SECTION FAX
FRONT AXLE

CONTENTS

FWD

AWD

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011278616

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.**

Precautions for Drive Shaft

INFOID:0000000011278617

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.
- Reassemble disassembled parts carefully in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Use paper shop cloths. 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 shop cloths.

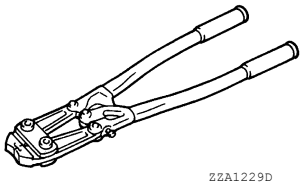
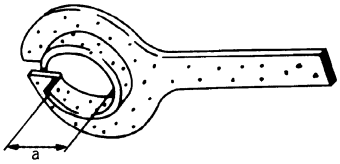
PREPARATION

PREPARATION

Special Service Tool

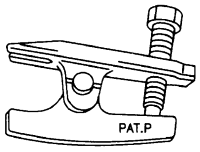
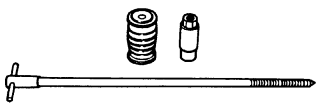
INFOID:0000000011278618

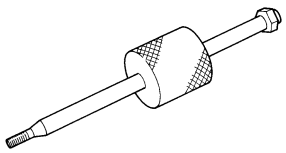
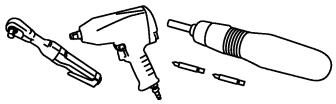
The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV40107300 (—) Boot band crimping tool  ZZA1229D	Installing boot band
KV40107500 (—) Drive shaft attachment  ZZA1230D	Removing drive shaft
KV38107900 (—) Protector  PDIA1183J	Installing drive shaft **a: 32 mm (1.26 in) dia.**

Commercial Service Tools

INFOID:0000000011278619

Tool name	Description
Ball joint remover  NT146	Removing wheel stud
Drive shaft puller  JPDIG0152ZZ	Removing drive shaft joint sub assembly

Tool name	Description
Sliding hammer  ZZA0023D	Removing drive shaft
Power tool  PIIB1407E	Loosening nuts, screws and bolts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000011278620

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

Reference				FAX-8		FAX-9		FAX-7	FSU-5		WT-62	WT-62		BR-6	ST-5
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	WHEEL	DRIVE SHAFT	BRAKE	STEERING
Symptom	DRIVE SHAFT	Noise	×	×				×	×	×	×	×		×	×
		Shake	×		×			×	×	×	×	×		×	×
	FRONT AXLE	Noise				×	×	×	×		×	×	×	×	×
		Shake				×	×	×	×		×	×	×	×	×
		Vibration				×	×	×	×		×		×		×
		Shimmy				×	×		×		×	×		×	×
		Shudder				×			×		×	×		×	×
		Poor quality ride or handling				×	×		×		×	×			

×: Applicable

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000011278621

- Move the wheel hub and bearing in an axial direction by hand to verify that looseness of wheel hub and bearing exists. If any looseness exists, replace the wheel hub and bearing.

Axial end play **: Refer to FAX-39, "Wheel Bearing".**

- Rotate wheel hub and bearing to verify if unusual noises or other irregular conditions exist. If any irregular conditions exist, replace the wheel hub and bearing.

FRONT DRIVE SHAFT

Inspection

INFOID:0000000011278622

Check the following items and replace parts as necessary:

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

CAUTION:

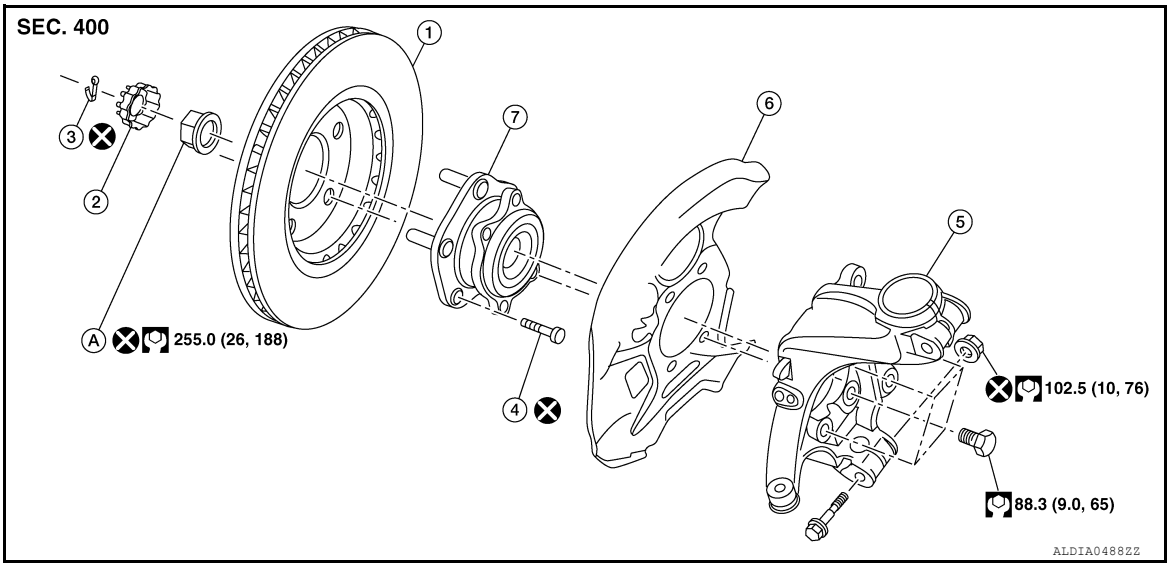
Replace entire drive shaft when noise or vibration occurs from drive shaft.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB

Exploded View

INFOID:0000000011278623



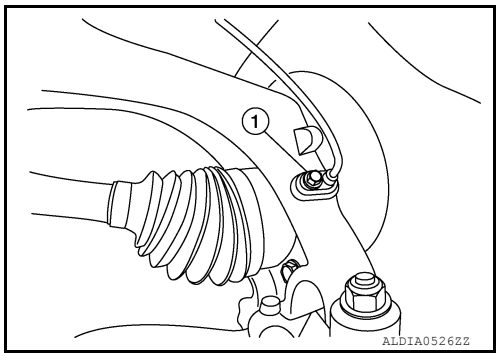
1. Disc brake rotor
2. Nut retainer
3. Cotter pin
4. Wheel stud
5. Steering knuckle
6. Splash guard
7. Wheel hub and bearing
A. Wheel hub lock nut

Removal and Installation

INFOID:0000000011278624

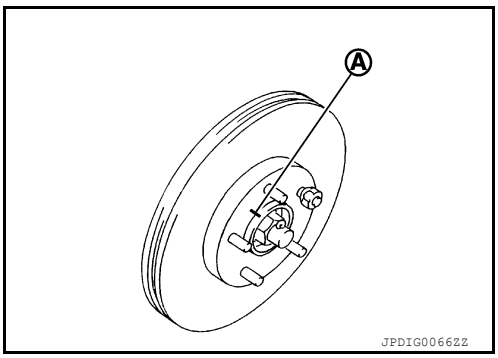
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Exploded View".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on wheel sensor harness.**



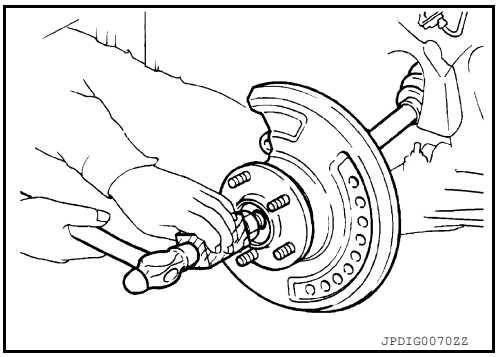
3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.

4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
CAUTION:
Do not drop the disc brake rotor.

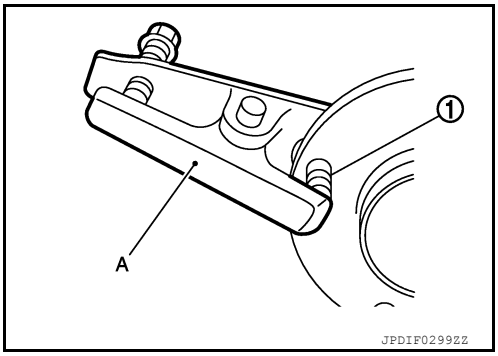


5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Refer to FAX-9, "Exploded View".
12. Separate transverse link from steering knuckle. Refer to FSU-13, "Exploded View".
13. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire. Refer to FAX-19, "Exploded View (LH)" (LH) or FAX-22, "Exploded View (RH)"(RH).
14. Remove the wheel hub and bearing bolts using power tool.
15. Remove the splash guard and the wheel hub and bearing from the steering knuckle.
16. If necessary, remove the wheel studs (1) using a suitable tool (A).



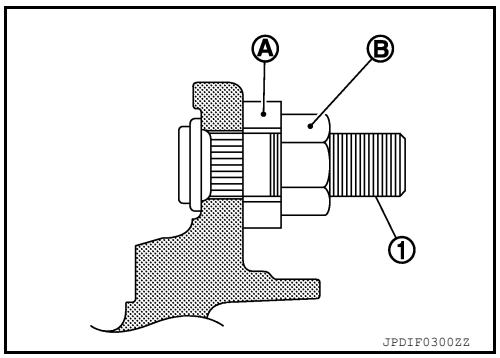
INSPECTION AFTER REMOVAL

Check the following items, and replace the part if necessary.
- Check components for deformation, cracks, and other damage.
- Check boots of transverse link ball joint for cracks, axial end play, and swinging torque. Refer to FSU-29, "Ball Joint".

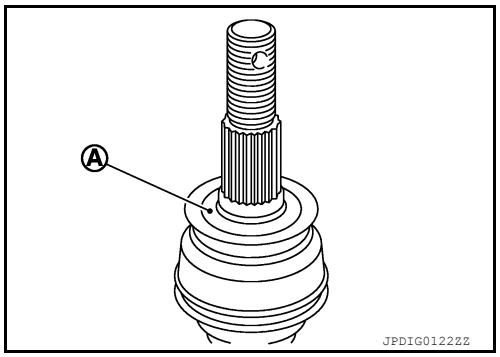
INSTALLATION

Installation is in the reverse order of the removal.
CAUTION:
- **Do not reuse the wheel stud.**
- **Do not reuse the cotter pin.**

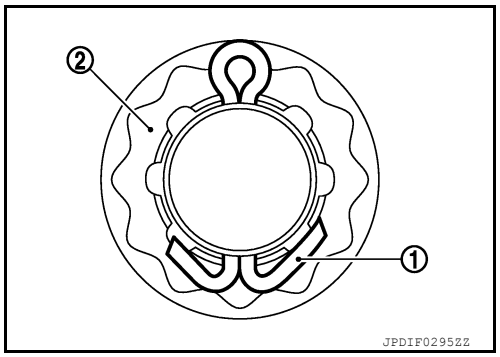
- Place a washer (A) as shown to install the wheel studs (1) by using the tightening force of the nut (B).
  CAUTION:
  Check that there is no clearance between the wheel stud and the wheel hub and bearing.



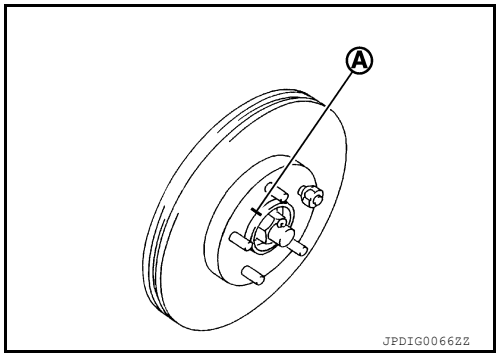
- Clean the mating surfaces of the wheel hub lock nut and the wheel hub and bearing.
  CAUTION:
  Do not apply lubricating oil to these mating surfaces.
- Clean the mating surfaces of the joint sub-assembly and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.
  CAUTION:
  Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
  NOTE:
  Always check with the Parts Department for the latest parts information.



- Hold the wheel hub and bearing using a suitable 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.**
- When installing the cotter pin (1) and the nut retainer (2), securely bend the cotter pin to prevent rattles.



- Align the matching marks (A) on the disc brake rotor and on the wheel hub and bearing.



- Complete the inspection. Refer to FAX-7, "Inspection".

INSPECTION AFTER INSTALLATION

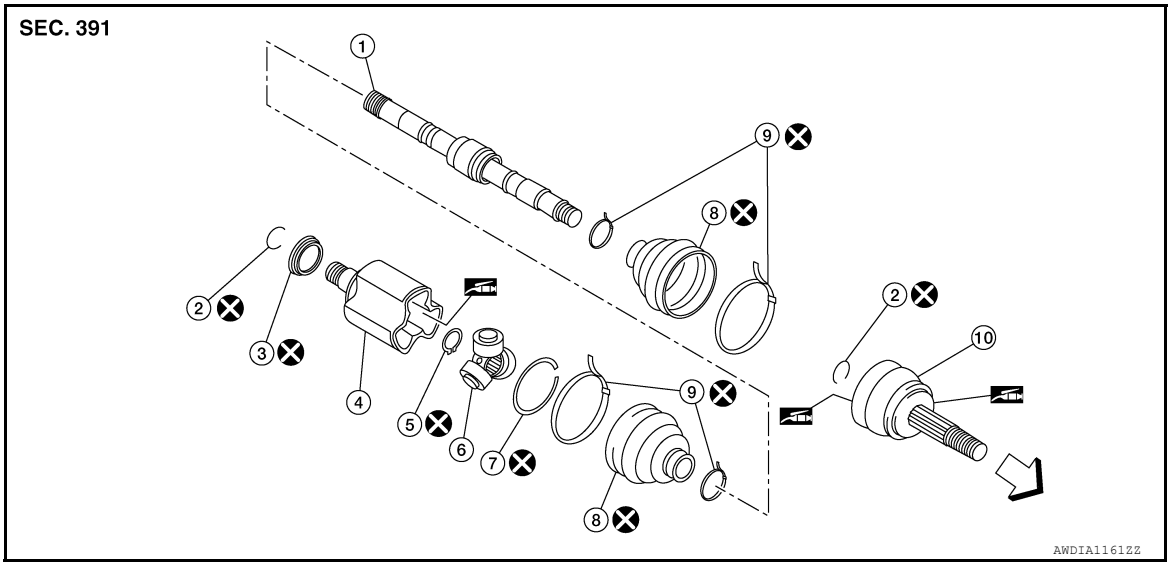
1. Check the wheel alignment. Refer to FSU-7, "Inspection".
2. Adjust neutral position of steering angle sensor. Refer to BRC-68, "Work Procedure".

FRONT DRIVE SHAFT BOOT

Exploded View

INFOID:0000000011278625

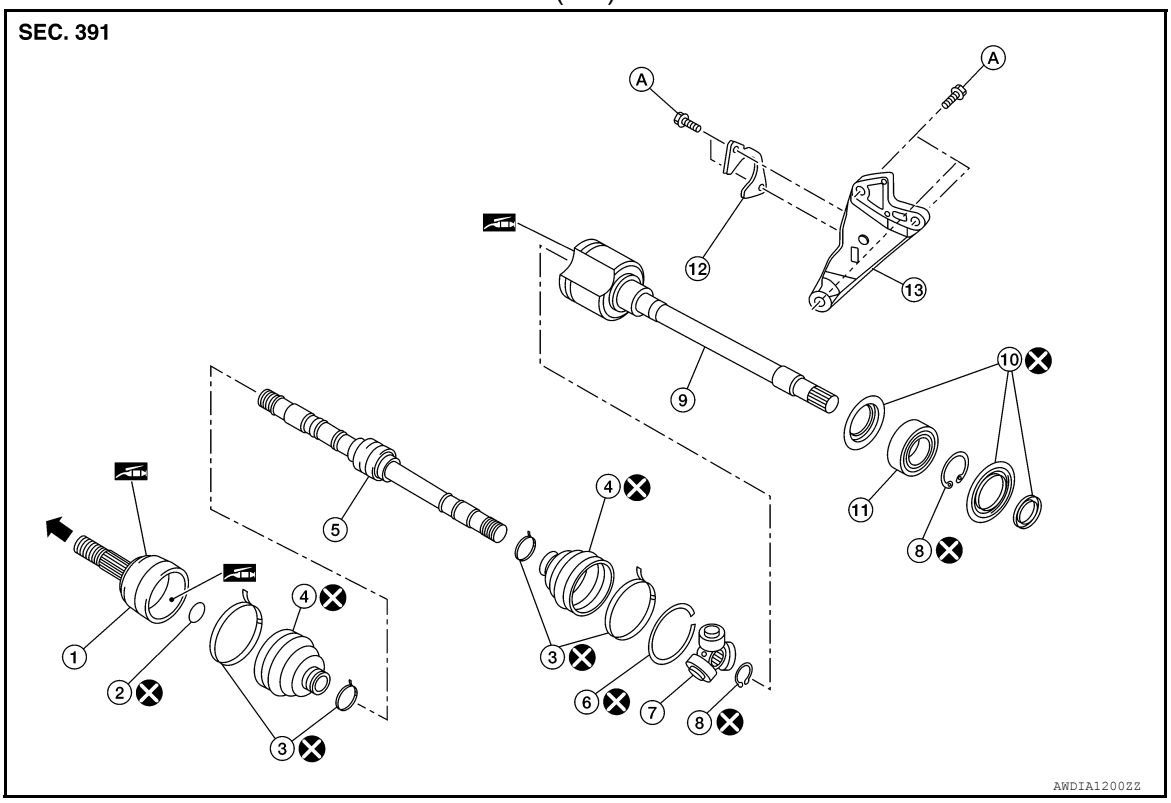
(LH)



1. Shaft
2. Circular clip
3. Dust shield
4. Housing
5. Snap ring
6. Spider assembly
7. Stopper ring
8. Boot
9. Boot band
10. Joint sub-assembly

⇦ Wheel side

(RH)



1. Joint sub-assembly
2. Circular clip
3. Boot band
4. Boot
5. Shaft
6. Stopper ring

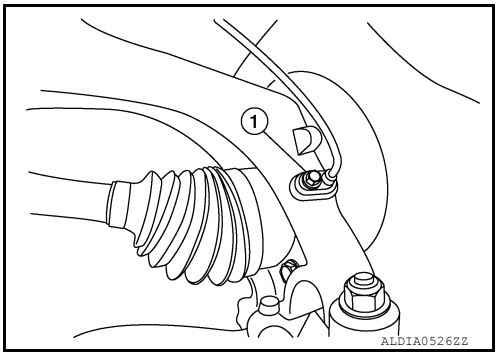
7. Spider assembly
8. Snap ring
9. Housing
10. Dust shield
11. Support bearing
12. Bearing retainer
13. Support bearing bracket
⬅ Wheel side
A. Refer to FRONT DRIVE SHAFT INSTALLATION

WHEEL SIDE

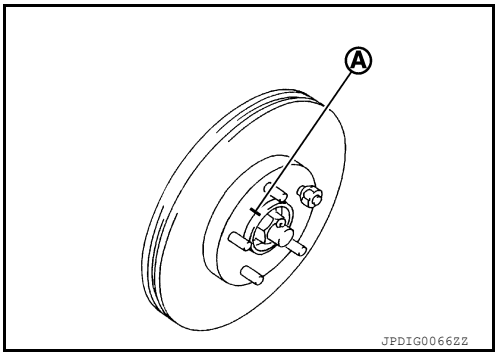
WHEEL SIDE : Removal and Installation

INFOID:0000000011278626

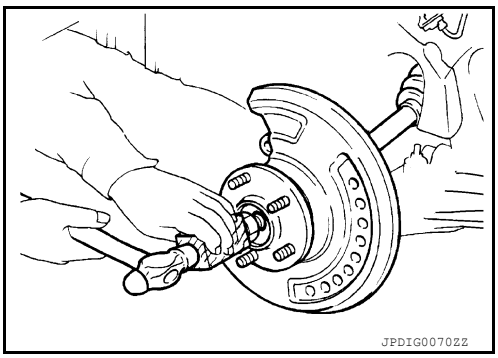
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".


CAUTION:
- **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
- **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on front wheel sensor harness**

3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
CAUTION:
Do not depress brake pedal while brake caliper is removed.
4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.


CAUTION:
Do not drop the disc brake rotor.

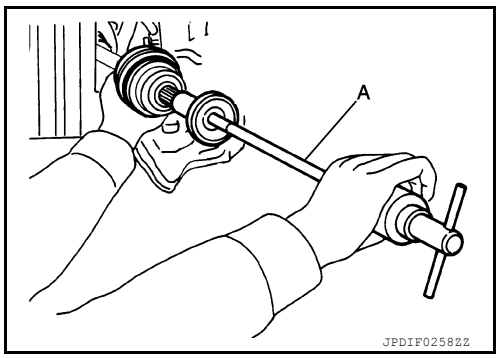
5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.


CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

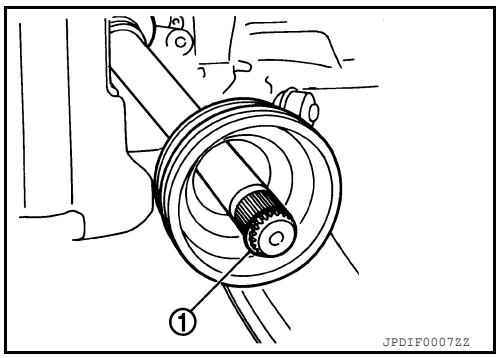
NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.

9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".

11. Remove the lower nut and bolt from the steering knuckle. Separate the transverse link from the steering knuckle. Refer to FAX-9, "Exploded View".
12. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire. Refer to FAX-22, "Exploded View (RH)".
13. Remove boot bands.
14. Separate boot from joint sub-assembly.
15. Screw a suitable tool (A) 30 mm (1.18 in) or more into threaded part of joint sub-assembly. Support drive shaft with one hand and pull out joint sub-assembly with a sliding hammer or suitable tool from housing assembly.
    CAUTION:
    - **Align sliding hammer or suitable tool and drive shaft and remove joint sub-assembly by pulling directly.**
    - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace the entire drive shaft assembly.**



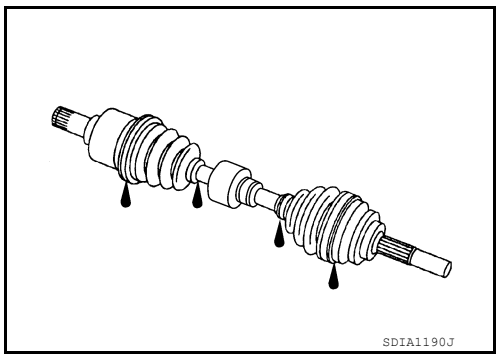
16. Remove circular clip (1) from shaft.



