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SECTION **EM**

ENGINE MECHANICAL

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Working Range at a Regular Dealership

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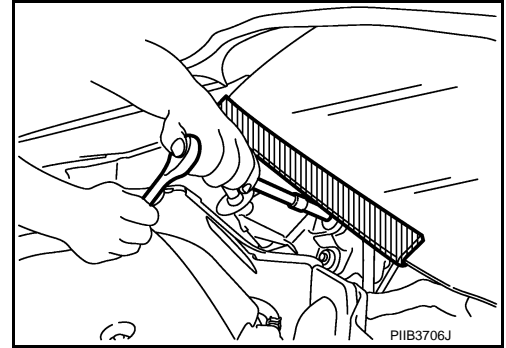
CAUTION:

The service items unmentioned on this manual are recommended to be performed by a GT-R certified NISSAN dealer. Because those service items require special equipment and a GT-R certified technical staff who completed special training.

Precaution for Procedure without Cowl Top Cover

INFOID:000000009162802

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000009162803

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precautions Necessary for Steering Wheel Rotation After Battery Disconnection

INFOID:000000009162804

CAUTION:

PRECAUTIONS

< PRECAUTION >

Comply with the following cautions to prevent any error and malfunction.

- Before removing and installing any control units, first turn the ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

For vehicle with steering lock unit, if the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Turn the ignition switch to ACC position.
(At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.
5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT.

Precaution for Battery Service

INFOID:000000009162805

Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

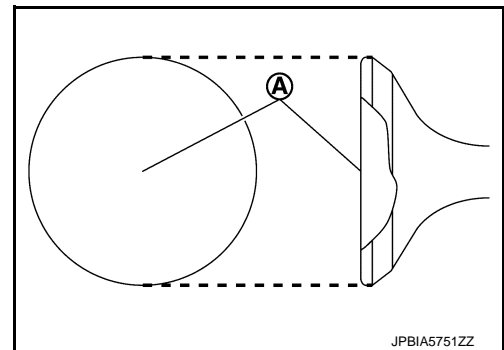
Special Cautions to Ensure the Safe Disposal of Sodium-filled Exhaust Valves

INFOID:000000009162806

Handling and disposal of sodium-filled exhaust valves requires special care and consideration. Under conditions such as breakage with subsequent contact with water, metal sodium which lines the inner portion of exhaust valve will react violently, forming sodium hydroxide and hydrogen which may result in an explosion. Sodium-filled exhaust valve is identified on the top of its stem as shown in illustration.

Identification of sodium-filled exhaust valve

A : Flat surface



DEALER DISPOSAL INSTRUCTIONS

CAUTION:

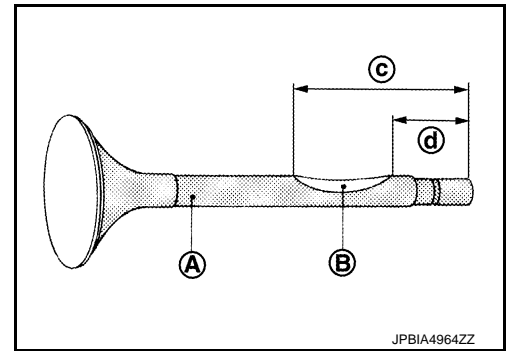
- Use approved shatter-resistant eye protection when performing this procedure.
- Perform this and all subsequent disposal work procedures in an open room, away from flammable liquids. Keep a fire extinguisher, rated at least 10 ABC, in close proximity to the work area.
- Be sure to wear rubber gloves when performing the following operations.
- Make sure the resultant (high alkalinity) waste water does not contact your skin. If the waste water does contact you, wash the contacted area immediately with large quantities of water.
- Dealers should check their respective state and local regulations concerning any chemical treatment or waste water discharge permits which may be required to dispose of the resultant (high alkalinity) waste water.

PRECAUTIONS

< PRECAUTION >

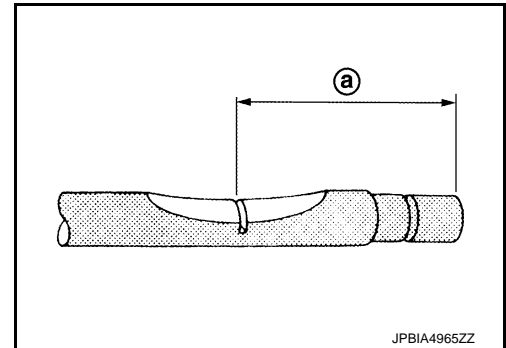
1. Clamp valve stem in a vice.
2. The valve has a specially-hardened surface. To cut through it, first remove a half-round section, approximately 30 mm (1.18 in) long using air-powered grinder until black color is removed and silver color appears.

- A : Black color
- B : Silver color
- c : 47 mm (1.85 in)
- d : 17 mm (0.67 in)

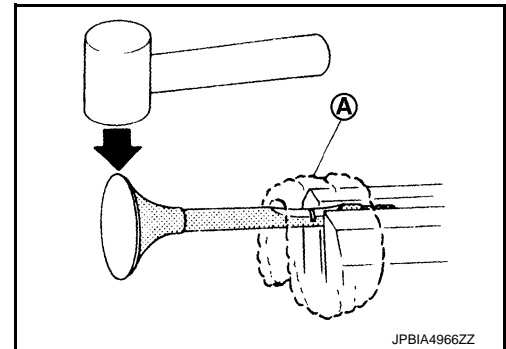


3. Use hacksaw to cut through approximately half the diameter of valve stem. Make the serration at a point 40 mm (1.57 in) from the end of valve stem.

- a : 32 mm (1.26 in)

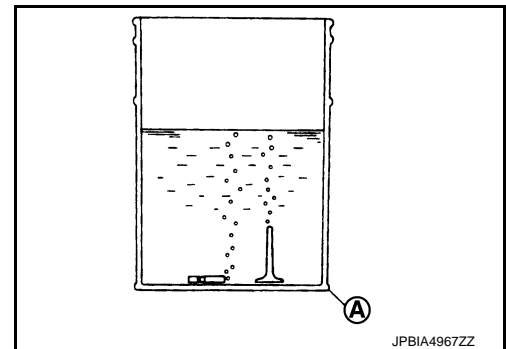


4. Cover the serrated end of the valve with a large shop towel (A). Strike the valve face end with a hammer, separating it into two pieces.
5. Fill a bucket (such as a 20 ℓ oil can) with at least 10 ℓ (2-1/4 Imp gal) of water. Carefully place the already cut (serrated) valves into the water one-at-a-time using a set of large tweezers and quickly move away at least 2.7 m (9 ft).



6. The valves should be placed in a standing position as shown in the illustration to allow complete reaction. After the bubbling action has subsided, additional valves can be placed into the bucket allowing each subsequent chemical reaction to subside. However, no more than 8 valves should be placed in the same 10 ℓ (2-1/4 Imp gal) amount of water. The complete chemical reaction may take as long as 4 to 5 hours. Remove the valves using a set of large tweezers after the chemical reaction has stopped. Afterwards, valves can be disposed as ordinary scrap.

- A : Bucket (Such as 20 ℓ oil can)



General Precautions

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CAUTION:

After finishing servicing, check that all the tools and waste are stored in a customary place.

Precautions For Engine Service

INFOID:000000009162808

DRAINING ENGINE COOLANT

Drain engine coolant and engine oil when the engine is cooled.

PRECAUTIONS

< PRECAUTION >

Definitions of Bank Names

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- In this manual, each bank name is defined as follows:

A : Bank 1 (The conventional right bank)

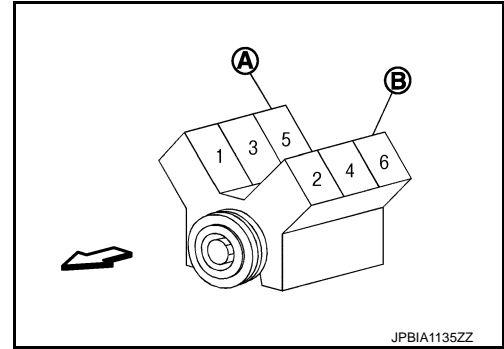
B : Bank 2 (The conventional left bank)

↔ : Engine front

- For cylinder numbers and bank layout, refer to the illustration.

Bank 1 : The bank side including cylinder No. 1
(odd-numbered cylinder side)

Bank 2 : The other bank side of the above
(even-numbered cylinder side)



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DRIVE BELT

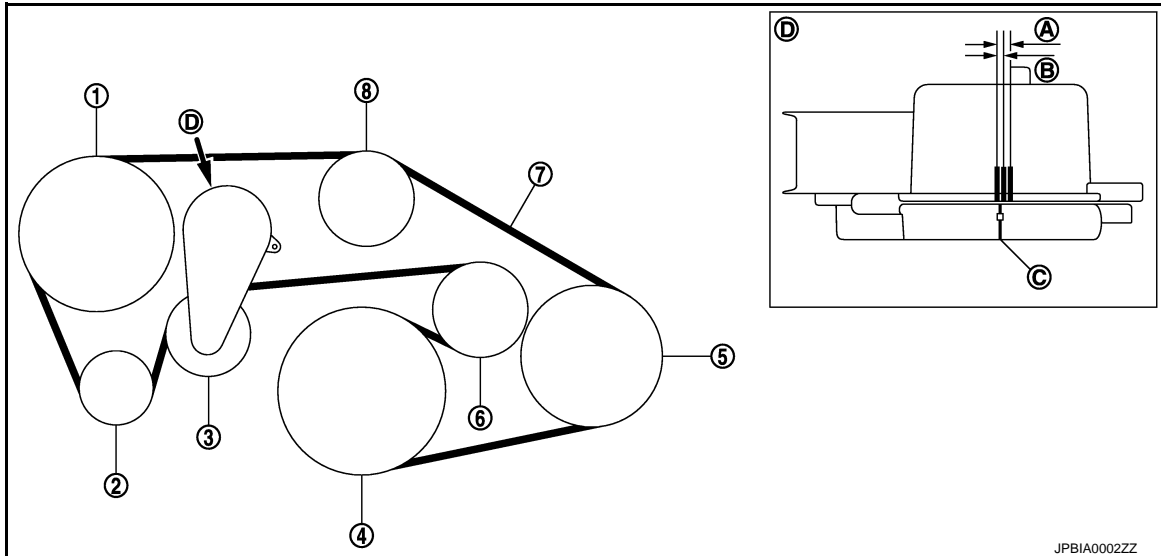
< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

DRIVE BELT

Exploded View

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|----------------------------|---|------------------------------|
| 1. Power steering oil pump | 2. Alternator | 3. Drive belt auto-tensioner |
| 4. Crankshaft pulley | 5. A/C compressor | 6. Idler pulley |
| 7. Drive belt | 8. Idler pulley | |
| A. Possible use range | B. Range when new drive belt is installed | C. Indicator |
| D. View D | | |

Checking

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WARNING:

Be sure to perform this step when engine is stopped.

