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2024 Nissan Frontier Service and Repair Manual

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Removal & Installation

RPR-001931240

For removal and installation of expansion valve (battery chiller), refer to disassembly and assembly of high-pressure cooler pipe assembly. Refer to [Disassembly & Assembly](#).

CAUTION:

Since it may not operate properly, initialize it when replacing electronic expansion valve (battery chiller). Refer to [Work Procedure](#).

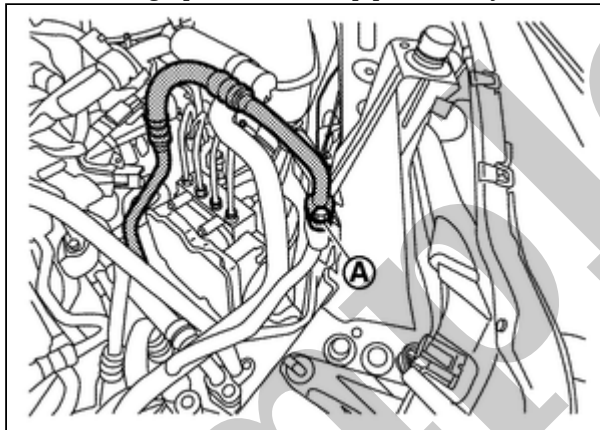
Sample

CAUTION:

Perform lubricant return operation before each refrigeration system disassembly. However, if a large amount of refrigerant or lubricant leak is detected, never perform lubricant return operation. Refer to [Perform Lubricant Return Operation](#).

REMOVAL

- 1 Use a refrigerant collecting equipment (for HFO-1234yf) to discharge the refrigerant. Refer to [Recycle Refrigerant](#).
- 2 Remove electric compressor. Refer to [Removal & Installation](#).
- 3 Disconnect water hoses from battery coolant chiller.
- 4 Remove mounting bolt (A), and then disconnect high-pressure cooler pipe assembly from low-pressure refrigerator pipe assembly.

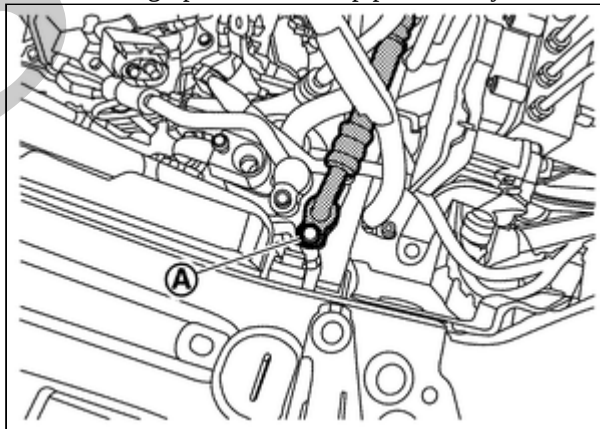


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CAUTION:

Cap or wrap the joint of the A/C piping with suitable material such as vinyl tape to avoid the entry of air.

- 5 Remove low-pressure refrigerator pipe assembly. Refer to [Removal & Installation](#).
- 6 Remove mounting bolt (A), and then disconnect high-pressure cooler pipe assembly from cooler pipe B.

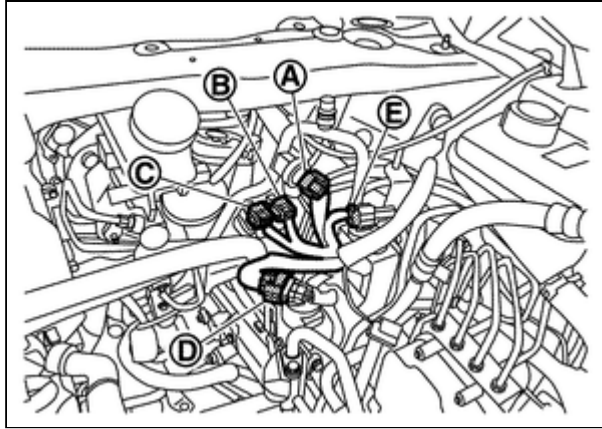


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CAUTION:

Cap or wrap the joint of the A/C piping with suitable material such as vinyl tape to avoid the entry of air.