17. Remove outer boot from shaft.

INSPECTION AFTER REMOVAL

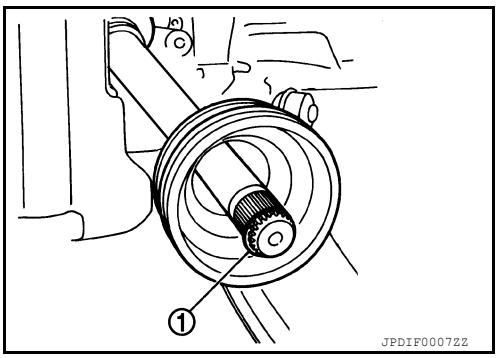
Check the following items, and replace the part if necessary.
- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.



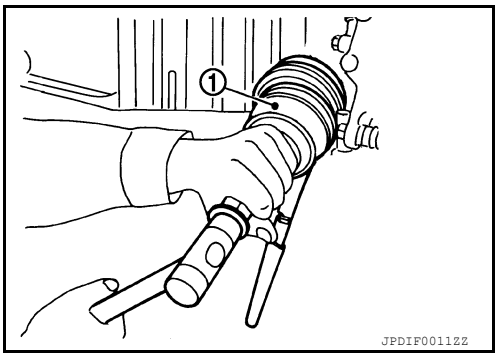
INSTALLATION

1. Clean the old grease on joint sub-assembly with paper shop cloth.
2. Fill serration slot joint sub-assembly with Genuine NISSAN Grease.
   CAUTION:
   After applying grease, use a paper shop cloth to wipe off old grease that has oozed out.
   NOTE:
   Always check with the Parts Department for the latest parts information.
3. Install boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape to protect the boot from damage.**
   - **Do not reuse boot and boot band.**
4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip (1) on groove at the shaft edge.
CAUTION:
Do not reuse circular clip.
NOTE:
A drive joint inserter is recommended when installing the circular clip.



6. Align the shaft and joint sub-assembly. Assemble the shaft with joint sub-assembly while holding the circular clip.
7. Install joint sub-assembly (1) to shaft using suitable tool.
CAUTION:
Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.

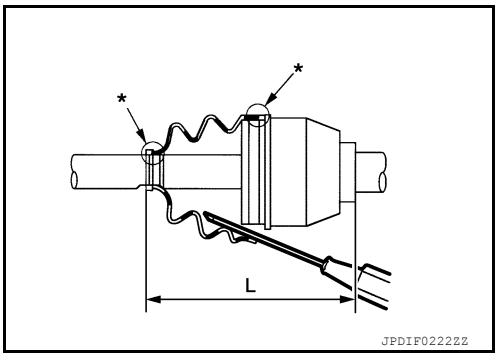


8. Apply the specified amount of Genuine NISSAN Grease into the large diameter side opening of the boot.

Grease quantity : Refer to FAX-39, "Drive Shaft".

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

9. Install the boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or the joint sub-assembly, boot may come off. Remove all grease from the boot mounting surface.
10. Make sure boot installation length (L) is the specified length. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.



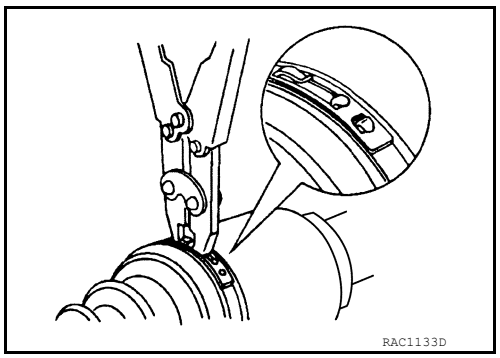
Boot installation length (L) : Refer to FAX-39, "Drive Shaft".

CAUTION:
- **Boot may break if boot installation length is not within standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

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

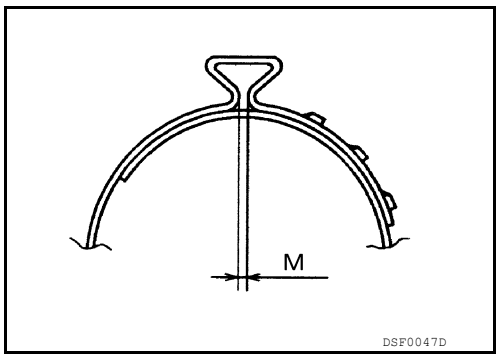
Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot band.

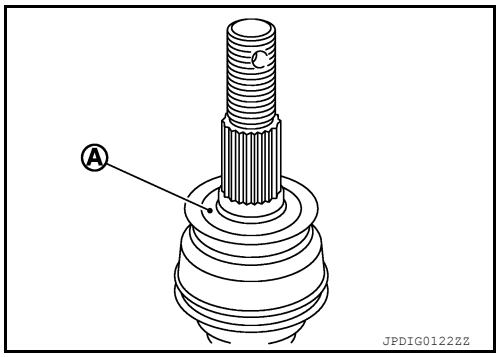


12. Secure boot band so that dimension (M) meets the specification as shown.

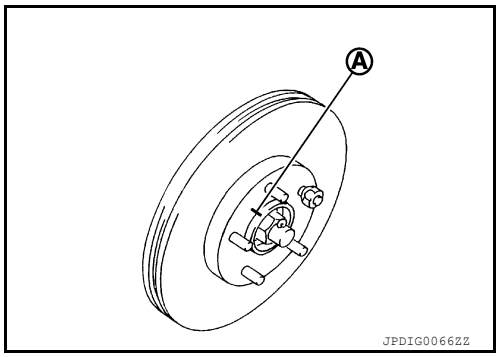
Dimension (M) : Refer to FAX-39, "Drive Shaft".



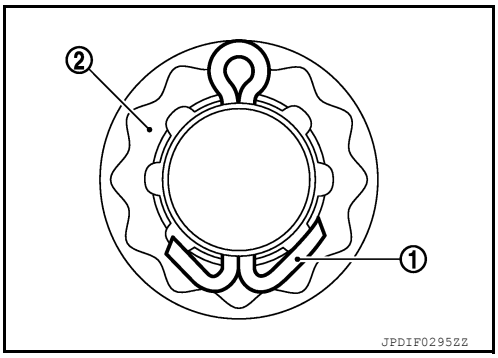
13. Attempt to rotate the boot to check whether or not the boot bands are securing the boot. If the boot is not secure, remove the boot bands, reposition the boot, and install new boot bands.
14. Clean the mating surfaces of the joint sub-assembly and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.
CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.



15. Clean the mating surfaces of the wheel hub lock nut and the wheel hub and bearing.
CAUTION:
Do not apply lubricating oil to these mating surfaces.
16. Insert drive shaft to wheel hub and bearing.
17. Temporarily install the wheel hub lock nut.
CAUTION:
Do not reuse the wheel hub lock nut.
18. Install the transverse link to the steering knuckle. Tighten the steering knuckle nut and bolt to the specification. Refer to FSU-19, "Exploded View".
19. Align the marks on the disc brake rotor (A) and on the wheel hub and bearing. Install the disc brake rotor.



20. Install brake caliper to steering knuckle. Refer to BR-38, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation" (2 PISTON TYPE).
21. Install the front wheel sensor to the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".
    CAUTION:
    - **Before installing, make sure there is no foreign material such as iron fragments adhered to the pick-up part of the front wheel sensor.**
    - **When installing, make sure there is no foreign material such as iron fragments on and in the hole in the steering knuckle for the front wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and then install the front wheel sensor.**
22. Hold the wheel hub and bearing. tighten the wheel hub lock nut. Refer to FAX-9, "Exploded View".
    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.**
23. Install the cotter pin (1) and the nut retainer (2), securely bend the cotter pin to prevent rattles.
    CAUTION:
    Do not reuse cotter pin.



24. Install the front wheel and tire. Refer to WT-67, "Removal and Installation".

INSPECTION AFTER INSTALLATION

Check the wheel sensor harness to be sure the connectors are fully seated.

TRANSAXLE SIDE

TRANSAXLE SIDE : Removal and Installation

INFOID:0000000011278627

NOTE:
Remove boot after removing drive shaft.
- For drive shaft removal and installation, refer to FAX-19, "Removal and Installation (LH)" (LH) or FAX-23, "Removal and Installation (RH)" (RH).
- For drive shaft disassembly and assembly, refer to FAX-27, "Disassembly and Assembly (LH)" (LH) or FAX-32, "Disassembly and Assembly (RH)" (RH).

FRONT DRIVE SHAFT

Exploded View (LH)

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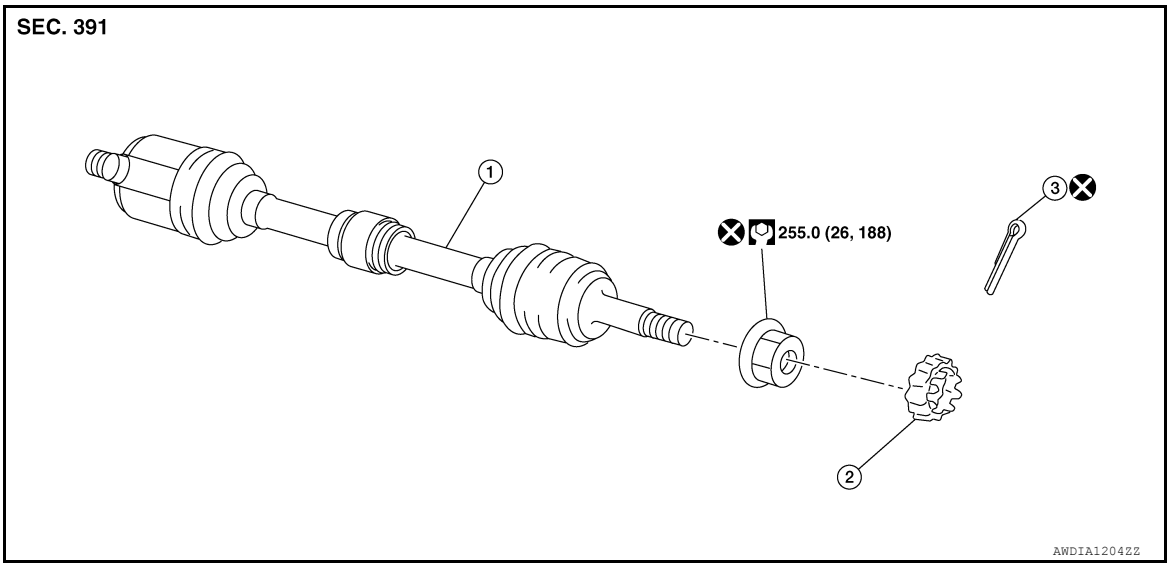


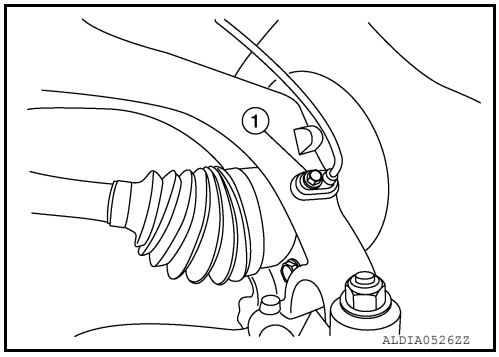
1. Drive shaft
2. Nut retainer
3. Cotter pin

Removal and Installation (LH)

INFOID:0000000011278630

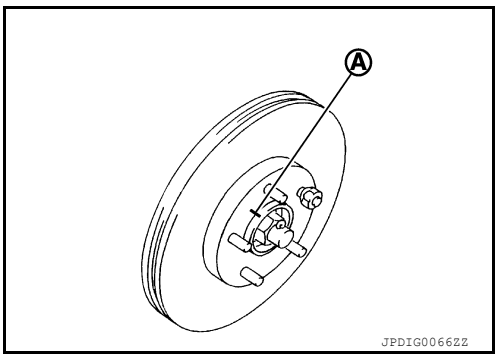
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on front wheel sensor harness**



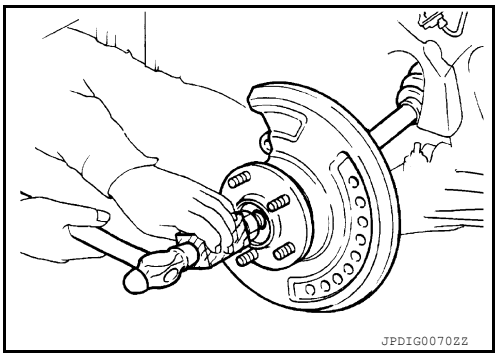
3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.

4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
CAUTION:
Do not drop the disc brake rotor.



5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

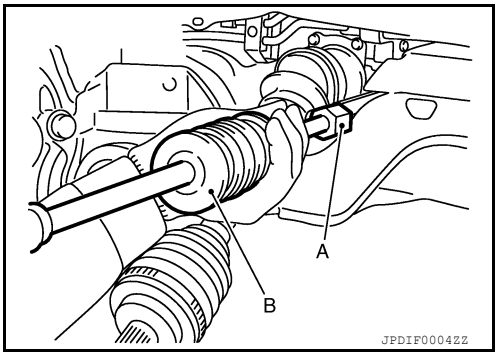
NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Separate the transverse link from the steering knuckle. Refer to FAX-9, "Exploded View".
12. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire.
13. Remove drive shaft from transaxle assembly.
- Use the Tool (A) and a suitable tool (B) while inserting tip of Tool (A) between housing and transaxle assembly.

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.**

Tool (A) : KV40107500 (—)

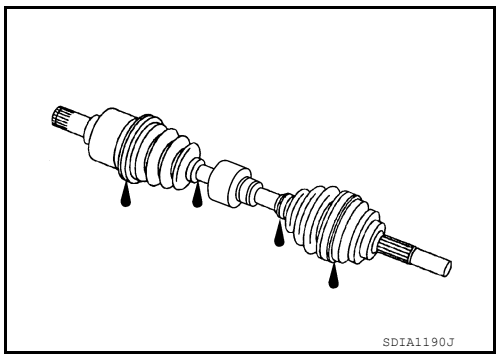


14. Remove the differential side oil seal. Refer to TM-210, "Removal and Installation".

INSPECTION AFTER REMOVAL

- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.

- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.



INSTALLATION

Installation is in the reverse order of removal.

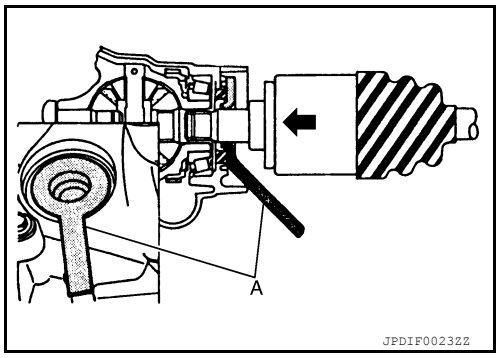
- Install a new differential side oil seal. Refer to TM-210, "Removal and Installation".

CAUTION:
Do not reuse the differential side oil seal.

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

CAUTION:
Check that circular clip is completely engaged.

Tool (A) : KV38107900 (—)

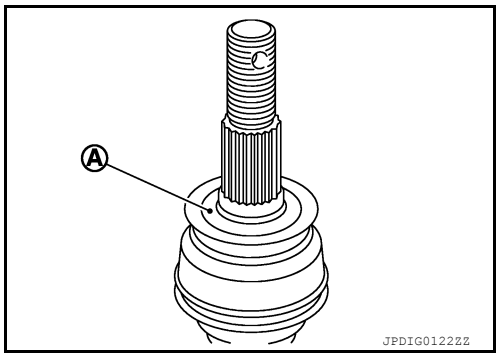


- Clean the mating surfaces of wheel hub lock nut and wheel hub and bearing.

CAUTION:
Do not apply lubricating oil to these mating surfaces.

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

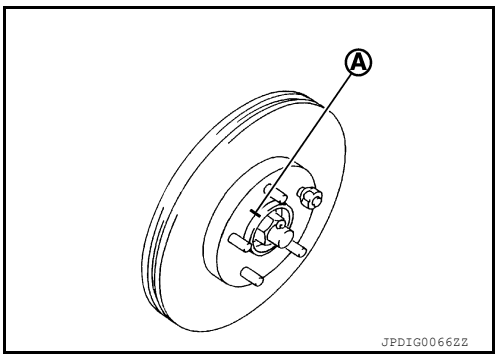
CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.



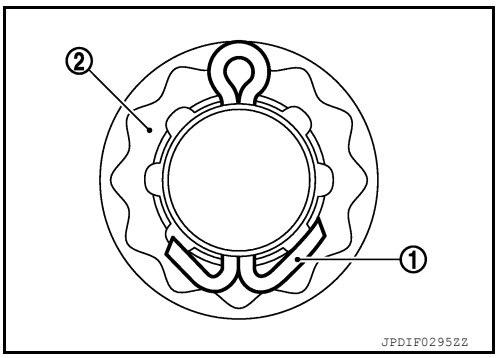
- Hold the wheel hub and bearing using a suitable tool. Tighten the wheel hub lock nut.

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.**

- Align the matching marks (A) made on the disc brake rotor and front wheel hub during disassembly.



- When installing a cotter pin (1) and nut retainer (2), securely bend the cotter pin to prevent rattles.
  CAUTION:
  Do not reuse cotter pin.



INSPECTION AND ADJUSTMENT AFTER INSTALLATION

- Check CVT fluid level and leakage. Refer to TM-189, "Inspection".

Exploded View (RH)

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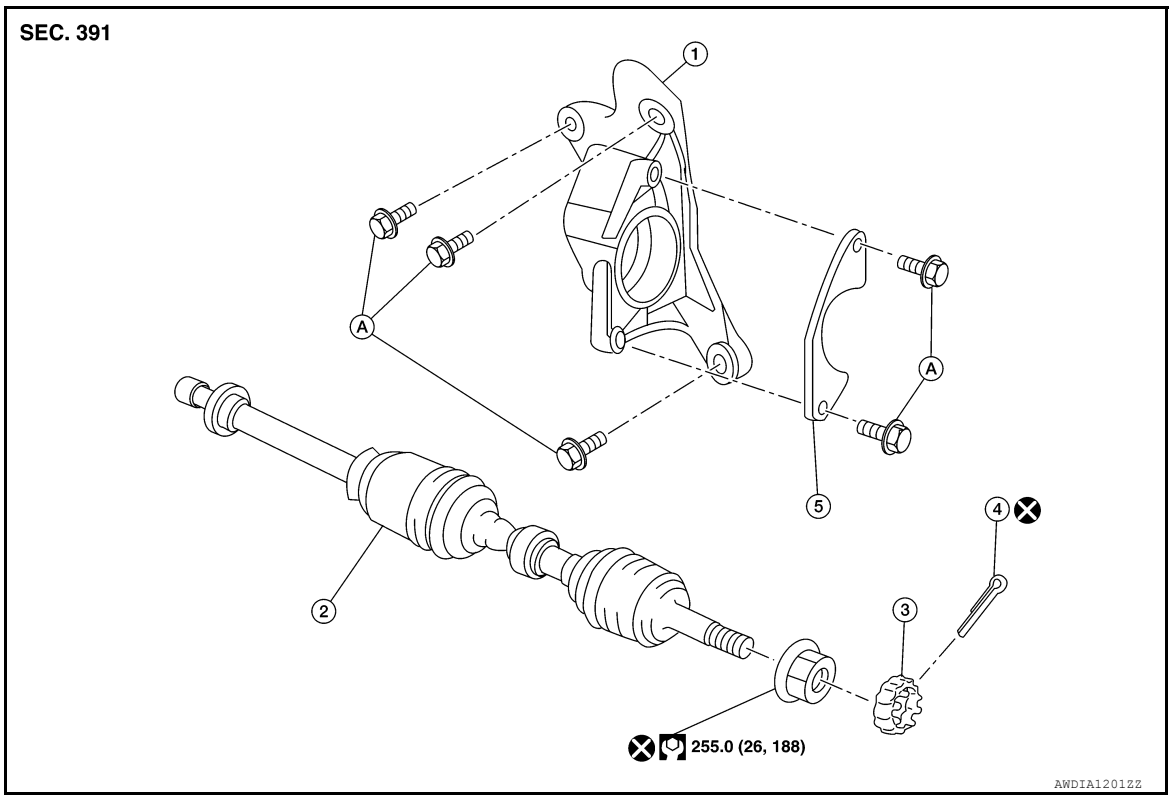


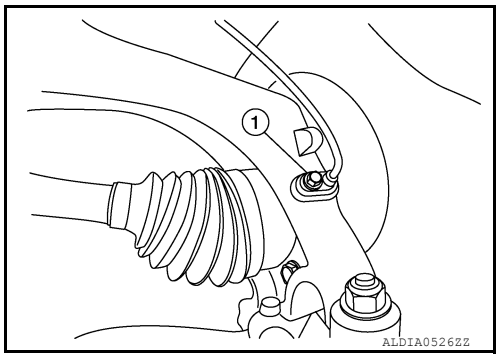
1. Support bearing bracket
2. Drive shaft
3. Nut retainer
4. Cotter pin
5. Bearing retainer
A. Refer to installation

Removal and Installation (RH)

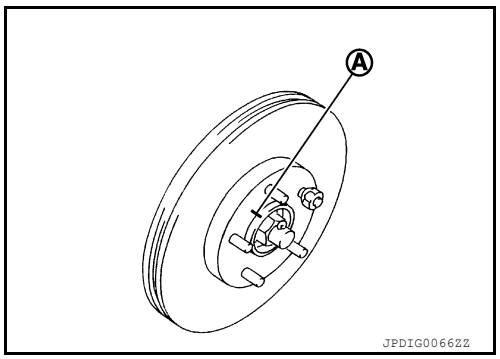
INFOID:0000000011278632

REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on front wheel sensor harness**

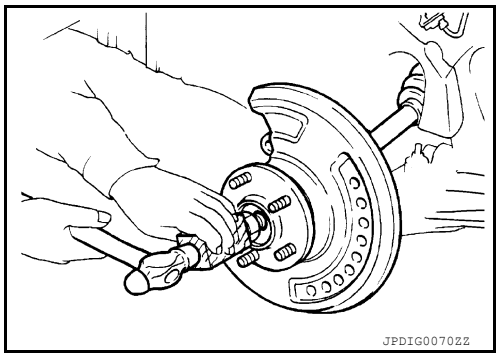


3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.
4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
   CAUTION:
   Do not drop the disc brake rotor.



