

SECTION **EX**
EXHAUST SYSTEM

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PREPARATION

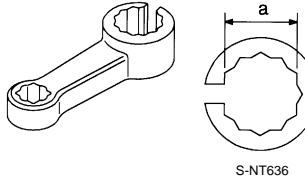
PREPARATION

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Special Service Tools

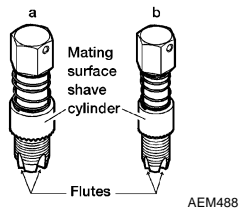

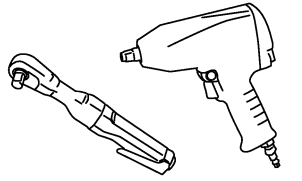
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10114400 (J-38365) Heated oxygen sensor wrench <div style="text-align: center;">  <p>S-NT636</p> </div>	Loosening or tightening heated oxygen sensor For 22 mm (0.87 in) width hexagon nut

Commercial Service Tools

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(Kent-Moore No.) Tool name	Description
(J-43897-18) (J-43897-12) Heated oxygen sensor thread cleaner <div style="text-align: center;">  <p>AEM488</p> </div>	Reconditioning the exhaust system threads before installing a new heated oxygen sensor (Use with anti-seize lubricant shown below.) a: J-43897-18 (18 mm dia.) for zirconia heated oxygen sensor b: J-43897-12 (12 mm dia.) for titania heated oxygen sensor
Anti-seize lubricant (Permatex 133AR or equivalent meeting MIL specification MIL-A-907) <div style="text-align: center;">  <p>AEM489</p> </div>	Lubricating heated oxygen sensor thread cleaner when reconditioning exhaust system threads
Power tool <div style="text-align: center;">  <p>PBIC0190E</p> </div>	Loosening bolts and nuts

EXHAUST SYSTEM

EXHAUST SYSTEM

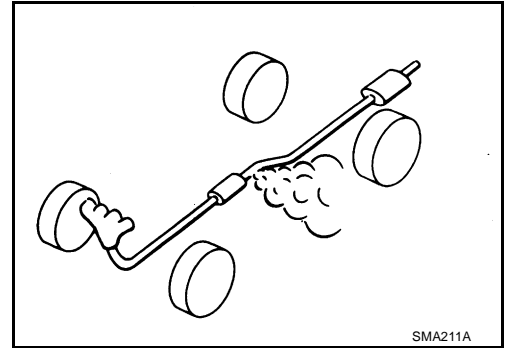
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Checking Exhaust System

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Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage or deterioration.

- If anything is found, repair or replace damaged parts.



