

SECTION **FAX**  
FRONT AXLE

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FAX

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# PRECAUTIONS

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## PRECAUTIONS

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### Precautions

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Observe the following precautions when disassembling and servicing the wheel hub and drive shafts.

- Perform work in a location which is as dust-free as possible.
- Before disassembling and servicing, clean the outside of parts.
- Prevention of the entry of foreign objects must be taken into account during disassembly of the component parts.
- Disassembled parts must be carefully reassembled in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Paper shop cloths must be used. Fabric shop cloths must not be used because of the danger of lint adhering to parts.
- Disassembled parts (except for rubber parts) should be cleaned with a suitable solvent which shall be removed by blowing with air or wiping with paper shop cloths.

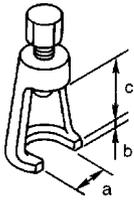
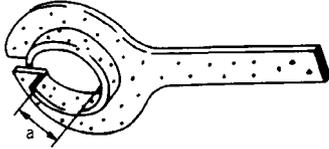
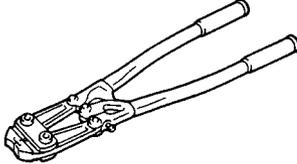
# PREPARATION

## PREPARATION

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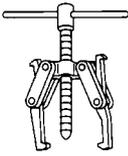
### Special Service Tools

EDS00314

Tool number Tool name	Description
ST29020001 Gear arm puller  <p style="text-align: right;">NT694</p>	Removing ball joint for steering knuckle <b>a: 34 mm (1.34 in)</b> <b>b: 6.5 mm (0.256 in)</b> <b>c: 61.5 mm (2.421 in)</b>
KV38105500 Protector  <p style="text-align: right;">ZZA0835D</p>	Installing drive shaft <b>a: 40 mm (1.57 in) dia</b>
KV40107300 Boot band crimping tool  <p style="text-align: right;">ZZA1229D</p>	Installing boot bands

### Commercial Service Tools

EDS00315

Tool name	Description
Puller  <p style="text-align: right;">NT077</p>	Removing drive shaft

# NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

## NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

PF0:00003

### NVH Troubleshooting Chart

EDS00316

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

		Reference page												
		<a href="#">FAX-14</a>	<a href="#">FAX-7</a>	<a href="#">FAX-5</a>	<a href="#">FAX-5</a>	<a href="#">FAX-7</a>	<a href="#">FAX-5</a>	<a href="#">PR-2, "NVH Troubleshooting Chart"</a>	<a href="#">FFD-6, "NVH Troubleshooting Chart"</a>	<a href="#">FSU-5, "NVH Troubleshooting Chart"</a>	<a href="#">WT-2, "NVH Troubleshooting Chart"</a>	<a href="#">WT-2, "NVH Troubleshooting Chart"</a>	<a href="#">BR-5, "NVH Troubleshooting Chart"</a>	<a href="#">PS-5, "NVH Troubleshooting Chart"</a>
Possible cause and SUSPECTED PARTS		Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	PROPELLER SHAFT	FRONT FINAL DRIVE	SUSPENSION	TIRES	ROAD WHEEL	BRAKES	STEERING
Symptom	Noise	x	x		x	x		x	x	x	x	x	x	x
	Shake	x		x	x	x		x		x	x	x	x	x
	Vibration	x	x	x	x	x		x		x	x			x
	Shimmy	x			x	x				x	x	x	x	x
	Shudder	x	x	x	x					x	x	x	x	x
	Poor quality ride or handling				x	x	x				x	x	x	

x: Applicable

# WHEEL HUB

## WHEEL HUB

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### On-Vehicle Inspection and Service

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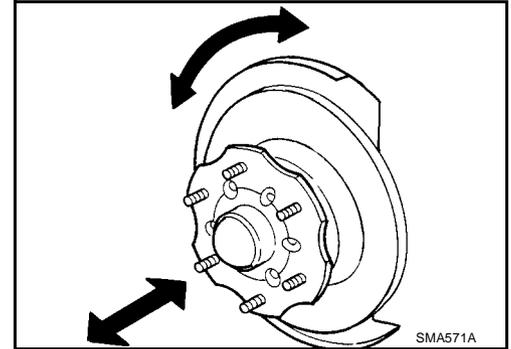
Make sure the mounting conditions (looseness, backlash) of each component and component status (wear, damage) are normal.