- 7 Disconnect high-pressure flexible pipe assembly from high-pressure cooler pipe assembly. Refer to [Removal & Installation](#).
- 8 Disconnect harness connectors (A) to (E).



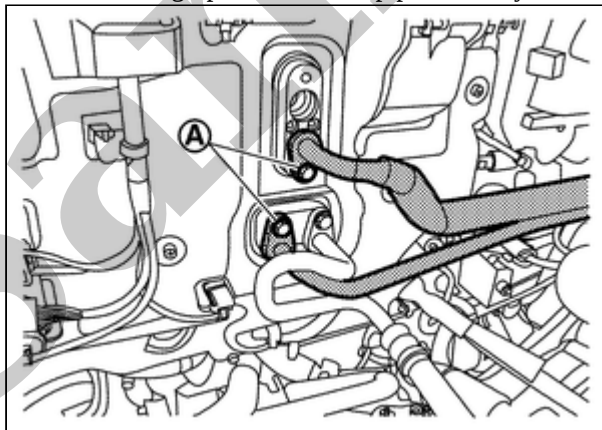
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9 Disengage harness fixing clip (A).



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10 Remove mounting bolts (A), and then disconnect high-pressure cooler pipe assembly from A/C unit assembly.



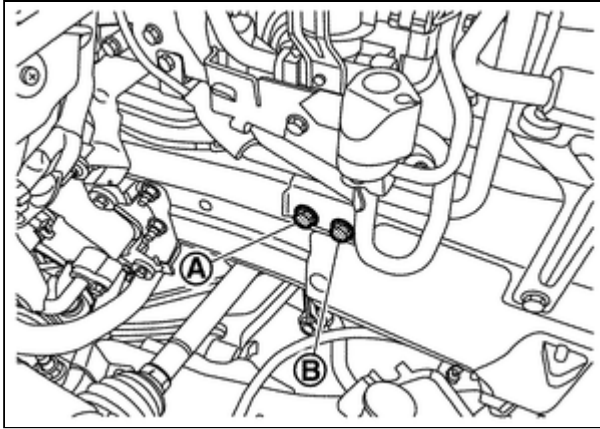
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CAUTION:

Cap or wrap the joint of the A/C piping, inner condenser and evaporator with suitable material such as vinyl tape to avoid the entry of air.

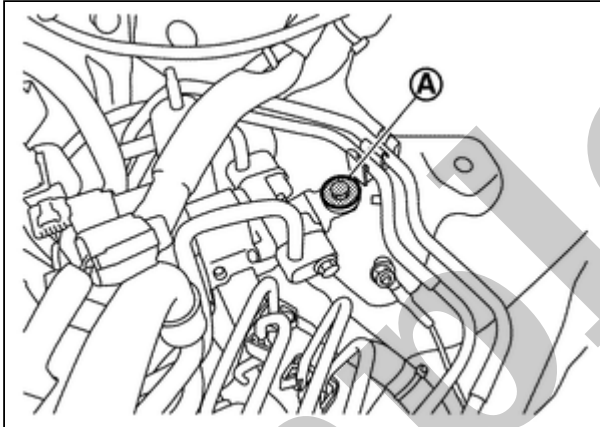
11 Remove mounting bolt, and then move reservoir tank to secure work space. Refer to [RADIATOR : Exploded View](#).

12 Remove the lower mounting bolt (A) of the high-pressure cooler pipe assembly and loosen (B).



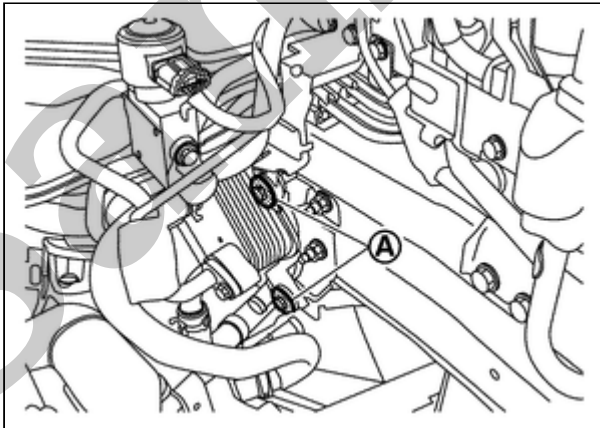
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13 Remove upper mounting bolt (A) of the high pressure cooler pipe assembly.