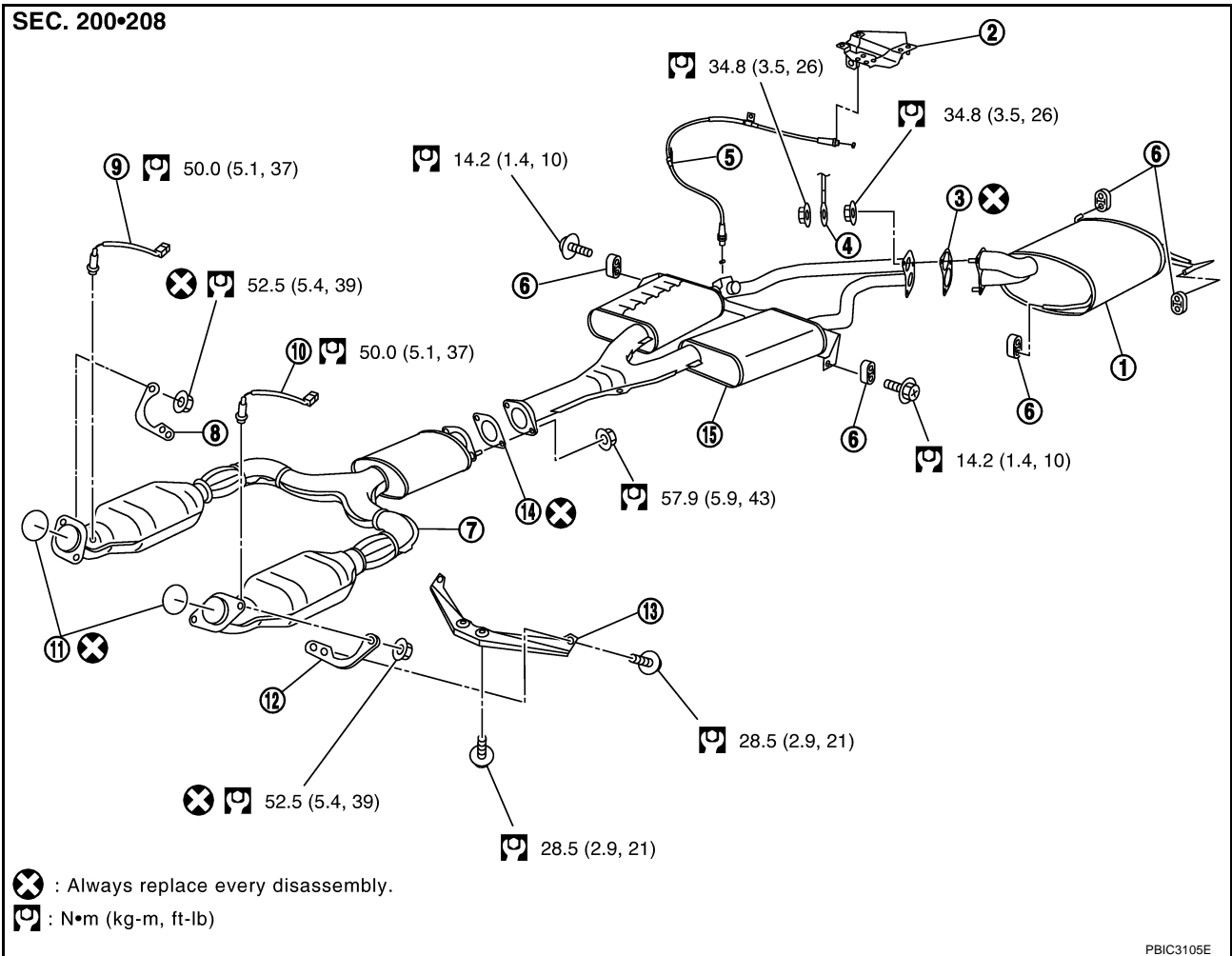
Removal and Installation

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CAUTION:

- Be sure to use genuine exhaust system parts or equivalents which are specially designed for heat resistance, corrosion resistance, and shape.
- Perform the operation with the exhaust system fully cooled down because the system will be hot just after engine stops.
- Be careful not to cut your hand on the insulator edge.

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|-----------------------|-------------|------------------------------------|
| 1. Main muffler | 2. Actuator | 3. Gasket |
| 4. Ground cable | 5. Cable | 6. Mounting rubber |
| 7. Exhaust front tube | 8. Bracket | 9. Heated oxygen sensor 2 (bank 2) |

EXHAUST SYSTEM

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|-------------------------------------|-----------------|--------------------|
| 10. Heated oxygen sensor 2 (bank 1) | 11. Ring gasket | 12. Bracket |
| 13. Bracket | 14. Gasket | 15. Center muffler |

REMOVAL

1. Remove cable from exhaust control valve. Refer to [EX-9, "Removal and Installation"](#)
2. Remove heated oxygen sensor 2 as follows:

NOTE:

Information for parts installation/disassembly is as follows although the information is not needed in view of installation/disassembly procedure.

- a. Disconnect harness connector of each heated oxygen sensor 2.
- b. Using heated oxygen sensor wrench (SST), remove both left and right heated oxygen sensor 2.
 - Put marks to identify installation positions of each heated oxygen sensor 2.

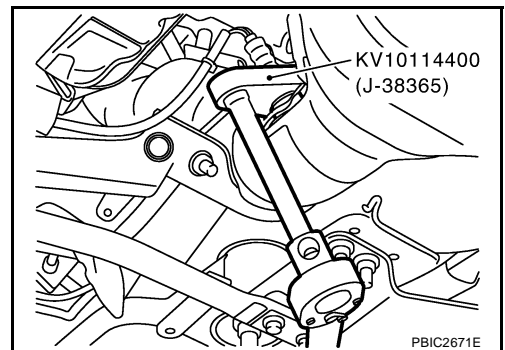
CAUTION:

Be careful not to damage heated oxygen sensor.

NOTE:

Figure is shown as an example of right bank.

