

SECTION **FAX**
FRONT AXLE

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FAX

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PRECAUTIONS

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PRECAUTION

PRECAUTIONS

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

INFOID:000000008143040

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 12V battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation after 12V Battery Disconnect

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For vehicle with steering lock unit, if the 12V battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the 12V battery disconnected or discharged, follow the operation procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both 12V battery cables.

NOTE:

Supply power using jumper cables if 12V battery is discharged.

2. Turn the ignition switch to ACC position.
(At this time, the steering lock will be released.)
3. Disconnect both 12V battery cables. The steering lock will remain released with both 12V 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 12V 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 All DTC Reading using CONSULT and delete DTC.

NOTE:

Multiple DTCs are detected when 12V battery cable is disconnected while ignition switch is in ACC position.

PRECAUTIONS

< PRECAUTION >

Precautions Concerning On-board Servicing of Hybrid Systems

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CAUTION:

Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically. If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. [HBC-89, "Description"](#).

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PREPARATION

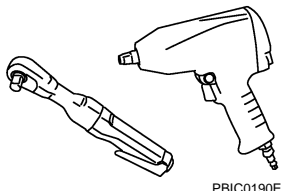
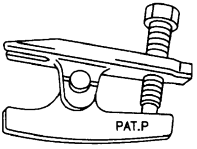
< PREPARATION >

PREPARATION

PREPARATION

Commercial Service Tools

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Tool name	Description
<p data-bbox="162 415 267 441">Power tool</p>  <p data-bbox="820 630 901 651">PBIC0190E</p>	<p data-bbox="1006 415 1258 441">Loosening bolts and nuts</p>
<p data-bbox="162 667 341 693">Ball joint remover</p>  <p data-bbox="787 819 836 840">PAT.P</p> <p data-bbox="820 882 868 903">NT146</p>	<ul data-bbox="1006 667 1429 724" style="list-style-type: none"><li data-bbox="1006 667 1429 693">• Removing ball joint for steering knuckle<li data-bbox="1006 693 1429 724">• Removing hub bolt

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.

Symptom		Reference		Possible cause and SUSPECTED PARTS		FAX-7, "Exploded View"		FAX-6, "Inspection"		NVH in FAX and FSU sections		NVH in WT section		NVH in BR section		NVH in ST section		
		Improper installation, looseness	Parts interference	Wheel bearing damage	FRONT AXLE AND FRONT SUSPENSION	TIRE	ROAD WHEEL	BRAKE	STEERING									
Symptom	FRONT AXLE	Noise	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
		Shake	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
		Vibration	x	x	x	x	x											
		Shimmy	x	x		x	x	x	x	x	x							
		Judder	x			x	x	x	x	x	x							
		Poor quality ride or handling	x	x		x	x	x	x	x								

x: Applicable

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FAX

FRONT WHEEL HUB AND KNUCKLE

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

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COMPONENT PART

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

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

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

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

Axial end play : Refer to [FAX-10. "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.

FRONT WHEEL HUB AND KNUCKLE

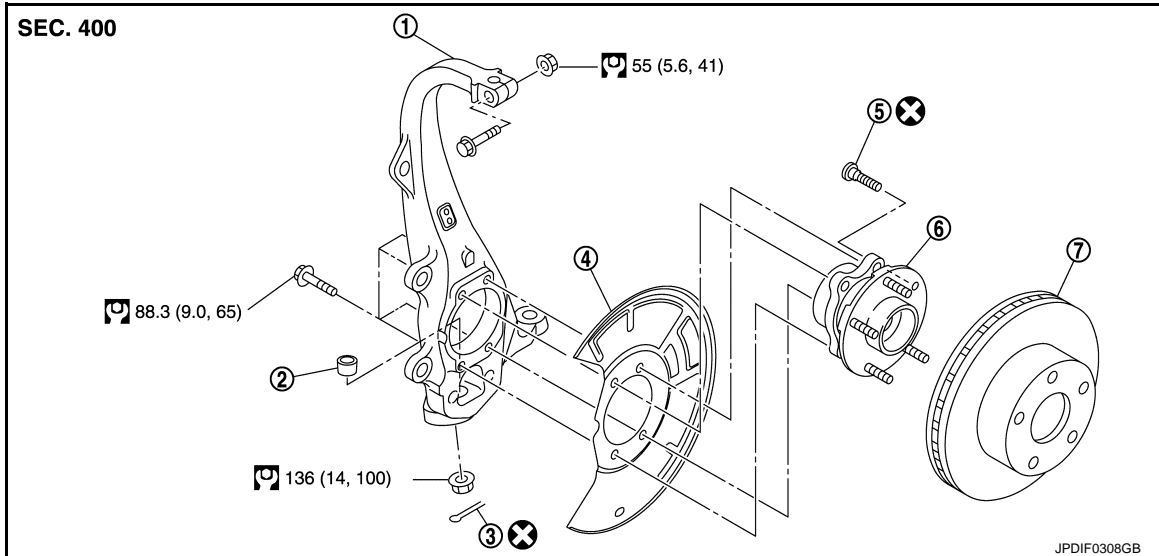
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

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- | | | |
|---------------------|--------------|---|
| 1. Steering knuckle | 2. Ball seat | 3. Cotter pin |
| 4. Splash guard | 5. Hub bolt | 6. Wheel hub assembly (Bearing-integrated type) |
| 7. Disc rotor | | |

⊗: Always replace after every disassembly.

