

SECTION FAX

FRONT AXLE

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FAX

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PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000009541306

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. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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 three minutes before performing any service.

Precaution for Drive Shaft

INFOID:000000009541307

Observe the following precautions when disassembling and assembling drive shaft.

- Do not disassemble joint sub-assembly because it is non-overhaul parts.
- Perform work in a location which is as dust-free as possible.
- Clean the parts, before disassembling and assembling.
- Prevent the entry of foreign objects during disassembly of the service location.
- Reassemble disassembled parts carefully in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Use paper waste. Fabric shop cloths must not be used because of the danger of lint adhering to parts.
- Clean disassembled parts (except for rubber parts) with kerosene which shall be removed by blowing with air or wiping with paper waste.

Precautions for Wheel Hub and Knuckle

INFOID:000000009541308

Observe the following precautions when assembling wheel hub and knuckle.

- Perform work in a location which is as dust-free as possible.
- Use paper waste. Fabric shop cloths must not be used because of the danger of lint adhering to parts.
- If any of wheel hub, steering knuckle, wheel bearing, and wheel hub lock nut is dropped, it must not be used.
- Always check that the tools used for press-fit work of wheel hub and wheel bearing have no wear and deformation so that a pressure can be applied vertically.

PREPARATION

< PREPARATION >

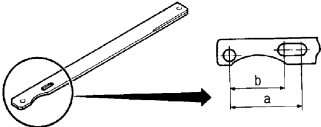
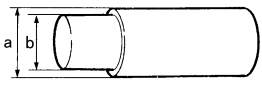
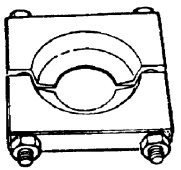
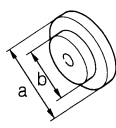
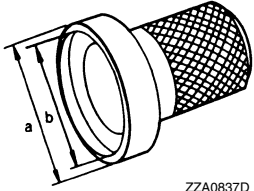
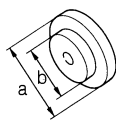
PREPARATION

PREPARATION

Special Service Tools

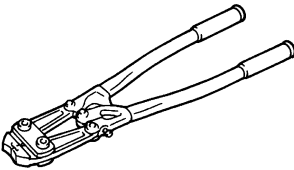
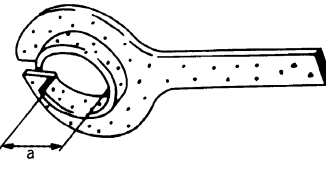
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The actual shapes of Kent-Moore tools may differ from those of special tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV40104000 (—) Hub lock nut wrench	Removing and Installing wheel hub lock nut a: 85 mm (3.35 in) b: 65 mm (2.56 in)
 ZZA0802D	
ST33710000 (—) Drift	Removing wheel hub a: 30 mm (1.18 in) dia. b: 23 mm (0.91 in) dia.
 ZZA1233D	
ST30031000 (—) Puller	Removing wheel bearing inner race (outer)
 ZZA0700D	
ST35321000 (—) Drift	- Removing wheel bearing - Installing wheel hub a: 49 mm (1.93 in) dia. b: 41 mm (1.61 in) dia.
 ZZA1051D	
ST35271000 (—) Drift	Installing wheel bearing a: 72 mm (2.83 in) dia. b: 63 mm (2.48 in) dia.
 ZZA0837D	
ST33061000 (—) Drift	Installing wheel hub a: 38 mm (1.50 in) dia. b: 28.5 mm (1.122 in) dia.
 ZZA1051D	

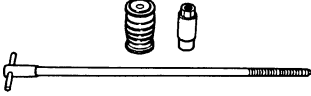
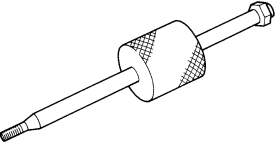
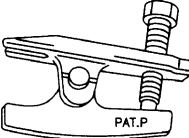
PREPARATION

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Tool number (Kent-Moore No.) Tool name	Description
KV40107300 (—) Boot band crimping tool	Installing boot band
 ZZA1229D	
KV40107500 (—) Drive shaft attachment	Removing drive shaft
 ZZA1230D	
KV38107900 (—) Differential side oil seal protector	Installing drive shaft a: 32 mm (1.26 in) dia.
 PDIA1183J	

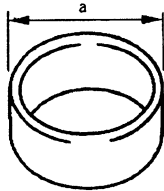
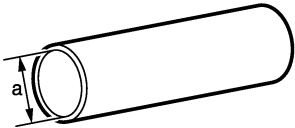
Commercial Service Tools

INFOID:000000009541310

Tool name	Description
Drive shaft puller	Removing drive shaft joint sub-assembly
 JPDIG0152ZZ	
Sliding hammer	Removing drive shaft
 ZZA0023D	
Ball joint remover	Removing wheel stud
 PAT.P NT146	

PREPARATION

< PREPARATION >

Tool name		Description
Drift	 ZZA0898D	- Installing wheel bearing - Installing splash guard a: 68 mm (2.68 in) dia.
Drift	 JPDIC0679ZZ	Installing splash guard a: 95 mm (3.74 in) dia.
Power tool	 PIIB1407E	Loosening nuts, screws and bolts

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NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:000000009541311

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

Reference			—	FSU-20	—	FAX-7	—	FAX-7	FSU-6	—	WT-5	WT-4	—	BR-7	ST-7
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	FRONT SUSPENSION	FRONT AXLE	TIRE	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING
Symptom	DRIVE SHAFT	Noise	x	x				x	x	x	x	x		x	x
		Shake	x		x			x	x	x	x	x		x	x
	FRONT AXLE	Noise				x	x	x	x		x	x	x	x	x
		Shake				x	x	x	x		x	x	x	x	x
		Vibration				x	x	x	x		x		x		x
		Shimmy				x	x		x		x	x		x	x
		Shudder				x			x		x	x		x	x
		Poor quality ride or handling				x	x		x		x	x			

x: Applicable

FRONT WHEEL HUB AND KNUCKLE

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PERIODIC MAINTENANCE

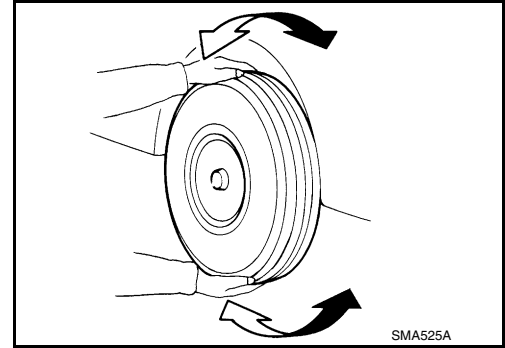
FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:000000009541312

COMPONENT PART

- Check that the mounting conditions (looseness, backlash) of each component and component conditions (wear, damage) are normal.
- Check the axle and suspension parts for excessive play, weary or damage.
- Shake each front wheel to check for excessive play.



FRONT WHEEL BEARING INSPECTION

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

- Move the wheel bearing in the axial direction by hand. Make sure there is no looseness in the wheel bearing.

Axial end play : Refer to [FAX-27](#).

- Rotate the wheel bearing and make sure there is no unusual noise or other irregular conditions. If there are any irregular conditions, replace wheel bearing.

FRONT DRIVE SHAFT

< PERIODIC MAINTENANCE >

FRONT DRIVE SHAFT

Inspection

INFOID:000000009541313

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

- Check drive shaft mounting point and joint for looseness and other damage.

CAUTION:

Replace entire drive shaft when noise or vibration occurs from drive shaft.

- Check boot for cracks and other damage.

FRONT WHEEL HUB AND KNUCKLE

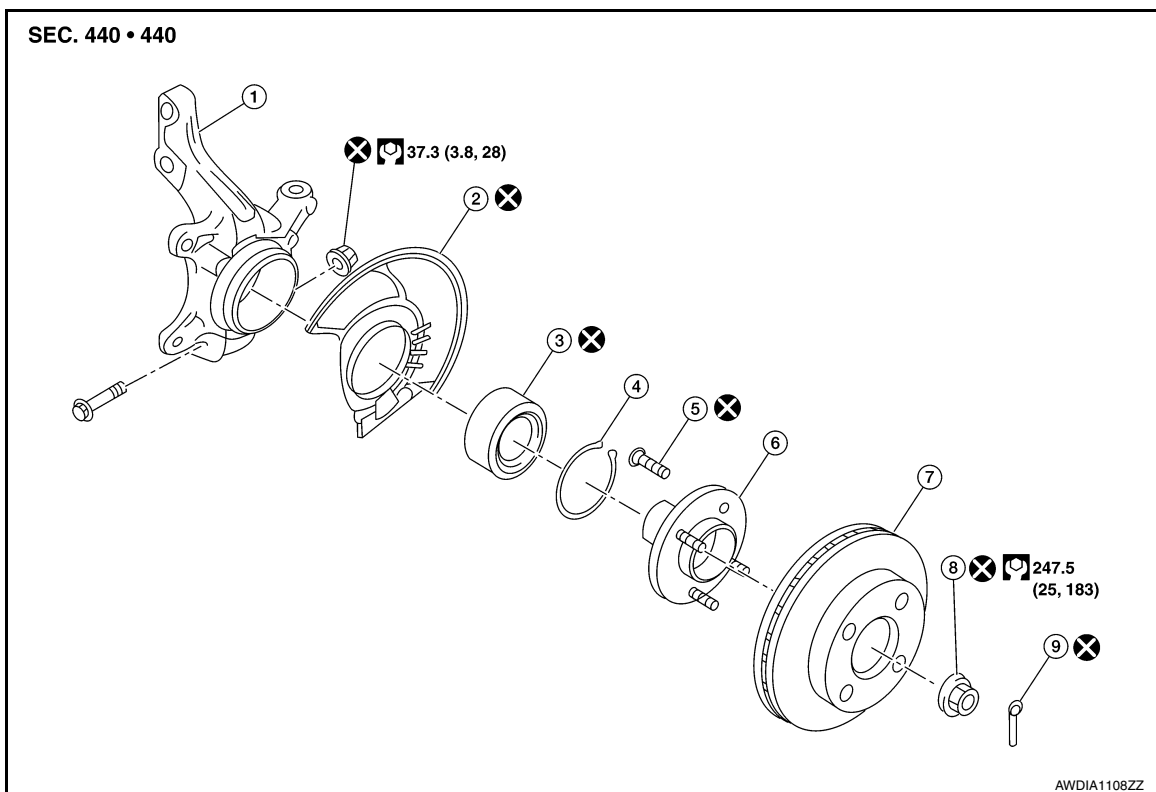
< REMOVAL AND INSTALLATION >

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

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- | | | |
|---------------------|-----------------------|------------------|
| 1. Steering knuckle | 2. Splash guard | 3. Wheel bearing |
| 4. Snap ring | 5. Wheel stud | 6. Wheel hub |
| 7. Disc brake rotor | 8. Wheel hub lock nut | 9. Cotter pin |

