SECTION FAX
FRONT AXLE

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000011220574

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:0000000011220575

Observe the following precautions when disassembling and assembling drive shaft.

- Joint sub-assembly does not disassemble because it is non-overhaul parts.
- Perform work in a location which is as dust-free as possible.
- Before disassembling and assembling, clean the outside of parts.
- Prevention of the entry of foreign objects must be taken into account during disassembly of the service location.
- 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 kerosene which shall be removed by blowing with air or wiping with paper shop cloths.

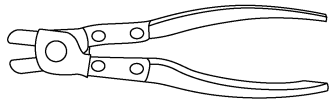
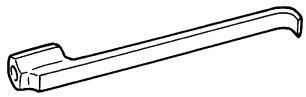
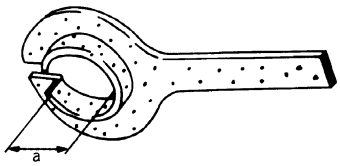
PREPARATION

PREPARATION

Special Service Tool

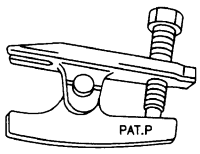
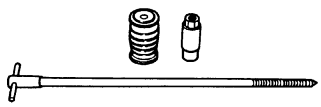
INFOID:0000000011220576

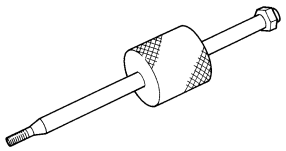
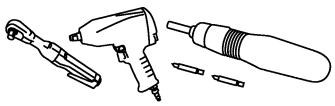
The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV40107300 (J-51751) Boot band crimping tool  ALDIA0586ZZ	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 Tool

INFOID:0000000011220577

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

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:0000000011220578

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

Reference			—	FAX-7	—	FAX-8	—	FAX-6	FSU-5	FAX-6	WT-63	WT-63	FAX-7	BR-6	ST-29
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

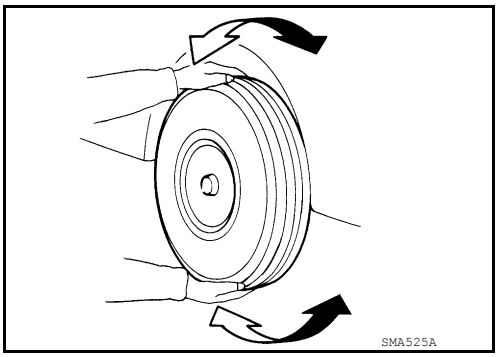
FRONT WHEEL HUB

On-vehicle Service

INFOID:0000000011565254

Check axle and suspension parts for excessive play, wear or damage.

- Move the wheel as shown to check for excessive play.



Inspection

INFOID:0000000011220579

- 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-38, "Wheel Bearing".

- Rotate wheel hub 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:0000000011220580