5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
   CAUTION:
   - **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
   - **Do not allow the drive shaft to hang without support.**

   NOTE:
   Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



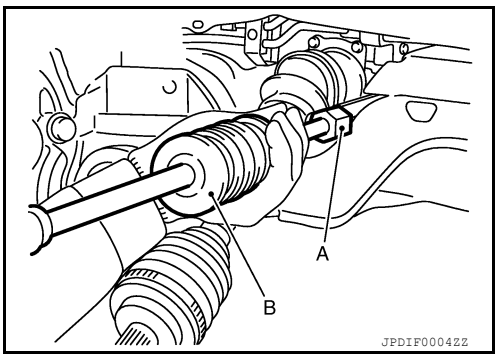
9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Separate the transverse link from the steering knuckle. Refer to FAX-9, "Exploded View".
12. Separate drive shaft from wheel hub and bearing and reposition drive shaft aside with wire.
13. Remove bearing retainer bolts and bearing retainer.
14. Remove drive shaft from transaxle assembly.

- Use the Tool (A) and a suitable tool (B) while inserting tip of Tool (A) between housing and transaxle assembly.

CAUTION:

- **Do not place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**

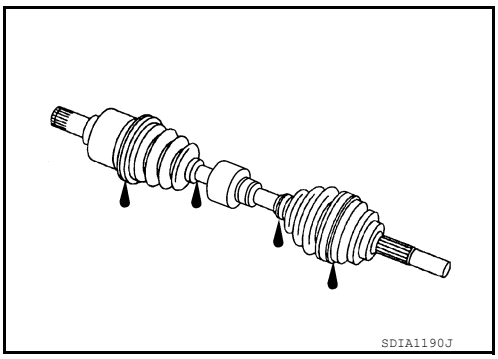
Tool : KV40107500 (—)



15. Remove the differential side oil seal. Refer to TM-210, "Removal and Installation".
16. If necessary, remove the support bearing bracket bolts and the support bearing bracket.

INSPECTION AFTER REMOVAL

- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.

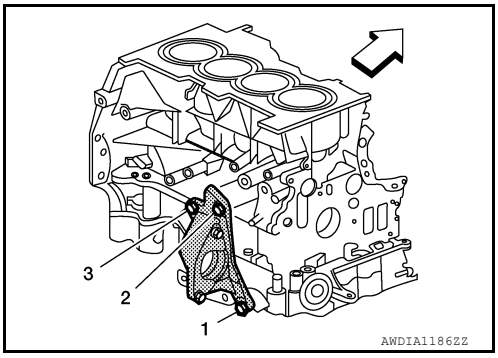


INSTALLATION

1. Install the support bearing bracket.
   - Refer to the following for the installation positions of bolts.
   - Tighten the support bearing bracket bolts in the numerical order shown.

M12 bolt	**: No. 1**	**97.1 N·m (9.9 kg-m, 72 ft-lb)**
M10 bolts	**: No. 2 and No. 3**	**48.0 N·m (4.9 kg-m, 35 ft-lb)**

⇦ : Front



2. Install a new differential side oil seal. Refer to TM-210, "Removal and Installation".

CAUTION:

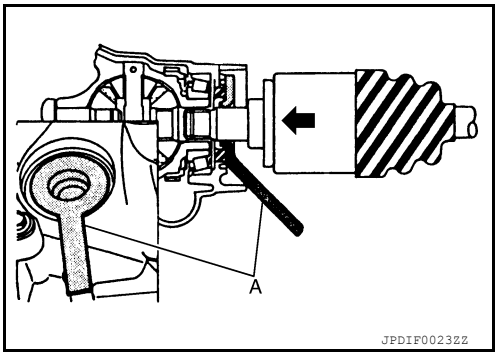
Do not reuse the differential side oil seal.

3. Place Tool (A) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a suitable tool to install securely.

CAUTION:

Check that circular clip is completely engaged.

Tool : KV38107900 (—)

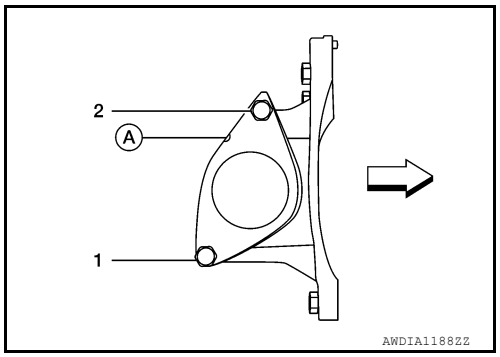


4. Install the bearing retainer using the following steps.

- Install the bearing retainer with the notch (A) facing up.
- Tighten the bearing retainer bolts in the numerical order shown.

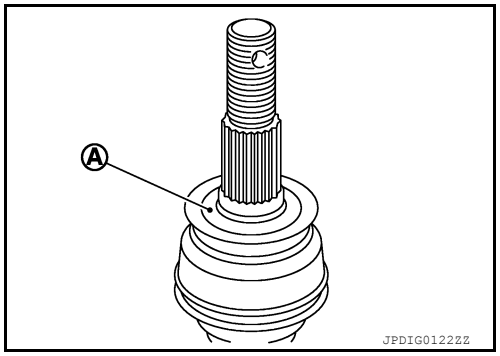
M8 bolt	**: No. 1 and No. 2**	**25.0 N·m (2.6 kg-m, 18 ft-lb)**

⇦ : Front



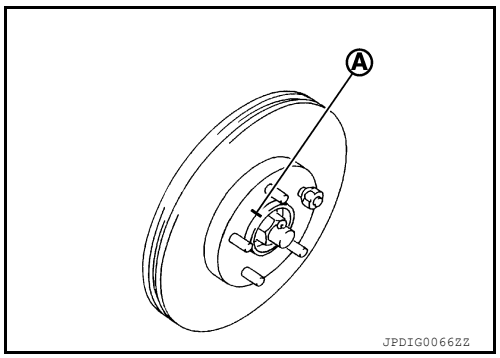
5. Clean the mating surfaces of wheel hub lock nut and wheel hub and bearing.
CAUTION:
Do not apply lubricating oil to these mating surfaces.

6. Clean the mating surfaces of the joint sub-assembly and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.
CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.

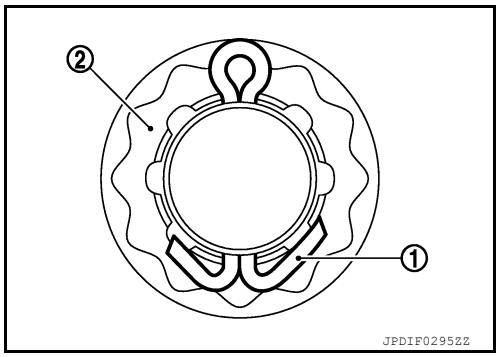


7. Hold the wheel hub and bearing using a suitable tool. Tighten the wheel hub lock nut.
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use a torque wrench to tighten the wheel hub lock nut. Do not use a power tool.**
- **Too much torque causes axle noise. Too little torque causes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

8. Align the matching marks (A) made on the disc brake rotor and front wheel hub during disassembly.



9. When installing a cotter pin (1) and nut retainer (2), securely bend the cotter pin to prevent rattles.
CAUTION:
Do not reuse cotter pin.



10. Installation of the remaining components is in the reverse order of removal.

INSPECTION AND ADJUSTMENT AFTER INSTALLATION

Check CVT fluid level and leakage. Refer to TM-189, "Inspection".

UNIT DISASSEMBLY AND ASSEMBLY

FRONT DRIVE SHAFT

Exploded View (LH)

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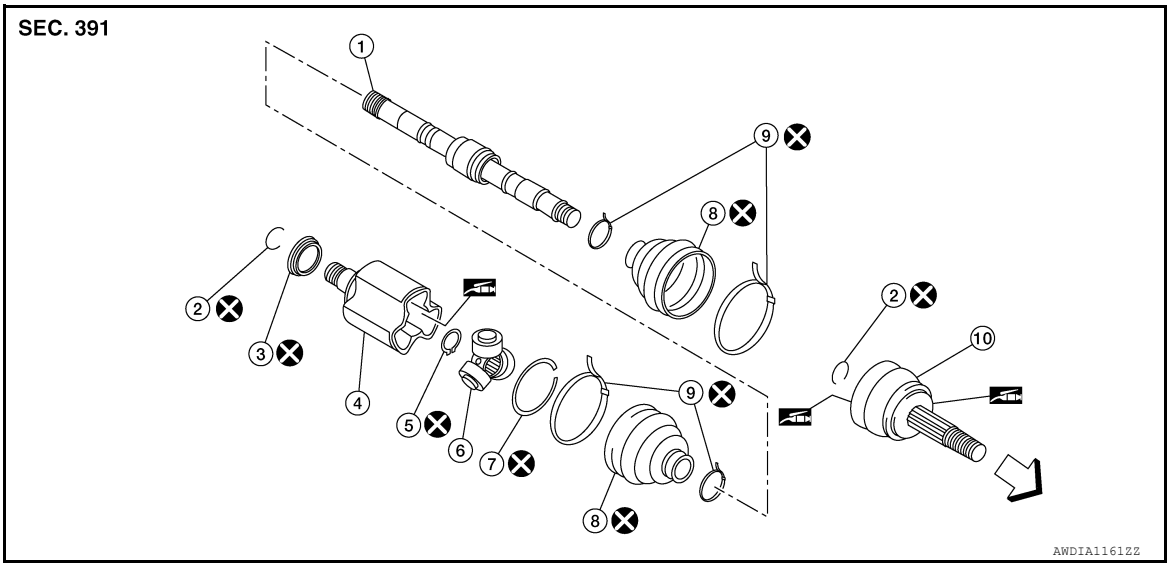


1. Shaft
2. Circular clip
3. Dust shield
4. Housing
5. Snap ring
6. Spider assembly
7. Stopper ring
8. Boot
9. Boot band
10. Joint sub-assembly

⇦ Wheel side

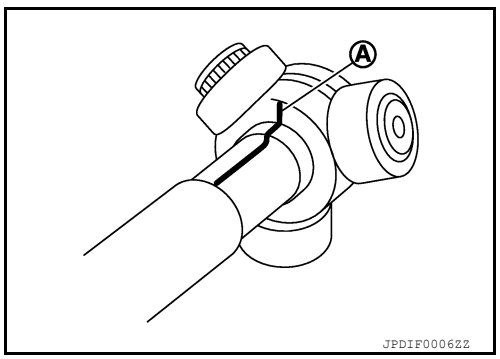
Disassembly and Assembly (LH)

INFOID:0000000011278635

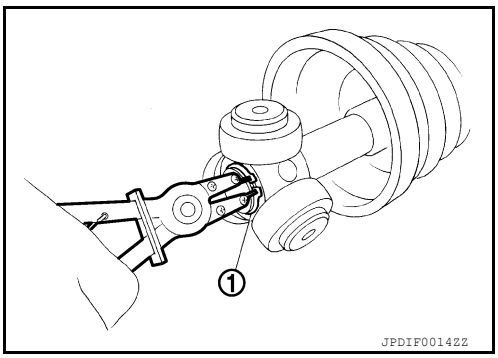
DISASSEMBLY

Transaxle Assembly Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.
5. Put matching marks (A) on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.



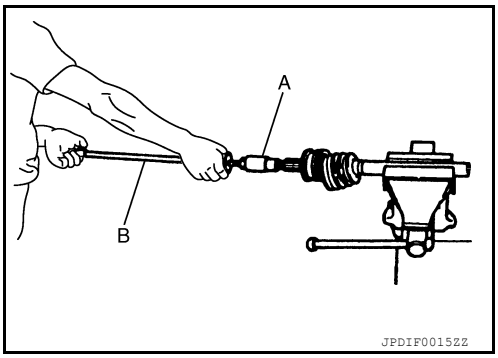
6. Remove snap ring (1), and then remove spider assembly from shaft.



7. Remove boot from shaft.
8. Remove circular clip from housing.
9. Remove dust shield from housing.
10. Clean old grease on housing using paper shop cloths.

Wheel Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Screw a suitable tool (A) 30 mm (1.18 in) or more into threaded part of joint sub-assembly. Pull joint sub-assembly out of shaft.
   CAUTION:
   - **Align suitable tool (B) and drive shaft then remove joint sub-assembly by pulling directly.**
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace the entire drive shaft.**



4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly using paper shop cloths while rotating ball cage.

INSPECTION AFTER DISASSEMBLY

Shaft
- Replace the entire drive shaft if there is bending, cracking, or other damage.

Joint Sub-Assembly
- Make sure there is no rough rotation or unusual axial looseness.
- Make sure there is no foreign material inside joint sub-assembly.
- Check joint sub-assembly for compression scars, cracks or fractures.

CAUTION:
If there are any irregular conditions of joint sub-assembly components, replace the entire drive shaft.

Slide Joint Housing
- Make sure there are no compression scars, cracks or fractures or unusual wear of ball rolling surface.
- Make sure there is no damage to shaft screws.
- Make sure there is no deformation of boot installation parts.

Ball Cage
- Make sure there are no compression scars, cracks, fractures of sliding surface.

Steel Ball

- Make sure there are no compression scars, cracks, fractures or unusual wear.

Inner Race

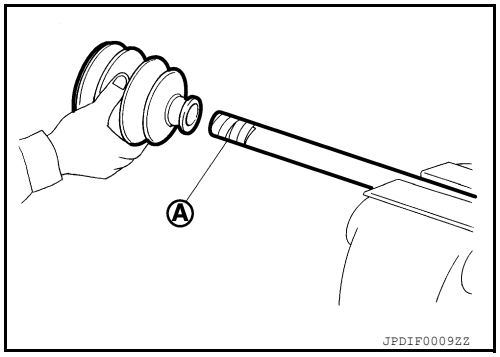
- Check ball sliding surface for compression scars, cracks or fractures.
- Make sure there is no damage to serrated part.

CAUTION:
If there are any irregular conditions in the component, replace the entire drive shaft.

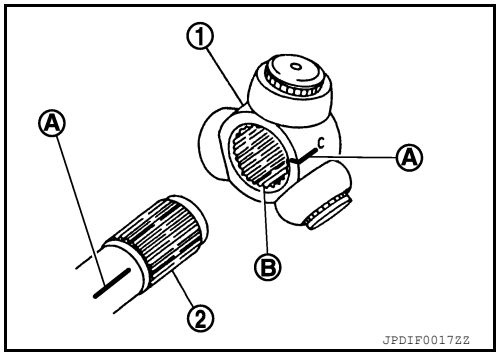
ASSEMBLY

Transaxle Assembly Side

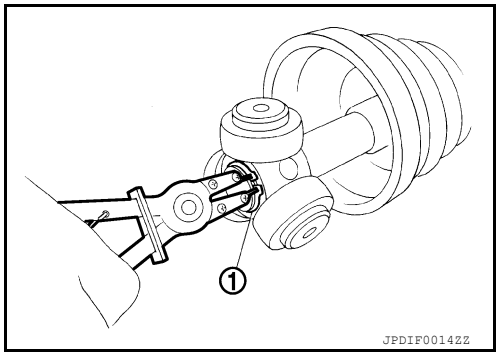
1. Install new boot and new small boot band on shaft.
   CAUTION:
   - **Do not reuse boot and boot bands.**
   - **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove the tape wrapped around the serration on shaft.



3. 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.



4. Secure spider assembly onto shaft with snap ring (1).
   CAUTION:
   Do not reuse snap ring.

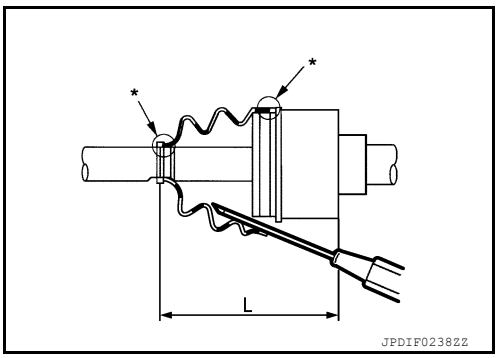


5. Apply the appropriate amount of Genuine NISSAN Grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the specified amount of grease.

   Grease Quantity : Refer to FAX-39, "Drive Shaft".

   NOTE:
   Always check with the Parts Department for the latest parts information.
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Do not reuse stopper ring.

9. Install boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated "*" mark) on shaft or housing, boot may be removed. Remove all grease from the boot mounting surface.

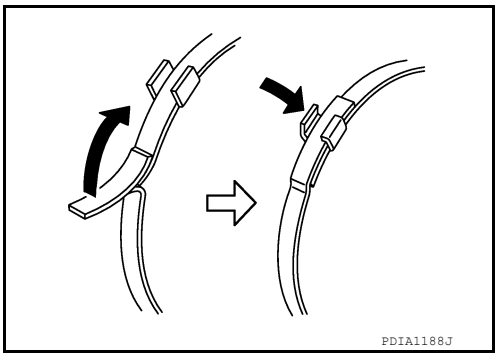


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the value shown below by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

Boot installed length (L) **: Refer to FAX-39, "Drive Shaft".**

CAUTION:
- **If the boot installation length is outside the standard, it may cause breakage of boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

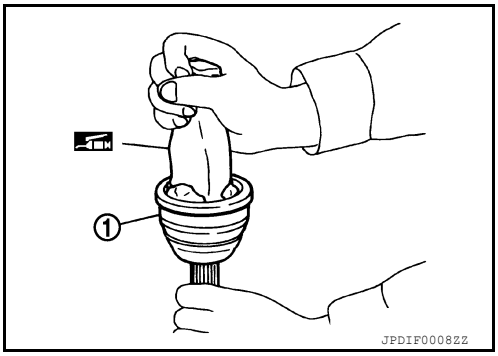
11. Install new boot bands securely as shown.
CAUTION:
Do not reuse boot bands.



12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Reinstall them with new boot bands when the mounting positions become incorrect.
13. Install dust shield to housing (left side).
CAUTION:
Do not reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Do not reuse circular clip.

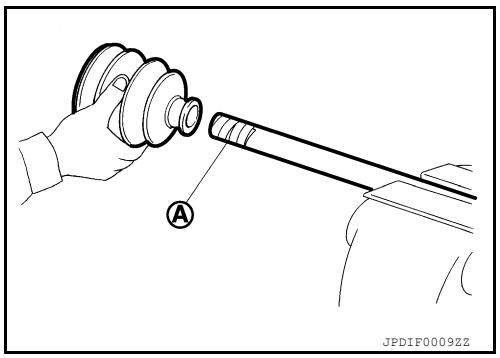
Wheel Side

1. Insert the amount of Genuine NISSAN Grease into joint sub-assembly (1) serration hole until grease begins to ooze from ball groove and serration hole.
CAUTION:
After inserting the grease, use a paper shop cloth to wipe off old grease that has oozed out.
NOTE:
Always check with the Parts Department for the latest parts information.

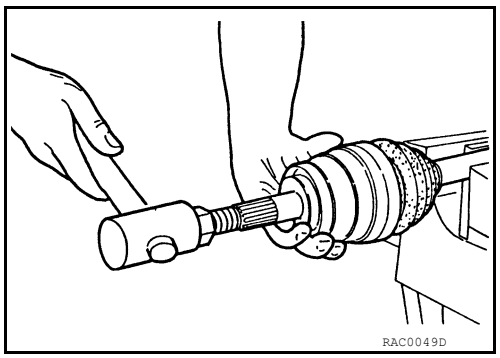


2. Install new boot and new small boot band on shaft.
CAUTION:
- **Do not reuse the boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**

3. Remove protective tape wound around serrated part of shaft.



4. Attach new circlip to shaft. The circlip must fit securely into shaft groove. Attach nut to joint sub-assembly.
Use a suitable tool to press-fit.
CAUTION:
Do not reuse circlip.

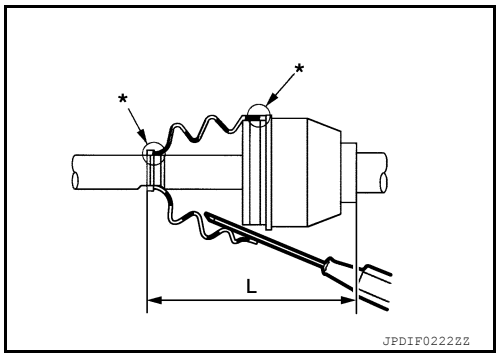


5. Insert the amount of new Genuine NISSAN Grease listed below into housing from large end of boot.

Grease quantity : Refer to FAX-39, "Drive Shaft".

6. Install boot securely into grooves (indicated by * marks) as shown.
CAUTION:
If there is grease on boot mounting surfaces (indicated by * marks) of shaft and housing, boot may come off. Remove all grease from surfaces.

7. Make sure boot installation length (L) is the specified length indicated below. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.



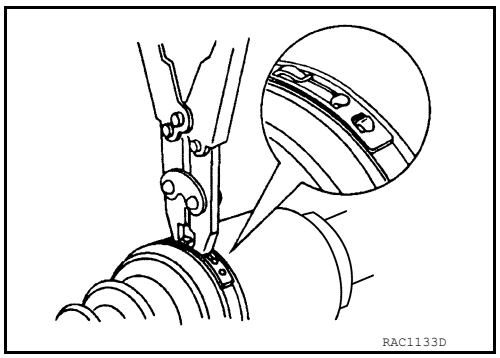
Boot installation length (L) : Refer to FAX-39, "Drive Shaft".

CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

8. Install new large and small boot bands securely using Tool.

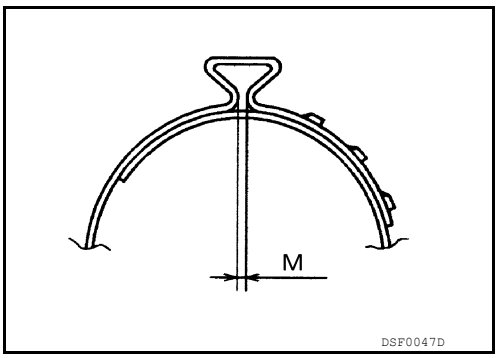
Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot bands.