Removal and Installation

INFOID:000000009541315

REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-8, "Removal and Installation"](#).
2. Remove wheel sensor and sensor harness. Refer to [BRC-69, "FRONT WHEEL SENSOR : Removal and Installation"](#).
3. Remove brake caliper using power tool, leaving brake hose connected. Reposition brake caliper aside with wire. Refer to [BR-35, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).
NOTE:
Avoid depressing brake pedal while brake caliper is removed.
4. Put matching marks on disc brake rotor and wheel hub, then remove disc brake rotor.
CAUTION:
 - Use paint for matching parts. Do not damage the disc brake rotor or wheel hub.
 - Do not drop disc rotor.
5. Remove and discard cotter pin, and then loosen wheel hub lock nut, using Tool.

Tool number : KV40104000 (—)

6. Separate the drive shaft from the wheel hub by lightly tapping the end of the drive shaft using a suitable tool and a wood block.

NOTE:

FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

Use suitable puller if wheel hub and drive shaft cannot be separated after performing the above procedure.

7. Remove wheel hub lock nut.
8. Remove the nut and separate the steering outer socket from steering knuckle. Refer to [ST-14. "Exploded View"](#).
9. Remove the nuts and bolts, then separate the steering knuckle from strut. Refer to [FSU-9. "Exploded View"](#).
10. Suspend the drive shaft with suitable wire.

CAUTION:

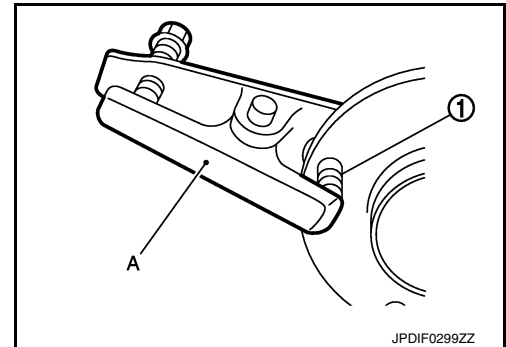
- Do not place drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.
- Do not allow drive shaft to hang down without support for joint sub-assembly, shaft and the other parts.

11. Remove transverse link outer nut and bolt. Remove steering knuckle from transverse link.

12. If necessary, remove wheel studs (1) from wheel hub using the suitable tool (A).

CAUTION:

- Remove stud only when necessary.
- Do not hammer the wheel stud or damage to the wheel bearing may occur.
- Press the wheel stud straight out to avoid damaging the stud.



INSTALLATION

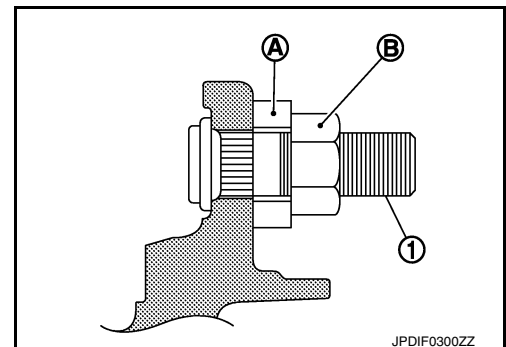
Installation is in the reverse order of the removal.

CAUTION:

- Do not reuse the transverse link outer nut.
- Do not damage the wheel bearing seal. If damage has occurred, replace wheel bearing.
- Do not allow paint to adhere to the wheel bearing seal.
- Check each mating surface for water and foreign matter. If there is any water or foreign matter, clean the mounting surface.
- Position the stud (1) to the wheel hub flange. Place a washer (A) and nut (B) on the opposite end of the stud. Tighten to press the stud into the wheel hub flange.

CAUTION:

- Check that no clearance exists between wheel hub and wheel stud after installation.
- Do not reuse wheel stud.



- Clean the mating surfaces of wheel hub lock nut and wheel hub.

CAUTION:

Do not apply lubricating oil to the mating surface of the wheel hub lock nut and the wheel hub.

FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

- Clean the mating surfaces of drive shaft, wheel hub, and wheel bearing. Apply Molykote M77 to surface (A) of joint sub-assembly.

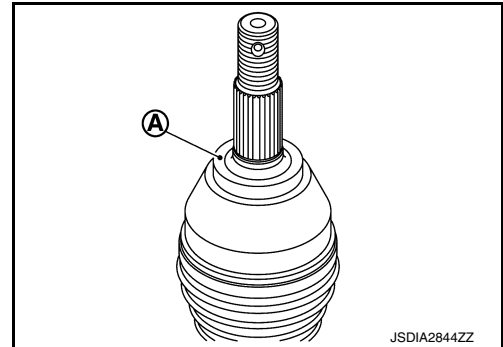
CAUTION:

Apply Molykote M77 to cover entire flat surface of joint sub-assembly.

NOTE:

Always check with the Parts Department for the latest parts information.

Molykote M77 quantity : [FAX-27, "Drive Shaft"](#)



- When reusing disc rotor, align the matching marks during removal.
- When installing a cotter pin, securely bend the cotter pin to prevent rattles.

CAUTION:

Do not reuse cotter pin.

Disassembly and Assembly

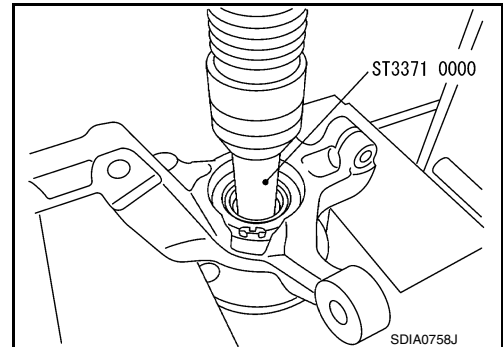
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DISASSEMBLY

1. Remove wheel hub using Tool.

Tool number : ST33710000 (—)

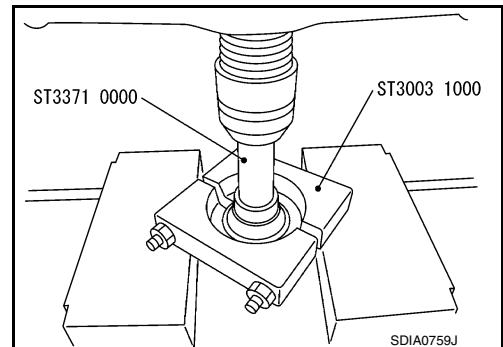
2. Remove splash guard from steering knuckle.



3. Remove wheel bearing inner race (outer side) from wheel hub using Tools.

Tool number : ST33710000 (—)

Tool number : ST30031000 (—)



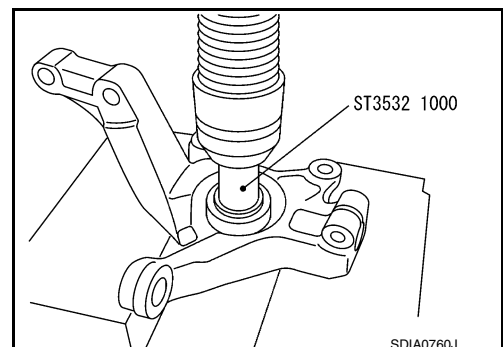
4. Remove snap ring from steering knuckle using suitable tool.

CAUTION:

Do not damage steering knuckle.

5. Remove wheel bearing from steering knuckle using Tool.

Tool number : ST35321000 (—)



FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

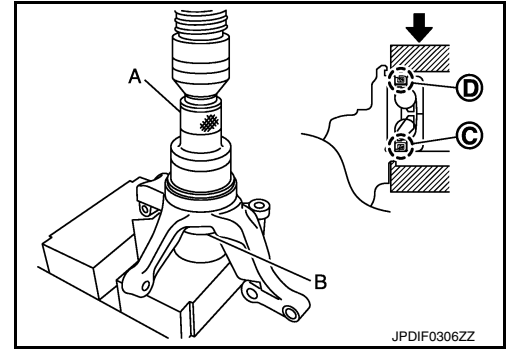
ASSEMBLY

1. Install wheel bearing to steering knuckle using the Tool (A) and a suitable tool (B).

Tool number : ST35271000 (—)

CAUTION:

- Do not reuse wheel bearing.
- Do not apply a cleaning agent or anticorrosive to the mounting surfaces of the wheel bearing and steering knuckle.
- Install wheel bearing with the wheel sensor rotor rubber part (C) faced to the steering knuckle inner side.
- The wheel sensor rotor of the wheel bearing must be kept free of foreign matter.
- The press-fit load must be applied to the wheel bearing outer race and the steering knuckle.
- Do not apply press-fit load to the wheel bearing inner race, the seal (C) on the rubber surface side (wheel sensor rotor side), and the seal (D) on the metallic surface side. If a press-fit load is applied, the wheel bearing must be replaced with a new one.