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

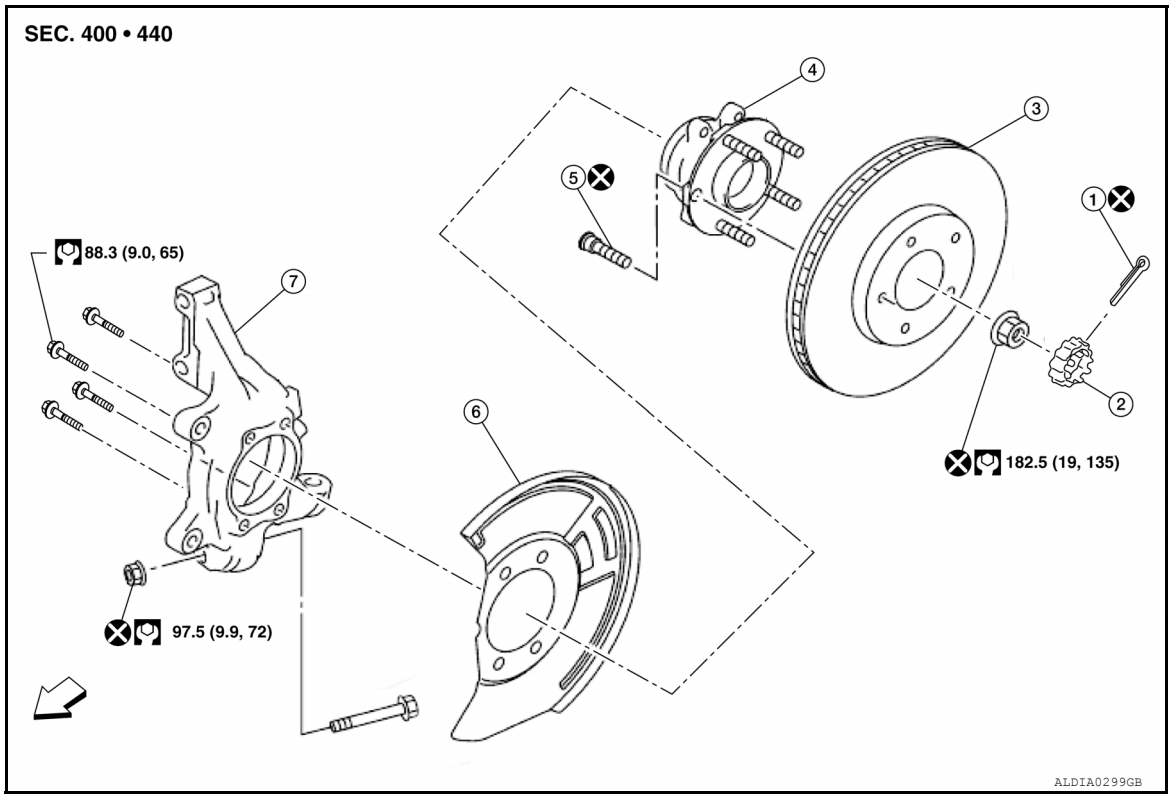
CAUTION:
Replace entire drive shaft when noise or vibration occurs from drive shaft.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB

Exploded View

INFOID:0000000011220581



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

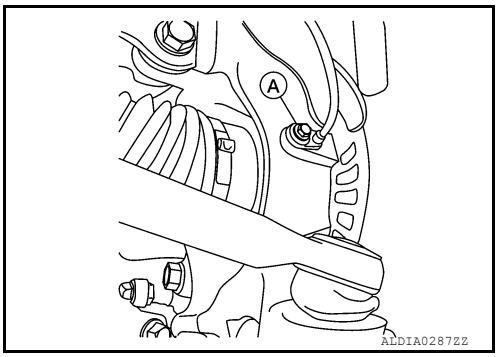
Removal and Installation

INFOID:0000000011220582

REMOVAL

1. Remove disc brake rotor. Refer to BR-40, "DISC BRAKE ROTOR : Removal and Installation".
2. Remove wheel sensor bolt (A) and position wheel sensor aside. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View".

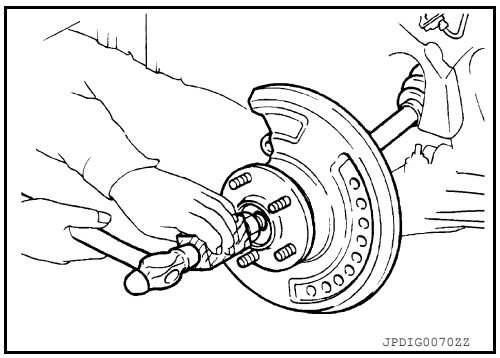
   CAUTION:
   - **Failure to separate front wheel sensor from steering knuckle may result in damage to front wheel sensor.**
   - **Pull out front wheel sensor being careful to turn it as little as possible. Do not pull on wheel sensor harness.**



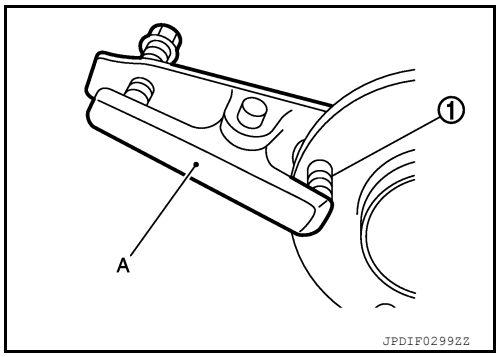
3. Remove cotter pin.
4. Remove nut retainer.
5. Loosen wheel hub lock nut from drive shaft using power tool.

