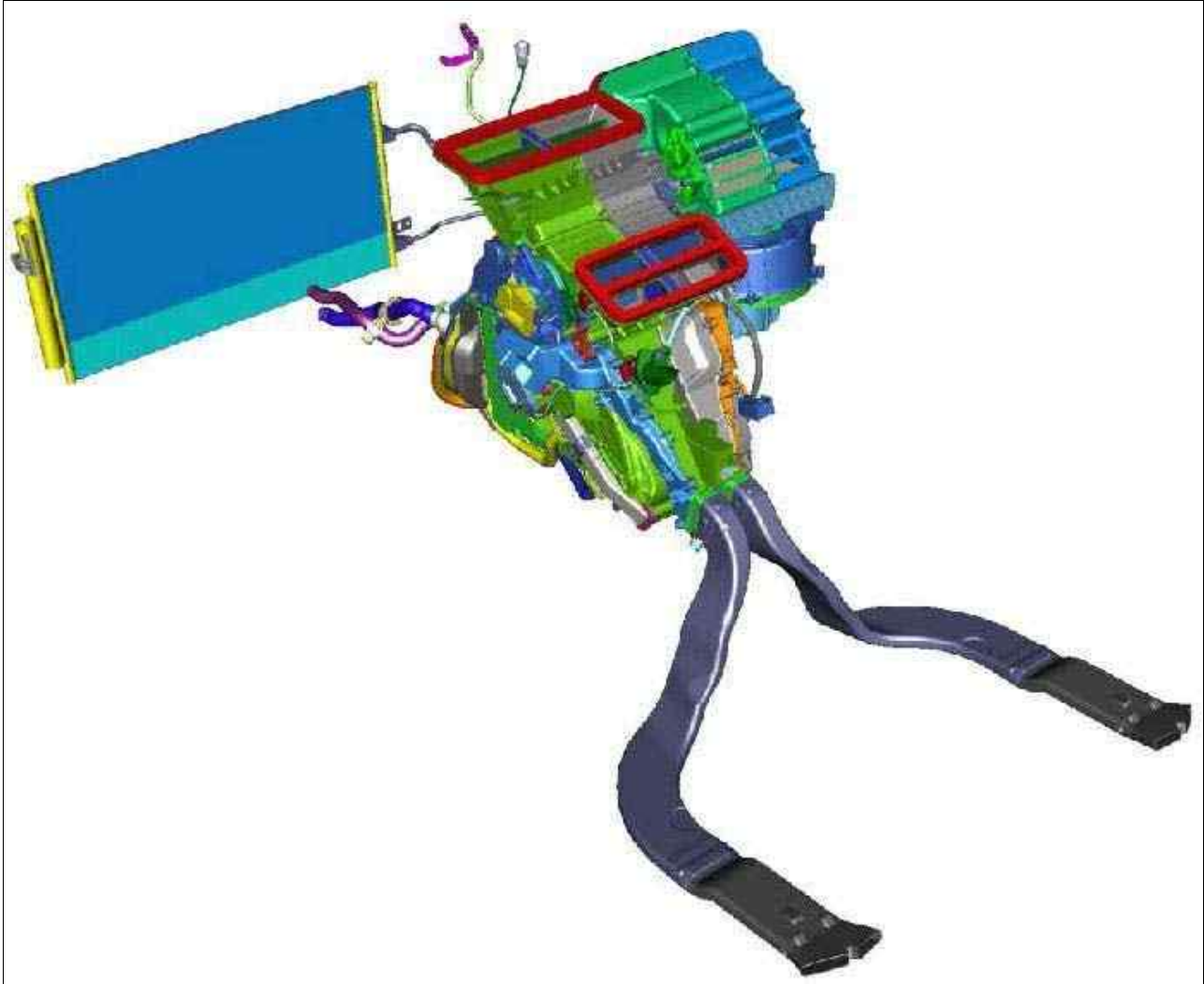


DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Heating & Air Conditioning System



Courtesy of CHRYSLER GROUP, LLC



NOTE:

Only use R-1234yf refrigerant and specific refrigerant oil for the climate control system compressor.

The vehicle is available with a manual or automatic dual zone climate control system.

With the automatic system, the operator can choose either automatic or manual operation. During automatic operation, the operator simply sets a target temperature. The A/C and heater module, called the Heating, Ventilation and Air Conditioning (HVAC) module, determines the best combination of A/C compressor operation, mixing flap position, and outlet air direction and speed to control passenger

compartment humidity and reach the target temperature.

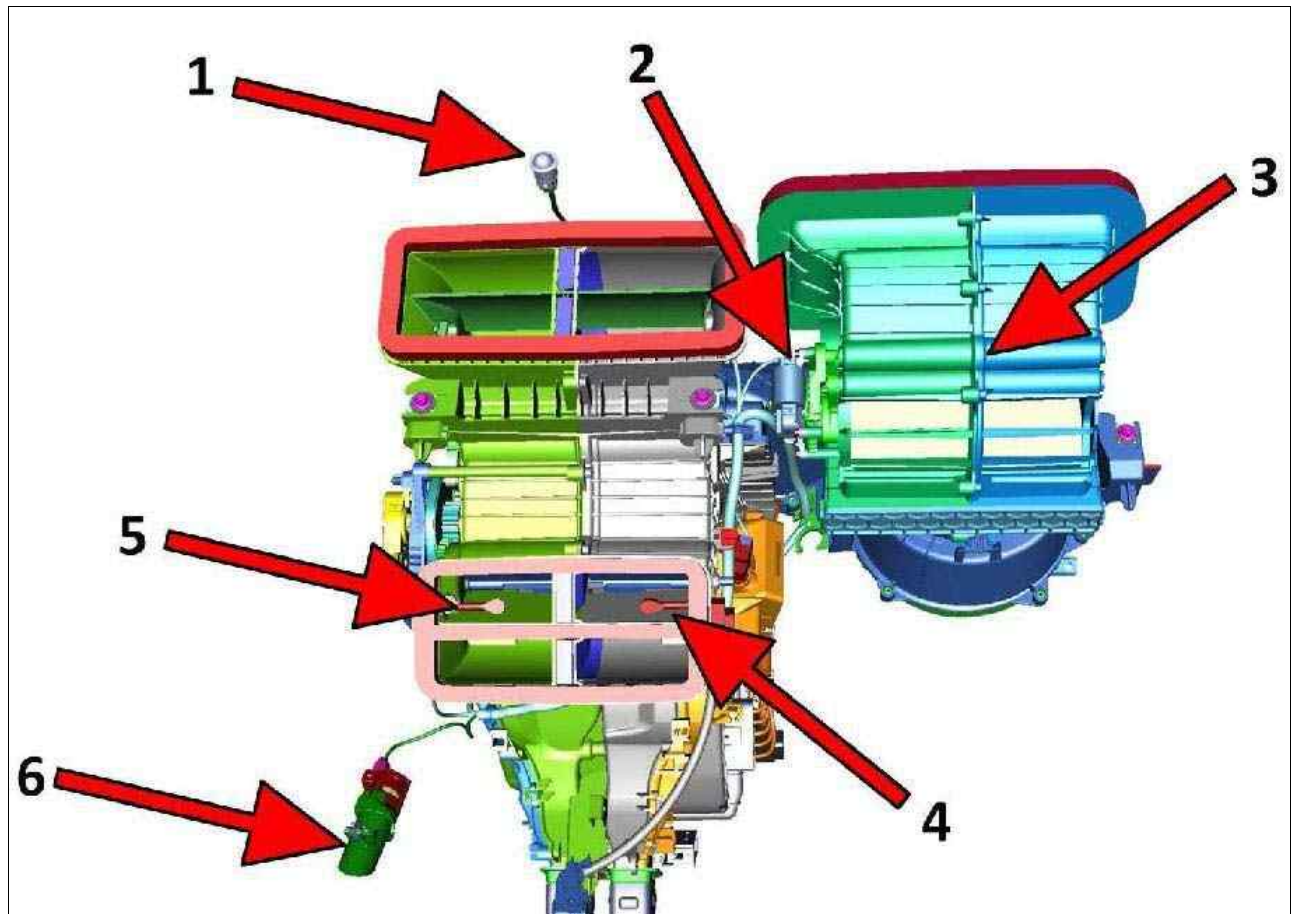
During manual operation, the operator can select A/C operation, air flow speed, air flow outlet location, and choose either fresh or recirculated air.

The HVAC module is integrated into the A/C heater control.

Air conditioning components

The positioning of the components of the automatic climate control system is shown below.

Fig 2: Climate Control System Assembly Upper View

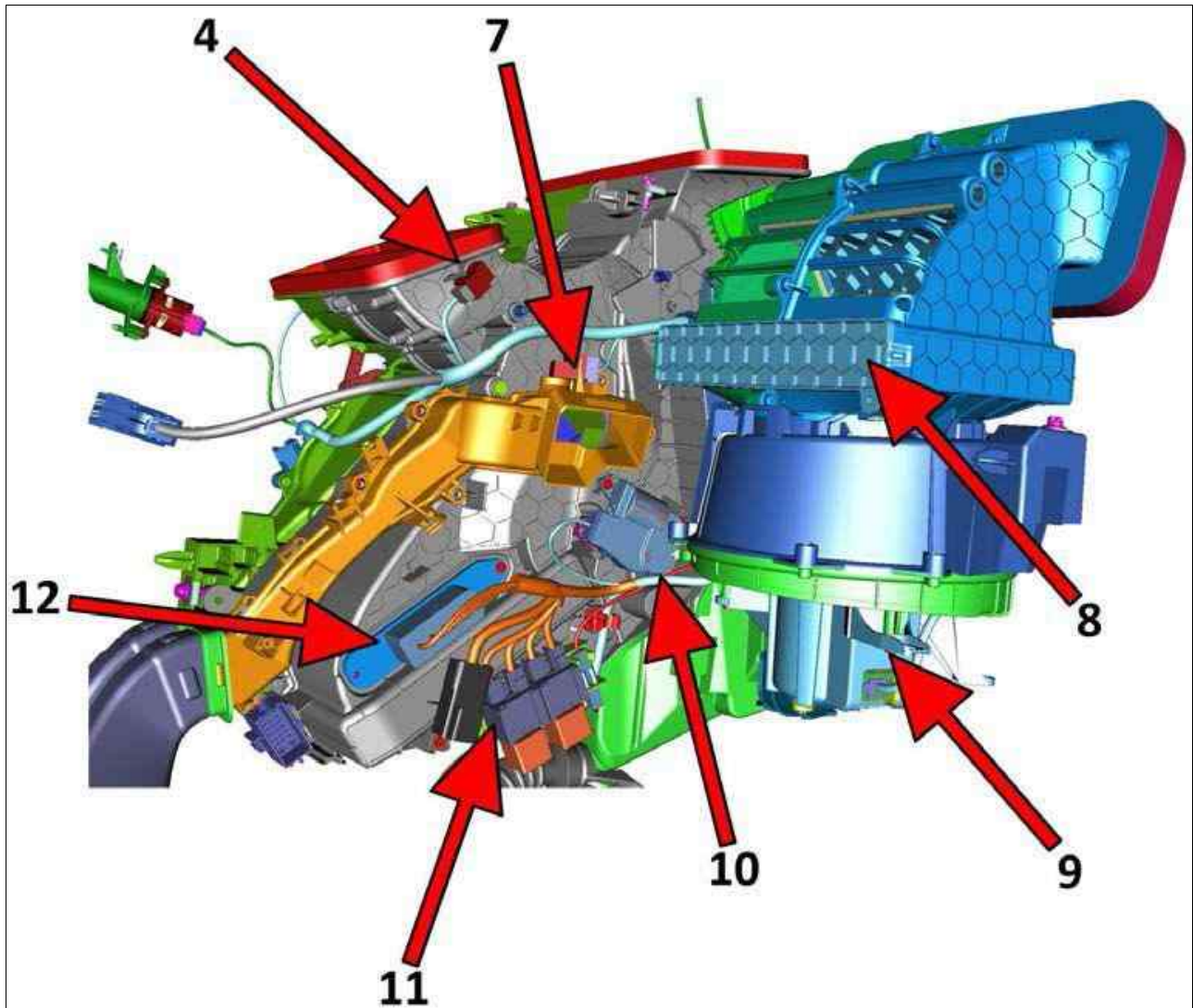


Courtesy of CHRYSLER GROUP, LLC

Climate control system assembly upper view

- Solar/dusk sensor (1)
- Recirculation actuator (2)
- Assembly for recirculation activation (3)
- Air outlet temperature sensor high right position (4)
- Air outlet temperature sensor high left position (5)
- In-car temperature sensor (6)

Fig 3: Climate Control System Assembly Right Side View

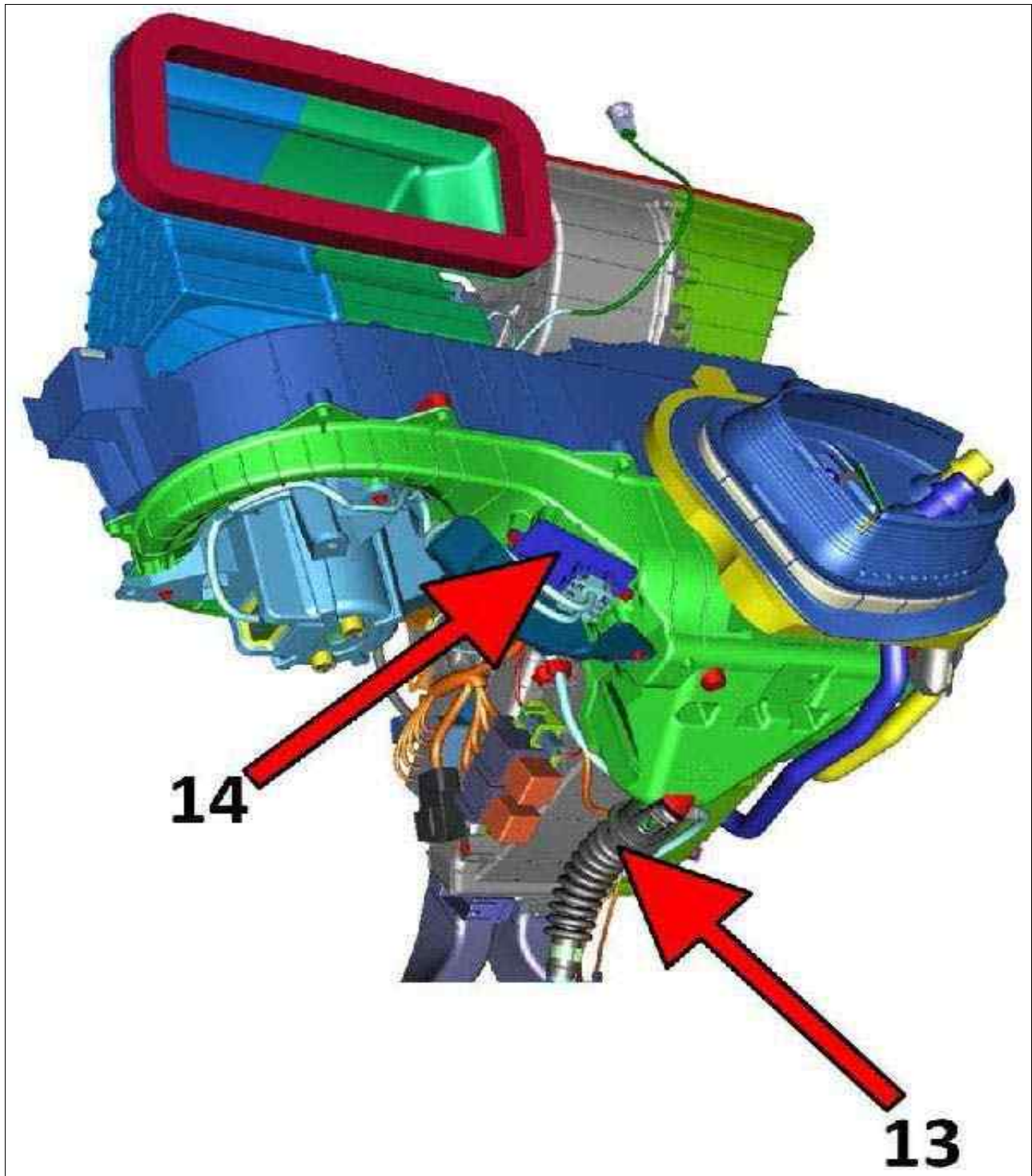


Courtesy of CHRYSLER GROUP, LLC

Right side view

- Air outlet temperature sensor high right position (4)
- Lower position temperature sensor (7)
- Compartment for pollen filter (8)
- Blower motor (9)
- Right blend door actuator (10)
- PTC activation relay panel (11)
- PTC plate (Cabin Heater) (12)

Fig 4: Climate Control System Assembly Lower View

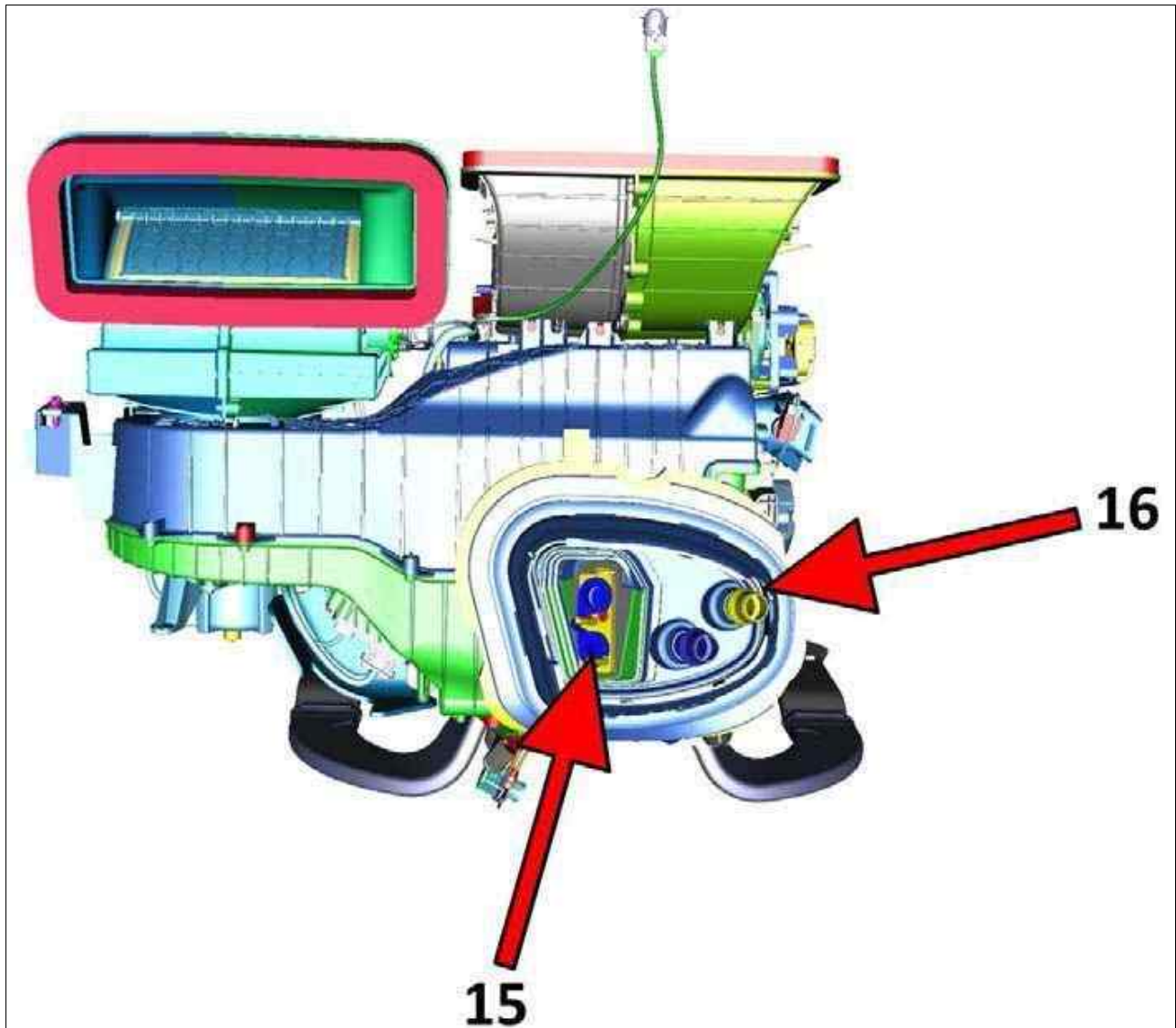


Courtesy of CHRYSLER GROUP, LLC

Lower view

- Condensation drainage tube (13)
- Blower motor speed regulator (14)

Fig 5: Climate Control System Assembly Front View

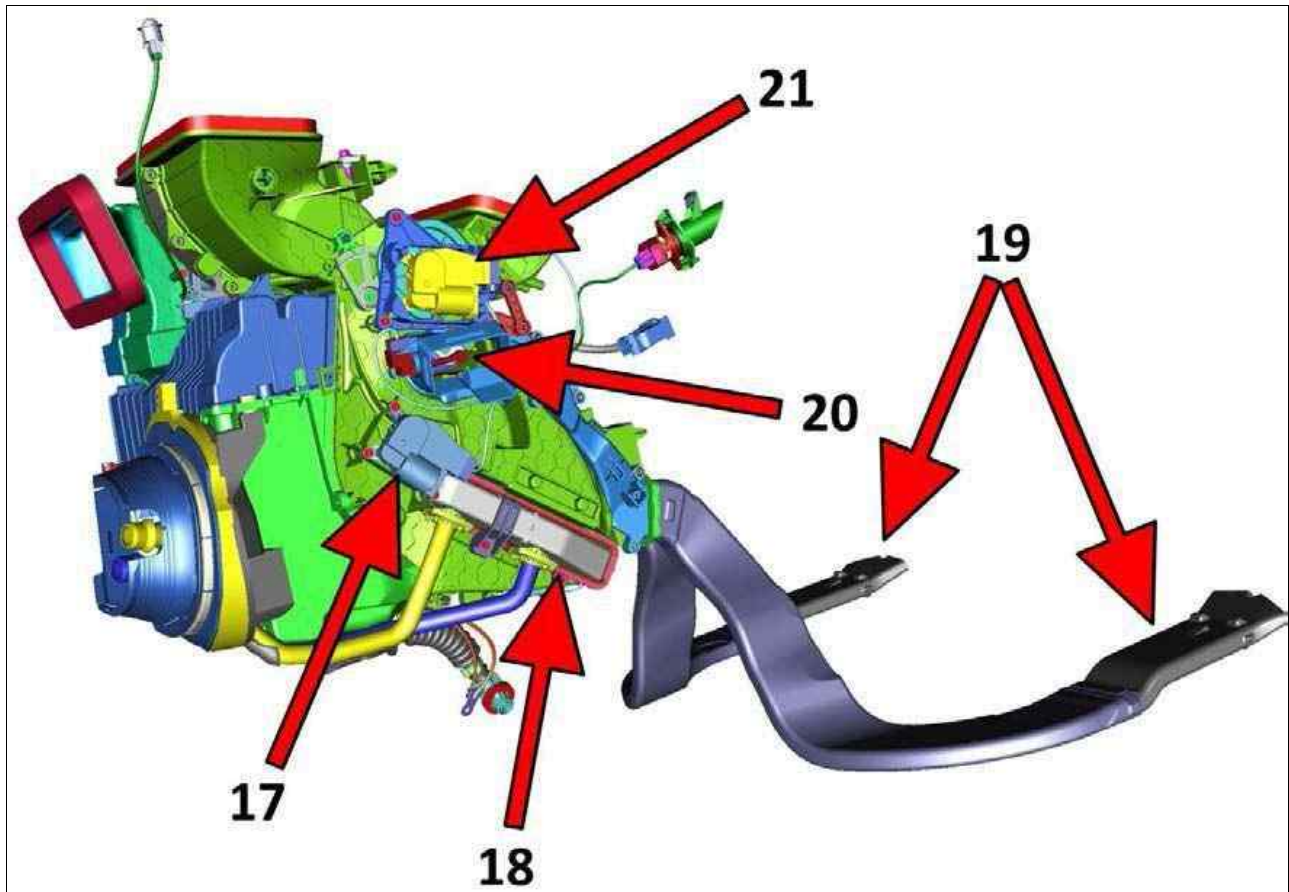


Courtesy of CHRYSLER GROUP, LLC

Front view

- Expansion valve (15)
- Heater core tubes (16)

Fig 6: Climate Control System Assembly Left Side View



Courtesy of CHRYSLER GROUP, LLC

Left side view

- Left blend door actuator (17)
- Heater core (18)
- Rear ventilation ducts (19)
- Air outlet temperature sensor low position (20)
- Mode door actuator (21)

DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

Manual Temperature Control (MTC)

The manual climate control system is used to heat up and cool down the vehicle.

This Heating, Ventilation and Air Conditioning (HVAC) system is composed of:

- A blower motor
- A blower motor speed regulator

- Three actuators with potentiometer for position return signal (one for distribution, one for mixing, one for recirculation)
- An NTC sensor for defrosting function on the evaporator
- A PTC (Cabin Heater) for additional heating

The HVAC module is connected to the Controller Area Network (CAN-B) data bus and receives the information of the humidity sensor from the Instrument Panel Cluster (IPC) via CAN.

The A/C activation request from the user and the heated rear window activation request must be sent to the Body Control Module (BCM) via CAN.

The A/C request status and the actuator position are stored in the HVAC.

This system manages air recirculation, distribution and temperature using the actuators with potentiometer, for opening, closing and regulating the intermediate positions via electrical commands.

The HVAC acquires the temperature of the evaporator, via an NTC (frost) sensor, positioned in the air flowing through the evaporator, in order to manage the valve for external control of the variable displacement of the External Control Variable Displacement (ECVD) compressor.

This system can be updated with an additional PTC component to heat up the air more rapidly when the engine is cold.

The HVAC manages activation of the additional PTC via two relays.

Automatic Dual Zone Temperature Control (ATC)

The automatic climate control system is used to heat up and cool down the vehicle.

This HVAC system is composed of:

- A blower motor
- A blower motor speed regulator
- Three actuators with potentiometer for position return signal (one for distribution, one for mixing, one for recirculation)
- One actuator with potentiometer for return signal.
- Four NTC air outlet sensors to measure the air temperature (two for temperature of the low position air distribution and two for the high position air distribution)
- A PTC (Cabin Heater) for additional heating
- Solar radiation/dusk (Sun) sensor
- An NTC sensor for defrosting function on the evaporator
- A motorized sensor for the internal passenger compartment (in-car) temperature

The HVAC module is connected to the CAN-B data bus and receives the information of the humidity sensor from the IPC via CAN.

The A/C activation request from the user and the heated rear window activation request must be sent to the BCM via CAN.

The A/C request status and the actuator position are stored in the HVAC.

This system manages air recirculation, distribution and temperature using the actuators with potentiometer, for opening, closing and regulating the intermediate positions via electrical commands.

The HVAC module controls the mixing temperatures through the temperature sensors located in the climate control system.

The system manages the air temperature request by also monitoring solar radiation through a dedicated sensor located on the dashboard.

The HVAC acquires the temperature of the evaporator, via an NTC sensor, positioned in the air flowing through the evaporator, in order to manage the valve for external control of the variable displacement of the ECVD compressor.

This system can be updated with an additional PTC component to heat up the air more rapidly when the engine is cold.

The HVAC manages activation of the rear window defroster.

The HVAC manages activation of the additional PTC via two relays.

DIAGNOSIS AND TESTING > A/C BLOWER MOTOR DOES NOT WORK AT DIFFERENT SPEEDS - ATC

1	CHECK BLOWER MOTOR WITH A/C HEATER CONTROL	Result OK	Result Not OK	Action
	Start the engine, set the climate control unit in the AUTO position, adjust the temperature of 22° C (72° F), and place the mode to the vent position, external air. Activate the fan button (upper arrow) and progressively increase the set speed and then decrease the speed by pressing the (lower arrow), thus verifying the variation of the air flow.	Diagnostic complete	No change in air flow	Continue to Step 2
2	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the blower motor	Continue to Step 4	1. error on blower motor. 2. short circuit failure. 3. error blower motor power module.	1. Continue to Step 4 2. Continue to Step 3 3. Continue to Step 4

	the lack of blower motor circuit related errors (errors of short circuit)			
3	CHECK ELECTRICAL CONNECTIONS A/C HEATER CONTROL	Result OK	Result Not OK	Action
	With the engine off, remove the A/C heater control from the instrument panel and disconnect the wire harness connector from the controller. Visually check for damage on the contacts of the connector and plug it back in the correct way to check for any false contacts.	Continue to Step 4	Weak or damaged electrical connections.	Restore the electrical connections.
4	CHECK ELECTRICAL CONNECTIONS AND BLOWER MOTOR OPERATION	Result OK	Result Not OK	Action
	Check wiring connections integrity. Disconnect/reconnect the connection to the blower motor. Disconnect the connector and connect to a power supply. Under these conditions the blower motor should run at full speed, indicating that the blower motor power module does not work.	Diagnostic complete	1. electrical connections unstable 2. the fan is not working. 3. The blower motor power module does not work.	1. Restore correct connections. 2. Replace the blower motor 3. Replace the blower motor power module

DIAGNOSIS AND TESTING > A/C BLOWER MOTOR DOES NOT WORK AT DIFFERENT SPEEDS - MTC

1	VERIFY PROPER OPERATION OF SPEED SWITCH	Result OK	Result Not OK	Action
	Check at full speed, the operation of the blower motor. If it only works at full speed, the resistor is to be	Continue to Step 2	Weak or damaged electrical connections.	Restore the electrical connections.

	replaced. Check if the thermal fuse is stopped going to detect the electrical continuity to the fixing points of the thermal fuse.			
2	VERIFY PROPER OPERATION OF BLOWER MOTOR	Result OK	Result Not OK	Action
	Check for poor wiring connection. Disconnect / reconnect the connection to the blower motor. Verify that the blower motor turns at all speeds. If it does not, check the blower motor fuse. If the issue persists, disconnect the blower motor connector and connect directly to the battery. In these conditions the blower motor should run at maximum speed.	Diagnostic complete	1. Wire harness connections unstable or damaged 2. The blower motor does not work.	1. Securely connect or repair the wire harness connector 2. Replace the blower motor

DIAGNOSIS AND TESTING > A/C BLOWS AIR IRREGULARLY - ATC



NOTE:

Blower motor airflow in the passenger compartment, through the manual control of speed, is insufficient. Does not correspond to the speed set.

1	CHECK BLOWER MOTOR WITH A/C HEATER CONTROL	Result OK	Result Not OK	Action
	Start the engine, set the climate control unit in the AUTO position, adjust the temperature of 22° C (72° F), and place the mode to	Diagnostic complete	No change in air flow	Continue to Step 2

	the vent position, external air. Activate the fan button (upper arrow) and progressively increase the set speed and then decrease the speed by pressing the (lower arrow), thus verifying the variation of the air flow.			
2	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: - the absence of errors on the blower motor - the absence of errors on the mode door actuator - the lack of blower motor circuit related errors (errors of short circuit)	Continue to Step 3	1. error on blower motor. 2. error blower motor power module. 3. errors on the mode door actuator 4. short circuit failure.	1. Continue to Step 5 2. Continue to Step 5 3. Continue to Step 6 4. Continue to Step 4
3	VERIFICATION OF AIR DUCTS AND CABIN FILTER	Result OK	Result Not OK	Action
	Check that the air ducts are intact and free of obstruction and that its vents are positioned properly in the opening. Check that the cabin filter is not clogged.	Continue to Step 4	1. Air ducts or vents are obstructed. 2. Cabin filter clogged.	1. Restore the functionality of the air ducts and vents, removing any obstruction. 2. Replace the cabin filter.
4	CHECK ELECTRICAL CONNECTIONS A/C HEATER CONTROL	Result OK	Result Not OK	Action
	With the engine off, remove the A/C heater control from the instrument panel and disconnect the wire harness connector from the controller. Visually check for damage on the contacts of the connector and plug it back in the correct way to check for any false contacts.	Continue to Step 5	Weak or damaged electrical connections.	1. Restore the wire harness connections.

5	CHECK ELECTRICAL CONNECTIONS AND BLOWER MOTOR OPERATION	Result OK	Result Not OK	Action
	Check wiring connections integrity. Disconnect/reconnect the connection to the blower motor. Disconnect the connector and connect to a power supply. Under these conditions the blower motor should run at full speed, indicating that the blower motor power module does not work.	Continue to Step 6	1. wire harness connections unstable 2. the blower motor is not working. 3. The blower motor power module does not work.	1. Restore wire harness connections. 2. Replace the blower motor 3. Replace the blower motor power module
6	CHECK PROPER OPERATION OF MODE DOOR ACTUATOR	Result OK	Result Not OK	Action
	Check wiring connection integrity. Disconnect visually checking damage on the contacts of the connector and reconnect the connection to the blower motor. If it stays, before replacing the actuator, test the functionality of the activating in manual mode. The actuator function should work. With the car in motion put the blower motor on full speed. Place the A/C heater control (in manual mode) so that the mode doors are in various positions of air distribution. Check by placing a hand on the outlets in the interior for air flow.	Diagnostic complete	1. Wire harness connections bad or damaged. 2. There is no entry of air flow into the passenger compartment from the air vents of the vehicle.	1. Restore the electrical connections. 2. Continue to Step 7
7	CHECK ROTATION OF THE MODE DOOR ACTUATOR	Result OK	Result Not OK	Action
	Remove the mode door actuator and check through A/C heater control command	Diagnostic complete	1. the actuator does not rotate. 2. Movement impeded	1. Replace the mode door actuator 2. Replace the

that the actuator turns, checking for the presence of mechanical impediments to the rotation.		or broken/blocked doors.	component that presents the anomaly.
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DIAGNOSIS AND TESTING > A/C BLOWS AIR IRREGULARLY - MTC

1	VERIFICATION OF AIR DUCTS AND CABIN FILTER	Result OK	Result Not OK	Action
	Check that the air ducts are intact and free of obstruction and that its vents are positioned properly in the opening.	Continue to Step 2	Air ducts or vents are obstructed.	Restore the functionality of the air ducts and vents removing any obstruction.
2	VERIFY PROPER OPERATION OF SPEED SWITCH	Result OK	Result Not OK	Action
	Check at full speed, the operation of the blower motor. If it only works at full speed, the resistor is to be replaced. Check if the thermal fuse resistor is stopped going to detect the electrical continuity to the fixing points of the thermal fuse.	Continue to Step 3	Weak or damaged wire harness connections.	Restore the wire harness connections.
3	VERIFY PROPER OPERATION OF BLOWER MOTOR	Result OK	Result Not OK	Action
	Check for poor wiring connection. Disconnect / reconnect the connection to the blower motor. Verify that the blower motor turns at all speeds. If it does not, check the blower motor fuse. If the issue persists, disconnect the blower motor connector and connect directly to the battery.	Continue to Step 4	1. Wire harness connections unstable or damaged 2. The blower motor does not work.	1. Securely connect or repair the wire harness connector. 2. Replace the blower motor.

	In these conditions the blower motor should run at maximum speed.			
4	CHECK CORRECT OPERATION	Result OK	Result Not OK	Action
	Verify that the fault is no longer present.	Diagnostic complete	The problem persists	Research the problem of HVAC door/flap obstructions.

DIAGNOSIS AND TESTING > A/C DOES NOT COOL - ATC



NOTE:

The fan works properly and sends air into the passenger compartment according to predetermined patterns, but that air remains at outside temperature and never gets cold.



NOTE:

The qualification for entering the refrigeration mode is controlled by both the A/C heater control and the powertrain control module.

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
	Connect the vehicle to the appropriate air conditioning charging equipment, and check the pressure of the system. Verify the correct operation of the engine cooling fan.	Continue to Step 1	1. incorrect system pressure 2. malfunctioning engine cooling fan.	1. Continue to Step 1 2. check the engine cooling fan circuit
1	CHECK FOR LEAK FROM THE CONDENSER	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), check to see if the leak is in correspondence with the A/C line	Continue to Step 2	1. Loss of refrigerant from the condenser. 2. pinched O-ring seal.	1. Replace the condenser and perform the correct filling. 2. Replace the O-rings and perform the correct filling.

	connections location at the condenser or the location of the filter drier or junction tubes on the condenser.			
2	CHECK FOR LEAK FROM THE EVAPORATOR	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), using the proper leak detector, check to see if there is a leak at the expansion valve or at the bend of the A/C lines.	Continue to Step 3	1. Loss of refrigerant from the evaporator. 2. pinched O-ring seal.	1. Replace the evaporator and perform the correct filling. 2. Replace the O-rings and perform the correct filling.
3	CHECK FOR LEAK FROM THE COMPRESSOR	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started at maximum speed (compressor ON), temperature adjusted to LO, using leak detector, check to see if there is a leak is at the A/C line flange at the compressor. If a leak is detected, repeat the test to verify the presence of a leak. With the vehicle engine OFF, using leak detector, check to see if there is a leak at the A/C compressor shaft seal or the area at the rear of the compressor. If a leak is detected, repeat the test to verify the presence of a leak.	Continue to Step 4	1. pinched O-ring seal. 2. Loss from the compressor shaft lip seal. 3. Loss from rear seal of the compressor.	1. Replace the O-rings and perform the correct filling. 2. Replace the compressor. 3. Replace the compressor.
4	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the blend door	Continue to Step 6	1. blend door actuator error. 2. error on air outlet temperature sensors	1. Continue to Step 5 2. Continue to Step 5 3. Continue to Step 5 4. Continue to Step 5

	actuator; the absence of errors on the air outlet temperature sensors; the absence of errors on ambient temperature sensor; the absence of errors on evaporator temperature sensor; the absence of errors on the interior temperature sensor; the absence of errors on the A/C transducer.		3. ambient temperature sensor error 4. evaporator temperature sensor error 5. interior temperature sensor error. 6. A/C transducer error	5. Continue to Step 5 6. Continue to Step 12
5	ELECTRIC CIRCUIT VERIFICATION	Result OK	Result Not OK	Action
	Check insulation continuity and visually check for any weakness or damage on the contacts of the connector electrical connection: blend door actuator in case of blend door actuator error; in case of sensor failure of the ambient temperature sensor; of the evaporator temperature sensor error A/C heater control connector.	Continue to Step 13	1. weak or damaged wire harness connections. 2. wire harness connection interrupted or not insulated.	1. Restore the wire harness connections. 2. Restore continuity / insulation of the wire harness connection.
6	CHECK A/C LINE TIGHTNESS	Result OK	Result Not OK	Action
	Verify that the connections of the A/C lines for air conditioning system are properly tightened. Make sure that the A/C lines are undamaged in all their parts. The absence of excessive deformations or indentations on rubber or metal parts.	Continue to Step 7	1. Torque not conforming 2. Line damaged because the vehicle was crashed. 3. The air conditioning system obstructed.	1. Restore the correct tightening of the A/C line and perform the correct filling 2. Replace the A/C line and perform the correct filling Indicate if the A/C line is from accident vehicle and mark it in all sections. 3. Replace the A/C line and perform the

				correct filling Indicate on the damaged A/C line the clogged point detected in the system. Indicate the date of the intervention on the A/C lines replaced, the mileage from the vehicle, car dealer name and number of operations performed on the defective A/C line.
7	CHECK FOR ABRASIONS ON HOSES	Result OK	Result Not OK	Action
	Check for A/C line contact with engine parts (rubber part and/or metal.)	Continue to Step 8	Refrigerant loss from contact area.	1. Replace the A/C line and perform the correct filling 2. Replace the O-ring and perform the correct filling Indicate on the defective A/C line at the exact point of abrasion.
8	CHECK FOR A/C LINE CONNECTION INTEGRITY	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), using a leak detector, check to see if there is a leak at the A/C line flange seat (brazing blocks and seals) or rubber hose crimps.	Continue to Step 9	1. Loss of refrigerant from solder connection at the flanges or rubber hose crimping. 2. pinched O-ring seal.	1. Replace the A/C line and perform the correct filling 2. Replace the O-rings and perform the correct filling Indicate on the defective A/C line the exact point of abrasion.
9	CHECK FOR LEAKS AT FLEXIBLE HOSE OR CHAFFERING	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), using a leak detector, check to see if there is a leak at the	Continue to Step 10	1. Loss of refrigerant from the A/C line. 2. pinched O-ring seal.	1. Replace the A/C line and perform the correct filling 2. Replace the O-rings and perform the correct filling

	A/C line rubber part or flexible hose bend.			Indicate on the defective A/C line the exact point of abrasion.
10	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the powertrain control module through active diagnosis, the proper functioning of the compressor relay activation, ensuring at the same time, there is the activation of the A/C clutch of the compressor.	Continue to Step 13	1. Errors on the powertrain control module. 2. The relay is commanded on and the relay does not activate. 3. the relay activates but the compressor clutch does not activate.	1. Proceed as indicated by the diagnostic tool 2. Go to Step 11 3. Go to Step 12
11	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	Check continuity / insulation of the electrical circuit of the compressor relay input.	Continue to Step 13	1. wire harness connections interrupted or not insulated. 2. compressor relay activation malfunction.	1. Restore continuity / insulation of wire harness connections 2. Replace the compressor relay
12	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	Check continuity / insulation of the electrical power circuit to the compressor.	Continue to Step 13	1. wire harness connections interrupted or not insulated. 2. Malfunctioning compressor clutch.	1. Restore continuity / wiring insulation 2. Replace the compressor equipped with clutch.
13	CHECK COMPRESSOR ACTIVATION	Result OK	Result Not OK	Action
	Check the correct activation of the compressor	Continue to Step 14	1. wire harness connections interrupted. 2. A/C transducer not allowing activation.	1. Check and restore continuity / insulation of the wire harness connection. 2. Replace the A/C transducer.

14	VERIFY PROPER OPERATION WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Verify that no errors exist: blend door actuator (after teach-in procedure); the ambient temperature sensor; on the interior temperature sensor; on air outlet temperature sensors.	Diagnostic complete	1. Error blend door actuator LH. 2. Error ambient temperature sensor. 3. Error interior temperature sensor. 4. Error on air outlet temperature sensors.	1. Continue to Step 15 2. Replace the ambient temperature sensor. 3. Replace the A/C heater control. 4. Replace the air outlet temperature sensors.
15	CHECK FOR PROPER OPERATION OF THE BLEND DOOR ACTUATOR	Result OK	Result Not OK	Action
	Remove the blend door actuator and check via command from the control unit that the actuator turns, checking for mechanical obstructions that prevent its rotation.	Diagnostic complete	1. The actuator does not rotate. 2. Mechanism or doors broken / blocked.	1. Replace the blend door actuator 2. Repair/replace the component that is causing the condition.

DIAGNOSIS AND TESTING > A/C DOES NOT COOL - MTC



NOTE:

The fan works properly and sends air into the passenger compartment according to predetermined patterns, but that air remains at outside temperature and never gets cold.



NOTE:

The qualification for entering the refrigeration mode is controlled by both the A/C heater control and the powertrain control module.

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
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	Connect the vehicle to the appropriate air conditioning charging equipment, and check the pressure of the system. Verify the correct operation of the engine cooling fan.	Continue to Step 1	1. incorrect system pressure	1. Continue to Step 1
1	CHECK FOR LEAK FROM THE CONDENSER	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), check to see if the leak is in correspondence with the A/C line connections location at the condenser or the location of the filter drier or junction tubes on the condenser.	Continue to Step 2	1. Loss of refrigerant from the condenser. 2. pinched O-ring seal.	1. Replace the condenser and perform the correct filling. 2. Replace the O-rings and perform the correct filling.
2	CHECK FOR LEAK FROM THE EVAPORATOR	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started (compressor ON), using the proper leak detector, check to see if there is a leak at the expansion valve or at the bend of the A/C lines.	Continue to Step 3	1. Loss of refrigerant from the evaporator. 2. pinched O-ring seal.	1. Replace the evaporator and perform the correct filling. 2. Replace the O-rings and perform the correct filling.
3	CHECK FOR LEAK FROM THE COMPRESSOR	Result OK	Result Not OK	Action
	Vehicle engine started, with the climate system started at maximum speed (compressor ON), temperature adjusted to LO, using leak detector, check to see if there is a leak is at the A/C line flange at the compressor.	Continue to Step 4	1. pinched O-ring seal.	1. Replace the O-rings and perform the correct filling.

	If a leak is detected, repeat the test to verify the presence of a leak.			
4	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the blend door actuator; the absence of errors on ambient temperature sensor; the absence of errors on evaporator temperature sensor;	Continue to Step 6	1. ambient temperature sensor error 2. evaporator temperature sensor error	1. Continue to Step 5 2. Continue to Step 5
5	ELECTRIC CIRCUIT VERIFICATION	Result OK	Result Not OK	Action
	Check insulation continuity and visually check for any weakness or damage on the contacts of the connector electrical connection: in case of sensor failure of the ambient temperature sensor; of the evaporator temperature sensor error	Continue to Step 10	1. weak or damaged wire harness connections. 2. wire harness connection interrupted or not insulated.	1. Restore the wire harness connections. 2. Restore continuity / insulation of the wire harness connection.
6	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the powertrain control module through active diagnosis, the proper functioning of the compressor relay activation, ensuring at the same time, there is the activation of the A/C clutch of the compressor.	Continue to Step 9	1. Errors on the powertrain control module. 2. The relay is commanded on and the relay does not activate. 3. the relay activates but the compressor clutch does not activate.	1. Proceed as indicated by the diagnostic tool 2. Go to Step 7 3. Go to Step 8

7	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	Check continuity / insulation of the electrical circuit of the compressor relay input.	Continue to Step 9	1. wire harness connections interrupted or not insulated. 2. compressor relay activation malfunction.	1. Restore continuity / insulation of wire harness connections 2. Replace the compressor relay
8	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	Check continuity / insulation of the electrical power circuit to the compressor.	Continue to Step 9	1. wire harness connections interrupted or not insulated. 2. Malfunctioning compressor clutch.	1. Restore continuity / wiring insulation 2. Replace the compressor equipped with clutch.
9	CHECK COMPRESSOR ACTIVATION	Result OK	Result Not OK	Action
	Check the correct activation of the compressor	Diagnostic complete	1. wire harness connections interrupted. 2. A/C transducer not allowing activation.	1. Check and restore continuity / insulation of the wire harness connection. 2. Replace the A/C transducer.
10	VERIFY PROPER OPERATION WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Verify that no errors exist: the ambient temperature sensor;	Diagnostic complete	Error ambient temperature sensor.	Replace the ambient temperature sensor.

DIAGNOSIS AND TESTING > A/C DOES NOT COOL TO DESIRED TEMPERATURE - ATC



NOTE:

The blower motor works properly and sends air into the passenger compartment according to predetermined patterns, but the air temperature is not the desired one.

1	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
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	Before you start, check the following conditions: ambient temperature of about 20°C (68°F), the car with the doors and windows closed (during cooling and the temperature detection). The vehicle engine powered on, at room temperature (check with the diagnostic tool to indicate that the interior temperature is about 20°C (68°F), with the compressor switched on, the A/C heater control in the AUTO position, the temperature adjusted to maximum cold LO, the air distribution in the front position, the speed of the blower motor to 6 bars and the air intake on external air intake. After about 5 minutes under these conditions, check with the diagnostic tool that the values of the temperature of the air vents have a decreasing trend: starting temperature of about 20°C (68°F) (room temperature) to descend progressively until the temperature of the front distribution air vents is between 6-10°C (42.8-50°F). Verify carefully if the outgoing air from the vents has a variation (toward the cold) temperature.	Diagnostic complete	There is no cooling change to the air leaving the air vents.	Continue to Step 2
2	CHECK SYSTEM PRESSURE	Result OK	Result Not OK	Action
	Connect the unit to the appropriate air conditioning charging equipment, and check the pressure of the system. Verify the correct operation of the engine cooling fan.	Continue to Step 3	1. System pressure is not correct. 2. Low or excessive refrigerant charge. 3. Improper operation of the electric motor	1. Restore the correct value of pressure. 2. Restore the proper level of refrigerant. 3. Check the cooling fan circuit

			cooling.	
3	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the blend door actuator; the absence of errors on the air outlet temperature sensors; the absence of errors on ambient temperature sensor; the absence of errors on evaporator temperature sensor; the absence of errors on the interior temperature sensor.	Continue to Step 5	1. blend door actuator error. 2. air outlet temperature sensor error 3. ambient temperature sensor error 4. evaporator temperature sensor error 5. interior temperature sensor error.	1. Continue to Step 4 2. Continue to Step 4 3. Continue to Step 4 4. Continue to Step 4 5. Continue to Step 4
4	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	With the car engine off, remove the A/C heater control from the instrument panel and disconnect the wire harness connector from the control unit, visually checking damage on the contacts of the connector and reconnect it correctly to verify any poor connections. Check continuity of the electrical connection/isolation: blend door actuator in case of a blend door actuator error; the sensor in the case of ambient temperature sensor error. of the sensor in case of evaporator temperature sensor error.	Continue to Step 5	1. Electrical connections unstable or damaged. 2. Electrical connection interrupted or not isolated.	1. Restore the electrical connections 2. Restore continuity / insulation of electrical connection
5	CHECK CONDENSER	Result OK	Result Not OK	Action
	Verify the condenser is not blocked or clogged with mud or damaged.	Continue to Step 6	1. Condenser damaged. 2. Condenser clogged.	1. Replace the condenser. 2. Remove the dirt by washing

6	VERIFY PROPER OPERATION WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Verify that no errors exist: blend door actuator (after teach-in procedure); on air outlet temperature sensors the ambient temperature sensor; on the interior temperature sensor.	Continue to Step 7	1. blend door actuator error. 2. on air outlet temperature sensor error. 3. ambient temperature sensor error. 4. interior temperature sensor error.	1. Replace the blend door actuator 2. Replace the air outlet temperature sensor causing the anomaly. 3. Replace the ambient temperature sensor. 4. Replace the A/C heater control.
7	CHECK FOR PROPER OPERATION OF THE BLEND DOOR ACTUATOR	Result OK	Result Not OK	Action
	Remove the blend door actuator and check via command from the A/C heater control that the actuator turns, checking for mechanical obstructions that prevent its rotation.	Diagnostic complete	1. The actuator does not rotate. 2. Mechanism or doors broken / blocked.	1. Replace the blend door actuator 2. Repair/replace the component that is causing the condition.

DIAGNOSIS AND TESTING > A/C DOES NOT COOL TO DESIRED TEMPERATURE - MTC



NOTE:

The blower motor works properly and sends air into the passenger compartment according to predetermined patterns, but the air temperature is not the desired one.

1	CHECK SYSTEM PRESSURE	Result OK	Result Not OK	Action
	Connect the unit to the appropriate air conditioning charging equipment, and check the pressure of the system.	Continue to Step 2	1. System pressure is not correct. 2. Low or excessive refrigerant charge.	1. Restore the correct value of pressure. 2. Restore the proper level of refrigerant.
2	CHECK MANUAL CONTROL FOR PROPER OPERATION	Result OK	Result Not OK	Action

	Before you start, check the following conditions: ambient temperature of about 20°C (68°F), the car with the doors and windows closed (during cooling and the temperature detection). The vehicle engine running, at room temperature (check with the diagnostic tool to indicate that the interior temperature is about 20°C (68°F), with the compressor switched on, the temperature adjusted to maximum cold, the air distribution in the front position, the speed of the blower motor selector to 2 and the air intake on external air intake. After about 5 minutes under these conditions, check with the diagnostic tool that the values of the temperature of the air vents, have a decreasing trend: starting temperature of about 20°C (68°F) (room temperature) to descend progressively until the temperature of the front distribution air vents is between 6-10°C (42.8-50°F).	Continue to Step 5	There is no cooling change to the air leaving the air vents.	Continue to Step 3
3	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on ambient temperature sensor;	Continue to Step 5	ambient temperature sensor error	Continue to Step 4
4	CHECK ELECTRIC CIRCUIT	Result OK	Result Not OK	Action
	Check continuity of the electrical connection/isolation: in case of sensor failure	Continue to Step 5	Electrical connection interrupted or not isolated.	Restore continuity / insulation of electrical connection

	on ambient temperature sensor; of the sensor in case of evaporator temperature sensor error.			
5	CHECK A/C LINES AND FILTER	Result OK	Result Not OK	Action
	Verify that the high and low pressure A/C lines for the air conditioner are not obstructed.	Continue to Step 6	1. obstructed compressor discharge line to condenser. 2. obstructed A/C liquid line from condenser to expansion valve.	1. Replace the compressor discharge line to condenser. 2. Replace the A/C liquid line from condenser to expansion valve.
6	CHECK CONDENSER	Result OK	Result Not OK	Action
	Verify the condenser is not blocked or clogged with mud or damaged.	Continue to Step 7	1. Condenser damaged. 2. Condenser clogged.	1. Replace the condenser. 2. Remove the dirt by washing
7	VERIFY PROPER OPERATION WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Verify that no errors exist: the ambient temperature sensor;	Continue to Step 8	ambient temperature sensor error.	Replace the ambient temperature sensor.
8	CHECK FOR PROPER OPERATION	Result OK	Result Not OK	Action
	Verify that the fault is no longer present.	Diagnostic complete	The anomaly persists.	Research the problem of mechanisms/flexible transmissions of the climate group

DIAGNOSIS AND TESTING > A/C DOES NOT WORK IN ANY MODE - ATC



NOTE:

Pressing the switch-on / switch-off, the air conditioning does not work.

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
	Check:	Continue to Step 1	1. Blown fuses 2. Relay damaged	1. Replace blown fuses

	- Fuses and relays of the A/C System - A/C System refrigerant pressure - Blower motor operation		3. Incorrect refrigerant pressures 4. Improper operation of the blower motor	2. Replace bad relay(s) 3. Find and eliminate leaks. Refill refrigerant to proper level 4. Check the blower motor circuit
1	CHECK COMPRESSOR CLUTCH OPERATION	Result OK	Result Not OK	Action
	Check the under the following conditions: room temperature at least 5°C (41°F) and indication of the ambient temperature sensor greater than 5°C (41°F). The engine running, with the compressor on (check the activation light on the display), set the A/C control to the AUTO position, set the temperature to maximum cold, LO, and distribution in the vent position. Using a scan tool, check that there are no short circuits to ground in the compressor circuit or any errors on the CAN line. In these conditions, verify the operation of the compressor by observing the compressor and clutch under the hood.	Diagnostic complete	1. The LED on the display does not turn on (but the compressor is engaged) 2. The LED on the display lights up (but the compressor does not engage) 3. The ambient temperature input is incorrect 4. Short circuit in the compressor circuit 5. Errors on CAN line	1. Continue to Step 3 2. Continue to Step 2 3. Continue to Step 3 4. Continue to Step 3 5. Continue to Step 4
2	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect a diagnostic scan tool to check for any errors: - A/C heater control - Powertrain Control Module	Continue to Step 3	1. A/C heater control not working properly 2. Powertrain control module not working properly	1. Continue to Step 4 2. Proceed as indicated by the diagnostic scan tool.
3	CHECKS USING DIAGNOSTIC SCAN TOOL	Result OK	Result Not OK	Action

	Connect a diagnostic scan tool to check for A/C heater control errors: • in the control relay of the compressor • in the A/C pressure transducer • in the ambient temperature sensor • in the blower motor • in the A/C compressor wiring	Continue to Step 5	1. Relay not working 2. A/C pressure transducer not working properly 3. Fault (short circuit or open circuit) on the ambient temperature sensor circuit 4. Ambient temperature sensor not working properly 5. Fault (short circuit or open circuit) on the blower motor circuit 6. Blower motor not working 7. the LED on the button does not light up (but the compressor is engaged)	1. Replace the relay 2. Check the A/C pressure transducer 3. Repair the ambient temperature sensor wiring 4. Replace the ambient temperature sensor 5. Check/repair the blower motor wire harness and connections as necessary 6. Continue to Step 6 7. Replace the A/C heater control
4	CHECK ELECTRICAL CONNECTIONS A/C HEATER CONTROL	Result OK	Result Not OK	Action
	With the engine off, remove the A/C heater control from the instrument panel and disconnect the wire harness connector from the controller. Visually verifying for possible damage on the contacts of the connector. Plug it back in properly to check for any poor contacts.	Continue to Step 5	1. wire harness connections unstable or damaged 2. A/C heater control connections are unstable	1. Securely connect or repair the electrical connector 2. Replace the A/C heater control
5	CHECK OPERATION OF A/C HEATER CONTROL	Result OK	Result Not OK	Action
	Start the engine, set the climate control unit in the AUTO position, adjust the temperature to 22°C (72°F), and place the mode to the vent position, external air. Activate the blower motor (upper arrow) and progressively increase	Diagnostic complete	No change in blower speed	Continue to Step 6

	the set speed and then decrease the speed by pressing the (lower arrow), thus verifying the variation of the air flow.			
6	CHECK ELECTRICAL CONNECTIONS AND OPERATION OF THE BLOWER MOTOR	Result OK	Result Not OK	Action
	Check for poor wiring connection. Disconnect / reconnect the connection to the blower motor. Disconnect the blower motor connector and connect to a power supply. In these conditions the blower motor should run at maximum speed, indicating that the A/C heater control is not working.	Diagnostic complete	1. Electrical connections unstable or damaged 2. The blower motor does not work. 3. The A/C heater control does not work	1. Securely connect or repair the electrical connector 2. Replace the blower motor 3. Replace the A/C heater control

DIAGNOSIS AND TESTING > A/C DOES NOT WORK IN ANY MODE - MTC



NOTE:

Pressing the switch-on / switch-off, the air conditioning does not work.

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
	Check: - Fuses and relays of the A/C System - A/C System refrigerant pressure	Continue to Step 1	1. Blown fuses 2. Relay damaged 3. Incorrect refrigerant pressures	1. Replace blown fuses 2. Replace bad relay(s) 3. Find and eliminate leaks. Refill refrigerant to proper level
1	CHECK COMPRESSOR CLUTCH OPERATION	Result OK	Result Not OK	Action
	Check the under the following conditions: room temperature at least	Diagnostic complete	1. The LED on the display does not turn on (but the	1. Replace the manual A/C heater control

	5°C (41°F) and indication of the ambient temperature sensor greater than 5°C (41°F). The engine running, with the compressor on (check the activation light on the display), set the temperature to maximum cold, LO, and distribution in the vent position. Using a scan tool, check that there are no short circuits to ground in the compressor circuit or any errors on the CAN line. In these conditions, verify the operation of the compressor by observing the compressor and clutch under the hood.		compressor is engaged) 2. The LED on the display lights up (but the compressor does not engage)	2. Continue to Step 2
2	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect a diagnostic scan tool to check for any errors: • Powertrain Control Module	Continue to Step 3	Powertrain control module not working properly	Proceed as indicated by the diagnostic scan tool.
3	CHECKS USING DIAGNOSTIC SCAN TOOL	Result OK	Result Not OK	Action
	Connect a diagnostic scan tool to check for A/C heater control errors: • in the control relay of the compressor • in the A/C pressure transducer • in the ambient temperature sensor	Continue to Step 5	1. Relay not working 2. A/C pressure transducer not working properly 3. Fault (short circuit or open circuit) on the ambient temperature sensor circuit 4. Ambient temperature sensor not working properly	1. Replace the relay 2. Check the A/C pressure transducer 3. Repair the ambient temperature sensor wiring 4. Replace the ambient temperature sensor
4	CHECK ELECTRICAL CONNECTIONS AND OPERATION OF THE BLOWER MOTOR	Result OK	Result Not OK	Action

	Check for poor wiring connection. Disconnect / reconnect the connection to the blower motor. Disconnect the blower motor connector and connect to a power supply. In these conditions the blower motor should run at maximum speed, indicating that the A/C heater control is not working.	Continue to Step 5	1. Electrical connections unstable or damaged 2. The blower motor does not work.	1. Securely connect or repair the electrical connector 2. Replace the blower motor
5	CHECK OPERATION OF THE BLOWER MOTOR RESISTOR	Result OK	Result Not OK	Action
	Check to see if the blower motor works at full speed. If the blower motor works at full speed, the blower motor resistor needs to be replaced. Check to see if the circuits to the blower motor resistor are working properly.	Diagnostic complete	1. Blower motor resistor does not work 2. The blower motor circuits need to be repaired.	1. Replace the blower motor resistor 2. Repair the blower motor resistor circuits

DIAGNOSIS AND TESTING > A/C NOISE FROM ENGINE COMPARTMENT

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
	Connect the vehicle to the appropriate air conditioning charging equipment, and check the pressure of the system. Check the condition of the accessory drive belt for wear, correct alignment and belt tension. While running the engine at idle with the a/c system in the off position, check if the	Continue to Step 2	1. Pressure values incorrect. 2. Belt alignment / tensioning incorrect or worn belt. 3. The noise comes from other engine compartment components (engine cooling fan motor, water pump, alternator).	1. Continue to Step 1 2. Restore the correct belt alignment / tension or replace the belt. 3. Continue as indicated in the related diagnosis.

	noise originates from other engine compartment components (engine cooling fan, water pump, alternator). Increase the number of engine revs and check for the presence of vibrations.			
1	CHECK PRESSURE VALUES OF HIGH AND LOW PRESSURE	Result OK	Result Not OK	Action
	With the correct charging equipment connected, check the low and high pressure values while the compressor is activated and engine is running: low pressure values at high and low pressure; high pressure at high and low pressure; Verify that the values of pressure (high and low) during operation of the compressor are not buttons and that the motor is switched off the pressure in the circuit is not equal slowly.	Diagnostic complete	1. low pressure values in the circuit (insufficient amount of refrigerant in the circuit) 2. high pressure values in the circuit (excessive amount of refrigerant oil in the circuit). 3. pressure buttons values in the circuit (compressor discharge valve always open).	1. Flush the system and restore the correct charge of oil and gas 2. Flush the system and restore the correct charge of oil and gas 3. Replace the compressor Note: If the compressor is replaced because of a mechanical problem, remember to flush the entire system and to change the filter drier.
2	CHECK A/C LINES AND COMPONENT BRACKETS	Result OK	Result Not OK	Action
	Check the correct mounting of the compressor, A/C lines and components. Verify in the following order: attachment of the compressor to the bracket on the engine block; attachment of the A/C lines (using clamps and spacers); the absence of contact between the A/C lines and other components	Continue to Step 3	1. attachment components incorrectly secured. 2. Interference in the engine compartment. 3. Condenser clogged or damaged 4. Presence of cracks on the hardware of the compressor to the bracket on the engine block.	1. Restore the tightening torque. 2. Restore the proper arrangement of the A/C lines 3. Clean or replace the condenser 4. Replace compressor or component that is causing the condition.

	of the engine compartment; cleaning or damage of the condenser (the presence of mud, foreign bodies). Also check for cracks in the hardware of the compressor to the bracket on the engine block (bolts and the bracket).			
3	CHECK A/C LINE TIGHTNESS	Result OK	Result Not OK	Action
	Check that the A/C line connections for the air conditioning system are properly tightened. Verify that the A/C lines are intact in all their parts. Absence of excessive deformation or bursting of the rubber or metal.	Continue to Step 4	1. Torque not to specification 2. A/C line damaged because the car was crashed. 3. The air conditioning system obstructed.	1. Restore the correct tightening of the pipe and make the correct filling 2. Replace the pipe and perform the correct filling. Indicate if the line is from accident vehicle and make it in all its parts. 3. Replace the pipe and perform the correct filling. Indicate on the damaged line clogged point detected in the system. Indicate the date of the intervention on the lines replaced, the mileage from the car, car dealer name and number of operations performed on problem line.
4	CHECK ABRASIONS ON A/C LINES	Result OK	Result Not OK	Action
	Verify tubing contact with motor parts (rubber part and/or metal.)	Continue to Step 5	Refrigerant loss from contact area.	1. Replace the A/C line and perform the correct filling 2. Replace the O-ring and perform the correct filling. Indicate on the line

				on the exact point of abrasion.
5	CHECK A/C LINE CONNECTION LOSSES	Result OK	Result Not OK	Action
	With the engine started and the climate system engaged (compressor ON), using the proper leak a detector, check for leaks at the block flanges for A/C lines in the system (brazing blocks and seals).	Continue to Step 6	1. Loss of refrigerant from solder connection flanges or rubber hose crimping. 2. pinched O-ring seal.	1. Replace the line and perform the correct filling 2. Replace the O-ring and perform the correct filling. Indicate on problem line the exact point of leak.
6	CHECK REFRIGERANT LEAKS FROM RUBBER HOSE OR CHAFFERING	Result OK	Result Not OK	Action
	With the engine started and the climate system engaged (compressor ON), using the proper leak a detector, check for leaks at the rubber portion or flexible part of the A/C lines.	Continue to Step 7	1. Loss of refrigerant from the rubber/flexible A/C line. 2. pinched O-ring seal.	1. Replace the line and perform the correct filling 2. Replace the O-ring and perform the correct filling. Indicate on problem line the exact point of leak.
7	CHECKS TO BE CARRIED OUT WHEN THE COMPRESSOR IS NOT ACTIVATED	Result OK	Result Not OK	Action
	Checks to be carried out with the engine off and the compressor not engaged: disconnect the belt to check for the presence of contact between the guard and the pulley; always with belt disconnected, check for contact between the pulley and the external elements. check for wear of the bearing of the pulley by rotating the movable plate in both directions of rotation. check whether the A/C	Continue to Step 8	1. Presence of contact between guard and pulley. 2. Presence of contact between the pulley and external elements. 3. Worn bearing. 4. Signs of overheating of the A/C clutch.	1. eliminate the contact. 2. Replace the pulley 3. Replace the pulley 4. replace the A/C clutch complete with pulley If the compressor is replaced due to a mechanical problem, be certain to flush the whole system and change filter dryer.

	clutch shows signs of overheating.			
8	CHECKS TO BE CARRIED OUT WHEN THE COMPRESSOR IS ACTIVATED	Result OK	Result Not OK	Action
	After installing the belt, check for the following by activating the compressor: Visually check to see if there is slippage of the A/C clutch plate due to the presence of oil or grease on the plate; Visually check to see if there is slippage between the belt and the compressor pulley.	Continue to Step 9	1. Presence of oil or grease on the plate. 2. the belt slipping on the pulley of the compressor.	1. Clean the oil or grease from the plate and check for an oil leak. 2. Replace the belt.
9	CHECK REFRIGERANT LEAKAGE FROM COMPRESSOR SIDE	Result OK	Result Not OK	Action
	With the engine running and the climate system activated at maximum speed (compressor ON), temperature setting at maximum cold, move the "nose" of the leak detector to analyze and verify any loss. If so (loss), repeat the test to ascertain the actual presence of the loss. With the engine off and compressor not activated, place the "nose" of the leak detector to the pulley near the compressor shaft lip seal and rear head gasket checking for eventual loss. If so (loss), repeat the test to ascertain the actual presence of the loss. Also, check if the leak is localized on other components of the refrigerating system.	Diagnostic complete	1. loss localized on the shaft lip seal or on the rear head of the compressor. 2. Loss localized on other components of the refrigerating system. 3. O-ring seal between the A/C lines and compressor poorly placed (pinched). 4. Fastener threads fixing the lines are damaged.	1. Replace the compressor 2. Repair the leak and restore the proper operation of the circuit. 3. Properly place the O-ring seals on the A/C lines for the compressor. 4. Replace the compressor If the compressor is replaced because of a mechanical problem, be certain to flush the entire system and to change the filter drier.

	Remove the A/C lines from the compressor and make sure that the O-rings are present in the A/C lines and are positioned correctly. Verify the integrity on compressor A/C line fastener threads.			
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DIAGNOSIS AND TESTING > A/C RECIRCULATION DOES NOT WORK



NOTE:

When pressing the appropriate button on the A/C heater control, the recirculation function does not work.

1	CHECK PROPER FUNCTIONING A/C HEATER CONTROL	Result OK	Result Not OK	Action
	The vehicle engine running, set the climate control unit in AUTO position, turn the temperature knob to reach 22°C (71.6°F), set the fan speed to 8 bars, and then press the recirculation button (verify that the recirculation symbol illuminates). Then check for variation of the air flow during the operation of opening / closing door. Locate also in the engine compartment, the box air intake grille and check the air intake in the transition from circulating in the outdoor air intake. "When the unit is set to FULL AUTO function and the outside temperature is lower than 3°C (37.4°F) above the air	Continue to Step 2	1. The recirculation symbol does not appear on the display. 2. The recirculation symbol appears on the display (but recirculation does not work)	1. Continue to Step 3 2. Continue to Step 2

	intake door opens automatically to prevent discolorations at the windshield".			
2	CHECK WITH DIAGNOSTIC TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify: the absence of errors on the recirculation actuator.	Continue to Step 6	Errors on recirculation actuator	Continue to Step 3
3	CHECKS USING DIAGNOSTIC SCAN TOOL	Result OK	Result Not OK	Action
	Connect the diagnosis tool and verify through active diagnosis: the proper functioning of the recirculation actuator correct illumination of all the symbols of the LCD graphics display.	Continue to Step 6	1. recirculation actuator not working 2. The recirculation symbol does not illuminate.	1. Continue to Step 6 2. Replace the A/C heater control
4	CHECK ELECTRICAL CONNECTIONS	Result OK	Result Not OK	Action
	Check integrity of electrical wiring connections. Remove A/c heater control from the instrument panel, disconnect the connector cable from the controller, visually inspect for damage to the connector, then reconnect it correctly to check for any false contacts. Remove the glove box, disconnect and visually inspect for damage to the recirculation actuator connector, then reconnect the electrical connection to the actuator.	Continue to Step 5	wire harness connections unstable or damaged	Securely connect or repair the electrical connector
5	VERIFY PROPER OPERATION OF RECIRCULATION ACTUATOR	Result OK	Result Not OK	Action

	Proceed as follows: with the car in motion, manually enter the recirculated air intake function with the fan at full speed. If the actuator operates and the door is dragged, sensitively the kind of tone of the air flow varies during handling. Turn the recirculation button off bringing the actuator to the outside air position. Locate the air intake box, check for a change of air intake in the transition from external air to recirculation air and vice versa. If the check is successful, do not replace the recirculation actuator.	Continue to Step 6	Incorrect operation of the recirculation actuator.	Replace the recirculation actuator.
6	CHECK RECIRCULATION DOOR IN HVAC HOUSING	Result OK	Result Not OK	Action
	Visually verify that the recirculation door travels the course without any impediment.	Diagnostic complete	1. incomplete door travel. 2. damaged recirculation door. 3. Mechanism / gear damaged.	1. Clear the obstruction from the recirculation door. 2. Replace the recirculation door. 3. Replace the damaged mechanism/gear.

DIAGNOSIS AND TESTING > ODORS FROM A/C



NOTE:

The air conditioner is operating normally, but you experience unpleasant odors in the passenger compartment.

0	PRELIMINARY CHECKS	Result OK	Result Not OK	Action
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	Check with compressor ON: - that the condensation drain is not clogged; - that condensation drains outside the passenger compartment; - that the condensation drain is not damaged; - if the outlet air / recirculation is not working; - that it is not unpleasant odors coming from the outside, by operating the recirculation - that it is not odors from overheating the blower motor, ceramic resistor or blower motor power module (vehicle options).	Continue to Step 1	1. Condensate drain clogged 2. Condensate draining into car 3. Condensate drain damaged 4. Recirculation does not work 5. Odors from outside entering vehicle 6. Odors from overheating of blower motor, resistor or blower power control module	1. Clean the condensation drain 2. Restore the correct functionality of the condensation drain 3. Replace the condensation drain 4. Continue as directed in Diagnostic Procedure for A/C RECIRCULATION DOES NOT WORK 5. Continue to Step 5 6. Replace damaged component
1	CHECK CABIN FILTER	Result OK	Result Not OK	Action
	Check the condition of the cabin filter The cabin filter should be replaced at least once a year	Continue to Step 2	clogged filter	Replace the filter element
2	CHECK AIR INLET DUCT	Result OK	Result Not OK	Action
	Check the air inlet ducts: they should not be obstructed with dirty or smelly substances	Continue to Step 3	Air ducts clogged	Clean the ducts
3	CHECK EVAPORATOR	Result OK	Result Not OK	Action
	With the engine started, and the climate system off (compressor OFF), set the temperature knob on max heat, operate the blower motor. Verify that the odor disappears	Continue to Step 6	Odors persist	Continue to Step 4
4	CHECK HEATER CORE	Result OK	Result Not OK	Action

	Check that the heater core does not have the fins blocked by dirt or other substances. With the car engine running hot engine temperature and air conditioning knob (temperature) in maximum heat, make sure there is no leakage of engine coolant inside the car under the HVAC housing	Diagnostic complete	1. dirty or clogged heater core 2. fluid leakage from heater core	1. Clean the heater core 2. Replace the heater core
5	CHECK AIR INLET HOUSING FOR CLEANING	Result OK	Result Not OK	Action
	Verify that there are no foreign objects inside the air inlet housing. Check in particular the perfect tightness of the seal between the air inlet and engine compartment	Diagnostic complete	1. dirty or foreign object in air inlet housing 2. air inlet seal not sealing	1. clean the air inlet housing 2. Restore the correct positioning of the seal
6	EVAPORATOR REPLACEMENT	Result OK	Result Not OK	Action
	Replacing the evaporator (see if you can clean it) For disinfection of mold on the evaporator, we recommend the use of the Aircomatic Equipment product with the Wynn's Airco-clean following the manufacturer's instructions of use.	Diagnostic complete	Evaporator covered with mold	Ask the customer if it is the first time there is a fault, in this case, clean the evaporator; 2nd complaint by the customer, if it has been more than six months, clean the evaporator again; if less than 6 months, replace the evaporator

DIAGNOSIS AND TESTING > HEATER PERFORMANCE

Before performing the following tests, see STANDARD PROCEDURE for the procedures to check the engine coolant level and flow, engine coolant reserve/recovery system operation, accessory drive belt condition and tension, radiator air flow and cooling fan operation. Perform the A/C System Performance Test, which is found within the HVAC System Test. Refer to STANDARD PROCEDURE . If any Diagnostic Trouble Codes (DTCs) are found in the A/C heater control or the Powertrain Control Module (PCM), repair as necessary.

 WARNING:

Do not remove radiator cap when engine is hot, personal injury can result.

If vehicle has been run recently, wait 15 minutes before removing the radiator cap. Place a rag over the cap and turn it to the first safety stop. Allow pressure to escape through the overflow tube. When the system pressure stabilizes, remove the cap completely.

DIAGNOSIS AND TESTING > HEATER PERFORMANCE > HEATER PERFORMANCE TEST

Engine coolant is delivered to the heater core through two heater hoses. With the engine idling at normal operating temperature, set the temperature control to the full hot position, the mode control to the floor position, and the blower motor control to the highest speed position. Using a test thermometer, check the temperature of the air being discharged at the HVAC housing floor outlets. Compare the test thermometer reading to the Heater Temperature Reference chart.

HEATER TEMPERATURE REFERENCE

Ambient Air Temperature	16° C (60° F)	21° C (70° F)	26° C (80° F)	32° C (90° F)
Minimum Heater System Air Outlet Temperature	52° C (125° F)	56° C (133° F)	59° C (139° F)	62° C (144° F)

See ENGINE COOLING SYSTEM if the heater outlet air temperature is below the minimum specification. Both of the heater hoses should be hot to the touch. The coolant return heater hose should be slightly cooler than the coolant supply heater hose. If the return hose is much cooler than the supply hose, locate and repair the engine coolant flow obstruction in the cooling system.

DIAGNOSIS AND TESTING > HEATER PERFORMANCE > OBSTRUCTED COOLANT FLOW

Possible causes of insufficient engine coolant flow are as follows:

- Improper heater hose routing.
- Low engine coolant.
- Pinched, kinked or plugged heater hoses.
- Plugged heater core.
- Plugged heater hose supply and return ports at the engine.

If proper coolant flow through the cooling system is verified, and heater outlet air temperature is still low, a mechanical problem may exist.

STANDARD PROCEDURE > STANDARD PROCEDURE - A/C EVAPORATOR CLEANING

When equipped with A/C, some vehicle operators may experience a musty odor from the Heating, Ventilation, and Air Conditioning (HVAC) system, primarily at start up in hot and humid climates. This odor may be the result of microbial growth on the A/C evaporator. During normal A/C system operation, condensation forms in and around the A/C evaporator. When airborne pollutants mix with the condensation on The A/C evaporator, bacteria and fungi growth begins, and odor may result.

If the vehicle operator experiences a musty odor when operating the A/C system, perform the following procedure.



WARNING:

Always use eye protection, rubber gloves and protective clothing when performing the following procedure. Avoid continuous breathing of vapors from evaporator coil cleaning and sealing fluids. Avoid contact with skin and eyes. Failure to follow these instruction may result in possible serious or fatal injury.

1. Remove the cowl panel cover. Refer to COVER, COWL PANEL, REMOVAL AND INSTALLATION .
2. Clean any dirt and debris that may be present at the HVAC fresh air inlet screen and at the top of the cowl panel.
3. Install the cowl panel cover. Refer to COVER, COWL PANEL, REMOVAL AND INSTALLATION .
4. Raise and support the vehicle.
5. Inspect the evaporator drain hose for foreign material that may be blocking the drain and repair as necessary.
6. Once drain operation has been verified, temporarily pinch the drain hose closed using an appropriate pair of heater hose pliers.
7. Remove the support and lower the vehicle.
8. Place a protective cover over the driver and front passenger side floor and seating areas.
9. Remove the blower motor. (Refer to REMOVAL AND INSTALLATION).
10. Remove and discard the cabin air filter. Refer to FILTER, CABIN AIR, REMOVAL AND INSTALLATION .
11. Clean any dirt and debris that may be present inside the HVAC housing through all readily accessible areas inside of the HVAC housing. If necessary, use a vacuum with a small flexible hose, and take caution not to damage the fins of the A/C evaporator.
12. Using PSE Flex Spray Delivery Tool 534-62637 or equivalent, completely coat the entire surface of A/C evaporator with three bottles of Mopar® Cooling Coil Cleaner through the blower motor and filter openings. Be sure to use all of the coil cleaner in each container.

13. Allow the vehicle to sit for 30 minutes.

14. Raise and support the vehicle.

 WARNING:

Excess cooling coil cleaner will drain from the evaporator housing when the pliers are removed from the evaporator drain hose or tube. Always use eye protection, rubber gloves and protective clothing. Avoid continuous breathing of vapors from evaporator coil cleaning fluid. Avoid contact with skin and eyes. Failure to follow these instruction may result in possible serious or fatal injury.

15. Remove the previously installed heater hose pliers and allow excess coil cleaner to drain from the HVAC housing.

16. Remove the support and lower the vehicle.

17. Refill the three empty coil cleaner bottles with clean tap water.

18. Using PSE Flex Spray Delivery Tool 534-62637 or equivalent, completely rinse the entire surface of A/C evaporator with the three bottles of clean tap water through the blower motor and filter openings. Be sure to use all of the water in each container.

19. Install the blower motor. (Refer to REMOVAL AND INSTALLATION).

20. Install the cabin air filter cover, with out a filter. Refer to FILTER, CABIN AIR, REMOVAL AND INSTALLATION .

21. Disconnect the wire harness connector from the A/C compressor to disable compressor operation. Refer to COMPRESSOR, A/C, REMOVAL AND INSTALLATION .

22. Start the engine

23. Adjust all the windows so they are open approximately 8 mm (0.5 in.).

24. Set the A/C heater controls to the following:

1. air distribution to Panel and Recirculation mode

2. temperature to full heat

25. Allow the vehicle to run for 20 minutes.

26. Turn the engine off.

27. Raise and support the vehicle.

28. Inspect the evaporator drain hose for foreign material that may have blocked the drain during evaporator coil cleaning and repair as necessary.

29. Once drain operation has been verified, temporarily pinch the drain hose closed again using an appropriate pair of heater hose pliers.

30. Remove the support and lower the vehicle.

31. Remove the blower motor. (Refer to REMOVAL AND INSTALLATION).
32. Remove the cabin air filter cover. Refer to FILTER, CABIN AIR, REMOVAL AND INSTALLATION .
33. Using PSE Flex Spray Delivery Tool 534-62637 or equivalent, completely coat the entire surface of A/C evaporator with one bottle of Mopar® Cooling Coil Coating through the blower motor and filter openings. Be sure to use all of the coil coating in the container.



NOTE:

Be sure to thoroughly clean out the spray delivery tool with warm water once coil coating is complete to prevent damage to the tool.

34. Refill the empty bottles with clean warm tap water and completely rinse out the PSE Flex Spray Delivery Tool 534-62637, or equivalent.
35. Allow the vehicle to sit for 30 minutes.
36. Install the blower motor. (Refer to REMOVAL AND INSTALLATION).
37. Install a new cabin air filter and the cover. Refer to FILTER, CABIN AIR, REMOVAL AND INSTALLATION .
38. Raise and support the vehicle.



WARNING:

Excess cooling coil coating will drain from the evaporator housing when the clamp, cap or plug is removed from the evaporator drain hose or tube. Always use eye protection, rubber gloves and protective clothing. Avoid continuous breathing of vapors from evaporator coil sealing fluid. Avoid contact with skin and eyes. Failure to follow these instruction may result in possible serious or fatal injury.

39. Remove the previously installed pliers from the evaporator drain hose and allow excess coil coating to drain from the HVAC housing.
40. Remove the support and lower the vehicle.
41. Start the engine
42. Adjust all the windows so they are open approximately 8 mm (0.5 in.).
43. Set the A/C heater controls to the following:
 1. air distribution to Panel and Recirculation mode
 2. temperature to full heat
44. Allow the vehicle to run for 20 minutes.
45. Turn vehicle off.

46. Remove the protective covers from the driver and front passenger side floor and seating areas.
47. Connect the wire harness connector to the A/C compressor. Refer to COMPRESSOR, A/C, REMOVAL AND INSTALLATION .
48. Verify proper heating and A/C system operation.

SPECIFICATIONS > A/C SYSTEM

A/C SYSTEM SPECIFICATIONS TABLE

	1.4 Turbo MultiAir	2.4 MultiAir	1.6 16V Multijet	2.0 16V Multijet
Type Specification	-	-	-	-
Maximum Displacement	140 cc / rev	140.6 cc / rev	140.6 cc / rev	140.6 cc / rev
Minimum Displacement	6 cc / rev	0 cc / rev	0 cc / rev	0 cc / rev
Number of Cylinders	6	6	6	6
Continuous RPM Maximum	8000			
Maximum speed not continuous (max 10 hours)	8500			
Maximum speed not continuous (max 10 minutes)	9200			
RPM Minimum	700			

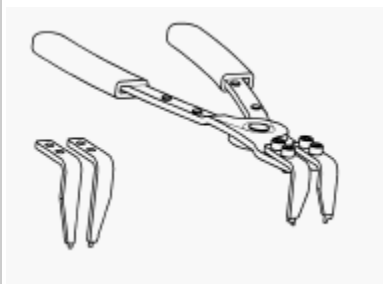
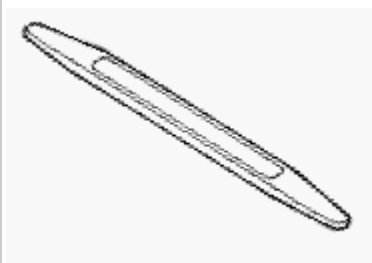
SPECIFICATIONS > TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS TABLE

Description	N.m	Ft. Lbs.	In. Lbs.	NEW FASTENER*
A/C Compressor to Engine M8 Bolts	25	18	-	
Refrigerant Lines to A/C Compressor M6 Bolt	9	6.6	79.7	

Refrigerant Lines to A/C Compressor M8 Bolt	20	15	177	
Refrigerant Lines to A/C Condenser	9	6.6	79.7	
*NEW FASTENER: Do not reuse these fasteners. If removed, a new fastener must be installed and tightened to specifications.				

SPECIAL TOOLS > SPECIAL TOOLS

	6801 - Terminal Probe (Originally Shipped In Kit Number(s) 10190.)
	9764 - Pliers, A/C Snap Ring (Originally Shipped In Kit Number(s) 9909.)
	C-4755 - Trim Stick (Originally Shipped In Kit Number(s) 9299, 9299CC, 9299CC, 9300A-CAN.)

CONTROLS > ACTUATOR, BLEND DOOR > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The blend door actuator is a direct current motor controlled at 12 V, but usually operates between 10 V and 16 V.

The specific feature of the potentiometer is that it is linear. The potentiometer receives a 5 V power supply at pin 3 and receives the earth at pin 1. The signal of the potentiometer exits pin 2 and is compared with the supply of the Heating, Ventilation, and Air Conditioning (HVAC) module. This is not an absolute value, it is a percentage of the power supply. Therefore this measurement is not linked to the level of the battery. The value of the potentiometer resistance must be about 4.7 kilohms.

CONTROLS > ACTUATOR, MODE DOOR > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The mode door actuator is a direct current motor controlled at 12 V, but usually operates between 10 V and 16 V.

The specific feature of the potentiometer is that it is linear. The potentiometer receives a 5 V power supply at pin 3 and receives the earth at pin 1. The signal of the potentiometer exits pin 2 and is compared with the supply of the Heating, Ventilation, and Air Conditioning (HVAC) module. This is not an absolute value, it is a percentage of the power supply. Therefore this measurement is not linked to the level of the battery. The value of the potentiometer resistance must be about 4.7 kilohms.

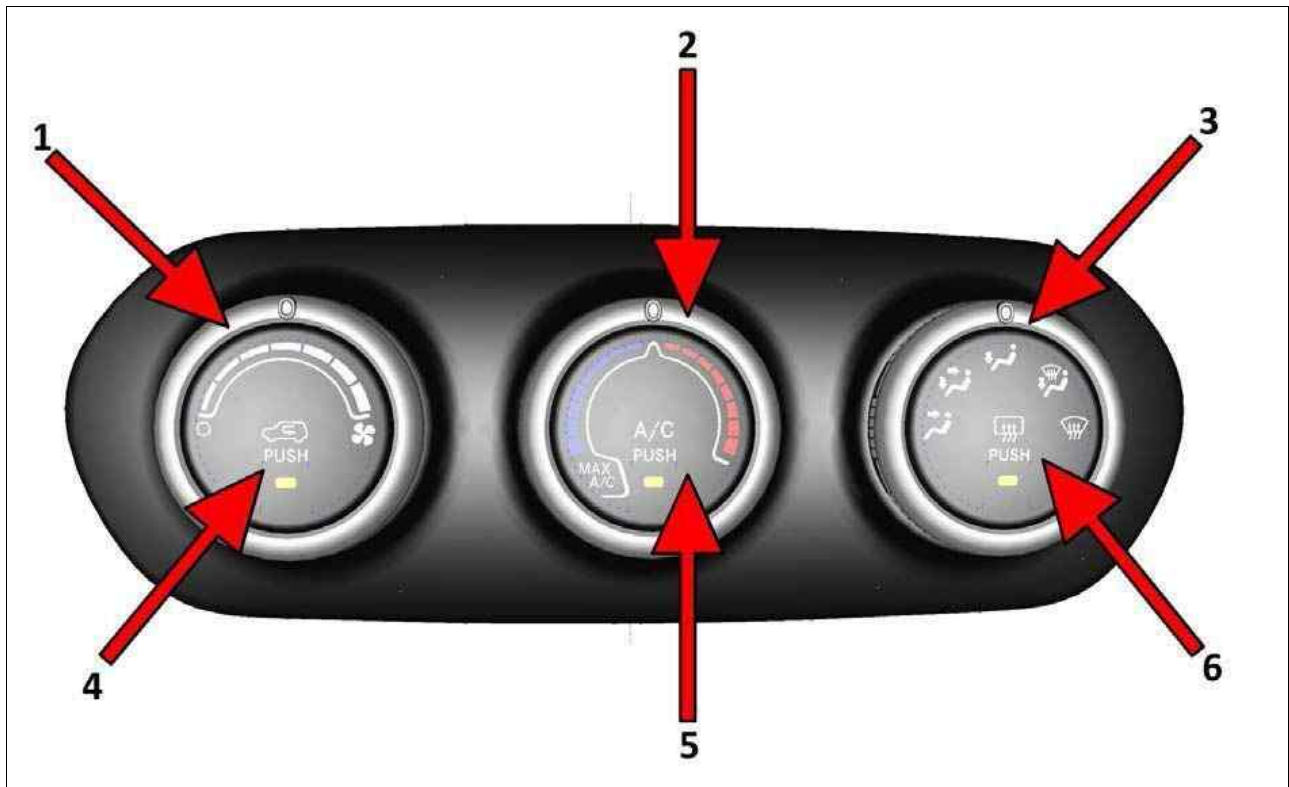
CONTROLS > ACTUATOR, RECIRCULATION DOOR > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The recirculation door actuator is a direct current motor controlled at 12 V, but usually operates between 10 V and 16 V.

The specific feature of the potentiometer is that it is linear. The potentiometer receives a 5 V power supply at pin 3 and receives the earth at pin 1. The signal of the potentiometer exits pin 2 and is compared with the supply of the Heating, Ventilation, and Air Conditioning (HVAC) module. This is not an absolute value, it is a percentage of the power supply. Therefore this measurement is not linked to the level of the battery. The value of the potentiometer resistance must be about 4.7 kilohms.

CONTROLS > CONTROL, A/C AND HEATER > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Manual Temperature Control (MTC) A/C Heater Control



Manual A/C Heater Control

The Manual Temperature Control (MTC) A/C heater control includes the following controls:

Blower motor activation/adjustment knob (1):

- 0 = blower motor off
- blower motor speed (7 different speeds can be chosen)

Air temperature adjustment knob and MAX A/C function activation (2):

- blue section = cold air
- red section = hot air

Air distribution knob (3):

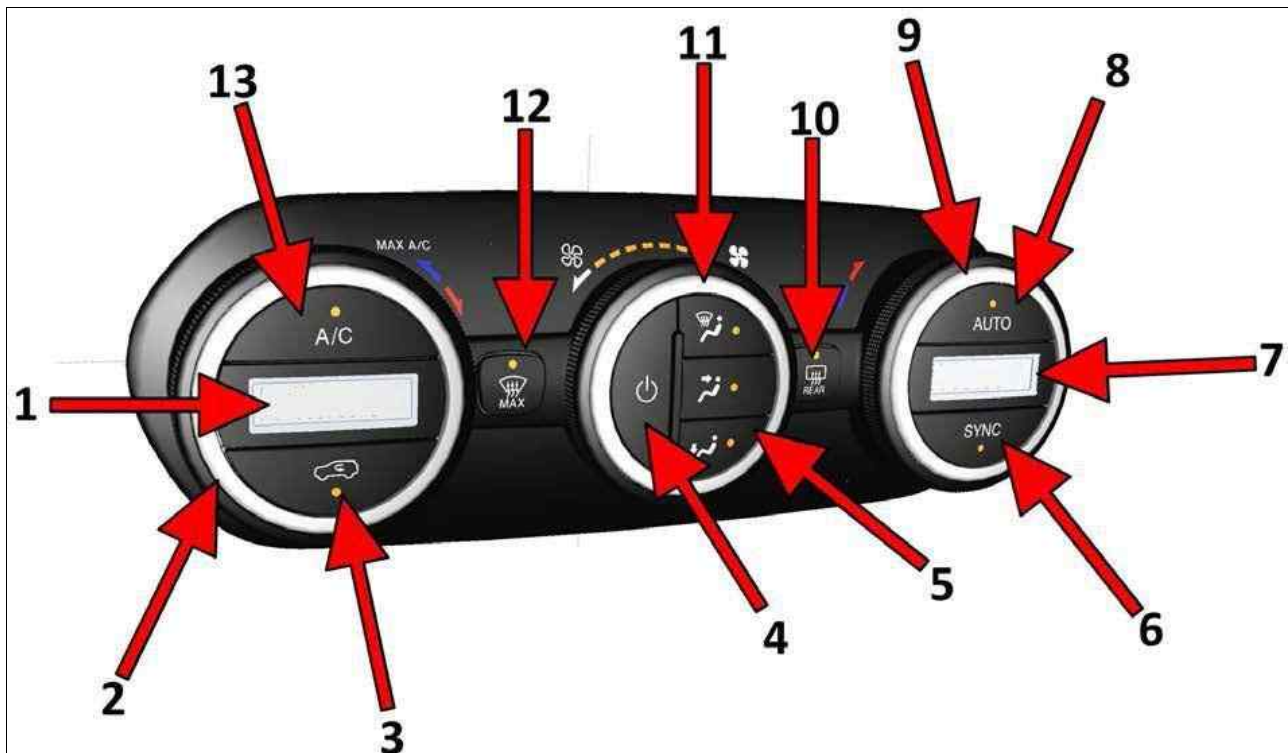
- air from central outlets and side vents
- air from central outlets, side vents and front and rear footwell vents
- air outlet from the front and rear footwell vents and a light air flow also from the side vents on the dashboard
- air outlet from the front and rear footwell vents, to the windshield, the side windows and a light air flow also at the side vents on the dashboard
- air outlet to the windshield, the side windows and a light air flow also at the side vents on the dashboard

Four further intermediate positions are also possible in the 5 main distributions described above:

- Air recirculation on/off button (4)
- Climate control compressor on/off button
- Heated rear window on/off button

Selecting the footwell/windshield or only windshield distribution activates the climate control system compressor (LED on A/C button on) and the air recirculation is set to "outside air" (LED on button B off). This logic guarantees optimum visibility at the windows. The driver can always set air recirculation and climate control system compressor.

Fig 2: Automatic Temperature Control (ATC) A/C Heater Control



Courtesy of CHRYSLER GROUP, LLC

Automatic A/C Heater Control

The Automatic Temperature Control (ATC) A/C heater control incorporates the following controls:

- Driver side temperature display (1).
- Driver side temperature adjustment knob (2).
- On/off button for internal air recirculation (3).
- Climate control system on/off button (4).
- Air distribution selection buttons (5).
- SYNC function activation button (alignment of set temperatures) driver/passenger side (6).
- Passenger side temperature display (7).
- AUTO function activation button (automatic operation) (8).
- Passenger side temperature adjustment knob (9).
- Heated rear window on/off button (10).
- Blower motor speed indicator LED (11).
- Button for activating the MAX DEF function (fast front window defrosting/demisting) (12).
- Climate control compressor on/off button (13).

The dual zone automatic climate control system regulates the temperature in the passenger compartment in two areas:

- Driver side.
- Passenger side.

The system maintains comfort inside the passenger compartment and compensates for possible variations in outside weather conditions.

The automatically controlled parameters and functions are:

- Air temperature at the driver/front passenger side vents
- Air distribution at the driver/front passenger side vents
- Blower motor speed (continuous variation of the air flow)
- Compressor engagement (for cooling/dehumidifying the air)
- Air recirculation

All these functions can be adjusted manually by operating the system and selecting one or more functions and modifying their parameters. Manual selections always have higher priority than automatic settings and are stored until the AUTO button is pressed, except for cases in which the system intervenes for safety reasons.

The following operations do not deactivate the AUTO function:

- Recirculation activation/deactivation
- Compressor activation/deactivation
- Sync function activation
- Heated rear window activation/deactivation

You can adjust one function manually without affecting the automatic control of the others. The amount of air introduced into the passenger compartment is not affected by vehicle speed; it is regulated by the blower motor, which is electronically controlled.

The temperature of the air sent is always automatically controlled according to the temperature set on the display (except for when the system is off or in certain conditions when the compressor is not running).

The system allows the following to be set or adjusted manually:

- Driver/passenger side air temperature
- Blower motor speed (continuous variation)
- Air distribution to 7 positions
- Compressor engagement
- Rapid defrosting/demisting function
- Air recirculation

- Heated rear window
- System deactivation

The A/C heater control cannot be adjusted or repaired and must be replaced if inoperative or damaged.

CONTROLS > CONTROL, A/C AND HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL



WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

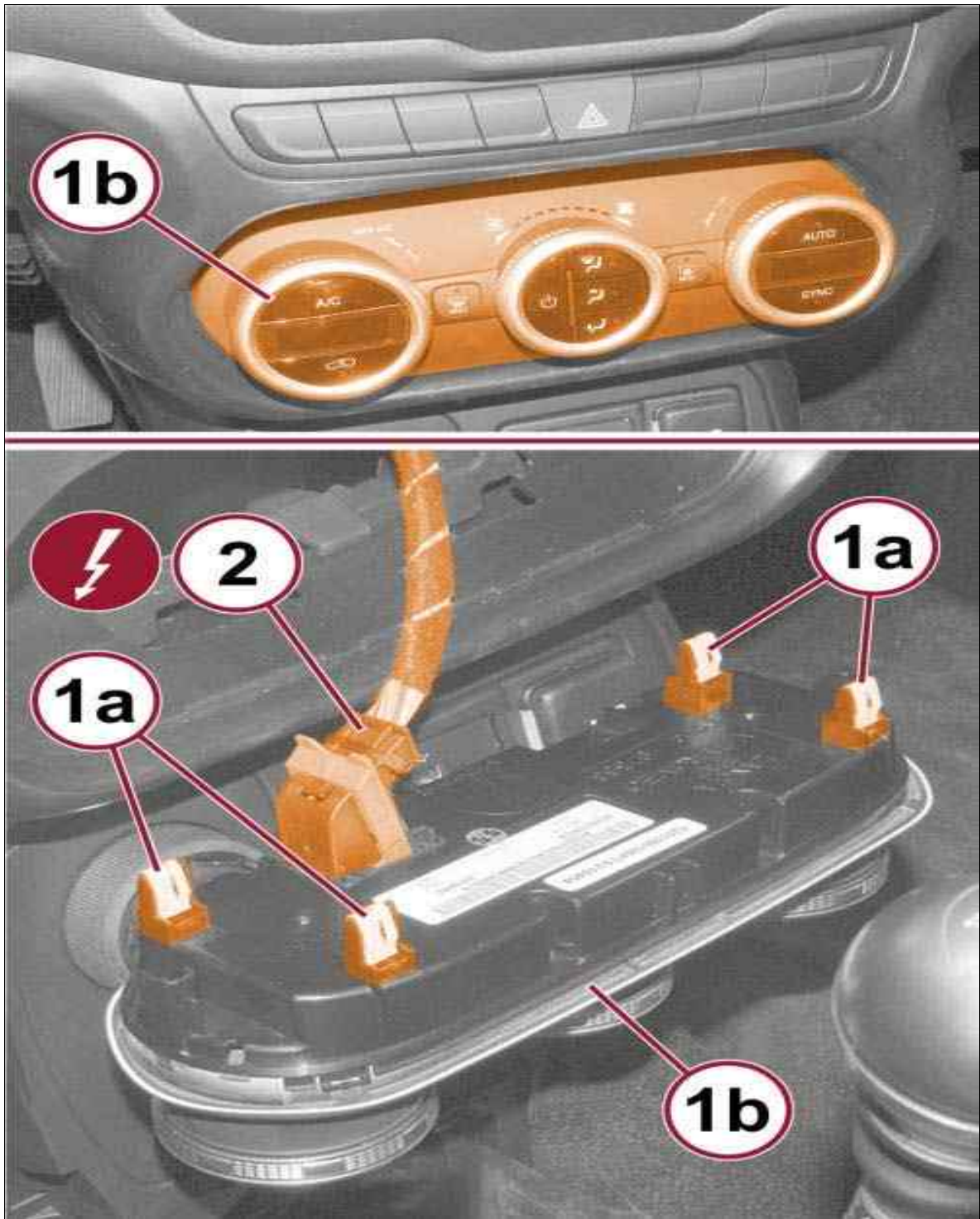


NOTE:

Automatic A/C heater control shown, manual A/C heater control similar.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the radio. Refer to RADIO, REMOVAL AND INSTALLATION .

Fig 1: A/C Heater Control, Retaining Clips & Connector



Courtesy of CHRYSLER GROUP, LLC

3. Reaching through the radio compartment to access the A/C heater control retaining clips (1a), disengage the four retainers (1a) while pulling the A/C heater control (1b) away from the instrument panel.
4. Disconnect the HVAC wire harness connector (2) from the A/C heater control (1b) and remove the A/C heater control.