Ⓜ: N·m (kg·m, ft·lb)

Removal and Installation

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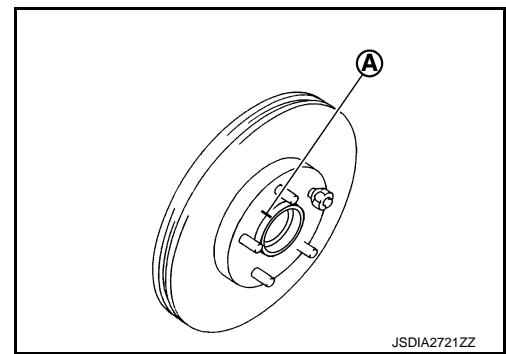
REMOVAL

1. Remove tires with power tool. Refer to [WT-58, "Exploded View"](#).
2. Remove wheel sensor and sensor harness. Refer to [BRC-159, "FRONT WHEEL SENSOR : Removal and Installation"](#).
CAUTION:
Never pull on wheel sensor harness.
3. Remove brake hose bracket from steering knuckle. Refer to [BR-283, "FRONT : Removal and Installation"](#).
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work. Refer to [BR-291, "BRAKE PAD : Removal and Installation"](#).
CAUTION:
Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor.
CAUTION:

FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

- Put matching marks (A) on the wheel hub and bearing assembly and the disc rotor before removing the disc rotor.
 - Never drop disc rotor.
6. Remove wheel hub and bearing assembly, and then remove splash guard.
 7. Separate steering outer socket from steering knuckle.
 - With heated steering wheel: Refer to [ST-37, "Removal and Installation"](#)
 - Without heated steering wheel: Refer to [ST-64, "Removal and Installation"](#)



CAUTION:

Never damage ball joint boot.

8. Separate steering knuckle from upper link.
9. Remove cotter pin of transverse link and steering knuckle, and then loosen nut.
10. Separate steering knuckle from transverse link, using the ball joint remover (commercial service tool), and remove steering knuckle.

CAUTION:

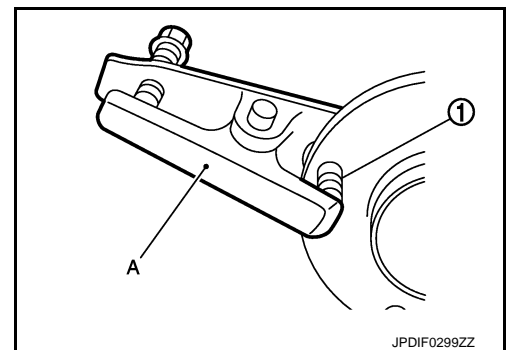
- Temporarily tighten the nut to prevent damage to threads and to prevent the ball joint remover from suddenly coming off.
- Never damage ball joint boot.

11. Remove steering knuckle.
12. Remove hub bolts from wheel hub and bearing 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 and bearing assembly.
- Pull out the hub bolt in a direction perpendicular to the wheel hub and bearing assembly.

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



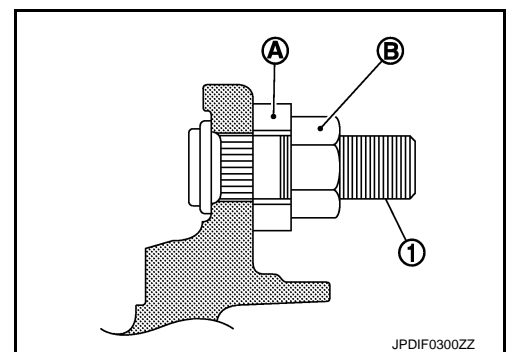
INSTALLATION

Note the following, and install in the reverse order of the 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 and bearing 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 wheel hub and bearing assembly and steering knuckle.
 - Never reuse cotter pin.
 - Perform inspection after installation. Refer to [FAX-8, "Inspection"](#).



Inspection

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INSPECTION AFTER REMOVAL

Check components for deformation, cracks, and other damage. Replace it if necessary.

Ball Joint Inspection

Check boots of transverse link, upper link, and steering outer socket ball joint for breakage, axial play, and torque.

- Transverse link: Refer to [FSU-14, "Inspection"](#).
- Upper link: Refer to [FSU-15, "Inspection"](#).

FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

- Steering outer socket: Refer to [ST-67, "Inspection and Adjustment"](#).

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to [BRC-159, "FRONT WHEEL SENSOR : Exploded View"](#).
2. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).
3. Adjust neutral position of steering angle sensor. Refer to [BRC-66, "Work Procedure"](#).

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SERVICE DATA AND SPECIFICATIONS (SDS)

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Wheel Bearing

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