Wheel bearing press-fit load : Refer to [FAX-27, "Wheel Bearing"](#)

2. Install snap ring to steering knuckle.

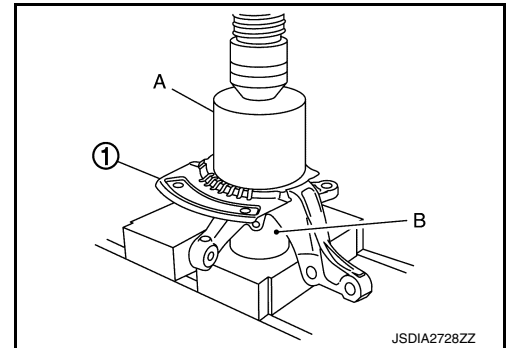
CAUTION:

- Do not damage the wheel bearing seal.
- The snap ring must be installed evenly into the groove.

3. Press splash guard (1) into the steering knuckle using suitable tools (A and B).

CAUTION:

Do not reuse splash guard.



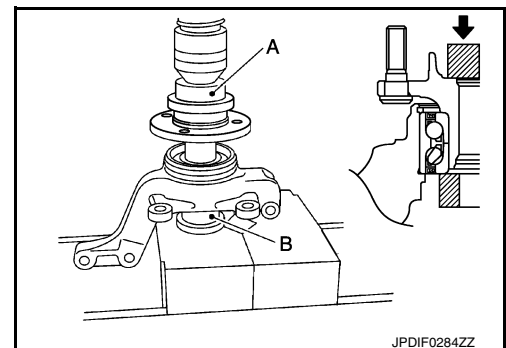
4. Install wheel hub using Tools.

Tool number (A) : ST33061000 (—)

Tool number (B) : ST35321000 (—)

CAUTION:

- Do not apply lubricating oil to the press-fit surface of the wheel hub bearing.
- Set wheel hub and wheel bearing horizontally and insert them vertically.
- The press-fit load must be applied to the wheel hub and the wheel bearing inner race.
- Do not apply press-fit load to the steering knuckle and the wheel bearing, the seal. If a press-fit load is applied, the wheel bearing must be replaced with a new one.
- Apply a press-fit load and maintain the loaded state for 30 seconds.
- If the inserted wheel hub is removed again, the wheel bearing must be replaced with a new one.



Wheel bearing press-fit load : Refer to [FAX-27, "Wheel Bearing"](#)

FRONT WHEEL HUB AND KNUCKLE

< REMOVAL AND INSTALLATION >

Inspection

INFOID:000000009541317

INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque. Refer to [FSU-20, "Ball Joint"](#) and [FAX-27, "Wheel Bearing"](#).

INSPECTION AFTER DISASSEMBLY

Wheel Hub

- Check wheel hub for cracks (with magnetic exploration or dye testing). Replace if necessary.

Steering Knuckle

- Check steering knuckle for deformation, cracks, and other damage. Replace if any non-standard conditions are found.

Snap Rings

- Check snap ring for wear or cracks. Replace if necessary.

INSPECTION AFTER ASSEMBLY

Check wheel bearing rotating torque as per the following instructions.

NOTE:

The adequacy of turning torque can be judged from a measurement value by a spring balancer.

1. For a proper fit of the bearing, turn the wheel hub clockwise and counterclockwise, respectively, 10 times or more with a press-fit load applied.

Wheel bearing press-fit load : Refer to [FAX-27, "Wheel Bearing"](#)

2. Set a spring balance on strut mounting hole (upper). Measure rotating torque at an rpm of 8 - 12 rpm.

Rotating torque : Refer to [FAX-27, "Wheel Bearing"](#).
Spring balance measurement : Refer to [FAX-27, "Wheel Bearing"](#).

- If the turning torque cannot be obtained by the above method, measure the torque, according to the instructions below.
- Install drive shaft and tighten the hub lock nut to the specified torque. Rotate the wheel hub to fit properly.
- Set a spring balancer to the hub bolt and measure turning torque at turning speeds of 8 to 12 rpm.

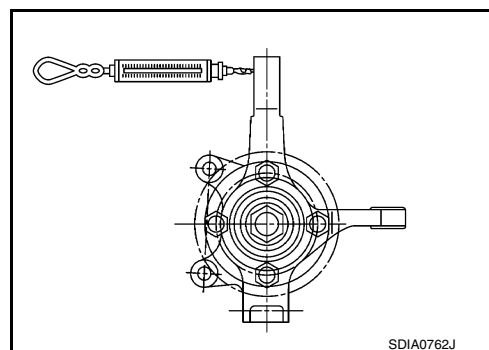
Rotating torque : Refer to [FAX-27, "Wheel Bearing"](#)
Spring balance measurement : Refer to [FAX-27, "Wheel Bearing"](#)

INSPECTION BEFORE INSTALLATION

Check wheel sensor rotor for foreign matter. Clean the rotor, if necessary.

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness to be sure the connectors are fully seated. Refer to [BRC-69, "FRONT WHEEL SENSOR : Exploded View"](#).
2. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).



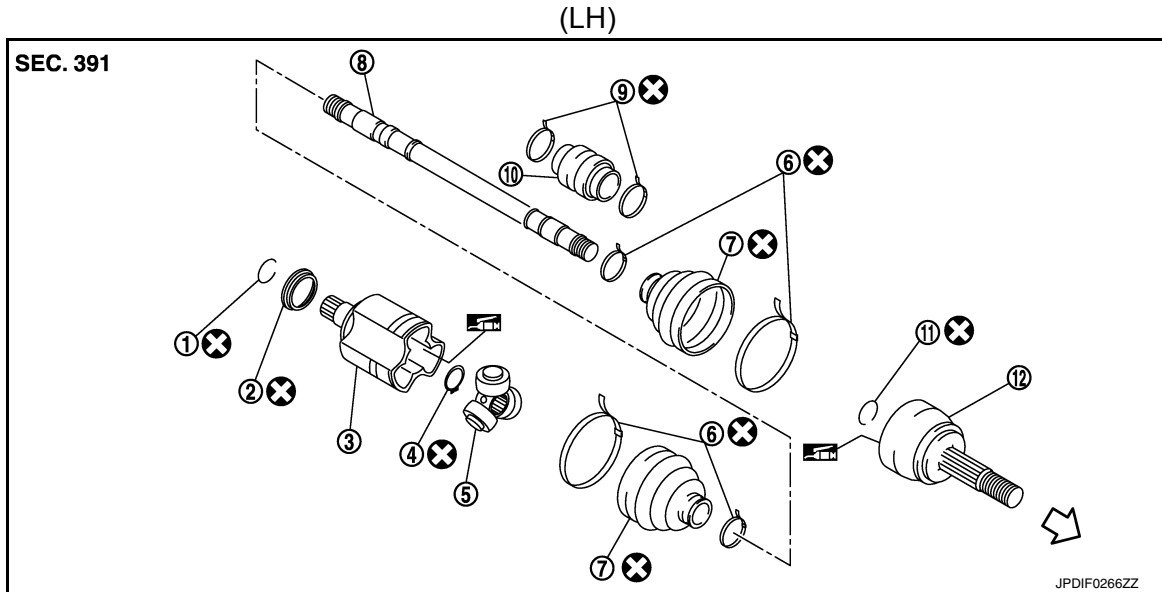
FRONT DRIVE SHAFT BOOT

< REMOVAL AND INSTALLATION >

FRONT DRIVE SHAFT BOOT

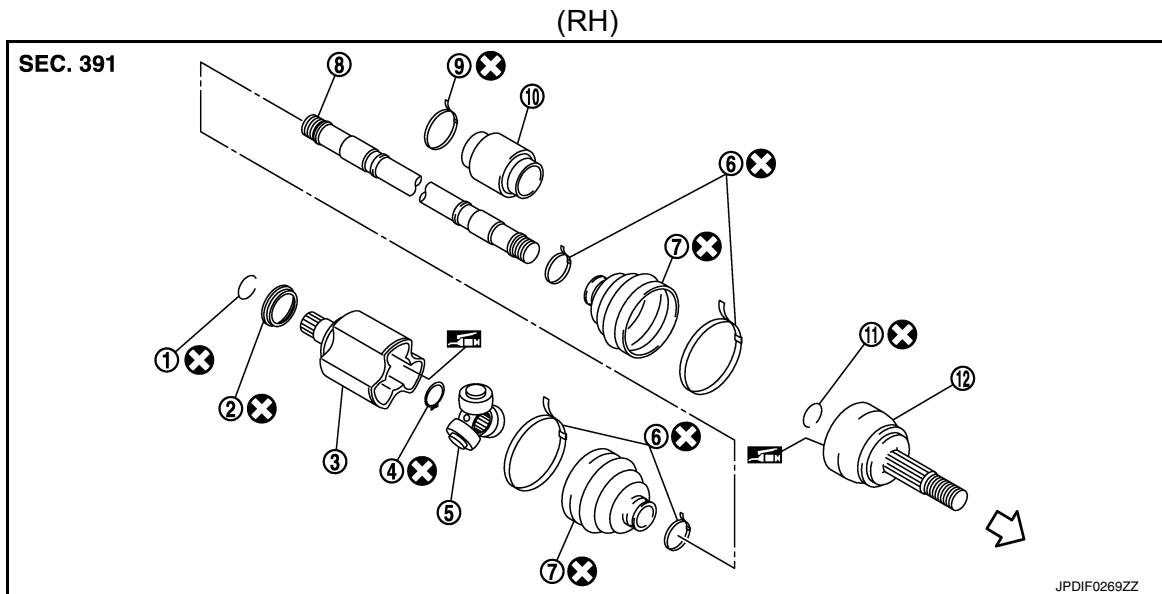
Exploded View

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|--------------------|--------------------|------------------------|
| 1. Circular clip | 2. Dust shield | 3. Slide joint housing |
| 4. Snap ring | 5. Spider assembly | 6. Boot band |
| 7. Boot | 8. Shaft | 9. Damper band |
| 10. Dynamic damper | 11. Circular clip | 12. Joint sub-assembly |