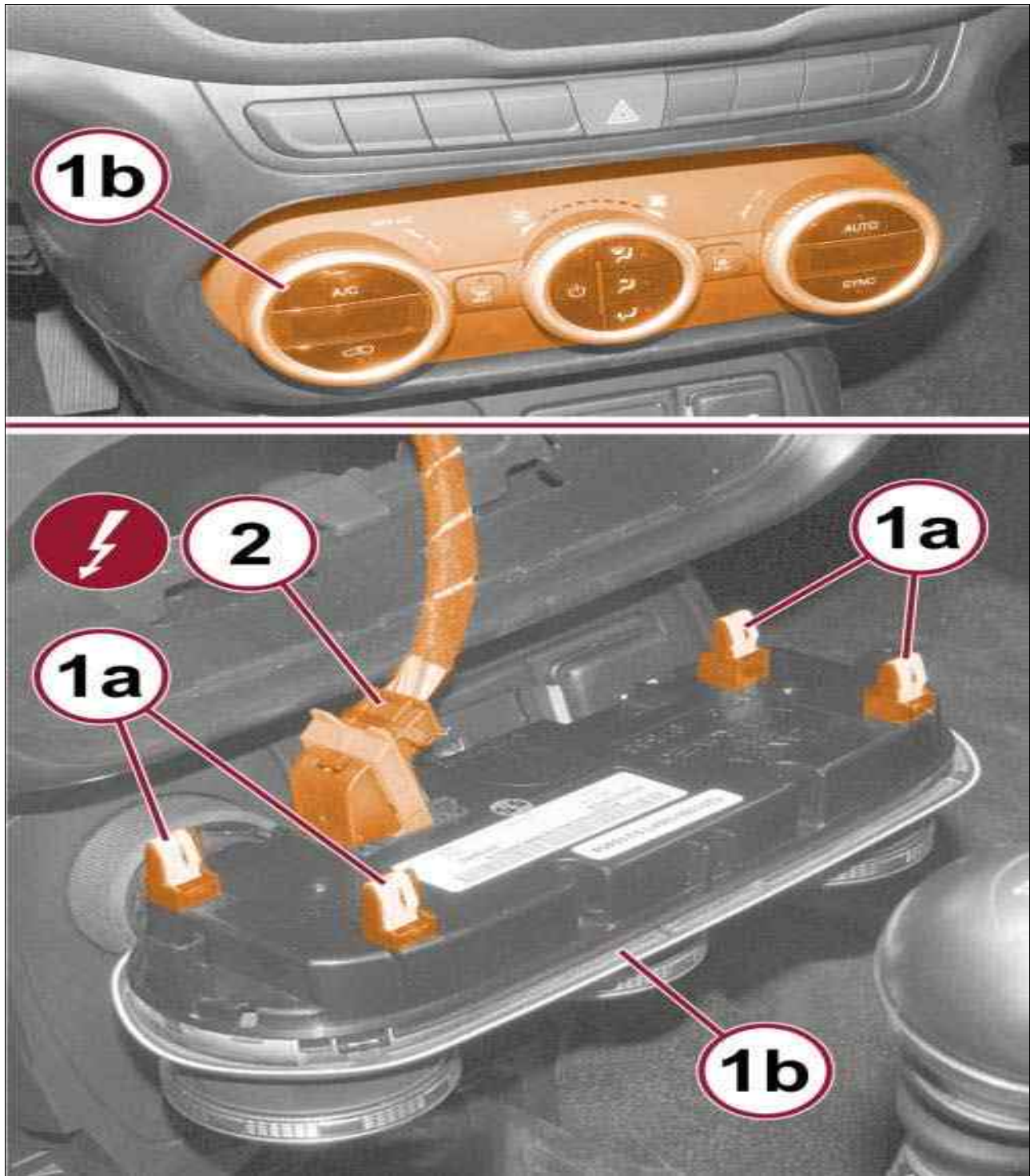
**CONTROLS > CONTROL, A/C AND HEATER > REMOVAL AND INSTALLATION >
REMOVAL AND INSTALLATION > INSTALLATION**



NOTE:

Automatic A/C heater control shown, manual A/C heater control similar.

Fig 1: A/C Heater Control, Retaining Clips & Connector



Courtesy of CHRYSLER GROUP, LLC

1. Position the A/C heater control (1b) to the instrument panel and connect the HVAC wire harness connector (2).
2. Align the four retainers (1a) of the A/C heater control (1b) with the instrument panel and press into place. Be certain all four retainers (1a) are fully engaged with the instrument panel.
3. Install the radio. Refer to RADIO, REMOVAL AND INSTALLATION .

4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
5. Initiate the Actuator Calibration function using a scan tool. Refer to STANDARD PROCEDURE .

 NOTE:

If this Electronic Control Unit (ECU) is being replaced with a new unit, a diagnostic scan tool MUST be used to align the PROXI configuration data into the new ECU. Follow the routine outlined in the diagnostic scan tool for PROXI Configuration Alignment under Body Control Module (BCM) Miscellaneous Functions menu.

CONTROLS > MODULE, POWER, BLOWER MOTOR > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The power blower motor module is a linear regulator. The Heating, Ventilation, and Air Conditioning (HVAC) sends a Pulse Width Modulated (PWM) signal to control the blower motor speed. The regulator sends its operating status to the HVAC module.

CONTROLS > SENSOR, AMBIENT TEMPERATURE > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The Heating, Ventilation, and Air Conditioning (HVAC) module receives the information about outside temperature to carry out the correct air mixing strategies from the Body Control Module (BCM) via Controller Area Network (CAN). The ambient temperature sensor is positioned in the right door mirror and it is managed by the BCM, which also receives the sensor's temperature information. The BCM sends the ambient temperature value via CAN for the modules that require this information.

CONTROLS > SENSOR, EVAPORATOR TEMPERATURE > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The evaporator temperature sensor is used to measure the temperature of the evaporator for the Heating, Ventilation, and Air Conditioning (HVAC) module. When the evaporator reaches a temperature that is critical for its safety, the HVAC module disables the A/C request.

The sensor resistance is about 9.965 kilohms at 25°C (77°F) and 32.52 kilohms at 0°C (32°F).

CONTROLS > SENSOR, HUMIDITY > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

 CAUTION:

Use care when servicing the humidity sensor. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

The Heating, Ventilation, and Air Conditioning (HVAC) module uses the passenger compartment humidity value to implement the correct operating strategy to activate the compressor, set the correct amount of recirculated air, blower motor speed and exit mode, to prevent the windshield from misting up.

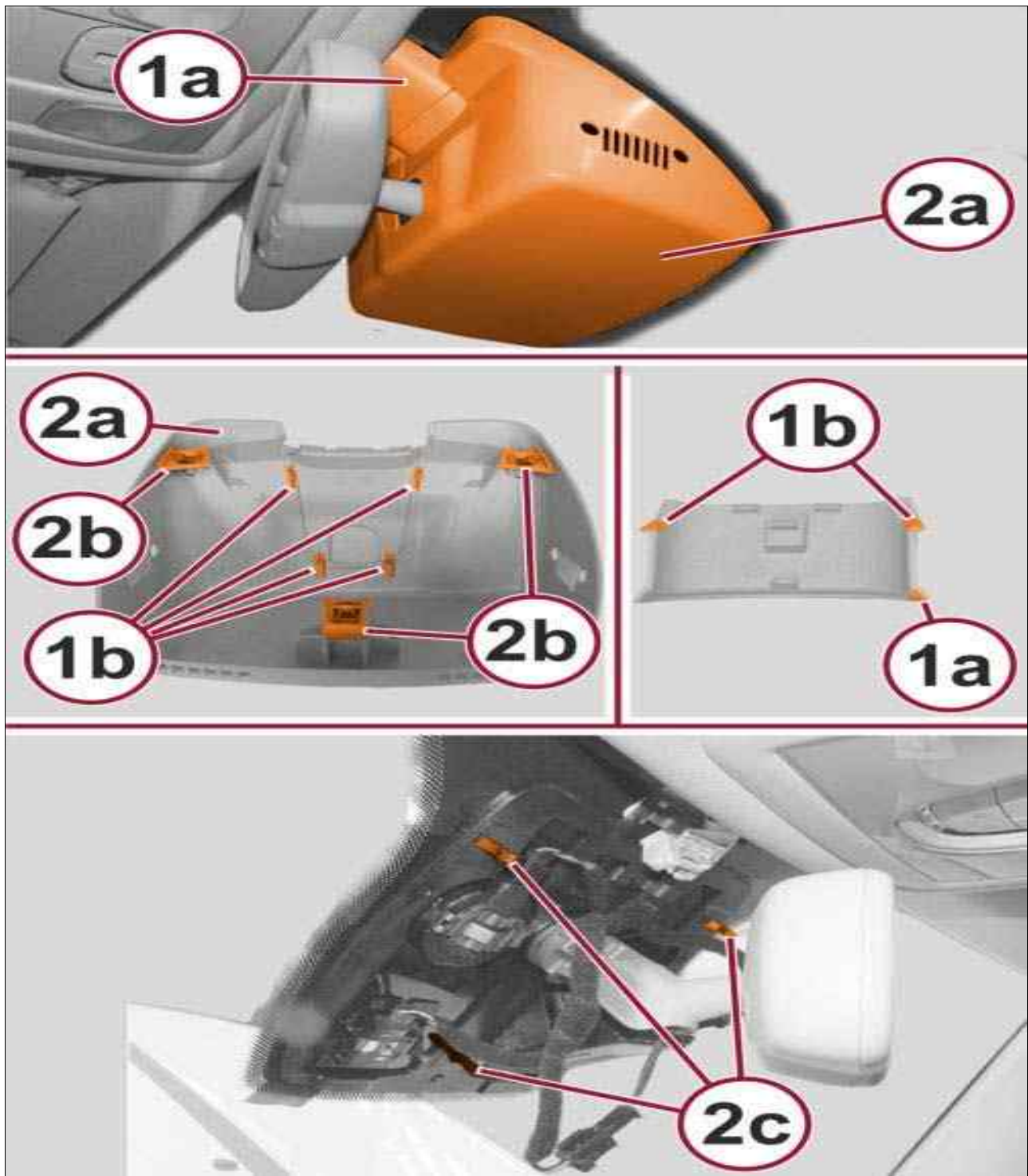
The humidity sensor is managed by the Instrument Panel Cluster (IPC) module, which receives its information and sends it via the Controller Area Network (CAN) for the modules that require it.

CONTROLS > SENSOR, HUMIDITY > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

 WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Remove/Install Humidity Sensor



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.

 **CAUTION:**

Use care when removing the humidity sensor cover. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

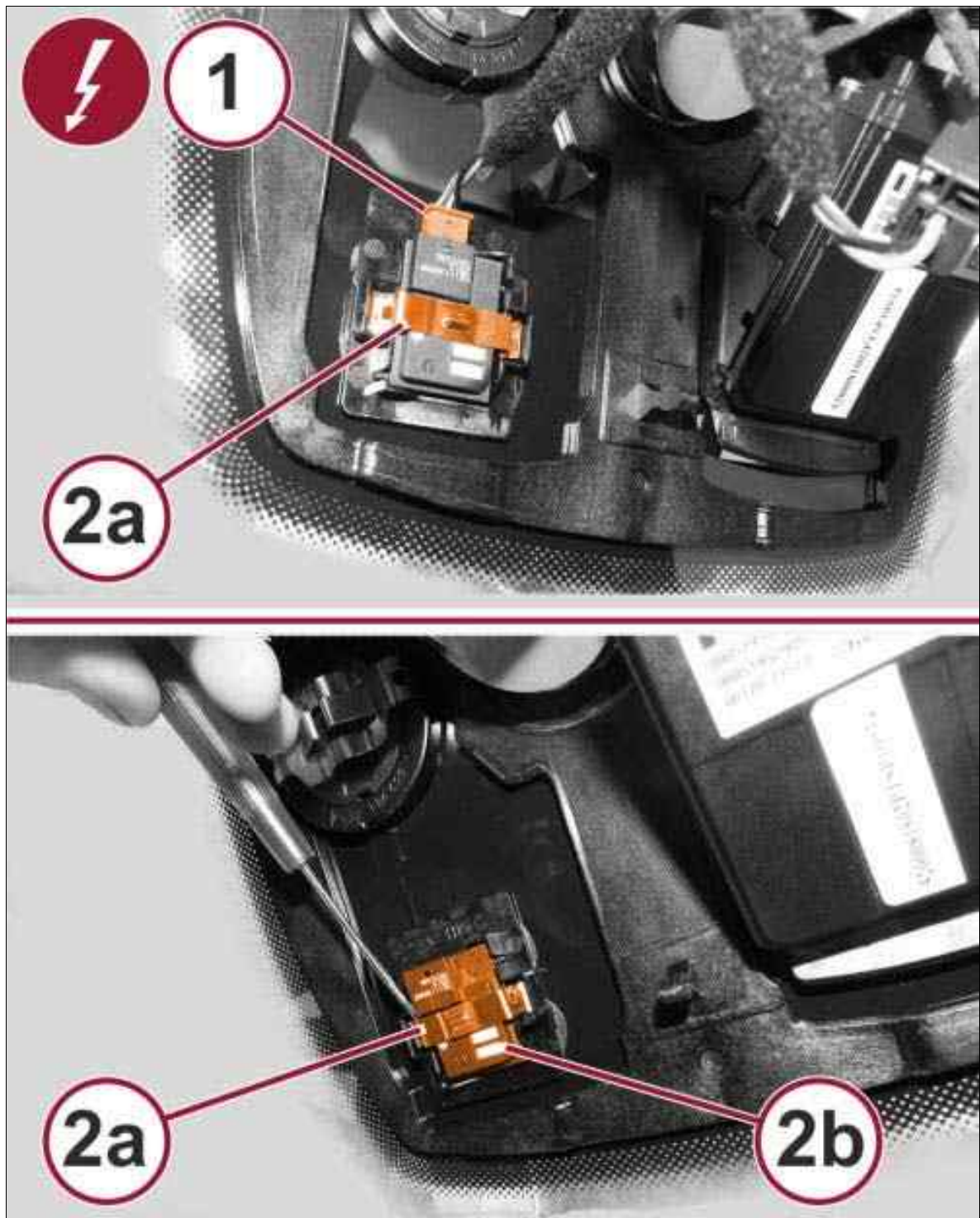
2. Using trim stick C-4755 or equivalent, carefully remove the upper cover (1a).

 CAUTION:

Use care when removing the humidity sensor. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

3. Using trim stick C-4755 or equivalent, carefully remove the lower cover (2a).

Fig 2: Humidity Sensor, Retaining Clip & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

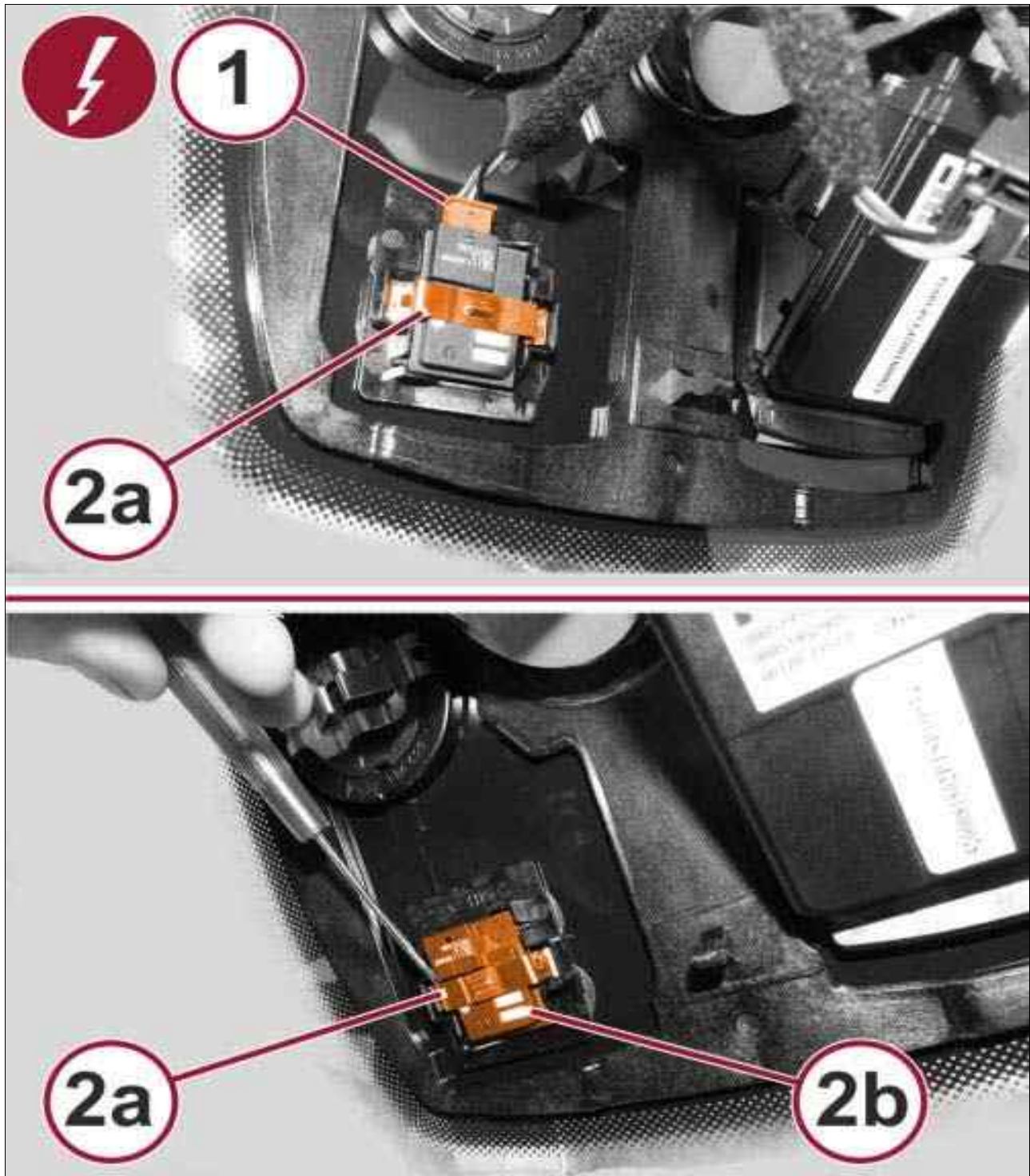
 CAUTION:

Use care when removing the humidity sensor. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

4. Using a small screwdriver or similar tool, carefully disengage the metal retaining clip (2a) from the sensor bracket and remove the humidity sensor (2b) and the clip as an assembly.
5. Disconnect the wire harness connector (1) from the humidity sensor (2b).
6. If the humidity sensor bracket is damaged and cannot be reused, replace the windshield. Refer to WINDSHIELD, REMOVAL AND INSTALLATION .

**CONTROLS > SENSOR, HUMIDITY > REMOVAL AND INSTALLATION > REMOVAL
AND INSTALLATION > INSTALLATION**

Fig 1: Humidity Sensor, Retaining Clip & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

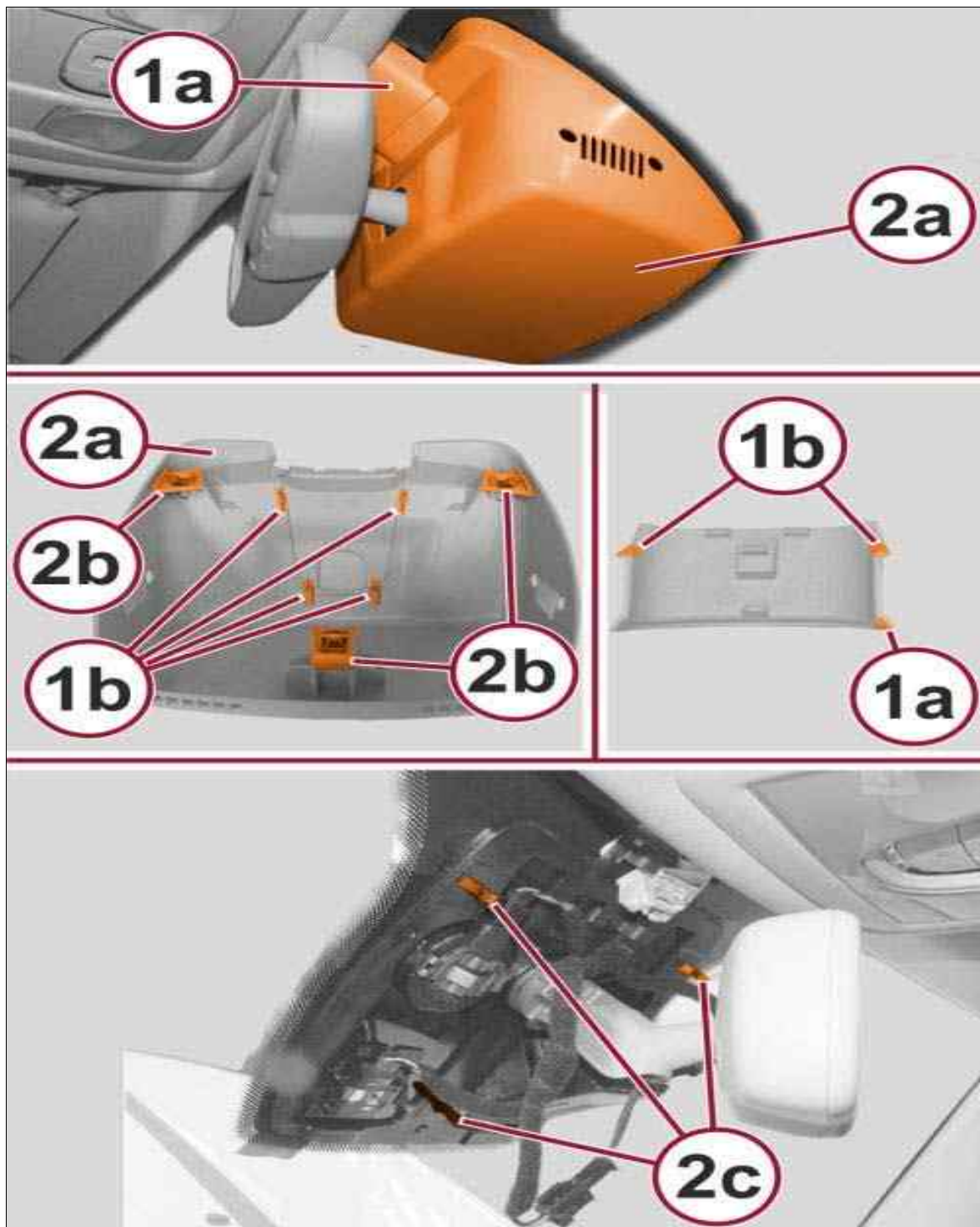
1. If the humidity sensor bracket is damaged and cannot be reused, install a new windshield. Refer to WINDSHIELD, REMOVAL AND INSTALLATION .
2. Connect the wire harness connector (1) to the humidity sensor (2b).

 **CAUTION:**

Use care when installing the humidity sensor. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

3. Position the humidity sensor (2b) to the sensor bracket and engage the metal retaining clip (2a) to the bracket. Be certain both sides of the retaining clip (2a) are fully engaged to the bracket.

Fig 2: Remove/Install Humidity Sensor



 CAUTION:

Use care when install the humidity sensor cover. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

4. Carefully align the lower cover (2a) to the attachment pins (2c) on the sensor bracket.
5. Install the lower cover (2a) by pressing it into place on the attachment pins (2c). Be certain all of the retaining tabs (2b) are fully engaged to the bracket.

 CAUTION:

Use care when install the humidity sensor cover. The humidity sensor bracket cannot be serviced separately from the windshield. If the sensor bracket becomes damaged, the windshield will need to be replaced.

6. Position the upper cover (1a) and install it by pressing it into place. Be certain all of the retaining tabs (1b) are fully engaged to the bracket.
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

CONTROLS > SENSOR, SUN > DESCRIPTION AND OPERATION > DESCRIPTION

The Heating, Ventilation, and Air Conditioning (HVAC) module uses the sun sensor to measure solar radiation inside the passenger compartment and define the best strategy to cool down the vehicle.

Temperature sensor technical specifications:

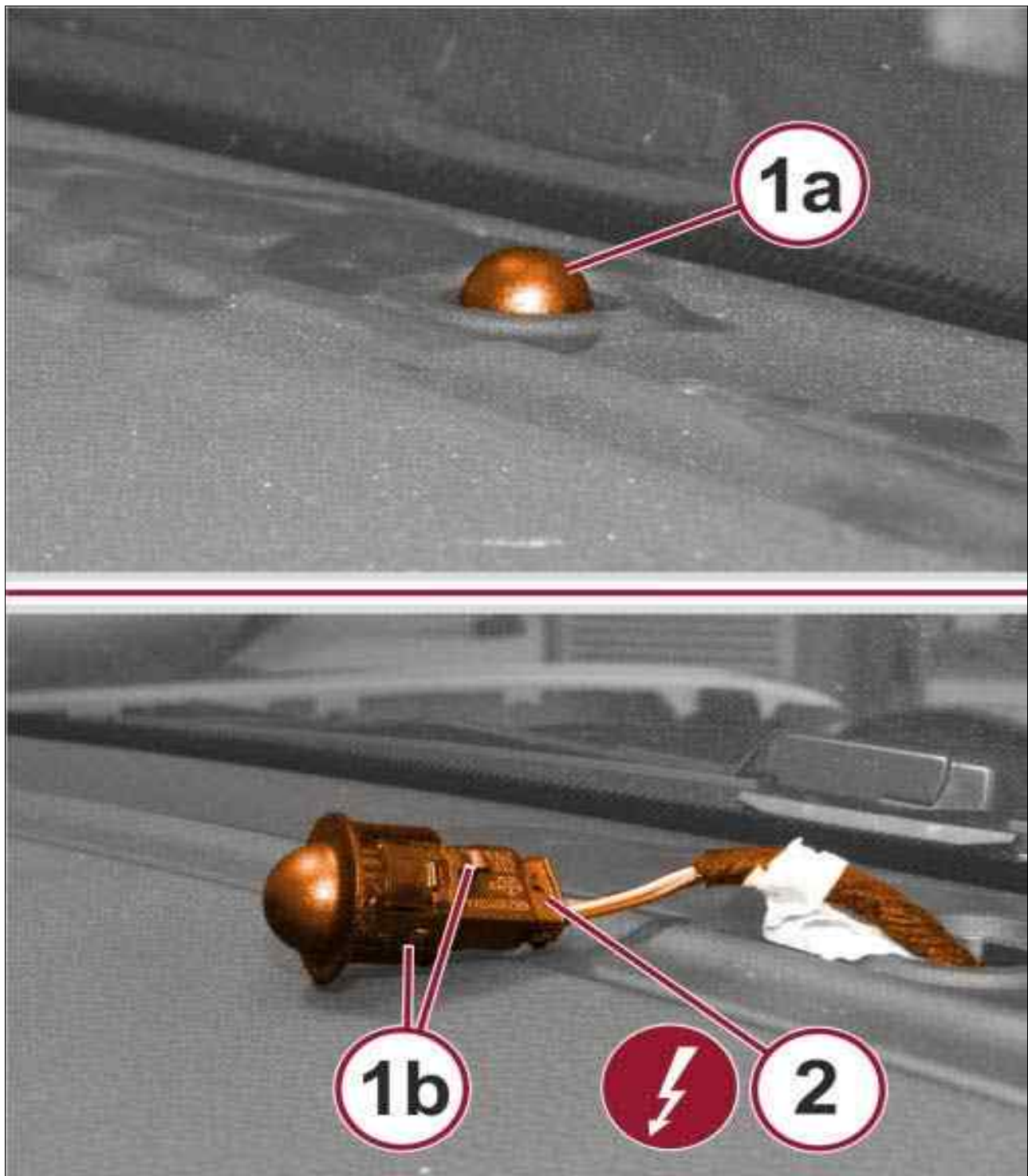
Characteristics	Value
Supply	5 V $\pm$ 0.1
Max. current uptake	10 mA
Operating range Temp.	-40 to 105 °C (-40 to 221 °F)
Output current	$I_{\min} = 0.25 \text{ mA}$ & $I_{\max} = 2.18 \text{ mA}$
Sun sensor response time	< 10 ms

CONTROLS > SENSOR, SUN > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

 WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Sun Sensor & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.

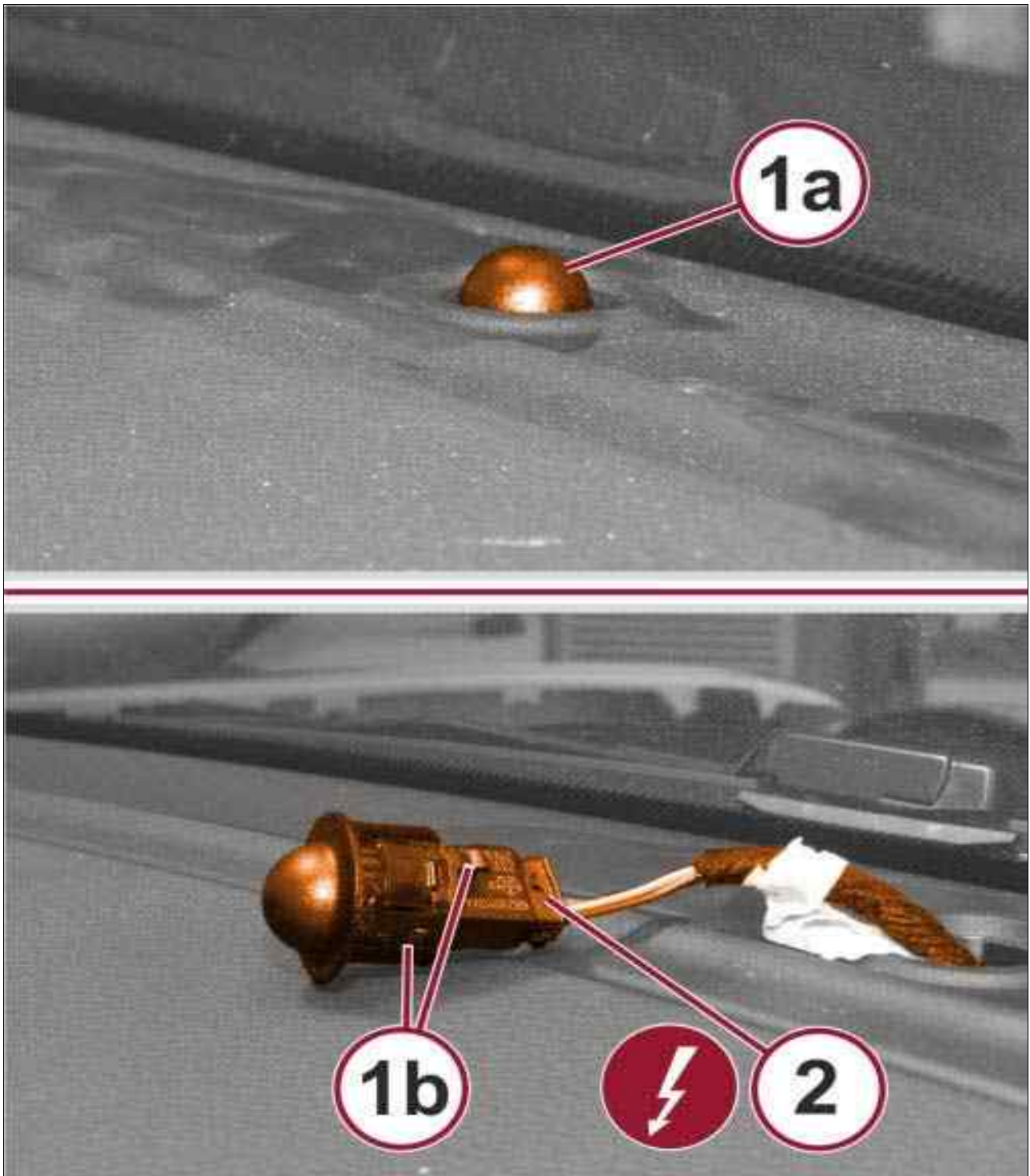
 **NOTE:**

Take the proper precautions to protect the instrument panel from cosmetic damage.

2. Using Trim Stick (special tool #C-4755, Trim Stick) or equivalent, remove the sun sensor (1a) from the defroster grille.
3. Disconnect the wire harness connector (2) from the sun sensor (1a) and remove the sensor.

**CONTROLS > SENSOR, SUN > REMOVAL AND INSTALLATION > REMOVAL AND
INSTALLATION > INSTALLATION**

Fig 1: Sun Sensor & Wire Connector



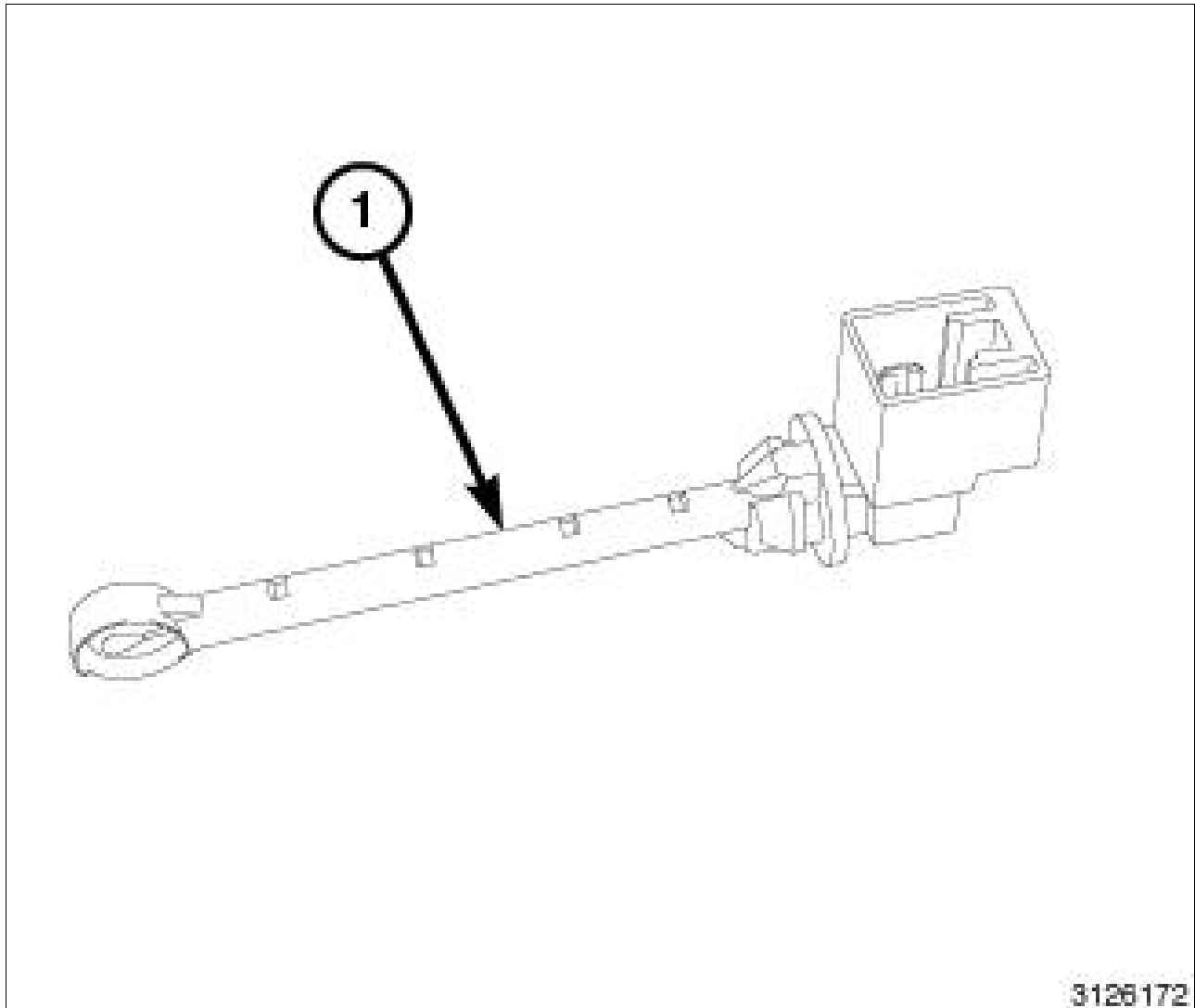
Courtesy of CHRYSLER GROUP, LLC

1. Position the sun sensor (1a) to the top of the instrument panel and connect the wire harness connector (2) to the sensor.
2. Align the tabs on the sun sensor (1b) with the slot in the opening in the defroster grille and install the sensor into the grille. Be certain that the sensor (1a) is fully engaged to the defroster grille.

3. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector to the negative battery cable.

CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: Air Outlet Temperature Sensor



Courtesy of CHRYSLER GROUP, LLC

There are four temperature sensors on the HVAC unit output. Two are on the lower part and the others are on the upper part.

These sensors are NTC type. This means that their resistance decreases when temperature increases.

The sensor resistance is about 10 kilohms at 25°C (77°F) and 32, 650 kilohms at 0°C (32°F).

The air duct temperature sensors are diagnosed using a scan tool. Refer to DIAGNOSIS AND TESTING

The air duct temperature sensors cannot be adjusted or repaired and must be replaced if inoperative or

damaged.

CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - LOWER LEFT > REMOVAL

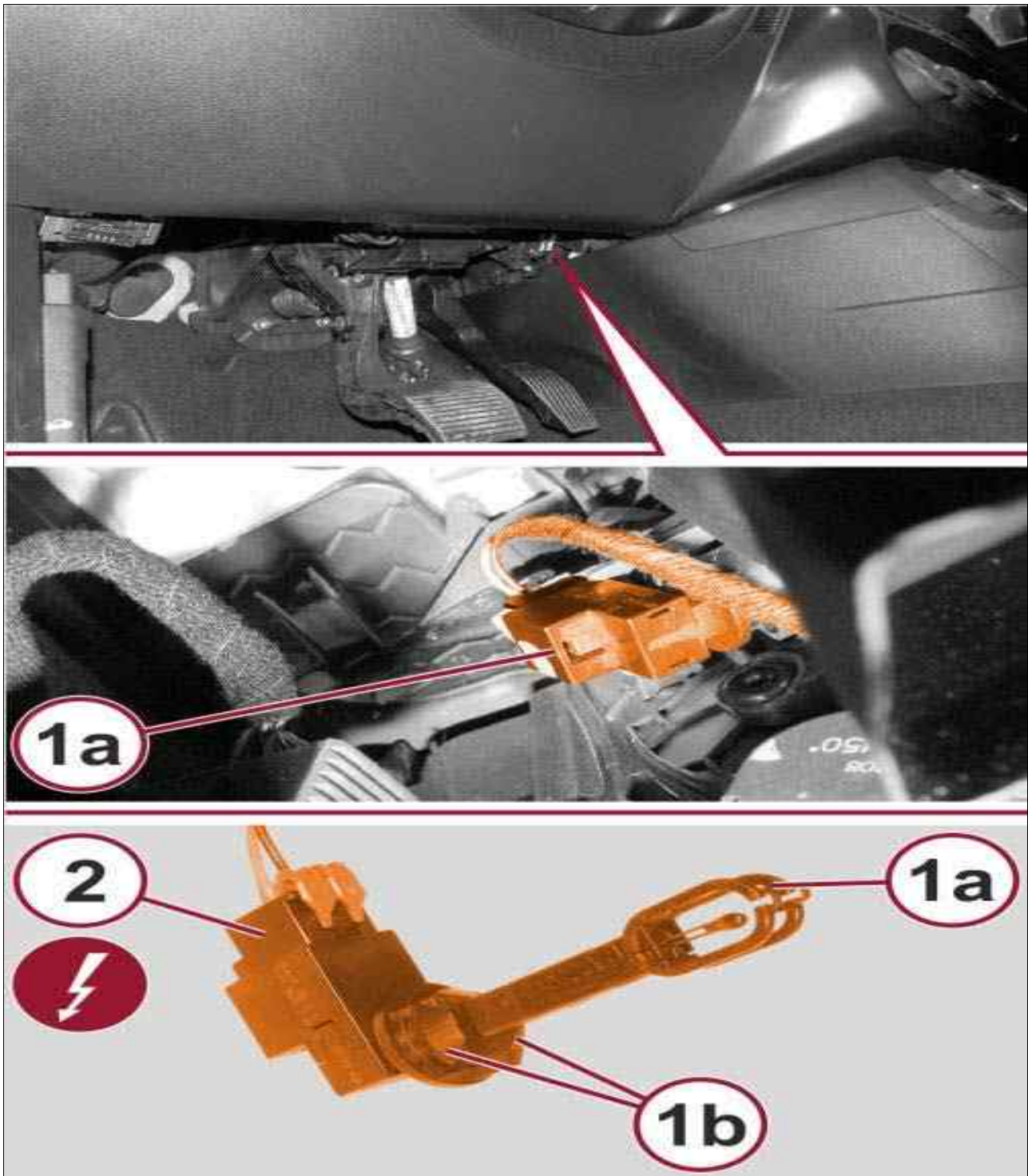
WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

WARNING:

Disable the airbag system before attempting any steering wheel, steering column or instrument panel component diagnosis or service. Disconnect and isolate the negative battery (ground) cable and wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to follow these instructions may result in accidental airbag deployment and possible serious or fatal injury.

Fig 1: Remove/Install Air Outlet Temperature Sensor - Lower Left



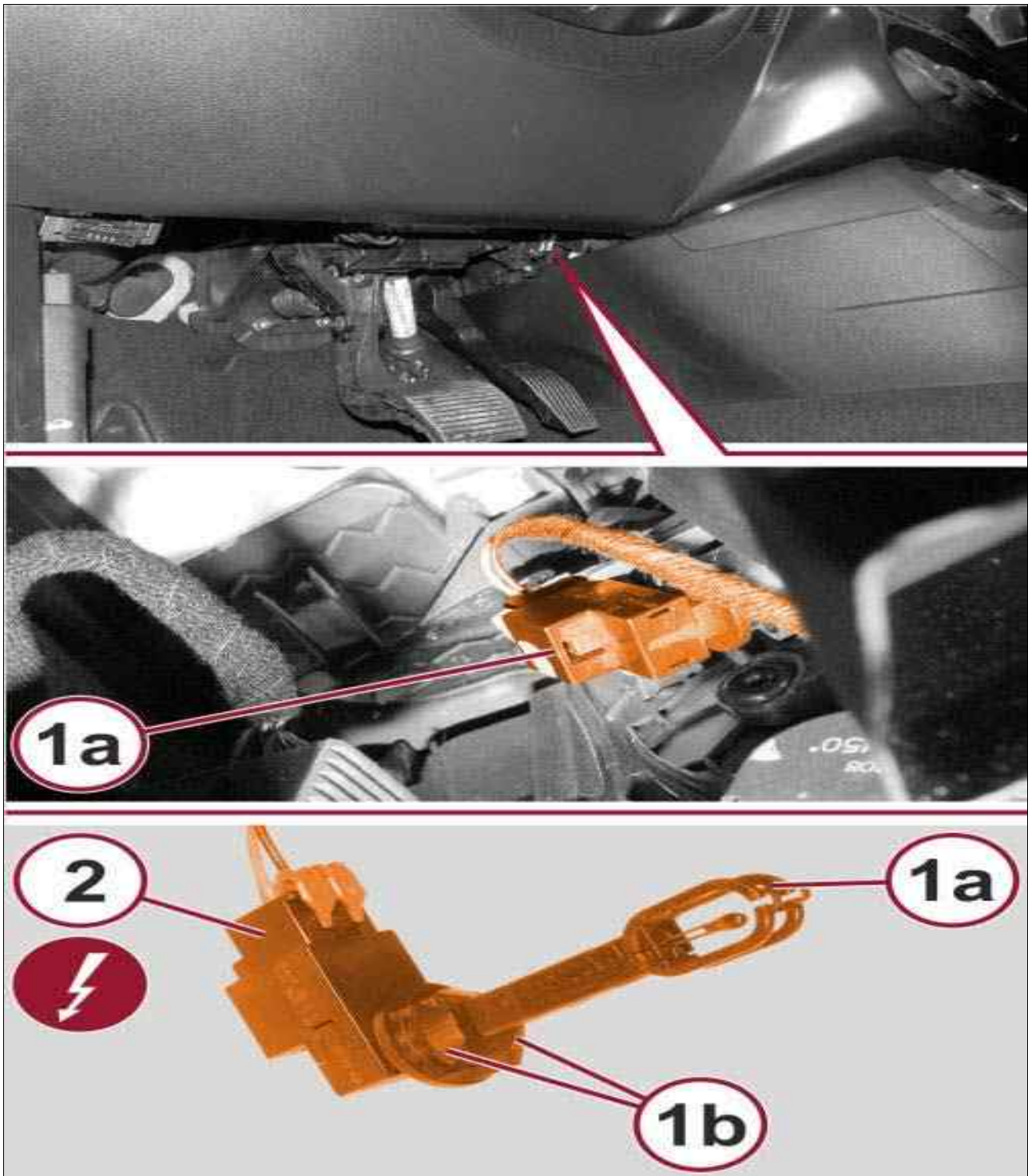
Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .

3. Disconnect the HVAC wire harness (2) from the air duct temperature sensor (1a).
4. Using Trim Stick (special tool #C-4755, Trim Stick) (3) or equivalent, disengage the air duct temperature sensor (1a) from the left side of the HVAC housing and remove the sensor.

**CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND
INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - LOWER LEFT >
INSTALLATION**

Fig 1: Remove/Install Air Outlet Temperature Sensor - Lower Left



Courtesy of CHRYSLER GROUP, LLC

1. Install the air duct temperature sensor (2) into the left side of the HVAC housing. Be certain the sensor retaining tabs (1b) are fully engaged to the housing.
2. Connect the HVAC wire harness (2) to the air duct temperature sensor (1a).
3. Install the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .

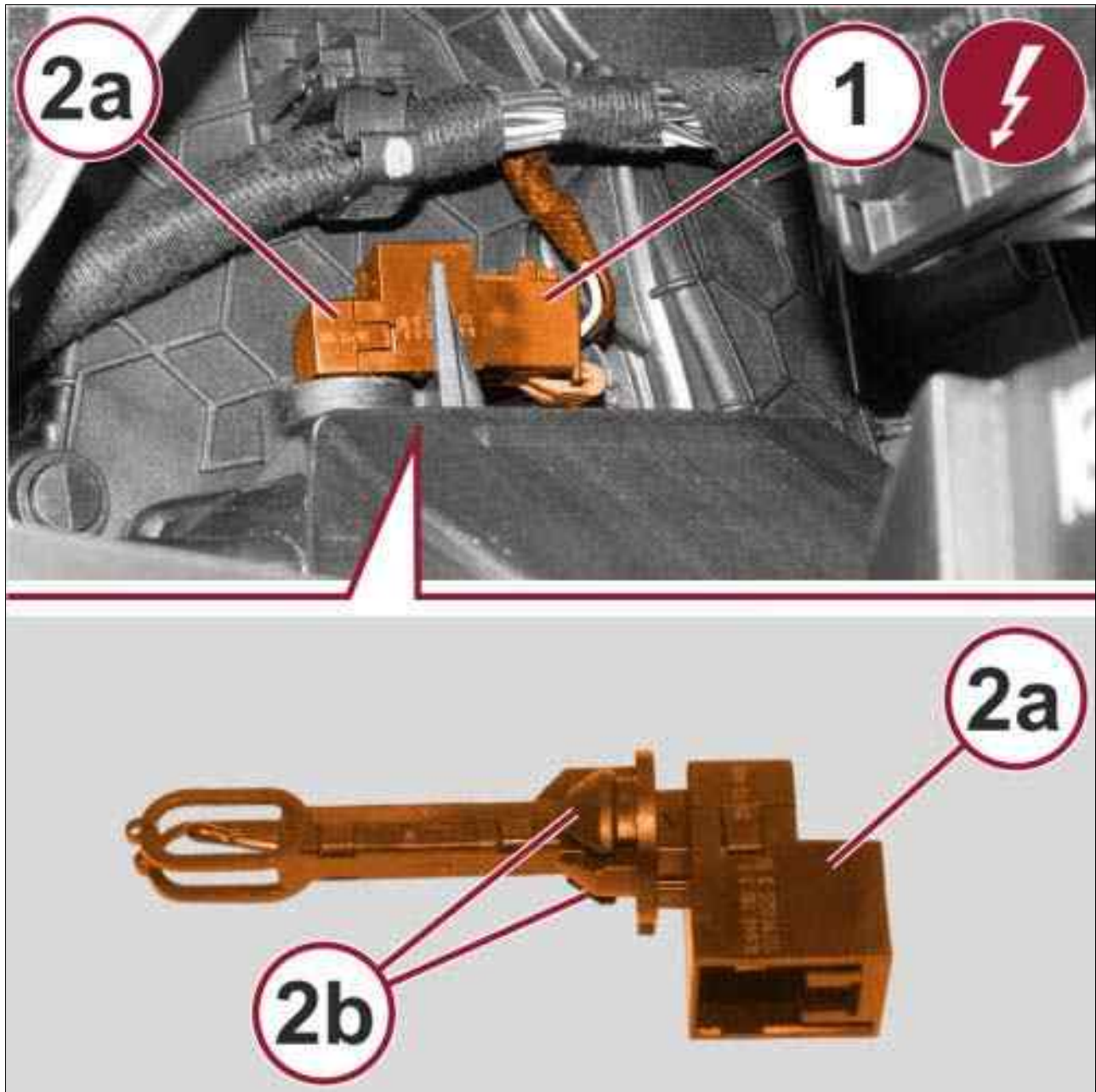
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - LOWER RIGHT > REMOVAL

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Remove/Install Air Outlet Temperature Sensor - Lower Right

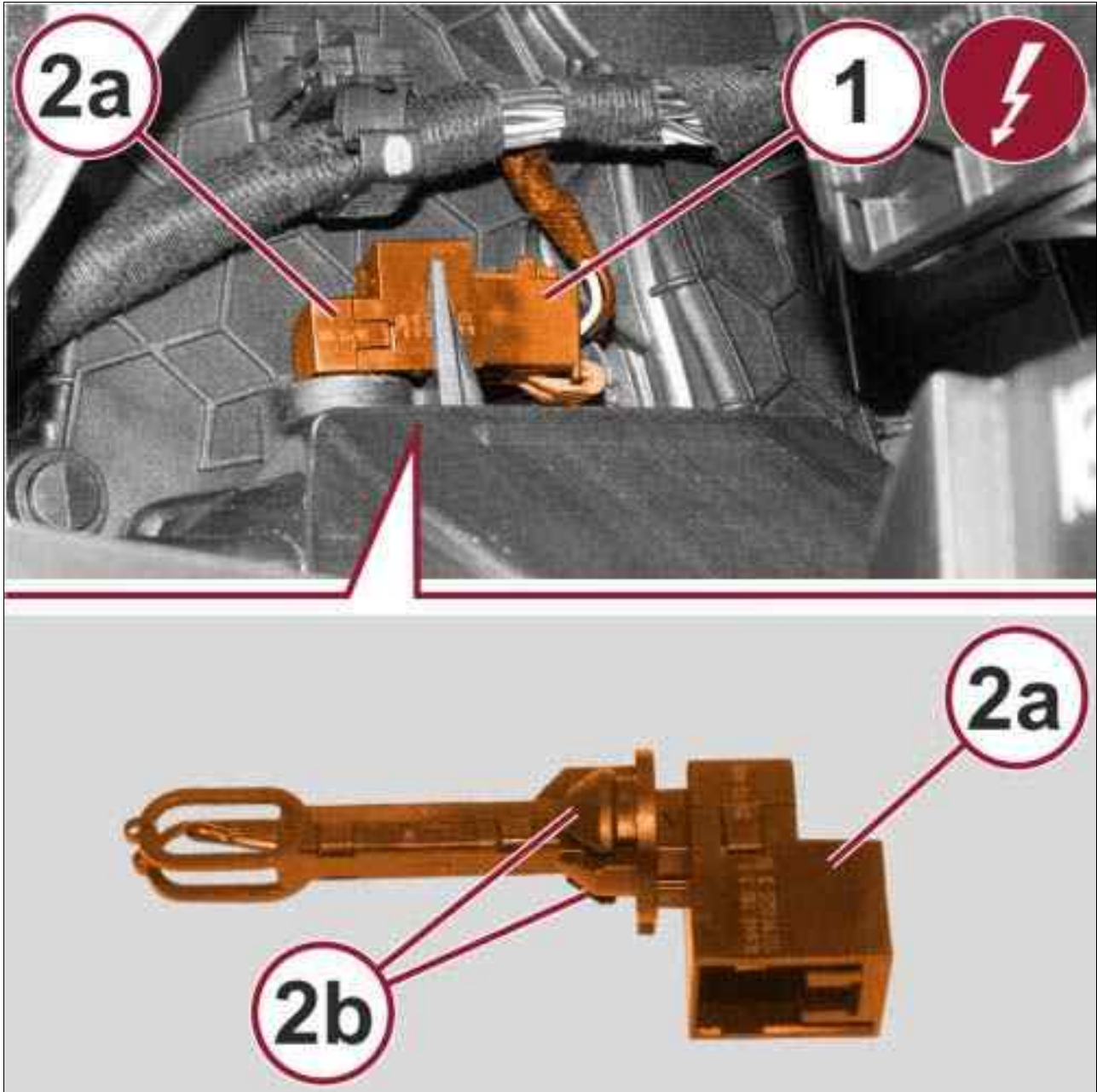


Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the instrument panel glovebox to gain access to the air duct temperature sensor (2a), located on the upper right side of the HVAC housing. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
3. Disconnect the HVAC wire harness (1) from the air duct temperature sensor (2a).
4. Using Trim Stick (special tool #C-4755, Trim Stick) (1) or equivalent, disengage the air duct temperature sensor (2a) from the right side of the HVAC housing and remove the sensor.

**CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND
INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - LOWER RIGHT >
INSTALLATION**

Fig 1: Remove/Install Air Outlet Temperature Sensor - Lower Right



Courtesy of CHRYSLER GROUP, LLC

1. Install the air duct temperature sensor (2a) into the right side of the HVAC housing. Be certain the sensor retaining tabs (2b) are fully engaged to the housing.
2. Connect the HVAC wire harness (1) to the air duct temperature sensor (2a).
3. Install the instrument panel glovebox. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL

AND INSTALLATION .

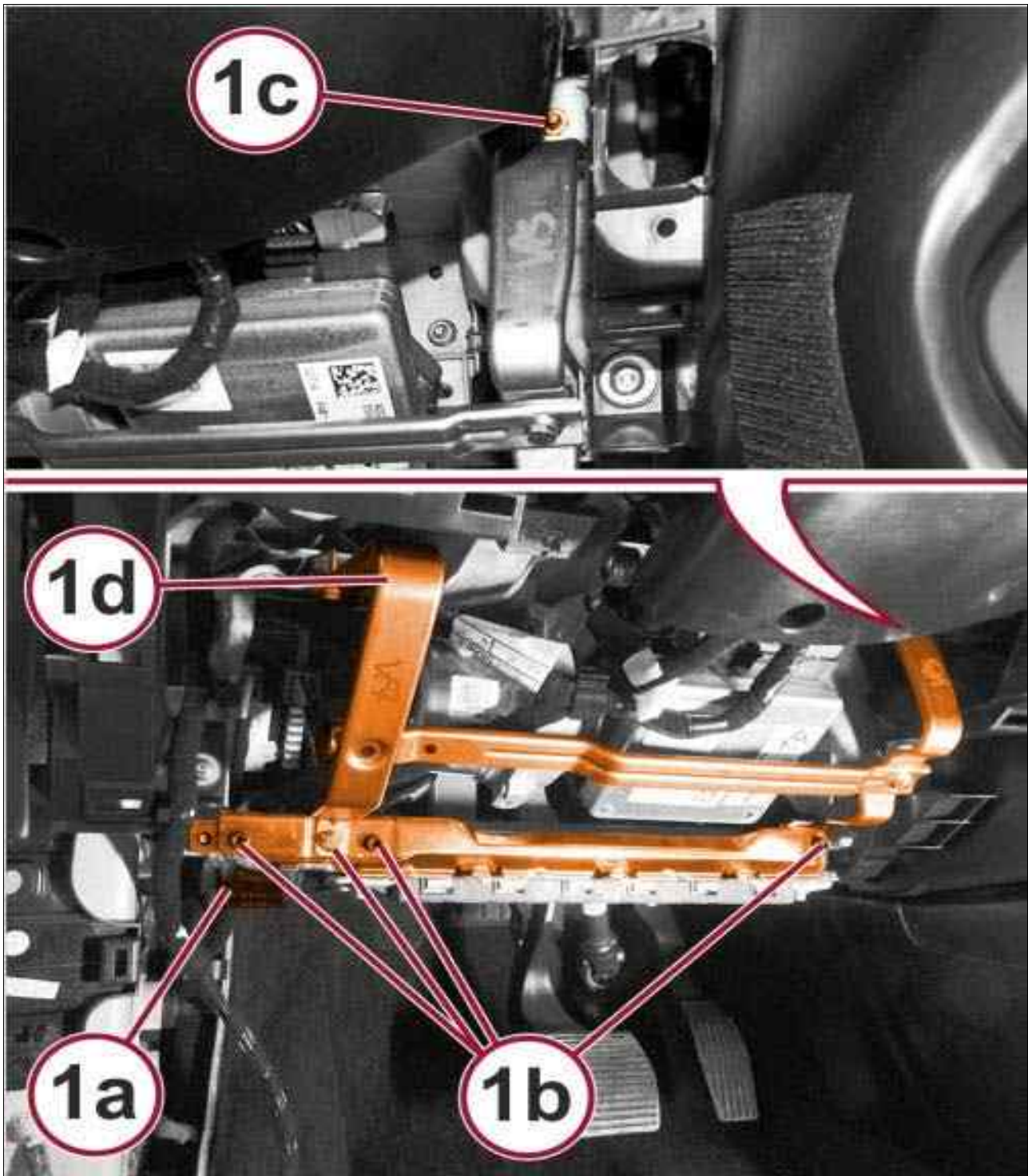
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - UPPER LEFT > REMOVAL

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Remove/Install Steering Column Opening Cover Support Bracket

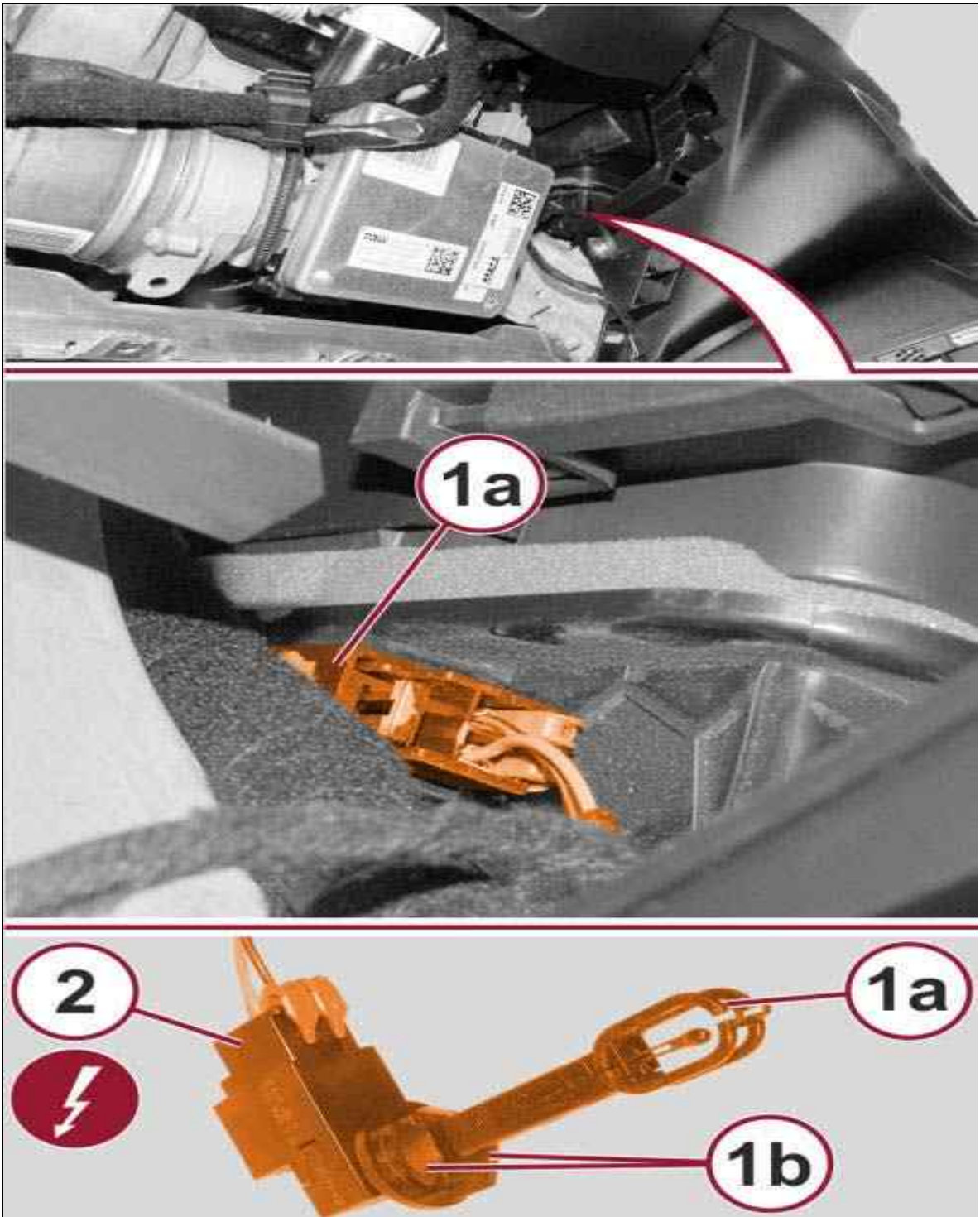


Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .

3. Disconnect the Data Link Connector (DLC) (1a) from the steering column opening cover support bracket (1d).
4. Remove the screws (1b) and the nut (1c) for the steering column opening cover support bracket (1d) and remove the bracket.

Fig 2: Remove/Install Air Outlet Temperature Sensor - Upper Left



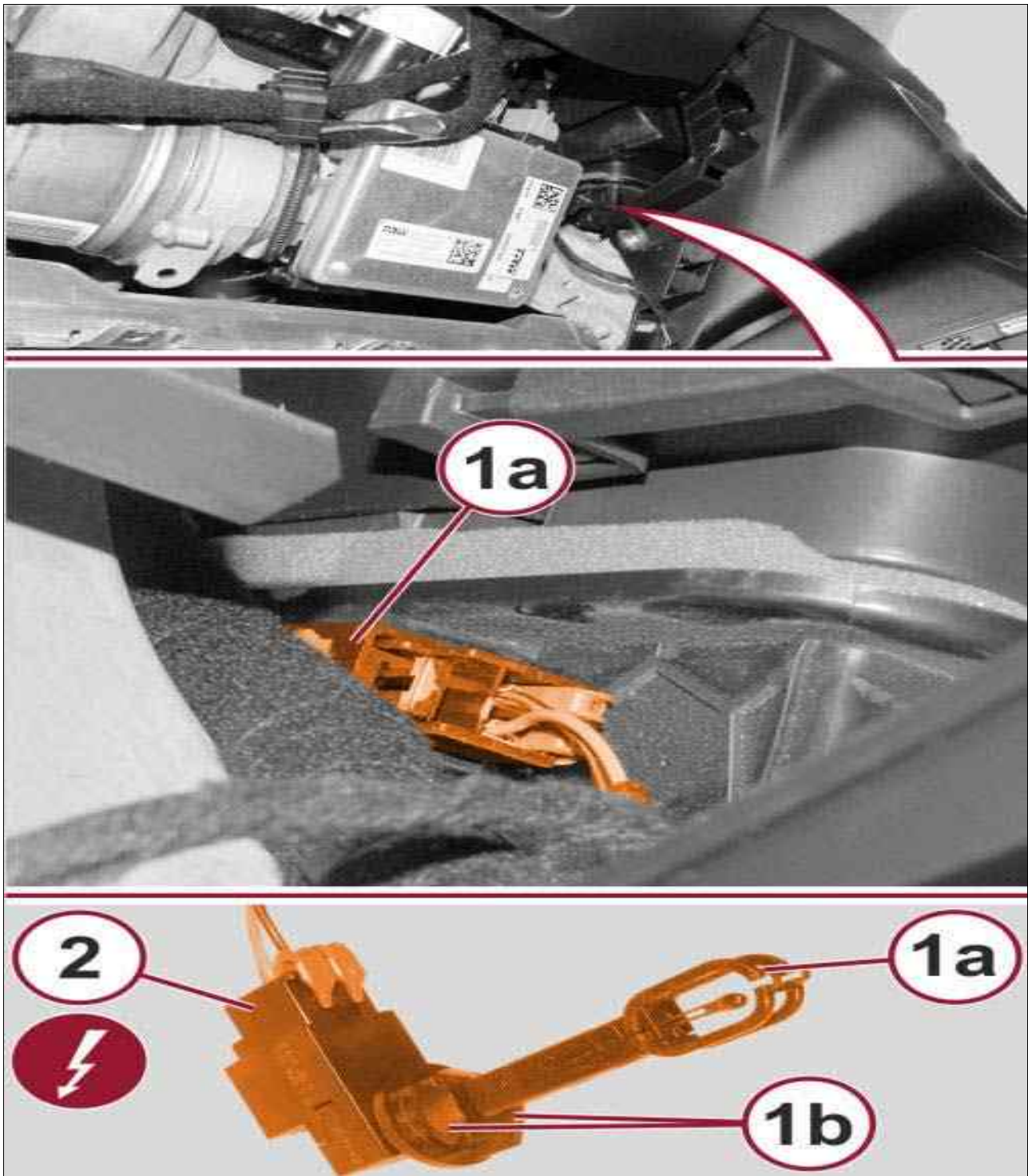
Courtesy of CHRYSLER GROUP, LLC

5. Disconnect the wire harness connector (2) from the air duct temperature sensor (1a).

6. Using Trim Stick (special tool #C-4755, Trim Stick) (3) or equivalent, disengage the air duct temperature sensor (1a) from the left side of the HVAC housing (2) and remove the sensor.

**CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND
INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - UPPER LEFT >
INSTALLATION**

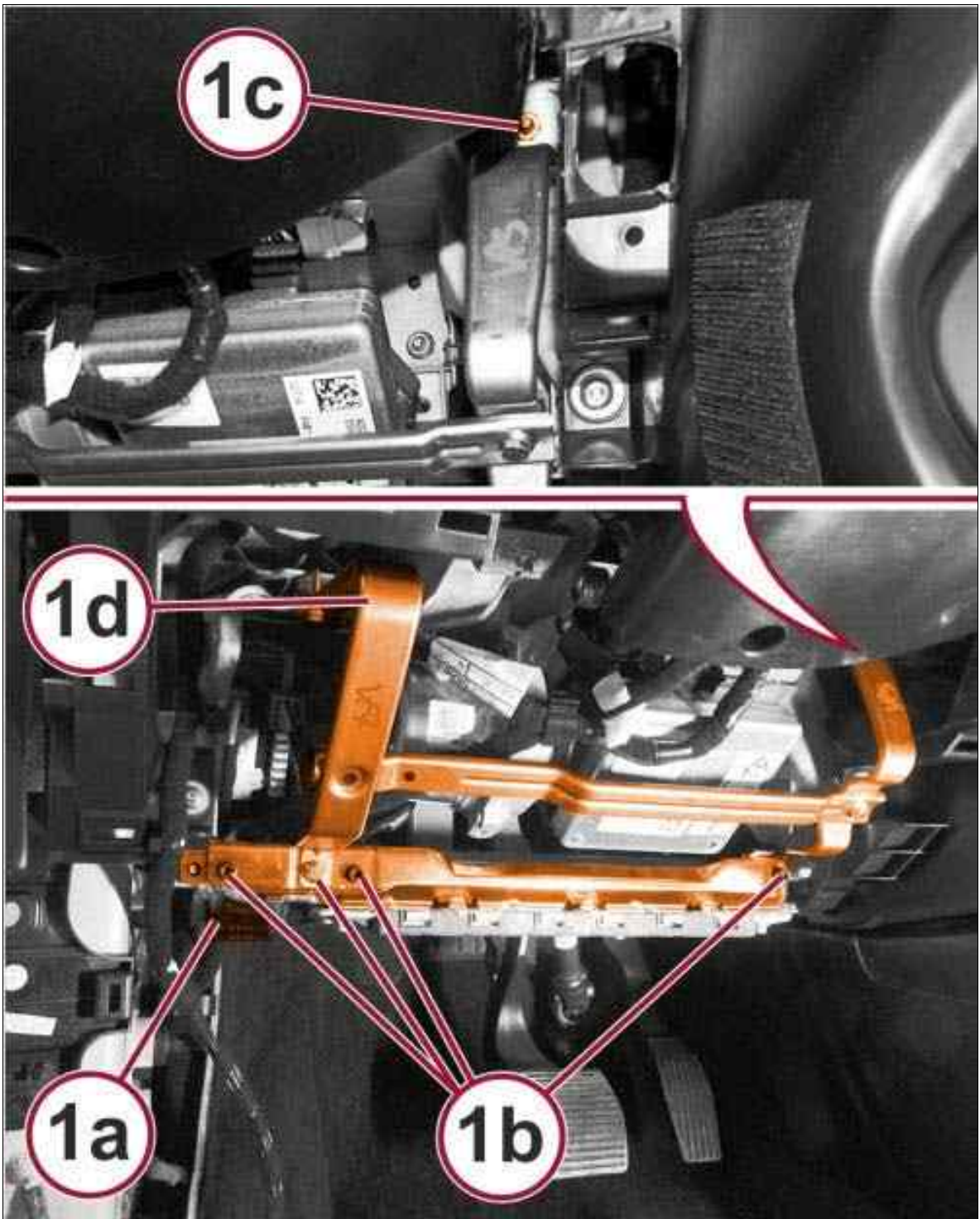
Fig 1: Remove/Install Air Outlet Temperature Sensor - Upper Left



Courtesy of CHRYSLER GROUP, LLC

1. Install the air duct temperature sensor (1a) into the left side of the HVAC housing. Be certain the sensor retaining tabs (1b) are fully engaged to the housing.
2. Connect the HVAC wire harness (2) to the air duct temperature sensor (1a).

Fig 2: Remove/Install Steering Column Opening Cover Support Bracket



Courtesy of CHRYSLER GROUP, LLC

3. Position the steering column opening cover support bracket (1d) and install the screws (1b) and the nut (1c) for the bracket (1d). Tighten the screws and nut securely.
4. Connect the Data Link Connector (DLC) (1a) to the steering column opening cover support bracket (1d).
5. Install the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING,

REMOVAL AND INSTALLATION .

6. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

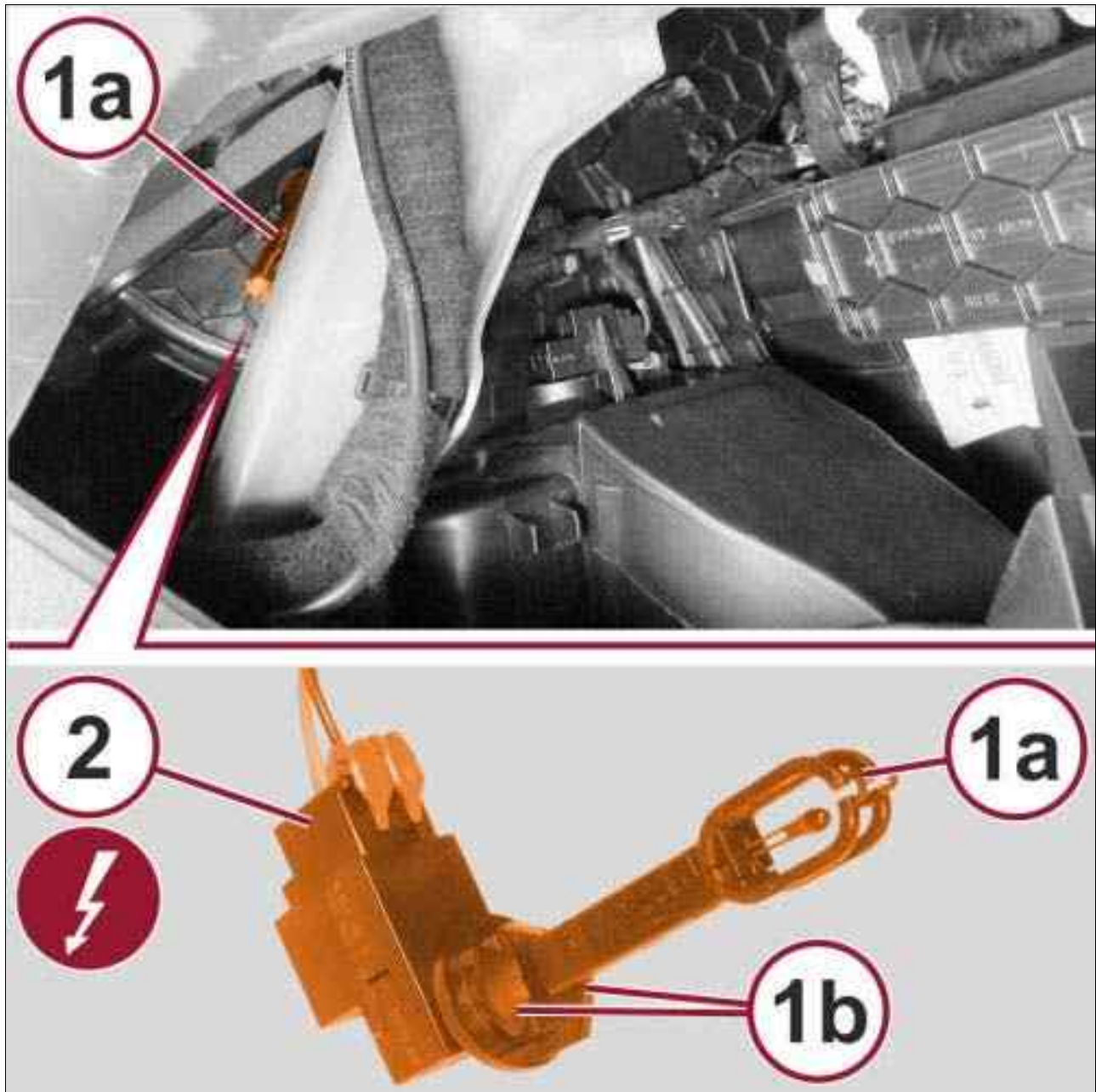
CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - UPPER RIGHT > REMOVAL



WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Remove/Install Air Outlet Temperature Sensor - Upper Right

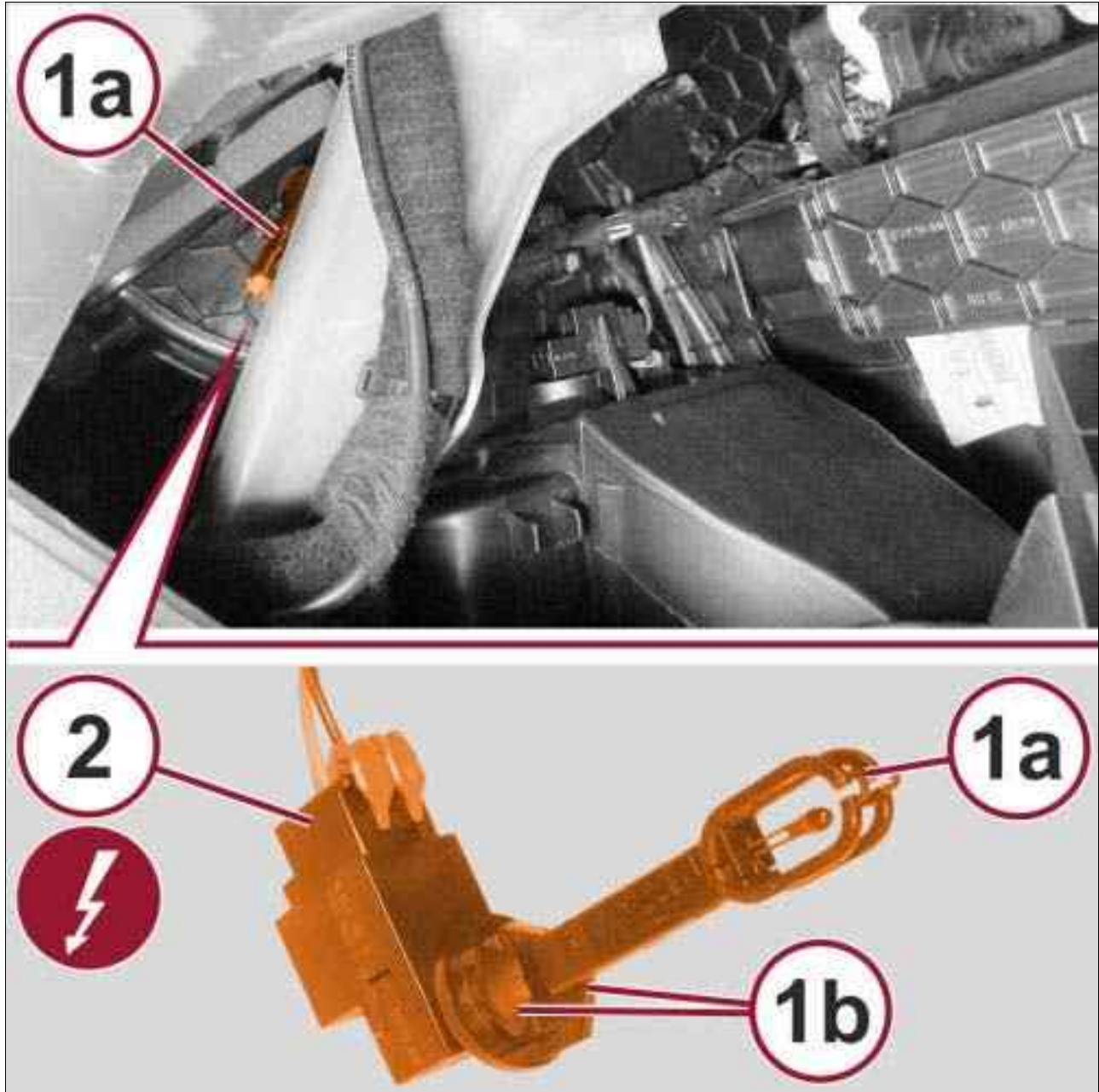


Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the instrument panel glovebox to gain access to the air duct temperature sensor (1a), located on the upper right side of the HVAC housing. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
3. Disconnect the HVAC wire harness (2) from the air duct temperature sensor (1a).
4. Using Trim Stick (special tool #C-4755, Trim Stick) (1) or equivalent, disengage the air duct temperature sensor (1a) from the right side of the HVAC housing and remove the sensor.

**CONTROLS > SENSOR, TEMPERATURE, AIR OUTLET > REMOVAL AND
INSTALLATION > AIR OUTLET TEMPERATURE SENSOR - UPPER RIGHT >
INSTALLATION**

Fig 1: Remove/Install Air Outlet Temperature Sensor - Upper Right



Courtesy of CHRYSLER GROUP, LLC

1. Install the air duct temperature sensor (1a) into the right side of the HVAC housing. Be certain the sensor retaining tabs (1b) are fully engaged to the housing.
2. Connect the HVAC wire harness (2) to the air duct temperature sensor (1a).
3. Install the instrument panel glovebox. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL

AND INSTALLATION .

4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

CONTROLS > SENSOR, TEMPERATURE, IN-CAR > DESCRIPTION AND OPERATION > DESCRIPTION

The Heating, Ventilation, and Air Conditioning (HVAC) module uses an in-vehicle temperature sensor to activate the correct operating strategy for the conditioning system.

Sensor specifications:

Function	Unit	Min.	Rated	Max.
Operating temperature	°C (°F)	-40 (-40)	23 (73.4)	+85 (+185)
Operating power supply	V _{DC}	8	12	16
Operating current	mA			100

CONTROLS > SENSOR, TEMPERATURE, IN-CAR > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

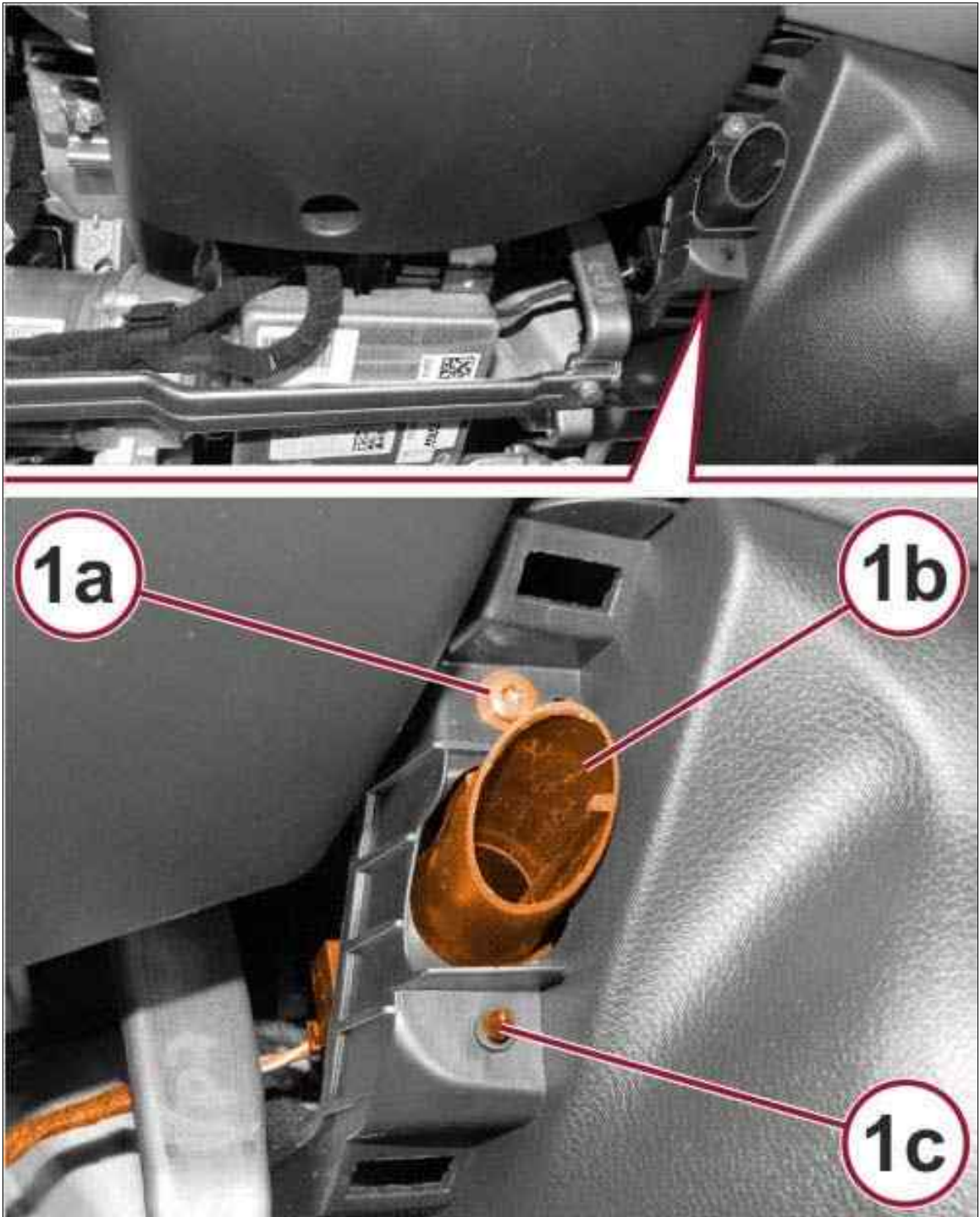


NOTE:

Take the proper precautions to protect the face of the steering column opening cover from cosmetic damage while performing this procedure.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .

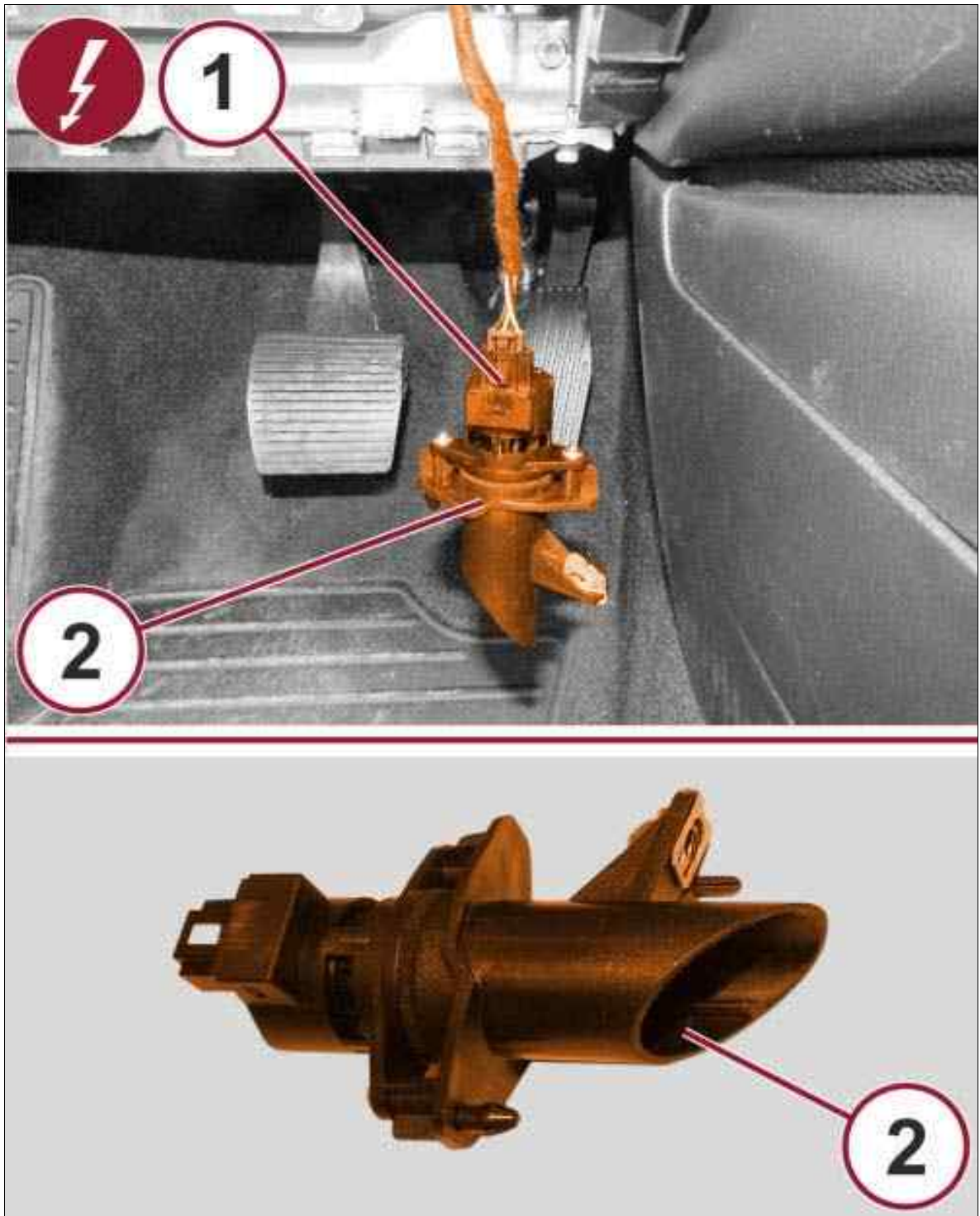
Fig 1: Remove/Install In-Car Temperature Sensor



Courtesy of CHRYSLER GROUP, LLC

3. Remove the screw (1a) that secures the in-car temperature sensor (1b) to the instrument panel and remove the sensor from the instrument panel.

Fig 2: In-Car Temperature Sensor & Wire Connector



Courtesy of CHRYSLER GROUP, LLC

4. Disconnect the wire harness connector (1) from the in-car temperature sensor (2) and remove the sensor from the vehicle.

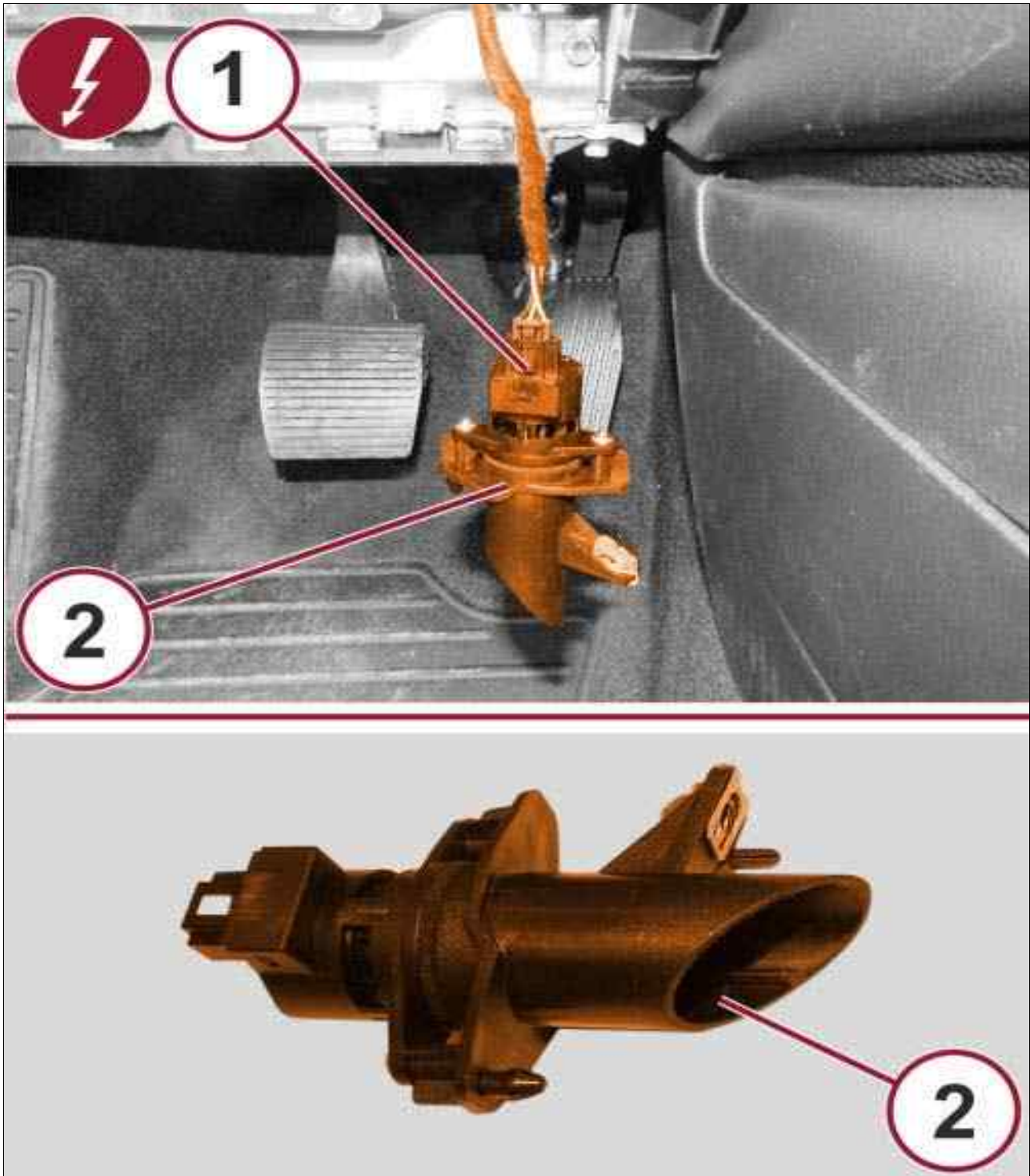
CONTROLS > SENSOR, TEMPERATURE, IN-CAR > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION



NOTE:

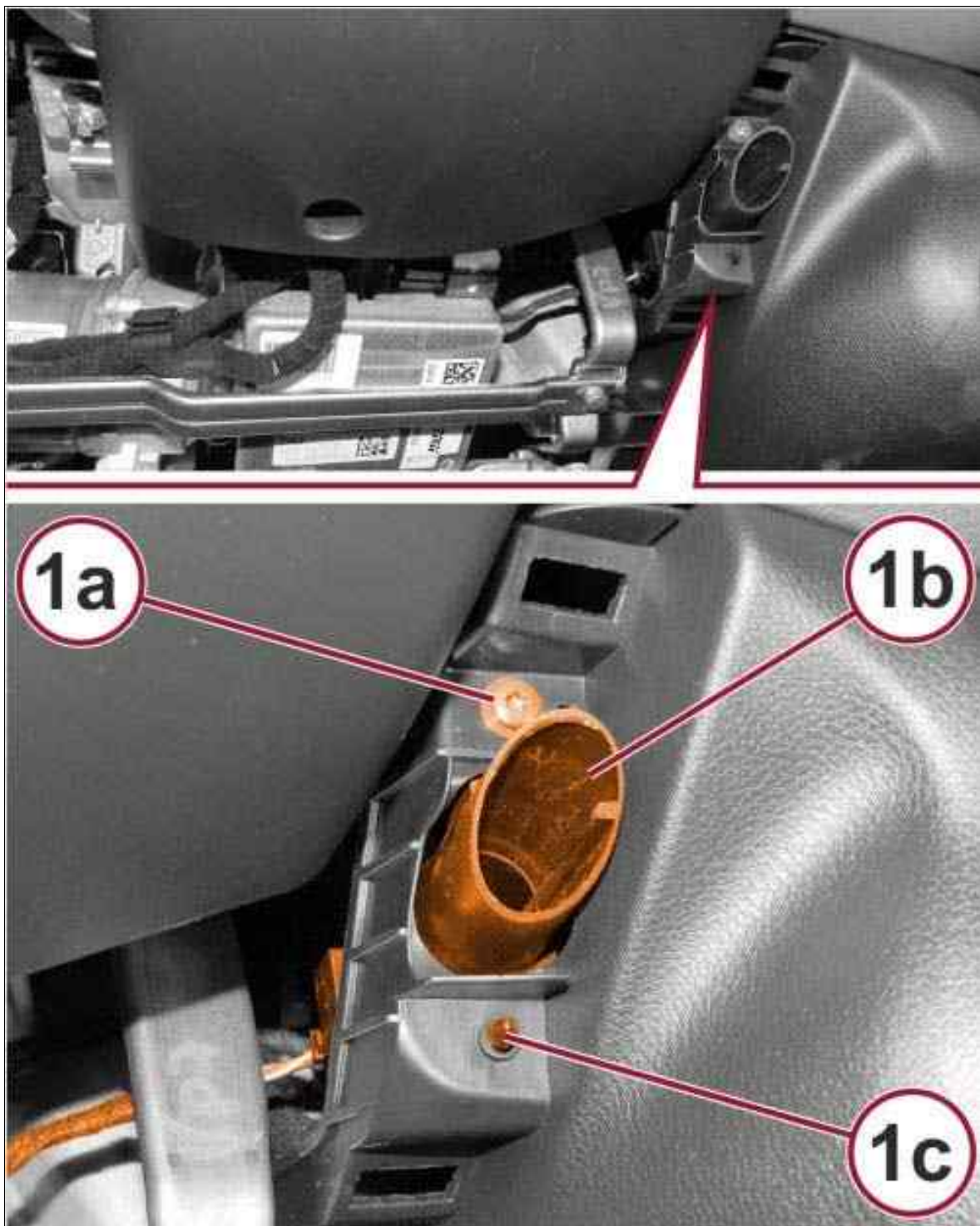
Take the proper precautions to protect the face of the steering column opening cover from cosmetic damage while performing this procedure.

Fig 1: In-Car Temperature Sensor & Wire Connector



1. Position the in-car temperature sensor (2) to connect the wire harness connector (1) to the sensor.

Fig 2: Remove/Install In-Car Temperature Sensor



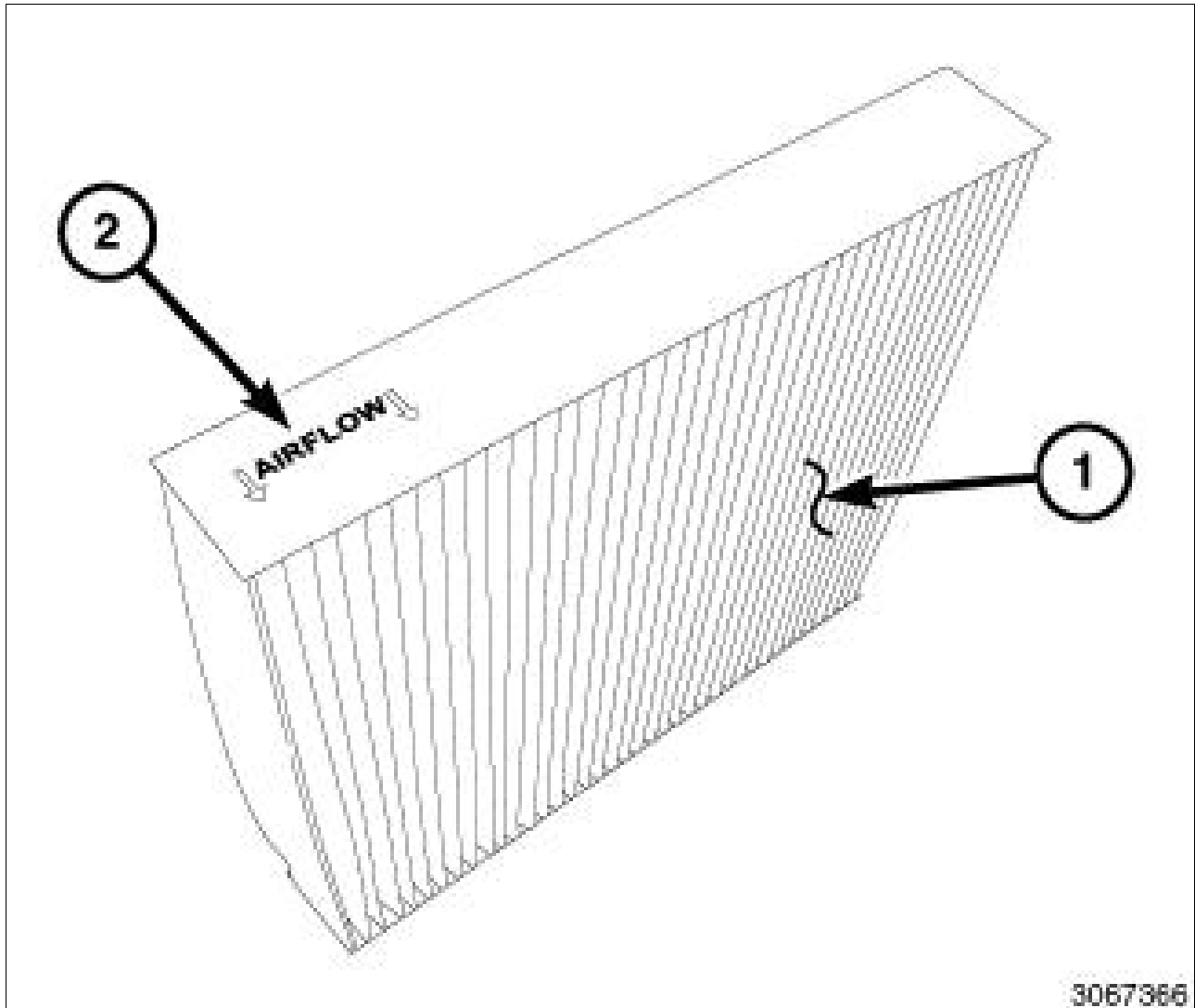
Courtesy of CHRYSLER GROUP, LLC

2. Position the in-car temperature sensor (1b) to the instrument panel, guiding the aligning pin (1c) on the sensor to the instrument panel.
3. Install the screw (1a) that secures the in-car temperature sensor (1b) to the instrument panel. Tighten the screw securely.

4. Install the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .
5. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector to the negative battery cable.

DISTRIBUTION > FILTER, CABIN AIR > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION

Fig 1: Particulate Air Filter (Cabin Air Filter)



Courtesy of CHRYSLER GROUP, LLC

Some models are equipped with a cabin air filter (1) that helps purify the outside air entering the vehicle. The cabin air filter is mounted in the HVAC housing, behind the glove box bin.

The filter should be replaced at least once a year or every 24, 000 km (15, 000 miles), and checked if the heating and A/C system performance seems lower than expected. The cabin air filter is labeled with an arrow (2) to indicate the direction of air flow through the filter.