9. Secure boot band so that dimension (M) meets specification as shown.

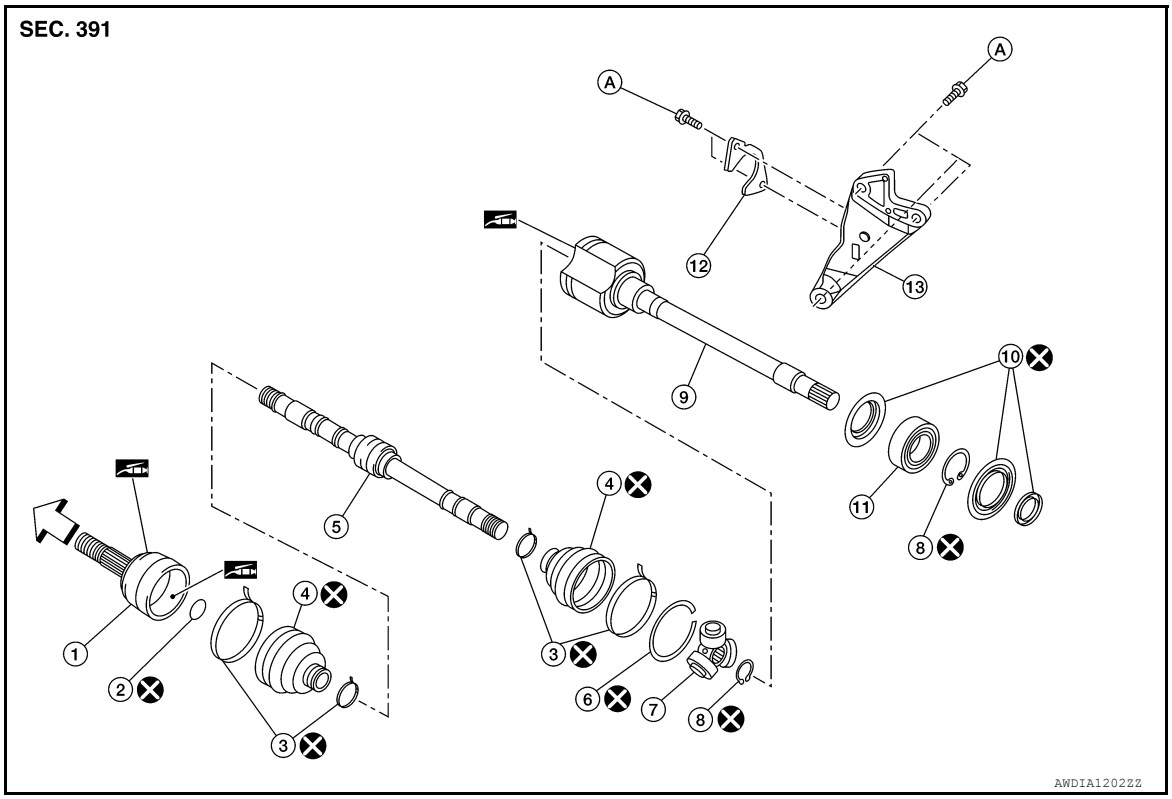
Dimension (M) **: Refer to FAX-39, "Drive Shaft".**



10. After installing housing and shaft, rotate boot to check whether or not the actual position is correct. If boot position is not correct, remove old boot bands then reposition the boot and secure with new boot bands.

Exploded View (RH)

INFOID:0000000011278636



1. Joint sub-assembly
2. Circular clip
3. Boot band
4. Boot
5. Shaft
6. Stopper ring
7. Spider assembly
8. Snap ring
9. Housing
10. Dust shield
11. Support bearing
12. Retainer
13. Support bearing bracket
- ⇦ Wheel side
- A. Refer to FRONT DRIVE SHAFT IN-STALLATION

Disassembly and Assembly (RH)

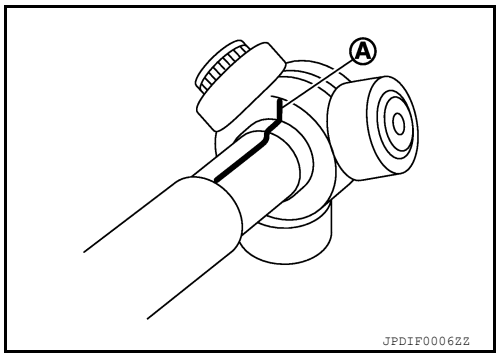
INFOID:0000000011278637

DISASSEMBLY

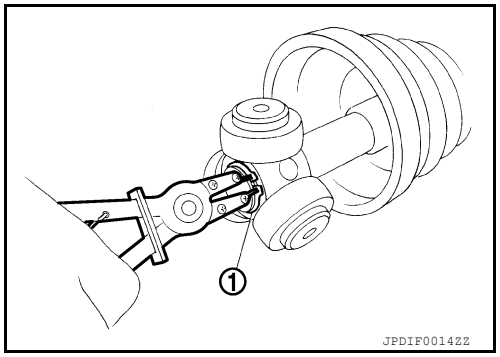
Transaxle Side

1. Secure shaft with a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.

3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.
5. Put matching marks (A) on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.



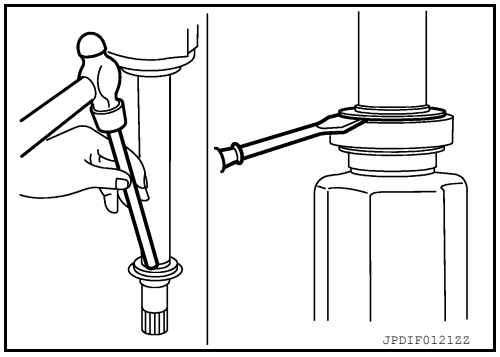
6. Remove snap ring (1), and then remove spider assembly from shaft.



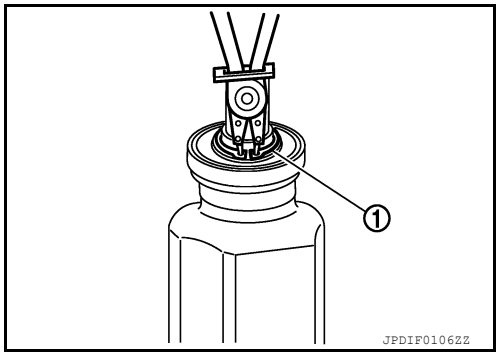
7. Remove boot from shaft.
8. Remove circular clip from housing.
9. Remove dust shield from housing.
10. Clean old grease on housing using paper shop cloths.

Support Bearing

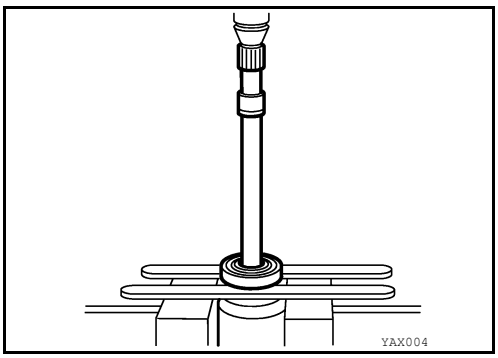
1. Remove dust shield from housing.



2. Remove snap ring (1).

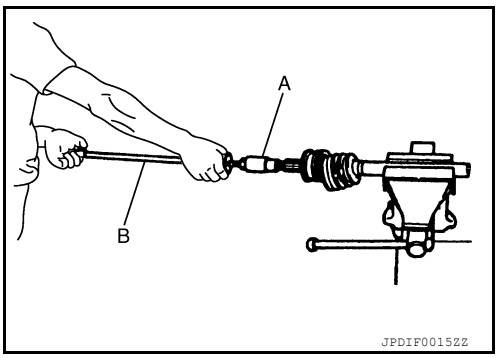


3. Press support bearing off of slide joint assembly using a suitable tool.
4. Remove dust shield.



Wheel Side

1. Secure the front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Screw a suitable tool (A) 30 mm (1.18 in) or more into the threaded part of joint sub-assembly. Pull joint sub-assembly out of shaft.
   CAUTION:
   - **Align suitable tool (B) and drive shaft then remove joint sub-assembly by pulling directly.**
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace the entire drive shaft.**



4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly using paper shop cloths while rotating ball cage.

INSPECTION AFTER DISASSEMBLY

Shaft
- Replace entire drive shaft if there is any bending, cracking, or other damage.

Joint Sub-assembly
- Make sure there is no rough rotation or unusual axial looseness.
- Make sure there is no foreign material inside joint sub-assembly.
- Check joint sub-assembly for compression scars, cracks or fractures.
  CAUTION:
  If there are any irregular conditions of joint sub-assembly components, replace the entire drive shaft.

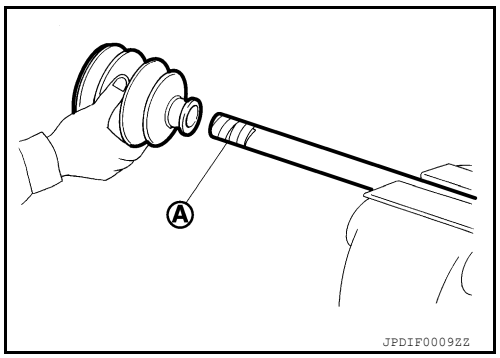
Sliding Joint Housing and Spider Assembly
- If roller surface of spider assembly has scratches or wear, replace entire drive shaft.

Support Bearing
- Make sure wheel bearing rolls freely and is free from noise, cracks, pitting or wear.

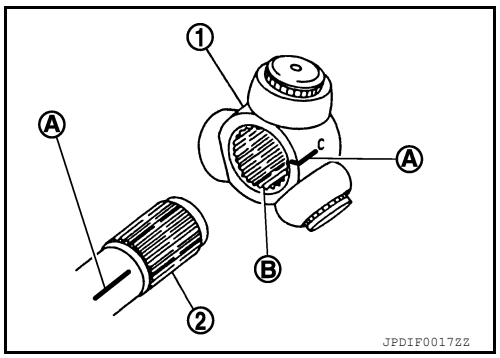
ASSEMBLY

Transaxle Side

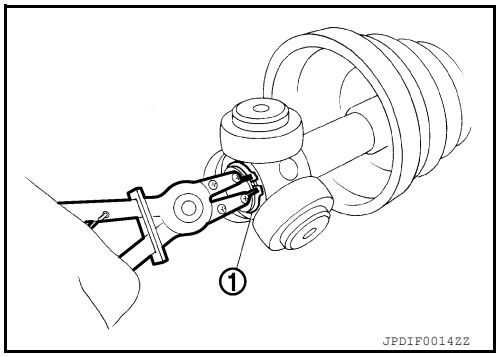
1. Install new boot and new small boot band to shaft.
CAUTION:
- **Do not reuse the boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove the tape wrapped around the serration on shaft.



3. 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.



4. Secure spider assembly onto shaft with snap ring (1).
CAUTION:
Do not reuse snap ring.

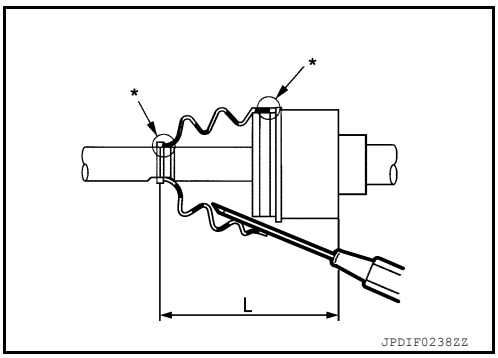


5. Apply the appropriate amount of Genuine NISSAN Grease to spider assembly and sliding surface.
NOTE:
Always check with the Parts Department for the latest parts information.
6. Assemble the housing onto spider assembly, and apply the specified amount of grease.

Grease quantity : Refer to FAX-39, "Drive Shaft".

NOTE:
Always check with the Parts Department for the latest parts information.
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
CAUTION:
Do not reuse stopper ring.

9. Install boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated "*" mark) on shaft or housing, boot may be removed. Remove all grease from the boot mounting surface.

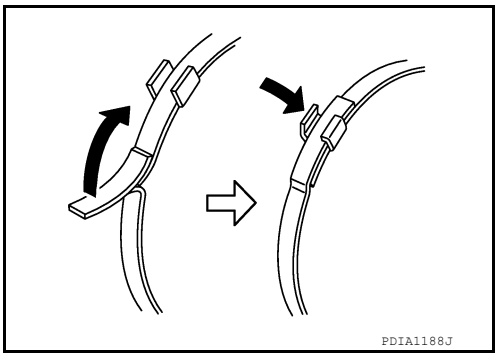


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the value shown below by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

Boot installed length (L) **: Refer to FAX-39, "Drive Shaft".**

CAUTION:
- **If the boot installation length is outside the standard, it may cause breakage of boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

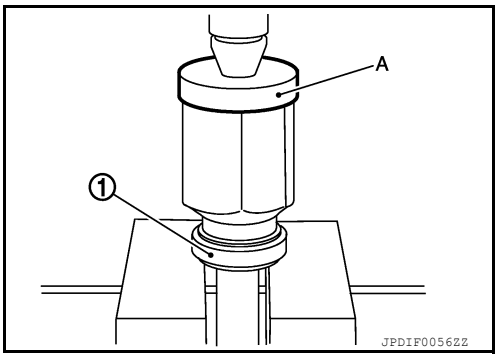
11. Install new boot bands securely as shown.
CAUTION:
Do not reuse boot band.



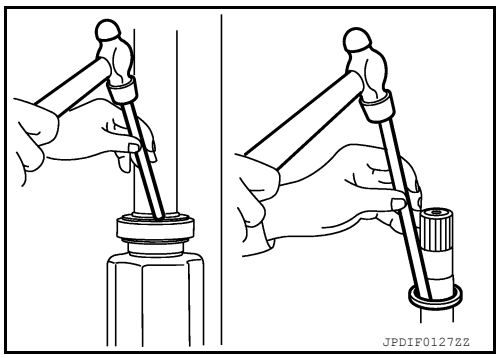
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Reinstall them with new boot bands when the mounting positions become incorrect.
13. Install dust shield to housing.
CAUTION:
Do not reuse dust shield.
14. Install circular clip to housing.
CAUTION:
Do not reuse circular clip.

Support Bearing

1. Install dust shield on housing.
CAUTION:
Do not reuse dust shield.
2. Press support bearing (1) onto housing to using the suitable tool (A).
3. Install snap ring.
CAUTION:
Do not reuse snap ring.

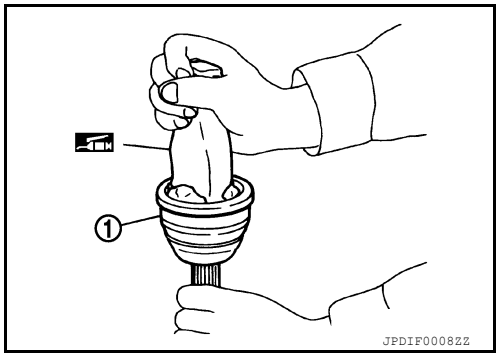


4. Install dust shields.
CAUTION:
Do not reuse dust shields.



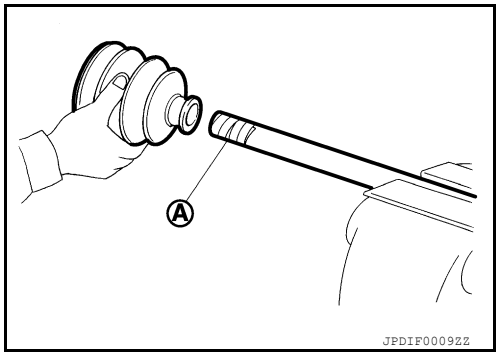
Wheel Side

1. Insert the amount of Genuine NISSAN Grease into joint sub-assembly serration (1) hole until grease begins to ooze from ball groove and serration hole.
CAUTION:
After inserting the grease, use a paper shop cloth to wipe off old grease that has oozed out.
NOTE:
Always check with the Parts Department for the latest parts information.

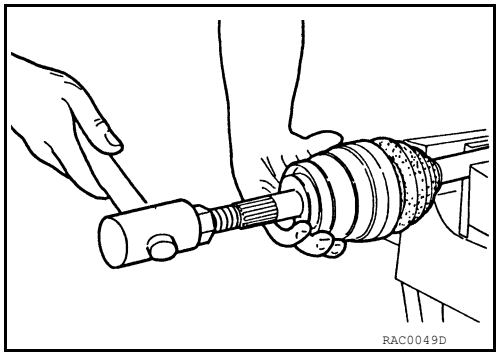


2. Install new boot and new small boot band onto shaft.
CAUTION:
- **Do not reuse boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**

3. Remove protective tape wound around serrated part of shaft.



4. Attach new circlip to shaft. The circlip must fit securely into shaft groove. Attach nut to joint sub-assembly.
Use a suitable tool to press-fit.
CAUTION:
Do not reuse circlip.

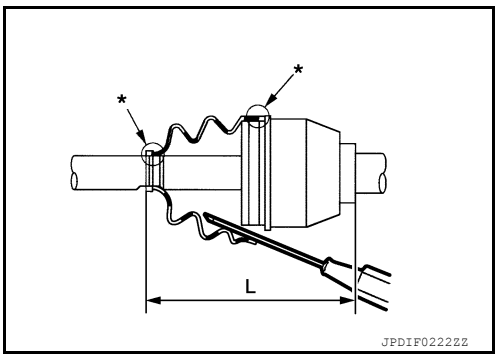


5. Insert the amount of new Genuine NISSAN Grease listed below into housing from large end of boot.

Grease quantity : Refer to FAX-39, "Drive Shaft".

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

6. Install boot securely into grooves (indicated by * marks) as shown.



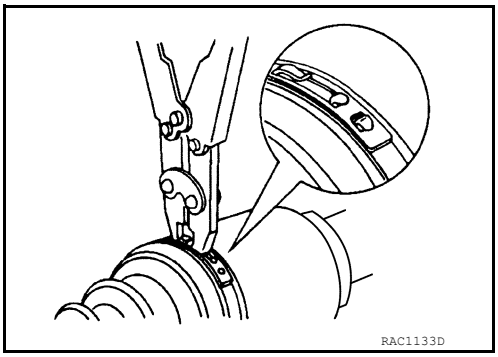
CAUTION:
If there is grease on boot mounting surfaces (indicated by * marks) of shaft and housing, boot may come off. Remove all grease from surfaces.

7. Make sure boot installation length (L) is the specified length. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.

Boot installation length (L) : Refer to FAX-39, "Drive Shaft".

CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

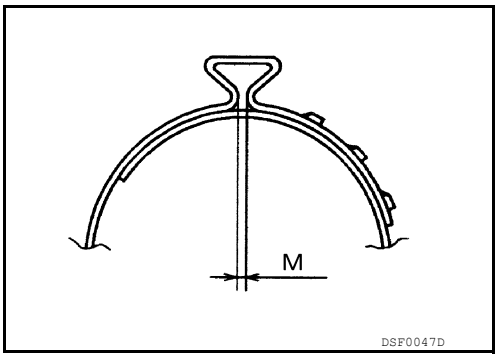
8. Install new large and small boot bands securely using Tool.



Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot bands.

9. Secure boot band so that dimension (M) meets specification as shown.



Dimension (M) : Refer to FAX-39, "Drive Shaft".

10. After installing housing and shaft, rotate boot to check whether or not the actual position is correct. If boot position is not correct, remove old boot bands then reposition the boot and secure with new boot bands.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

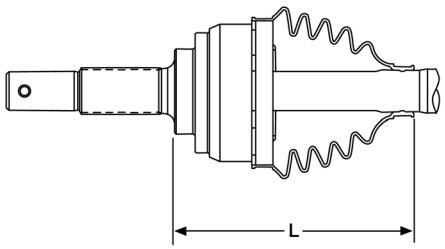
INFOID:0000000011278638

Item	Standard
Axial end play	0.0 mm (0.0 in)

Drive Shaft

INFOID:0000000011278639

Drive Shaft Specifications



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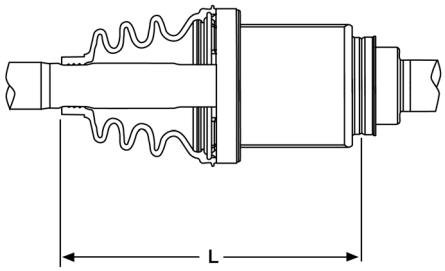

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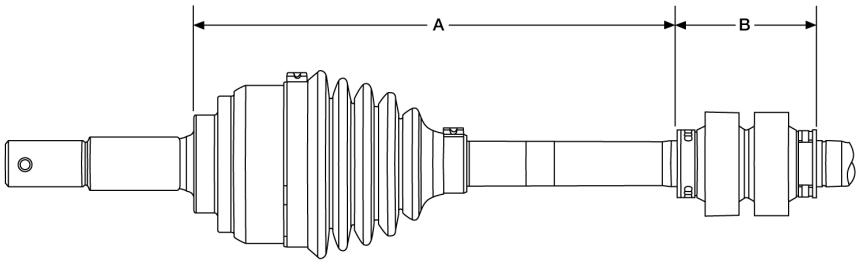
Application	FWD			
Joint type	Wheel side		Transaxle side	
	(LH)	(RH)	(LH)	(RH)
Grease quantity*	125 ± 10 g (4.41 ± 0.35 oz)		185 ± 10 g (6.52 ± 0.35 oz)	
Boot installed length (L)	141.5 mm (5.57 in)		176.9 mm (6.96 in)	

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

Dynamic Damper Specifications

Unit: mm (in)



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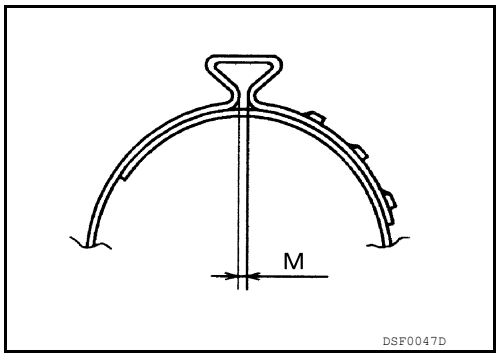
Application	FWD	
	(LH)	(RH)
Dimension (A)	243 ± 3 (9.57 ± 0.12)	243 ± 3 (9.57 ± 0.12)
Dimension (B)	70 (2.76)	50 (1.97)

Boot Band Specification

Unit: mm (in)



Dimension (M)	1.0 - 4.0 mm (0.039 - 0.157 in)

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011278640

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.**

Precautions for Drive Shaft

INFOID:0000000011278641

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.
- Reassemble disassembled parts carefully in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Use paper shop cloths. 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 shop cloths.