- Check that the indicator (C) (notch on fixed side) of drive belt auto-tensioner is within the possible use range (A).

NOTE:

- Check the drive belt auto-tensioner indication when the engine is cold.
- When new drive belt is installed, the indicator (notch on fixed side) should be within the range (B) in the figure.
- Visually check entire drive belt for wear, damage or cracks.
- If the indicator (notch on fixed side) is out of the possible use range or belt is damaged, replace drive belt.

AIR CLEANER FILTER

< PERIODIC MAINTENANCE >

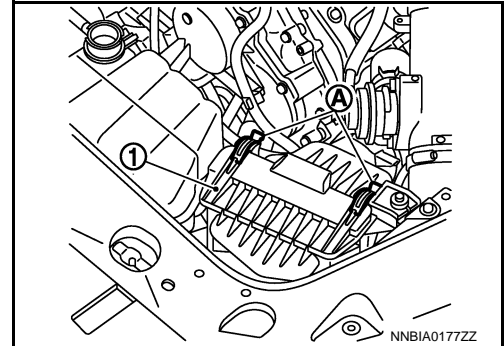
AIR CLEANER FILTER

Removal and Installation

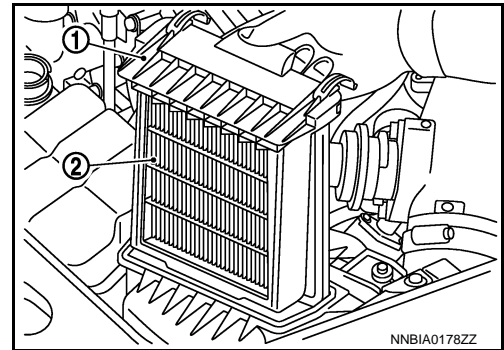
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REMOVAL

1. Unhook clips (A) and remove holder (1) from air cleaner case.



2. Remove air cleaner filter (2) from holder (1).



INSTALLATION

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

- Install the air cleaner filter by aligning the seal with the notch of air cleaner case.

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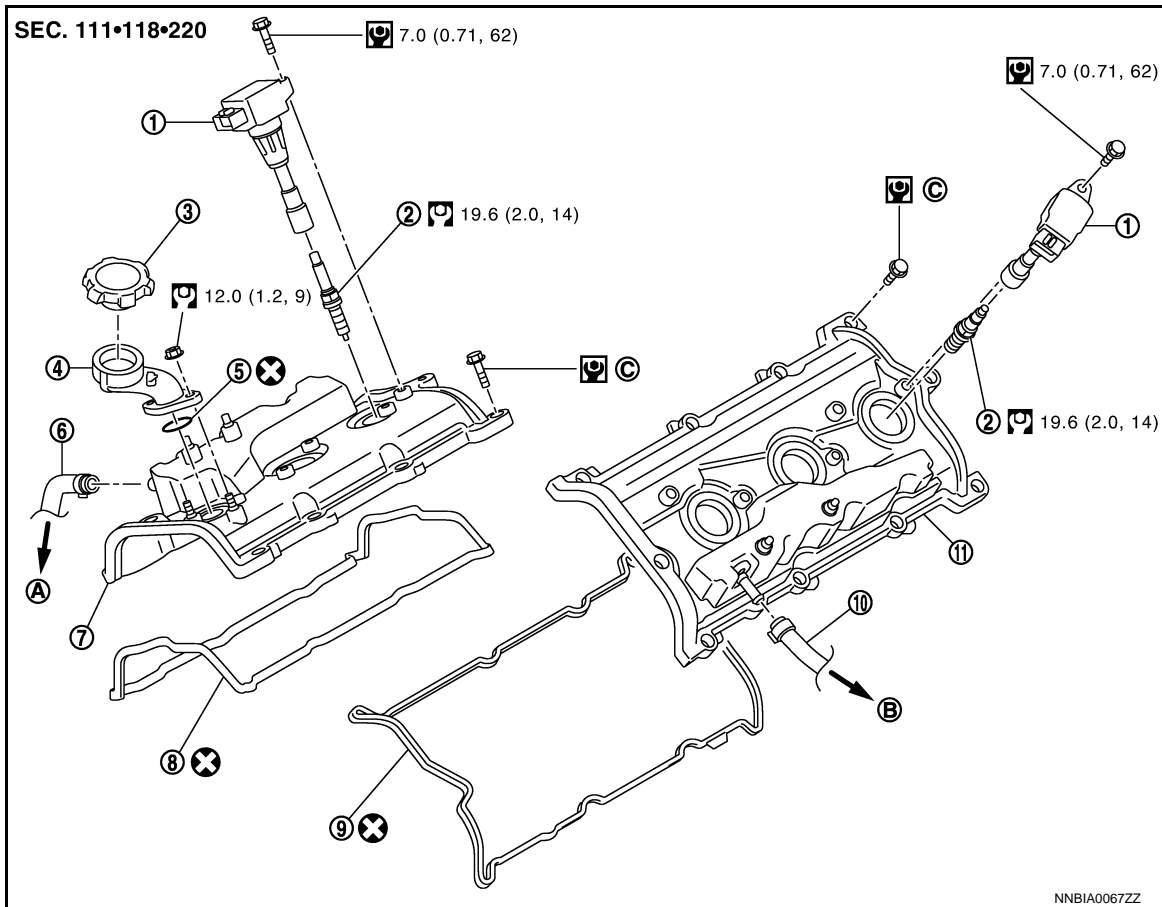
SPARK PLUG

< PERIODIC MAINTENANCE >

SPARK PLUG

Exploded View

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- | | | |
|-------------------------------|---------------------------------|--|
| 1. Ignition coil | 2. Spark plug | 3. Oil filler cap |
| 4. Oil filler tube | 5. O-ring | 6. Fresh air hose |
| 7. Rocker cover (bank 1) | 8. Rocker cover gasket (bank 1) | 9. Rocker cover gasket (bank 2) |
| 10. Fresh air hose | 11. Rocker cover (bank 2) | |
| A. To fresh air tube (bank 1) | B. To fresh air tube (bank 2) | C. This work is recommended to be performed by GT-R certified NISSAN dealer. |

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

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REMOVAL

1. Remove engine cover with power tool. Refer to [EM-10, "Exploded View"](#).
2. Remove intake manifold collector. Refer to [EM-17, "Exploded View"](#).
CAUTION:
Mark the parts with paint in advance of the reinstallation to prevent misalignment between the intake manifold collector and intake manifold.
3. Remove ignition coil.

SPARK PLUG

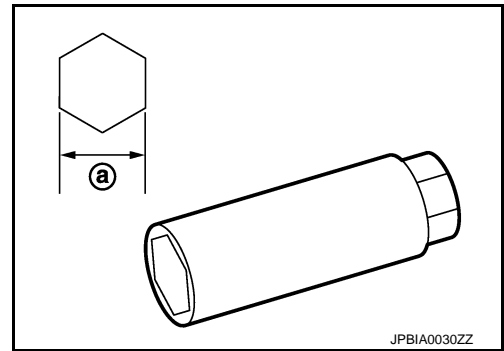
< PERIODIC MAINTENANCE >

- Remove spark plug with a spark plug wrench (commercial service tool).

a : 14 mm (0.55 in)

CAUTION:

Never drop or shock spark plug.



INSTALLATION

Installation is the reverse order of removal.

Inspection

INFOID:000000009162822

INSPECTION AFTER REMOVAL

Use the standard type spark plug for normal condition.

Spark plug (Standard type) : Refer to [EM-28, "Spark Plug"](#).

CAUTION:

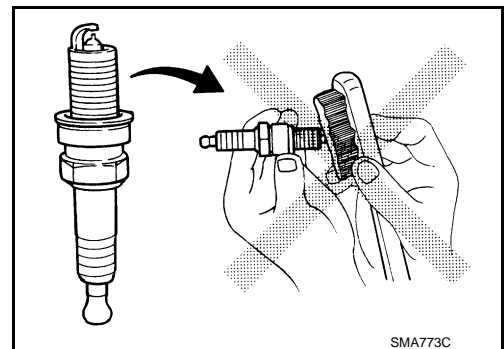
- Never drop or shock spark plug.
- Never use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure:

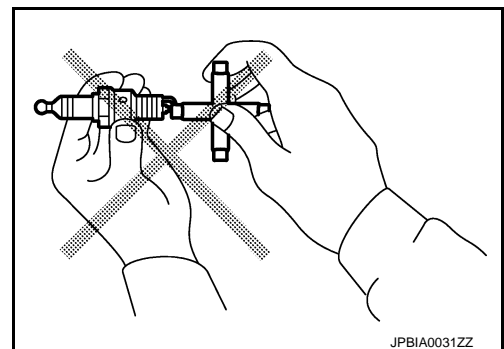
Less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time:

Less than 20 seconds



- Measure spark plug gap. When it exceeds the limit, replace spark plug even if it is within the specified replacement mileage. Refer to [EM-28, "Spark Plug"](#).
- Spark plug gap adjustment is not required between replacement intervals.



ENGINE COVER

< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

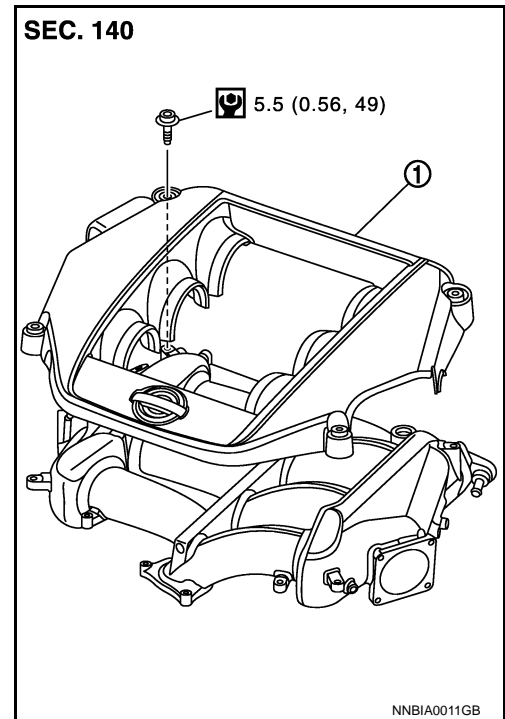
ENGINE COVER

Exploded View

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1. Engine room cover

Refer to [GI-4, "Components"](#) for symbols in the figure.