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14 Remove rear mounting bolts (A) of the high-pressure cooler pipe assembly.

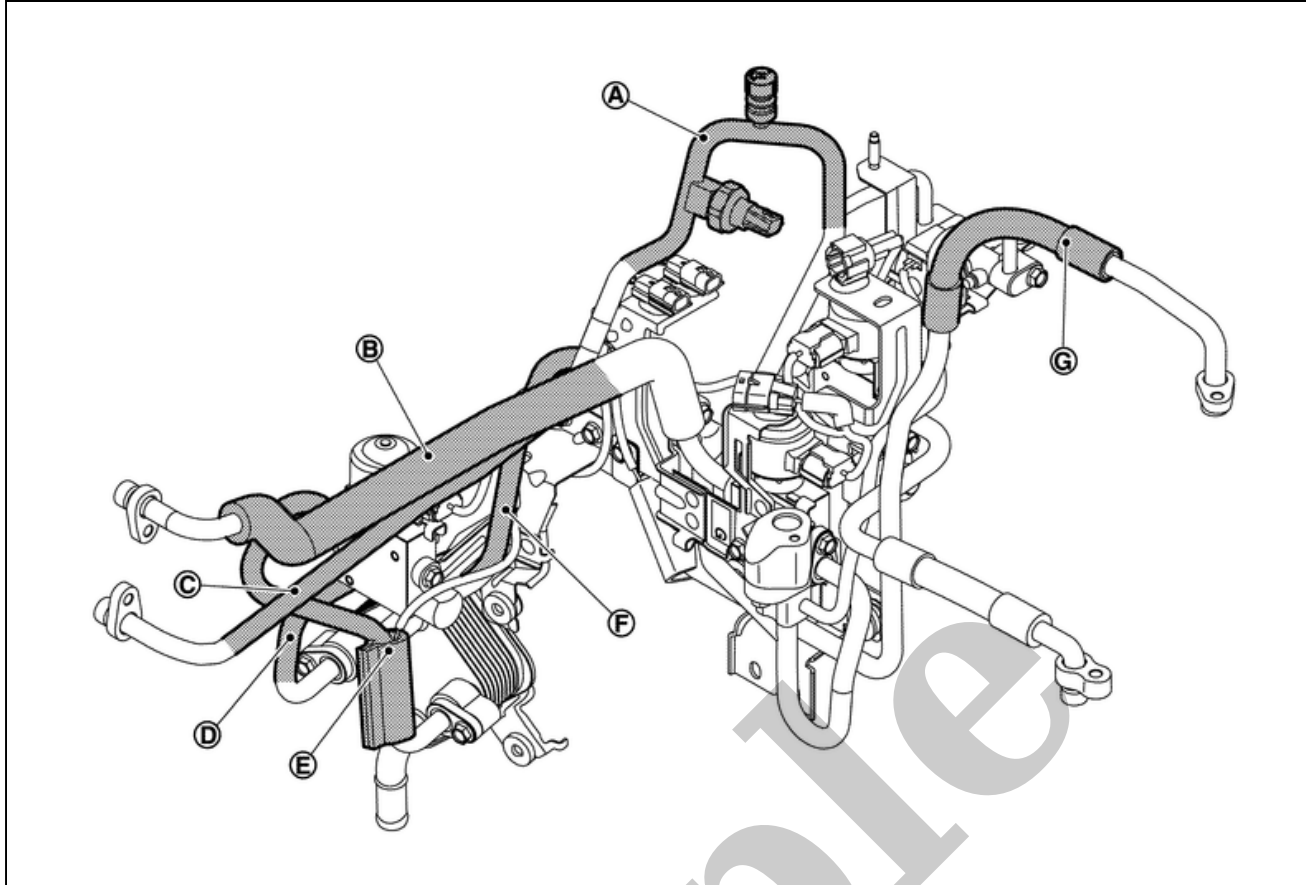


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15 Remove high-pressure cooler pipe from vehicle.