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

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



7. Remove wheel hub lock nut.
8. Remove wheel hub and bearing bolts using power tool.
9. Remove splash guard and wheel hub and bearing from steering knuckle.
10. If necessary, remove wheel studs (1) using a suitable tool (A).



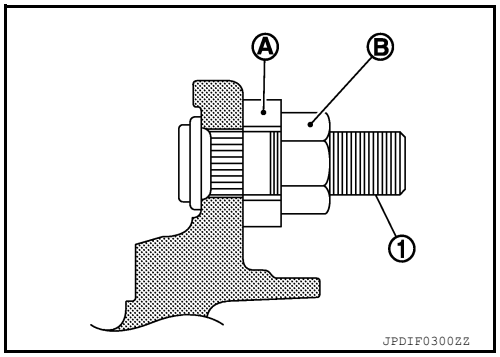
INSPECTION AFTER REMOVAL

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

INSTALLATION

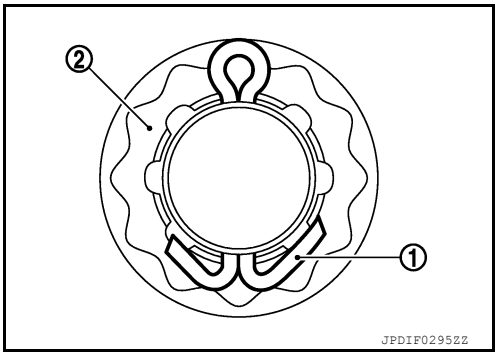
Installation is in reverse order of the removal.

CAUTION:
- **Do not reuse wheel stud.**
- **Do not reuse cotter pin.**
- Place a washer (A) as shown to install wheel studs (1) by using tightening force of nut (B).
  CAUTION:
  Check that there is no clearance between wheel stud and wheel hub and bearing.