DISTRIBUTION > FILTER, CABIN AIR > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

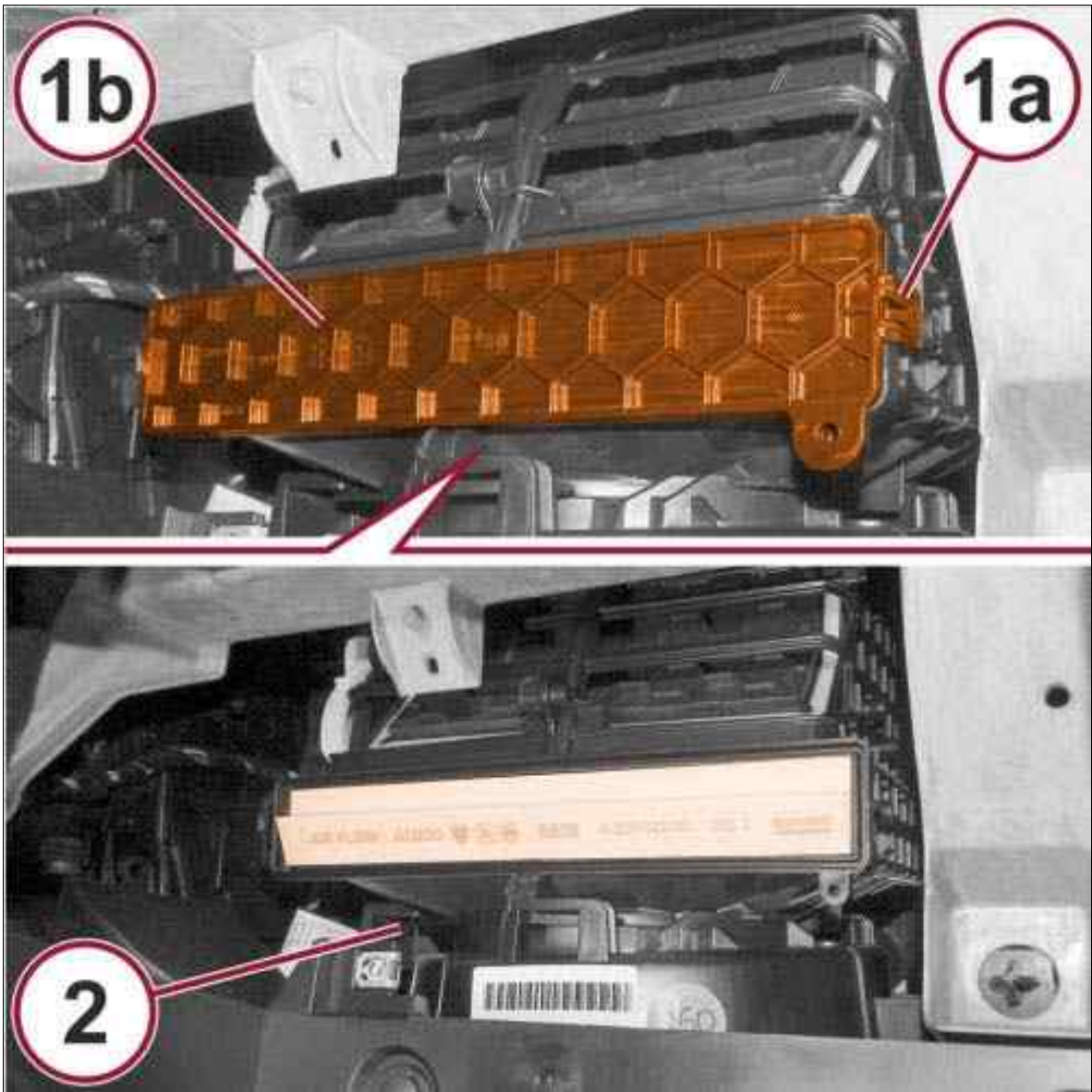


WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the glove box. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

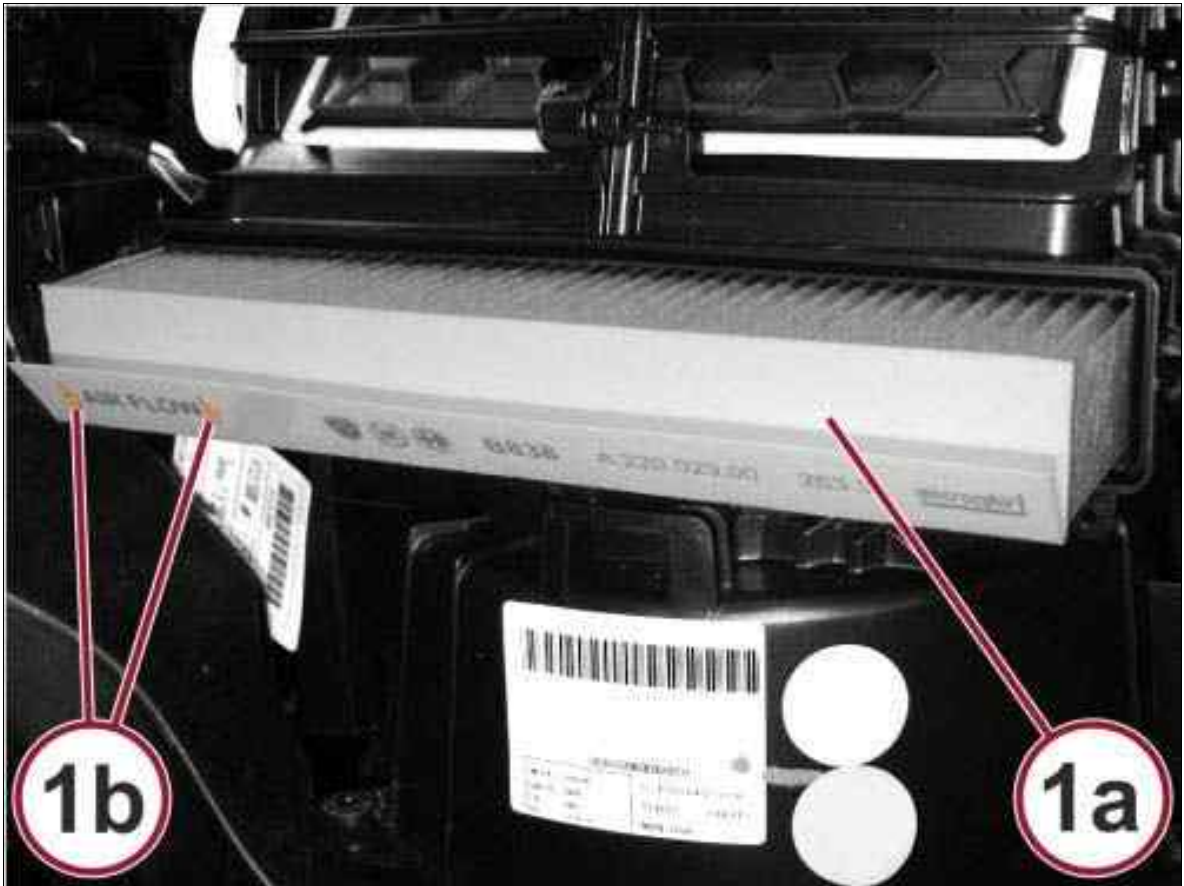
Fig 1: Remove/Install Cabin Filter



Courtesy of CHRYSLER GROUP, LLC

3. Release the retainer (1a) and remove the cover (1b) for the cabin filter.

Fig 2: Cabin Filter Air Flow Direction



Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Make note of the air flow direction (1b).

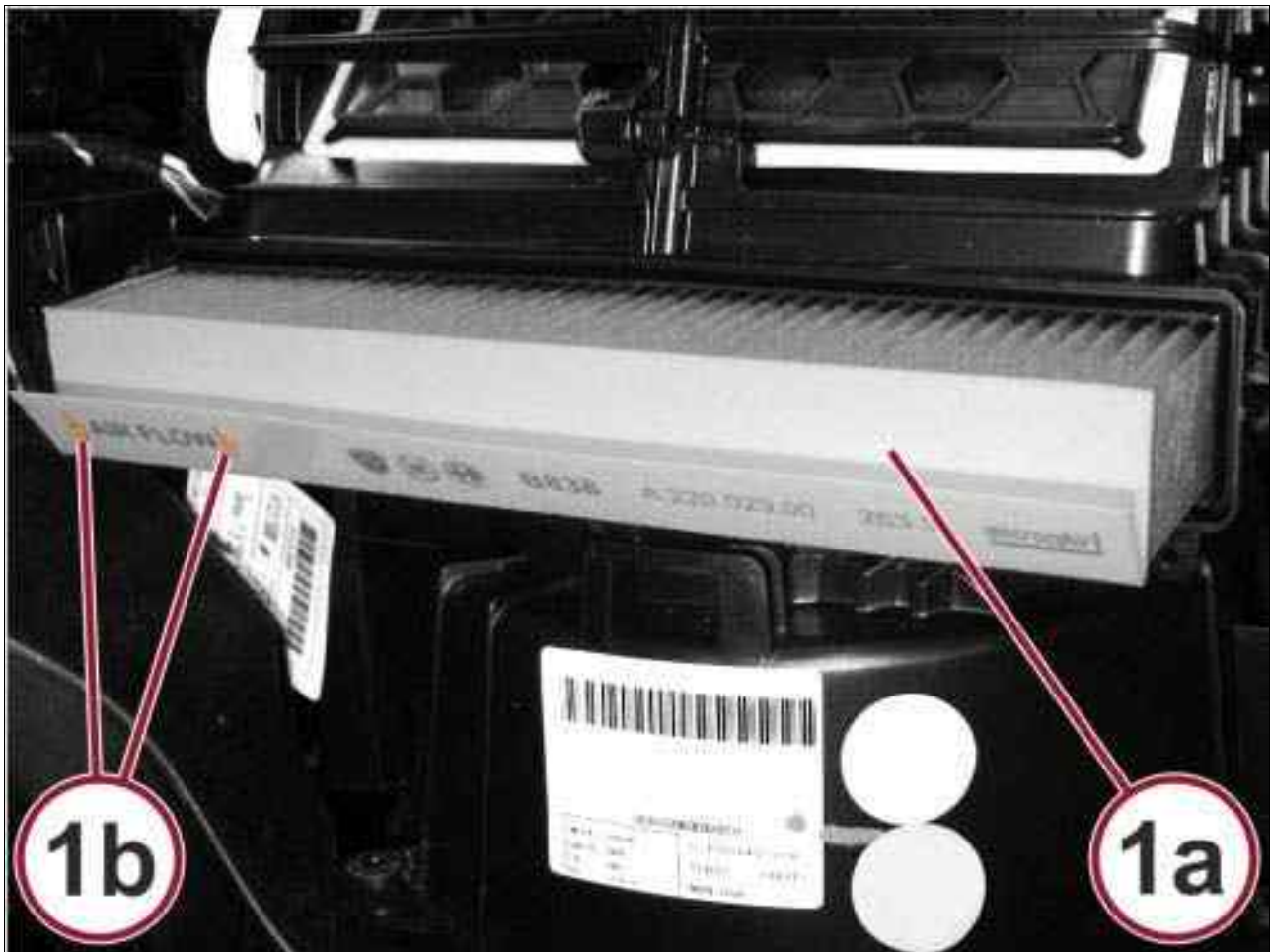
4. Remove the cabin air filter (1a) from HVAC housing by pulling the filter element straight out of the housing.

DISTRIBUTION > FILTER, CABIN AIR > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

 **NOTE:**

The cabin air filter is labeled with an arrow to indicate air flow direction through the filter. Make sure to properly install the cabin air filter. Failure to properly install the filter will result in the need to replace the filter sooner than required by design.

Fig 1: Cabin Filter Air Flow Direction

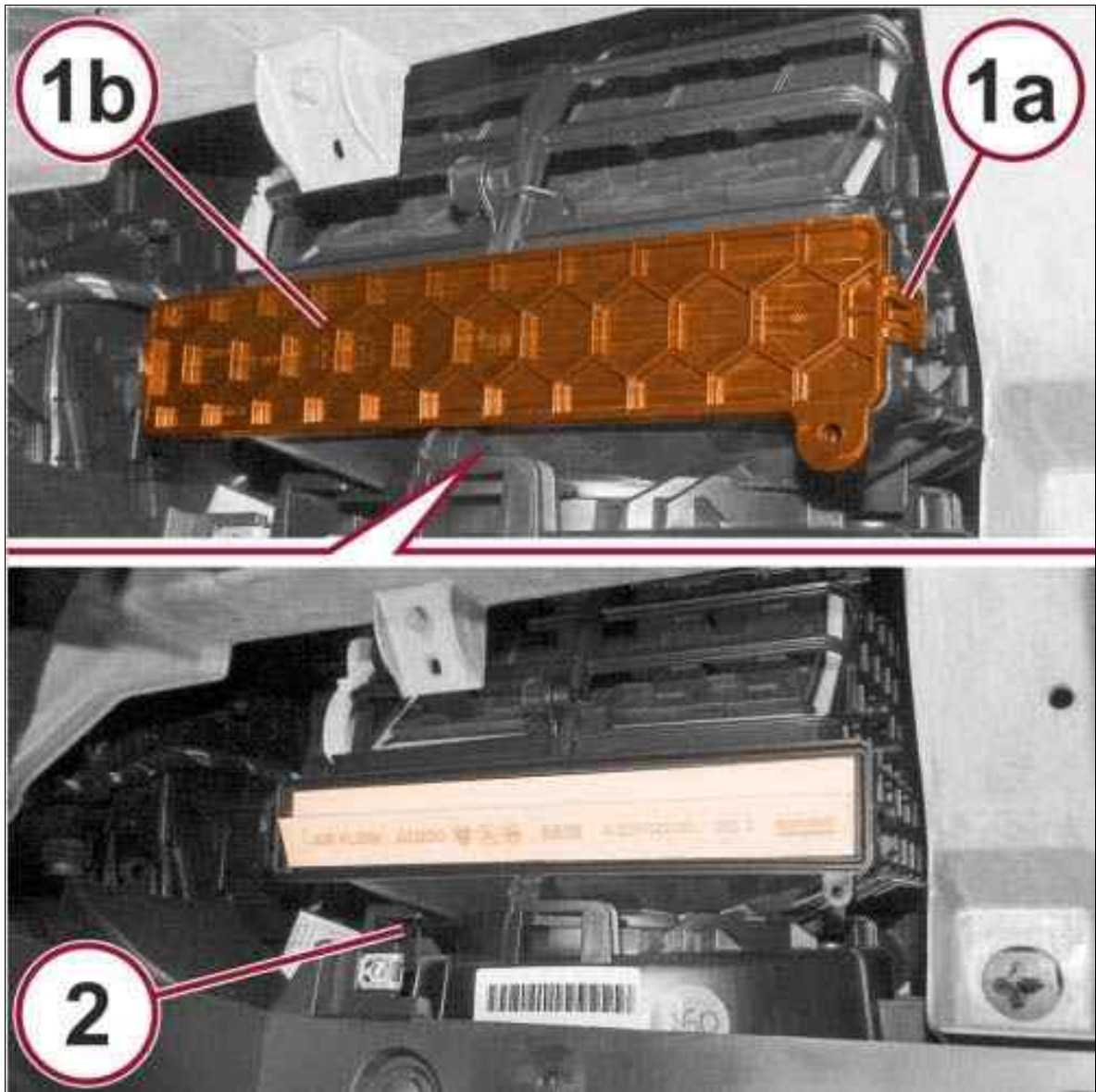


Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Make note of the air flow direction (1b).

Fig 2: Remove/Install Cabin Filter



Courtesy of CHRYSLER GROUP, LLC

1. Install the cabin air filter (1a) into the HVAC housing.
2. Install the cabin air filter cover (1b) onto the HVAC housing (2) and engage the retaining clip (1a).
3. Install the glove box. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

**DISTRIBUTION > HOUSING, HVAC > REMOVAL AND INSTALLATION >
HOUSING-HVAC > REMOVAL**

 WARNING:

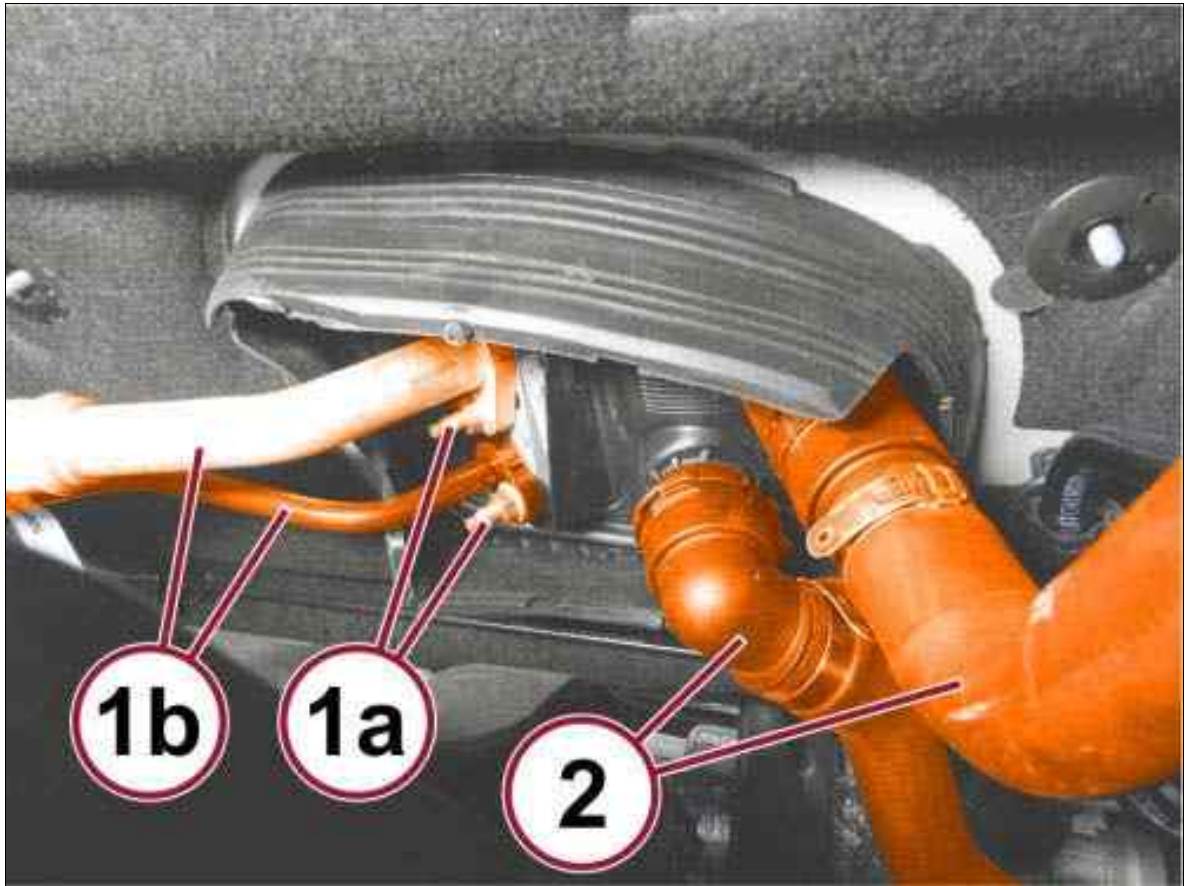
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

 WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

1. Remove the instrument panel cover. Refer to COVER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .
2. Remove the engine cover and clean air hose. (Refer to REMOVAL AND INSTALLATION - 1.4L or REMOVAL AND INSTALLATION - 2.4L).
3. Partially drain the engine cooling system. Refer to STANDARD PROCEDURE .
4. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

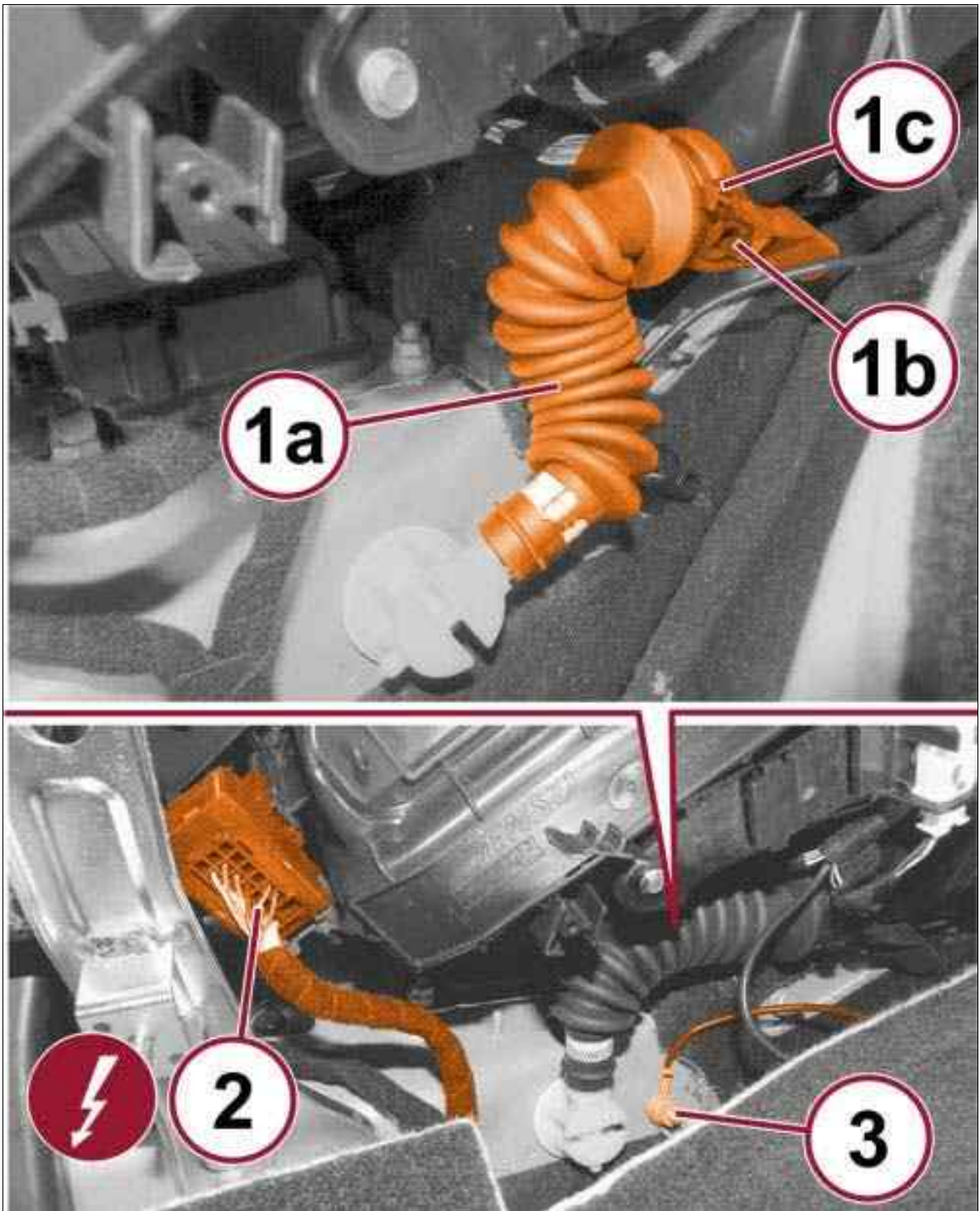
Fig 1: Heater Hoses, A/C Suction Lines, A/C Liquid Lines & Nuts



Courtesy of CHRYSLER GROUP, LLC

5. Disengage the two tabs that secure each heater hose connector (2) to the heater core tubes and disconnect the connectors from the tubes.
6. Install plugs in, or tape over the open heater core tubes to prevent coolant spillage inside the vehicle during HVAC housing removal.
7. Remove the two nuts (1a) that secure the A/C suction and A/C liquid lines (1b) to the A/C expansion valve.
8. Disconnect the A/C suction and liquid lines (1) from the A/C expansion valve (2). Remove and discard the seal washers.
9. Install plugs in, or tape over the open refrigerant line fittings and the A/C expansion valve ports.
10. Remove the instrument panel carrier. Refer to CARRIER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

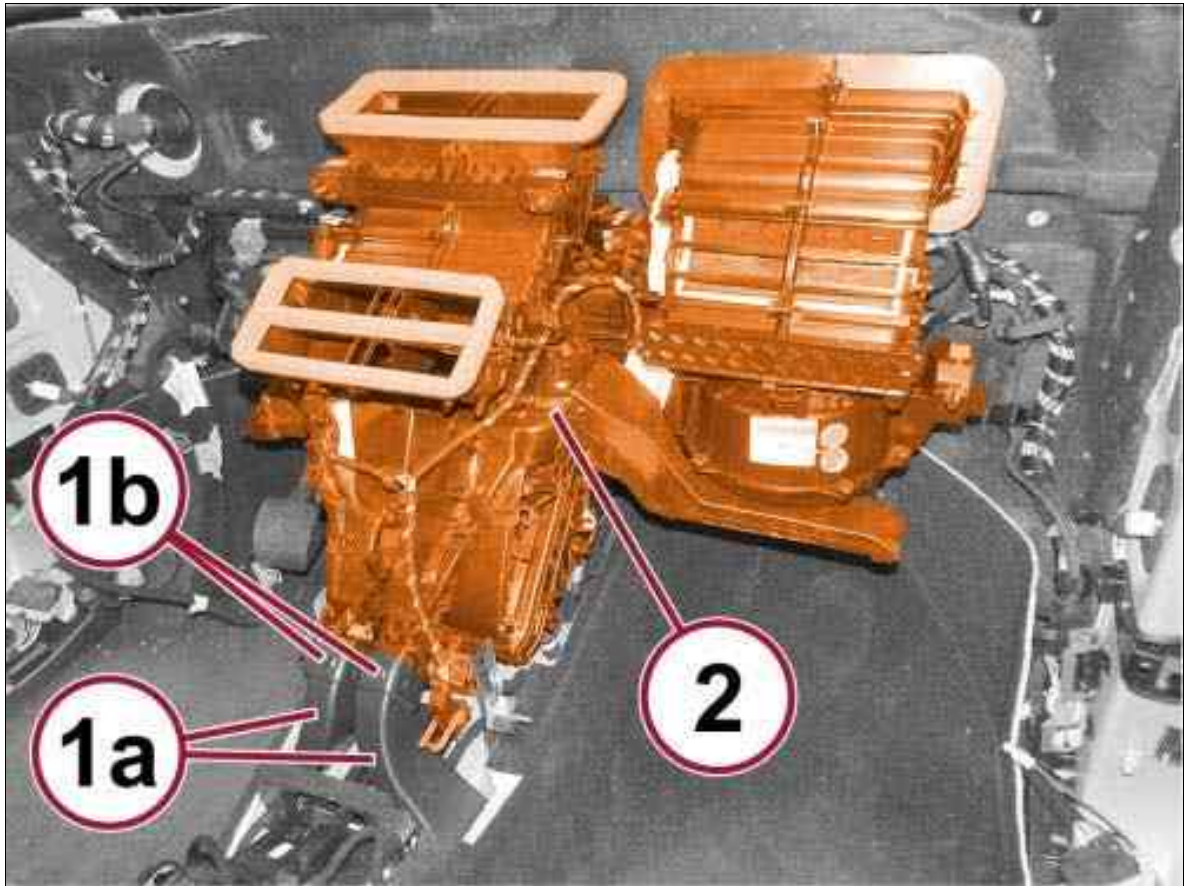
Fig 2: Condensation Tube Clamp, Retainer, Wire Harness & Ground Wire Nut



Courtesy of CHRYSLER GROUP, LLC

11. Remove the condensation tube clamp (1c) and disengage the tube retainer (1b) from the HVAC housing. Remove the condensation tube from the HVAC housing.
12. Disconnect the vehicle wire harness (2) from the HVAC wire harness.
13. Remove the nut (3) from the ground wire floor stud and disconnect the ground wire from the vehicle.

Fig 3: HVAC Housing, Rear Air Floor Ducts & Connecting Points



Courtesy of CHRYSLER GROUP, LLC

14. Disconnect the rear air floor ducts (1a) from the HVAC housing at the connecting points (1b).
15. Remove the HVAC housing (2) from the vehicle.

DISTRIBUTION > HOUSING, HVAC > REMOVAL AND INSTALLATION > HOUSING-HVAC > INSTALLATION



NOTE:

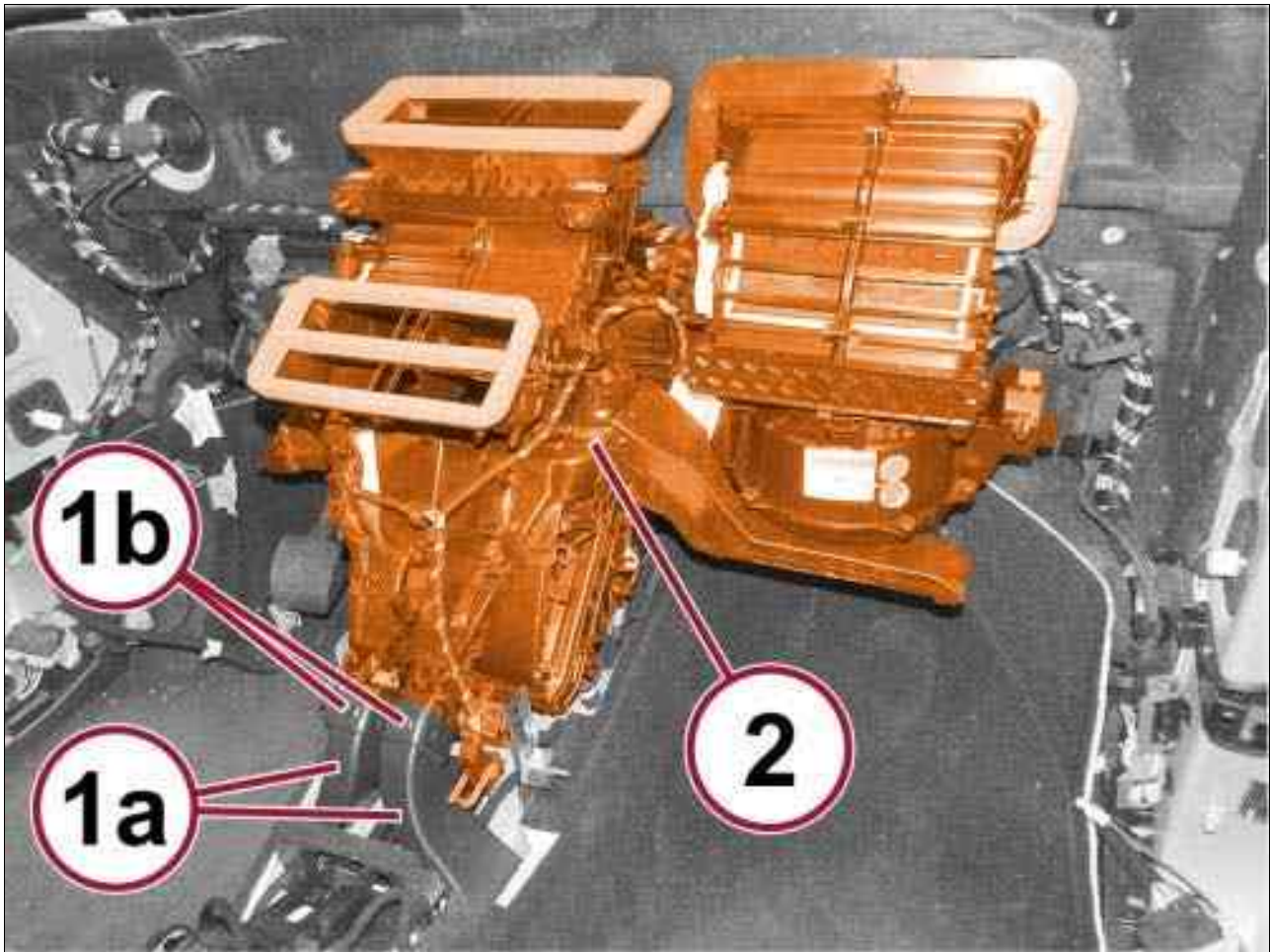
If a foam seal on the HVAC housing or air inlet housing is deformed or damaged, the seal must be replaced.



NOTE:

Replacement of the seal washers is required anytime a refrigerant line or A/C expansion valve is disconnected. Failure to replace the seal washers may result in a refrigerant system leak.

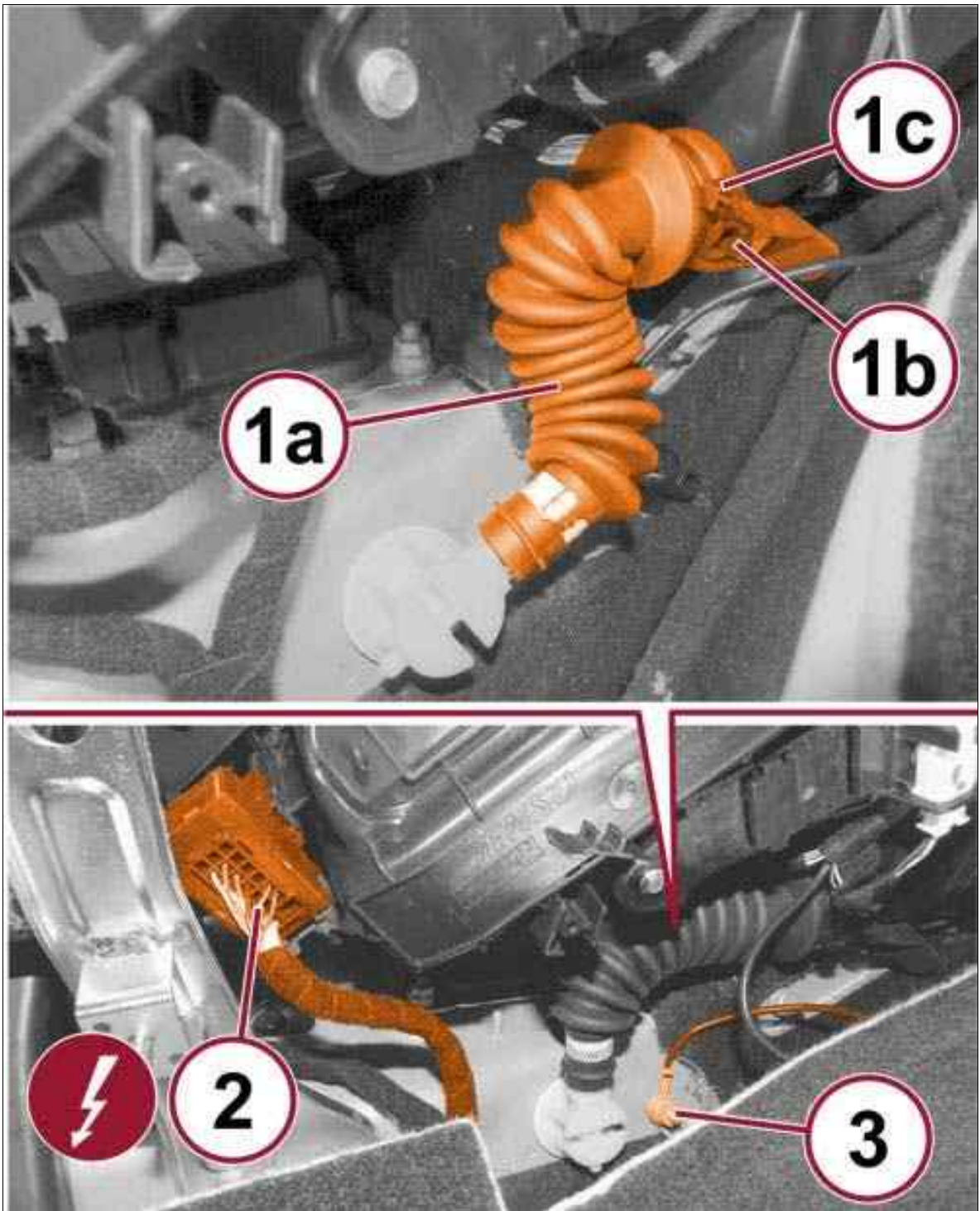
Fig 1: HVAC Housing, Rear Air Floor Ducts & Connecting Points



Courtesy of CHRYSLER GROUP, LLC

1. Position the HVAC housing (2) to the dash panel.
2. Connect the rear air floor ducts (1a) to the HVAC housing at the connecting points (1b).

Fig 2: Condensation Tube Clamp, Retainer, Wire Harness & Ground Wire Nut

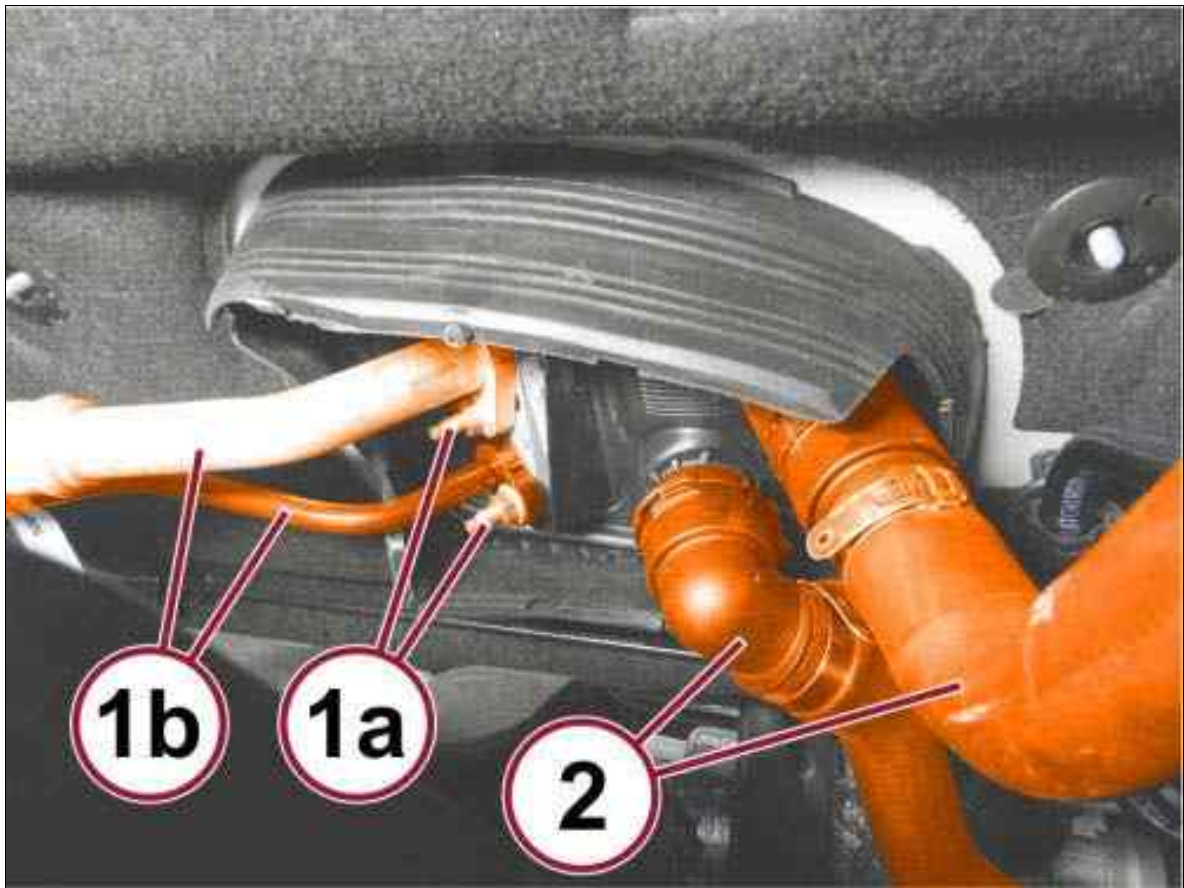


Courtesy of CHRYSLER GROUP, LLC

3. Attach the ground wire to the ground wire floor stud in the vehicle and install the nut (3). Tighten the nut securely.
4. Install the condensation tube (1a) and secure the tube retainer (1b). Attach a new condensation tube clamp (1c).
5. Connect the vehicle wire harness (2) to the HVAC wire harness.

6. Install the instrument panel carrier. Refer to CARRIER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

Fig 3: Heater Hoses, A/C Suction Lines, A/C Liquid Lines & Nuts



Courtesy of CHRYSLER GROUP, LLC

7. Remove the tape or plugs from the opened refrigerant line fittings and the expansion valve ports.
8. Lubricate new seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seals as they are made of a special material for the refrigerant in the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
9. Connect the A/C liquid and A/C suction lines (1b) to the A/C expansion valve.
10. Install the two nuts (1a) that secures the A/C liquid and suction lines (1) to the A/C expansion valve. Tighten the nuts to the proper SPECIFICATIONS .
11. Remove the plugs or tape from the heater core tubes.
12. Lubricate the O-ring seals in the two heater hose connectors (2) with clean engine coolant and connect the heater hose connectors (2) to the heater core tubes. Make sure the two retaining tabs in each connector are fully engaged to the tubes.
13. Refill the engine cooling system. Refer to STANDARD PROCEDURE .
14. Install the instrument panel cover. Refer to COVER, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

15. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
16. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
17. Install the engine cover and clean air hose. (Refer to REMOVAL AND INSTALLATION - 1.4L or REMOVAL AND INSTALLATION - 2.4L).

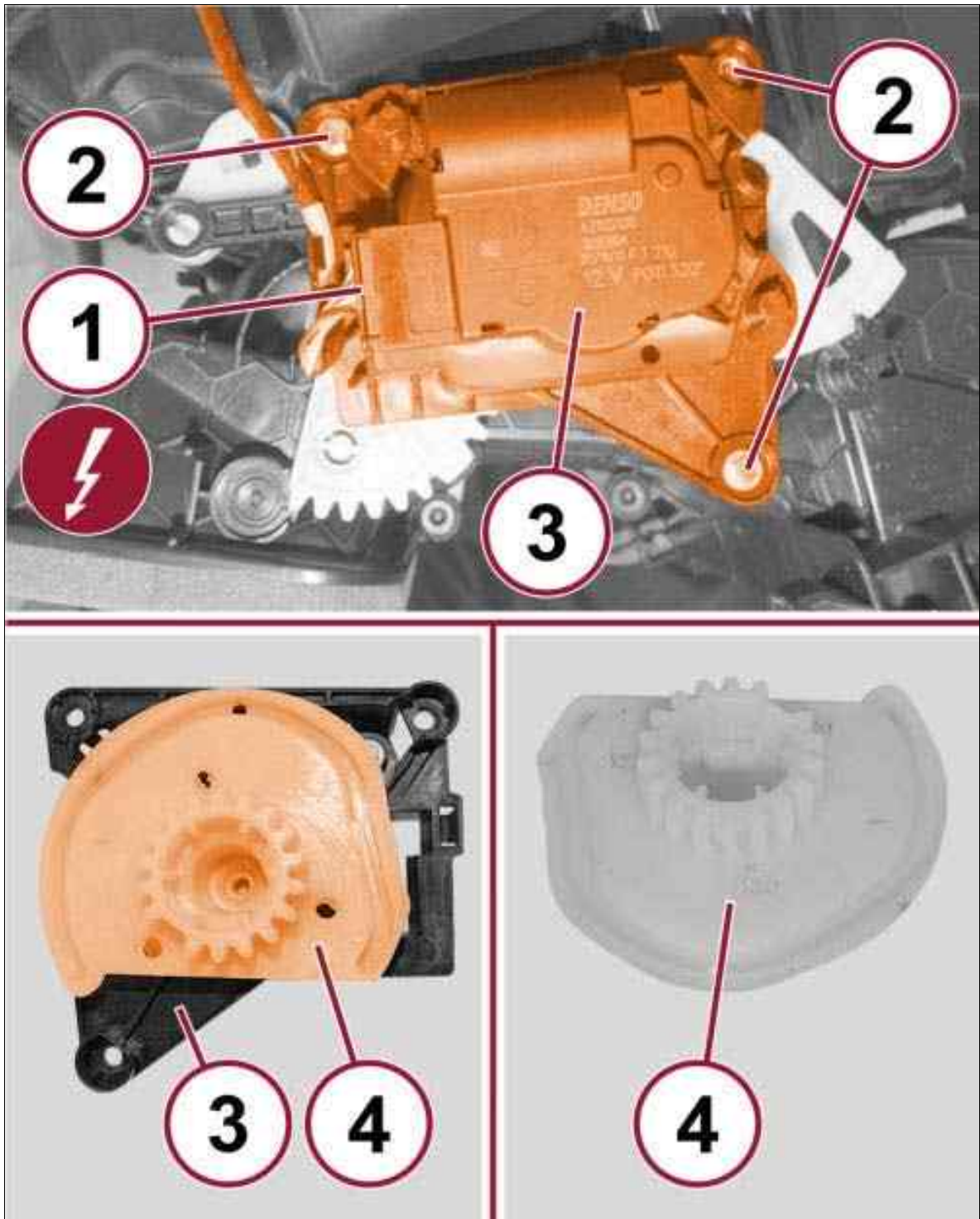
DISTRIBUTION > HOUSING, HVAC > DISASSEMBLY AND ASSEMBLY > DISASSEMBLY AND ASSEMBLY - GEARS AND LEVERS > DISASSEMBLY

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

1. Remove the HVAC housing from the vehicle and place it on a workbench. Refer to HOUSING, HVAC, REMOVAL AND INSTALLATION .

Fig 1: Mode Door Actuator, Wire Connector, Drive Gear & Screws



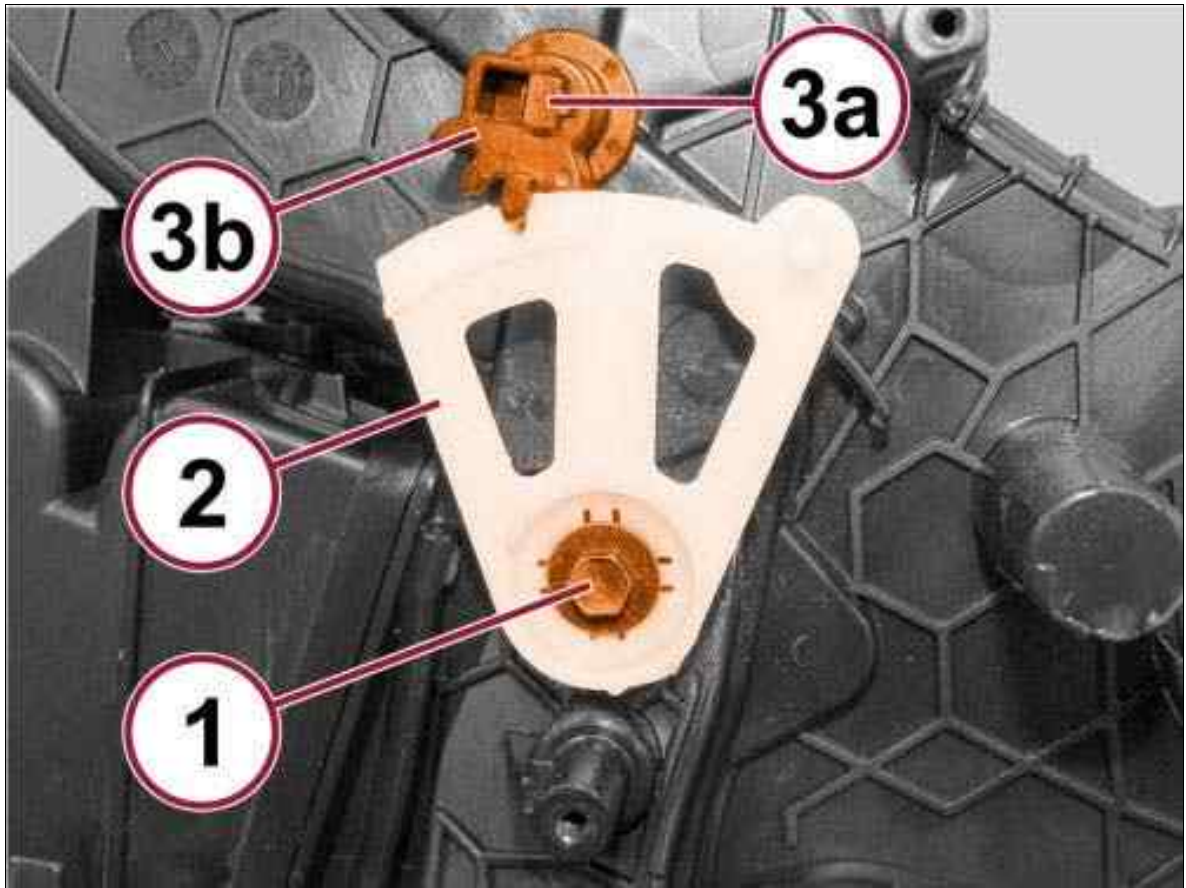
Courtesy of CHRYSLER GROUP, LLC

 **NOTE:**

Mark the position of the gears and levers prior to disassembly to assist in the assembly procedure.

2. Disconnect the HVAC wire harness connector (1) from the mode door actuator (3).
3. Remove the three screws (2) from mode door actuator (3).
4. Remove the mode door actuator (3), disengaging the drive gear (4). If replacing the drive gear (4), remove it from the actuator (3).

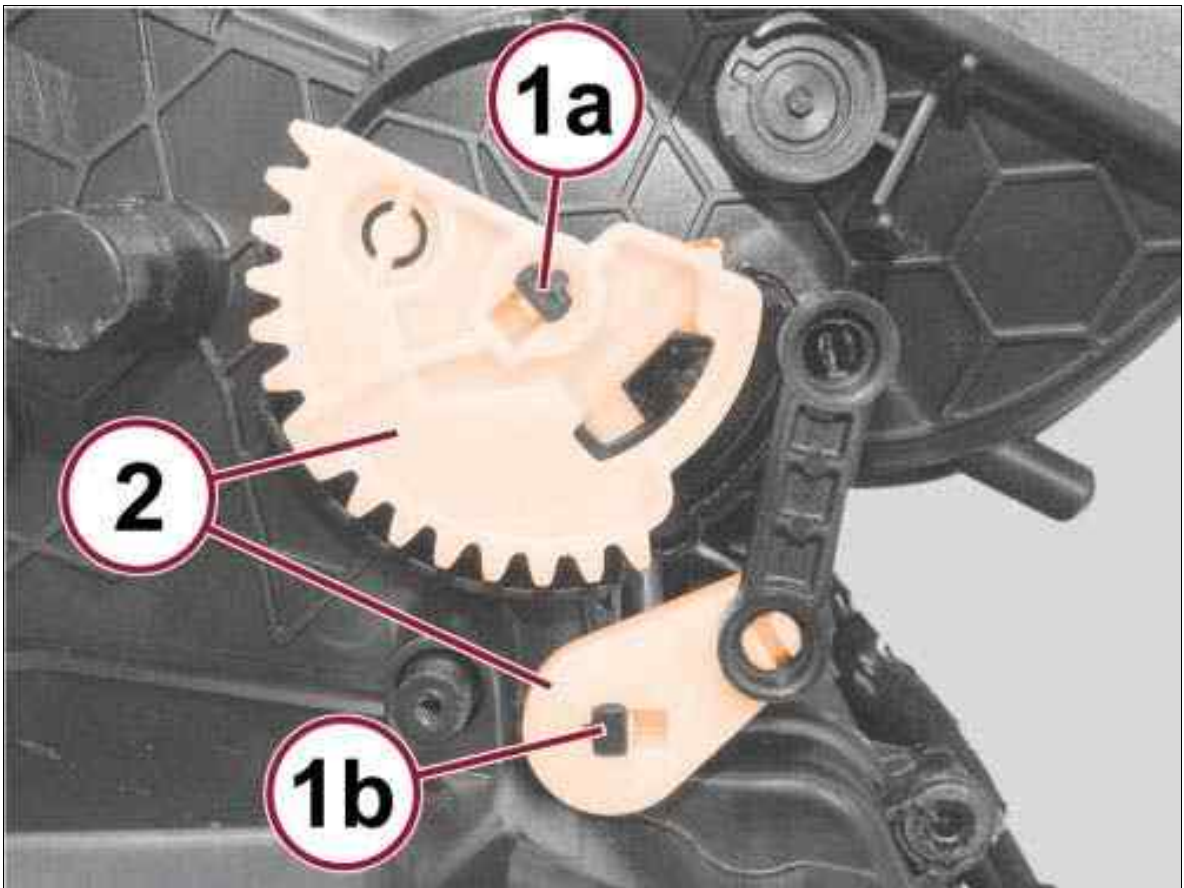
Fig 2: Driven Gear, Transfer Lever & Fasteners



Courtesy of CHRYSLER GROUP, LLC

5. Remove the screw (1) from the transfer lever (2).
6. Remove the transfer lever (2).
7. Disengage the retainer (3a) and remove the driven gear (3b).

Fig 3: Gear/Lever Mechanism & Retainers



Courtesy of CHRYSLER GROUP, LLC

8. Release the retainers (1a) and (1b).
9. Remove the gear and lever mechanism (2).
10. Check that the various components of the gear train are not damaged.

DISTRIBUTION > HOUSING, HVAC > DISASSEMBLY AND ASSEMBLY > DISASSEMBLY AND ASSEMBLY - GEARS AND LEVERS > ASSEMBLY



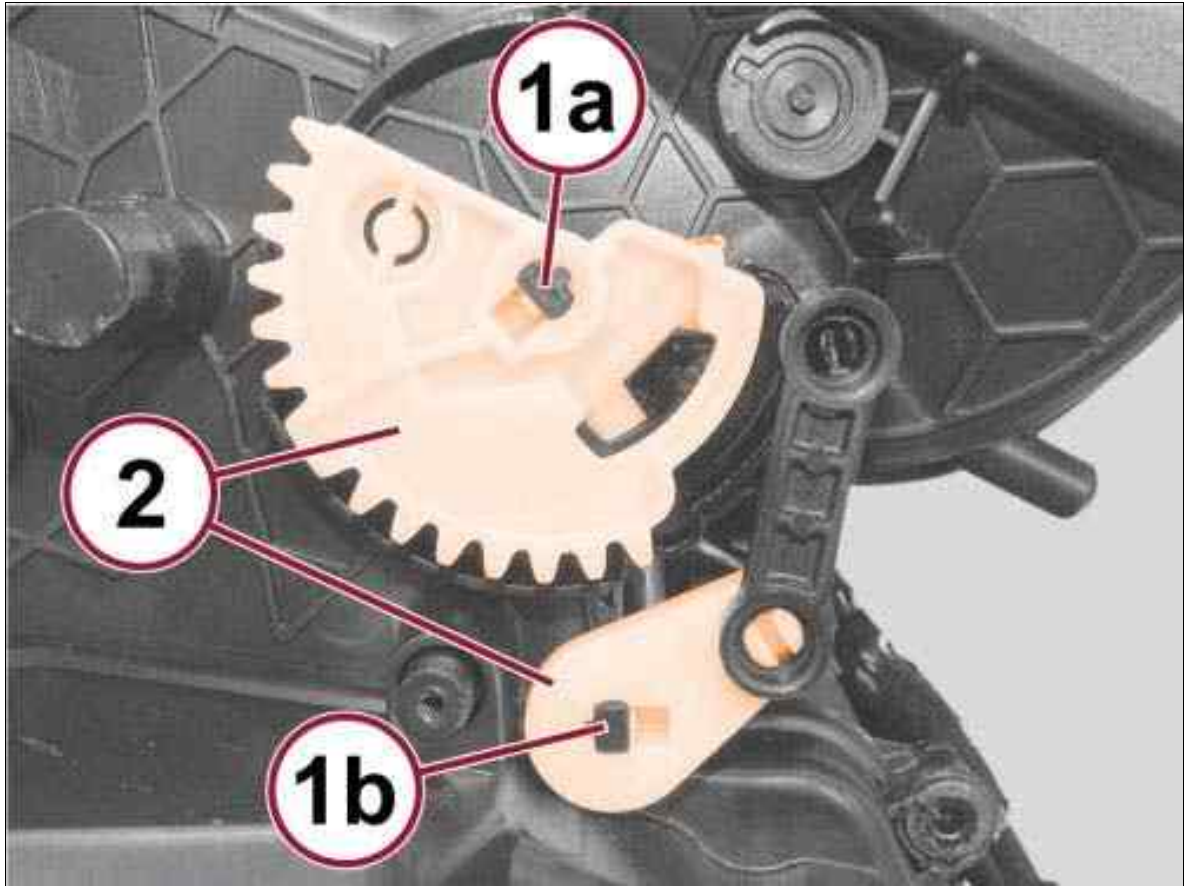
NOTE:

All of the linkage and gear to gear contact points on the HVAC housing should be adequately lubricated, as well as the air door pivot shaft to HVAC housing contact points using Molykote® Grease, available through Mopar. Do not get grease on the air door seals, as this could cause unwanted flap noises and impairs the durability of the seal. Lubrication should be performed if there is a concern or complaint of linkage chatter, grinding, or other movement derived noises that are detectable in the cabin.

1. Check that the various components of the gear train are not worn or damaged. Replace any

gear train components that are worn or damaged.

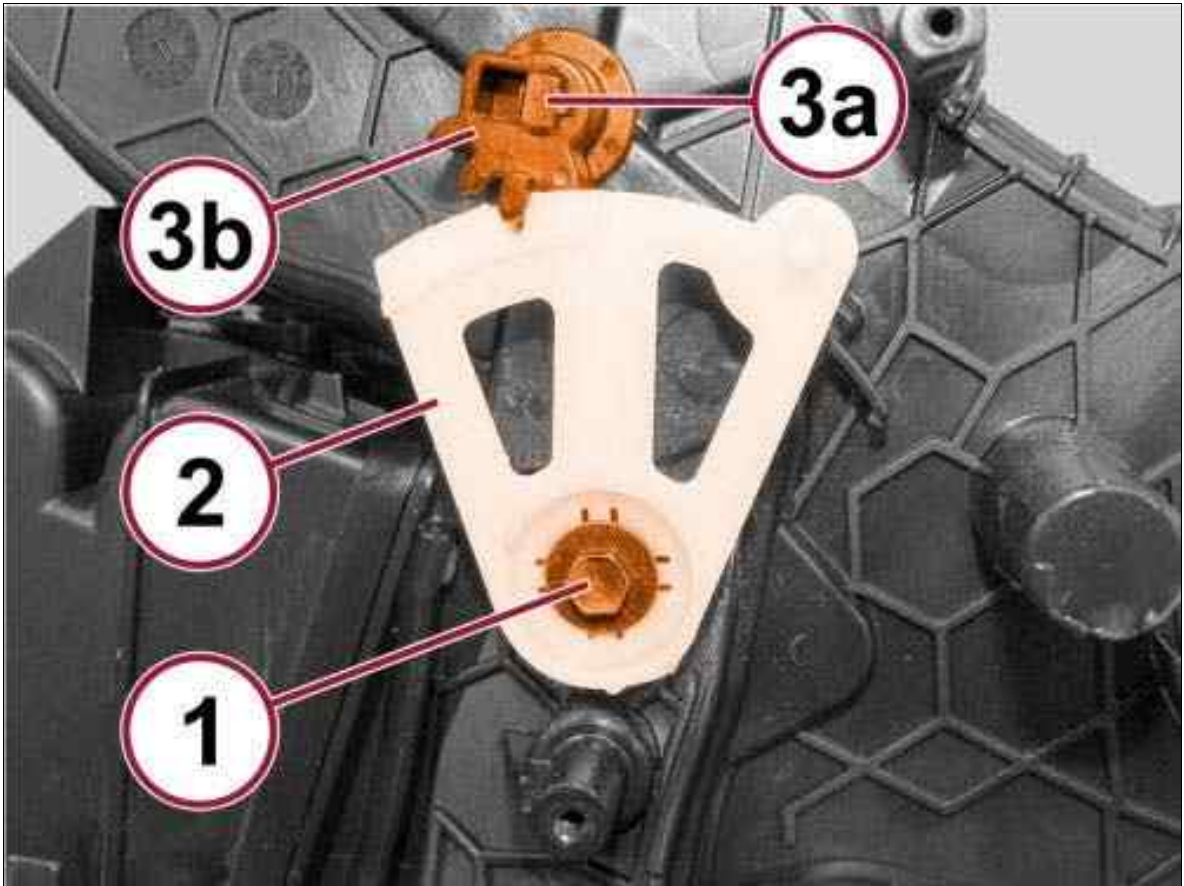
Fig 1: Gear/Lever Mechanism & Retainers



Courtesy of CHRYSLER GROUP, LLC

2. Position the gear and lever mechanism (2) according to the position required for proper alignment. Be certain the retainers are fully engaged.

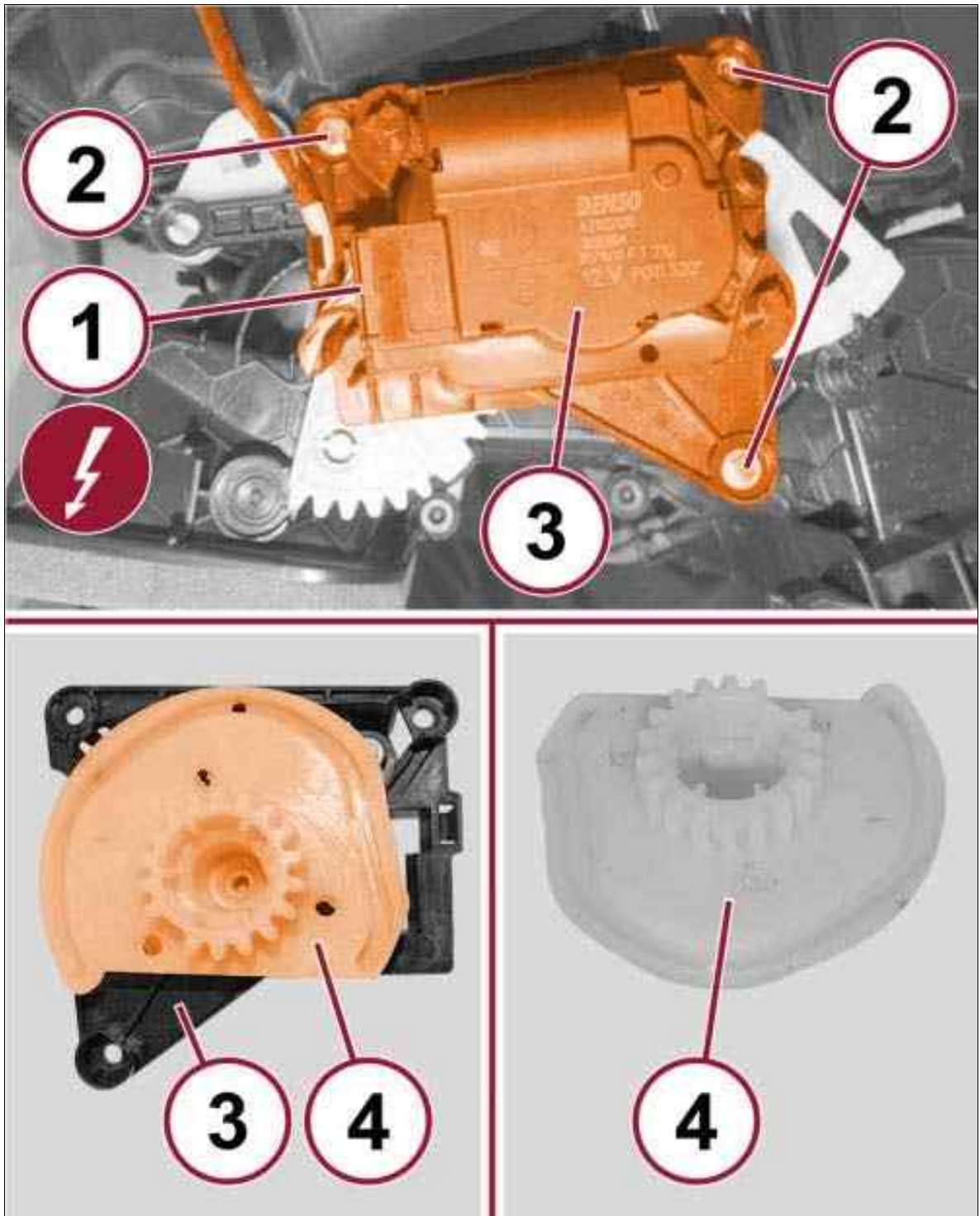
Fig 2: Driven Gear, Transfer Lever & Fasteners



Courtesy of CHRYSLER GROUP, LLC

3. Install the driven gear (3b). Be certain the retainer (3a) is fully engaged.
4. Align the transfer lever (2) to the driven gear (3b) and install the screw (1). Tighten the screw securely.

Fig 3: Mode Door Actuator, Wire Connector, Drive Gear & Screws



Courtesy of CHRYSLER GROUP, LLC

5. If removed, fit the drive gear (4) to the mode door actuator (3).
6. Align mode door drive gear (4) properly to the transfer lever and the gear and lever mechanism.
7. Install the three screws (2) for the mode door actuator (3).
8. Connect the HVAC wire harness connector (1) to the mode door actuator (3).

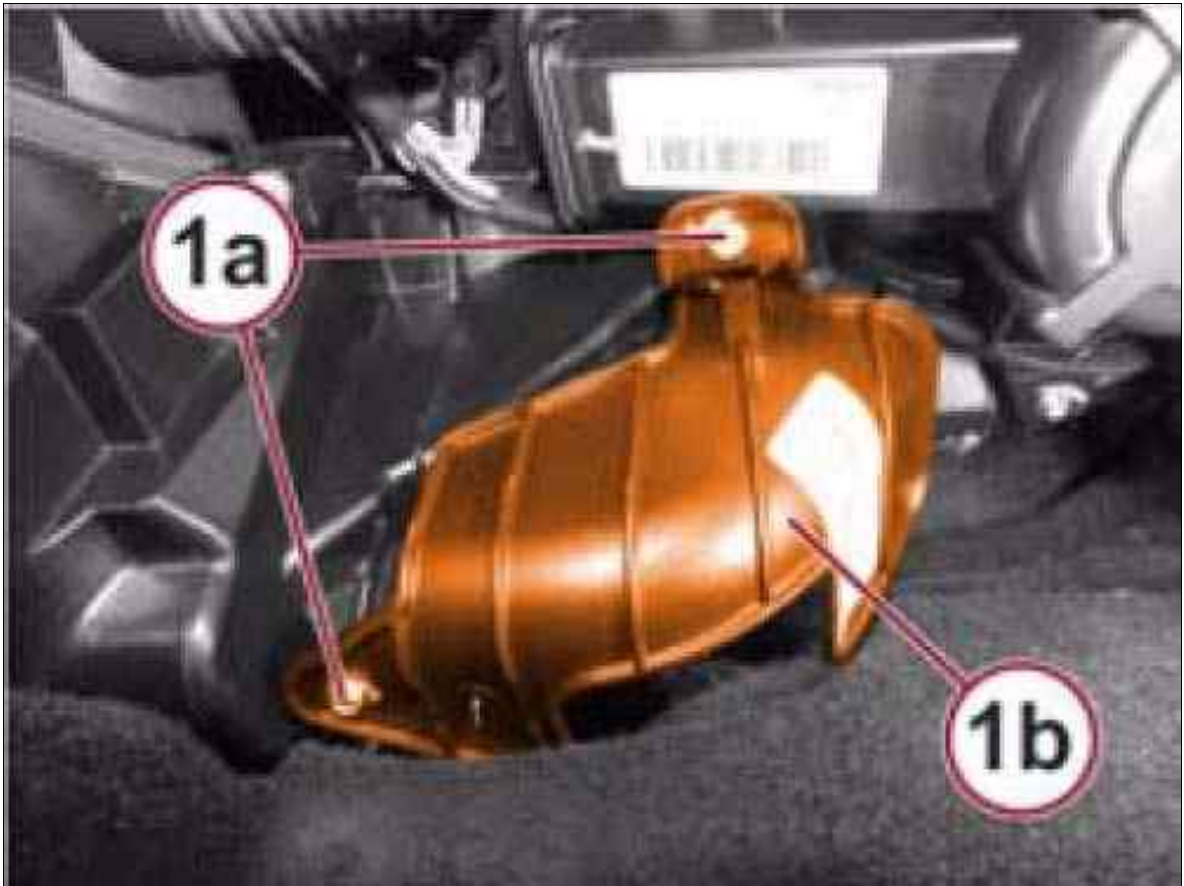
9. Install the HVAC housing in the vehicle. Refer to HOUSING, HVAC, REMOVAL AND INSTALLATION .

DISTRIBUTION > MOTOR, BLOWER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

 **WARNING:** To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the right front floor outlet duct (Refer to REMOVAL AND INSTALLATION).
3. Remove the right silencer panel.
4. Working under the storage compartment, remove the screws (1a) and remove the guard (1b) of the blower motor module.

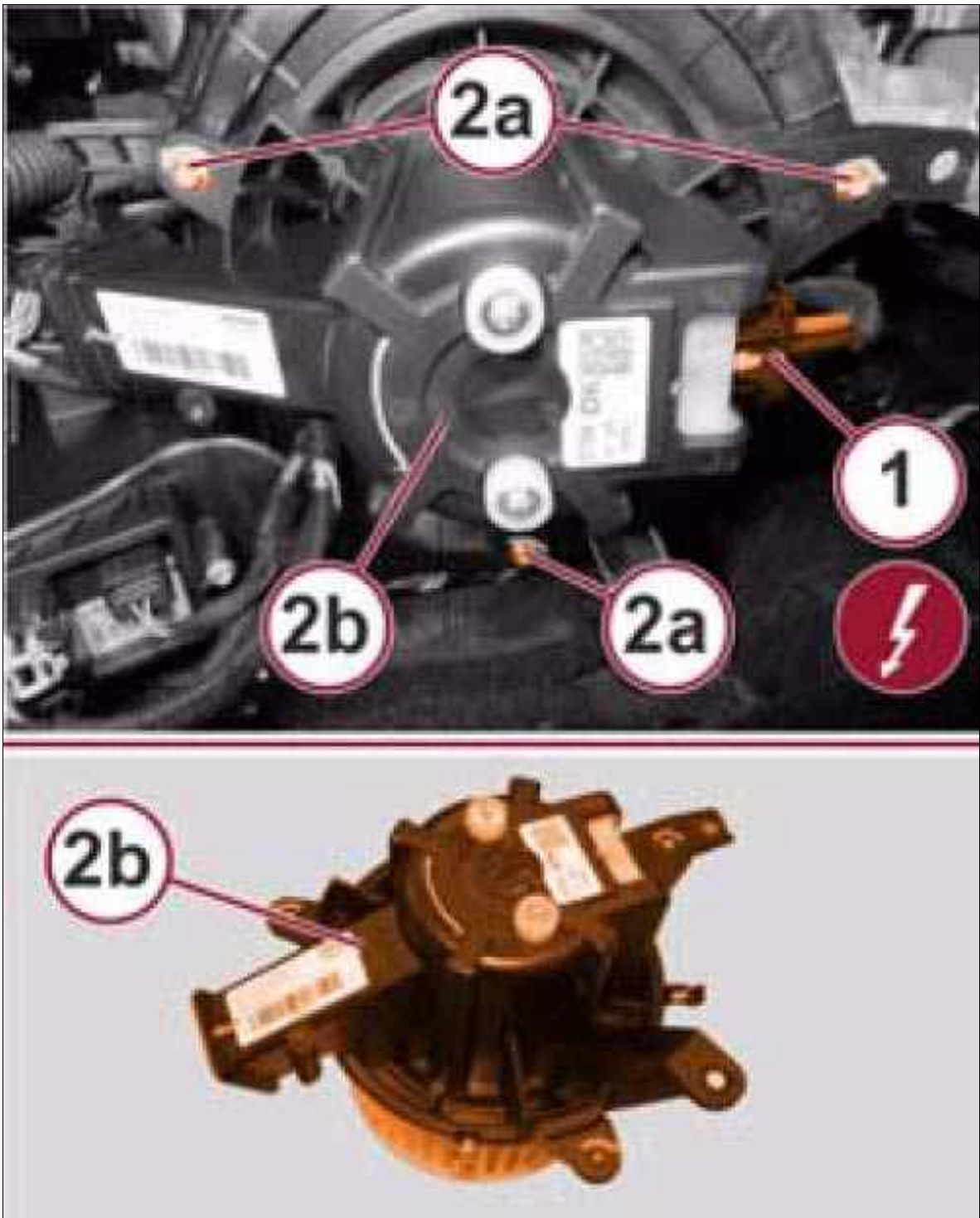
Fig 1: Blower Motor Module Guard & Screws



Courtesy of CHRYSLER GROUP, LLC

5. Disconnect the electrical connection (1) for the blower motor.

Fig 2: Blower Motor, Electrical Connection & Screws



Courtesy of CHRYSLER GROUP, LLC

6. Remove the screws (2a) and remove the blower motor (2b).

**DISTRIBUTION > MOTOR, BLOWER > REMOVAL AND INSTALLATION > REMOVAL
AND INSTALLATION > INSTALLATION**

1. Fit the blower motor in its housing and tighten the fixing screws.
2. Connect the blower motor electrical connection.
3. Position the guard of the blower motor module and tighten the fixing screws.
4. Install the right silencer panel.
5. Install the right front floor outlet duct (Refer to REMOVAL AND INSTALLATION).
6. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS - CENTER > REMOVAL



WARNING:

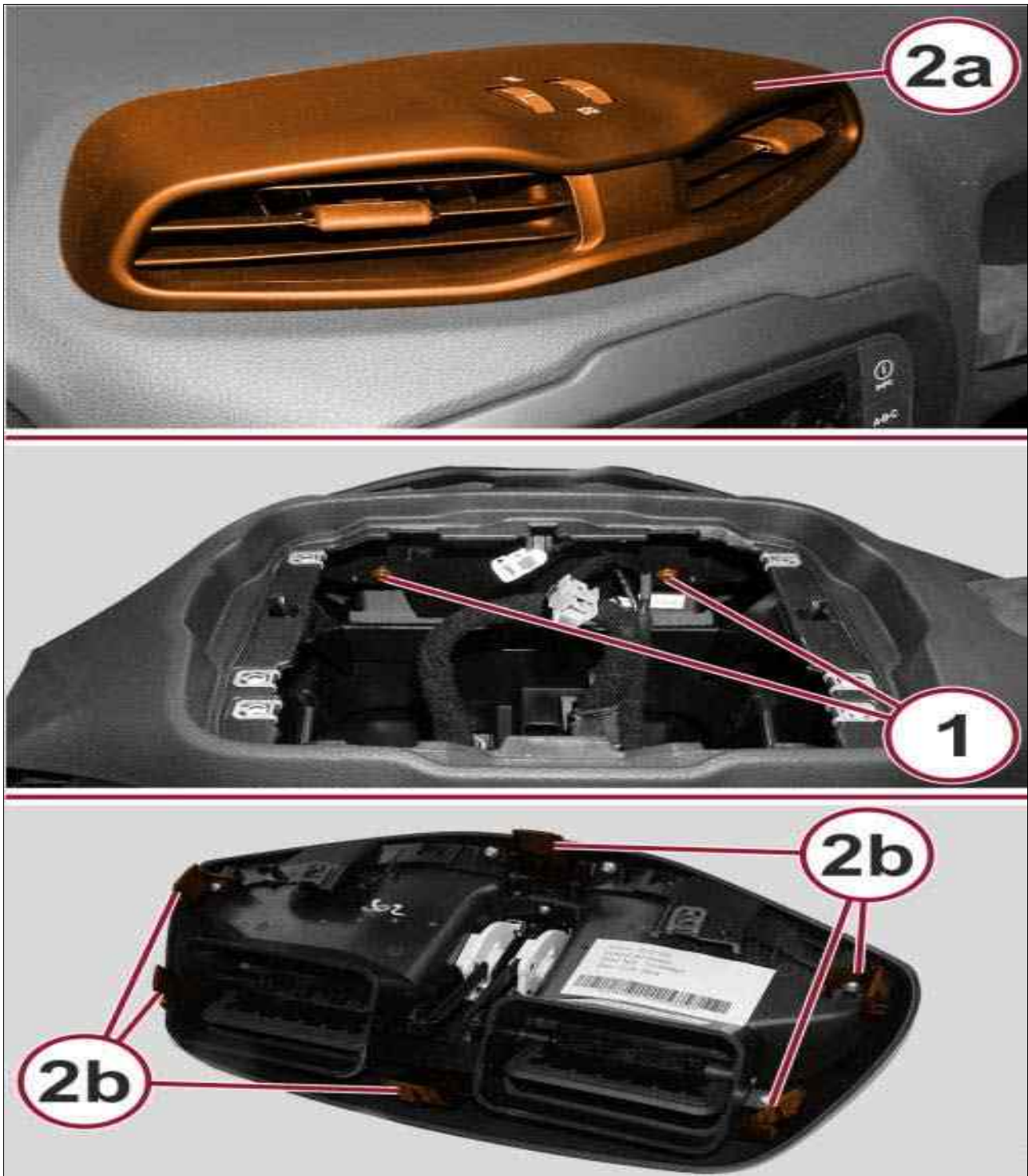
To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.



NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

Fig 1: Center Air Outlet & Fasteners



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the radio. Refer to RADIO, REMOVAL AND INSTALLATION .
3. Working inside the radio compartment, remove the two screws (1) from the center air outlets

(2a).

4. Using trim stick C-4755 or equivalent, remove the center air outlet (2a) from the instrument panel.

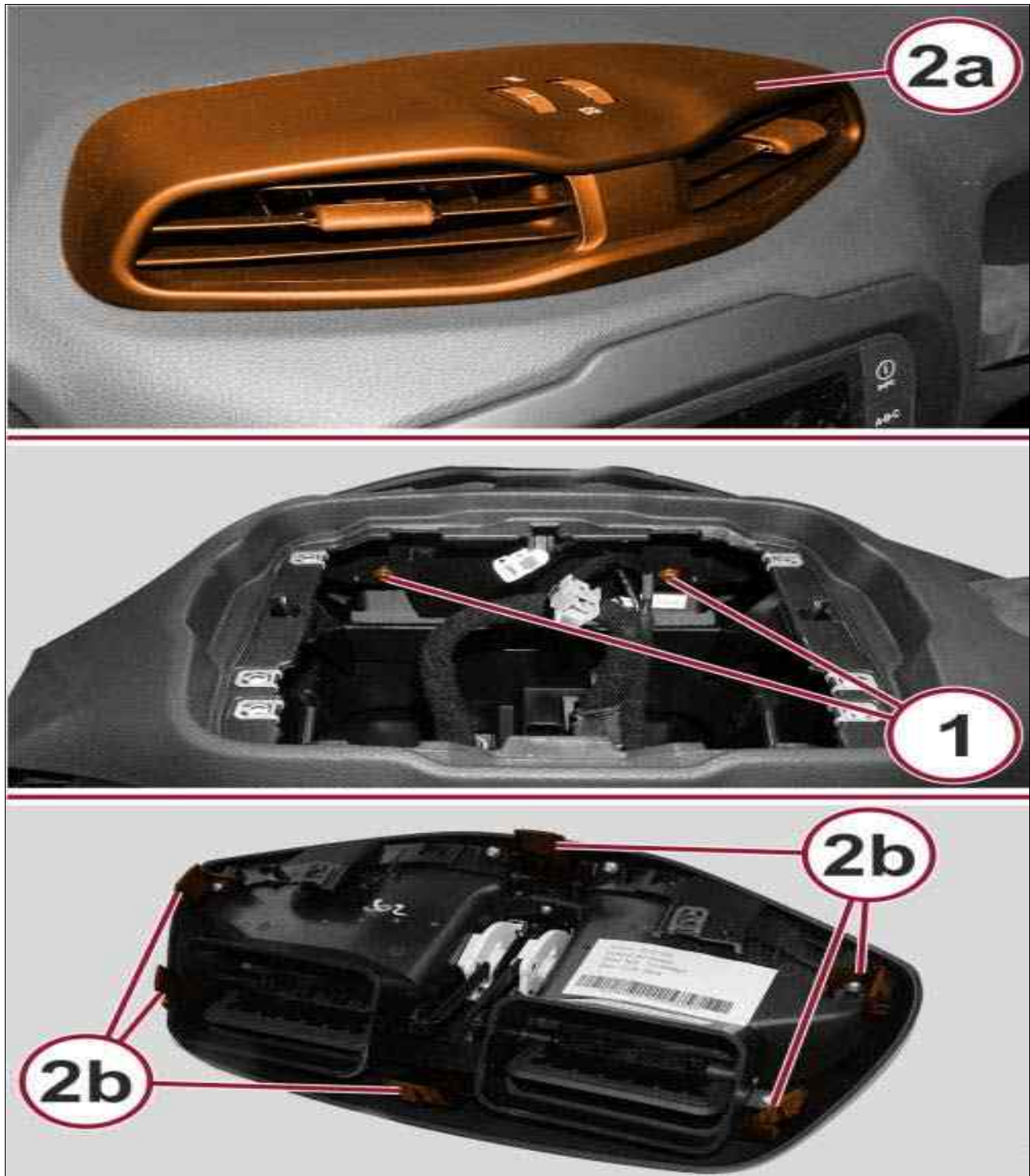
DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS - CENTER > INSTALLATION



NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

Fig 1: Center Air Outlet & Fasteners



Courtesy of CHRYSLER GROUP, LLC

1. Position the center air outlet (2a) to the instrument panel and carefully press into place. Be certain all retaining tabs (2b) are engaged with the instrument panel.
2. Working inside the radio compartment, install the two screws (1) to the center air outlet (2a).
3. Install the radio. Refer to RADIO, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS),

connect the IBS connector.

DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS - DEMISTER > REMOVAL

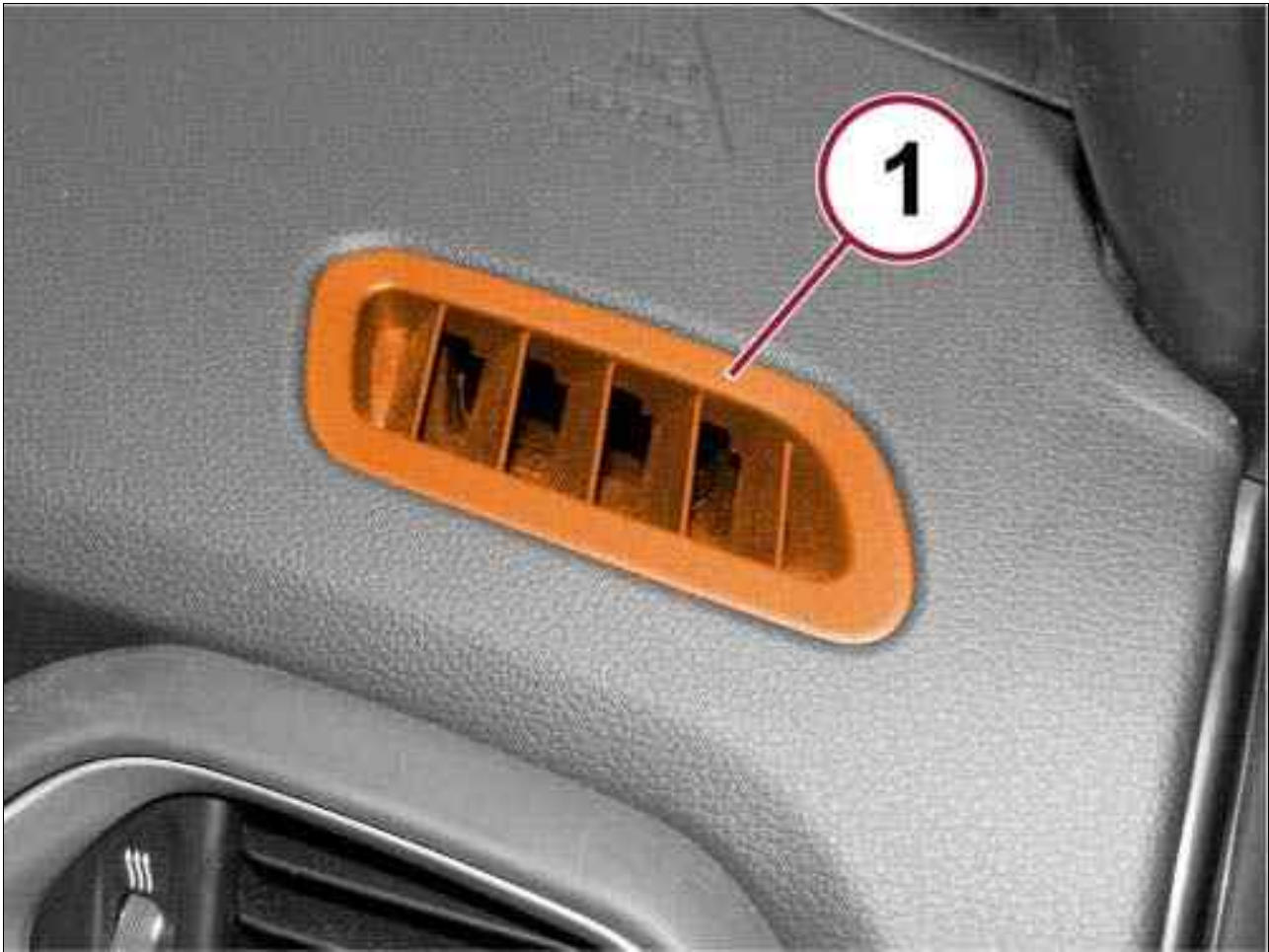
WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

Fig 1: Demister Air Outlet



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Using trim stick C-4755 or equivalent, remove the demister air outlet (1) from the instrument panel.

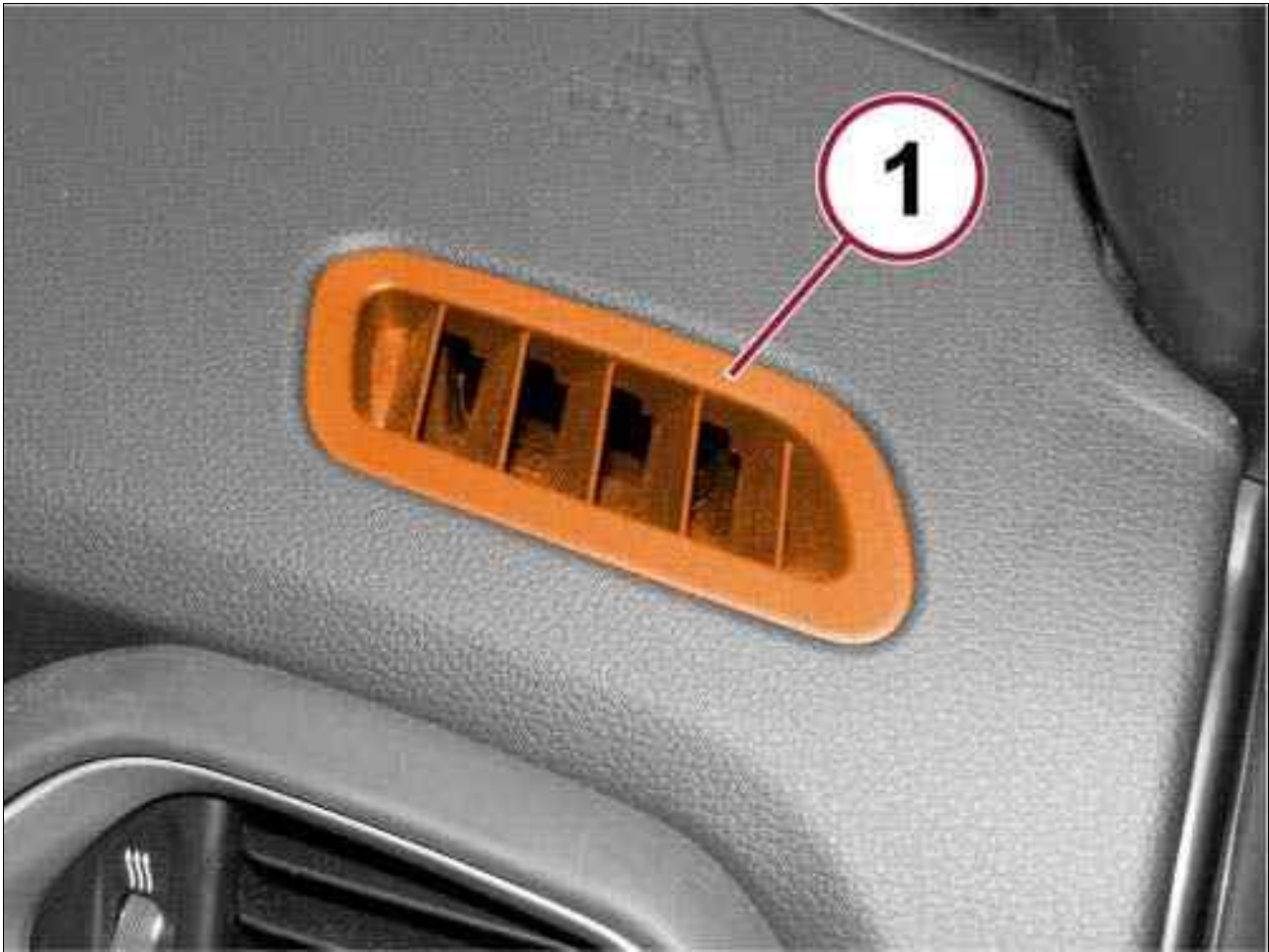
DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS - DEMISTER > INSTALLATION



NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

Fig 1: Demister Air Outlet



Courtesy of CHRYSLER GROUP, LLC

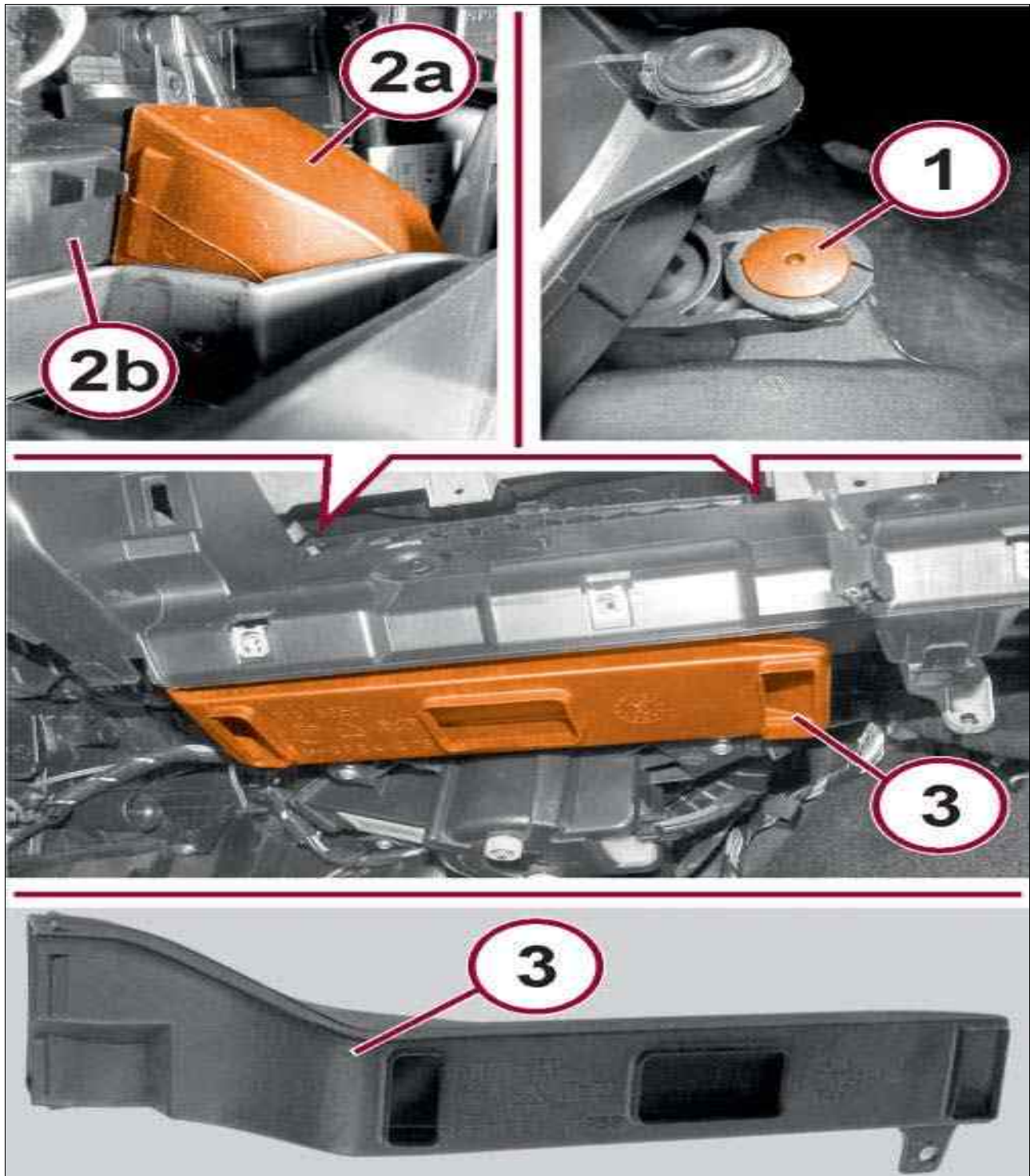
1. Position the demister air outlet (1) to the instrument panel and press the outlet (1) into the instrument panel. Be certain the retainers are fully engaged.
2. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS - FRONT FLOOR > REMOVAL

 WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

Fig 1: Remove/Install Right Front Floor Air Outlet

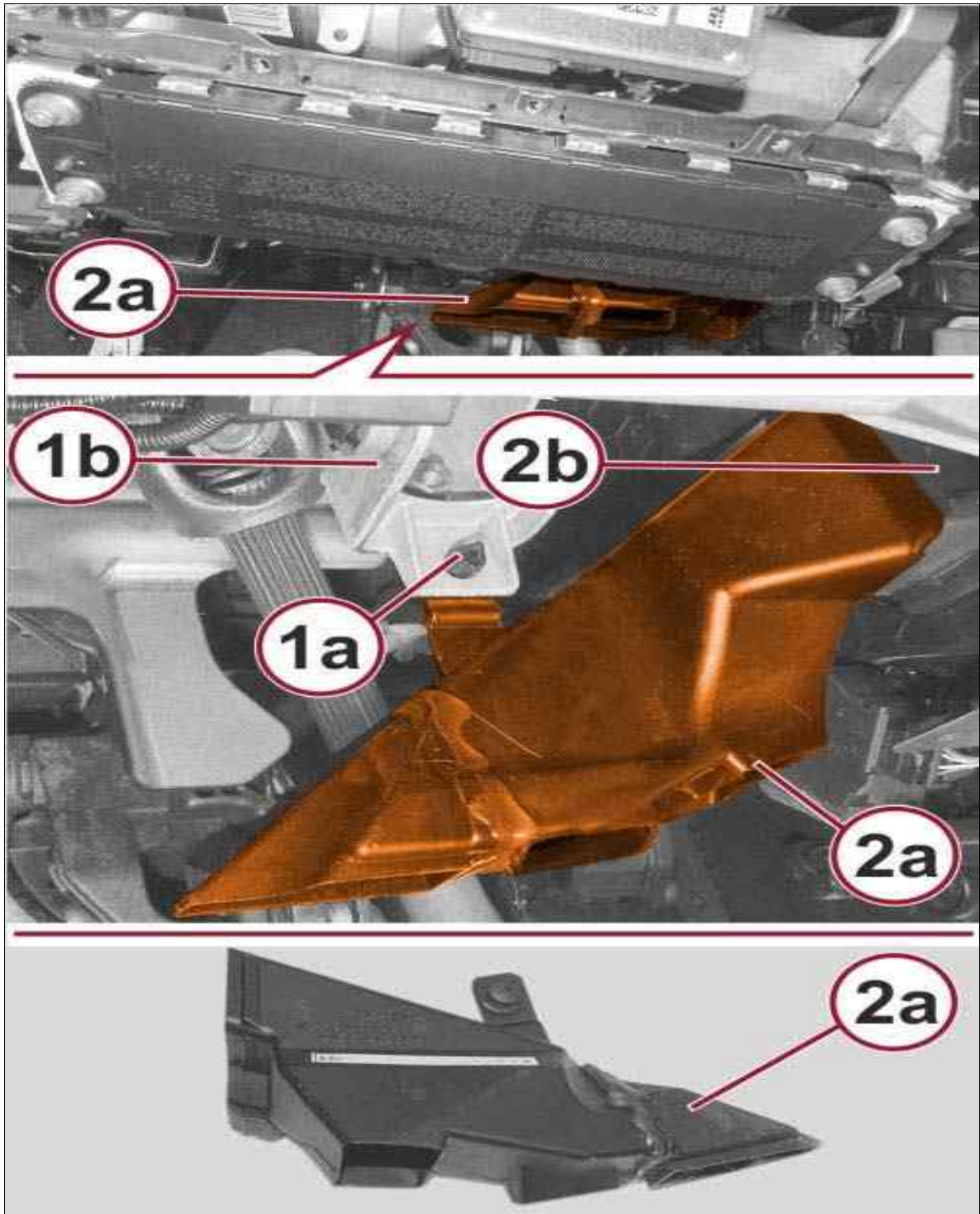


Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. To remove the right front floor air outlet, remove the instrument panel glovebox. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

3. Working in the glovebox opening, remove the retaining push pin (1) from the HVAC housing by the blower motor.
4. Disengage the right front floor air outlet (2a and 3) from the HVAC housing (2b).
5. Remove the right front floor air outlet (2a and 3) from the vehicle.

Fig 2: Remove/Install Left Front Floor Air Outlet



Courtesy of CHRYSLER GROUP, LLC

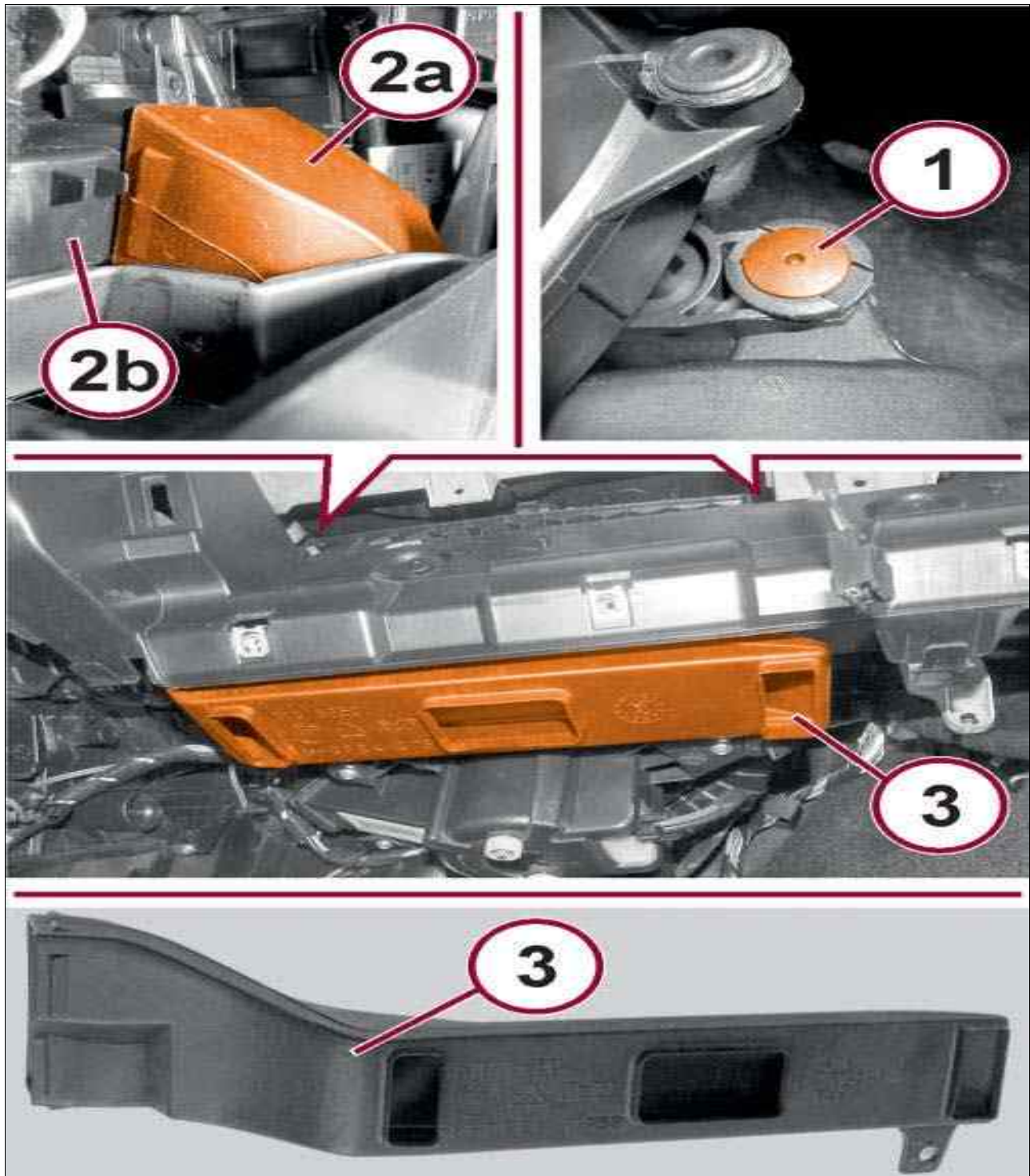
6. To remove the left front floor air outlet, remove the steering column opening cover. Refer to

COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .

7. Remove the retaining push pin (1a) from the instrument panel carrier (1b).
8. Disengage the left front floor air outlet (2a) from the HVAC housing (2b).
9. Remove the left front floor air outlet (2a) from the vehicle.

**DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLETS -
FRONT FLOOR > INSTALLATION**

Fig 1: Remove/Install Right Front Floor Air Outlet

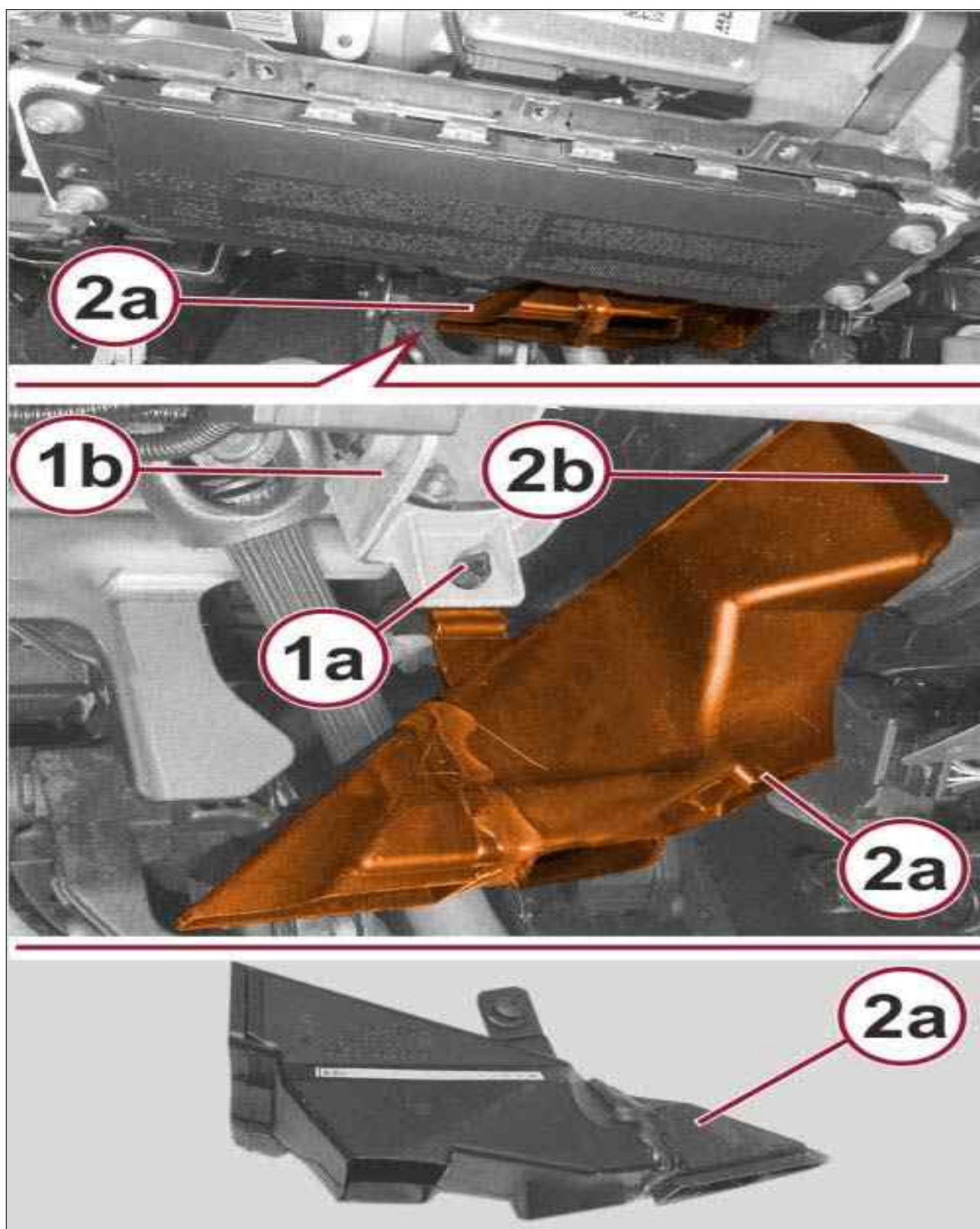


Courtesy of CHRYSLER GROUP, LLC

1. To install the right front floor air outlet, position the air outlet (2a and 3) to the HVAC housing (2b) and push the air outlet onto the HVAC housing. Be certain the air outlet (2a) and HVAC housing (2b) are fully engaged.
2. Insert the retaining push pin and press it into place in the HVAC housing by the blower motor. Be certain the retaining push pin (1) is fully engaged.

