fuel vapor quick-connect hose.
7. Install the right rear wheel and splash shield. Refer to SHIELD, SPLASH, REAR

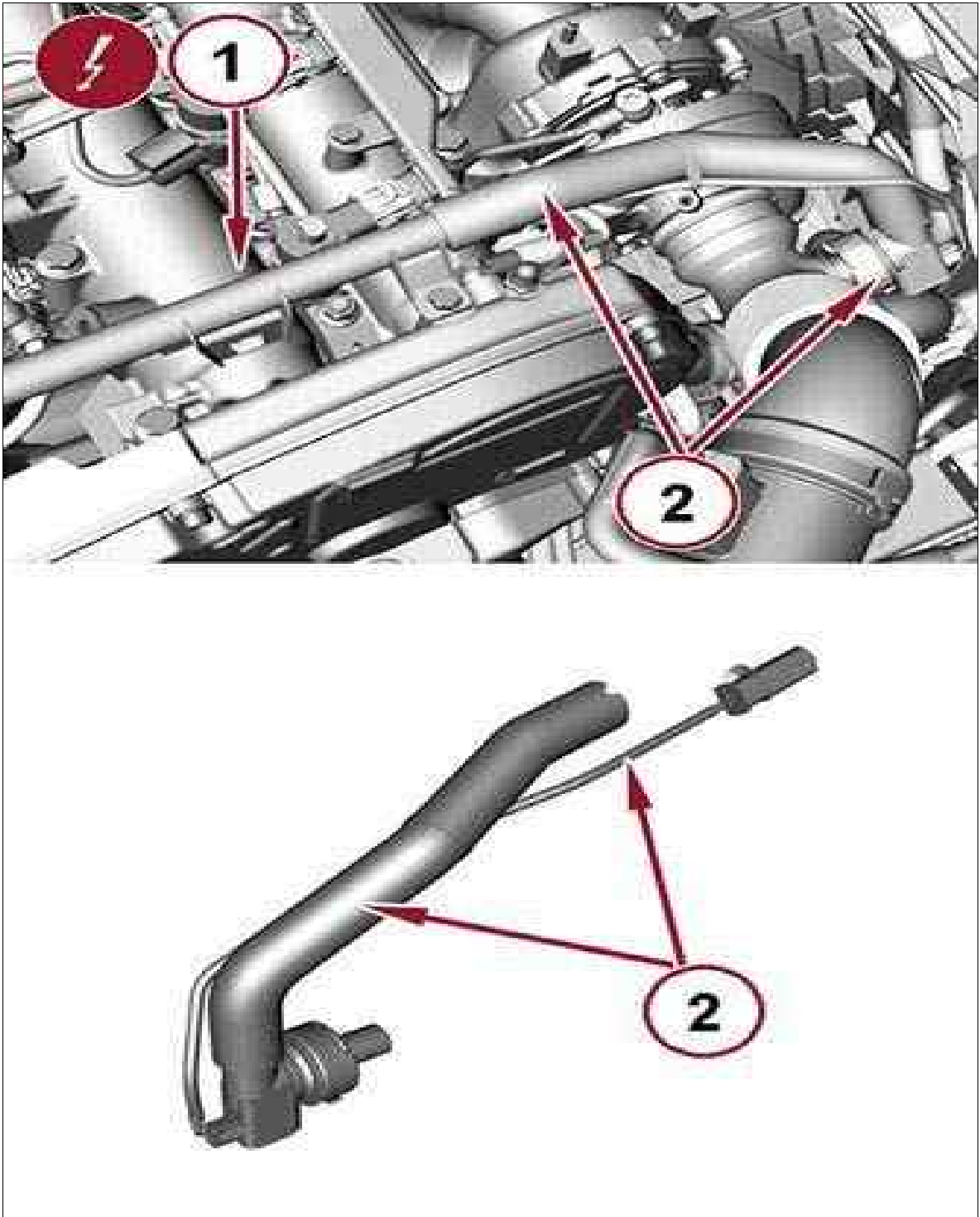
WHEELHOUSE, REMOVAL AND INSTALLATION .

8. Connect the negative battery cable.

**EVAPORATIVE EMISSIONS, DIESEL > TUBE, CRANKCASE BREATHER > REMOVAL
AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL 1.6L DIESEL**

1. Remove the engine cover. Refer to REMOVAL AND INSTALLATION .

Fig 1: Oil Vapor Recovery Hose & Connector - 1.6L

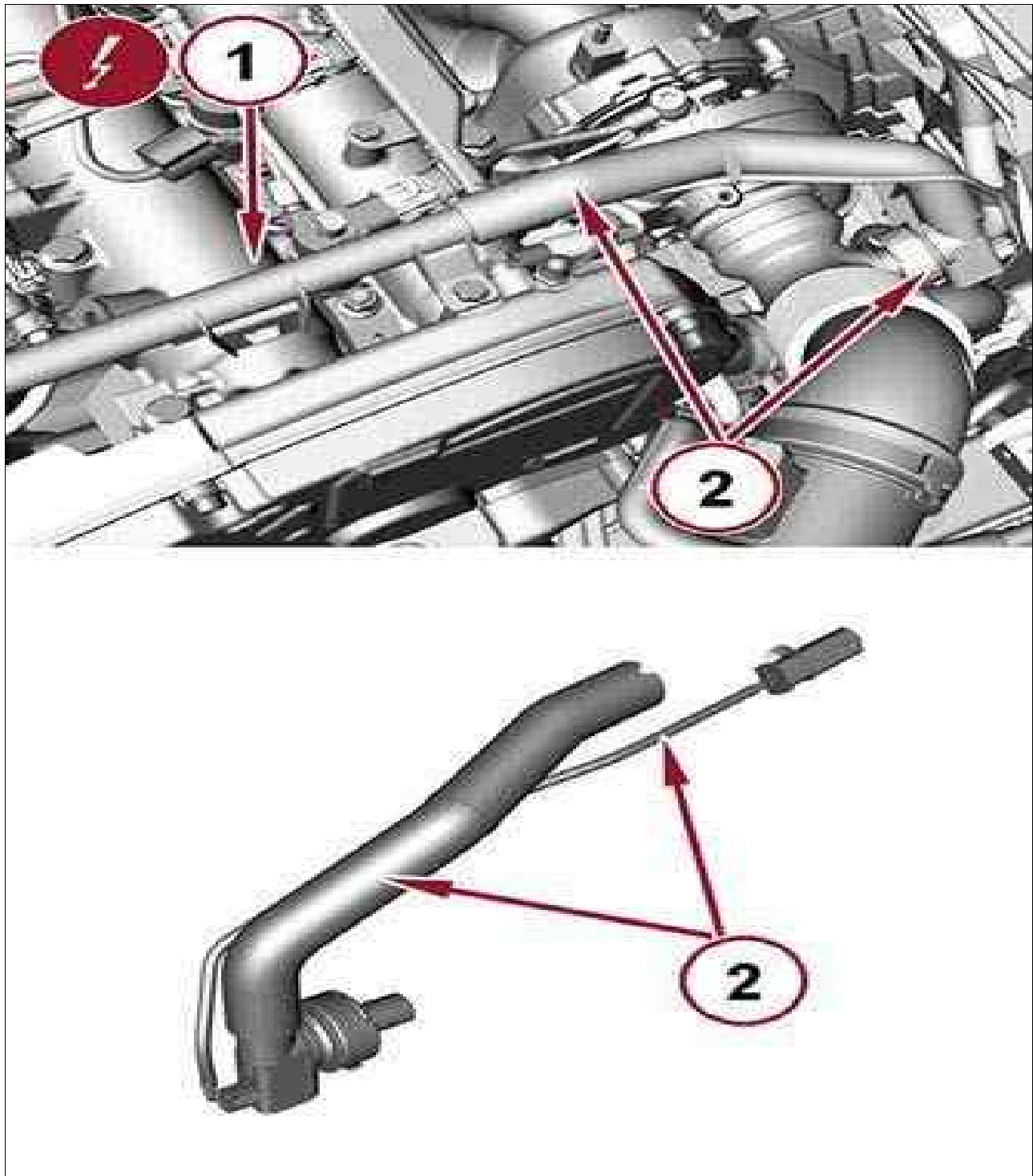


Courtesy of CHRYSLER GROUP, LLC

2. Disconnect the engine oil vapor heating resistor wire harness connector (2).
3. Detach the oil vapor heating resistor wire harness connector from the retaining bracket.
4. Disconnect the quick connect coupling and remove the oil vapor recovery hose (2).

**EVAPORATIVE EMISSIONS, DIESEL > TUBE, CRANKCASE BREATHER > REMOVAL
AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION 1.6L DIESEL**

Fig 1: Oil Vapor Recovery Hose & Connector - 1.6L



Courtesy of CHRYSLER GROUP, LLC

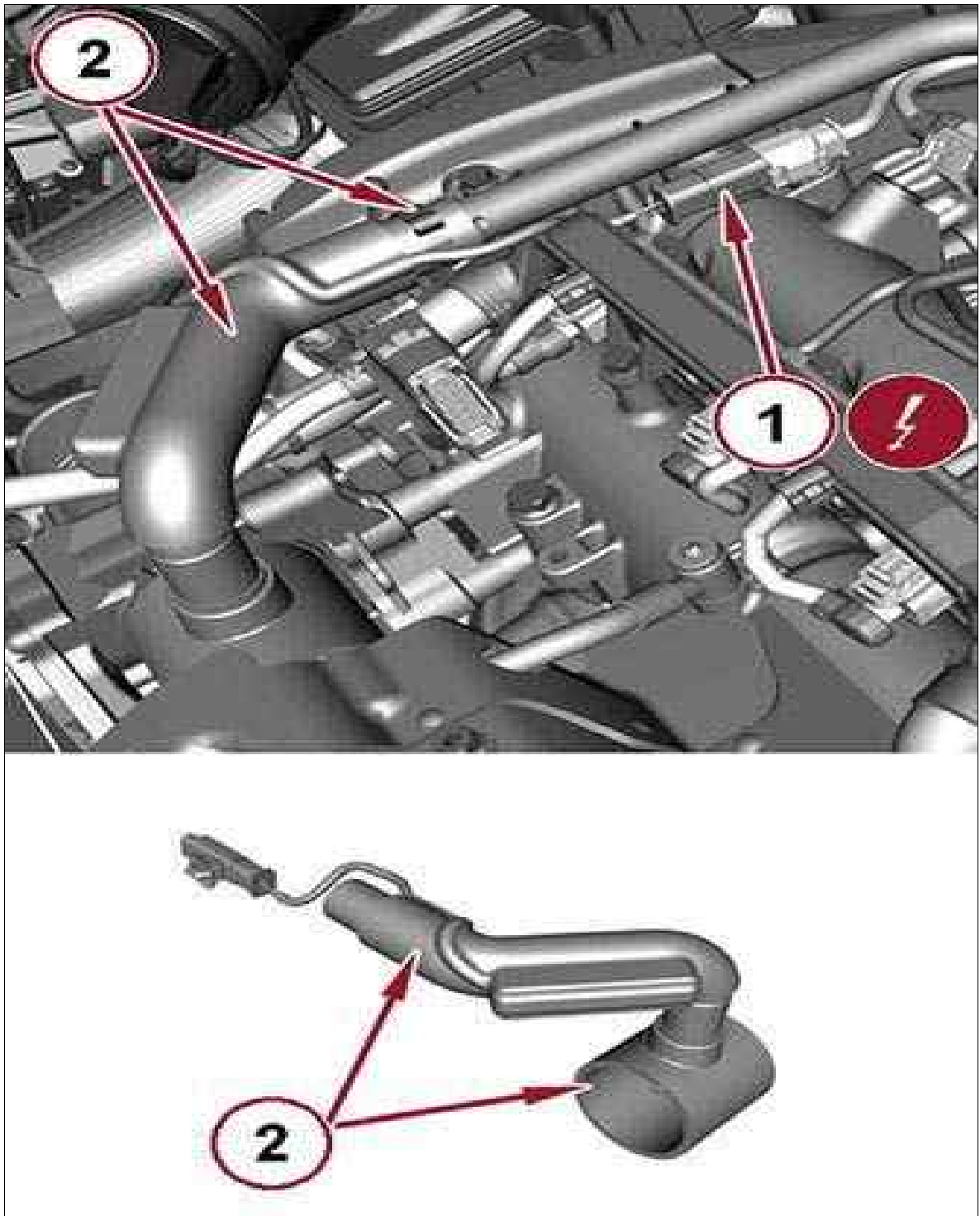
1. Install the oil vapor recovery hose and connect the quick connect coupling (2).
2. Connect the engine oil vapor heating resistor wire harness connector (2).

3. Attach the oil vapor heating resistor wire harness connector to the retaining bracket.
4. Install the engine cover. Refer to REMOVAL AND INSTALLATION .

EVAPORATIVE EMISSIONS, DIESEL > TUBE, CRANKCASE BREATHER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL 2.0L DIESEL

1. Remove the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

Fig 1: Oil Vapor Recovery Hose & Connector - 2.0L

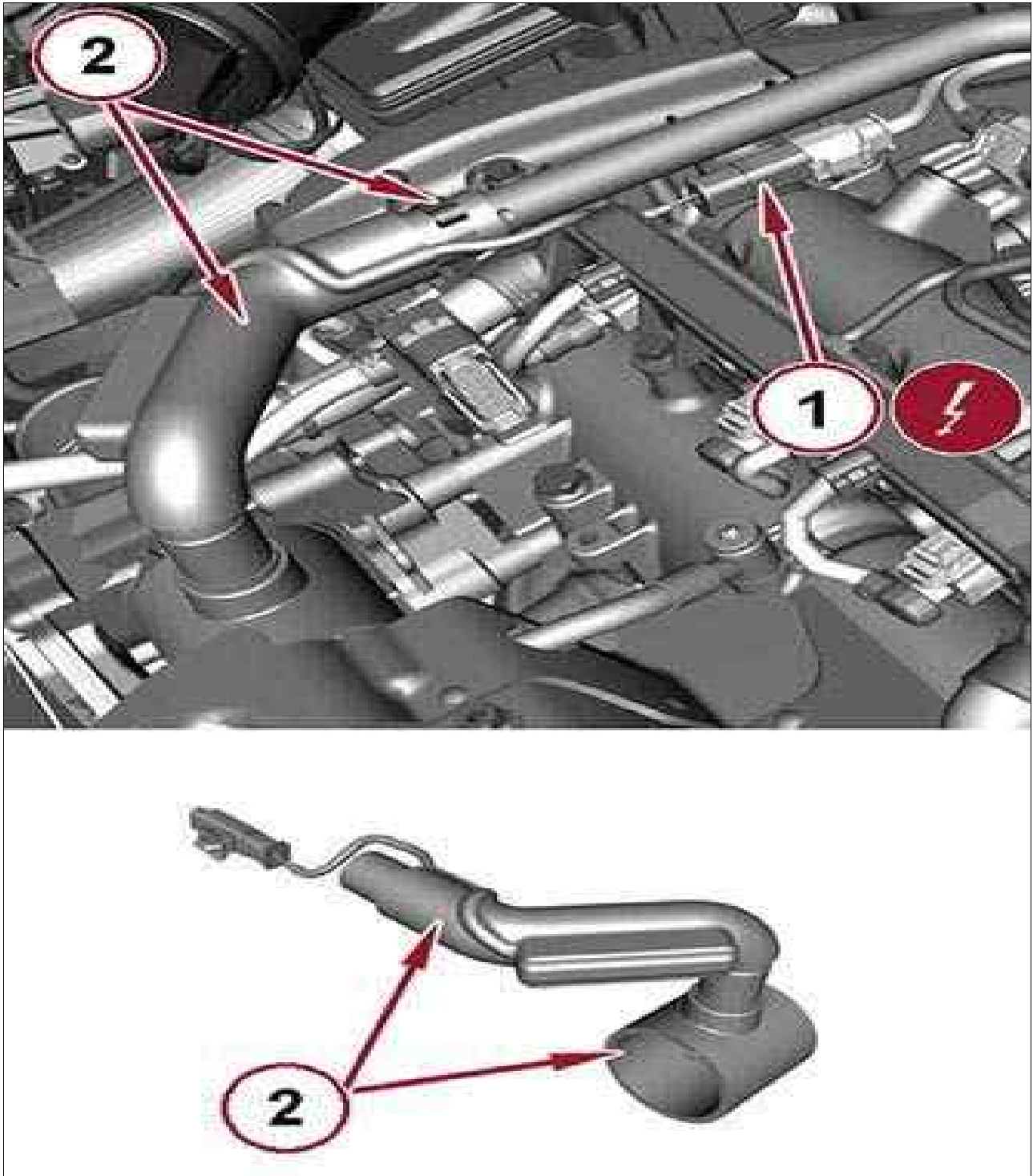


Courtesy of CHRYSLER GROUP, LLC

2. Disconnect the engine oil vapor heating resistor wire harness connector (1).
3. Using the (special tool #10288, Pliers, Hose Clamp), remove the clamp and the oil vapor recovery hose (2) from the pipe.
4. Remove the oil vapor recovery hose (2) from the turbocharger.

**EVAPORATIVE EMISSIONS, DIESEL > TUBE, CRANKCASE BREATHER > REMOVAL
AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION 2.0L DIESEL**

Fig 1: Oil Vapor Recovery Hose & Connector - 2.0L



Courtesy of CHRYSLER GROUP, LLC

1. Install the oil vapor recovery hose (2) onto the turbocharger.
2. Install the oil vapor recovery hose (2) onto the pipe. Using the (special tool #10288, Pliers,

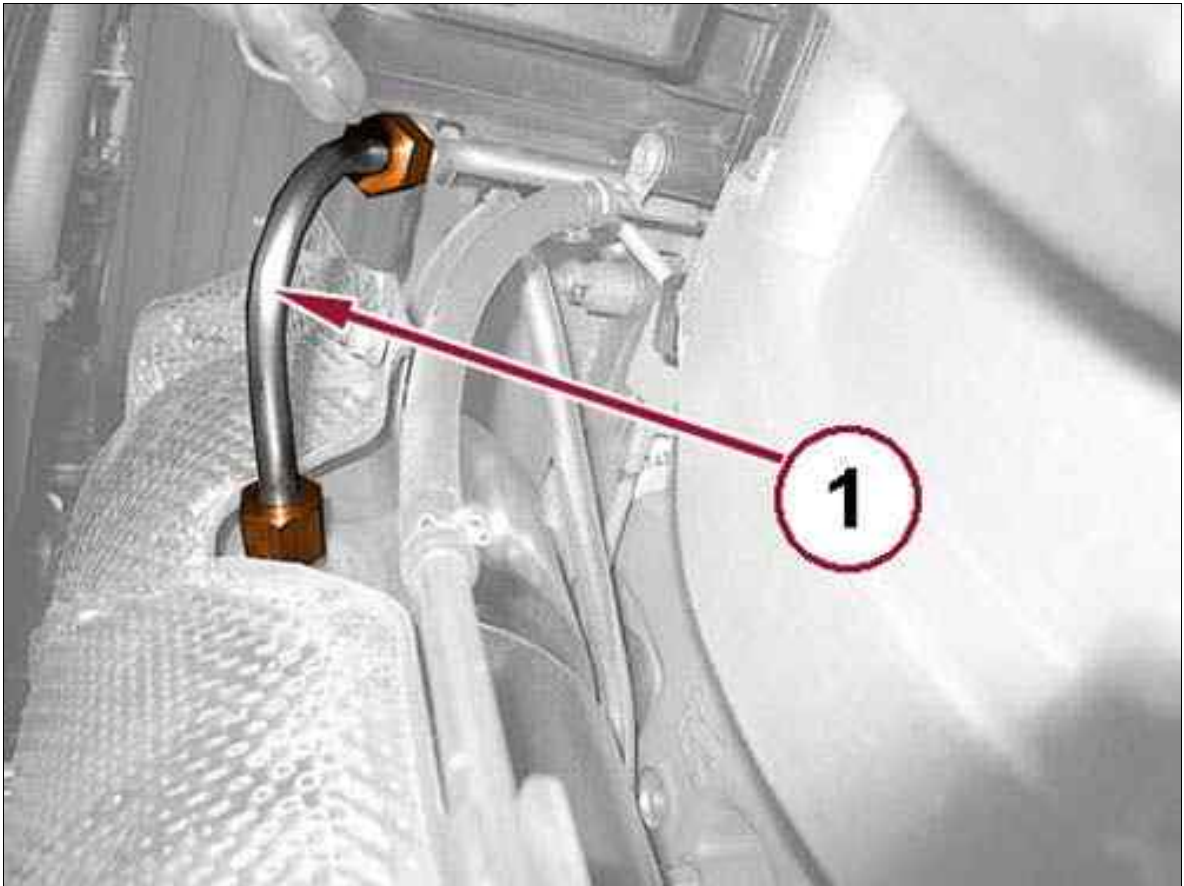
Hose Clamp), to lock the clamp.

3. Connect the engine oil vapor heating resistor wire harness connector (1).
4. Install the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > COOLER, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the engine beauty cover. For 1.6/2.0L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 1.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 2.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
3. Remove the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .
4. Remove the turbocharger valve control actuator solenoid. For 1.6/2.0L, refer to TURBOCHARGER, REMOVAL AND INSTALLATION . For 1.4L, refer to TURBOCHARGER, REMOVAL AND INSTALLATION .
5. Raise and support the vehicle.
6. Drain the engine coolant. Refer to STANDARD PROCEDURE .

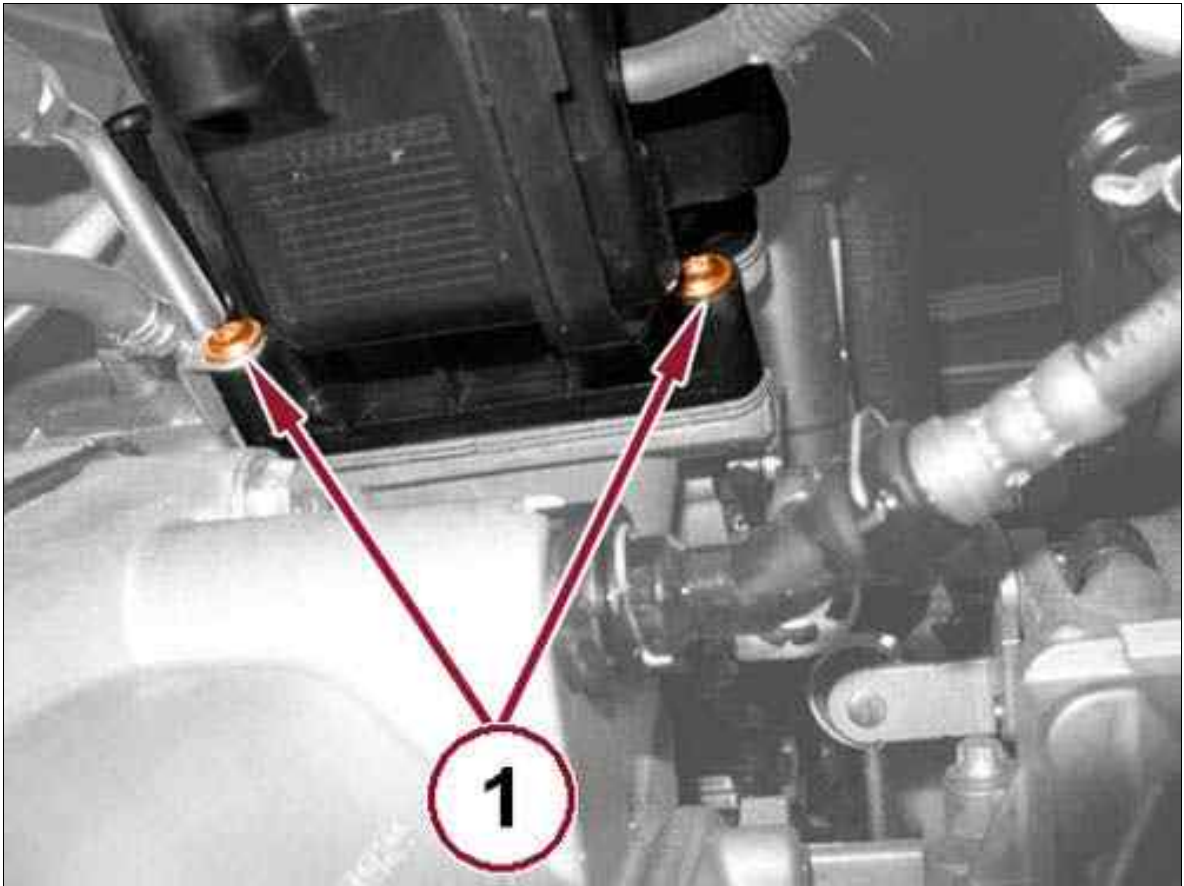
Fig 1: Intake Pressure Duct



Courtesy of CHRYSLER GROUP, LLC

7. Unscrew the fittings and remove the intake pressure duct upstream of the DPF.

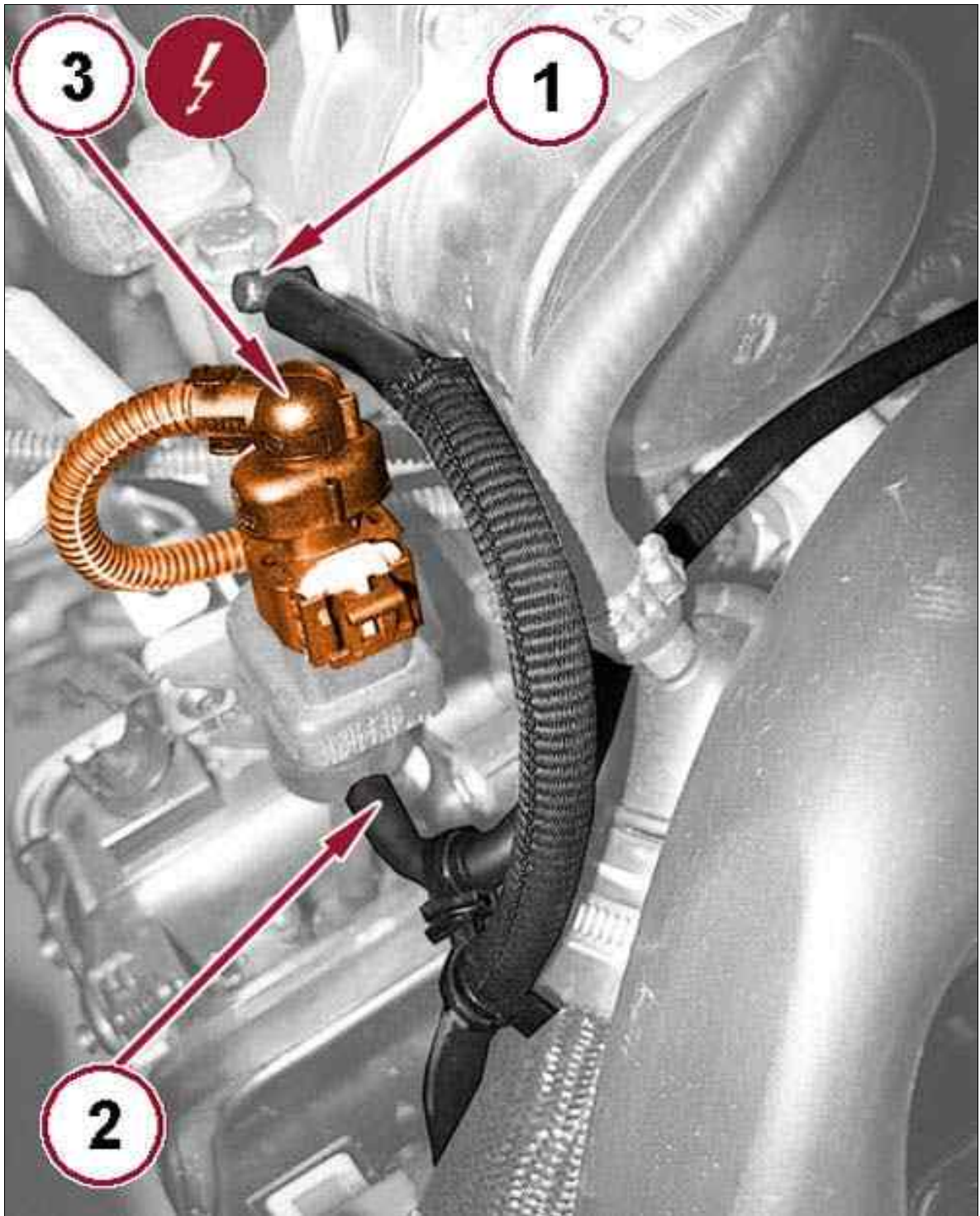
Fig 2: EGR Cooler Screws



Courtesy of CHRYSLER GROUP, LLC

8. Unscrew the lower screws securing the EGR cooler.
9. Remove the upper screw fastening the oil dipstick tube.

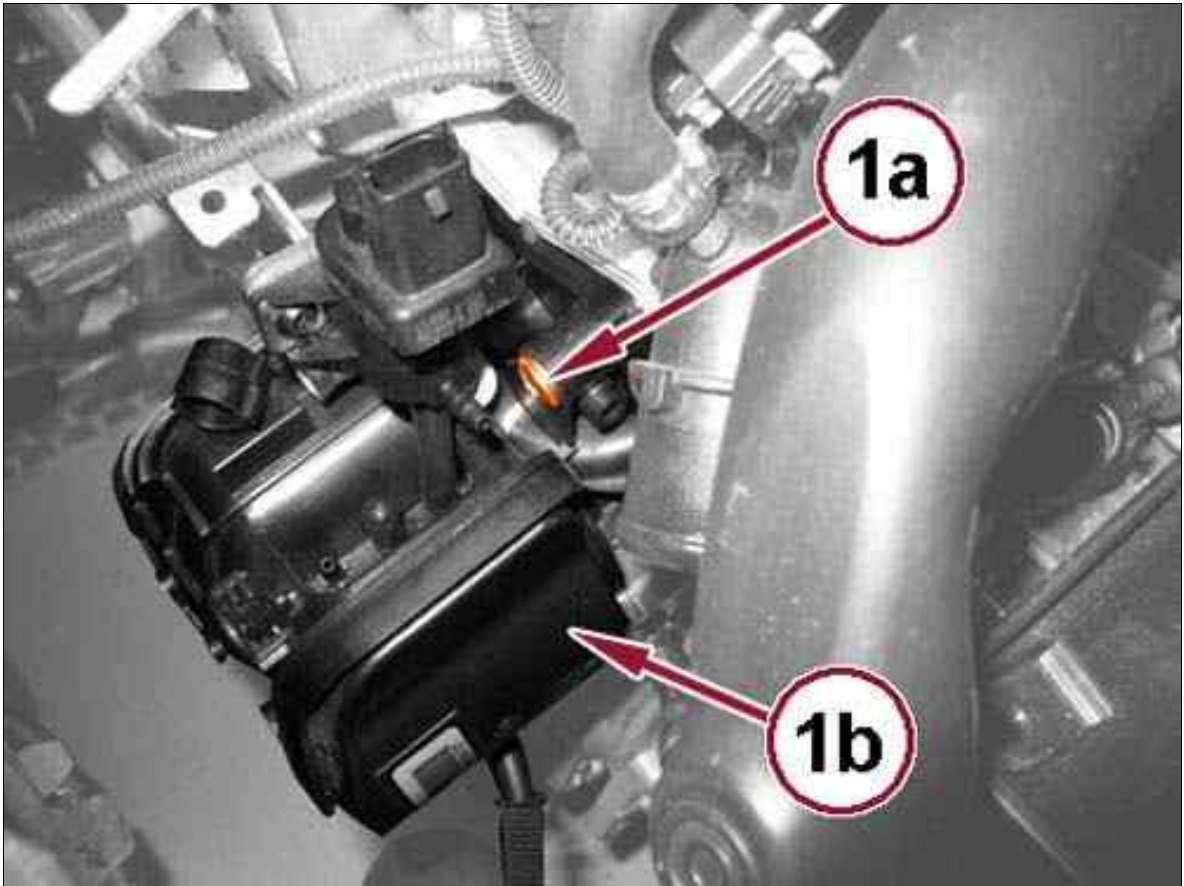
Fig 3: Water Flow Actuator Control Solenoid Connector & Hose Connections



Courtesy of CHRYSLER GROUP, LLC

10. Disconnect the vacuum tank outlet (1) side depressor.
11. Disconnect the air hose vacuum actuator (2) for the water supply to the EGR cooler.
12. Disconnect the electrical connection (3) of the water flow actuator control solenoid to the EGR cooler.

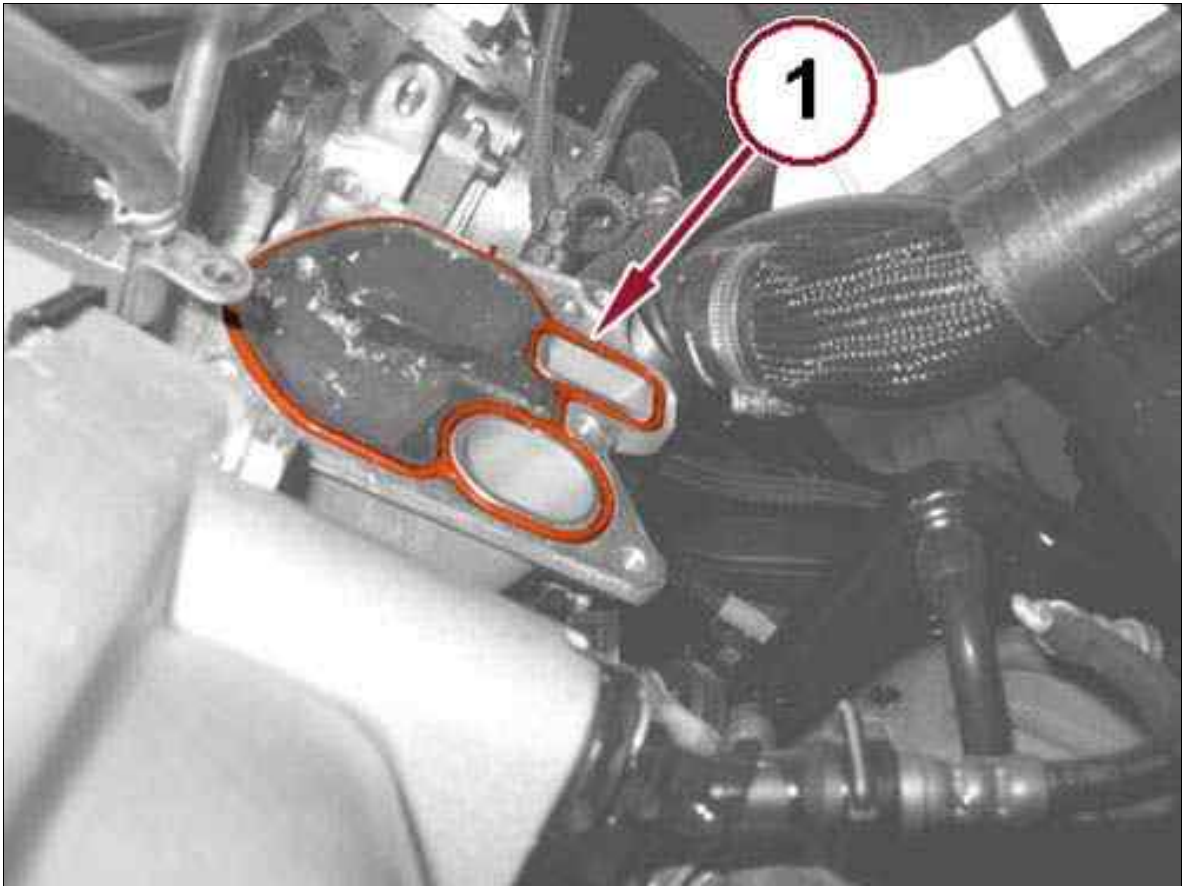
Fig 4: EGR Cooler & Screw



Courtesy of CHRYSLER GROUP, LLC

13. Remove the top screws (1a) and remove the EGR cooler (1b) complete with radiator fins.

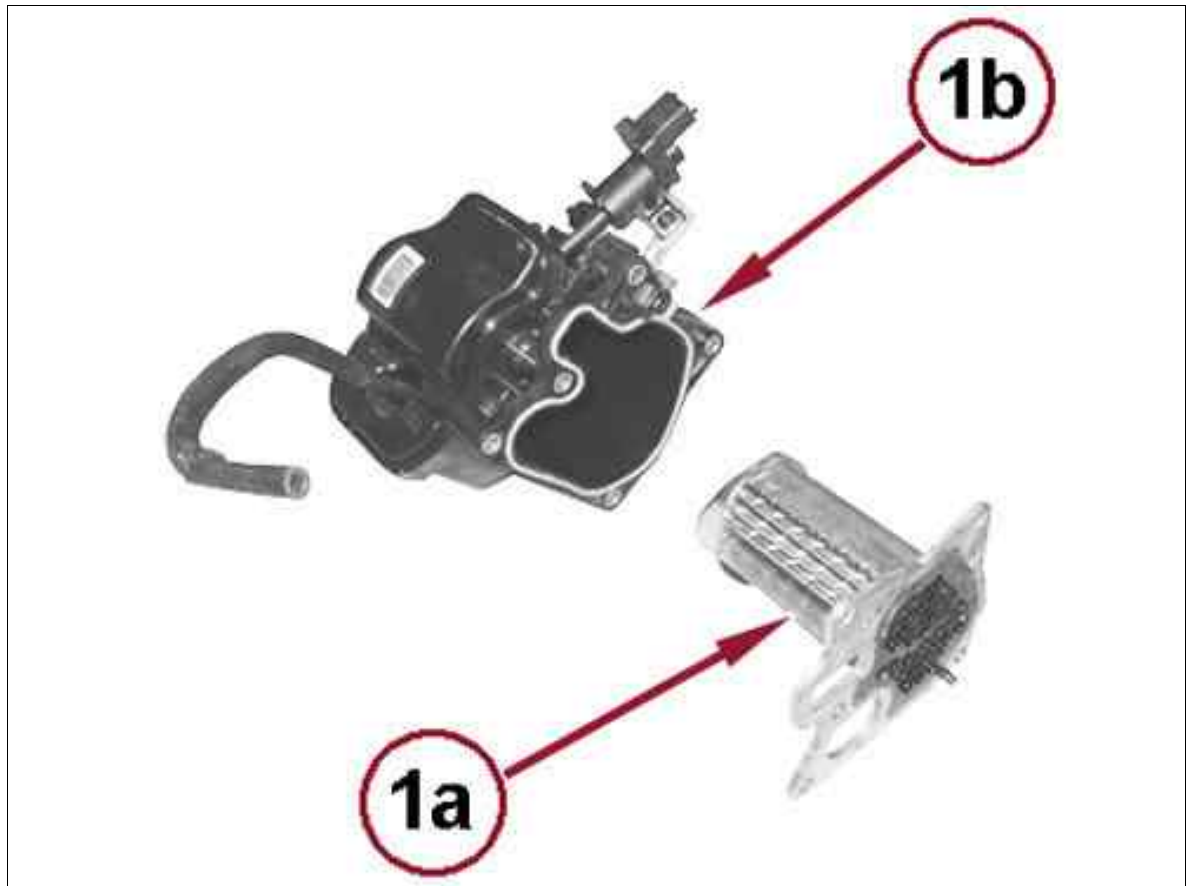
Fig 5: EGR Cooler Gasket



Courtesy of CHRYSLER GROUP, LLC

14. Remove the gasket (1).

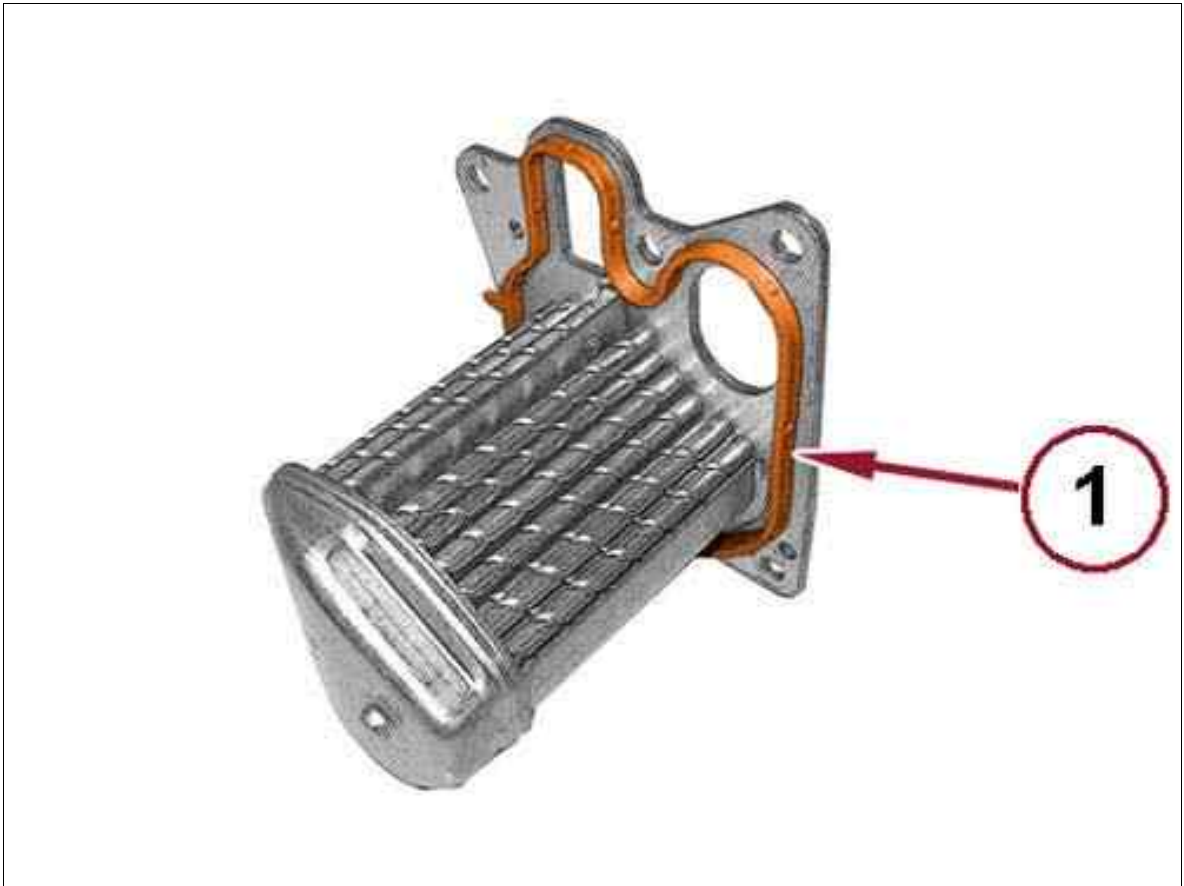
Fig 6: Radiating Pack



Courtesy of CHRYSLER GROUP, LLC

15. Remove the radiating pack (1a) from the heat EGR system (1b).

Fig 7: Gasket



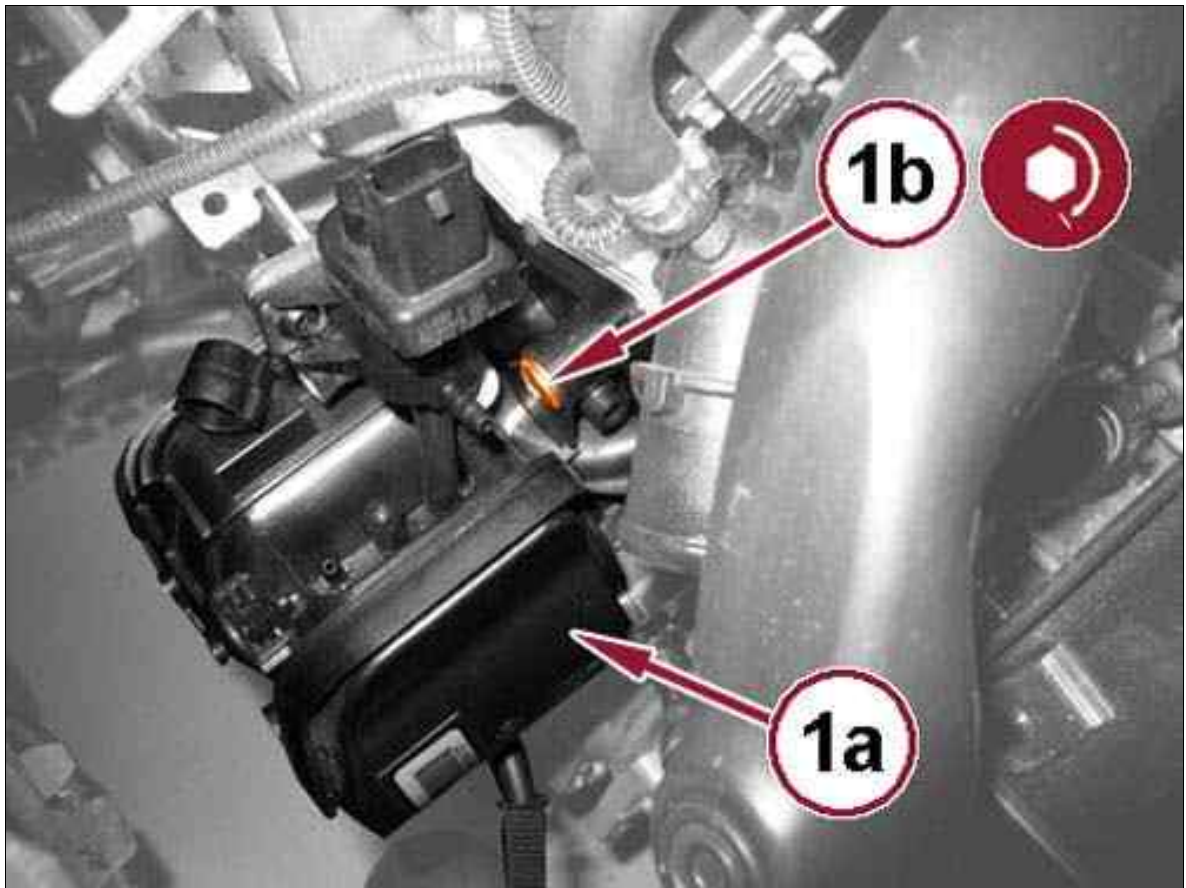
Courtesy of CHRYSLER GROUP, LLC

16. Remove the gasket from the radiator fins.

**EXHAUST GAS RECIRCULATION > COOLER, EXHAUST GAS RECIRCULATION (EGR)
> REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION**

1. Fit a new gasket on the radiator fins and put it in place.
2. Install a new gasket on the EGR cooler.

Fig 1: EGR Cooler & Screw



Courtesy of CHRYSLER GROUP, LLC

3. Position the EGR cooler (1a) complete with radiator fins and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .
4. Connect the electrical connection of the solenoid to the EGR cooler.
5. Connect the air hose to the water supply vacuum actuator to the EGR cooler.
6. Connect the vacuum tank depression hose, side depressor.
7. Tighten the upper screw fastening the oil dipstick tube.
8. Install the intake pressure hose upstream of the DPF and tighten their connectors.
9. Install the turbocharger valve control actuator solenoid. For 1.6/2.0L, refer to TURBOCHARGER, REMOVAL AND INSTALLATION . For 1.4L, refer to TURBOCHARGER, REMOVAL AND INSTALLATION .
10. Install the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .
11. Install the engine beauty cover. For 1.6/2.0L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 1.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 2.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
12. Fill the engine coolant. Refer to STANDARD PROCEDURE .