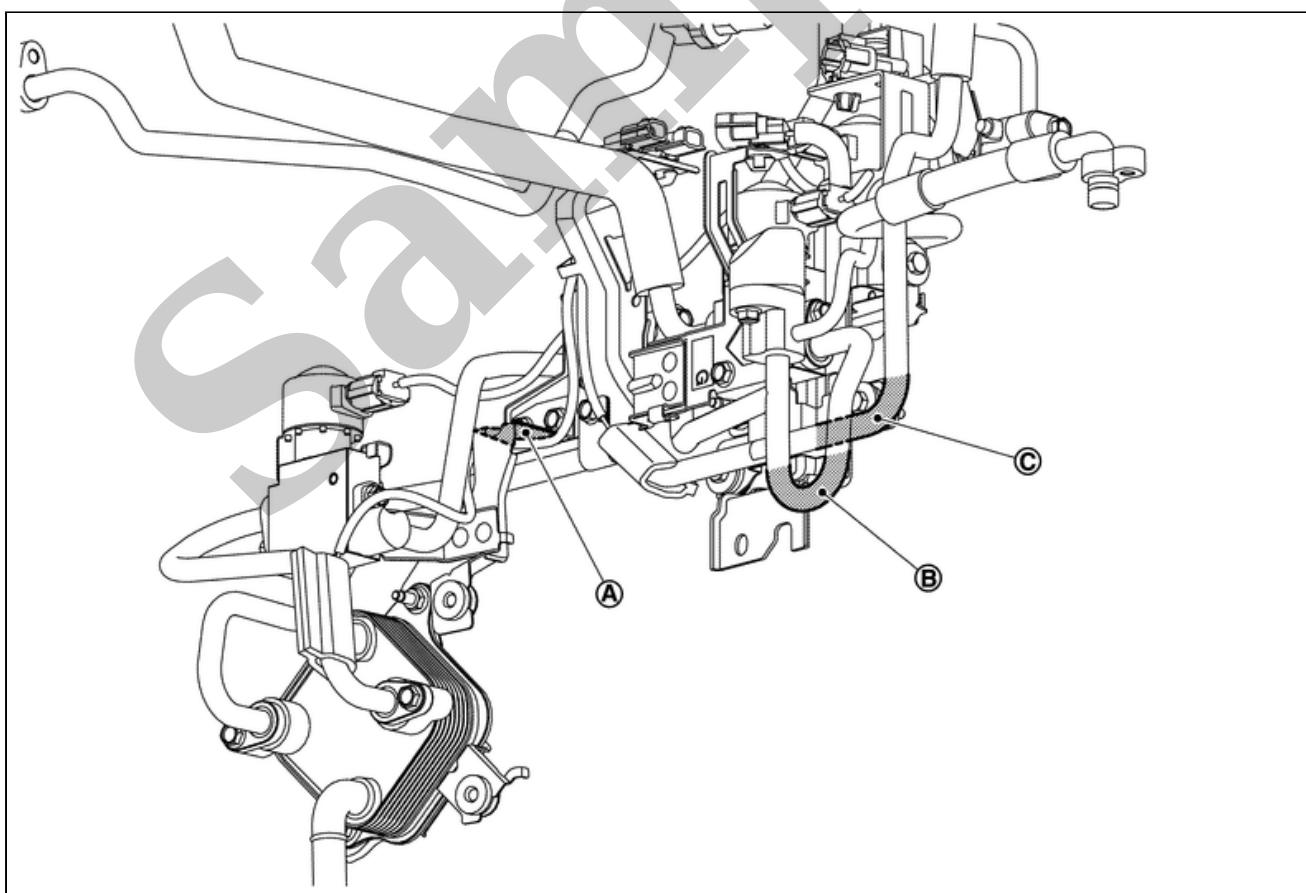
CAUTION:

- When removing, never lift from (A) to (G) in the figure.



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- When removing, support and remove (A), (B) and (C).