⇐ Wheel side



- | | | |
|--------------------|--------------------|------------------------|
| 1. Circular clip | 2. Dust shield | 3. Slide joint housing |
| 4. Snap ring | 5. Spider assembly | 6. Boot band |
| 7. Boot | 8. Shaft | 9. Damper Band |
| 10. Dynamic damper | 11. Circular clip | 12. Joint sub-assembly |

⇐ Wheel side

WHEEL SIDE

FRONT DRIVE SHAFT BOOT

< REMOVAL AND INSTALLATION >

WHEEL SIDE : Removal and Installation

INFOID:000000009541319

REMOVAL

1. Remove the wheel and tire using power tool.
2. Remove the brake caliper torque member bolts, leaving the brake hose attached. Position the brake caliper aside with wire. Refer to [BR-35, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

CAUTION:

Do not depress the brake pedal while the brake caliper is removed.

3. Put alignment marks on the disc brake rotor and on the wheel hub. Remove the disc brake rotor.

CAUTION:

Do not drop the disc brake rotor.

4. Remove the wheel sensor bolt. Position the wheel sensor and the wheel sensor harness aside. Refer to [BRC-69, "FRONT WHEEL SENSOR : Removal and Installation"](#).
5. Remove the cotter pin from the drive shaft.
6. Hold the wheel hub using Tool. Loosen the wheel hub lock nut.

Tool number : KV4010104000 (—)

7. Using a piece of wood and a suitable tool, tap on the wheel hub lock nut to disengage the drive shaft from the wheel hub.

CAUTION:

- Do not place the drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.
- Do not allow the drive shaft to hang down without support.

NOTE:

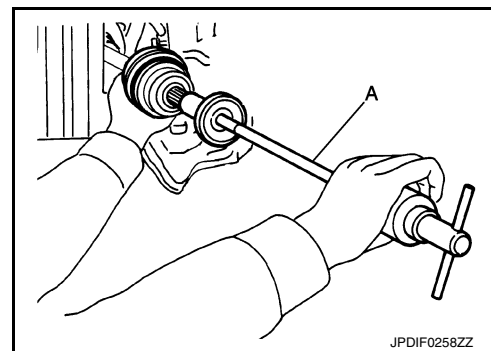
Use a suitable puller if the drive shaft cannot be separated from the wheel hub even after performing the above procedure.

8. Remove the wheel hub lock nut.
9. Remove the nut and bolt from the lower ball joint. Disconnect the steering knuckle from the transverse link.
10. Remove the drive shaft from the wheel hub.
11. Remove the boot bands.
12. Separate the boot from the joint sub-assembly.

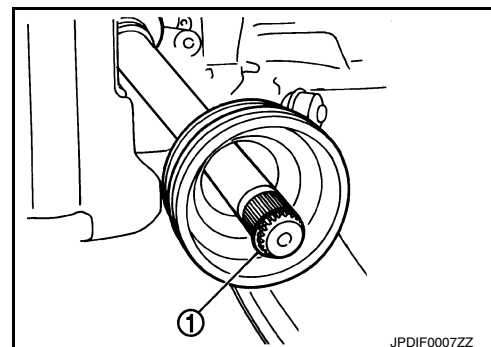
13. Screw a suitable tool (A) into the joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support the drive shaft with one hand and pull out the joint sub-assembly from the shaft.

CAUTION:

- Align the suitable tool and the drive shaft. Remove the joint sub-assembly by pulling firmly and uniformly.
- If the joint sub-assembly cannot be pulled out, try after removing the drive shaft from the vehicle. Refer to [FAX-22, "Disassembly and Assembly"](#).



14. Remove the circular clip (1) from the shaft.
15. Remove the outer boot from the shaft.



FRONT DRIVE SHAFT BOOT

< REMOVAL AND INSTALLATION >

INSTALLATION

1. Clean the old grease from the joint sub-assembly using paper waste.
2. Fill the serration slot on the joint sub-assembly (1) with NISSAN genuine grease or equivalent until the serration slot and ball groove become full to the brim.

CAUTION:

After applying the grease, use paper waste to wipe off the grease that has oozed out.

NOTE:

Always check with the Parts Department for the latest parts information.

3. Install the outer boot and the boot bands to the shaft.

CAUTION:

- **Wrap the serration on the shaft with tape to protect the boot from damage.**
- **Do not reuse the boot.**
- **Do not reuse the boot bands.**

4. Remove the tape wrapped around the serration on the shaft.

5. Position the circular clip (1) on the groove at the shaft edge.

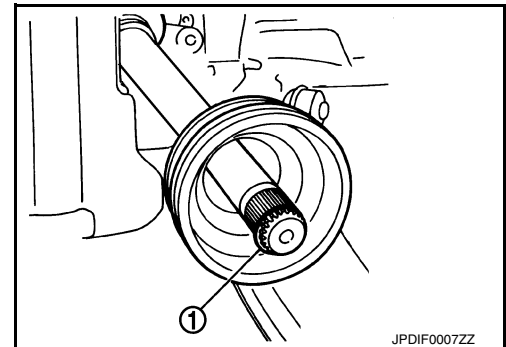
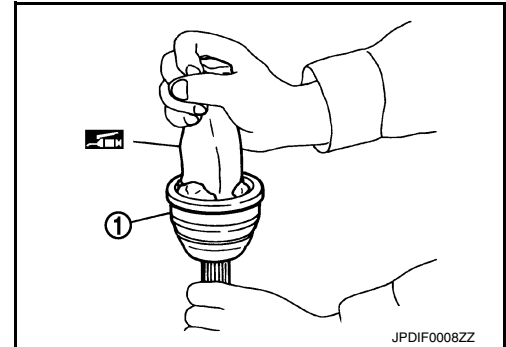
CAUTION:

Do not reuse the circular clip.

NOTE:

A drive joint inserter is recommended when installing the circular clip.

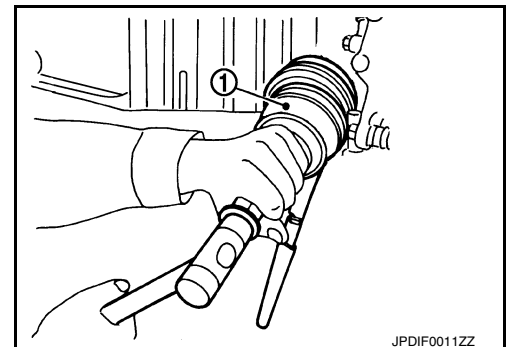
6. Align the shaft and the joint sub-assembly. Assemble the shaft with the joint sub-assembly while holding the circular clip.



7. Install the joint sub-assembly (1) to the shaft using a suitable tool.

CAUTION:

- **Make sure the circular clip is properly positioned on the groove of the joint sub-assembly.**
- **Confirm that the joint sub-assembly is correctly engaged while rotating the drive shaft.**



8. Apply the specified amount of grease to the inside of the large diameter side of the boot.

NOTE:

Always check with the Parts Department for the latest parts information.

Grease amount : Refer to [FAX-27, "Drive Shaft"](#).

FRONT DRIVE SHAFT BOOT

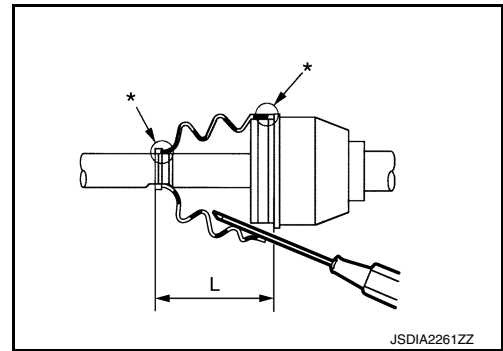
< REMOVAL AND INSTALLATION >

9. Install the boot securely into the grooves (indicated by "*" marks) as shown.

CAUTION:

If there is grease on the boot mounting surfaces (indicated by "*" marks) on the shaft or the joint sub-assembly, the boot may come off. Remove all grease from the boot mounting surfaces.

10. To prevent the deformation of the boot, adjust the boot installation length to the specified value by inserting a suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.



Boot installation length (L) : Refer to FAX-27, "Drive Shaft".

CAUTION:

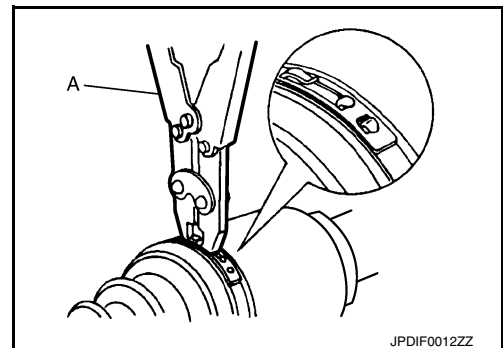
- The boot may break if the boot installation length is not correct.
- Be careful not to touch the inside of the boot with the tip of the suitable tool.

11. Install new large and small boot bands securely using Tool (A).

CAUTION:

Do not reuse the boot bands.