13. Disconnect and isolate the negative battery cable.

EXHAUST GAS RECIRCULATION > COOLER, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > VACUUM TANK



NOTE:

1.6L Turbo Diesel and 2.0L Turbo Diesel 120CV/140CV



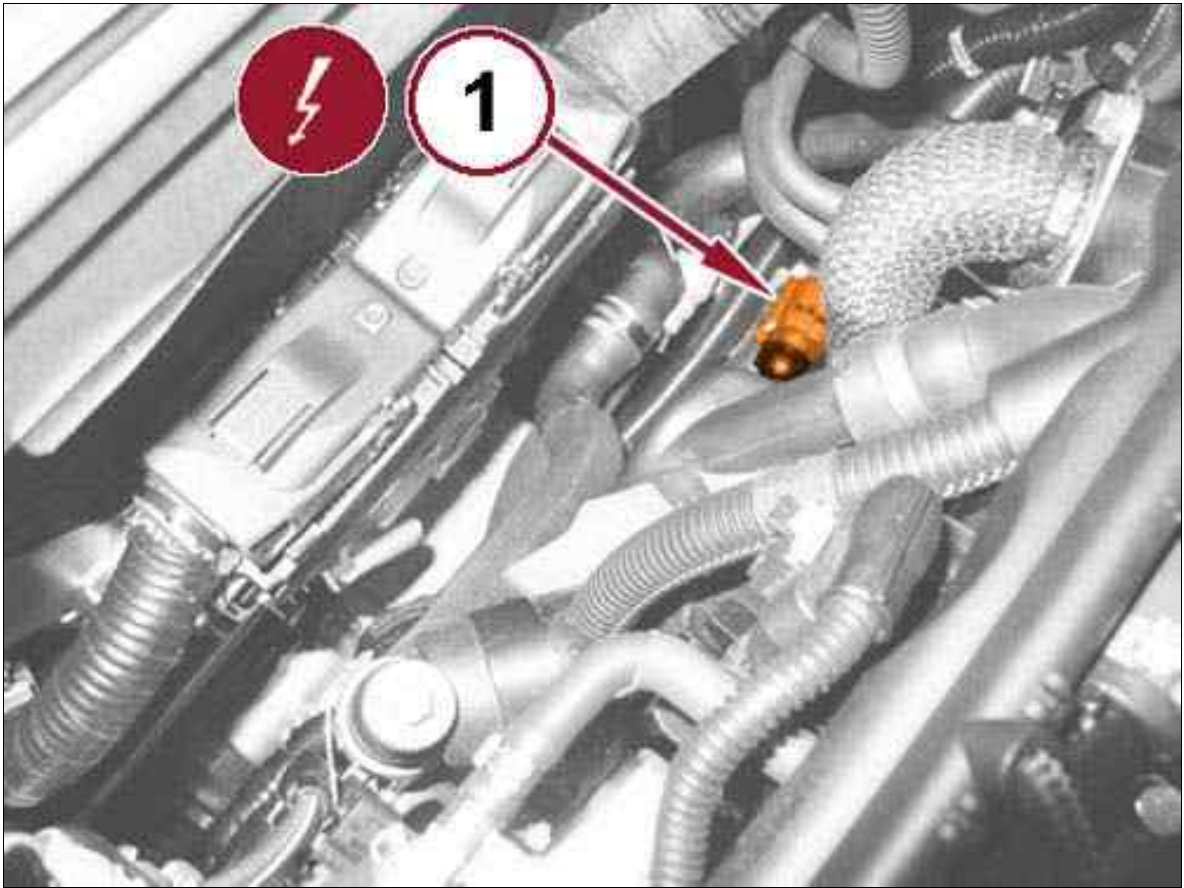
NOTE:

The vacuum tank is integrated in the EGR heat exchanger. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > EXHAUST GAS TEMPERATURE SENSOR ON EGR SOLENOID VALVE TO INTAKE MANIFOLD > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the engine beauty cover. For 1.6/2.0L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 1.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 2.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

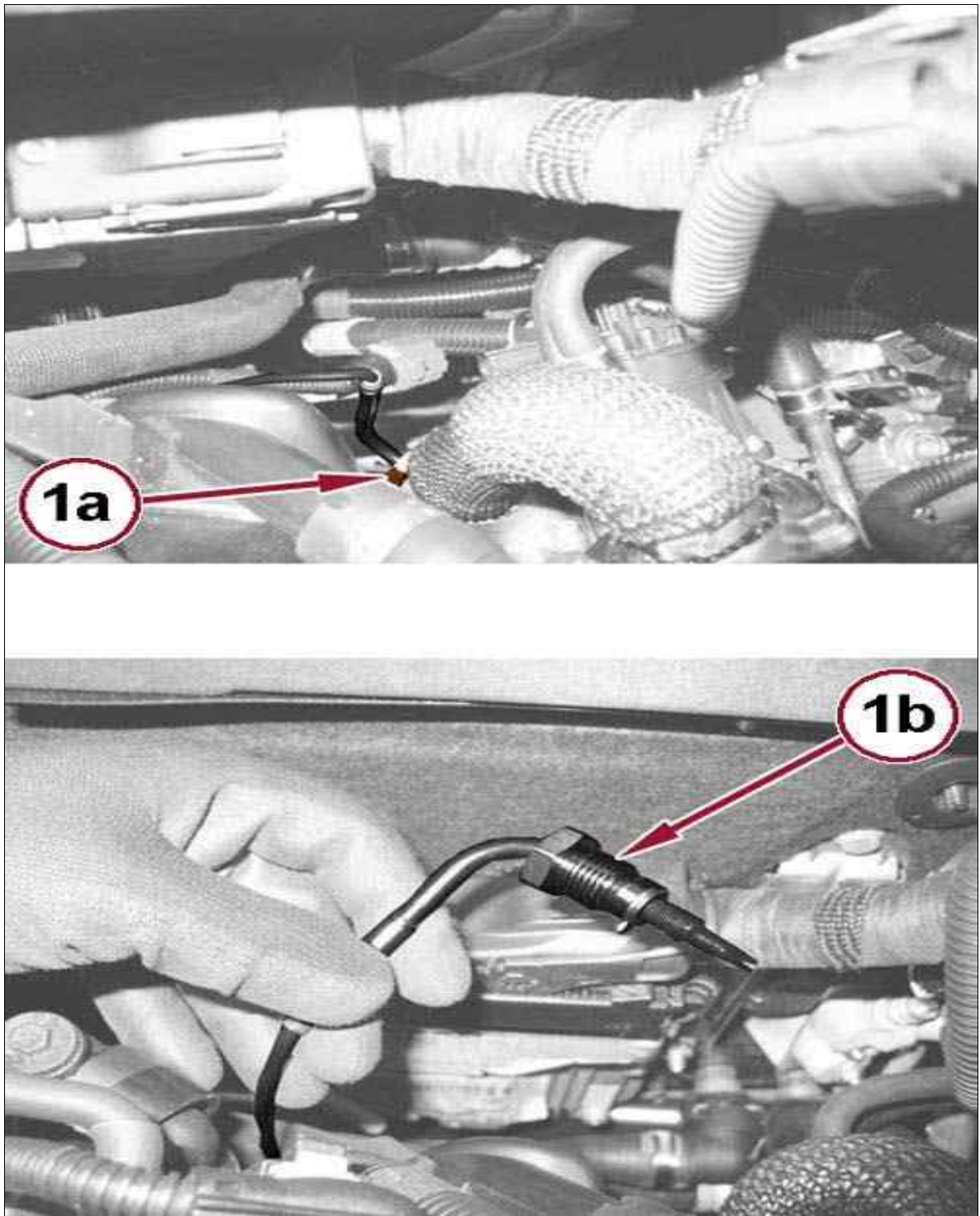
Fig 1: EGR Solenoid Electrical Connector



Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the EGR solenoid electrical connection (1).

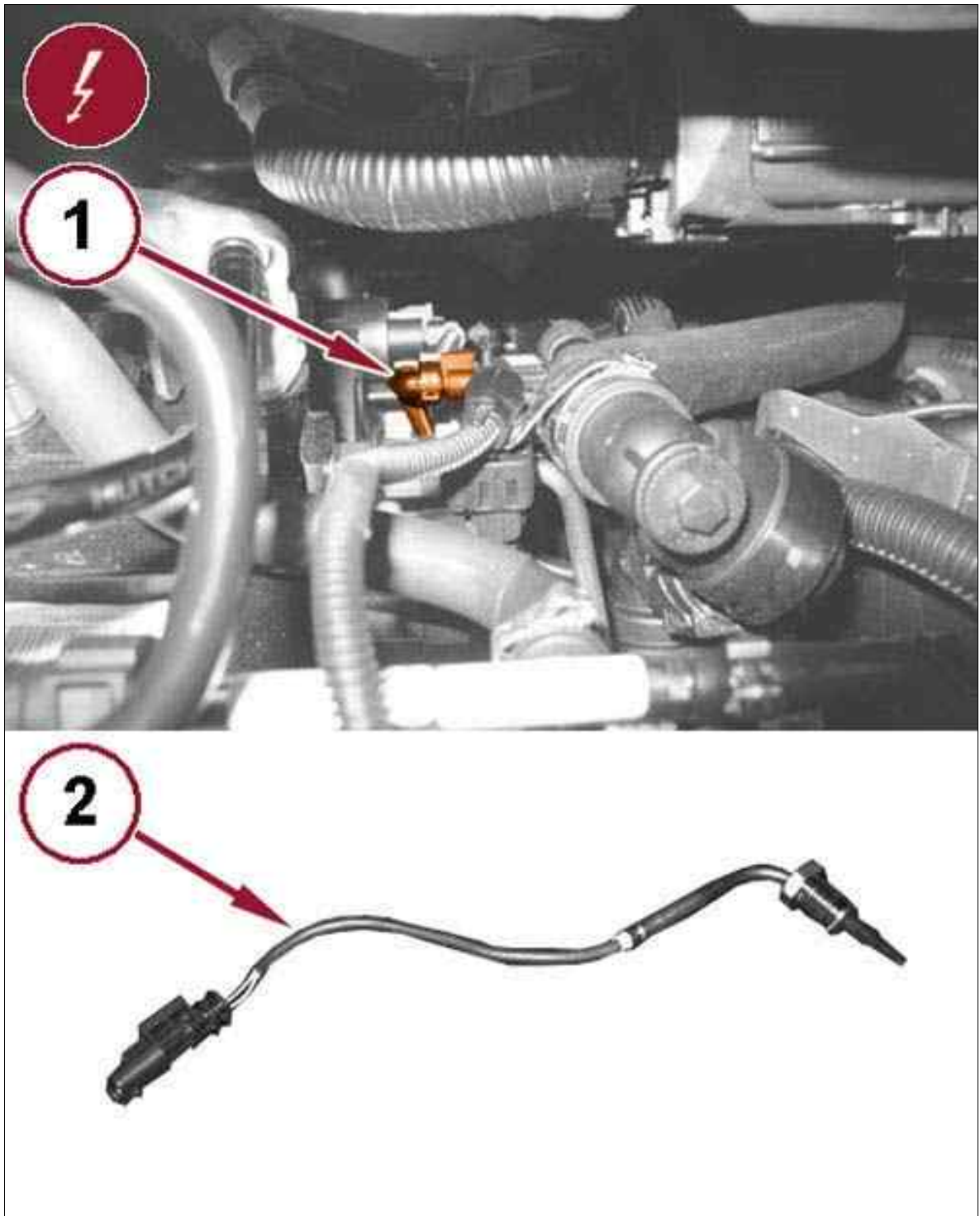
Fig 2: Exhaust Gas Temperature Sensor & Hose



Courtesy of CHRYSLER GROUP, LLC

4. Remove and disengage exhaust gas temperature sensor (1a) and EGR solenoid manifold hose (1b).

Fig 3: Temperature Sensor & Connector



Courtesy of CHRYSLER GROUP, LLC

5. Disconnect the temperature sensor electrical connection (1) from the EGR valve to the intake manifold.
6. Remove the temperature sensor (2).

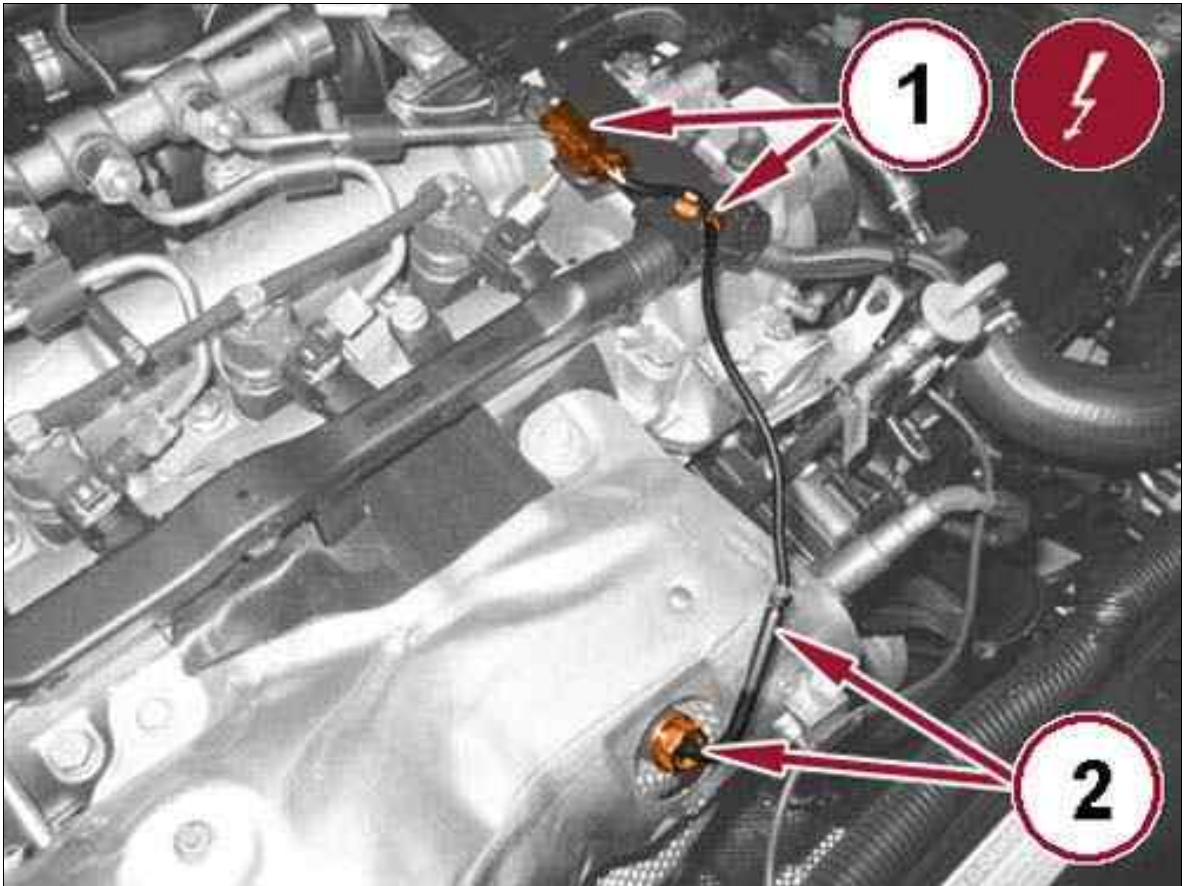
EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > EXHAUST GAS TEMPERATURE SENSOR ON EGR SOLENOID VALVE TO INTAKE MANIFOLD > INSTALLATION

1. Connect the exhaust gas temperature sensor electrical connection from the EGR valve to the intake manifold.
2. Install the temperature sensor and tighten its connector.
3. Connect the EGR solenoid electrical connection.
4. Install the engine beauty cover. For 1.6/2.0L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 1.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION . For 2.4L, refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
5. Connect the negative battery cable.

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF CATALYST > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

Fig 1: Temperature Sensor Connector & Ring



Courtesy of CHRYSLER GROUP, LLC

2. Disconnect the upstream exhaust gas temperature sensor electrical connector (1), disengage the connector and the wiring from the retaining clips.
3. Remove the ring (2) and remove the sensor.

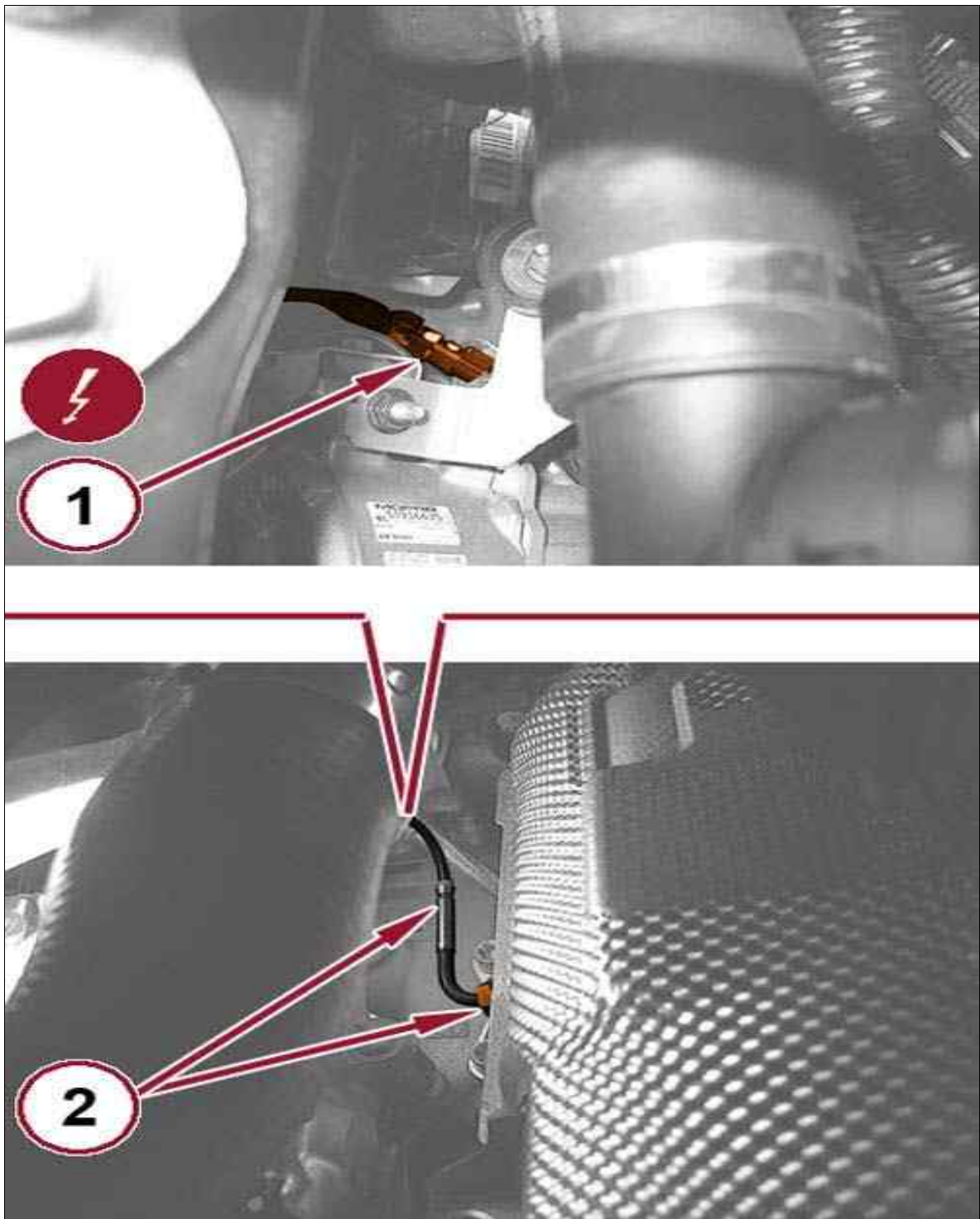
EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF CATALYST > INSTALLATION

1. Install the upstream exhaust gas temperature sensor and tighten its connector.
2. Engage the wiring ring connector and retaining clips.
3. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF DPF > REMOVAL

1. Remove the right front wheel and splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
2. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

Fig 1: Upstream Exhaust Gas Temperature Sensor & Connector



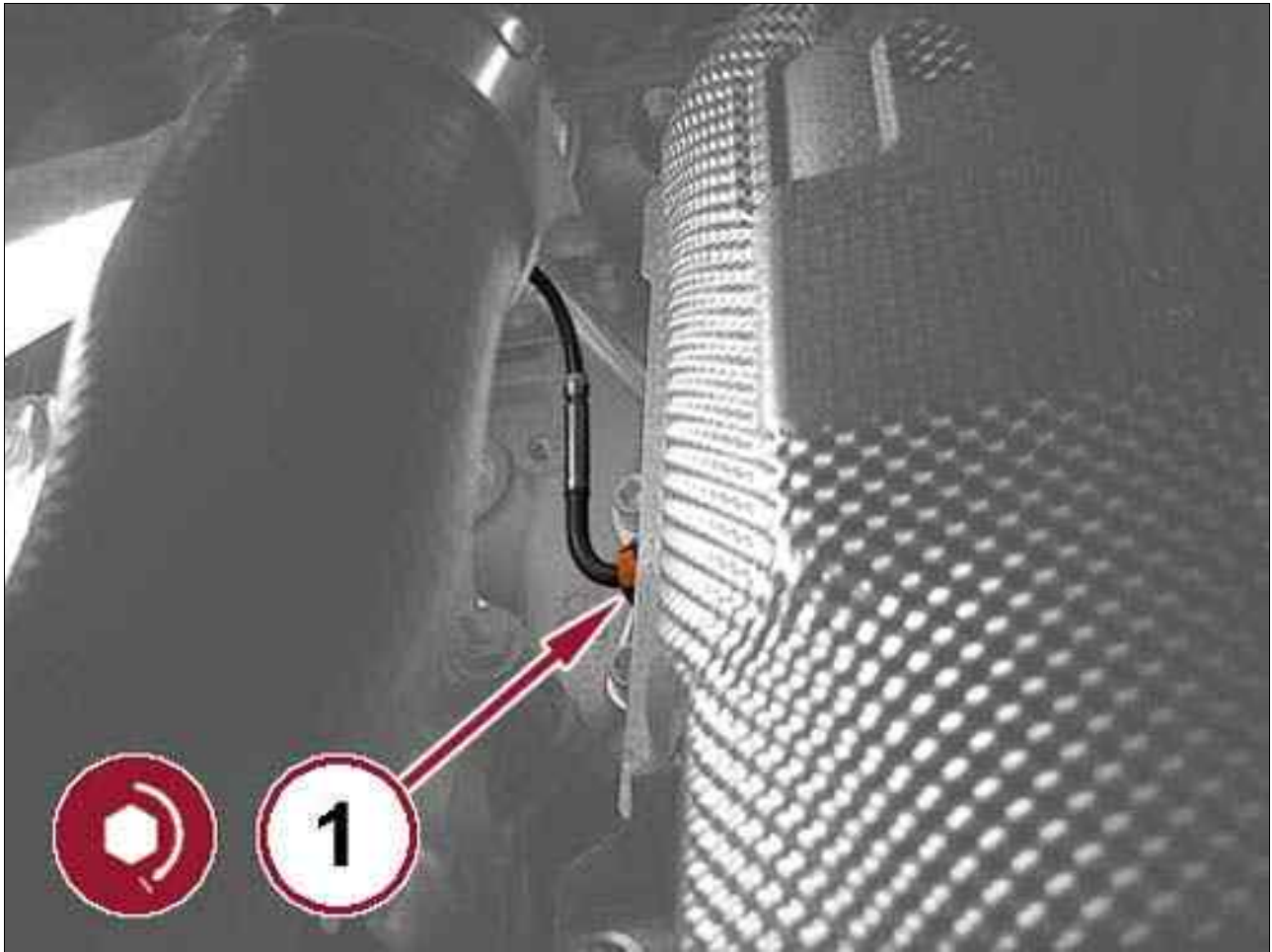
Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the upstream exhaust gas temperature sensor electrical connection (1) at the particulate filter (DPF).

4. Remove the connector (2) and remove the sensor.

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF DPF > INSTALLATION

Fig 1: Upstream Exhaust Gas Temperature Sensor Bolt



Courtesy of CHRYSLER GROUP, LLC

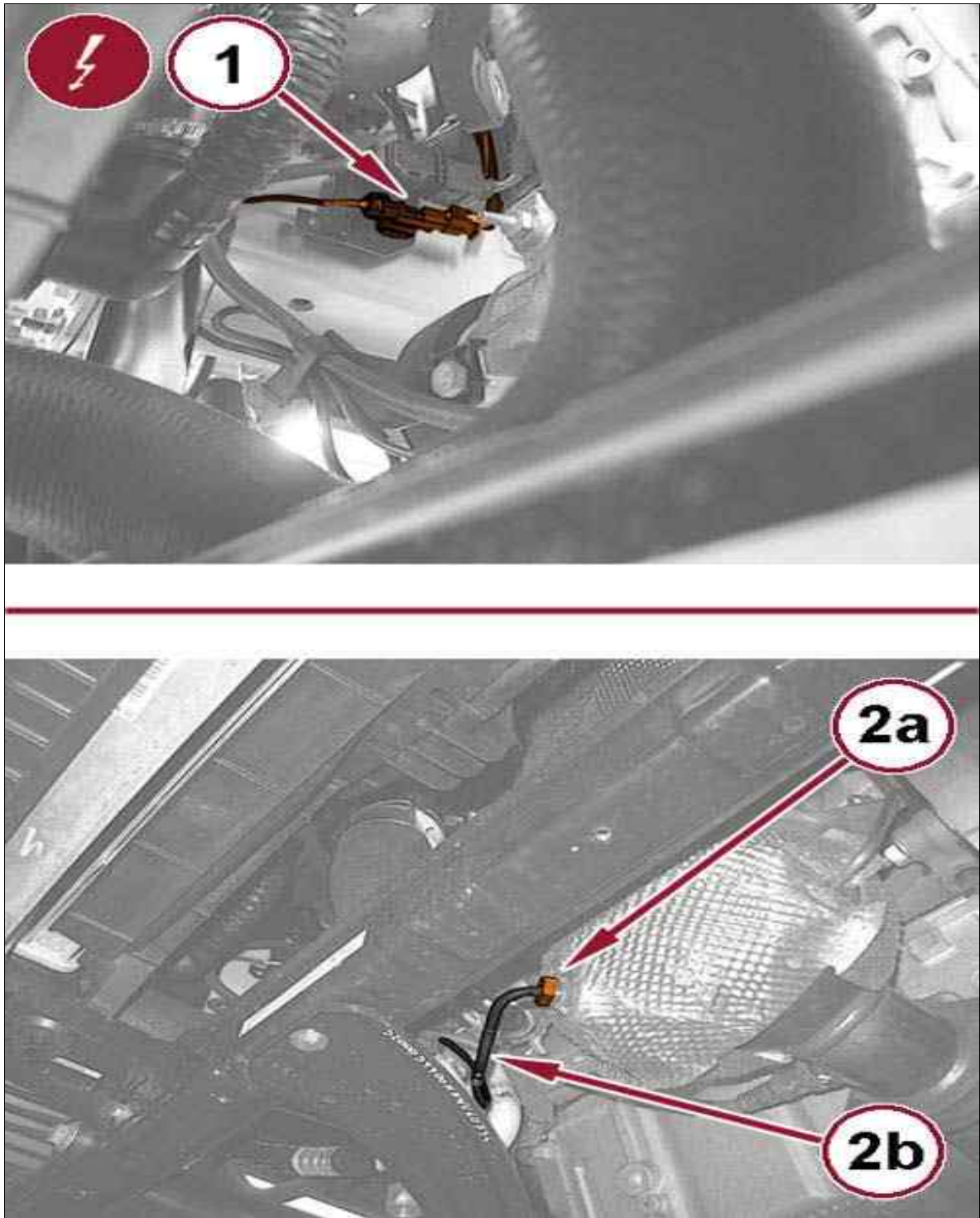
1. Install the upstream exhaust gas temperature sensor and tighten the bolt to the proper specification. Refer to TORQUE SPECIFICATIONS .
2. Connect the electrical connector to the sensor.
3. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
4. Install the right front wheel and splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND

INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF DPF > REMOVAL

1. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

Fig 1: Downstream Exhaust Gas Temperature Sensor & Connector

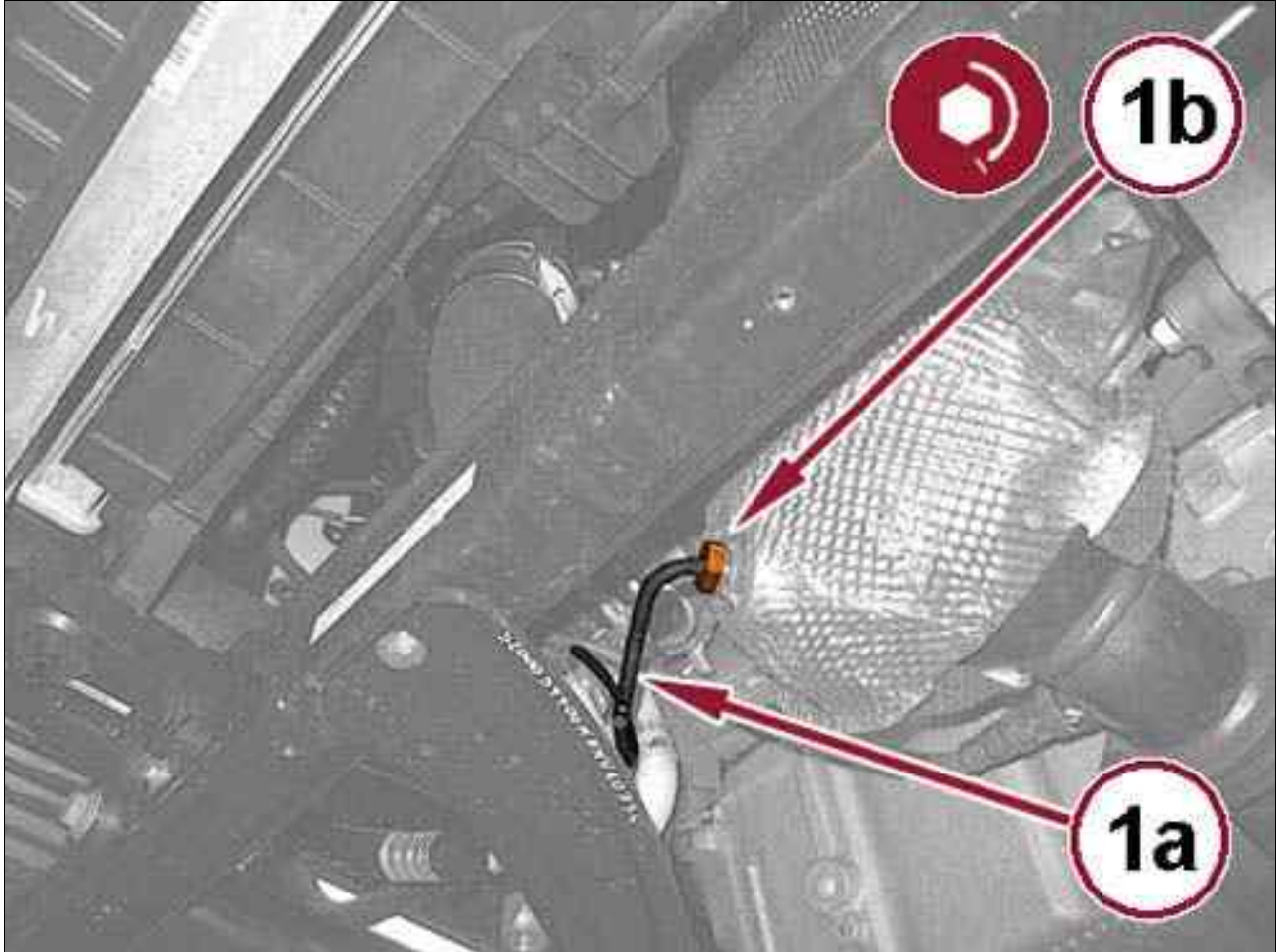


Courtesy of CHRYSLER GROUP, LLC

2. Disconnect the downstream exhaust gas temperature sensor electrical connection (1).
3. Remove the connector (2a) and remove the sensor (2b).

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 120HP / 140HP EXHAUST GAS TEMPERATURE SENSOR UPSTREAM OF DPF > INSTALLATION

Fig 1: Downstream Exhaust Gas Temperature Sensor Bolt



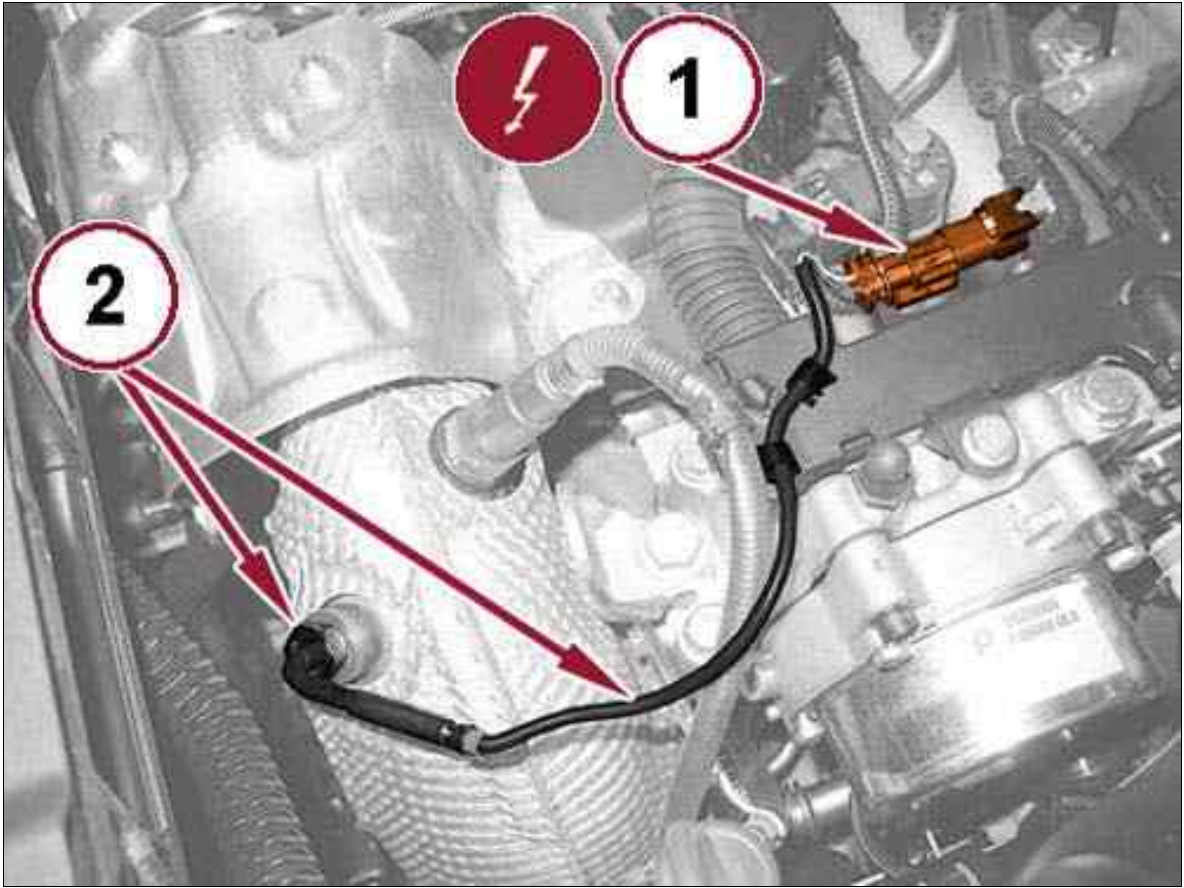
Courtesy of CHRYSLER GROUP, LLC

1. Install the downstream exhaust gas temperature sensor and tighten the bolt (1) to the proper specification. Refer to TORQUE SPECIFICATIONS
2. Connect the electrical connector to the sensor.
3. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 170HP EXHAUST GAS TEMPERATURE UPSTREAM OF CATALYST > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION

Fig 1: Upstream Exhaust Gas Temperature Sensor Connector & Ring



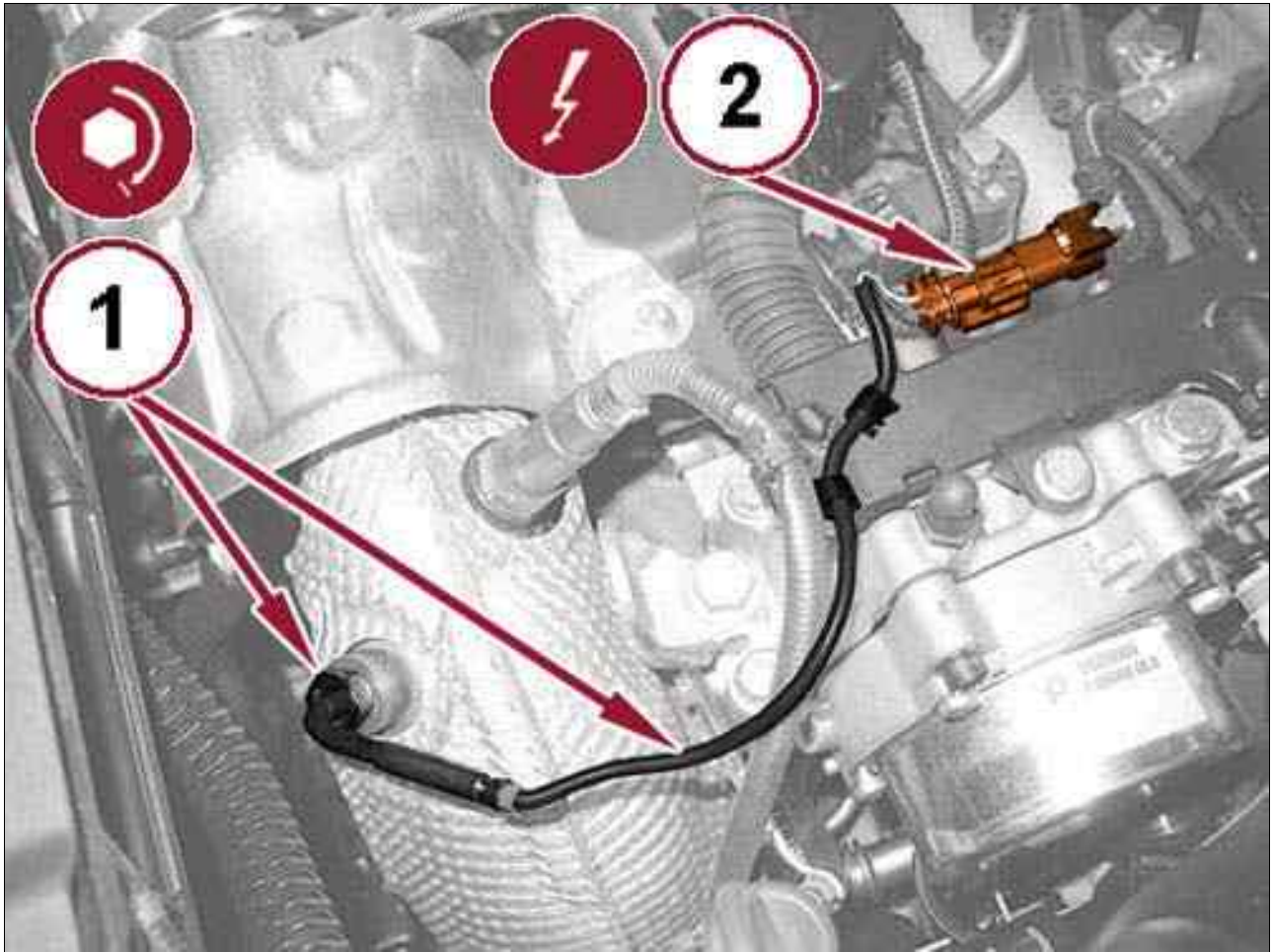
Courtesy of CHRYSLER GROUP, LLC

2. Disconnect the upstream exhaust gas temperature sensor electrical connector (1), disengage the connector and the wiring from the retaining clips.
3. Remove the ring (2) and remove the sensor.

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 170HP EXHAUST GAS TEMPERATURE UPSTREAM OF CATALYST > INSTALLATION

1. Install the upstream exhaust gas temperature sensor and tighten its connector (2).
2. Engage the wiring ring connector and retaining clips (1).
3. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

Fig 1: Upstream Exhaust Gas Temperature Sensor Connector & Ring

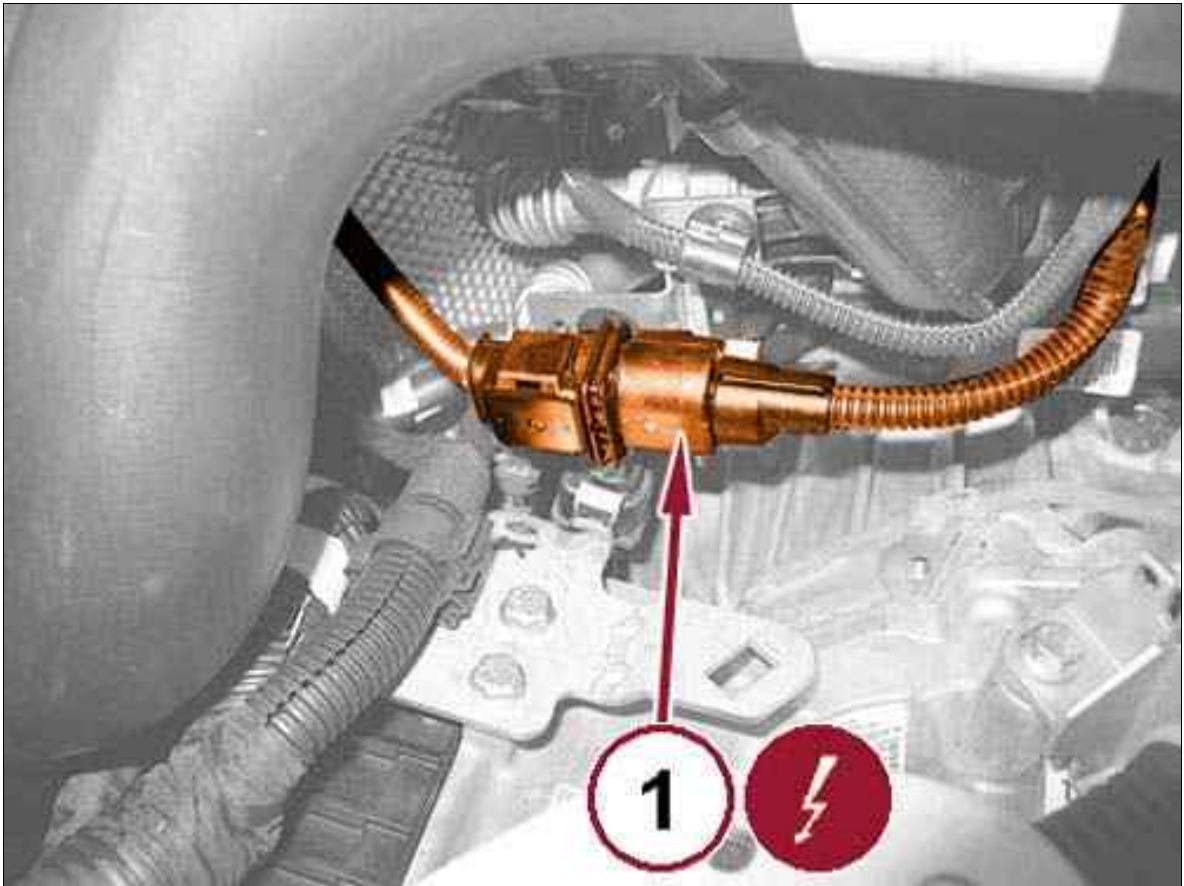


Courtesy of CHRYSLER GROUP, LLC

EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND INSTALLATION > 2.0L 170CV EXHAUST GAS TEMPERATURE SENSOR TO DPF > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
2. Remove the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .

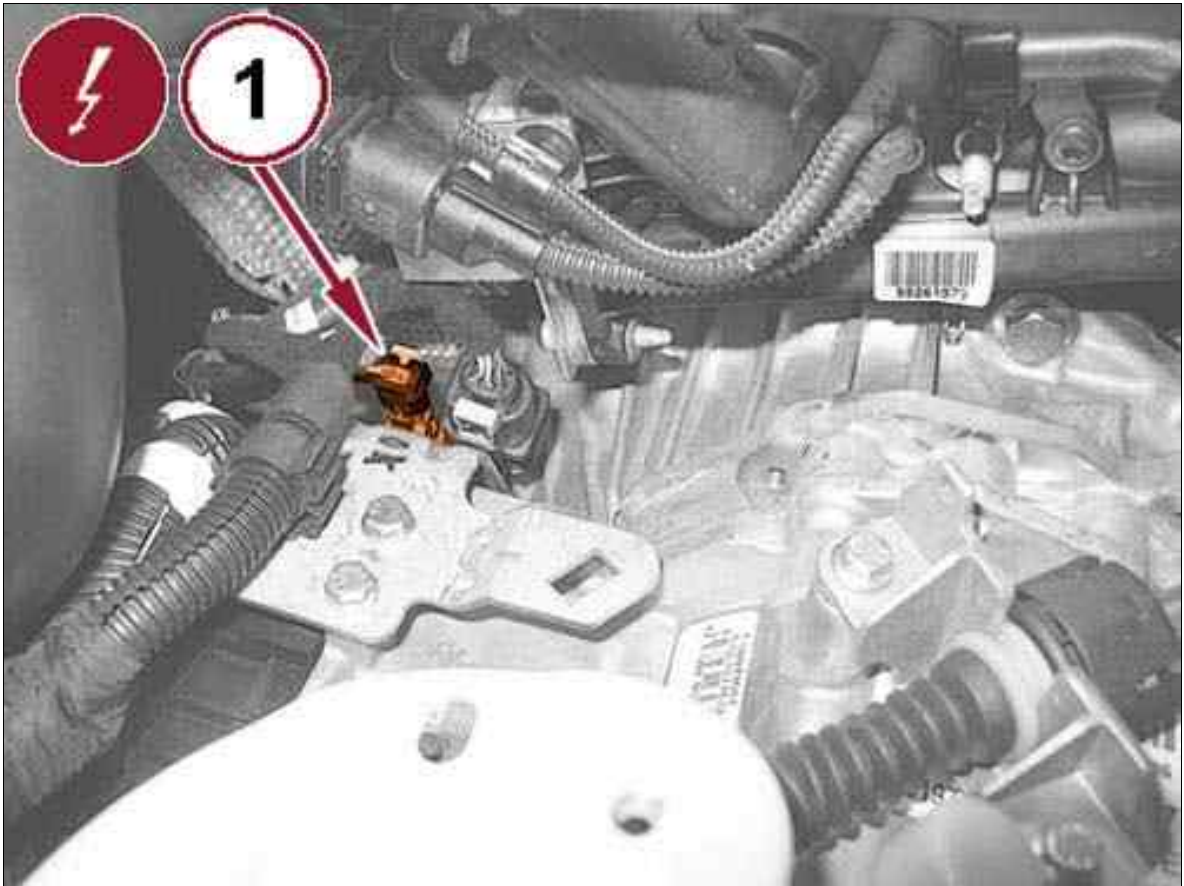
Fig 1: Upstream Oxygen Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

4. Disconnect and upstream oxygen sensor connector (1).

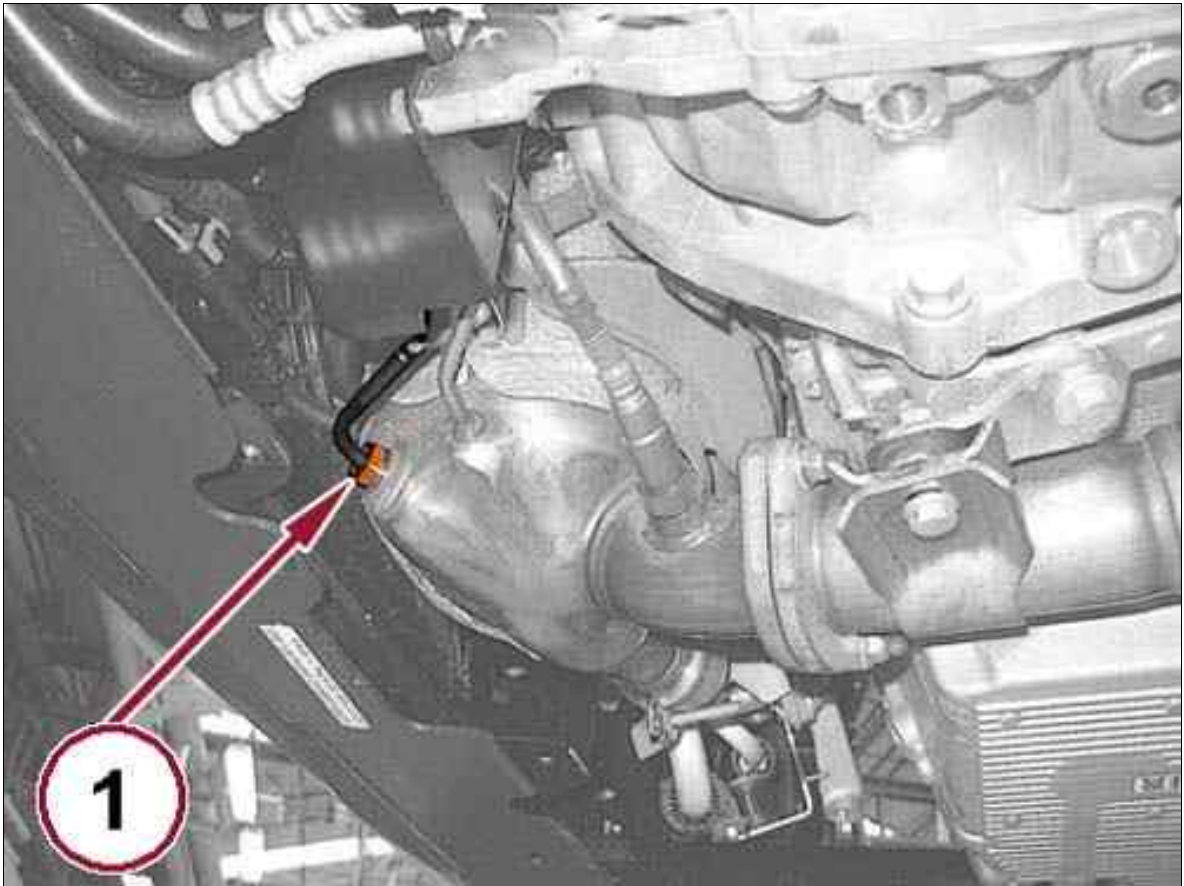
Fig 2: Downstream Oxygen Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

5. Unplug the connector from the downstream exhaust gas temperature sensor.

Fig 3: Sensor Fitting

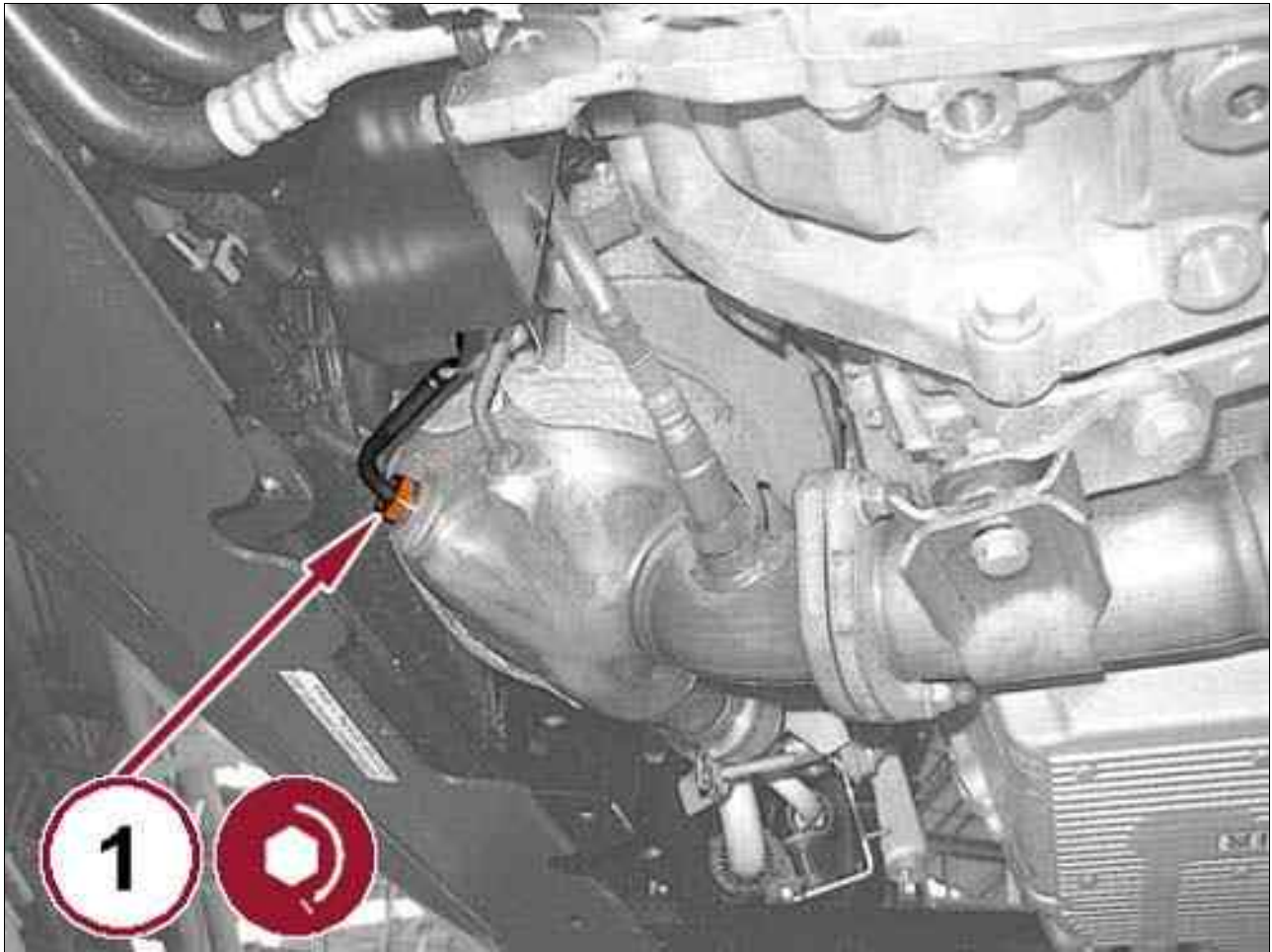


Courtesy of CHRYSLER GROUP, LLC

6. Remove the wiring from the retaining clips, unscrew the fitting and remove the sensor (1).

**EXHAUST GAS RECIRCULATION > SENSOR, EGR TEMPERATURE > REMOVAL AND
INSTALLATION > 2.0L 170CV EXHAUST GAS TEMPERATURE SENSOR TO DPF >
INSTALLATION**