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INSTALLATION

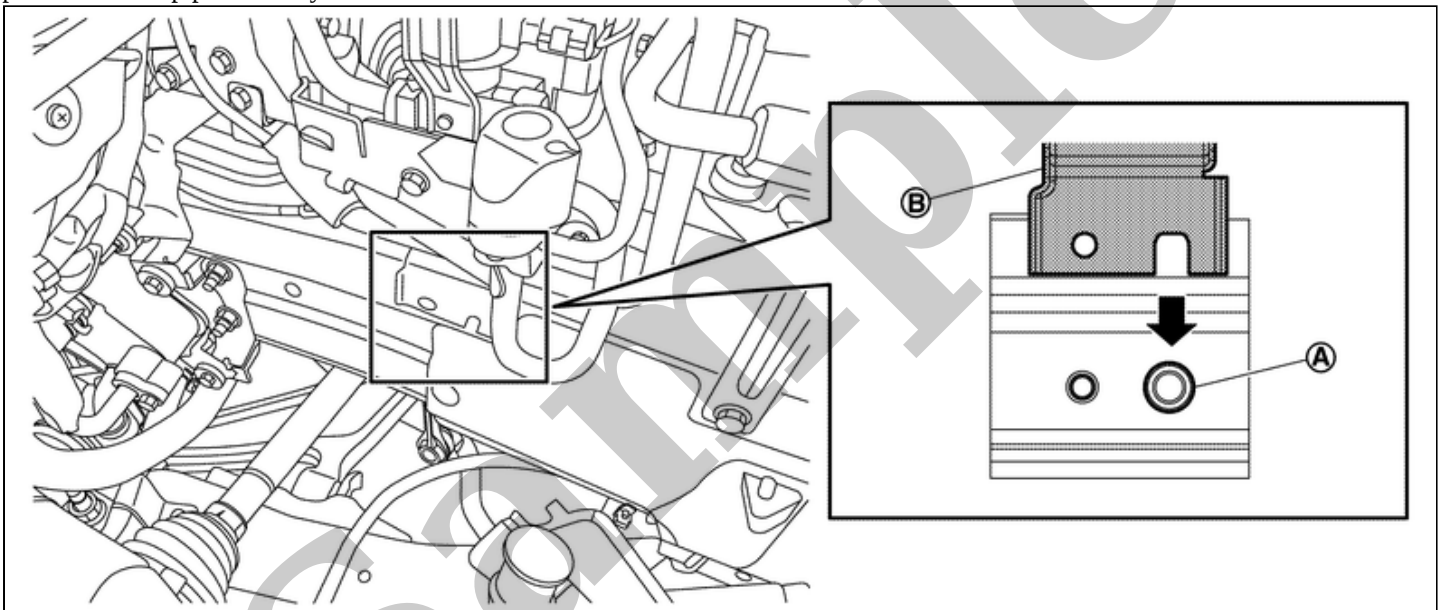
Note the following items, and then install in the reverse order of removal.

CAUTION:

- To prevent degradation in insulation performance, use special electric compressor oil as the compressor oil.
- In order to prevent conventional PAG oil from becoming mixed in, never reuse recovered electric compressor oil and instead always use new oil. The use of oil including the conventional PAG oil may degrade the performance of insulation.
- To prevent performance degradation, never use a fluorescent agent in order to detect refrigerant leakage. Also be careful that a fluorescent agent never enter the oil.
- To prevent leakage of refrigerant, replace the O-ring with a new one. Apply a coat of electric compressor oil to the O-ring prior to installation.
- Use a refrigerant collecting equipment (for HFO-1234yf) to charge the refrigerant. Refer to [Charge Refrigerant](#).
- Perform a check for refrigerant leakage when charging with refrigerant. Refer to [Leak Test](#).

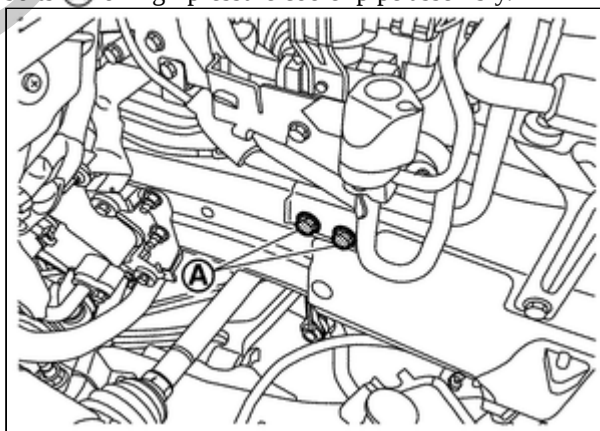
Tighten high-pressure cooler pipe assembly mounting bolts according to the following order.