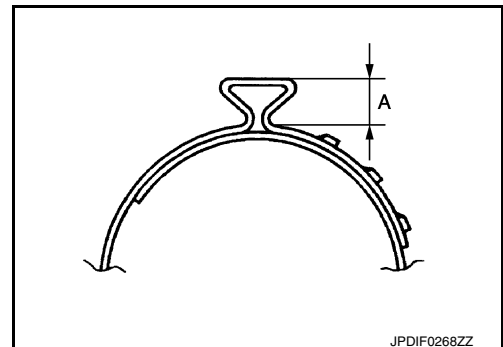
Tool number : KV40107300 (-)



12. Secure the boot band so that dimension (A) meets the specification.

Dimension (A) : Refer to FAX-27, "Drive Shaft".

13. Attempt to rotate the boot to check whether or not the boot bands are securing the boot. If the boot is not secure, remove the boot bands, reposition the boot, and install new boot bands.



14. Clean the mating surfaces of wheel hub lock nut and wheel hub.

CAUTION:

Do not apply lubricating oil to these mating surfaces.

15. Clean the mating surfaces of the drive shaft, wheel hub, and wheel bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.

CAUTION:

Apply Molykote M77 to cover the entire flat mating surface of the joint sub-assembly.

Molykote M77 quantity Refer to FAX-27, "Drive Shaft".

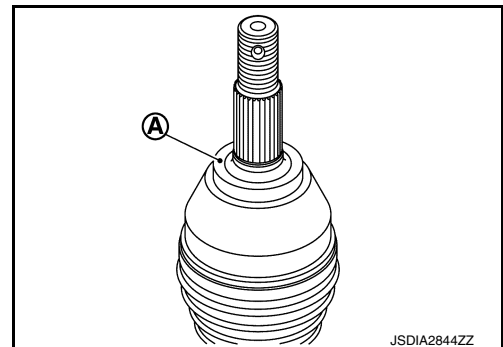
NOTE:

Always check with the Parts Department for the latest parts information.

16. Install the drive shaft to the wheel hub. Temporarily install, but do not tighten, the wheel hub lock nut.

CAUTION:

- Do not damage the wheel bearing seal. If damage has occurred, replace wheel bearing.
- Do not allow paint to adhere to the wheel bearing seal.



FRONT DRIVE SHAFT BOOT

< REMOVAL AND INSTALLATION >

- Check each mating surface for water and foreign matter. If there is any water or foreign matter, clean the mating surface.

17. Install the transverse link to the steering knuckle with the nut and bolt. Refer to [FSU-10, "Exploded View"](#).

18. Hold the wheel hub using a Tool. Tighten the wheel hub lock nut.

CAUTION:

- Since the drive shaft is assembled by press-fitting, use a torque wrench to tighten the wheel hub lock nut. Do not use a power tool.
- Too much torque causes axle noise. Too little torque causes wheel bearing looseness. Tighten the wheel hub lock nut to the specification.

Tool number : KV4010104000 (—)

19. Install the cotter pin. Securely bend the cotter pin to prevent rattles.

CAUTION:

Do not reuse the cotter pin.

20. Install the wheel sensor, the wheel sensor bolt, and the wheel sensor harness. Refer to [BRC-69, "FRONT WHEEL SENSOR : Removal and Installation"](#).

21. Align the matching marks on the disc brake rotor and on the wheel hub. Install the disc brake rotor.

CAUTION:

Do not drop the disc brake rotor.

22. Remove the wire from the brake caliper. Install the brake caliper and the brake caliper torque member bolts. Refer to [BR-36, "BRAKE CALIPER ASSEMBLY : Removal and Installation"](#).

CAUTION:

Do not twist the brake hose.

23. Install the wheel and tire. Refer to [WT-8, "Removal and Installation"](#).

24. Complete the inspection. Refer to [FAX-18, "Inspection"](#).

TRANSAXLE SIDE

TRANSAXLE SIDE : Removal and Installation

INFOID:0000000009541320

Remove boot after drive shaft is removed from the vehicle.

- For drive shaft removal and installation, refer to [FAX-19, "Removal and Installation"](#).
- For drive shaft disassembly and assembly, refer to [FAX-22, "Disassembly and Assembly"](#).

Inspection

INFOID:0000000009541321

INSPECTION AFTER INSTALLATION

1. Check the wheel sensor harness to be sure the connectors are fully seated.
2. Check the wheel alignment. Refer to [FSU-7, "Inspection"](#).

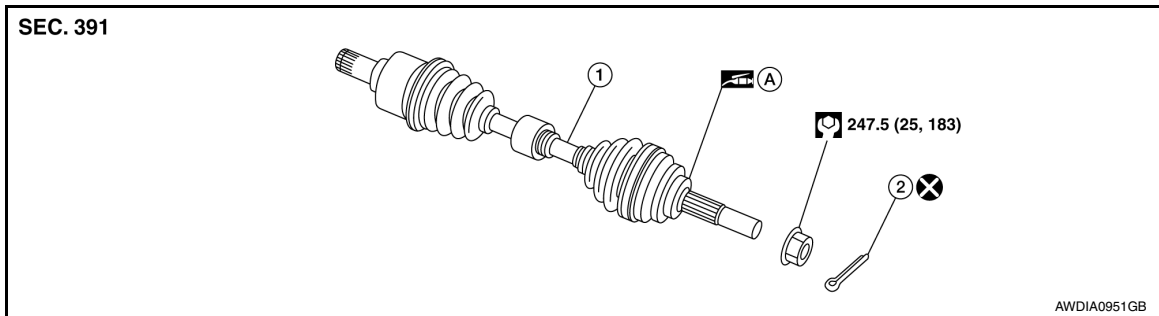
FRONT DRIVE SHAFT

< REMOVAL AND INSTALLATION >

FRONT DRIVE SHAFT

Exploded View

INFOID:000000009541322



Removal and Installation

INFOID:000000009541323

NOTE:

When removing components such as hoses, tubes, lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

1. Remove the wheel and tire using power tool. Refer to [WT-8, "Removal and Installation"](#).
2. Remove wheel sensor and sensor harness. Refer to [BRC-69, "FRONT WHEEL SENSOR : Removal and Installation"](#).
3. Remove brake lock plate from strut.
4. Remove brake caliper using power tool, leaving brake hose connected. Reposition brake caliper aside with wire. Refer to [BR-35, "BRAKE CALIPER ASSEMBLY : Exploded View"](#).

NOTE:

Do not depress brake pedal while brake caliper is removed.

5. Put matching marks on disc brake rotor and wheel hub, then remove disc brake rotor.

CAUTION:

- Put matching marks on the wheel hub and the disc brake rotor before removing the disc brake rotor.
- Do not drop disc brake rotor.

6. Remove and discard cotter pin, and then loosen wheel hub lock nut, using Tool.

Tool number : KV40104000 (—)

7. Separate the drive shaft from the wheel hub by lightly tapping the end of the drive shaft using a suitable tool and a wood block.

CAUTION:

- Do not place drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.
- Do not allow drive shaft to hang down without support for joint sub-assembly, shaft and the other parts.

NOTE:

Use suitable puller if wheel hub and drive shaft cannot be separated even after performing the above procedure.

8. Remove wheel hub lock nut.
9. Remove the nuts and bolts, then separate the steering knuckle from strut. Refer to [FSU-9, "Exploded View"](#).
10. Remove drive shaft from wheel hub.

FRONT DRIVE SHAFT

< REMOVAL AND INSTALLATION >

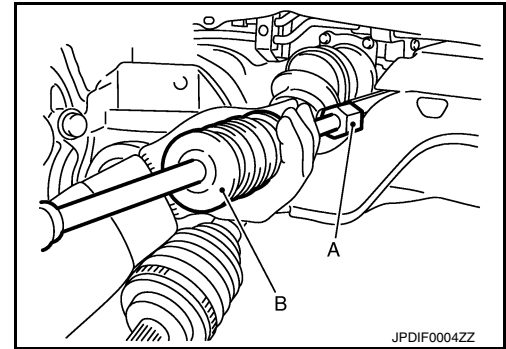
11. Insert the Tool (A) between the drive shaft and the transaxle. Insert the suitable tool (B) to the Tool (A). Remove the drive shaft from the transaxle.

Tool number : KV40107500 (—)

CAUTION:

- Do not place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.
- Confirm that the circular clip is attached to the drive shaft.

12. Remove the differential side oil seal. Refer to [TM-17, "Removal and Installation"](#) (5MT:RS5F91R), or [TM-243, "Removal and Installation"](#) (CVT:RE0F11A).



INSTALLATION

Installation is in the reverse order of removal.

Transaxle Side

- Install a new differential side oil seal. Refer to [TM-17, "Removal and Installation"](#) (5MT:RS5F91R), or [TM-243, "Removal and Installation"](#) (CVT:RE0F11A).

CAUTION:

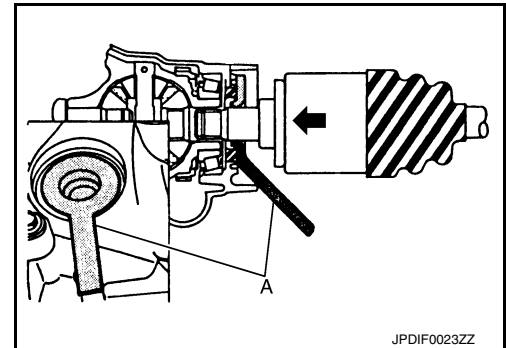
Do not reuse the differential side oil seal.

- Place the Tool (A) onto transaxle to prevent damage to the oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.

Tool number : KV38107900 (—)

CAUTION:

- Check that circular clip is completely engaged.
- Check the transaxle fluid level. Refer to [TM-224, "Inspection"](#) (5MT), or [TM-224, "Inspection"](#) (CVT).