3. Install the instrument panel glovebox, then go to Step 7. Refer to GLOVE BOX, INSTRUMENT PANEL, REMOVAL AND INSTALLATION .

Fig 2: Remove/Install Left Front Floor Air Outlet



Courtesy of CHRYSLER GROUP, LLC

4. To install the left front floor air outlet, position the left front floor air outlet (2a) to the HVAC housing and press the air outlet onto the HVAC housing. Be certain the air outlet (2a) and HVAC housing (2b) are fully engaged.
5. Insert the retaining push pin (1a) through the left front floor air outlet and into the instrument

panel carrier (1b). Be certain the retaining push pin (1a) is fully engaged.

6. Install the steering column opening cover. Refer to COVER, STEERING COLUMN OPENING, REMOVAL AND INSTALLATION .
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLET - LEFT OUTER > REMOVAL

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

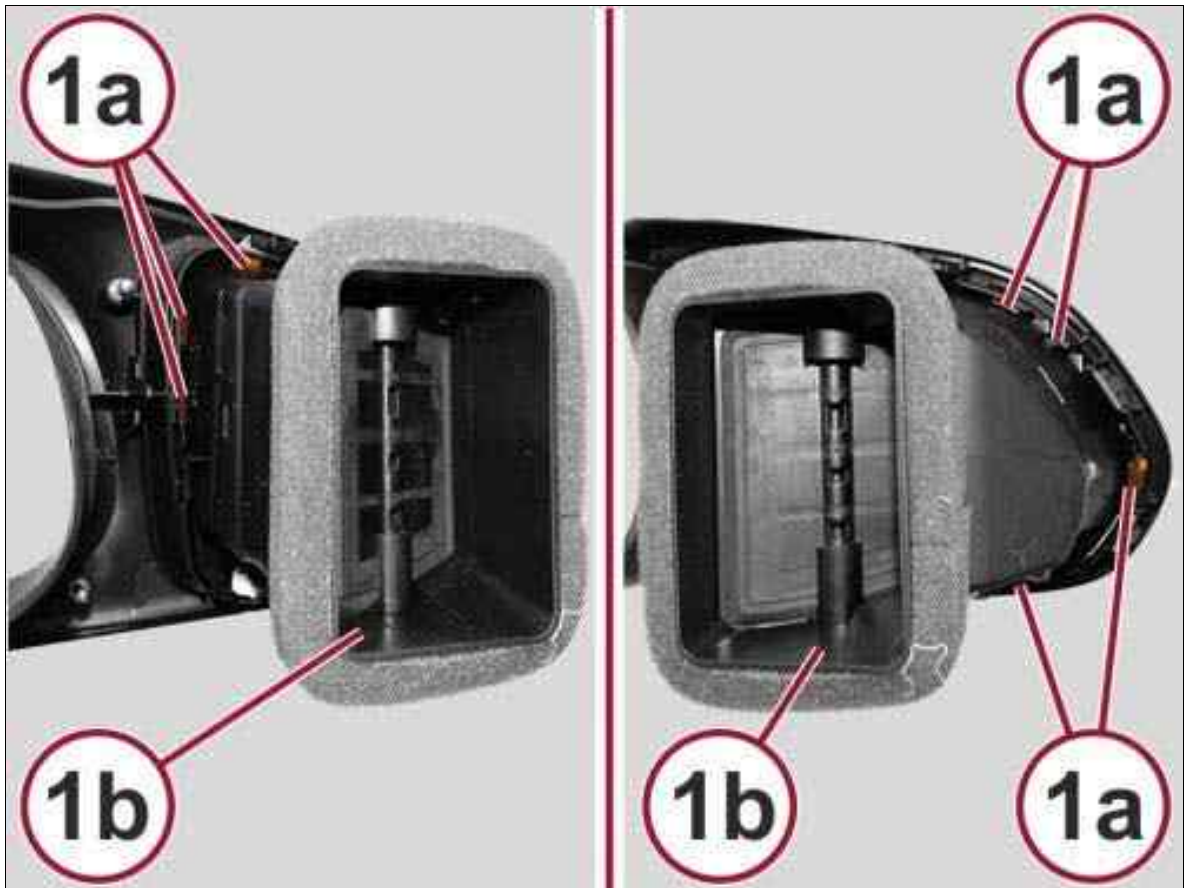
Fig 1: Air Outlet Bezel & Retaining Clips



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the instrument cluster bezel. Refer to BEZEL, INSTRUMENT CLUSTER, REMOVAL AND INSTALLATION .
3. Using trim stick C-4755 or equivalent, remove the air outlet bezel (1a) from the instrument cluster bezel.

Fig 2: Remove/Install Air Outlet



Courtesy of CHRYSLER GROUP, LLC

4. Using trim stick C-4755 or equivalent, release the retaining clips (1a) and remove the air outlet (1b) from the instrument cluster bezel.

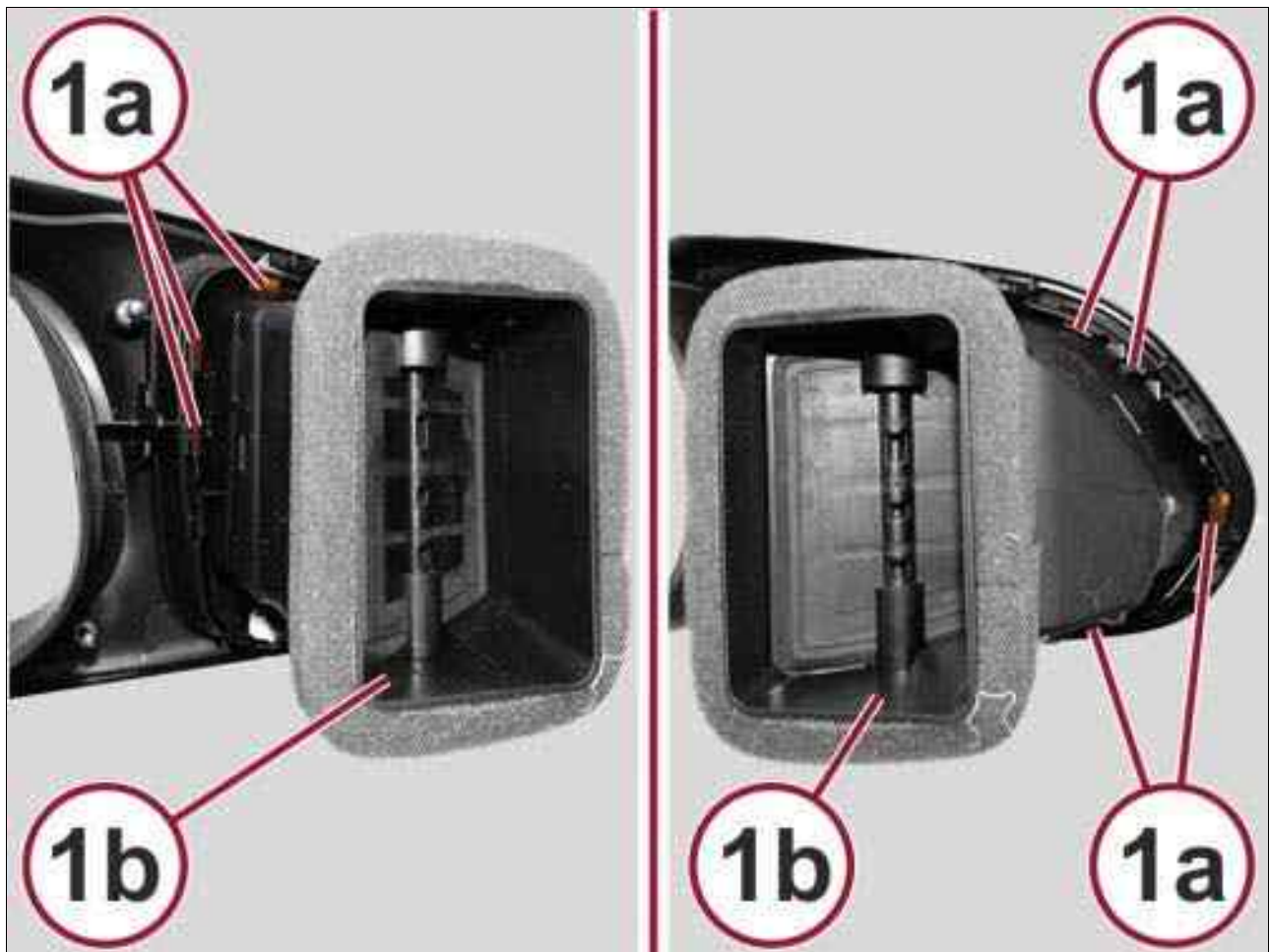
DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLET - LEFT OUTER > INSTALLATION



NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

Fig 1: Remove/Install Air Outlet



Courtesy of CHRYSLER GROUP, LLC

1. Position the air outlet (1b) to the instrument cluster bezel and engage the retaining clips (1a). Be certain the retainers (1a) are fully engaged.

Fig 2: Air Outlet Bezel & Retaining Clips



Courtesy of CHRYSLER GROUP, LLC

2. Position the air outlet bezel (1a) and press it into place in the instrument cluster bezel. Be certain all of the retaining clips (1b) are fully engaged.
3. Install the instrument cluster bezel. Refer to BEZEL, INSTRUMENT CLUSTER, REMOVAL AND INSTALLATION .
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLET - RIGHT OUTER > REMOVAL

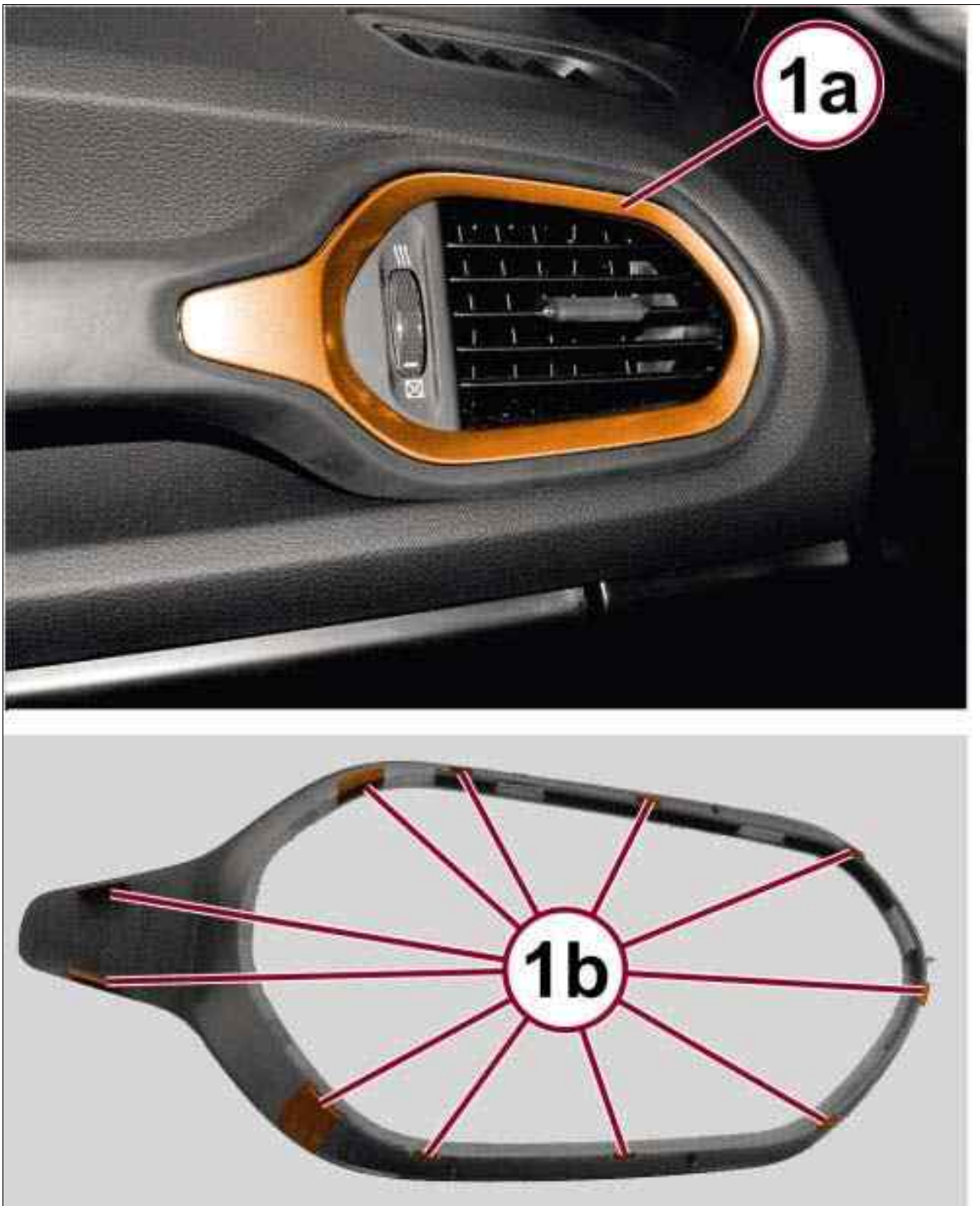
 WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

 NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

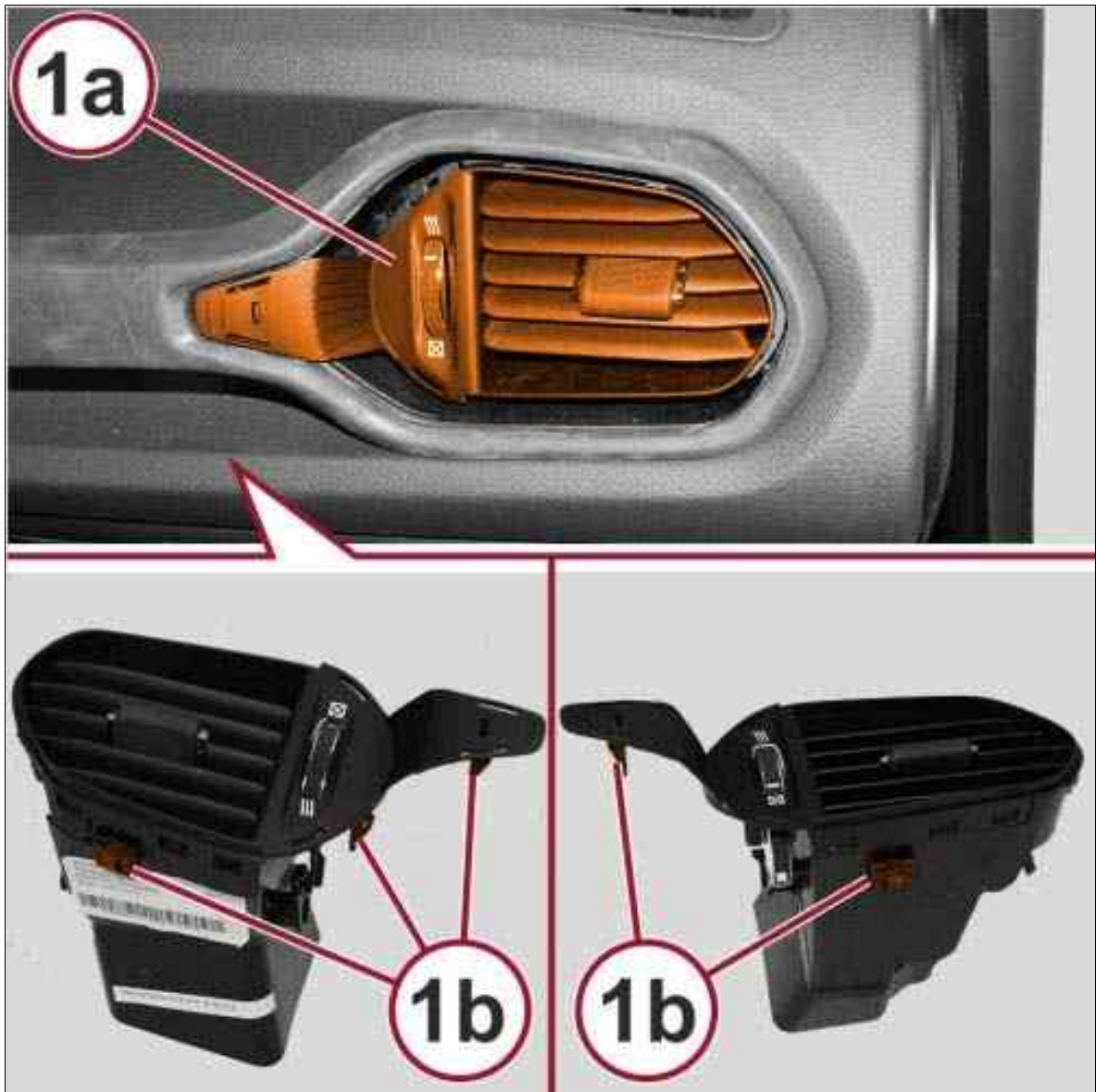
Fig 1: Air Outlet Bezel & Retaining Clips



Courtesy of CHRYSLER GROUP, LLC

- 1.
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Using trim stick C-4755 or equivalent, remove the air outlet bezel (1a) from the instrument panel.

Fig 2: Remove/Install Air Outlet Bezel



Courtesy of CHRYSLER GROUP, LLC

4. Using trim stick C-4755 or equivalent, release the retaining clips (1b) and remove the air outlet (1a) from the instrument panel.

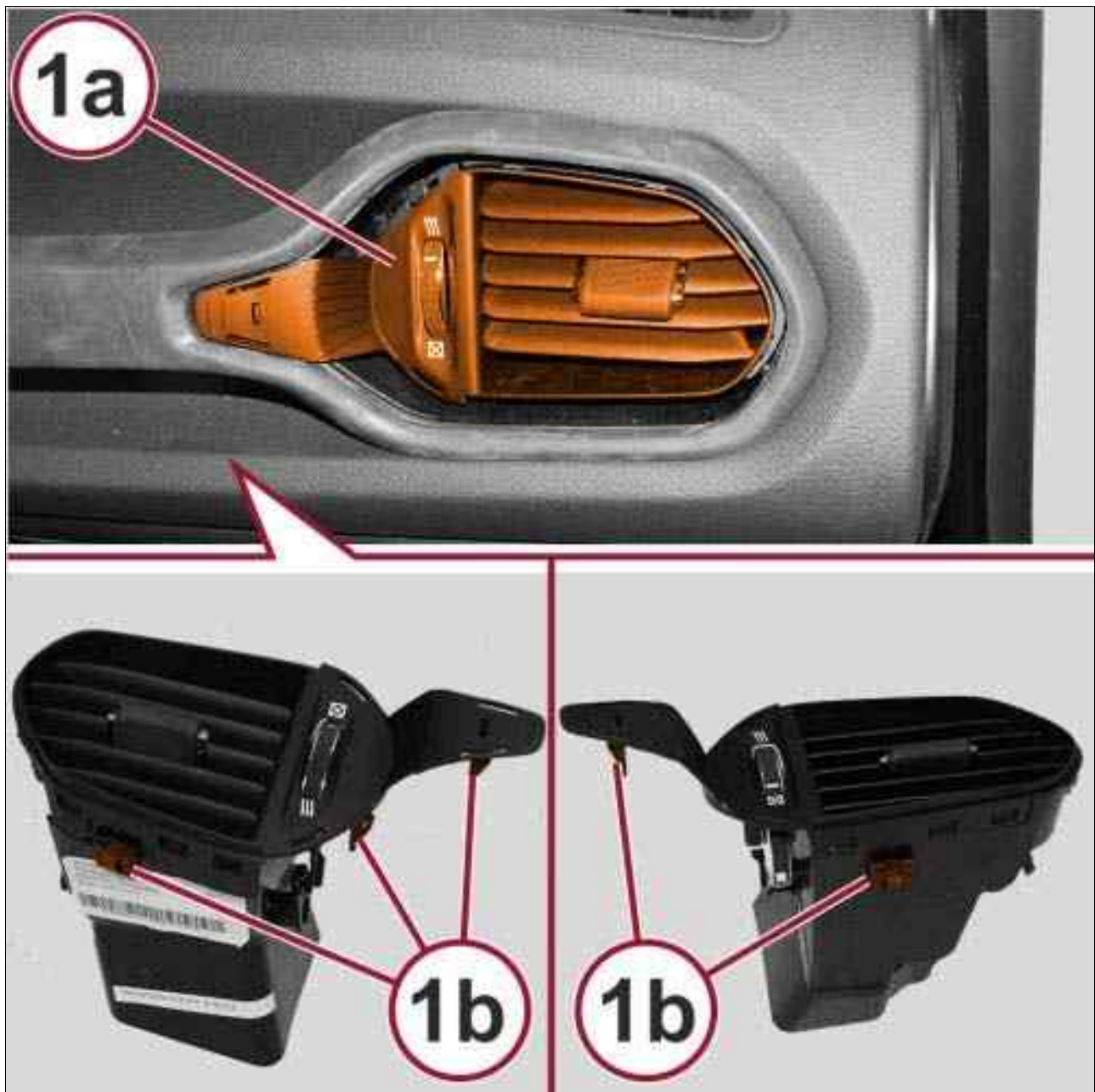
DISTRIBUTION > OUTLET, AIR > REMOVAL AND INSTALLATION > AIR OUTLET - RIGHT OUTER > INSTALLATION



NOTE:

Take the proper precautions to protect the instrument panel from cosmetic damage.

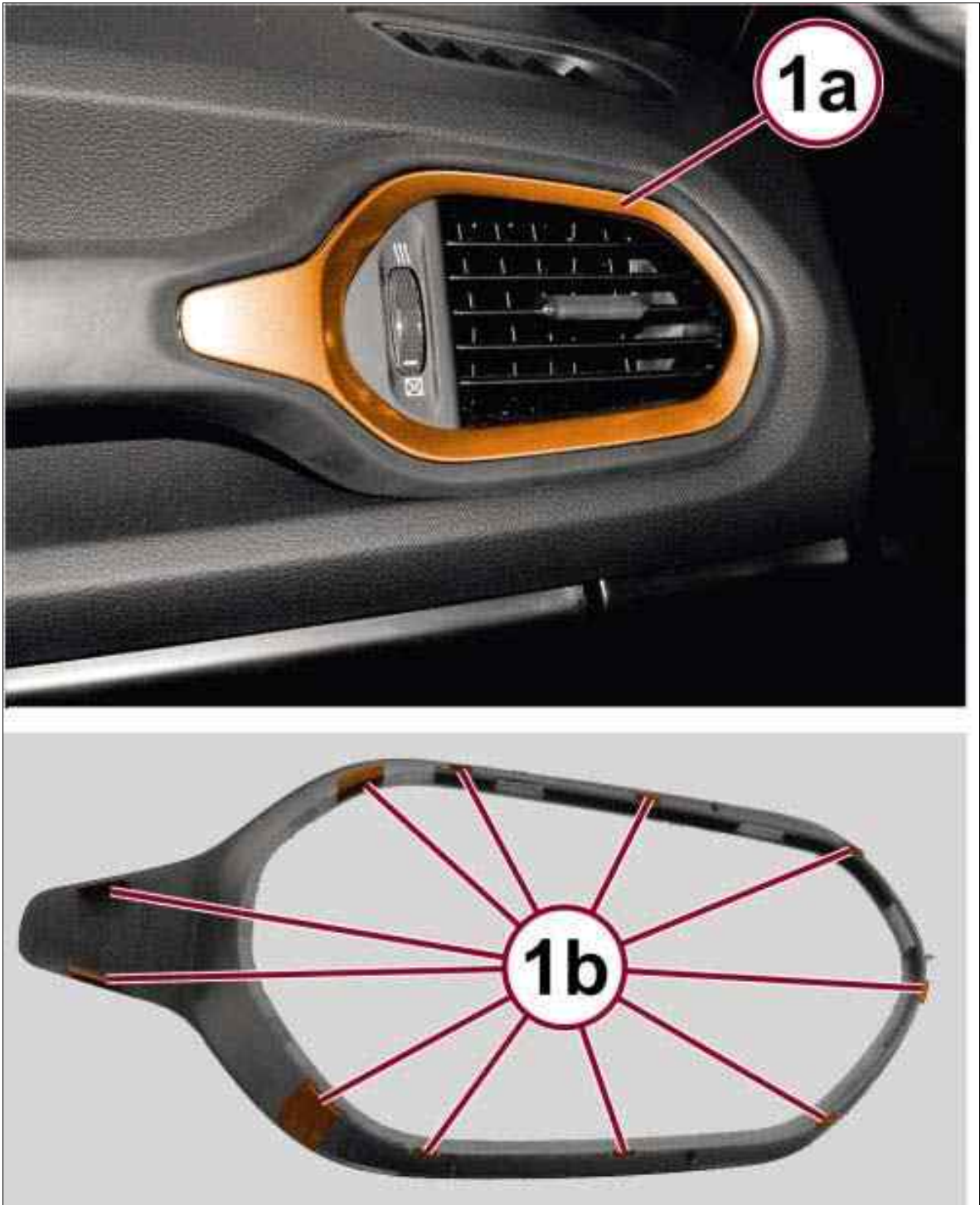
Fig 1: Remove/Install Air Outlet Bezel



Courtesy of CHRYSLER GROUP, LLC

1. Position the air outlet (1a) to the instrument panel and engage the retaining clips (1b) to the instrument panel. Be certain the retainers (1b) are fully engaged.

Fig 2: Air Outlet Bezel & Retaining Clips



Courtesy of CHRYSLER GROUP, LLC

2. Position the air outlet bezel (1a) and press it into place in the instrument panel. Be certain all of the retaining clips (1b) are fully engaged.
3. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

PLUMBING > WARNING > WARNING

WARNING:

The A/C system contains refrigerant under high pressure. Repairs should only be performed by qualified service personnel. Serious or fatal injury may result from improper service procedures.

WARNING:

Avoid breathing the refrigerant and refrigerant oil vapor or mist. Exposure may irritate the eyes, nose, and/or throat. Wear eye protection when servicing the A/C refrigerant system. Serious eye injury can result from direct contact with the refrigerant. If eye contact occurs, seek medical attention immediately.

WARNING:

Do not expose the refrigerant to open flame. Poisonous gas is created when refrigerant is burned. An electronic leak detector is recommended. Serious or fatal injury may result from improper service procedures.

WARNING:

If accidental A/C system discharge occurs, ventilate the work area before resuming service. Large amounts of refrigerant released in a closed work area will displace the oxygen and cause suffocation and serious or fatal injury.

WARNING:

The engine cooling system is designed to develop internal pressures up to 145 kPa (21 psi). Do not remove or loosen the coolant pressure cap, cylinder block drain plugs, radiator drain, radiator hoses, heater hoses, or hose clamps while the engine cooling system is hot and under pressure. Allow the vehicle to cool for a minimum of 15 minutes before opening the cooling system for service. Failure to observe this warning can result in serious burns from the heated engine coolant.

PLUMBING > CAUTION > CAUTION

 CAUTION:

Never add R-12 to a refrigerant system designed to use R-134a or R-1234yf. Never add R-134a to a refrigerant system designed to use R-1234yf. Do not use R-12 equipment or parts on an R-134a or R-1234yf A/C system. Do not use R-134a equipment or parts on an R-1234yf A/C system. These refrigerants are not compatible and damage to the A/C system will result.

 CAUTION:

Never use R-12 refrigerant oil in an A/C system designed to use R-134a or R-1234yf refrigerant oil. Never use R-134a refrigerant oil in an A/C system designed to use R-1234yf refrigerant oil. These refrigerant oils are not compatible and damage to the A/C system will result.

 CAUTION:

The use of A/C system sealers may result in damage to A/C refrigerant recovery/evacuation /recharging equipment and/or A/C system. Many federal, state/provincial and local regulations prohibit the recharge of A/C systems with known leaks. Chrysler LLC recommends the detection of A/C system leaks through the use of approved leak detectors and fluorescent leak detection dyes. Vehicles found with A/C system sealers should be treated as contaminated and replacement of the entire A/C refrigerant system is recommended. A/C systems found to be contaminated with A/C system sealers, A/C stop-leak products or seal conditioners voids the warranty for the A/C system.

 CAUTION:

Recover the refrigerant before opening any fitting or connection. Open the fittings with caution, even after the system has been discharged. Never open or loosen a connection before recovering the refrigerant.

 CAUTION:

If equipped, do not remove the secondary retention clip from any spring-lock coupler connection while the refrigerant system is under pressure. Recover the refrigerant before removing the secondary retention clip. Open the fittings with caution, even after the system has been discharged. Never open or loosen a connection before recovering the refrigerant.

 CAUTION:

The internal parts of the A/C system will remain stable as long as moisture-free refrigerant and refrigerant oil is used. Abnormal amounts of dirt, moisture or air can upset the chemical stability. This may cause operational troubles or even serious damage if present in more than very small quantities. Before disconnecting a component, clean the outside of the fittings thoroughly to prevent contamination from entering the refrigerant system. Keep service tools and the work area clean. Do not open the refrigerant system or uncap a replacement component until you are ready to service the system. Immediately after disconnecting a component from the refrigerant system, seal the open fittings with a cap or plug. This will prevent contamination from entering the A/C system.

 CAUTION:

Refrigerant oil will absorb moisture from the atmosphere if left uncapped. Do not open a container of refrigerant oil until you are ready to use it. Replace the cap on the oil container immediately after using. Store refrigerant oil only in a clean, airtight, and moisture-free container.

 CAUTION:

Do not overcharge the refrigerant system. Overcharging will cause excessive compressor head pressure and can cause compressor noise and A/C system failure.

PLUMBING > DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - REFRIGERANT SYSTEM LEAKS

 WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

 WARNING:

Do not expose the refrigerant to open flame. Poisonous gas is created when refrigerant is burned. An electronic leak detector is recommended. Serious or fatal injury may result from improper service procedures.

 WARNING:

Use extreme care when working around a running engine. Keep hands and fingers clear of

the radiator fan, accessory drive belt and all other moving components. Keep away when wearing loose clothing, jewelry or long hair that is not properly secured. Underhood components may become hot to the touch. Be careful not to come into contact with hot engine, A/C and engine cooling system components. Failure to follow these instructions may result in serious or fatal injury.



NOTE:

Always conduct the A/C Performance Test as outlined in this service information prior to searching for an A/C refrigerant leak. Refer to DIAGNOSIS AND TESTING .



NOTE:

The A/C system in this vehicle comes equipped from the factory with fluorescent refrigerant leak detection dye installed in the refrigerant system.

When searching for a refrigerant leak in the A/C system, use an Ultra Violet (UV) light and an electronic leak detector that is designed for refrigerant used on this vehicle. It is important to use only high-quality refrigerant leak detection equipment to properly locate refrigerant system leaks, such as the equipment listed in the team PSE Service Equipment Catalog. When the use of additional leak detection dye is required, use only Chrysler LLC approved refrigerant leak detection dye, available through Mopar®.

PLUMBING > DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - REFRIGERANT SYSTEM LEAKS > LEAK TEST

1. Begin searching for refrigerant leaks using a high quality UV light to detect the fluorescent refrigerant leak detection dye.
 1. Inspect all connections, plumbing fittings, brazed joints, hoses, hose crimps, service ports, compressor housing, pressure relief valve and A/C condenser for dye.
 2. Inspect the evaporator drain tube and condensate for presence of dye, which indicates a leak from the A/C evaporator.
 3. If equipped with rear A/C, inspect the underbody refrigerant lines, fittings, rear evaporator drain tube and condensate for presence of dye, which indicates a leak from the rear evaporator.
 4. If no leaks are found using a UV light, proceed to **Step #2** .
2. If a leak is not found with the leak detection dye, operate the heating and A/C system with the engine at idle under the following conditions for at least 15 minutes, then proceed to **Step #3** .
 1. Doors or windows open
 2. Transmission in Park or Neutral with the parking brake set (depending on transmission

application)

3. A/C and heater controls set to outside air, full cool, panel mode, high blower and A/C compressor engaged (If the A/C compressor does not engage, go to LOW OR EMPTY REFRIGERANT SYSTEM .
4. If equipped with rear A/C, set rear controls to full cool and high blower.
3. Shut the vehicle off and wait at least 5 minutes.
4. Insert a leak detector, with the proper tip attached for the refrigerant in the A/C system being checked, into the evaporator drain tube and the instrument panel air outlets, to check for evaporator leaks. Check the evaporator tubes at the A/C expansion valve, for leaks not visible behind the expansion valve. Check around the front of the A/C compressor, for compressor shaft seal leaks. Check between the A/C condenser and radiator for condenser leaks not previously visible.
5. If equipped with rear A/C, insert the leak detector into the rear evaporator drain tube and rear air outlets. Check the underbody A/C lines and fittings, evaporator tubes and rear A/C expansion valve.

PLUMBING > DIAGNOSIS AND TESTING > DIAGNOSIS AND TESTING - REFRIGERANT SYSTEM LEAKS > LOW OR EMPTY REFRIGERANT SYSTEM



NOTE:

This procedure should only be done after an A/C Performance Test has been conducted and a refrigerant system leak has NOT been found using the factory installed leak detection dye.

Do the following if the A/C compressor will not engage and a refrigerant leak in the A/C system is suspected. but cannot be found using the factory installed leak detection dye.

1. Recover, evacuate and recharge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
2. Operate the heating and A/C system with the engine at idle under the following conditions for at least 15 minutes.
 1. Doors or windows open
 2. Transmission in Park or Neutral with the parking brake set (depending on transmission application)
 3. A/C and heater controls set to outside air, full cool, panel mode, high blower and A/C compressor engaged
 4. If equipped with rear A/C, set rear controls to full cool and high blower
3. Shut the vehicle off and return to. Refer to LEAK TEST .

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM RECOVERY



WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.



CAUTION:

Various aftermarket manufacturers produce A/C system sealants that are designed to stop A/C refrigerant system leaks. The use of A/C system sealants may result in damage to A/C refrigerant recovery/evacuation/recharging equipment and/or the vehicle A/C system and are not recommended for use by Chrysler LLC.

Fig 1: R-1234YF Refrigerant Recovery/Recycling/Charging Station



Courtesy of CHRYSLER GROUP, LLC

When servicing the A/C system, an R-1234yf refrigerant recovery/recycling/charging station that meets SAE standard J2843 must be used. Per SAE standard J2843, refrigerant recovery stations must recover 95% of the refrigerant system within 30 minutes at 21.1°C (70°F) and be able to measure the amount of refrigerant removed from the system to an accuracy of 28 grams (1 oz.). See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.



NOTE:

A/C system should be tested prior to refrigerant recovery if the use of A/C system sealants are suspected. These sealants have the potential to clog refrigerant recovery equipment and cause vehicle A/C component damage. Various tool manufacturers make tool kits that detect A/C system sealants. See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.

If sealants are detected in an A/C system, the system should be treated as contaminated and

replacement of the entire A/C refrigerant system is recommended. A/C systems found to be contaminated with A/C system sealers, A/C stop-leak products or seal conditioners void the warranty for the A/C system.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM RECOVERY > R-1234YF RECOVERY PROCEDURE

WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

CAUTION:

Various aftermarket manufacturers produce A/C system sealants that are designed to stop A/C refrigerant system leaks. The use of A/C system sealants may result in damage to A/C refrigerant recovery/evacuation/recharging equipment and/or the vehicle A/C system and are not recommended for use by Chrysler LLC.

CAUTION:

*A small amount of refrigerant oil is removed from the A/C system each time the refrigerant system is recovered and evacuated. Before charging the A/C system, you **MUST** replenish any oil lost during the recovery process. See the equipment manufacturer instructions for more information.*

1. If use of aftermarket A/C system sealant is suspected, the A/C system should be tested for sealant prior to refrigerant system recovery. See the operating instructions supplied by the equipment manufacturer for proper use and care of this equipment.
2. Connect an R-1234yf refrigerant recovery/recycling/charging station that meets SAE standard J2843 to the refrigerant system.
3. Recover the A/C refrigerant system following the operating instructions supplied by the recovery/recycling/charging station manufacturer.
4. Disconnect the refrigerant recovery/recycling/charging station from the refrigerant system service ports.
5. Reinstall the caps onto the refrigerant system service ports.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM

EVACUATE

Fig 1: R-1234YF Refrigerant Recovery/Recycling/Charging Station



Courtesy of CHRYSLER GROUP, LLC

If the A/C refrigerant system has been open to the atmosphere, it must be evacuated before the A/C system can be recharged with R-1234yf refrigerant.



NOTE:

Special effort must be used to prevent moisture from entering the A/C system oil. Moisture in the oil is very difficult to remove and will cause a reliability problem with the A/C compressor.

Moisture and air in the A/C refrigerant system will raise the compressor head pressure above acceptable operating levels. This will reduce the performance of the A/C system and damage the A/C compressor. Moisture will boil at near room temperature when exposed to vacuum. Always use an R-1234yf refrigerant recovery/recycling/charging station with a vacuum pump that meets SAE standard J2843, or an R-1234yf compatible manifold gauge set and a stand alone vacuum pump.

If an A/C compressor is left open to the atmosphere for an extended period of time, it is recommended that the refrigerant oil in the compressor be drained and replaced with new refrigerant oil to reduce the possibility of contaminating the refrigerant system. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM EVACUATE > R-1234YF EVACUATION PROCEDURE

WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

CAUTION:

*A small amount of refrigerant oil is removed from the A/C system each time the refrigerant system is recovered and evacuated. Before charging the A/C system, you **MUST** replenish any oil lost during the recovery process. See the equipment manufacturer instructions for more information.*

1. Recover the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

NOTE:

When connecting service equipment couplers to refrigerant line service ports, verify that the valve of each coupler is fully closed prior to connecting. This will reduce the amount of effort required to make the connections.

2. Connect an R-1234yf refrigerant recovery/recycling/charging station with a vacuum pump that meets SAE standard J2843 to the refrigerant system, or an R-1234yf compatible manifold gauge set and a stand alone vacuum pump (depending on available equipment).
3. Open the refrigerant recovery/recycling/charging station or manifold gauge set valves and start the vacuum pump. The vacuum pump should run a minimum of 45 minutes prior to recharge to eliminate all moisture in system. When the low-side gauge reads to the lowest degree of vacuum possible (approximately -88 kPa (-26 in. Hg or greater) for 30 minutes, close all valves and turn off vacuum pump. If the refrigerant system fails to reach specified vacuum, the refrigerant system likely has a leak that must be corrected. If the refrigerant system maintains specified vacuum for at least 30 minutes, start the vacuum pump, open the valves and allow the refrigerant system to evacuate an additional 10 minutes.
4. Close the refrigerant recovery/recycling/charging station or manifold gauge set valves. Turn off and disconnect the vacuum pump.
5. Disconnect the refrigerant recovery/recycling/charging station or manifold gauge set from the

refrigerant system service ports.

6. Install the caps onto the refrigerant system service ports.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM CHARGE



WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.



NOTE:

The Underhood HVAC Specification Label contains the refrigerant fill specification of the vehicle being serviced.

Fig 1: R-1234YF Refrigerant Recovery/Recycling/Charging Station



Courtesy of CHRYSLER GROUP, LLC

After all refrigerant system leaks have been repaired and the refrigerant system has been evacuated, a refrigerant charge can be injected into the system. Refer to PLUMBING, STANDARD PROCEDURE .

When charging the A/C system, use an R-1234yf refrigerant recovery/recycling/charging station that meets SAE standard J2843. Per SAE standard J2843, refrigerant recovery stations must charge the system to an accuracy of 14 grams (0.5 oz.). See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM CHARGE > R-1234YF CHARGING PROCEDURE

⚠ WARNING:

Review the safety precautions and warnings in this service information before performing

this procedure. Failure to follow these instructions may result in serious injury or death.

 CAUTION:

A small amount of refrigerant oil is removed from the A/C system each time the refrigerant system is recovered and evacuated. Before charging the A/C system, you MUST replenish any oil lost during the recovery process. See the equipment manufacturer instructions for more information.

1. Recover and evacuate the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
2. Connect an R-1234yf refrigerant recovery/recycling/charging station that meets SAE standard J2843 to the refrigerant system.
3. When required, adjust the refrigerant oil level. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

 NOTE:

A/C system refrigerant capacity can be found on the HVAC Specification Label, located in the engine compartment.

4. Open both the low and high side valves, then open the charge valve to allow the refrigerant to flow into the refrigerant system.
5. When the transfer of refrigerant has stopped, close the valves.

 WARNING:

Take care not to open the high side (high pressure) valve while performing Step 7. Failure to follow these instructions may result in possible serious or fatal injury.

6. Perform the following if all of the refrigerant charge did not transfer from the dispensing device.
 1. Open all of the windows in the vehicle.
 2. Set the heating and A/C system so that the A/C compressor is operating and the blower motor is operating at its lowest speed setting.
 3. Run the engine at a steady high idle (about 1400 rpm).
 4. If the A/C compressor does not operate, test the compressor control circuits and repair as required.
 5. Open the low side valve and the charge valve to allow the remaining refrigerant to flow into the refrigerant system.

6. When the transfer of refrigerant has stopped, close the valves.
7. Disconnect the refrigerant recovery/recycling/charging station from the refrigerant system service ports.
8. Install the caps onto the refrigerant system service ports.

**PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM
RECOVERY - EMEA**

Fig 1: R-1234YF Refrigerant System Recovery Station - EMEA



Courtesy of CHRYSLER GROUP, LLC

Comply with the safety standards prescribed. Refer to PLUMBING, WARNING and PLUMBING, CAUTION .

Use the appropriate equipment to empty and refill the A/C system. When recovering the A/C refrigerant system, use an R-1234yf refrigerant recovery/recycling/charging station (1) that meets SAE standard J2843. Per SAE standard J2843, refrigerant recovery stations must recover 95% of the refrigerant system within 30 minutes at 21.1°C (70°F) and be able to measure the amount of refrigerant removed

from the system to an accuracy of 28 grams (1 oz.). See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.



NOTE:

A/C system should be tested prior to refrigerant recovery if the use of A/C system sealants are suspected. These sealants have the potential to clog refrigerant recovery equipment and cause vehicle A/C component damage. Various tool manufacturers make tool kits that detect A/C system sealants. See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.

If sealants are detected in an A/C system, the system should be treated as contaminated and replacement of the entire A/C refrigerant system is recommended. A/C systems found to be contaminated with A/C system sealers, A/C stop-leak products or seal conditioners void the warranty for the A/C system.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM RECOVERY - EMEA > R-1234YF RECOVERY PROCEDURE - EMEA



WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.



CAUTION:

Various aftermarket manufacturers produce A/C system sealants that are designed to stop A/C refrigerant system leaks. The use of A/C system sealants may result in damage to A/C refrigerant recovery/evacuation/recharging equipment and/or the vehicle A/C system and are not recommended for use by Chrysler LLC.



CAUTION:

*A small amount of refrigerant oil is removed from the A/C system each time the refrigerant system is recovered and evacuated. Before charging the A/C system, you **MUST** replenish any oil lost during the recovery process. See the equipment manufacturer instructions for more information.*

Fig 1: R-1234YF Refrigerant System Recovery Station - EMEA

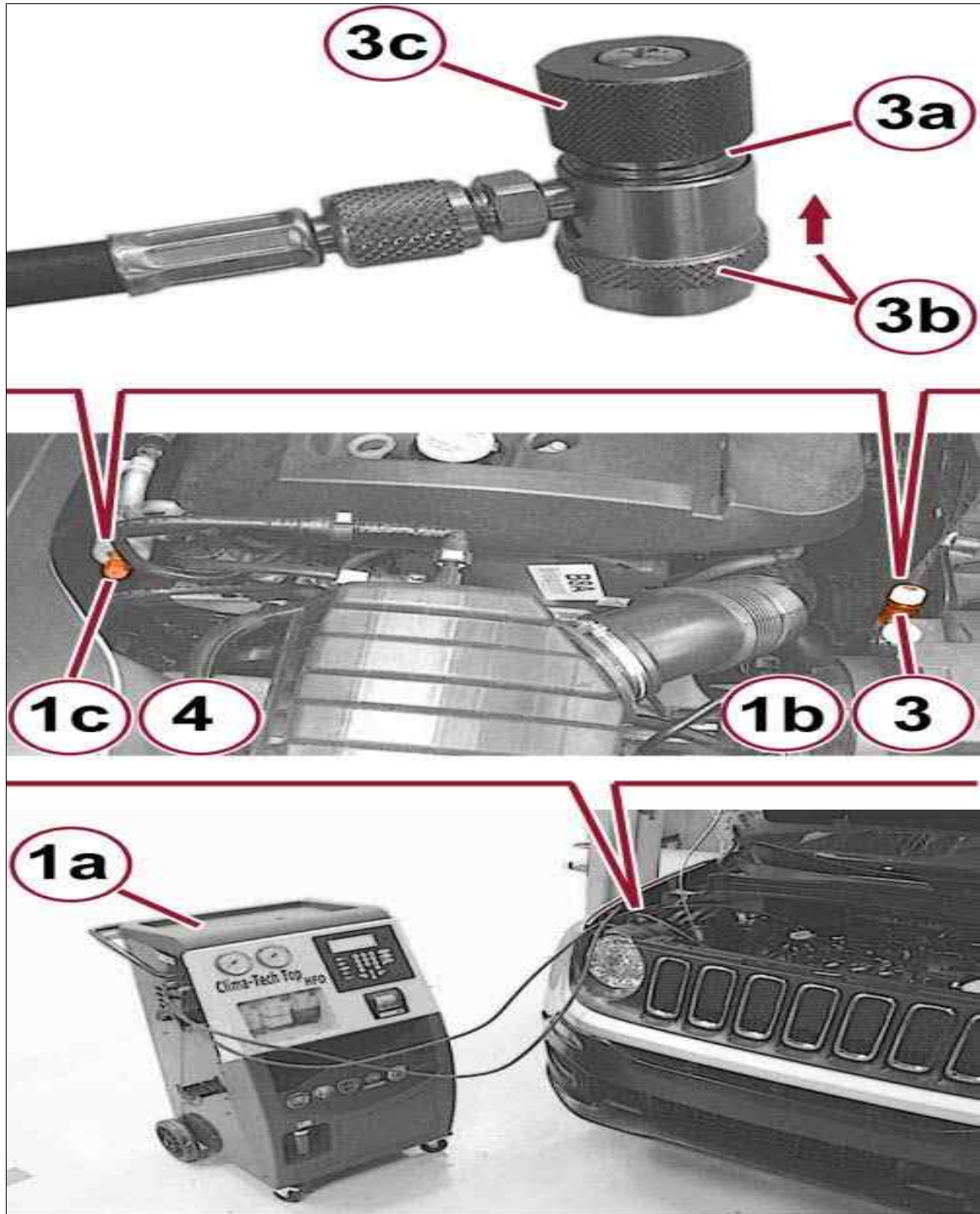


Courtesy of CHRYSLER GROUP, LLC

1. If use of aftermarket A/C system sealant is suspected, the A/C system should be tested for sealant prior to refrigerant system recovery. See the operating instructions supplied by the equipment manufacturer for proper use and care of this equipment.
2. Connect an R-1234yf refrigerant recovery/recycling/charging station (1) that meets SAE standard J2843 to the refrigerant system.

3. Run the engine with air conditioner engaged for 10-15 minutes.

Fig 2: Connecting R-1234YF Refrigerant Recovery/Recycling/Charging Station



Courtesy of CHRYSLER GROUP, LLC

4. Depending on the type of engine in the vehicle, move or remove any parts that obstruct connecting of the recovery, evacuation, charging station (1a), to the corresponding charging valve (1b) and (1c) of the air conditioning.
5. Remove the caps from the service ports (1b and 1c).

6. Connect the high pressure hose (HIGH) of the equipment corresponding to the high pressure quick coupler service port (1b).

 **NOTE:**

To engage the fittings (3a) on the quick coupler valves, you need to pull up the knurled fitting (3b). After connecting, tighten the locking cap (3c).

7. Connect the low pressure hose (LOW) to the low pressure quick coupler service port (1c).

 **NOTE:**

For added security, the quick coupler fittings (3a) of the hoses connecting the equipment are of different diameters: high pressure side is larger than the low pressure side and low pressure side is smaller than the high pressure side.

8. Recover the A/C refrigerant system following the operating instructions supplied by the recovery/recycling/charging station manufacturer.

Fig 3: Compressor Oil Container



Courtesy of CHRYSLER GROUP, LLC

9. During the emptying of the system, the compressor oil extract accumulates in an appropriate

container (1).

 **NOTE:**

The oil is highly hygroscopic: avoid leaving open containers.

10. Refill the system with new oil in the same amount as indicated on the container.

 **NOTE:**

In case of replacement of some components, it is necessary to add, for each of the replaced parts, the following amounts of oil:

1. A/C Lines, 5 cm³/m
2. Evaporator, 40 cm³
3. Condenser with integrated filter, 50 cm³

In case of accidental breakage which causes "quick emptying of the system (in less than 5 minutes), it is not possible to determine the exact amount of oil loss since the high fluid pressures can cause" entrainment ". In this case, begin with an initial amount of 50 cm³.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM CHARGE - EMEA

Fig 1: R-1234YF Refrigerant System Recovery Station - EMEA



Courtesy of CHRYSLER GROUP, LLC

Comply with the safety standards prescribed. Refer to PLUMBING, WARNING and PLUMBING, CAUTION . Use the appropriate equipment to empty and refill the A/C system.

After all A/C refrigerant system repairs have been completed and the refrigerant system has been evacuated, the A/C system can be recharged with R-1234yf refrigerant.

When charging the A/C system, use an R-1234yf refrigerant recovery/recycling/charging station (1) that

meets SAE standard J2843. Per SAE standard J2843, refrigerant recovery stations must charge the system to an accuracy of 14 grams (0.5 oz.). See the operating instructions supplied by the equipment manufacturer for proper care and use of this equipment.

PLUMBING > STANDARD PROCEDURE > R-1234YF REFRIGERANT SYSTEM CHARGE - EMEA > R-1234YF CHARGING PROCEDURE - EMEA

WARNING:

Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

CAUTION:

A small amount of refrigerant oil is removed from the A/C system each time the refrigerant system is recovered and evacuated. Before charging the A/C system, you MUST replenish any oil lost during the recovery process. See the equipment manufacturer instructions for more information.

1. Start the charging procedure of refrigerant according to the instructions given in the manual to operate the equipment.

NOTE:

In case of damage to the compressor or other system components, or after prolonged exposure of an open system to the air (over 6 hours) you must perform the SYSTEM WASHING procedure as follows. Using filtered compressed air to avoid introducing foreign objects into the system, clean all system components that connect to the compressor, including the compressor.

2. Connect an R-1234yf refrigerant recovery/recycling/charging station that meets SAE standard J2843 to the refrigerant system.
3. Charge the A/C system with the specified amount of refrigerant using the High pressure port.
4. Recover the refrigerant from the Low pressure port using the recovery procedure.

NOTE:

A/C system refrigerant capacity can be found on the HVAC Specification Label, located in the engine compartment.

5. Repeat the charging procedure with the specified amount of R-1234yf refrigerant.



NOTE:

In the case of SYSTEM WASHING, this procedure eliminated all oil in the system.

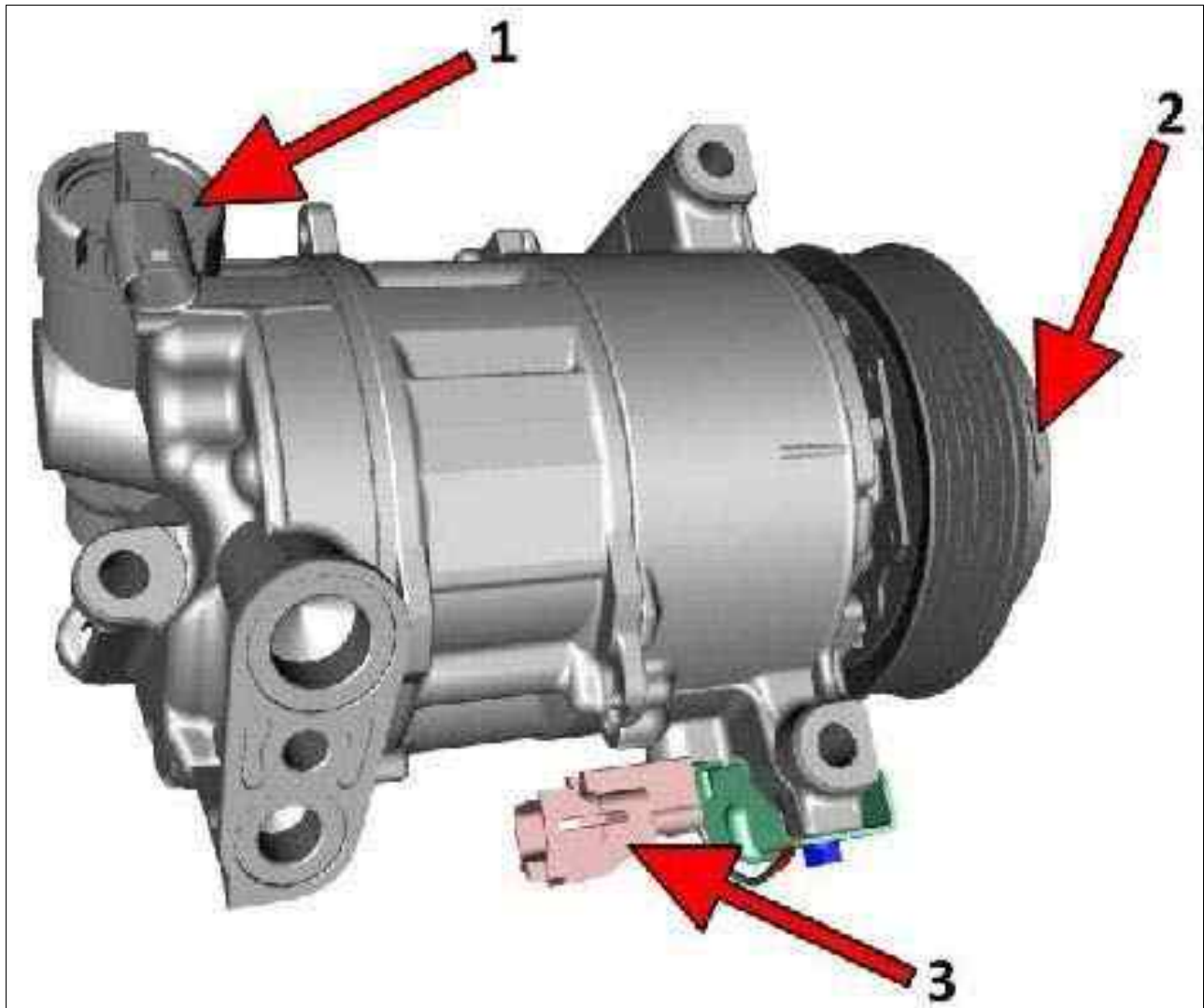
6. When required, adjust the refrigerant oil level with the required amount. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

7. Disconnect the refrigerant recovery/recycling/charging station from the refrigerant system service ports.

8. Reinstall the caps onto the refrigerant system service ports.

PLUMBING > COMPRESSOR, A/C > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > A/C COMPRESSOR

Fig 1: A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

The compressor of the air conditioning system is the variable displacement type, with electric clutch engagement and external control of the displacement, via the External Control Variable Displacement (ECVD) valve. The compressors are specific for engine version and market.

The Heating, Ventilation, and Air Conditioning (HVAC) module manages the ECVD valve to increase or decrease the compressor displacement and thus the system pressure, via Pulse Width Modulation (PWM) control. External regulation of the displacement improves comfort, operation of the air conditioning system and saves the energy requested by the climate control system.

The external compressor controls are:

- ECVD valve (1)
- Electric clutch
- Connector for electric clutch

 **CAUTION:**

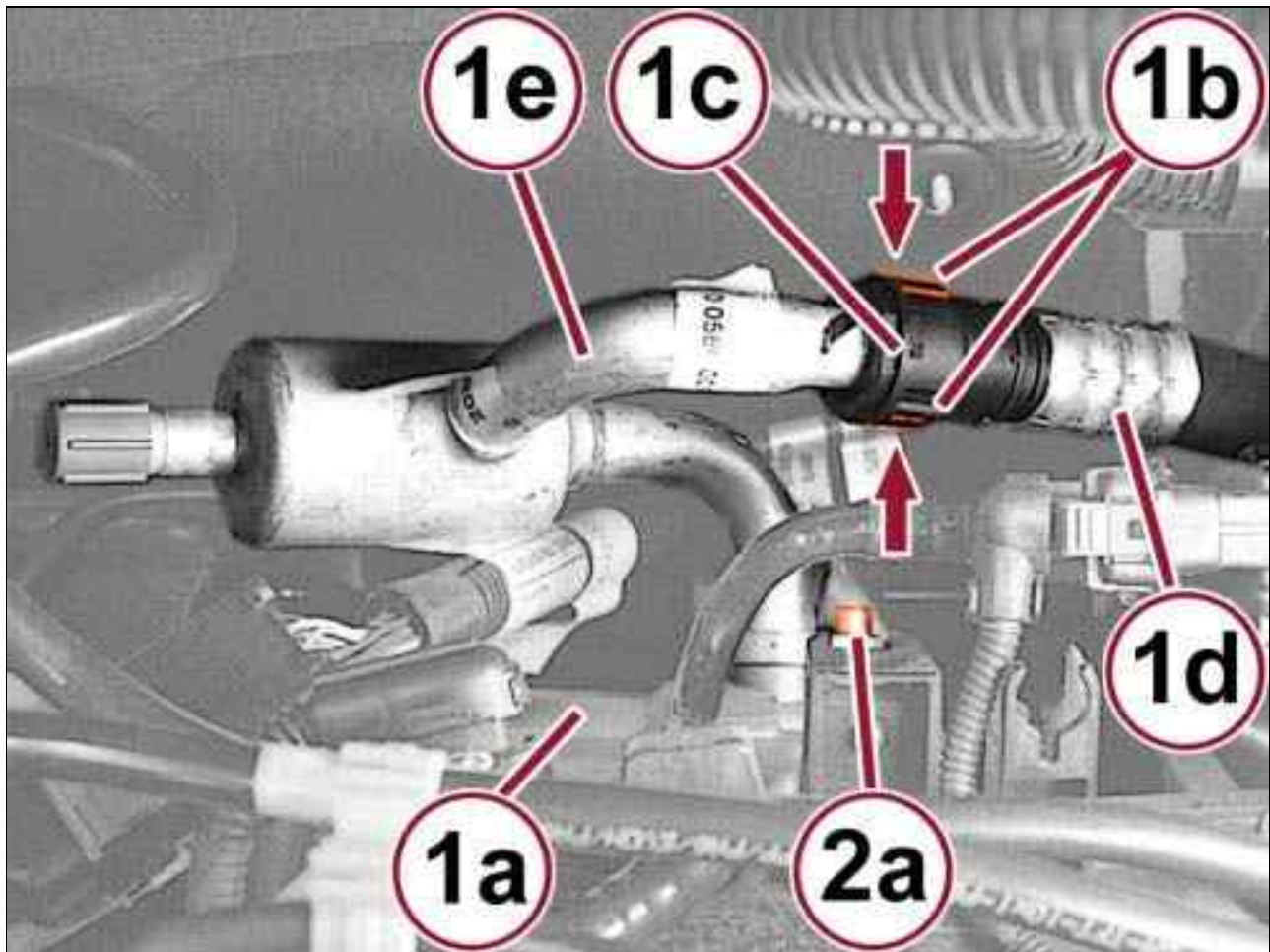
Be certain to adjust the refrigerant system oil level when replacing an A/C compressor. Failure to properly adjust the refrigerant oil level can prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 1.4L > REMOVAL

⚠ WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

Fig 1: Remove/Install A/C Suction Line



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.

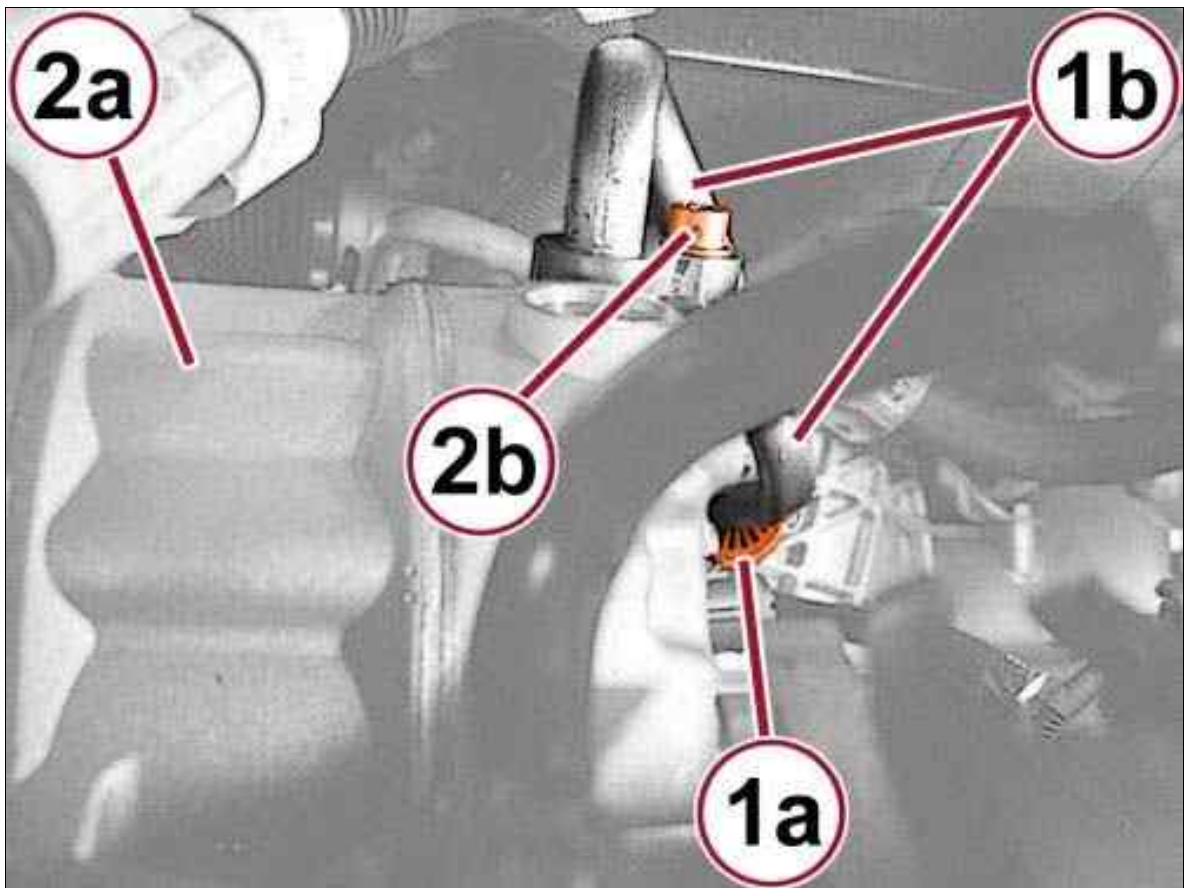
2. Remove the engine cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
3. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
4. Remove the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
5. Release the quick disconnect coupling (1c) of the A/C suction line (1d) by pinching the release tabs (1b) of the coupling together.

 **NOTE:**

Pushing the coupling (1c) toward the metal portion of the A/C suction line (1e) initially will make it easier to remove it when pulling it off the metal line (1e).

6. Remove the bolt (2a) that secures the metal line (1e) to the compressor (1a). Remove and discard the seal washers.

Fig 2: Remove/Install A/C Discharge Line

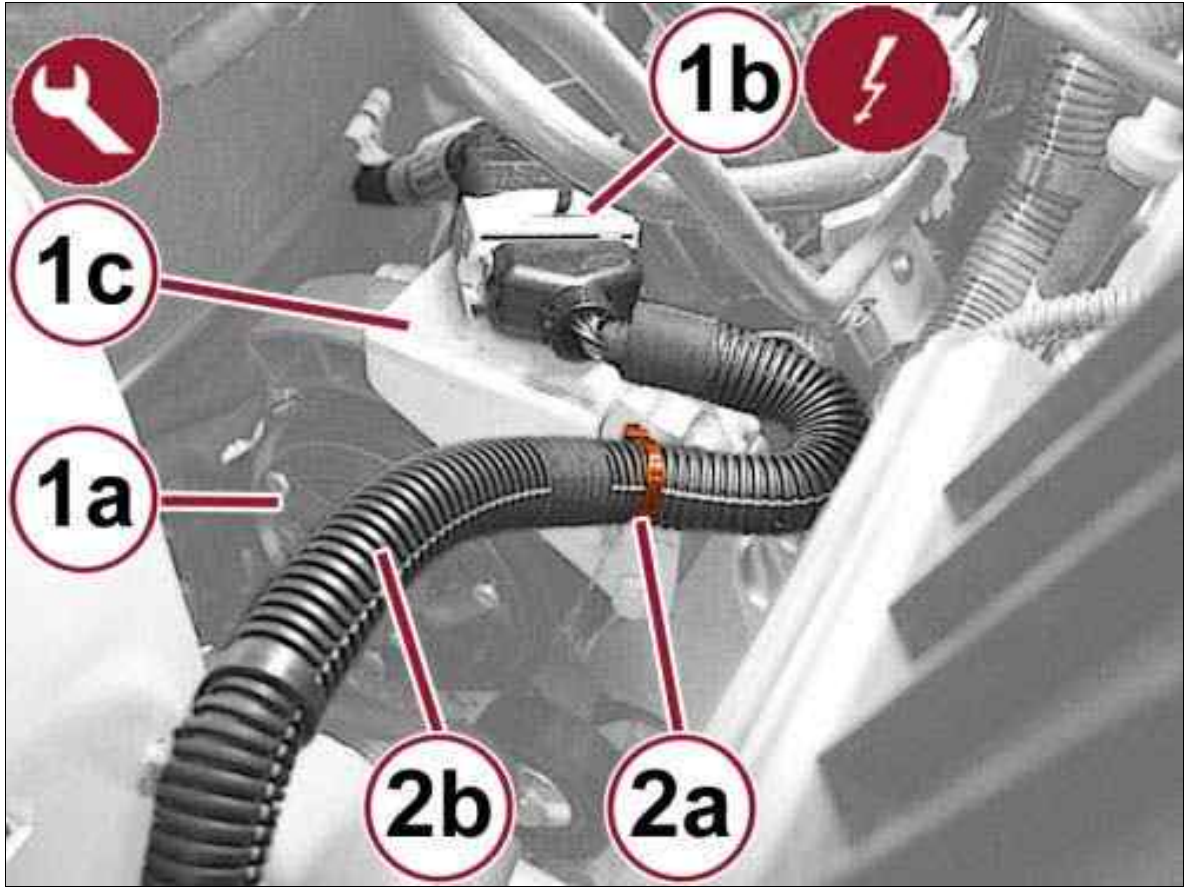


Courtesy of CHRYSLER GROUP, LLC

7. Release the retainer (1a) for the A/C discharge line.
8. Remove the bolt (2b) that secures the A/C discharge line (1b) to the compressor (2a). Remove and discard the seal washers.

9. Install plugs in, or tape over the opened refrigerant line fittings and compressor ports (2).

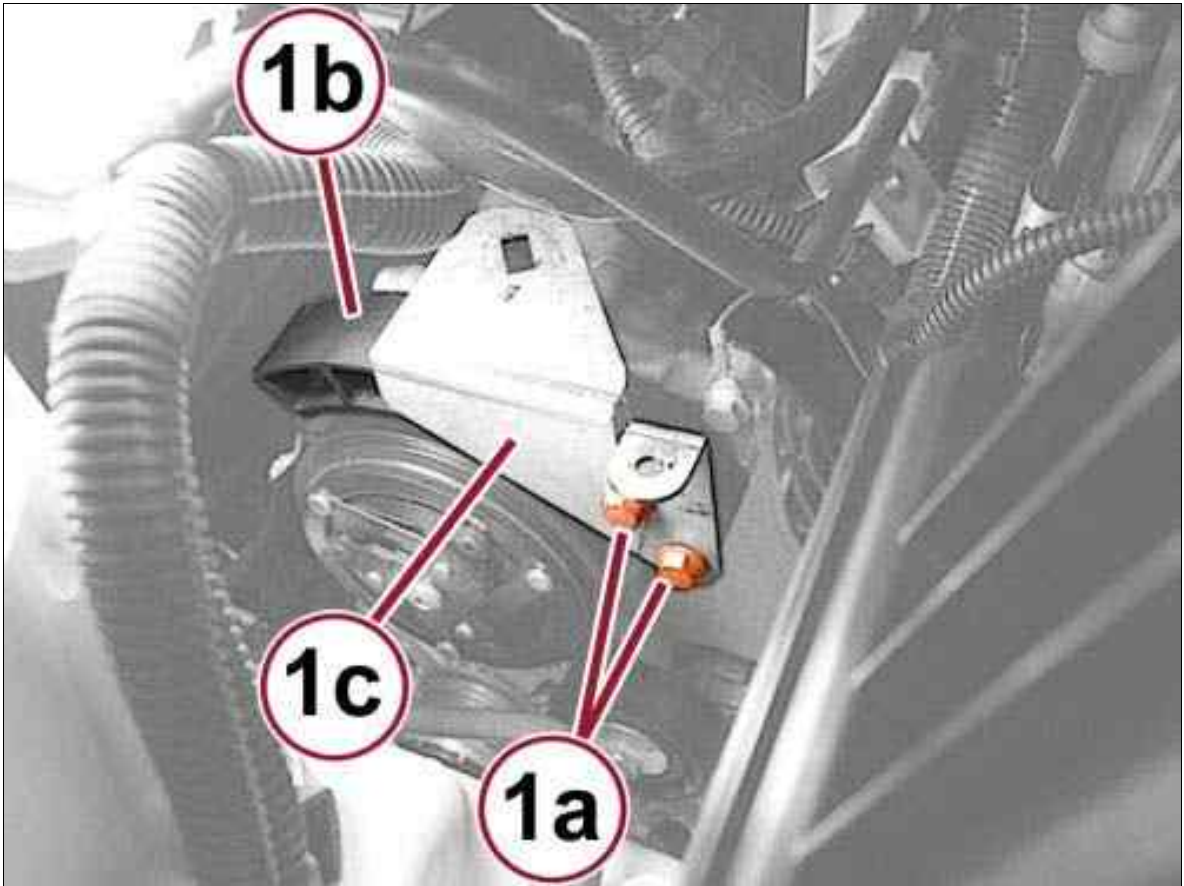
Fig 3: Remove/Install Engine Wire Harness Connector



Courtesy of CHRYSLER GROUP, LLC

10. Disengage the engine wire harness connector (1b) from the belt guard bracket (1c) and disconnect the engine wire harness connector (1b).
11. Disengage the wire harness retainer (2a) from the belt guard bracket (1c) and relocate the wire harness (2b) out of the way.

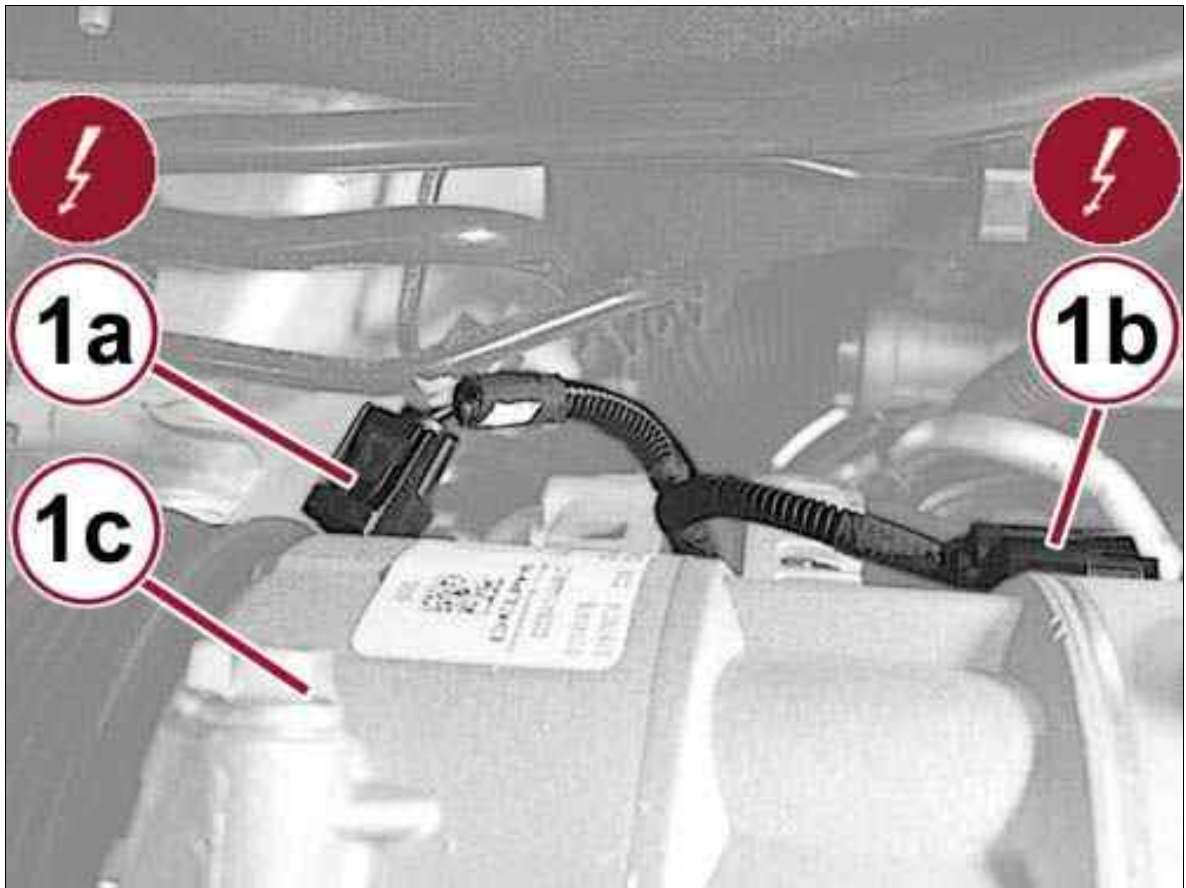
Fig 4: Belt Guard, Bracket & Bolts



Courtesy of CHRYSLER GROUP, LLC

12. Remove the two bolts (1a) from the belt guard (1b) and belt guard bracket (1c).

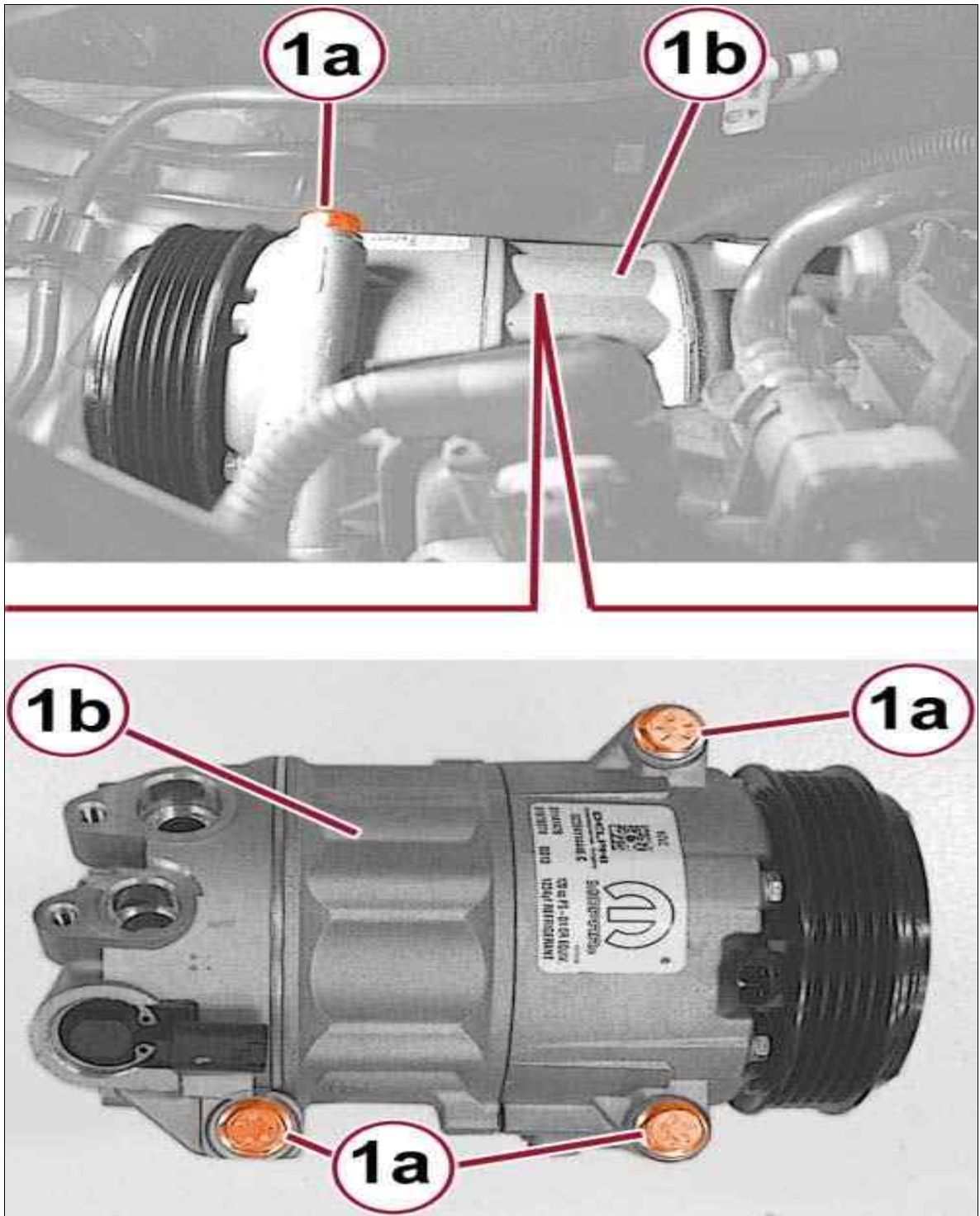
Fig 5: Wire Connectors & Compressor



Courtesy of CHRYSLER GROUP, LLC

13. Disconnect the wire harness connectors (1a and 1b) from the compressor (1c).

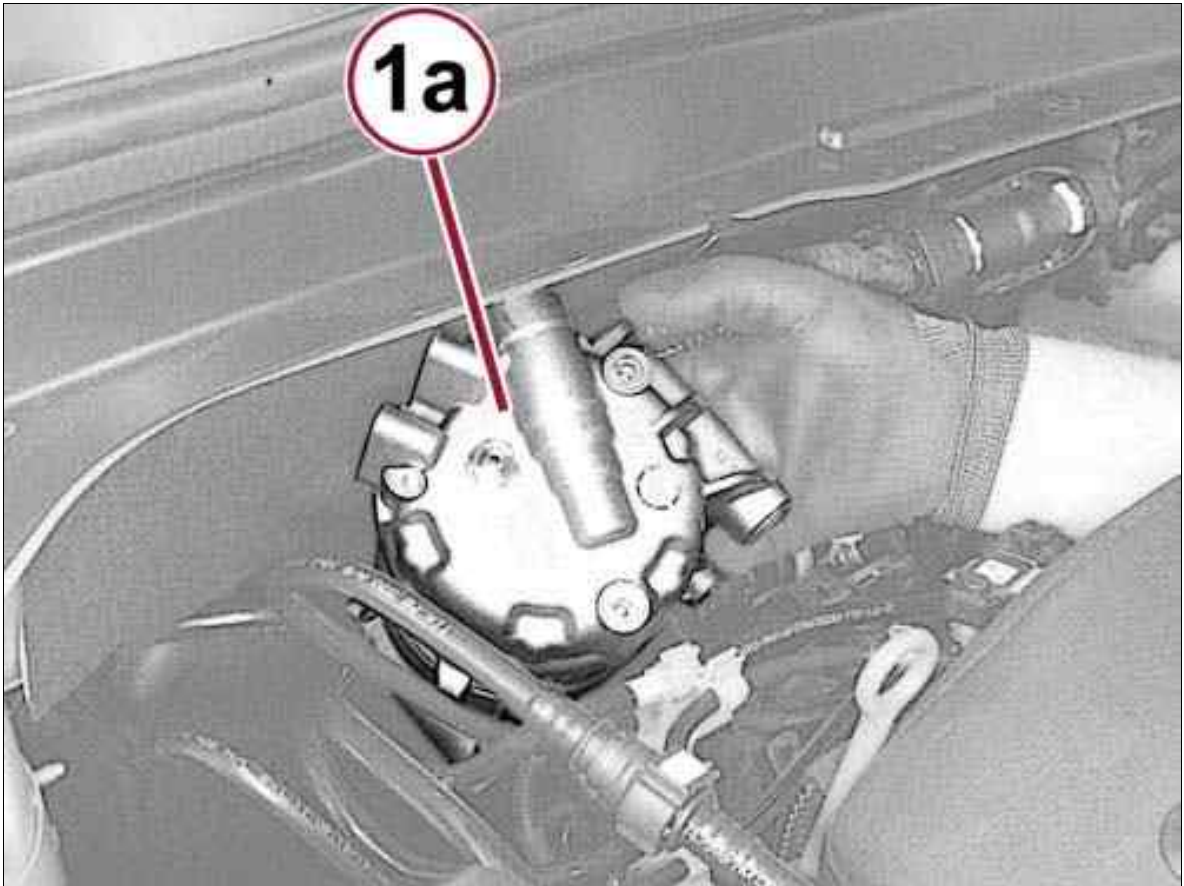
Fig 6: A/C Compressor & Bolts



Courtesy of CHRYSLER GROUP, LLC

14. Remove the three bolts (1a) that secure the A/C compressor (1b) to the engine.

Fig 7: A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

15. Remove the A/C compressor (1a) from the engine compartment.

 NOTE:

If replacing the compressor, it will be necessary to adjust the oil level prior to installation.

Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

**PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C
COMPRESSOR - 1.4L > INSTALLATION**

 CAUTION:

If the A/C compressor is being replaced, be certain to adjust the refrigerant system oil level. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 CAUTION:

The A/C receiver/drier must be replaced if an internal failure of the A/C compressor has occurred. Failure to replace the A/C receiver/drier can cause serious damage to the replacement A/C compressor.

 NOTE:

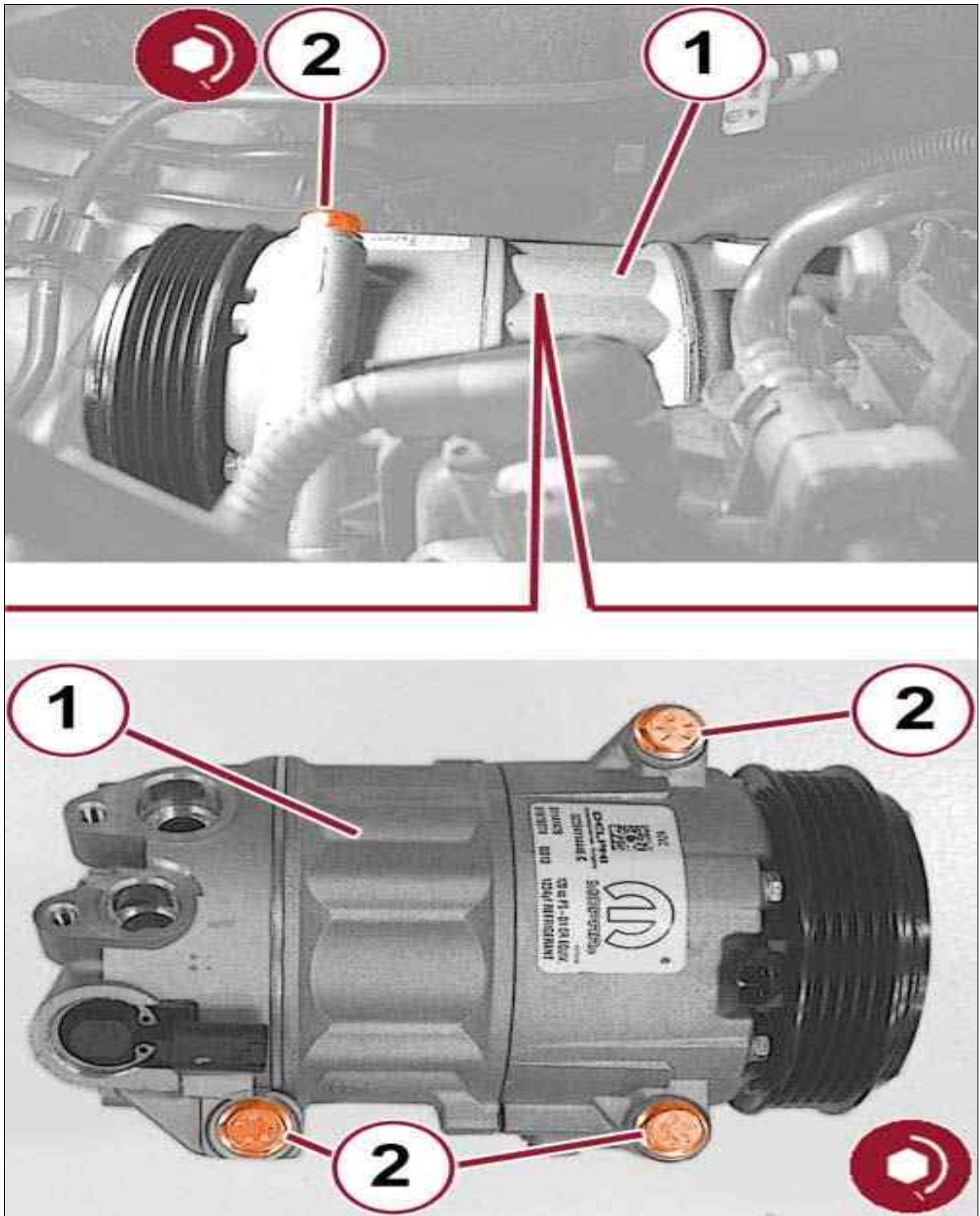
When replacing a compressor, see the Refrigerant Oil Standard Procedure to determine how much oil should be removed from the new A/C compressor. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

 NOTE:

Replacement of the refrigerant line seal washer is required anytime a refrigerant line is disconnected. Failure to replace the seal washer may result in a refrigerant system leak.

1. If the A/C compressor (1) is being replaced, the refrigerant oil in the old compressor must be first drained and measured. Then the oil in the new A/C compressor must be drained. Finally, the new compressor must be refilled with the same amount of new refrigerant oil that was drained out of the old compressor. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the refrigerant system. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE . Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

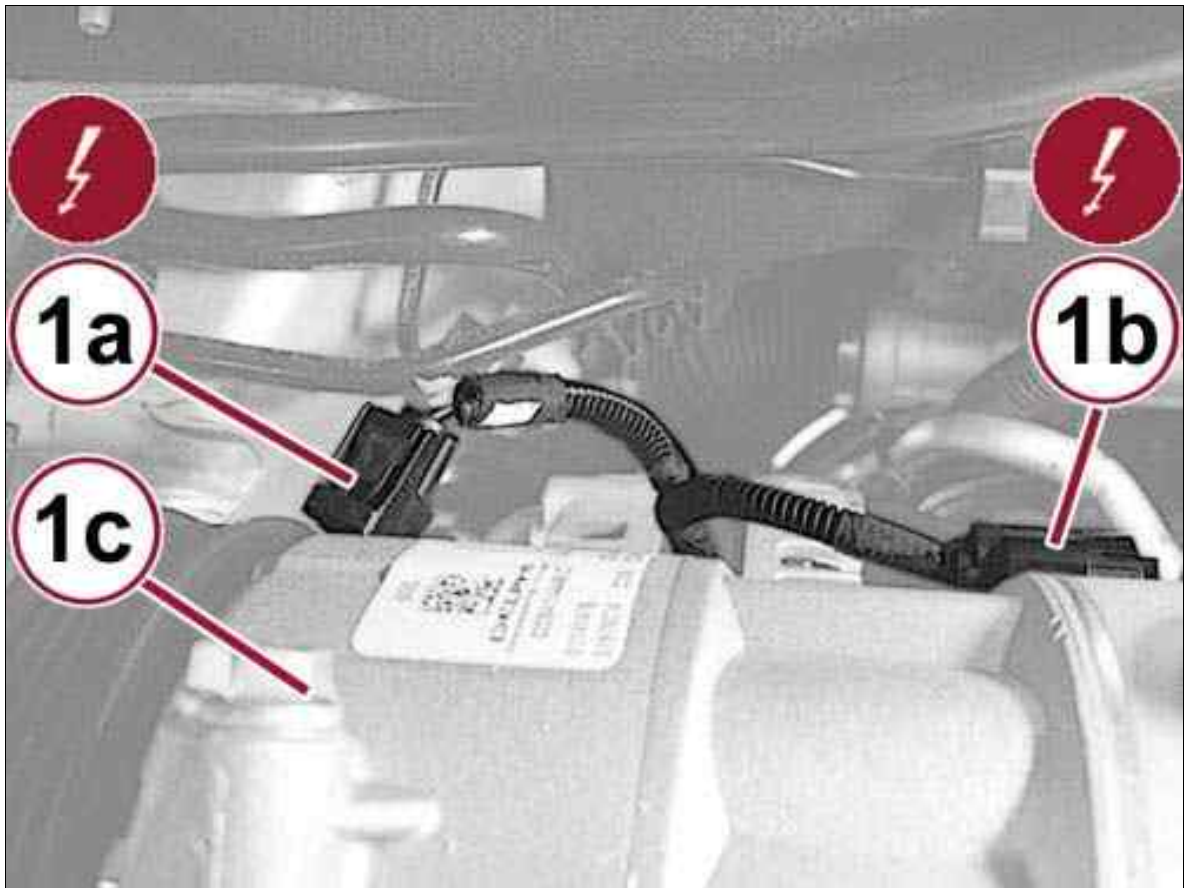
Fig 1: A/C Compressor & Bolts



Courtesy of CHRYSLER GROUP, LLC

2. Position the A/C compressor (1) to the engine.
3. Install and tighten the three bolts (2) to the proper SPECIFICATIONS .

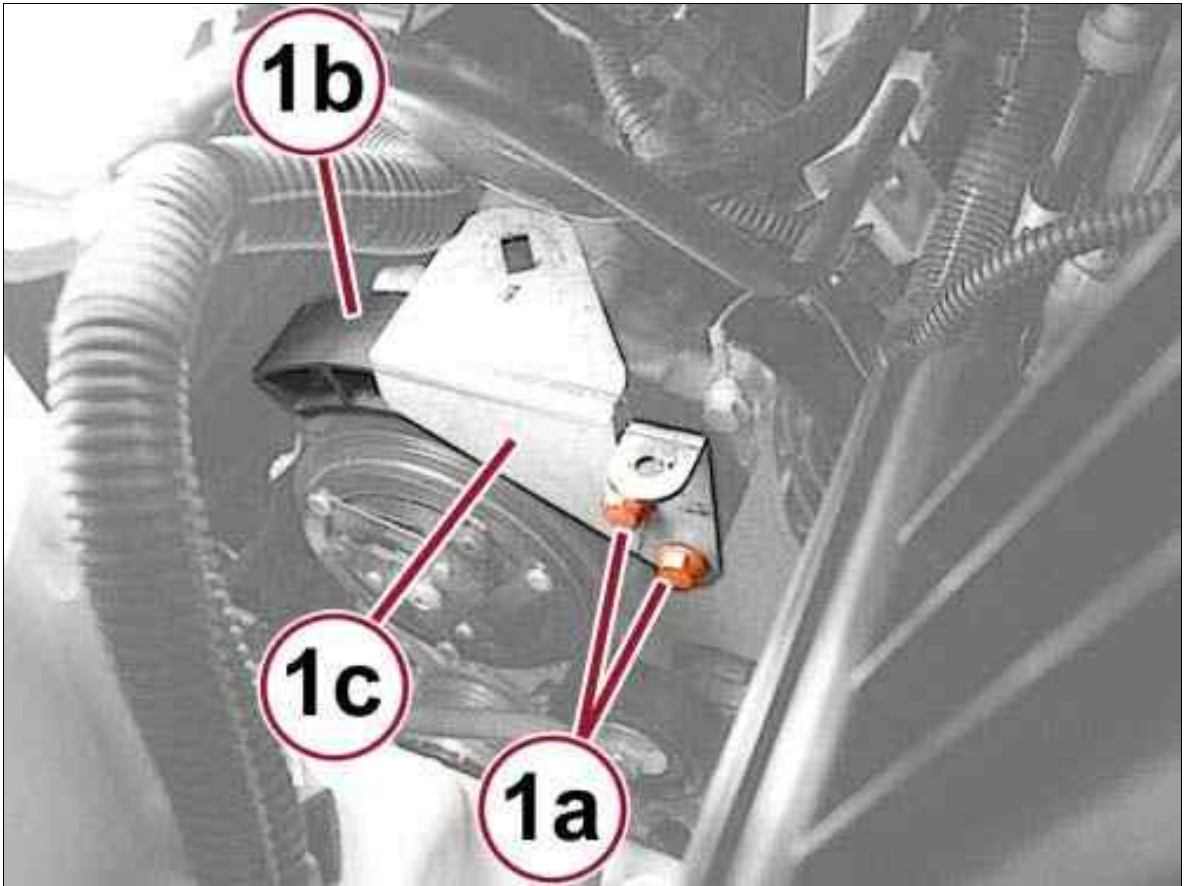
Fig 2: Wire Connectors & Compressor



Courtesy of CHRYSLER GROUP, LLC

4. Connect the wire harness connectors (1a and 1b) to the compressor (1c).

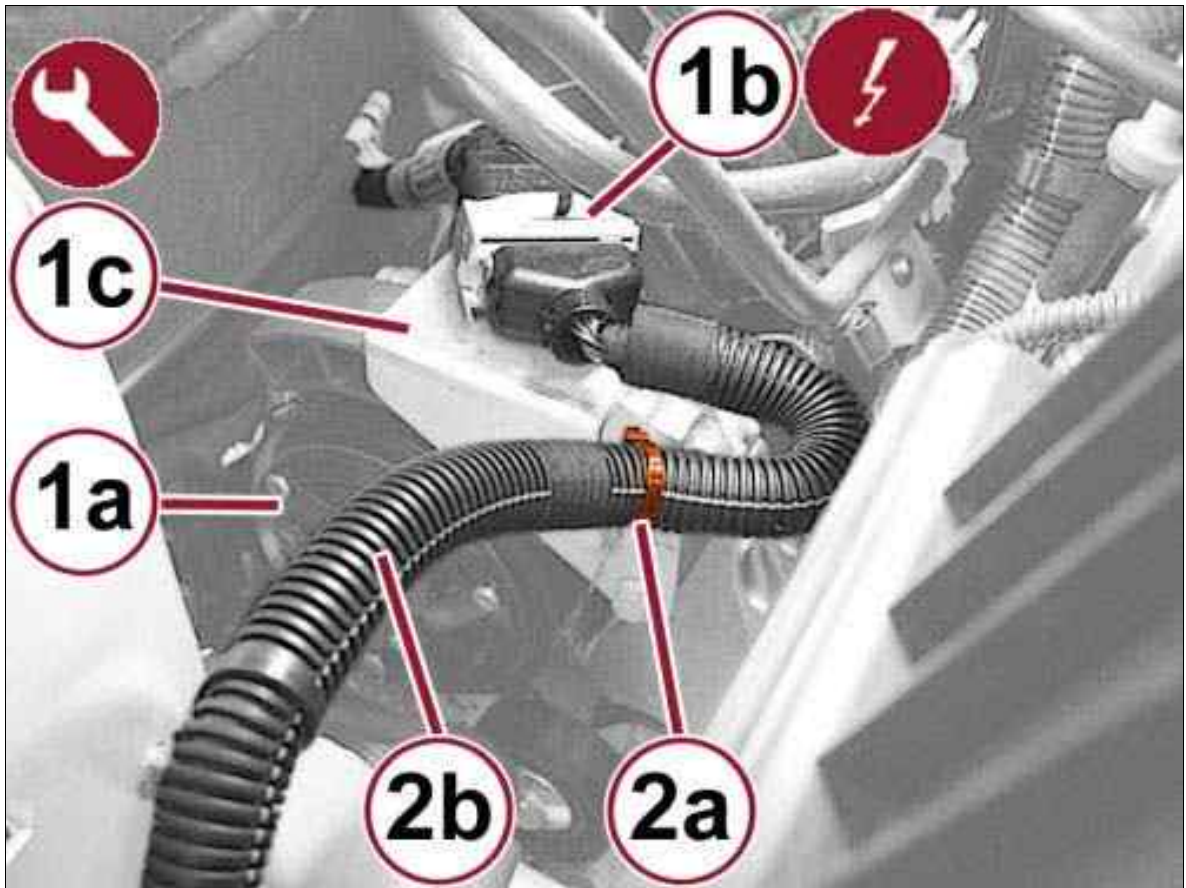
Fig 3: Belt Guard, Bracket & Bolts



Courtesy of CHRYSLER GROUP, LLC

5. Position the belt guard (1b) and belt guard bracket (1c) and install the two bolts (1a) for the bracket (1c). Tighten the bolts securely.

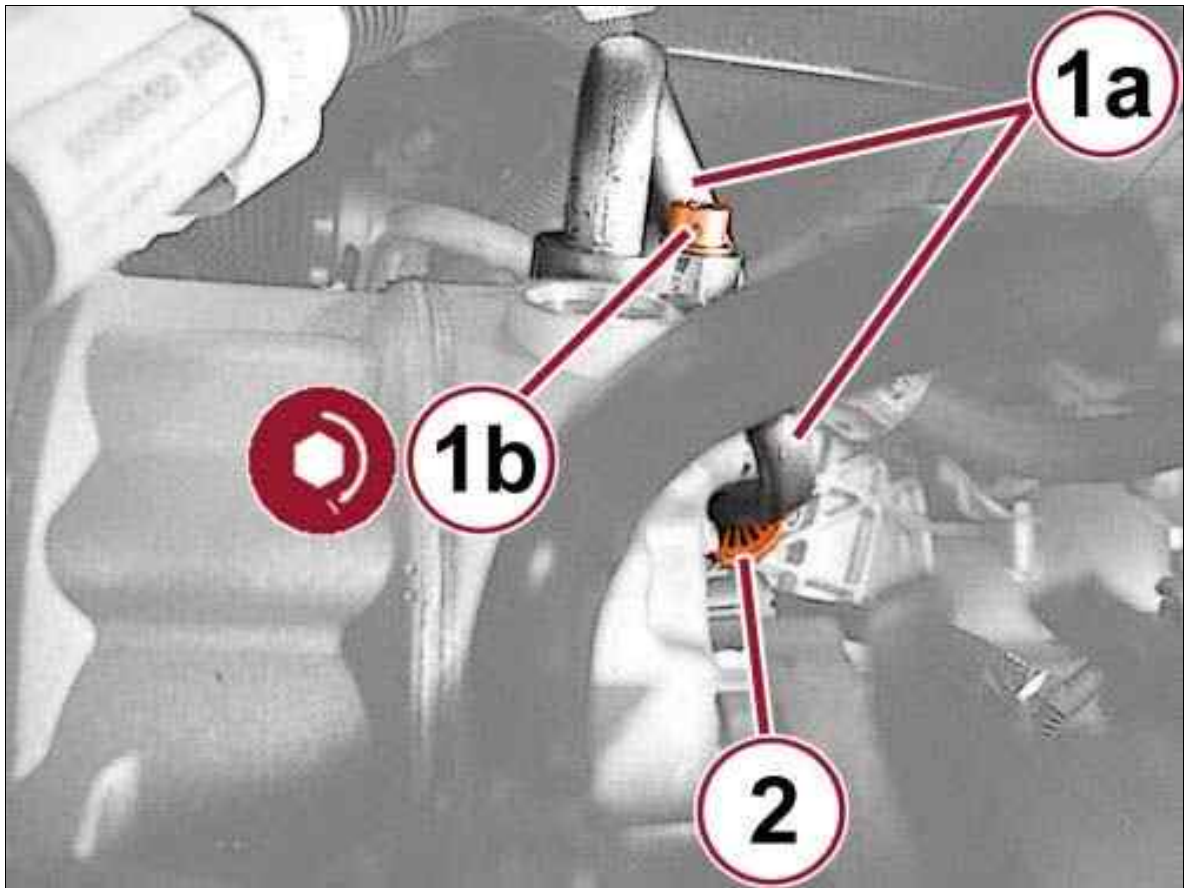
Fig 4: Remove/Install Engine Wire Harness Connector



Courtesy of CHRYSLER GROUP, LLC

6. Position and engage the wire harness retainer (2a) with the belt guard bracket (1c).
7. Position and engage the engine wire harness connector (1b) to the belt guard bracket (1c).
Connect the engine wire harness connector (1b).
8. Remove the tape or plugs from the opened refrigerant line fittings and the compressor ports.