Removal and Installation

INFOID:000000009162826

Removal

Remove engine cover with the following cares.

CAUTION:

- Perform this step when the engine is cold.
- Never damage engine cover.
- Wipe out oil with wasted as soon as possible whenever necessary.
- Never exert pressure by hand on the surface of engine cover.

Installation

Install engine cover with the following cares.

CAUTION:

- Never damage engine cover.
- Never get harnesses and hoses caught between engine cover and intake manifold collector.
- Wipe out oil with wasted as soon as possible whenever necessary.
- Never exert pressure by hand on the surface of engine cover.

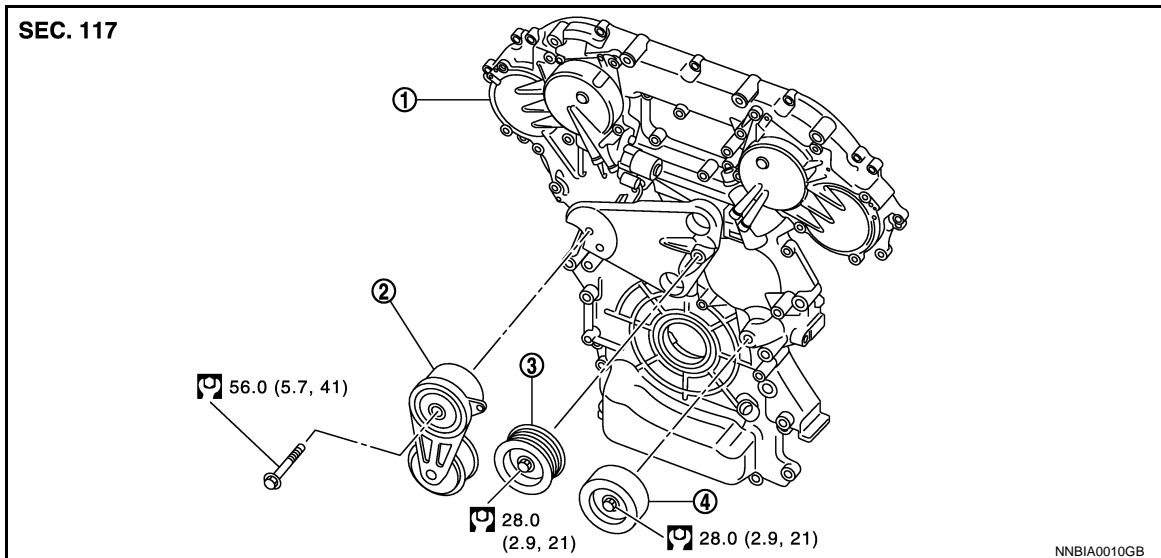
DRIVE BELT AUTO TENSIONER AND IDLER PULLEY

< REMOVAL AND INSTALLATION >

DRIVE BELT AUTO TENSIONER AND IDLER PULLEY

Exploded View

INFOID:000000009162827



1. Front timing chain case
2. Drive belt auto-tensioner
3. Idler pulley
4. Idler pulley

Refer to [GI-4, "Components"](#) for symbols in the figure.

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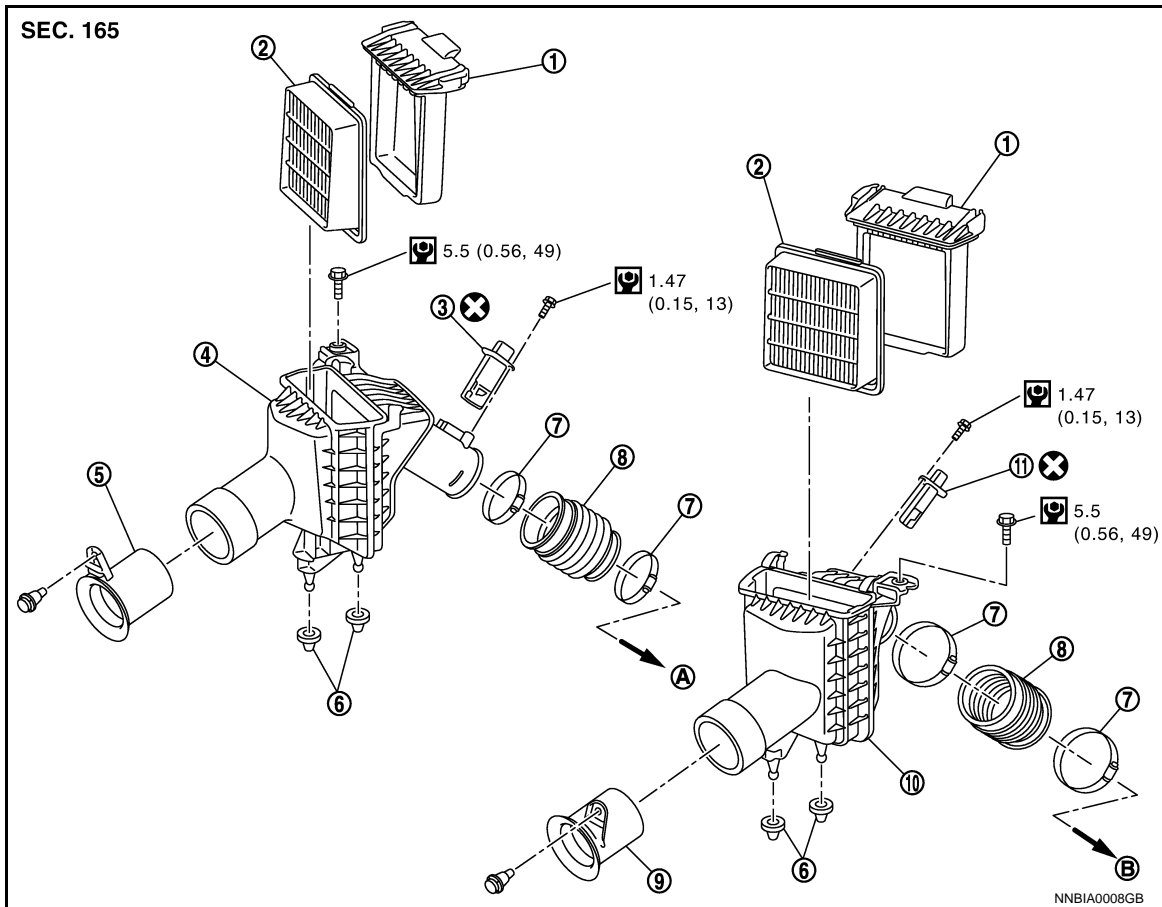
AIR CLEANER AND AIR DUCT

< REMOVAL AND INSTALLATION >

AIR CLEANER AND AIR DUCT

Exploded View

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- | | | |
|--|--|----------------------------------|
| 1. Holder | 2. Air cleaner filter | 3. Mass air flow sensor (bank 1) |
| 4. Air cleaner case (bank 1) | 5. Dust side duct (bank 1) | 6. Grommet |
| 7. Clamp | 8. Air duct | 9. Dust side duct (bank 2) |
| 10. Air cleaner case (bank 2) | 11. Mass air flow sensor (bank 2) | |
| A. To exhaust manifold and turbocharger (bank 1) | B. To exhaust manifold and turbocharger (bank 2) | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

INFOID:000000009162830

REMOVAL

NOTE:

Mass air flow sensor is removable under the car-mounted condition.

1. Disconnect mass air flow sensor harness connector.
2. Remove radiator cover. (This work is recommended to be performed by GT-R certified NISSAN dealer.)
3. Remove dust side duct.
4. Disconnect ground cable at front timing chain case side.
5. Remove recirculation pipe and air inlet hose. Refer to [EM-14, "Exploded View"](#).
6. Remove air cleaner case with mass air flow sensor and air duct, disconnecting each joints.
 - Mark with paint for a reference purpose before removal.
7. Remove mass air flow sensor from air cleaner case, if necessary.

CAUTION:

Mass air flow sensor is non-reusable. Never mass flow sensor remove unless this is required.

AIR CLEANER AND AIR DUCT

< REMOVAL AND INSTALLATION >

INSTALLATION

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

- Align marks. Attach each joint. Screw clamps firmly.

Clamp tightening torque : **4.5 N·m (0.46 kg-m, 40 in-lb)**

CAUTION:

Never use air tool or power tools for tightening.