Wheel Hub Side

CAUTION:

- Do not damage the wheel bearing seal. If damage has occurred, replace wheel bearing with a new one.
- Do not allow paint to adhere to the wheel bearing seal.
- Check each mating surface for water and foreign matter. If there is any water or foreign matter, clean the mating surface.
- Clean the mating surfaces of wheel hub lock nut and wheel hub.

CAUTION:

Do not apply lubricating oil to the mating surface of the wheel hub lock nut and the wheel hub.

- Clean the mating surfaces of drive shaft, wheel hub, and wheel bearing. Apply Molykote M77 to surface (A) of joint sub-assembly.

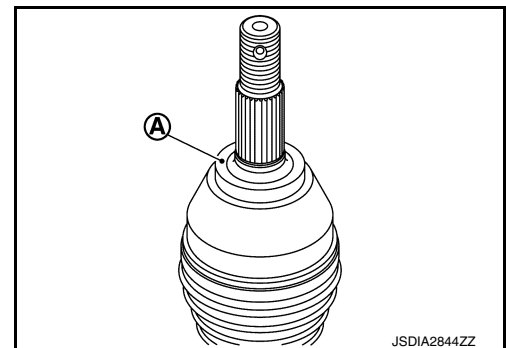
CAUTION:

Apply Molykote M77 to cover entire flat surface of joint sub-assembly.

NOTE:

Always check with the Parts Department for the latest parts information.

Molykote M77 quantity : Refer to [FAX-27, "Drive Shaft"](#).



When installing a cotter pin, securely bend the cotter pin to prevent rattles.

CAUTION:

Do not reuse cotter pin.

FRONT DRIVE SHAFT

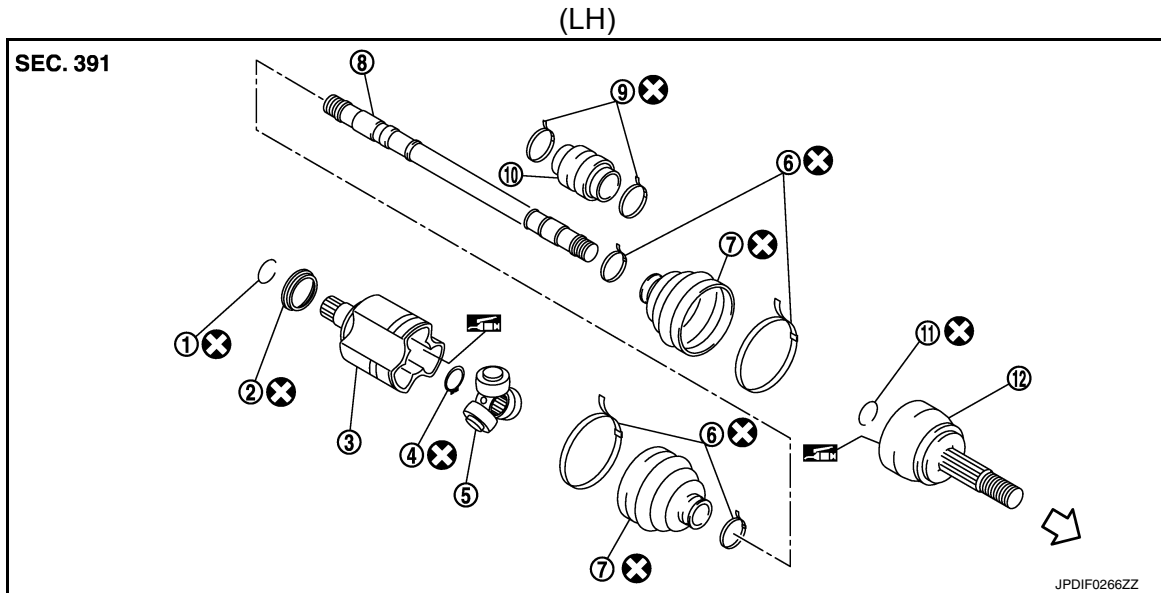
< UNIT DISASSEMBLY AND ASSEMBLY >

UNIT DISASSEMBLY AND ASSEMBLY

FRONT DRIVE SHAFT

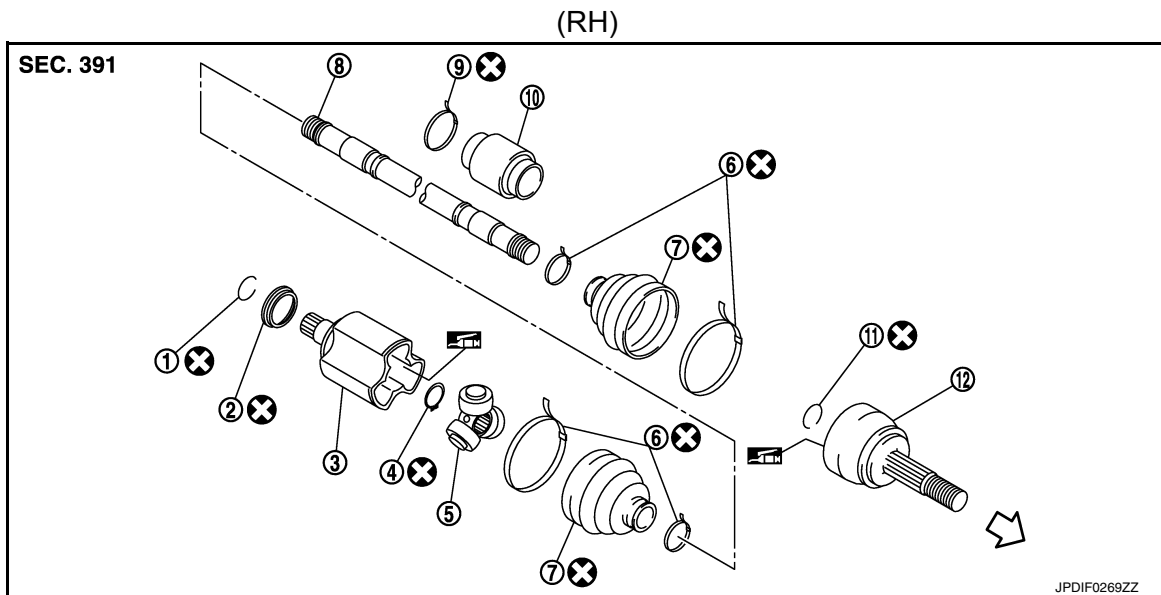
Exploded View

INFOID:000000009541324



- | | | |
|--------------------|--------------------|------------------------|
| 1. Circular clip | 2. Dust shield | 3. Slide joint housing |
| 4. Snap ring | 5. Spider assembly | 6. Boot band |
| 7. Boot | 8. Shaft | 9. Damper band |
| 10. Dynamic damper | 11. Circular clip | 12. Joint sub-assembly |

⇐ Wheel side



- | | | |
|--------------------|--------------------|------------------------|
| 1. Circular clip | 2. Dust shield | 3. Slide joint housing |
| 4. Snap ring | 5. Spider assembly | 6. Boot band |
| 7. Boot | 8. Shaft | 9. Damper Band |
| 10. Dynamic damper | 11. Circular clip | 12. Joint sub-assembly |

⇐ Wheel side

FRONT DRIVE SHAFT

< UNIT DISASSEMBLY AND ASSEMBLY >

Disassembly and Assembly

INFOID:000000009541325

DISASSEMBLY (WHEEL SIDE)

1. Mount the drive shaft in a vise.

CAUTION:

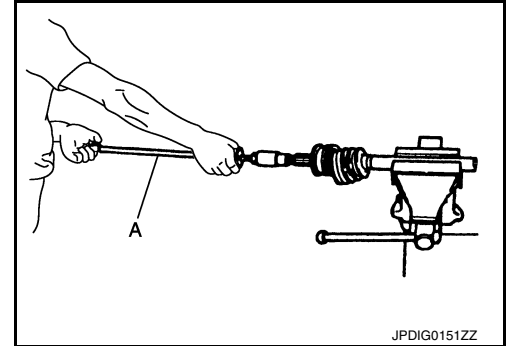
When mounting the drive shaft in a vise, always use aluminum or copper plates between the vise and the drive shaft.

2. Remove the boot bands and slide the boot back.
3. Screw a suitable tool (A) into the joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support the drive shaft with one hand and pull out the joint sub-assembly from the shaft.

CAUTION:

- Align the suitable tool and the drive shaft. Remove the joint sub-assembly by pulling firmly and uniformly.
- If the joint sub-assembly cannot be removed after five or more attempts, replace the shaft and the joint sub-assembly as a set.

4. Remove the circular clip from the shaft.
5. Remove the outer boot from the shaft.
6. Inspect the components. Refer to [FAX-8, "Inspection"](#).



DISASSEMBLY (TRANSAXLE SIDE)

1. Mount the drive shaft in a vise.

CAUTION:

When mounting the drive shaft in a vise, always use aluminum or copper plates between the vise and the drive shaft.

2. Remove the boot bands and slide the boot back.
3. Put matching marks on the slide joint housing and on the shaft.

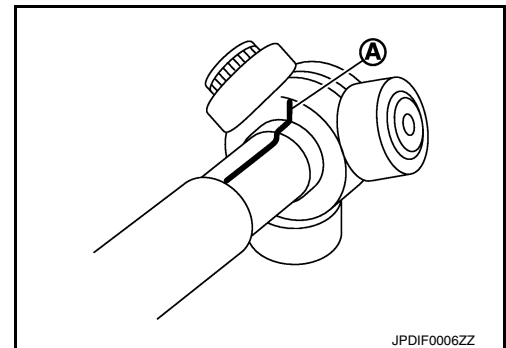
CAUTION:

Use paint or an equivalent for matching marks. Do not scratch the surfaces.