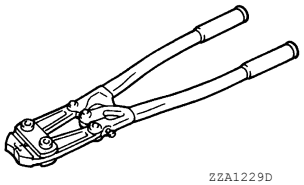
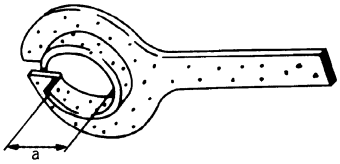
PREPARATION

PREPARATION

Special Service Tool

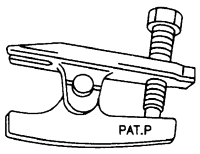
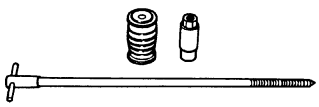
INFOID:0000000011278642

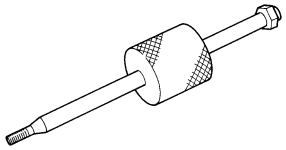
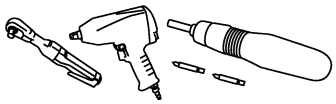
The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV40107300 (—) Boot band crimping tool  ZZA1229D	Installing boot band
KV40107500 (—) Drive shaft attachment  ZZA1230D	Removing drive shaft
KV38107900 (—) Protector  PDIA1183J	Installing drive shaft **a: 32 mm (1.26 in) dia.**

Commercial Service Tools

INFOID:0000000011278643

Tool name	Description
Ball joint remover  NT146	Removing wheel stud
Drive shaft puller  JPDIG0152ZZ	Removing drive shaft joint sub assembly

Tool name	Description
Sliding hammer  ZZA0023D	Removing drive shaft
Power tool  PIIB1407E	Loosening nuts, screws and bolts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000011278644

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

Reference			—	FAX-46	—	FAX-47	—	FAX-45	FSU-5	—	WT-62	WT-62	—	BR-6	ST-5
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	WHEEL	DRIVE SHAFT	BRAKE	STEERING
Symptom	DRIVE SHAFT	Noise	×	×				×	×	×	×	×		×	×
		Shake	×		×			×	×	×	×	×		×	×
	FRONT AXLE	Noise				×	×	×	×		×	×	×	×	×
		Shake				×	×	×	×		×	×	×	×	×
		Vibration				×	×	×	×		×		×		×
		Shimmy				×	×		×		×	×		×	×
		Shudder				×			×		×	×		×	×
		Poor quality ride or handling				×	×		×		×	×			

×: Applicable

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000011278645

- Move the wheel hub and bearing in an axial direction by hand to verify that looseness of wheel hub and bearing exists. If any looseness exists, replace the wheel hub and bearing.

Axial end play **: Refer to FAX-77, "Wheel Bearing".**

- Rotate wheel hub and bearing to verify if unusual noises or other irregular conditions exist. If any irregular conditions exist, replace the wheel hub and bearing.

FRONT DRIVE SHAFT

Inspection

INFOID:0000000011278646

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

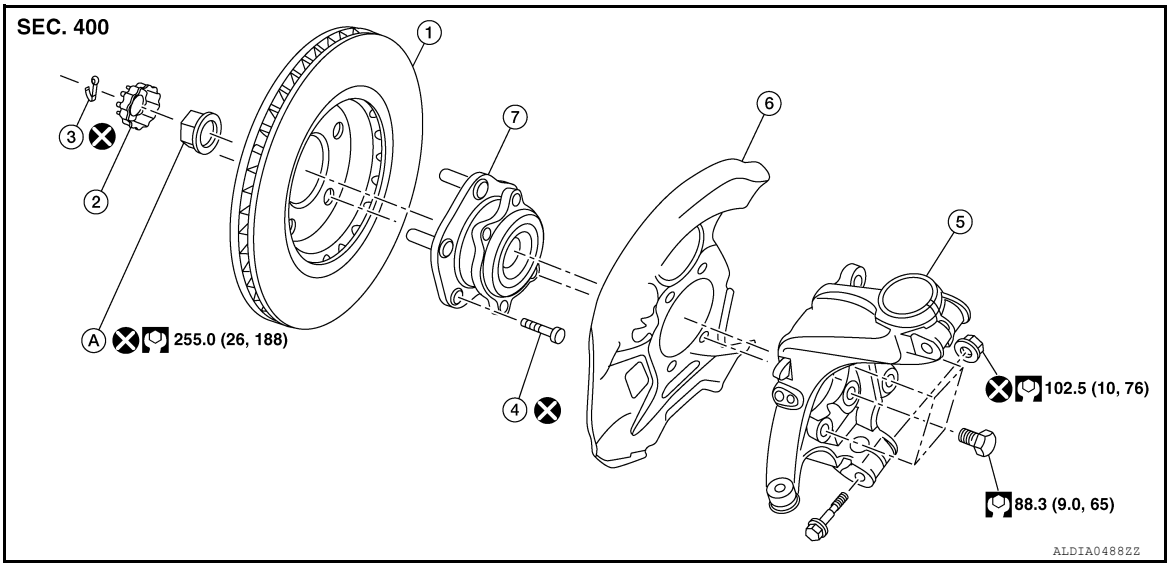
CAUTION:
Replace entire drive shaft when noise or vibration occurs from drive shaft.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB

Exploded View

INFOID:0000000011278647



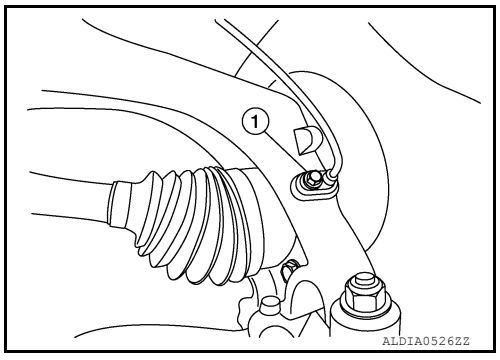
1. Disc brake rotor
2. Nut retainer
3. Cotter pin
4. Wheel stud
5. Steering knuckle
6. Splash guard
7. Wheel hub and bearing
A. Wheel hub lock nut

Removal and Installation

INFOID:0000000011278648

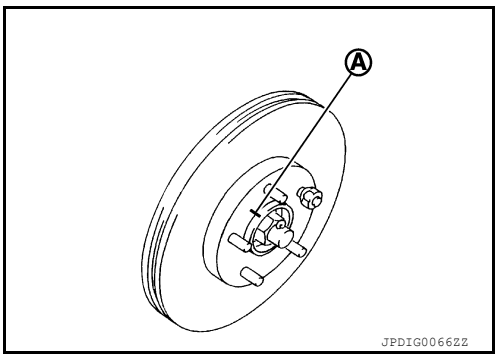
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Exploded View".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on wheel sensor harness.**



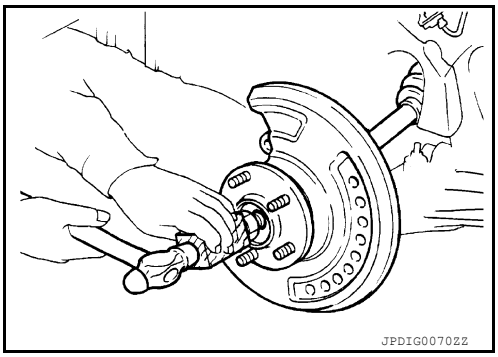
3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.

4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
CAUTION:
Do not drop the disc brake rotor.

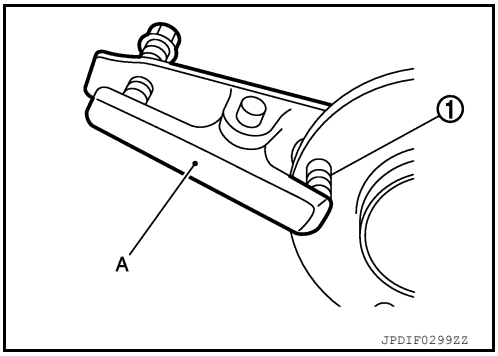


5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Refer to FAX-47, "Exploded View".
12. Separate transverse link from steering knuckle. Refer to FSU-13, "Exploded View".
13. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire. Refer to FAX-57, "Exploded View (LH)" (LH) or FAX-60, "Exploded View (RH)" (RH).
14. Remove the wheel hub and bearing bolts using power tool.
15. Remove the splash guard and the wheel hub and bearing from the steering knuckle.
16. If necessary, remove the wheel studs (1) using a suitable tool (A).



INSPECTION AFTER REMOVAL

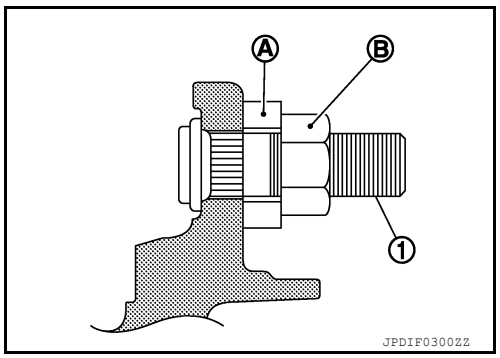
Check the following items, and replace the part if necessary.
- Check components for deformation, cracks, and other damage.
- Check boots of transverse link ball joint for cracks, axial end play, and swinging torque. Refer to FSU-29, "Ball Joint".

INSTALLATION

Installation is in the reverse order of the removal.
CAUTION:
- **Do not reuse the wheel stud.**
- **Do not reuse the cotter pin.**

- Place a washer (A) as shown to install the wheel studs (1) by using the tightening force of the nut (B).

CAUTION:
Check that there is no clearance between the wheel stud and the wheel hub and bearing.

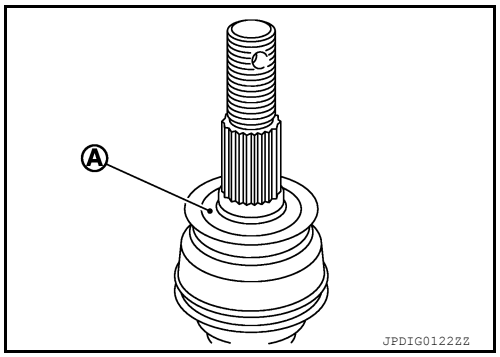


- Clean the mating surfaces of the wheel hub lock nut and the wheel hub and bearing.

CAUTION:
Do not apply lubricating oil to these mating surfaces.

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

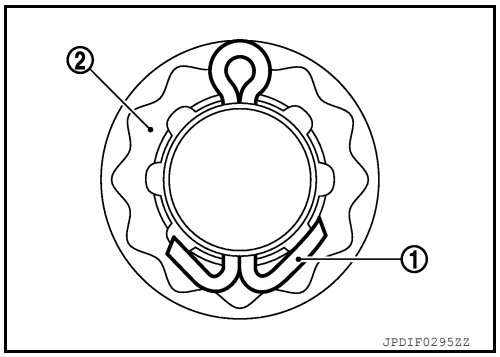
CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.



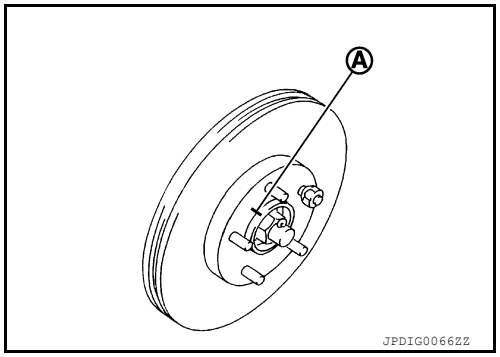
- Hold the wheel hub and bearing using a suitable tool. Tighten the wheel hub lock nut.

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.**

- When installing a the cotter pin (1) and the nut retainer (2), securely bend the cotter pin to prevent rattles.



- Align the matching marks (A) on the disc brake rotor and on the wheel hub and bearing.



INSPECTION AFTER INSTALLATION

- Check the wheel alignment. Refer to FSU-7, "Inspection".

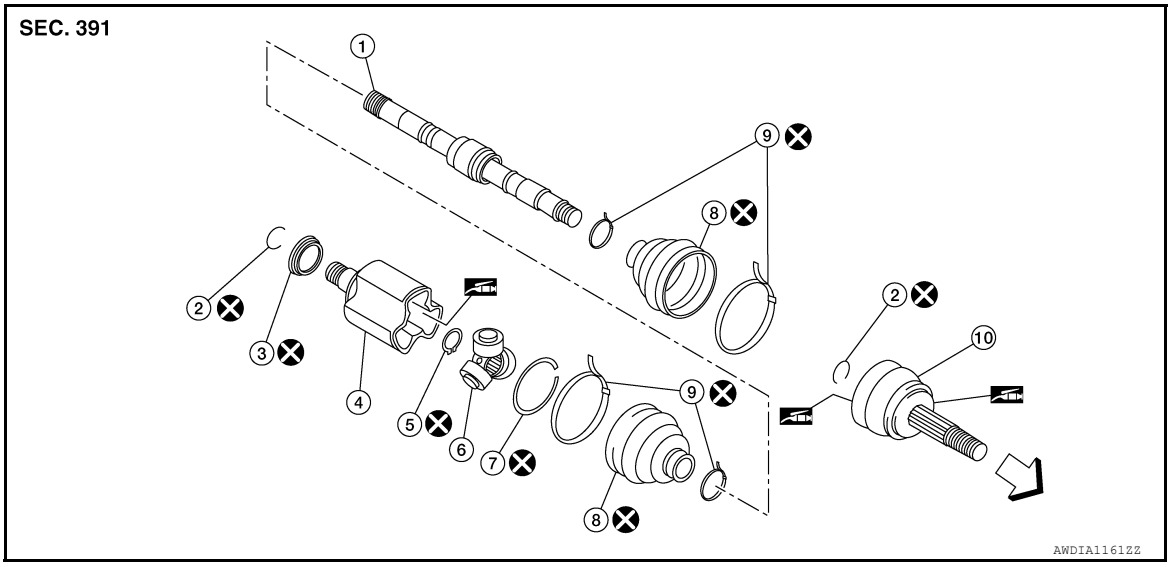
- Adjust neutral position of steering angle sensor. Refer to BRC-68, "Work Procedure".

FRONT DRIVE SHAFT BOOT

Exploded View

INFOID:0000000011278650

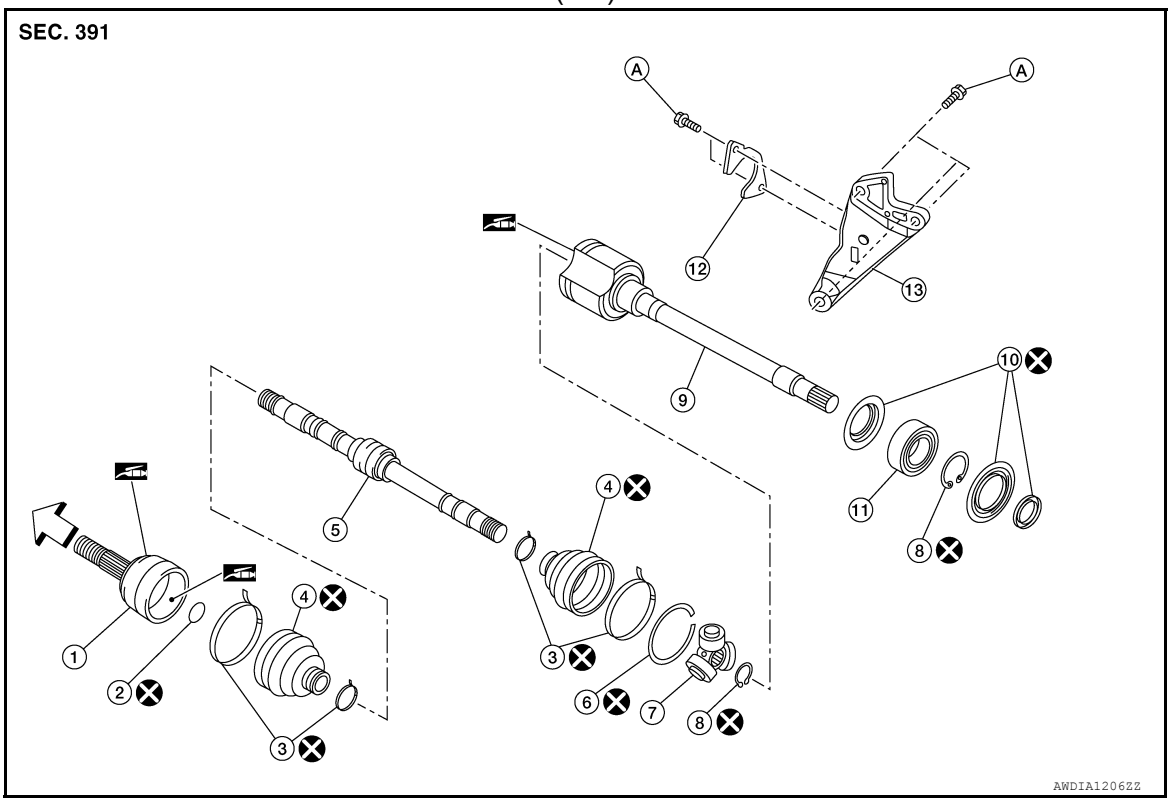
(LH)



1. Shaft
2. Circular clip
3. Dust shield
4. Housing
5. Snap ring
6. Spider assembly
7. Stopper ring
8. Boot
9. Boot band
10. Joint sub-assembly

⇦ Wheel side

(RH)



1. Joint sub-assembly
2. Circular clip
3. Boot band
4. Boot
5. Shaft
6. Stopper ring
7. Spider assembly
8. Snap ring
9. Housing

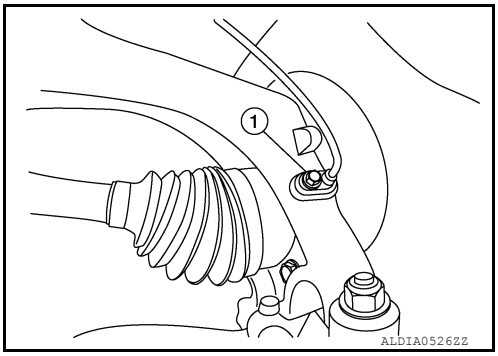
10. Dust shield
11. Support bearing
12. Bearing retainer
13. Support bearing bracket
⇦ Wheel side
A. Refer to FRONT DRIVE SHAFT INSTALLATION

WHEEL SIDE

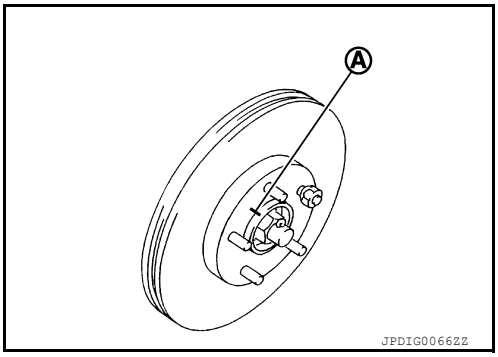
WHEEL SIDE : Removal and Installation

INFOID:0000000011278651

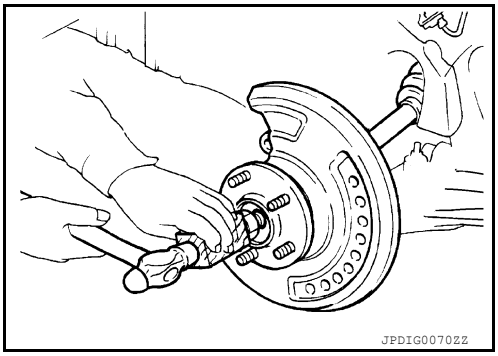
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".


CAUTION:
- **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
- **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on front wheel sensor harness**

3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
CAUTION:
Do not depress brake pedal while brake caliper is removed.
4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.


CAUTION:
Do not drop the disc brake rotor.

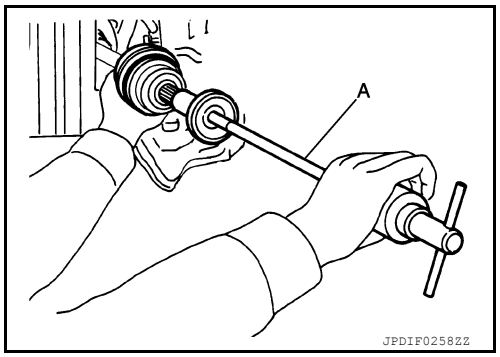
5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.


CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

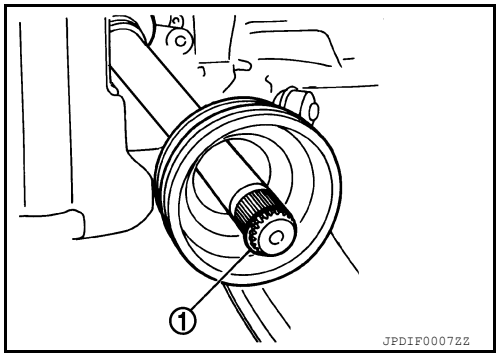
NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.

9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Separate the transverse link from the steering knuckle. Refer to FAX-47, "Exploded View".

12. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire. Refer to FAX-57, "Exploded View (LH)".
13. Remove boot bands.
14. Separate boot from joint sub-assembly.
15. Screw a suitable tool (A) 30 mm (1.18 in) or more into threaded part of joint sub-assembly. Support drive shaft with one hand and pull out joint sub-assembly with a sliding hammer or suitable tool from housing assembly.
    CAUTION:
    - **Align suitable tool and drive shaft and remove joint sub-assembly by pulling directly.**
    - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace the entire drive shaft assembly.**



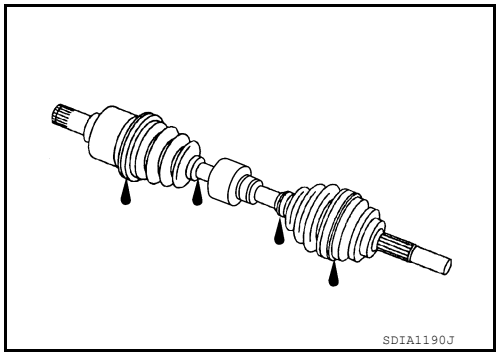
16. Remove circular clip (1) from shaft.



17. Remove outer boot from shaft.

INSPECTION AFTER REMOVAL

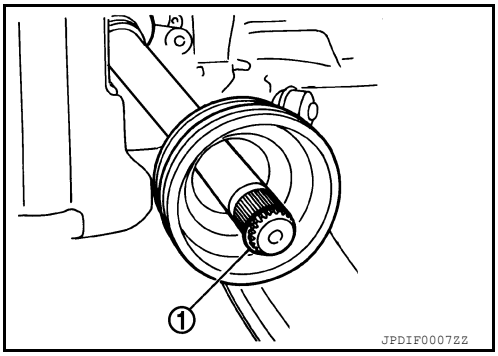
Check the following items, and replace the part if necessary.
- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.



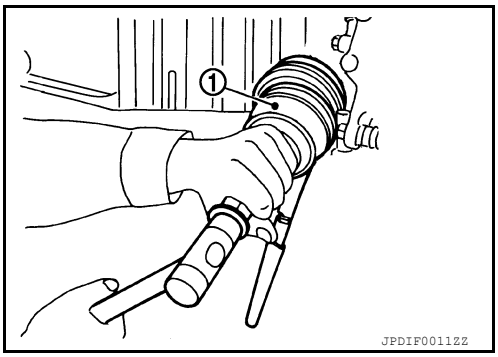
INSTALLATION

1. Clean the old grease on joint sub-assembly with paper shop cloth.
2. Fill serration slot joint sub-assembly with Genuine NISSAN Grease.
   CAUTION:
   After applying grease, use a paper shop cloth to wipe off old grease that has oozed out.
   NOTE:
   Always check with the Parts Department for the latest parts information.
3. Install boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape to protect the boot from damage.**
   - **Do not reuse boot and boot band.**
4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip (1) on groove at the shaft edge.
CAUTION:
Do not reuse circular clip.
NOTE:
A drive joint inserter is recommended when installing the circular clip.