### WHEEL BEARING INSPECTION

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

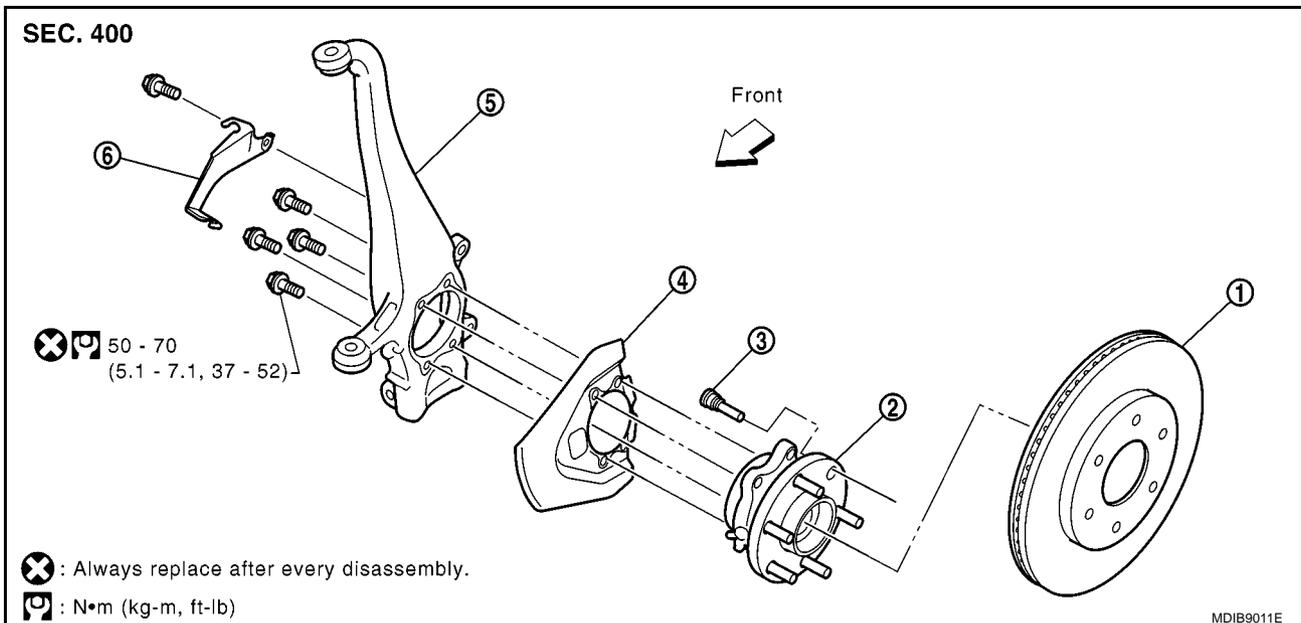
**Axial end play limit : 0.05 mm (0.002 in) or less**

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



### Removal and Installation

EDS00318



- |                 |                                    |                         |
|-----------------|------------------------------------|-------------------------|
| 1. Disc rotor   | 2. Wheel hub and bearing assembly* | 3. Wheel stud           |
| 4. Splash guard | 5. Steering knuckle                | 6. Wheel sensor bracket |

\*: Do not disassemble

### REMOVAL

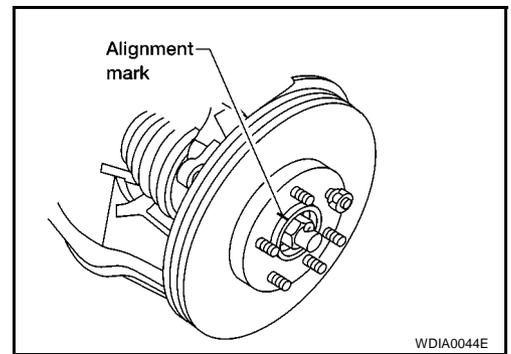
1. Remove wheel.
2. Without disassembling the hydraulic lines, remove caliper torque member bolts. Then reposition brake caliper aside with wire. Refer to [BR-26, "Removal and Installation of Brake Caliper Assembly"](#).

#### CAUTION:

**Do not press brake pedal while brake caliper is removed.**

# WHEEL HUB

- Put alignment mark on disc rotor and wheel hub and bearing assembly, then remove disc rotor.



## — For 4WD models —

- Remove cotter pin, then remove lock nut from drive shaft. Refer to [FAX-7, "Removal and Installation"](#).
  - Remove drive shaft from wheel hub and bearing assembly. Refer to [FAX-5, "Removal and Installation"](#).
- Remove wheel sensor from wheel hub and bearing assembly. Refer to [BRC-37, "Removal and Installation"](#).
    - Inspect the wheel sensor O-ring, replace the wheel sensor assembly if damaged.
    - Clean the wheel sensor hole and mounting surface with a suitable brake cleaner and clean lint-free shop rag. Be careful that dirt and debris do not enter the axle bearing area.
    - Apply a coat of suitable grease to the wheel sensor O-ring and mounting hole.
- CAUTION:**  
**Do not pull on the ABS sensor harness.**
- Remove wheel hub and bearing assembly bolts.
  - Remove splash guard and wheel hub and bearing assembly from steering knuckle.
    - Carefully remove wheel sensor and harness through hole in splash guard.