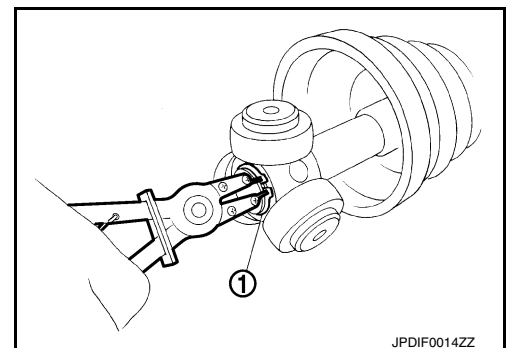
4. Remove the slide joint housing from the shaft.
5. Put matching marks (A) on the spider assembly and on the shaft.

CAUTION:

Use paint or an equivalent for matching marks. Do not scratch the surfaces.



6. Remove the snap ring (1).
7. Remove the spider assembly from the shaft.
8. Remove the inner boot from the shaft.



9. Remove the dust shield from the slide joint housing.

FRONT DRIVE SHAFT

< UNIT DISASSEMBLY AND ASSEMBLY >

10. Remove the circular clip from the slide joint housing.
11. Clean the old grease from the slide joint housing with paper waste.
12. Remove the damper bands.
13. Remove the dynamic damper from the shaft.
14. Inspect the components. Refer to [FAX-8, "Inspection"](#).

ASSEMBLY (WHEEL SIDE)

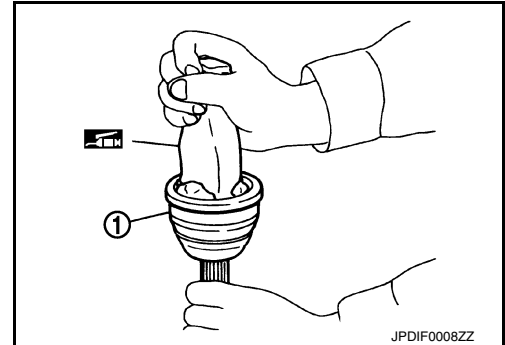
1. Clean the old grease from the joint sub-assembly using paper waste.
2. Fill the serration slot on the joint sub-assembly (1) with NISSAN genuine grease or equivalent until the serration slot and ball groove become full to the brim.

CAUTION:

After applying the grease, use paper waste to wipe off the grease that has oozed out.

NOTE:

Always check with the Parts Department for the latest parts information.

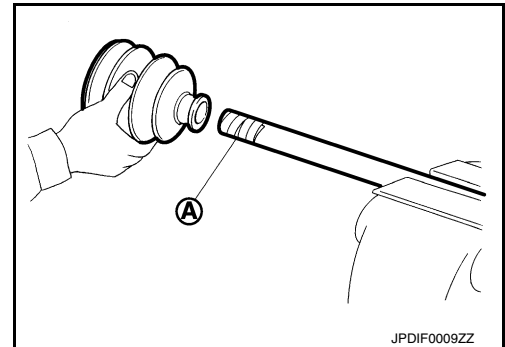


3. Install the outer boot and the boot bands to the shaft.

CAUTION:

- Wrap the serration on the shaft with tape (A) to protect the boot from damage.
- Do not reuse the boot.
- Do not reuse the boot bands.

4. Remove the tape wrapped around the serration on the shaft.



5. Position the circular clip (1) on the groove at the shaft edge.

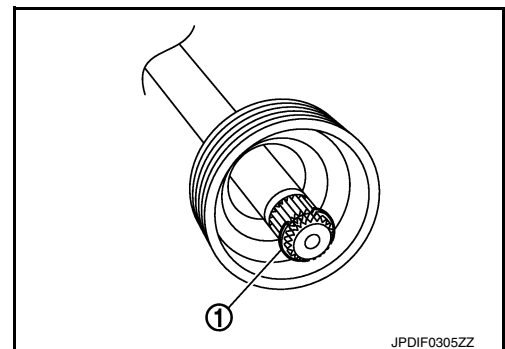
CAUTION:

Do not reuse the circular clip.

NOTE:

A drive joint inserter is recommended when installing the circular clip.

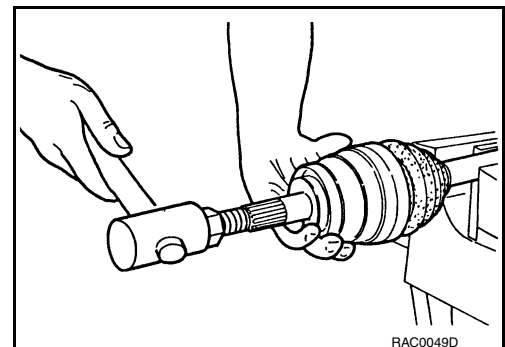
6. Align the shaft and the joint sub-assembly. Assemble the shaft with the joint sub-assembly while holding the circular clip.



7. Install the joint sub-assembly to the shaft using a suitable tool.

CAUTION:

- Make sure the circular clip is properly positioned on the groove of the joint sub-assembly.
- Confirm that the joint sub-assembly is correctly engaged while rotating the drive shaft.



8. Apply the specified amount of grease to the inside of the large diameter side of the boot.

NOTE:

FRONT DRIVE SHAFT

< UNIT DISASSEMBLY AND ASSEMBLY >

Always check with the Parts Department for the latest parts information.

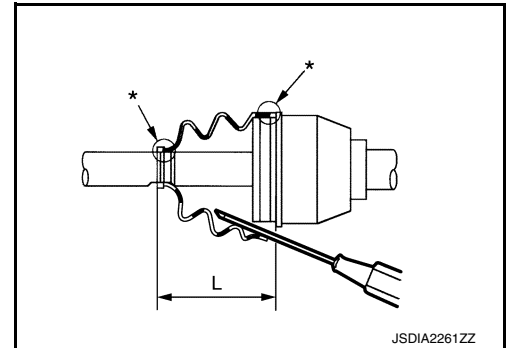
Grease amount : Refer to [FAX-27, "Drive Shaft"](#).

9. Install the boot securely into the grooves (indicated by "*" marks) as shown.

CAUTION:

If there is grease on the boot mounting surfaces (indicated by "*" marks) on the shaft or the joint sub-assembly, the boot may come off. Remove all grease from the boot mounting surfaces.

10. To prevent the deformation of the boot, adjust the boot installation length to the specified value by inserting a suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.



Boot installation length (L) : Refer to [FAX-27, "Drive Shaft"](#).

CAUTION:

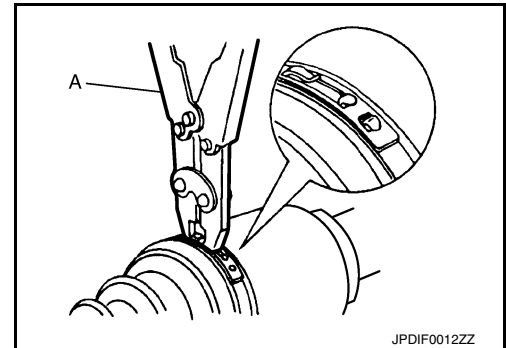
- The boot may break if the boot installation length is not correct.
- Be careful not to touch the inside of the boot with the tip of the suitable tool.

11. Install new large and small boot bands securely using Tool (A).

CAUTION:

Do not reuse the boot bands.

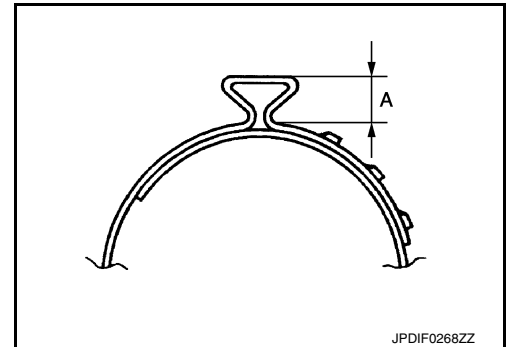
Tool number : KV40107300 (-)



12. Secure the boot band so that dimension (A) meets the specification.

Dimension (A) : Refer to [FAX-27, "Drive Shaft"](#).

13. Attempt to rotate the boot to check whether or not the boot bands are securing the boot. If the boot is not secure, remove the boot bands, reposition the boot, and install new boot bands.



ASSEMBLY (TRANSAXLE SIDE)

1. Install the dynamic damper using the following procedure:
 - a. Install the dynamic damper to the shaft.

FRONT DRIVE SHAFT

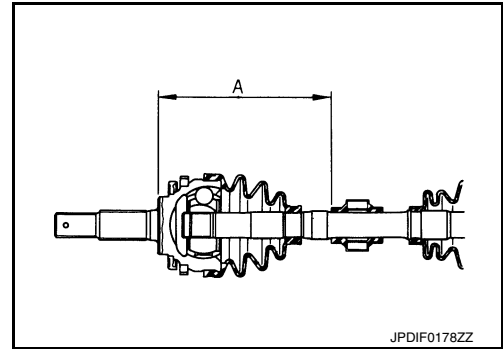
< UNIT DISASSEMBLY AND ASSEMBLY >

- b. Secure the dynamic damper in the correct position with new damper bands.

CAUTION:

Do not reuse the damper bands.

Dimension (A) : Refer to FAX-27, "Drive Shaft".