6. Align the shaft and joint sub-assembly. Assemble the shaft with joint sub-assembly while holding the circular clip.
7. Install joint sub-assembly (1) to shaft using suitable tool.
CAUTION:
Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.

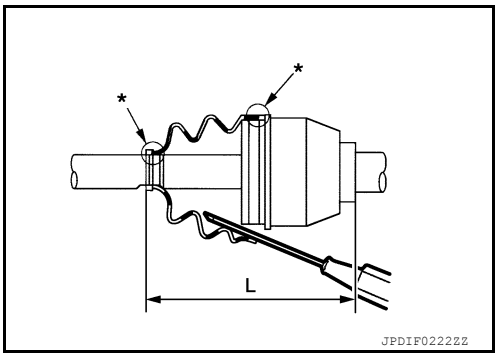


8. Apply the specified amount of Genuine NISSAN Grease into the large diameter side opening of the boot.

Grease quantity : Refer to FAX-77, "Drive Shaft".

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

9. Install the boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or the joint sub-assembly, boot may come off. Remove all grease from the boot mounting surface.
10. Make sure boot installation length (L) is the specified length. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.



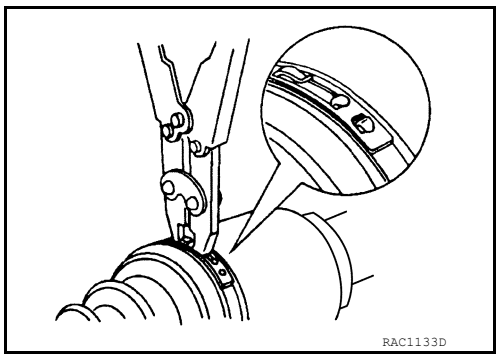
Boot installation length (L) : Refer to FAX-77, "Drive Shaft".

CAUTION:
- **Boot may break if boot installation length is not within standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

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

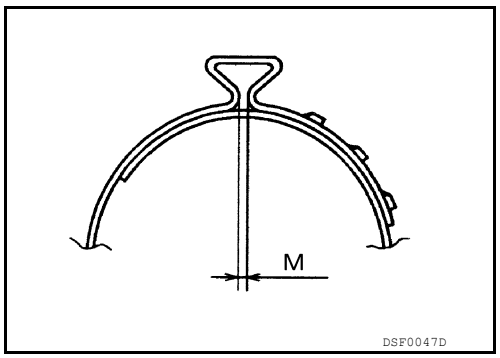
Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot band.



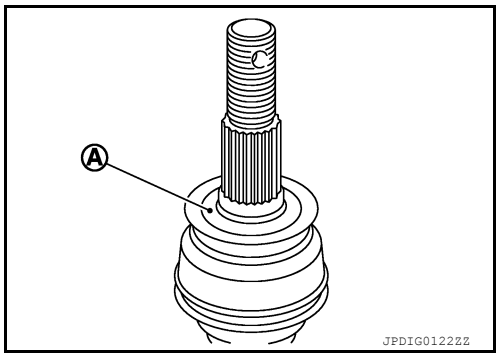
12. Secure boot band so that dimension (M) meets the specification as shown.

Dimension (M) : Refer to FAX-77, "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 the joint sub-assembly (A) and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.

CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.



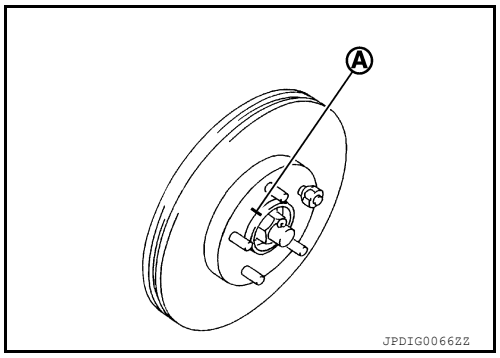
15. Clean the mating surfaces of the wheel hub lock nut and wheel hub and bearing.

CAUTION:
Do not apply lubricating oil to these mating surfaces.

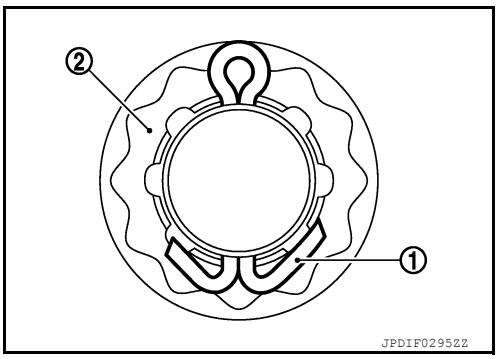
16. Insert drive shaft to wheel hub and bearing.
17. Temporarily install the wheel hub lock nut.

CAUTION:
Do not reuse the wheel hub lock nut.

18. Install the transverse link to the steering knuckle. Tighten the steering knuckle nut and bolt to the specification. Refer to FSU-19, "Exploded View".
19. Align the marks (A) made on the disc brake rotor and on the wheel hub and bearing during disassembly.



20. Install brake caliper to steering knuckle. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
21. Install the front wheel sensor to the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Exploded View".
    CAUTION:
    - **Before installing, make sure there is no foreign material such as iron fragments adhered to the pick-up part of the front wheel sensor.**
    - **When installing, make sure there is no foreign material such as iron fragments on and in the hole in the steering knuckle for the front wheel sensor. Make sure no foreign material has been caught in the sensor rotor. Remove any foreign material and then install the front wheel sensor.**
22. Hold the wheel hub and bearing. tighten the wheel hub lock nut. Refer to FAX-47, "Exploded View".
    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.**
23. Install the nut retainer (2) and a new cotter pin (1), securely bend the cotter pin to prevent rattles.
    CAUTION:
    - **Do not reuse cotter pin.**
    - **Bend cotter pin securely to prevent any looseness.**



24. Install the front wheel and tire. Refer to WT-67, "Removal and Installation".

INSPECTION AFTER INSTALLATION

Check the wheel sensor harness to be sure the connectors are fully seated.

TRANSAXLE SIDE

TRANSAXLE SIDE : Removal and Installation

INFOID:0000000011278652

NOTE:

Remove boot after removing drive shaft.

- For drive shaft removal and installation, refer to FAX-57, "Removal and Installation (LH)" (LH) or FAX-61, "Removal and Installation (RH)" (RH).
- For drive shaft disassembly and assembly, refer to FAX-65, "Disassembly and Assembly (LH)" (LH) or FAX-70, "Disassembly and Assembly (RH)" (RH).

FRONT DRIVE SHAFT

Exploded View (LH)

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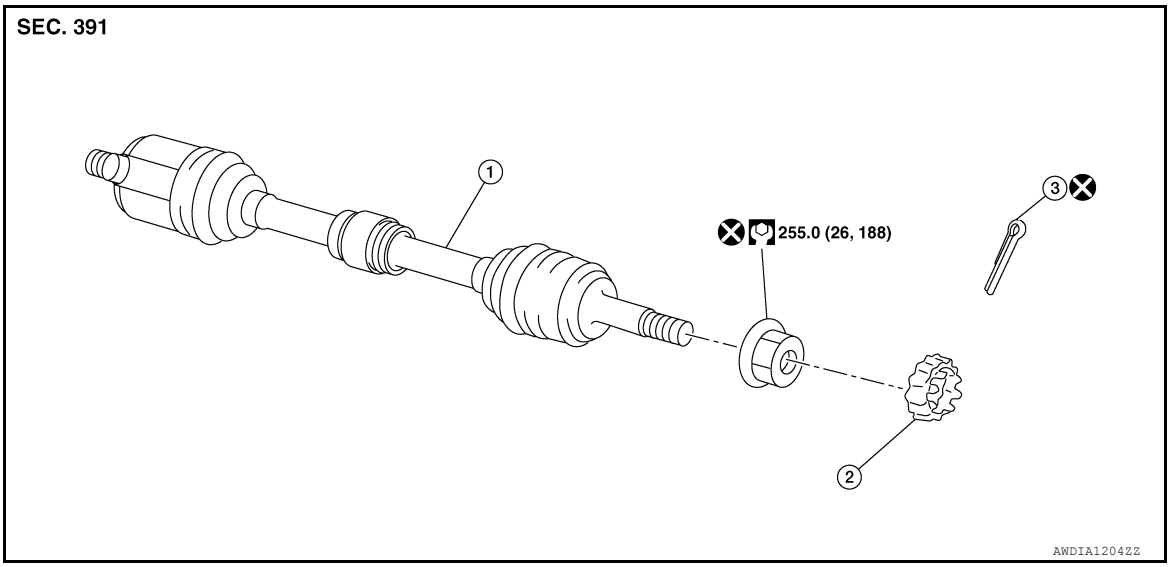


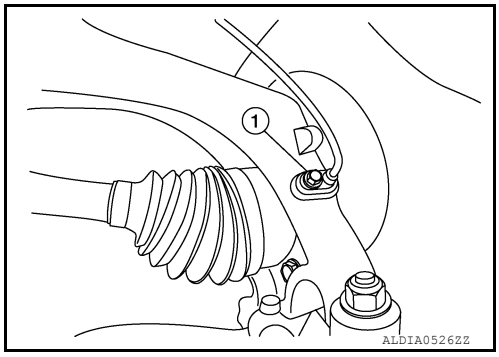
1. Drive shaft
2. Nut retainer
3. Cotter pin

Removal and Installation (LH)

INFOID:0000000011278655

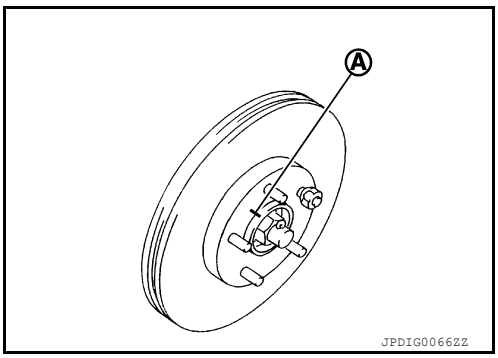
REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove the bolt (1) and separate the front wheel sensor from the steering knuckle. Refer to BRC-130, "FRONT WHEEL SENSOR : Exploded View".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on wheel sensor harness.**



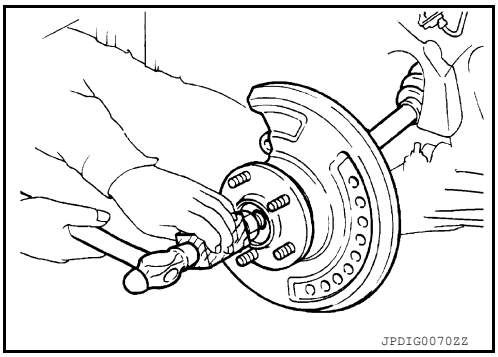
3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.

4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
CAUTION:
Do not drop the disc brake rotor.



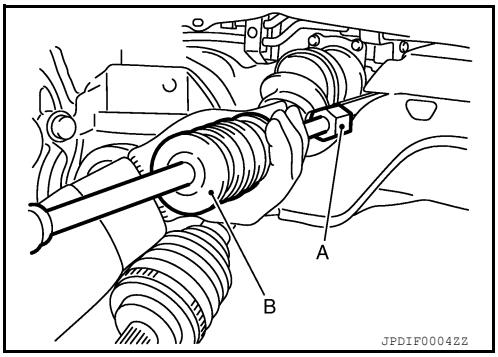
5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
CAUTION:
- **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
- **Do not allow the drive shaft to hang without support.**

NOTE:
Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Refer to FAX-47, "Exploded View".
12. Separate transverse link from steering knuckle. Refer to FSU-13, "Exploded View".
13. Separate drive shaft from wheel hub and bearing. Reposition the drive shaft aside with wire. Refer to FAX-57, "Exploded View (LH)".
14. Set Tool (A) and a suitable tool (B) between the drive shaft (slide joint side) and the transaxle as shown. Remove the drive shaft.
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.**

Tool number (A) : KV40107500 (—)

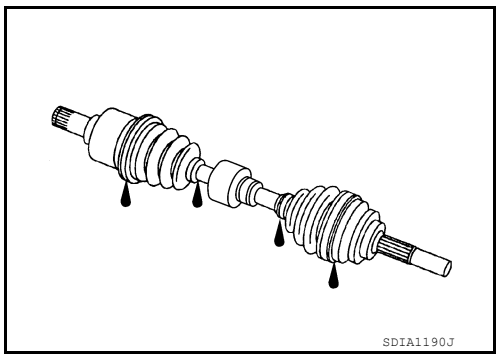


15. Remove the differential side oil seal. Refer to TM-210, "Removal and Installation".

INSPECTION AFTER REMOVAL

- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.

- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.

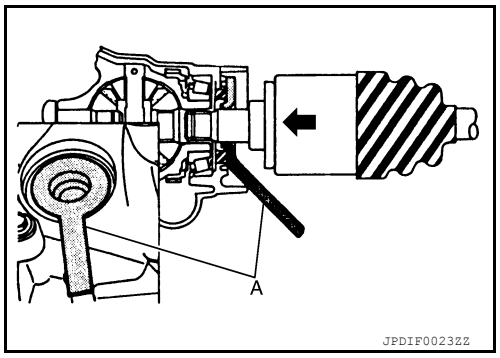


INSTALLATION

Installation is in the reverse order of removal.

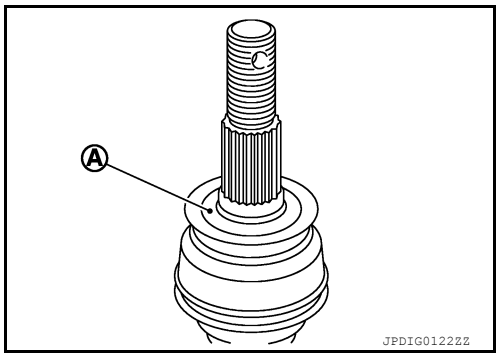
- Install a new differential side oil seal. Refer to TM-210, "Removal and Installation".
  CAUTION:
  Do not reuse the differential side oil seal.
- Place Tool (A) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a suitable tool to install securely.
  CAUTION:
  Check that circular clip is completely engaged.

  Tool number (A) : KV38107900 (—)



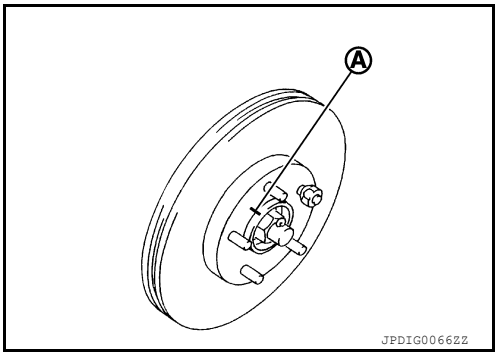
- Clean the mating surfaces of wheel hub lock nut and wheel hub and bearing.
  CAUTION:
  Do not apply lubricating oil to these mating surfaces.

- Clean the mating surfaces of drive shaft, wheel hub and bearing. And then apply Molykote M77 lubricant to surface (A) of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.
  NOTE:
  Always check with the Parts Department for the latest parts information.

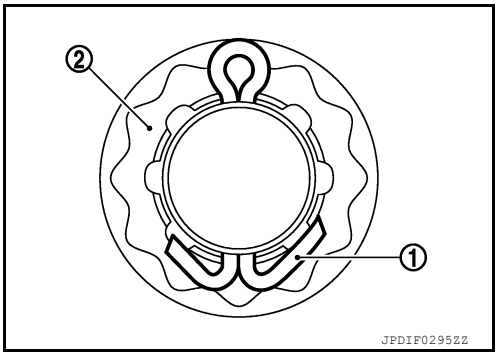


- **CAUTION:**
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Do not use a power tool.**
  - **Do not reuse wheel hub lock nut.**
  - **Too much torque causes axle noise. Too little torque, causes wheel hub and bearing looseness. Tighten the wheel hub lock nut to the specification.**

- Align the matching marks (A) made on the disc brake rotor and on the front wheel hub and bearing during disassembly.



- When installing a cotter pin (1) and nut retainer (2), securely bend the cotter pin to prevent rattles.
  CAUTION:
  Do not reuse cotter pin.

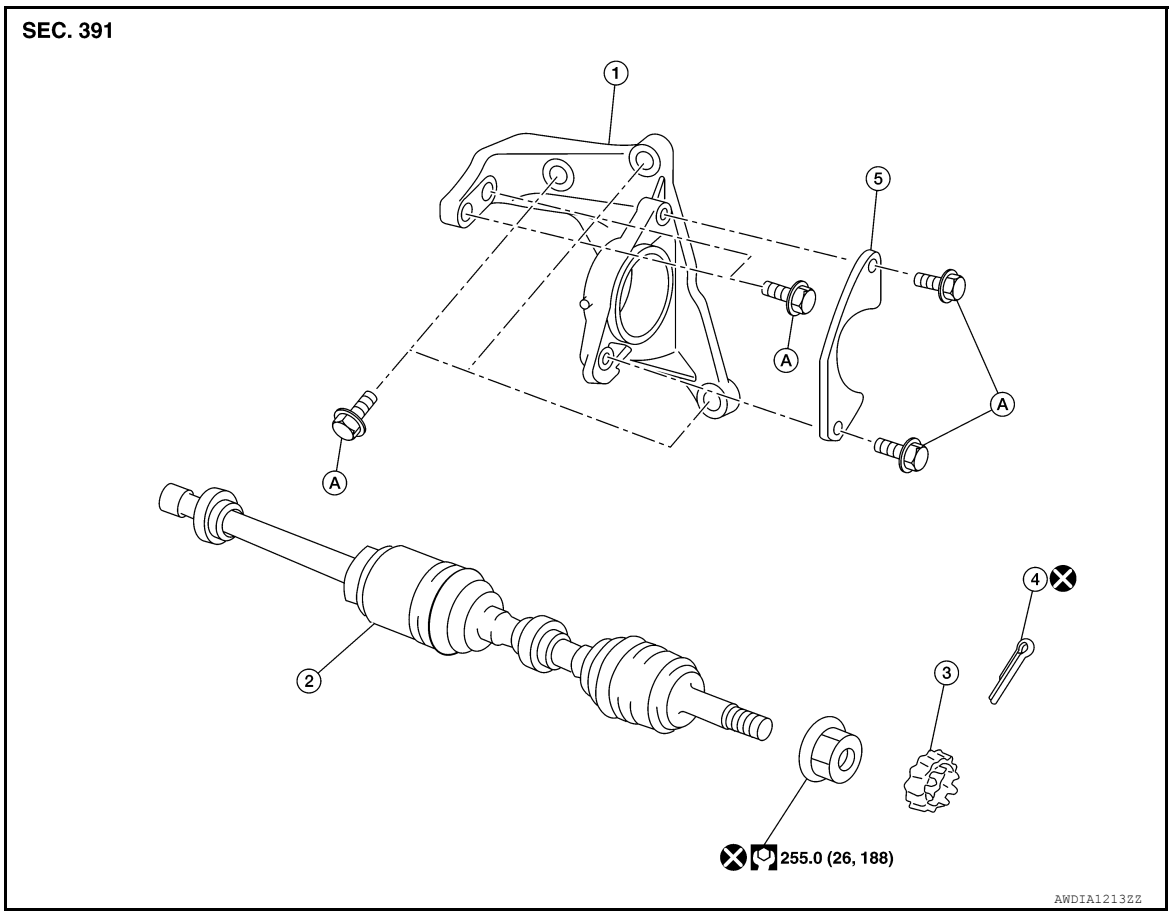


INSPECTION AFTER INSTALLATION

Check CVT fluid level and leakage. Refer to TM-189, "Inspection".

Exploded View (RH)

INFOID:0000000011278656



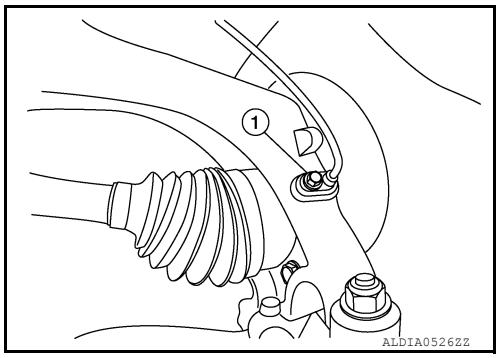
1. Support bearing bracket
2. Drive shaft
3. Nut retainer
4. Cotter pin
5. Bearing retainer
A. Refer to installation.

Removal and Installation (RH)

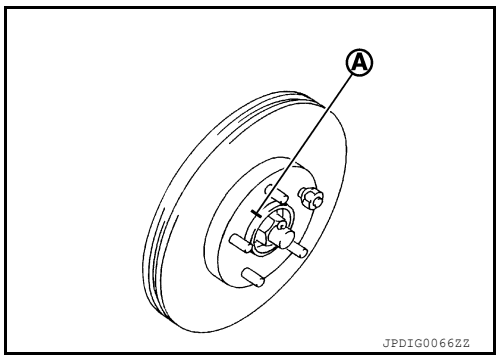
INFOID:0000000011278657

REMOVAL

1. Remove front wheel and tire using power tool. Refer to WT-67, "Removal and Installation".
2. Remove wheel sensor bolt (A) and position wheel sensor aside. Refer to BRC-130, "FRONT WHEEL SENSOR : Removal and Installation".
   CAUTION:
   - **Failure to separate the front wheel sensor from the steering knuckle may result in damage to the front wheel sensor.**
   - **Pull out the front wheel sensor, being careful to turn it as little as possible. Do not pull on wheel sensor harness.**

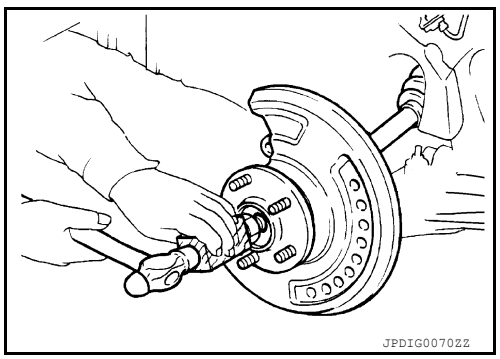


3. Remove brake caliper torque member bolts, leaving brake hose attached. Position the brake caliper aside with wire. Refer to BR-37, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Exploded View" (1 PISTON TYPE), or BR-42, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Exploded View" (2 PISTON TYPE).
   CAUTION:
   Do not depress brake pedal while brake caliper is removed.
4. Put alignment marks (A) on disc brake rotor and wheel hub and bearing. Remove disc brake rotor.
   CAUTION:
   Do not drop the disc brake rotor.