3. Disconnect each joint and mounting using power tool.

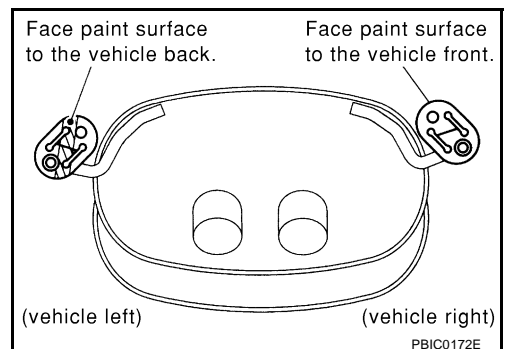


INSTALLATION

Install in the reverse order of removal.

CAUTION:

- Always replace exhaust gaskets with new ones when reassembling.
- Discard any heated oxygen sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing a new heated oxygen sensor, clean exhaust system threads using the heated oxygen sensor thread cleaner (commercial service tool: J-43897-18 or J-43897-12), and apply anti-seize lubricant (commercial service tool).
- Do not over torque heated oxygen sensor. Doing so may cause damage to the heated oxygen sensor, resulting in the MIL coming on.
- If the insulator is badly deformed, repair or replace it. If deposits such as mud pile up on the insulator, remove them.
- When installing insulator avoid large gaps or interference between insulator and each exhaust pipe.
- Remove deposits and left over gasket material from the sealing surface of each connection. Connect them securely to avoid gas leakage.
- Temporarily tighten mounting nuts on the exhaust manifold side and mounting bolts on the vehicle side. Check each part for unusual interference, and then tighten them to the specified torque.
- When installing each clamp, align the protrusion on insulator with the clamp hole.
- When installing each mounting rubber, avoid twisting or unusual extension in up/down and right/left directions.
- Install mounting rubbers on rear main muffler as shown.



EXHAUST SYSTEM

INSPECTION AFTER INSTALLATION

Install in the reverse order of removal paying attention to the followings.

- Check clearance between tail tube and bumper is even.
- With engine running, check exhaust tube joints for gas leakage and unusual noises.
- Check to ensure that mounting brackets and mounting insulators are installed properly and free from undue stress. Improper installation could result in excessive noise and vibration.

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DUAL MODE MUFFLER

DUAL MODE MUFFLER

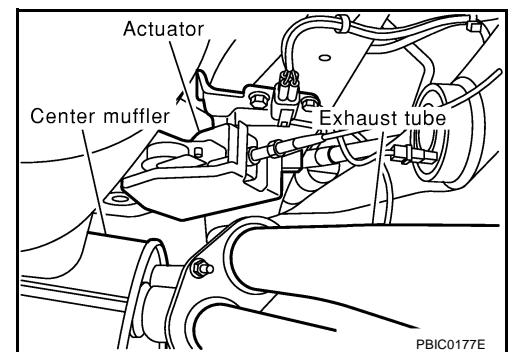
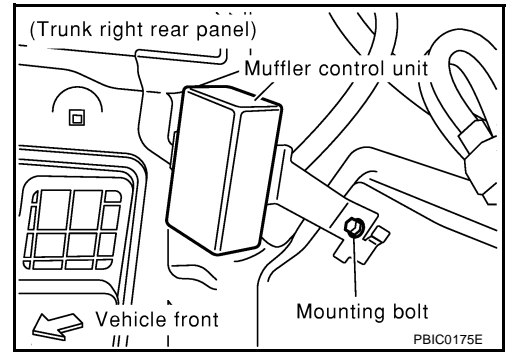
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Component Parts Location

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NOTE:

Refer to [EX-9, "Removal and Installation"](#) about Muffler control unit and Cable.