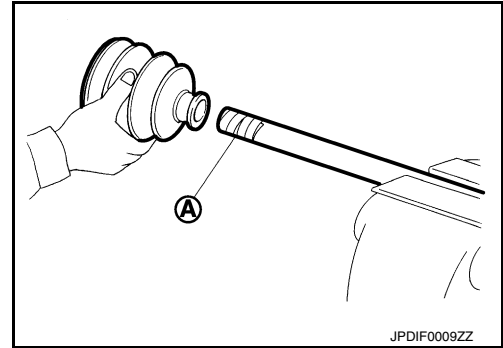


2. Install the inner boot and the boot bands to the shaft.

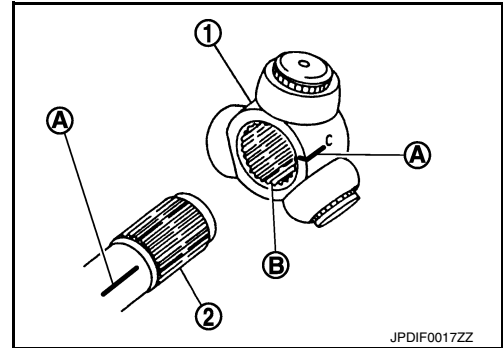
CAUTION:

- **Wrap the serration on the shaft with tape (A) to protect the boot from damage.**
- **Do not reuse the boot.**
- **Do not reuse the boot bands.**

3. Remove the tape wrapped around the serration on the shaft.



4. Align the matching mark (A) on the spider assembly (1) with the matching mark on the shaft (2). Install the spider assembly to the shaft with the chamfer (B) facing the shaft.



5. Secure the spider assembly onto the shaft with the snap ring (1).

CAUTION:

Do not reuse the snap ring.

6. Apply the appropriate amount of grease (Genuine NISSAN Grease or equivalent) to the spider assembly and to the sliding surface.

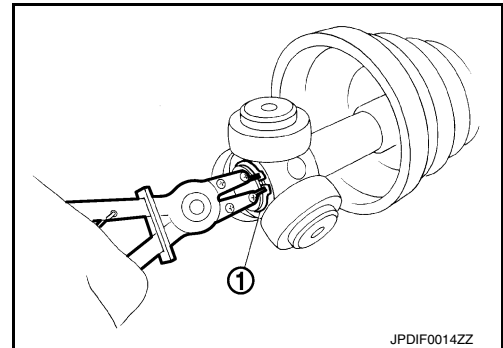
NOTE:

Always check with the Parts Department for the latest parts information.

7. Install the slide joint housing onto the spider assembly and pack the balance of the specified amount grease (Genuine NISSAN Grease or equivalent) into the slide joint housing.

NOTE:

Always check with the Parts Department for the latest parts information.



Grease amount : Refer to FAX-27, "Drive Shaft".

8. Align the matching marks on the slide joint housing and on the shaft.

FRONT DRIVE SHAFT

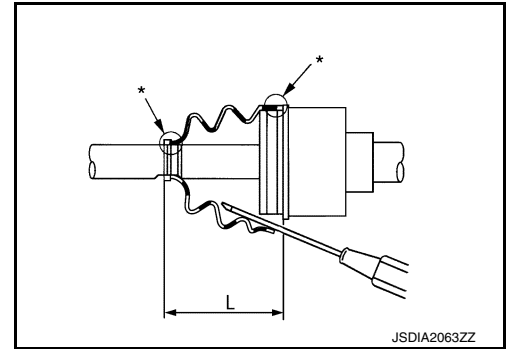
< UNIT DISASSEMBLY AND ASSEMBLY >

9. Install the boot securely into the grooves (indicated by “*” marks) as shown.

CAUTION:

If there is grease on the boot mounting surfaces (indicated by “*” marks) on the shaft or the joint sub-assembly, the boot may come off. Remove all grease from the boot mounting surfaces.

10. To prevent the deformation of the boot, adjust the boot installation length to the specified value by inserting a suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.



Boot installation length (L) : Refer to FAX-27, "Drive Shaft".

CAUTION:

- The boot may break if the boot installation length is not correct.
- Be careful not to touch the inside of the boot with the tip of the suitable tool.

11. Install the boot bands securely.

CAUTION:

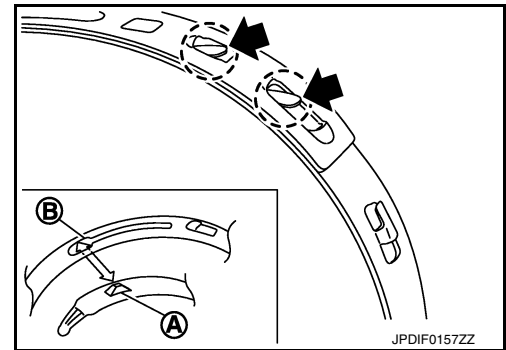
Do not reuse the boot bands.

- a. Put boot band in the groove on drive shaft boot. Then fit pawls into holes for temporary installation.

NOTE:

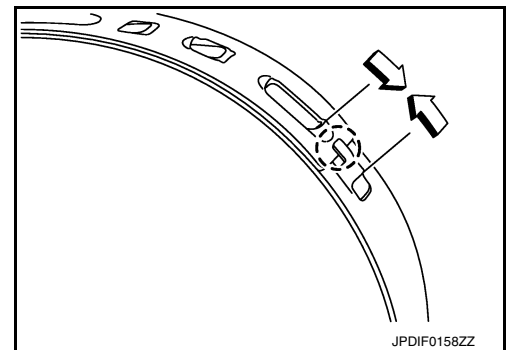
For the large diameter side, fit projection (A) and guide slit (B) at first.

- b. Pinch projection on the band with suitable pliers to tighten band.



- c. Insert the tip of band into the lower part of pawl (marked with dotted circle) as shown.

12. Attempt to rotate the boot to check whether or not the boot bands are securing the boot. If the boot is not secure, remove the boot bands, reposition the boot, and install new boot bands.



13. Install the dust shield to the slide joint housing.

CAUTION:

Do not reuse the dust shield.

14. Install the circular clip to the slide joint housing.

CAUTION:

Do not reuse the circular clip.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

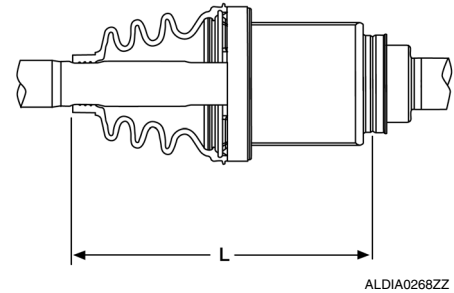
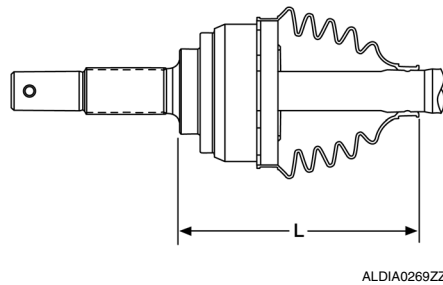
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Item	Standard
Axial end play	0.0 mm (0.0 in)
Rotating torque	1.9 N·m (0.19 kg-m, 17 in-lb) or less
Spring balance measurement	13.7 N (1.40 kg-f, 3.08 lb-f) or less
Wheel bearing press-fit load	49 kN (4,998.0 kg-f, 11,015.2 lb-f)

Drive Shaft

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Drive Shaft Specifications



Application	M/T			
Joint type	Wheel side		Transaxle side	
	(LH)	(RH)	(LH)	(RH)
Grease quantity*	90 - 100 g (3.17 - 3.53 oz)		141.1- 157.1 g (4.98 - 5.54 oz)	
Boot installed length (L)	135.5 mm (5.33 in)		154 mm (6.06 in)	
Molykote M77*	1.0 - 3.0 g (0.04 - 0.10 oz)			
Application	CVT			
Joint type	Wheel side		Transaxle side	
	(LH)	(RH)	(LH)	(RH)
Grease quantity*	90 - 100 g (3.17 - 3.53 oz)		132.7 - 148.7 g (4.68 - 5.25 oz)	
Boot installed length (L)	136.8 mm (5.39 in)		145.5 mm (5.73 in)	
Molykote M77*	1.0 - 3.0 g (0.04 - 0.10 oz)			

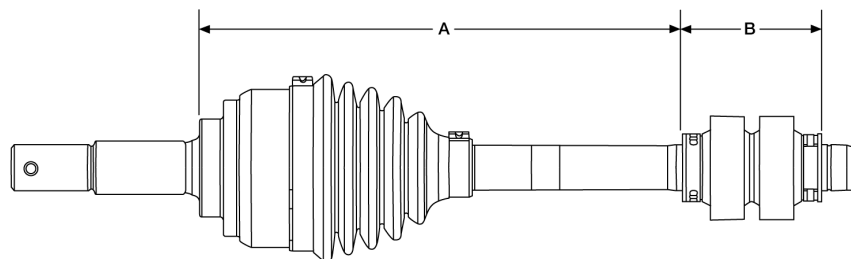
*Always check with the Parts Department for the latest parts information.

Dynamic Damper Specifications

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

Unit: mm (in)

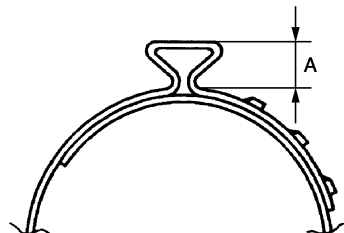


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Application	M/T		CVT	
	(LH)	(RH)	(LH)	(RH)
Dimension (A)	240 ± 3 (9.45 ± 0.1)	457 ± 3 (17.99 ± 0.1)	242.9 ± 3 (9.56 ± 0.1)	457 ± 3 (17.99 ± 0.1)
Dimension (B)	70 (2.76)			

Boot Band Specification

Unit: mm (in)



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Dimension (A) - maximum	7.0 (0.28)
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