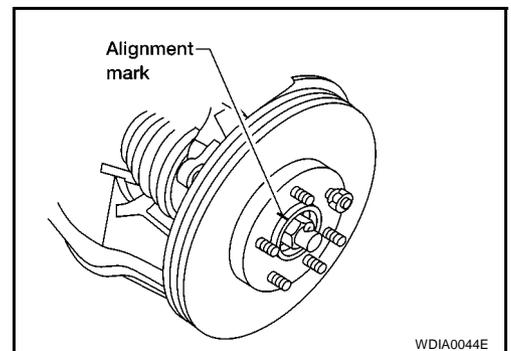
## INSPECTION AFTER REMOVAL

Check for deformity, cracks and damage on each part and replace if necessary.

## INSTALLATION

Installation is in the reverse order of removal.

- Use new bolts when installing the wheel hub and bearing assembly.
- When installing disc rotor on wheel hub and bearing assembly, position the disc rotor according to alignment mark. (When not using the alignment mark, refer to [BR-26, "Removal and Installation of Brake Caliper Assembly"](#).)
- When installing wheel and tire, refer to [WT-5, "Rotation"](#).



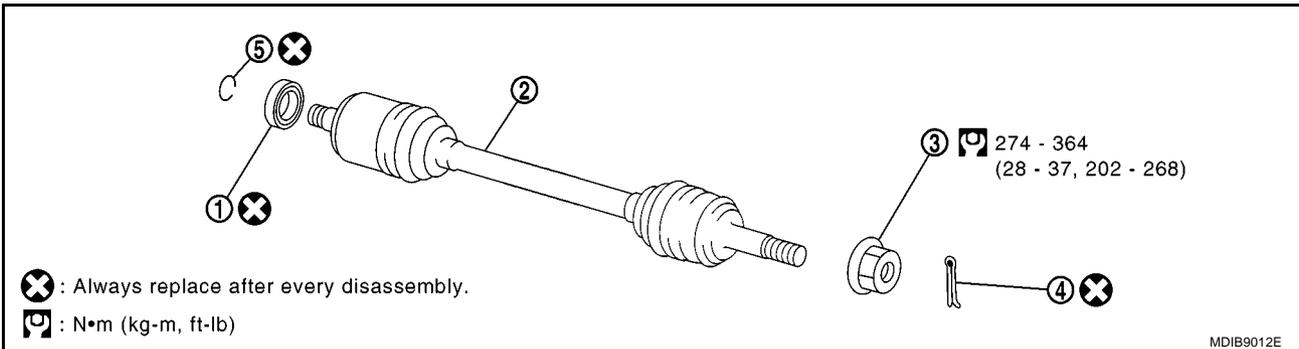
# DRIVE SHAFT

## DRIVE SHAFT

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### Removal and Installation

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1. Differential side oil seal
2. Drive shaft
3. Drive shaft nut
4. Cotter pin
5. Circlip

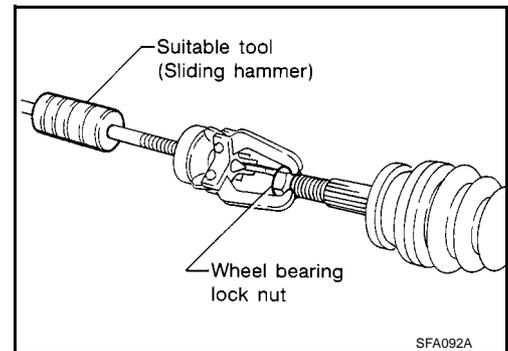
### REMOVAL

1. Remove wheel.
2. Remove ABS sensor harness from mount on knuckle, then disconnect ABS sensor harness connector.

**CAUTION:**  
Do not pull on ABS sensor harness.

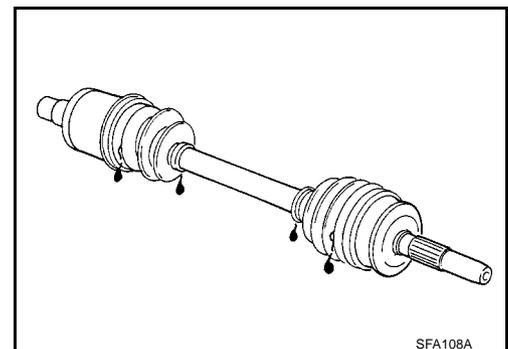
3. Remove steering knuckle. Refer to [FSU-16, "Removal and Installation"](#).
4. Using a slide hammer, remove the drive shaft from final drive.