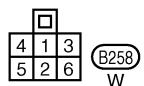
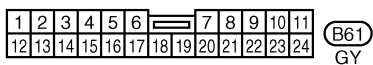
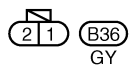
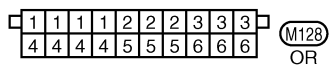
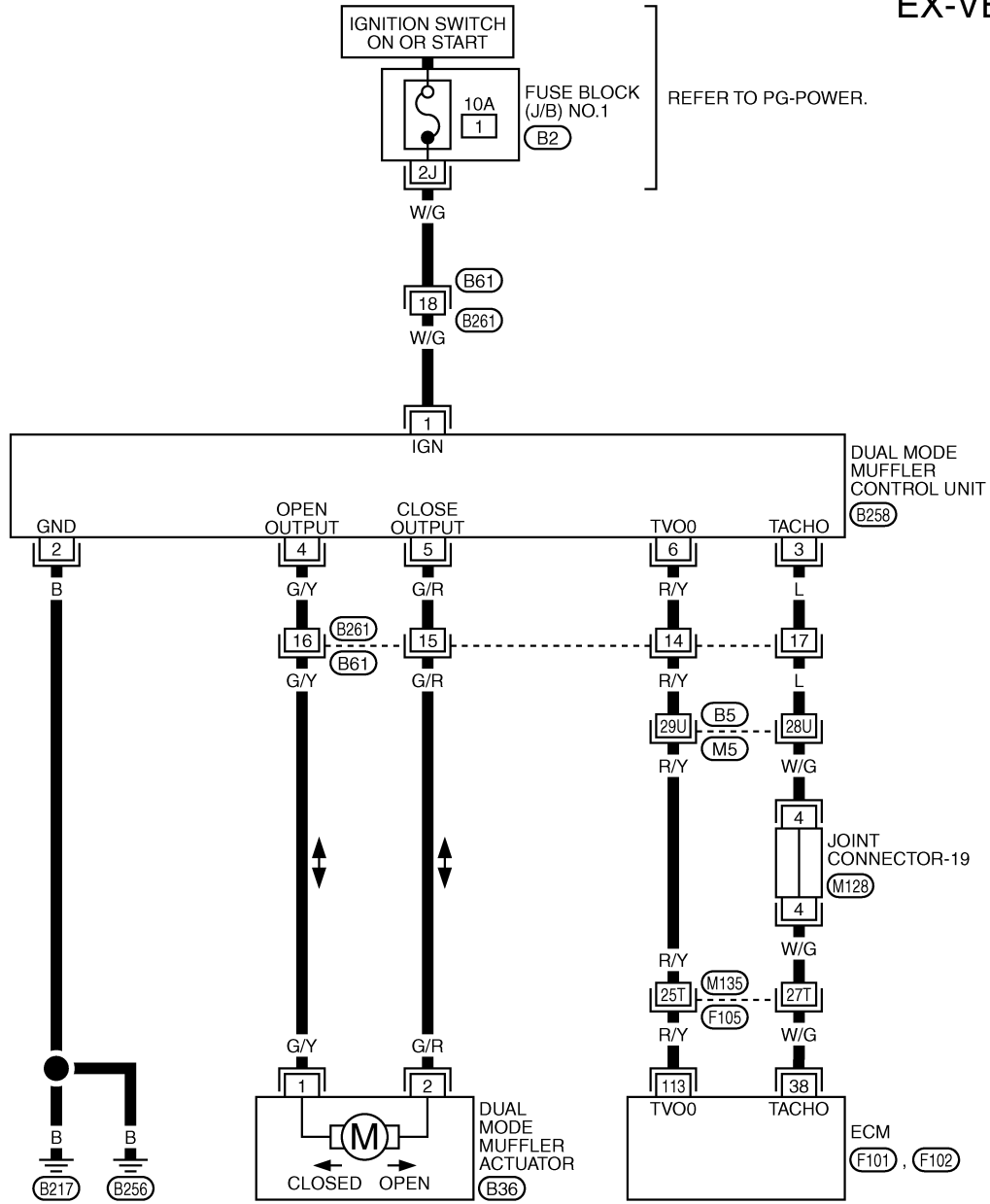
DUAL MODE MUFFLER

Wiring Diagram -VEXH-

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EX-VEXH-01

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REFER TO THE FOLLOWING.
 (M5), (F105) -SUPER MULTIPLE JUNCTION (SMJ)
 (B2) -FUSE BLOCK-JUNCTION BOX (J/B) NO.1
 (F101), (F102) -ELECTRICAL UNITS

TBWA0317E

DUAL MODE MUFFLER

Terminals and Reference Value for Dual Mode Muffler Control Unit

ABS00A7K

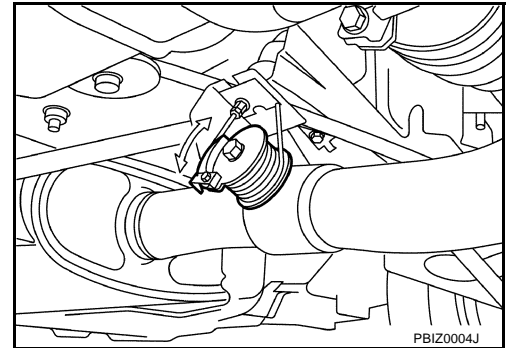
Terminal No. (Wire color)	Item	condition		Voltage (V)
		Ignition switch	Operation or condition	
1 (W/G)	Ignition switch	OFF		0
		ON		Battery voltage
2 (B)	Ground	ON		0
3 (L)	Engine speed signal	—	Idling	Approx. 4 - 6
4 (G/Y)	Exhaust control valve signal (Open)	ON	CLOSE	0 - 1
			OPEN	Battery voltage
5 (G/R)	Exhaust control valve signal (Close)		CLOSE	Battery voltage
			OPEN	0 - 1
6 (R/Y)	Accelerator pedal position signal	ON	Over half	More than approx. 2.4
			Below half	Approx. 0 - 2.4

Components Inspection EXHAUST CONTROL VALVE

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Check operation of valve and actuator by revving engine.