Fig 1: Sensor Fitting



Courtesy of CHRYSLER GROUP, LLC

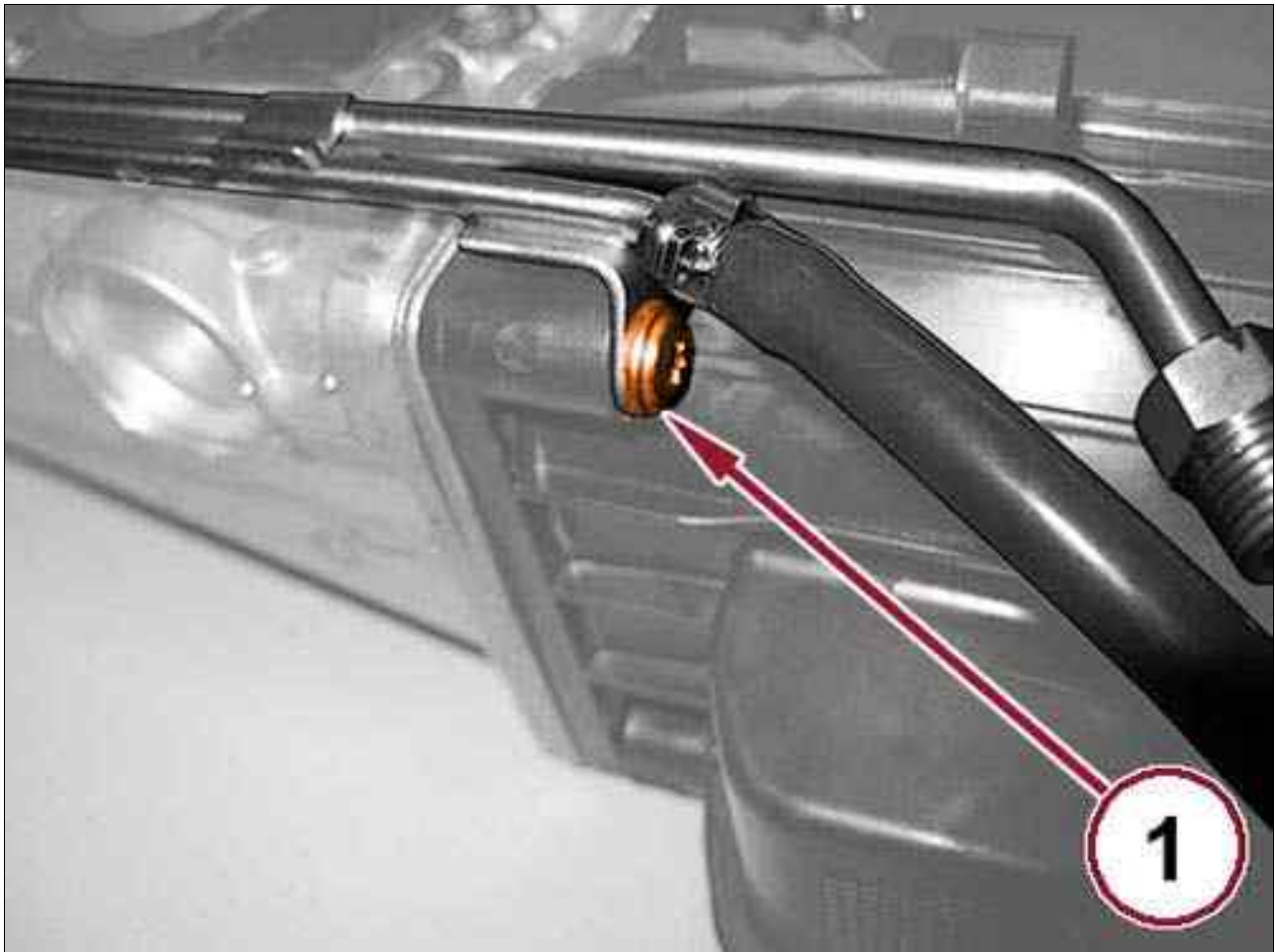
1. Install the downstream exhaust gas temperature sensor, engage the wiring in the retainer clips and then tighten the sensor bolt (1b) to the proper specification. Refer to TORQUE SPECIFICATIONS
2. Connect the electrical connector to the sensor.
3. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
4. Install the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
5. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > SOLENOID, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > EGR SOLENOID

The EGR solenoid is serviced with the EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > EGR VALVE DISASSEMBLY AND ASSEMBLY > DISASSEMBLY

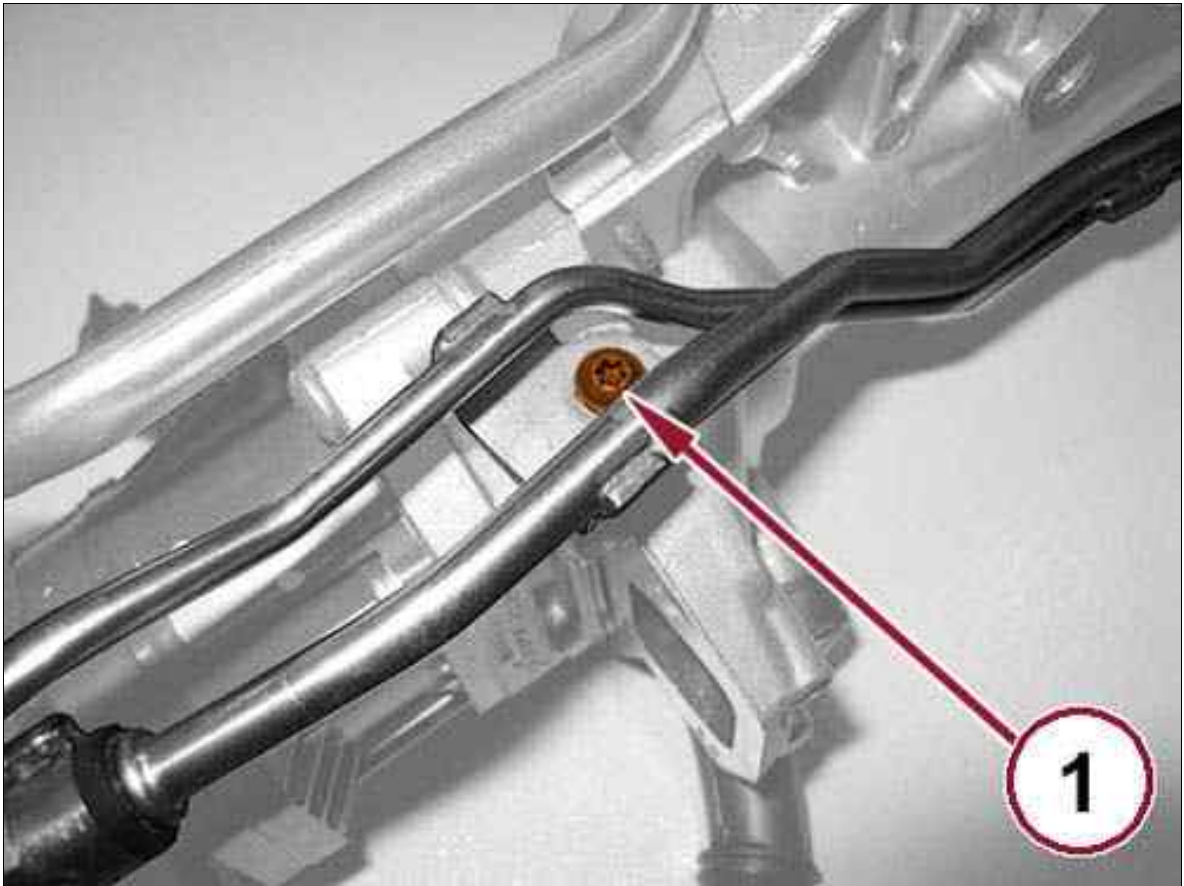
Fig 1: Tandem Pipe To EGR Cooler Retaining Screw



Courtesy of CHRYSLER GROUP, LLC

1. Place the EGR assembly in a vice, using the tool.
2. Remove the retaining screw (1) securing the tandem pipe to the EGR cooler.

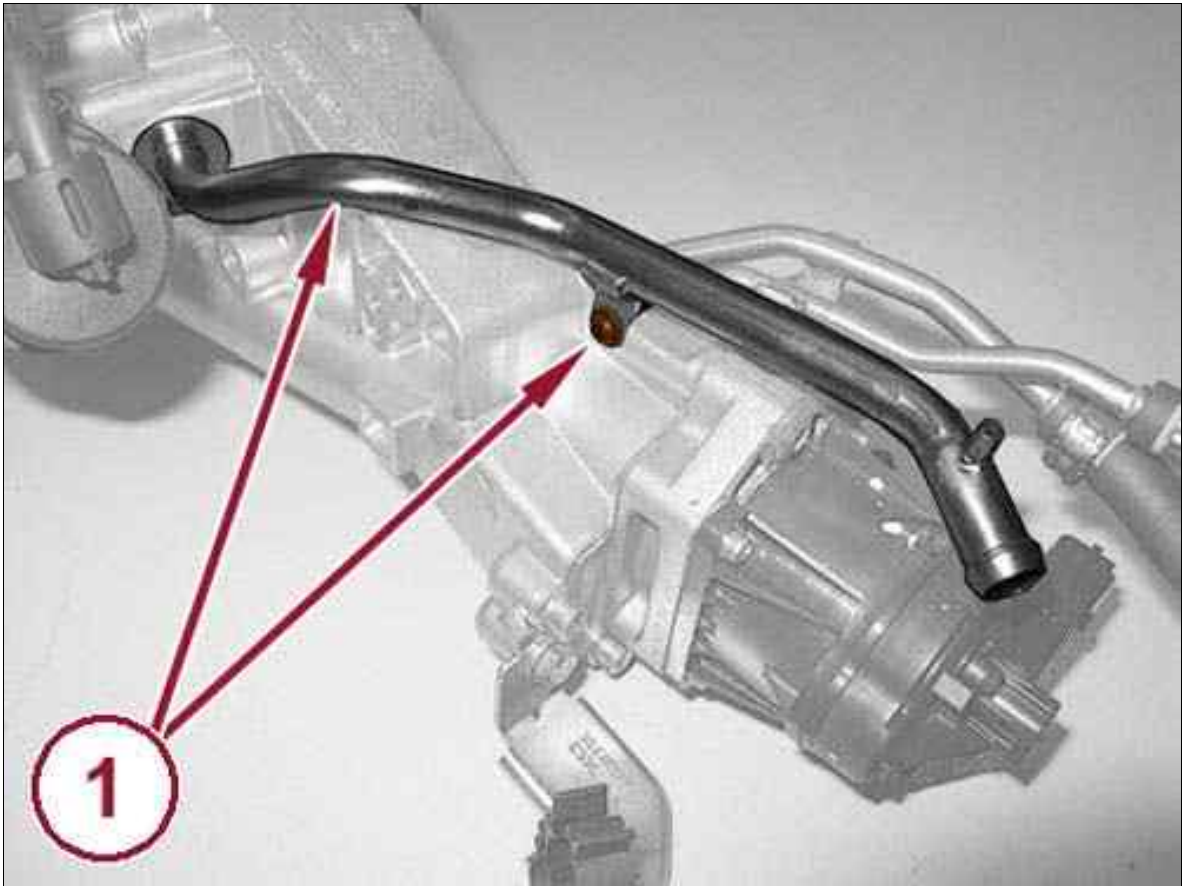
Fig 2: Tandem Pipe Retaining Screw



Courtesy of CHRYSLER GROUP, LLC

3. Remove the screw (1) and remove the tandem pipe.

Fig 3: Discharge Hose Screw



Courtesy of CHRYSLER GROUP, LLC

4. Remove the screw (1) and remove the discharge hose to the cooler with the gasket.

Fig 4: Water Delivery Pipe To EGR Cooler Screw



Courtesy of CHRYSLER GROUP, LLC

5. Remove the screw (1) and remove the water delivery pipe to the EGR cooler with gasket.

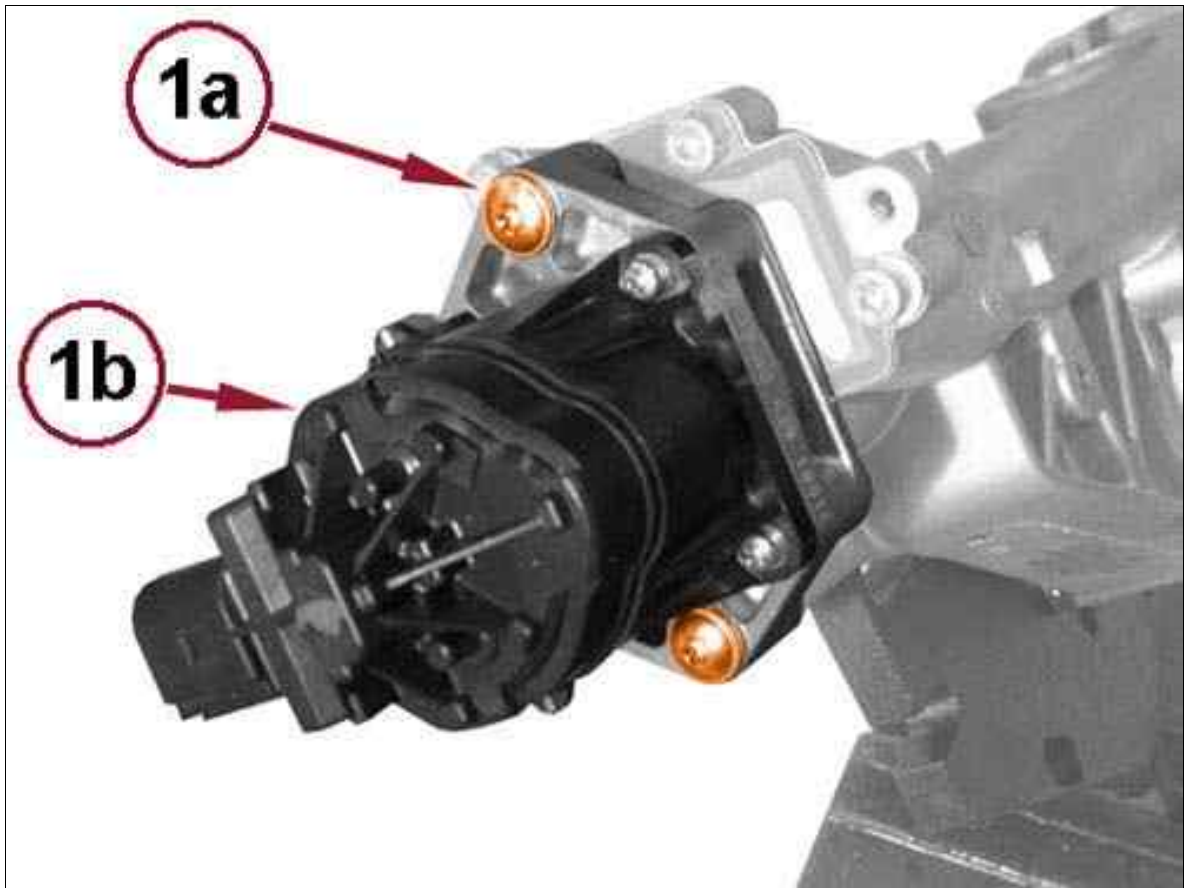
Fig 5: Discharge Pipe O-Ring



Courtesy of CHRYSLER GROUP, LLC

6. Remove the O-ring (1) from the water discharge pipe to the EGR cooler.

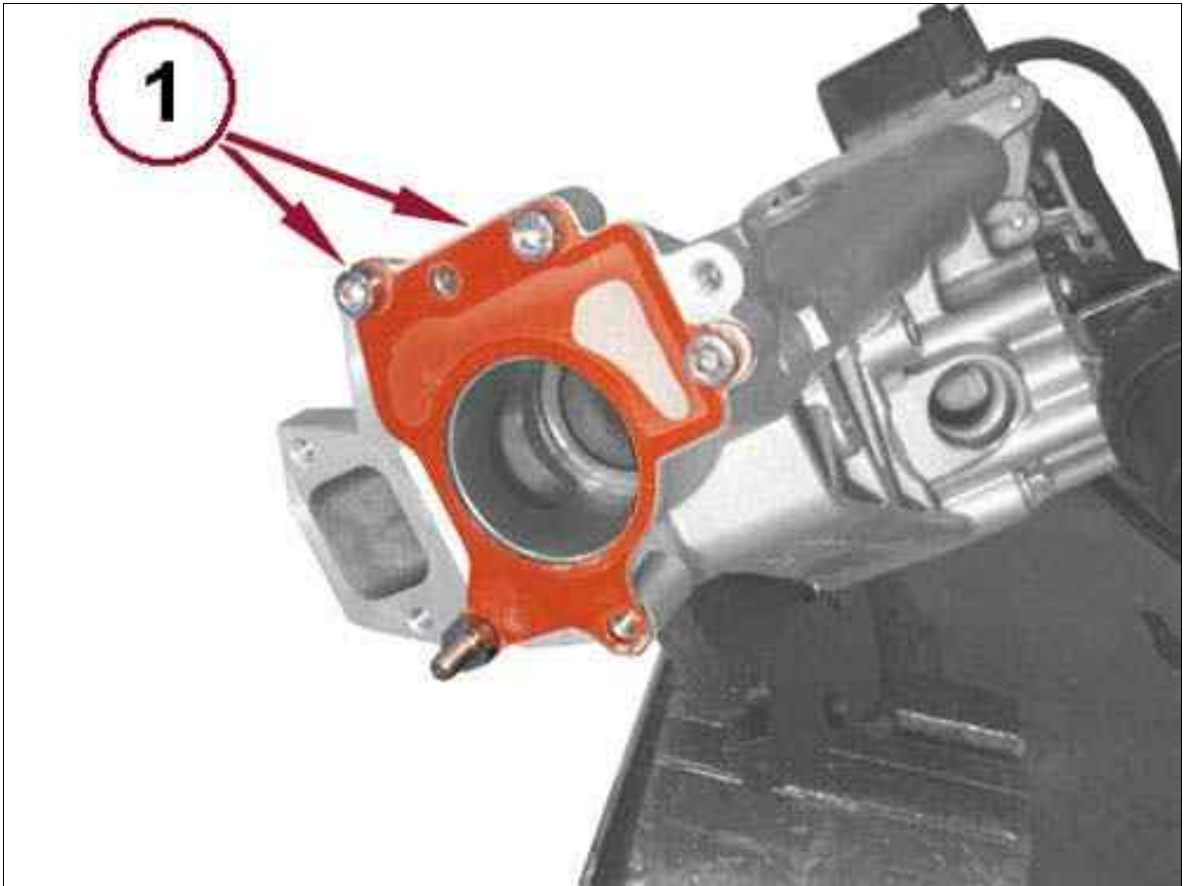
Fig 6: EGR Solenoid & Screws



Courtesy of CHRYSLER GROUP, LLC

7. Remove the screws (1a) and remove the EGR solenoid (1b) complete with internal seal.

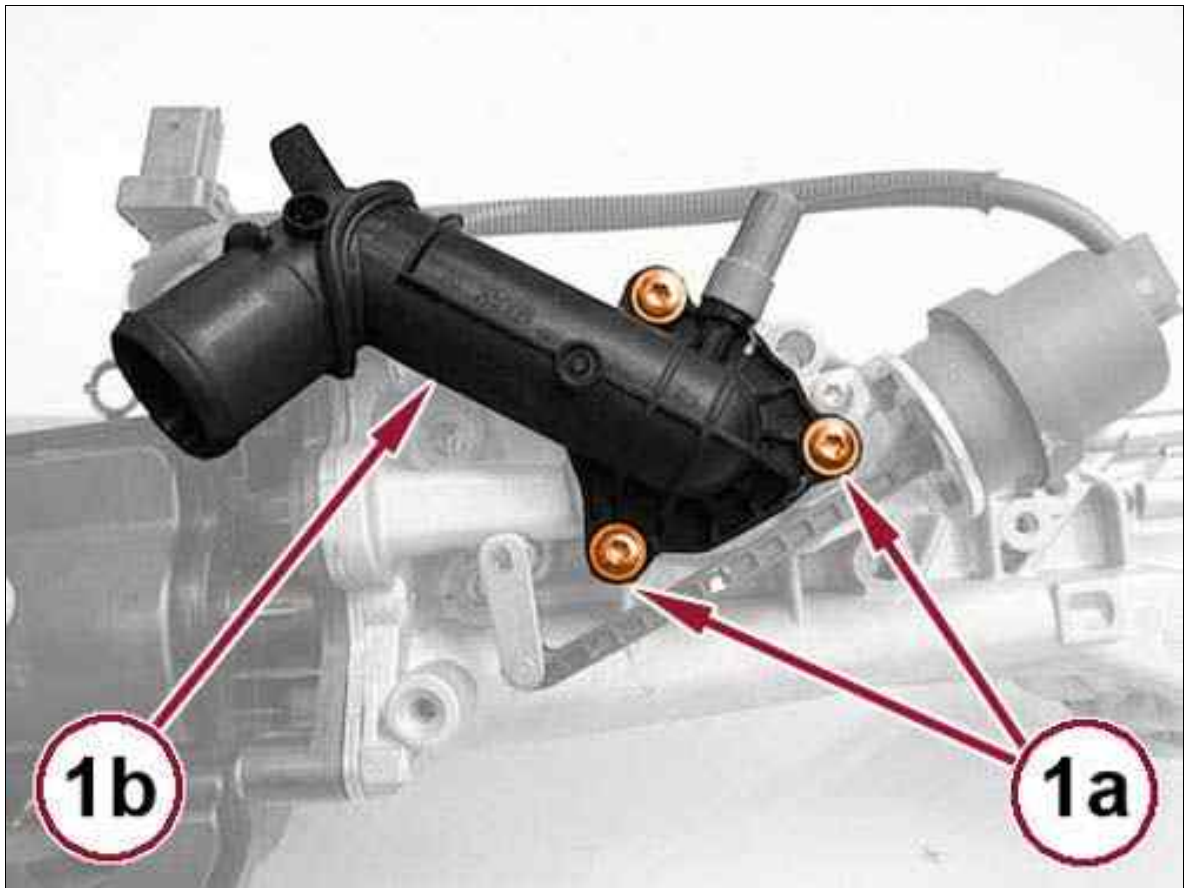
Fig 7: Flange & Gasket



Courtesy of CHRYSLER GROUP, LLC

8. Remove the screws and remove the gasket / flange.

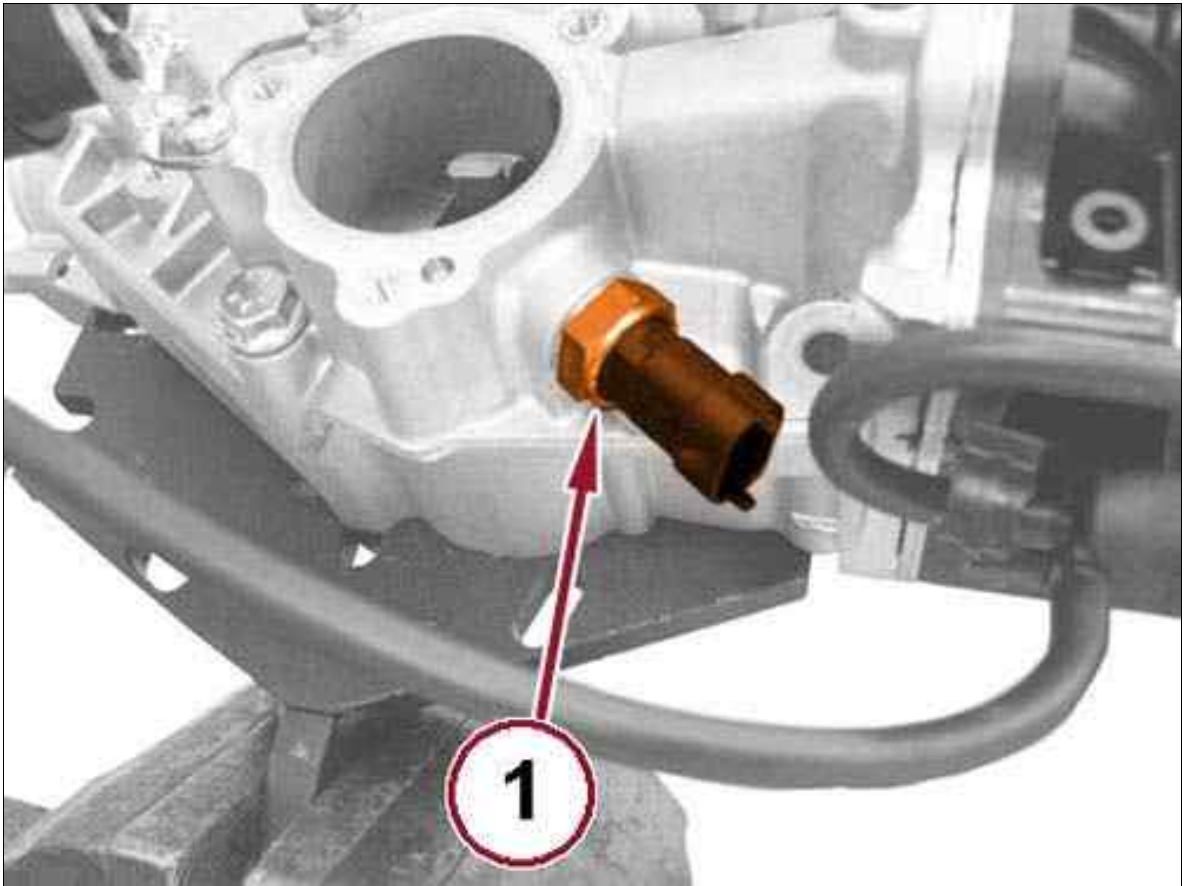
Fig 8: Thermostat Housing & Screws



Courtesy of CHRYSLER GROUP, LLC

9. Remove the screws (1a) and remove the thermostat (1b) with gasket.

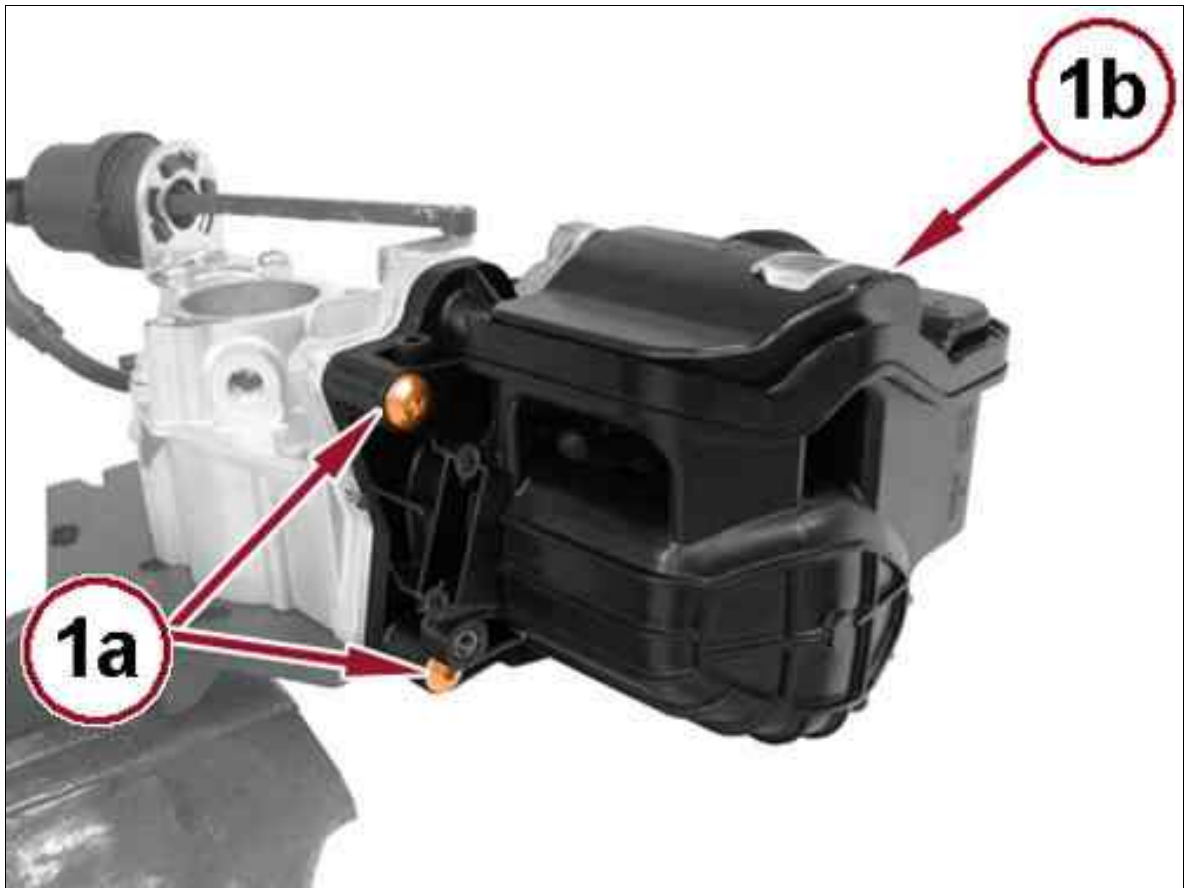
Fig 9: Engine Coolant Temperature Sensor



Courtesy of CHRYSLER GROUP, LLC

10. Unscrew and remove the engine coolant temperature sensor.

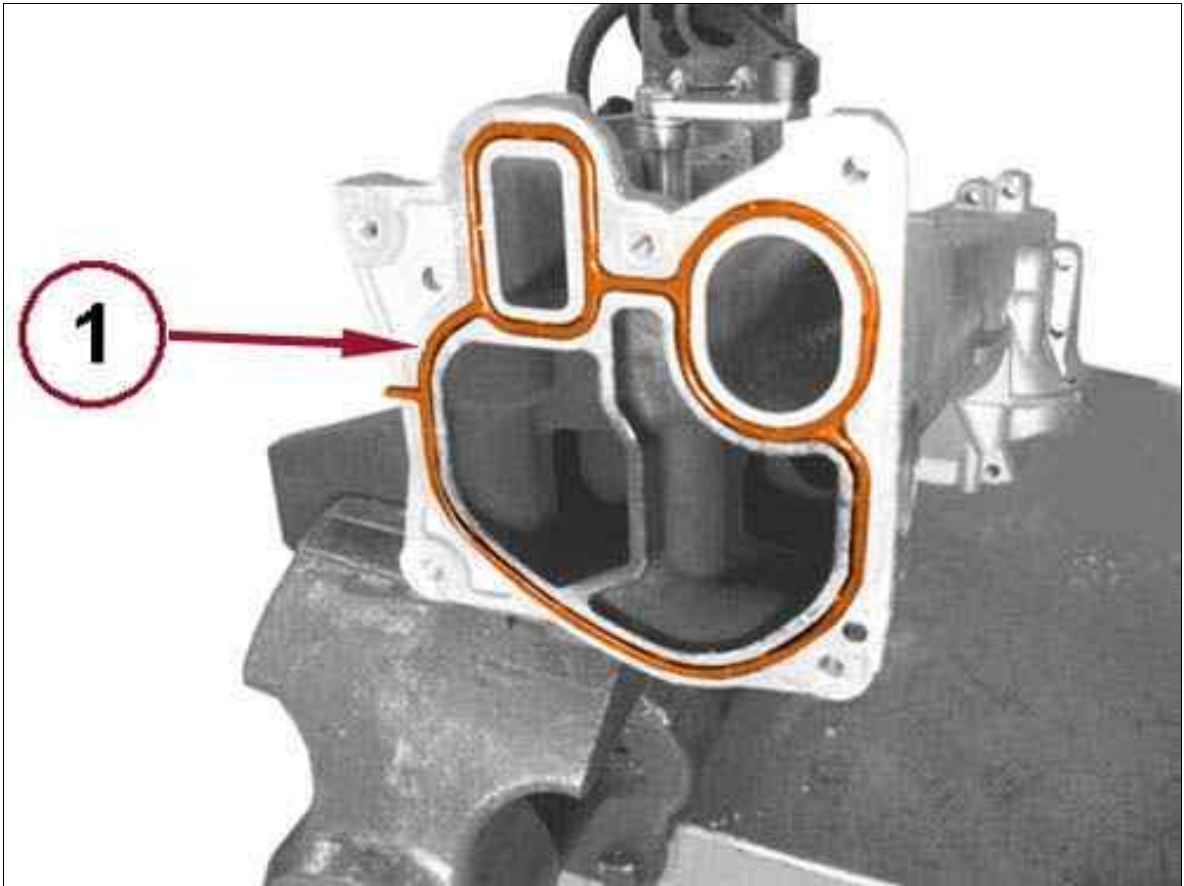
Fig 10: Vacuum Tank & Screws



Courtesy of CHRYSLER GROUP, LLC

11. Remove the screws (1a) and remove the vacuum tank (1b) complete with radiator fins.

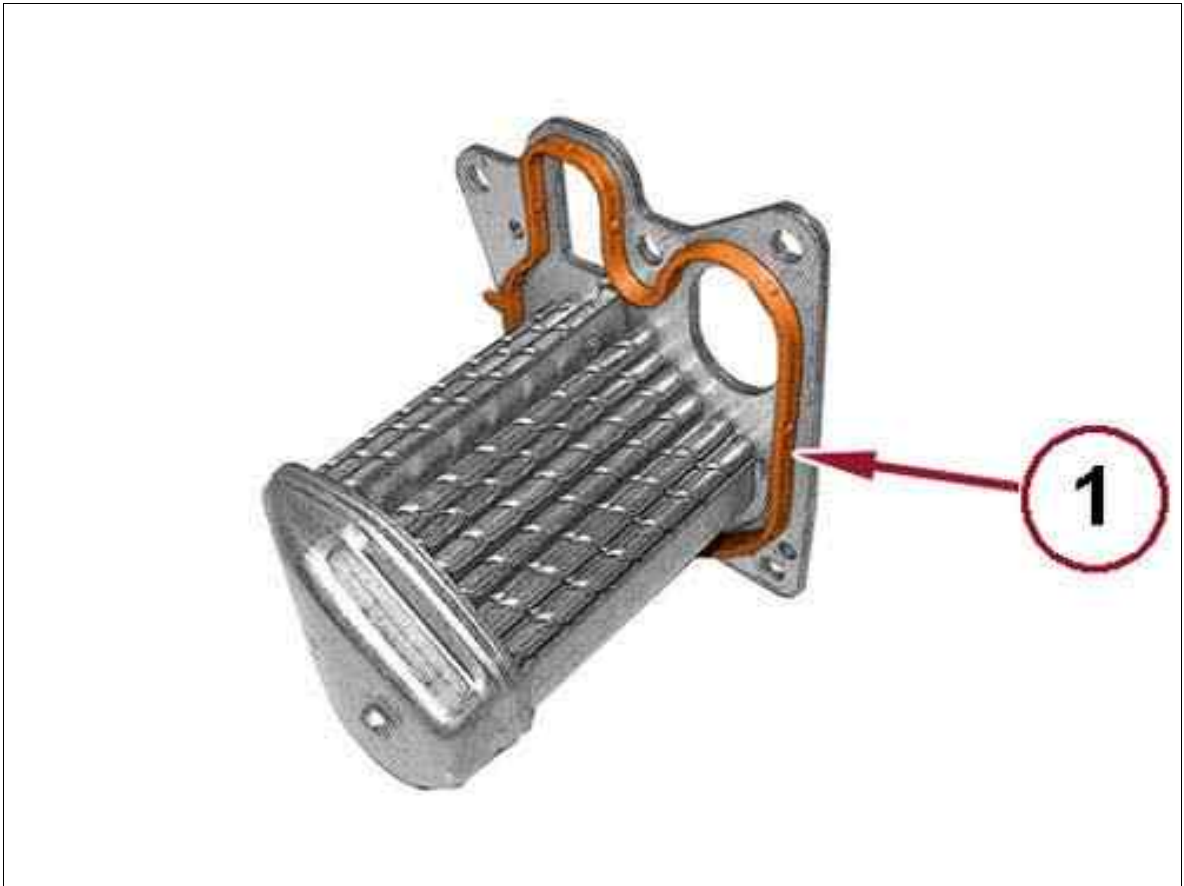
Fig 11: EGR Cooler Gasket



Courtesy of CHRYSLER GROUP, LLC

12. Remove the gasket from the EGR cooler.

Fig 12: EGR Radiator Fins Gasket

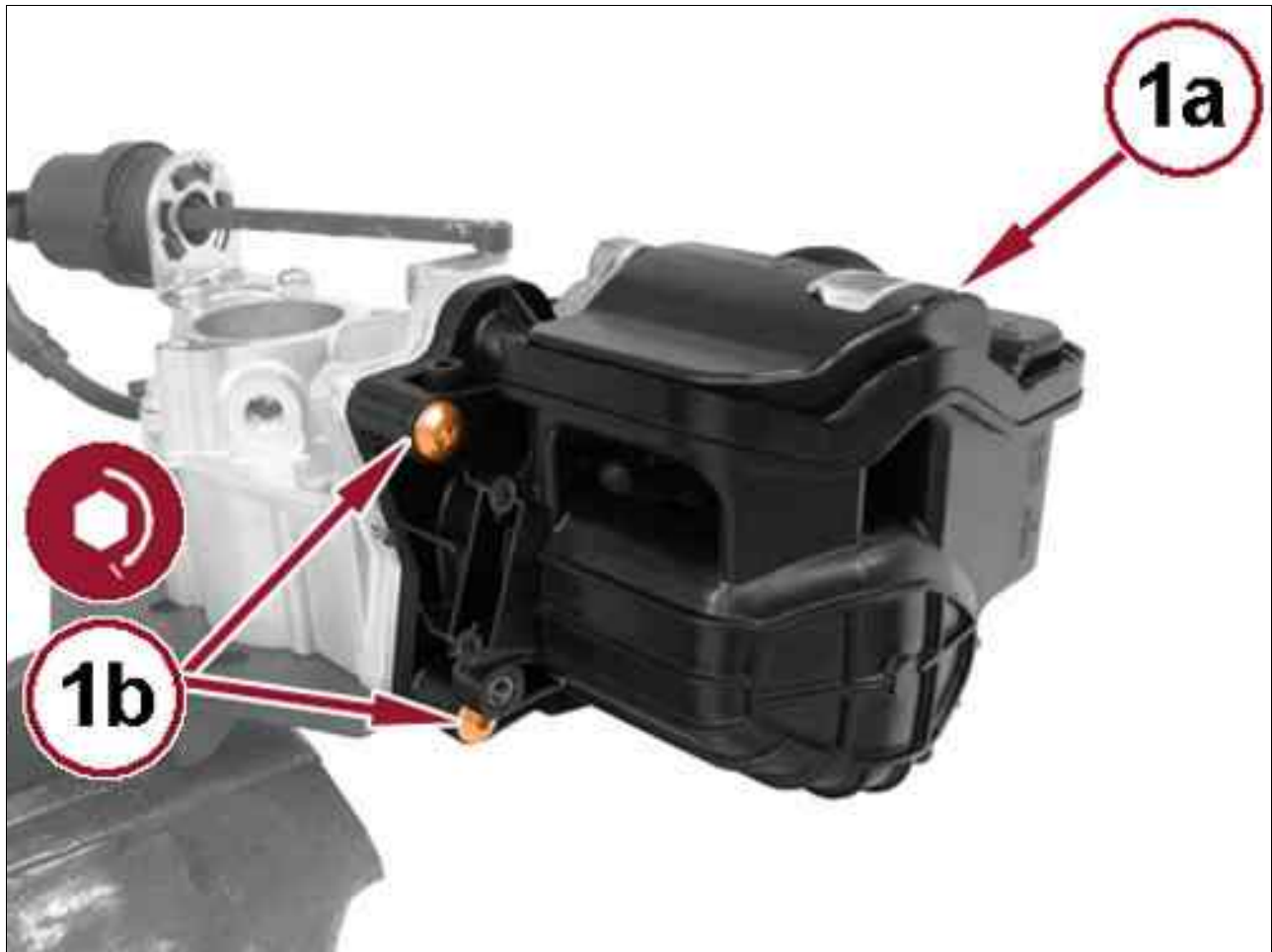


Courtesy of CHRYSLER GROUP, LLC

13. Remove the gasket from the radiator fins of the exhaust gas to EGR

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > EGR VALVE DISASSEMBLY AND ASSEMBLY >
ASSEMBLY**

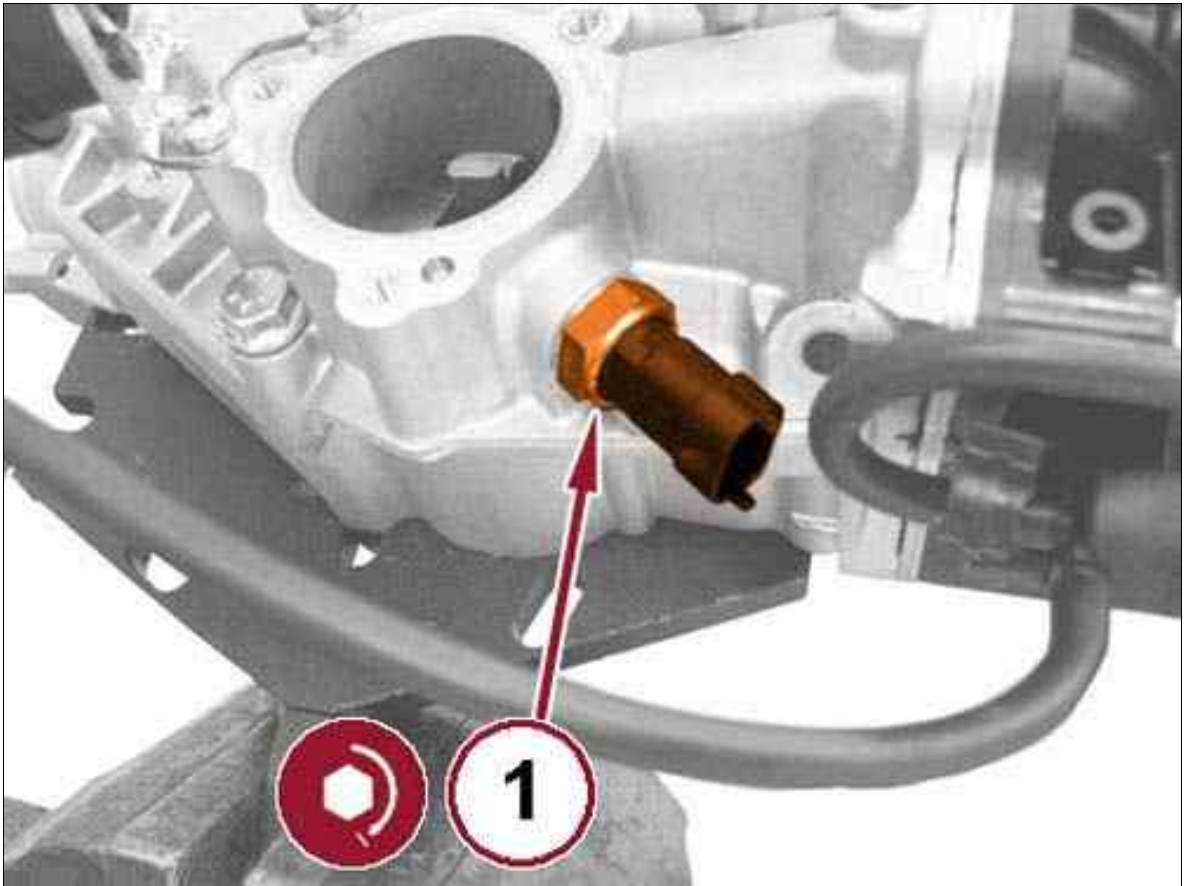
Fig 1: Vacuum Tank & Screws



Courtesy of CHRYSLER GROUP, LLC

1. Install the cooler (1a), new gaskets and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .

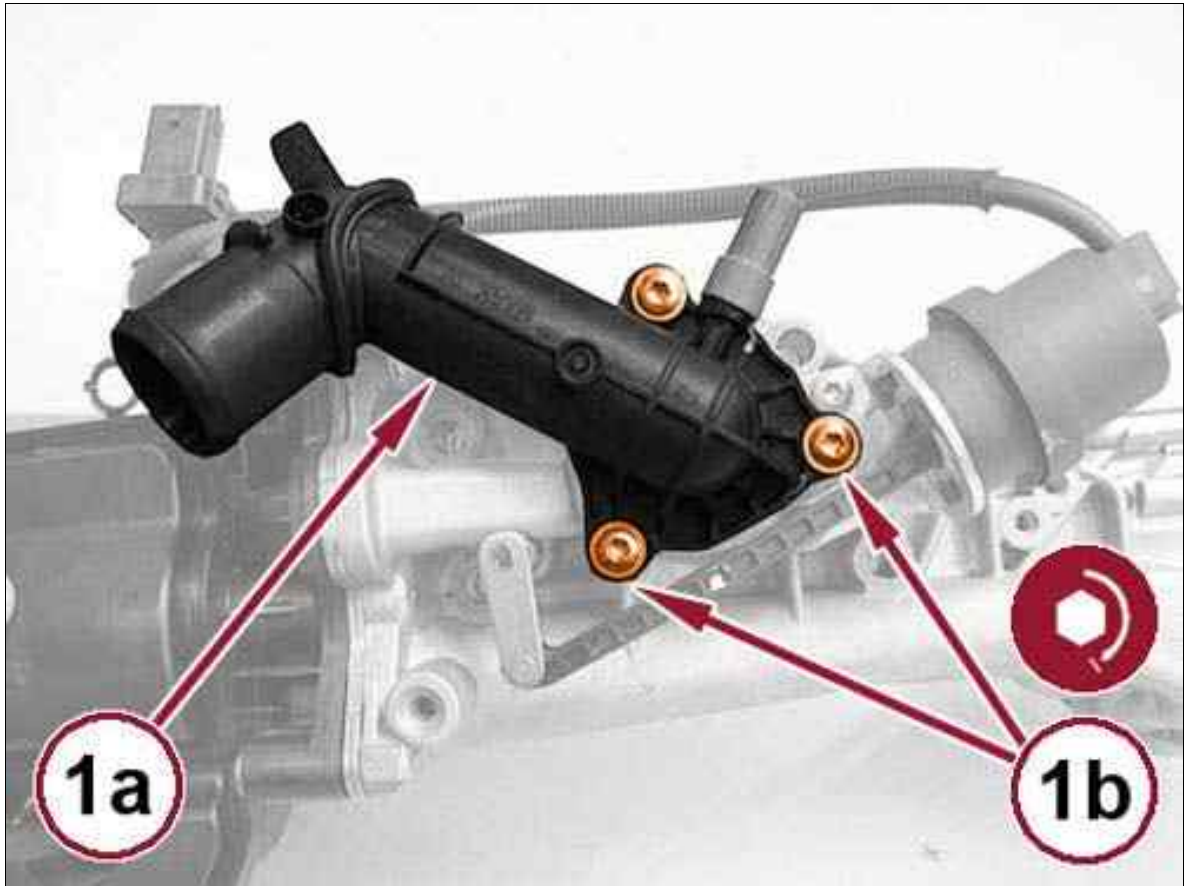
Fig 2: Engine Coolant Temperature Sensor



Courtesy of CHRYSLER GROUP, LLC

2. Install the engine coolant temperature sensor (1) and tighten it to the proper specification. Refer to SPECIFICATIONS .