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

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

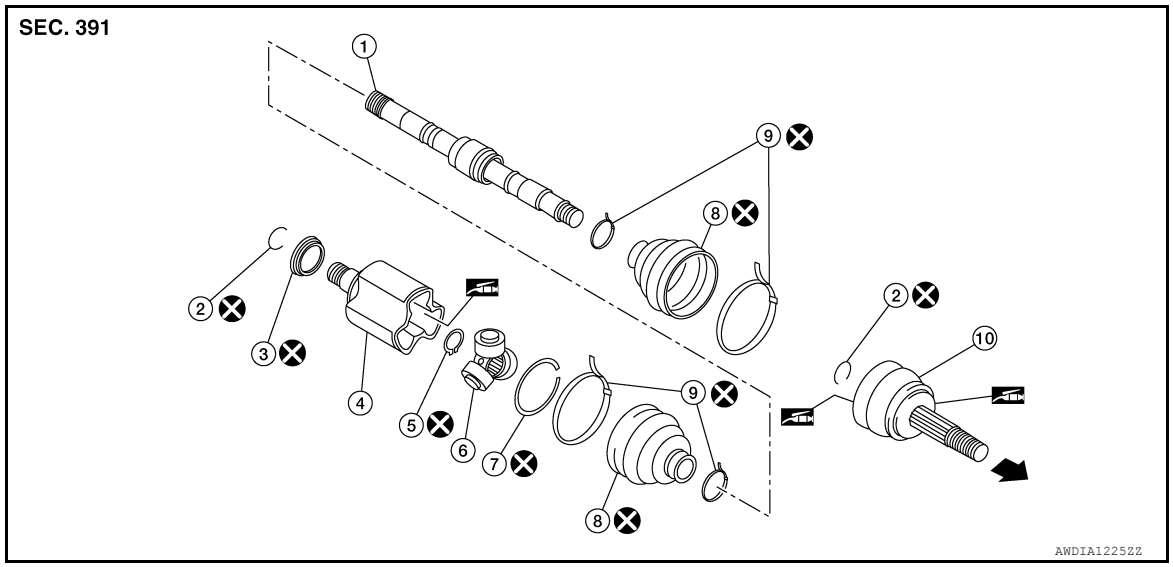


FRONT DRIVE SHAFT BOOT

Exploded View

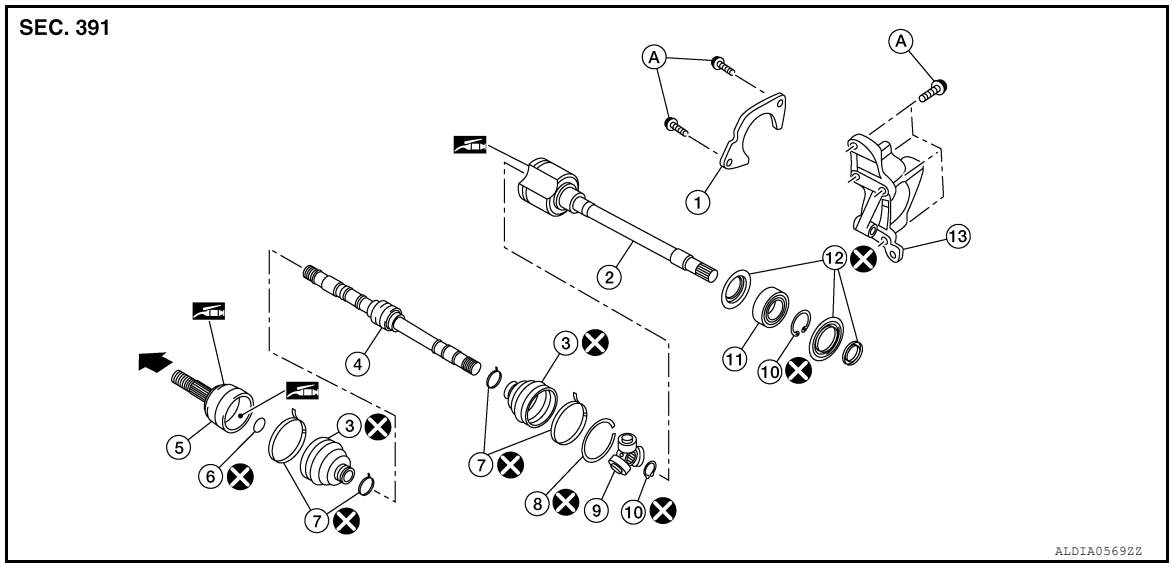
INFOID:0000000011220583

LH



1. Shaft with damper
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
- Fill with Genuine NISSAN grease.

RH



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

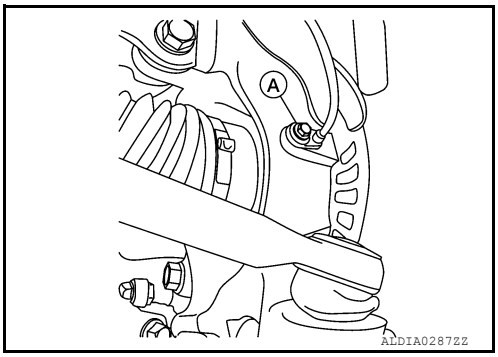
WHEEL SIDE

WHEEL SIDE : Removal and Installation

INFOID:0000000011220584

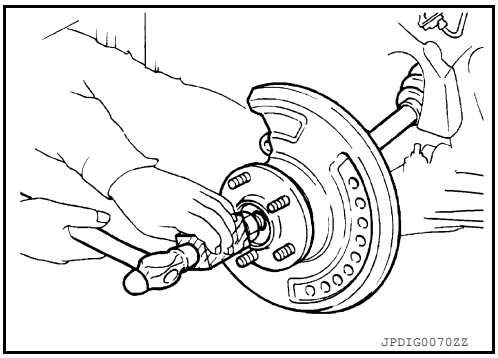
REMOVAL

1. Remove disc brake rotor. Refer to BR-40, "DISC BRAKE ROTOR : Removal and Installation".
2. Remove wheel sensor bolt (A) and position wheel sensor aside. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View".
   CAUTION:
   - **Failure to separate front wheel sensor from steering knuckle may result in damage to front wheel sensor.**
   - **Pull out front wheel sensor being careful to turn it as little as possible. Do not pull on wheel sensor harness.**