1 Temporarily attach lower mounting bolt (A) of high-pressure cooler pipe assembly and temporarily place bracket part (B) of high-pressure cooler pipe assembly.



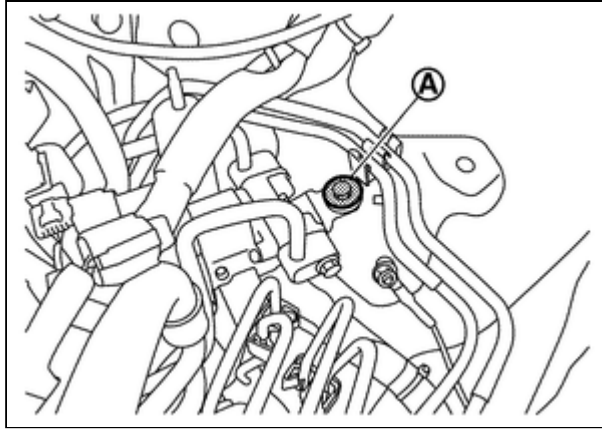
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2 Temporarily tighten lower mounting bolts (A) of high-pressure cooler pipe assembly.



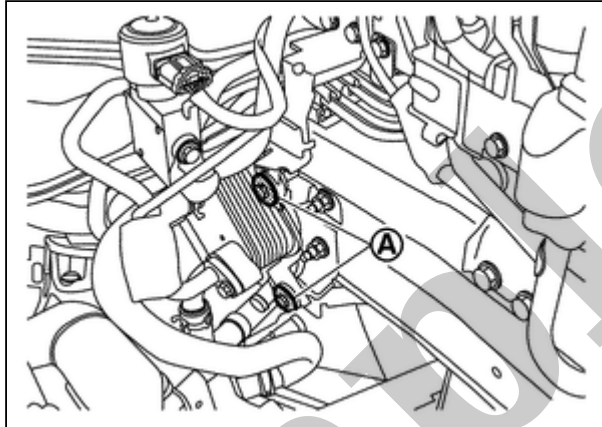
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3 Temporarily tighten upper mounting bolt (A) of high-pressure cooler pipe assembly.



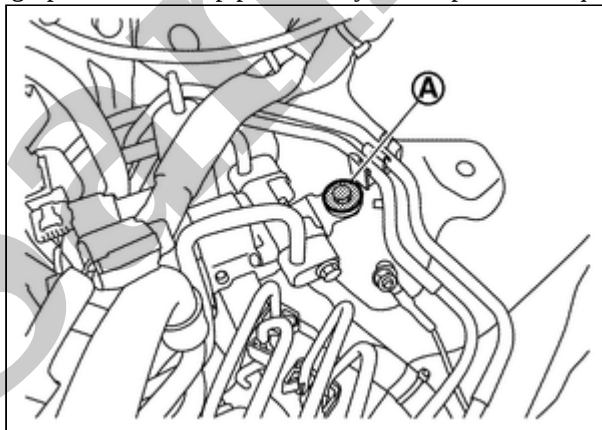
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4 Tighten rear mounting bolts (A) of high-pressure cooler pipe assembly to the specified torque value.



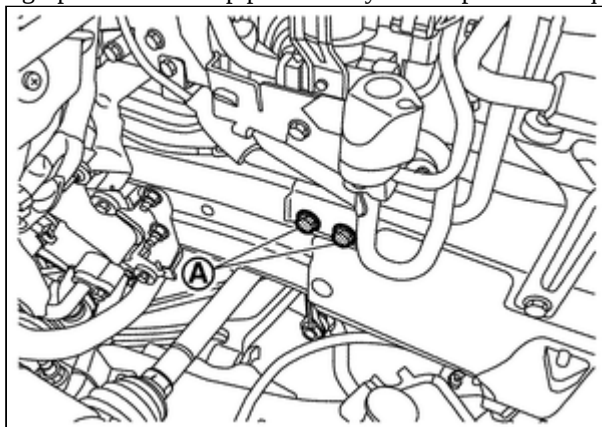
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5 Tighten upper mounting bolt (A) of high-pressure cooler pipe assembly to the specified torque value.