5. Remove cotter pin.
6. Remove the nut retainer.
7. Loosen the wheel hub lock nut from the drive shaft using power tool.
8. Using a piece of wood and a suitable tool, tap on the lock nut to disengage the drive shaft from the wheel hub and bearing.
   CAUTION:
   - **Do not place the drive shaft joint at an extreme angle. Be careful not to over extend the slide joint.**
   - **Do not allow the drive shaft to hang without support.**

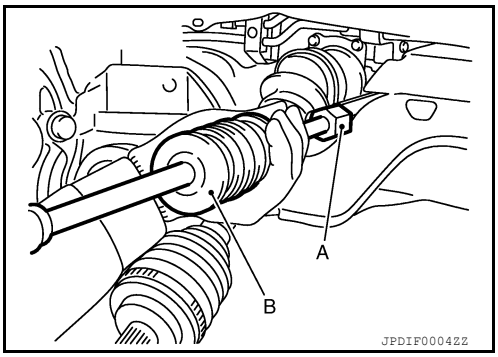
   NOTE:
   Use a suitable puller if drive shaft cannot be separated from the wheel hub and bearing.



9. Remove the wheel hub lock nut.
10. Remove the engine side cover. Refer to EXT-28, "FENDER PROTECTOR : Exploded View".
11. Remove the lower nut and bolt from the steering knuckle. Refer to FAX-47, "Exploded View".
12. Separate transverse link from steering knuckle. Refer to FSU-13, "Exploded View".
13. Separate drive shaft from wheel hub and bearing and reposition drive shaft aside with wire.

14. Remove bearing retainer bolts and bearing retainer.
15. Set tool (A) and a suitable tool (B) between the drive shaft (slide joint side) and the transaxle as shown. Remove the drive shaft.
CAUTION:
Do not place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.

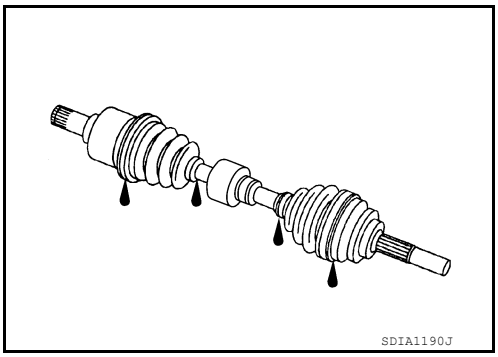
Tool : KV40107500 (—)



16. Remove the differential side oil seal. Refer to TM-210, "Removal and Installation"
17. If necessary, remove the support bearing bracket bolts and the support bearing bracket.

INSPECTION AFTER REMOVAL

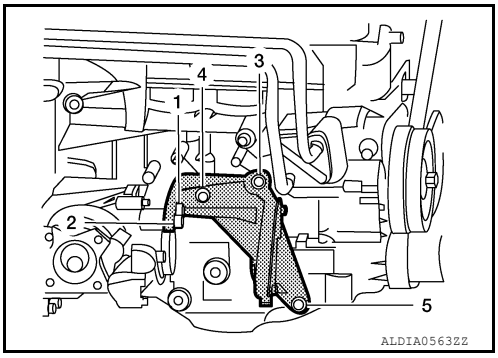
- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.



INSTALLATION

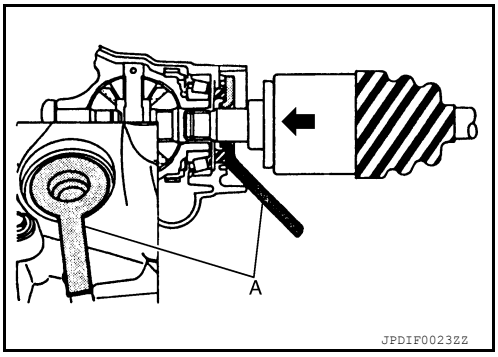
1. Install the support bearing bracket.
    1. Temporarily tighten bolts 1 and 2.
    2. Completely tighten bolts 3 and 4.
    3. Completely tighten bolts 1 and 2.
    4. Completely tighten bolt 5.

M10 bolts	**: No. 1-4**	**48.0 N·m (4.9 kg-m, 35 ft-lb)**
M12 bolts	**: No. 5**	**97.1 N·m (9.9 kg-m, 72 ft-lb)**



2. Install a new differential side oil seal. Refer to TM-210, "Removal and Installation".
CAUTION:
Do not reuse the differential side oil seal.
3. Place Tool (A) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a suitable tool to install securely.
CAUTION:
Check that circular clip is completely engaged.

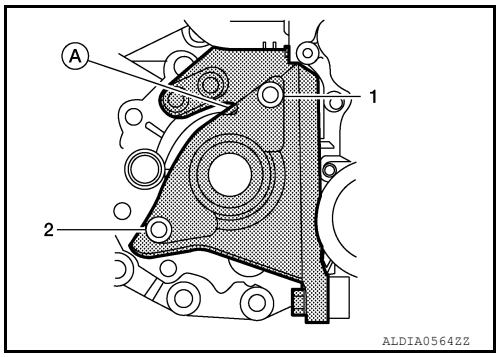
Tool : KV38107900 (—)



4. Install the bearing retainer using the following steps.

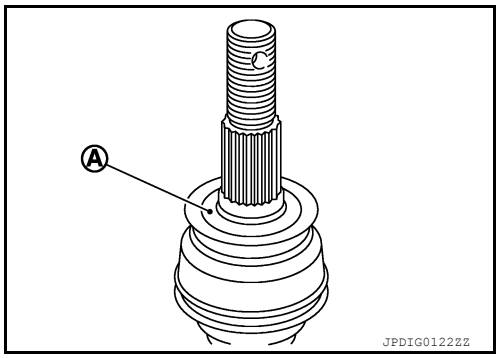
1. Install the bearing retainer with the notch (A) facing up.
2. Tighten the bearing retainer bolts in the numerical order shown.

M8 bolt : No. 1 and No. 2 25.0 N·m (2.6 kg-m, 18 ft-lb)



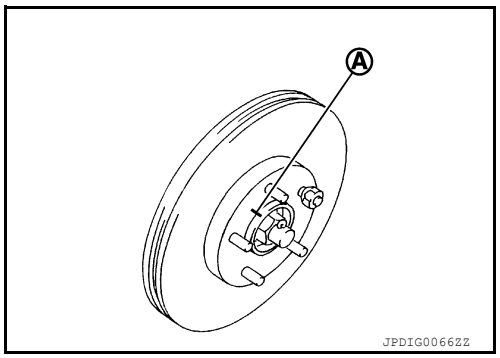
5. Clean the mating surfaces of wheel hub lock nut and wheel hub and bearing.
CAUTION:
Do not apply lubricating oil to these mating surfaces.

6. Clean the mating surfaces of the joint sub-assembly and the wheel hub and bearing. Apply Molykote M77 lubricant to the surface (A) of the joint sub-assembly.
CAUTION:
Apply lubricant to cover the entire flat mating surface of the joint sub-assembly.
NOTE:
Always check with the Parts Department for the latest parts information.

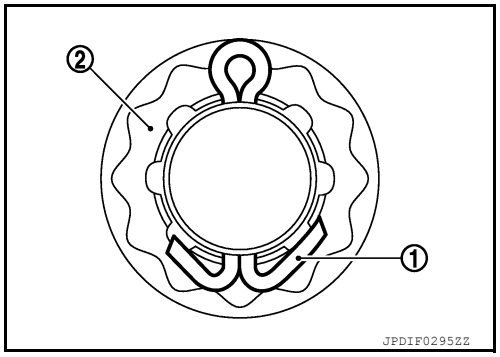


7. Hold the wheel hub and bearing using a suitable tool. Tighten the wheel hub lock nut.
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Do not use a power tool.**
- **Do not reuse wheel hub lock nut.**
- **Too much torque causes axle noise. Too little torque, causes wheel bearing looseness. Tighten the wheel hub lock nut to the specification.**

8. Align the matching marks (A) made on the disc brake rotor and on the front wheel hub and bearing during disassembly.



9. When installing a cotter pin (1) and nut retainer (2), securely bend the cotter pin to prevent rattles.
CAUTION:
Do not reuse cotter pin.



10. Installation of the remaining components is in the reverse order of removal.

INSPECTION AFTER INSTALLATION

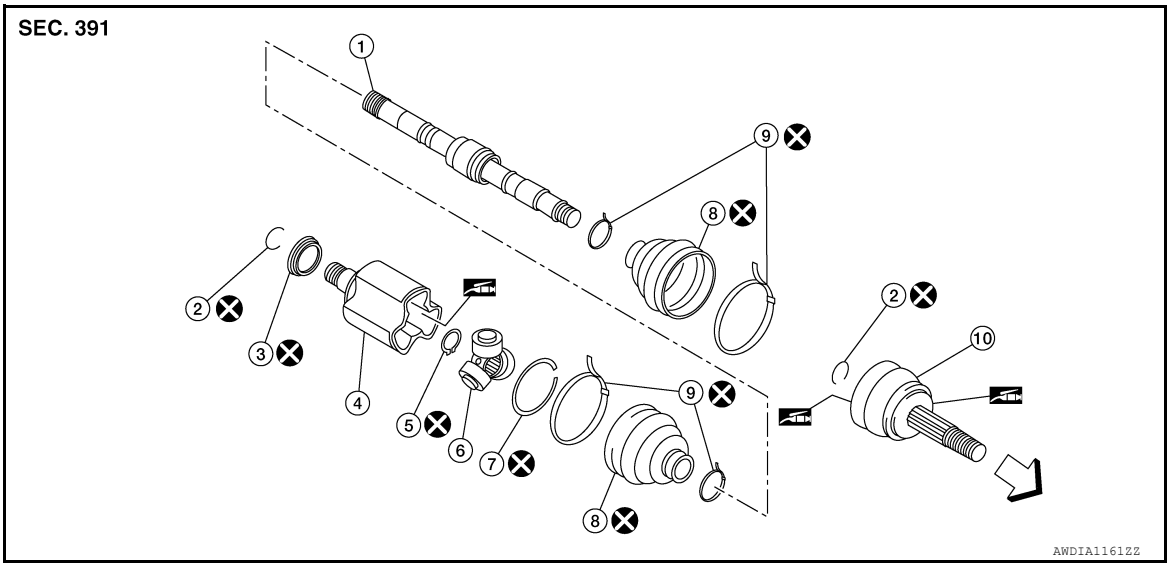
Check CVT fluid level and leakage. Refer to TM-189, "Inspection".

UNIT DISASSEMBLY AND ASSEMBLY

FRONT DRIVE SHAFT

Exploded View (LH)

INFOID:0000000011278659



1. Shaft
2. Circular clip
3. Dust shield
4. Housing
5. Snap ring
6. Spider assembly
7. Stopper ring
8. Boot
9. Boot band
10. Joint sub-assembly
⇦ Wheel side

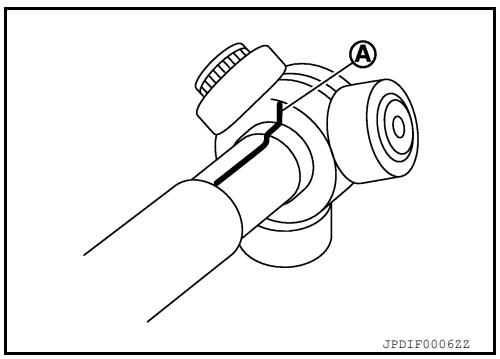
Disassembly and Assembly (LH)

INFOID:0000000011278660

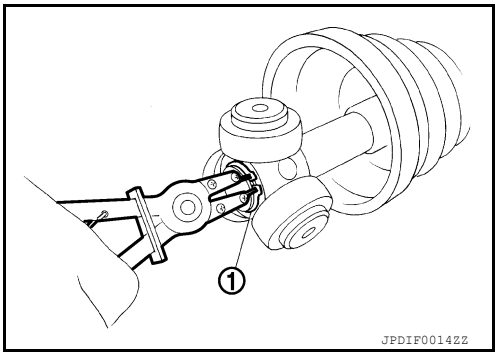
DISASSEMBLY

Transaxle Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between the vise and shaft.
2. Remove boot bands and slide the boot back.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.
5. Put matching marks (A) on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.

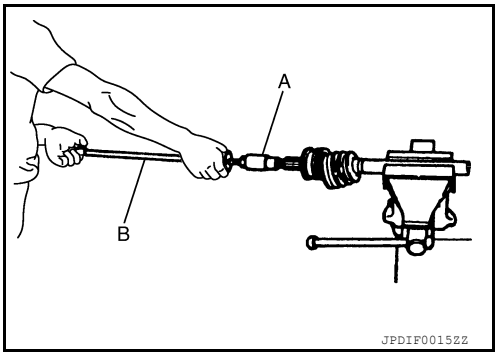


6. Remove snap ring (1), and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing.
9. Remove dust shield from housing.
10. Clean old grease on housing using paper shop cloths.



Wheel Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Screw a suitable tool (A) 30 mm (1.18 in) or more into threaded part of joint sub-assembly. Pull joint sub-assembly out of shaft.
   CAUTION:
   - **Align suitable tool (B) and drive shaft then remove joint sub-assembly by pulling directly.**
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace entire drive shaft.**
4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly using paper shop cloths while rotating ball cage.



INSPECTION AFTER DISASSEMBLY

Shaft

Check shaft for runout, cracks, or other damage. Replace entire drive shaft if necessary.

Dynamic Damper

Check damper for cracks or wear. Replace drive shaft if necessary.

Joint Sub-Assembly (Wheel Side)

Check the following:

- Joint sub-assembly for rough rotation and excessive axial looseness
- The inside of the joint sub-assembly for entry of foreign material
- Joint sub-assembly for compression scars, cracks, and fractures inside of joint sub-assembly

Replace entire drive shaft if necessary.

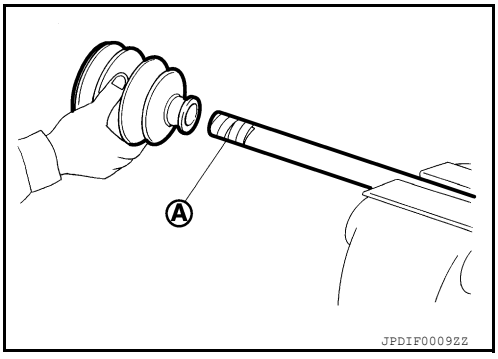
Housing and Spider assembly (Transaxle Side)

Replace entire drive shaft if there is scratching or wear of housing roller contact surface or spider roller contact surface.

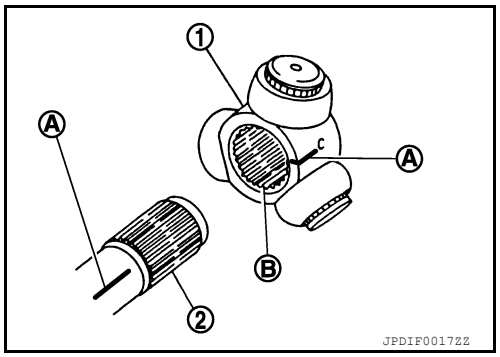
ASSEMBLY

Transaxle Side

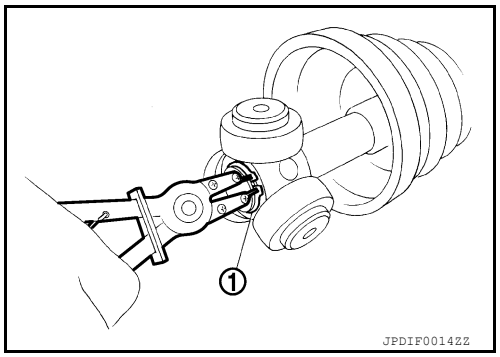
1. Install new boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape (A) to protect from damage**
   - **Do not reuse boot and boot band.**
2. Remove the tape wrapped around the serration on shaft.



3. 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.



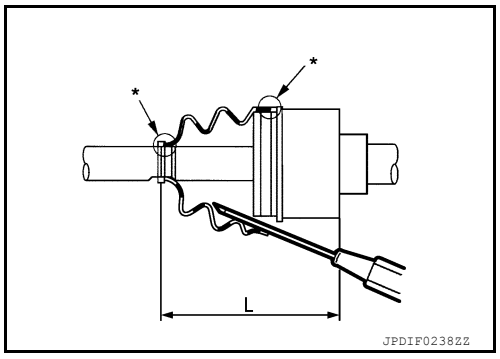
4. Secure spider assembly onto shaft with snap ring (1).
CAUTION:
Do not reuse snap ring.



5. Apply the appropriate amount of Genuine NISSAN Grease to spider assembly and sliding surface.
NOTE:
Always check with the Parts Department for the latest parts information.
6. Assemble the housing onto spider assembly, and apply the specified amount of Genuine NISSAN Grease.

Grease quantity : Refer to FAX-77, "Drive Shaft".

NOTE:
Always check with the Parts Department for the latest parts information.
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
CAUTION:
Do not reuse stopper ring.
9. Install boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated "*" mark) on shaft or housing, boot may be removed. Remove all grease from the boot mounting surface.

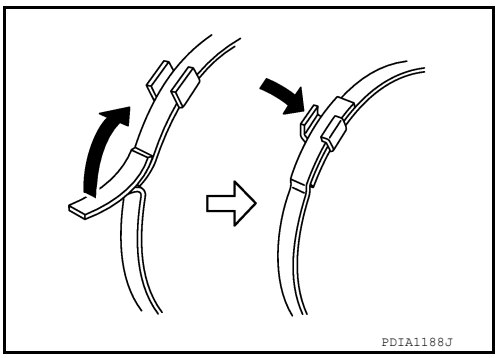


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the value shown below by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

Boots installed length (L) : Refer to FAX-77, "Drive Shaft".

CAUTION:
- **If the boot installation length is outside the standard, it may cause breakage of boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

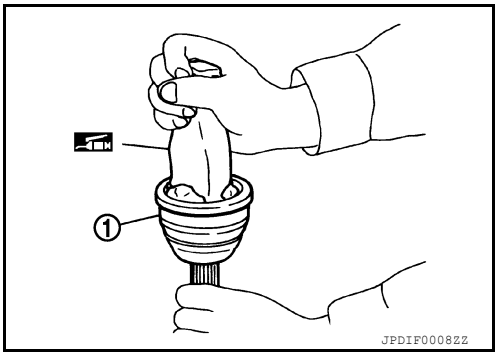
11. Install new boot bands securely as shown.
CAUTION:
Do not reuse boot band.



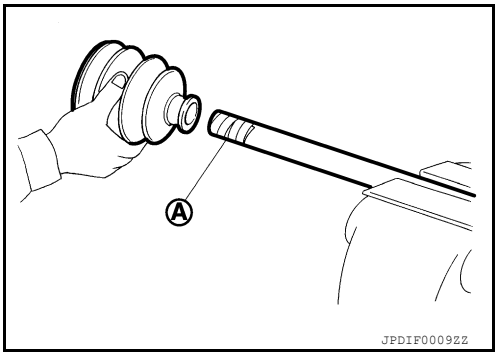
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Reinstall them with new boot bands when the mounting positions become incorrect.
13. Install dust shield to housing.
CAUTION:
Do not reuse dust shield.
14. Install circular clip to housing.
CAUTION:
Do not reuse circular clip.

Wheel Side

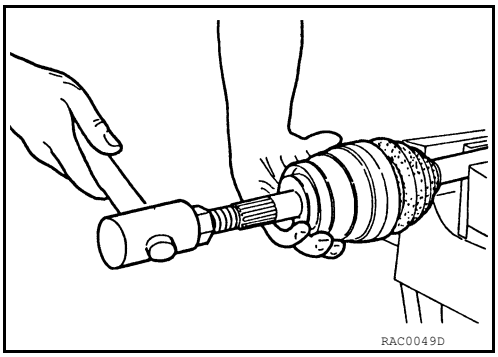
1. Insert the amount of Genuine NISSAN Grease into joint sub-assembly (1) serration hole until grease begins to ooze from ball groove and serration hole.
CAUTION:
After inserting the grease, use a paper shop cloth to wipe off old grease that has oozed out.
NOTE:
Always check with the Parts Department for the latest parts information.



2. Install new boot and new small boot band on shaft.
CAUTION:
- **Do not reuse the boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
3. Remove protective tape wound around serrated part of shaft.



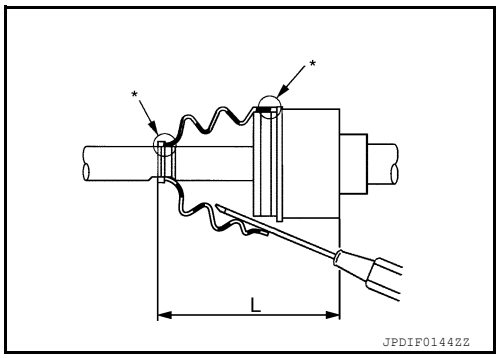
4. Attach new circlip to shaft. The circlip must fit securely into shaft groove. Attach nut to joint sub-assembly.
Use a suitable tool to press-fit.
CAUTION:
Do not reuse circlip.



5. Insert the amount of new Genuine NISSAN Grease listed below into housing from large end of boot.

Grease quantity : Refer to FAX-77, "Drive Shaft".

6. Install boot securely into grooves (indicated by "* marks) as shown.
CAUTION:
If there is grease on boot mounting surfaces (indicated by "* marks) on shaft or joint sub-assembly, boot may come off. Remove all grease from surfaces.



7. Make sure boot installation length (L) is the specified length indicated below. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.

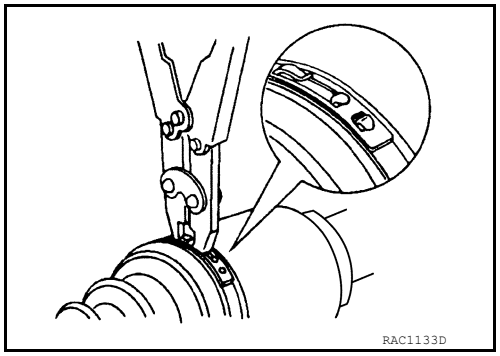
Boot installation length (L) : Refer to FAX-77, "Drive Shaft".

CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

8. Install new large and small boot bands securely using Tool.

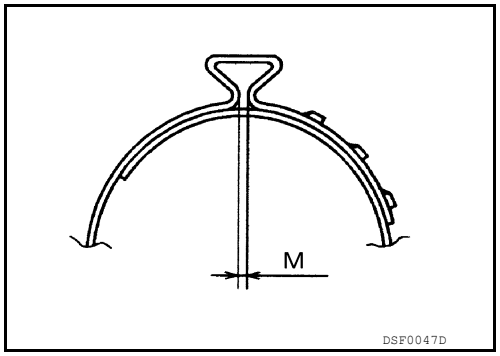
Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot bands.