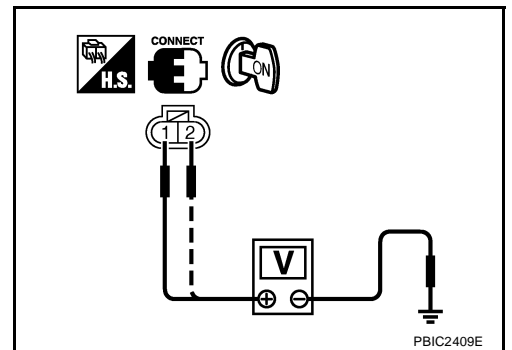
Condition		Exhaust control valve
Accelerator pedal opening	Engine rpm	
Below half (no-load)	Above approximate 4830 rpm	Open
	Below approximate 4730 rpm	Close
Over half (loaded)	—	Open



DUAL MODE MUFFLER ACTUATOR

Check voltage between terminals 1 and 2 of dual mode muffler actuator harness connector and ground.

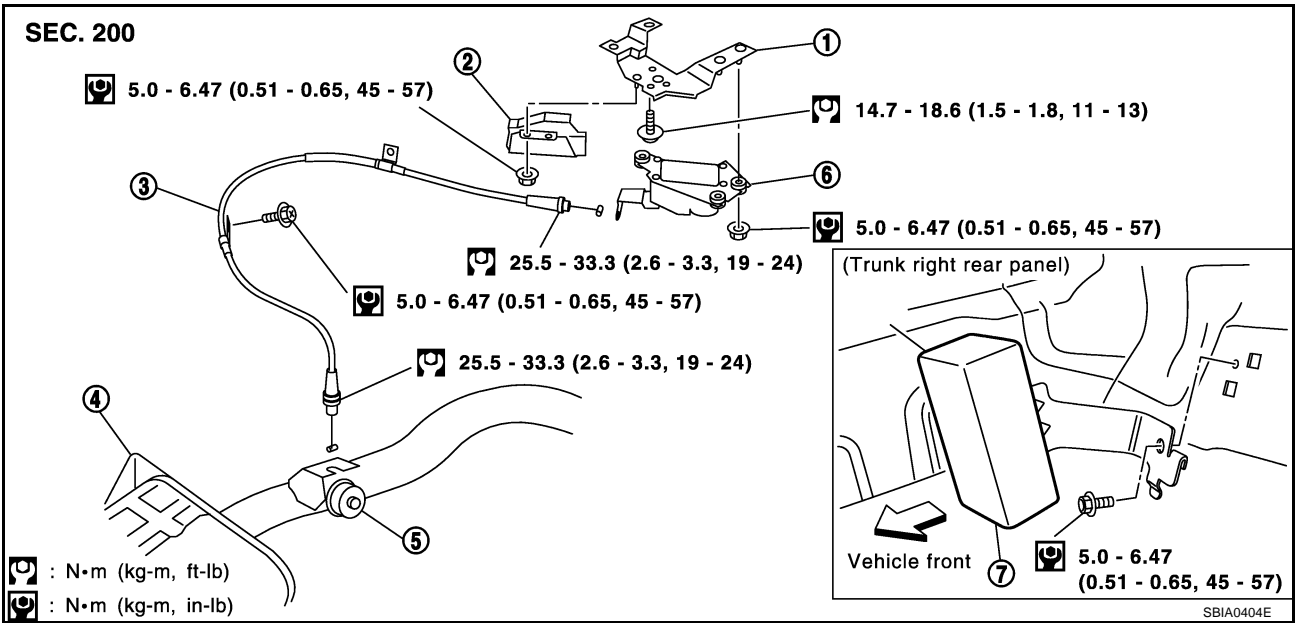
Terminals			Exhaust control valve	
(+)	Terminal (Wire color)	(-)	Open	Close
1	(G/Y)	GND	Battery voltage	0 - 1V
2	(G/R)		0 - 1V	Battery voltage



DUAL MODE MUFFLER

ABS00A3M

Removal and Installation



- | | | |
|------------------------------|---|-------------|
| 1. Actuator mounting bracket | 2. Actuator cover | 3. Cable |
| 4. Center muffler | 5. Exhaust control valve
(Do not disassemble.) | 6. Actuator |
| 7. Muffler control unit | | |

NOTE:

Exhaust control valve is provided in center muffler and not permitted to disassemble.