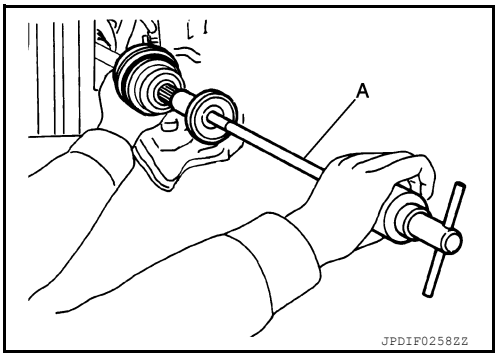


3. Remove cotter pin.
4. Remove nut retainer.
5. Loosen wheel hub lock nut from drive shaft using power tool.
6. Using a piece of wood and a suitable tool, tap on wheel hub lock nut to disengage drive shaft from wheel hub and bearing.
   CAUTION:
   - **Do not place drive shaft joint at an extreme angle.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

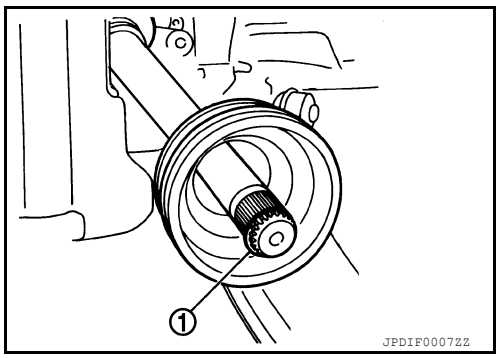
   NOTE:
   Use suitable puller if drive shaft cannot be separated from wheel hub and bearing.



7. Remove wheel hub lock nut.
8. Remove lower strut bolts and nuts.
9. Separate front strut from steering knuckle. Refer to FSU-10, "Exploded View".
10. Separate drive shaft from front wheel hub and bearing.
11. Remove boot bands, and then separate boot from joint sub-assembly.
12. Screw 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 from housing with suitable tool.
    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 entire drive shaft.**



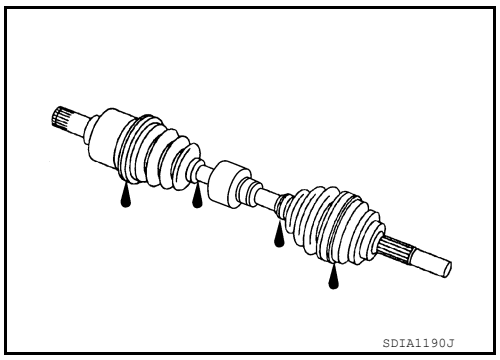
13. Remove circular clip (1) from shaft.



14. Remove boot from shaft.
15. While rotating ball cage, clean old grease off joint sub-assembly.

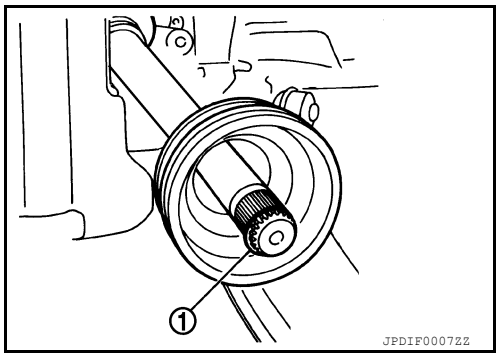
INSPECTION AFTER REMOVAL

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



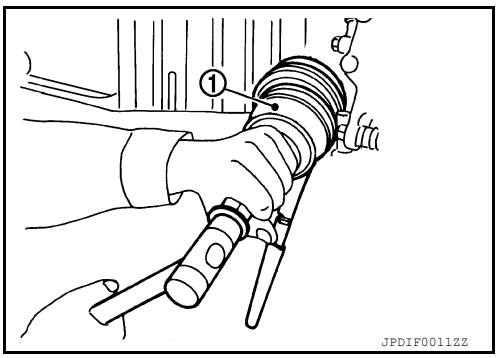
INSTALLATION

1. Insert Genuine NISSAN Grease into joint sub-assembly serration hole until grease begins to ooze from ball groove and serration hole.
   CAUTION:
   After inserting 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 boot and boot bands.**
   - **Cover drive shaft serration with protective tape to prevent damage to boot during installation.**
3. Remove protective tape wrapped around serrated part of shaft.
4. Attach new circular clip to shaft. Circular clip must fit securely into shaft groove.
   CAUTION:
   Do not reuse circular clip.



