

SECTION **RAX**
REAR AXLE

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RAX

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PREPARATION

< PRECAUTION >

PRECAUTION

PREPARATION

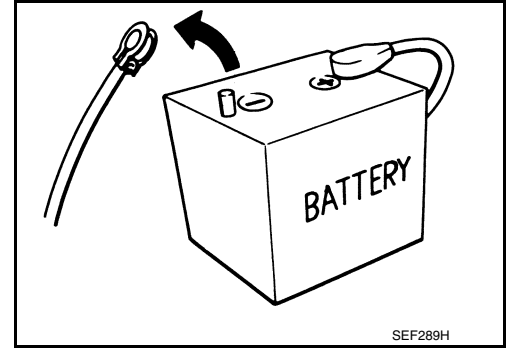
Precautions for Removing Battery Terminal

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When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		
YD25DDTi	: 2 minutes		



NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:

- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
 - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
 - Driving for 30 minutes or more on a steep slope.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.

- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.

NOTE:

The removal of 12V battery may cause a DTC detection error.

PREPARATION

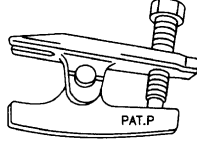
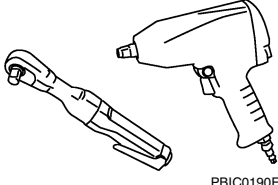
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

INFOID:000000012408341

Tool name	Description
<p>Ball joint remover</p>  <p>NT146</p>	<ul style="list-style-type: none">• Removing ball joint for suspension arm• Removing hub bolt
<p>Power tool</p>  <p>PBIC0190E</p>	<p>Loosening bolts and nuts</p>

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NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

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Use chart below to find the cause of the symptom. If necessary, repair or replace these parts.

Reference			RAX-6. "Exploded View"	—	RAX-5. "Inspection"	NVH in RAX and RSU sections	NVH in WT section	NVH in WT section	NVH in BR section
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Parts interference	Wheel bearing damage	REAR AXLE AND REAR SUSPENSION	TIRE	ROAD WHEEL	BRAKE
Symptom	REAR AXLE	Noise	x	x	x	x	x	x	x
		Shake	x	x	x	x	x	x	x
		Vibration	x	x	x	x	x		
		Shimmy	x	x		x	x	x	x
		Judder	x			x	x	x	x
		Poor quality ride or handling	x	x		x	x	x	

x: Applicable

REAR WHEEL HUB

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

REAR WHEEL HUB

Inspection

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COMPONENT PART

Check the mounting conditions (looseness, back lash) of each component and component conditions (wear, damage) are normal.

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

Check the following items, and replace the part it necessary.

- Move wheel hub assembly in the axial direction by hand. Check there is no looseness of wheel bearing.

Axial end play : Refer to [RAX-9, "Wheel Bearing"](#).

- Rotate wheel hub assembly and check there is no unusual noise or other irregular conditions. If there is any of irregular conditions, replace wheel hub assembly.