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6 Tighten lower mounting bolts (A) of high-pressure cooler pipe assembly to the specified torque value.

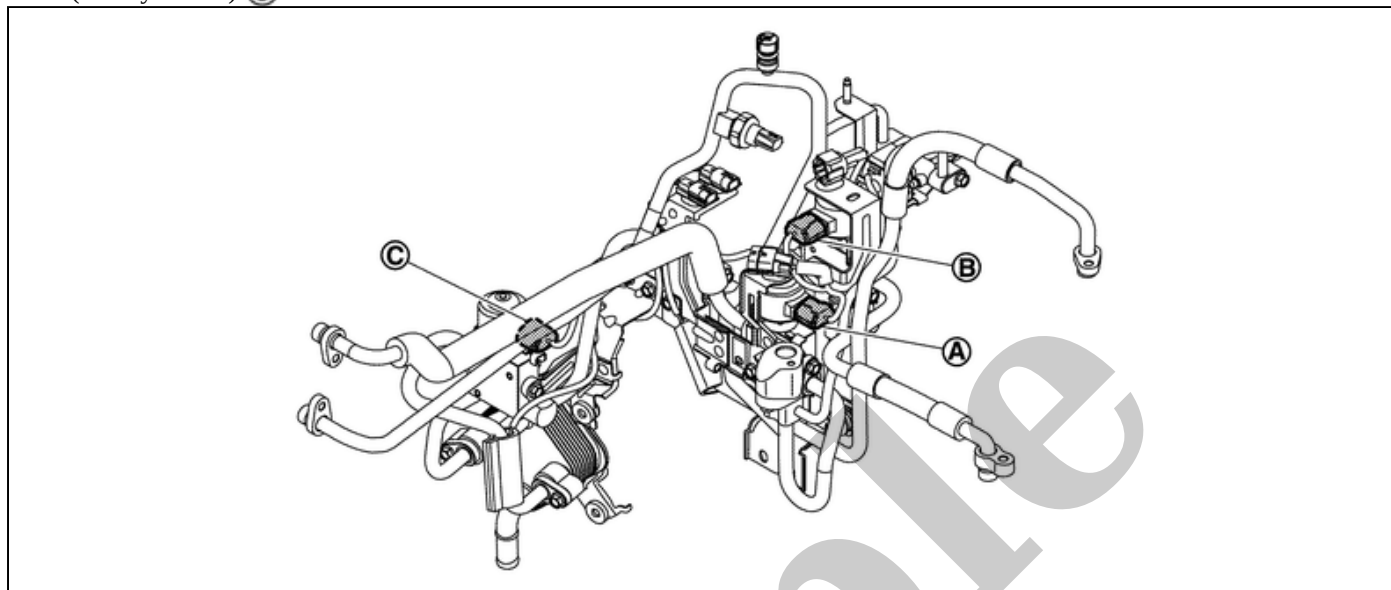


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DISASSEMBLY

1 Remove sub harness.

a Disconnect harness connectors of electric expansion valve (cooler) (A), electric expansion valve (heater) (B) and expansion valve (battery chiller) (C).



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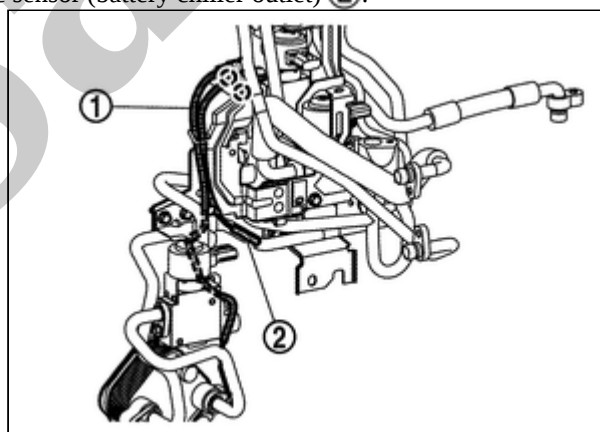
b Remove harness connector fixing clip of the sub-harness from bracket 3, and then remove the sub-harness.