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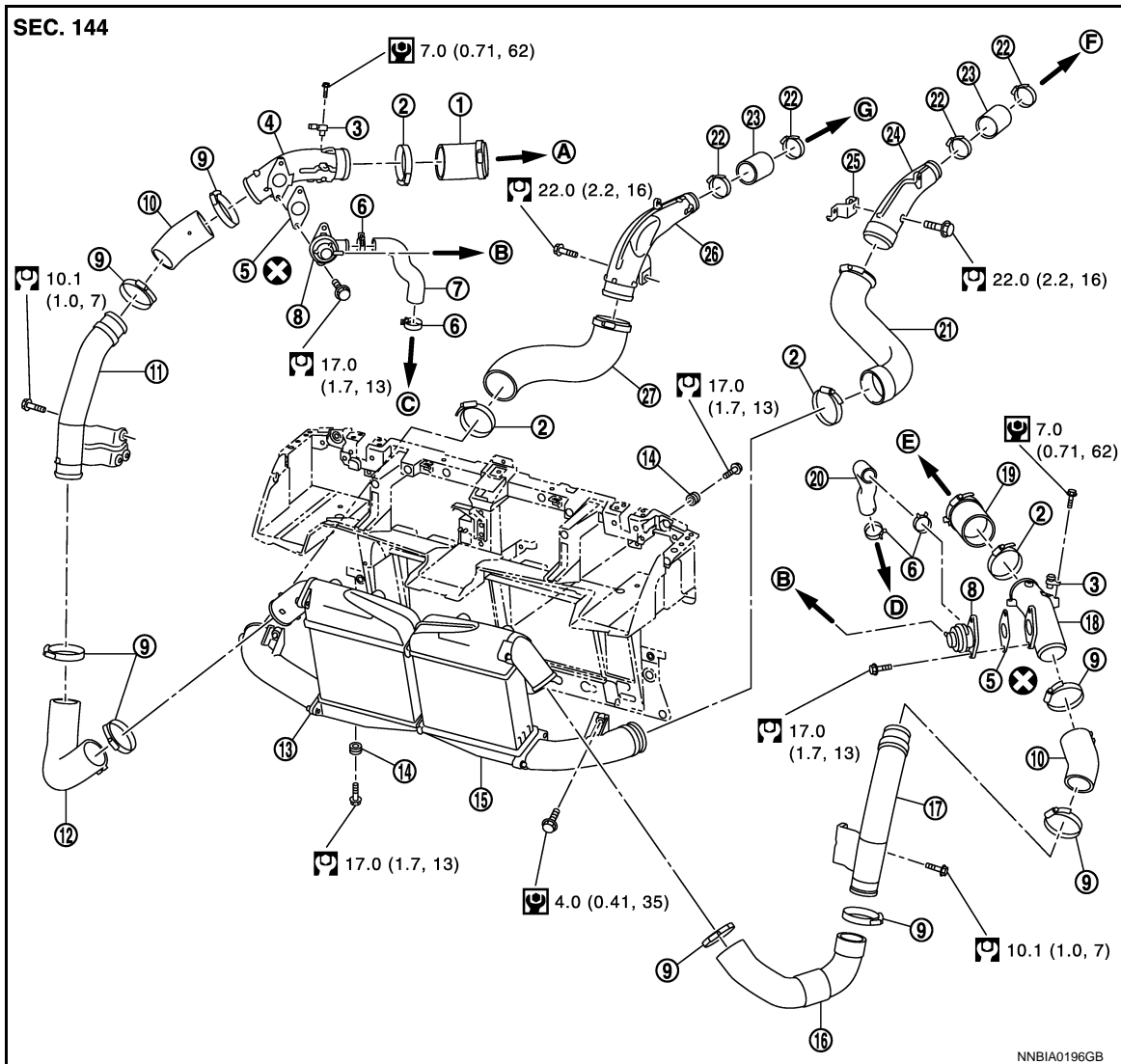
CHARGE AIR COOLER

< REMOVAL AND INSTALLATION >

CHARGE AIR COOLER

Exploded View

INFOID:000000009162832



- | | | |
|---|---|---|
| 1. Air inlet hose (bank 1) | 2. Clamp | 3. Turbocharger boost sensor |
| 4. Recirculation pipe (bank 1) | 5. Gasket | 6. Clamp |
| 7. Recirculation hose (bank 1) | 8. Recirculation valve | 9. Clamp |
| 10. Air inlet hose | 11. Air inlet pipe assembly (bank 1) | 12. Air inlet hose (bank 1) |
| 13. Charge air cooler assembly (bank 1) | 14. Grommet | 15. Charge air cooler assembly (bank 2) |
| 16. Air inlet hose (bank 2) | 17. Air inlet pipe assembly (bank 2) | 18. Recirculation pipe (bank 2) |
| 19. Air inlet hose (bank 2) | 20. Recirculation hose (bank 2) | 21. Air inlet hose (bank 2) |
| 22. Clamp | 23. Air inlet hose | 24. Air inlet pipe (bank 2) |
| 25. Bracket | 26. Air inlet pipe (bank 1) | 27. Air inlet hose (bank 1) |
| A. To electric throttle control actuator (bank 1) | B. To intake manifold collector | C. To exhaust manifold and turbocharger assembly (bank 1) (upper) |
| D. To exhaust manifold and turbocharger assembly (bank 2) (upper) | E. To electric throttle control actuator (bank 2) | F. To exhaust manifold and turbocharger assembly (bank 2) |
| G. To exhaust manifold and turbocharger assembly (bank 1) | | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

CHARGE AIR COOLER

< REMOVAL AND INSTALLATION >

Removal and Installation

INFOID:000000009162833

REMOVAL

1. Remove air cleaner case and air duct assembly. Refer to [EM-12, "Exploded View"](#).
2. Disconnect turbocharger boost sensor harness connector.
3. Disconnect air inlet hose to remove the turbocharger boost sensor and the integrated recirculation valve and pipe.

NOTE:

Mark with paint for a reference purpose before removal.

4. Remove front bumper. Refer to [EXT-14, "Exploded View"](#).
5. Remove air intake duct assembly. (This work is recommended to be performed by GT-R certified NISSAN dealer.)
6. Disconnect air inlet hose and pipe to remove the charge air cooler assembly.

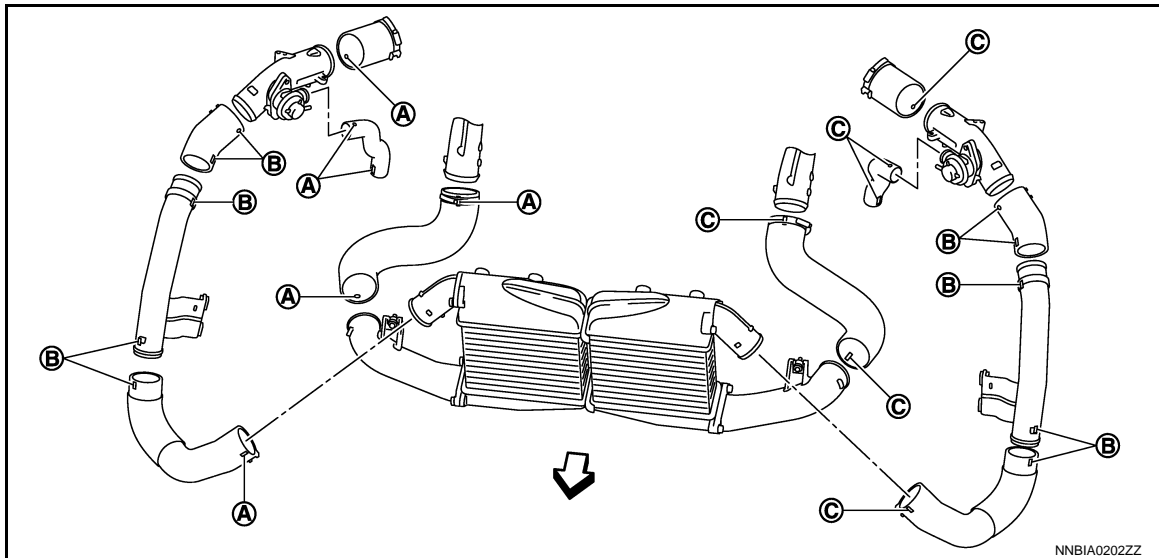
CAUTION:

Never damage or scratch charge air cooler core when removing.

INSTALLATION

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

AIR INLET HOSE ASSEMBLY



A. Matching mark (blue)

B. Matching mark (yellow)

C. Matching mark (pink)

↶ : Vehicle front

- To install each part, refer to the above figure to align the matching marks.
- Temporarily assemble all the removed parts before tightening the clamp.
- Tighten the clamp to the specified torque as shown below:

Clamp tightening torque  : 4.6 N·m (0.47 kg·m, 41 in·lb)

CAUTION:

Never use air tool or power tools for tightening.

AIR INLET PIPE ASSEMBLY

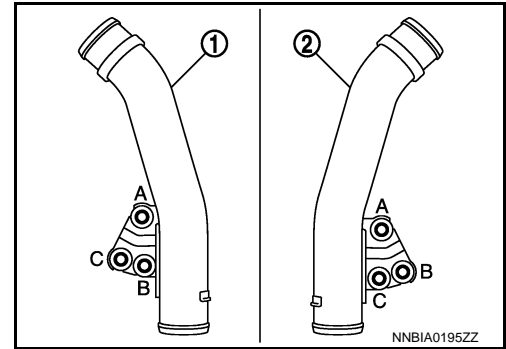
CHARGE AIR COOLER

< REMOVAL AND INSTALLATION >

- Install air inlet pipe assembly as follows:

- 1 : Air inlet pipe assembly (bank 1)
- 2 : Air inlet pipe assembly (bank 2)

1. Tighten bolt (A) (temporarily).
2. Tighten bolt (B) (temporarily).
3. Tighten bolt (C) (specified torque).
4. Tighten bolt (A) (specified torque).
5. Tighten bolt (B) (specified torque).