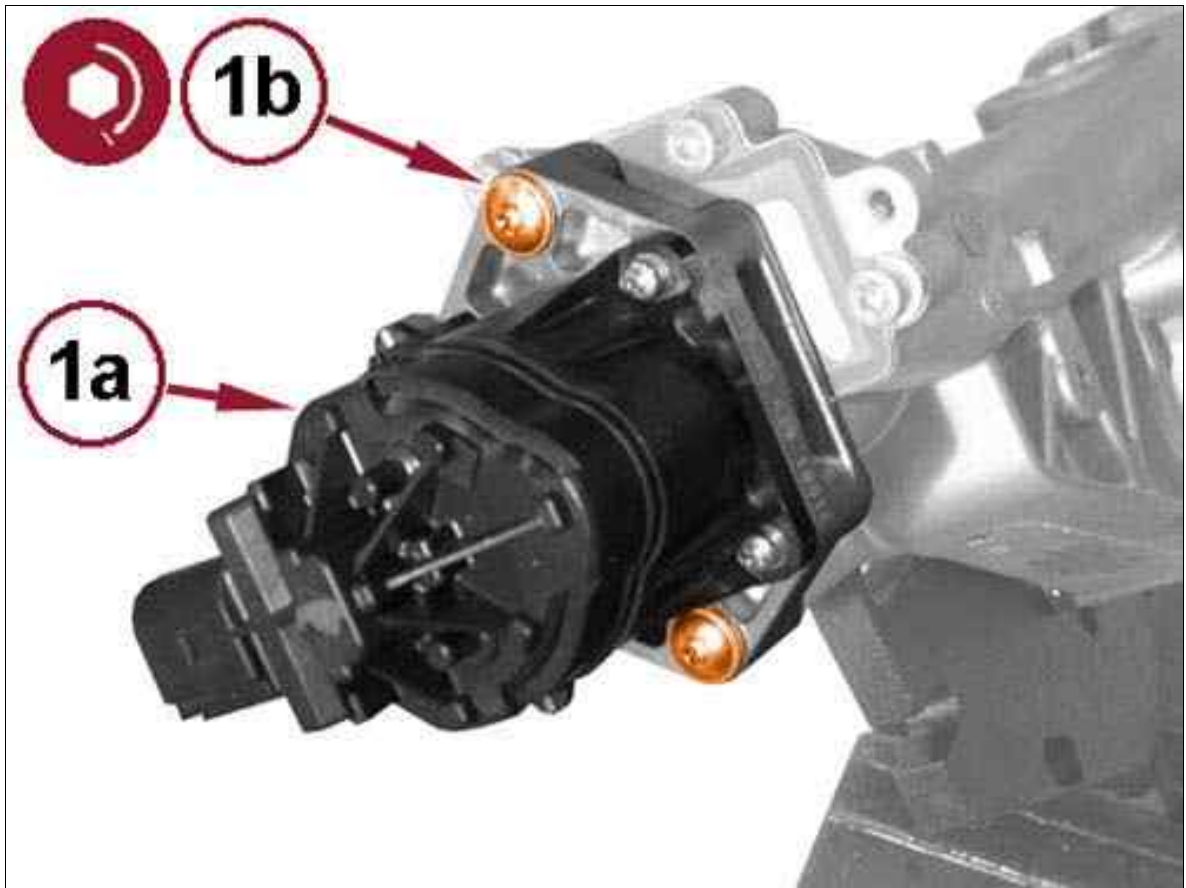
Fig 3: Thermostat Housing & Screws



Courtesy of CHRYSLER GROUP, LLC

3. Install the thermostat (1a) complete with new gasket and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .

Fig 4: EGR Solenoid & Screws



Courtesy of CHRYSLER GROUP, LLC

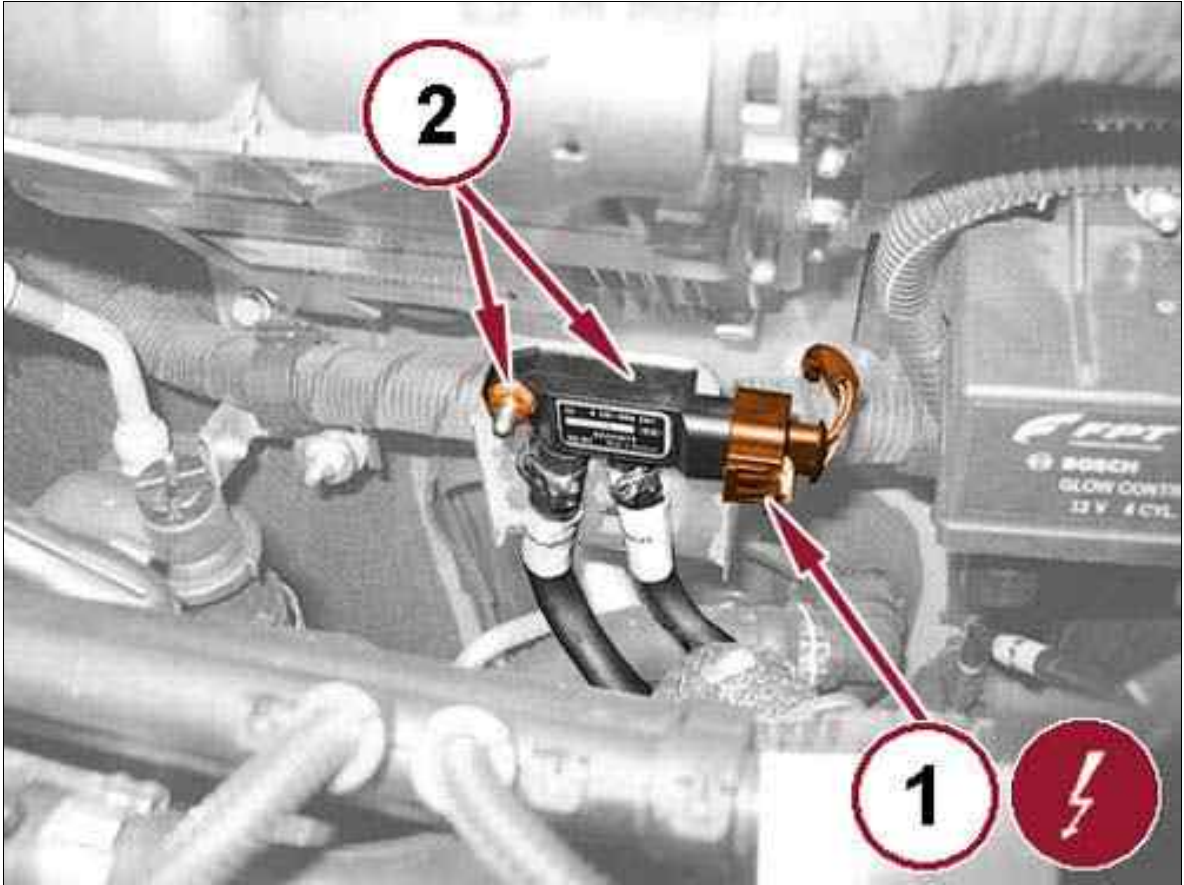
4. Install the gasket / flange and tighten the screws.
5. Install the EGR solenoid (1a) complete with new inner seal and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .
6. Install the water supply pipe to the cooler complete with new gasket and tighten the screw.
7. Install the discharge pipe to the water heater complete with new gasket and tighten the screw.
8. Install the tandem pipe complete and tighten its hardware.
9. Remove the overall EGR from the tool support.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 1.6L EGR VALVE ASSEMBLY > 1.6L REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
3. Remove the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .

4. Remove the turbocharger valve control actuator solenoid. Refer to TURBOCHARGER, REMOVAL AND INSTALLATION .
5. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
6. Drain the engine coolant. Refer to STANDARD PROCEDURE .

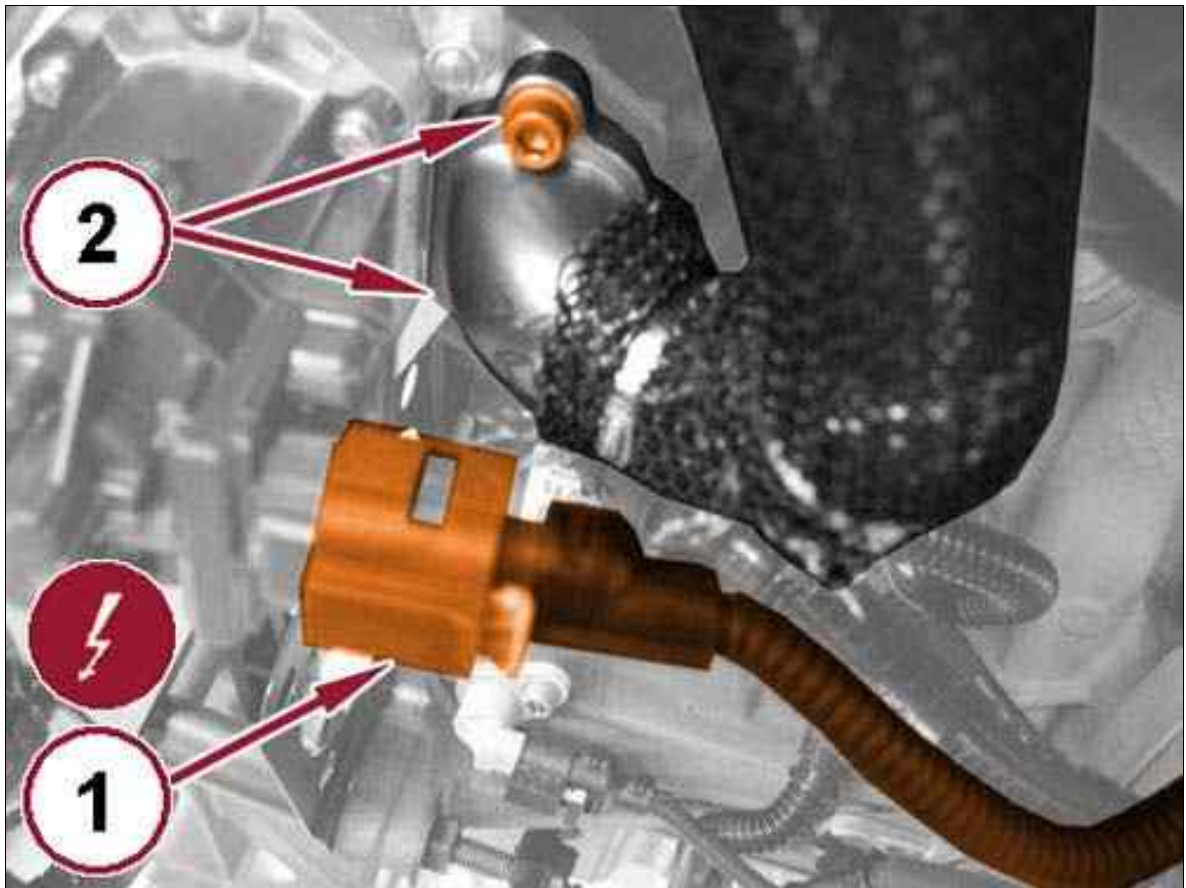
Fig 1: Particulate Filter Differential Pressure Sensor & Connector



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the particulate filter differential pressure sensor electrical connector (2).
8. Loosen the nut and reposition the particulate filter differential pressure sensor.

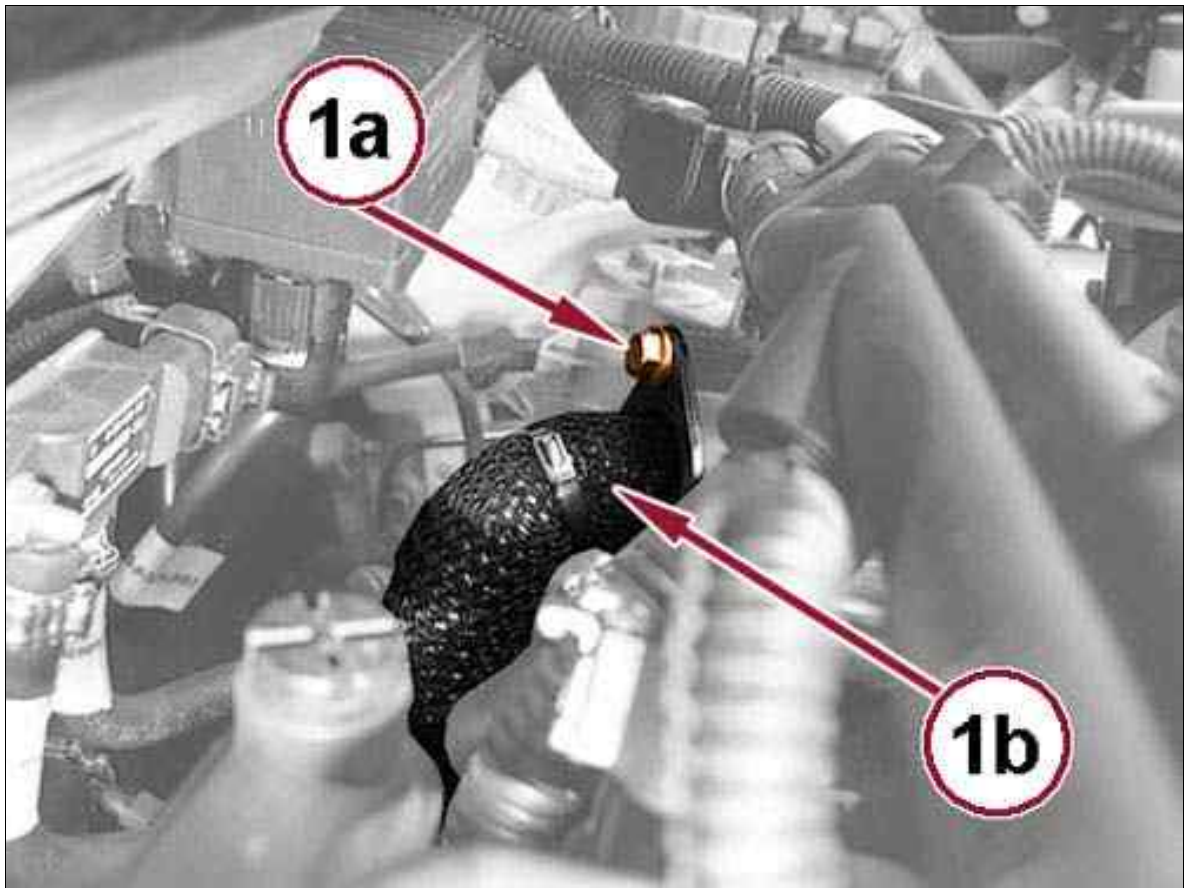
Fig 2: EGR Solenoid Connector & Screw



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the EGR solenoid electrical connection (1).
10. Remove the screws (2) securing the locking hose at the EGR solenoid valve to intake manifold EGR valve.

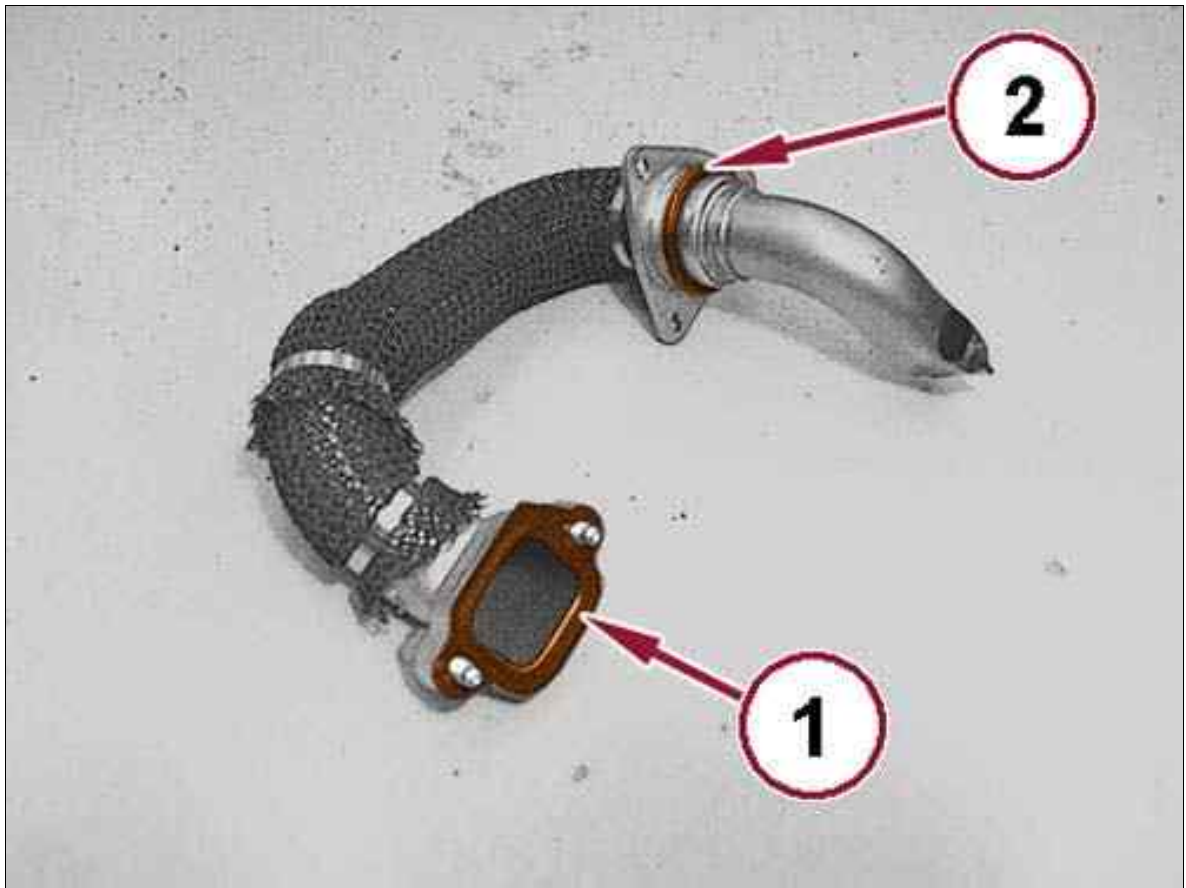
Fig 3: EGR Solenoid To Intake Manifold & Screw



Courtesy of CHRYSLER GROUP, LLC

11. Remove the screws (1a) and remove the hose from the EGR solenoid to the intake manifold (1b).

Fig 4: O-Ring & Gasket

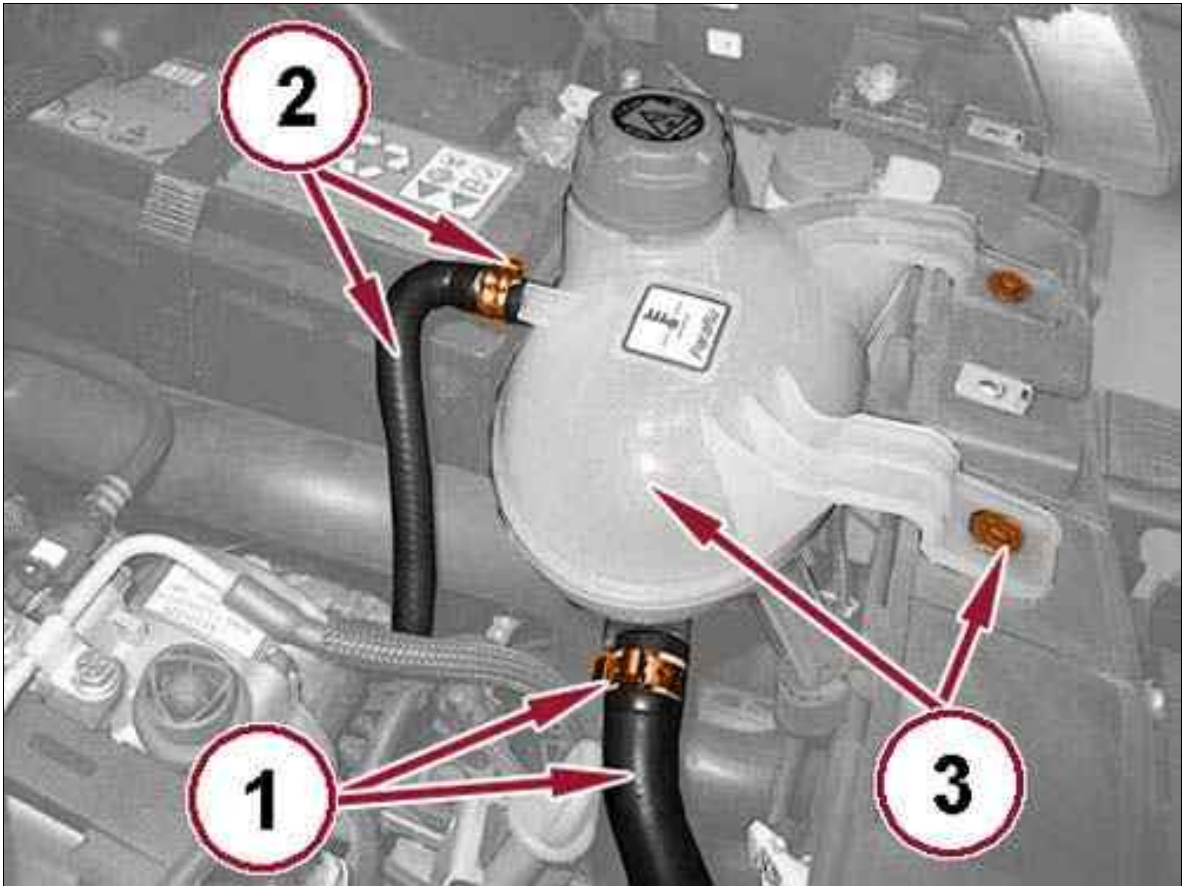


Courtesy of CHRYSLER GROUP, LLC

12. Remove the gasket (1).

13. Remove the O-ring (2).

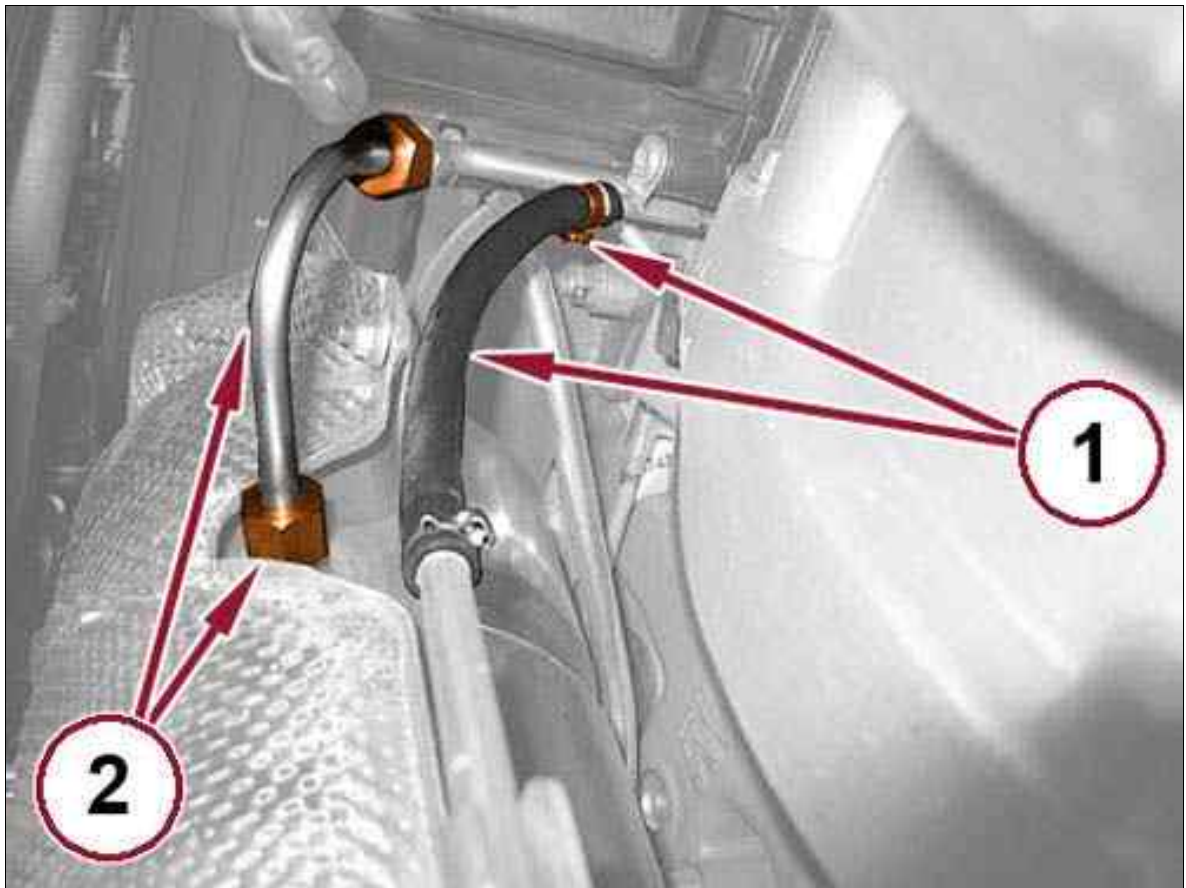
Fig 5: Tank, Hoses, Clamps & Screws



Courtesy of CHRYSLER GROUP, LLC

14. Loosen the clamp and disconnect the hose (1).
15. Loosen the clamp and disconnect the hose (2).
16. Remove the screws and remove the tank (3).

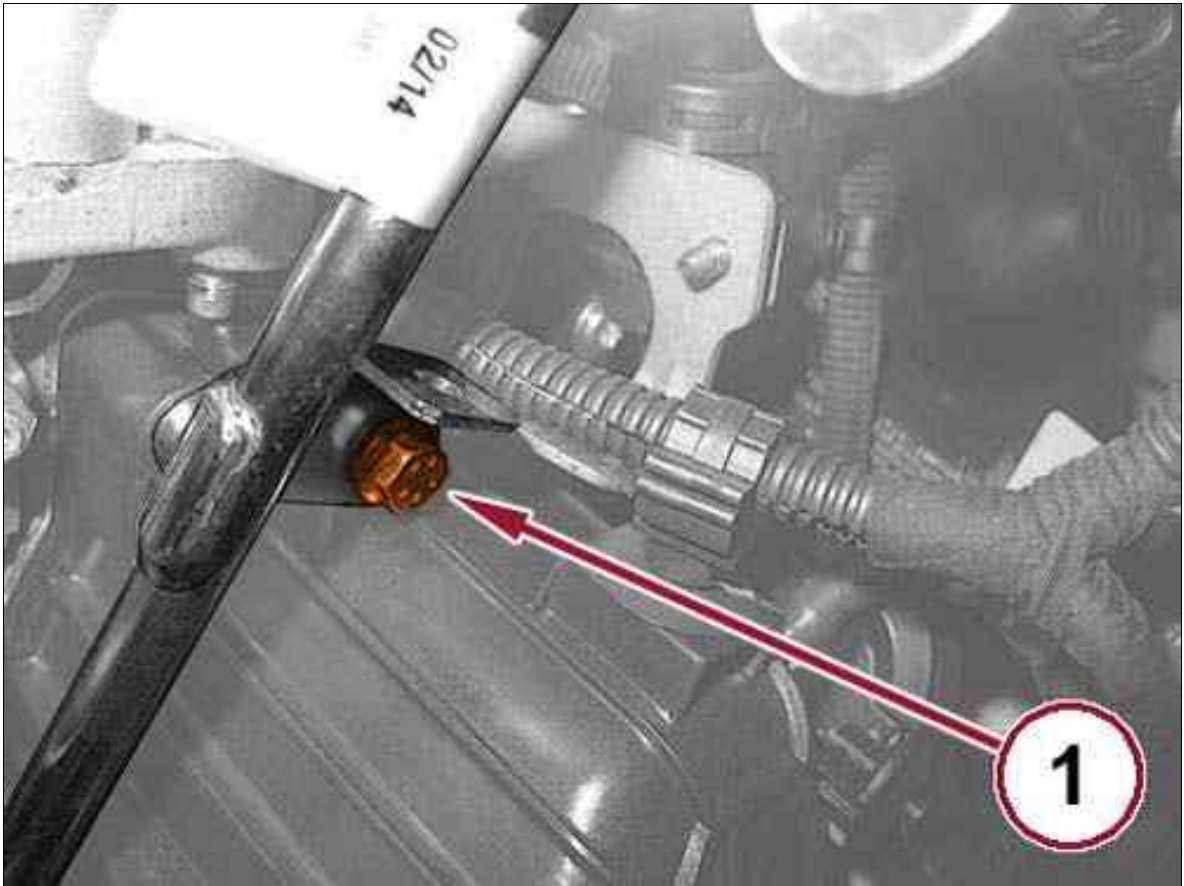
Fig 6: Hose, Pipe, Clamp & Fittings



Courtesy of CHRYSLER GROUP, LLC

17. Loosen the clamp and disconnect the intermediate pressure hose (1).
18. Remove the fittings and remove the intake pressure upstream pipeline (2).

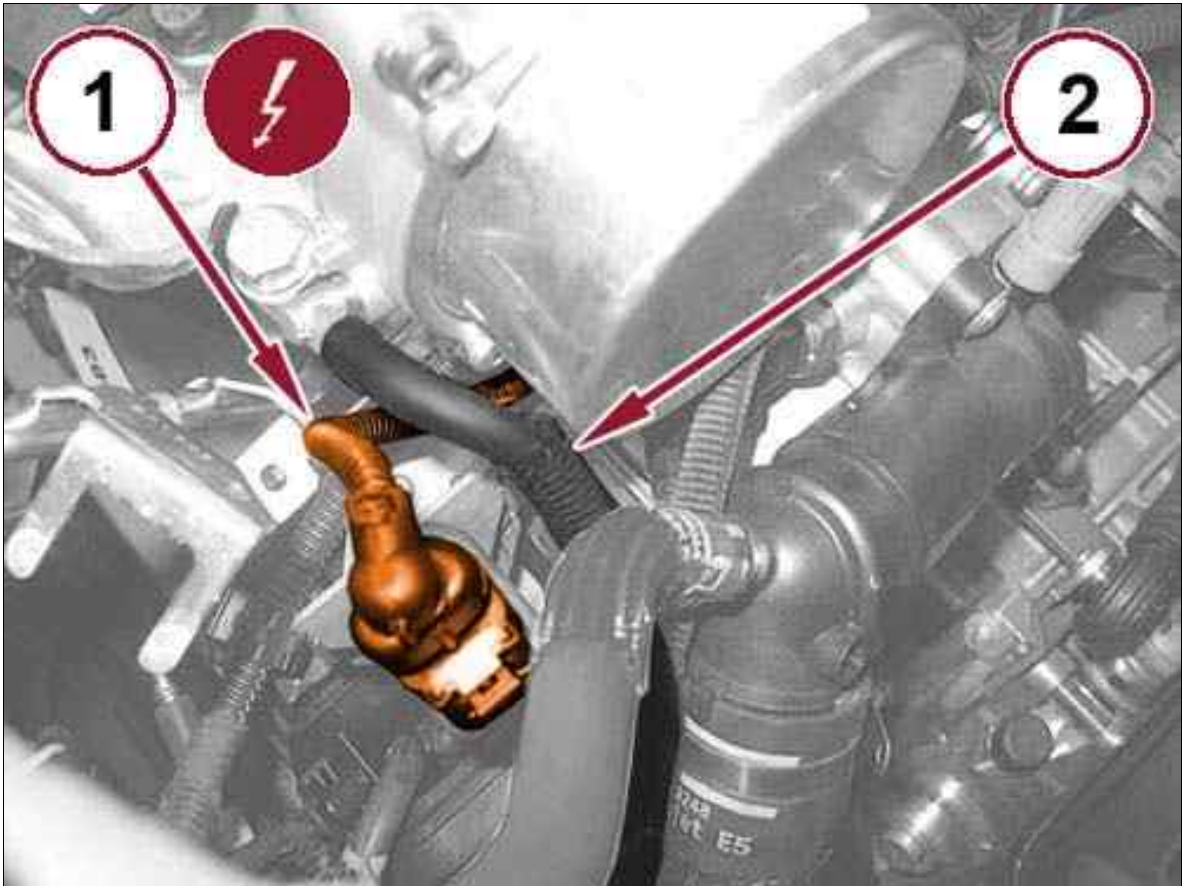
Fig 7: Engine Oil Dipstick Tube Fastening Screw



Courtesy of CHRYSLER GROUP, LLC

19. Remove the engine oil dipstick tube fastening screw (1).

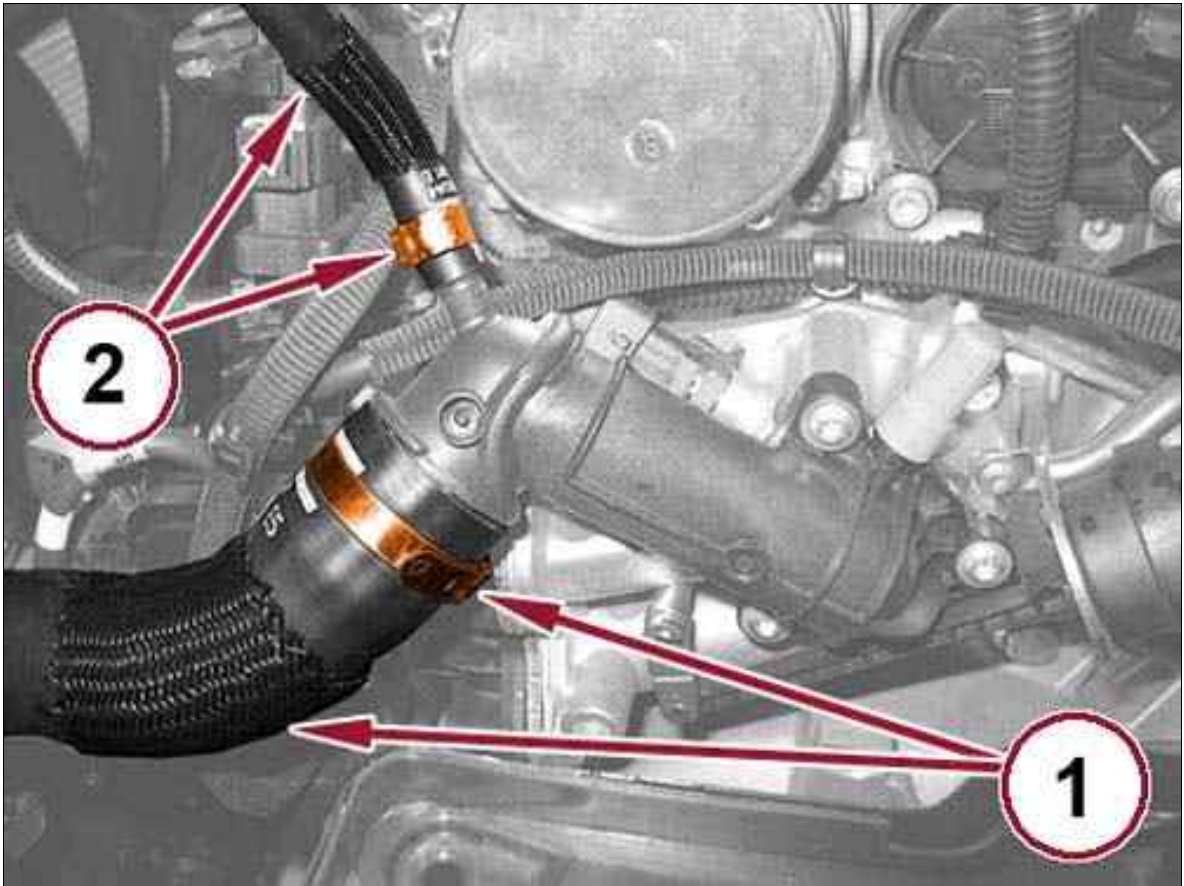
Fig 8: EGR Cooler Connector & Hose



Courtesy of CHRYSLER GROUP, LLC

20. Disconnect the water flow control actuator solenoid to the EGR cooler electrical connection (1).
21. Disconnect the hose (2).

Fig 9: Water Supply Hose, Degassing Hose & Clamps

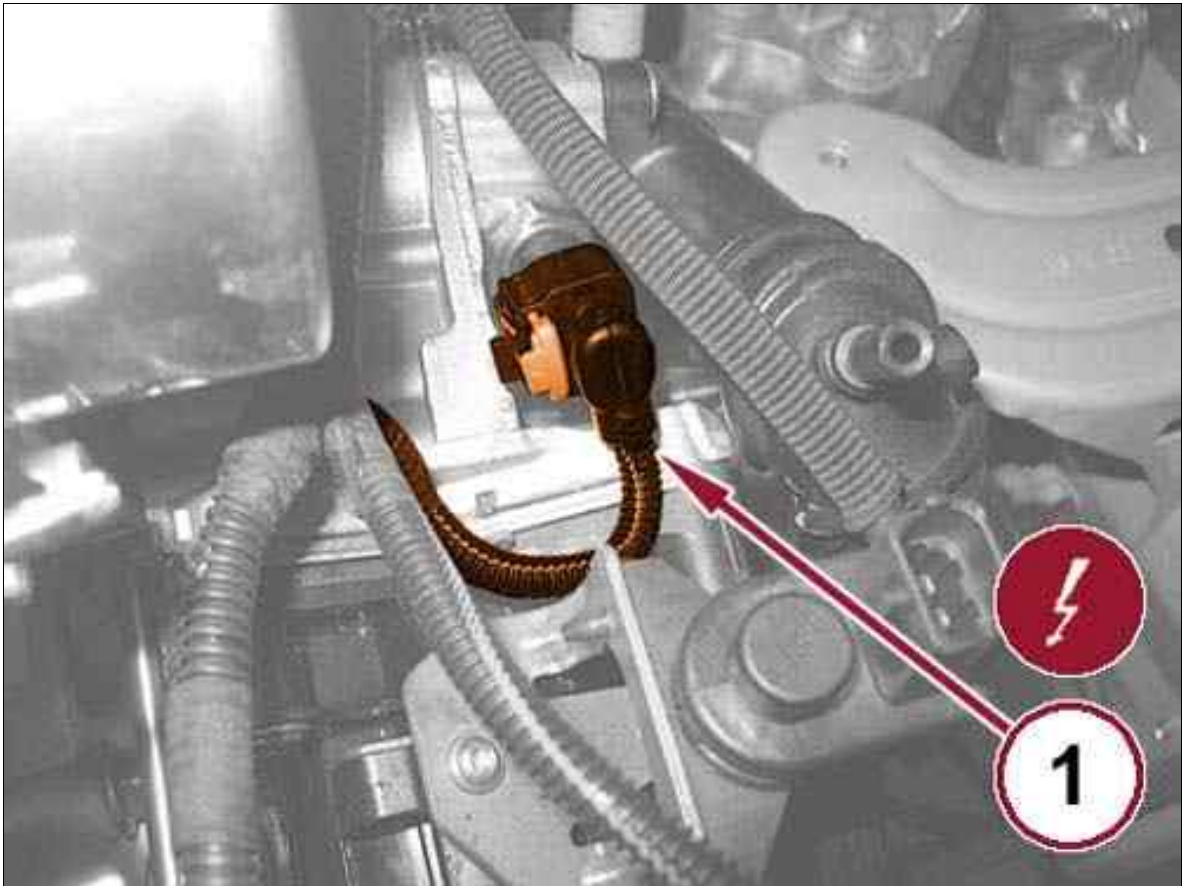


Courtesy of CHRYSLER GROUP, LLC

22. Loosen the clamp and disconnect the water supply hose (1), thermostat side.

23. Loosen the clamp and disconnect the degassing hose (2), thermostat side.

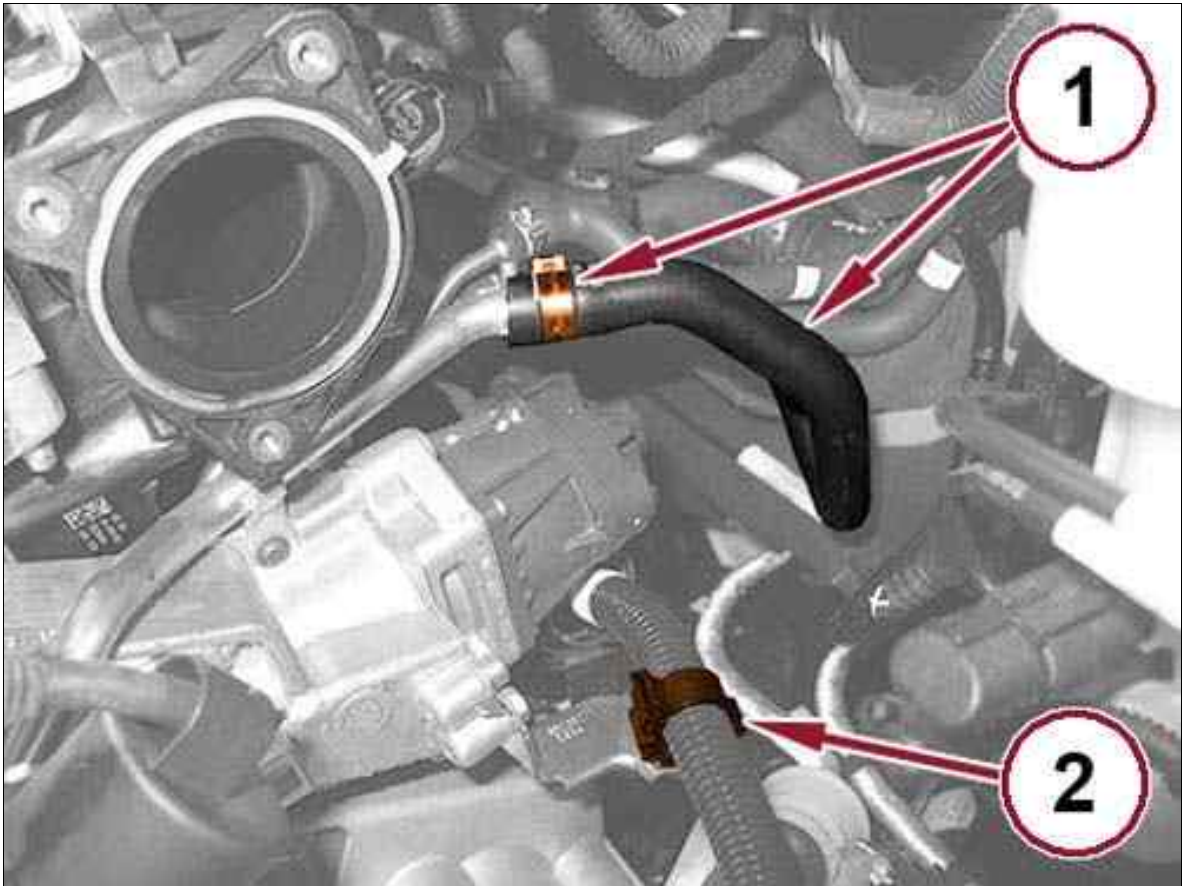
Fig 10: Engine Coolant Temperature Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

24. Disconnect the engine coolant temperature sensor electrical connection (1).

Fig 11: Discharge Hose, Clamp & Wiring Retaining Clip

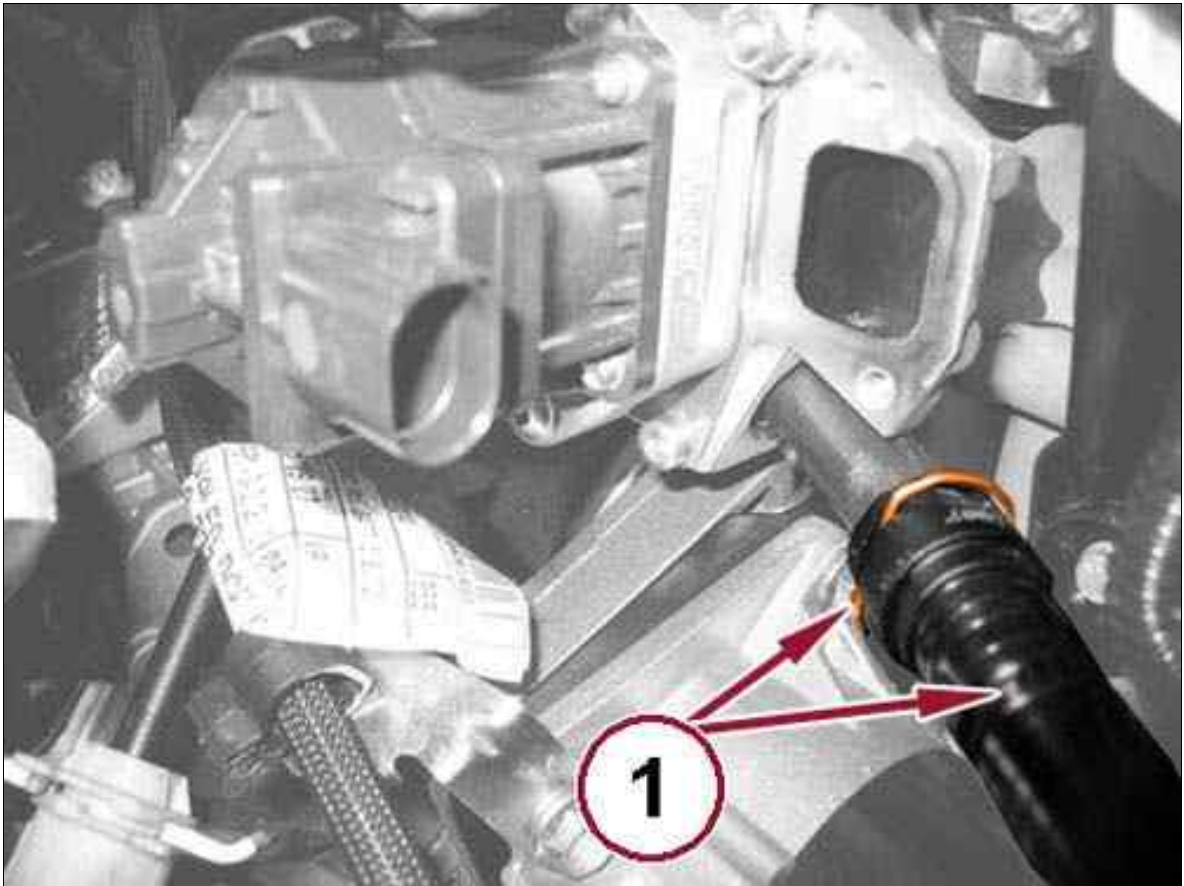


Courtesy of CHRYSLER GROUP, LLC

25. Loosen the clamp and disconnect the discharge (1), thermostat side.

26. Open the wiring retaining clip (2).

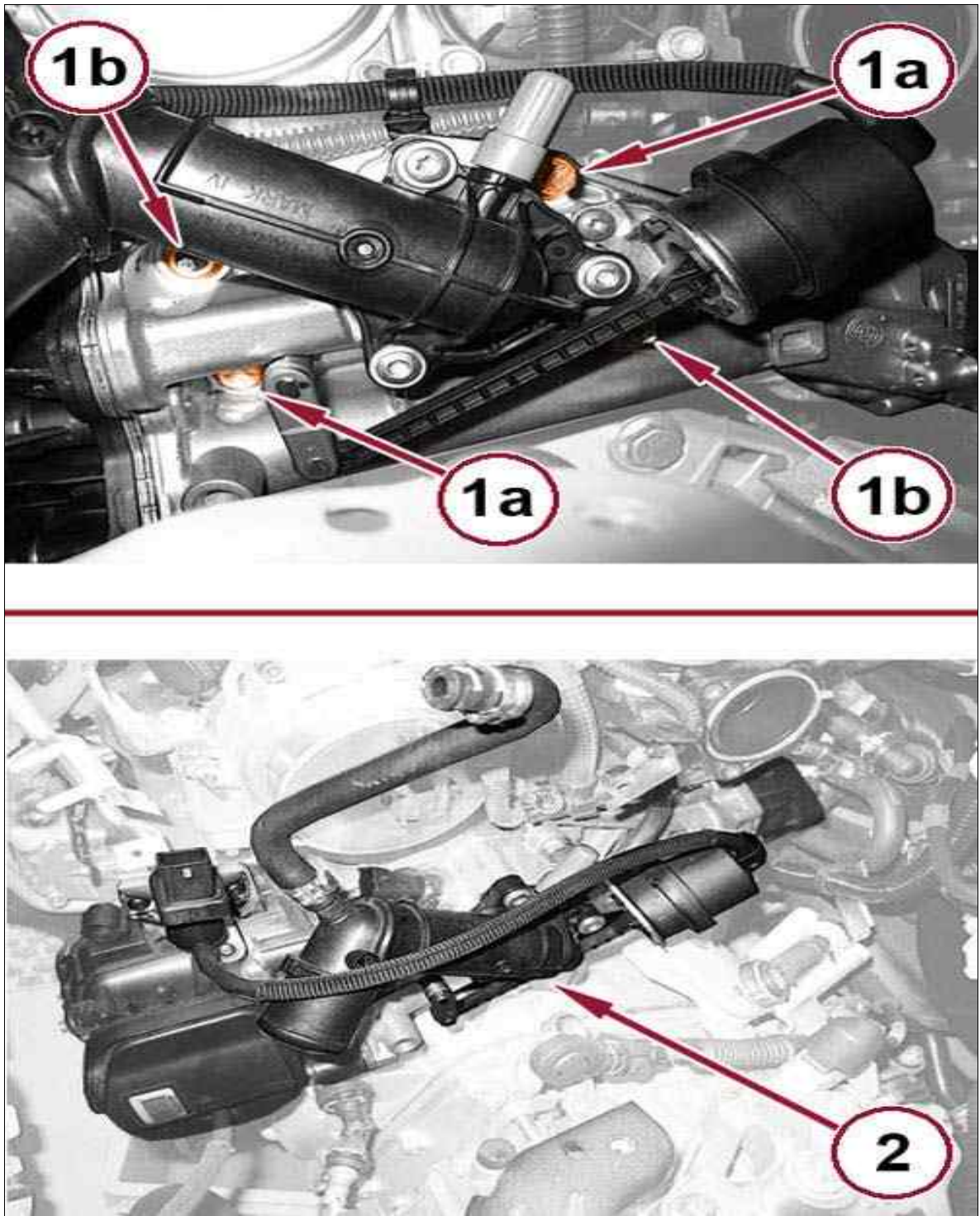
Fig 12: Water To Engine Cooler Hose & Quick Coupling



Courtesy of CHRYSLER GROUP, LLC

27. Lift the clip and disconnect the water to engine cooler hose quick coupling (1), thermostat side.

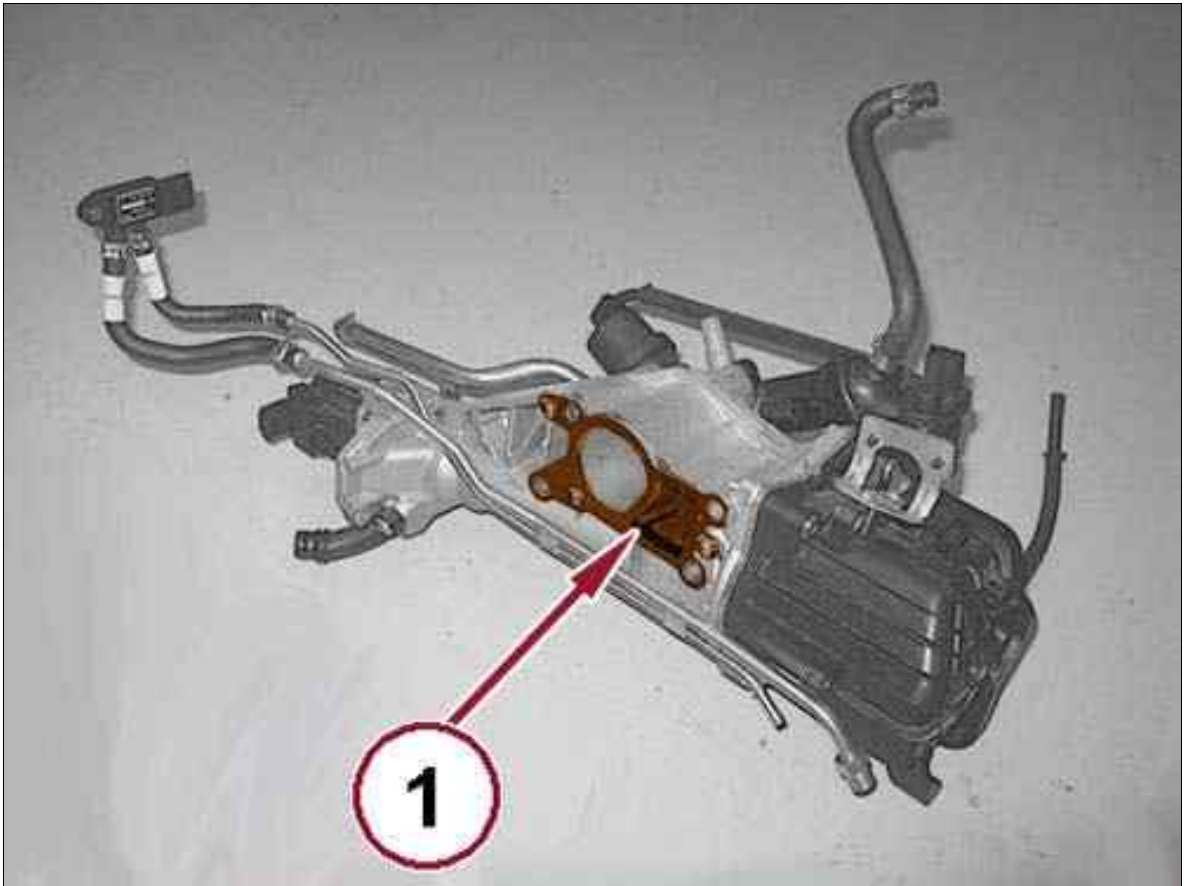
Fig 13: EGR Valve Connecting Hoses, Screws & Nuts



Courtesy of CHRYSLER GROUP, LLC

28. Remove the screws (1a), nuts (1b) of the complete EGR valve connecting hoses.
29. Remove the EGR valve connecting hoses with gasket.