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REAR WHEEL HUB AND HOUSING

< REMOVAL AND INSTALLATION >

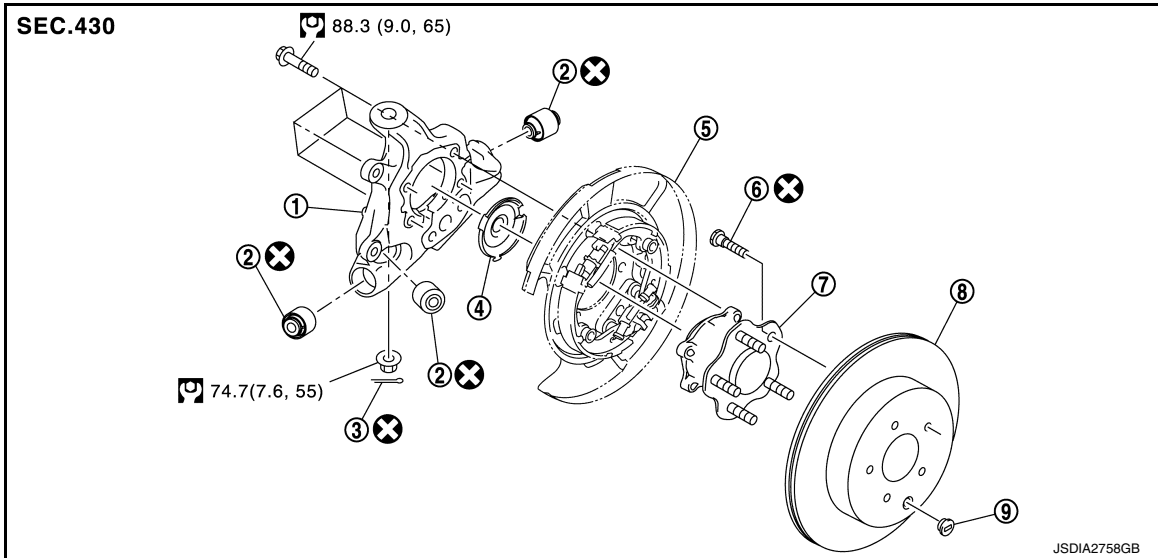
REMOVAL AND INSTALLATION

REAR WHEEL HUB AND HOUSING

Exploded View

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Except for 3.5LE Grade

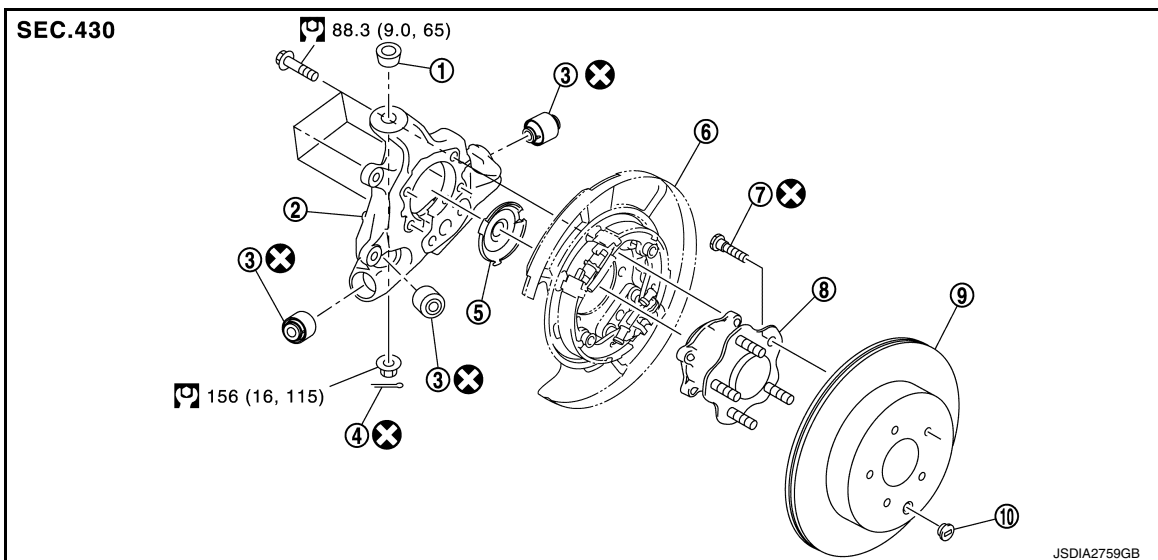


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|---|--------------------------------|---------------|
| 1. Axle housing | 2. Bushing | 3. Cotter pin |
| 4. Hub cap | 5. Parking brake shoe assembly | 6. Hub bolt |
| 7. Wheel hub assembly (Bearing-integrated type) | 8. Disc rotor | 9. Plug |

: N·m (kg·m, ft·lb)

: Always replace after every disassembly.

For 3.5LE Grade




- | | | |
|---------------|-----------------|--------------------------------|
| 1. Ball seat | 2. Axle housing | 3. Bushing |
| 4. Cotter pin | 5. Hub cap | 6. Parking brake shoe assembly |

REAR WHEEL HUB AND HOUSING

< REMOVAL AND INSTALLATION >

7. Hub bolt
8. Wheel hub assembly (Bearing-integrated type)
9. Disc rotor
10. Plug

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

Removal and Installation

INFOID:000000012408345

REMOVAL

1. Remove tires with power tool. Refer to [WT-46, "Exploded View"](#).
2. Remove wheel sensor. Refer to [BRC-136, "REAR WHEEL SENSOR : Removal and Installation"](#).
3. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work. Refer to [BR-49, "BRAKE CALIPER ASSEMBLY : Removal and Installation"](#).

CAUTION:

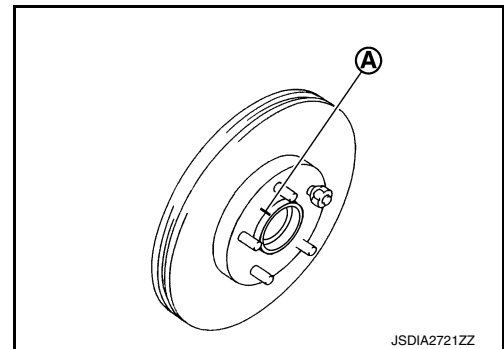
Never depress brake pedal while brake caliper is removed.

4. Remove disc rotor. If disc rotor cannot be removed, remove as follows.

CAUTION:

- Parking brake completely in the released position.
- Put matching marks (A) on the wheel hub assembly and the disc rotor before removing the disc rotor.
- Never drop disc rotor.

- a. Fix the disc rotor with wheel nuts and remove the adjusting hole plug.