INTAKE MANIFOLD COLLECTOR

< REMOVAL AND INSTALLATION >

INTAKE MANIFOLD COLLECTOR

Exploded View

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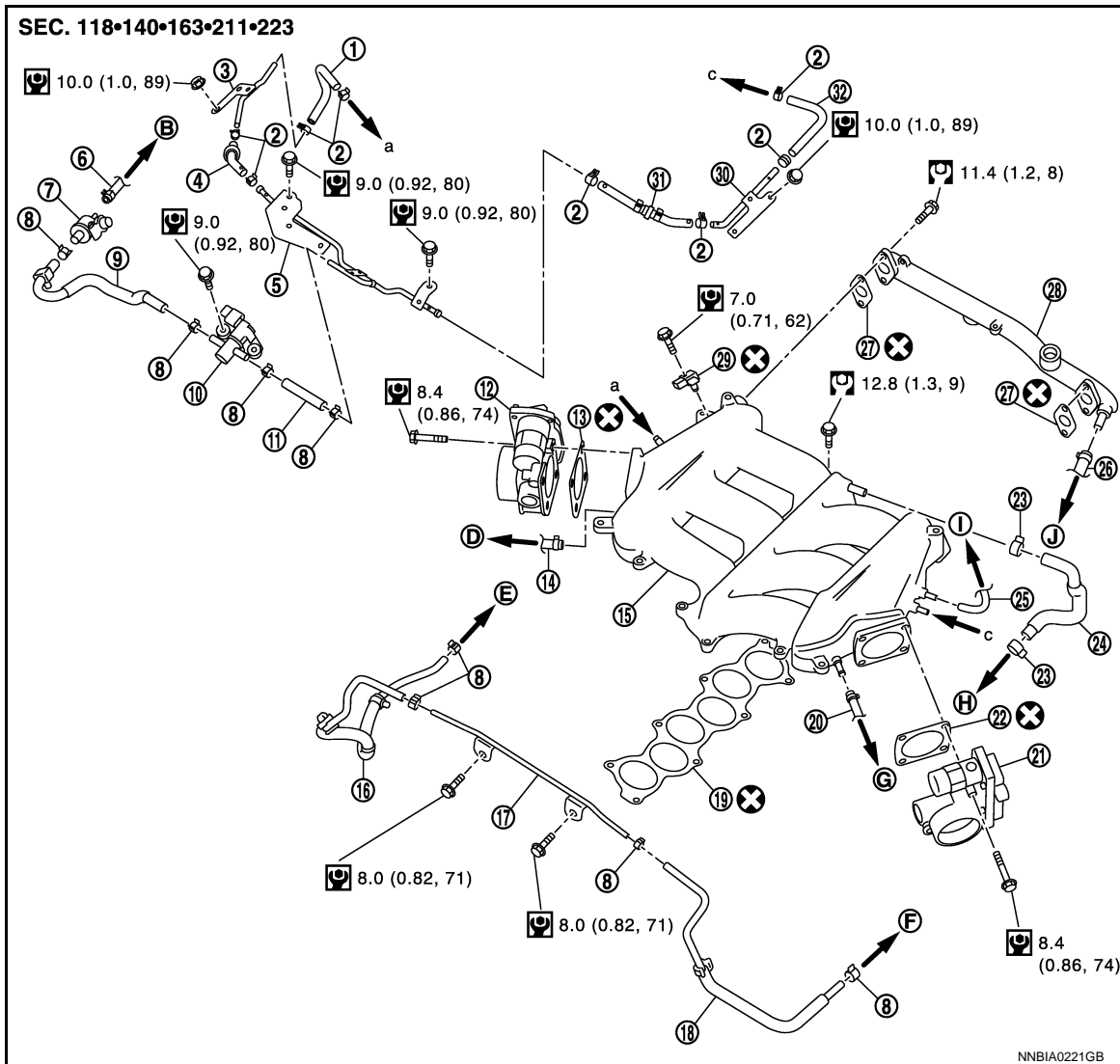
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|---|---|--|
| 1. EVAP hose | 2. Clamp | 3. EVAP tube (bank 1) |
| 4. EVAP connector hose | 5. EVAP tube (front) | 6. EVAP hose |
| 7. Vacuum tank (service port) | 8. Clamp | 9. EVAP hose |
| 10. EVAP canister purge control solenoid valve | 11. EVAP hose | 12. Electric throttle control actuator (bank 1) |
| 13. Gasket | 14. Vacuum hose | 15. Intake manifold collector |
| 16. Vacuum hose | 17. Vacuum tube assembly | 18. Vacuum hose |
| 19. Gasket | 20. Vacuum hose | 21. Electric throttle control actuator (bank 2) |
| 22. Gasket | 23. Clamp | 24. PCV hose |
| 25. Vacuum hose | 26. Vacuum hose | 27. Gasket |
| 28. Balance tube | 29. Manifold absolute pressure (MAP) sensor | 30. EVAP tube (bank 2) |
| 31. EVAP connector hose | 32. EVAP hose | |
| B. To centralized under-floor piping | D. To recirculation valve (bank 1) | E. To exhaust manifold and turbocharger (bank 1) |
| F. To turbocharger boost control solenoid valve | G. To recirculation valve (bank 2) | H. To breather separator assembly |

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INTAKE MANIFOLD COLLECTOR

< REMOVAL AND INSTALLATION >

- I. To pressure regulator and fuel hose assembly J. To brake booster

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

INFOID:000000009162838

REMOVAL

WARNING:

To avoid the danger of being scalded, never drain engine coolant when the engine is hot.

1. Remove engine cover. Refer to [EM-10, "Exploded View"](#).
2. Remove recirculation valve and air inlet hose. Refer to [EM-14, "Exploded View"](#).
3. Remove electric throttle control actuator as follows:

- Loosen mounting bolts in reverse order as shown in the figure.

CAUTION:

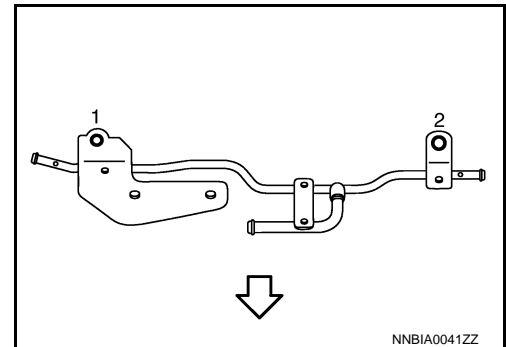
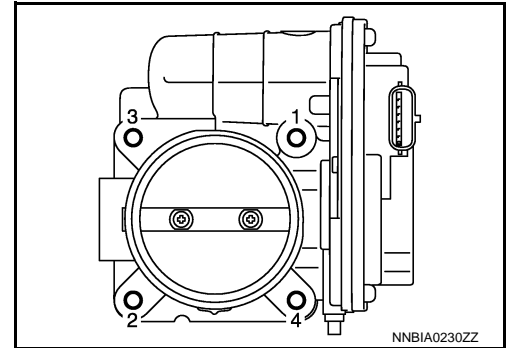
- Handle carefully to avoid any shock to electric throttle control actuator.
- Never disassemble and adjust electric throttle control actuator.

NOTE:

- The figure shows the electric throttle control actuator (bank 2) viewed from the air duct side.
 - Viewed from the air duct side, order of loosening mounting bolts of electric throttle control actuator (bank 2) is the same as that of the electric throttle control actuator (bank 1).
4. Remove EVAP canister purge volume control solenoid valve and EVAP tube (front) from intake manifold collector.

- Loosen mounting bolts in reverse order as shown in the figure.

⇐ : Engine front

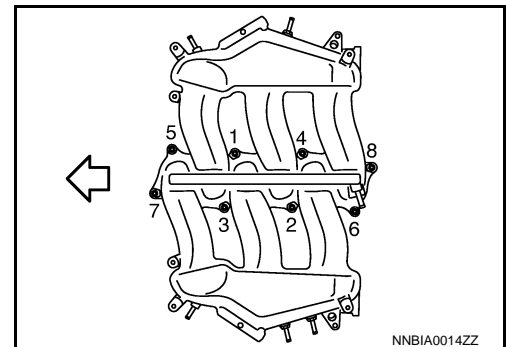


5. Remove vacuum hoses, PCV hoses and EVAP hoses, disconnecting each joints
 6. Remove intake manifold collector.
- Loosen mounting bolts in the reverse order as shown in the figure with power tool.

⇐ : Engine front

CAUTION:

Mark the parts with paint in advance of the reinstallation to prevent misalignment between the intake manifold collector and intake manifold.

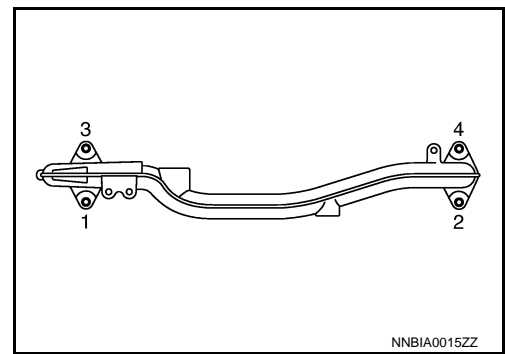


7. Remove balance tube.

INTAKE MANIFOLD COLLECTOR

< REMOVAL AND INSTALLATION >

- Loosen mounting bolts in the reverse order as shown in the figure with power tool.



- Remove EVAP tube (bank 1 and bank 2), if necessary.
- Remove vacuum tube assembly, if necessary.
- Remove manifold absolute pressure (MAP) sensor, if necessary.

CAUTION:

Handle carefully to avoid any shock to manifold absolute pressure (MAP) sensor.

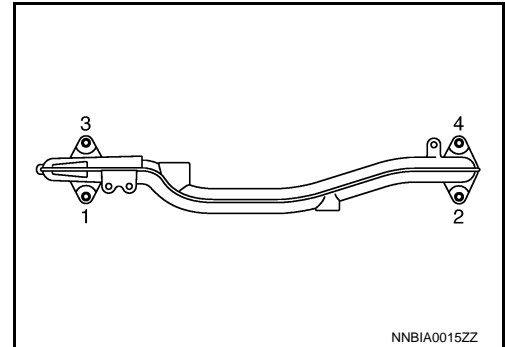
INSTALLATION

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

Balance Tube

- Tighten mounting bolts in numerical order as shown in the figure.

← : Engine front



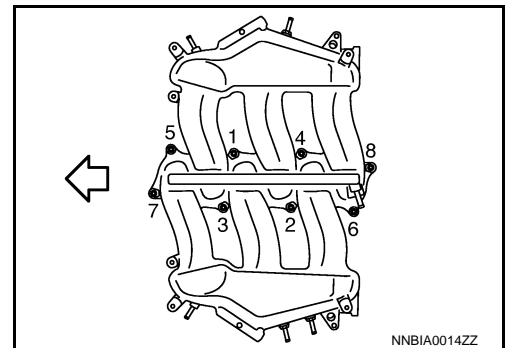
Intake Manifold Collector

- Tighten mounting bolts in numerical order as shown in the figure.

← : Engine front

CAUTION:

- Install each part according to the marks put before removal.
- Tighten mounting bolts with care to avoid misalignment in the intake manifold collector.



- After replacing an intake manifold collector, be sure to adjust the position as instructed below.

- Remove intake manifold. Refer to [EM-21, "Exploded View"](#).

CAUTION:

Mark the parts with paint with advance of the reinstallation to prevent misalignment between the intake manifold and cylinder head.

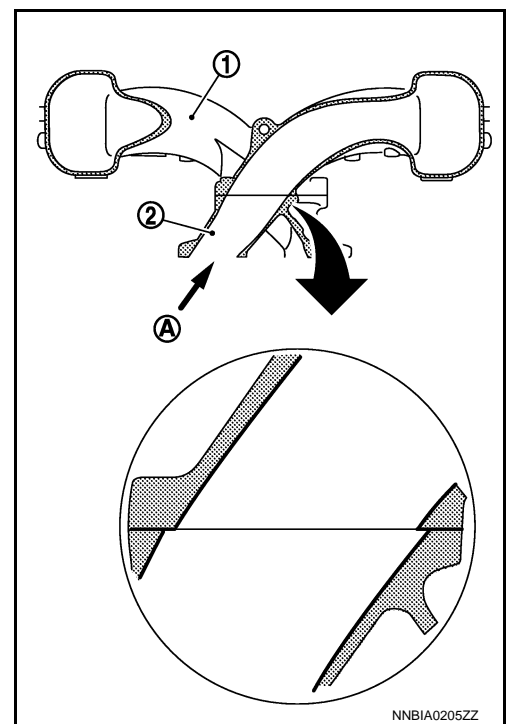
INTAKE MANIFOLD COLLECTOR

< REMOVAL AND INSTALLATION >

2. Temporarily assemble intake manifold collector (1) and intake manifold (2).
3. Check an exact location that the intake manifold collector port locates inside the intake manifold port and mark each part. Refer to the arrow (A) shown in the figure to check the location.
4. After another disassembly, install the parts, aligning with the marks put before the temporary assembly.