Fig 14: EGR Valve Connecting Pipes Gasket

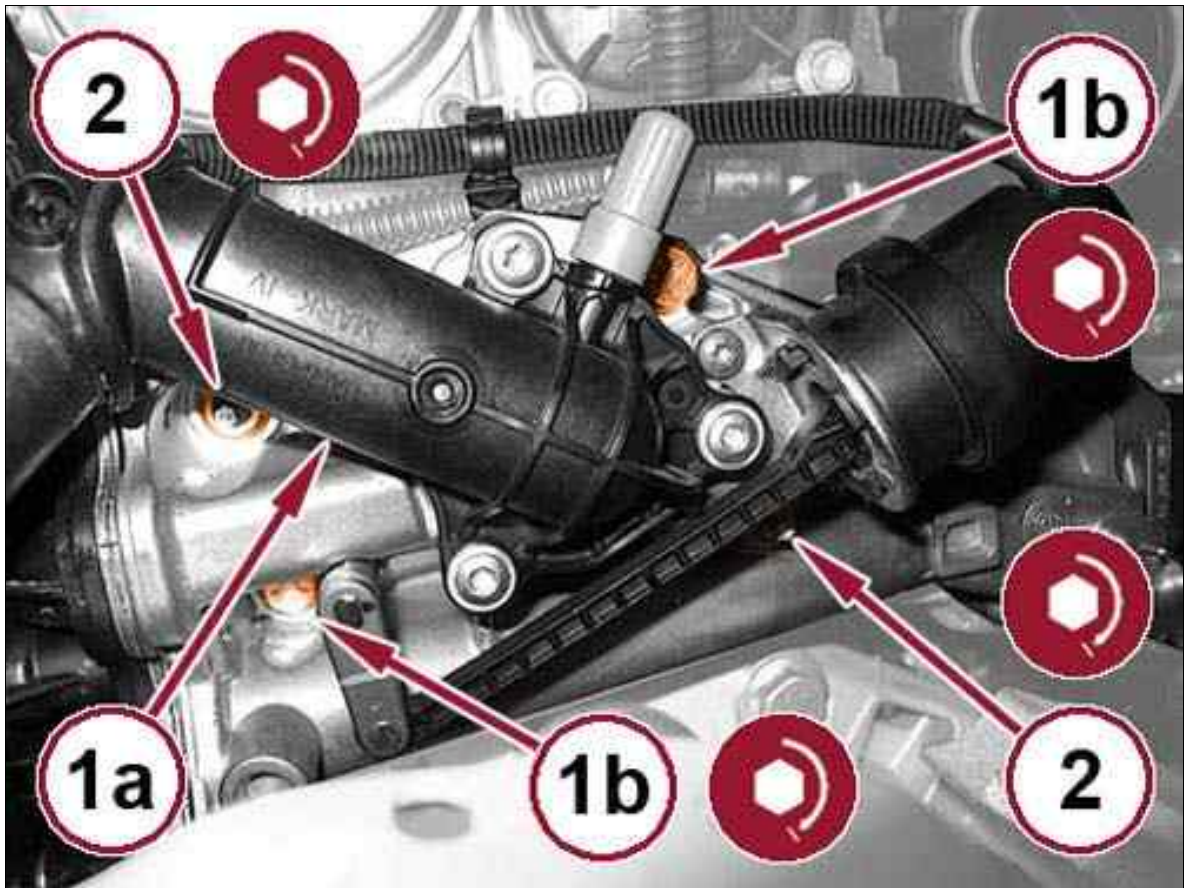


Courtesy of CHRYSLER GROUP, LLC

30. Remove the gasket from the overall EGR valve connecting pipes.

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > 1.6L EGR VALVE ASSEMBLY > 1.6L INSTALLATION**

Fig 1: EGR Valve Connecting Hoses, Screws & Nuts



Courtesy of CHRYSLER GROUP, LLC

1. Position the EGR valve assembly into and connecting hoses (1a) complete with new gasket. Tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .
2. Screw the studs, tighten the nuts of the EGR valve assembly connecting hoses to the proper specification. Refer to SPECIFICATIONS .
3. Connect the quick coupling of the hose that delivers water to the engine oil cooler, thermostat side.
4. Close the starter wiring clip retainer.
5. Connect the pressure hose to the water heater, thermostat side and tighten its strap.
6. Connect the electrical connection of the engine coolant temperature sensor.
7. Connect the degassing hose, thermostat side and tighten its strap.
8. Connect the water supply hose to the radiator, thermostat side and tighten its strap.
9. Connect the pressure take-off tube depression for vacuum tank, vacuum pump side.
10. Connect the electrical connection of the electric actuator control water flow to the EGR cooler.
11. Tighten the upper screw for the engine oil dipstick tube.
12. Put into place the intake pipeline pressure upstream of the particulate filter and tighten their

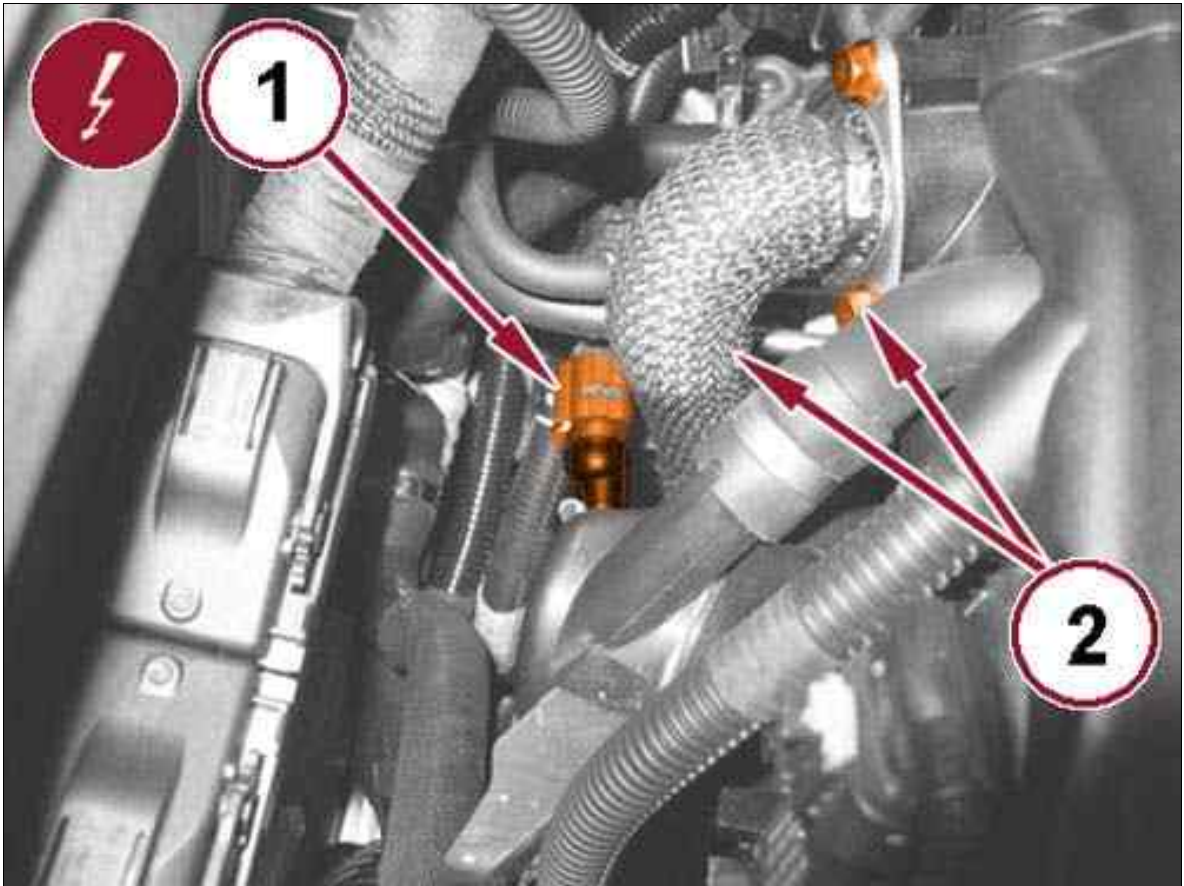
connectors.

13. Connect the intermediate pressure sampling downstream hose of the particulate filter and tighten its strap.
14. Put into place the engine cooling power tank and tighten the screws.
15. Connect the hose of degassing tank to supply engine cooling and tighten its strap.
16. Connect the hose to the engine cooling tank plant supply and tighten its strap.
17. Put into place the hose from the EGR solenoid to the intake manifold complete with new gaskets and tighten the screws.
18. Connect the EGR solenoid electrical connection
19. Install the differential pressure sensor and tighten the nut.
20. Connect the differential pressure sensor electrical connection.
21. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
22. Install the turbocharger valve control actuator solenoid. Refer to TURBOCHARGER, REMOVAL AND INSTALLATION .
23. Fill the engine coolant. Refer to STANDARD PROCEDURE .
24. Install the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .
25. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
26. Connect the negative battery cable.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L EGR VALVE ASSEMBLY > 2.0L REMOVAL

1. Remove the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .
2. Remove the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
3. Remove the throttle body. Refer to THROTTLE BODY, REMOVAL AND INSTALLATION .
4. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
5. Drain the engine coolant. Refer to STANDARD PROCEDURE .

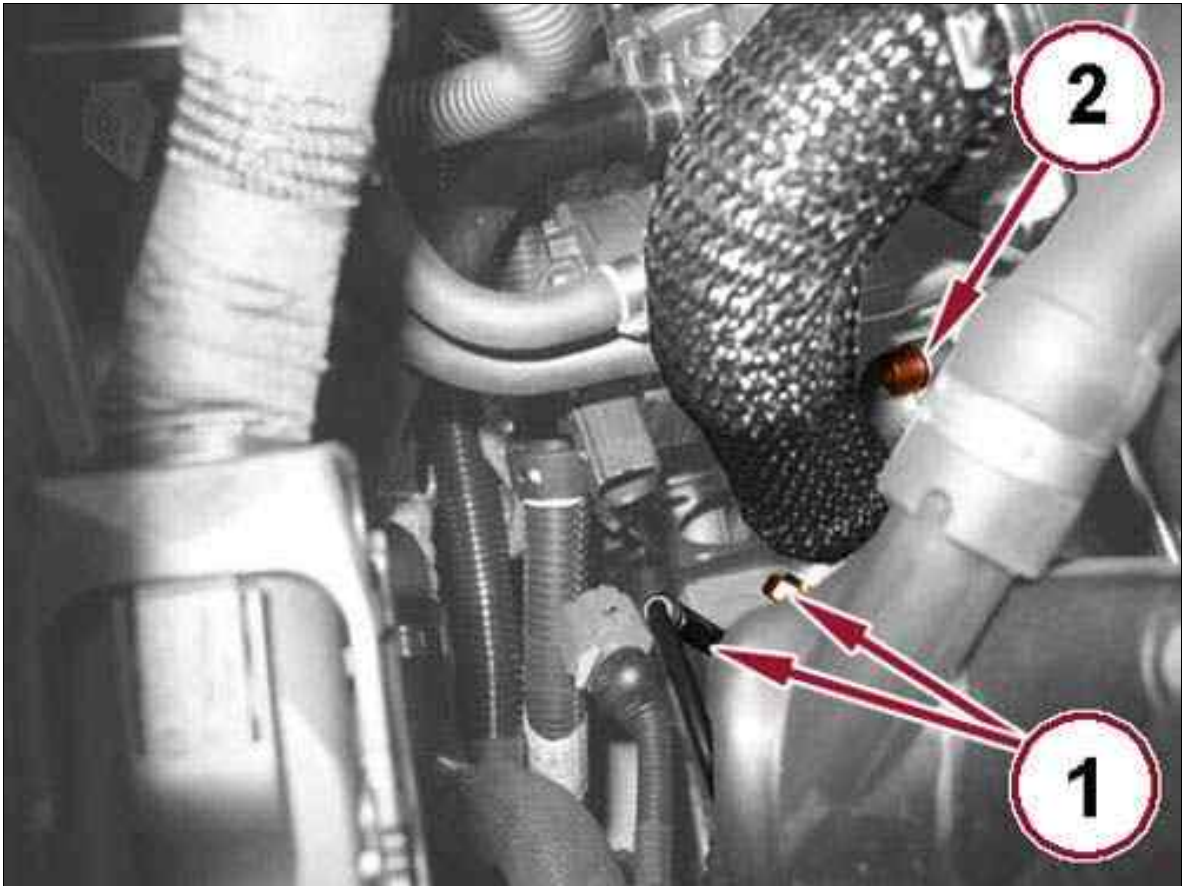
Fig 1: EGR Solenoid Connector & Screws



Courtesy of CHRYSLER GROUP, LLC

6. Disconnect the EGR solenoid electrical connection (1).
7. Remove the screws (2) securing the hose from the EGR solenoid valve, side intake manifold.

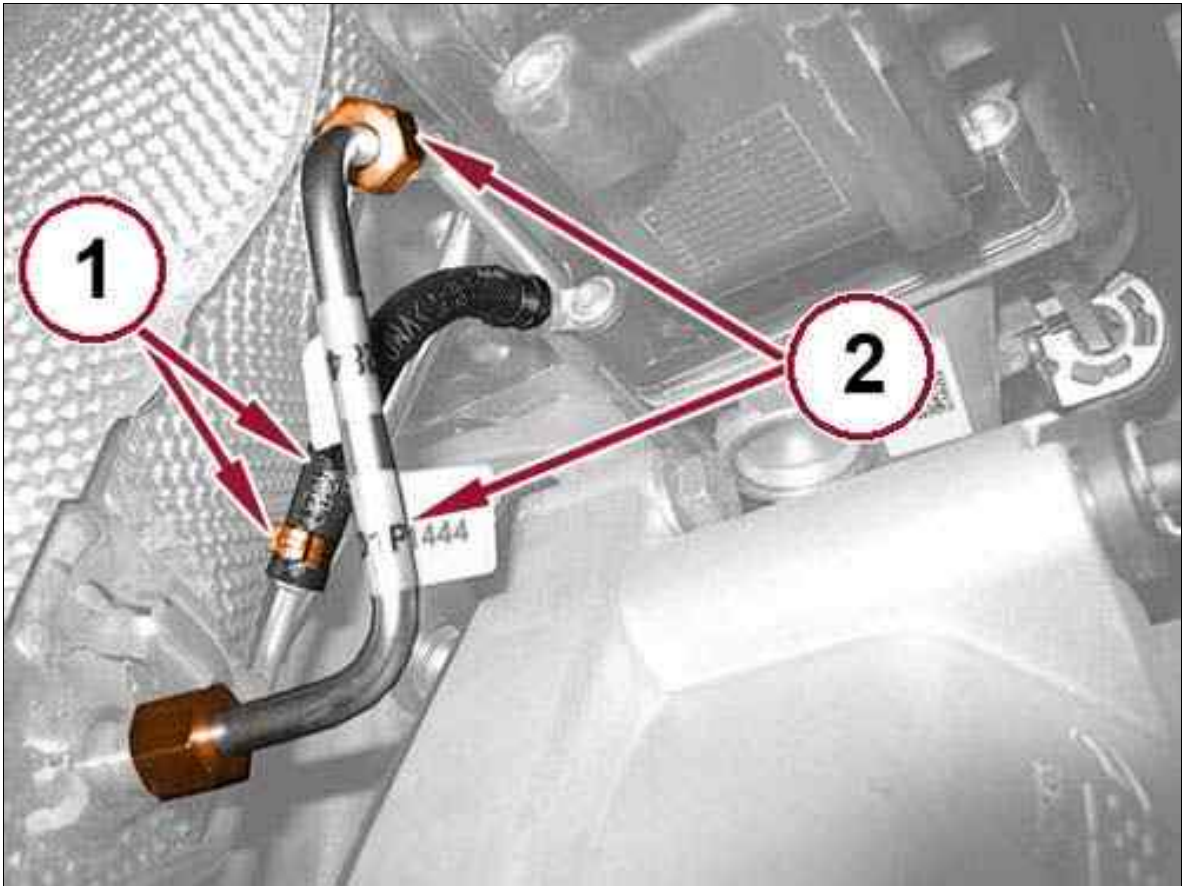
Fig 2: Temperature Exhaust Gas Sensor & Screws Securing Hose



Courtesy of CHRYSLER GROUP, LLC

8. Unscrew the union and disengage the temperature exhaust gas sensor (1).
9. Remove the screws securing the hose (2) from the EGR solenoid valve in the intake manifold, EGR solenoid side.

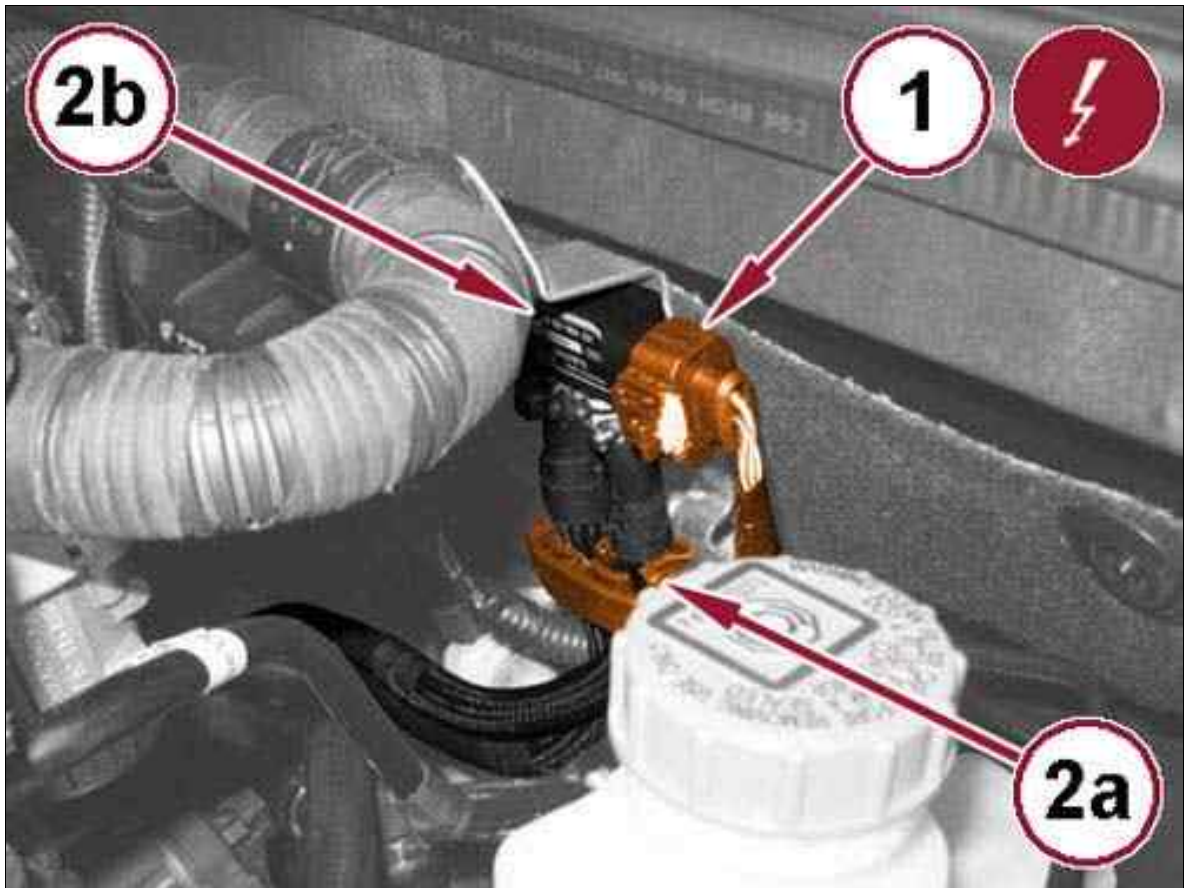
Fig 3: Tubing, Rigid Pipe, Fittings & Clamps



Courtesy of CHRYSLER GROUP, LLC

10. Remove the tubing (1) from the EGR valve to the intake manifold complete with seals.
11. Remove the fittings and remove the rigid pipe (2) pressure sampling upstream of the particulate filter.

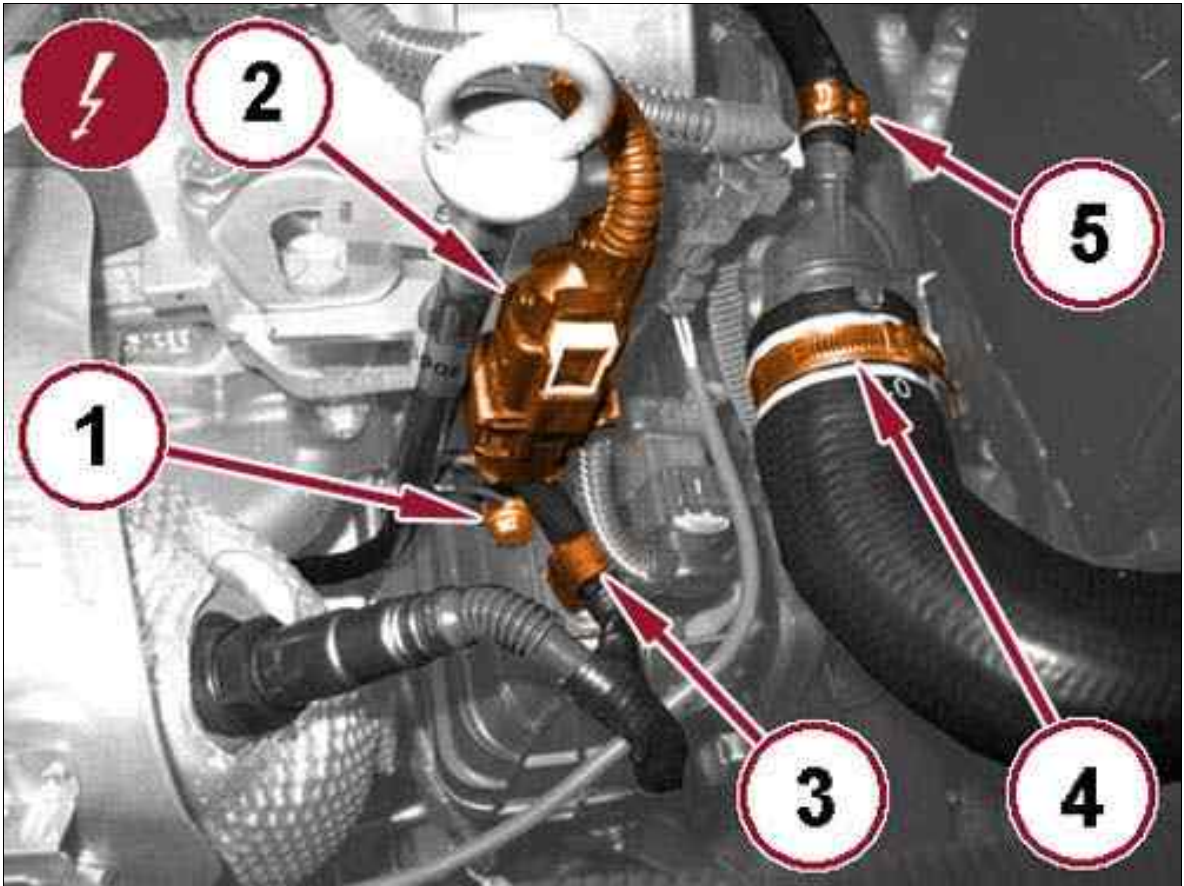
Fig 4: Differential Pressure Sensor, Connector & Clip



Courtesy of CHRYSLER GROUP, LLC

12. Disconnect the DPF differential pressure sensor (1) electrical connection.
13. Open the retaining clip (2a), unscrew the nut and remove the DPF differential pressure sensor (2b) complete with hoses.

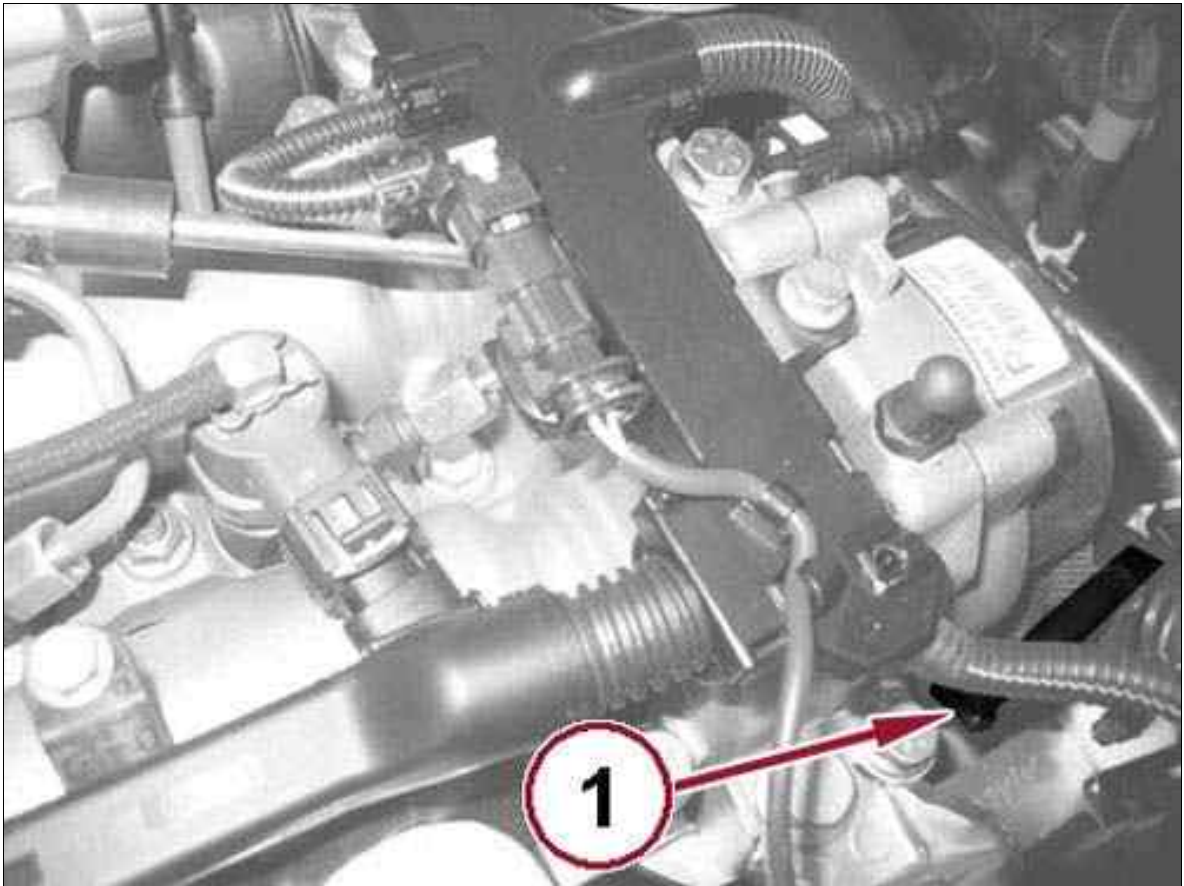
Fig 5: Water Flow Actuator Control Solenoid Connector, Screw & Clamps



Courtesy of CHRYSLER GROUP, LLC

14. Remove the top fastening screw (1) securing the engine oil dipstick tube to the engine oil dipstick.
15. Disconnect the water flow actuator control solenoid electrical connection (2).
16. Open the clamp (3) and release the oxygen sensor wiring.
17. Loosen the clamp (4) and disconnect the water supply hose to the radiator, thermostat side.
18. Loosen the clamp (5) and disconnect the degassing hose.

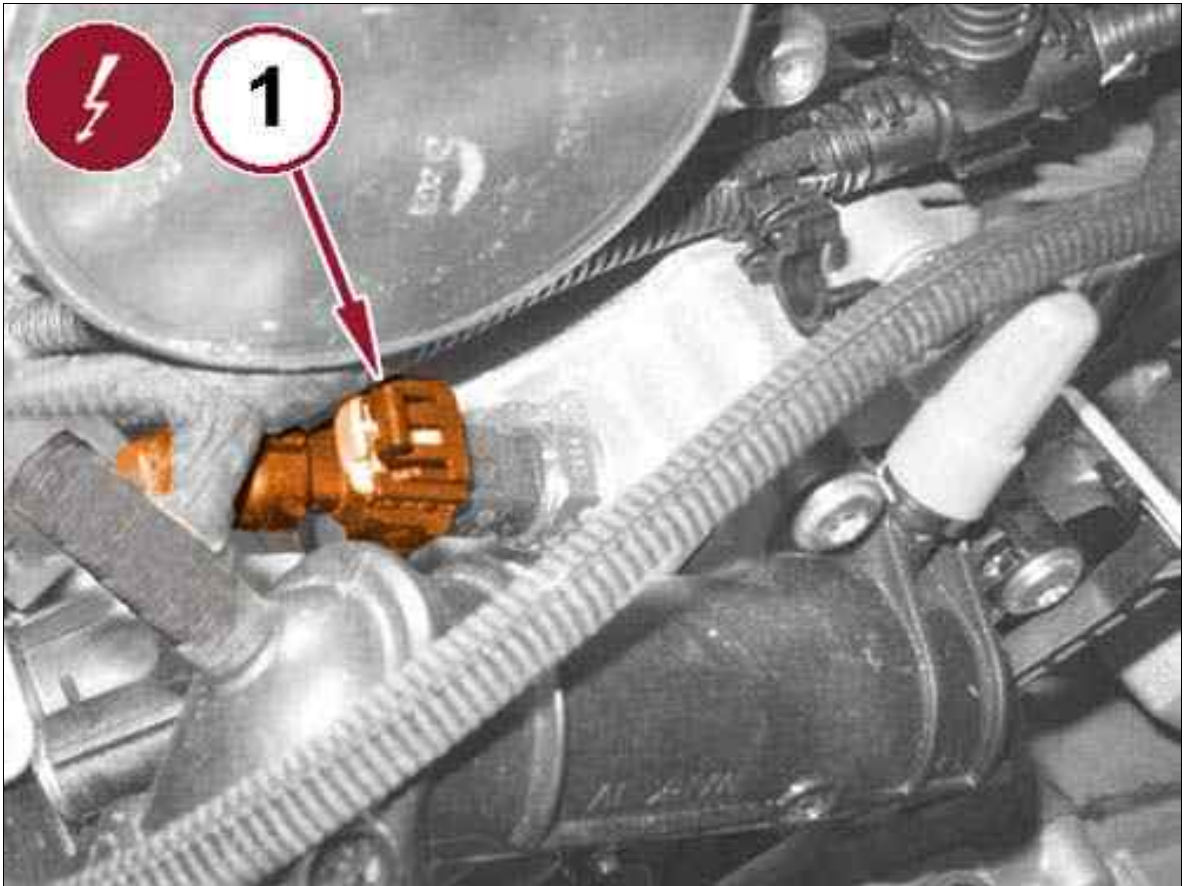
Fig 6: Depression Vacuum Tank Hose Outlet



Courtesy of CHRYSLER GROUP, LLC

19. Disconnect the hose outlet (1) for the depression vacuum tank, side depressor.

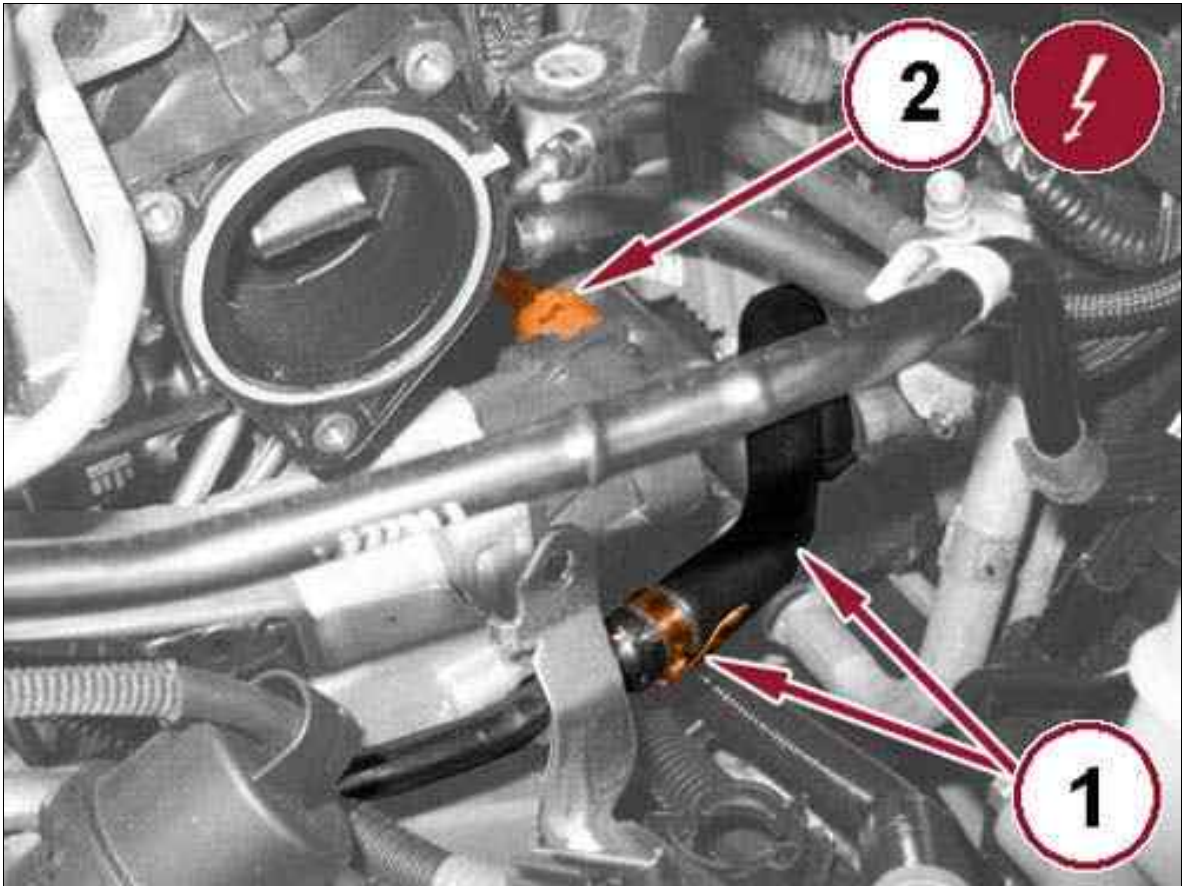
Fig 7: Engine Coolant Temperature Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

20. Disconnect the engine coolant temperature sensor electrical connection (1).

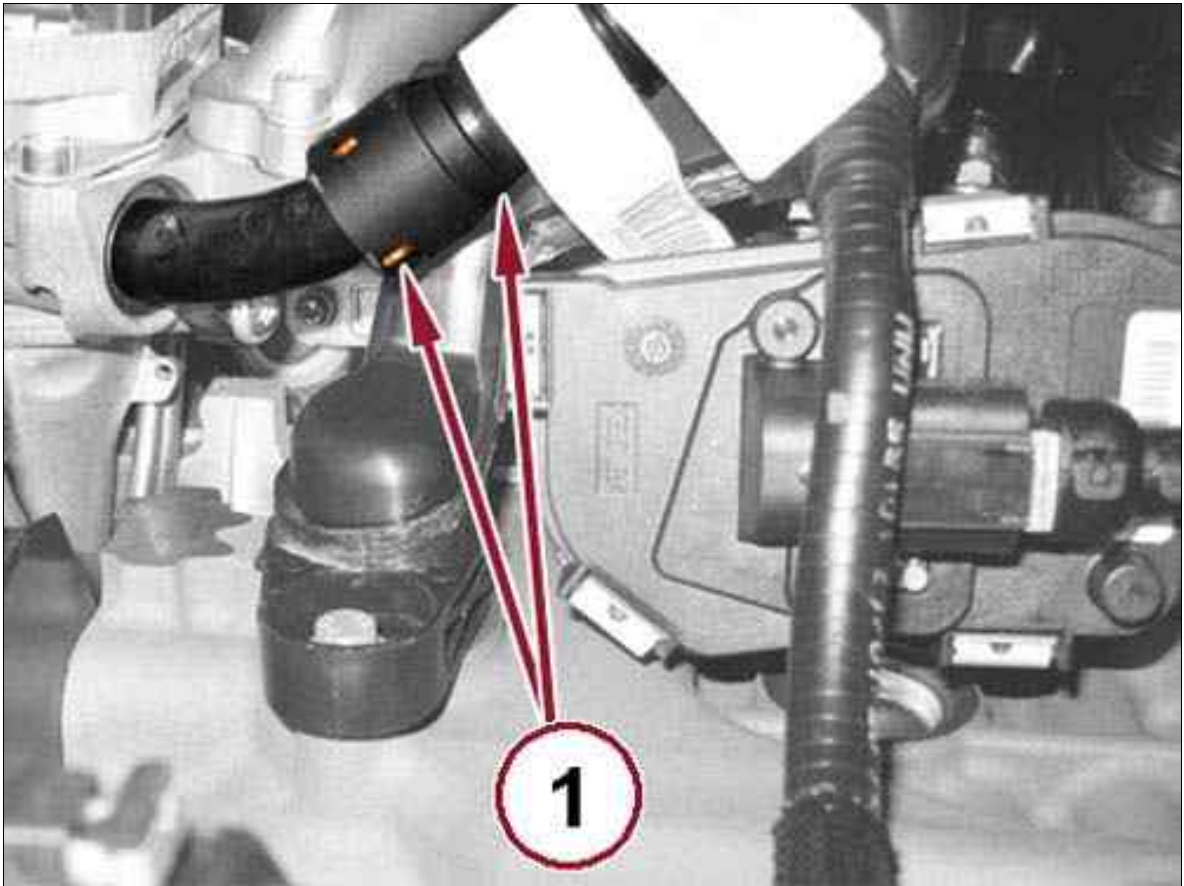
Fig 8: EGR Solenoid Connector & Discharge Hose Clamp



Courtesy of CHRYSLER GROUP, LLC

21. Loosen the clamp (1) and disconnect the discharge hose to the water heater, thermostat side.
22. Disconnect the EGR solenoid electrical connection (2).

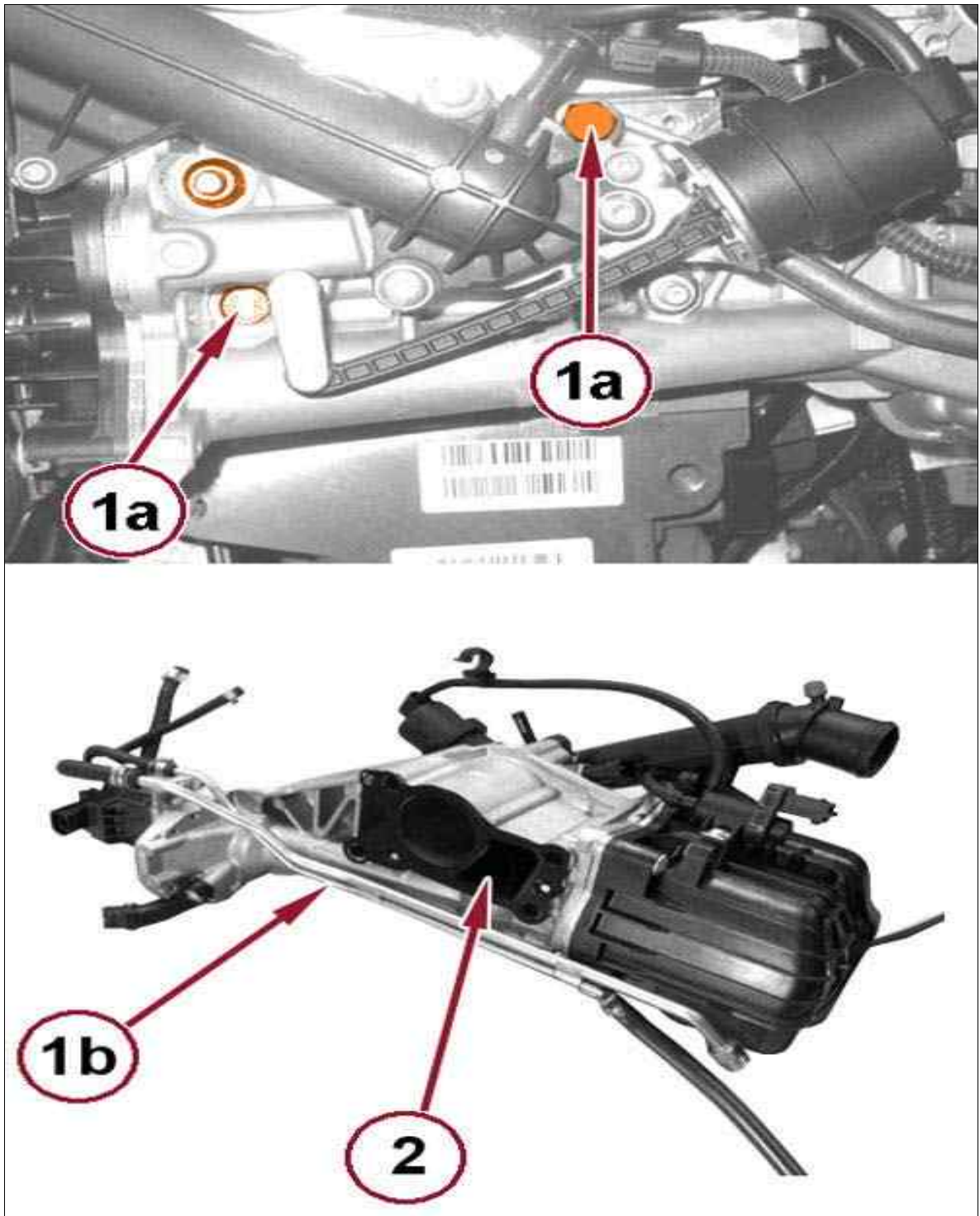
Fig 9: Water To Engine Oil Cooler Pipe & Quick Coupling



Courtesy of CHRYSLER GROUP, LLC

23. Lift the clip and disconnect the quick coupling (1) of the pipe that delivers water to the engine oil cooler, thermostat side.

Fig 10: EGR Assembly And Connecting Pipes & Fasteners

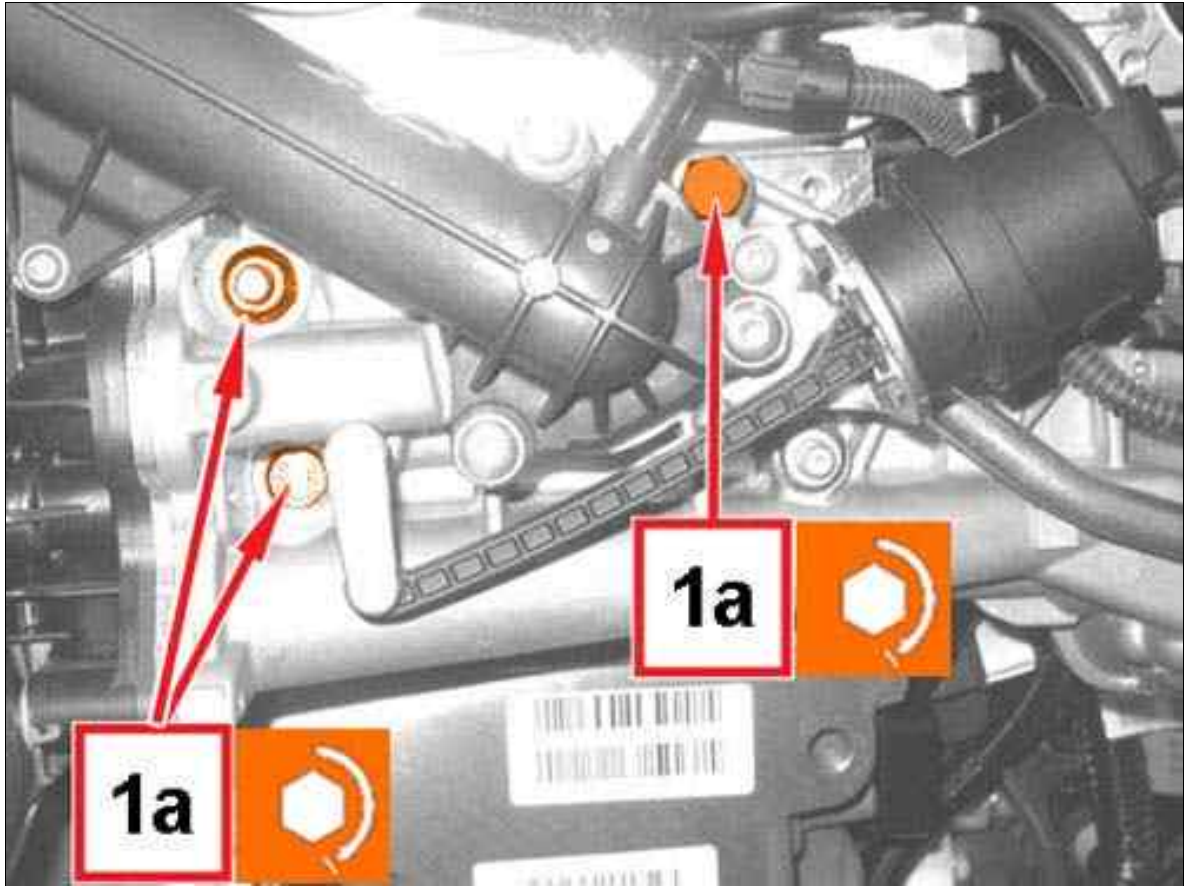


Courtesy of CHRYSLER GROUP, LLC

24. Remove the clamps (1a) and remove the complete EGR assembly and connecting pipes (1b) with gasket.
25. Remove the gasket from the complete EGR assembly with connecting pipes.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L EGR VALVE ASSEMBLY > 2.0L INSTALLATION

Fig 1: EGR Assembly Fasteners



Courtesy of CHRYSLER GROUP, LLC

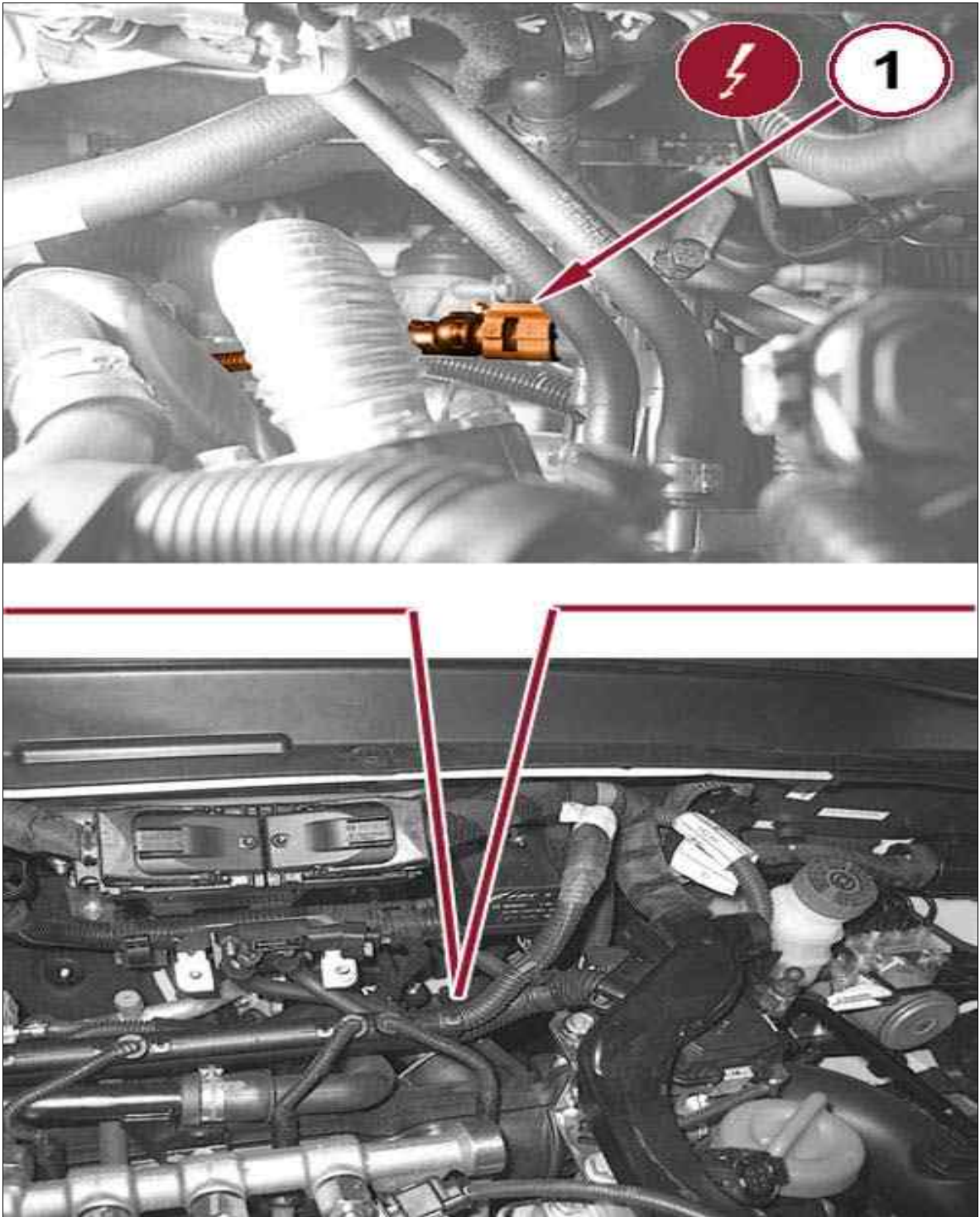
1. Install the complete EGR assembly complete with new gasket and tighten the fasteners (1a) to the proper specification. Refer to SPECIFICATIONS .
2. Connect the quick coupling of the hose that delivers water to the engine oil cooler, thermostat side by engaging its peg.
3. Connect the EGR solenoid electrical connection.
4. Connect the water heater pressure hose, thermostat side and tighten its strap.
5. Connect the engine coolant temperature sensor electrical connection.
6. Connect the vacuum tank depression hose, side depressor.
7. Connect the degassing hose and tighten its strap.
8. Connect the water supply hose to the radiator, thermostat side and tighten its strap.
9. Position the oxygen sensor wiring to the wiring retainer and close the clip.
10. Connect the water flow solenoid actuator control electrical connection.