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

6. Install joint sub-assembly (1) to shaft using suitable tool.
CAUTION:
Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.

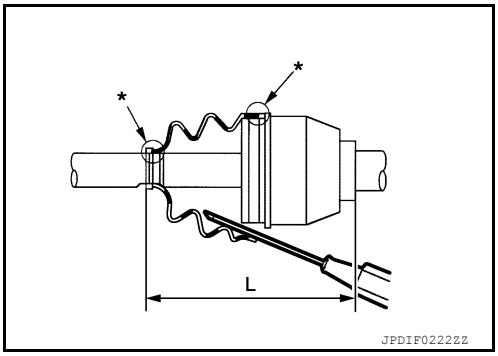


7. Apply specified amount of Genuine NISSAN Grease into large diameter side opening of boot.

Grease amount : Refer to FAX-38, "Drive Shaft".

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

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



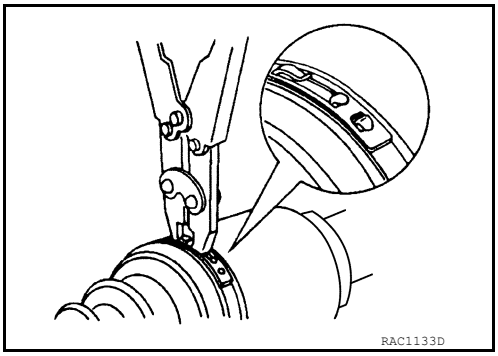
Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

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.**

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

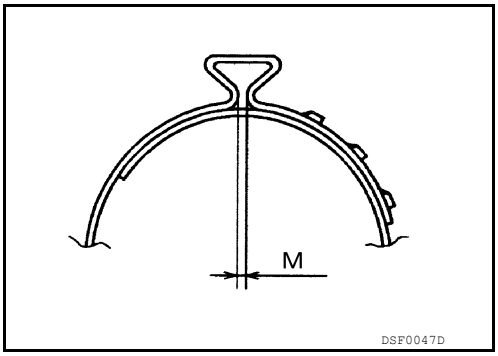
Tool number : KV40107300 (J-51751)

CAUTION:
Do not reuse boot band.

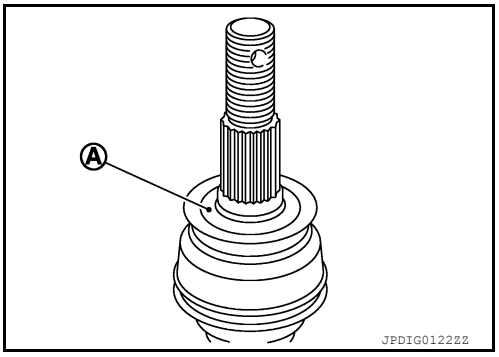


NOTE:
Secure boot band so that dimension (M) meets specification as shown.

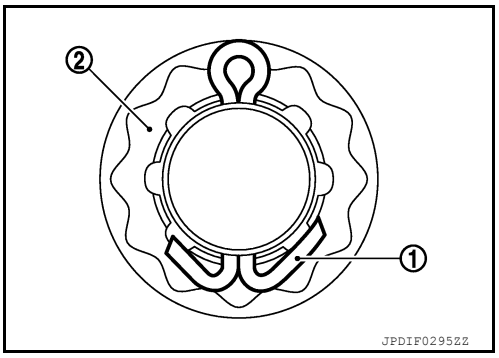
Dimension (M) : Refer to FAX-39, "Boot Bands".



11. Attempt to rotate boot to check whether or not boot bands are securing boot. If boot is not secure, remove boot bands, reposition boot, and install new boot bands.
CAUTION:
Do not reuse boot bands.
12. Clean mating surface of wheel hub lock nut and wheel hub and bearing.
CAUTION:
Do not apply lubricating oil to these mating surfaces.
13. Clean mating surface of drive shaft (A) and wheel hub and bearing.