2 Remove refrigerant temperature sensor (battery chiller outlet) and refrigerant temperature sensor (battery chiller inlet).

a Peel foam seal.

b Disengage sensor clip, and then remove sensor from high-pressure cooler pipe.

c Disengage refrigerant temperature sensor (battery chiller outlet) harness connector fixing clip and refrigerant temperature sensor (battery chiller inlet) harness connector fixing clip from bracket 3, and then remove refrigerant temperature sensor (battery chiller inlet) (1) and refrigerant temperature sensor (battery chiller outlet) (2).



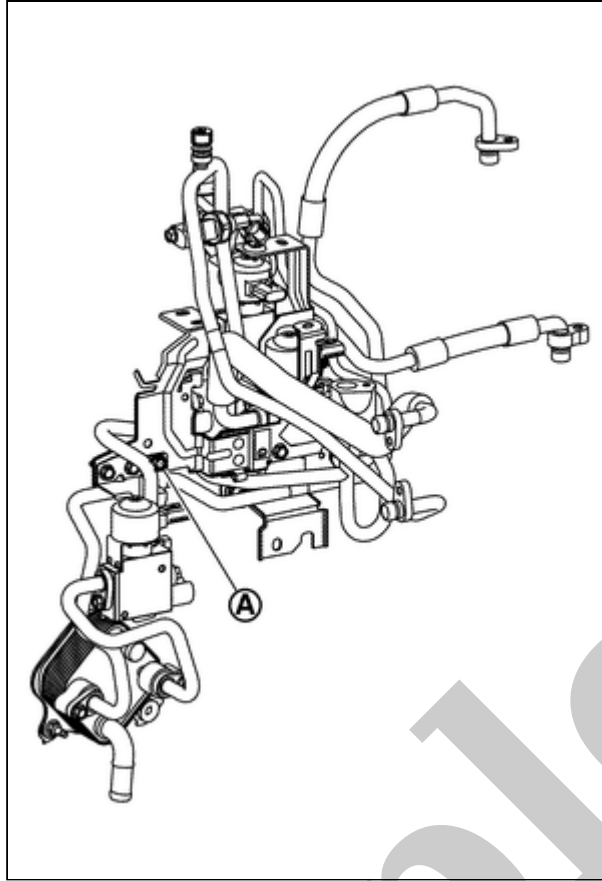
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: Clip

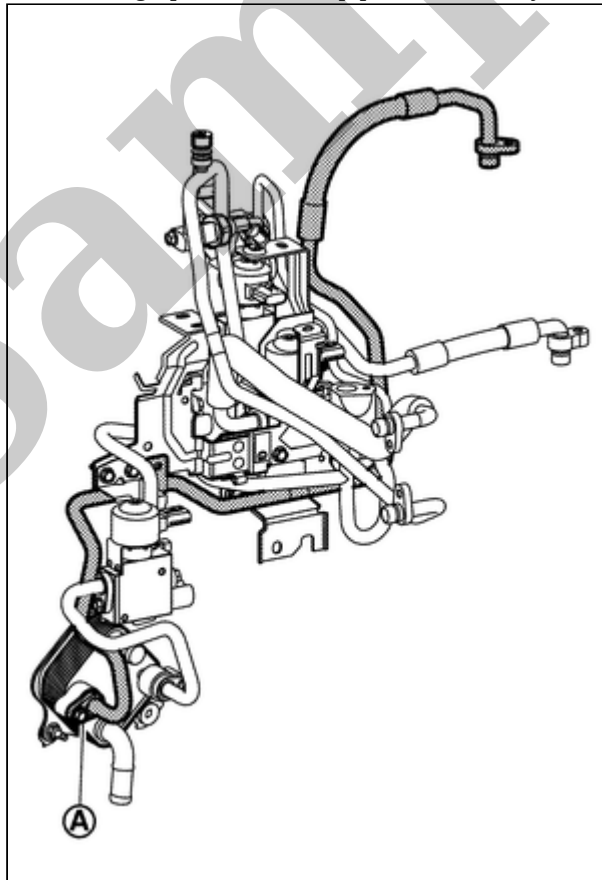
3 Remove high-pressure cooler pipe 7.

a Remove tube clamp mounting bolt (A).



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b Remove mounting bolt (A), and then remove high-pressure cooler pipe 7 from battery coolant chiller.



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4 Remove mounting bolt (A), and then high-pressure cooler pipe 5 from electric expansion valve (heater).