REMOVAL (CABLE)

NOTE:

Removal and installation procedure is the same on both side of actuator and exhaust control valve.

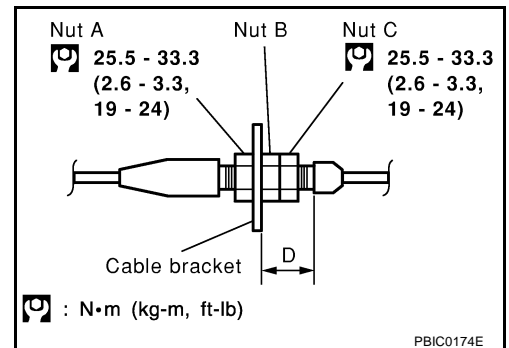
- Remove cable from actuator and exhaust control valve.

- Loosen lock nut A.

CAUTION:

Do not loosen positioning nuts B and C.

- Remove middle clamp bolt and cable.



INSTALLATION (CABLE)

- Install in the reverse order of removal.
- Install cable on cable bracket and then tighten lock nut A to specified torque.
- To avoid twisting the cable when tightening the lock nut A, hold the positioning nut B or C with a wrench.
- If the positioning nuts B and C are loosened, place the nut B so that span D becomes 17.0 mm (0.669 in). Hold the nut B with a wrench and tighten the nut C to specified torque.

NOTE:

Additional adjustment is unnecessary.

REMOVAL (ACTUATOR)

- Remove insulator on lower side of actuator.
- Disconnect harness connector and cable from actuator.
Refer to [EX-9, "REMOVAL \(CABLE\)"](#).
- Remove actuator.

DUAL MODE MUFFLER

INSTALLATION (ACTUATOR)

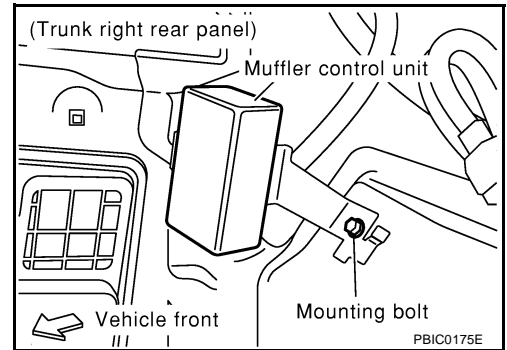
Install in the reverse order of removal.

REMOVAL (MUFFLER CONTROL UNIT)

1. Open trunk lid, and remove trunk side finisher (right).
2. Remove muffler control unit fixing bolt.
3. Disconnect harness connector and remove muffler control unit along with bracket.

CAUTION:

Do not drop or damage muffler control unit when removing.



INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

PPF:00030

Tightening Torque

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Unit: N·m (kg·m, ft·lb)
Unit: N·m (kg·m, in·lb)*

Exhaust system connections			
Between exhaust manifold and exhaust front tube		52.5 (5.4, 39)	
Between exhaust front tube and center muffler		57.9 (5.9, 43)	
Between center muffler and main muffler		34.8 (3.5, 26)	
Exhaust mounting fixing bolts			
For exhaust front tube		28.5 (2.9, 21)	
For center muffler		14.2 (1.4, 10)	
Heated oxygen sensor 2 (bank 1) (bank 2)		50.0 (5.1, 37)	
Dual mode muffler			
Muffler control unit		5.0 - 6.47 (0.51 - 0.65, 45 - 57)*	
Actuator		5.0 - 6.47 (0.51 - 0.65, 45 - 57)*	
Actuator mounting bracket		14.7 - 18.6 (1.5 - 1.8, 11 - 13)	
Actuator cover		5.0 - 6.47 (0.51 - 0.65, 45 - 57)*	
Cable lock nut (Both actuator and valve side)		25.5 - 33.3 (2.6 - 3.3, 19 - 24)	
Cable middle clamp tightening bolt		5.0 - 6.47 (0.51 - 0.65, 45 - 57)*	

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SERVICE DATA AND SPECIFICATIONS (SDS)