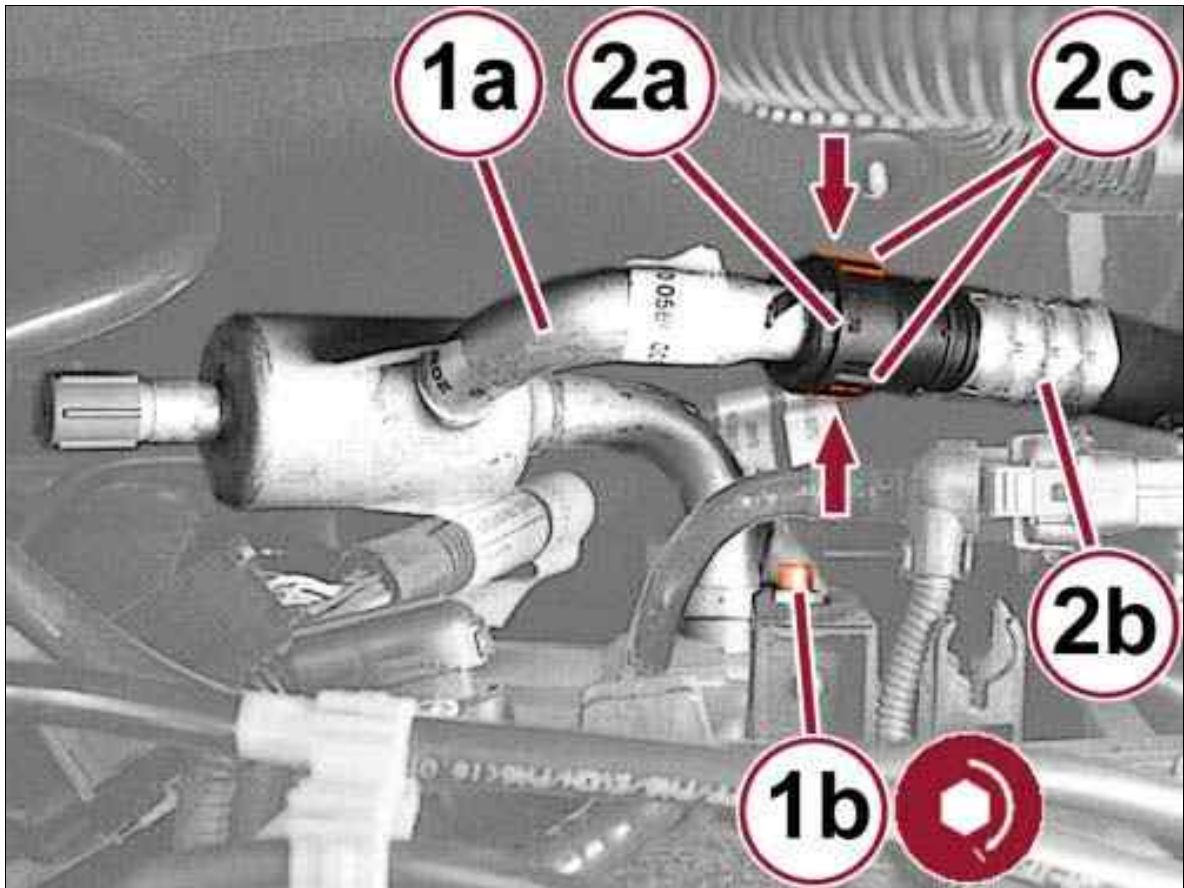
Fig 5: A/C Discharge Line & Fasteners



Courtesy of CHRYSLER GROUP, LLC

9. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
10. Install the A/C discharge line (1a) onto the A/C compressor.
11. Install the bolt (1b) that secures the A/C discharge line to the A/C compressor and tighten to the proper SPECIFICATIONS .
12. Secure the A/C discharge line in the retainer (2).

Fig 6: Remove/Install A/C Discharge Line



Courtesy of CHRYSLER GROUP, LLC

13. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
14. Install the metal portion of the A/C suction line (1a) onto the A/C compressor.
15. Install the bolt (1b) that secures the A/C suction line to the A/C compressor and tighten to the proper SPECIFICATIONS .
16. Connect the coupling (1c) of the A/C suction line (2b) to the metal portion of the A/C suction line (1a). Be certain the coupling (2a) is fully engaged with the metal portion of the A/C suction line (1a).
17. Install the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
18. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
19. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
20. Install the engine cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

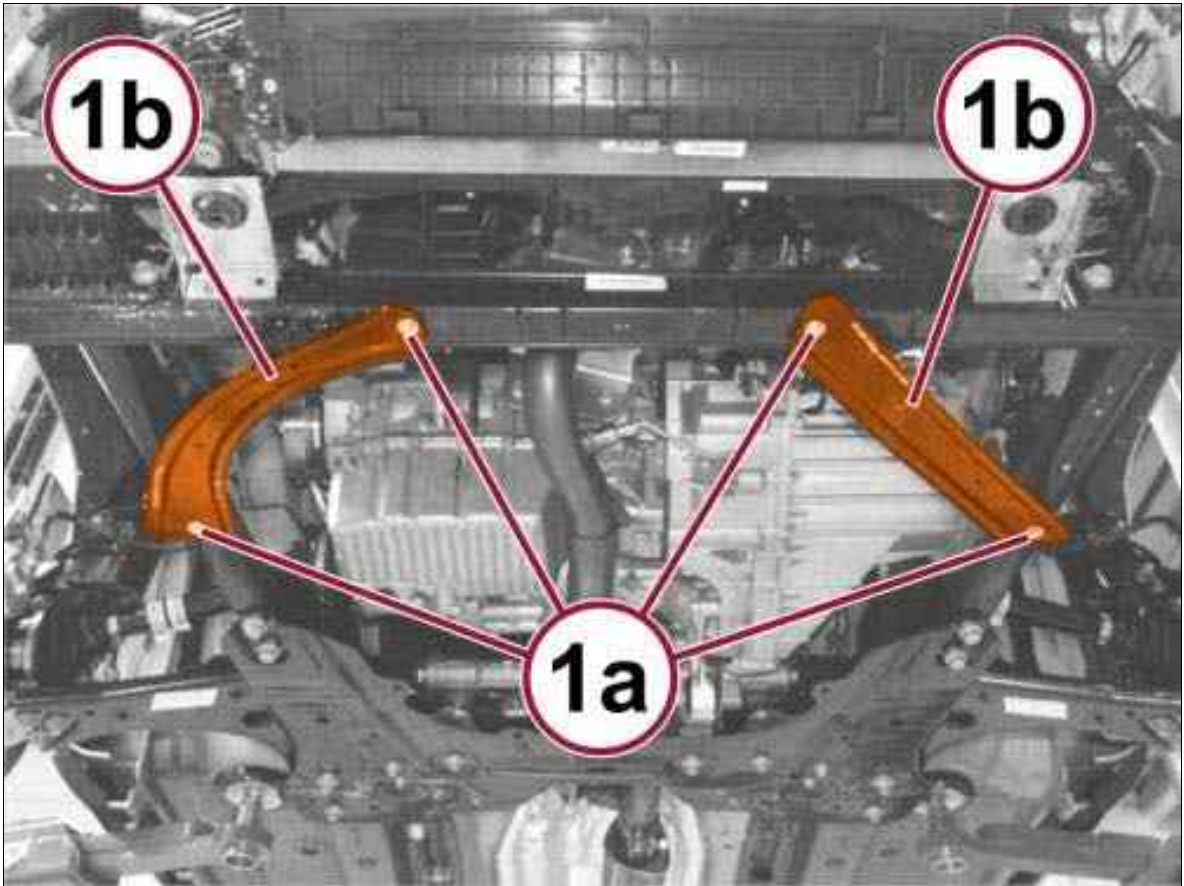
PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 1.6L TURBO DIESEL > REMOVAL

WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
3. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
4. Remove the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
5. Remove the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
6. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
7. Remove the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .

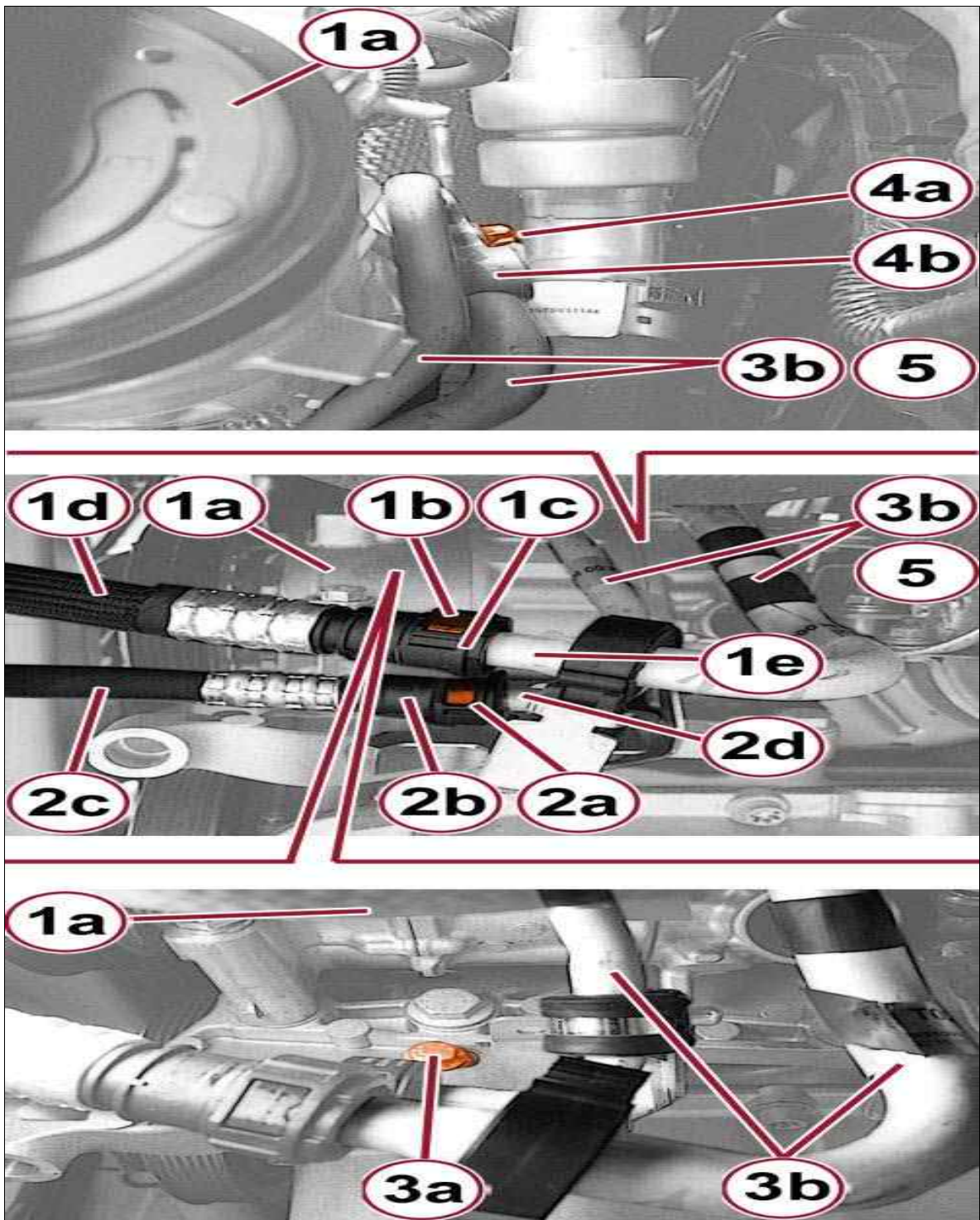
Fig 1: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

8. Remove the two bolts (1a) from the right front lower frame strut (1b).

Fig 2: Remove/Install A/C Suction & Discharge Lines



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the two quick disconnect fittings (1c and 2b) from the metal portion of the A/C suction and discharge line flange (3b).

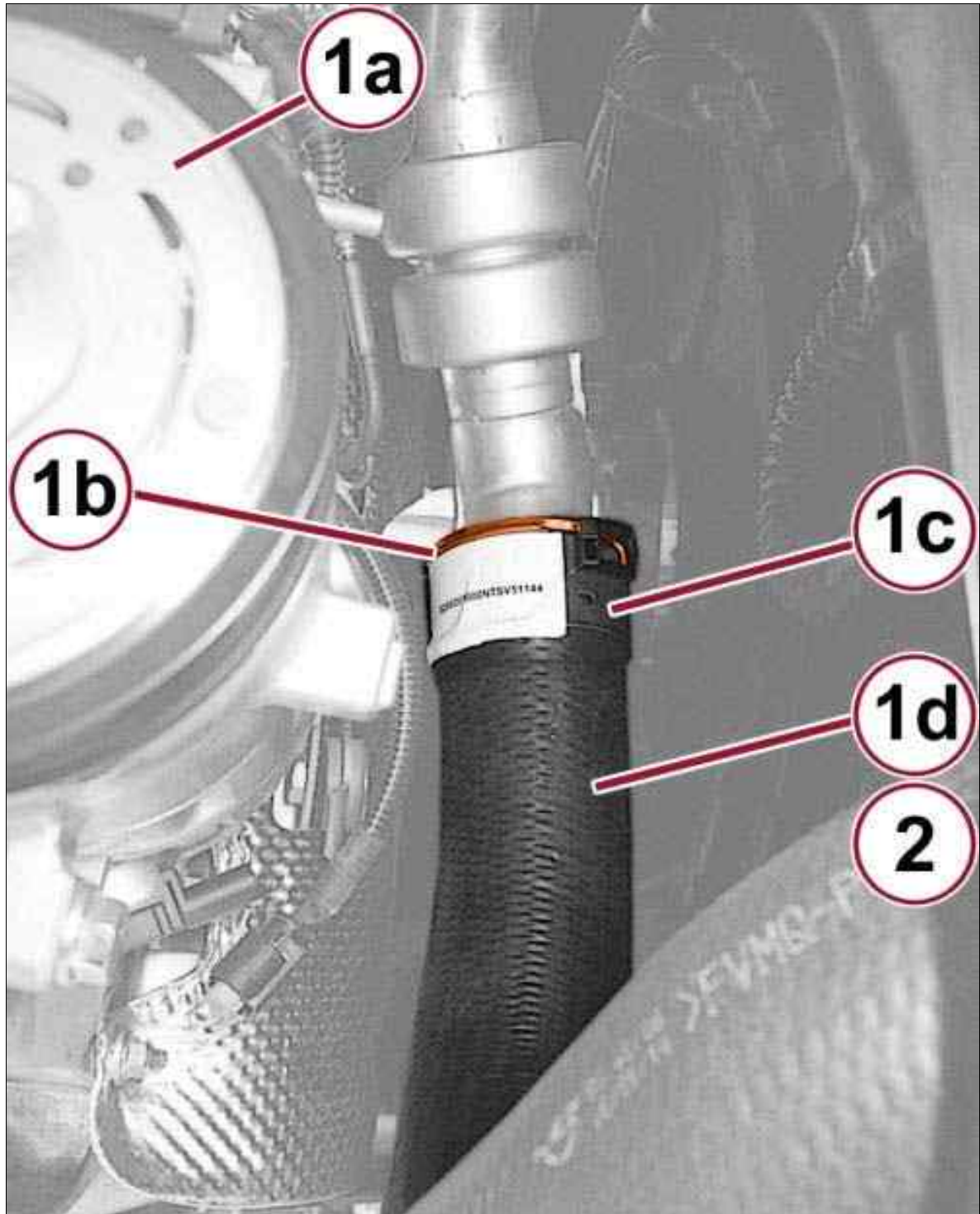
 **NOTE:**

Pushing the coupling (1c) toward the metal portion of the A/C suction/discharge line

(1e) initially will make it easier to remove it when pulling it off the metal line (1e).

10. Remove the A/C line retaining bracket screw (3a).
11. Remove the retaining bolt (4a) and disconnect the A/C discharge and suction line flange (4b) from the A/C compressor (1a). Remove and discard the seal washers.

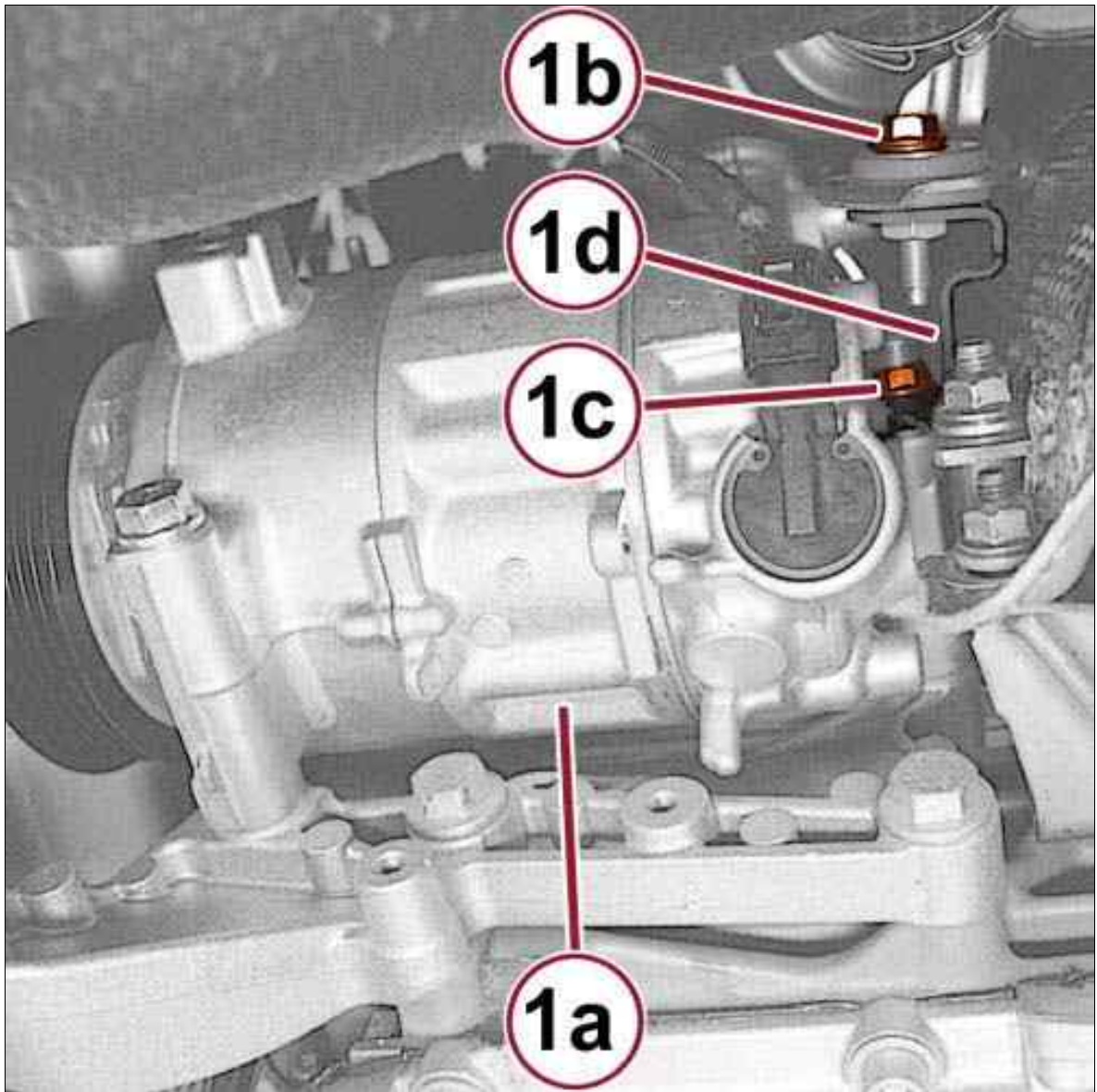
Fig 3: Compressor, Hose, Retaining Clip & Coupling



Courtesy of CHRYSLER GROUP, LLC

12. Working in front of the compressor (1a), release the retaining clip (1b) and disconnect the quick disconnect coupling (1c) of the hose (1d) to the internal heat exchanger (IHX).

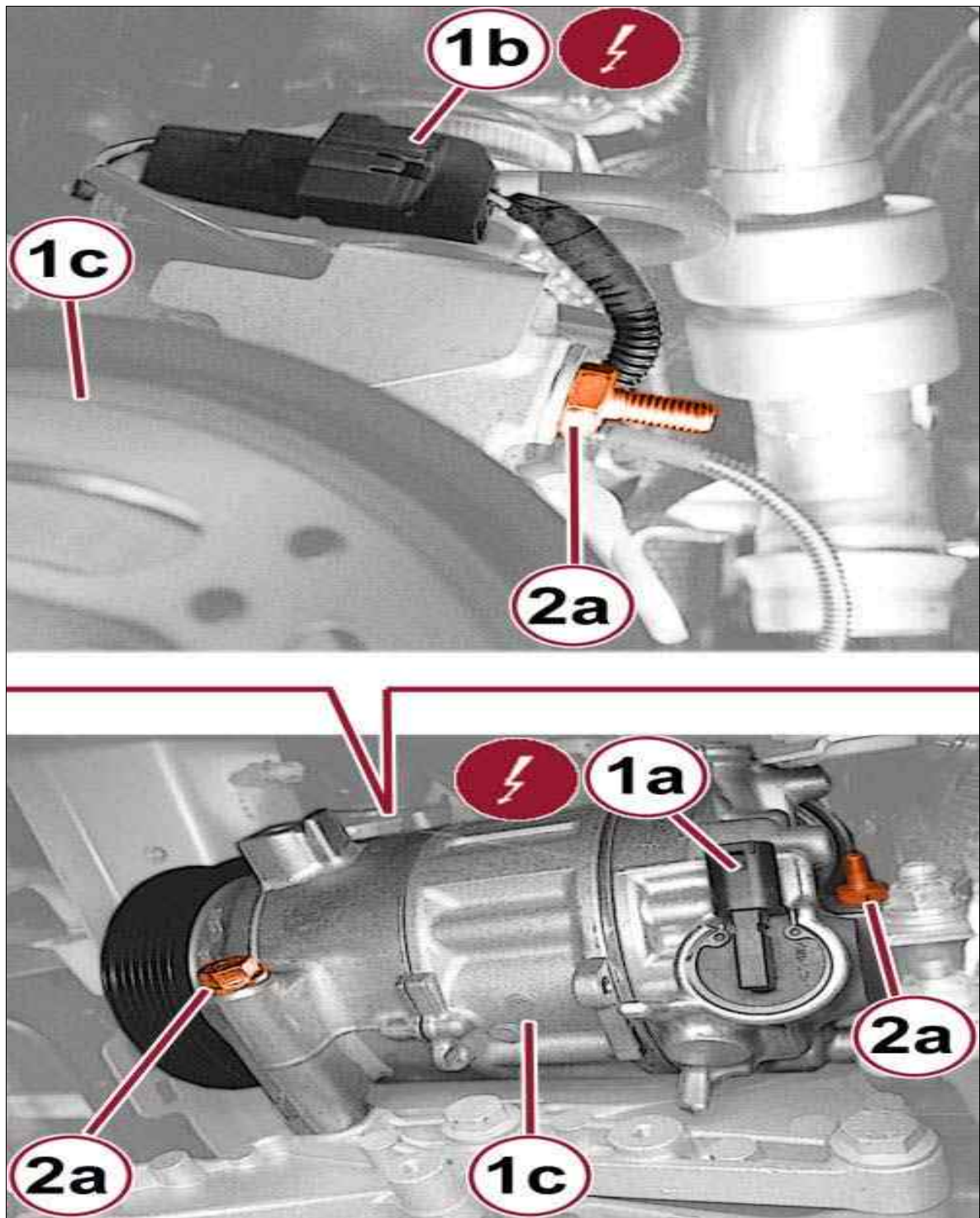
Fig 4: Compressor, Support Bracket & Fasteners



Courtesy of CHRYSLER GROUP, LLC

13. Working on the left side of the compressor (1a), loosen screw (1b) and the nut (1c), then remove the support bracket (1d).

Fig 5: Remove A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

14. Disconnect the wire harness connectors (1a and 1b) from the A/C compressor (1c).
15. Install plugs in, or tape over all open refrigerant line fittings and compressor ports.
16. Remove the three bolts (2a) that secure the A/C compressor (1c) to the engine.
17. Remove the A/C compressor (1c) from the engine compartment.

 NOTE:

If replacing the compressor, it will be necessary to adjust the oil level prior to installation.

Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 1.6L TURBO DIESEL > INSTALLATION

 CAUTION:

If the A/C compressor is being replaced, be certain to adjust the refrigerant system oil level. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 CAUTION:

The A/C receiver/drier must be replaced if an internal failure of the A/C compressor has occurred. Failure to replace the A/C receiver/drier can cause serious damage to the replacement A/C compressor.

 NOTE:

When replacing the A/C compressor, see OIL, REFRIGERANT, STANDARD PROCEDURE to determine how much oil should be removed from the new A/C compressor.

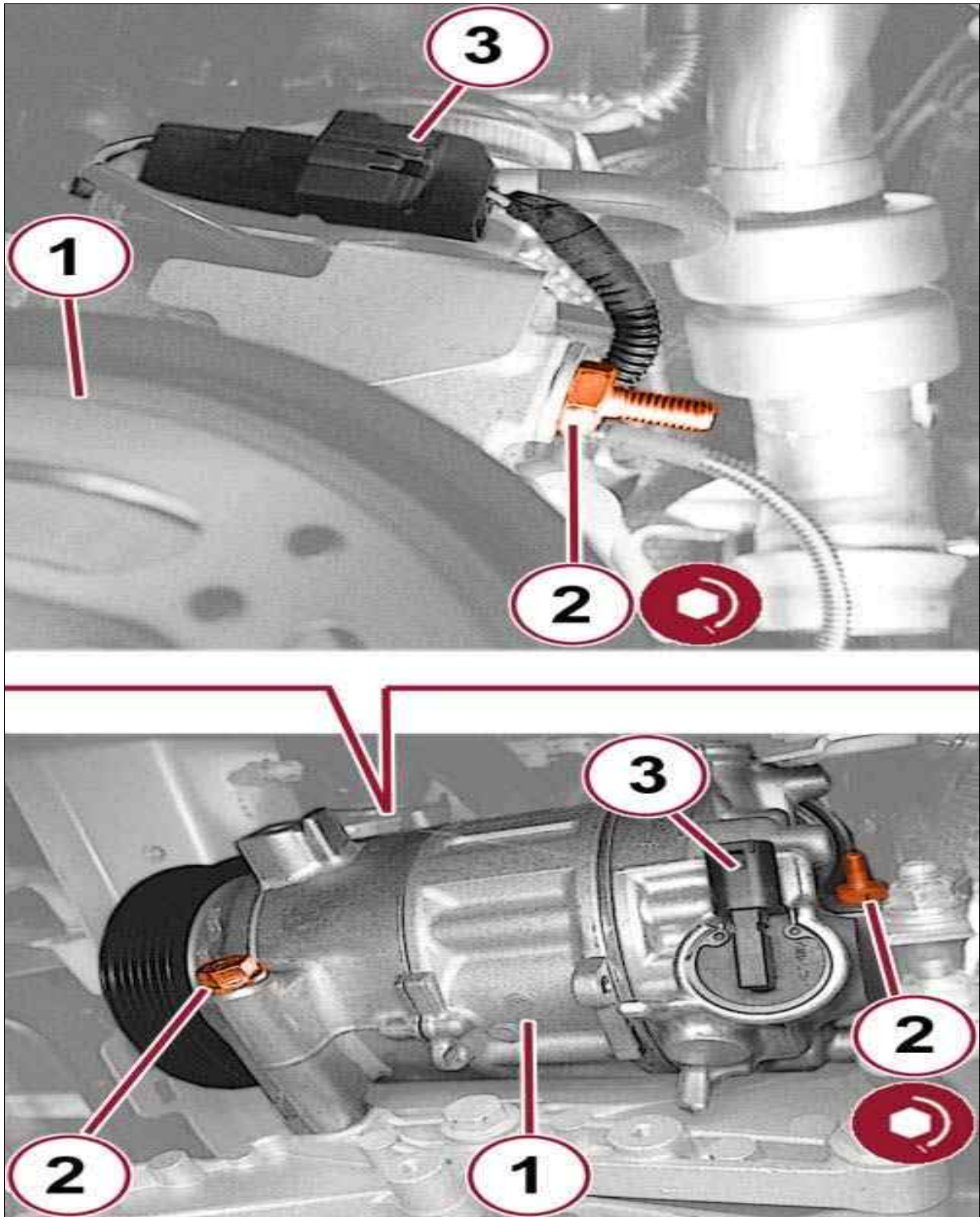
 NOTE:

Replacement of the refrigerant line seal washers is required anytime a refrigerant line is disconnected. Failure to replace the rubber seal washers may result in a refrigerant system leak.

1. If the A/C compressor (1) is being replaced, the refrigerant oil in the old compressor must be first drained and measured. Then the oil in the new A/C compressor must be drained. Finally, the new compressor must be refilled with the same amount of new refrigerant oil that was drained out of the old compressor. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the refrigerant system. Use only refrigerant oil of the type recommended for the A/C compressor in

the vehicle.

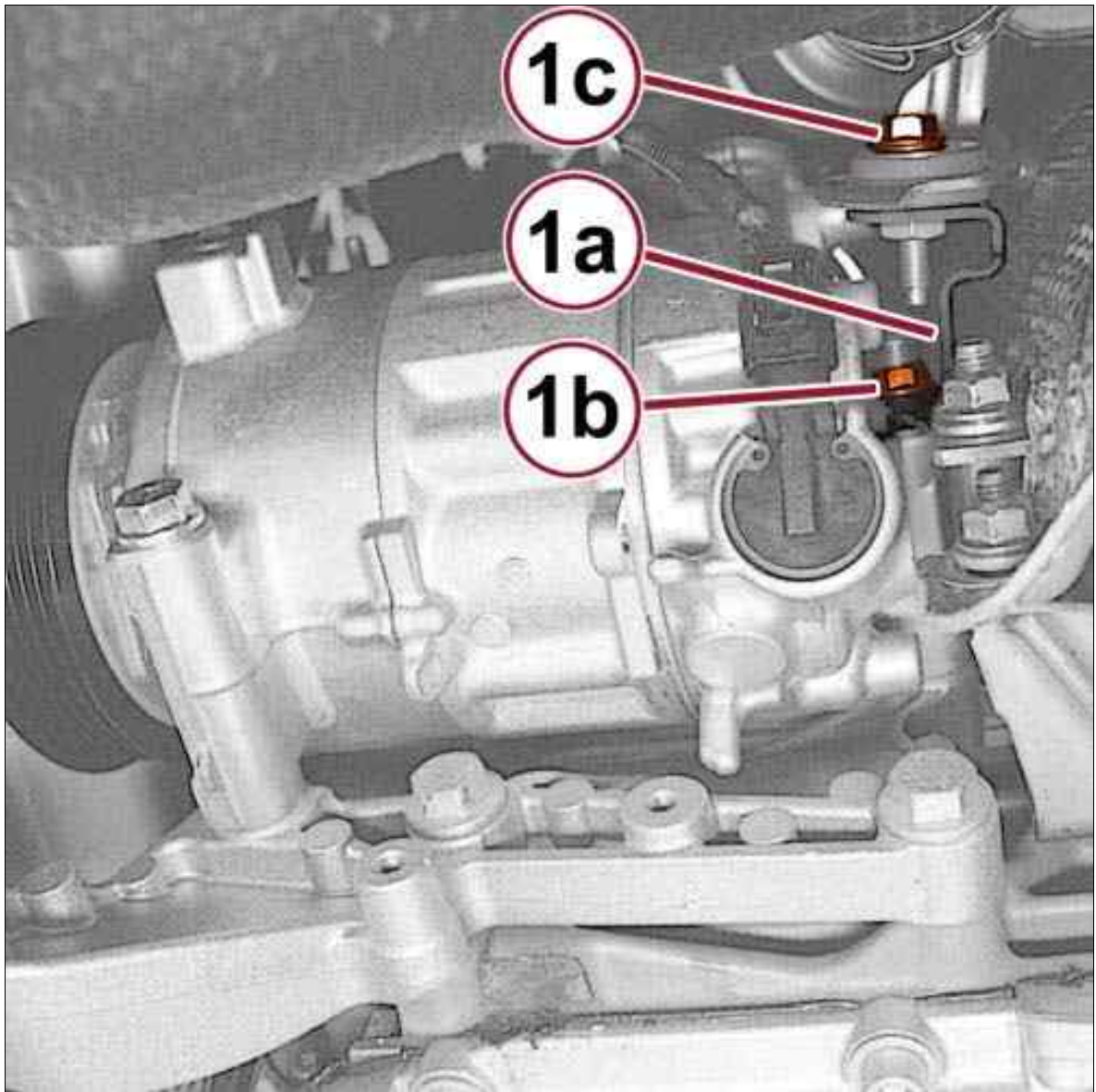
Fig 1: Install A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

2. Position the A/C compressor (2) to the engine.
3. Install and tighten the three bolts (1) to the proper SPECIFICATIONS .
4. Connect the wire harness connectors (3) for the compressor (1).

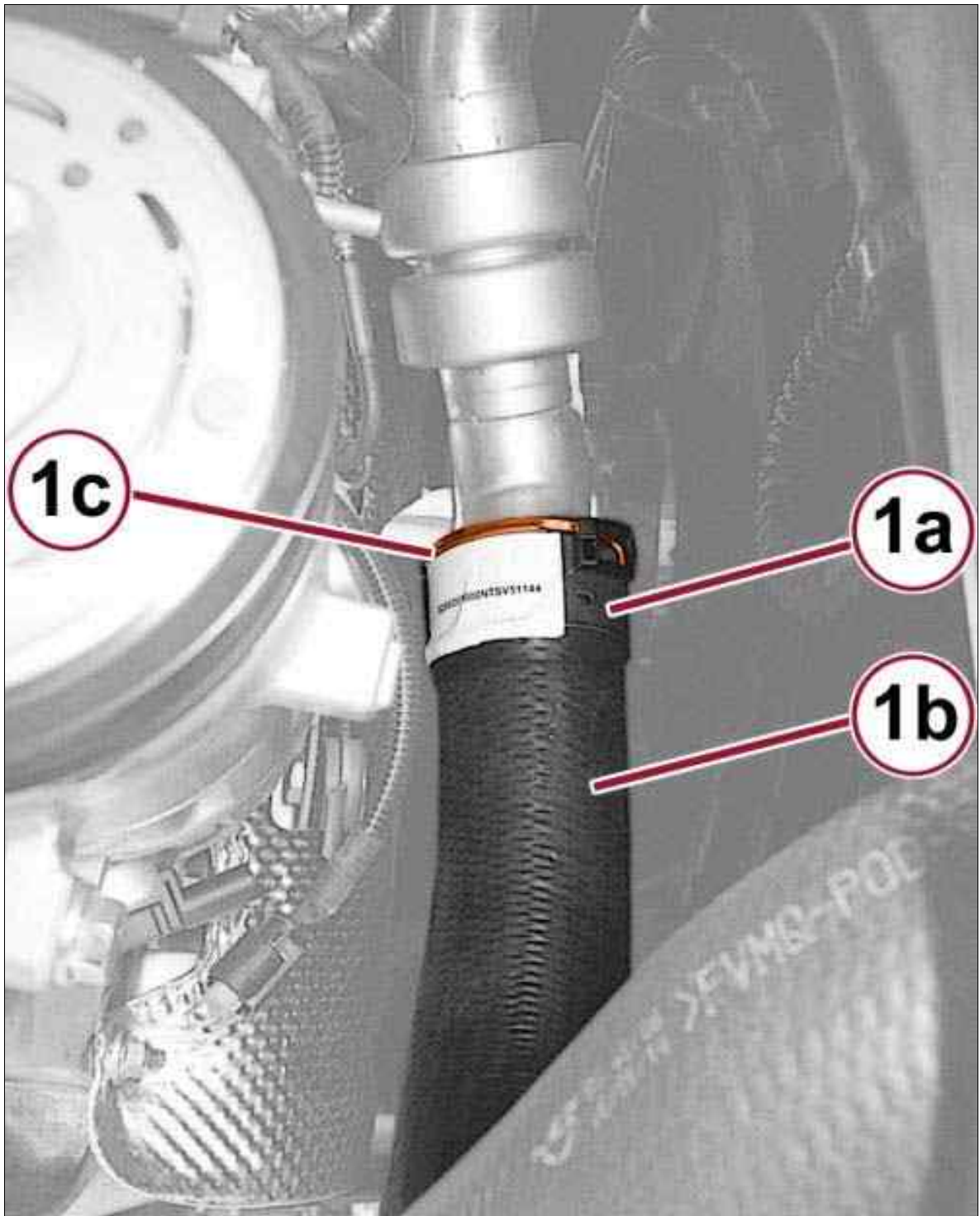
Fig 2: Compressor, Support Bracket & Fasteners



Courtesy of CHRYSLER GROUP, LLC

5. Position the support bracket (1a) and securely tighten the bolt (1c) and nut (1b).

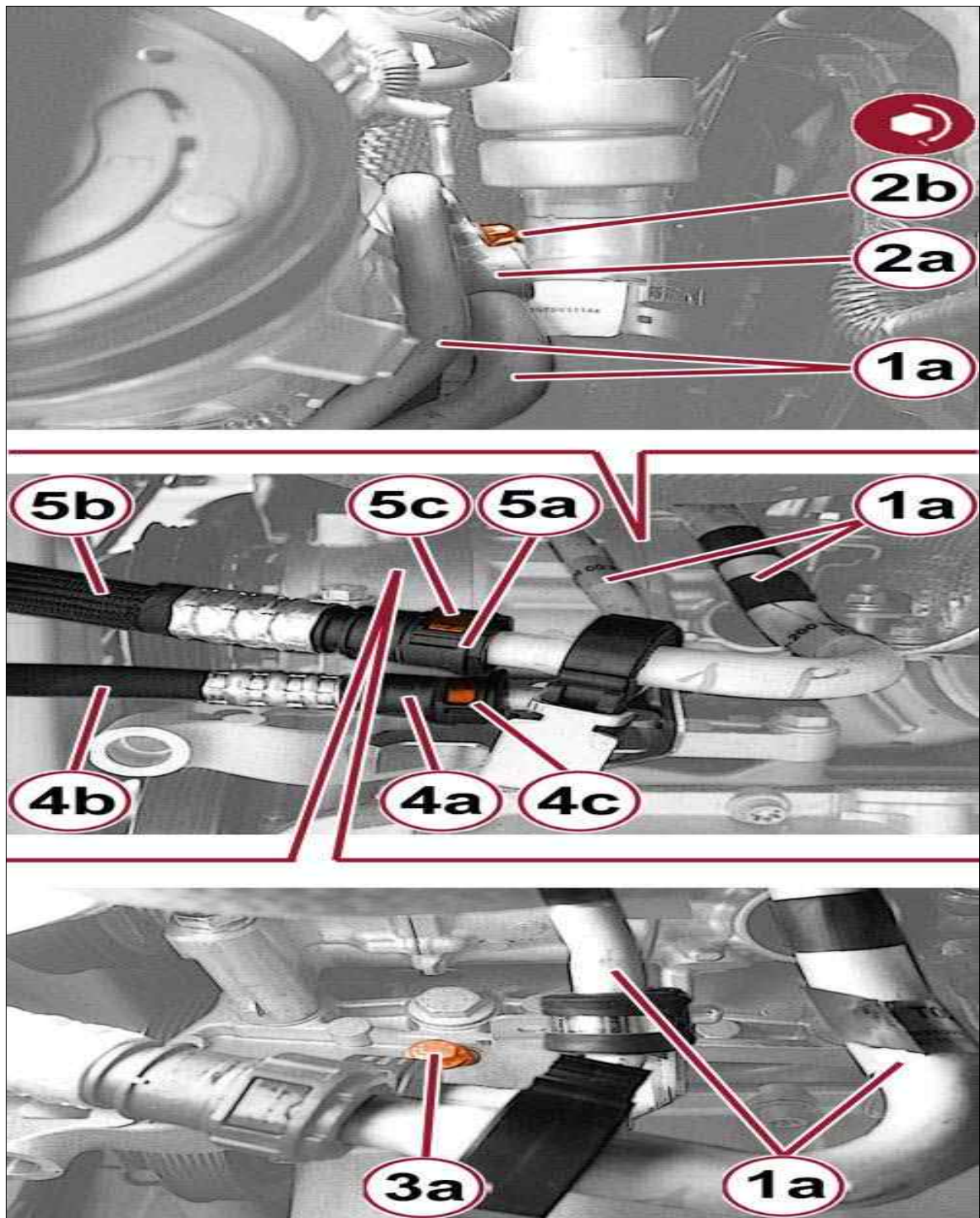
Fig 3: Compressor, Hose, Retaining Clip & Coupling



Courtesy of CHRYSLER GROUP, LLC

6. Working in front of the compressor, connect the quick disconnect coupling (1a) of the hose (1b) to the internal heat exchanger (IHx). Be certain the hose is fully engaged and the retaining clip (1c) is connected properly.

Fig 4: Remove/Install A/C Suction & Discharge Lines

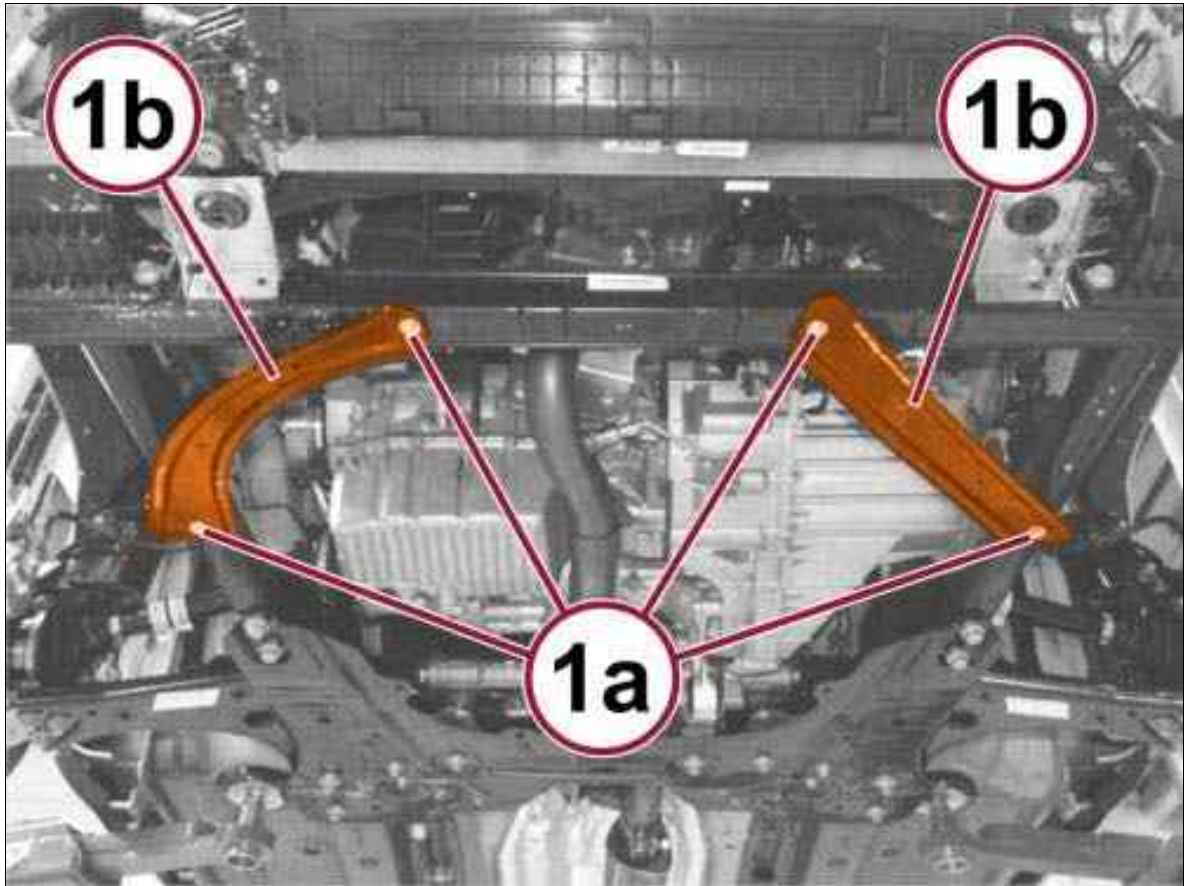


Courtesy of CHRYSLER GROUP, LLC

7. Remove the tape or plugs from the open refrigerant line fittings and the compressor ports.
8. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

9. Install the A/C discharge and suction line flange (2a) onto the A/C compressor.
10. Install the bolt (2b) that secures the A/C discharge and suction line flange (2a) to the A/C compressor and tighten to the proper SPECIFICATIONS .
11. Position the A/C line retaining bracket and install the screw (3a). Tighten the screw securely.
12. Connect the quick disconnect couplings (4a and 5a). Be certain the couplings (4a and 5a) have engaged the metal portion of the A/C lines (1a) completely.

Fig 5: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

13. Position the right front lower frame strut (1b) and install the two bolts (1a). Tighten the bolts to the proper TORQUE SPECIFICATIONS .
14. Install the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
15. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
16. Install the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
17. Install the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
18. Remove the support and lower the vehicle. Refer to HOISTING, STANDARD PROCEDURE .

19. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
20. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

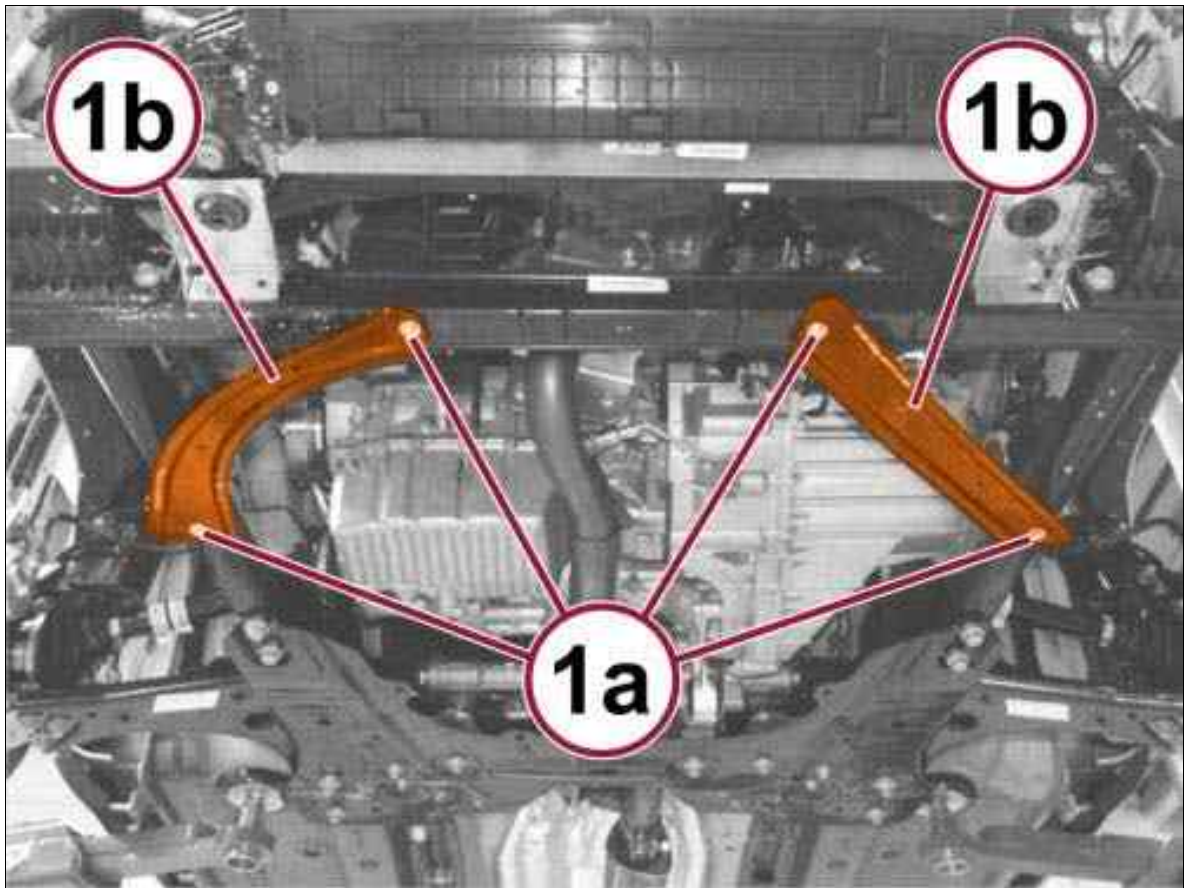
PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.0L TURBO DIESEL 120 HP/ 140 HP > REMOVAL

WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
3. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
4. Remove the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
5. Remove the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
6. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
7. Remove the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .

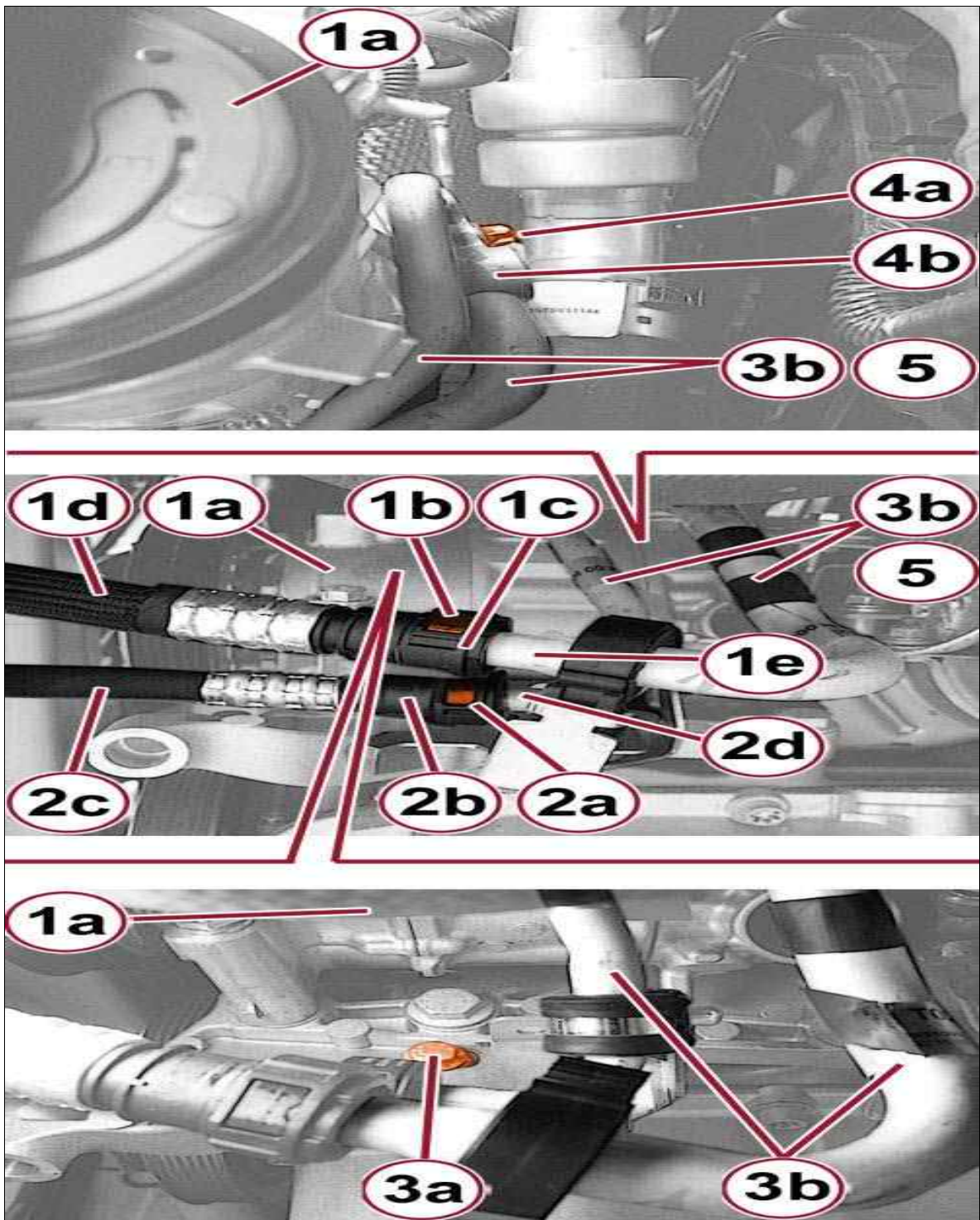
Fig 1: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

8. Remove the two bolts (1a) from the right front lower frame strut (1b).

Fig 2: Remove/Install A/C Suction & Discharge Lines



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the two quick disconnect fittings (1c and 2b) from the metal portion of the A/C suction and discharge line flange (3b).

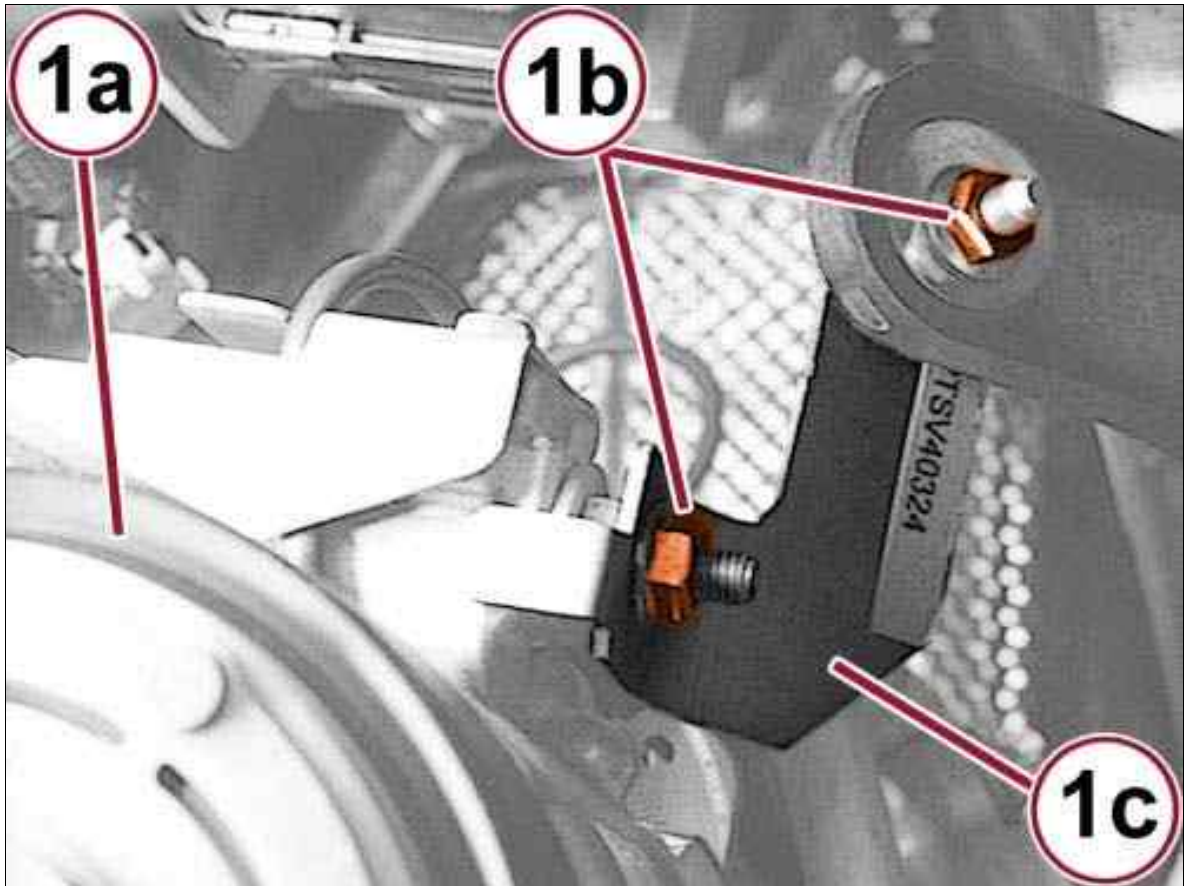
 **NOTE:**

Pushing the coupling (1c) toward the metal portion of the A/C suction/discharge line

(1e) initially will make it easier to remove it when pulling it off the metal line (1e).

10. Remove the A/C line retaining bracket screw (3a).
11. Remove the retaining bolt (4a) and disconnect the A/C discharge and suction line flange (4b) from the A/C compressor (1a). Remove and discard the seal washers.

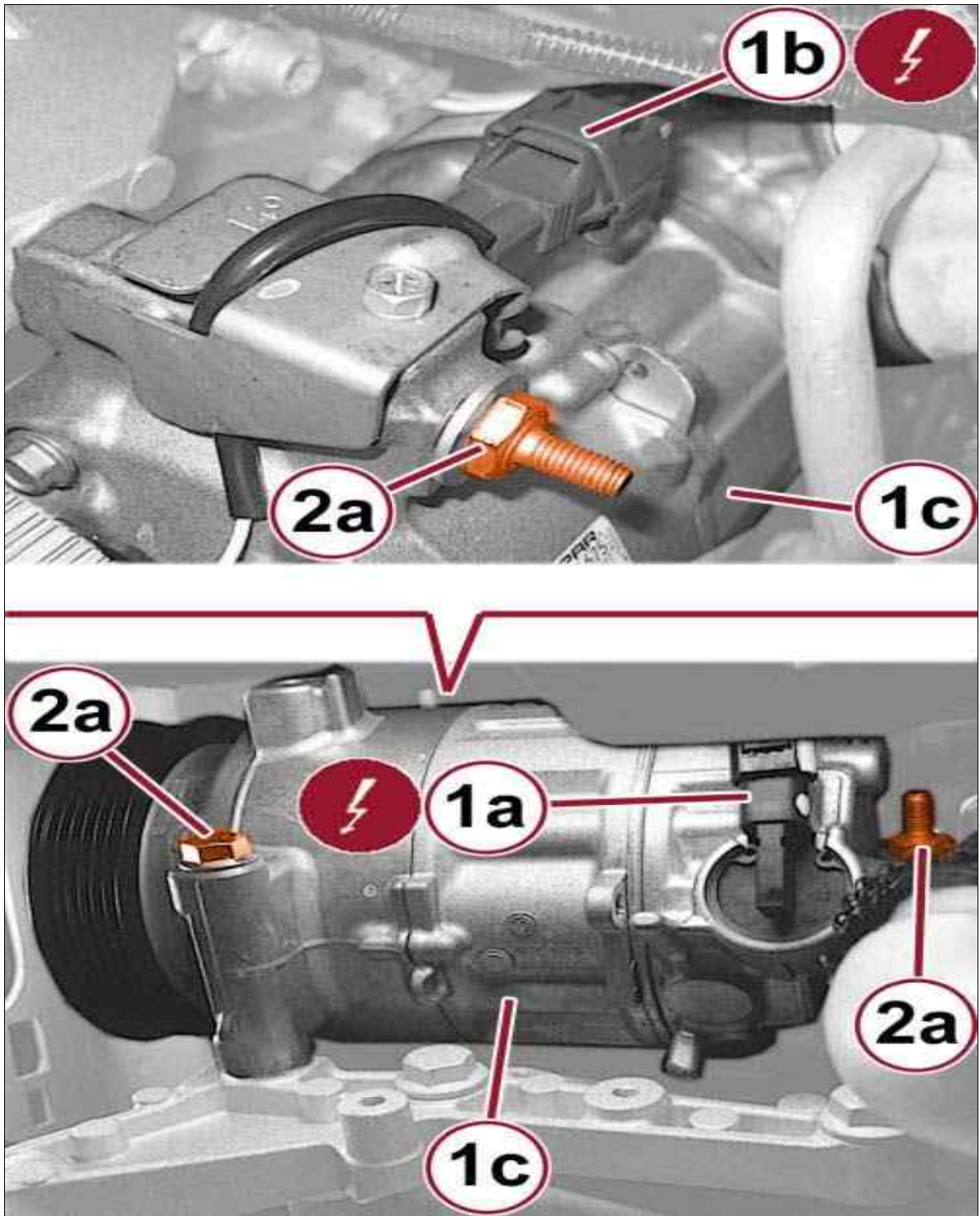
Fig 3: Compressor, Support Bracket & Nuts



Courtesy of CHRYSLER GROUP, LLC

12. Working from the right front wheel compartment, in front of the compressor (1a), remove the two nuts (1b) and remove the support bracket (1c).

Fig 4: Remove/Install A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

13. Disconnect the wire harness connectors (1a and 1b) from the A/C compressor (1c).
14. Install plugs in, or tape over the open refrigerant line fittings and compressor ports.
15. Remove the three bolts (2a) that secure the A/C compressor (1c) to the engine.
16. Remove the A/C compressor (1c) from the engine compartment.

 NOTE:

If replacing the compressor, it will be necessary to adjust the oil level prior to installation.

Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.0L TURBO DIESEL 120 HP/ 140 HP > INSTALLATION

 CAUTION:

If the A/C compressor is being replaced, be certain to adjust the refrigerant system oil level. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 CAUTION:

The A/C receiver/drier must be replaced if an internal failure of the A/C compressor has occurred. Failure to replace the A/C receiver/drier can cause serious damage to the replacement A/C compressor.

 NOTE:

When replacing the A/C compressor, see the Refrigerant Oil Standard Procedure to determine how much oil should be removed from the new A/C compressor. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

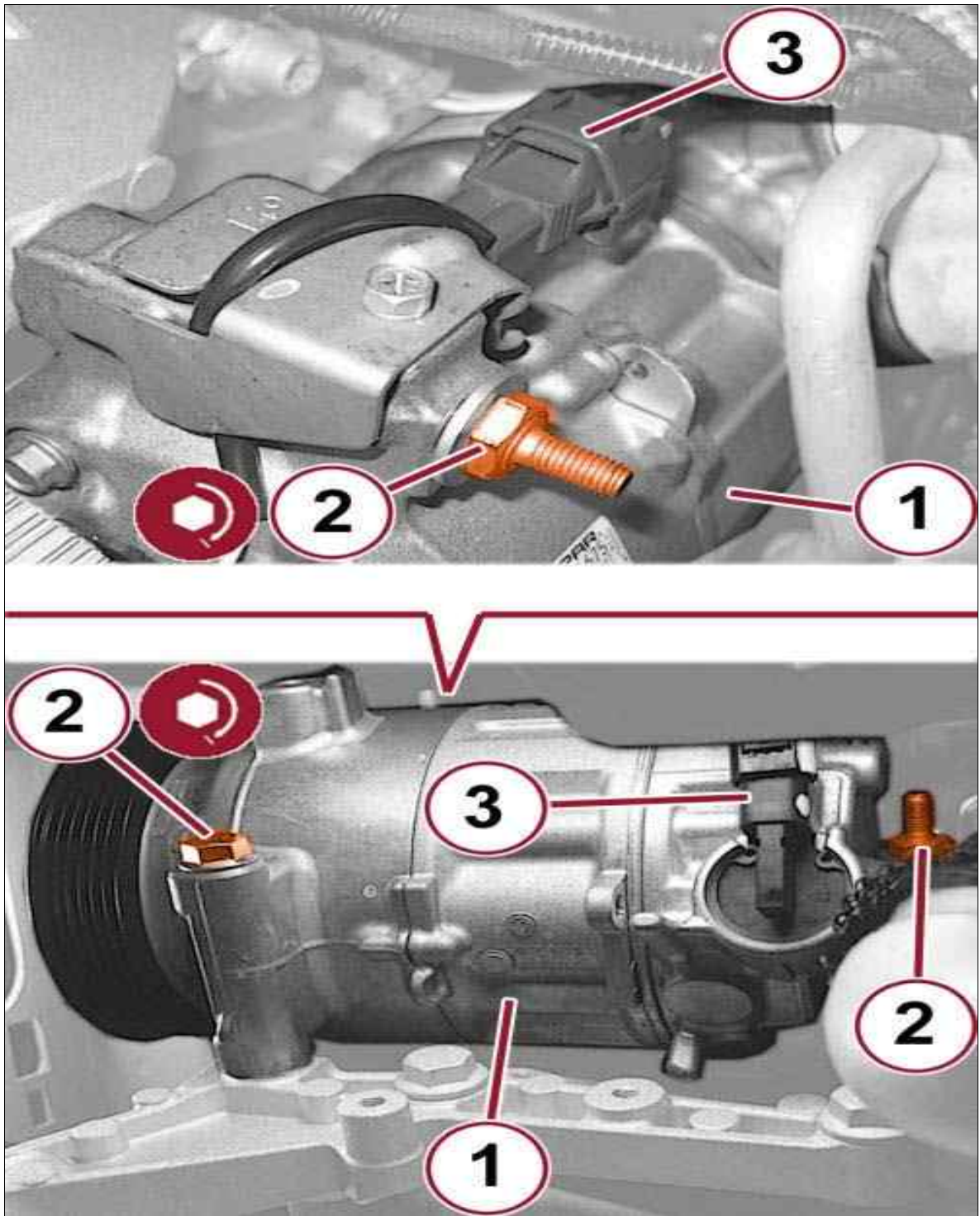
 NOTE:

Replacement of the refrigerant line seal washers is required anytime a refrigerant line is disconnected. Failure to replace the rubber seal washers may result in a refrigerant system leak.

1. If the A/C compressor (1) is being replaced, the refrigerant oil in the old compressor must be first drained and measured. Then the oil in the new A/C compressor must be drained. Finally, the new compressor must be refilled with the same amount of new refrigerant oil that was drained out of the old compressor. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the

refrigerant system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

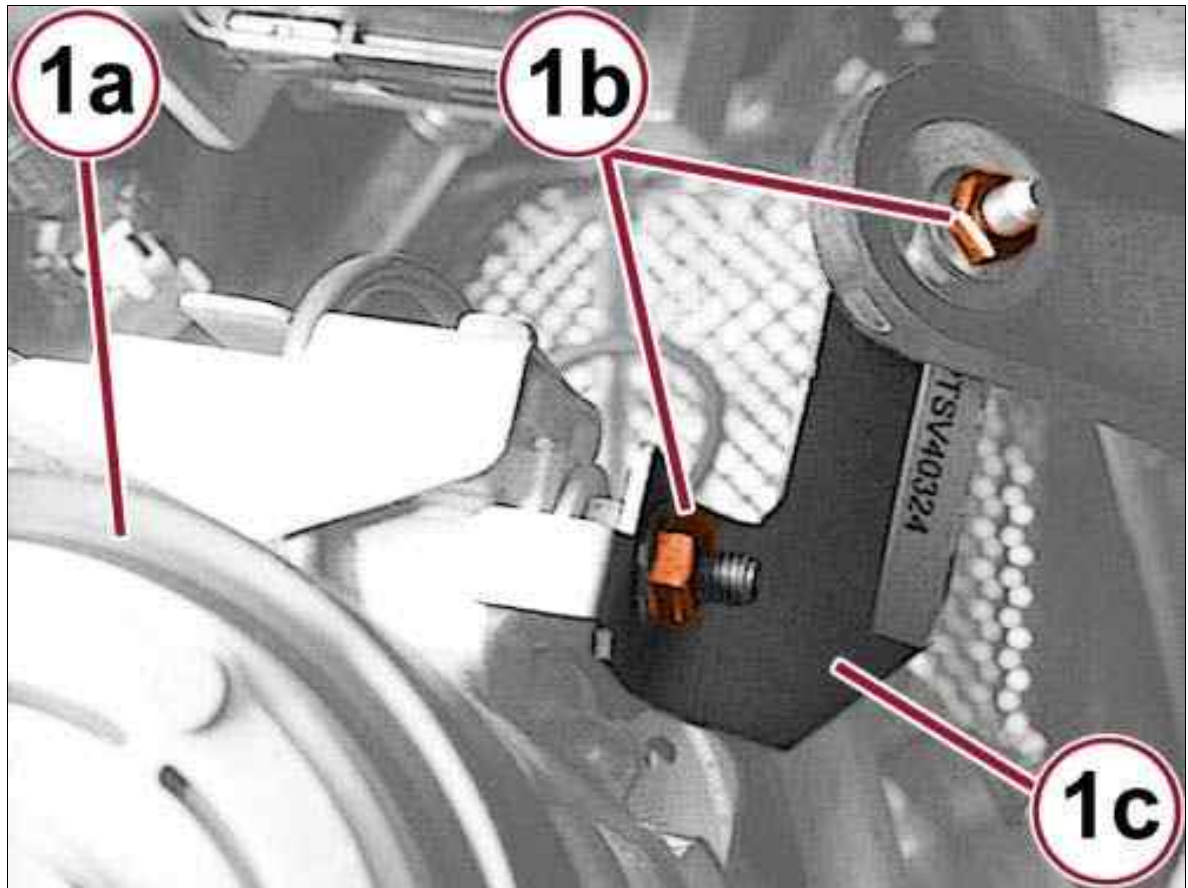
Fig 1: Install A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

2. Position the A/C compressor (1c) to the engine.
3. Install and tighten the three bolts (2a) to the proper SPECIFICATIONS .
4. Connect the wire harness connectors (1a and 1b) for the compressor (1c).

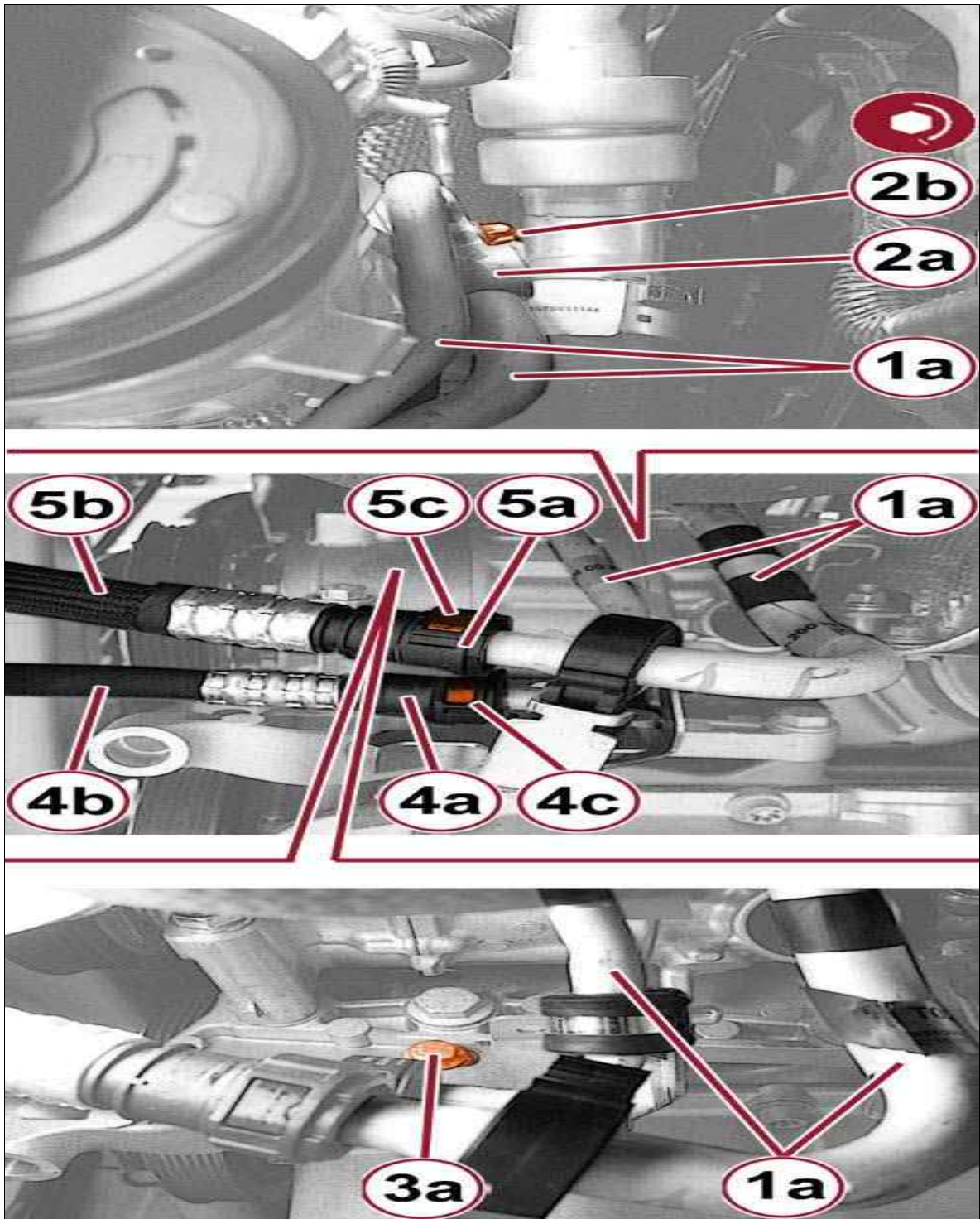
Fig 2: Compressor, Support Bracket & Nuts



Courtesy of CHRYSLER GROUP, LLC

5. Position the support bracket (1c) and securely tighten the nuts (1b).

Fig 3: Remove/Install A/C Suction & Discharge Lines

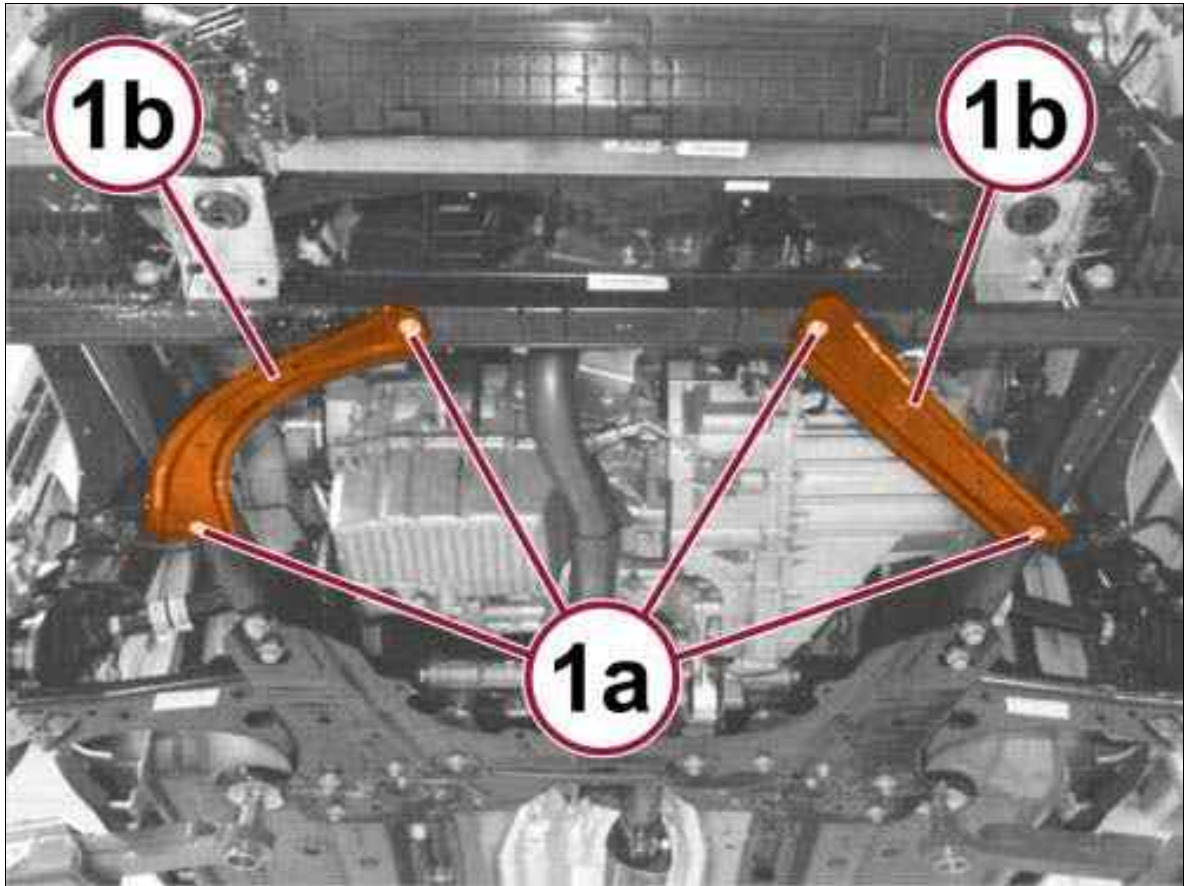


Courtesy of CHRYSLER GROUP, LLC

6. Remove the tape or plugs from the opened refrigerant line fittings and the compressor ports.
7. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

8. Install the A/C discharge and suction line flange (2a) onto the A/C compressor.
9. Install the bolt (2b) that secures the A/C discharge and suction line flange (2a) to the A/C compressor and tighten to the proper SPECIFICATIONS .
10. Position the A/C line retaining bracket and install the screw (3a). Tighten the screw securely.
11. Connect the quick disconnect couplings (4a and 5a). Be certain the couplings (4a and 5a) have engaged the A/C line flange fittings (1a) completely.

Fig 4: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

12. Position the right front lower frame strut (1b) and install the two bolts (1a). Tighten the bolts to the proper TORQUE SPECIFICATIONS .
13. Install the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
14. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
15. Install the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
16. Install the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
17. Remove the support and lower the vehicle. Refer to HOISTING, STANDARD PROCEDURE .

18. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
19. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

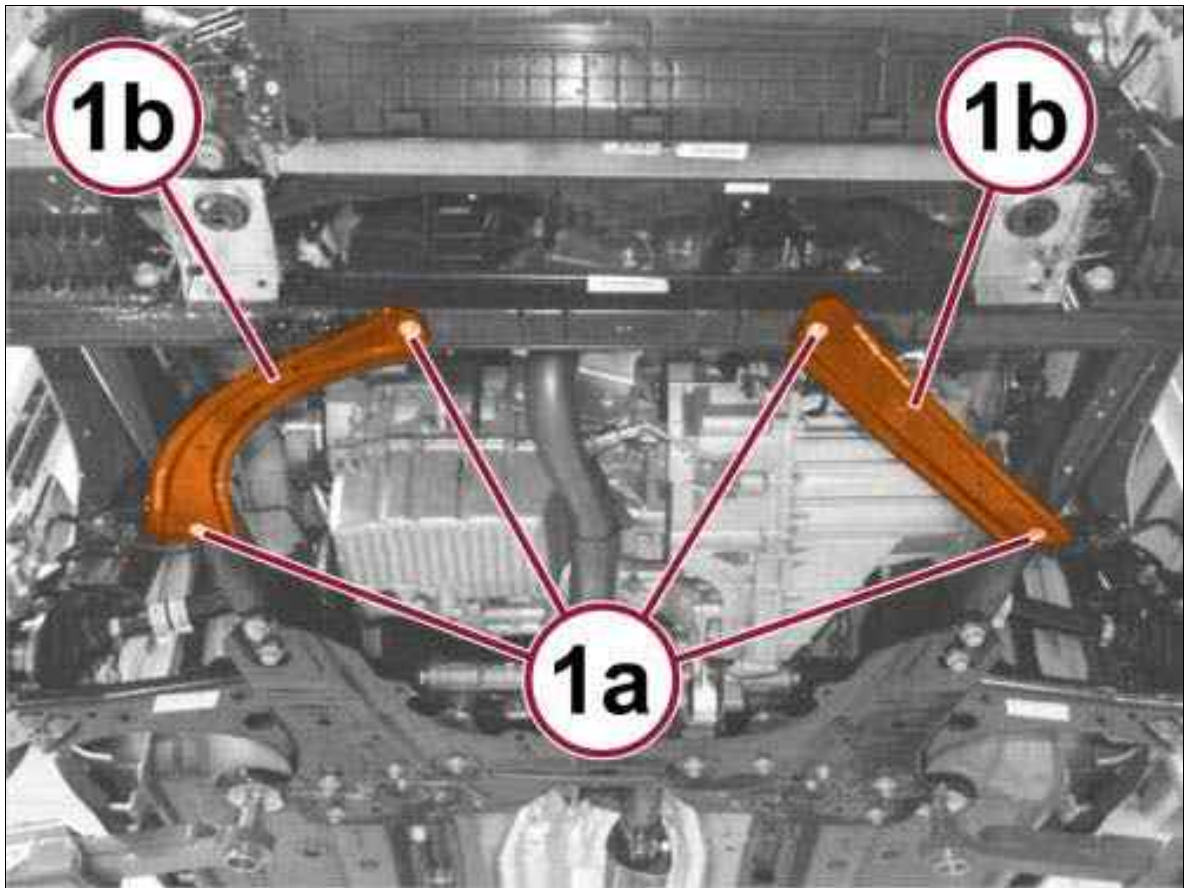
PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.0L TURBO DIESEL 170 HP > REMOVAL

WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
3. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
4. Remove the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
5. Remove the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
6. Remove the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
7. Remove the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .

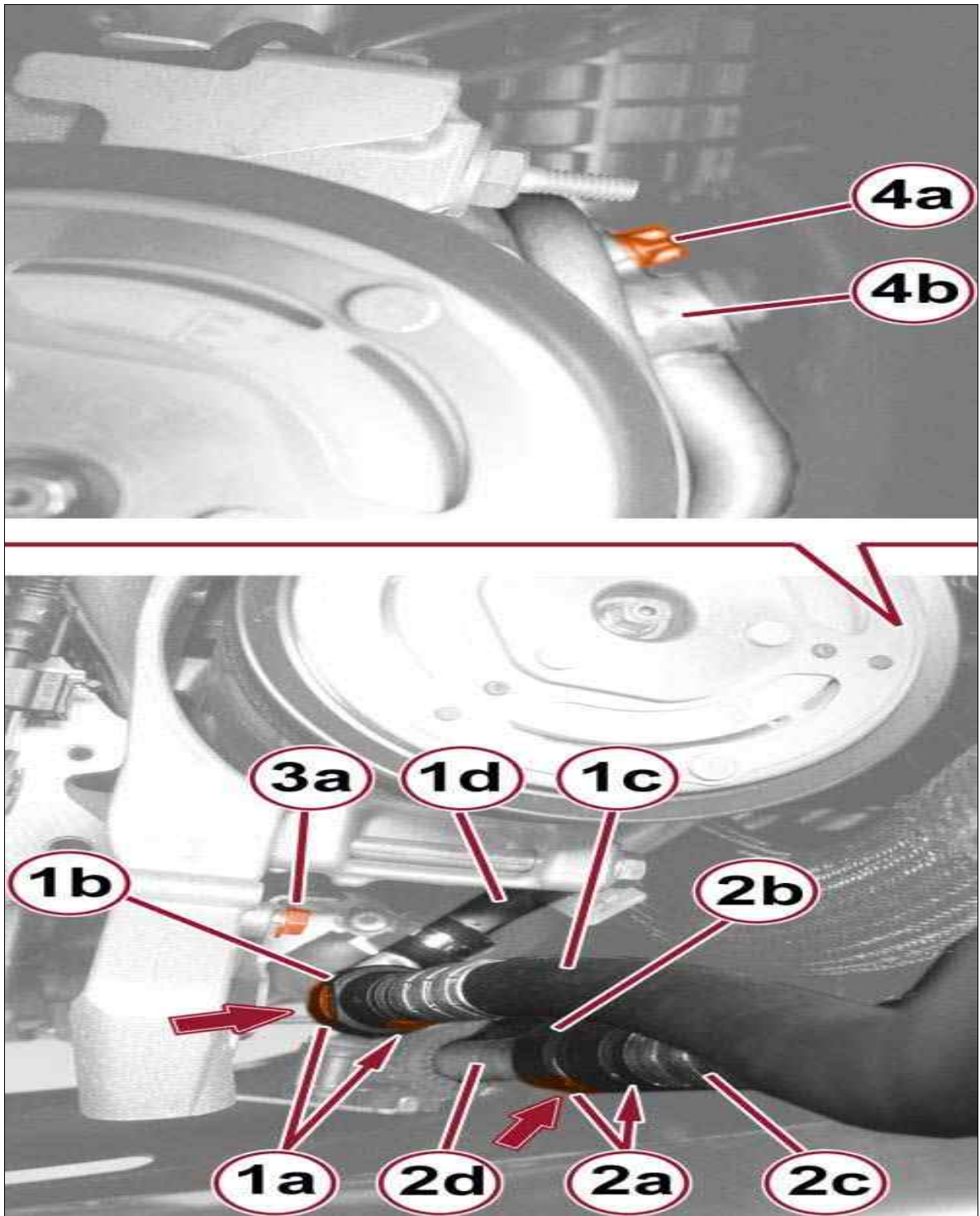
Fig 1: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

8. Remove the two bolts (1a) from the right front lower frame strut (1b).

Fig 2: Disconnecting Two Quick Disconnect Fittings



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the two quick disconnect fittings (1a and 2a) from the metal portion of the A/C suction and discharge line flanges (1d and 2d).

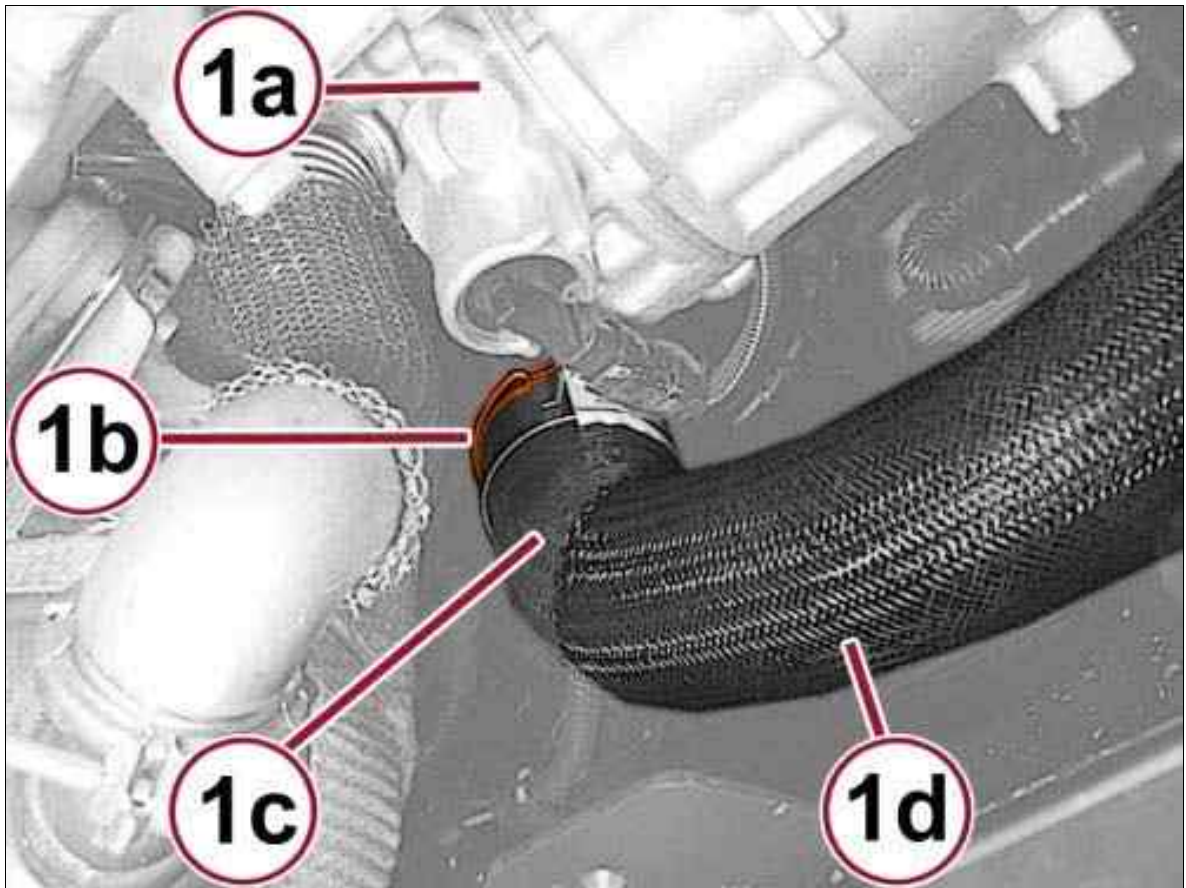
 **NOTE:**

Pushing the couplings (1a and 2a) toward the metal portion of the A/C

suction/discharge lines (1d and 2d) initially will make it easier to remove them when pulling them off the metal lines.

10. Remove the A/C line retaining bracket screw (3a).
11. Remove the retaining bolt (4a) and disconnect the A/C discharge and suction line flange (4b) from the A/C compressor.
12. Remove the A/C suction and discharge line flange and discard the seal washers.

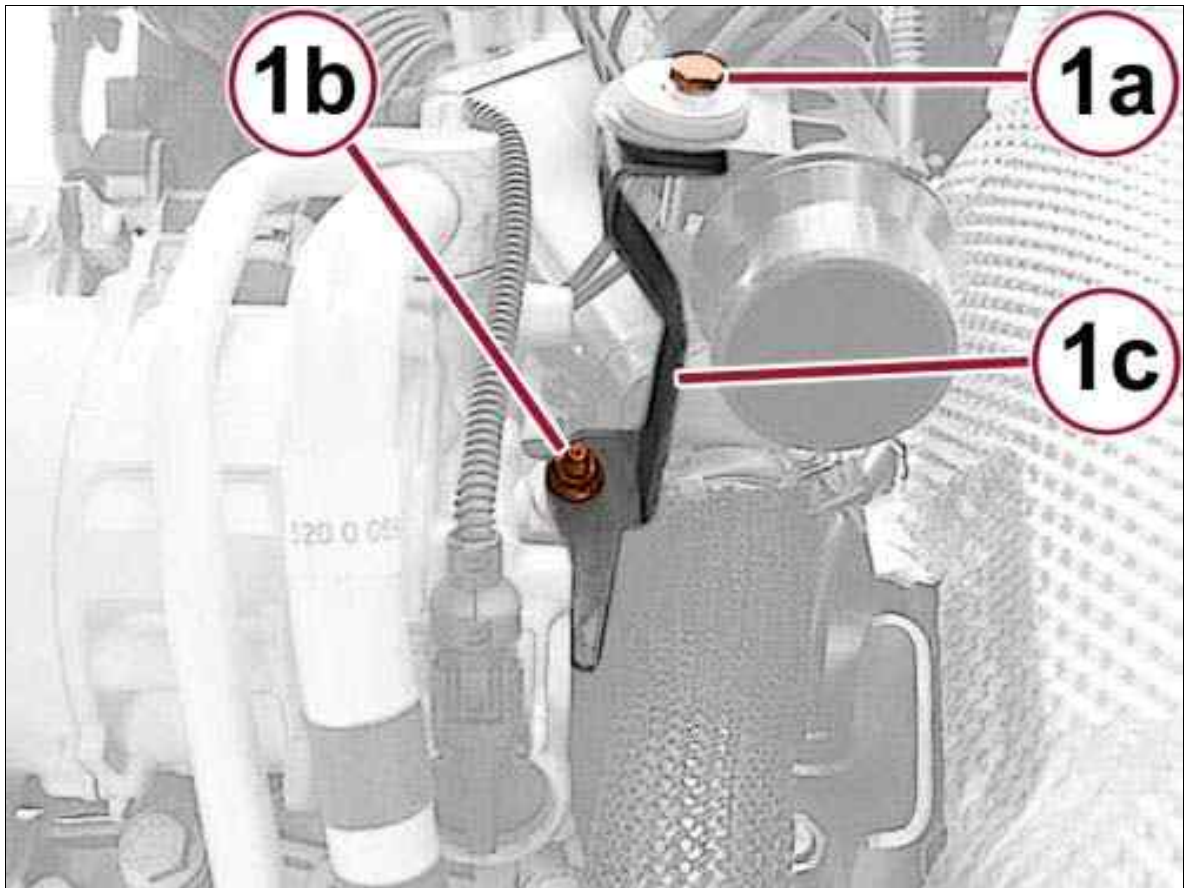
Fig 3: Compressor, Retaining Clip, Coupling & Internal Heat Exchanger



Courtesy of CHRYSLER GROUP, LLC

13. Working below the compressor (1a), release the retaining clip (1b) and disconnect the quick disconnect coupling (1c) of the hose (1d) to the internal heat exchanger (IHx).

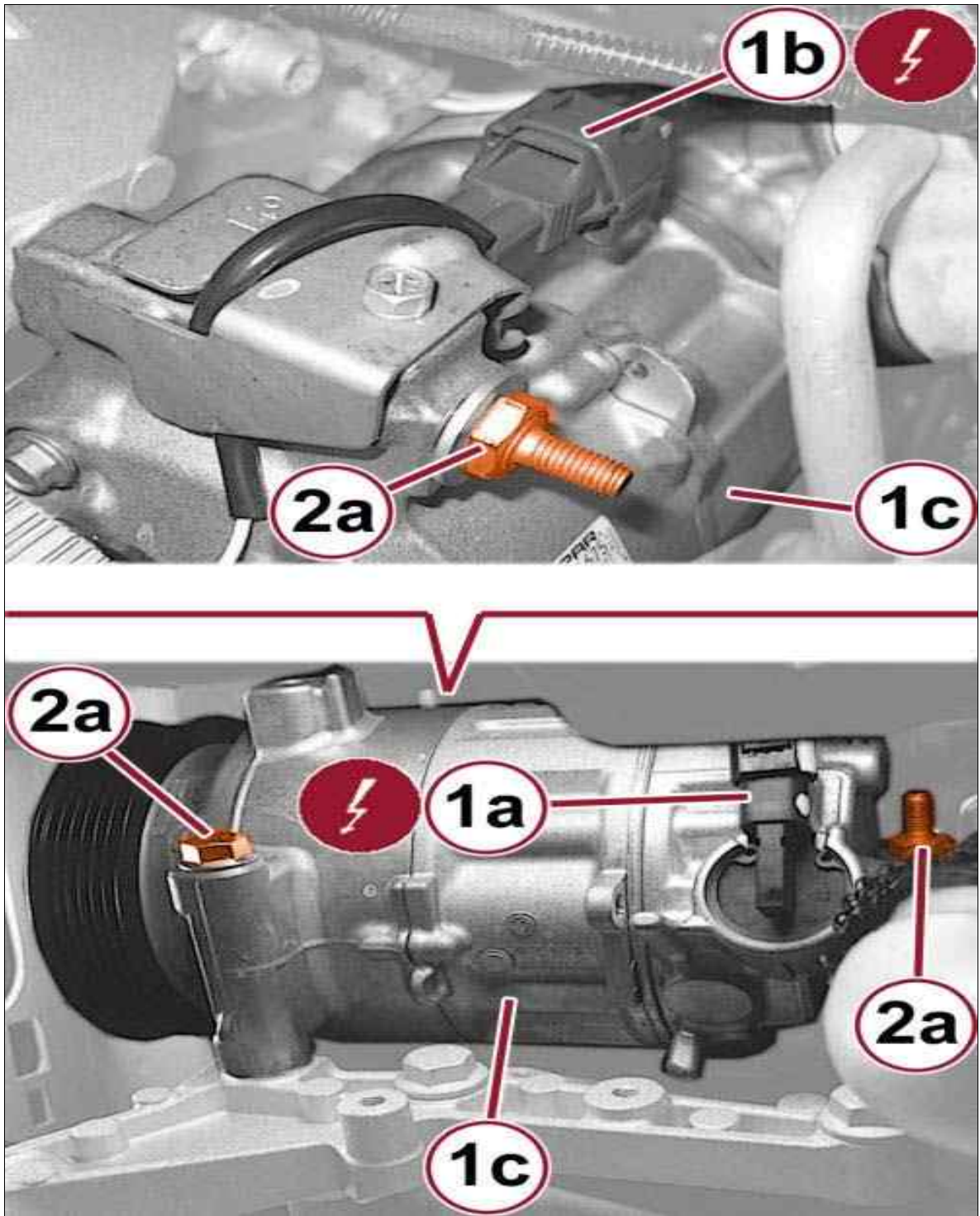
Fig 4: IHX Support Bracket, Nut & Screw



Courtesy of CHRYSLER GROUP, LLC

14. Remove the screw (1a) and the nut (1b), then remove the IHX support bracket (1c).

Fig 5: Remove/Install A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

15. Disconnect the wire harness connectors (1a and 1b) from the A/C compressor (1c).
16. Install plugs in, or tape over the open refrigerant line fittings and compressor ports.
17. Remove the three bolts (2a) that secure the A/C compressor (1c) to the engine.
18. Remove the A/C compressor (1c) from the engine compartment.

 NOTE:

If replacing the compressor, it will be necessary to adjust the oil level prior to installation.

Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.0L TURBO DIESEL 170 HP > INSTALLATION

 CAUTION:

If the A/C compressor is being replaced, be certain to adjust the refrigerant system oil level. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 CAUTION:

The A/C receiver/drier must be replaced if an internal failure of the A/C compressor has occurred. Failure to replace the A/C receiver/drier can cause serious damage to the replacement A/C compressor.

 NOTE:

When replacing the A/C compressor, see the Refrigerant Oil Standard Procedure to determine how much oil should be removed from the new A/C compressor. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

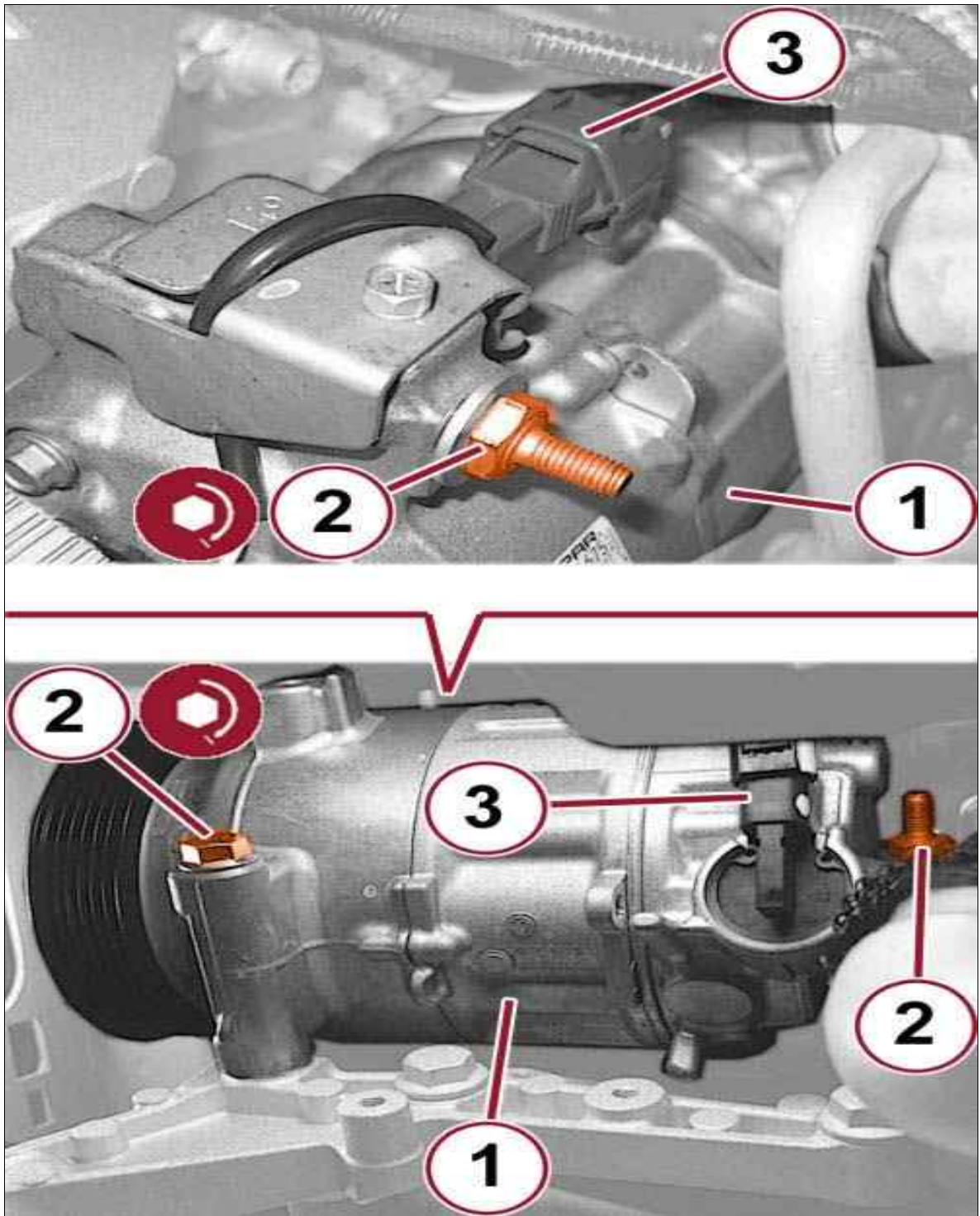
 NOTE:

Replacement of the refrigerant line seal washers is required anytime a refrigerant line is disconnected. Failure to replace the rubber seal washers may result in a refrigerant system leak.