CAUTION:

Tighten mounting bolts with care to avoid misalignment in the intake manifold collector and intake manifold.

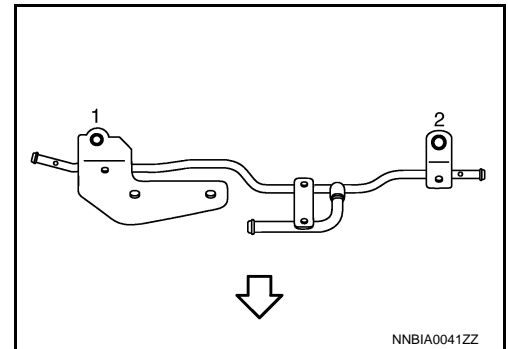


NNBIA0205ZZ

EVAP Tube (front)

- Tighten mounting bolts in numerical order as shown in the figure.

⇐ : Engine front



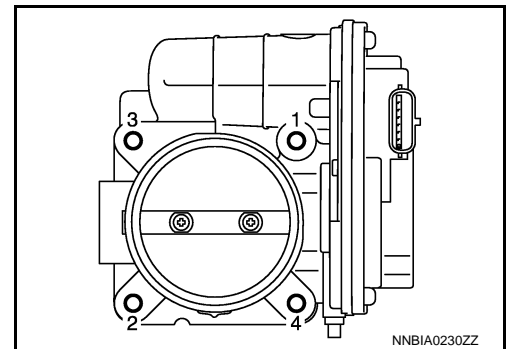
NNBIA0041ZZ

Electric Throttle Control Actuator

- Tighten bolts in numerical order as shown in the figure.

NOTE:

- The figure shows the electric throttle control actuator (bank 2) viewed from the air duct side.
- Viewed from the air duct side, the order of tightening mounting bolts of electric throttle control actuator (bank 2) is the same as that of the electric throttle control actuator (bank 1).
- Perform the "Throttle Valve Closed Position Learning" when harness connector of electric throttle control actuator is disconnected. (This work is recommended to be performed by GT-R certified NISSAN dealer.)
- Perform the "Idle Air Volume Learning" and "Throttle Valve Closed Position Learning" when electric throttle control actuator is replaced. (This work is recommended to be performed by GT-R certified NISSAN dealer.)



NNBIA0230ZZ

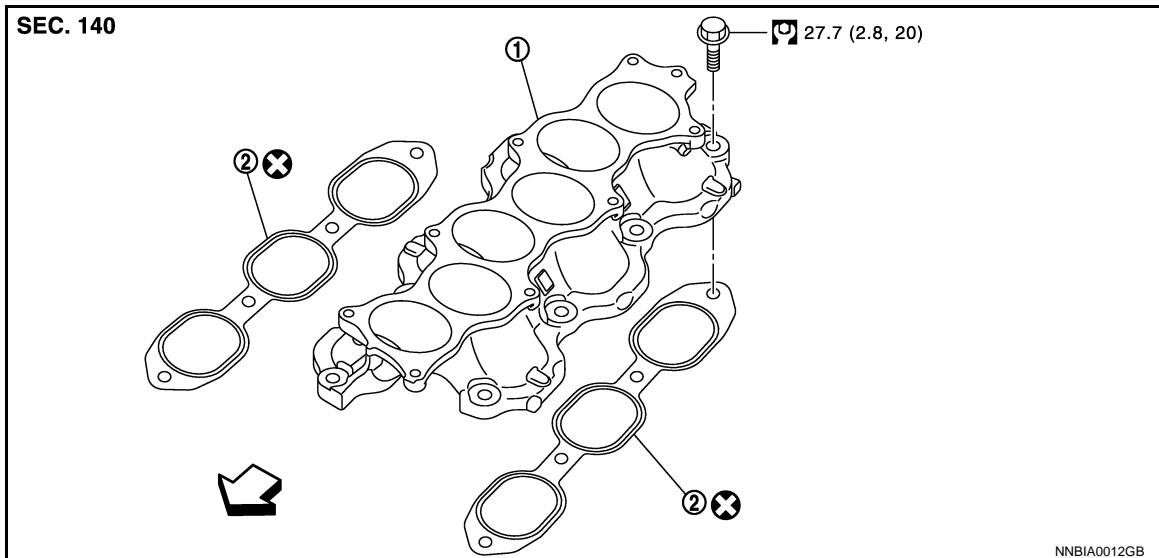
INTAKE MANIFOLD

< REMOVAL AND INSTALLATION >

INTAKE MANIFOLD

Exploded View

INFOID:000000009162840



1. Intake manifold
2. Gasket

↩ : Engine front

Refer to [GI-4, "Components"](#) for symbols in the figure.

Removal and Installation

INFOID:000000009162841

REMOVAL

1. Remove intake manifold collector. Refer to [EM-17, "Exploded View"](#).

CAUTION:

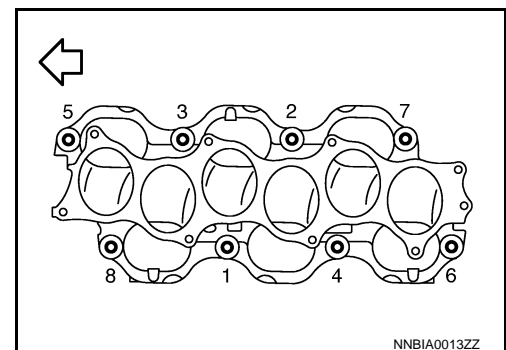
Mark the parts with paint in advance of the reinstallation to prevent misalignment between the intake manifold collector and intake manifold.

2. Loosen pressure regulator and fuel hose assembly mounting bolt. Refer to [EM-23, "Exploded View"](#).
3. Disconnect harness connector from fuel tube.
4. Remove intake manifold.
 - Loosen mounting bolts in reverse order as shown in the figure with power tool.

↩ : Engine front

CAUTION:

- **Mark the parts with paint in advance of the reinstallation to prevent misalignment between the intake manifold and cylinder head.**
- **Cover engine openings to avoid entry of foreign materials.**



5. Remove gaskets.

INSTALLATION

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

Intake Manifold

INTAKE MANIFOLD

< REMOVAL AND INSTALLATION >

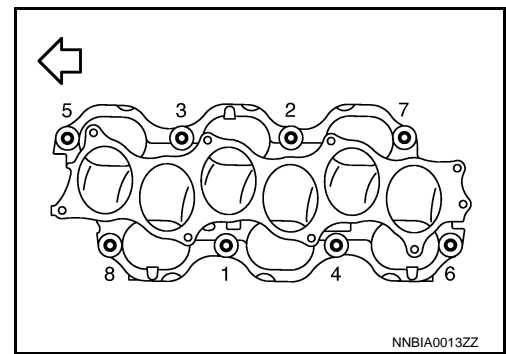
- Tighten mounting bolts in numerical order as shown in the figure.

← : Engine front

- Refer to the figure to check the installation direction of the intake manifold.

CAUTION:

- Install each part according to the marks put before removal.
- Tighten mounting bolts with care to avoid misalignment in the intake manifold.



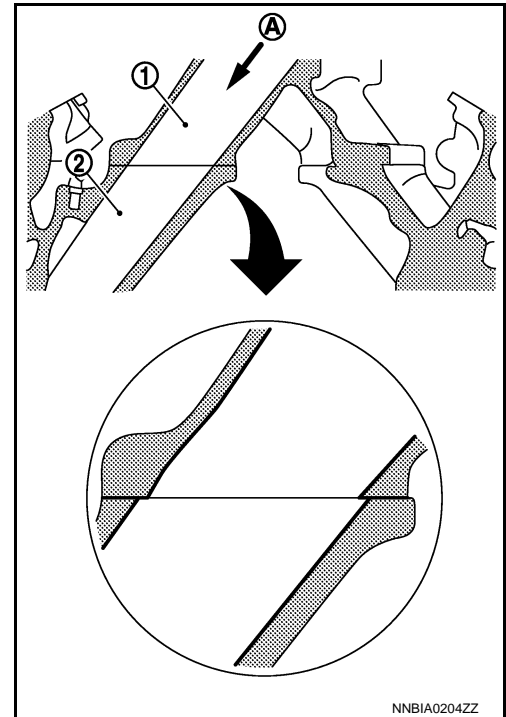
- After replacing an intake manifold, be sure to adjust the position as instructed below.
- Check an exact location that the intake manifold port locates inside the cylinder head port and mark each part. Refer to the arrow (A) shown in the figure to check the location.

1 : Intake manifold

2 : Cylinder head

CAUTION:

Tighten mounting bolts with care to avoid misalignment in the intake manifold.