- CAUTION:**
- When removing drive shaft from vehicle, be careful to avoid interfering with brake hose, ABS wheel speed sensor harness, and other parts.
  - When removing drive shaft, do not apply an excessive angle ( $22^\circ$  or more) to drive shaft joint. Also be careful not to excessively extend slide joint.



### INSPECTION AFTER REMOVAL

- Move joint up, down, left, right, and in axial direction. Check for any rough movement or significant looseness.
- Check boot for cracks or other damage, and for grease leakage.
- If damaged, disassemble drive shaft to verify damage, and repair or replace as necessary.



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# DRIVE SHAFT

## INSTALLATION

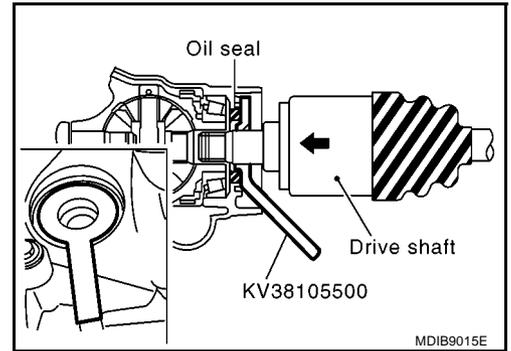
Installation is in the reverse order of removal.

- When installing drive shaft onto front final drive, use Tool to prevent damage to the oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.

**Tool number : KV38105500**

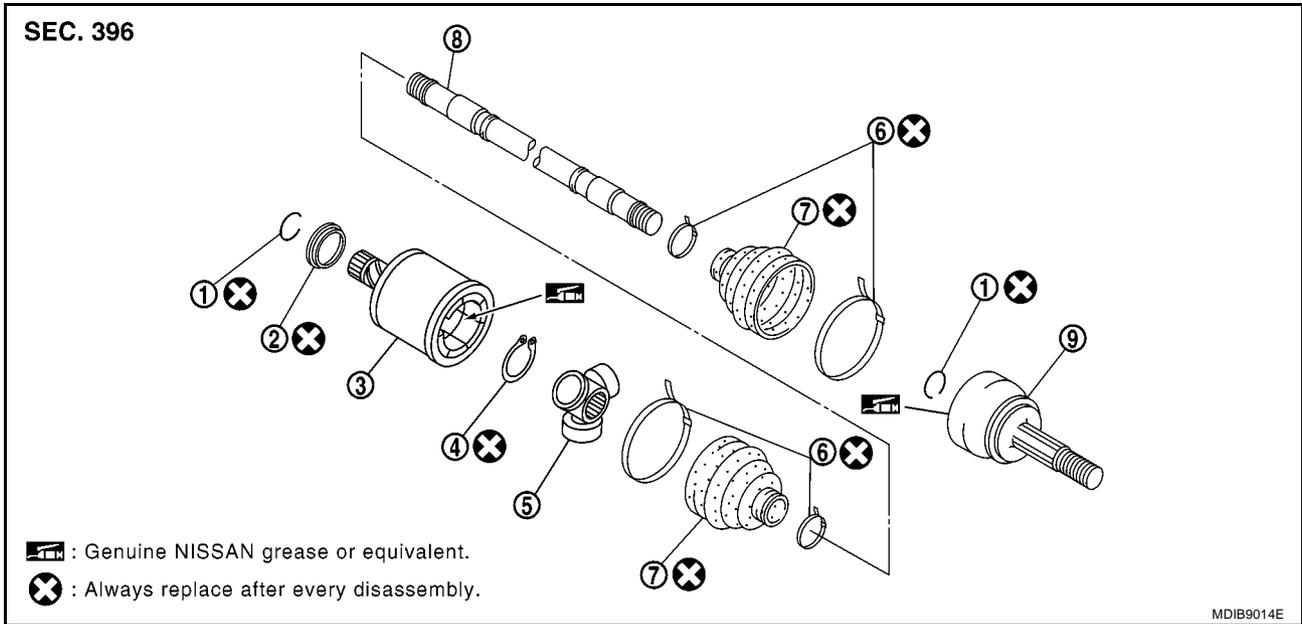
### CAUTION:

Be sure to check that circlip is securely fastened.  
Never reuse the differential side oil seal.



## Disassembly and Assembly

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- |              |                    |                          |
|--------------|--------------------|--------------------------|
| 1. Circlip   | 2. Dust cover      | 3. Housing (slide joint) |
| 4. Snap ring | 5. Spider assembly | 6. Boot band             |
| 7. Boot      | 8. Shaft           | 9. Joint sub-assembly*   |

\*: Do not disassemble

## DISASSEMBLY

### Final Drive Side

- Mount the drive shaft in a vise.

### CAUTION:

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

- Remove boot bands and slide the boot back.
- Put matching marks on housing and shaft before separating joint assembly.