- b. Using suitable tool, rotate adjuster (1) in the direction (B) to retract and loosen brake shoe.

5. Remove wheel hub assembly.

6. Remove parking brake and rear cable from back plate.
 - Parking brake: Refer to [PB-9, "Removal and Installation"](#).
 - Rear cable: Refer to [PB-7, "Removal and Installation"](#).

7. Remove radius rod from axle housing. Refer to [RSU-13, "Exploded View"](#).

8. Remove rear lower link and coil spring. Refer to [RSU-8, "Removal and Installation"](#).

9. Set suitable jack under axle housing.

CAUTION:

- At this step, the jack must be set only for supporting the removal procedure. For details on jacking up the vehicle, refer to [GI-29, "Garage Jack and Safety Stand and 2-Pole Lift"](#).
- Never damage the axle housing with a jack.
- Check the stable condition when using a jack.

10. Remove front lower link from shock absorber with power tool. Refer to [RSU-10, "Exploded View"](#).

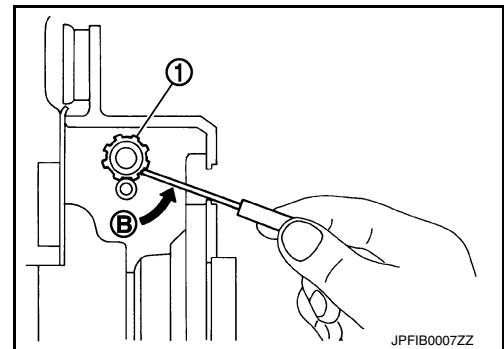
11. Remove front lower link from axle housing. Refer to [RSU-15, "Exploded View"](#).

12. Remove cotter pin, then remove suspension arm mounting nut.

13. Separate suspension arm from axle housing, using ball joint remover (commercial service tool), and then remove axle housing.

CAUTION:

- Never damage ball joint boot.
- Temporarily tighten nuts to prevent damage to threads and to prevent the ball joint remover from coming off.



REAR WHEEL HUB AND HOUSING

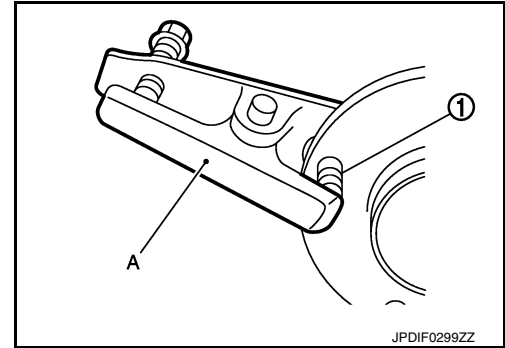
< REMOVAL AND INSTALLATION >

14. Remove axle housing.
15. Remove hub cap.
16. Remove hub bolts (1) from wheel hub assembly, using the ball joint remover (A) (commercial service tool).

CAUTION:

- Remove hub bolt only when necessary.
- Never hammer the hub bolt to avoid impact to the wheel hub assembly.
- Pull out the hub bolt in a direction perpendicular to the wheel hub assembly.

17. Perform inspection after removal. Refer to [RAX-8, "Inspection"](#).



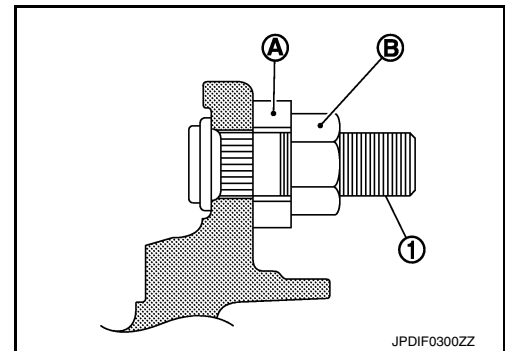
INSTALLATION

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

- Place a washer (A) as shown in the figure to install the hub bolts (1) by using the tightening force of the nut (B).

CAUTION:

- Check that there is no clearance between wheel hub assembly and hub bolt.
- Never reuse hub bolt.
- Align the matching marks that have been made during removal when reusing the disc rotor.
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing suspension component.
- Never reuse cotter pin and bushing.
- Perform inspection after installation. Refer to [RAX-8, "Inspection"](#).



Inspection

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INSPECTION AFTER REMOVAL

Check the wheel hub assembly for wear, cracks, and damage. Replace if necessary.

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. [BRC-136, "REAR WHEEL SENSOR : Exploded View"](#).
2. Adjust parking brake operation (stroke). Refer to [PB-4, "Inspection and Adjustment"](#).
3. Check wheel alignment. Refer to [RSU-6, "Inspection"](#).
4. Adjust neutral position of steering angle sensor. Refer to [BRC-50, "Work Procedure"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

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SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

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Item	Standard
Axial end play	0.05 mm (0.002 in) or less

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