1. If the A/C compressor (1) is being replaced, the refrigerant oil in the old compressor must be first drained and measured. Then the oil in the new A/C compressor must be drained. Finally, the new compressor must be refilled with the same amount of new refrigerant oil that was drained out of the old compressor. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the

refrigerant system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

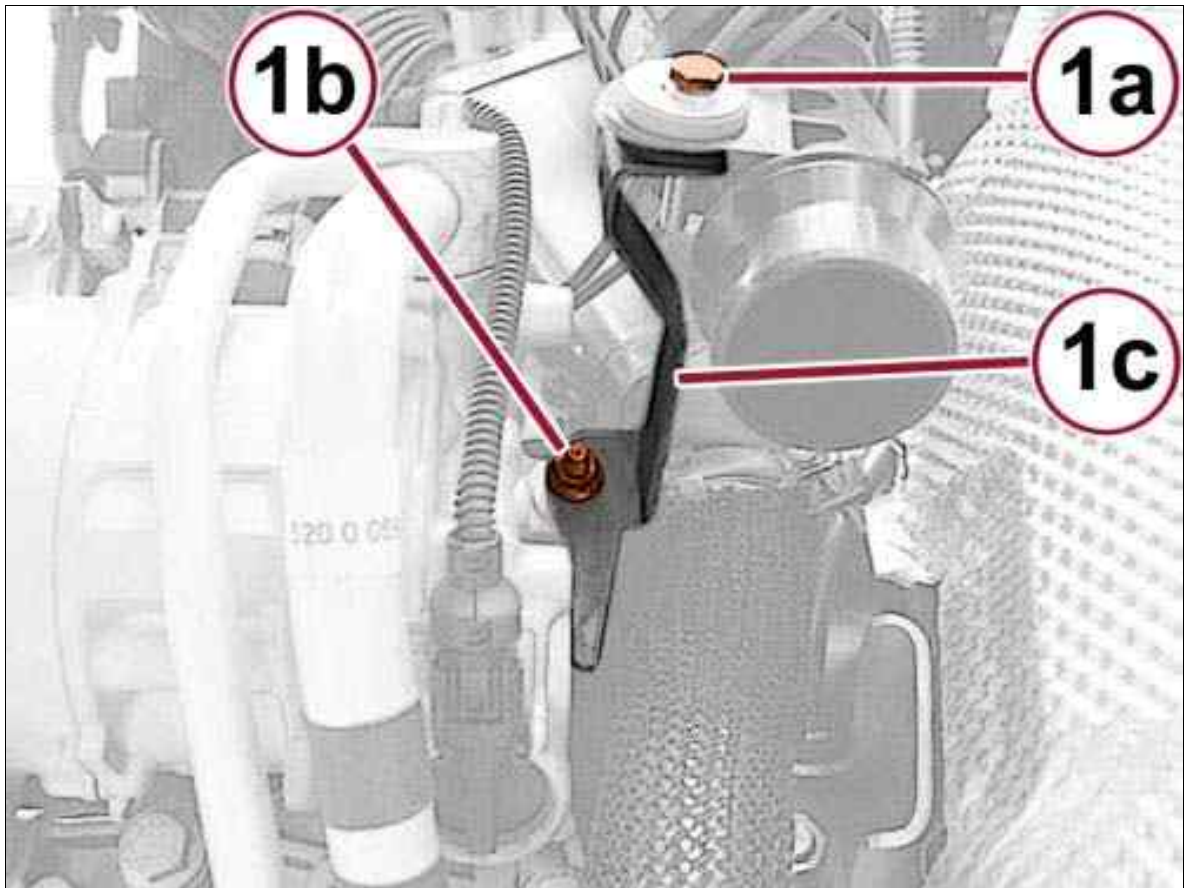
Fig 1: Install A/C Compressor



Courtesy of CHRYSLER GROUP, LLC

2. Position the A/C compressor (1) to the engine.
3. Install and tighten the three bolts (2) to the proper SPECIFICATIONS .
4. Connect the wire harness connectors (3) for the compressor (1).

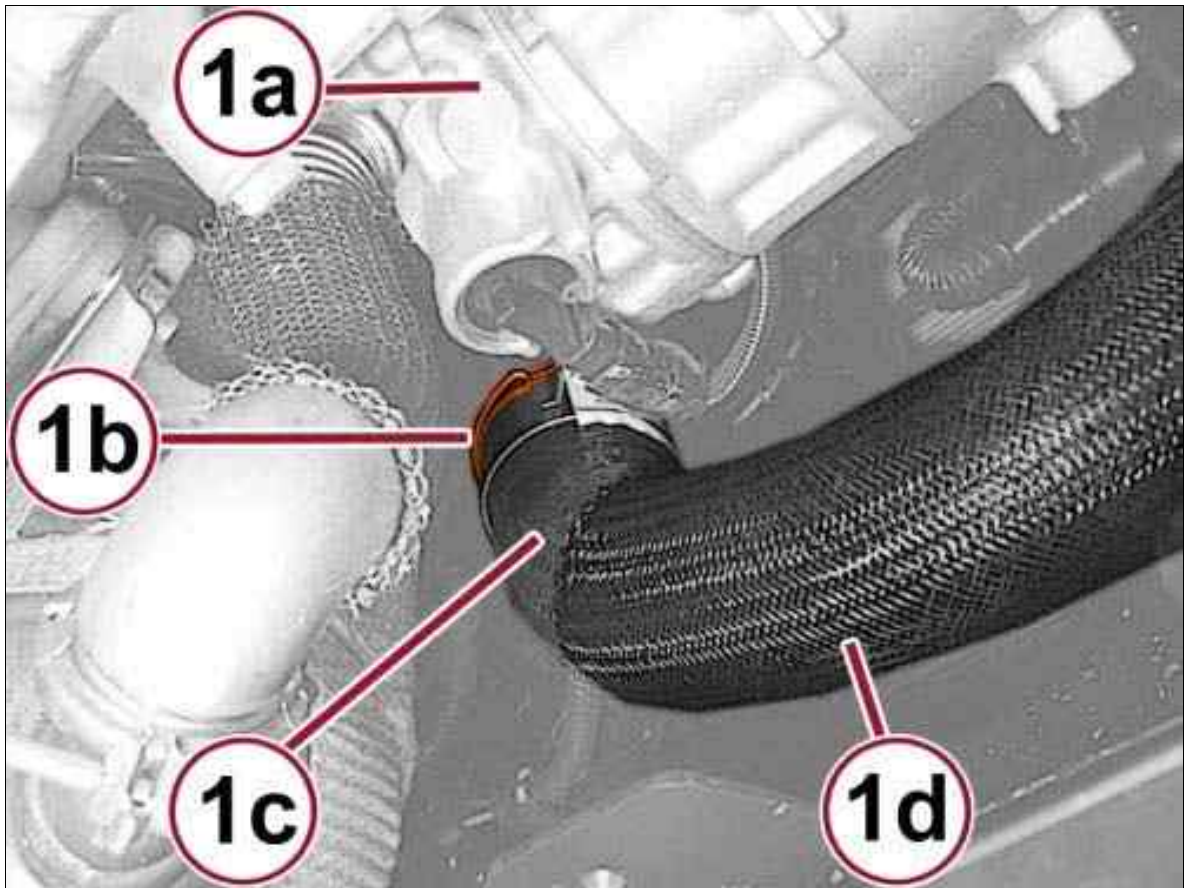
Fig 2: IHX Support Bracket, Nut & Screw



Courtesy of CHRYSLER GROUP, LLC

5. Position the internal heat exchanger (IHX) support bracket (1c) and install the screw (1a) and the nut (1b). Tighten the fasteners securely.

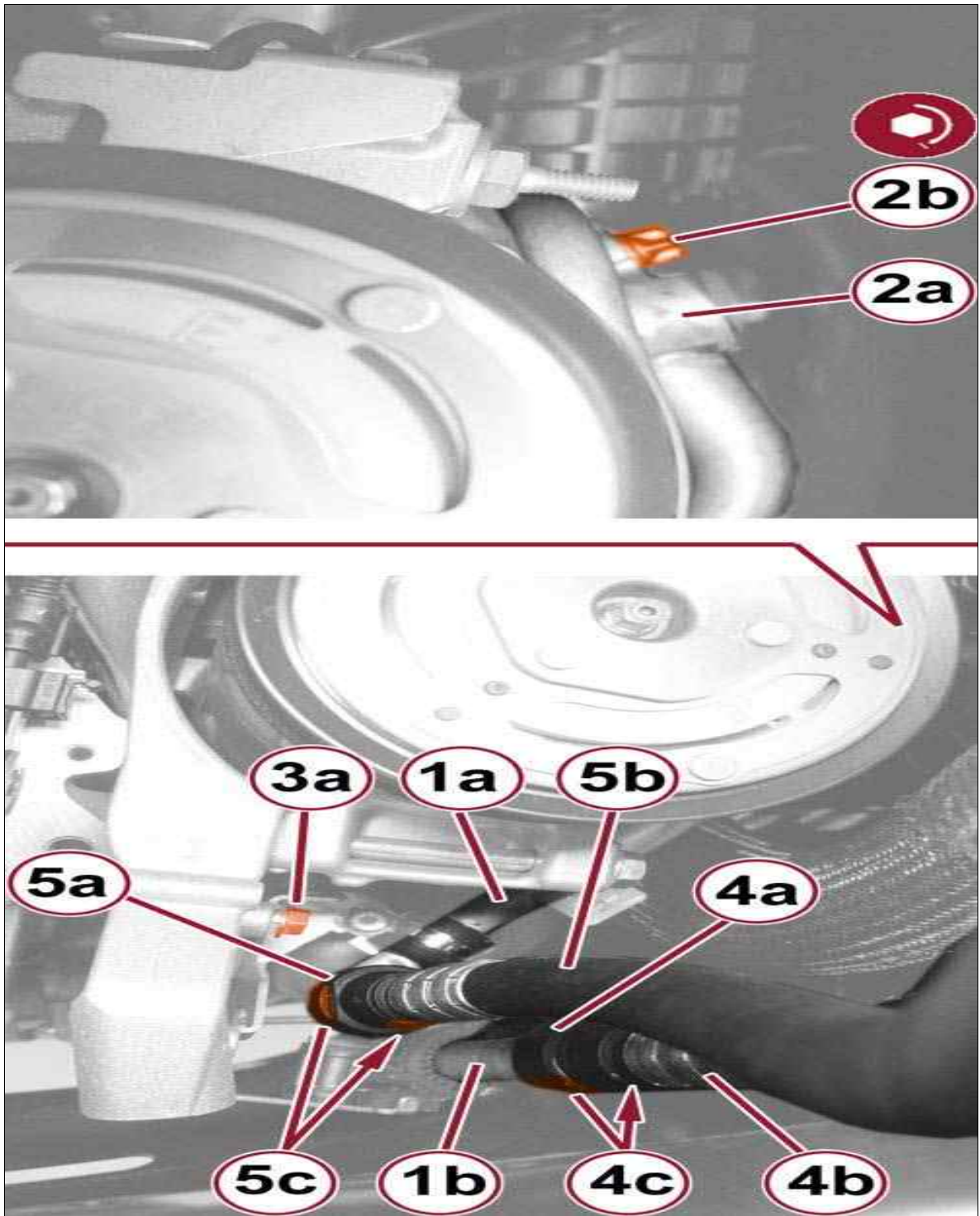
Fig 3: Compressor, Retaining Clip, Coupling & Internal Heat Exchanger



Courtesy of CHRYSLER GROUP, LLC

6. Remove the tape or plugs from the open refrigerant line fittings and the compressor ports.
7. Connect coupling (1c) of the hose (1d) to the internal heat exchanger (IHX). Be certain the coupling (1b) has engaged the IHX completely.

Fig 4: Connecting Two Quick Disconnect Fittings

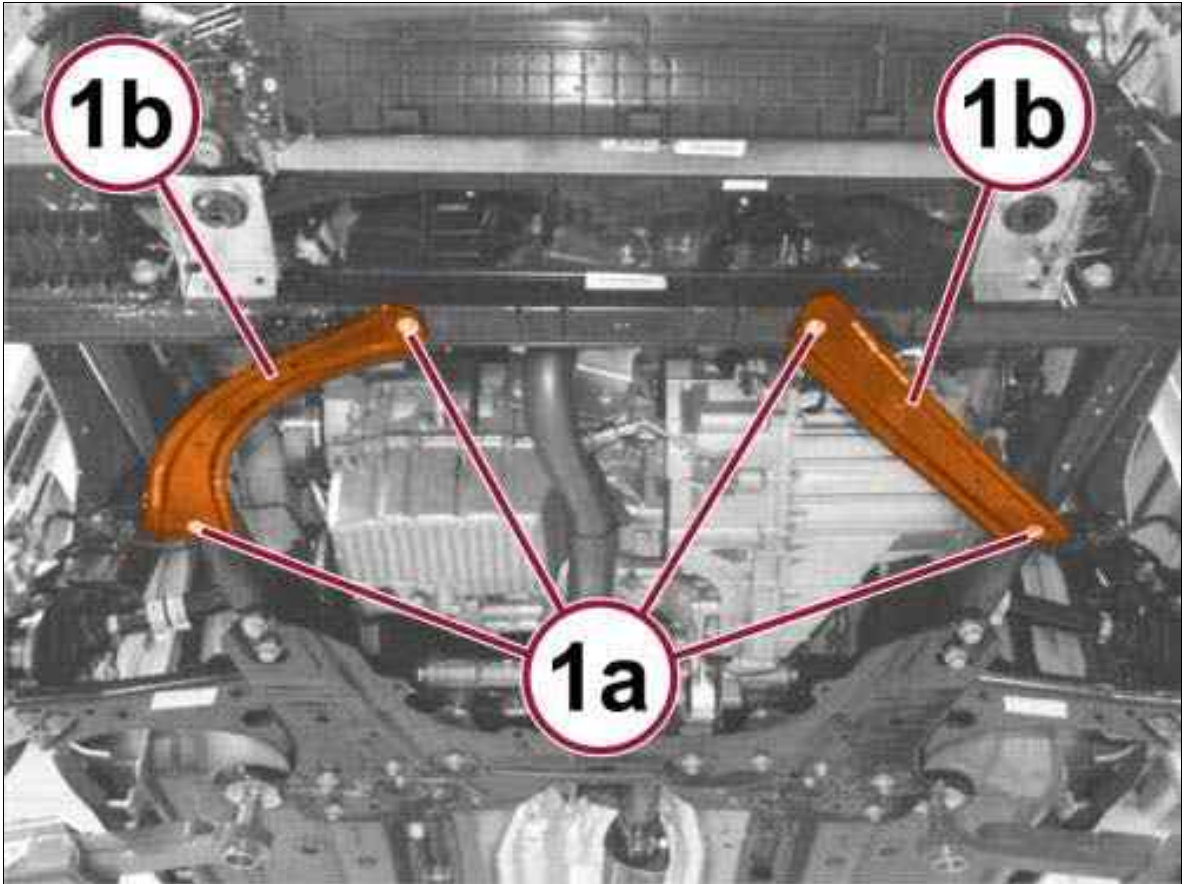


Courtesy of CHRYSLER GROUP, LLC

8. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
9. Install the A/C discharge and suction line flange (2a) onto the A/C compressor.

10. Install the bolt (2b) that secures the A/C discharge and suction line flange (2a) to the A/C compressor and tighten to the proper SPECIFICATIONS .
11. Position the A/C line retaining bracket and install the screw (3a). Tighten the screw securely.
12. Connect the quick disconnect couplings (4c and 5c). Be certain the couplings (4c and 5c) have engaged the A/C line flange fittings (1a and 1b) completely.

Fig 5: Right Front Lower Frame Strut & Bolts



Courtesy of CHRYSLER GROUP, LLC

13. Position the right front lower frame strut (1b) and install the two bolts (1a). Tighten the bolts to the proper TORQUE SPECIFICATIONS .
14. Install the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
15. Install the belly pan. Refer to BELLY PAN, REMOVAL AND INSTALLATION and BELLY PAN, SIDE, REMOVAL AND INSTALLATION .
16. Install the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
17. Install the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
18. Remove the support and lower the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
19. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

20. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

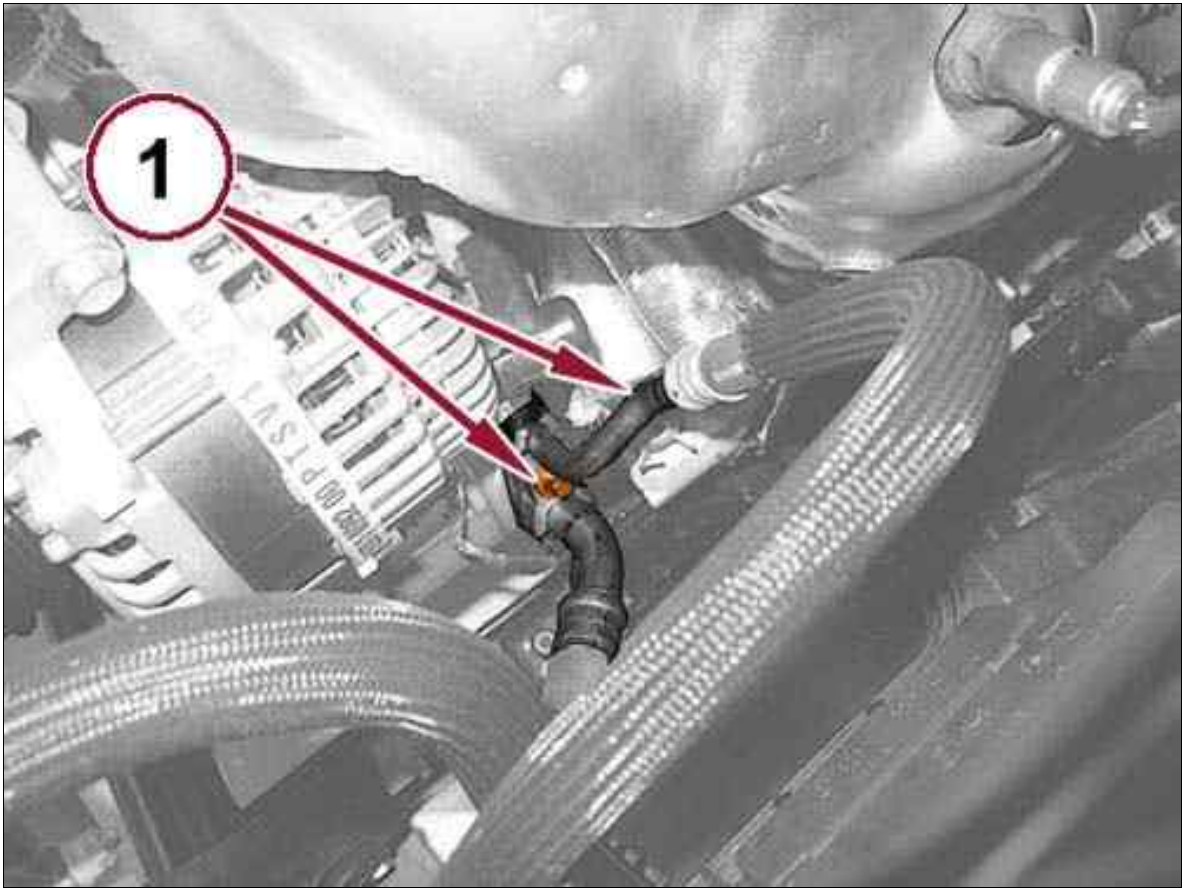
PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.4L > REMOVAL

 WARNING:

Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the engine cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .
3. Recover the refrigerant from the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .
4. Raise and support the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
5. Remove the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
6. Remove the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
7. Remove the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .

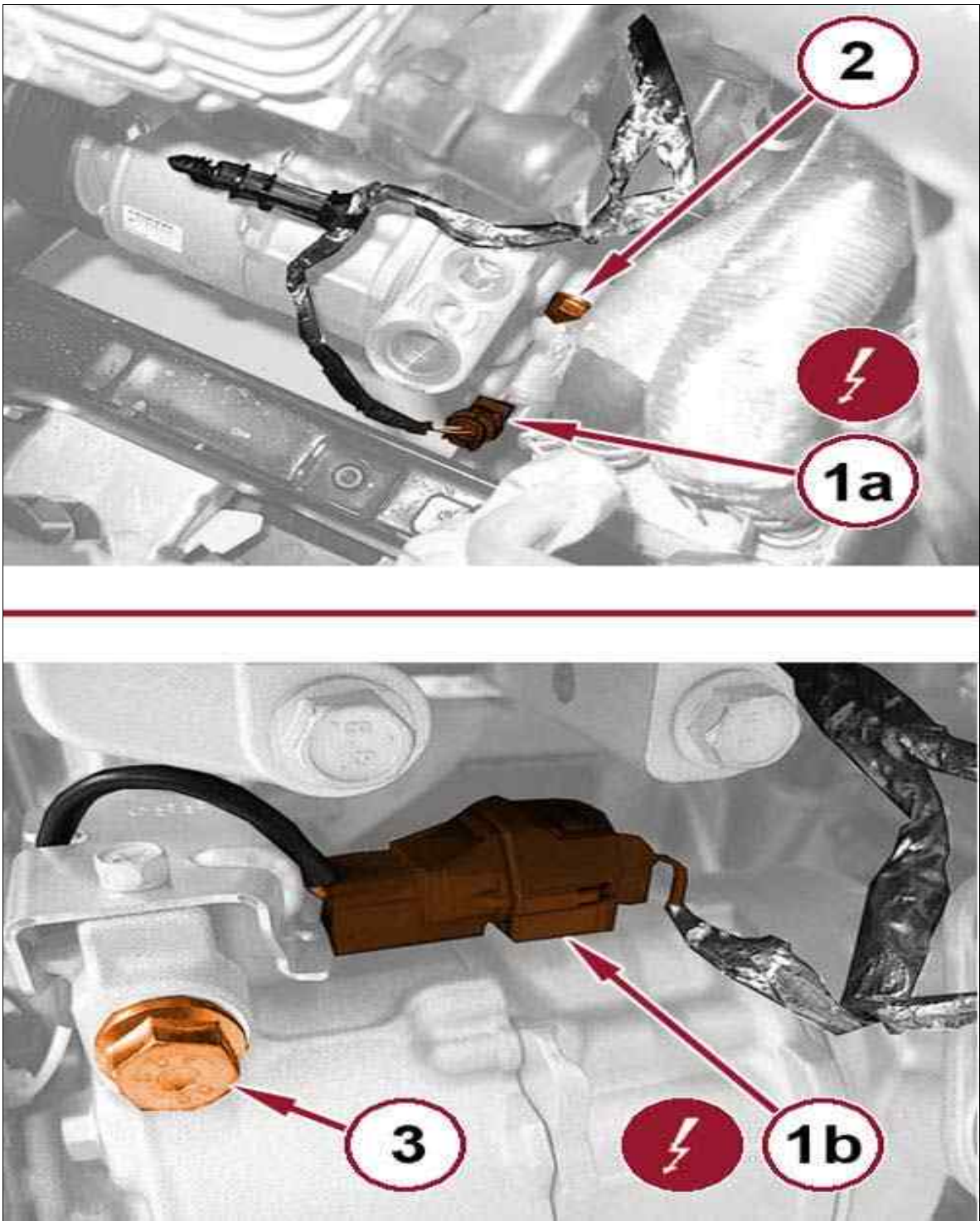
Fig 1: A/C Discharge And Suction Lines & Retaining Bolt



Courtesy of CHRYSLER GROUP, LLC

8. Remove the retaining bolt (1) and disconnect the A/C discharge and suction lines from the A/C compressor. Remove and discard the seal washers.

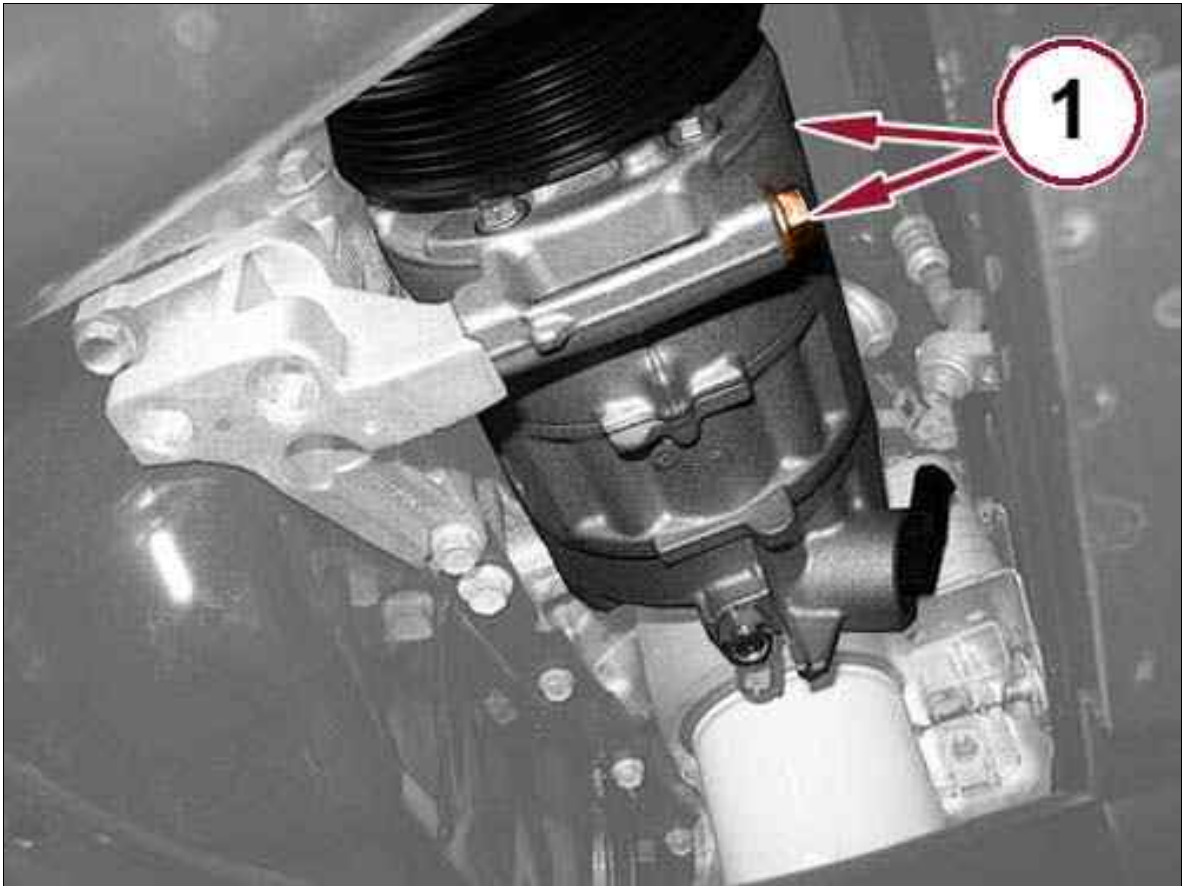
Fig 2: A/C Compressor Wire Harness Connectors



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the wire harness connectors (1a and 1b) from the A/C compressor).
10. Install plugs in, or tape over the open refrigerant line fittings and compressor ports.
11. Remove the two upper bolts (2 and 3) that secure the A/C compressor to the engine.

Fig 3: A/C Compressor & Bolts



Courtesy of CHRYSLER GROUP, LLC

12. Remove the lower bolt (1) that secures the A/C compressor to the engine.
13. Remove the A/C compressor from the engine compartment.

 NOTE:

If replacing the compressor, it will be necessary to adjust the oil level prior to installation.

Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

PLUMBING > COMPRESSOR, A/C > REMOVAL AND INSTALLATION > A/C COMPRESSOR - 2.4L > INSTALLATION

 CAUTION:

If the A/C compressor is being replaced, be certain to adjust the refrigerant system oil level. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating

as designed and can cause serious A/C compressor damage.

 CAUTION:

The A/C receiver/drier must be replaced if an internal failure of the A/C compressor has occurred. Failure to replace the A/C receiver/drier can cause serious damage to the replacement A/C compressor.

 NOTE:

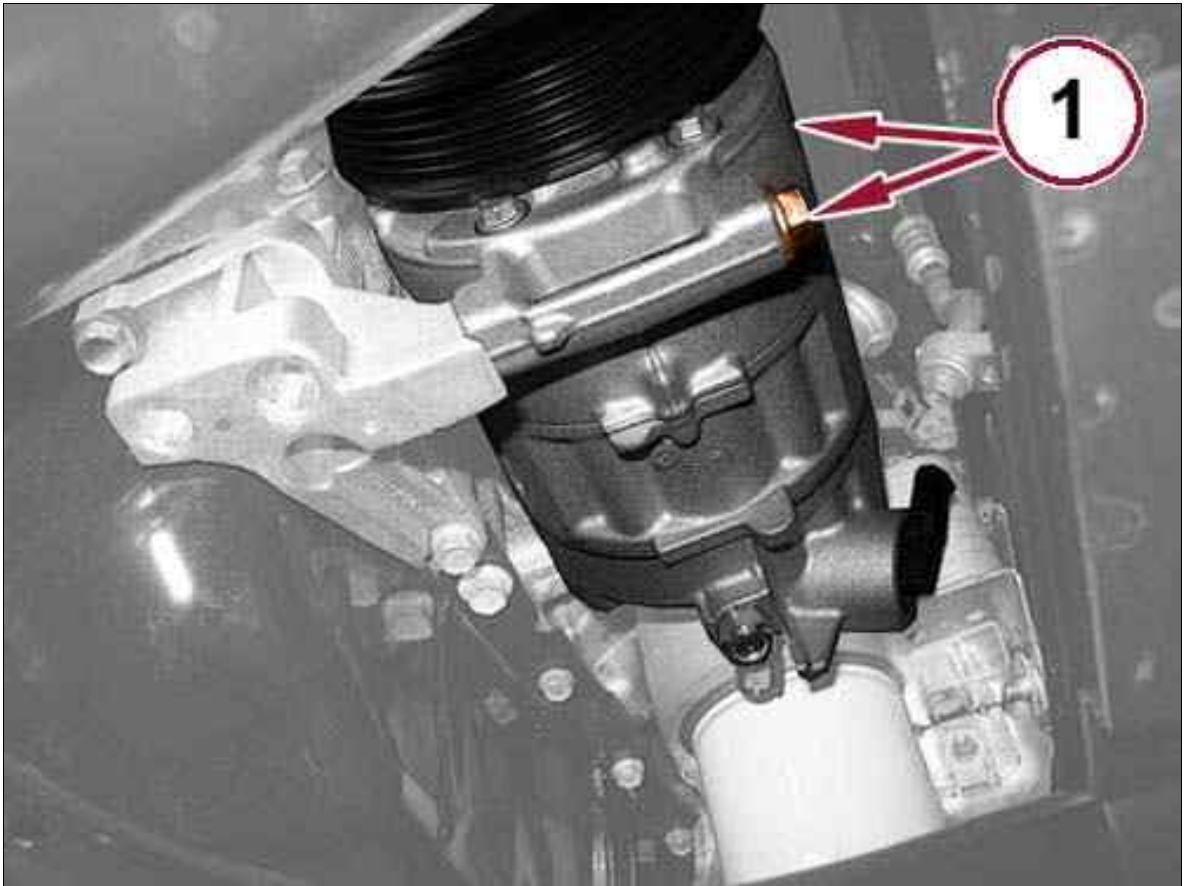
When replacing the A/C compressor, see the Refrigerant Oil Standard Procedure to determine how much oil should be removed from the new A/C compressor. Refer to OIL, REFRIGERANT, STANDARD PROCEDURE .

 NOTE:

Replacement of the refrigerant line seal washers is required anytime a refrigerant line is disconnected. Failure to replace the rubber seal washers may result in a refrigerant system leak.

1. If the A/C compressor (1) is being replaced, the refrigerant oil in the old compressor must be first drained and measured. Then the oil in the new A/C compressor must be drained. Finally, the new compressor must be refilled with the same amount of new refrigerant oil that was drained out of the old compressor. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the refrigerant system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

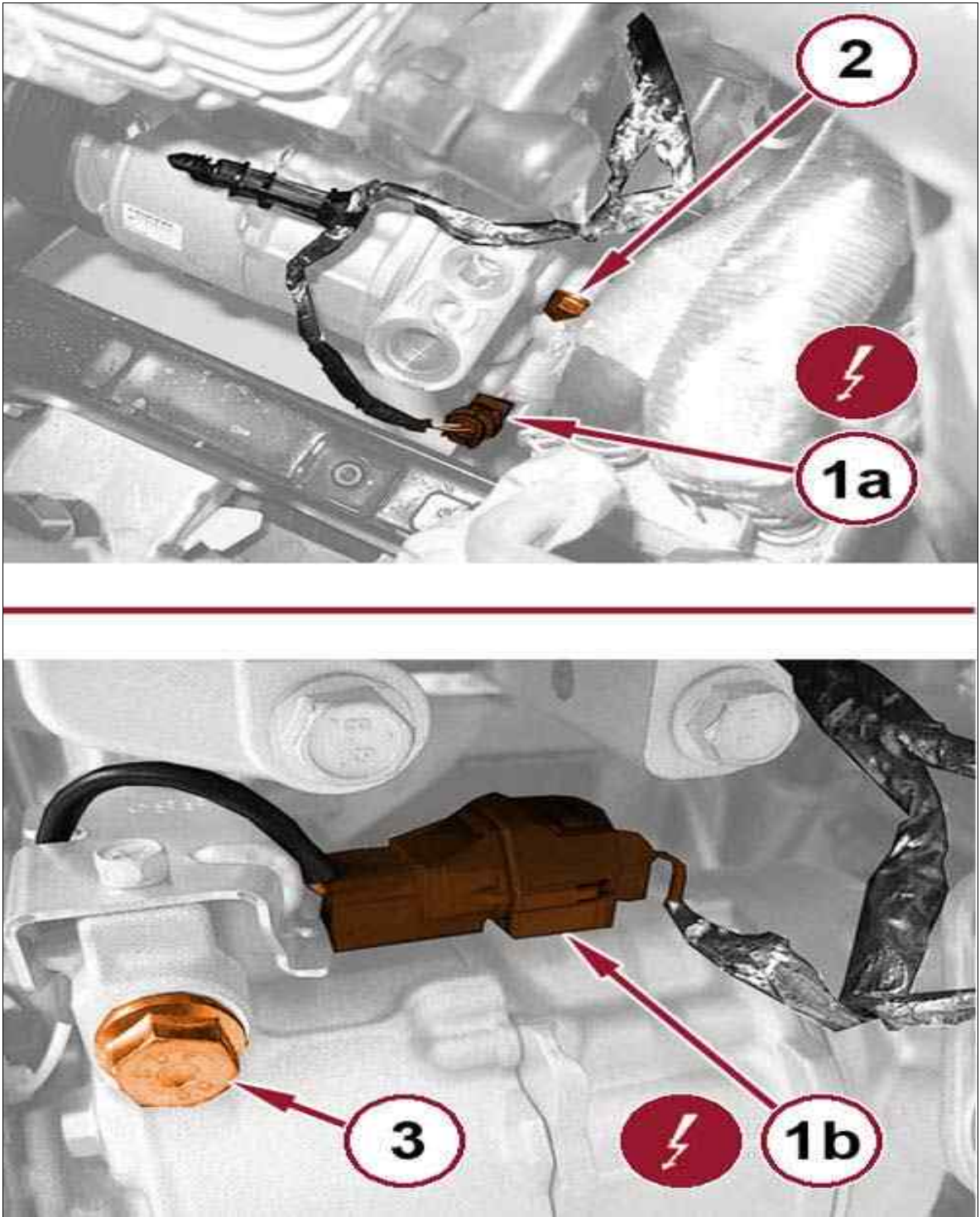
Fig 1: A/C Compressor & Bolts



Courtesy of CHRYSLER GROUP, LLC

2. Position the A/C compressor to the engine.
3. Install the lower compressor bolt (1). Snug the bolt up but don't tighten at this time.

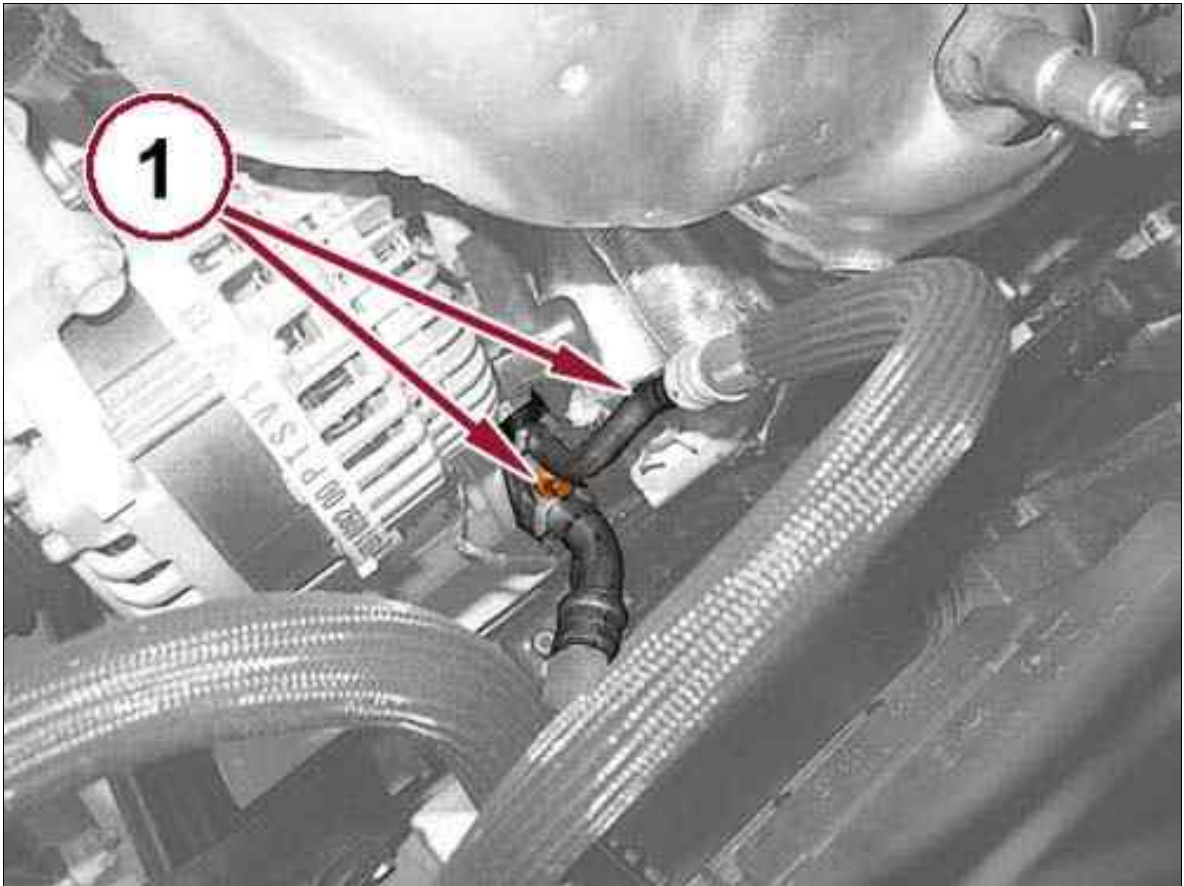
Fig 2: A/C Compressor Wire Harness Connectors



Courtesy of CHRYSLER GROUP, LLC

4. Install the two upper compressor bolts (2 and 3). Tighten all three compressor bolts to the proper SPECIFICATIONS .
5. Connect the wire harness connectors (1a and 1b) for the compressor.

Fig 3: A/C Discharge And Suction Lines & Retaining Bolt



Courtesy of CHRYSLER GROUP, LLC

6. Remove the tape or plugs from the opened refrigerant line fittings and the compressor ports.
7. Lubricate new rubber seal washers with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified seal washers as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
8. Install the A/C discharge and suction line flange onto the A/C compressor.
9. Install the bolt (1) that secures the A/C discharge and suction line flange to the A/C compressor and tighten to the proper SPECIFICATIONS .
10. Install the accessory drive belt. Refer to BELT, SERPENTINE, REMOVAL AND INSTALLATION .
11. Install the right front wheelhouse splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .
12. Install the right front tire and wheel assembly. Refer to REMOVAL AND INSTALLATION .
13. Remove the support and lower the vehicle. Refer to HOISTING, STANDARD PROCEDURE .
14. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.

15. Evacuate and charge the refrigerant system. Refer to PLUMBING, STANDARD PROCEDURE .

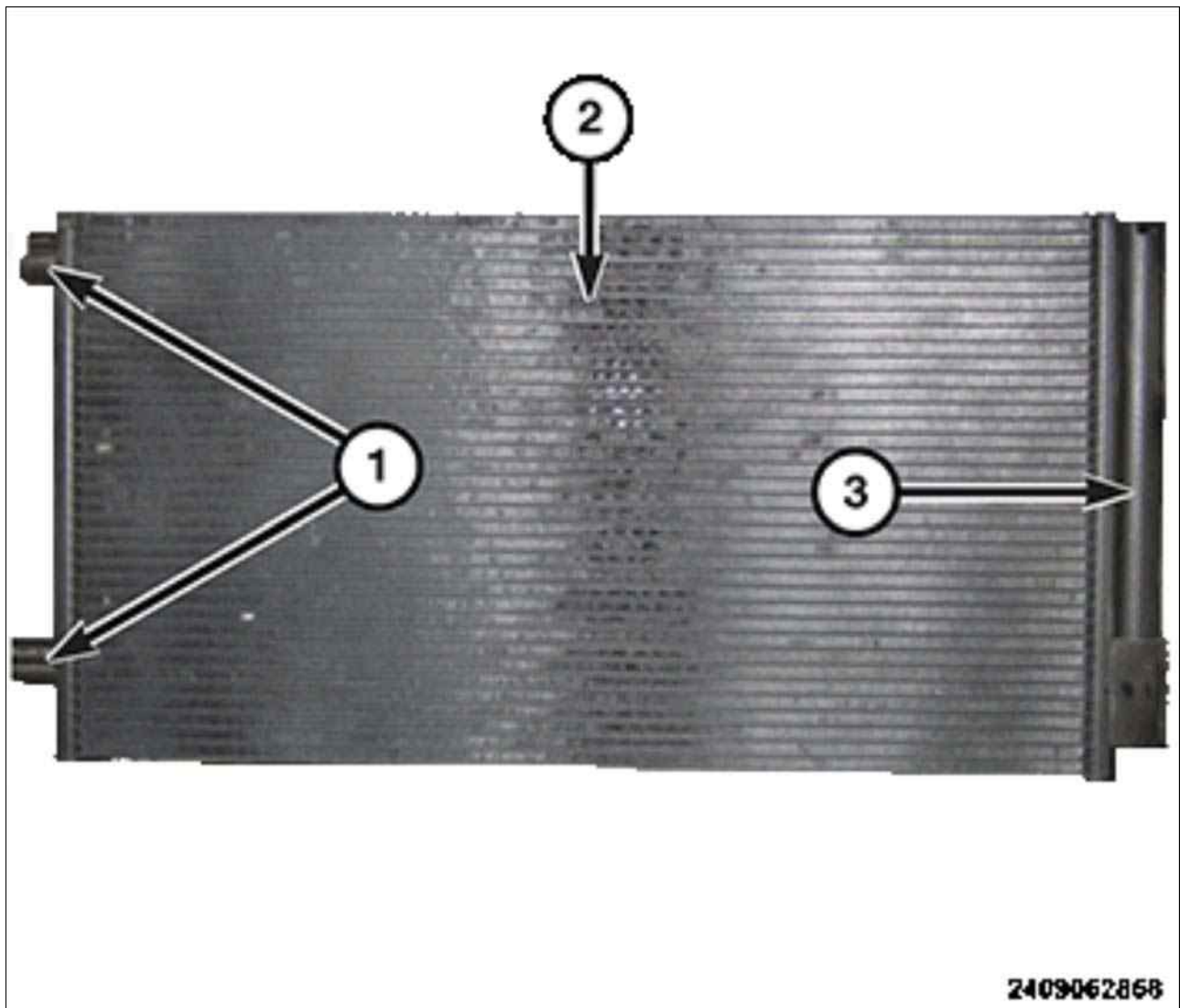
16. Install the engine cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

PLUMBING > CONDENSER, A/C > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The A/C condenser is located in the front of the engine compartment behind the grille. The A/C condenser is a heat exchanger that allows the high-pressure refrigerant gas being discharged by the A/C compressor to give up its heat to the air passing over the condenser fins (2), which causes the refrigerant to cool and change to a liquid state.

The A/C condenser (2) is equipped with tapping blocks for the discharge and liquid lines (1), integral mounting brackets and a integral A/C receiver/drier (3).

Fig 1: A/C Condenser, Discharge And Liquid Lines & A/C Receiver/Drier



PLUMBING > CONDENSER, A/C > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

When air passes through the fins of the A/C condenser, the high-pressure refrigerant gas within the A/C condenser gives up its heat. The refrigerant then condenses as it leaves the A/C condenser and becomes a high-pressure liquid. The volume of air flowing over the condenser fins is critical to the proper cooling performance of the A/C system. Therefore, it is important that there are no objects placed in front of the radiator grille openings at the front of the vehicle or foreign material on the condenser fins that might obstruct proper air flow. Also, any factory-installed air seals or shrouds must be properly reinstalled following radiator or A/C condenser service.



NOTE: Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets could result in a refrigerant system leak.

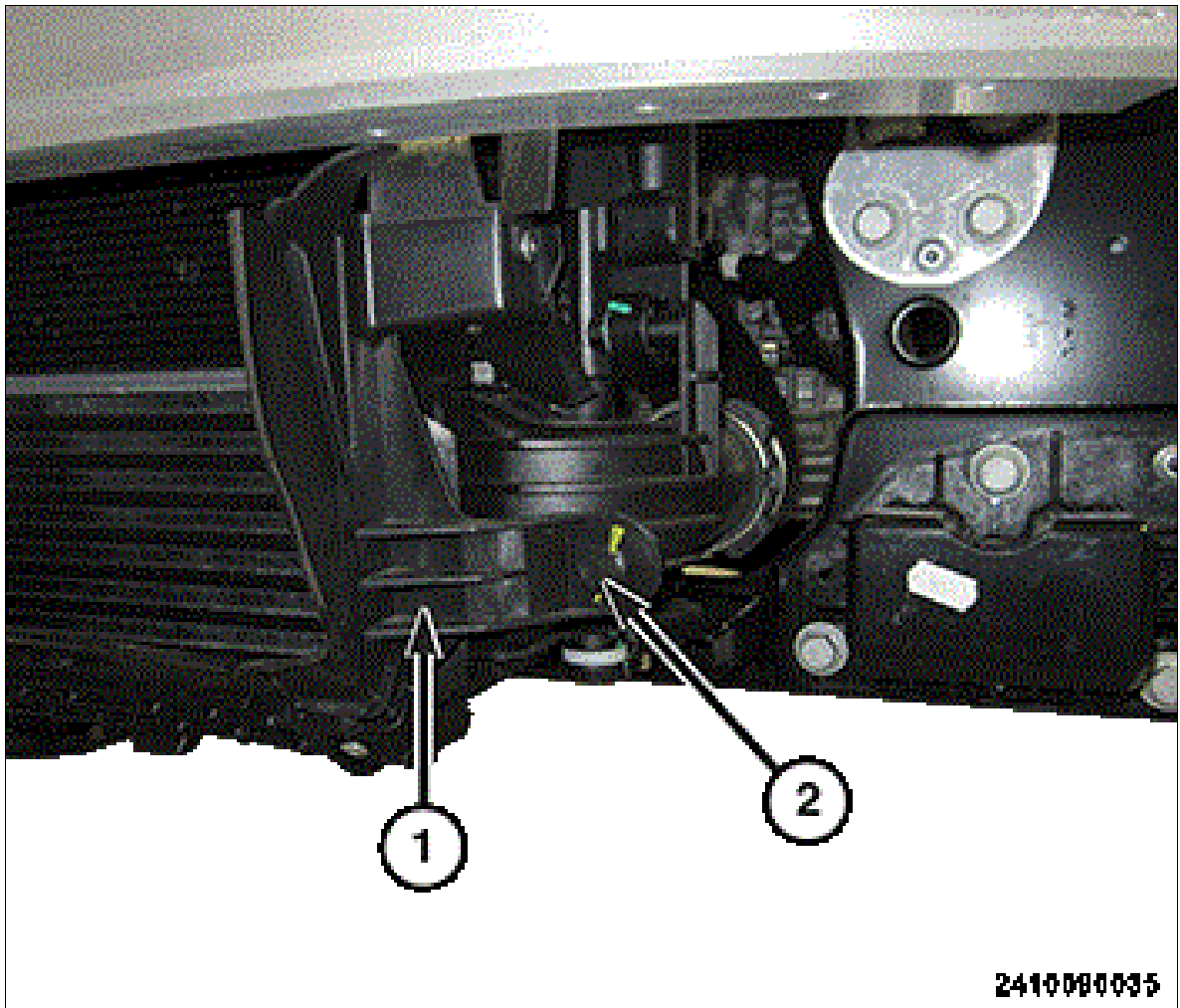
The A/C condenser has no serviceable parts except for the O-ring seals and gaskets. The O-ring seals used on the connections are made from a special type of rubber not affected by R-134a refrigerant. The O-ring seals and gaskets must be replaced whenever a refrigerant line is disconnected from the A/C condenser.

The A/C condenser cannot be repaired and must be replaced if leaking or damaged.

PLUMBING > CONDENSER, A/C > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
3. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).

Fig 1: Lower Radiator Air Deflector & Screws



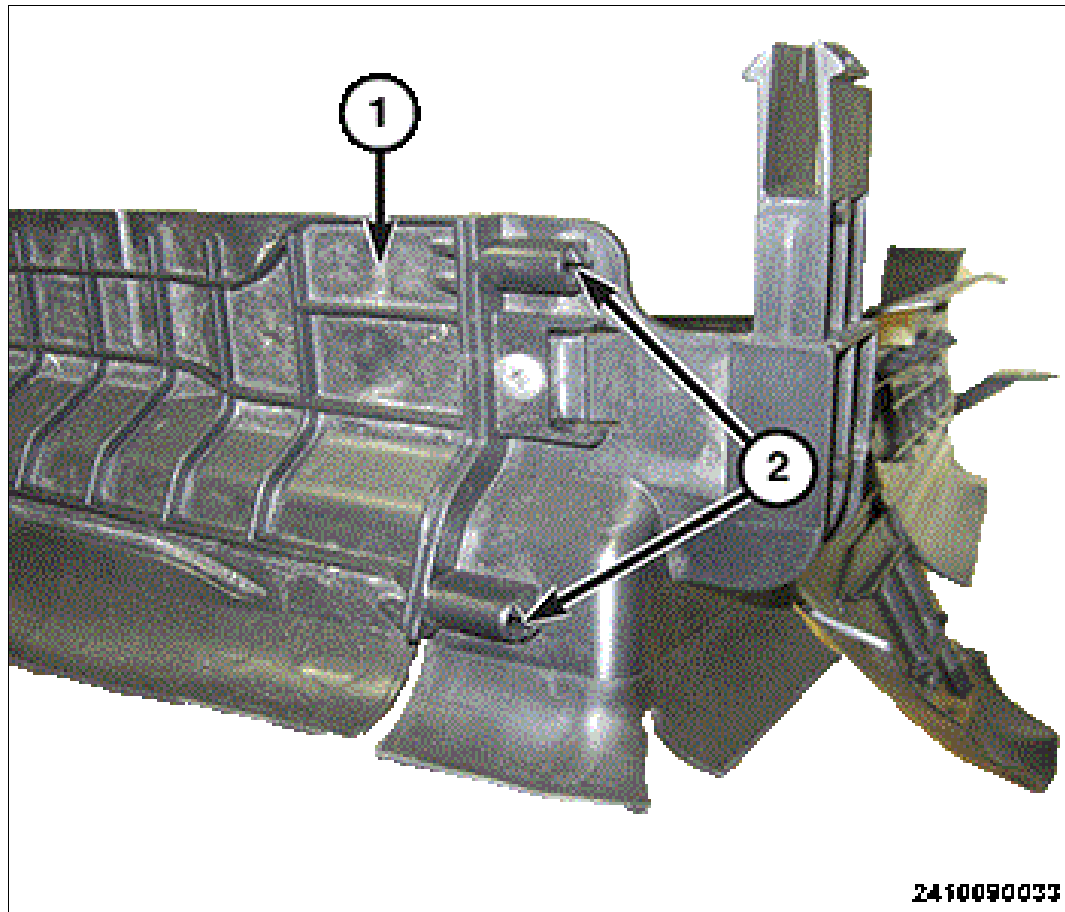
Courtesy of CHRYSLER GROUP, LLC

4. Remove both of the lower radiator air deflector to radiator screws (2).
5. Disengage the upper radiator air deflector to radiator clips.
6. With a suitable tool, disengage the upper air deflector panel clips (2) and remove the upper panel (1), to aide in the removal and installation of the air deflector



NOTE: Remove the radiator air deflector through the top of the vehicle.

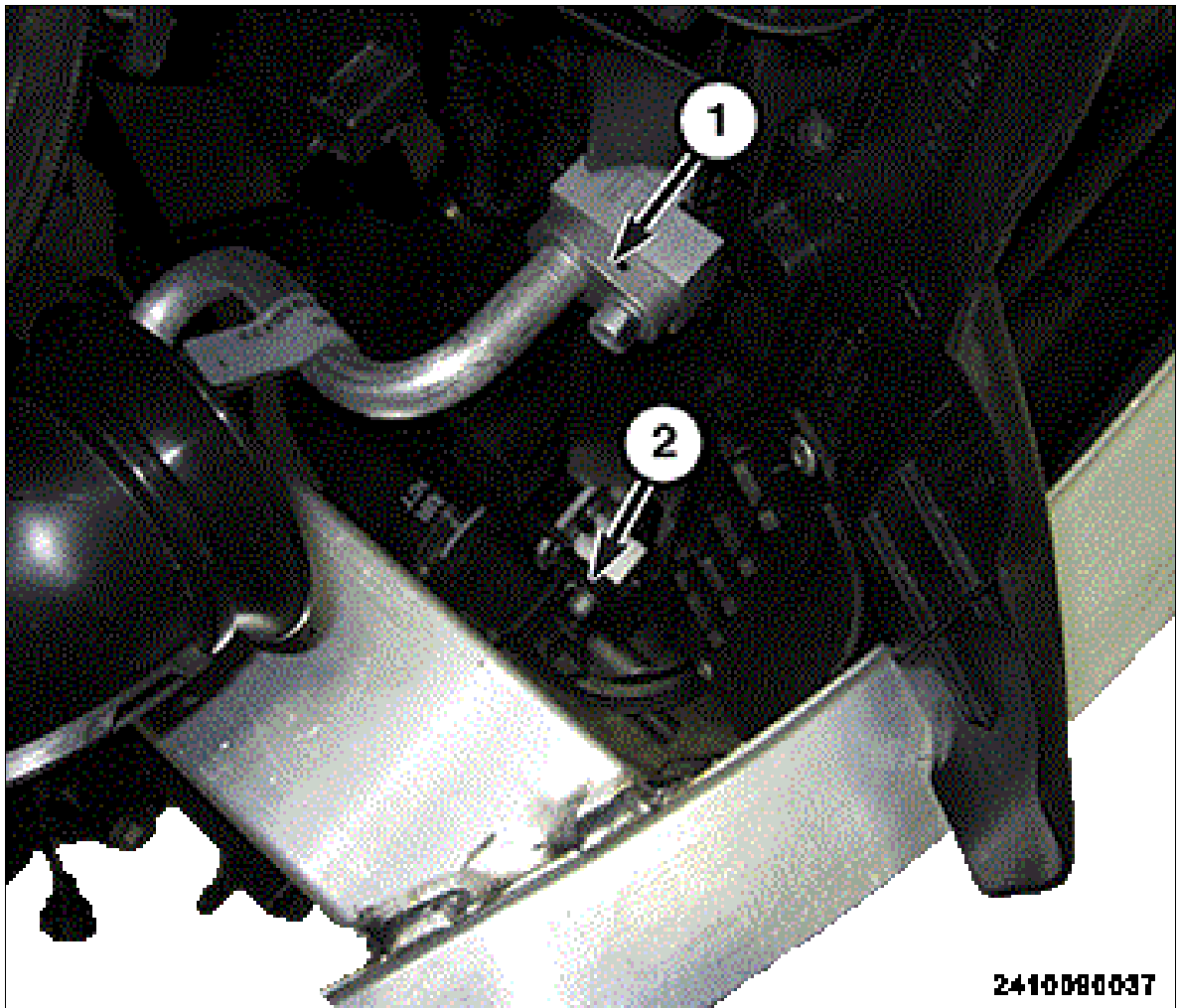
Fig 2: Upper Air Deflector Panel Clips & Upper Panel



Courtesy of CHRYSLER GROUP, LLC

7. If equipped, remove the transmission cooler enough to reposition the cooler out of the way. (Refer to REMOVAL AND INSTALLATION).
8. Remove the A/C discharge line to the condenser bolt (1).

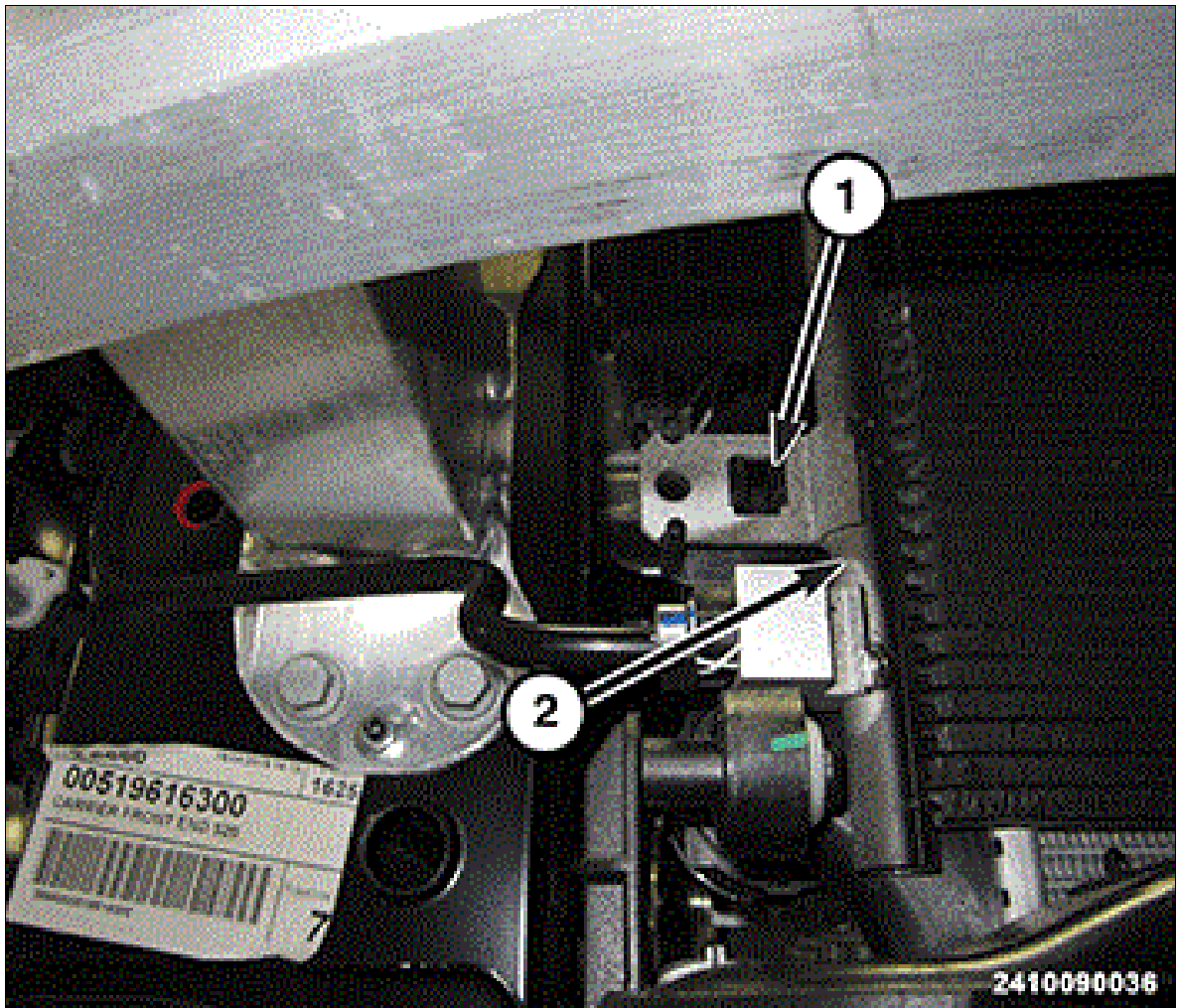
Fig 3: Condenser Bolts



Courtesy of CHRYSLER GROUP, LLC

9. Remove the A/C liquid line to the condenser bolt (2).
10. Disconnect the A/C discharge and liquid lines from the condenser tapping blocks and remove and **discard** the O-ring seals and gaskets.
11. Install plugs in, or tape over the opened refrigerant line fittings and condenser ports.
12. Disengage the two retaining tabs (1) that secure the condenser (2) to the mounting brackets on the radiator.

Fig 4: Retaining Tabs & Condenser



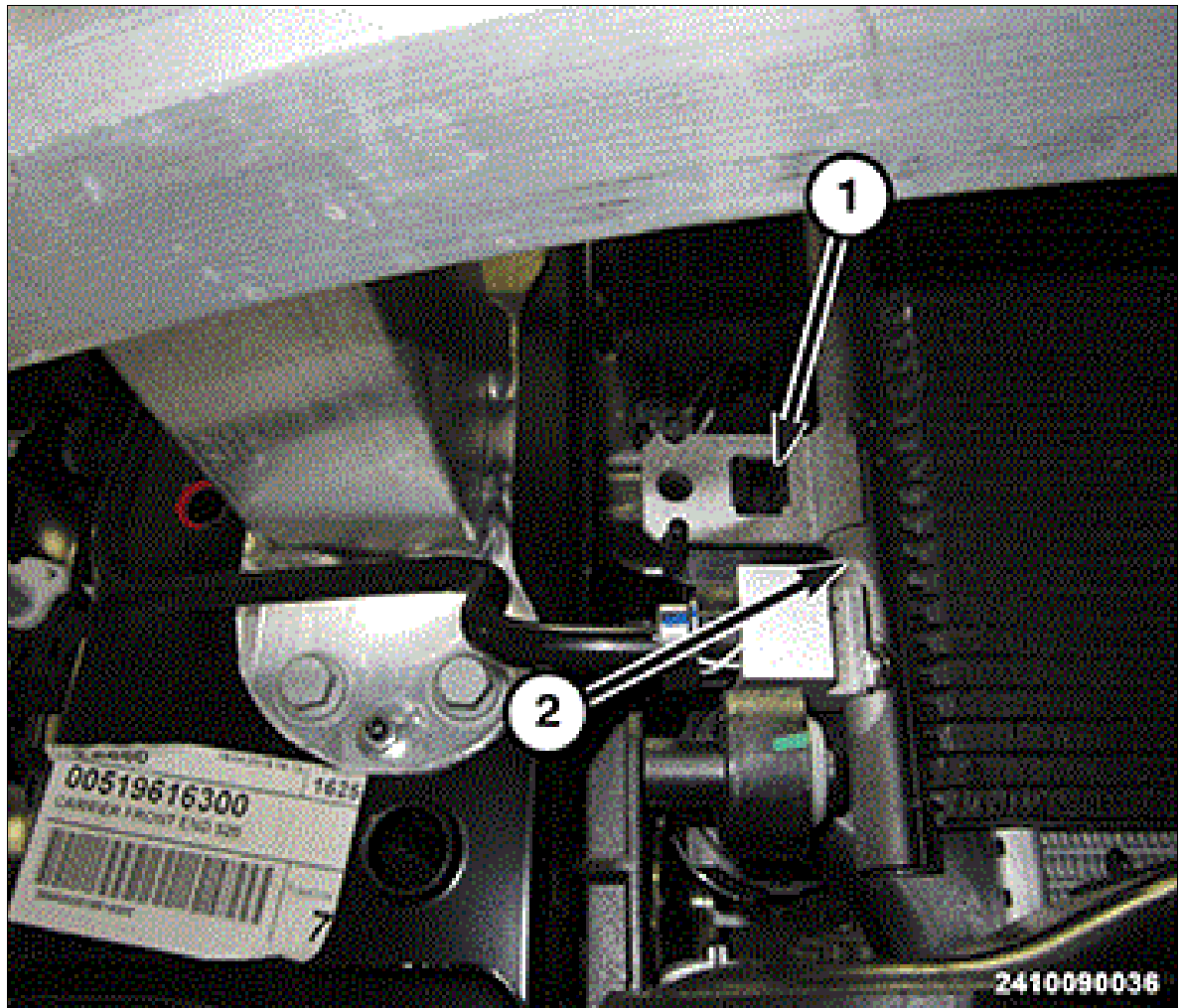
Courtesy of CHRYSLER GROUP, LLC

13. Once the condenser is removed from the retaining clips, pull it towards the right side of the vehicle and up to disengage the left side retaining brackets on the radiator. Lift the condenser upward to remove the condenser (2) from the engine compartment.

PLUMBING > CONDENSER, A/C > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

1. Position the A/C condenser (2) in front of the radiator so that the left side of the condenser is between the locating brackets on the radiator and engage the left side of the condenser into the mounting brackets on the radiator.

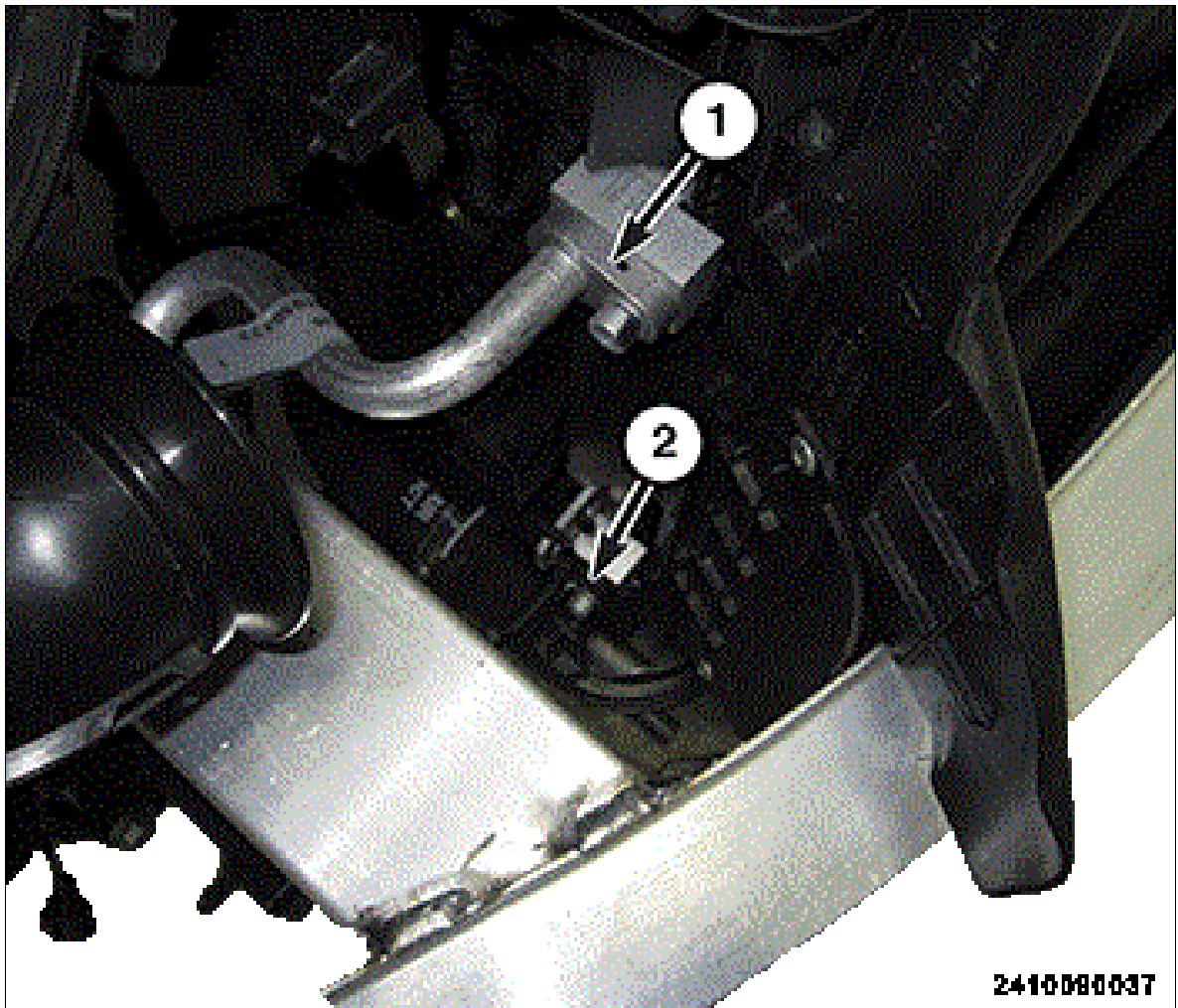
Fig 1: Retaining Tabs & Condenser



Courtesy of CHRYSLER GROUP, LLC

2. Engage the right side retaining tabs (1) that secures the condenser to the mounting brackets of the radiator.
3. Remove the tape or plugs from the opened refrigerant line fittings and condenser ports.
4. Lubricate NEW rubber O-ring seals with clean refrigerant oil and install them and new gaskets onto the opened refrigerant line fittings. Use only the specified O-rings as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
5. Connect the A/C liquid line to the condenser.
6. Install the A/C liquid line to the condenser bolt (2) and tighten to the proper TORQUE SPECIFICATIONS .

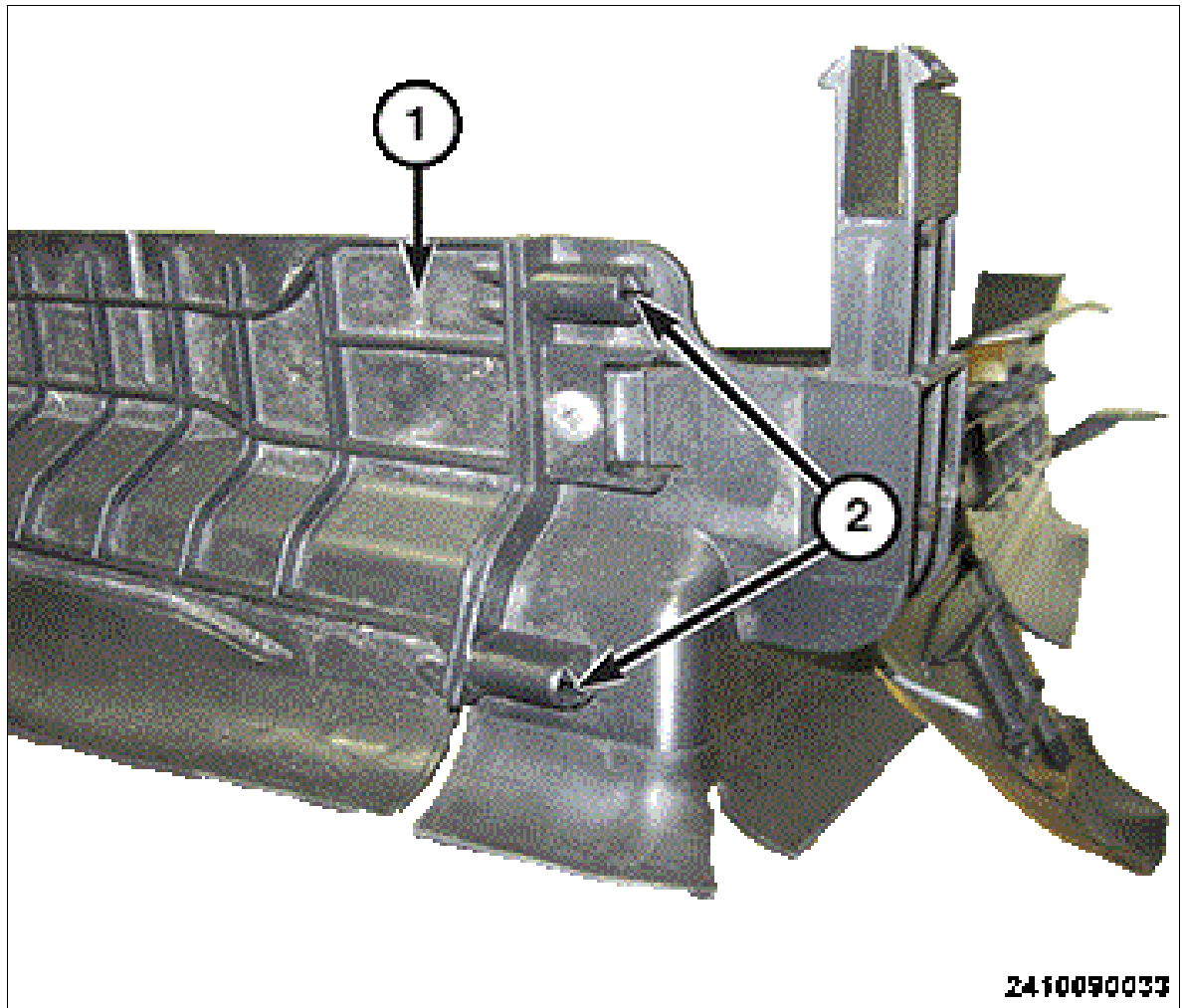
Fig 2: Condenser Bolts



Courtesy of CHRYSLER GROUP, LLC

7. Connect the A/C discharge line to the condenser.
8. Install the A/C discharge line to the condenser bolt (1) and tighten to the proper TORQUE SPECIFICATIONS .
9. If equipped, install the transmission cooler. (Refer to REMOVAL AND INSTALLATION).
10. Position the radiator air deflector (1) in front of the radiator.

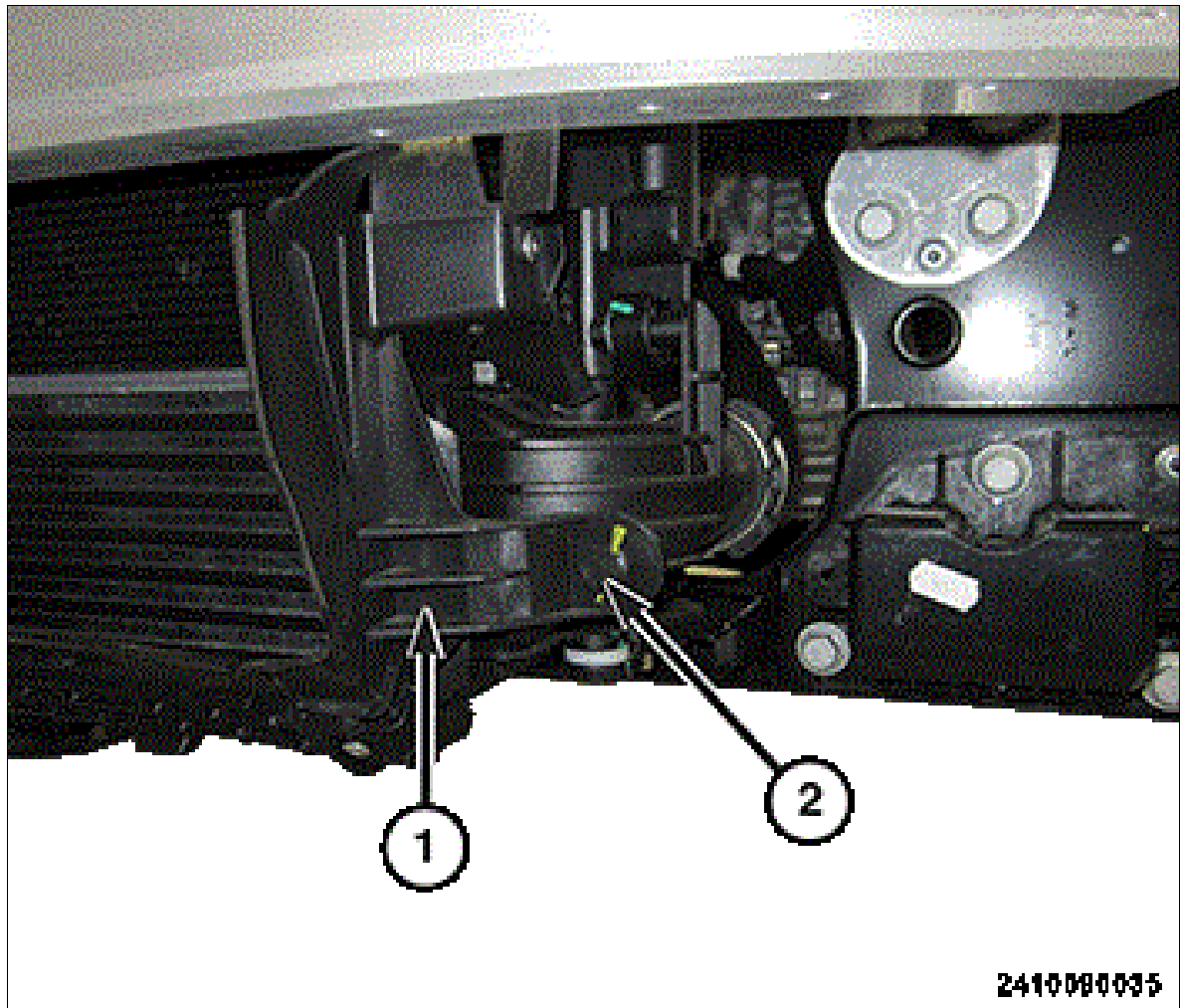
Fig 3: Upper Air Deflector Panel Clips & Upper Panel



Courtesy of CHRYSLER GROUP, LLC

11. Position the upper radiator panel (1) in place and engage the upper panel clips (2).
12. Engage the upper radiator air deflector to radiator clips.
13. Install and tighten both of the lower radiator air deflector to radiator screws (2).

Fig 4: Lower Radiator Air Deflector & Screws



Courtesy of CHRYSLER GROUP, LLC

14. Install the front fascia (Refer to REMOVAL AND INSTALLATION).
15. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
16. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
17. If the A/C condenser is being replaced, add 30 milliliters (1 fluid ounce) of refrigerant oil to the refrigerant system. When replacing multiple A/C system components, see REFRIGERANT OIL CAPACITIES to determine how much oil should be added to the refrigerant system). Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.
18. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

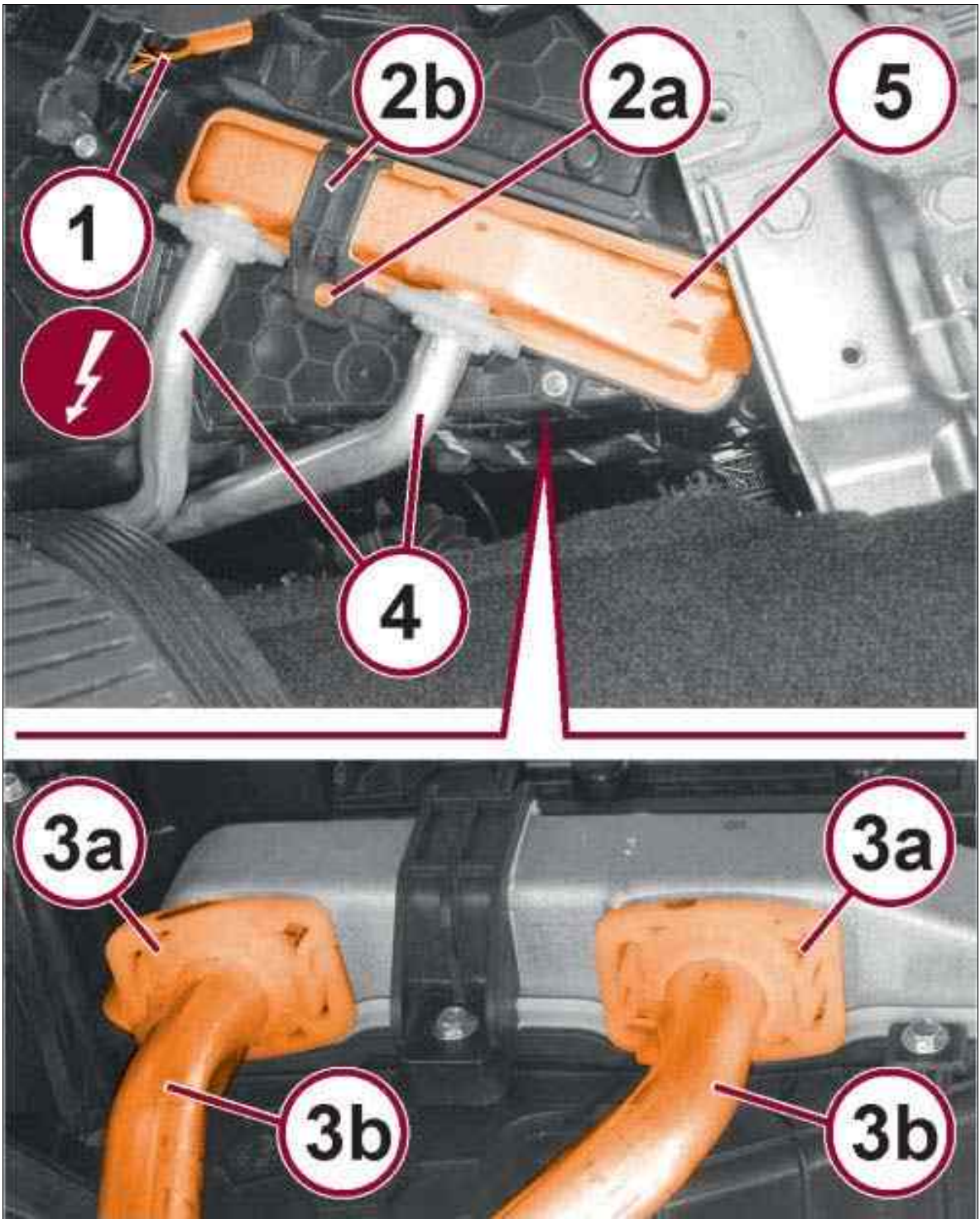
**PLUMBING > CORE, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND
INSTALLATION > REMOVAL**

 WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

1. Comply with all prescribed safety standards. Refer to PLUMBING, WARNING and PLUMBING, CAUTION .
2. Partially drain the engine cooling system. Refer to STANDARD PROCEDURE .
3. Remove the driver knee air bag. Refer to AIR BAG, KNEE BLOCKER, REMOVAL AND INSTALLATION .
4. Remove the front floor console. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .

Fig 1: Remove/Install Heater Core



Courtesy of CHRYSLER GROUP, LLC

5. Disconnect the mode door actuator wire harness connector (1).
6. Remove the screw (2a) from the heater core retaining bracket (2b).

 NOTE:

Mark the location of the retaining collars to make installation easier.

7. Unlock and disengage the heater core tube retaining collars (3a).
8. Gently disengage the heater core tubes (3b) from the heater core (5).
9. Carefully remove the heater core (5) from the HVAC housing.

 NOTE:

The O-ring seals must be replaced during installation.

10. Remove and discard the O-ring seals from the heater tubes.

 NOTE:

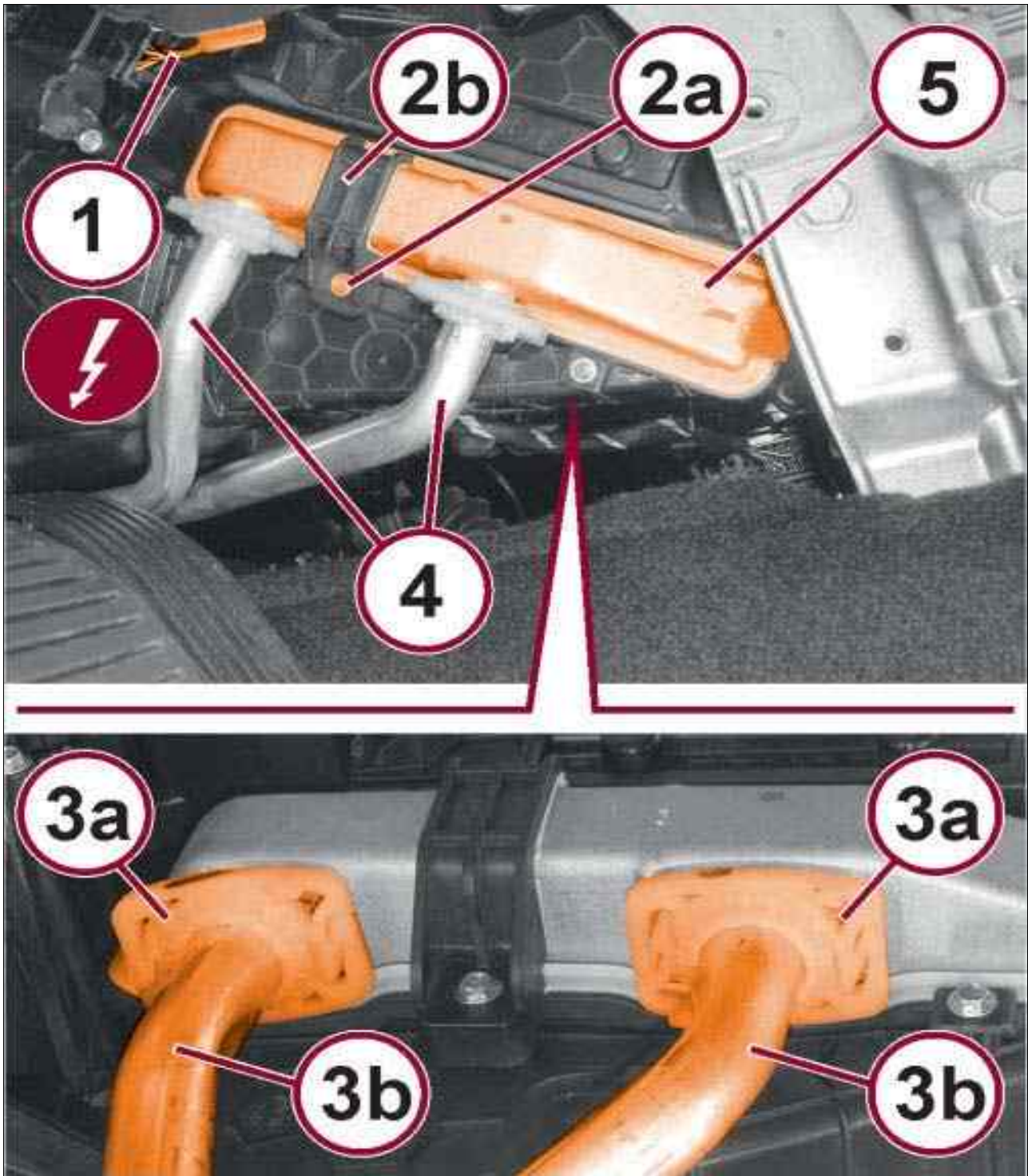
If the foam seals around the heater core are deformed or damaged, they must be replaced.

PLUMBING > CORE, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

 WARNING:

Use care when installing the heater core. Do not force the heater core into the housing. Do not push on the heater core tubes. Apply pressure on the heater core side tank only. Failure to follow these instructions can result in a possible engine coolant leak and serious or fatal injury.

Fig 1: Remove/Install Heater Core



Courtesy of CHRYSLER GROUP, LLC



NOTE:

If the foam seals (2) around the heater core are deformed or damaged, they must be replaced.

1. Lubricate new rubber O-ring seals with clean engine coolant and install them onto the heater core tubes. Use only the specified O-ring as they are made of a special material for the engine cooling system.
2. Carefully install the heater core (5) into the HVAC housing. Be certain the heater core has fully bottomed in the HVAC housing.
3. Engage the heater core tubes (3b and 4) to the heater core (5).
4. Install the heater core tube retaining collars (3a). Be certain the collars are fully seated and align with the marks made during the removal process.
5. Position the heater core retaining bracket (2b) and install the screw (2a). Tighten the screw securely.
6. Connect the mode door actuator wire harness connector (1).
7. Install the driver knee air bag. Refer to AIR BAG, KNEE BLOCKER, REMOVAL AND INSTALLATION .
8. Install the front floor console. Refer to CONSOLE, FLOOR, REMOVAL AND INSTALLATION .
9. Fill the engine cooling system. Refer to STANDARD PROCEDURE .

PLUMBING > EVAPORATOR, A/C > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > DESCRIPTION

The A/C evaporator for the heating-A/C system is mounted in the HVAC housing, which is located behind the instrument panel. The A/C evaporator and its insulator are positioned within the HVAC housing so that all air entering the housing must pass over the evaporator fins (2) before it is distributed through the heating-A/C system ducts and outlets.

The A/C evaporator can only be serviced by removing and disassembling the HVAC housing assembly (Refer to DISASSEMBLY AND ASSEMBLY).

PLUMBING > EVAPORATOR, A/C > DESCRIPTION AND OPERATION > DESCRIPTION AND OPERATION > OPERATION

Refrigerant enters the A/C evaporator from the A/C expansion valve as a low-temperature, low-pressure mixture of liquid and gas. As air flows over the fins of the A/C evaporator, the humidity in the air condenses on the fins, and the heat from the air is absorbed by the refrigerant. Heat absorption causes the refrigerant to boil and vaporize. The refrigerant becomes a low-pressure gas when it leaves the A/C evaporator.



NOTE: Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets could result in a refrigerant system leak.

The A/C evaporator has no serviceable parts except for the O-ring seals. The O-ring seals used on the

connections are made from a special type of rubber for the specific system.

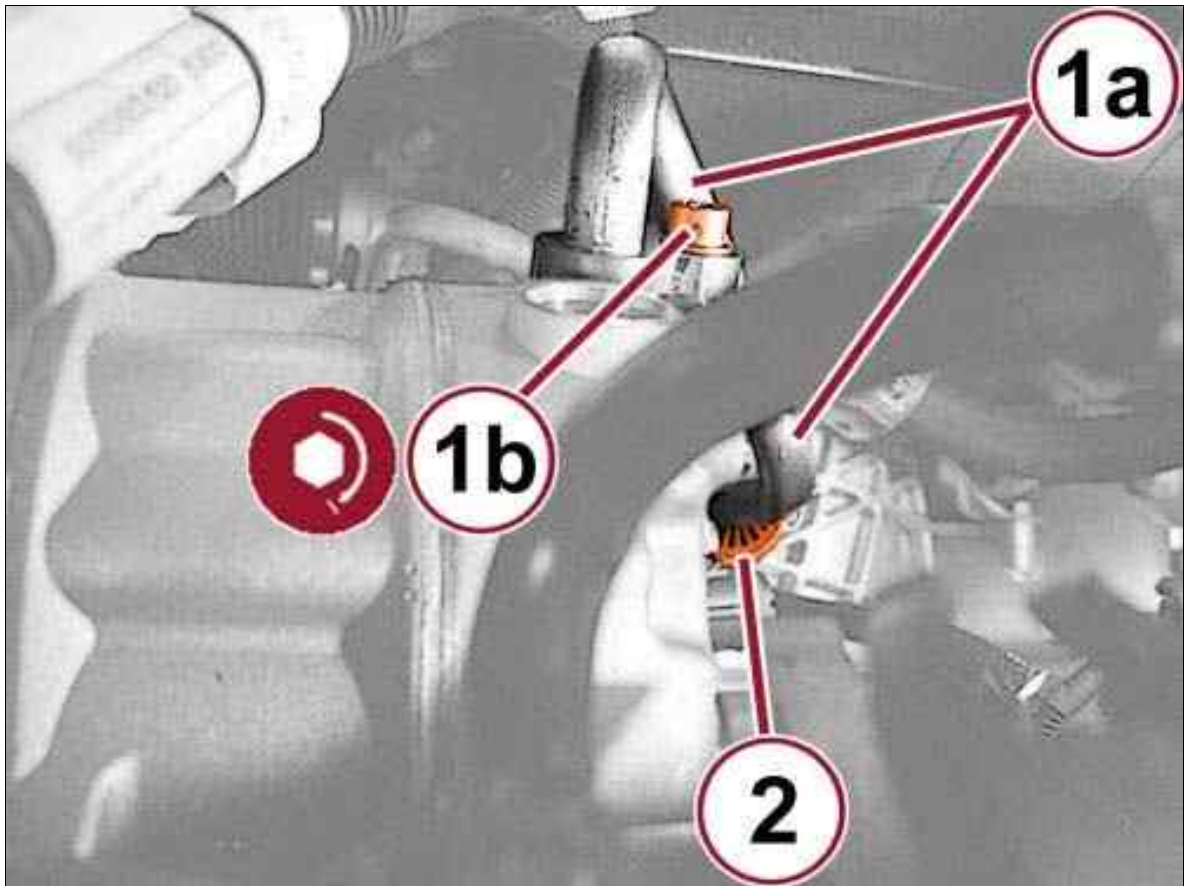
The A/C evaporator cannot be repaired and must be replaced if leaking or damaged.

PLUMBING > LINE, A/C DISCHARGE > REMOVAL AND INSTALLATION > A/C DISCHARGE LINE - 1.4L > REMOVAL

⚠ WARNING: Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. Refer to STANDARD PROCEDURE .
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the engine cover. Refer to COVER, ENGINE, REMOVAL AND INSTALLATION .

Fig 1: A/C Discharge Line & Fasteners

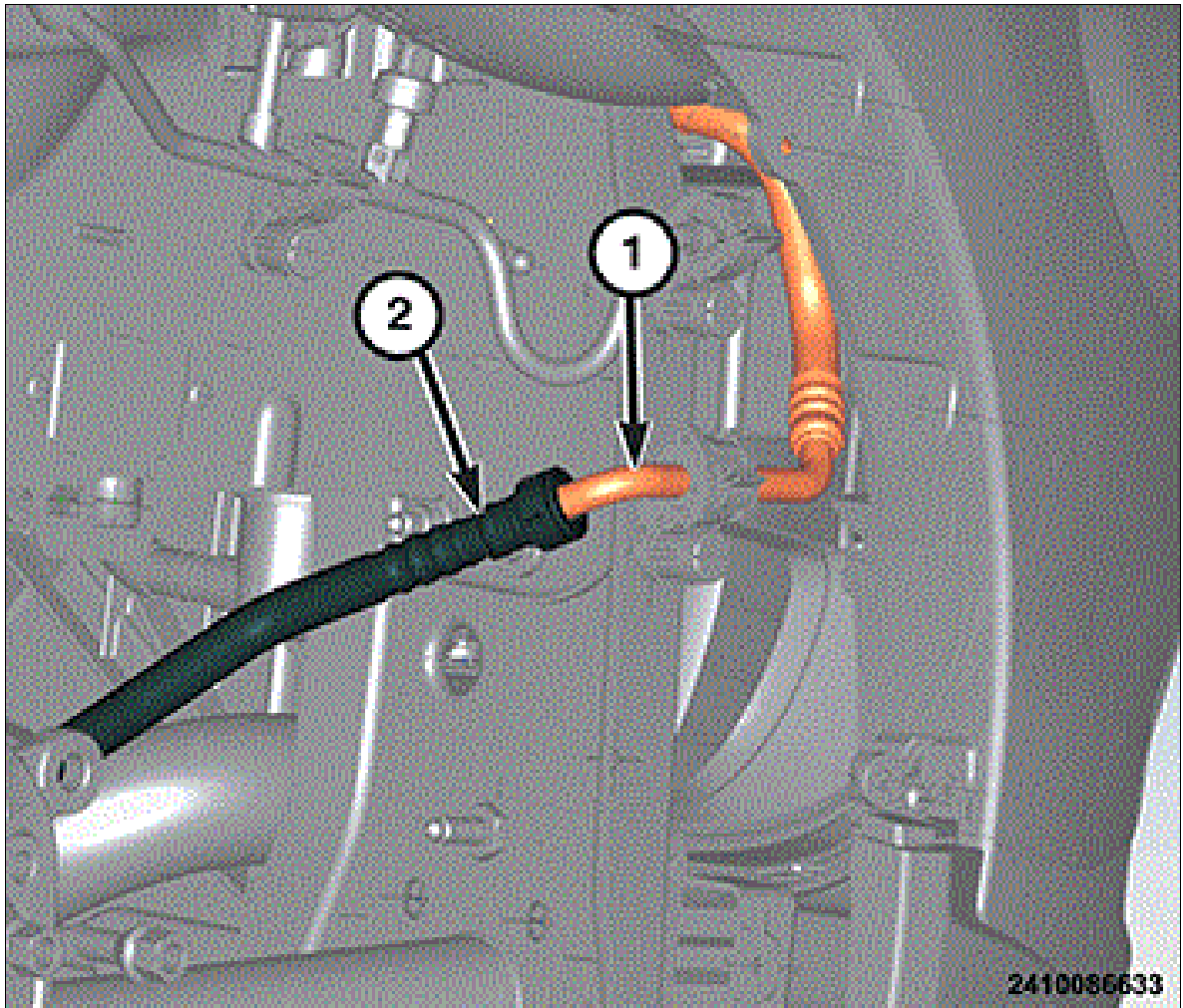


Courtesy of CHRYSLER GROUP, LLC

4. Remove the bolt (1b) that secures the A/C discharge line (1a) to the A/C compressor. **Remove and discard the O-ring seals** .

5. Raise and support the vehicle. Refer to STANDARD PROCEDURE .
6. Remove the front passenger side splash shield. Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION .

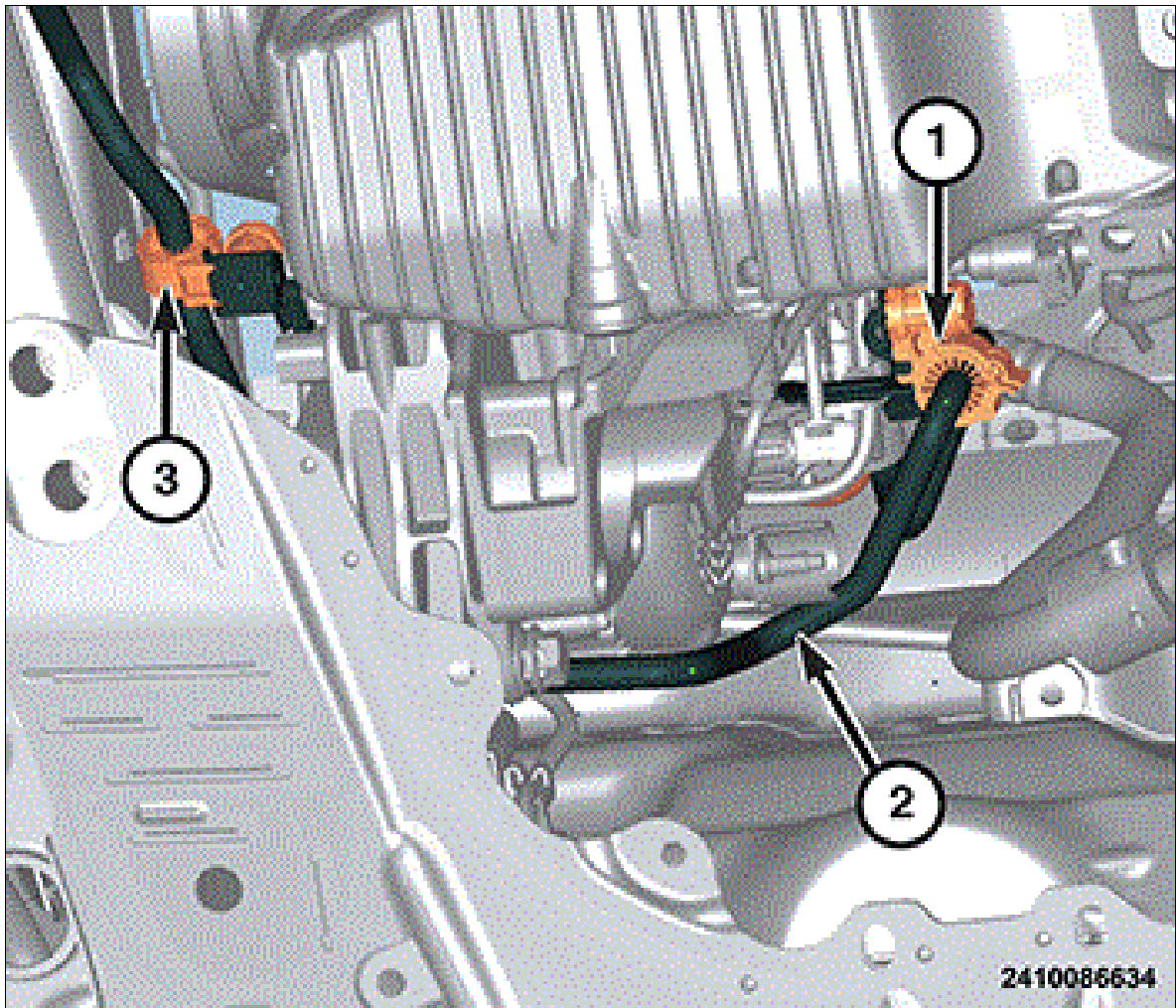
Fig 2: A/C Discharge Line & A/C Discharge Jumper Line



Courtesy of CHRYSLER GROUP, LLC

7. Disconnect the quick-disconnect for the A/C discharge line (2) to the A/C discharge jumper line (1).
8. Release the two retaining clamps (1, 3) for the A/C discharge line (2).

Fig 3: A/C Discharge Line & Retaining Clamps



Courtesy of CHRYSLER GROUP, LLC

9. Remove the A/C discharge line (2) from the engine compartment. **Remove and discard the O-ring seals .**
10. Install plugs in, or tape over the open refrigerant line fittings, the condenser and compressor ports.

PLUMBING > LINE, A/C DISCHARGE > REMOVAL AND INSTALLATION > A/C DISCHARGE LINE - 1.4L > INSTALLATION

 **CAUTION:** Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.



NOTE: When replacing multiple A/C system components, see REFRIGERANT OIL

CAPACITIES to determine how much oil should be added to the refrigerant system).