11. Tighten the upper screw fastening the engine oil dipstick tube.
12. Install the differential pressure sensor of the DPF complete with hoses, tighten the nut and close the clip retainer.
13. Connect the differential pressure sensor electrical connection.
14. Install the pressure sampling rigid pipe upstream of the particulate filter and tighten their connectors.
15. Install the pipe from the EGR solenoid valve in the intake manifold complete with new gaskets and tighten the screws.
16. Install the exhaust gas temperature sensor and tighten its connector.
17. Connect the EGR solenoid electrical connection.
18. Fill the engine coolant. Refer to STANDARD PROCEDURE .
19. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
20. Install the throttle body. Refer to THROTTLE BODY, REMOVAL AND INSTALLATION .
21. Install the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
22. Install the battery. Refer to BATTERY, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L HIGH PRESSURE EGR VALVE > REMOVAL

1. Disconnect and isolate the negative battery cable.
2. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

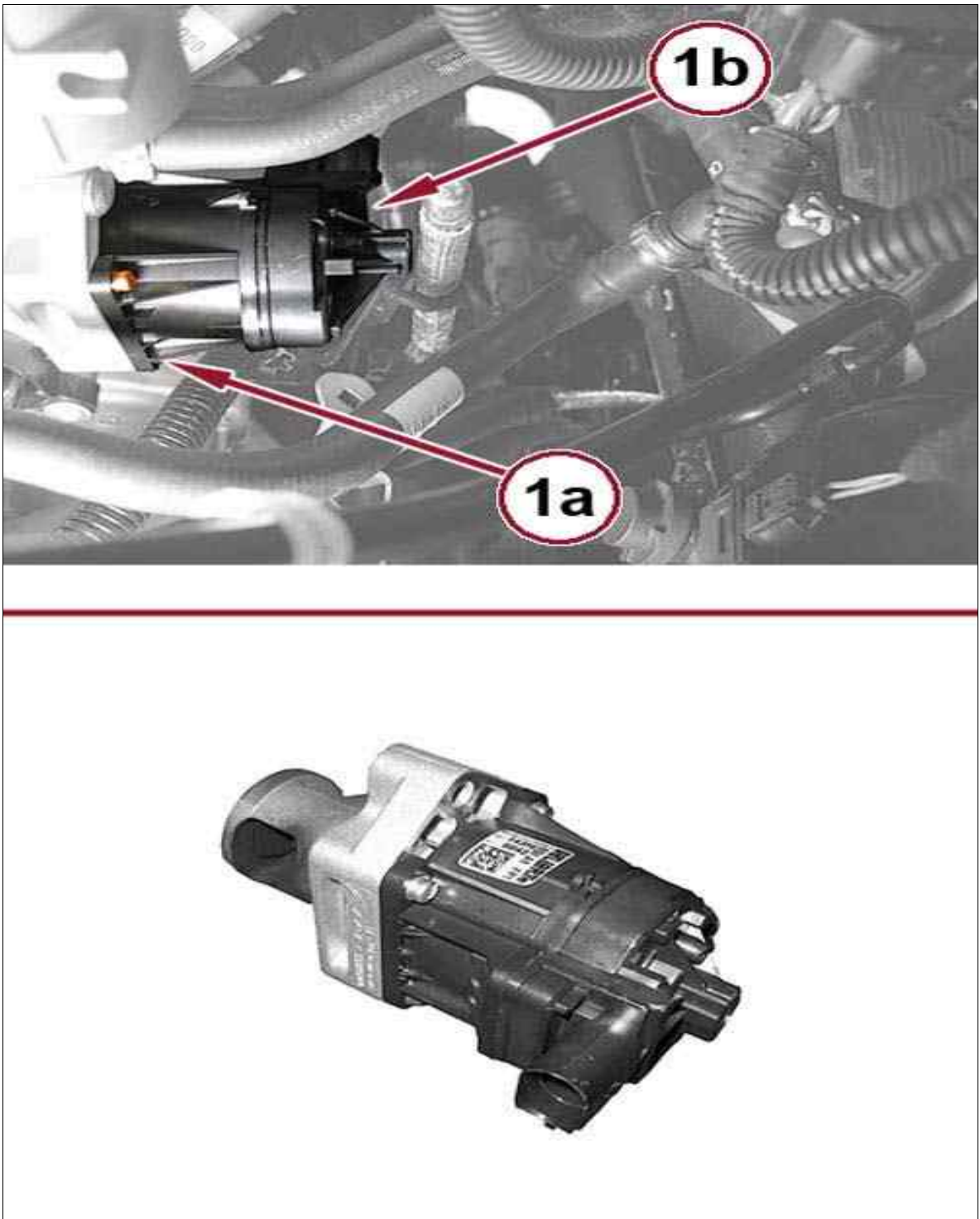
Fig 1: EGR High Pressure Solenoid Connector



Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the EGR high pressure solenoid electrical connection (1).

Fig 2: EGR High Pressure Solenoid & Screws



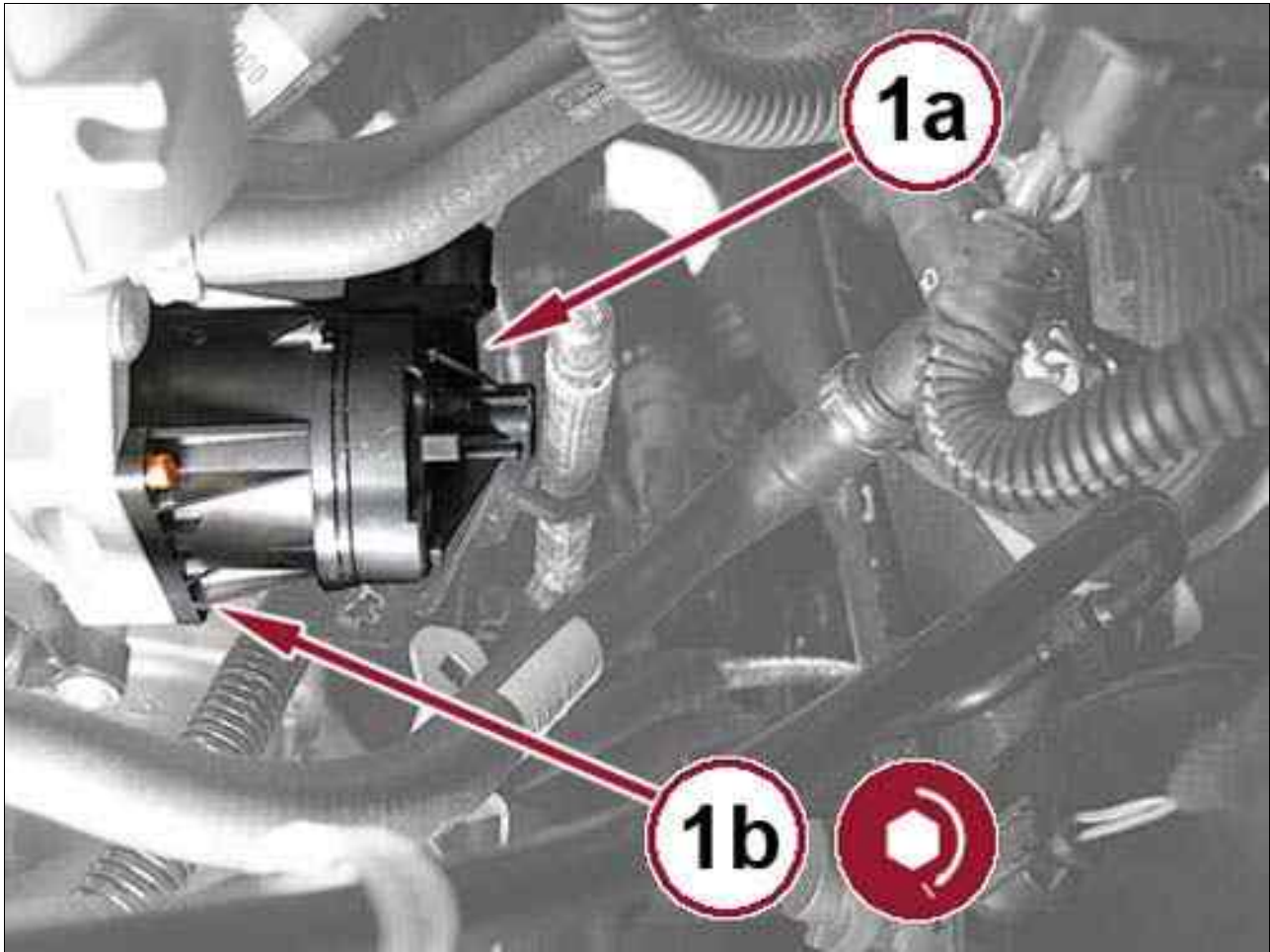
Courtesy of CHRYSLER GROUP, LLC

4. Remove the screws (1a) and remove the EGR high pressure solenoid (1b).
5. Remove the gasket.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >

REMOVAL AND INSTALLATION > 2.0L HIGH PRESSURE EGR VALVE > INSTALLATION

Fig 1: EGR High Pressure Solenoid & Screws



Courtesy of CHRYSLER GROUP, LLC

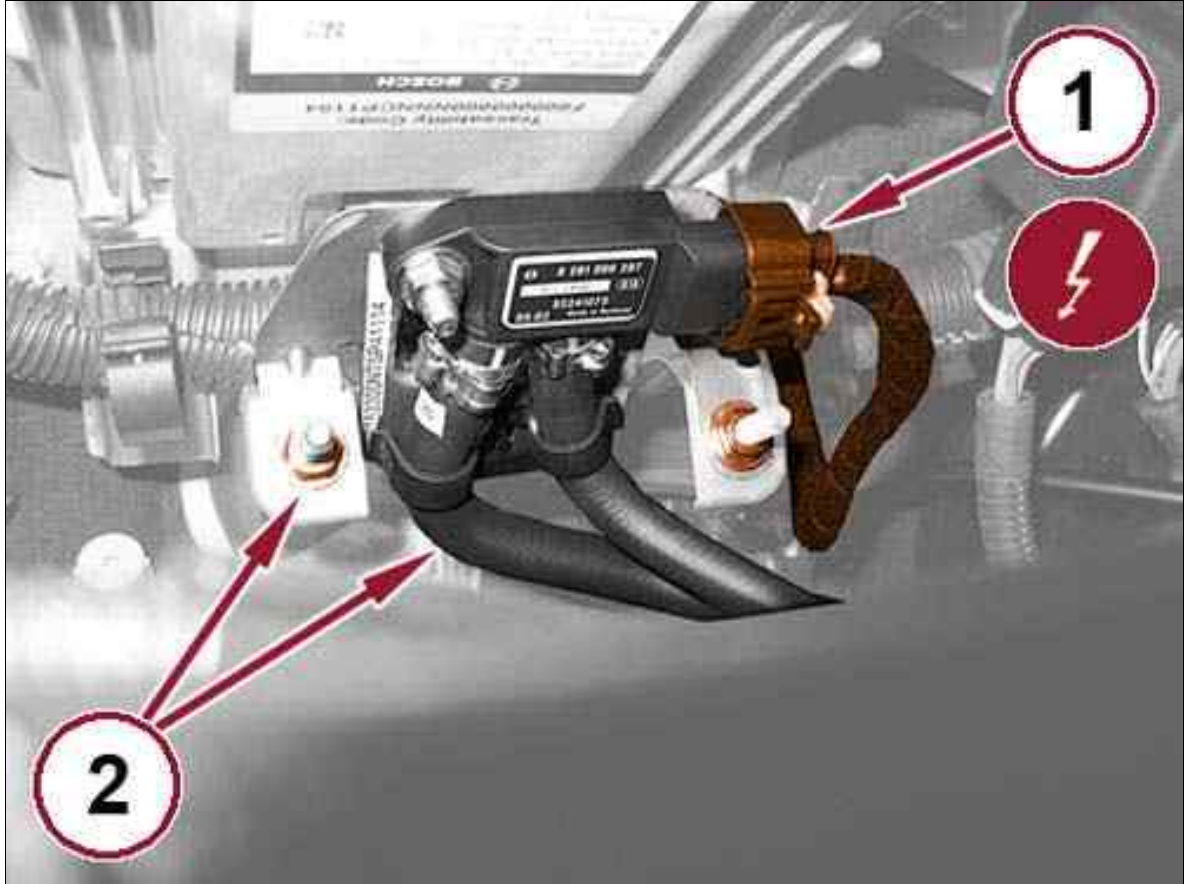
1. Install the EGR high pressure solenoid (1a), complete with new gasket and tighten the mounting screws (1b) to the proper specification. Refer to SPECIFICATIONS .
2. Connect the EGR high pressure solenoid electrical connection.
3. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L HIGH PRESSURE EGR VALVE MOUNTING > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION

2. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
3. Drain the engine coolant. Refer to STANDARD PROCEDURE .
4. Remove the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
5. Remove the thermostat. Refer to THERMOSTAT, REMOVAL AND INSTALLATION .

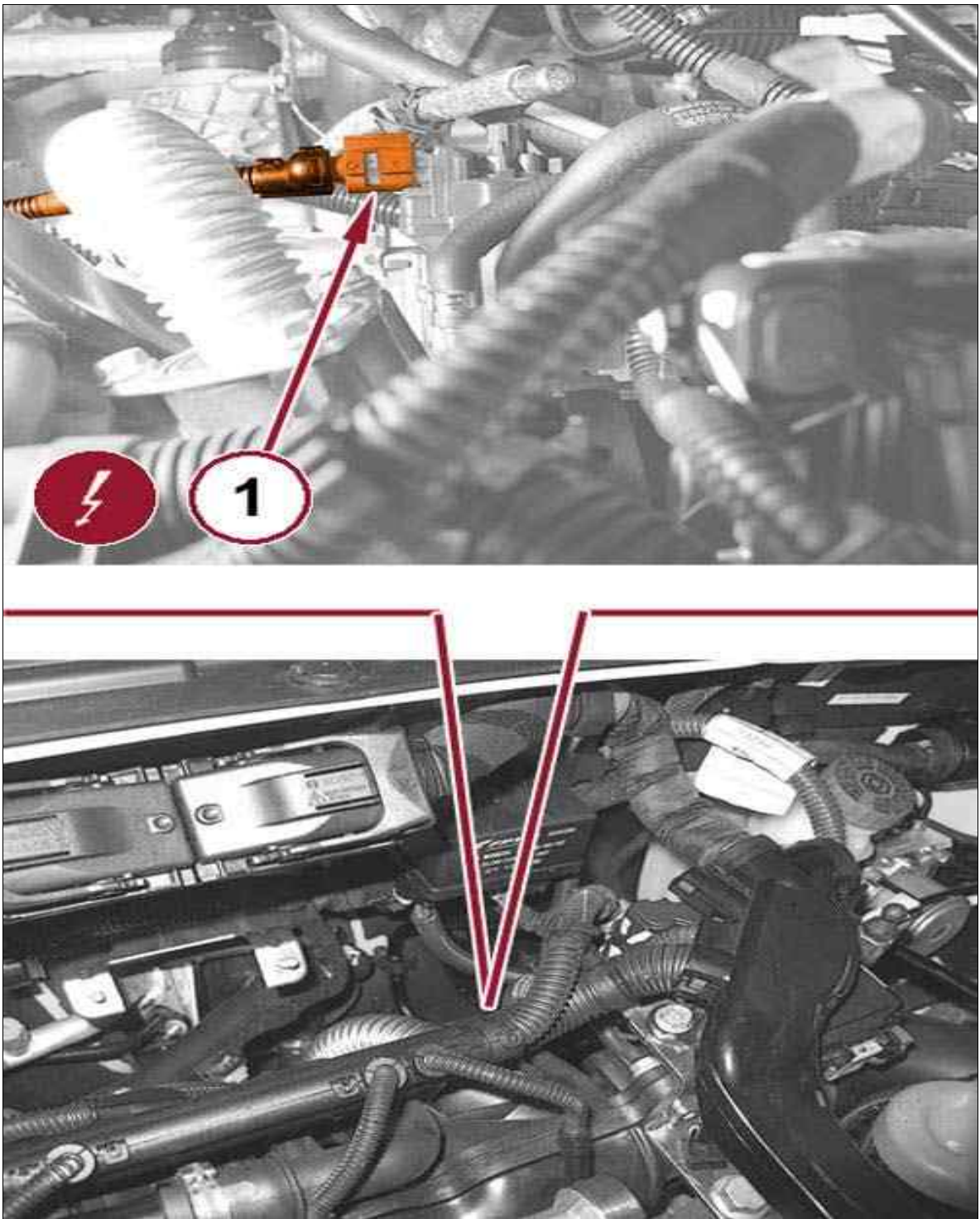
Fig 1: Particulate Filter Differential Pressure Sensor, Connector & Bracket



Courtesy of CHRYSLER GROUP, LLC

6. Unplug the particulate filter differential pressure sensor connection (1).
7. Remove the nuts and move sensor and bracket (2) to the side.

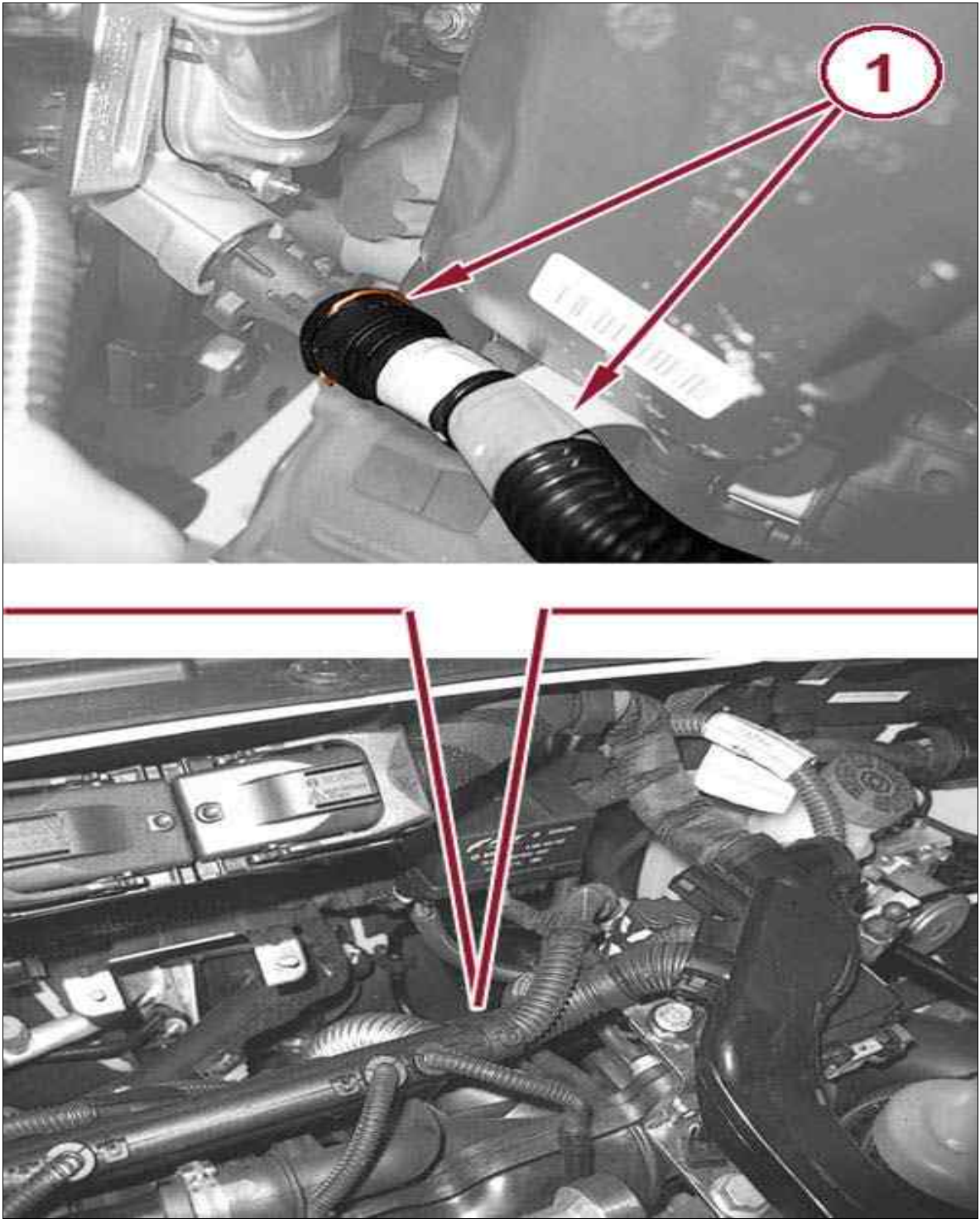
Fig 2: EGR High Pressure Solenoid Connector



Courtesy of CHRYSLER GROUP, LLC

8. Disconnect the EGR high pressure solenoid electrical connection (1).

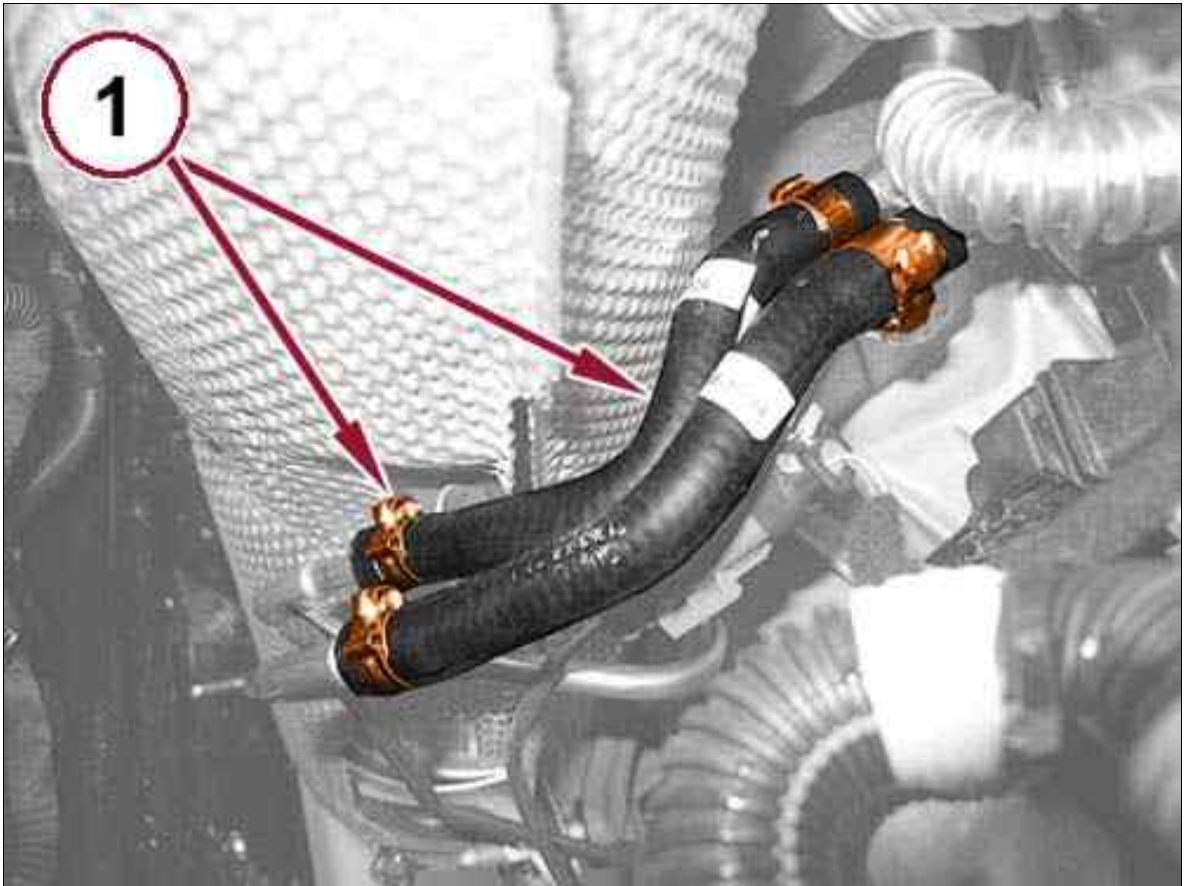
Fig 3: Quick Coupling Coolant Hose



Courtesy of CHRYSLER GROUP, LLC

9. Lift the clip and disconnect the quick coupling (1) of the water engine oil cooler supply hose, thermostat side.

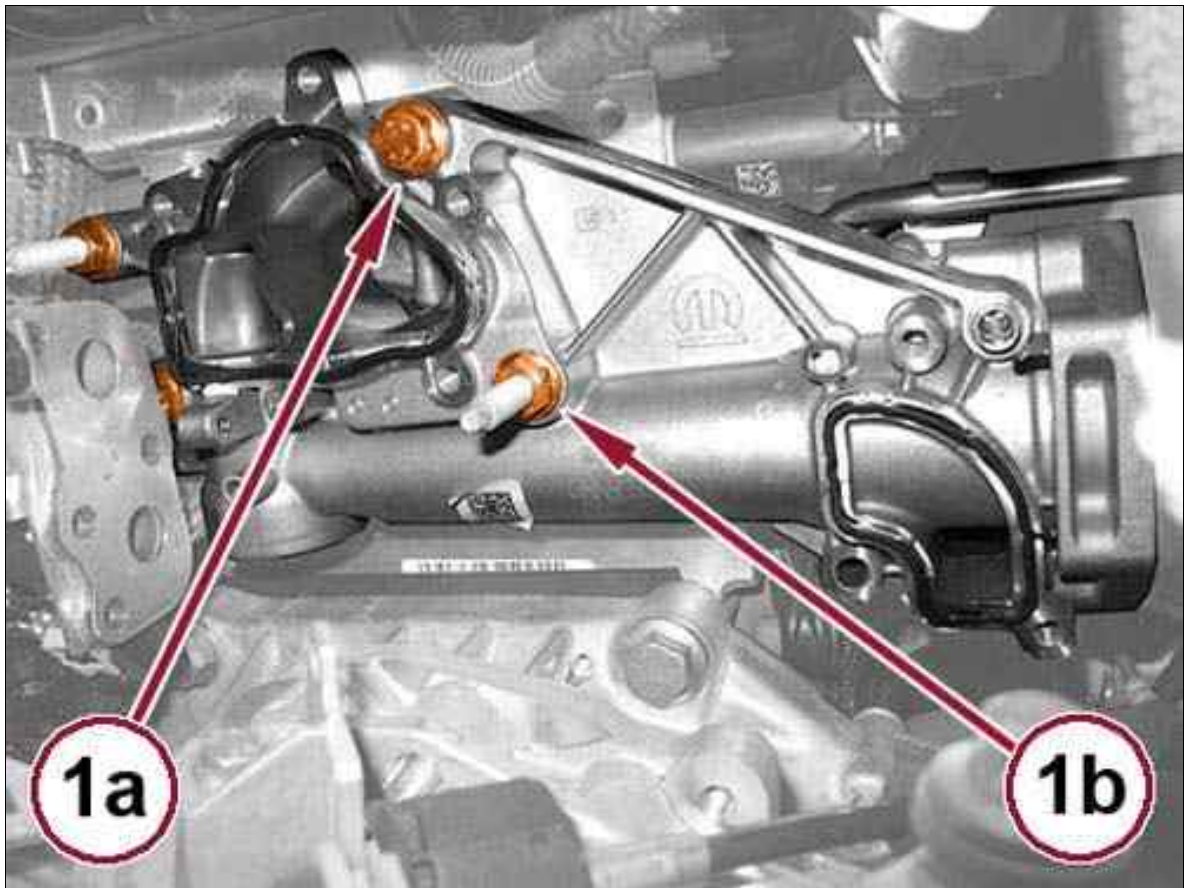
Fig 4: DPS Hoses



Courtesy of CHRYSLER GROUP, LLC

10. Loosen the clamps and disconnect the particulate filter upstream and downstream exhaust gas pressure hoses (1).

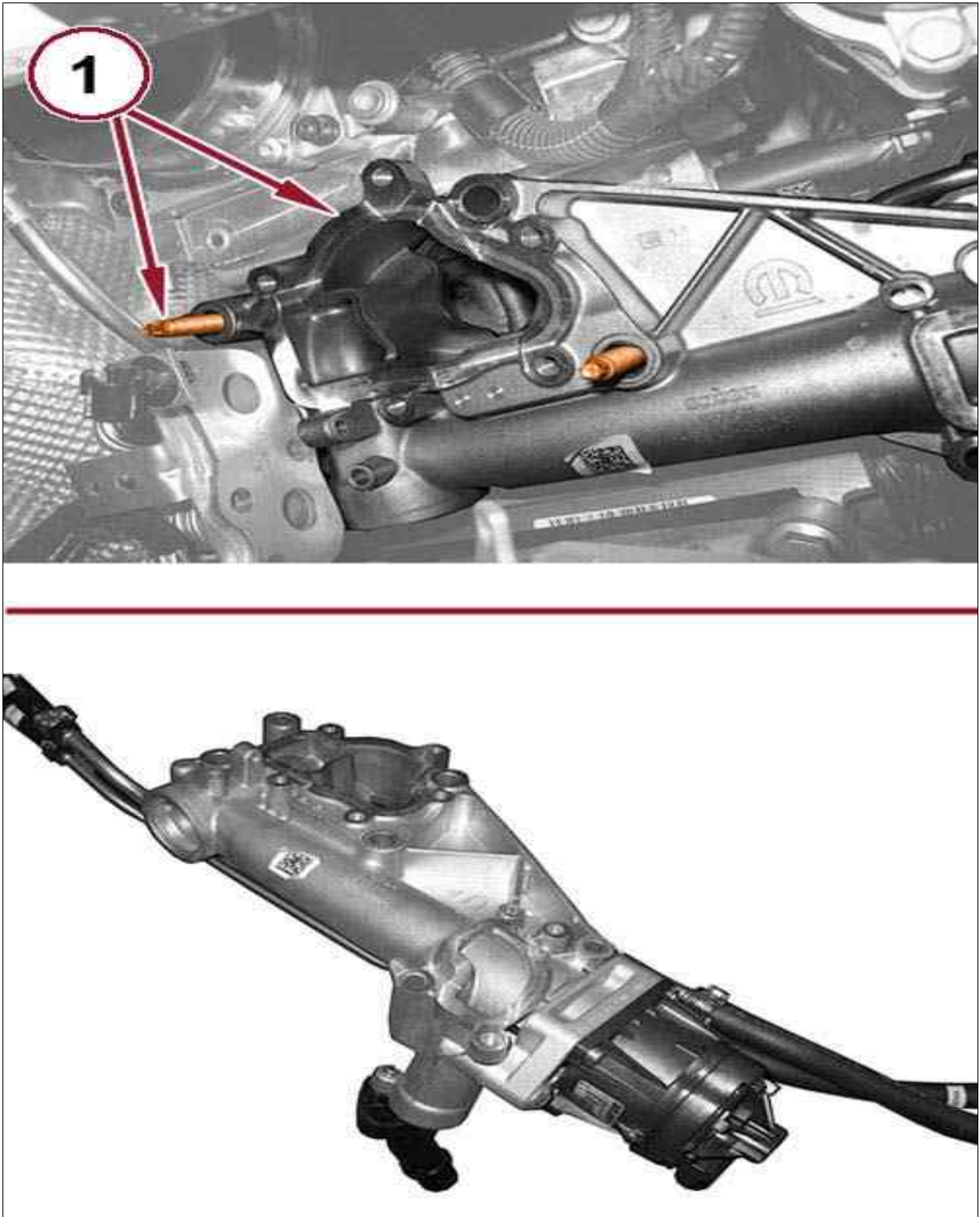
Fig 5: EGR Cooler Nuts & Bolts



Courtesy of CHRYSLER GROUP, LLC

11. Remove the screws (1a) and nuts (1b) securing the EGR high pressure solenoid bracket.

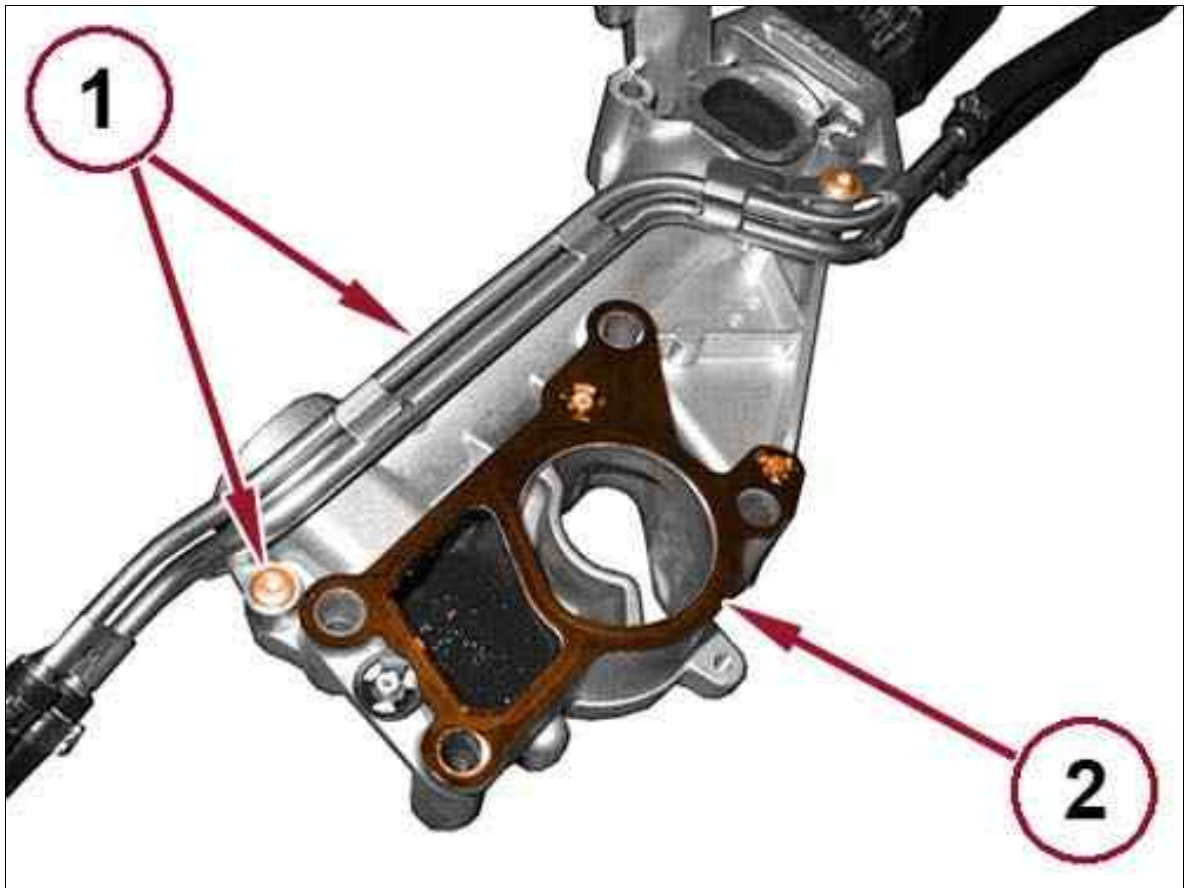
Fig 6: EGR Cooler & Studs



Courtesy of CHRYSLER GROUP, LLC

12. Using a suitable tool, unscrew the captive nuts (1) and remove the EGR high pressure solenoid.

Fig 7: DPS Tubing, Gasket & Bolts



Courtesy of CHRYSLER GROUP, LLC

13. Remove the screws and remove the piping (1).

14. Remove the metal gasket (2).

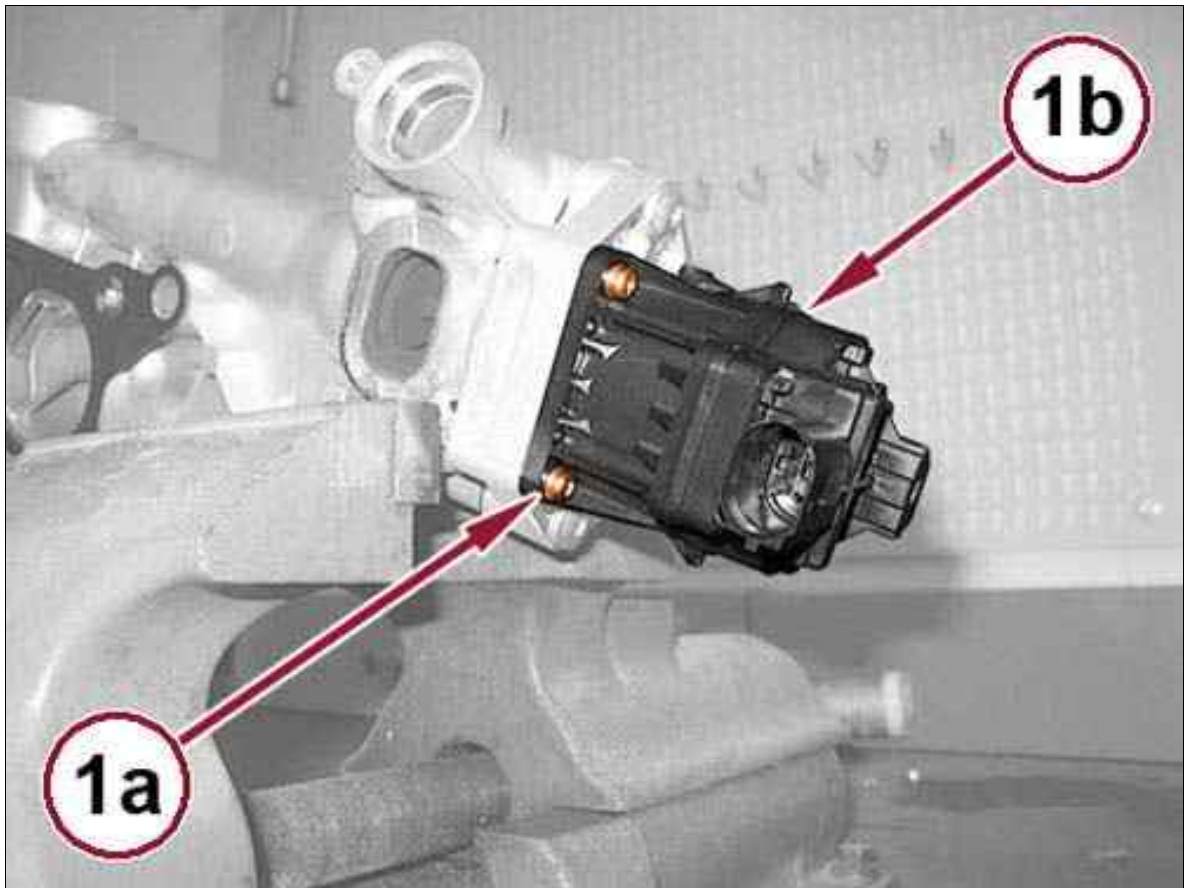
Fig 8: Water Delivery Pipe & Screw



Courtesy of CHRYSLER GROUP, LLC

15. Remove the screw and remove the connection for the water delivery pipe (1) to the oil cooler motor, complete with O-rings.

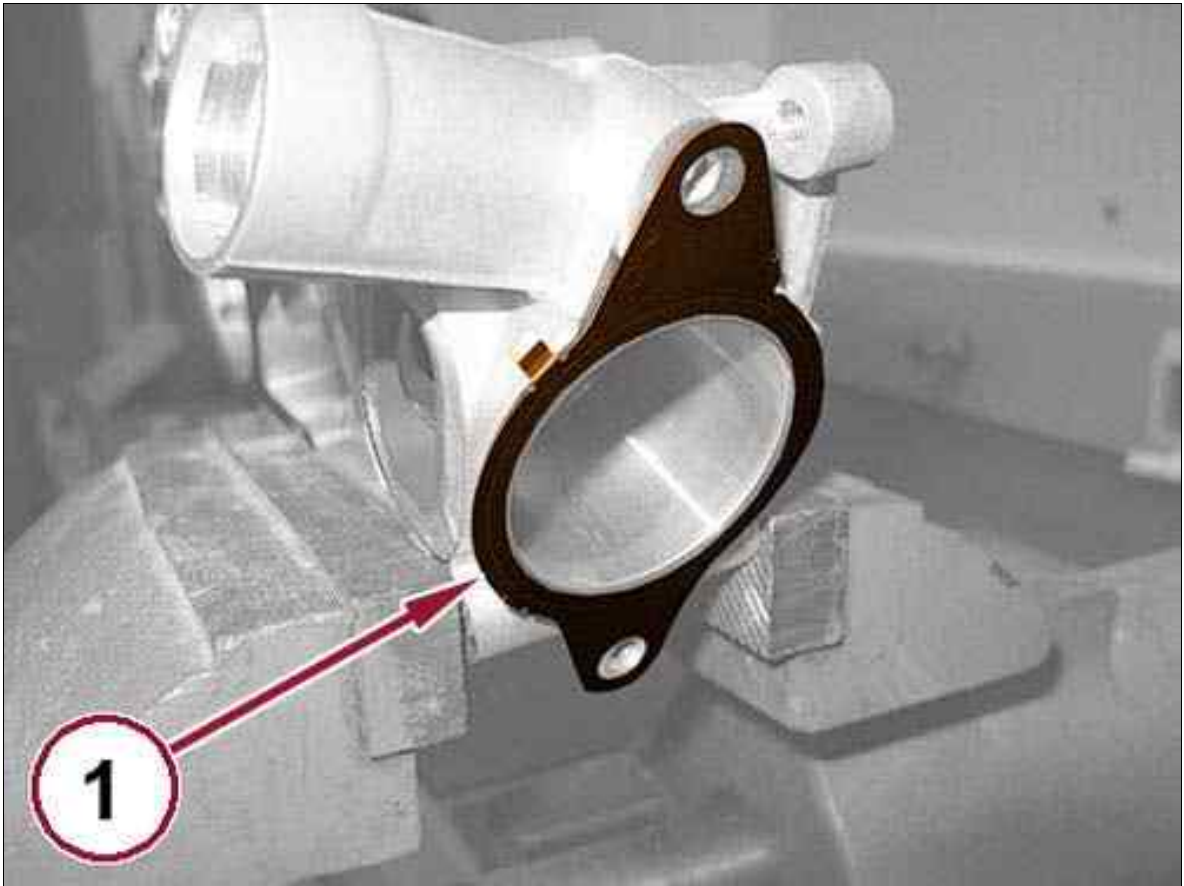
Fig 9: EGR High Pressure Solenoid & Screws



Courtesy of CHRYSLER GROUP, LLC

16. Remove the screws (1a) and remove the EGR high pressure solenoid (1b).

Fig 10: EGR Valve Gasket

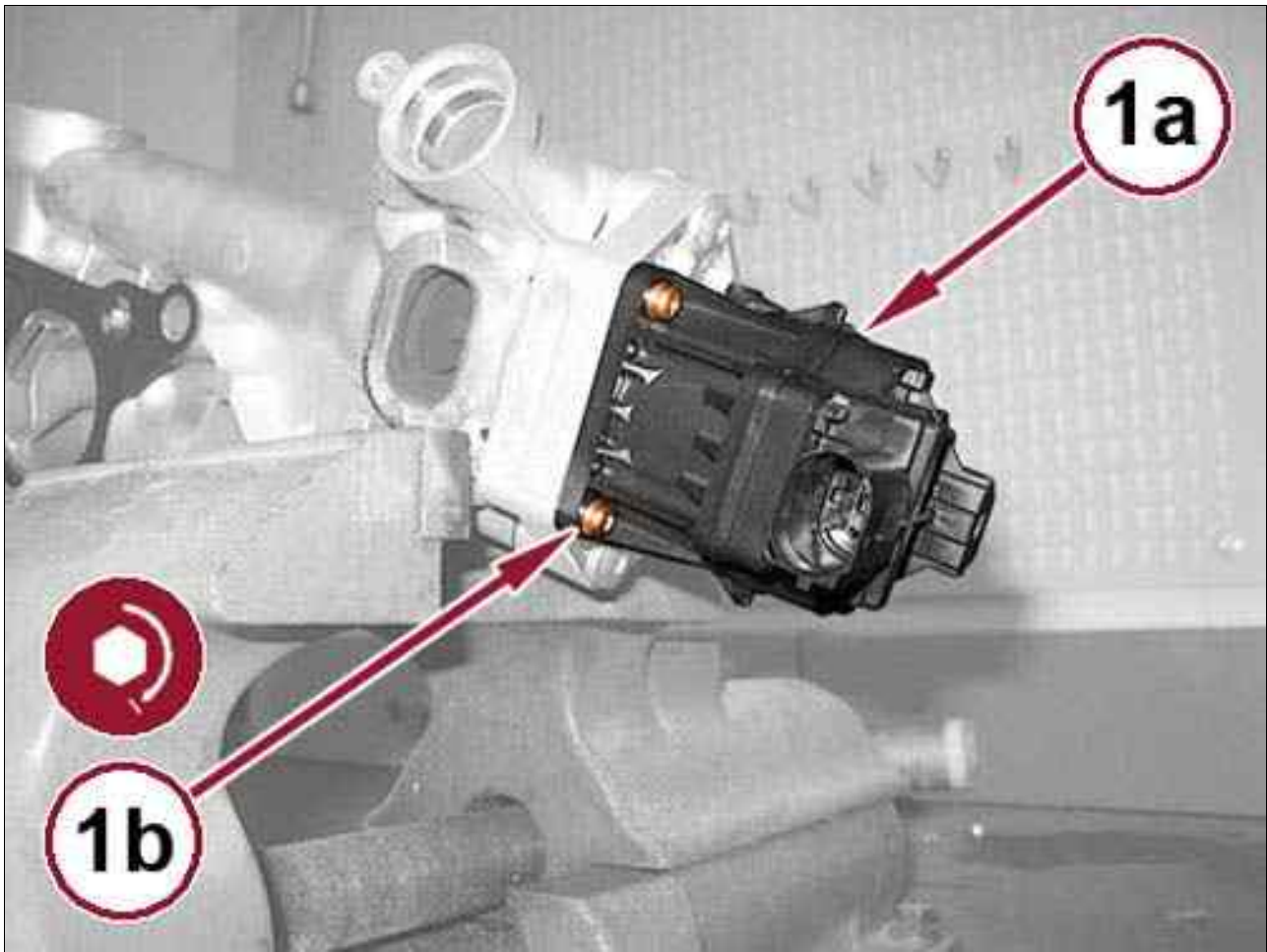


Courtesy of CHRYSLER GROUP, LLC

17. Remove the metal gasket (1).

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > 2.0L HIGH PRESSURE EGR VALVE MOUNTING >
INSTALLATION**

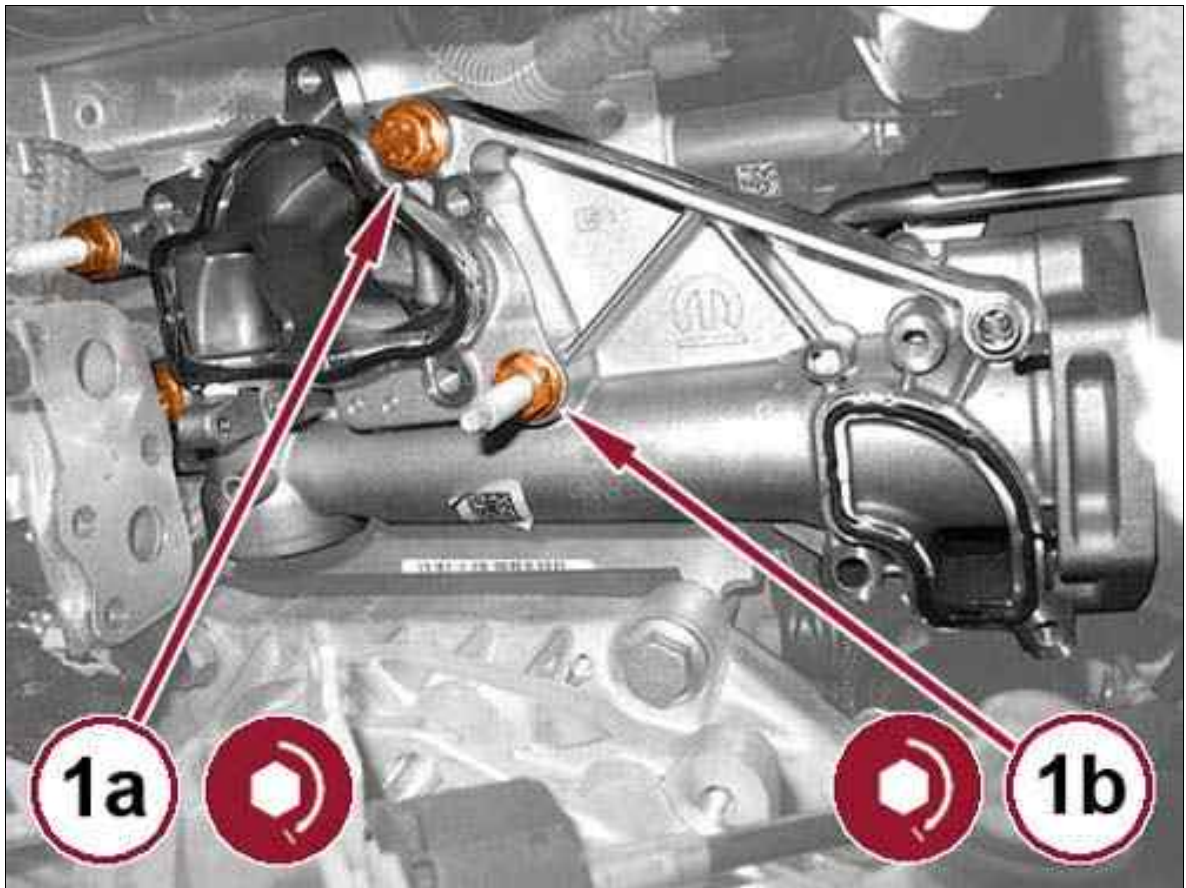
Fig 1: EGR High Pressure Solenoid & Screws



Courtesy of CHRYSLER GROUP, LLC

1. Install the EGR high pressure solenoid (1a), complete with new gasket and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .
2. Install the water delivery pipe to oil cooler engine hose, complete with new O-ring and tighten the screw.
3. Position and install the exhaust gas upstream and downstream outlet pressure piping of the particulate filter and tighten the screws.