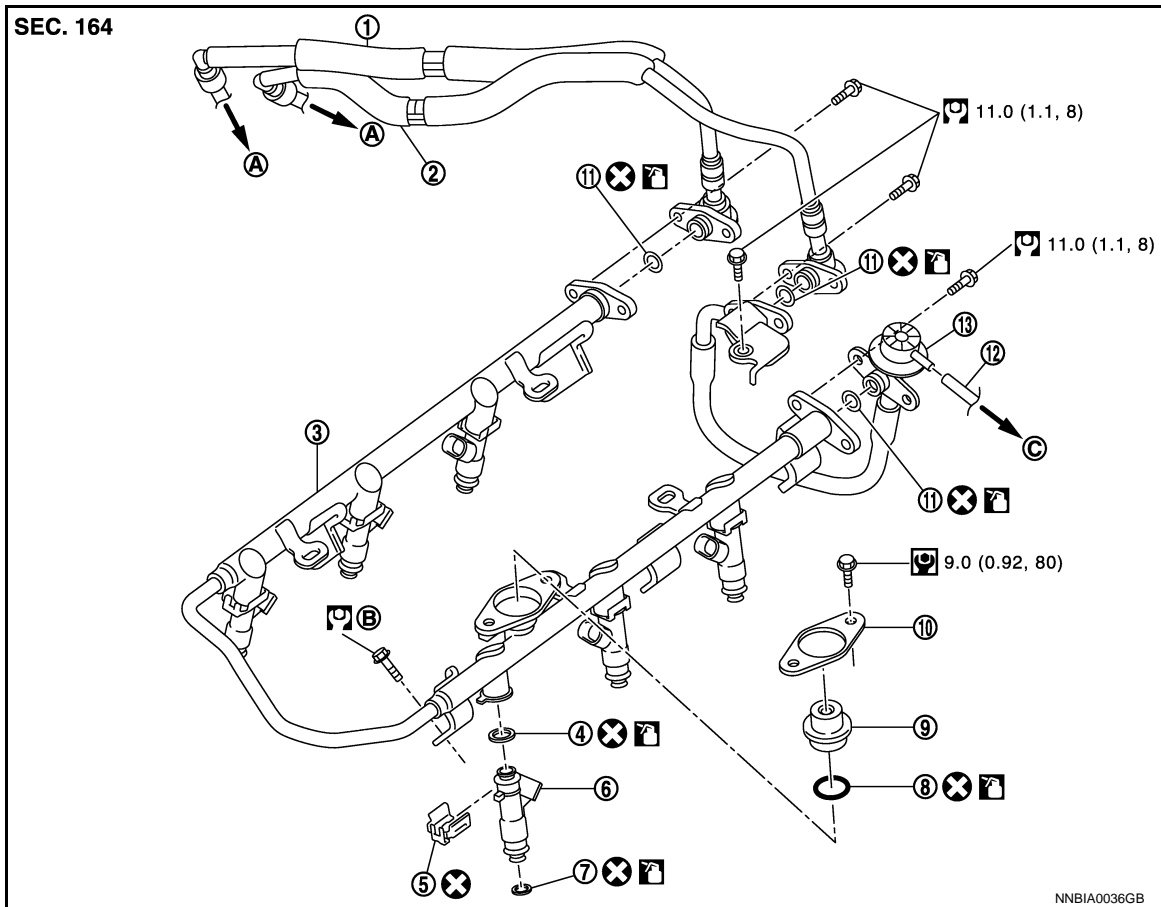
FUEL INJECTOR AND FUEL TUBE

< REMOVAL AND INSTALLATION >

FUEL INJECTOR AND FUEL TUBE

Exploded View

INFOID:000000009162843



- | | | |
|---|-----------------------------------|------------------|
| 1. Fuel feed hose (with damper) | 2. Fuel return hose (with damper) | 3. Fuel tube |
| 4. O-ring (black) | 5. Clip | 6. Fuel injector |
| 7. O-ring (green) | 8. O-ring | 9. Fuel damper |
| 10. Fuel damper cap | 11. O-ring | 12. Vacuum hose |
| 13. Fuel hose (with pressure regulator) | | |
- A. To centralized under-floor piping B. This work is recommended to be performed by GT-R certified NISSAN dealer. C. To intake manifold collector

Refer to [GI-4, "Components"](#) for symbols in the figure.

CAUTION:

Never remove or disassemble parts unless instructed as shown in the figure.

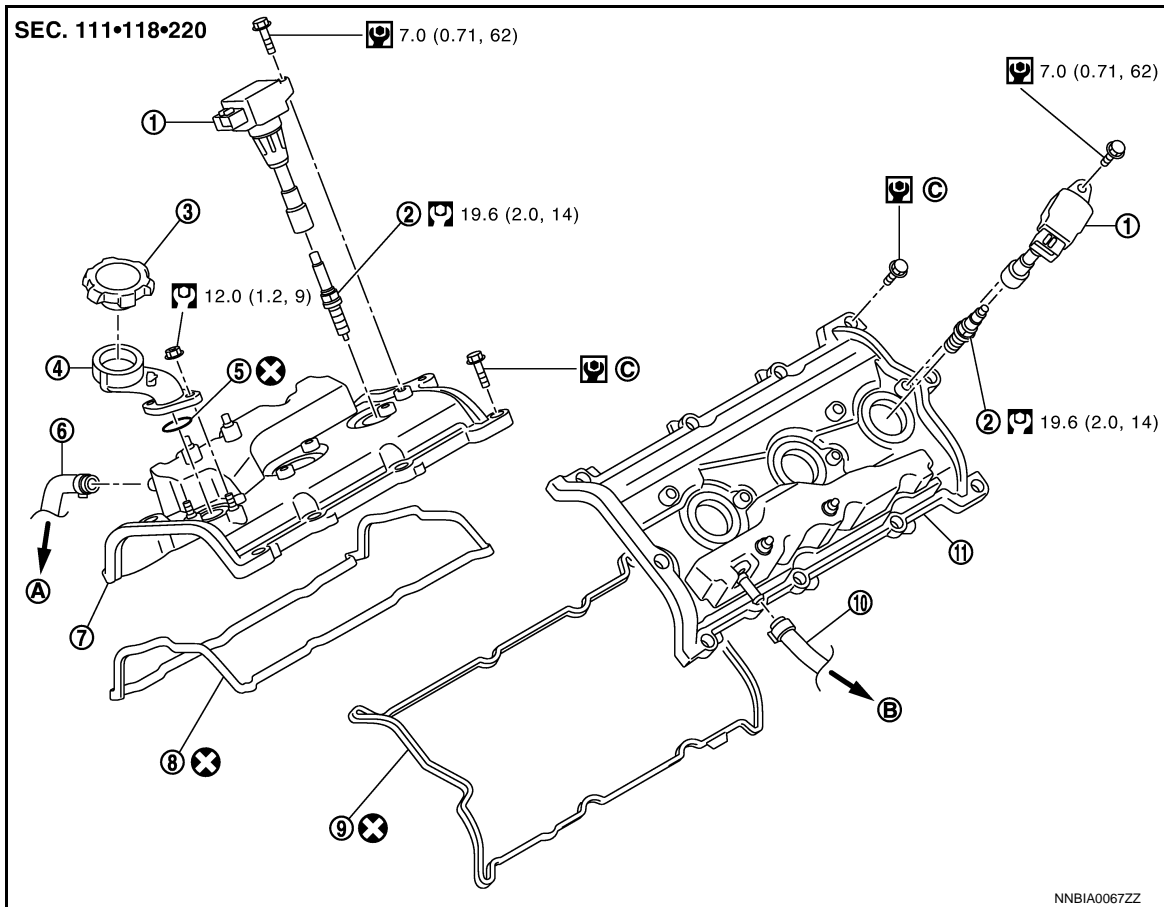
IGNITION COIL, SPARK PLUG AND ROCKER COVER

< REMOVAL AND INSTALLATION >

IGNITION COIL, SPARK PLUG AND ROCKER COVER

Exploded View

INFOID:000000009162846



- | | | |
|-------------------------------|---------------------------------|--|
| 1. Ignition coil | 2. Spark plug | 3. Oil filler cap |
| 4. Oil filler tube | 5. O-ring | 6. Fresh air hose |
| 7. Rocker cover (bank 1) | 8. Rocker cover gasket (bank 1) | 9. Rocker cover gasket (bank 2) |
| 10. Fresh air hose | 11. Rocker cover (bank 2) | |
| A. To fresh air tube (bank 1) | B. To fresh air tube (bank 2) | C. This work is recommended to be performed by GT-R certified NISSAN dealer. |

Refer to [GI-4, "Components"](#) for symbols in the figure.

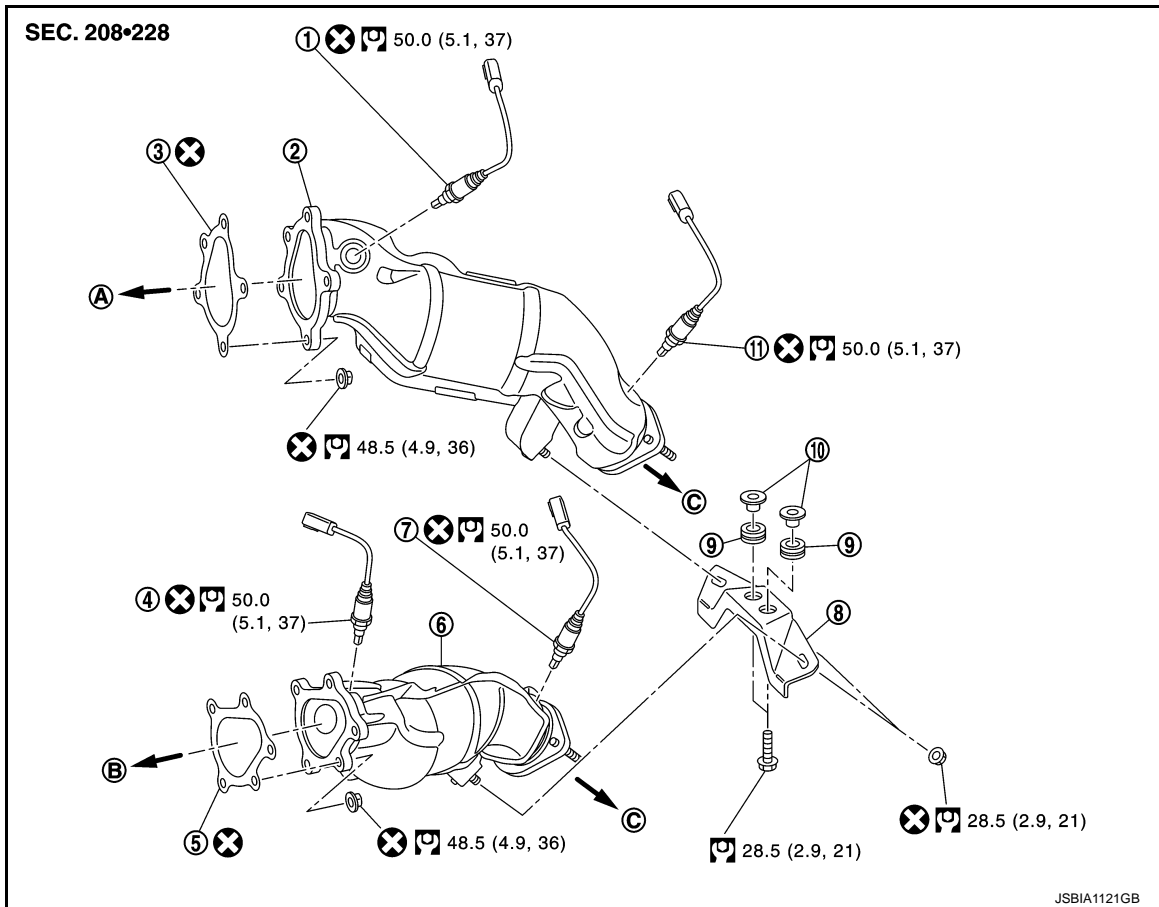
CATALYST

< REMOVAL AND INSTALLATION >

CATALYST

Exploded View

INFOID:000000009162848



- | | | |
|---|---|--------------------------------|
| 1. Air fuel ratio sensor 1 (bank 1) | 2. Three way catalyst (bank 1) | 3. Gasket |
| 4. Air fuel ratio sensor 1 (bank 2) | 5. Gasket | 6. Three way catalyst (bank 2) |
| 7. Heated oxygen sensor 2 (bank 2) | 8. Bracket | 9. Mounting rubber |
| 10. Collar | 11. Heated oxygen sensor 2 (bank 1) | |
| A. To exhaust manifold and turbocharger assembly (bank 1) | B. To exhaust manifold and turbocharger assembly (bank 2) | C. To sub muffler |

Refer to [Gl-4, "Components"](#) for symbols in the figure.

EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

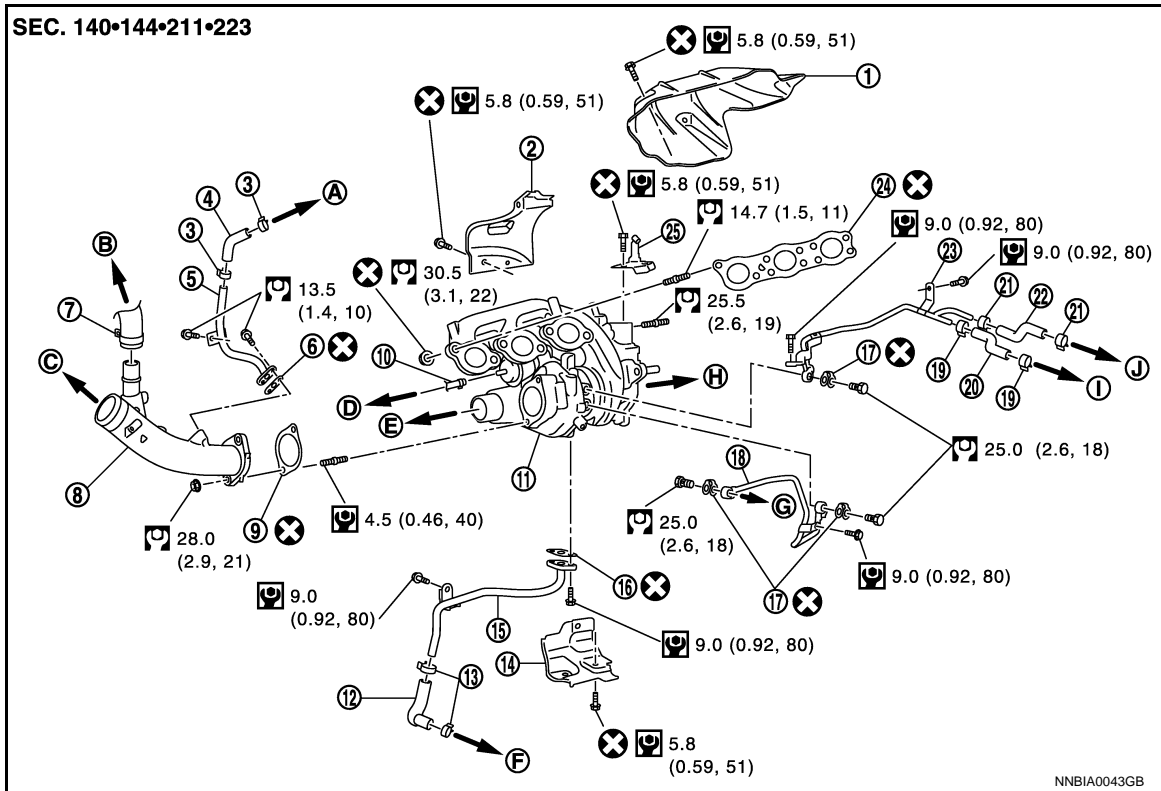
UNIT DISASSEMBLY AND ASSEMBLY

EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

Exploded View

INFOID:000000009162855

Bank 1 side



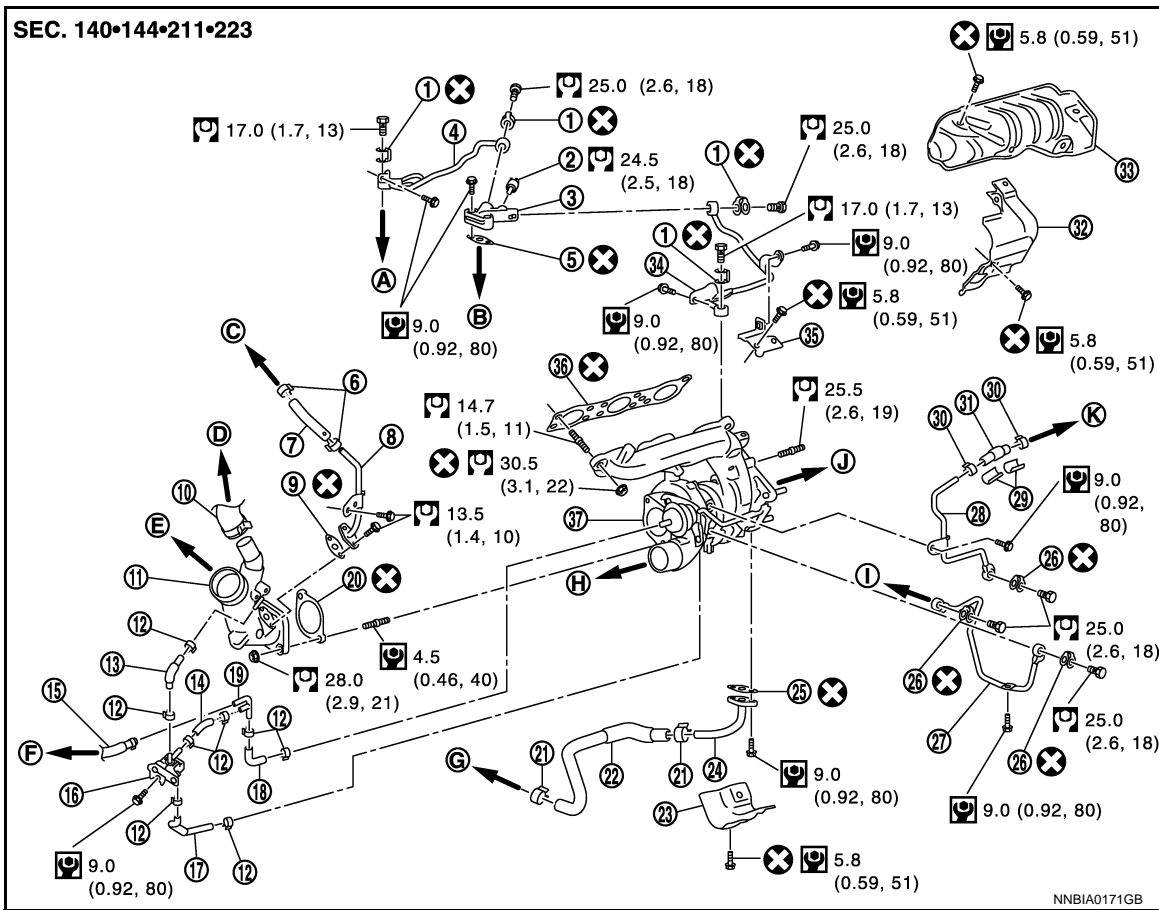
- | | | |
|---|--|----------------------------|
| 1. Exhaust manifold cover | 2. Insulator (upper) | 3. Clamp |
| 4. Fresh air hose | 5. Fresh air tube | 6. Gasket |
| 7. Recirculation hose | 8. Air inlet pipe | 9. Gasket |
| 10. Vacuum hose | 11. Exhaust manifold and turbocharger assembly | 12. Oil return hose |
| 13. Clamp | 14. Insulator (lower) | 15. Oil return tube |
| 16. Gasket | 17. Gasket | 18. Water inlet tube |
| 19. Clamp | 20. Water hose | 21. Clamp |
| 22. Water hose | 23. Water outlet tube | 24. Gasket |
| 25. Bracket | | |
| A. To rocker cover (bank 1) | B. To recirculation valve (bank 1) | C. To air cleaner (bank 1) |
| D. To turbocharger boost control solenoid valve | E. To charge air cooler | F. To oil filter bracket |
| G. To cylinder block | H. To three way catalyst (bank 1) | I. To heater pipe |
| J. To air cut solenoid valve (bank 2) | | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

Bank 2 side



- | | | |
|---|----------------------------|---|
| 1. Gasket | 2. Oil temperature sensor | 3. Oil feed adapter |
| 4. Oil feed tube (bank 1) | 5. Gasket | 6. Clamp |
| 7. Fresh air hose | 8. Fresh air tube | 9. Gasket |
| 10. Recirculation hose | 11. Air inlet pipe | 12. Clamp |
| 13. Vacuum hose | 14. Vacuum hose | 15. Vacuum hose |
| 16. Turbocharger boost control solenoid valve | 17. Vacuum hose | 18. Vacuum hose |
| 19. 3- WAY connector | 20. Gasket | 21. Clamp |
| 22. Oil return hose | 23. Insulator (lower) | 24. Oil return tube |
| 25. Gasket | 26. Gasket | 27. Water inlet tube |
| 28. Water outlet tube | 29. Clip | 30. Clamp |
| 31. Water hose | 32. Insulator (upper) | 33. Exhaust manifold cover |
| 34. Oil feed tube | 35. Bracket | 36. Gasket |
| 37. Exhaust manifold and turbocharger assembly | | |
| A. To exhaust manifold and turbocharger assembly (bank 1) | B. To cylinder block | C. To rocker cover (bank 2) |
| D. To recirculation valve (bank 2) | E. To air cleaner (bank 2) | F. To exhaust manifold and turbocharger assembly (bank 1) |
| G. To oil pan (upper) | H. To charge air cooler | I. To cylinder block |
| J. To three way catalyst (bank 2) | K. To heater pipe | |

Refer to [GI-4, "Components"](#) for symbols in the figure.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Spark Plug

INFOID:000000009162879

SPARK PLUG

Unit: mm (in)

Make		NGK
Standard type		DILKAR8A8
Gap (Nominal)	Standard	0.7 - 0.8 (0.028 - 0.031)
	Limit	1.0 (0.039)