### CAUTION:

Use paint or similar substance for matching marks. Do not scratch the surfaces.

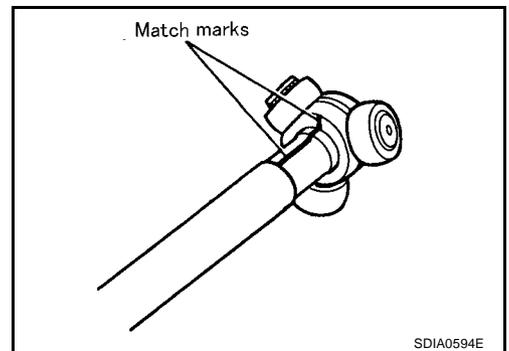
# DRIVE SHAFT

- Put match marks on shaft and spider assembly.

**CAUTION:**

**Use paint or similar substance for alignment marks. Do not scratch the surface.**

- Remove snap ring. Remove spider assembly from shaft.
- Remove boot from shaft.



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FAX

## Wheel Side

- Mount the drive shaft in a vise.

**CAUTION:**

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

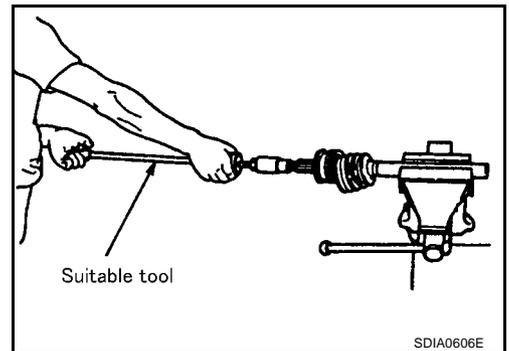
- Remove the boot bands and slide the boot back.
- Screw a sliding hammer or suitable tool into threaded part of joint sub-assembly. Pull joint sub-assembly out of drive shaft as shown.

**NOTE:**

Align the sliding hammer and drive shaft and remove the joint sub-assembly by pulling directly.

**CAUTION:**

- If the joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace the entire drive shaft assembly.**
- Joint sub-assembly cannot be disassembled. Do not attempt to disassemble it.**



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- Remove boot from the drive shaft.
- Remove circlip from the drive shaft.
- While rotating the ball cage, clean the old grease off of the joint sub-assembly using paper towels.

## INSPECTION AFTER DISASSEMBLY

### Shaft

- Replace the shaft if there is any bending, cracking, or other damage.

### Joint Sub-assembly

- Check for any rough rotation or unusual axial looseness.
- Clean any foreign material from inside the joint sub-assembly.
- Check for any compression scars, cracks, or fractures.

**CAUTION:**

- If any irregular conditions are found in the joint sub-assembly components, replace the entire joint sub-assembly.**
- Joint sub-assembly can not be disassembled. Do not attempt to disassemble it.**

### Housing

**NOTE:**

Housing, ball cage, steel ball, and inner race are in a set.

- Check for any compression scars, cracks, fractures, or unusual wear on the ball rolling surface.
- Check for any deformation of the boot installation components.

### Ball Cage

- Check the sliding surface for any compression scars, cracks, or fractures of sliding surface.

### Steel Ball

- Check for any compression scars, cracks, fractures, or unusual wear.

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# DRIVE SHAFT

## Inner Race

- Check the ball sliding surface for any compression scars, cracks, or fractures.
- Check for any damage to the serrated part.

## ASSEMBLY

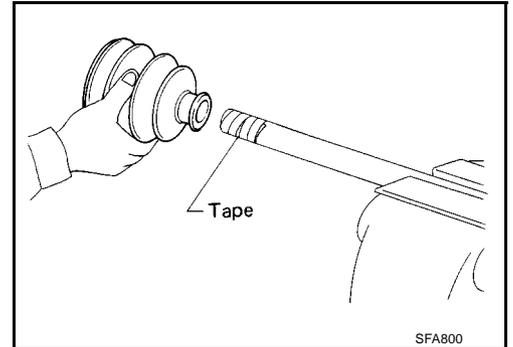
### Final Drive Side

1. Wrap the serrated part of the drive shaft with tape. Install the boot band and boot to drive shaft.

**CAUTION:**

**Discard the old boot band and boot: replace with new ones.**

2. Remove the tape wound around the serrated part of the shaft.

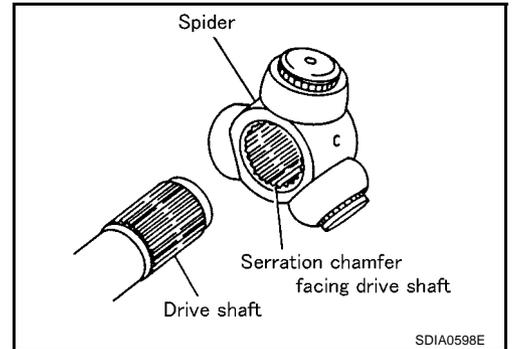


3. Line up alignment marks which were made when spider assembly was removed. Install spider assembly, with serration chamfer facing drive shaft.