Fig 2: EGR High Pressure Solenoid Support Mounting, Screws & Nuts



Courtesy of CHRYSLER GROUP, LLC

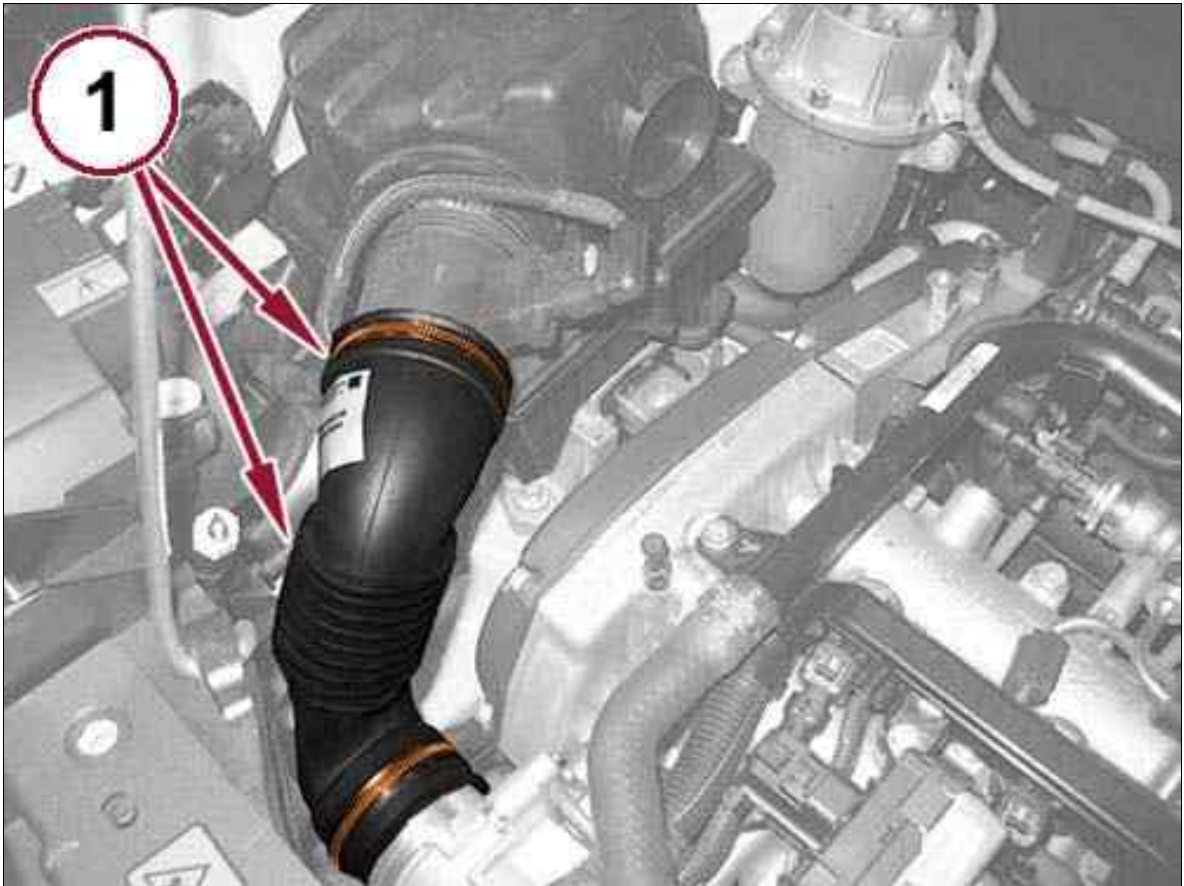
4. Install the EGR high pressure solenoid support mounting complete with new gasket and tighten the screws (1a) and nuts (1b) to the proper specification. Refer to SPECIFICATIONS .
5. Connect the exhaust gas pressure hoses upstream and downstream of the particulate filter and tighten the clamps.
6. Connect the EGR high pressure solenoid electrical connection.
7. Install the particulate filter differential pressure sensor complete with pipes and tighten its nuts.
8. Connect the particulate filter differential pressure sensor electrical connection.
9. Install the thermostat. Refer to THERMOSTAT, REMOVAL AND INSTALLATION .
10. Install the battery tray. Refer to TRAY, BATTERY, REMOVAL AND INSTALLATION .
11. Fill the engine coolant. Refer to STANDARD PROCEDURE .
12. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
13. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >

REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
2. Remove the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
3. Drain the engine coolant. Refer to STANDARD PROCEDURE .
4. Discharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
5. Remove the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .

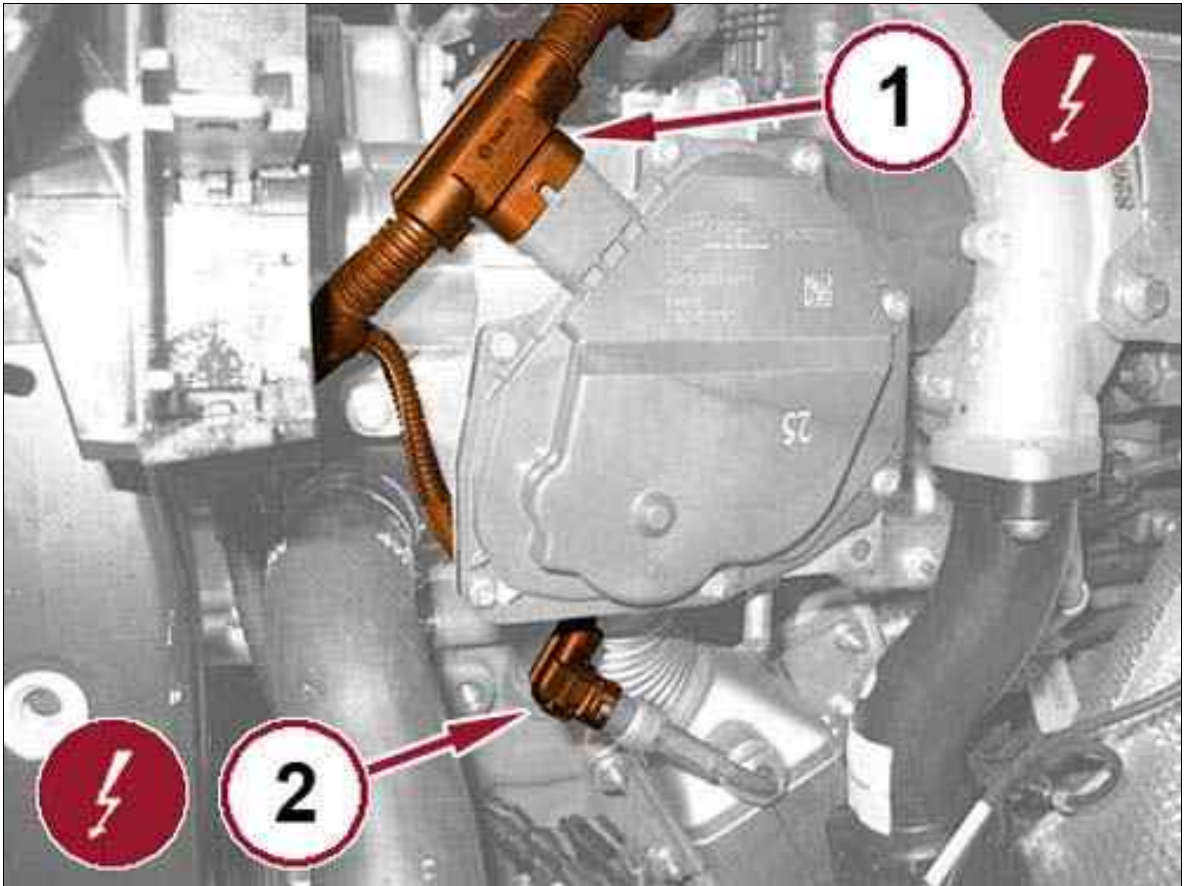
Fig 1: Air Flow Meter Hose & Clamp



Courtesy of CHRYSLER GROUP, LLC

6. Loosen the hose clamp and remove the tubing from the air flow meter (1).

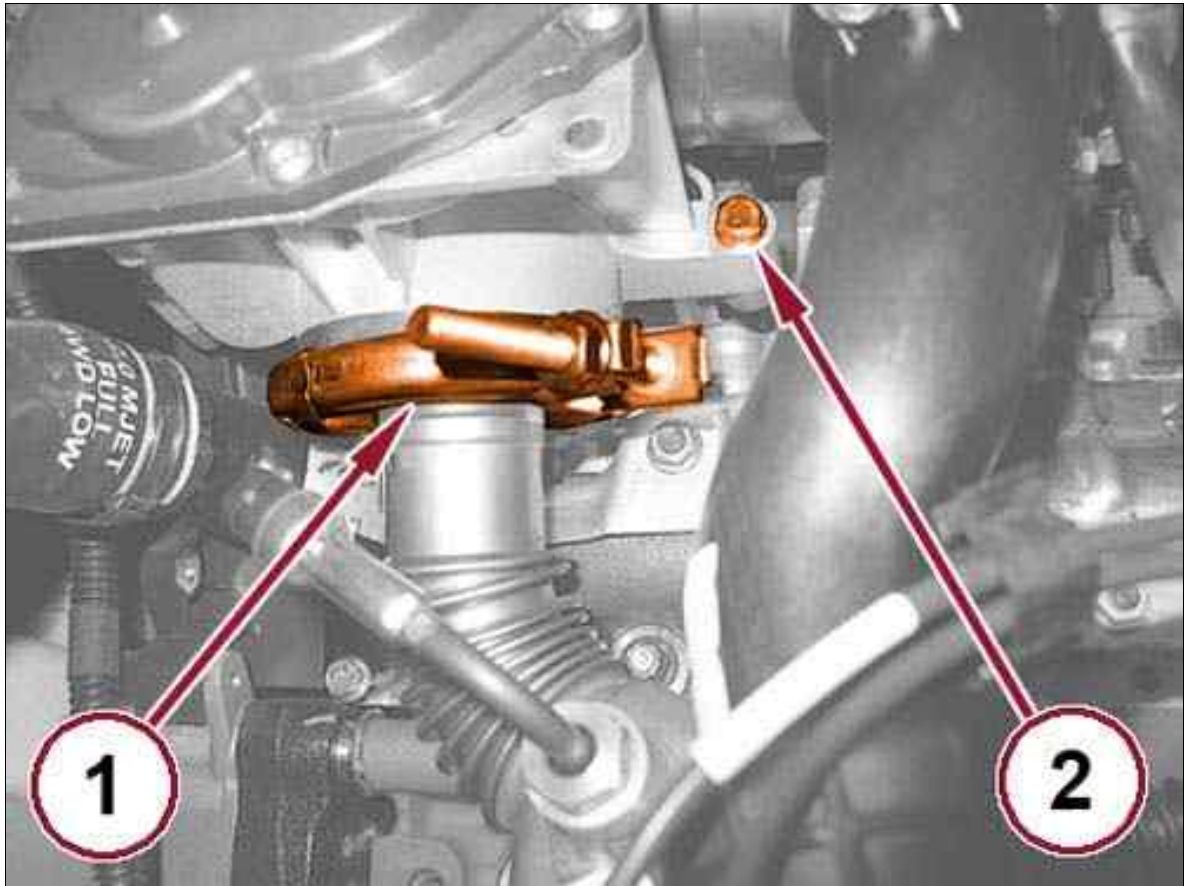
Fig 2: Wire Harness Connectors



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the low pressure EGR valve electrical connection (1).
8. Disconnect the exhaust gas temperature sensor electrical connection (2).

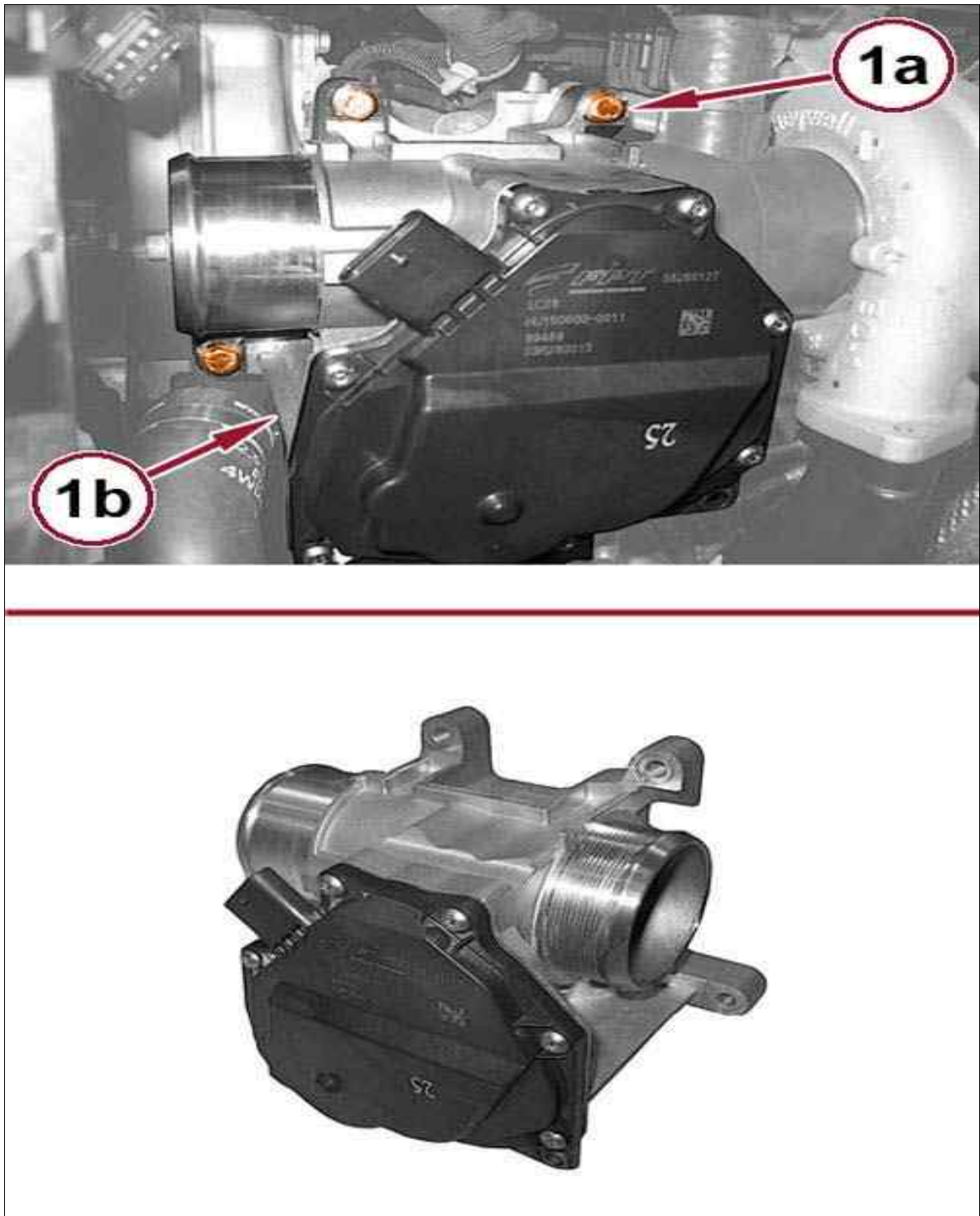
Fig 3: EGR Air Flow Control Valve Bolt & Clamp



Courtesy of CHRYSLER GROUP, LLC

9. Loosen the exhaust gas delivery clamp (1), EGR valve side of low pressure.
10. Remove the low pressure EGR valve screw (2).

Fig 4: EGR Air Flow Control Valve & Bolt



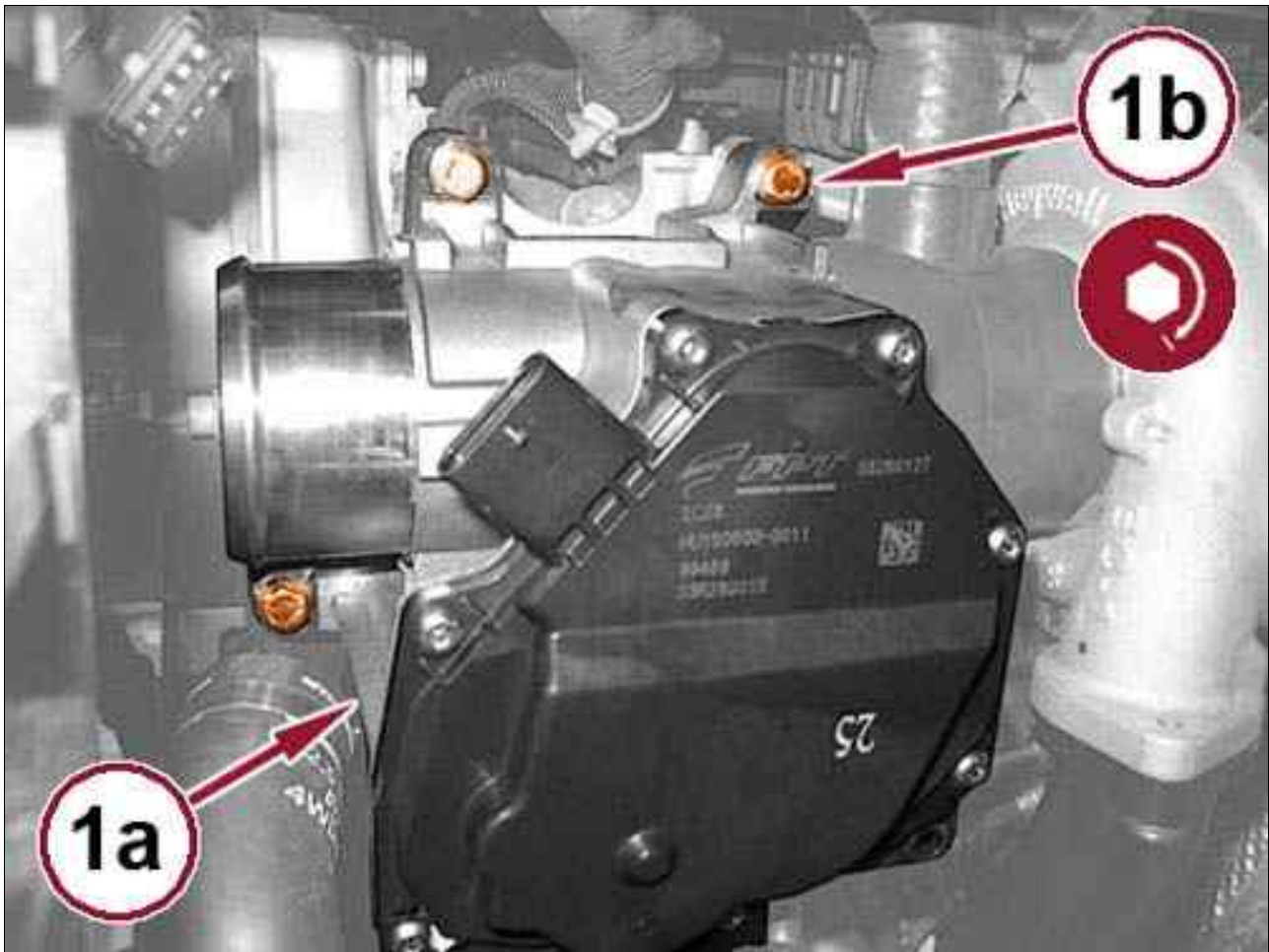
Courtesy of CHRYSLER GROUP, LLC

11. Remove the screws (1a) and remove the EGR low pressure valve (1b) disengaging it from the sleeve to the turbocharger air delivery.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE >

INSTALLATION

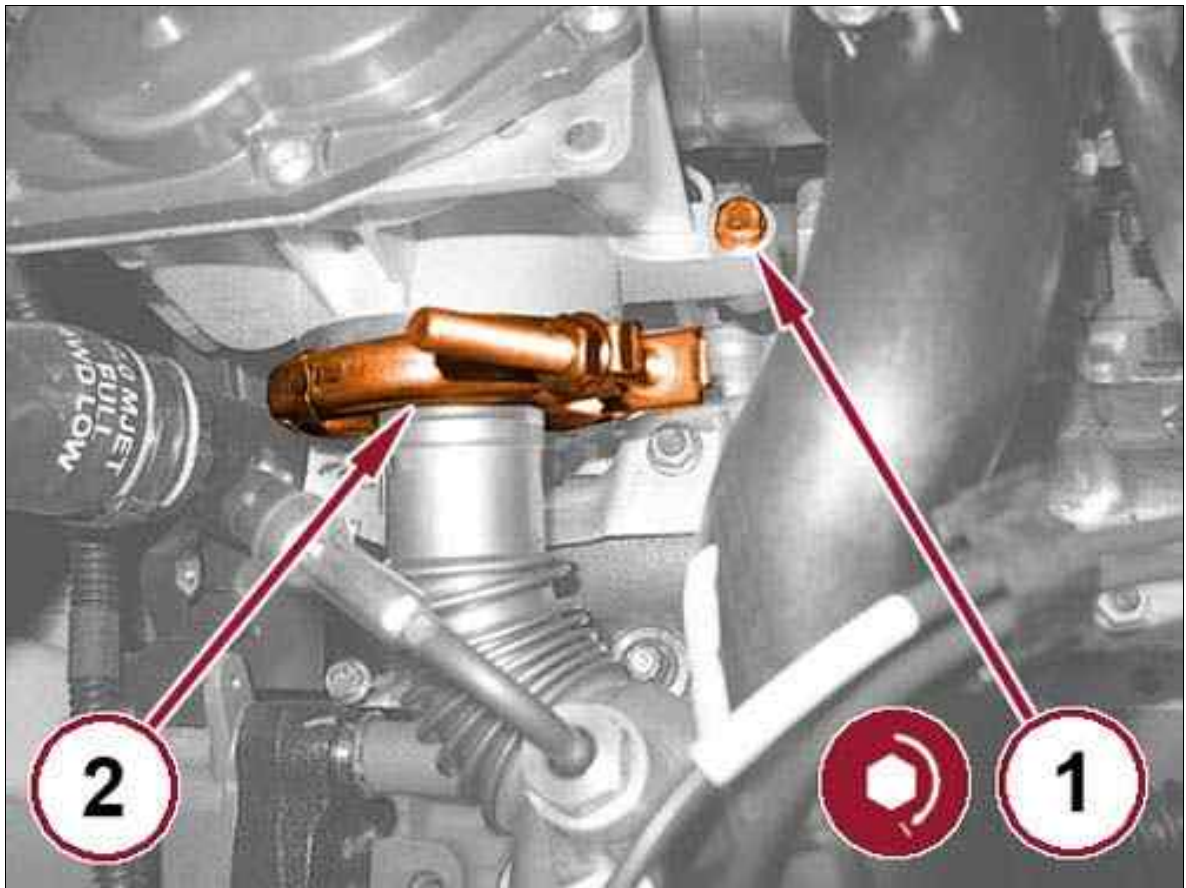
Fig 1: Low Pressure EGR Valve & Screws



Courtesy of CHRYSLER GROUP, LLC

1. Install the low pressure EGR valve (1a), connect the hose to the turbocharger air delivery and tighten the mounting screws (1b) to the proper specification. Refer to SPECIFICATIONS .

Fig 2: Exhaust Gas Delivery Pipe Clamp & Screw



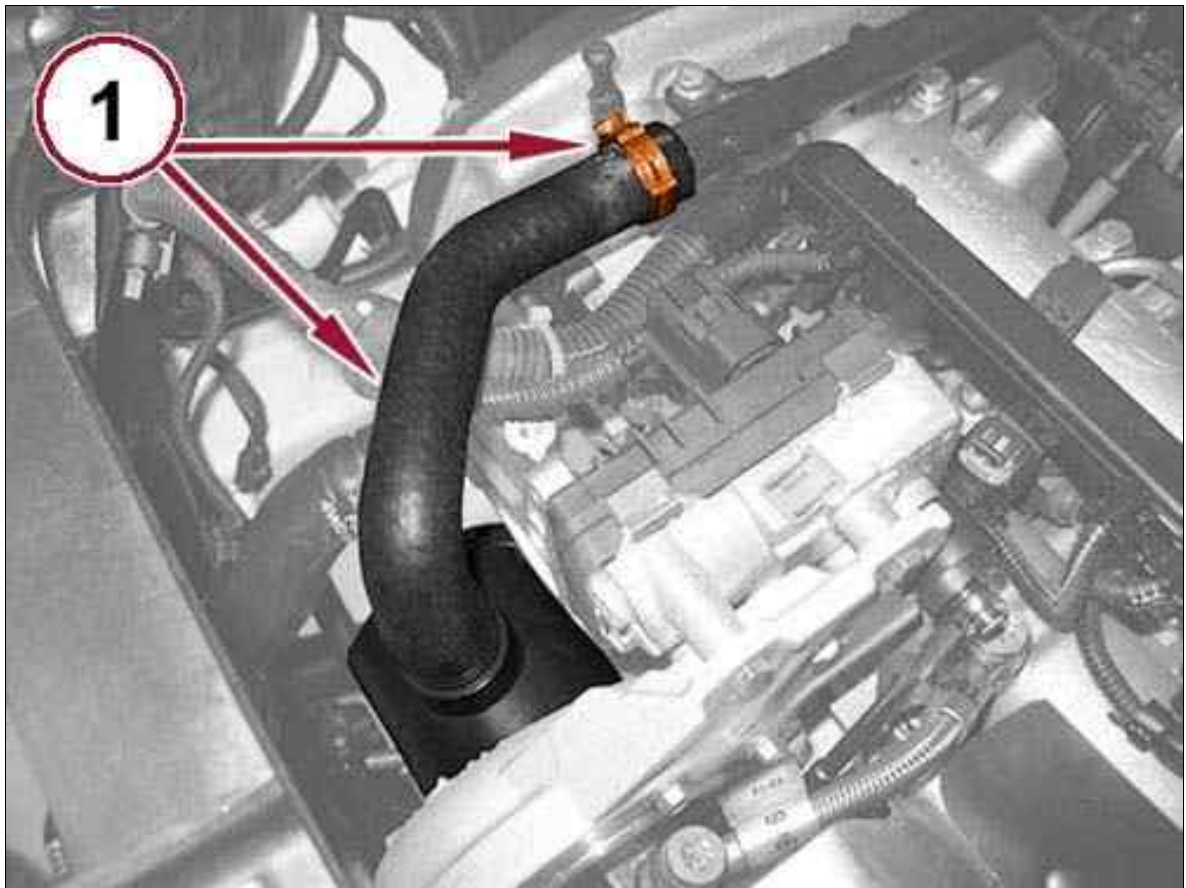
Courtesy of CHRYSLER GROUP, LLC

2. Tighten the lower pressure EGR pipe screw to the proper specification. Refer to SPECIFICATIONS .
3. Tighten the exhaust gas delivery pipe clamp, EGR valve side low pressure, to the proper specification. Refer to SPECIFICATIONS .
4. Connect the electrical connection of the exhaust gas temperature sensor.
5. Connect the electrical connection of the low pressure EGR valve.
6. Put the air flow meter hose from the air flow meter to the low pressure EGR valve in place and tighten the clamps.
7. Install the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
8. Recharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
9. Fill the engine coolant system. Refer to STANDARD PROCEDURE .
10. Install the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
11. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE MOUNTING > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
2. Remove the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
3. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
4. Drain the engine coolant. Refer to STANDARD PROCEDURE .
5. Discharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
6. Remove the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
7. Remove the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

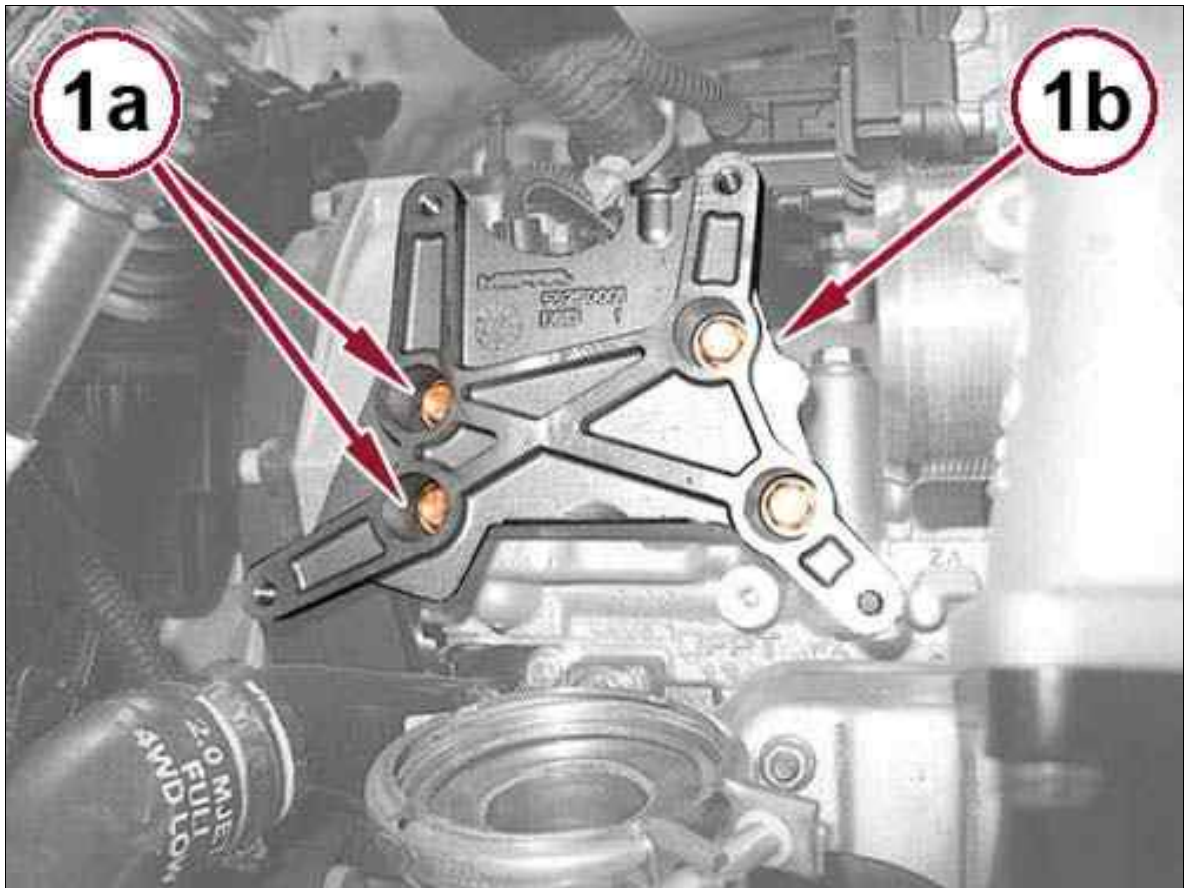
Fig 1: Inlet Air Hose & Clamp



Courtesy of CHRYSLER GROUP, LLC

8. Loosen the clamp and remove the inlet air hose to the turbocharger (1) complete with the engine oil vapor recovery pipe.

Fig 2: Low Pressure EGR Valve Bracket & Screws

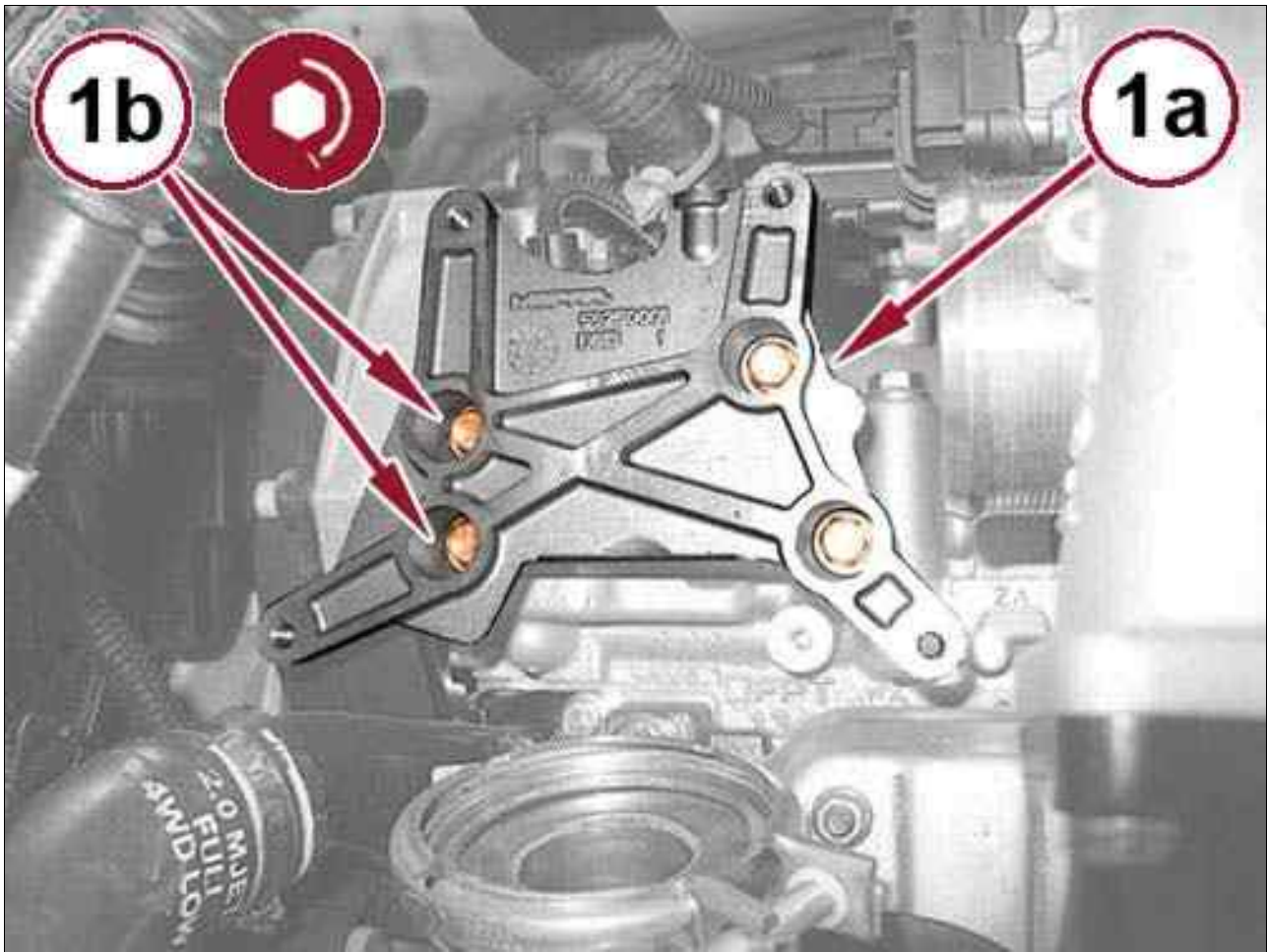


Courtesy of CHRYSLER GROUP, LLC

9. Remove the screws (1a) and remove support for low pressure EGR valve mounting (1b).

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE MOUNTING >
INSTALLATION**

Fig 1: Low Pressure EGR Valve Bracket & Screws



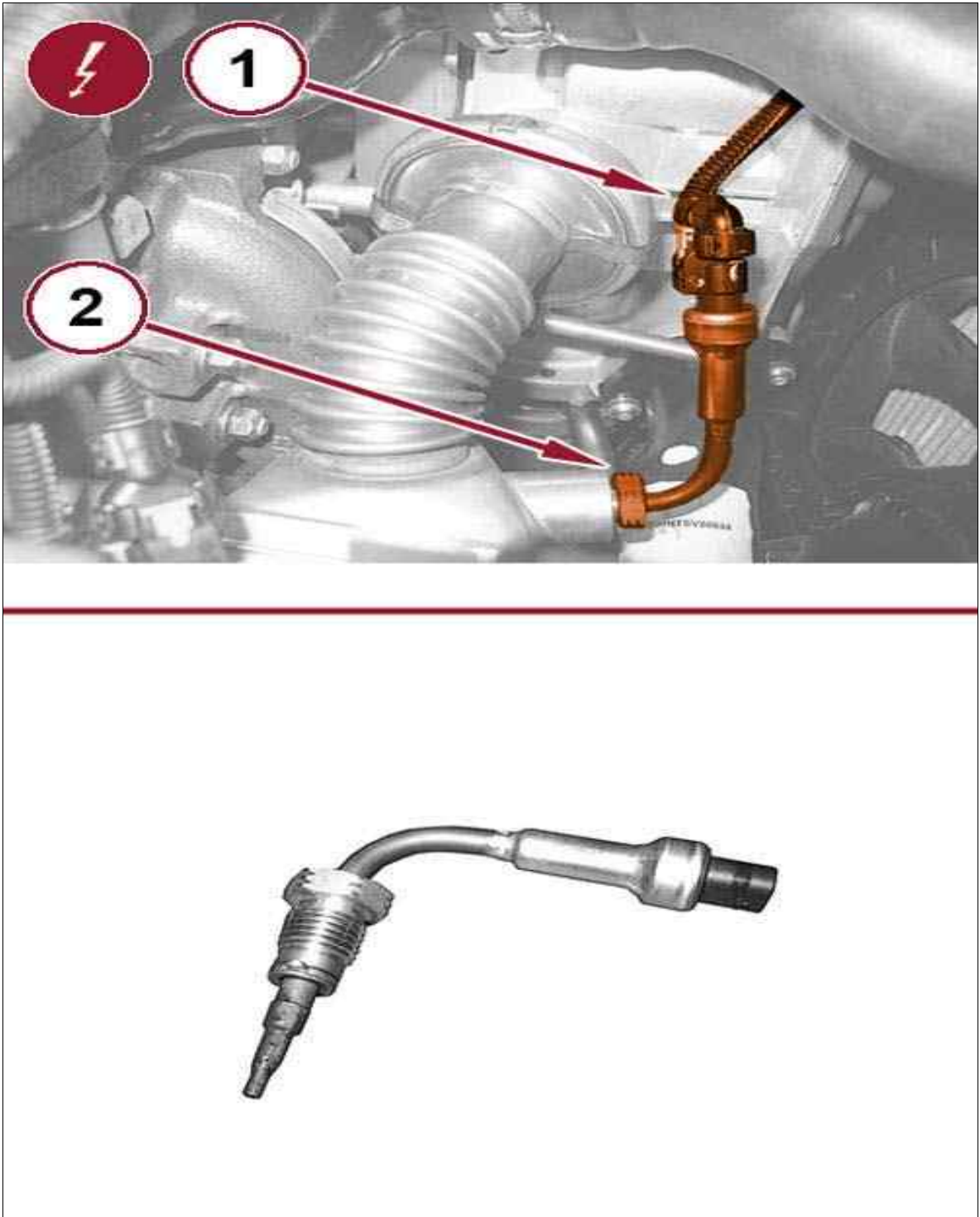
Courtesy of CHRYSLER GROUP, LLC

1. Install the low pressure EGR valve bracket (1a) and tighten the screws (1b) to the proper specification. Refer to SPECIFICATIONS .
2. Install the air inlet hose to the turbocharger complete with engine oil vapor recovery pipe and tighten its strap.
3. Install the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .
4. Install the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
5. Install the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
6. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
7. Recharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
8. Fill the engine coolant system. Refer to STANDARD PROCEDURE .
9. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
10. Disconnect and isolate the negative battery cable.

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE SENSOR >
REMOVAL**

1. Disconnect and isolate the negative battery cable.
2. Remove the right front wheel and splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .

Fig 1: EGR Temperature Sensor & Connector



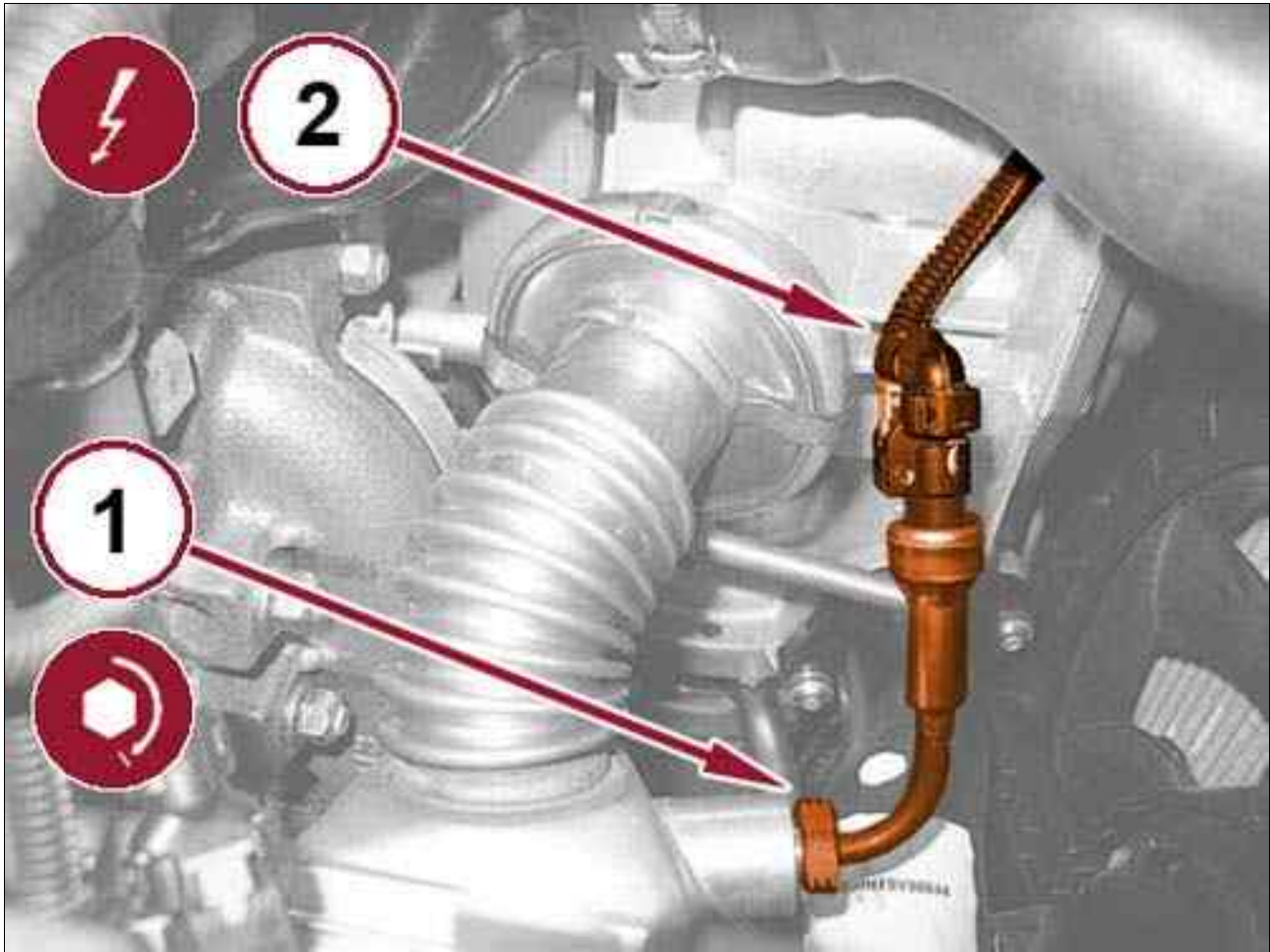
Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the exhaust gas temperature sensor electrical connection (1).
4. Unscrew the ring (2) and remove the sensor.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >

REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EGR VALVE SENSOR > INSTALLATION

Fig 1: EGR Temperature Sensor & Connector



Courtesy of CHRYSLER GROUP, LLC

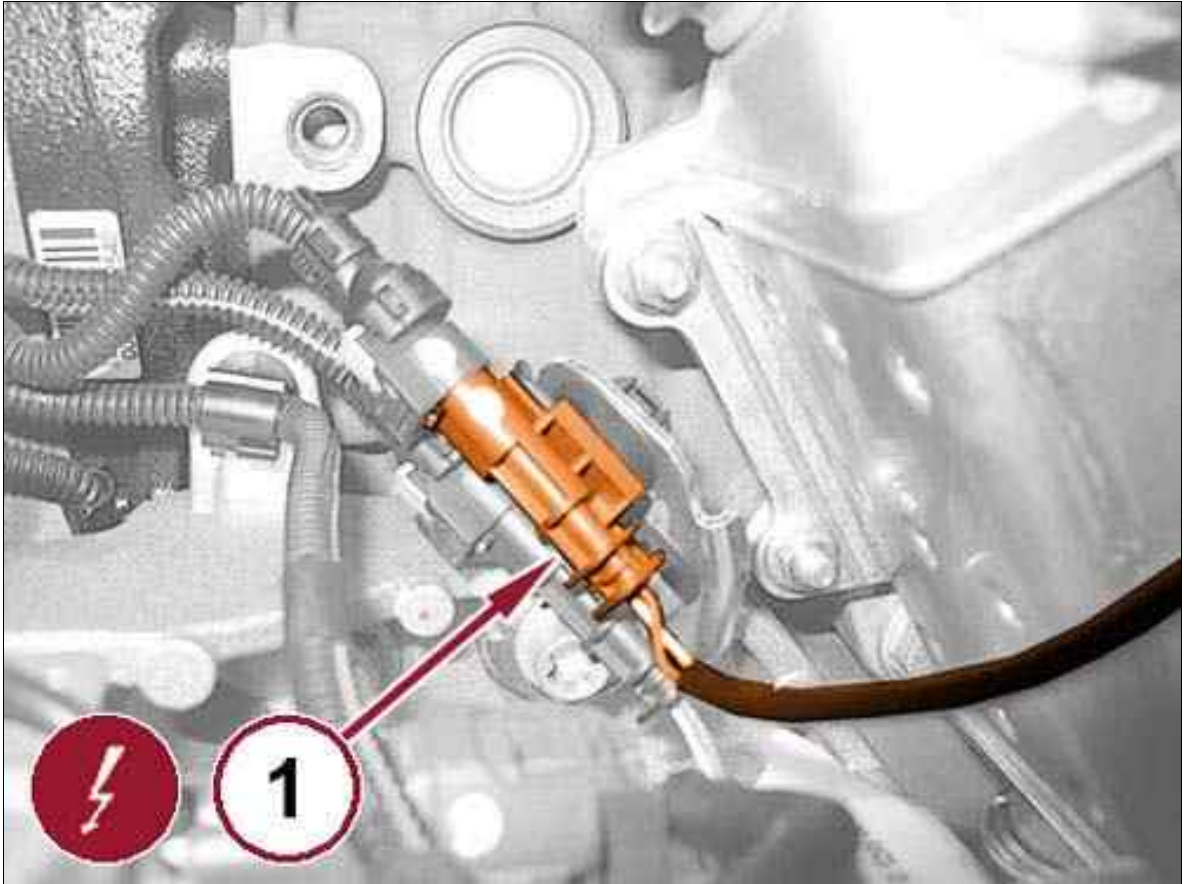
1. Install the EGR temperature sensor (1) and tighten the fitting to the proper specification. Refer to SPECIFICATIONS .
2. Connect the electrical connection of the sensor (2).
3. Install the right front wheel and splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EXHAUST COOLER > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

2. Drain the engine coolant. Refer to STANDARD PROCEDURE .
3. Discharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
4. Remove the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
5. Remove the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .

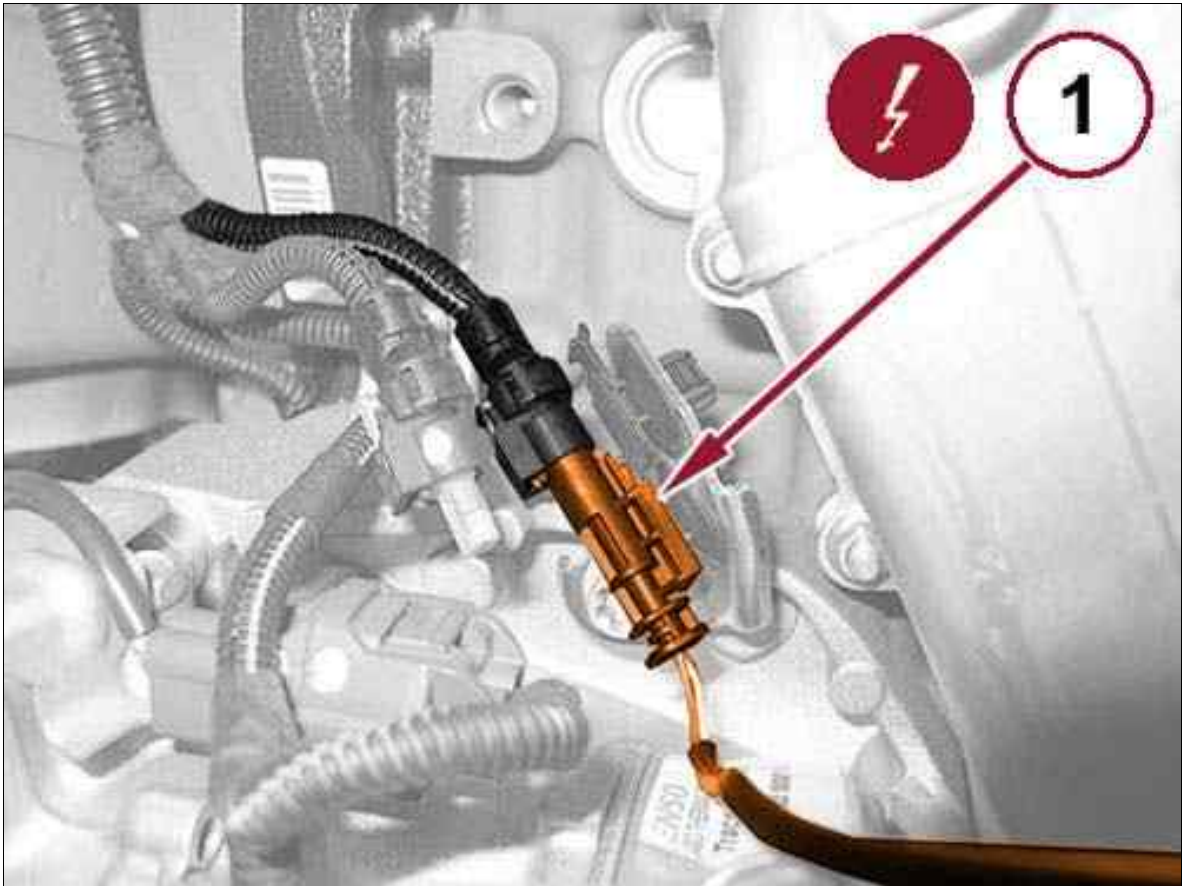
Fig 1: Particulate Filter Temperature Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

6. Disconnect the particulate filter temperature sensor electrical connection (1), upstream of the PDF.

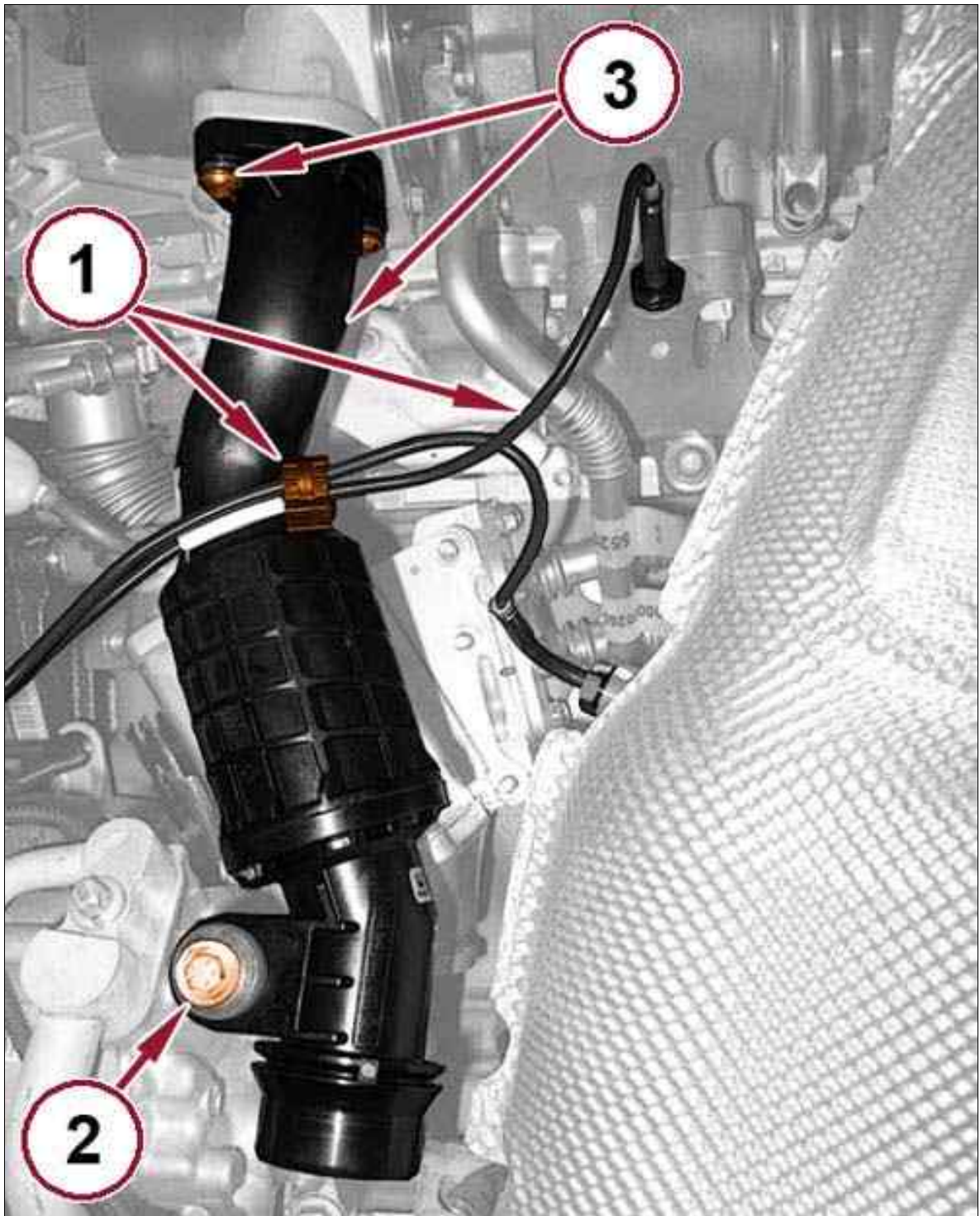
Fig 2: Exhaust Gas Temperature Sensor Connector



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the exhaust gas temperature sensor electrical connection (1).

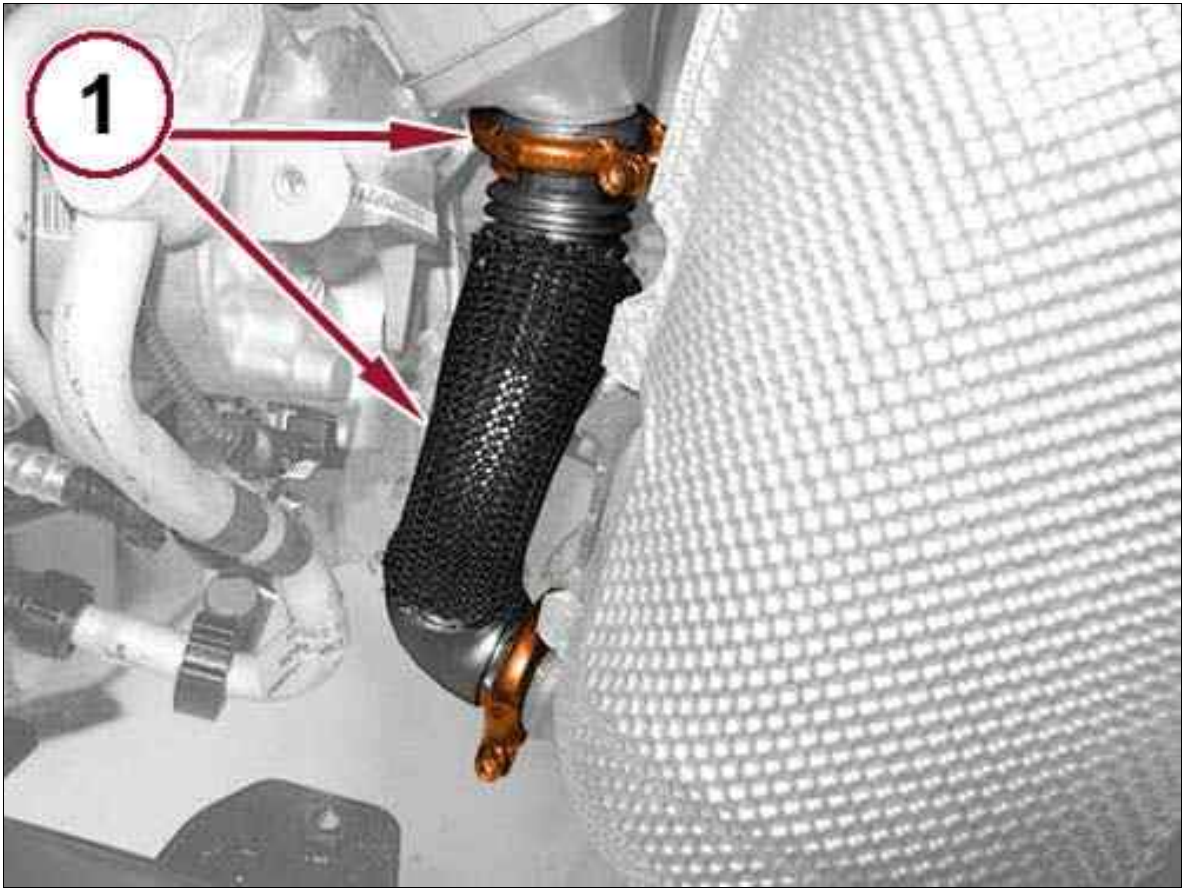
Fig 3: Air Outlet Pipe Screws & Clip



Courtesy of CHRYSLER GROUP, LLC

8. Open the retaining clip (1) and disengage the exhaust temperature sensor wiring.
9. Remove the air outlet pipe screw (2) from the turbocharger, the base side.
10. Remove the screws (3) and remove the outlet air rigid pipe from the turbocharger complete with seals.

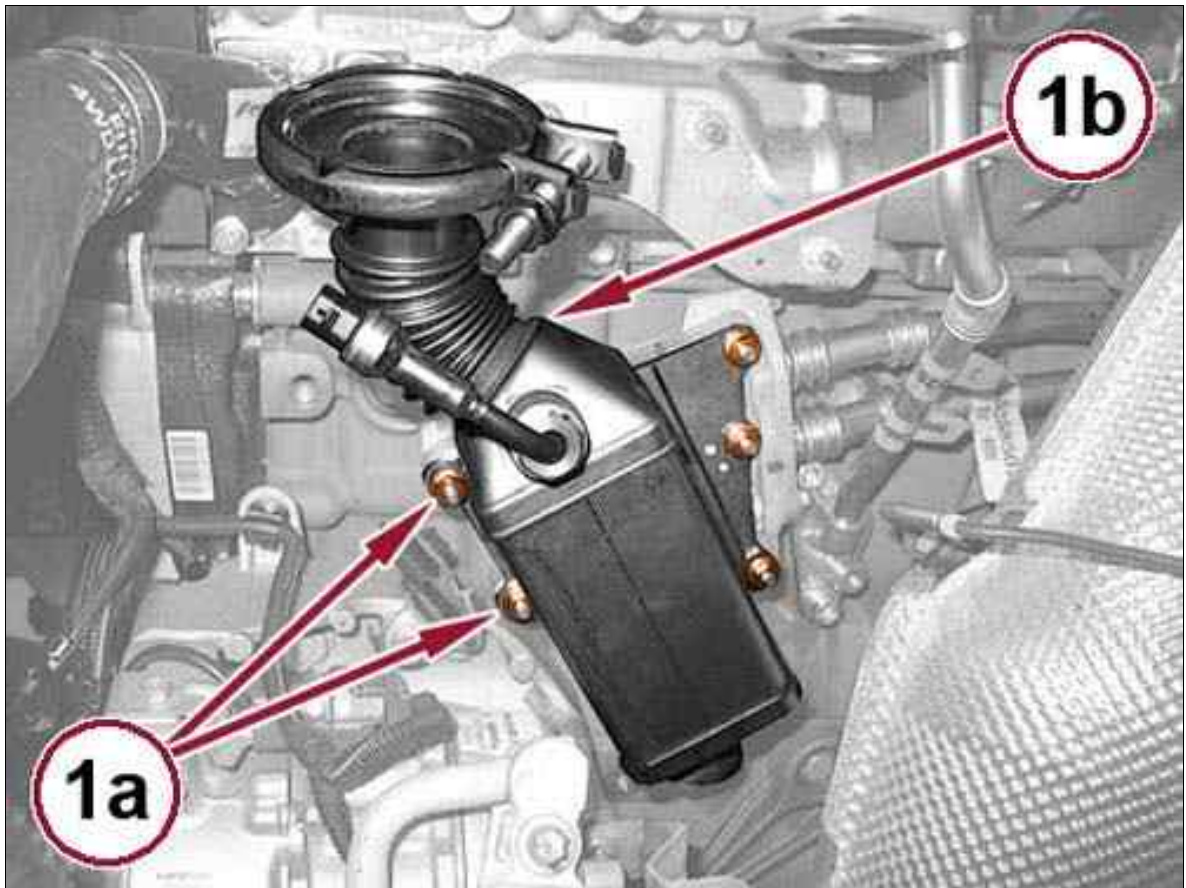
Fig 4: EGR Cooler Inlet Tube & Upper Clamp



Courtesy of CHRYSLER GROUP, LLC

11. Loosen the clamps and remove the pipe (1).

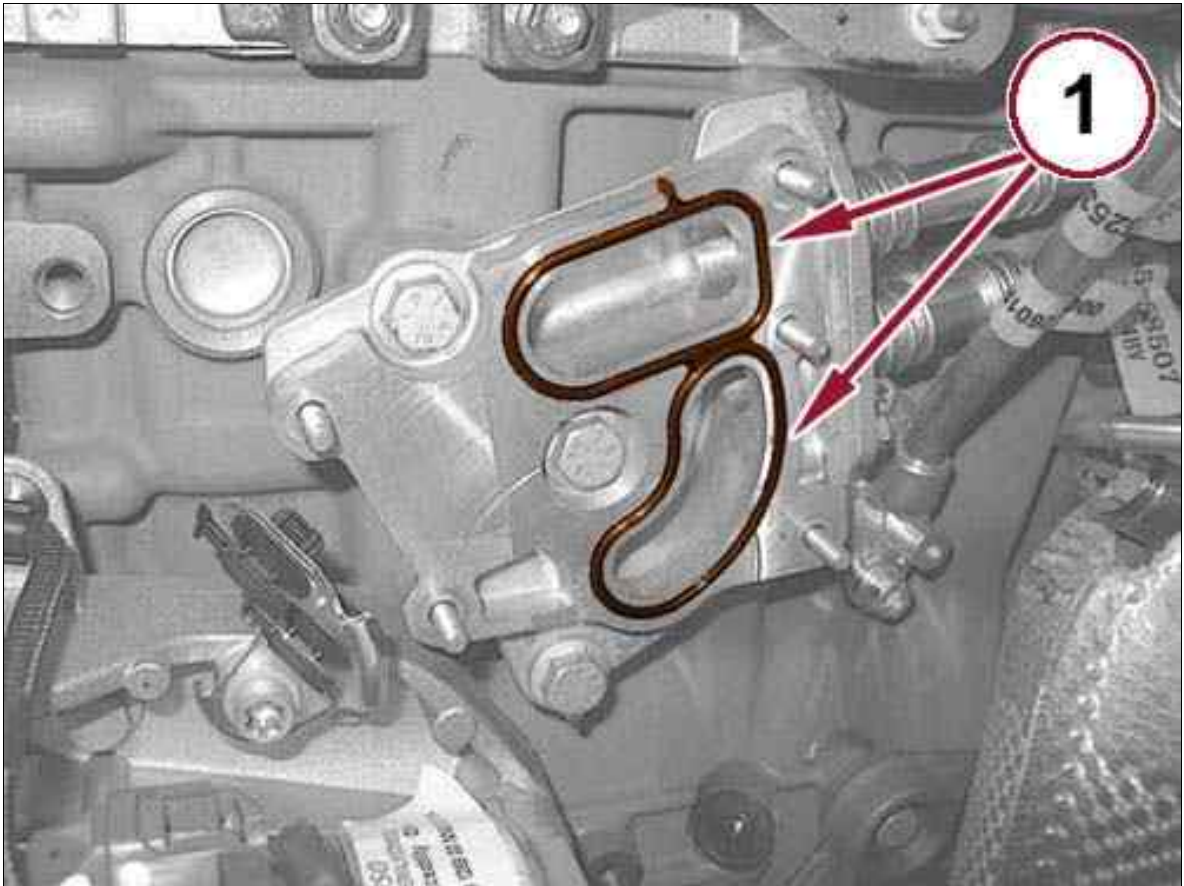
Fig 5: Low Pressure EGR Cooler & Nuts



Courtesy of CHRYSLER GROUP, LLC

12. Remove the nuts (1a) and remove the cooler housing (1b).

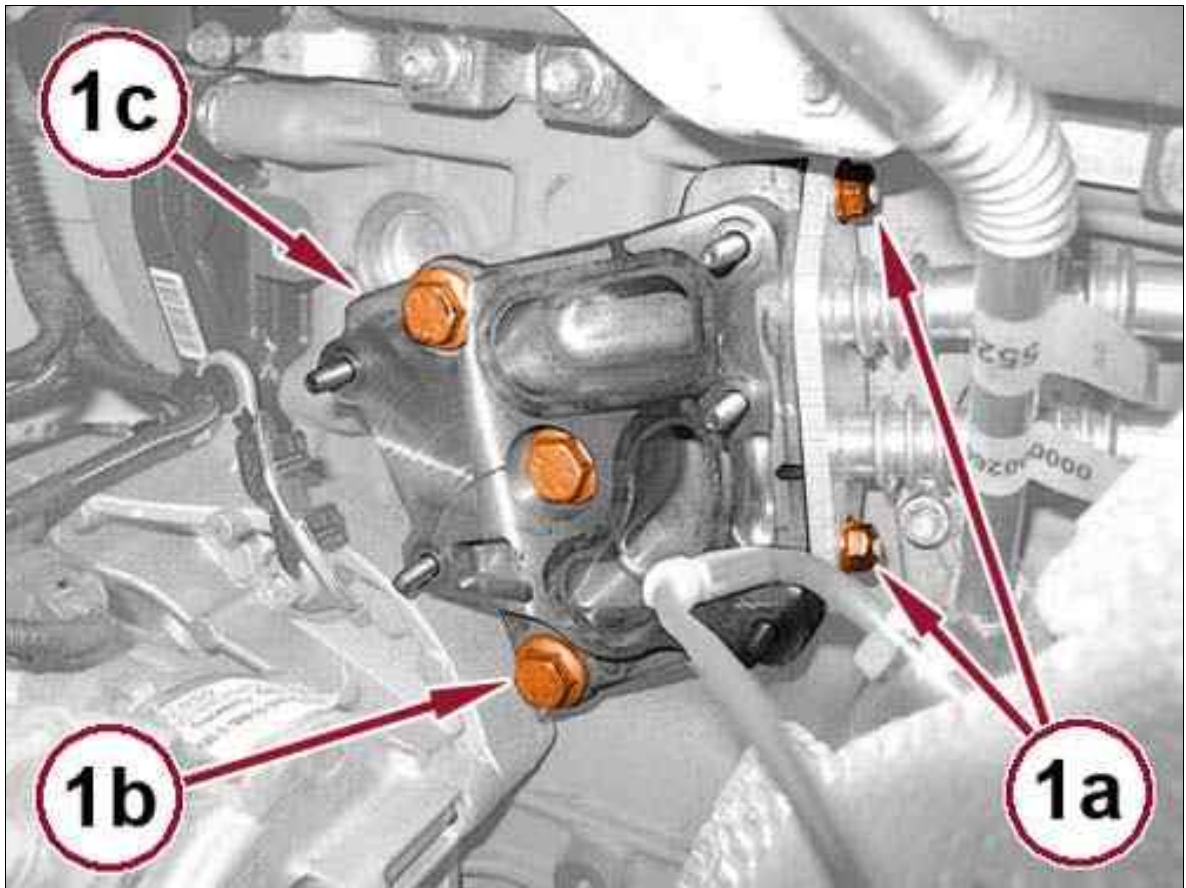
Fig 6: Low Pressure EGR Cooler Gasket Seals



Courtesy of CHRYSLER GROUP, LLC

13. Remove the gaskets (1).

Fig 7: EGR Cooler Manifold, Nuts & Bolts

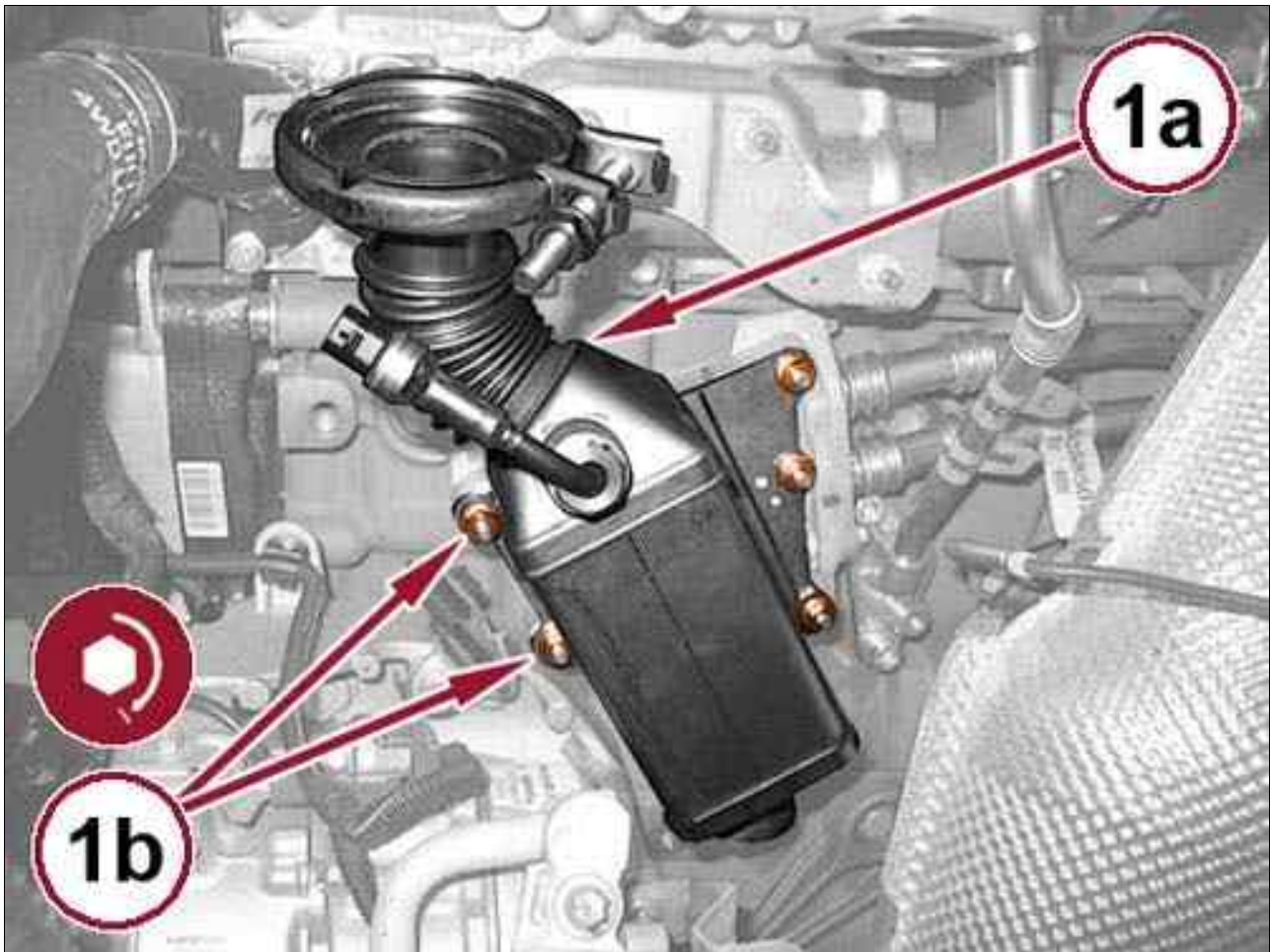


Courtesy of CHRYSLER GROUP, LLC

14. Remove the nuts (1a), the screws (1b) and remove the cooler (1c).

**EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) >
REMOVAL AND INSTALLATION > 2.0L LOW PRESSURE EXHAUST COOLER >
INSTALLATION**

Fig 1: Cooler & Nuts



Courtesy of CHRYSLER GROUP, LLC

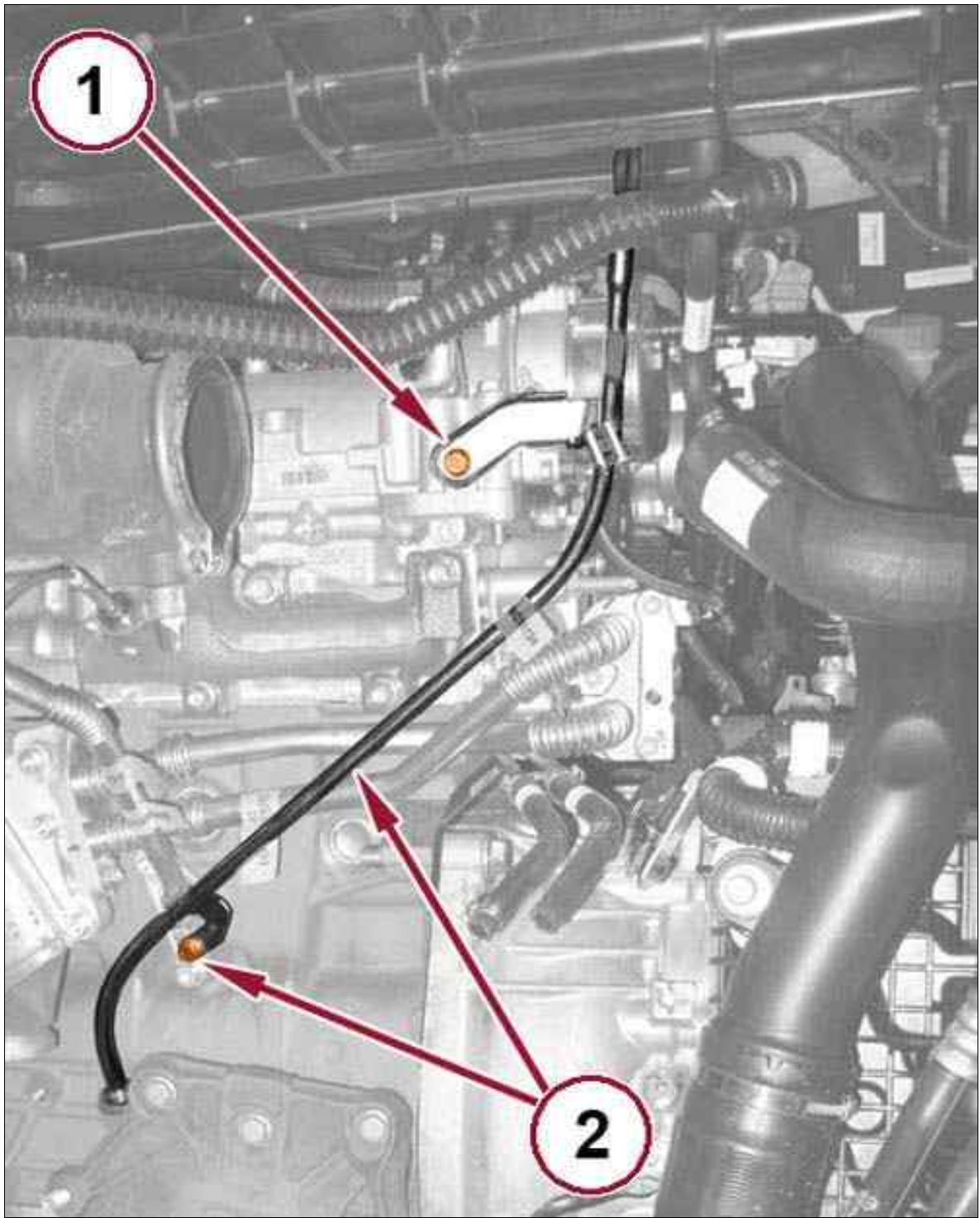
1. Install the cooler (1a), complete with new gasket and tighten the nuts (1b) to the proper specification. Refer to SPECIFICATIONS .
2. Install the exhaust gas low pressure outlet pipe to its seat and tighten the relative fastening clamps.
3. Install the air outlet pipe complete with new gasket and tighten the screw, the base side.
4. Tighten the air outlet pipe mounting screws, turbocharger side.
5. Engage the exhaust gas temperature sensors spring retainer.
6. Connect the exhaust gas temperature sensor electrical connection.
7. Connect the particulate filter temperature sensor electrical connection, upstream of the DPF.
8. Install the low pressure EGR valve. Refer to VALVE, EXHAUST GAS RECIRCULATION (EGR), REMOVAL AND INSTALLATION .
9. Install the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
10. Charge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .

11. Fill the engine coolant. Refer to STANDARD PROCEDURE .
12. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L EGR SUPPLY AND RETURN DUPLEX PIPE > REMOVAL

1. Remove the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
2. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
3. Drain the engine coolant. Refer to STANDARD PROCEDURE .
4. Discharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
5. Remove the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
6. Remove the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .

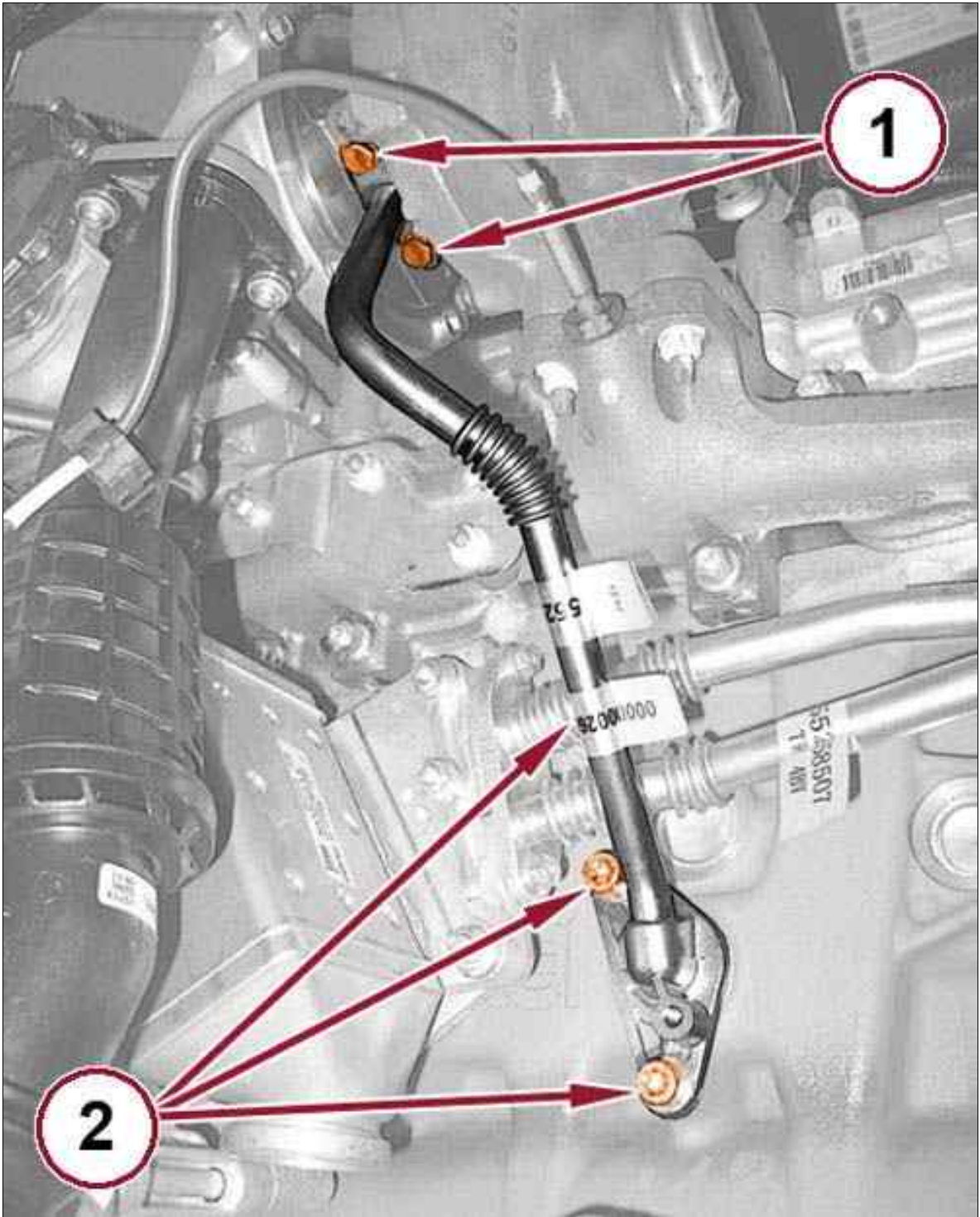
Fig 1: Oil Dipstick Tube & Screws



Courtesy of CHRYSLER GROUP, LLC

7. Remove the engine oil dipstick tube fastening screw (1).
8. Remove the lower engine oil dipstick tube screw (2) and remove the tube.

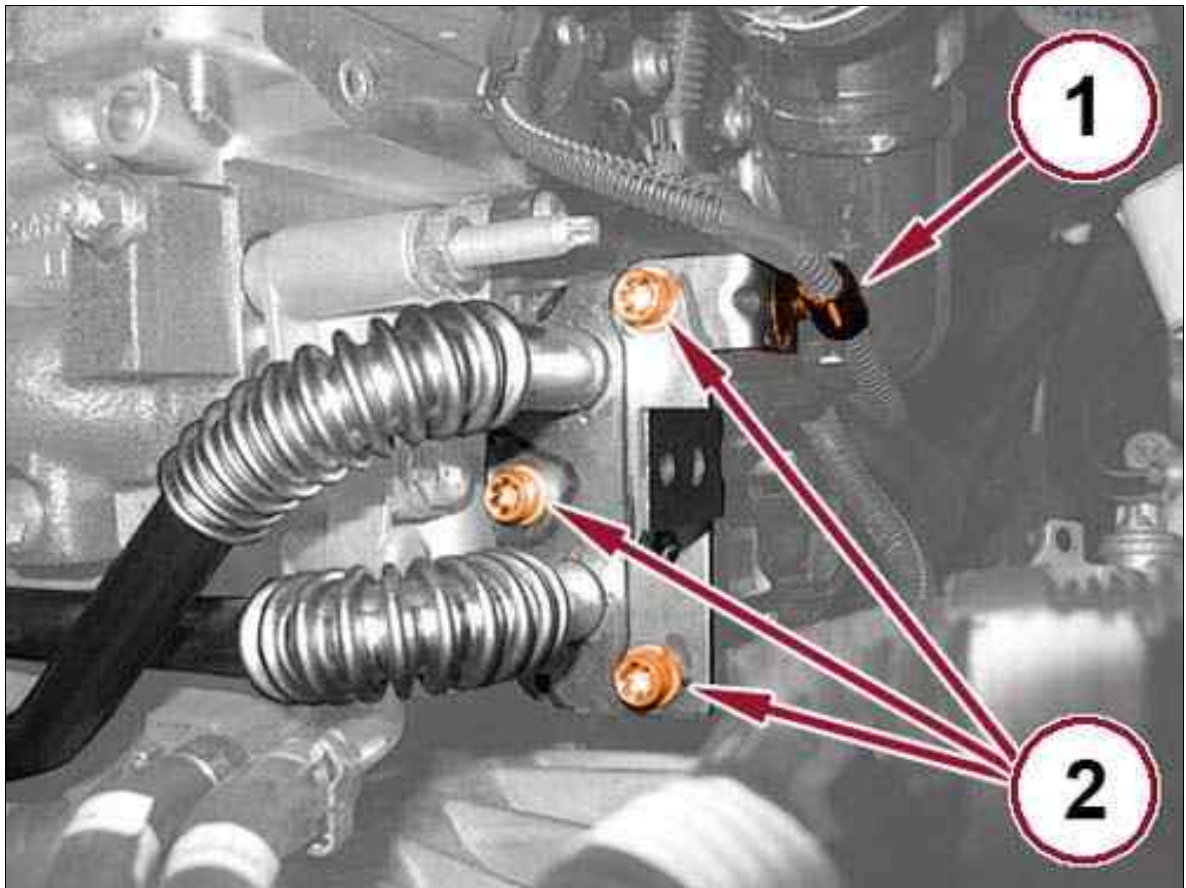
Fig 2: Output Engine Oil Pipe & Screws



Courtesy of CHRYSLER GROUP, LLC

9. Remove the screws securing the output engine oil pipe (1) from the turbocharger, turbocharger side.
10. Remove the screws on the base side (2) and remove the outlet pipe complete with seals.

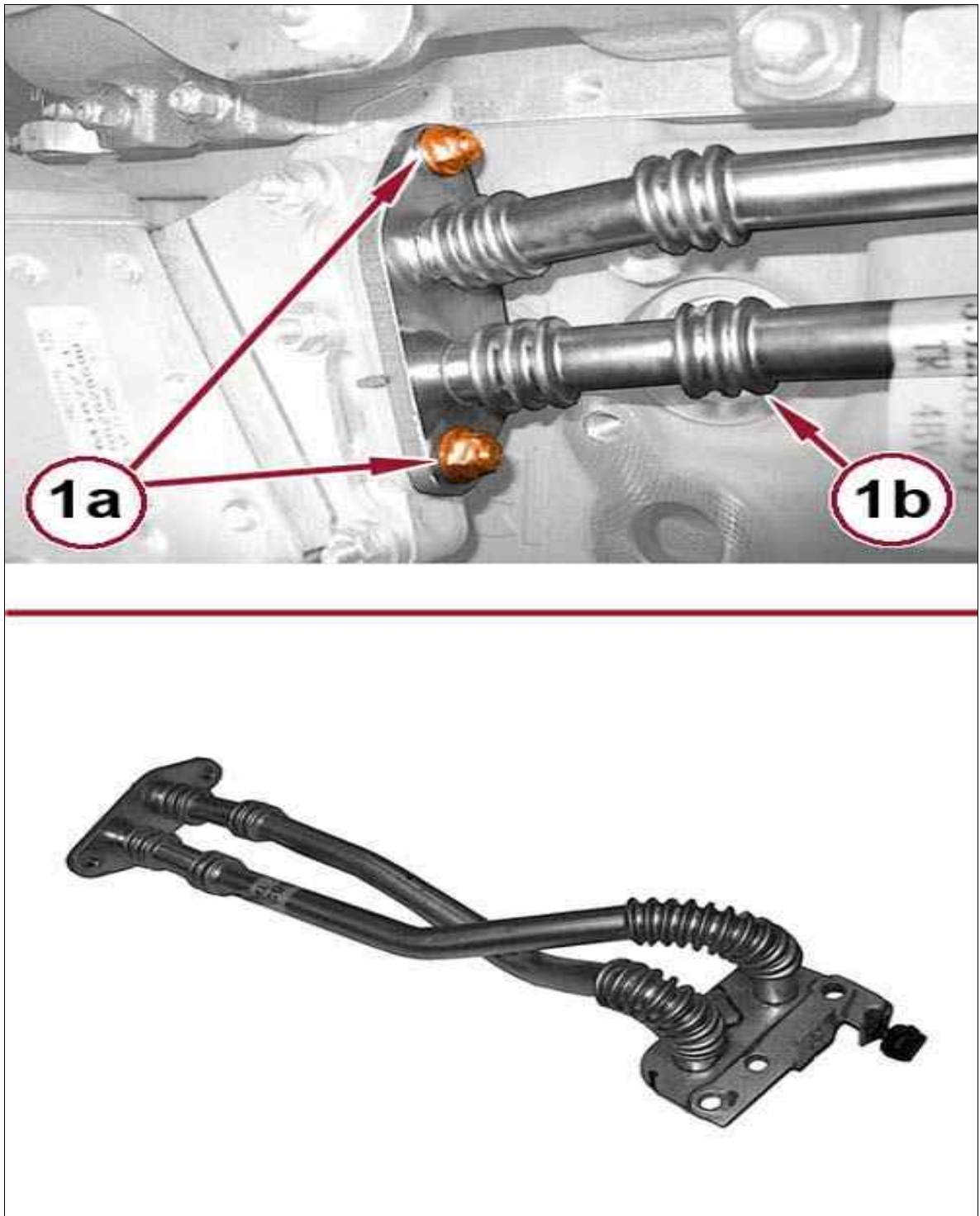
Fig 3: Duplex Screws & Retainer



Courtesy of CHRYSLER GROUP, LLC

11. Disengage the wiring spring retainer (1).
12. Remove the screws securing the thermostat duplex pipe (2).

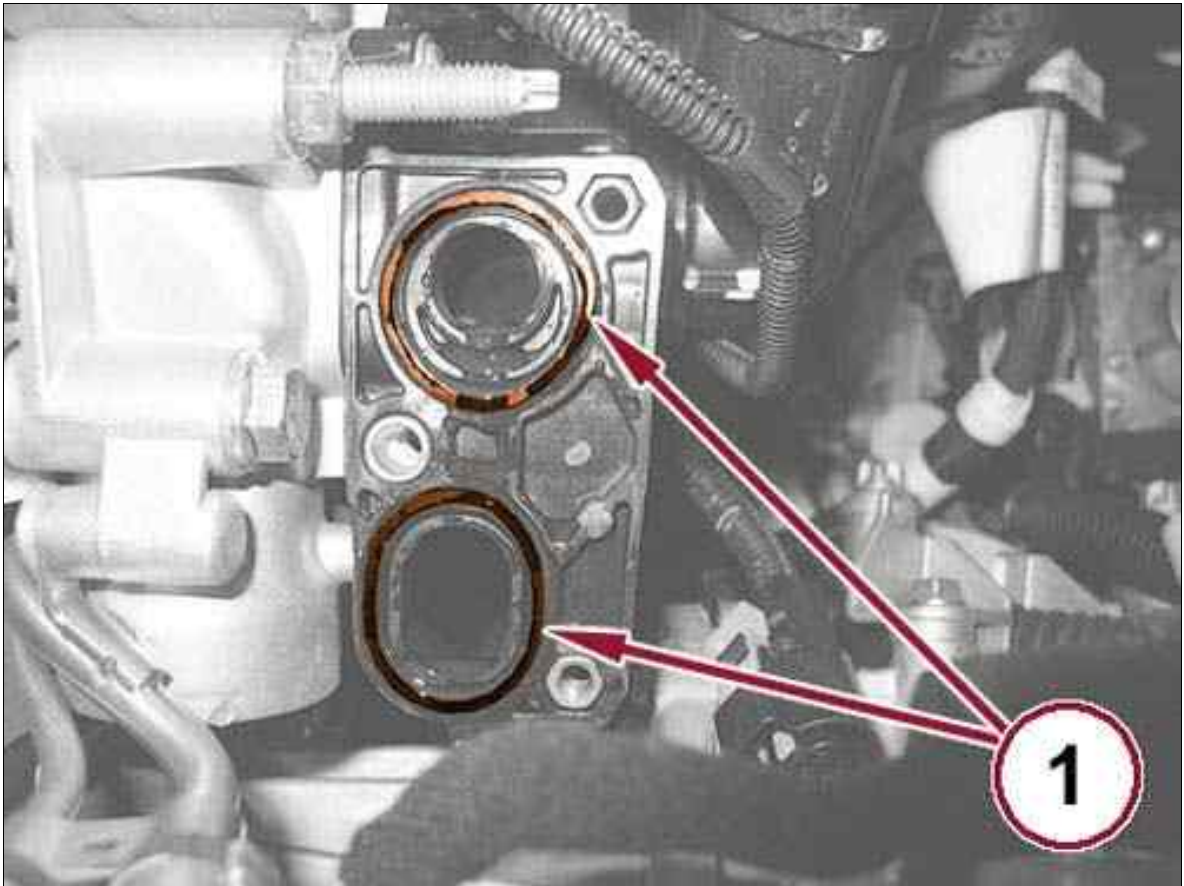
Fig 4: Duplex Pipe & Nuts



Courtesy of CHRYSLER GROUP, LLC

13. Remove the nuts (1a) and remove the flow and return duplex pipe.

Fig 5: Thermostat Seals



Courtesy of CHRYSLER GROUP, LLC

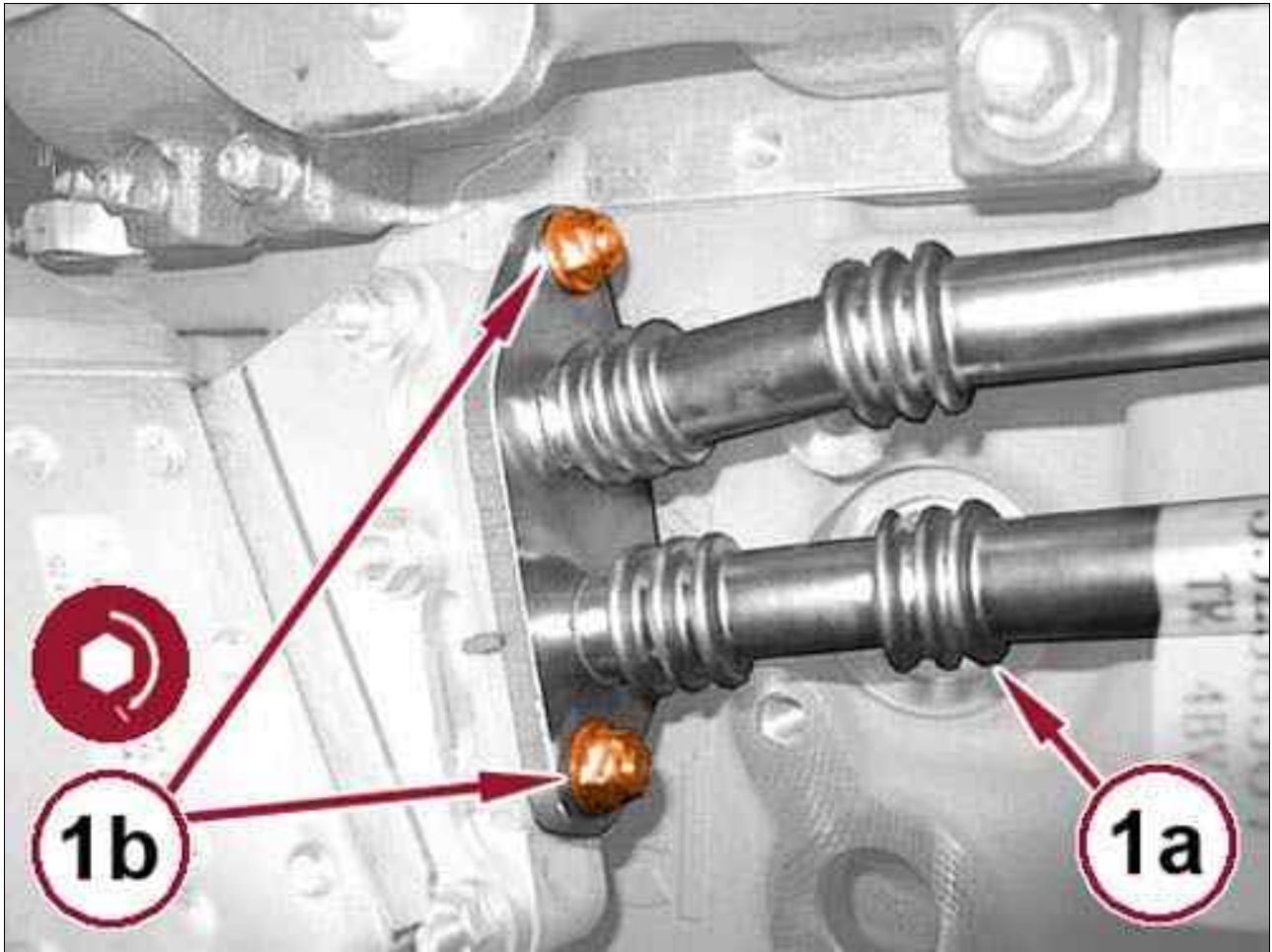
14. Remove the seals (1) from the thermostat.

[illegible]

15. Remove the seals (1) from the heat exchanger.

EXHAUST GAS RECIRCULATION > VALVE, EXHAUST GAS RECIRCULATION (EGR) > REMOVAL AND INSTALLATION > 2.0L EGR SUPPLY AND RETURN DUPLEX PIPE > INSTALLATION

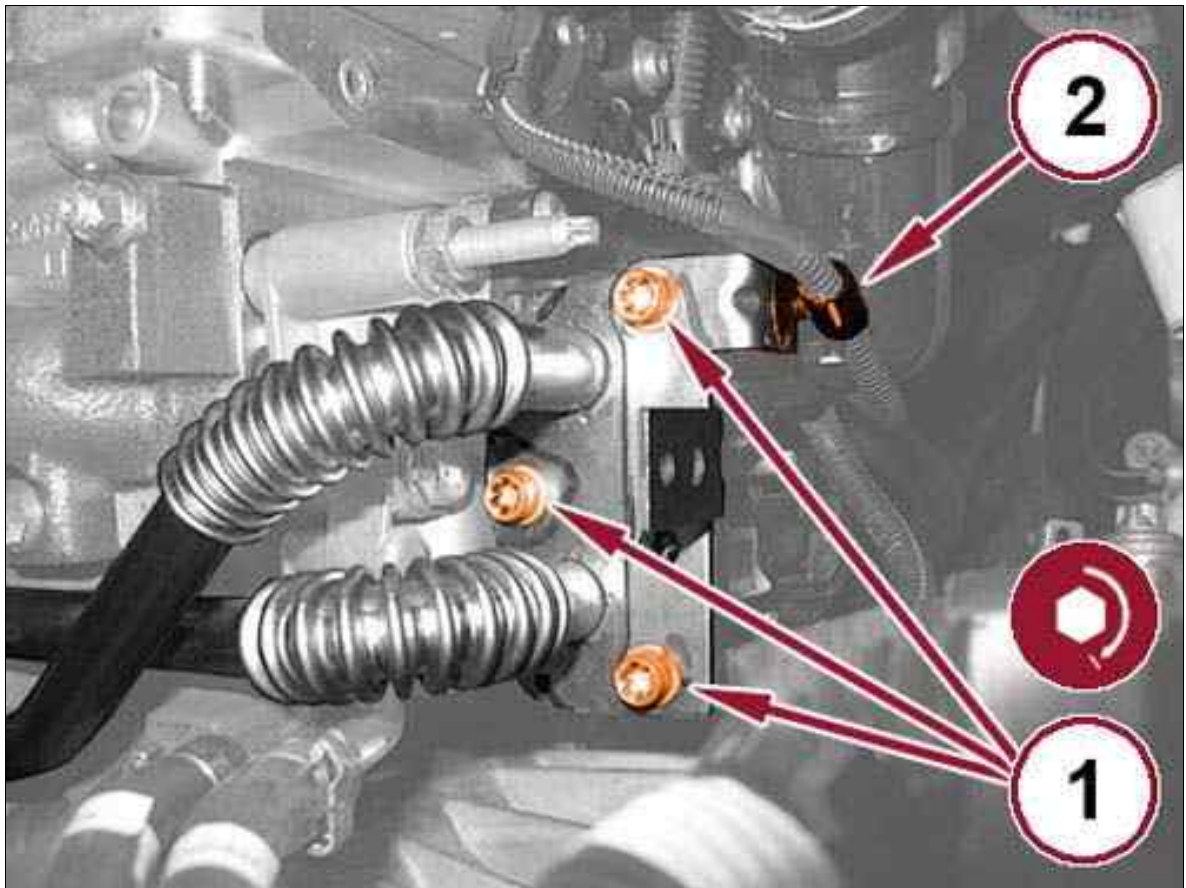
Fig 1: Duplex Pipe & Nuts



Courtesy of CHRYSLER GROUP, LLC

1. Install the duplex pipe, heat exchanger side (1a) complete with new gaskets, and tighten the nuts (1b) to the proper Specification. Refer to SPECIFICATIONS .

Fig 2: Duplex Screws & Retainer



Courtesy of CHRYSLER GROUP, LLC

2. Tighten to torque the duplex pipe mounting screws (1).
3. Engage the wiring spring retainer (2).
4. Install the turbocharger engine oil output pipe, base side and tighten the screws to the proper specification. Refer to SPECIFICATIONS .
5. Install the turbocharger engine oil output pipe screws, turbocharger side and tighten to the proper specification. Refer to SPECIFICATIONS .
6. Install the engine oil dipstick tube and tighten its screws.
7. Install the radiator and radiator cooling fan. Refer to RADIATOR, ENGINE COOLING, REMOVAL AND INSTALLATION .
8. Install the front fascia. Refer to FASCIA, FRONT, REMOVAL AND INSTALLATION .
9. Recharge the A/C system. Refer to PLUMBING, STANDARD PROCEDURE .
10. Fill the engine coolant. Refer to STANDARD PROCEDURE .
11. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION .
12. Install the engine beauty cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