9. Secure boot band so that dimension (M) meets specification as shown.

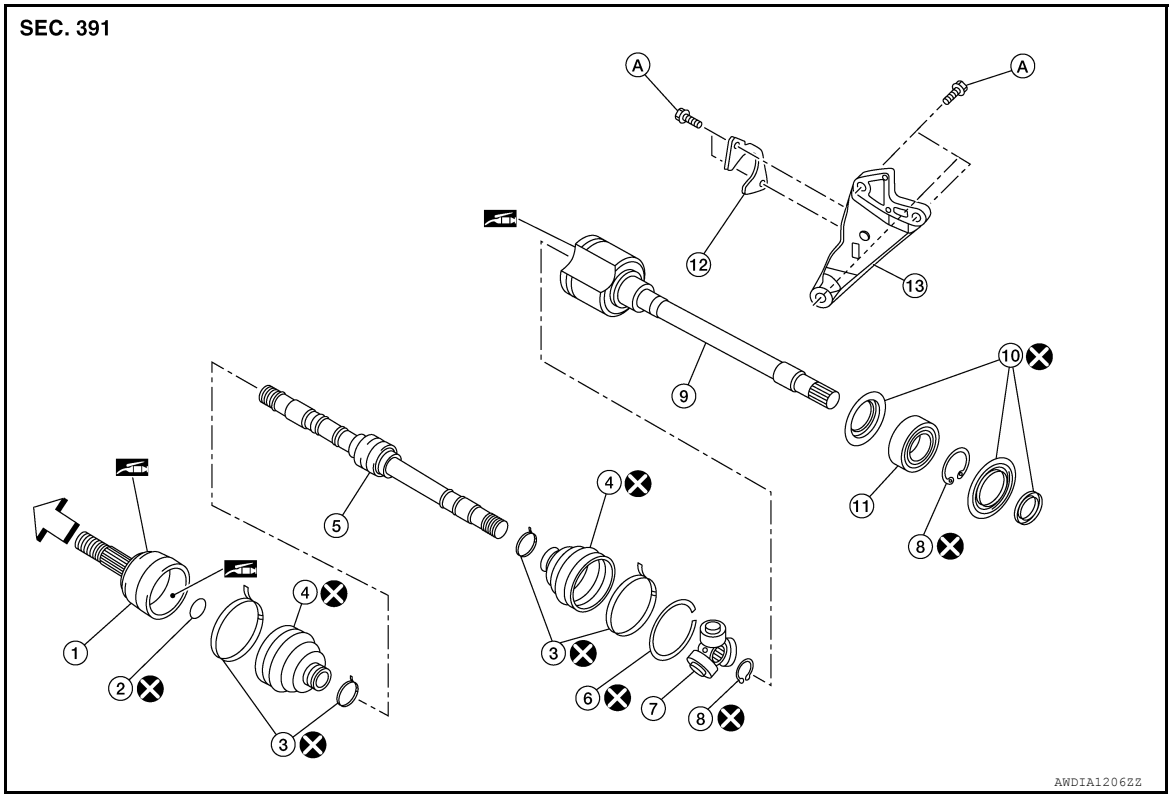
Dimension (M) : Refer to FAX-77, "Drive Shaft".



10. 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.
CAUTION:
Do not reuse boot bands.

Exploded View (RH)

INFOID:0000000011278661



1. Joint sub-assembly
2. Circular clip
3. Boot band
4. Boot
5. Shaft
6. Stopper ring
7. Spider assembly
8. Snap ring
9. Housing
10. Dust shield
11. Support bearing
12. Bearing retainer
13. Support bearing bracket
- Wheel side
A. Refer to FRONT DRIVE SHAFT INSTALLATION

Disassembly and Assembly (RH)

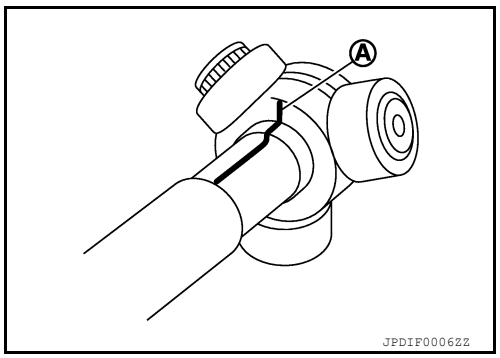
INFOID:0000000011278662

DISASSEMBLY

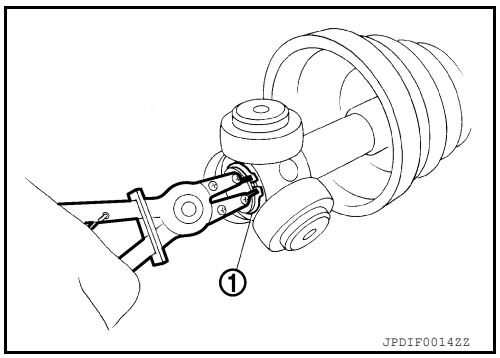
Transaxle Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch the surfaces.

5. Put matching marks (A) on the spider assembly and shaft.
CAUTION:
Use paint or an equivalent for matching marks. Do not scratch the surfaces.



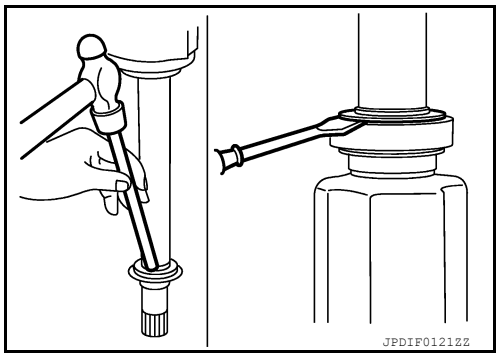
6. Remove snap ring (1), and then remove spider assembly from shaft.



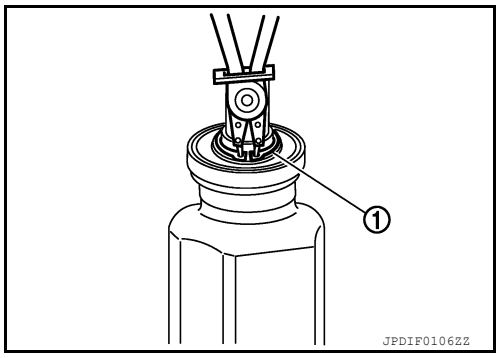
7. Remove boot from shaft.
8. Remove circular clip from housing.
9. Remove dust shield from housing.
10. Clean old grease on housing using paper shop cloths.

Support Bearing

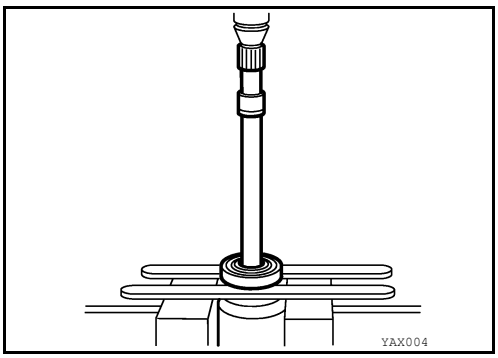
1. Remove dust shield from housing.



2. Remove snap ring (1).



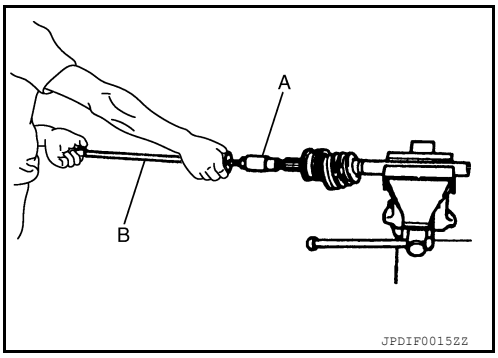
3. Press out support bearing from housing.



4. Remove dust shield.

Wheel Side

1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide the boot back.
3. Screw a suitable tool (A) 30 mm (1.18 in) or more into threaded part of joint sub-assembly. Pull joint sub-assembly out of shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align suitable tool (B) and drive shaft then remove joint sub-assembly by pulling directly.**



4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly using paper shop cloths while rotating ball cage.

INSPECTION AFTER DISASSEMBLY

Shaft
Check shaft for runout, cracks, or other damage. Replace entire drive shaft if necessary.

Dynamic Damper
Check damper for cracks or wear. Replace drive shaft if necessary.

Joint Sub-Assembly (Wheel Side)
Check the following:
- Joint sub-assembly for rough rotation and excessive axial looseness
- The inside of the joint sub-assembly for entry of foreign material
- Joint sub-assembly for compression scars, cracks, and fractures inside of joint sub-assembly

Replace entire drive shaft if there are any non-standard conditions of components.

Housing and Spider assembly (Transaxle Side)
Replace entire drive shaft if there is scratching or wear of housing roller contact surface or spider roller contact surface.

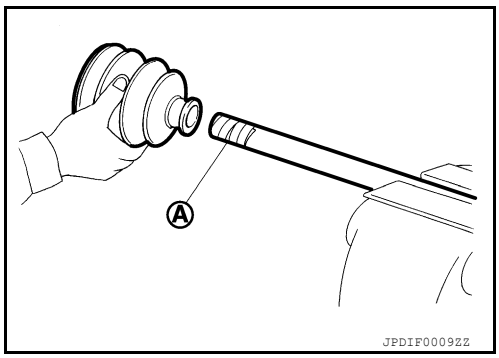
Support Bearing
Make sure support bearing rolls freely and is free from noise, cracks, pitting or wear. Replace support bearing if there are any non-standard conditions.

Support Bearing Bracket
Check for bending, cracks, or damage. Replace support bearing bracket if there are any non-standard conditions.

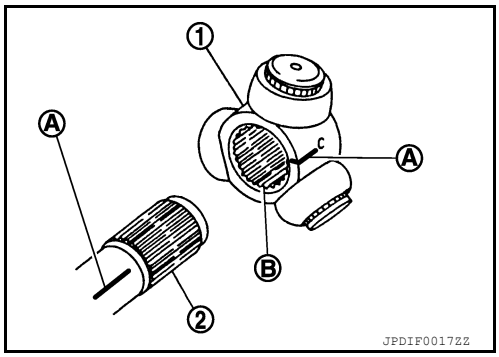
ASSEMBLY

Transaxle Side

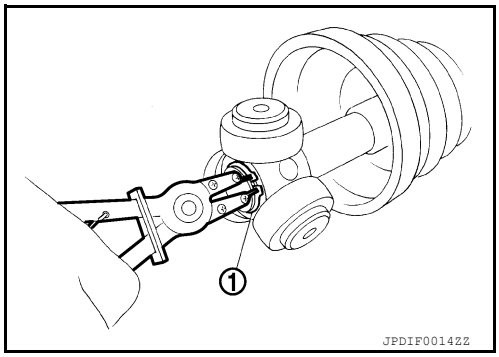
1. Install new boot and new small boot band on shaft.
   CAUTION:
   - **Do not reuse boot and boot bands.**
   - **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove the tape wrapped around the serration on shaft.



3. 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.



4. Secure spider assembly onto shaft with snap ring (1).
   CAUTION:
   Do not reuse snap ring.

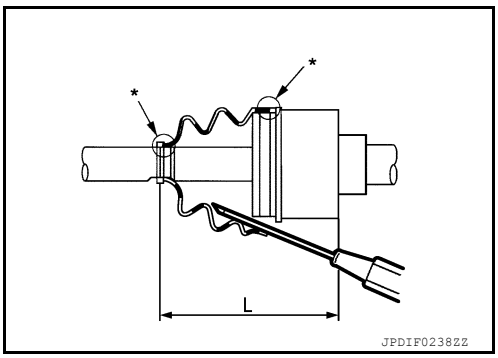


5. Apply the appropriate amount of Genuine NISSAN Grease to spider assembly and sliding surface.
   NOTE:
   Always check with the Parts Department for the latest parts information.
6. Assemble the housing onto spider assembly, and apply the specified amount of grease.

   Grease quantity : Refer to FAX-77, "Drive Shaft".

   NOTE:
   Always check with the Parts Department for the latest parts information.
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Do not reuse stopper ring.

9. Install boot securely into grooves (indicated by "*" marks) shown.
CAUTION:
If grease adheres to the boot mounting surface (indicated "*" mark) on shaft or housing, boot may be removed. Remove all grease from the boot mounting surface.

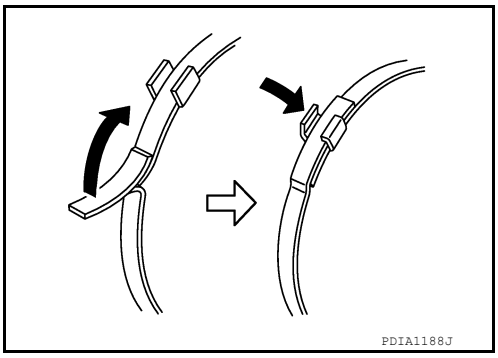


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the value shown below by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

Boots installed length (L) **: Refer to FAX-77, "Drive Shaft".**

CAUTION:
- **If the boot installation length is outside the standard, it may cause breakage of boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

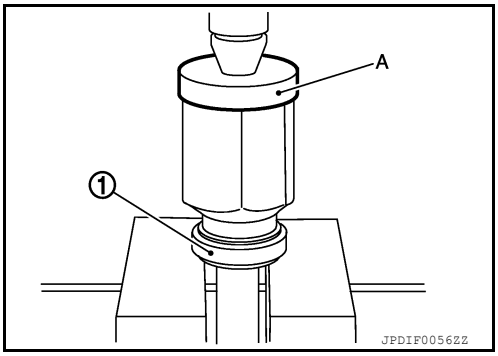
11. Install new boot bands securely as shown.
CAUTION:
Do not reuse boot band.



12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Reinstall them with new boot bands when the mounting positions become incorrect.
CAUTION:
Do not reuse boot bands.
13. Install dust shield to housing.
CAUTION:
Do not reuse dust shield.
14. Install circular clip to housing.
CAUTION:
Do not reuse circular clip.

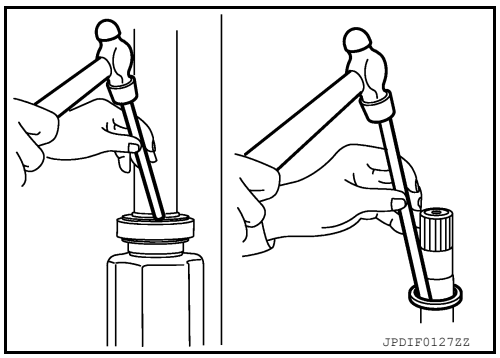
Support Bearing

1. Install dust shield on housing.
CAUTION:
Do not reuse dust shield.
2. Press support bearing (1) onto housing to using the suitable tool (A).



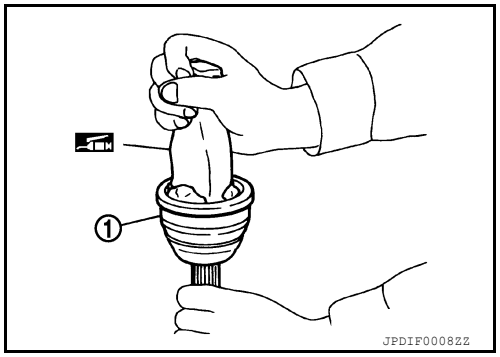
3. Install snap ring.
CAUTION:
Do not reuse snap ring.

4. Install dust shields.
CAUTION:
Do not reuse dust shields.



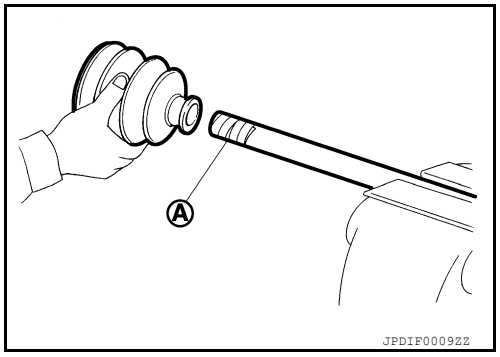
Wheel Side

1. Insert the amount of Genuine NISSAN Grease into joint sub-assembly (1) serration hole until grease begins to ooze from ball groove and serration hole.
CAUTION:
After inserting the grease, use a paper shop cloth to wipe off old grease that has oozed out.
NOTE:
Always check with the Parts Department for the latest parts information.

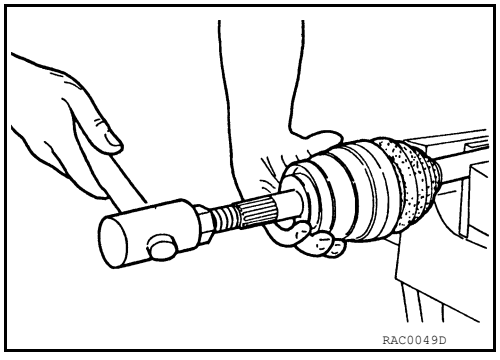


2. Install new boot and new small boot band on shaft.
CAUTION:
- **Do not reuse the boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**

3. Remove protective tape wound around serrated part of shaft.



4. Attach new circlip to shaft. The circlip must fit securely into shaft groove. Attach nut to joint sub-assembly.
Use a suitable tool to press-fit.
CAUTION:
Do not reuse circlip.

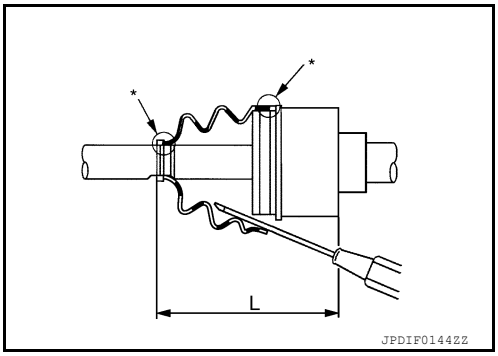


5. Insert the amount of new Genuine NISSAN Grease listed below into housing from large end of boot.

Grease quantity : Refer to FAX-77, "Drive Shaft".

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

6. Install boot securely into grooves (indicated by "* marks) as shown.
CAUTION:
If there is grease on boot mounting surfaces (indicated by "* marks) on shaft or joint sub-assembly, boot may come off. Remove all grease from surfaces.



7. Make sure boot installation length (L) is the specified length. Insert a suitable tool into the large end of boot. Bleed air from boot to prevent boot deformation.

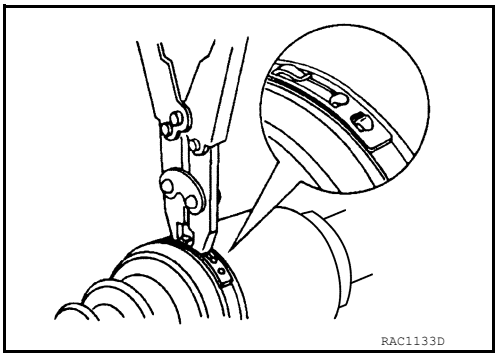
Boot installation length (L) : **Refer to FAX-77, "Drive Shaft".**

CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

8. Install new large and small boot bands securely using Tool.

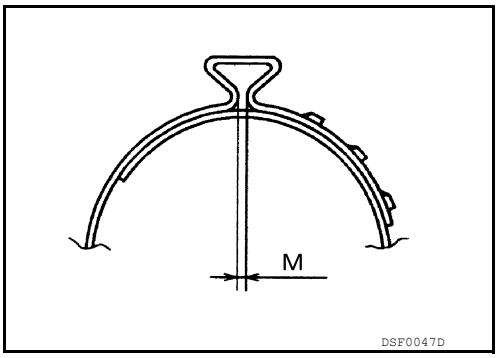
Tool number : KV40107300 (—)

CAUTION:
Do not reuse boot bands.



9. Secure boot band so that dimension (M) meets specification as shown.

Dimension (M) : **Refer to FAX-77, "Drive Shaft".**



10. 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.
CAUTION:
Do not reuse boot bands.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

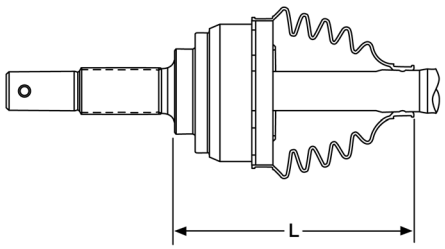
INFOID:0000000011278663

Item	Standard
Axial end play	0.0 mm (0.0 in)

Drive Shaft

INFOID:0000000011278664

Drive Shaft Specifications



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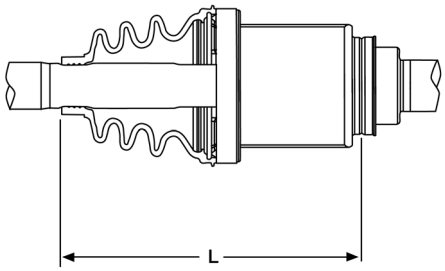


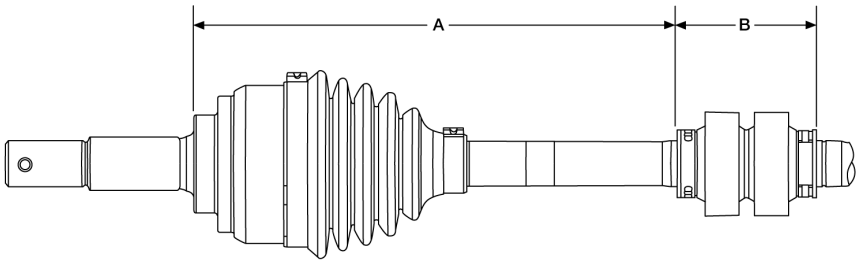
ALDIA0268ZZ

Application	AWD			
Joint type	Wheel side		Transaxle side	
	(LH)	(RH)	(LH)	(RH)
Grease quantity*	125 ± 10 g (4.41 ± 0.35 oz)		185 ± 10 g (6.52 ± 0.35 oz)	
Boot installed length (L)	141.5 mm (5.57 in)		176.9 mm (6.96 in)	

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

Dynamic Damper Specifications

Unit: mm (in)



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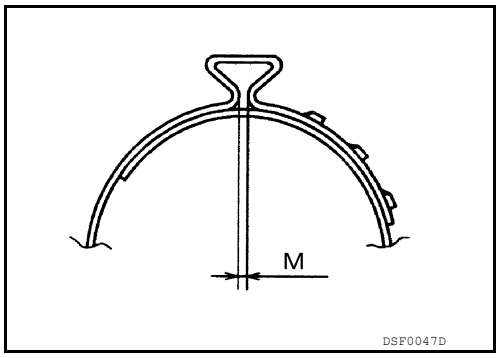
Application	AWD	
	(LH)	(RH)
Dimension (A)	243 ± 3 (9.57 ± 0.1)	243 ± 3 (9.57 ± 0.1)
Dimension (B)	70 (2.76)	50 (1.97)

Boot Band Specification

Unit: mm (in)



Dimension (M) - maximum	1.0 - 4.0 mm (0.039 - 0.157 in)