4. Secure spider assembly with snap ring.

**CAUTION:**

**Discard the old snap ring: replace with new ones.**

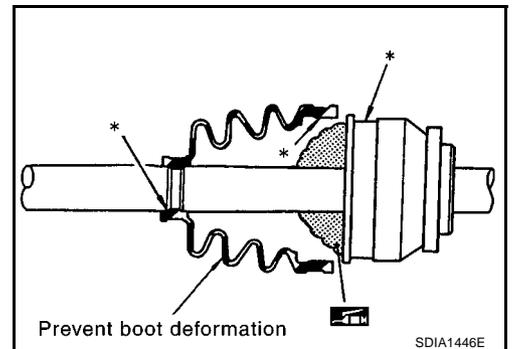


5. Apply Nissan genuine grease or equivalent to spider assembly and sliding surface.

6. Line up matching marks on shaft and housing, and install sliding joint housing to spider assembly. Add remaining grease up to the amount listed below.

**Grease capacity: MT: 134 - 144g (4.73 - 5.08 oz)**

**AT: 134 - 144g (4.73 - 5.08 oz)**



7. Install the stopper ring onto the housing.

**CAUTION:**

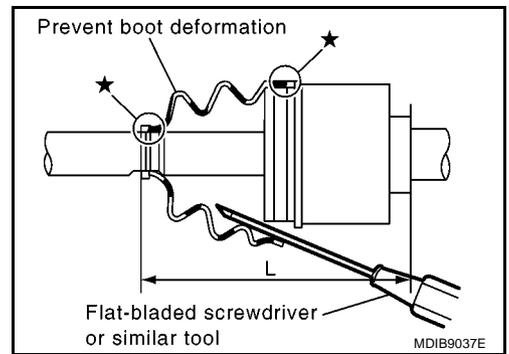
- Do not reuse stopper rings.
- Make sure that housing and stopper ring are fully engaged.

# DRIVE SHAFT

8. Install the boot securely into the 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.



9. Check that the boot installation length "L" is the length indicated below. Insert a flat-tip screwdriver or similar tool into bigger side of boot. Bleed air from boot to prevent boot deformation.

**Boot installation length "L"** MT: 176 - 178 mm (6.93 - 7.01 in)  
AT: 176 - 178 mm (6.93 - 7.01 in)

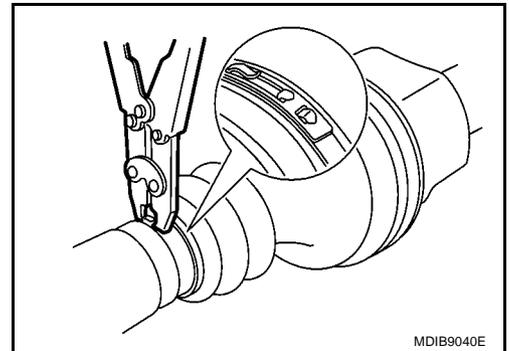
**CAUTION:**

- The boot may break if the boot installation length is less than the specified value.
- Do not touch the tip of the screwdriver to the inside of the boot.

10. Using a boot band crimping tool, secure the small end of the boot with a new boot band as shown.

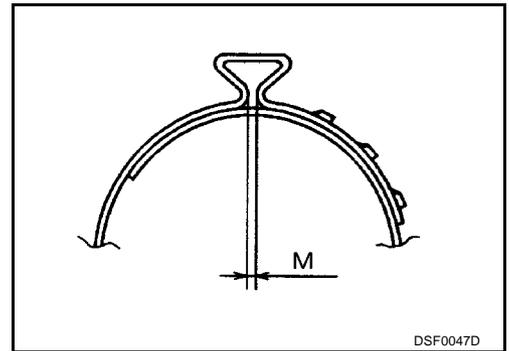
**CAUTION:**

Discard the old boot band and boot: replace with new ones.



- When fixing boot band, fix so that the M diameter on the drawing becomes as follows.