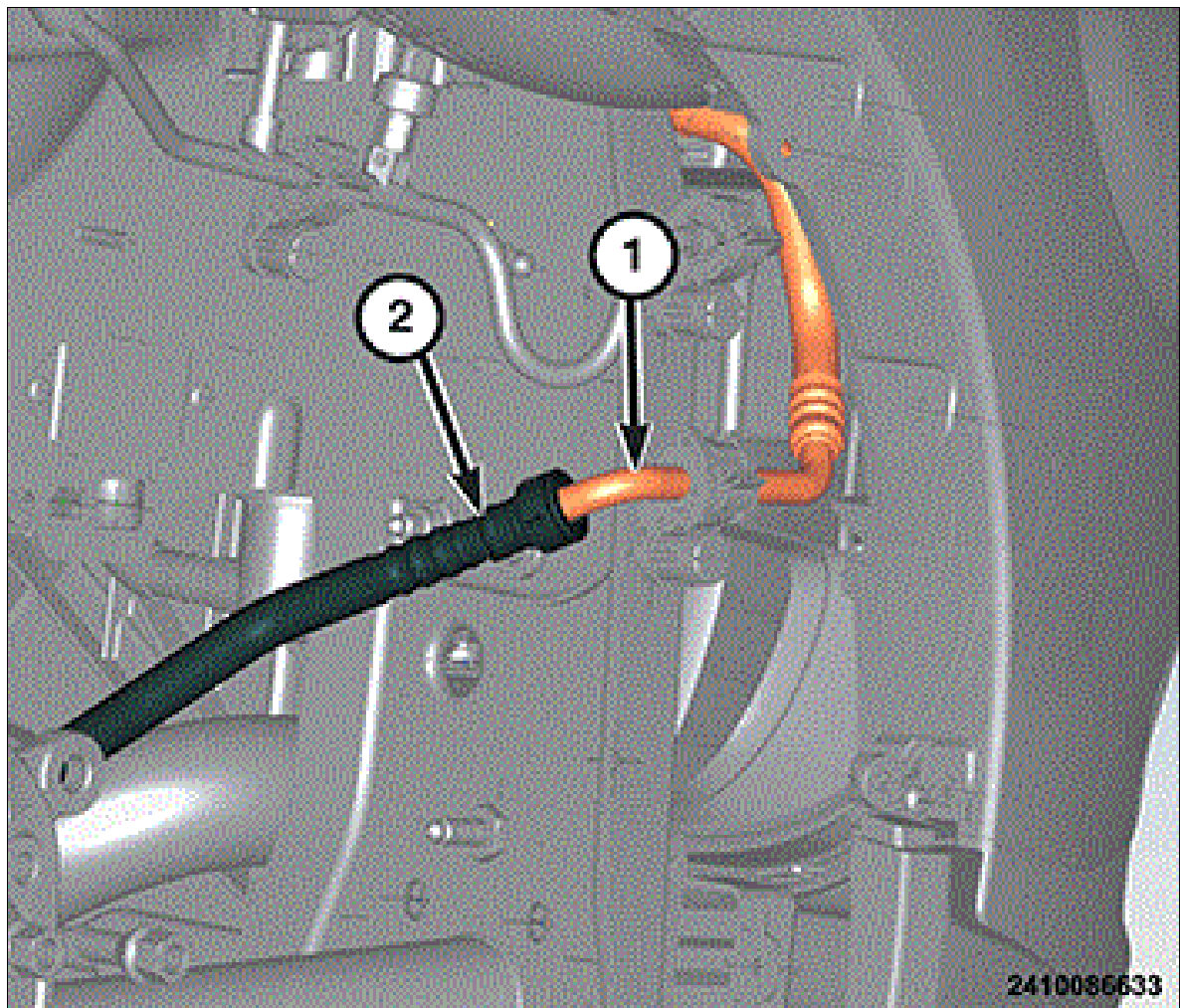
 **NOTE:** Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets may result in a refrigerant system leak.

1. Position the A/C discharge line into the engine compartment.
2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor and condenser ports.

 **NOTE:** Lubricate NEW rubber O-ring seals with clean refrigerant oil and install them and new gaskets onto the discharge line fittings. Use only the specified O-rings as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

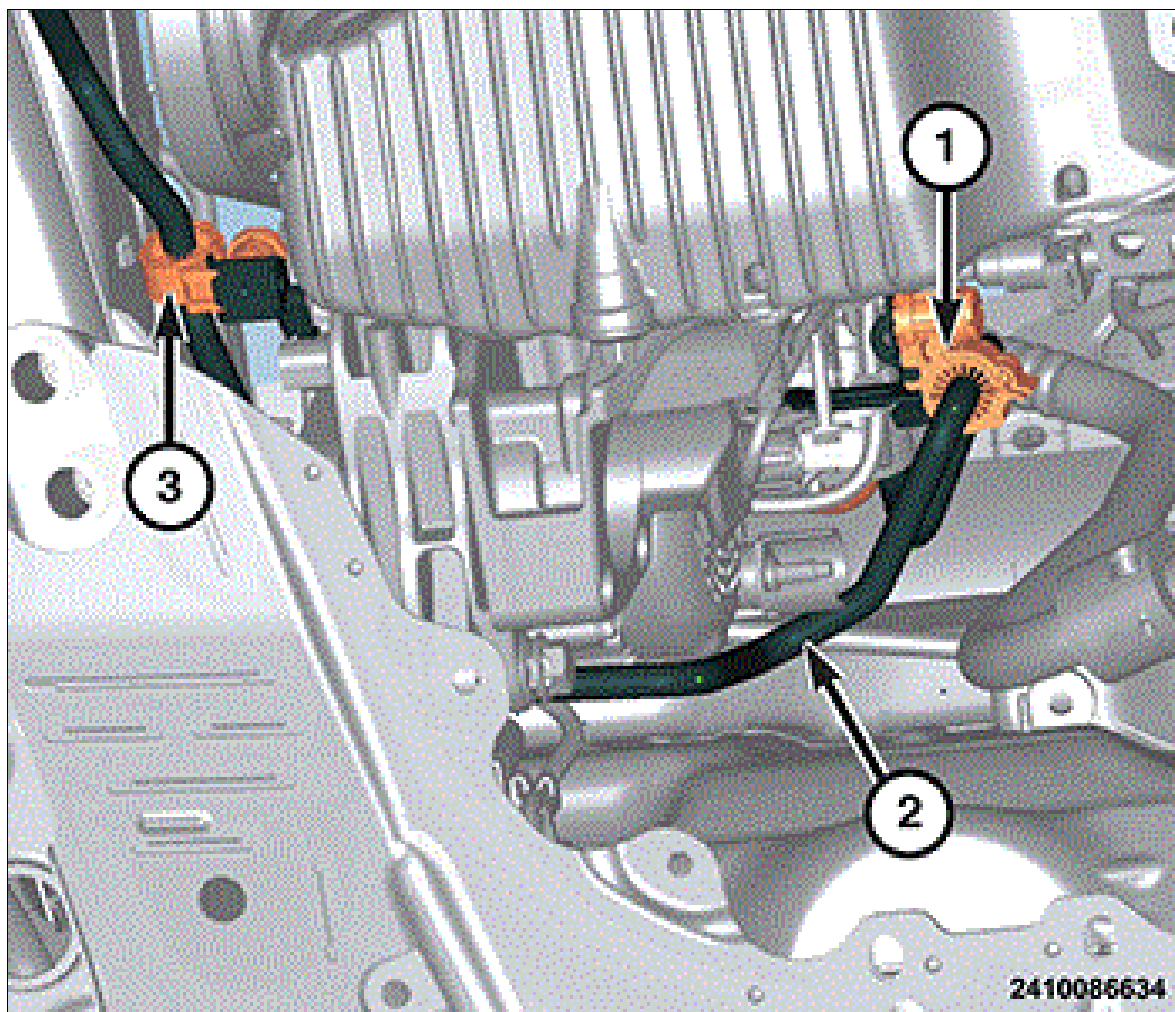
3. Reconnect the quick-disconnect between the A/C discharge line (2) and the A/C discharge jumper line (1).

Fig 1: A/C Discharge Line & A/C Discharge Jumper Line



4. Engage the retaining clamps (1, 3) for the A/C discharge line (2).

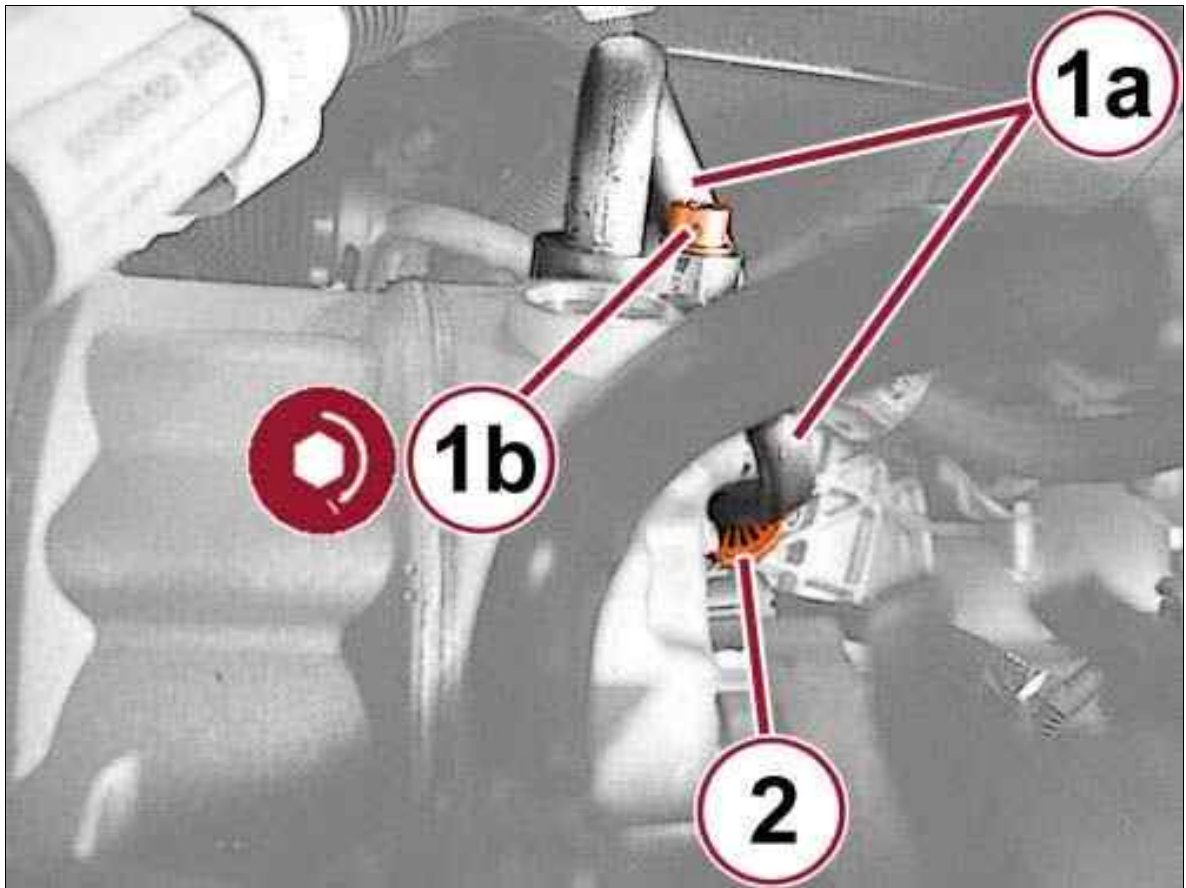
Fig 2: A/C Discharge Line & Retaining Clamps



Courtesy of CHRYSLER GROUP, LLC

5. Reinstall the front passenger side splash shield (Refer to SHIELD, SPLASH, FRONT WHEELHOUSE, REMOVAL AND INSTALLATION).
6. Remove the support and lower the vehicle.
7. Install the bolt that secures the A/C discharge line to the A/C compressor and tighten to the proper TORQUE SPECIFICATIONS . **Install a NEW O-ring seal** .

Fig 3: A/C Discharge Line & Fasteners



Courtesy of CHRYSLER GROUP, LLC

8. Install the engine cover (Refer to COVER, ENGINE, REMOVAL AND INSTALLATION).
9. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
10. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
11. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
12. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

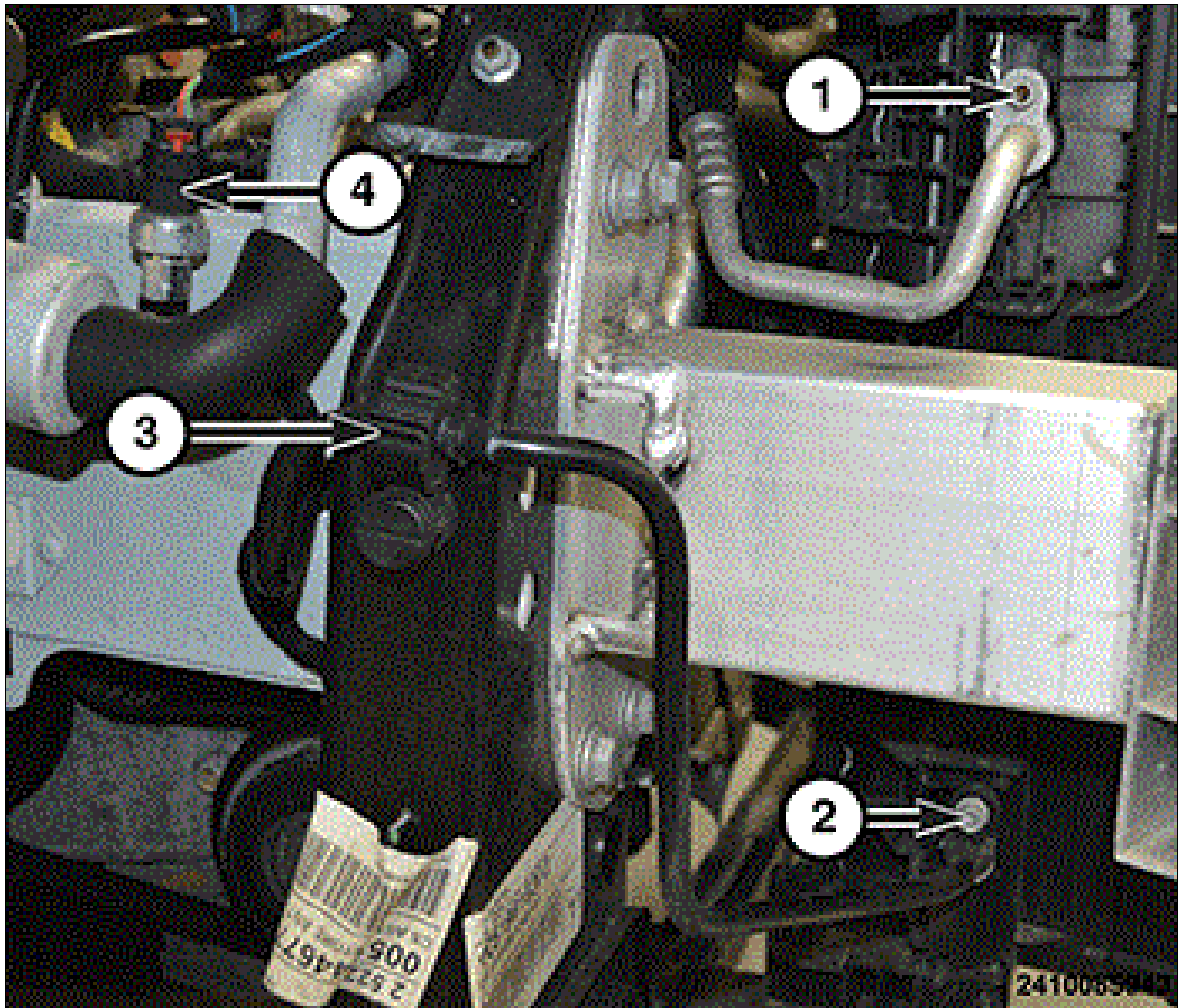
PLUMBING > LINE, A/C DISCHARGE > REMOVAL AND INSTALLATION > A/C DISCHARGE LINE - 2.4L > REMOVAL

⚠ WARNING: Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).

2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).

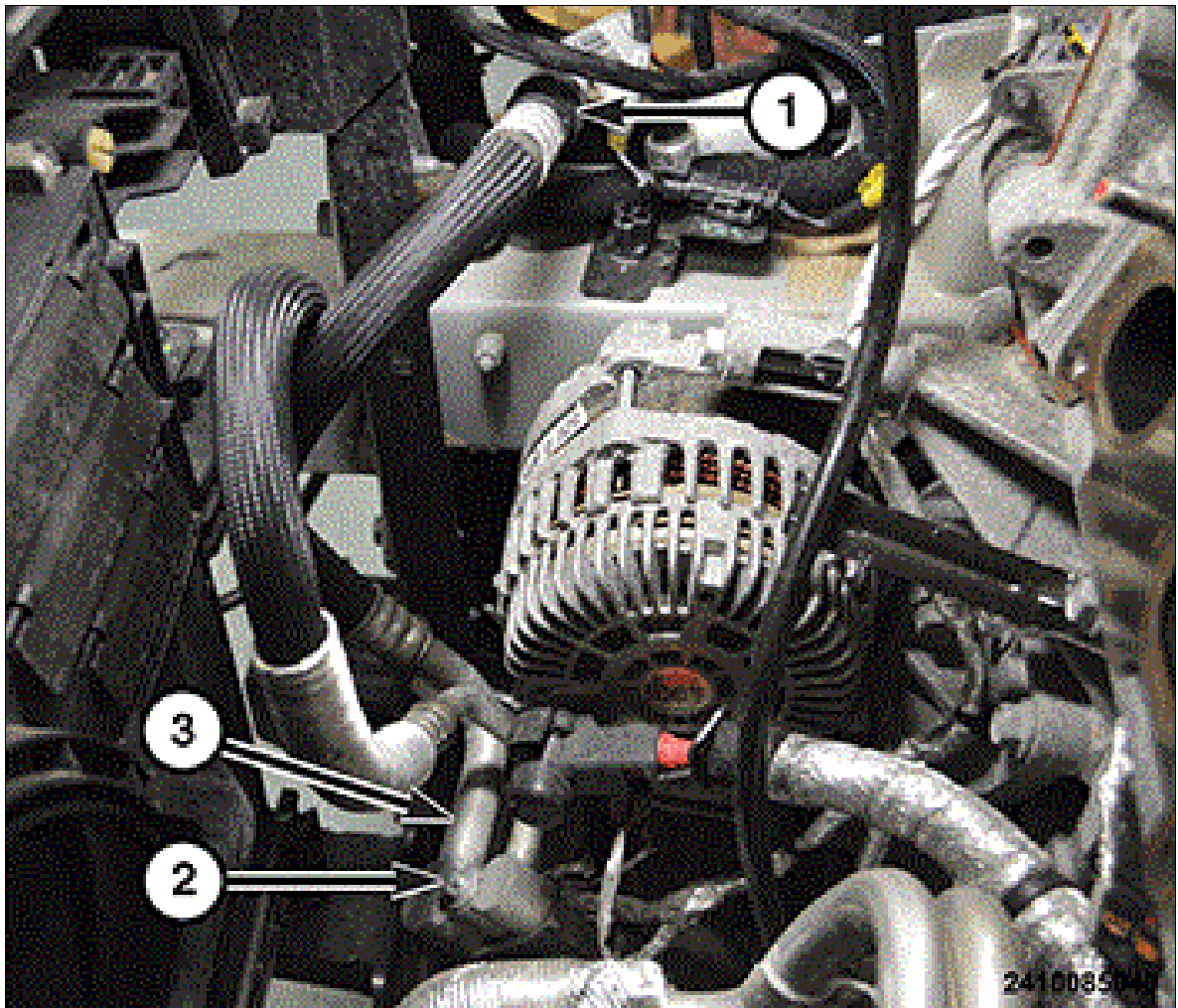
Fig 1: A/C Discharge Line Bolts



Courtesy of CHRYSLER GROUP, LLC

4. Remove the bolt (1) that secures the A/C discharge line to the condenser.
5. Disconnect the A/C discharge line from the A/C condenser. **Remove and discard the O-ring seal .**
6. Disconnect the quick-disconnect (1) for the A/C discharge line to the A/C suction line.

Fig 2: A/C Discharge Line, Quick-Disconnect & Bolt



Courtesy of CHRYSLER GROUP, LLC

7. Remove the bolt (2) that secures the A/C discharge lines (3) to the A/C compressor.
8. Remove the A/C discharge line (3) from the engine compartment. **Remove and discard the O-ring seals** .
9. Install plugs in, or tape over the open refrigerant line fittings, the condenser and compressor ports.

PLUMBING > LINE, A/C DISCHARGE > REMOVAL AND INSTALLATION > A/C DISCHARGE LINE - 2.4L > INSTALLATION

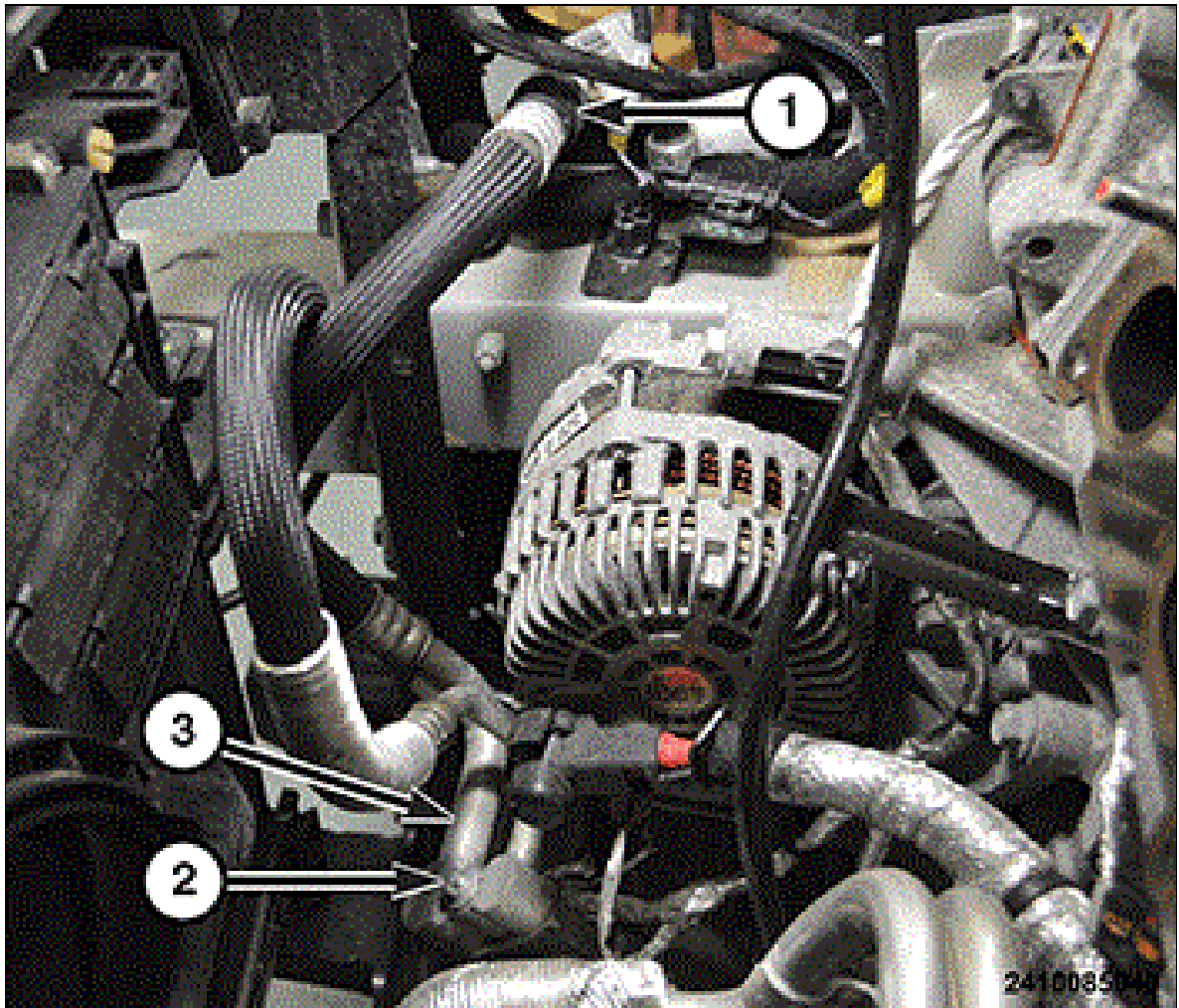
⚠ CAUTION: Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 **NOTE:** When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).

 **NOTE:** Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets may result in a refrigerant system leak.

1. Position the A/C discharge line (3) into the engine compartment.

Fig 1: A/C Discharge Line, Quick-Disconnect & Bolt



Courtesy of CHRYSLER GROUP, LLC

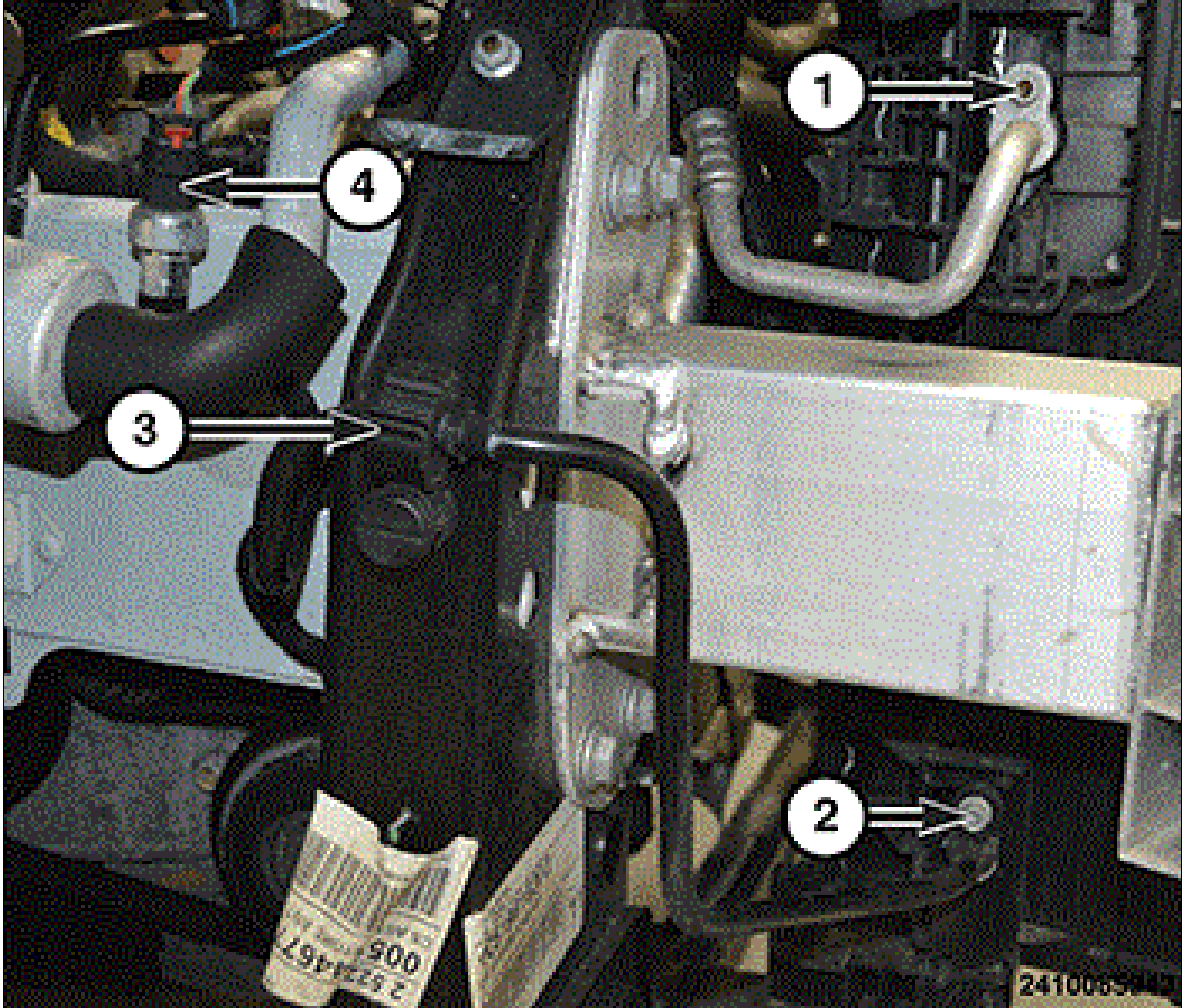
2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor and condenser ports.

 **NOTE:** Lubricate *NEW* rubber O-ring seals with clean refrigerant oil and install them and new gaskets onto the discharge line fittings. Use only the specified O-rings as they are made of a special material for the system. Use only refrigerant

oil of the type recommended for the A/C compressor in the vehicle.

3. Reconnect the quick-disconnect (1) between the A/C discharge line and the A/C suction line.
4. Install the bolt (2) that secures the A/C discharge line (3) to the A/C compressor and tighten to the proper TORQUE SPECIFICATIONS . **Install a NEW O-ring seal** .

Fig 2: A/C Discharge Line Bolts



Courtesy of CHRYSLER GROUP, LLC

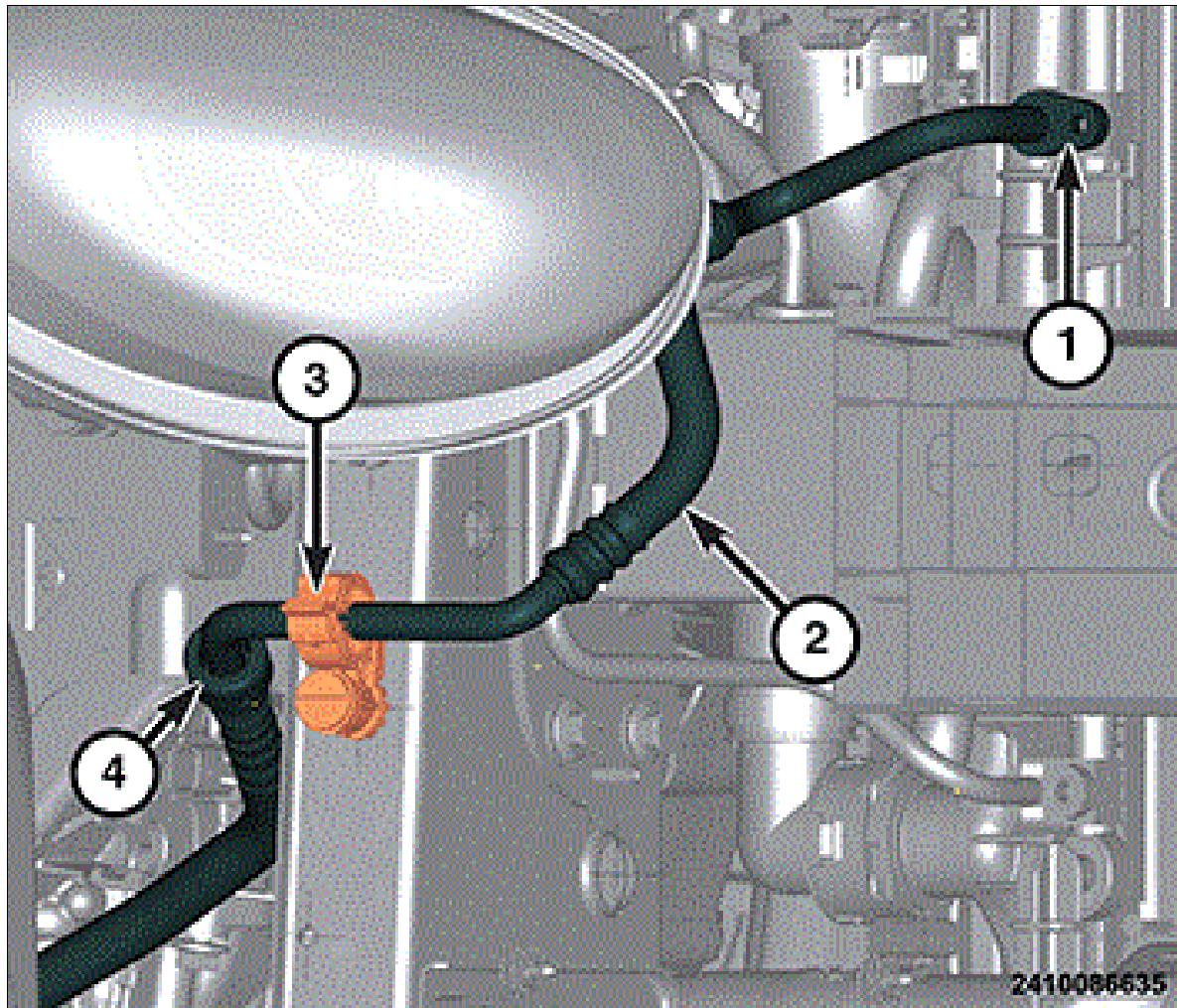
5. Connect the A/C discharge line to the condenser and install the bolt (1) that secures the A/C discharge line to the A/C condenser and tighten to the proper TORQUE SPECIFICATIONS . **Install a NEW O-ring seal** .
6. Install the front fascia (Refer to REMOVAL AND INSTALLATION) .
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
8. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE) .
9. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE) .
10. Charge the refrigerant system. (Refer to STANDARD PROCEDURE) .

PLUMBING > LINE, A/C DISCHARGE JUMPER > REMOVAL AND INSTALLATION > A/C DISCHARGE JUMPER LINE - 1.4L > REMOVAL

 **WARNING:** Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).
4. Raise and support the vehicle. Refer to STANDARD PROCEDURE .
5. Disconnect the quick-disconnect fitting (4) for the A/C discharge jumper line (2) to the A/C discharge line.

Fig 1: A/C Discharge Jumper Line, Quick-Disconnect Fitting, Retaining Clamp & Nut



Courtesy of CHRYSLER GROUP, LLC

6. Release the retaining clamp (3) for the A/C discharge jumper line (2).
7. Remove the nut (1) that secures the A/C discharge jumper line (2) to the A/C condenser.
8. Remove the A/C discharge line from the engine compartment. Remove and discard the O-ring seals.
9. Install plugs in, or tape over the open refrigerant line fittings, the condenser and compressor ports.

PLUMBING > LINE, A/C DISCHARGE JUMPER > REMOVAL AND INSTALLATION > A/C DISCHARGE JUMPER LINE - 1.4L > INSTALLATION

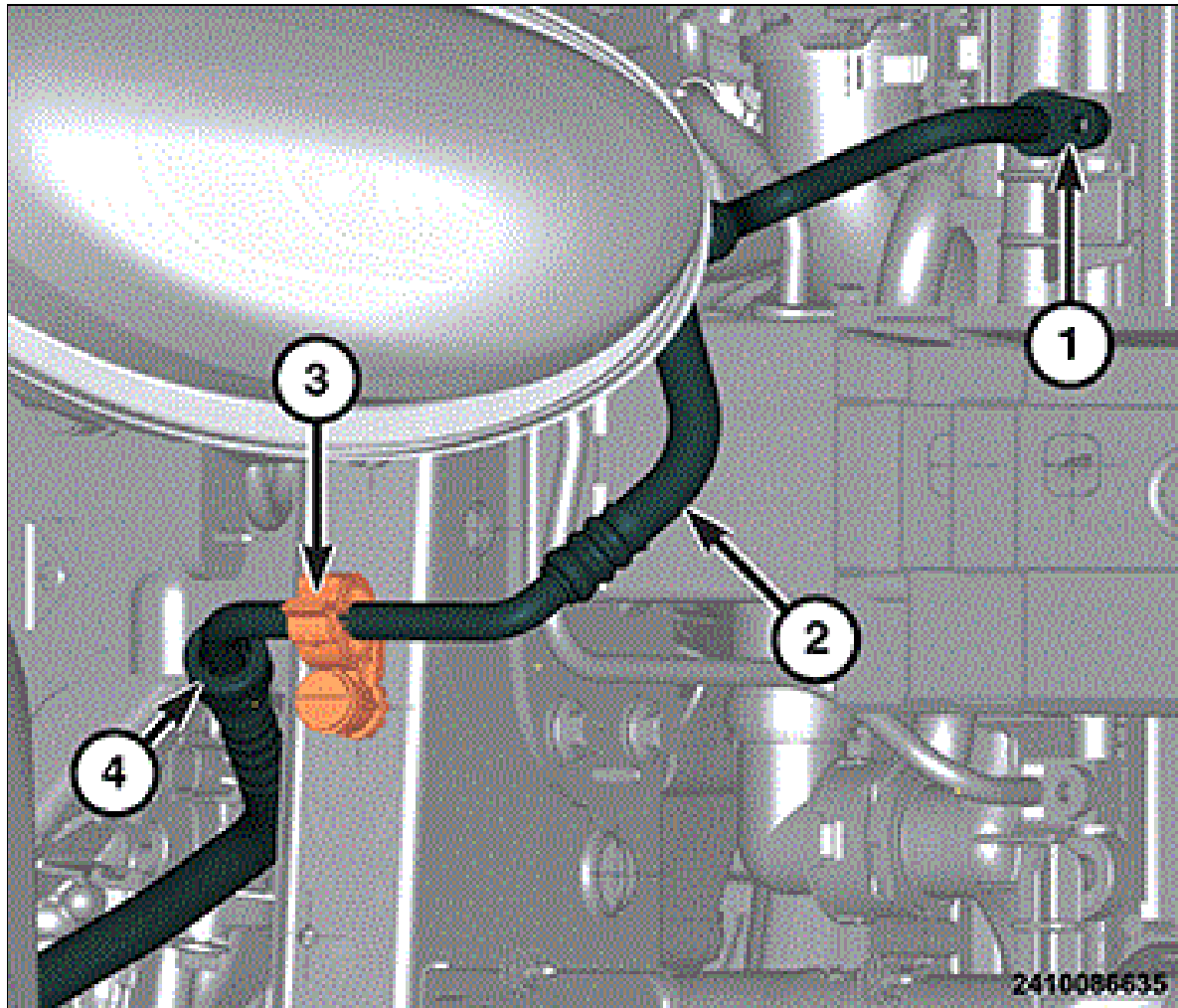
⚠ CAUTION: Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 **NOTE:** When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).

 **NOTE:** Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets may result in a refrigerant system leak.

1. Position the A/C discharge line (3) into the engine compartment.

Fig 1: A/C Discharge Jumper Line, Quick-Disconnect Fitting, Retaining Clamp & Nut



Courtesy of CHRYSLER GROUP, LLC

2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor and condenser ports.

 **NOTE:** Lubricate *NEW* rubber O-ring seals with clean refrigerant oil and install them and new gaskets onto the discharge line fittings. Use only the specified O-rings as they are made of a special material for the system. Use only refrigerant

oil of the type recommended for the A/C compressor in the vehicle.

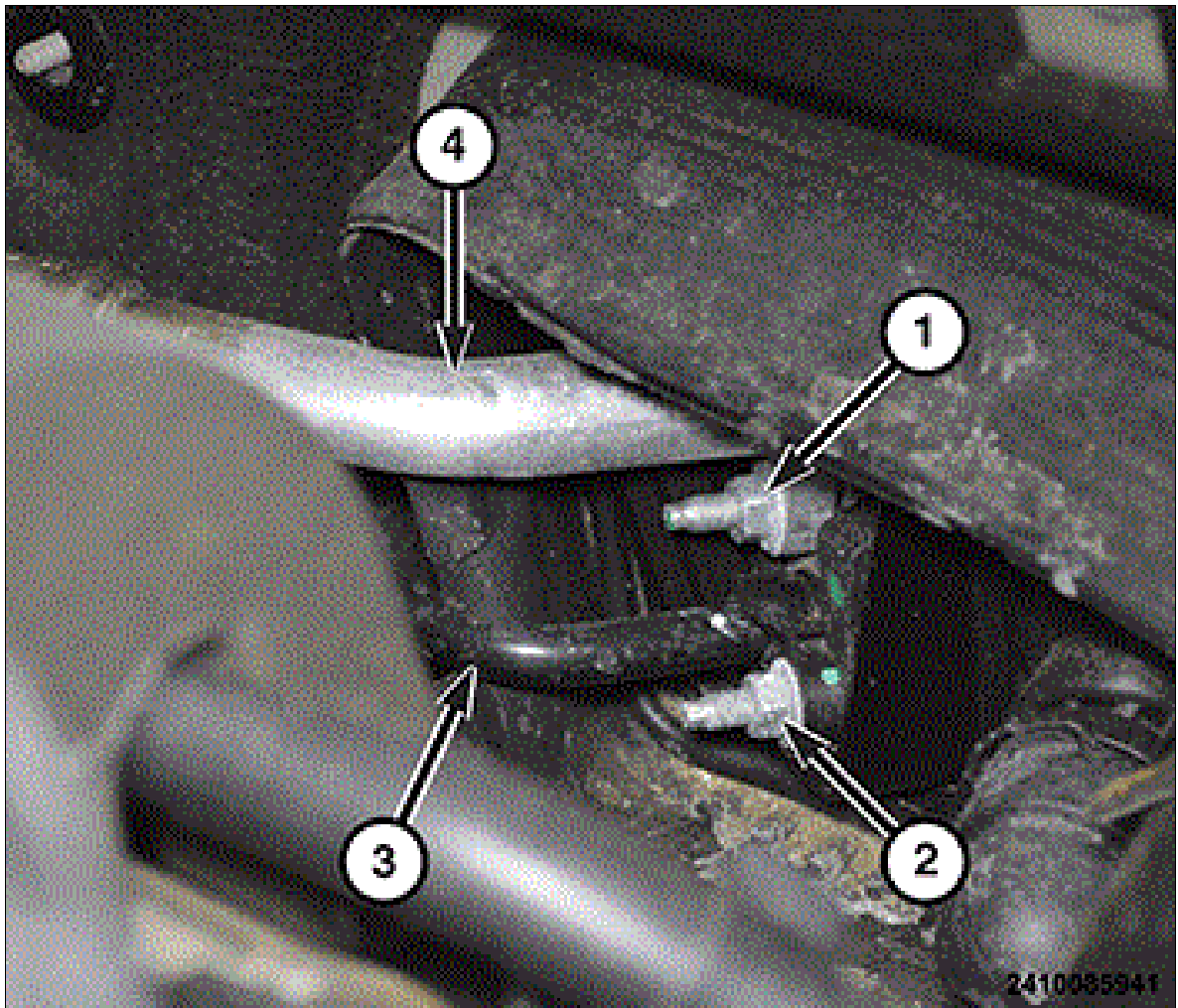
3. Reconnect the quick-disconnect fitting (4) between the A/C discharge jumper line (2) and the A/C discharge line.
4. Install the nut (1) that secures the A/C discharge jumper line (2) to the A/C condenser and tighten to the proper TORQUE SPECIFICATIONS . **Install a NEW O-ring seal** .
5. Remove the support and lower the vehicle.
6. Install the front fascia (Refer to REMOVAL AND INSTALLATION).
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
8. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
9. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
10. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

PLUMBING > LINE, A/C LIQUID > REMOVAL AND INSTALLATION > A/C LIQUID LINE - 1.4L > REMOVAL

 **WARNING:** Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the engine cover (Refer to COVER, ENGINE, REMOVAL AND INSTALLATION).
4. Remove the nut (2) that secures the A/C liquid line (3) to the evaporator core.

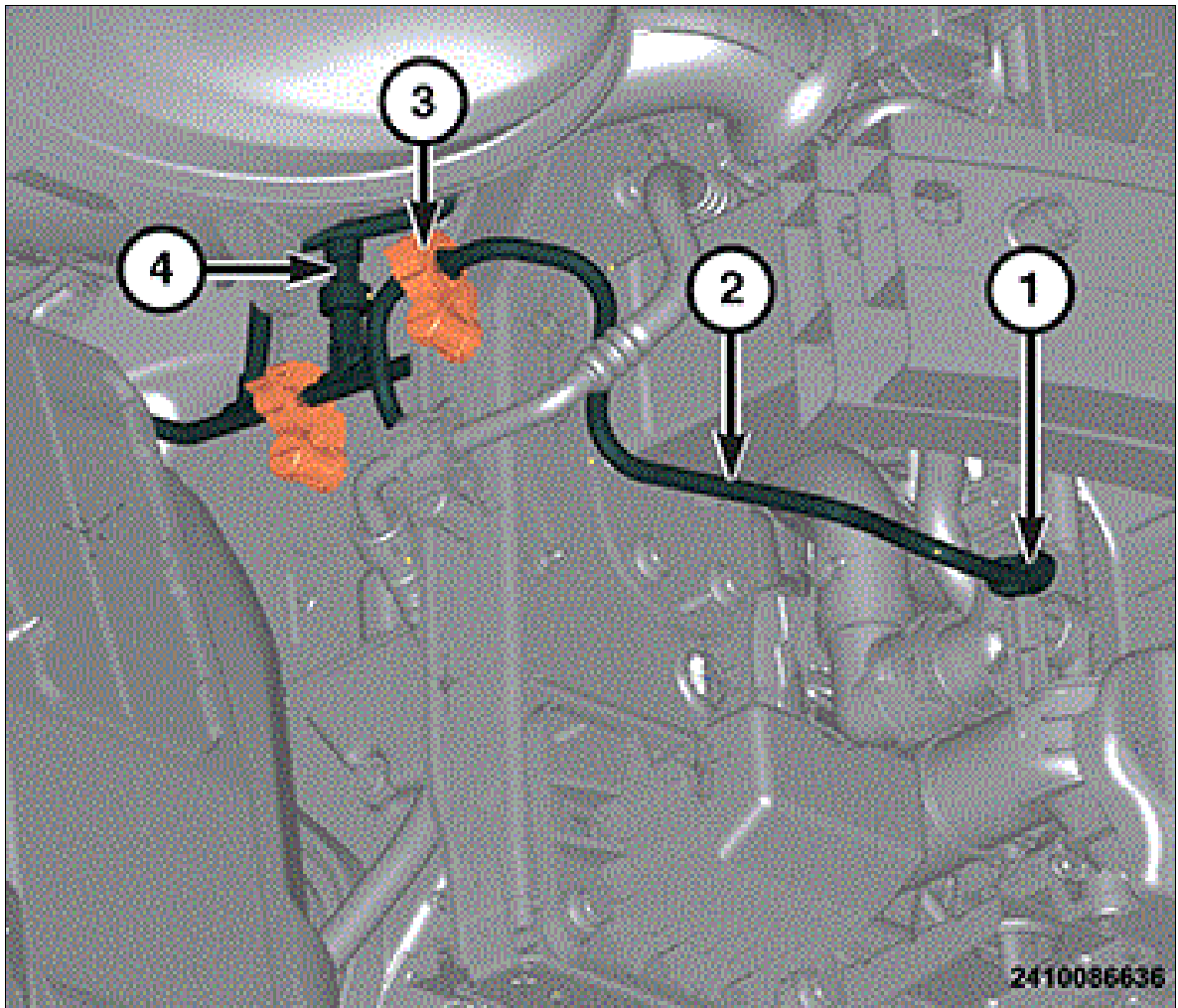
Fig 1: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

5. Separate the A/C liquid line (3) from the evaporator core and install plugs in, or tape over the open refrigerant line fittings and evaporator core ports. **Remove and discard the O-ring seal**.
6. Remove the air cleaner body. (Refer to REMOVAL AND INSTALLATION).
7. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).
8. Remove the nut (1) that secures the A/C liquid line to the condenser. Remove and discard the O-ring seal.

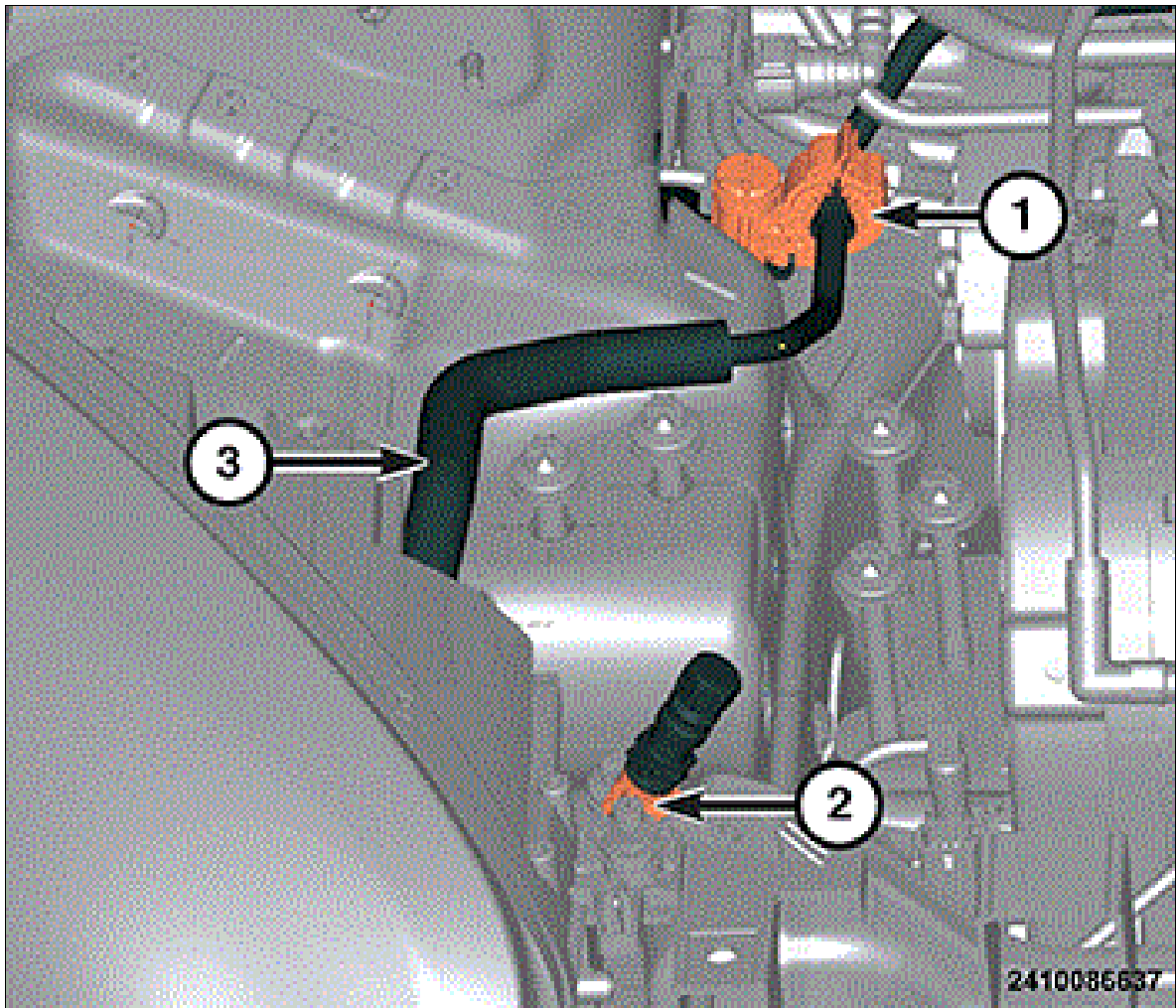
Fig 2: A/C Liquid Line, A/C Pressure Transducer, Wire Connector & Fasteners



Courtesy of CHRYSLER GROUP, LLC

9. Disconnect the wire harness connector from the A/C pressure transducer (4).
10. Release the two retaining clamps (3) for the A/C liquid line (2).
11. Release the retainer for the (2) A/C liquid line service port.

Fig 3: A/C Liquid Line & Retainer



Courtesy of CHRYSLER GROUP, LLC

12. Release the retainer (1) for the A/C liquid line (3).
13. Remove the A/C liquid line (3) from the engine compartment.

PLUMBING > LINE, A/C LIQUID > REMOVAL AND INSTALLATION > A/C LIQUID LINE - 1.4L > INSTALLATION

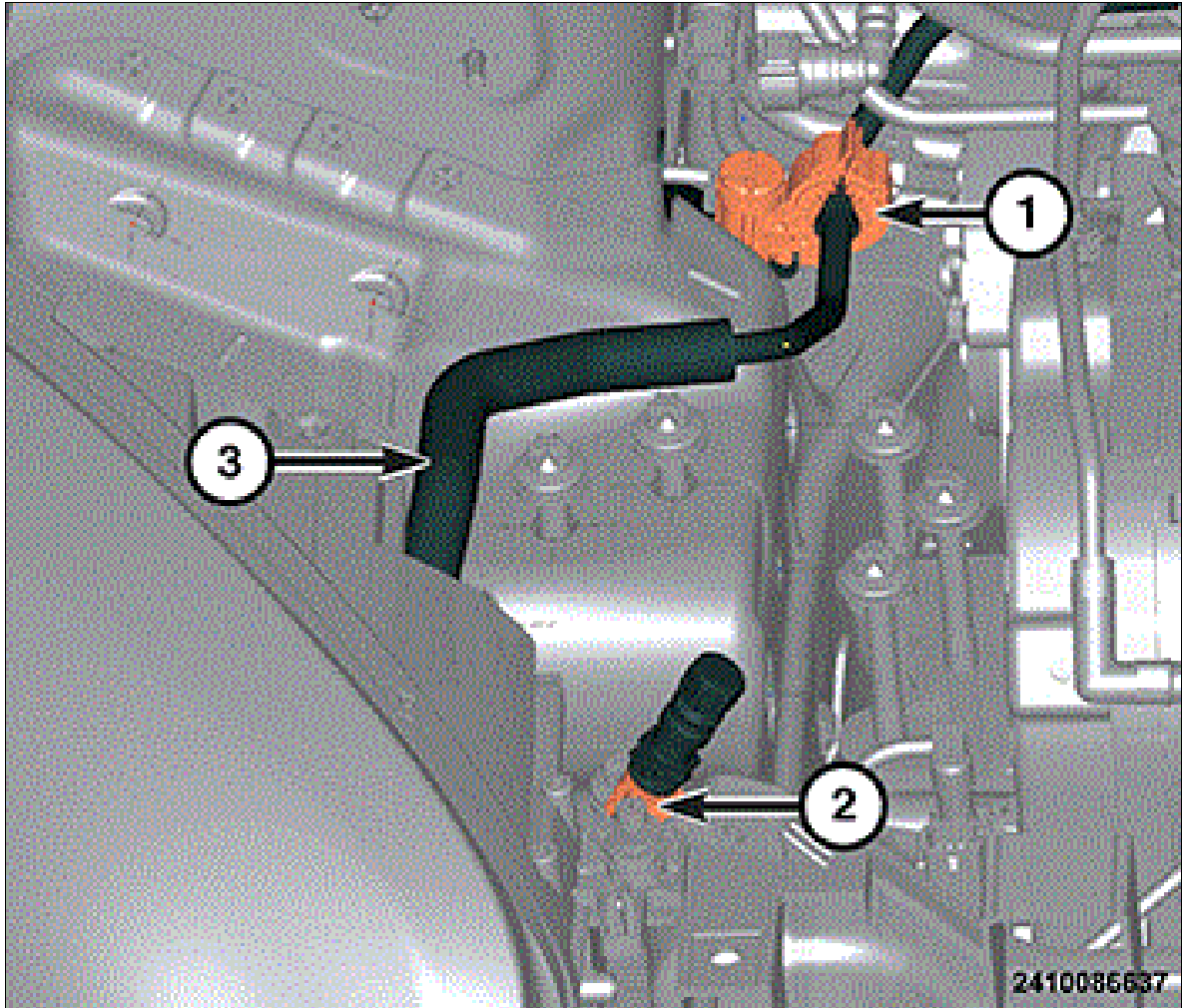
 **CAUTION:** Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 **NOTE:** When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).

 **NOTE:** Replacement of the refrigerant line O-ring seals is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals could result in a refrigerant system leak.

1. Position the A/C liquid line (3) into the engine compartment.

Fig 1: A/C Liquid Line & Retainer



Courtesy of CHRYSLER GROUP, LLC

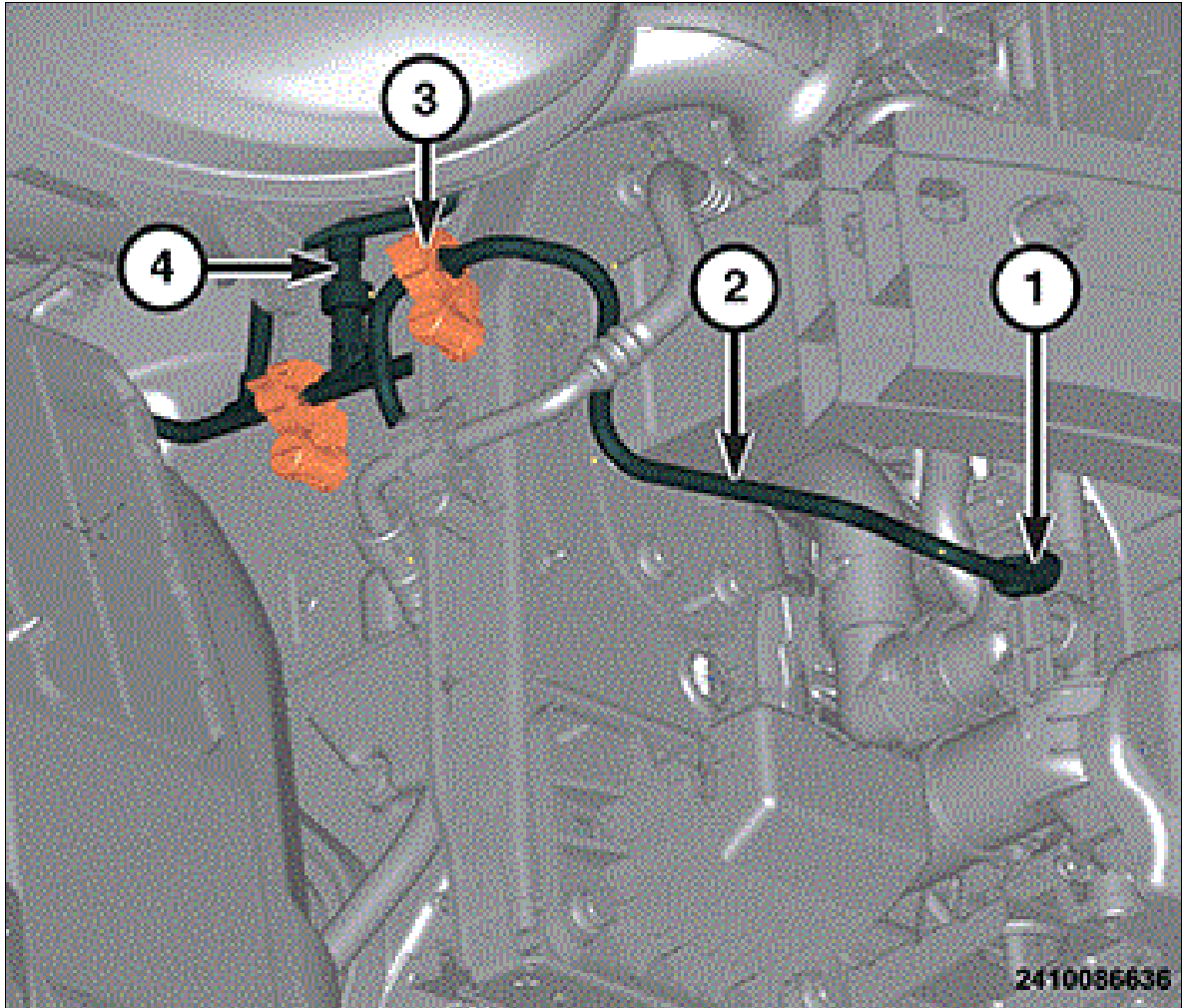
2. Engage the A/C liquid line (3) in the retaining clip (1).
3. Engage the clamp (2) for the A/C liquid line service port.
4. Remove the tape or plugs from the refrigerant line fittings and expansion valve ports.

 **NOTE:** Lubricate NEW O-ring seals with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified O-ring seals as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the vehicle.

5. Connect the A/C liquid line (2) to the condenser and install the bolt (1) that secures the A/C

liquid line to the condenser and tighten the nut to the proper TORQUE SPECIFICATIONS .

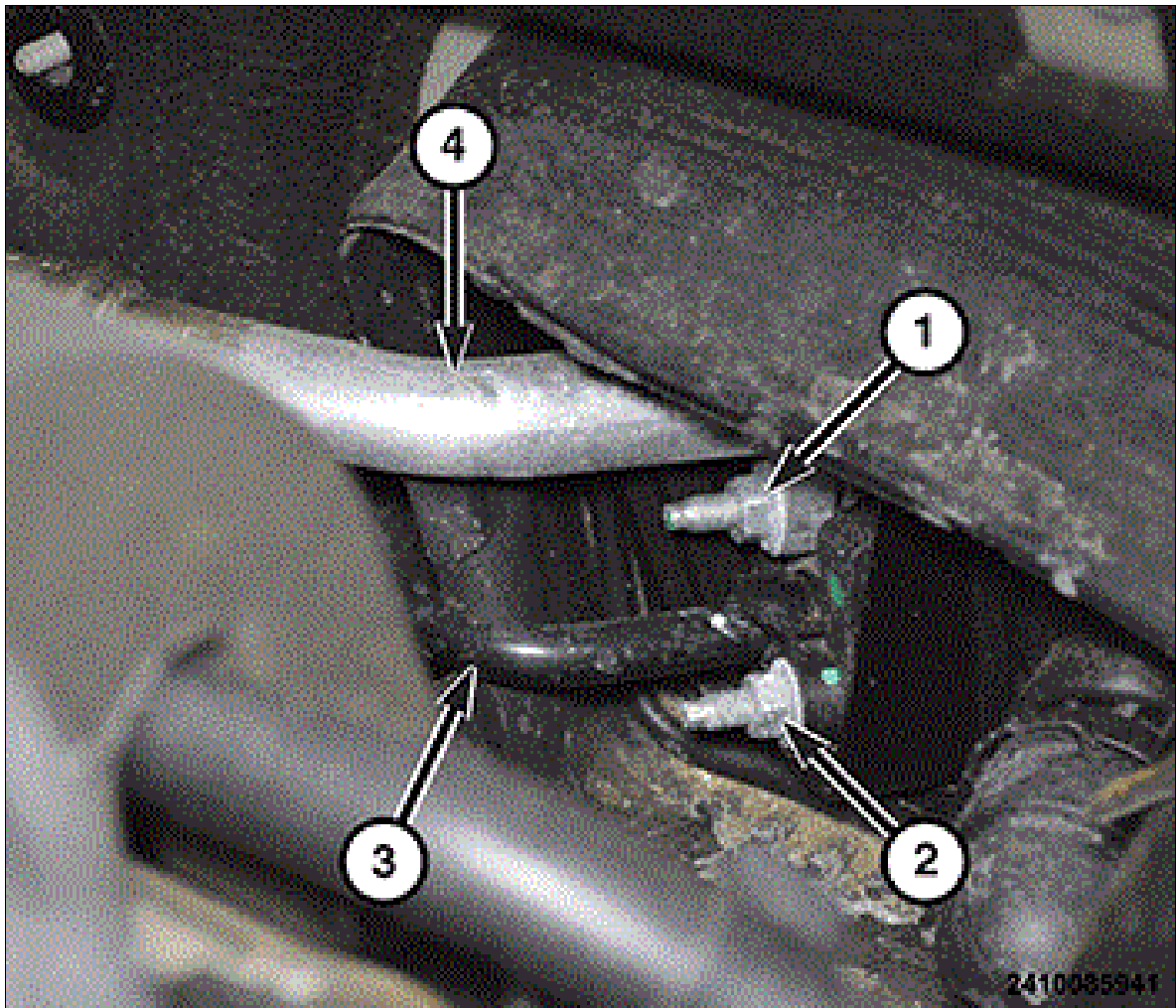
Fig 2: A/C Liquid Line, A/C Pressure Transducer, Wire Connector & Fasteners



Courtesy of CHRYSLER GROUP, LLC

6. Connect the wire harness connector to the A/C pressure transducer (4).
7. Engage both the A/C liquid line (2) retaining clip (3).
8. Engage the A/C liquid line (3) with the evaporator core. **Install a NEW O-ring seal** .

Fig 3: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

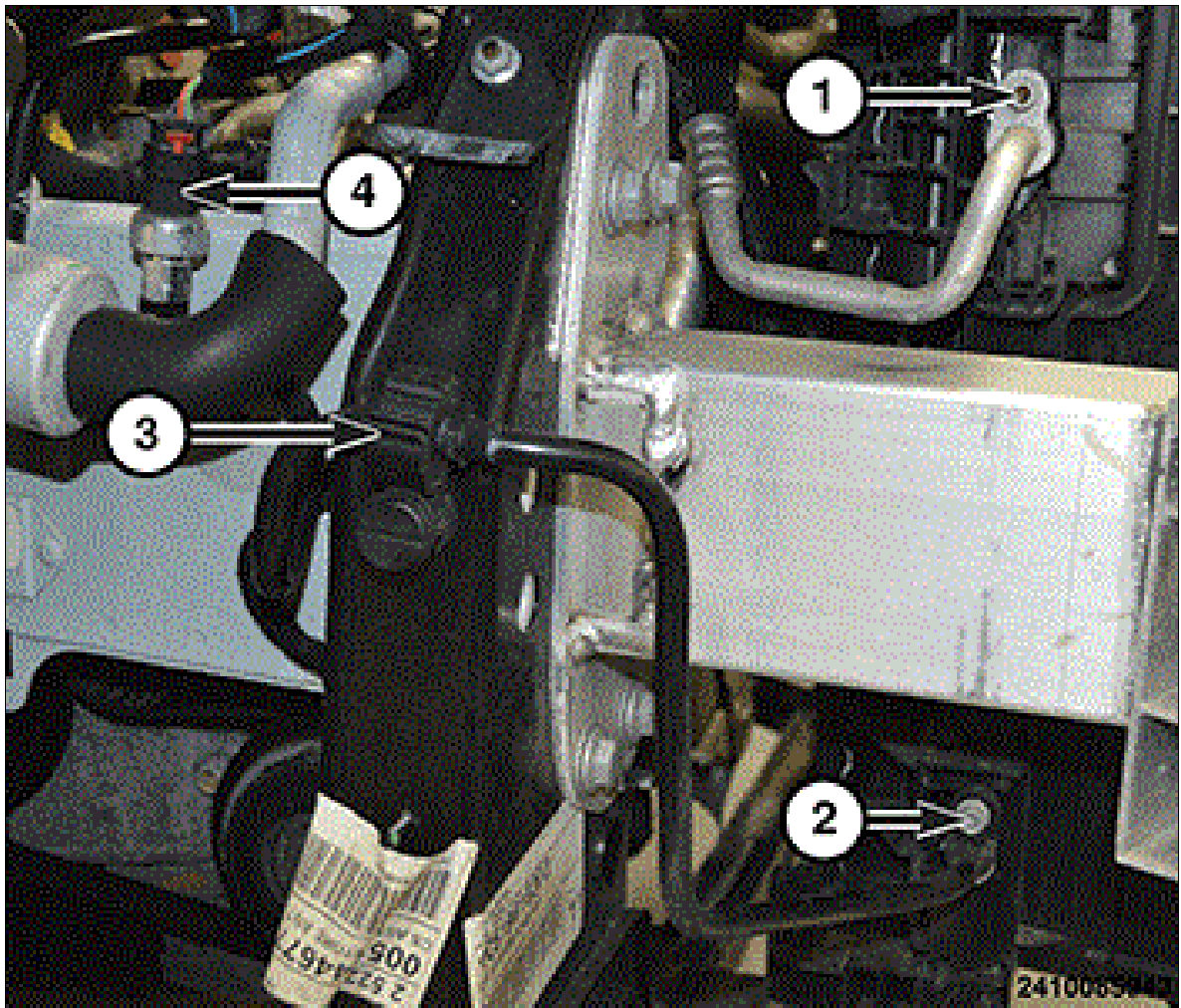
9. Install the nut (2) that secures the A/C liquid line (3) to the evaporator core and tighten the nut to the proper TORQUE SPECIFICATIONS .
10. Install the front fascia (Refer to REMOVAL AND INSTALLATION).
11. Install the air cleaner body. (Refer to REMOVAL AND INSTALLATION).
12. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
13. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
14. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
15. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

**PLUMBING > LINE, A/C LIQUID > REMOVAL AND INSTALLATION > A/C LIQUID LINE
- 2.4L > REMOVAL**

⚠ WARNING: Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).
4. Remove the air cleaner body. (Refer to REMOVAL AND INSTALLATION).
5. Disconnect the wire harness connector (4) from the A/C pressure transducer.

Fig 1: A/C Discharge Line Bolts



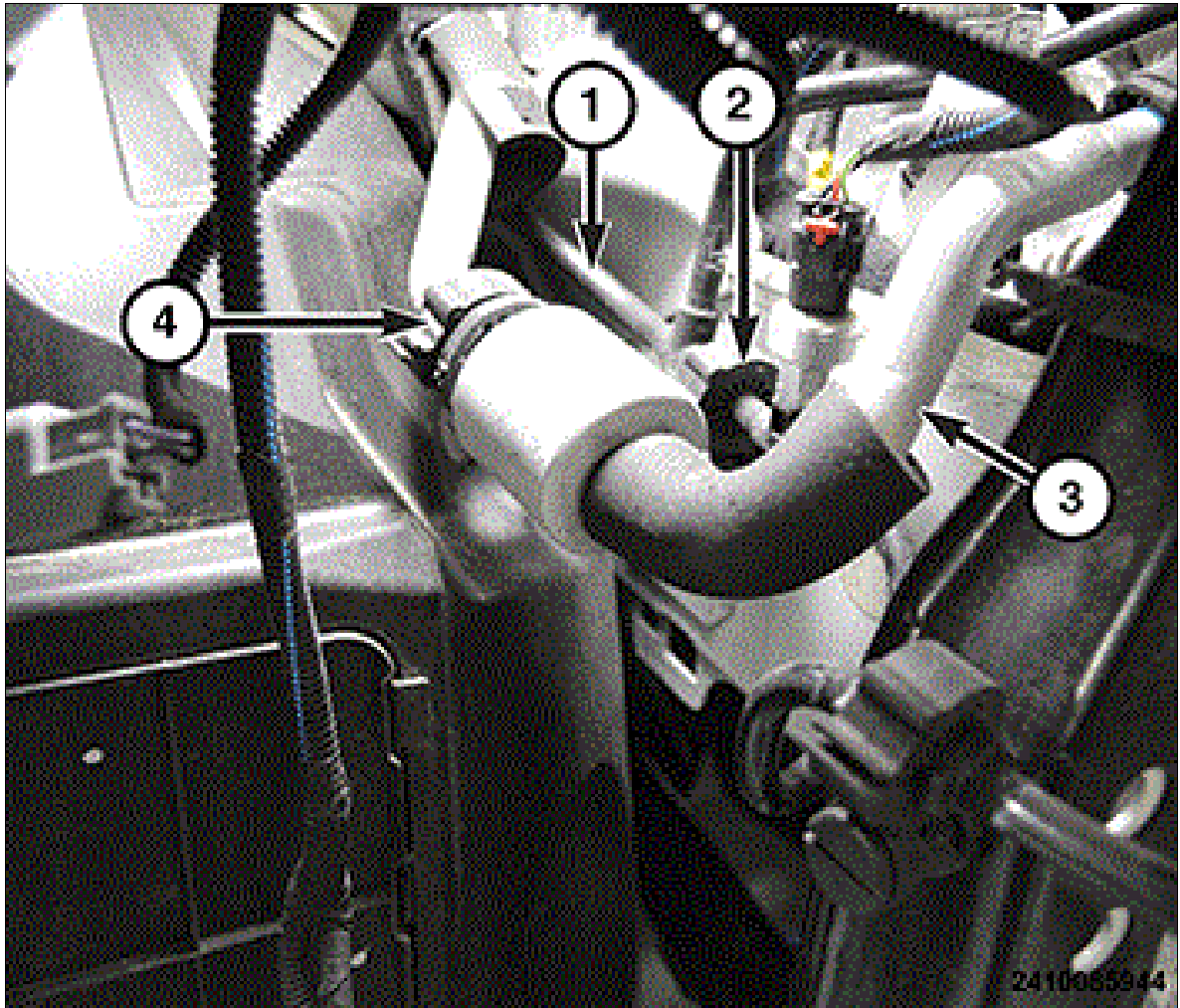
Courtesy of CHRYSLER GROUP, LLC

6. Remove the bolt (2) that secures the A/C liquid line to the condenser. Remove and discard the O-ring seal.
7. Install plugs in, or tape over the open refrigerant line fitting and condenser port.

8. Release the front clamp (3) for the A/C liquid line.

9. Release the front clamp (2) at the frame rail for the A/C liquid line (1).

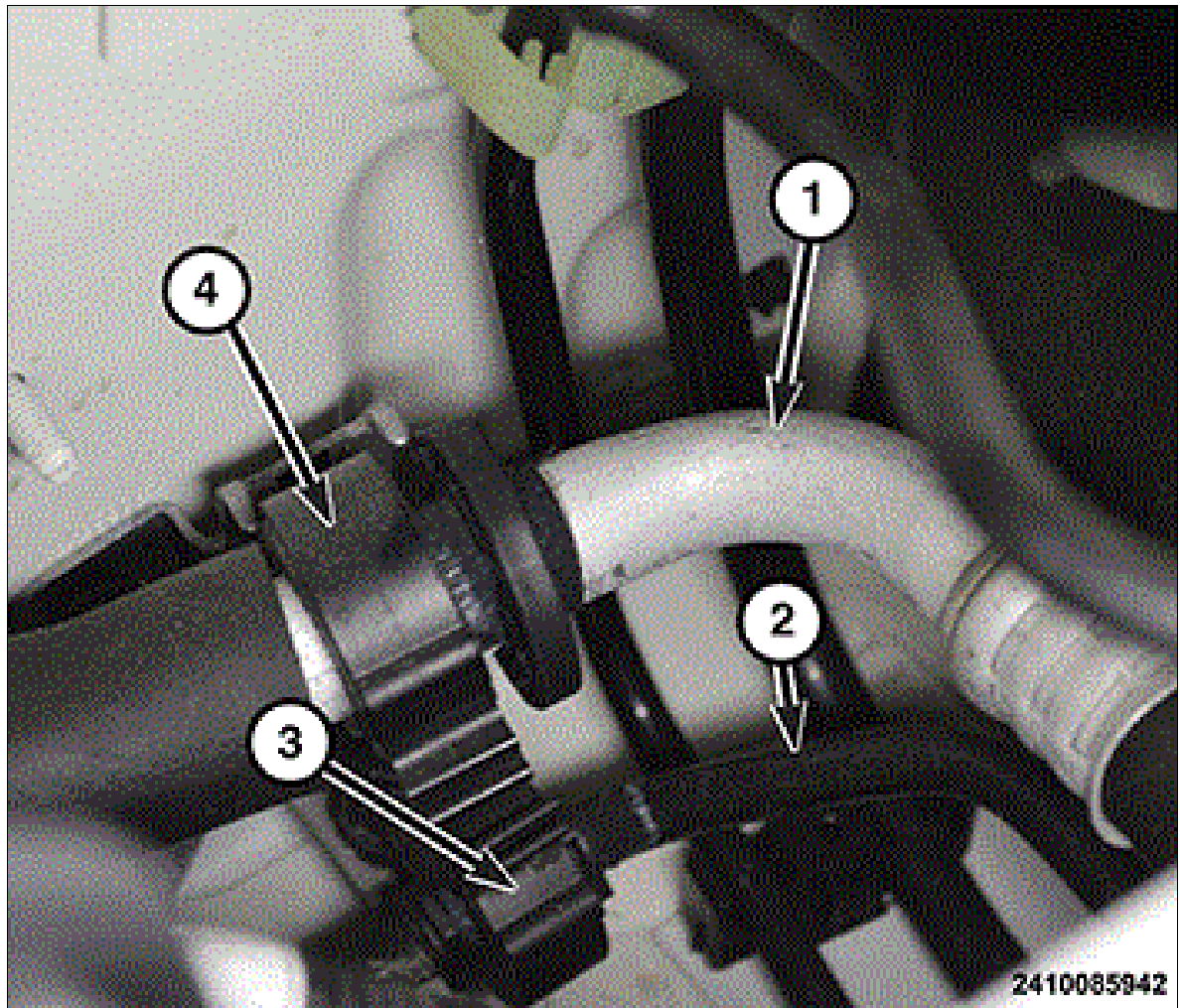
Fig 2: A/C Liquid Line & Clamps



Courtesy of CHRYSLER GROUP, LLC

10. Release the rear clamp (3) for the A/C liquid line (2).

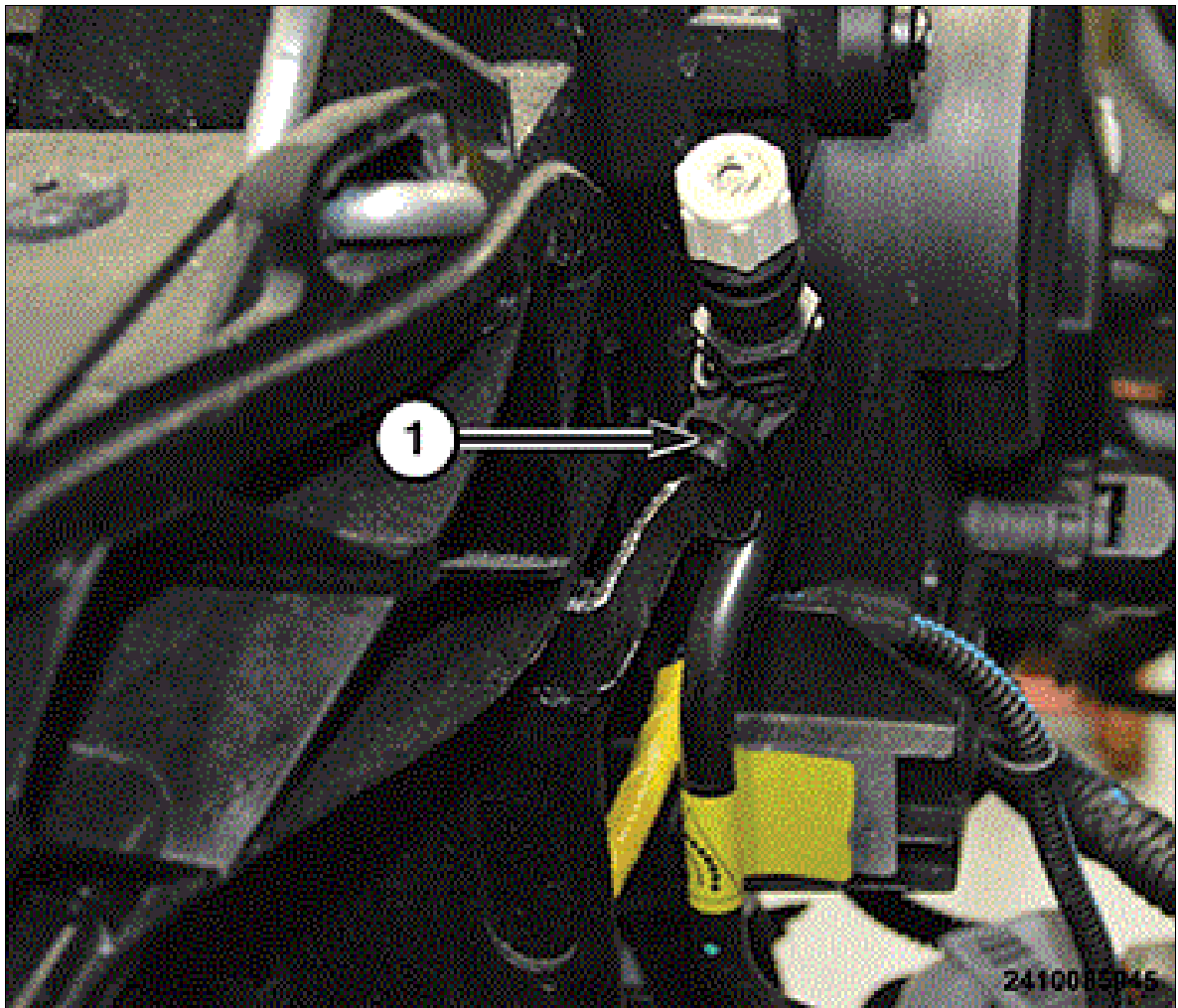
Fig 3: A/C Liquid Line & Rear Clamp



Courtesy of CHRYSLER GROUP, LLC

11. Release the clamp (1) for the A/C liquid line service port.

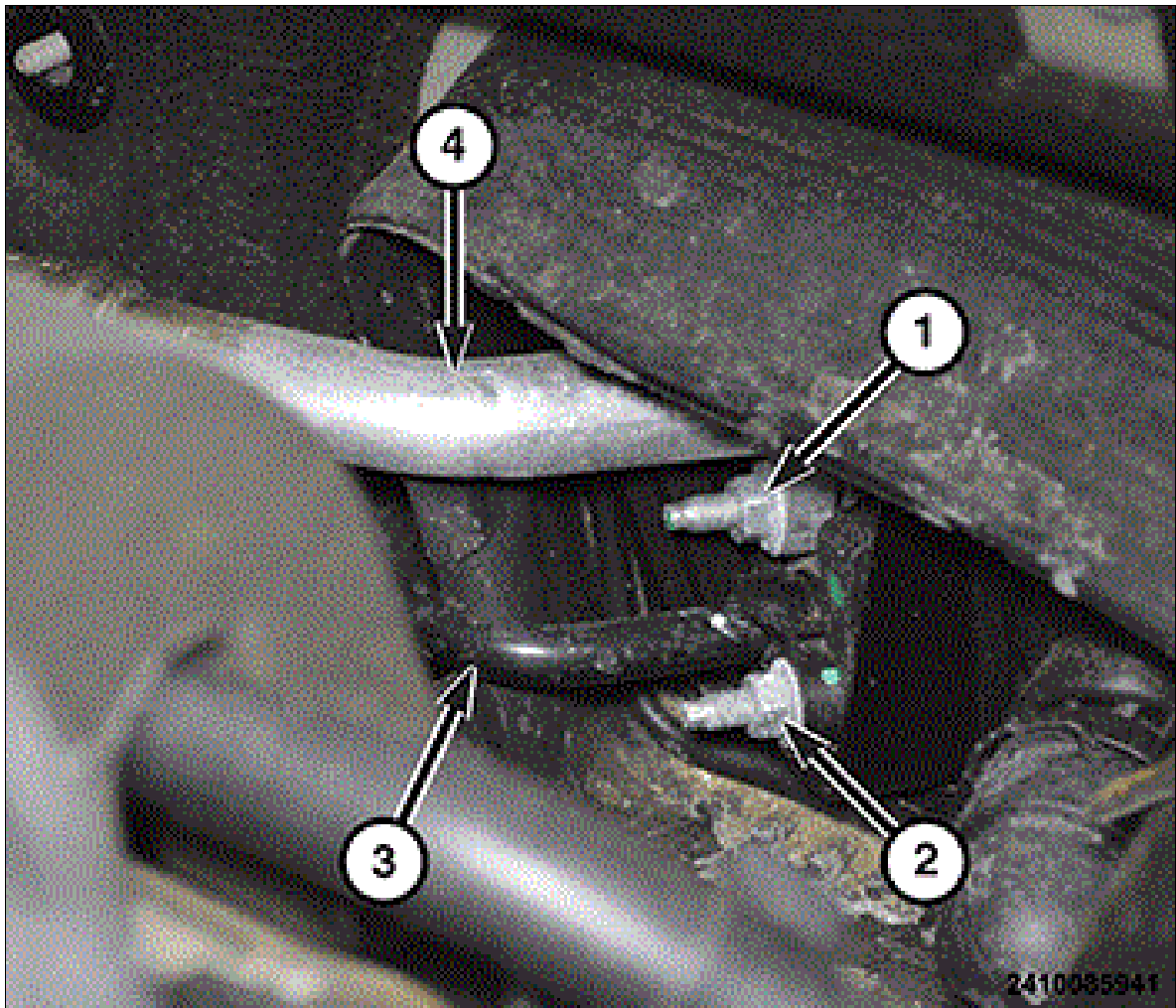
Fig 4: A/C Liquid Line Service Port Clamp



Courtesy of CHRYSLER GROUP, LLC

12. Remove the nut (2) that secures the A/C liquid line (3) and A/C suction line to the evaporator core.

Fig 5: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

13. Separate the A/C liquid line (3) from the evaporator core and install plugs in, or tape over the open refrigerant line fittings and evaporator core ports. Remove and discard the O-ring seal.
14. Remove the A/C liquid line from the engine compartment.

PLUMBING > LINE, A/C LIQUID > REMOVAL AND INSTALLATION > A/C LIQUID LINE - 2.4L > INSTALLATION

 **CAUTION:** Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

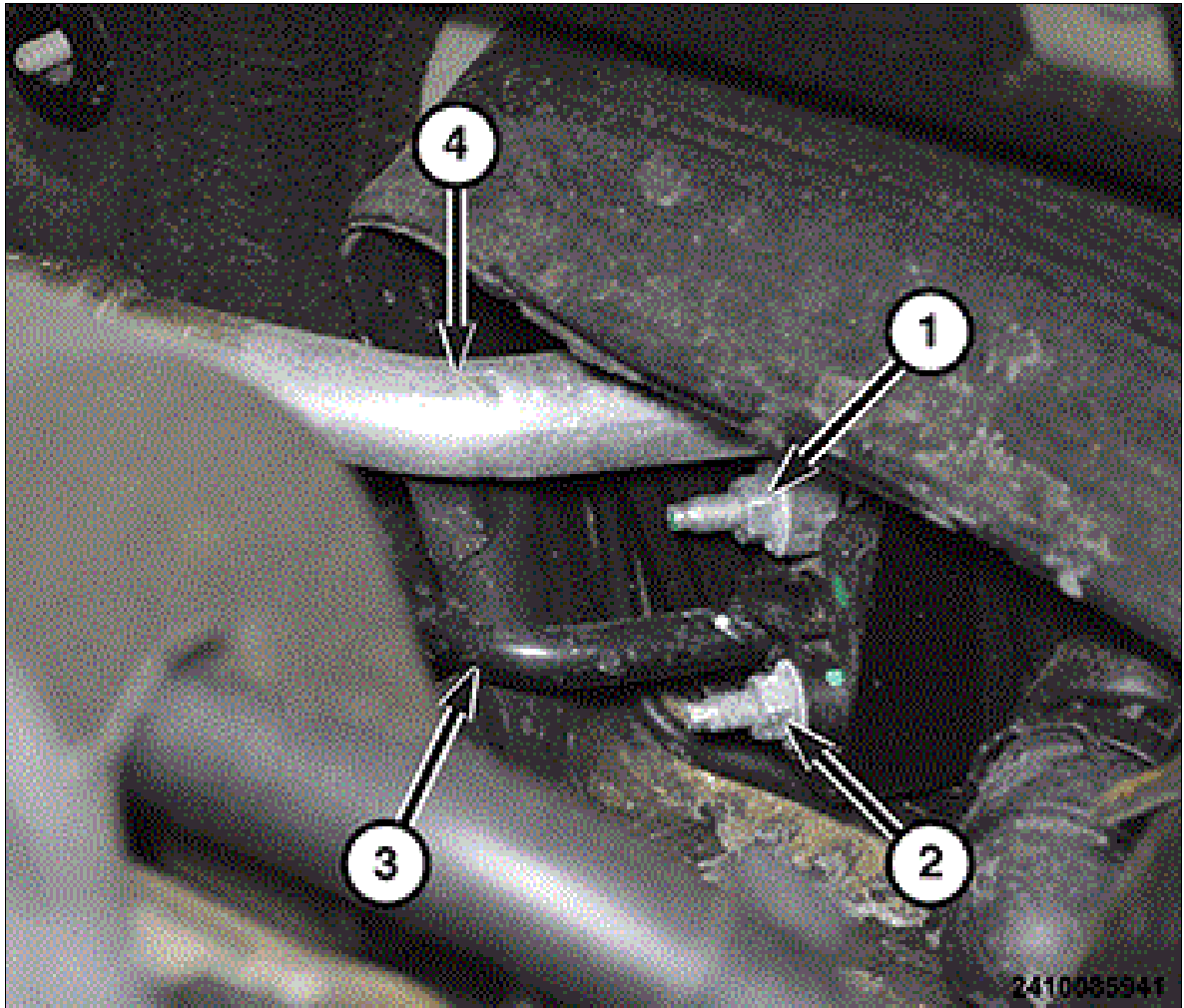
 **NOTE:** When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).



NOTE: Replacement of the refrigerant line O-ring seals is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals could result in a refrigerant system leak.

1. Position the A/C liquid line into the engine compartment.
2. Engage the A/C liquid line (3) with the evaporator core. **Install a NEW O-ring seal** .

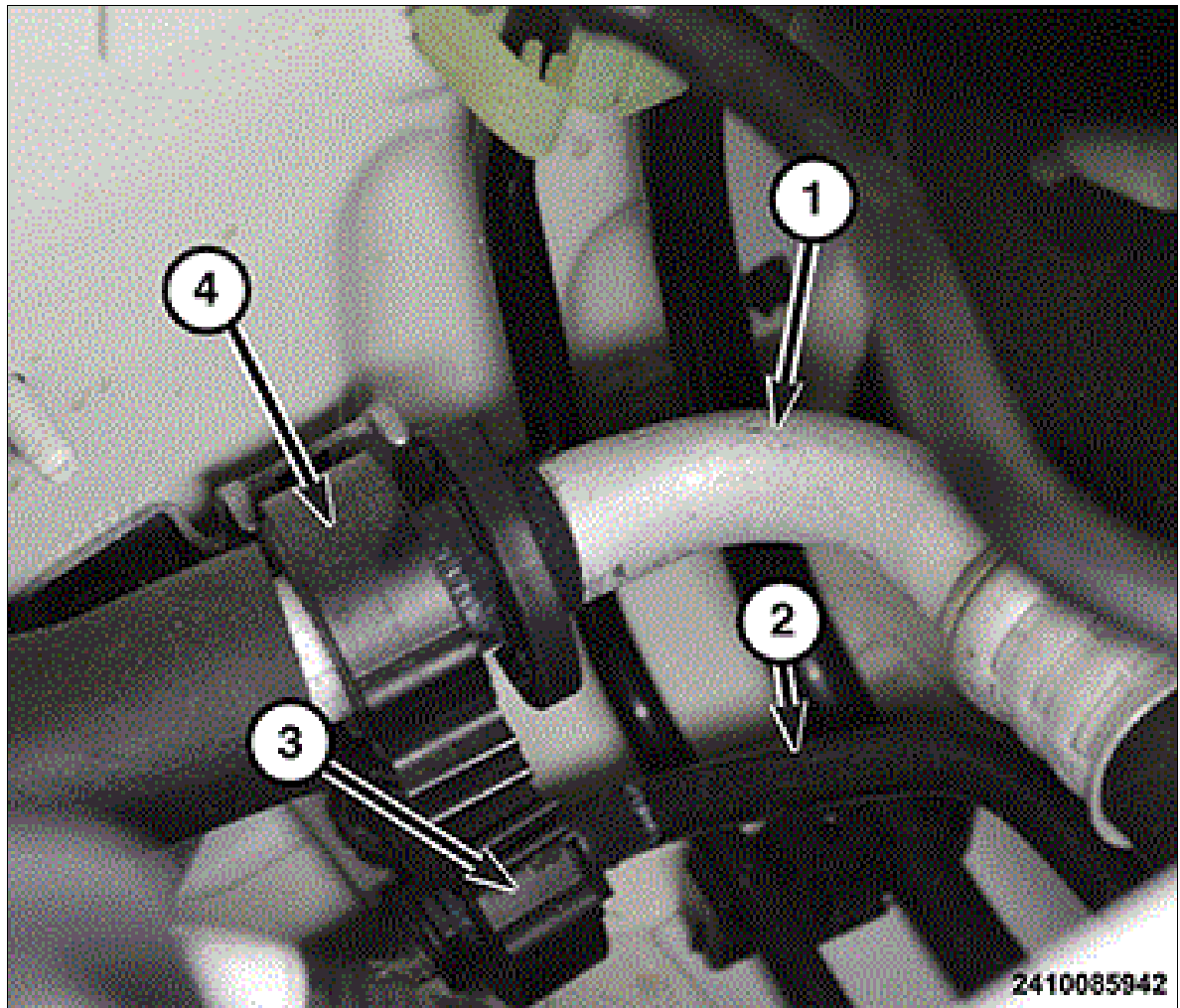
Fig 1: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

3. Install the nut (2) that secures the A/C liquid line (3) to the evaporator core and tighten the nut to the proper TORQUE SPECIFICATIONS .
4. Engage the A/C liquid line (2) to the rear retaining clip (3).

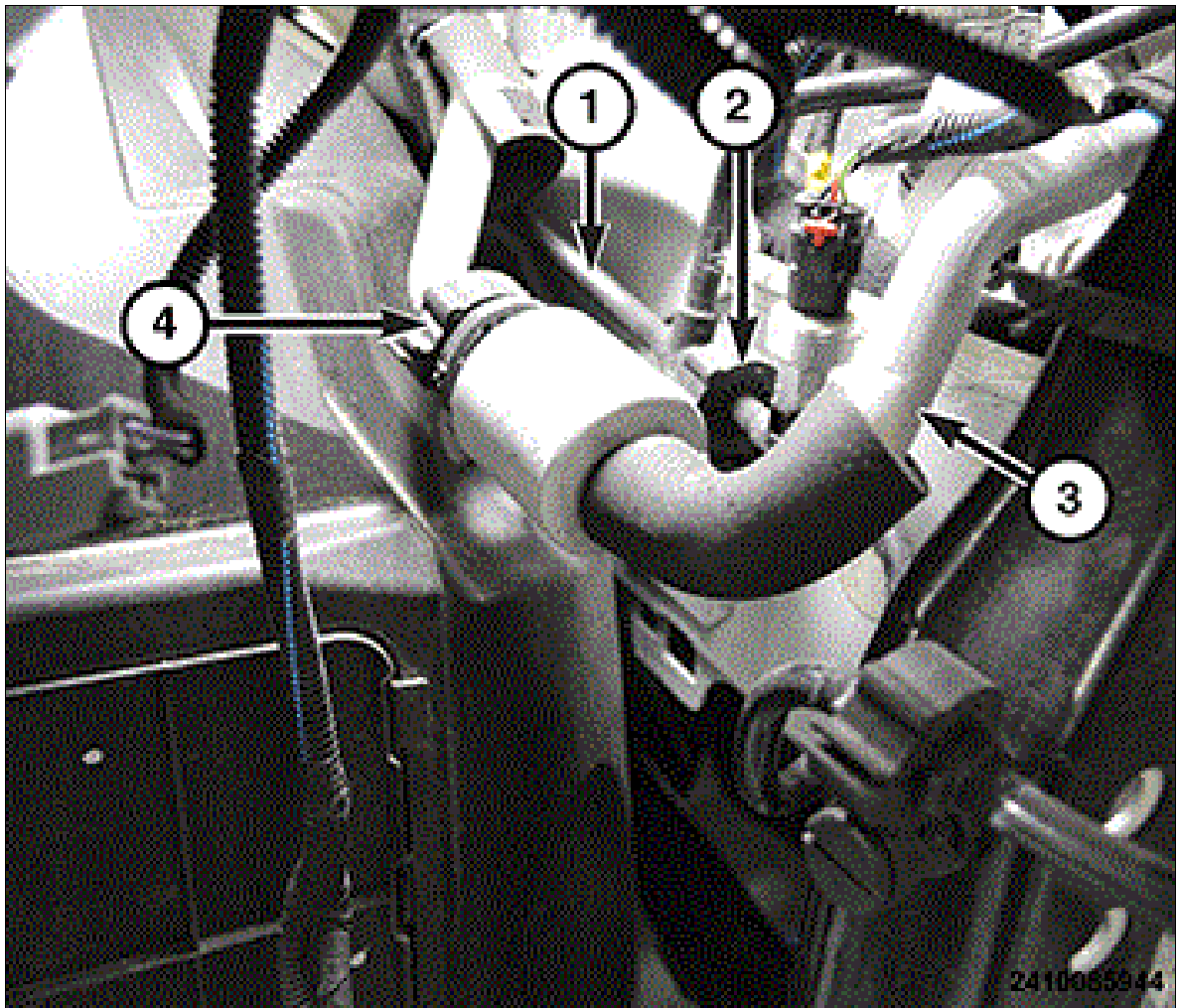
Fig 2: A/C Liquid Line & Rear Clamp



Courtesy of CHRYSLER GROUP, LLC

5. Engage the front clamp (2) at the frame rail for the A/C liquid line (1).

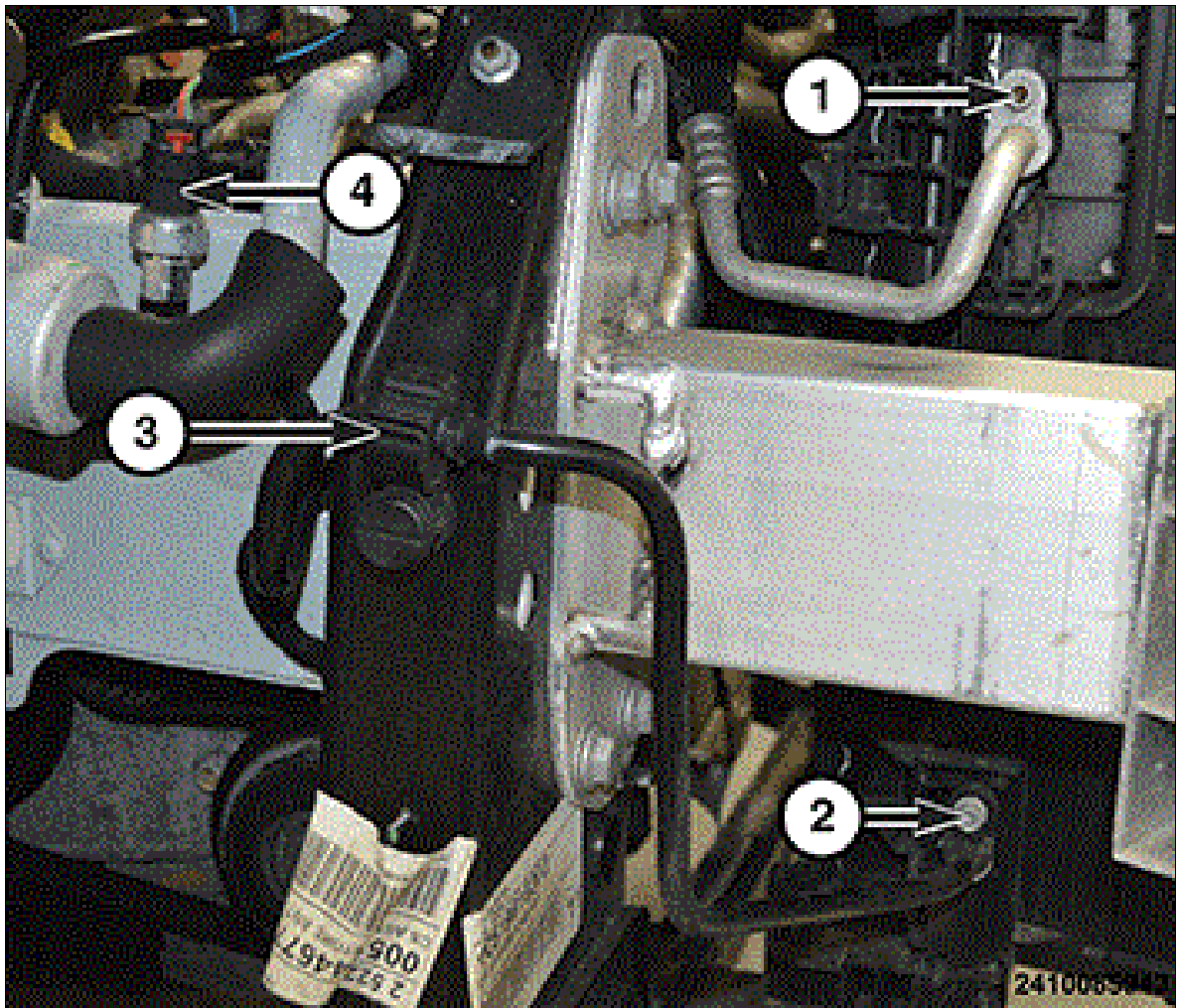
Fig 3: A/C Liquid Line & Clamps



Courtesy of CHRYSLER GROUP, LLC

6. Engage the front clamp (3) for the A/C liquid line.

Fig 4: A/C Discharge Line Bolts



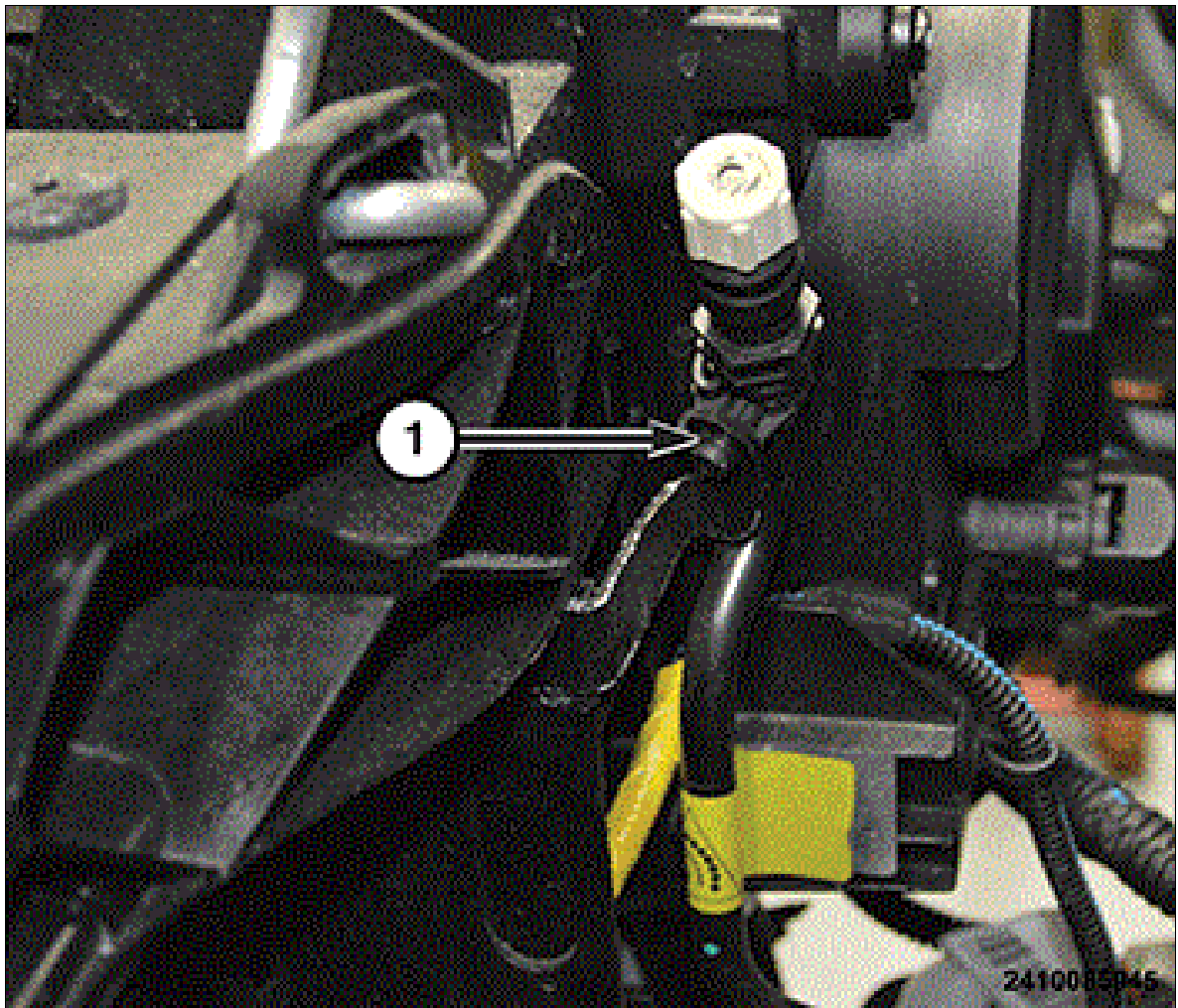
Courtesy of CHRYSLER GROUP, LLC

7. Remove the tape or plugs from the refrigerant line fittings and expansion valve ports.

 **NOTE:** Lubricate NEW O-ring seals with clean refrigerant oil and install them onto the refrigerant line fittings. Use only the specified O-ring seals as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the vehicle.