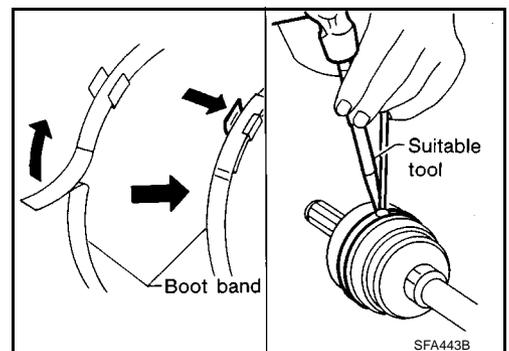
**M diameter (big ends): 1.0 - 4.0 mm (0.39 - 1.57 in)**  
**M diameter (small ends): 1.0 - 4.0 mm (0.39 - 1.57 in)**



11. Secure the boot big end with a new boot band as shown.

**NOTE:**

Discard old boot band; replace with new one.



12. After the installation of boot bands, make sure that they stay in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.

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# DRIVE SHAFT

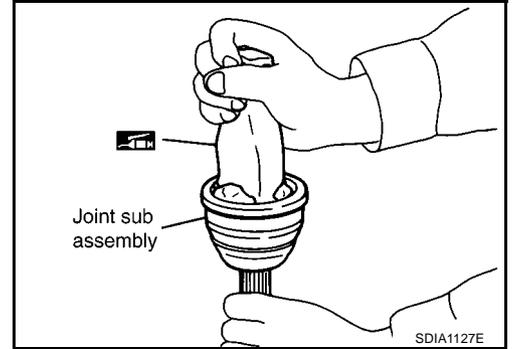
13. Install circlip and dust cover to housing.

**NOTE:**

Do not reuse circlip and dust cover.

## Wheel Side

1. Insert the Genuine NISSAN Grease or equivalent, into the joint sub-assembly serration hole until the grease begins to ooze from the ball groove and serration hole. Refer to [MA-14, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) . After inserting the grease, use a shop cloth to wipe off the grease that has oozed out.

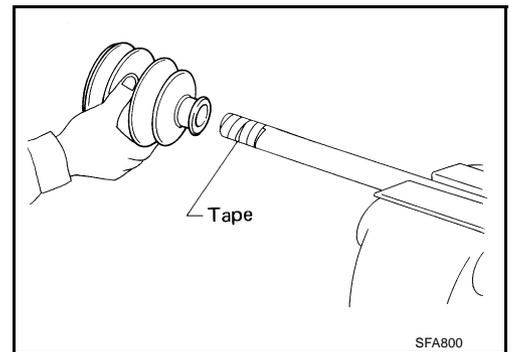


2. Wrap the serrated part of the drive shaft with tape. Install the boot band and boot onto the shaft. Do not damage the boot.

**CAUTION:**

**Discard the old boot band and boot: replace with new ones.**

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



4. Attach the circlip to the shaft. The circlip must fit securely into the shaft groove. Attach the nut to the joint sub-assembly. Use a soft hammer to press-fit the circlip.

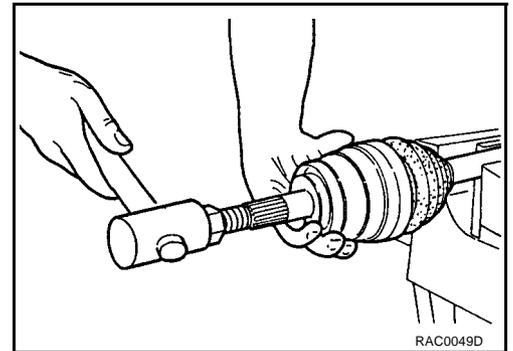
**CAUTION:**

- Circlips cannot be reused. Do not attempt to reuse them.
- Be sure to check that circlip is securely fastened.

5. Insert the specified quantity of Genuine NISSAN Grease or equivalent, into the joint sub-assembly and the large end of the boot. Refer to [MA-14, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) .

**Grease capacity** MT: 226 - 246 g (7.97 - 8.68 oz)

AT: 110 - 130 g (3.88 - 4.59 oz)

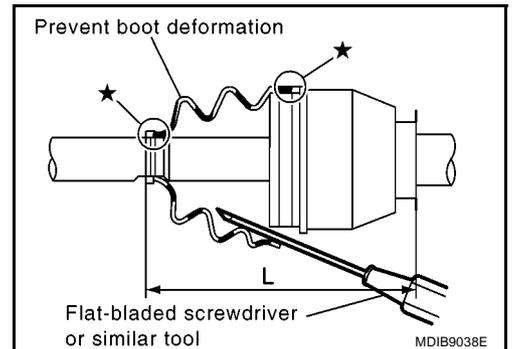


6. Install the boot securely into the grooves (indicated by the \* marks) as shown.

**CAUTION:**

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

7. Check that the boot installation length "L" is the specified length. Insert a flat-tip screwdriver or similar tool into the bigger side of the boot. Bleed the air from the boot to prevent boot deformation.



**Boot installation length "L"** MT: 154mm (6.06 in)

AT: 150.4 mm (5.92 in)

**CAUTION:**

- The boot may break if the boot installation length is less than the specified length.