8. Connect the A/C liquid line to the condenser and install the bolt (2) that secures the A/C liquid line to the condenser and tighten the nut to the proper TORQUE SPECIFICATIONS .
9. Connect the wire harness connector (4) to the A/C pressure transducer.
10. Engage the clamp (1) for the A/C liquid line service port.

Fig 5: A/C Liquid Line Service Port Clamp



Courtesy of CHRYSLER GROUP, LLC

11. Install the air cleaner body. (Refer to REMOVAL AND INSTALLATION).
12. Install the front fascia (Refer to REMOVAL AND INSTALLATION).
13. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
14. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
15. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
16. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

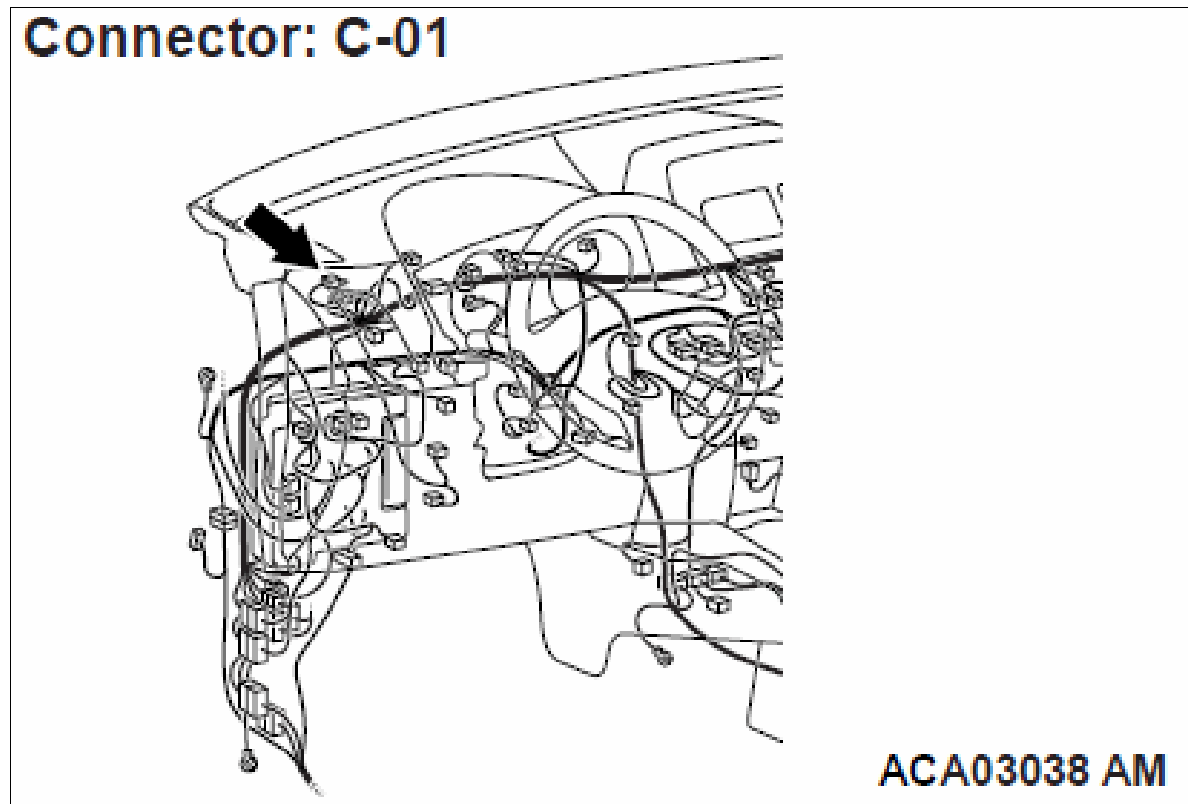
**PLUMBING > LINE, A/C SUCTION > REMOVAL AND INSTALLATION > A/C SUCTION
LINE - 1.4L > REMOVAL**

ⓧ **WARNING:** Review the safety precautions and warnings in this service information

before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Remove the engine cover (Refer to COVER, ENGINE, REMOVAL AND INSTALLATION).
4. Disconnect the quick-disconnect fitting (2) between the A/C suction line and the A/C suction line jumper.

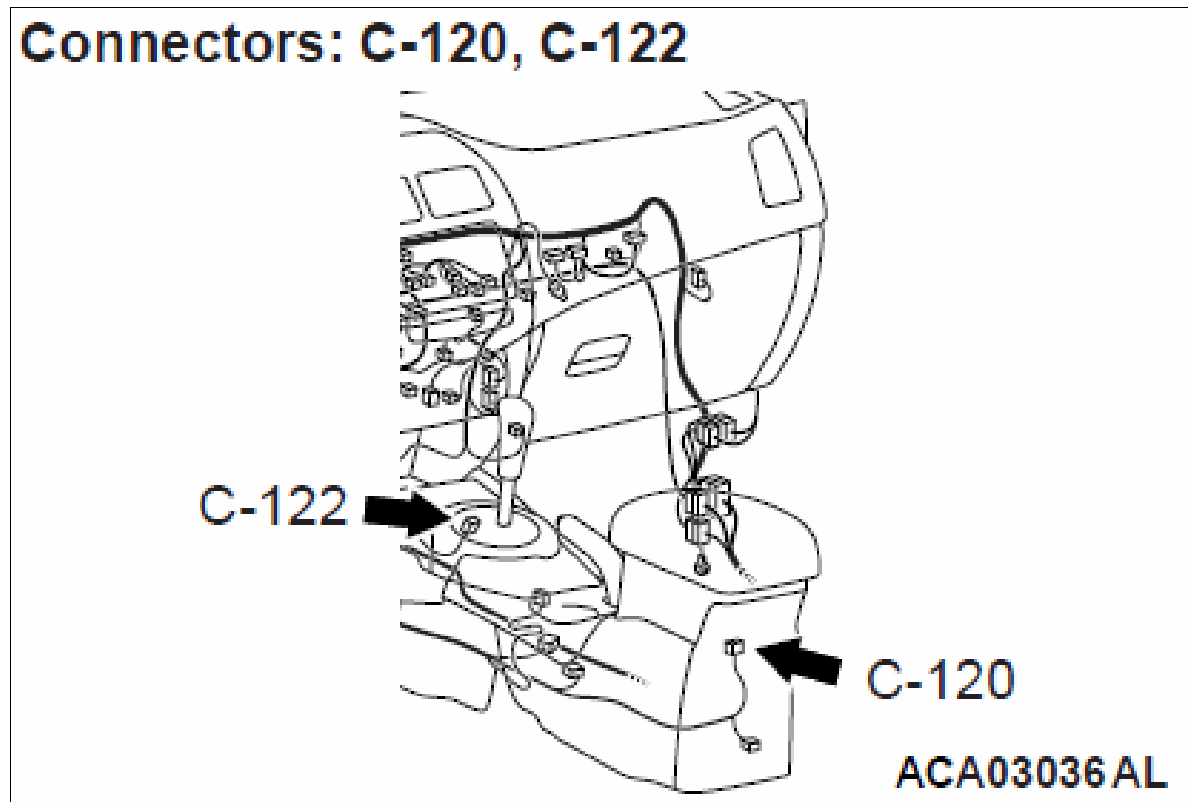
Fig 1: Quick-Disconnect Fitting



Courtesy of CHRYSLER GROUP, LLC

5. Remove the retaining nut (1) that secures the A/C suction line (4) to the evaporator core.

Fig 2: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

6. Separate the A/C suction line from the evaporator core. **Remove and discard the O-ring seals .**
7. Remove the A/C suction line (4) from the engine compartment.
8. Install plugs in, or tape over all the open refrigerant line fittings and expansion valve ports.

PLUMBING > LINE, A/C SUCTION > REMOVAL AND INSTALLATION > A/C SUCTION LINE - 1.4L > INSTALLATION

 **CAUTION:** Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 **NOTE:** When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).

 **NOTE:** Replacement of the refrigerant line seals is required anytime a refrigerant line is

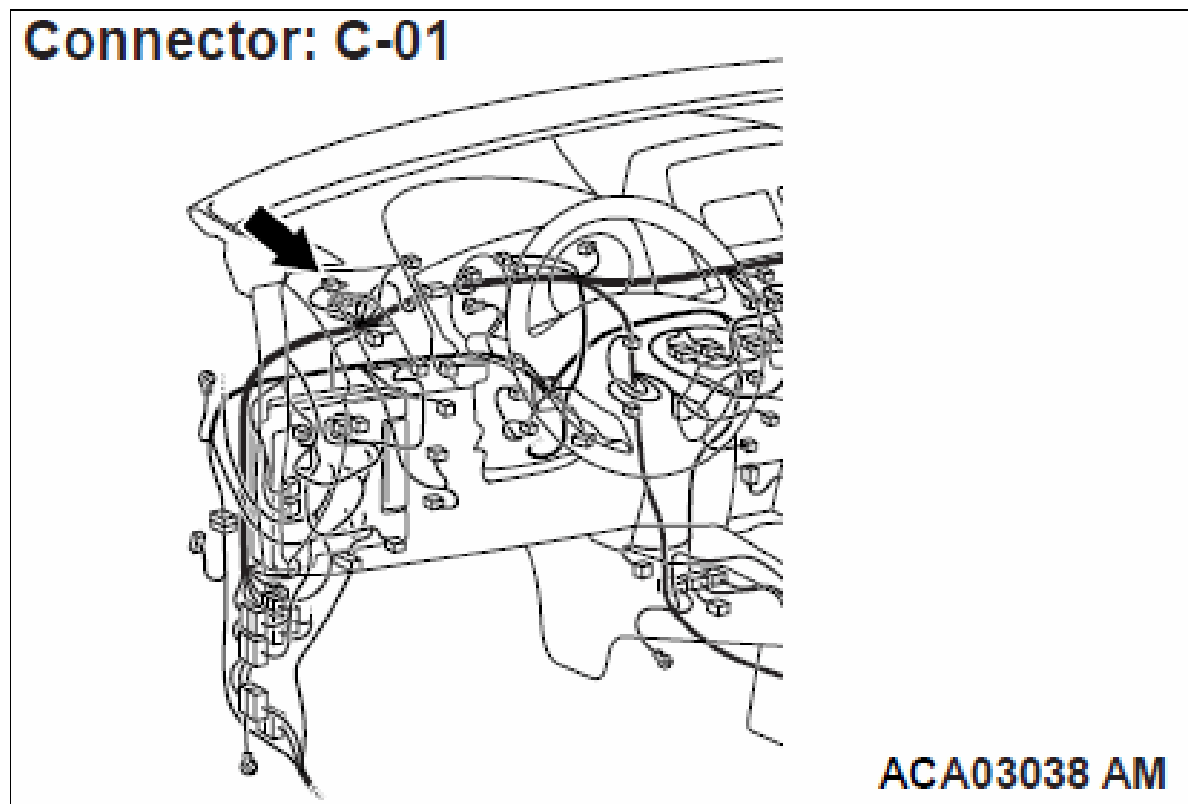
disconnected. Failure to replace the rubber O-ring seals may result in a refrigerant system leak.

1. Position the A/C suction line into the engine compartment.
2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor ports.

 **NOTE:** Lubricate **NEW** seals with clean refrigerant oil and install them onto the open refrigerant line fittings. Use only the specified seals as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

3. Engage the A/C suction line (4) into the evaporator core.

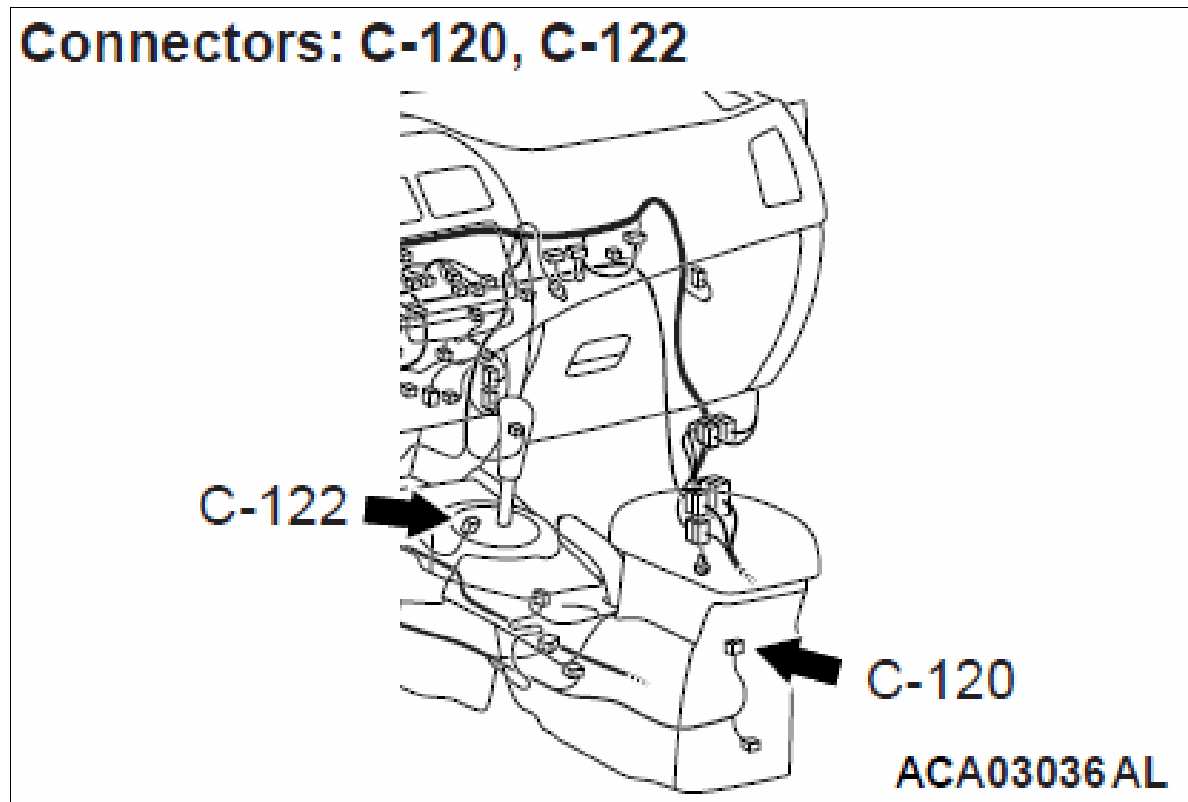
Fig 1: Quick-Disconnect Fitting



Courtesy of CHRYSLER GROUP, LLC

4. Install the retaining nut (1) holding the A/C suction line (4) to the evaporator core and tighten to the proper TORQUE SPECIFICATIONS . **Install NEW O-ring seal** .
5. Connect the quick-disconnect fitting (2) of the A/C suction line to the A/C suction line jumper.

Fig 2: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

6. Install the engine cover (Refer to COVER, ENGINE, REMOVAL AND INSTALLATION).
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
8. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
9. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
10. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

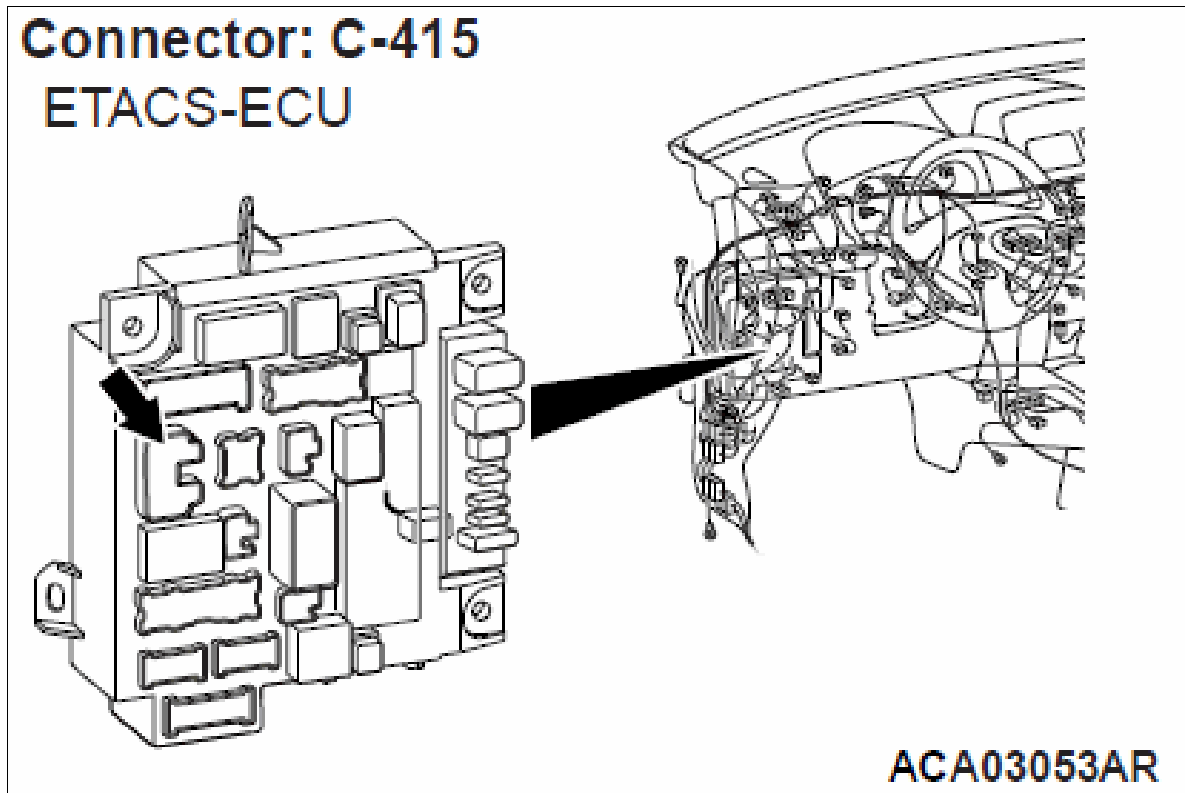
PLUMBING > LINE, A/C SUCTION > REMOVAL AND INSTALLATION > A/C SUCTION LINE - 2.4L > REMOVAL

⊗ **WARNING:** Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.

3. Remove the front fascia (Refer to REMOVAL AND INSTALLATION).
4. Remove the air cleaner body (Refer to REMOVAL AND INSTALLATION).
5. Disconnect the quick-disconnect fitting (1) between the flexible A/C suction line (3) and the A/C discharge line).

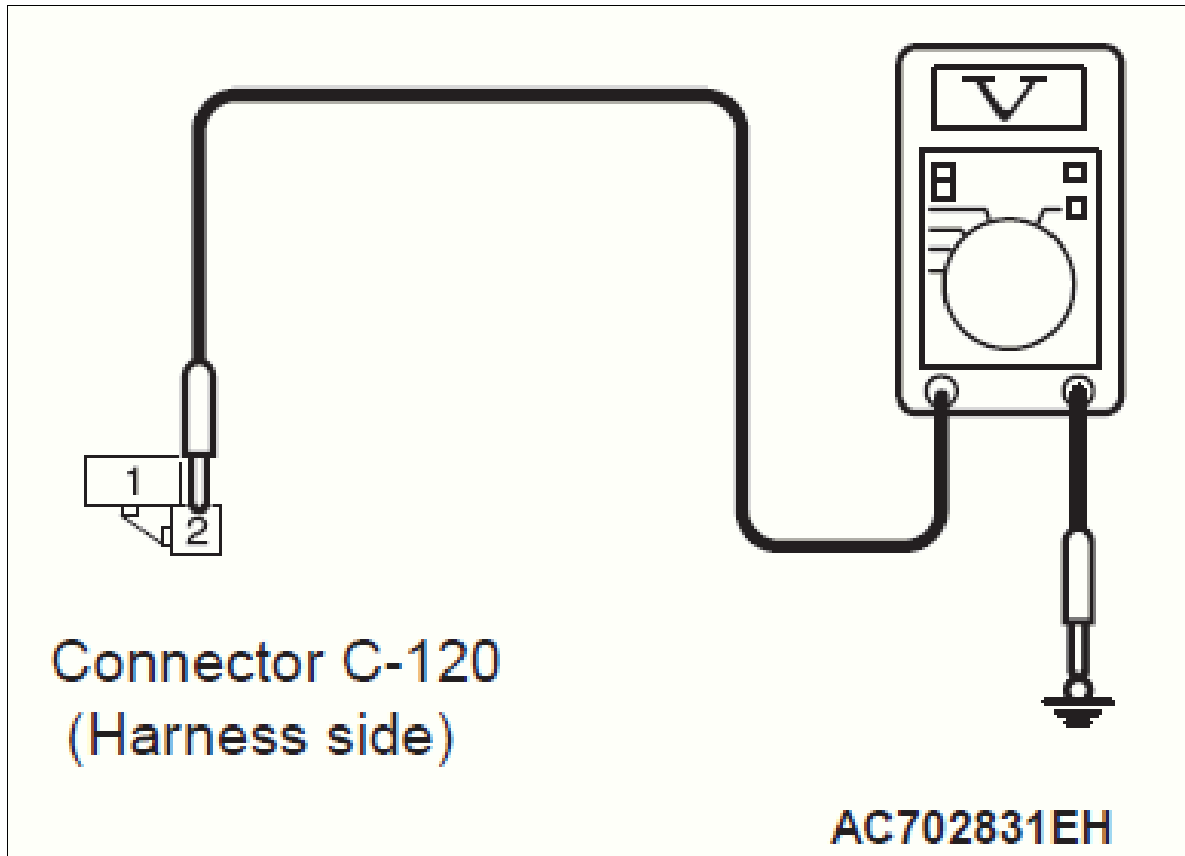
Fig 1: A/C Discharge Line, Quick-Disconnect & Bolt



Courtesy of CHRYSLER GROUP, LLC

6. Install plugs in, or tape over all the open refrigerant line fittings and expansion valve ports.
7. Remove the retaining nut (1) that secures the A/C suction line to the evaporator core.

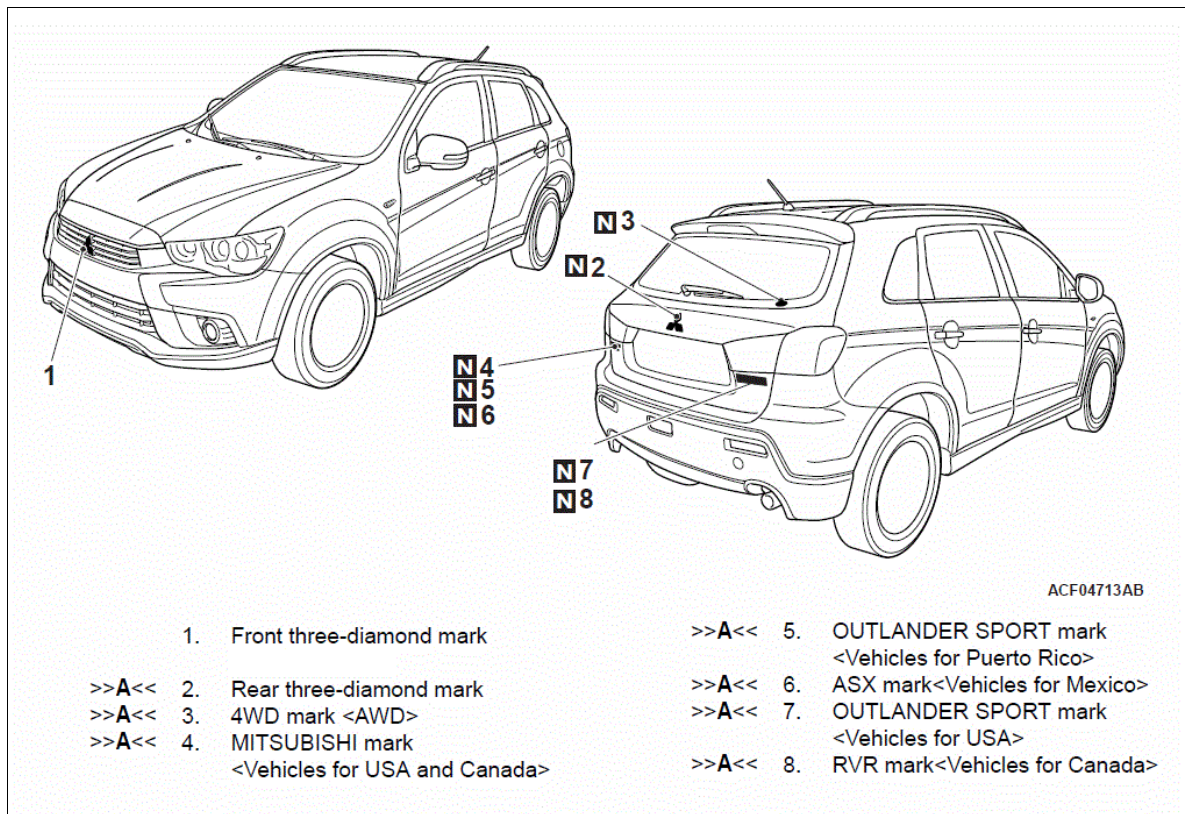
Fig 2: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

8. Separate the A/C suction line (4) from the evaporator core. **Remove and discard the O-ring seals** .
9. Disengage the A/C suction line (1) from the rear retaining clip (4).

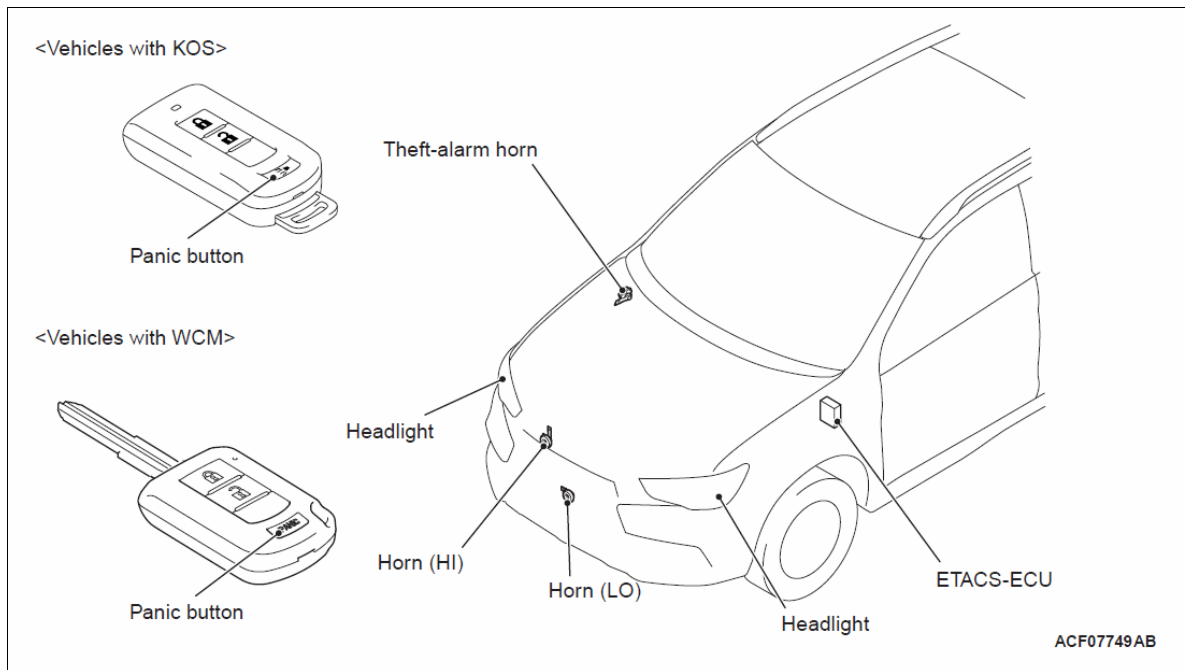
Fig 3: A/C Liquid Line & Rear Clamp



Courtesy of CHRYSLER GROUP, LLC

10. Disengage the A/C suction line (3) from the front retaining clips (4).

Fig 4: A/C Liquid Line & Clamps



Courtesy of CHRYSLER GROUP, LLC

11. Remove the A/C suction line (3) from the engine compartment.

PLUMBING > LINE, A/C SUCTION > REMOVAL AND INSTALLATION > A/C SUCTION LINE - 2.4L > INSTALLATION



CAUTION: Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.



NOTE: When replacing multiple A/C system components, see *REFRIGERANT OIL CAPACITIES* to determine how much oil should be added to the refrigerant system).



NOTE: Replacement of the refrigerant line seals is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals may result in a refrigerant system leak.

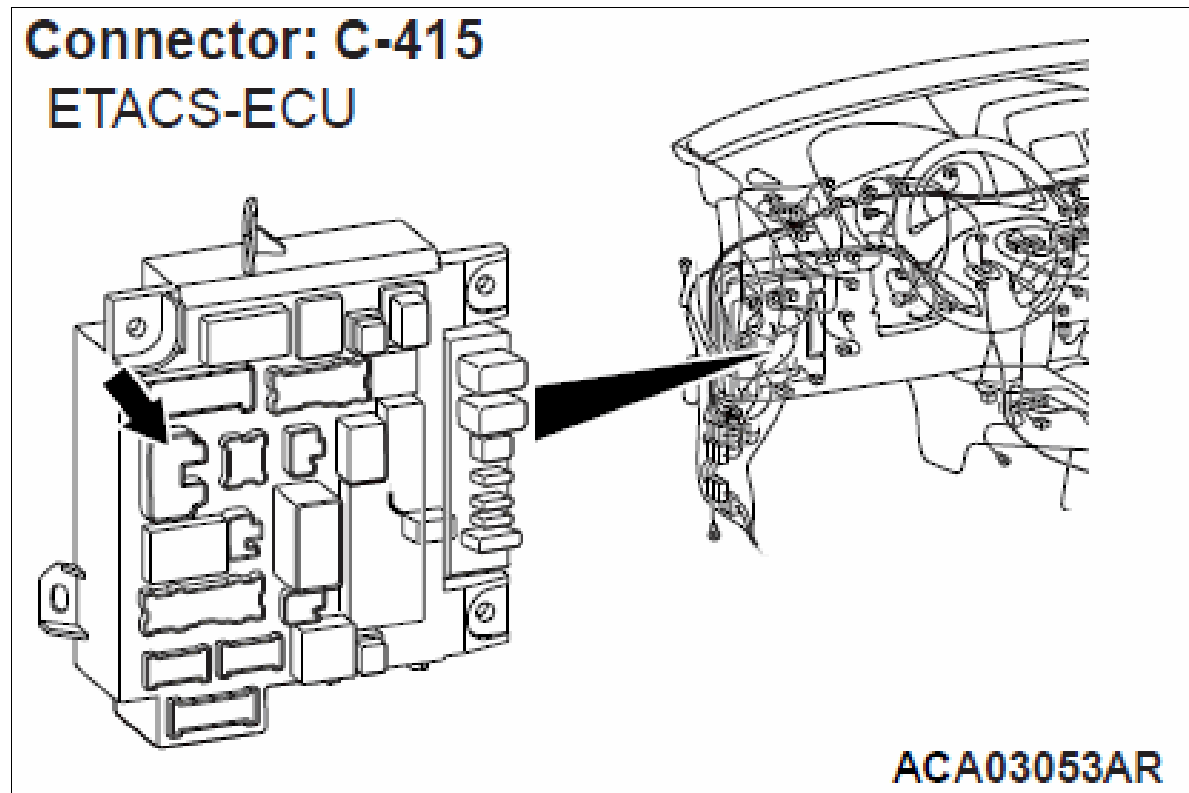
1. Position the A/C suction line into the engine compartment.
2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor ports.



NOTE: Lubricate *NEW* seals with clean refrigerant oil and install them onto the open refrigerant line fittings. Use only the specified seals as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

3. Connect the quick-disconnect fitting (1) of the A/C suction line (3) to the A/C discharge.

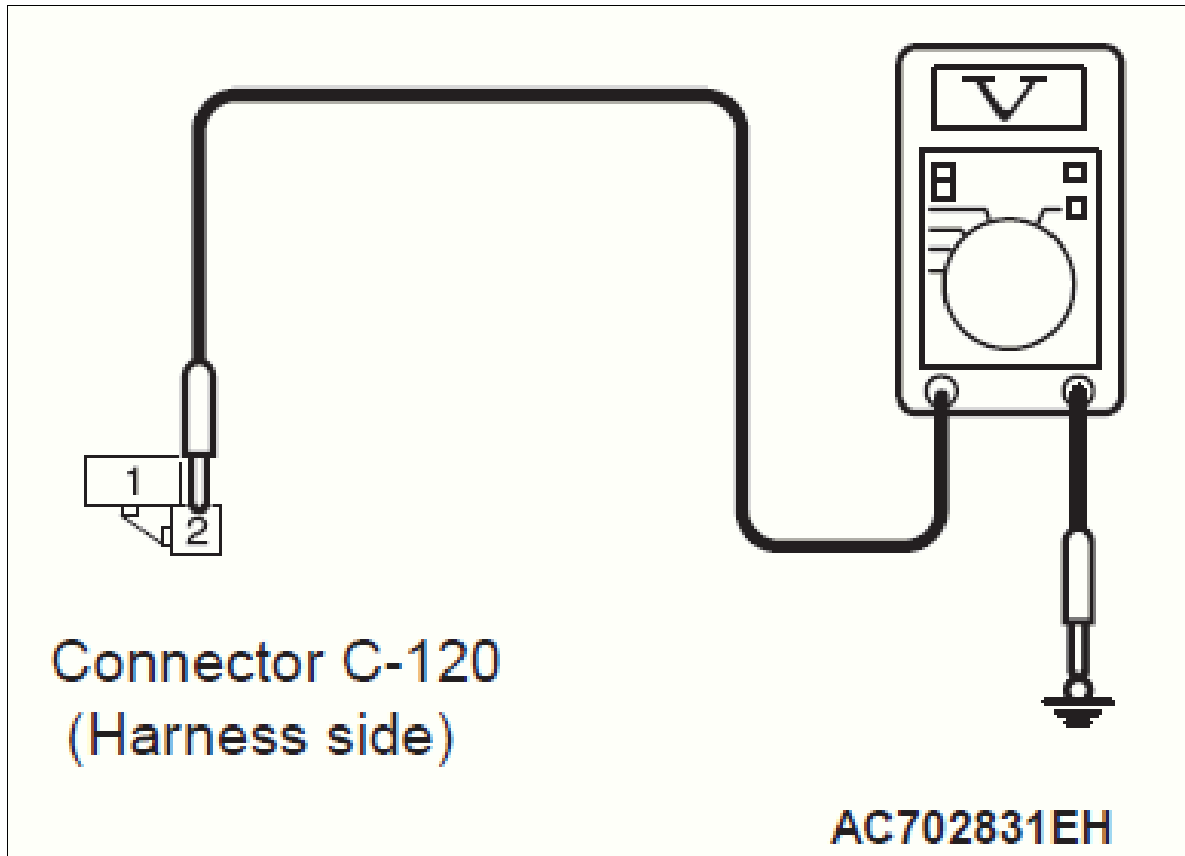
Fig 1: A/C Discharge Line, Quick-Disconnect & Bolt



Courtesy of CHRYSLER GROUP, LLC

4. Engage the A/C suction line (4) into the evaporator core.

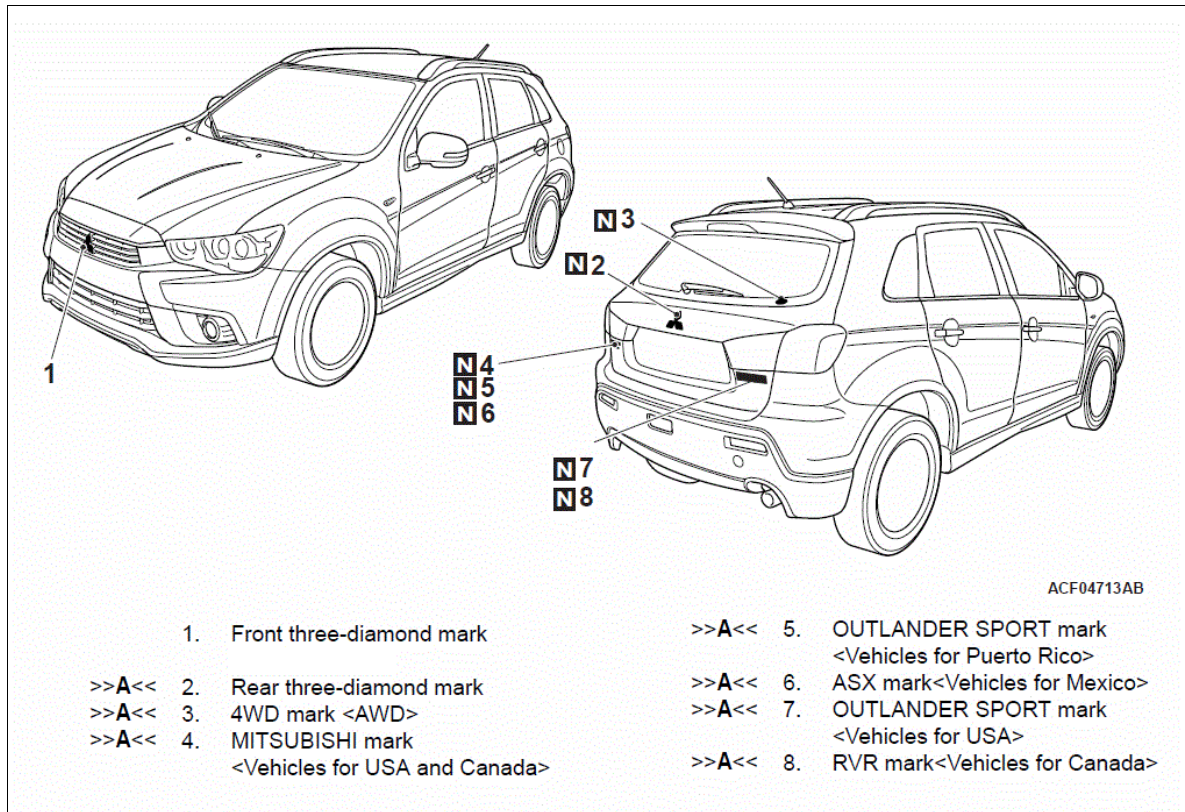
Fig 2: A/C Liquid Line & Nuts



Courtesy of CHRYSLER GROUP, LLC

5. Install the retaining nut (1) holding the A/C suction line (4) to the evaporator core and tighten to the proper TORQUE SPECIFICATIONS .
6. Engage the A/C suction line (1) into the rear retaining clip (4).

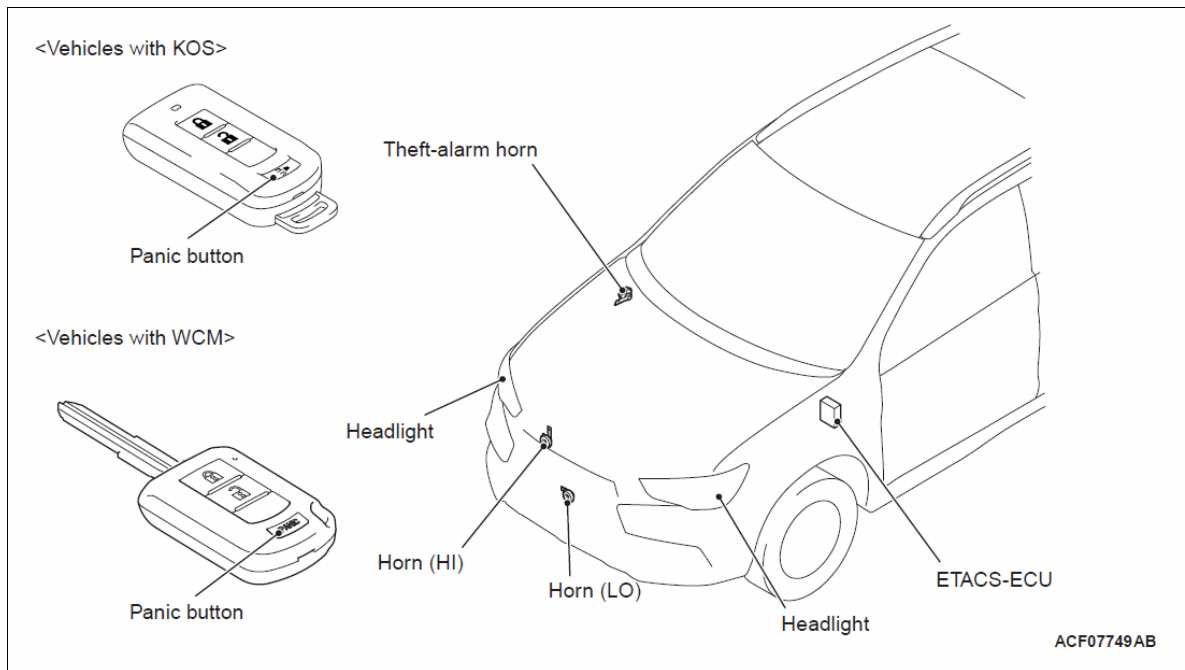
Fig 3: A/C Liquid Line & Rear Clamp



Courtesy of CHRYSLER GROUP, LLC

7. Engage the A/C suction line (3) into the front retaining clip (4).

Fig 4: A/C Liquid Line & Clamps



Courtesy of CHRYSLER GROUP, LLC

8. Install the front fascia (Refer to REMOVAL AND INSTALLATION).

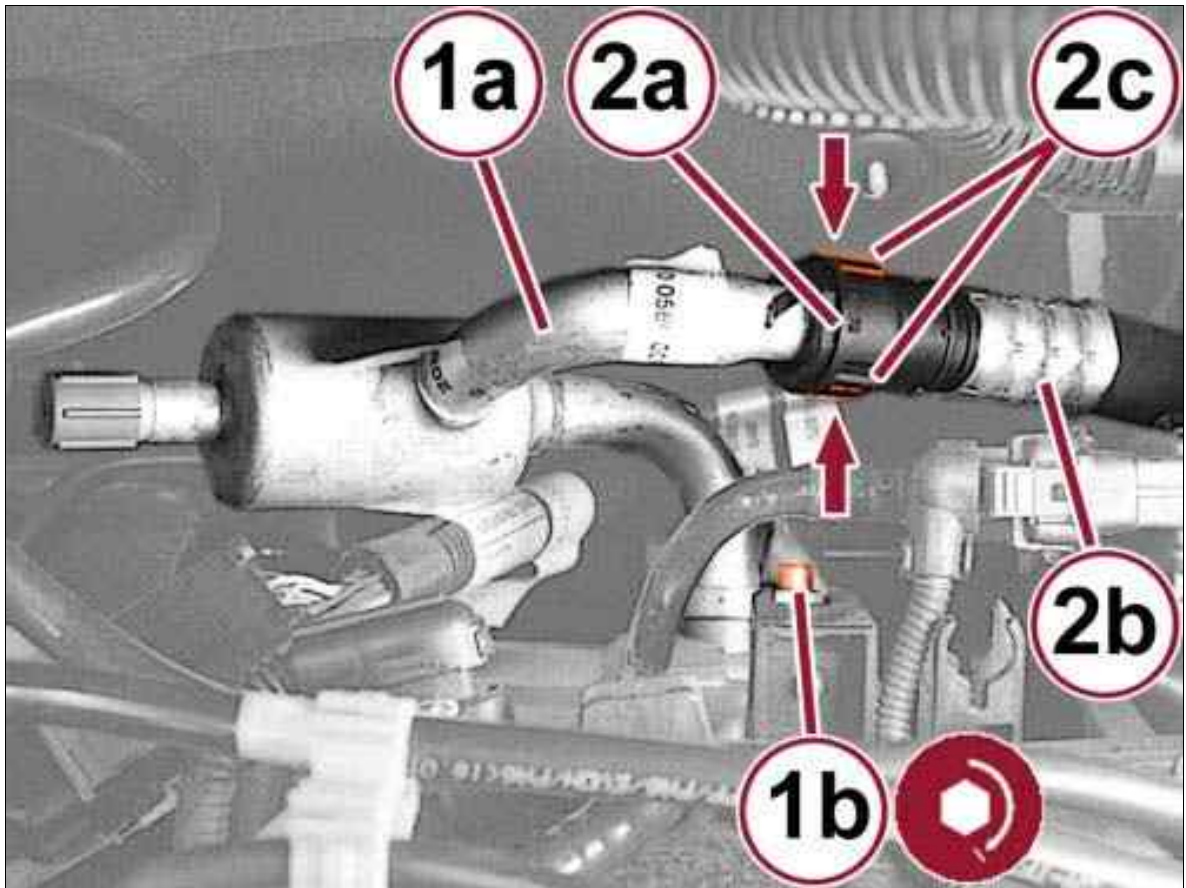
9. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
10. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
11. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
12. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

PLUMBING > LINE, A/C SUCTION JUMPER > REMOVAL AND INSTALLATION > A/C SUCTION JUMPER LINE - 1.4L > REMOVAL

 **WARNING:** Review the safety precautions and warnings in this service information before performing this procedure. Failure to follow these instructions may result in serious injury or death.

1. Recover the refrigerant from the refrigerant system. (Refer to STANDARD PROCEDURE).
2. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
3. Disconnect the quick-disconnect (2a) for the A/C suction jumper line (1a) to the A/C suction line (2b).

Fig 1: Remove/Install A/C Suction Line



Courtesy of CHRYSLER GROUP, LLC

4. Remove the bolt (1b) that secures the A/C suction jumper line (1a) to the A/C compressor. Remove and discard the O-ring seals.
5. Separate the A/C suction jumper line (1a) from the A/C compressor and install plugs in, or tape over the open refrigerant line fittings and evaporator core ports. Remove and discard the O-ring seal.
6. Remove the A/C suction jumper line from the engine compartment.
7. Install plugs in, or tape over the open refrigerant line fittings, the condenser and compressor ports.

PLUMBING > LINE, A/C SUCTION JUMPER > REMOVAL AND INSTALLATION > A/C SUCTION JUMPER LINE - 1.4L > INSTALLATION

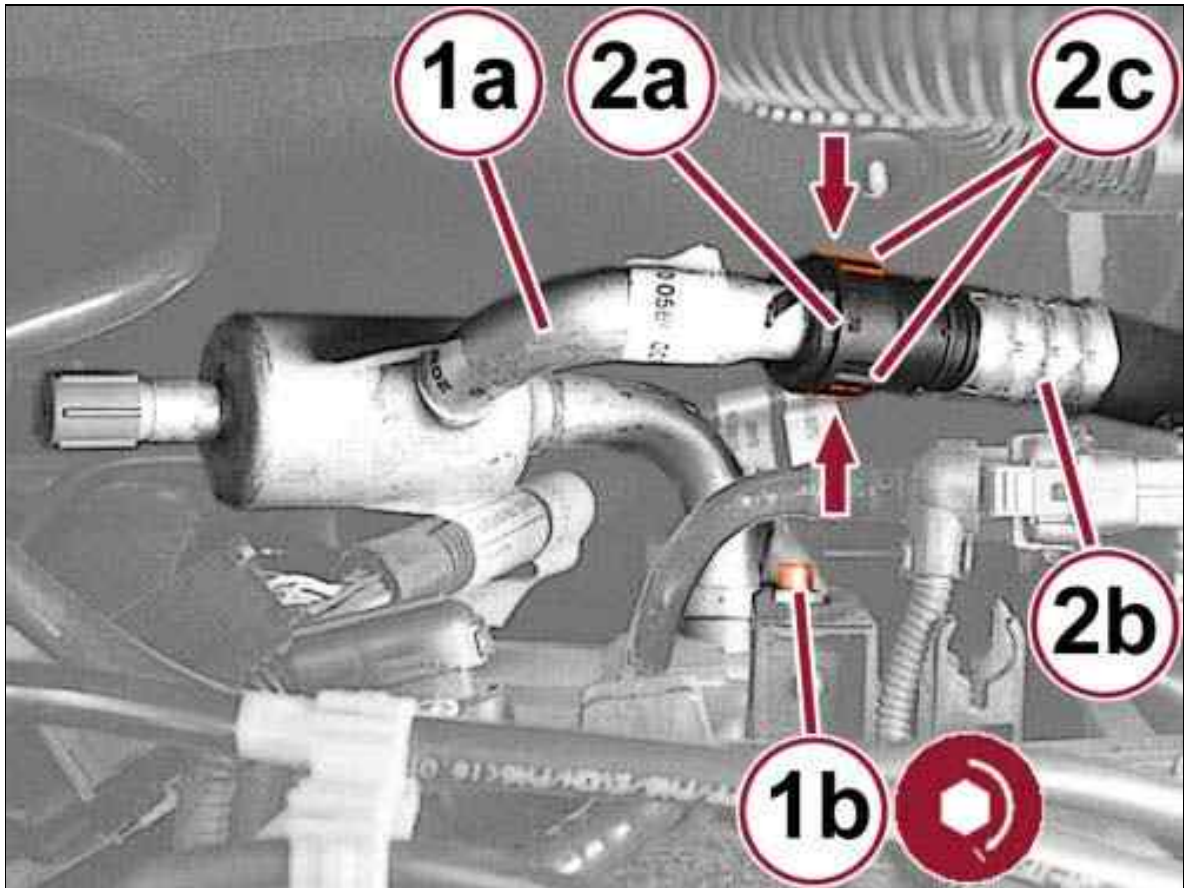
⚠ CAUTION: Be certain to adjust the refrigerant oil level when servicing the A/C refrigerant system. Failure to properly adjust the refrigerant oil level will prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

 **NOTE:** When replacing multiple A/C system components, see **REFRIGERANT OIL CAPACITIES** to determine how much oil should be added to the refrigerant system).

 **NOTE:** Replacement of the refrigerant line O-ring seals and gaskets is required anytime a refrigerant line is disconnected. Failure to replace the rubber O-ring seals and metal gaskets may result in a refrigerant system leak.

1. Position the A/C suction jumper line (1a) into the engine compartment.

Fig 1: Remove/Install A/C Suction Line



Courtesy of CHRYSLER GROUP, LLC

2. Remove the tape or plugs from the opened refrigerant line fittings and the compressor and condenser ports.

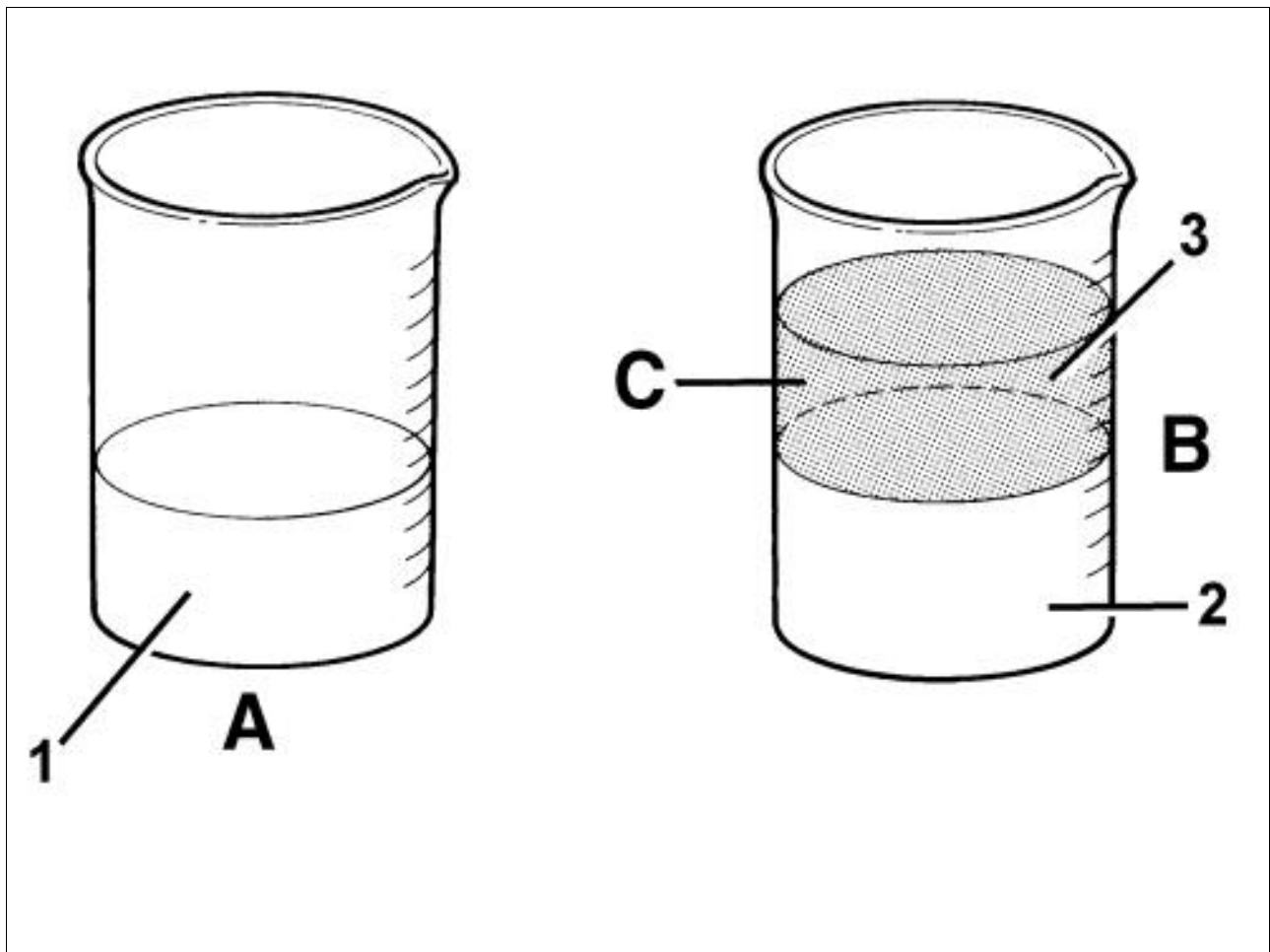
 **NOTE:** Lubricate **NEW** rubber O-ring seals with clean refrigerant oil and install them and new gaskets onto the discharge line fittings. Use only the specified O-rings as they are made of a special material for the system. Use only refrigerant oil of the type recommended for the A/C compressor in the vehicle.

3. Install the bolt (1b) that secures the A/C suction jumper line (1a) to the A/C compressor and tighten to the proper **TORQUE SPECIFICATIONS** . Install a **NEW** O-ring seal.

4. Reconnect the quick-disconnect (2a) between the A/C suction jumper line (1a) and the A/C suction line (2b).
5. Install the engine cover (Refer to COVER, ENGINE, REMOVAL AND INSTALLATION).
6. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.
7. Evacuate the refrigerant system. (Refer to STANDARD PROCEDURE).
8. Adjust the refrigerant oil level. (Refer to STANDARD PROCEDURE).
9. Charge the refrigerant system. (Refer to STANDARD PROCEDURE).

PLUMBING > OIL, REFRIGERANT > STANDARD PROCEDURE > COMPRESSOR OIL DRAIN PROCEDURE

Fig 1: Refrigerent Oil



Courtesy of CHRYSLER GROUP, LLC

 **CAUTION:**

Be certain to adjust the refrigerant system oil level when replacing an A/C compressor. Failure to properly drain and measure the refrigerant oil from the A/C compressor can prevent the A/C system from operating as designed and cause serious compressor damage.

The A/C compressor is filled with refrigerant oil from the factory. Use the following procedure to drain and measure refrigerant oil from the A/C compressor.

1. Drain all of the refrigerant oil from the old A/C compressor (A) into a clean measured container (1).
2. Drain all of the refrigerant oil from the new A/C compressor (B) into a clean measured container (2). The difference between amount (A) and (B) is the amount to remove (C) from (B) before returning the refrigerant oil to the new compressor.
3. Refill the new A/C compressor with the same amount of refrigerant oil that was drained out of the old compressor. Use only clean refrigerant oil of the type specified for the A/C compressor in the vehicle.
4. Install the new A/C compressor onto the engine. Refer to COMPRESSOR, A/C, REMOVAL AND INSTALLATION .

PLUMBING > OIL, REFRIGERANT > STANDARD PROCEDURE > STANDARD PROCEDURE - REFRIGERANT OIL LEVEL

When an A/C system is assembled at the factory, all components except the A/C compressor are refrigerant oil free. After the refrigerant system has been charged and operated, the refrigerant oil in the A/C compressor is dispersed throughout the refrigerant system. The A/C receiver/drier, A/C evaporator, A/C condenser and the A/C compressor will each retain a significant amount of the needed refrigerant oil.

It is important to have the correct amount of refrigerant oil in the A/C system. This ensures proper lubrication of the A/C compressor. Too little oil will result in damage to the A/C compressor, while too much oil will reduce the cooling capacity of the A/C system and consequently result in higher discharge air temperatures.

CAUTION:

Be certain to adjust the refrigerant system oil level when replacing an A/C compressor. Failure to properly adjust the refrigerant oil level can prevent the A/C system from operating as designed and can cause serious A/C compressor damage.

CAUTION:

Never use R-12 refrigerant oil in an A/C system designed to use R-134a or R-1234yf refrigerant oil. Never use R-134a refrigerant oil in an A/C system designed to use R-1234yf refrigerant oil. These refrigerant oils are not compatible and damage to the A/C system will

result.



NOTE:

Most reclaim/recycling equipment will measure the lubricant being removed during recovery. This amount of lubricant should be added back into the system. See the reclaim/recycling equipment manufacturers instructions.

It will not be necessary to check the oil level in the A/C compressor or to add oil, unless there has been an oil loss. An oil loss may occur due to a rupture or leak from a refrigerant line, connector fitting, component or a component seal. If a leak occurs, add 30 milliliters (1 fluid ounce) of refrigerant oil to the refrigerant system after the repair has been made. Refrigerant oil loss will be evident at the leak point by the presence of a wet, shiny surface around the leak.

Refrigerant oil must be added when an A/C condenser, A/C receiver/drier or A/C evaporator is replaced (see REFRIGERANT OIL CAPACITIES).

The refrigerant oil level in a new A/C compressor must first be adjusted prior to compressor installation.

REFRIGERANT OIL CAPACITIES

Component	ml	fl oz	Oil Type
Total System Fill	130	4.4	-
Condenser	50	1.7	-
A/C line	5	.17	-
Evaporator	40	1.4	-
Compressor	Drain and measure the oil from the old A/C compressor. See COMPRESSOR OIL DRAIN PROCEDURE .	-	-
1.4L MultiAir	-	-	PAG PS-D1
1.6L E-torQ; 1.6L Turbo Diesel; 2.0L Turbo Diesel; 2.4L MultiAir2	-	-	PAG ND-12

PLUMBING > REFRIGERANT > SPECIFICATIONS > SPECIFICATIONS

Application	Capacity
All engines - R-1234yf	Refer to CAPACITIES AND RECOMMENDED FLUIDS, SPECIFICATIONS .

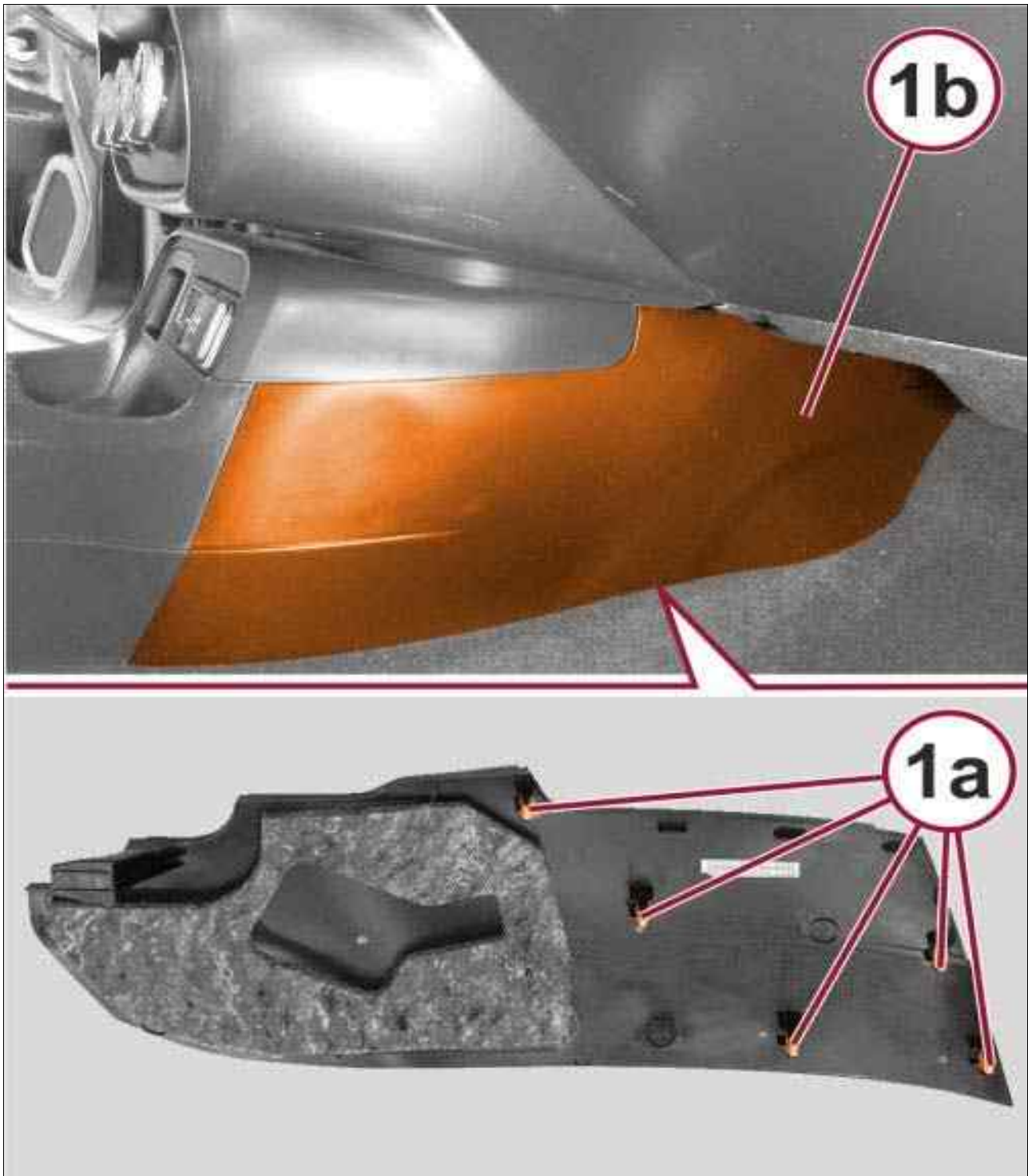
**PLUMBING > TUBE, CONDENSATION DRAIN > REMOVAL AND INSTALLATION >
REMOVAL AND INSTALLATION > REMOVAL**



WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

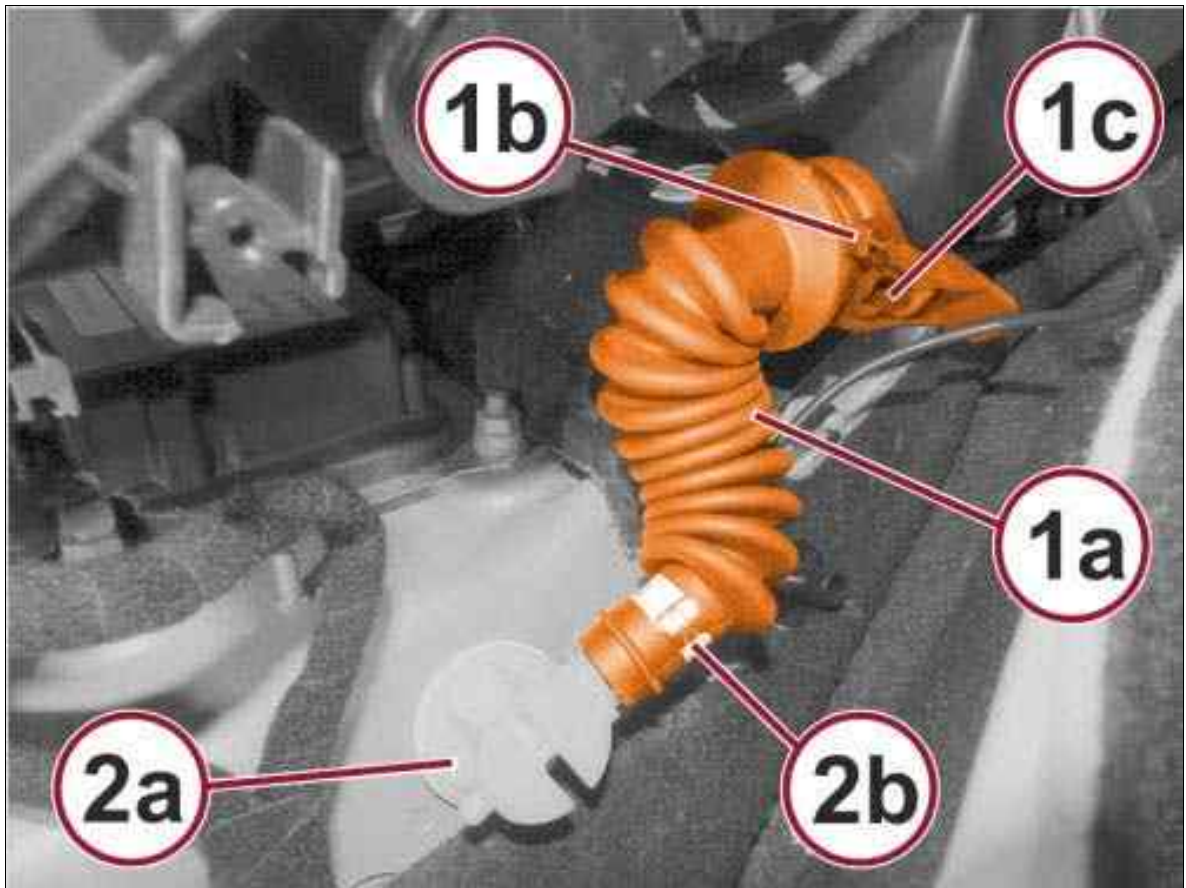
Fig 1: Right Side Center Console Closeout & Clips



Courtesy of CHRYSLER GROUP, LLC

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.
2. Remove the right side center console closeout (1b) from the center console.

Fig 2: Remove/Install Condensation Drain Tube

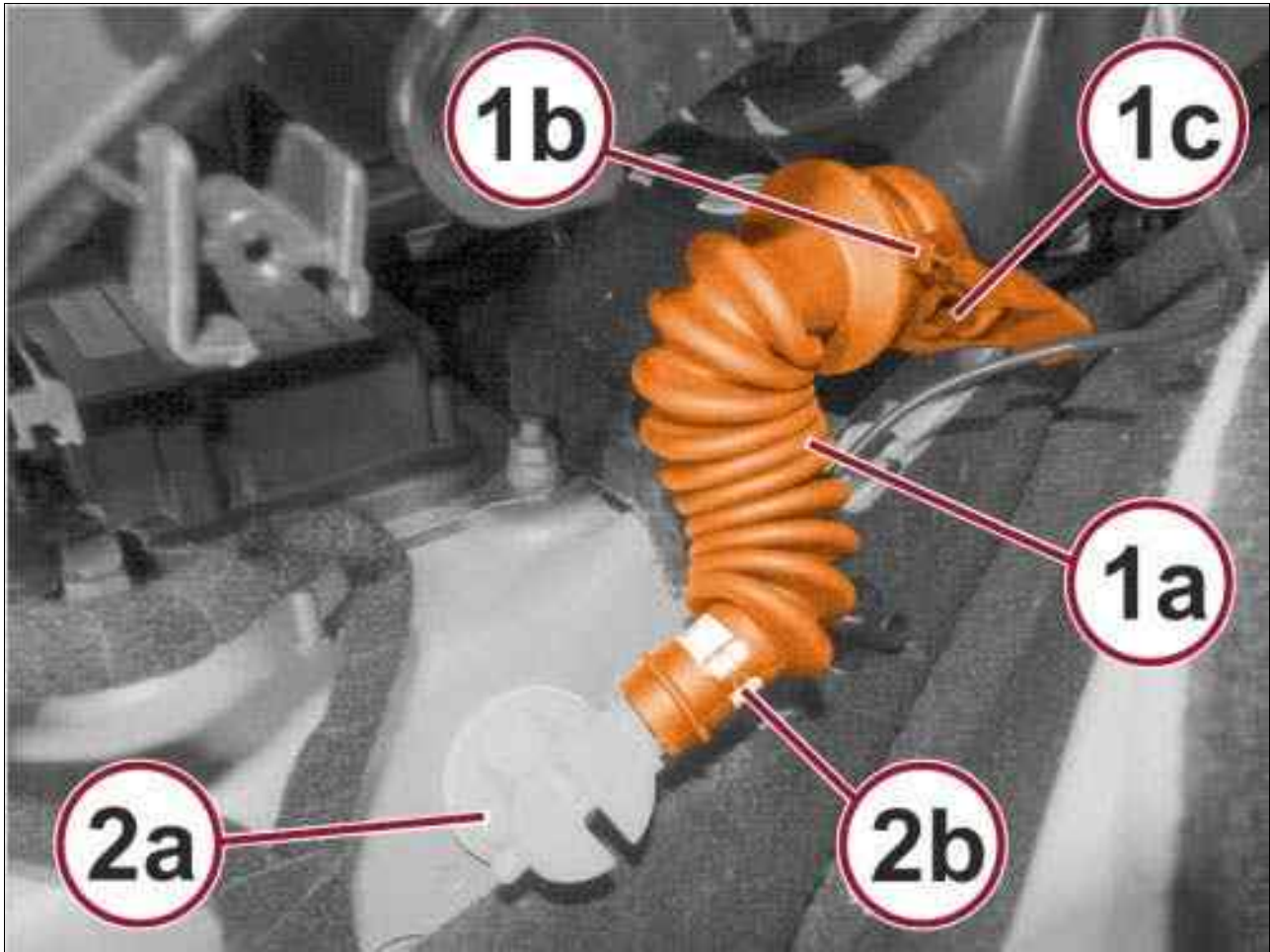


Courtesy of CHRYSLER GROUP, LLC

3. Disconnect two clamps (1b and 2b) from the condensation drain tube (1a).
4. Disengage the condensation tube retainer (1c) from the HVAC housing.
5. Disengage the condensation drain tube (1a) from the floor coupling (2a) and remove the tube from the vehicle.

**PLUMBING > TUBE, CONDENSATION DRAIN > REMOVAL AND INSTALLATION >
REMOVAL AND INSTALLATION > INSTALLATION**

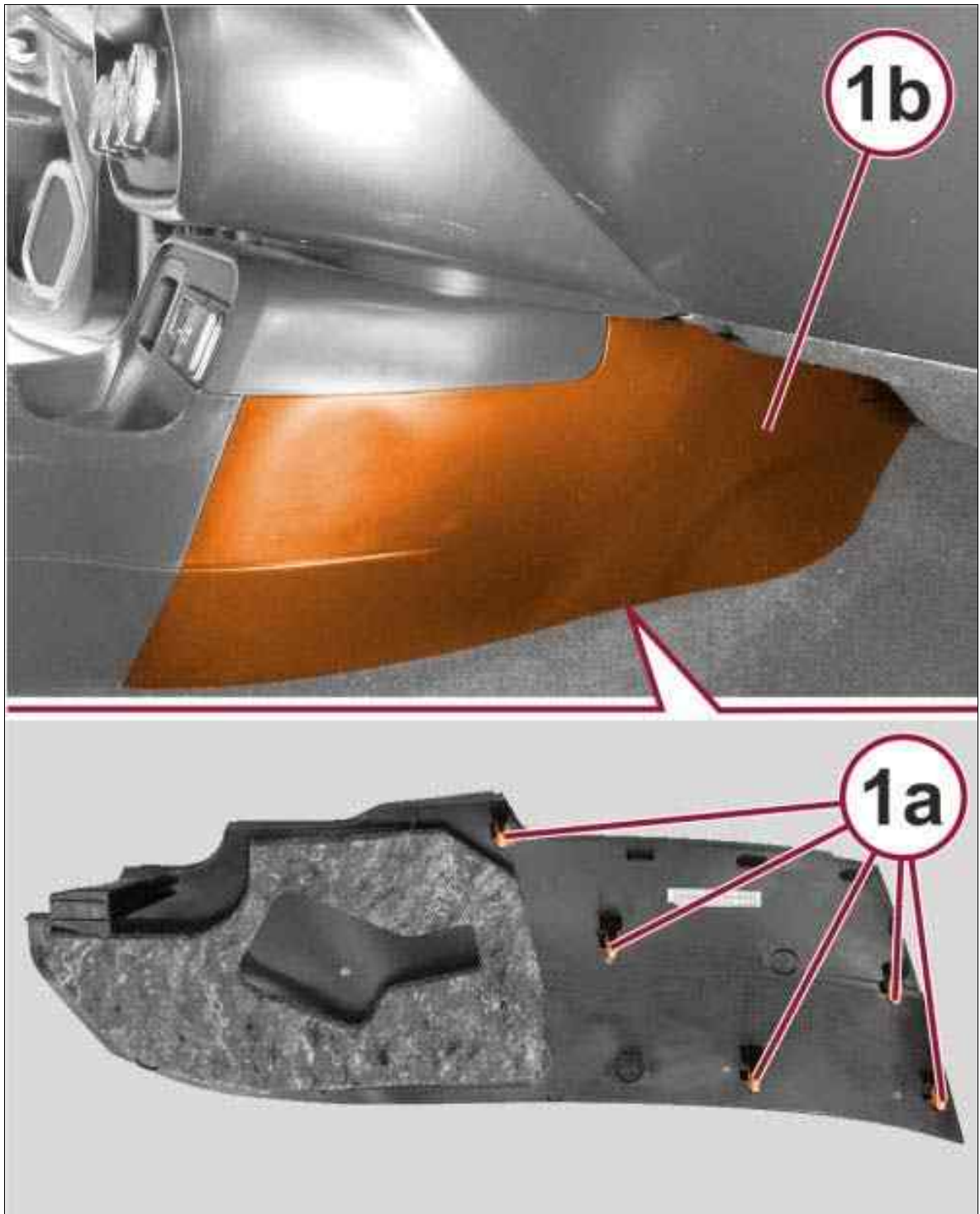
Fig 1: Remove/Install Condensation Drain Tube



Courtesy of CHRYSLER GROUP, LLC

1. Connect the condensation drain tube (1a) to the floor coupling (2a) and install a new clamp (2b).
2. Connect the condensation drain tube with clamp (1b) to the HVAC housing. Be certain the tube is fully engaged with the HVAC housing.

Fig 2: Right Side Center Console Closeout & Clips

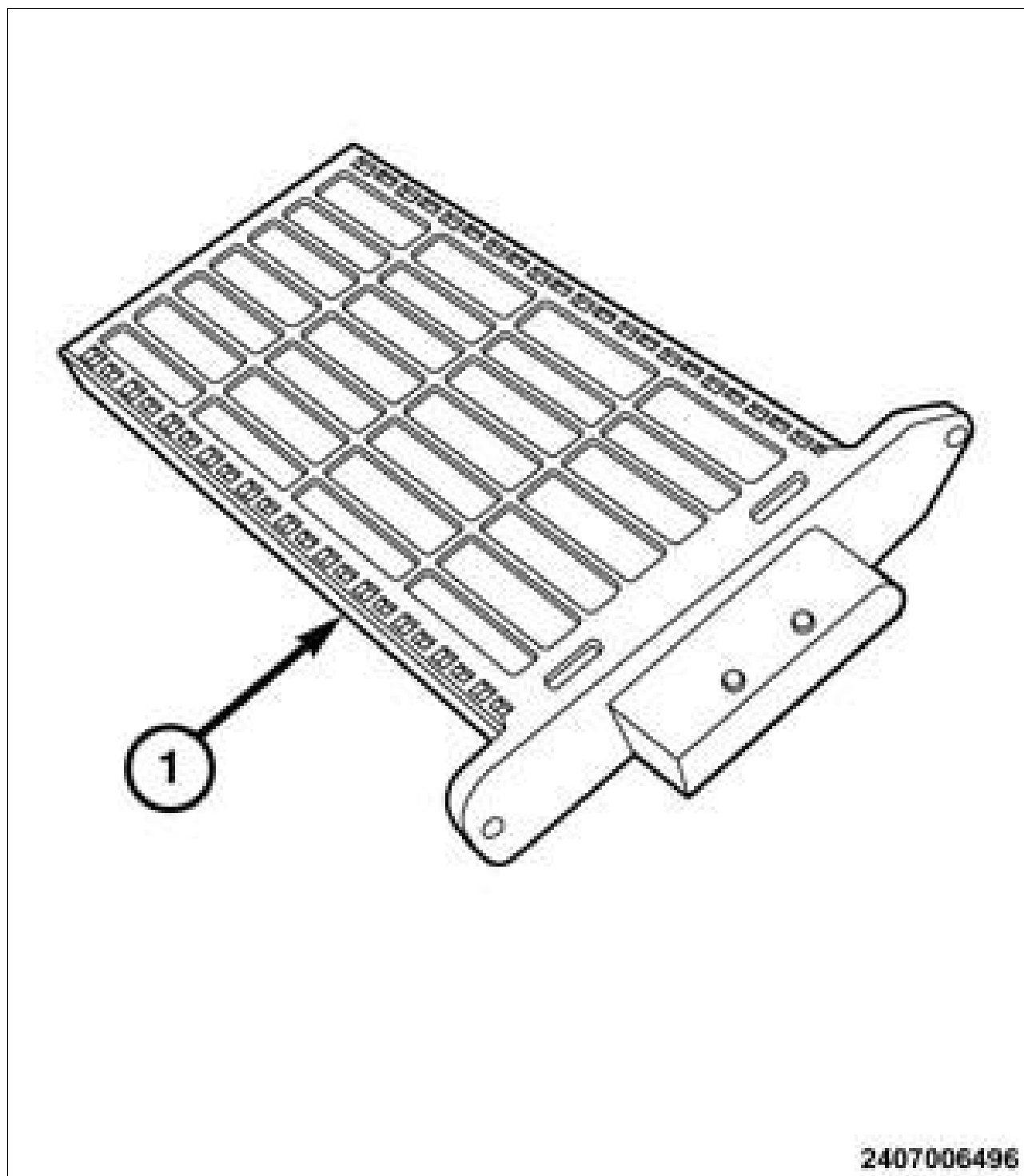


Courtesy of CHRYSLER GROUP, LLC

3. Install the right side center console closeout (1b) to the center console. Be certain all retaining tabs (1a) are fully engaged with the console.
4. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector to the negative battery cable.

CABIN HEATER > UNIT, HEATER > DESCRIPTION AND OPERATION > DESCRIPTION

Fig 1: PTC Heater Unit (Cabin Heater)



Courtesy of CHRYSLER GROUP, LLC

On 1.4L engine equipped vehicles, the climate of the car through the heater assembly can be insufficient due to a cold engine. As an option, an additional system of heating is offered that is activated in the first instants of operation of the engine, according to the temperature reached by the engine coolant.

The system consists of a device for additional heating, located inside the heater assembly: in this device are located two resistors (PTC1 - 250W, and PTC2 - 500W).

The operation of the resistors is controlled by the A/C heater control which activates one or two, thus providing a progressive heating with a maximum power of 750 W, determined by a control logic that depends on:

- The outside temperature below 20°C (68°F)
- The temperature reached by the coolant of the engine about 70°C (158°F)
- The number of revolutions of the engine (which must be greater than 700 rpm)
- The battery voltage (which must not fall below 12.6 V)

The power of one or two resistors is controlled through two relays placed on the HVAC housing:

- Level 1: activation of the first relay (250W)
- Level 2: activation of the second relay (500W)
- Level 3: activation of both relays (750W)

The supply line is protected by two "MAXIFUSE", contained in the box on the positive battery terminal.

The PTC heater unit is accessed for service without removing the instrument panel.

CABIN HEATER > UNIT, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > REMOVAL

WARNING:

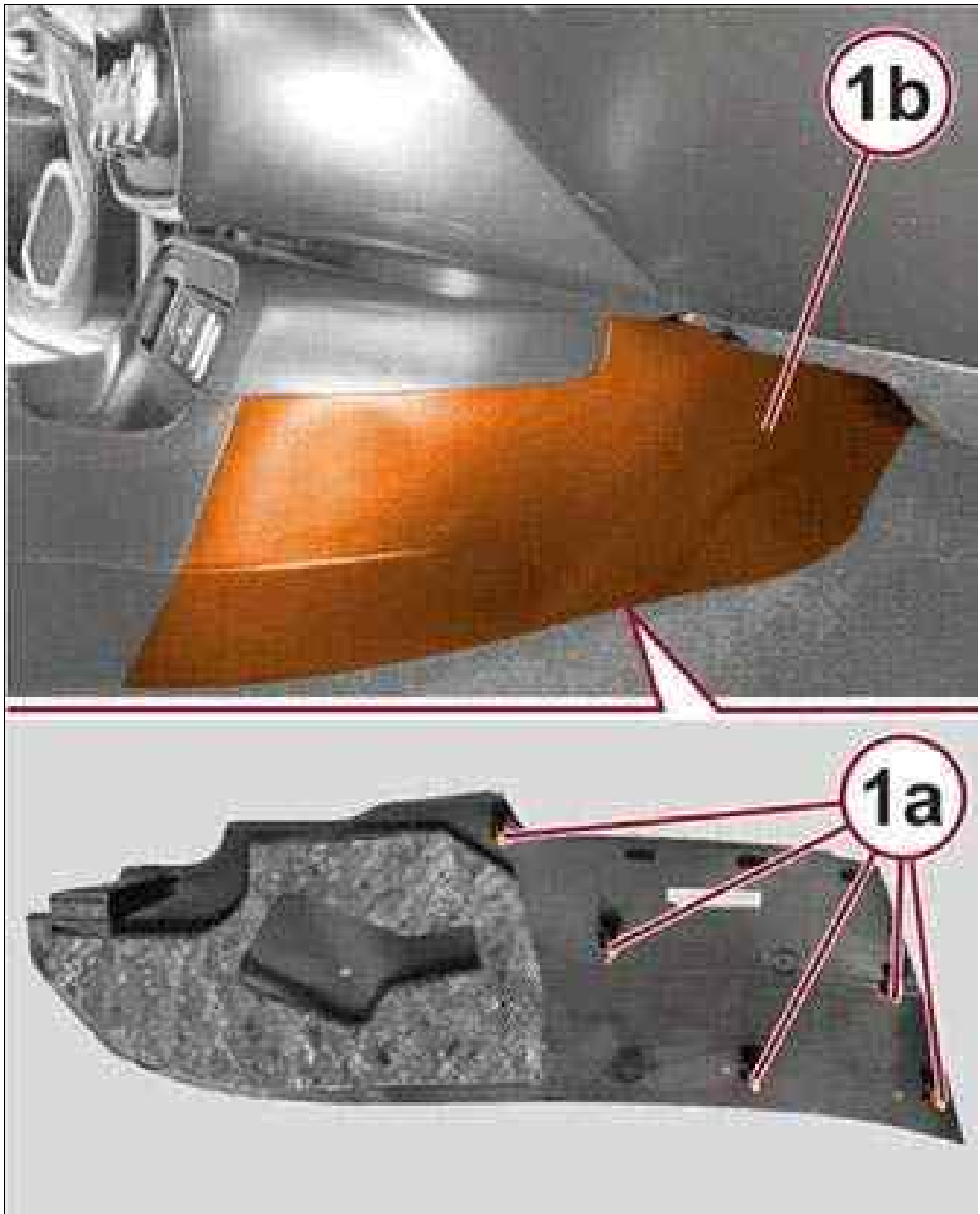
Review the warnings and cautions for this system before performing the procedure. Failure to follow these instructions may result in serious injury or death.

WARNING:

To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbags, airbag curtains, knee blocker, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect the IBS/negative battery cable assembly from the negative battery post, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

1. Disconnect and isolate the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), disconnect the IBS connector first before disconnecting the negative battery cable.

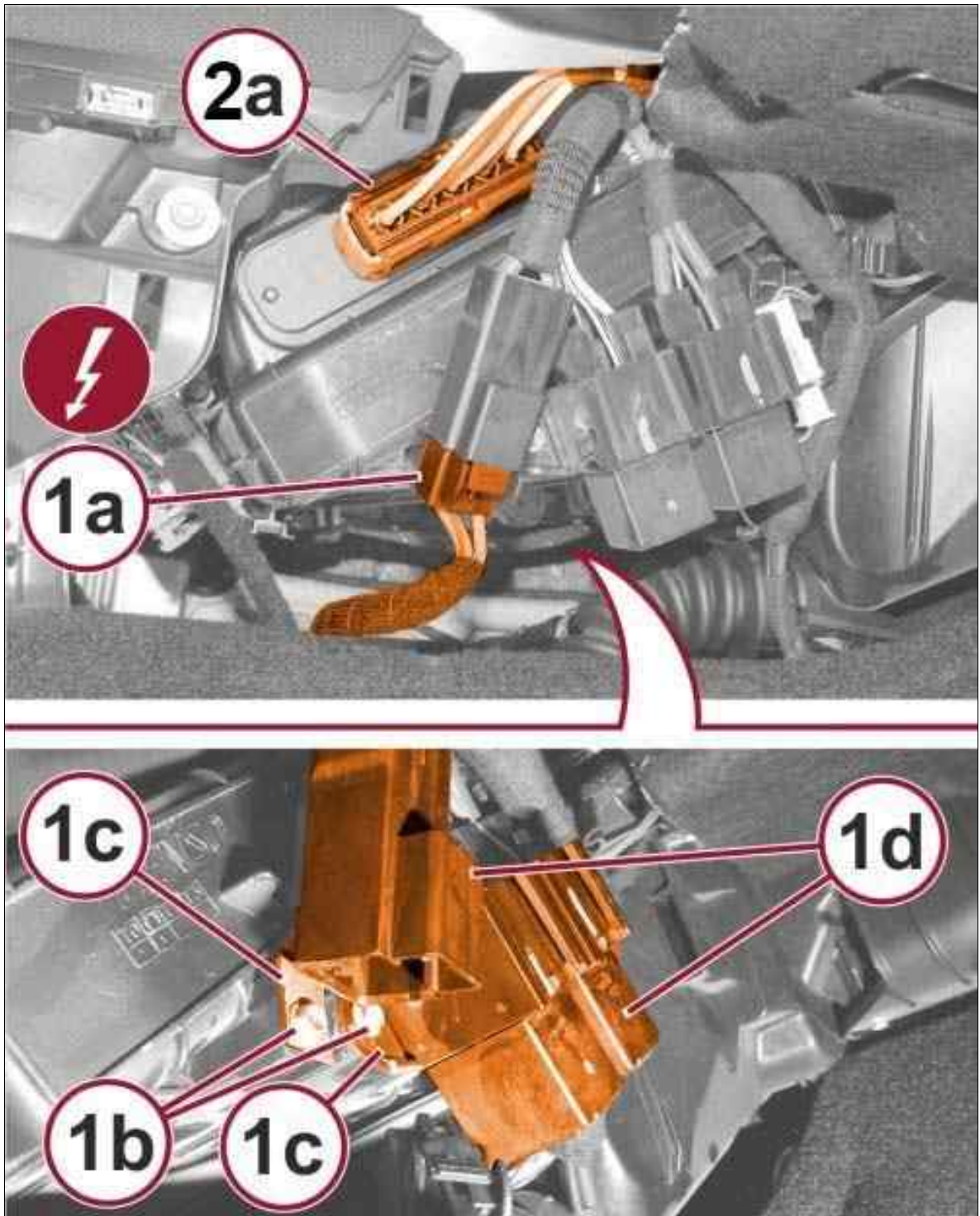
Fig 1: Right Front Center Console Trim Panel & Clips



Courtesy of CHRYSLER GROUP, LLC

2. Remove the right front center console trim panel (1b) by releasing panel retaining clips (1a).

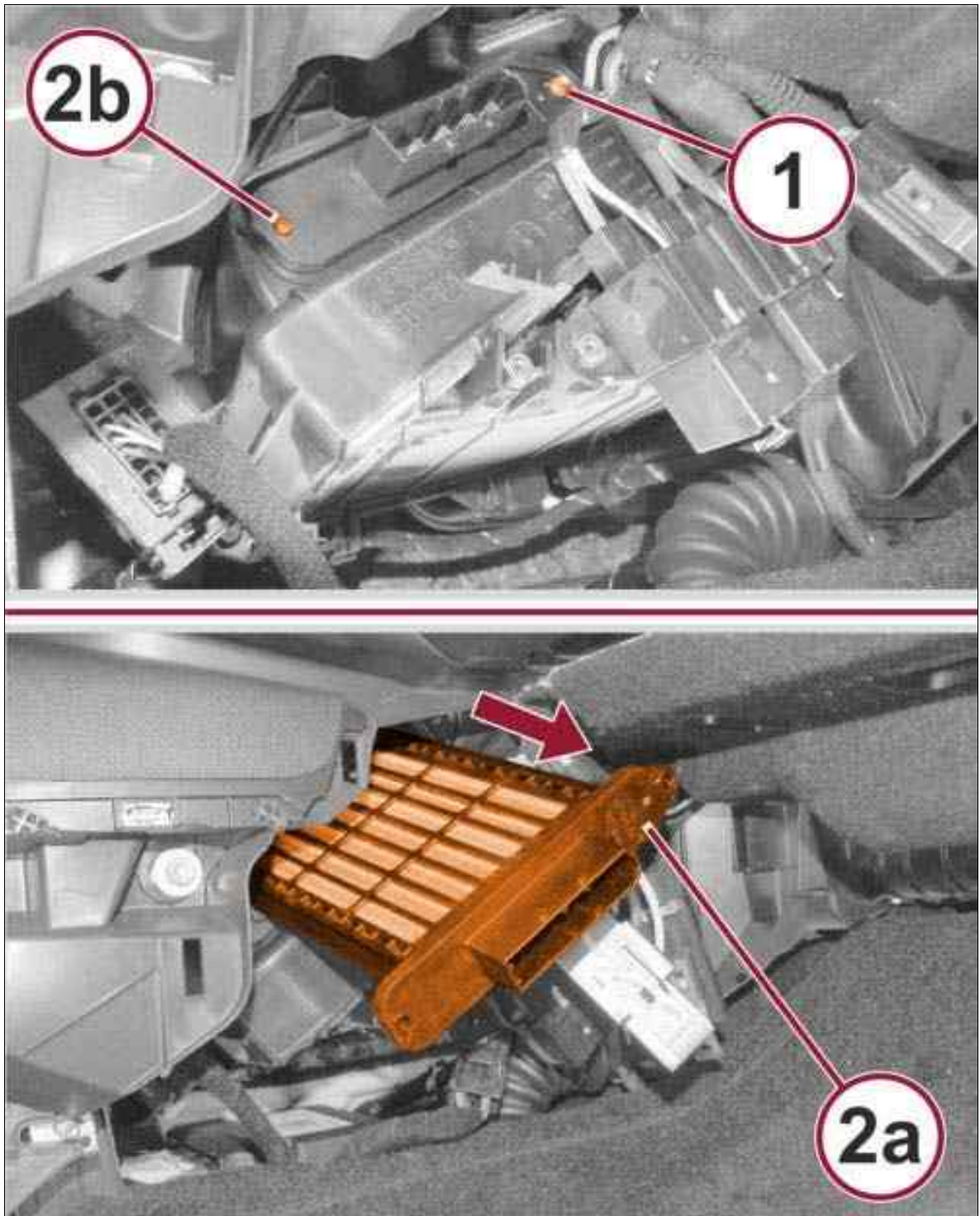
Fig 2: (PTC) Heater (Cabin Heater) Relay, Wire Connectors & Fasteners



Courtesy of CHRYSLER GROUP, LLC

3. Disconnect the wire harness connector (1a) from the positive temperature coefficient (PTC) heater (cabin heater) relay assembly (1d).
4. Remove the screws (1b) from the PTC relay assembly bracket (1c) and position the relays and connector out of the way.
5. Disconnect the PTC heater wire harness connector (2a).

Fig 3: Remove/Install PTC Heater Unit

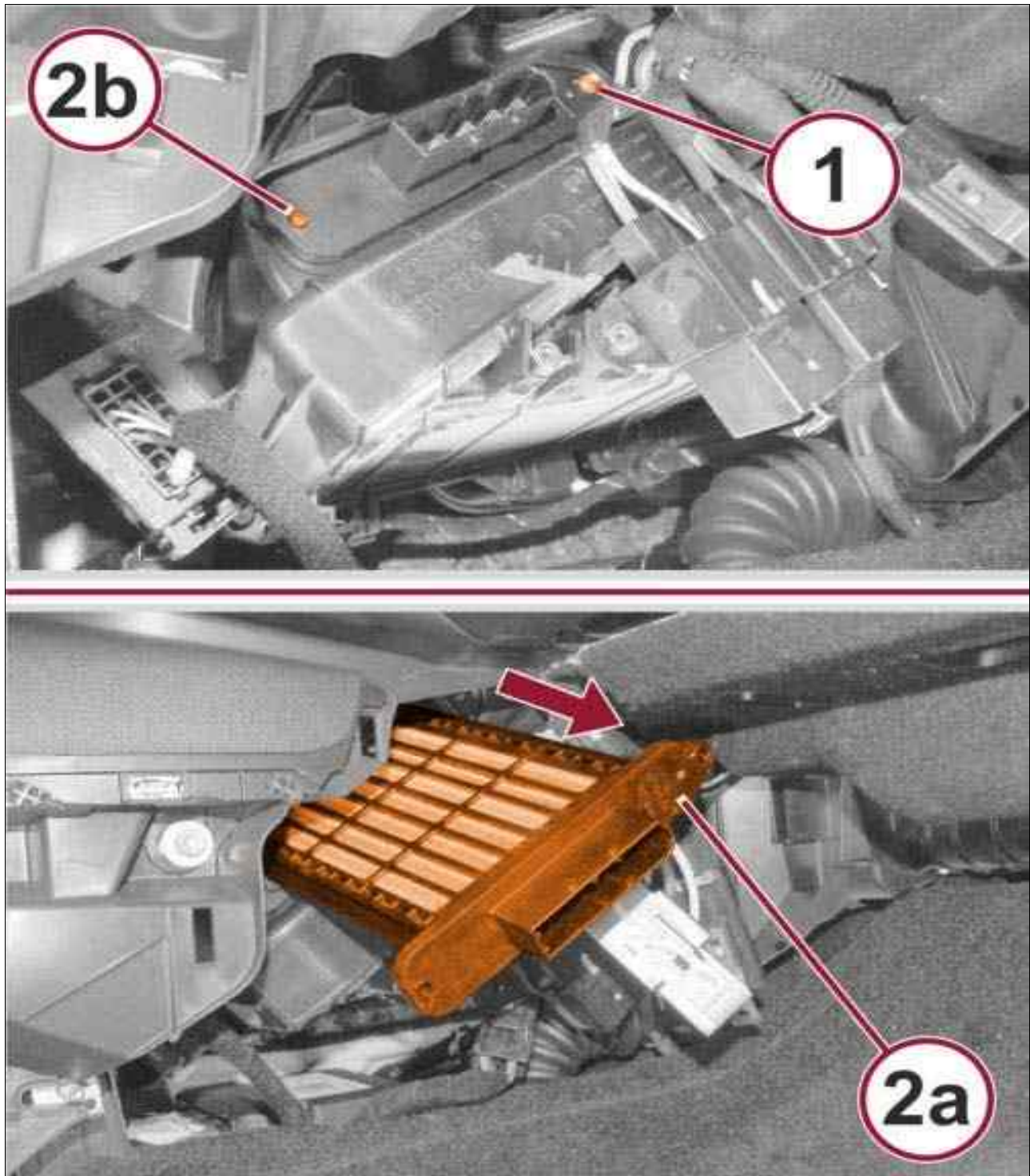


Courtesy of CHRYSLER GROUP, LLC

6. Remove the screw (1) that secures the PTC heater unit (2a) to the HVAC air distribution housing.
7. Carefully remove the PTC heater unit (2a) from the air distribution housing by pulling it straight out of the housing, releasing it from the centering pin (2b).

CABIN HEATER > UNIT, HEATER > REMOVAL AND INSTALLATION > REMOVAL AND INSTALLATION > INSTALLATION

Fig 1: Remove/Install PTC Heater Unit

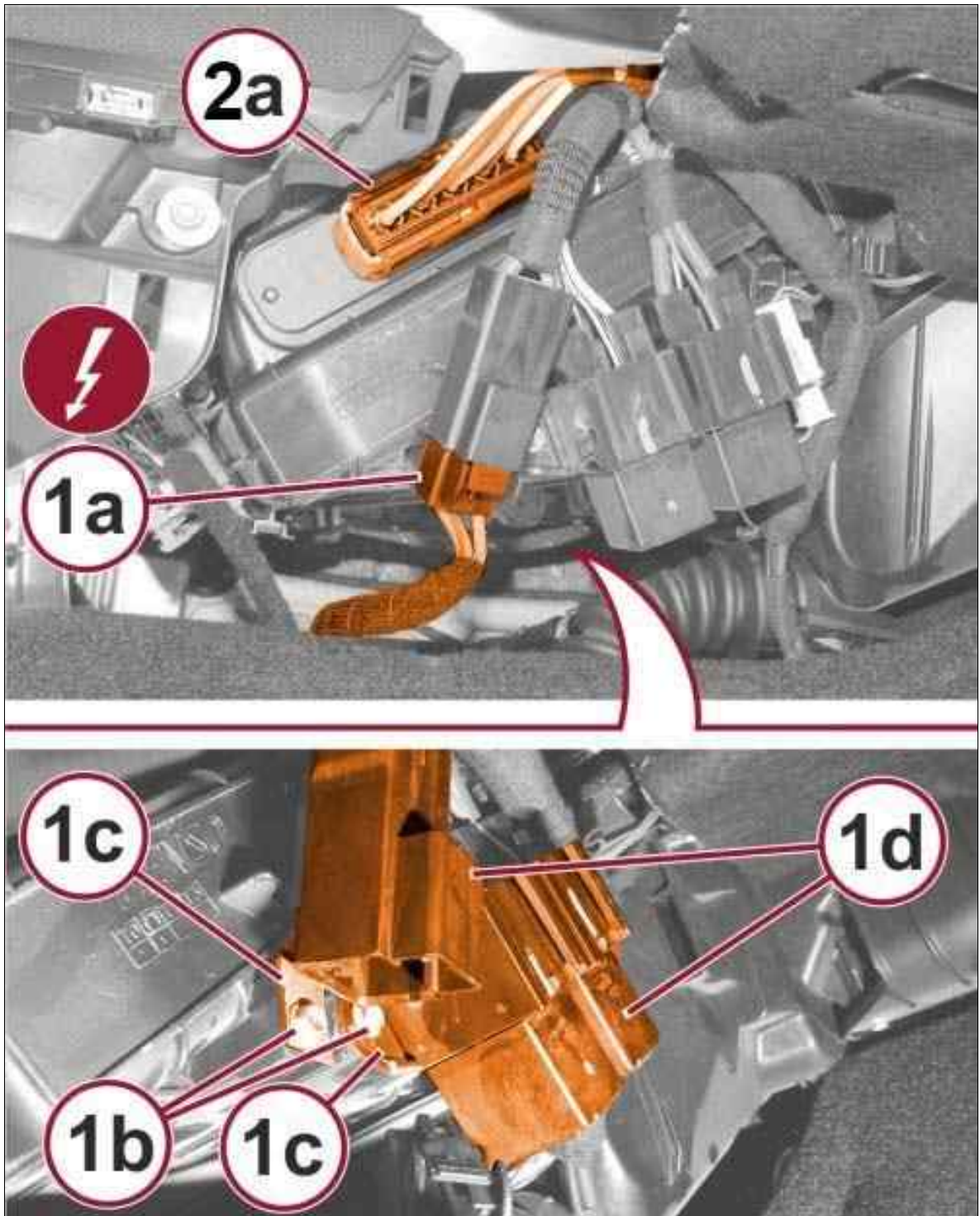


Courtesy of CHRYSLER GROUP, LLC

1. Carefully install the positive temperature coefficient (PTC) heater (cabin heater) unit (2a) into the HVAC air distribution housing. Be certain to engage the heater unit to the centering pin (2b).

2. Install and securely tighten the screw (1) that secures the PTC heater unit to the air distribution housing.

Fig 2: (PTC) Heater (Cabin Heater) Relay, Wire Connectors & Fasteners



Courtesy of CHRYSLER GROUP, LLC

3. Connect the wire harness connector (2a) to the PTC heater unit.
4. Position the PTC relay assembly bracket (1d) to the HVAC air distribution housing and install the screws (1b) for the relay bracket (1c).

5. Connect the wire harness connector (1a) to the PTC heater relay assembly (1d).
6. Install the right front center console trim panel.
7. Connect the negative battery cable. If equipped with an Intelligent Battery Sensor (IBS), connect the IBS connector.