# DRIVE SHAFT

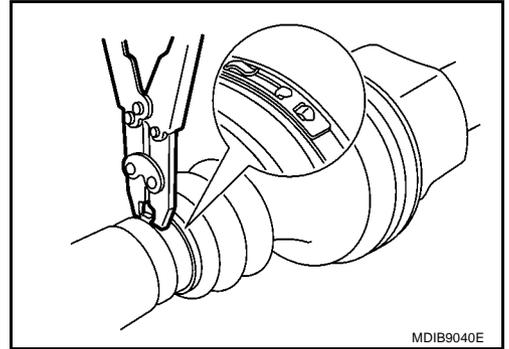
- Do not contact inside surface of boot with the tip of the screwdriver.

8. Secure small end of the boot using a new boot band and a boot band crimping tool as shown.

**Tool number : KV40107300**

**CAUTION:**

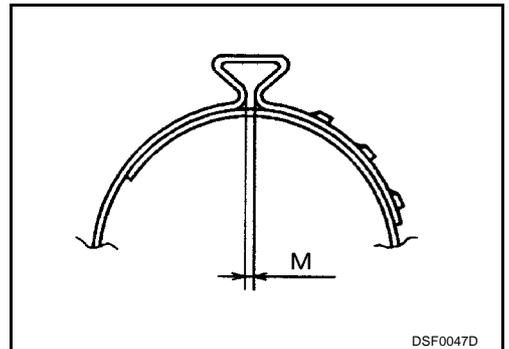
Discard the old boot band and boot: replace with new ones.



- When fixing boot band, fix so that the M diameter on the drawing becomes as follows.

**M diameter (big ends): 1.0 - 4.0 mm (0.39 - 1.57 in)**

**M diameter (small ends): 1.0 - 4.0 mm (0.39 - 1.57 in)**

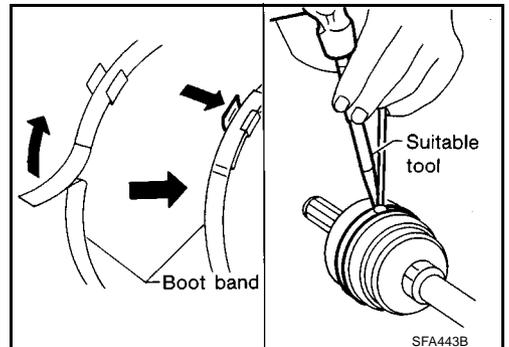


9. Secure the boot big end with a new boot band as shown.

**NOTE:**

Discard old boot band; replace with new one.

10. After the installation of boot bands, rotate the boot to check that it is positioned correctly. If the boot is not positioned correctly, remove the old boot bands then reposition the boot and secure the boot with new boot bands.



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# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

### Wheel Bearing

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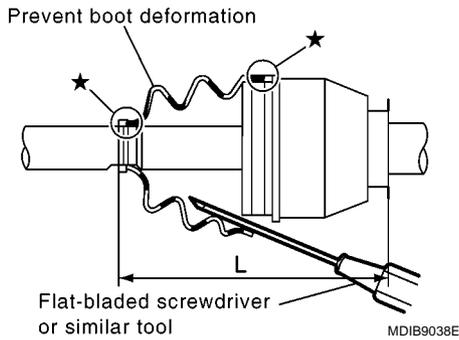
Wheel bearing axial end play

0.05 mm (0.002 in) or less

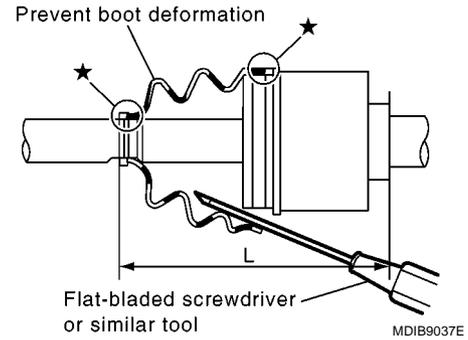
### Drive Shaft

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Wheel Side



Final Drive Side



Applied model	Engine	YD25, VQ40		
	Transaxle		MT	AT
Drive shaft joint type	Final drive side		AAR3300I	AAR3300I
	Wheel side		UF3700I	AC3300I
Grease	Quality	Nissan genuine grease or equivalent		
	Capacity g (oz)	Final drive side	134 - 144 (4.73 - 5.08)	134 - 144 (4.73 - 5.08)
		Wheel side	226 - 246 (7.97 - 8.68)	110 - 130 (3.88 - 4.59)
Boot length "L" mm (in)	Final drive side		176 - 178 (6.93 - 7.01)	176 - 178 (6.93 - 7.01)
	Wheel side		154 (6.06)	150.4 (5.92)