14. Insert drive shaft to wheel hub and bearing, and then temporarily tighten wheel hub lock nut.
CAUTION:
Do not reuse wheel hub lock nut.
15. Attach front strut to steering knuckle and tighten lower strut nuts to specification. Refer to FSU-10, "Exploded View".
CAUTION:
Do not reuse lower strut nuts.
16. Tighten wheel hub lock nut to specified torque. Refer to FAX-8, "Exploded View".
CAUTION:
Do not use a power tool to tighten wheel hub lock nut.
17. Install nut retainer (2) and a new cotter pin (1); securely bend cotter pin to prevent rattles.
CAUTION:
- **Do not reuse cotter pin.**
- **Bend cotter pin securely to prevent any looseness.**



18. Install front wheel sensor to steering knuckle. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View".
CAUTION:
- **Before installing, make sure there is no foreign material, such as iron fragments, adhered to pick-up part of front wheel sensor.**
- **When installing, make sure there is no foreign material, such as iron fragments, on and in hole in steering knuckle for front wheel sensor. Make sure no foreign material has been caught in sensor rotor. Remove any foreign material and then install front wheel sensor.**
19. Install disc brake rotor. Refer to BR-40, "DISC BRAKE ROTOR : Removal and Installation".

INSPECTION AND ADJUSTMENT AFTER INSTALLATION

1. Check wheel alignment. Refer to FSU-7, "Inspection".
2. Adjust neutral position of the steering angle sensor. Refer to BRC-64, "Work Procedure".

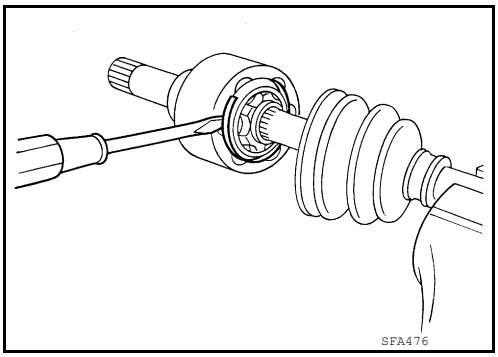
TRANSAXLE SIDE

TRANSAXLE SIDE : Removal and Installation

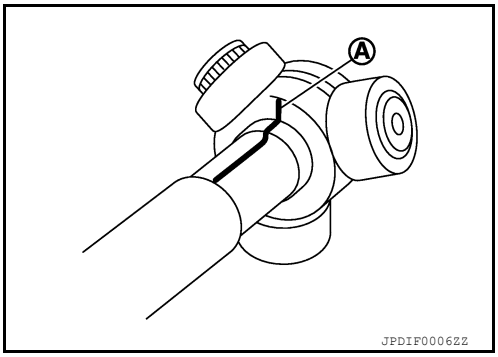
INFOID:0000000011220585

REMOVAL

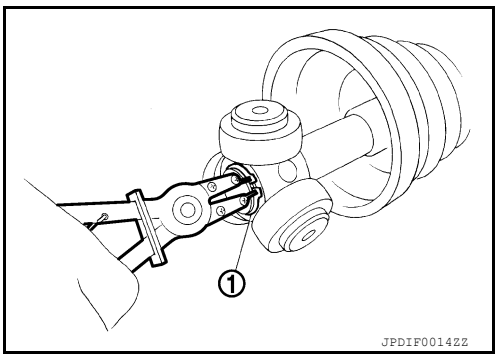
1. Remove drive shaft. Refer to FAX-19, "Removal and Installation (LH)" (LH) or FAX-21, "Removal and Installation (RH)" (RH).
2. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
3. Remove boot bands and slide boot back.
4. Put matching marks on housing and shaft before separating housing.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch surfaces.
5. Remove stopper ring using a suitable tool.
6. Pull out housing.



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



8. Remove snap ring (1) using a suitable tool.
9. Remove spider assembly from shaft.



10. Remove boot from shaft.
11. Remove circular clip from housing.
12. Remove dust shield from housing.
13. Clean old grease off slide joint housing.

INSPECTION AFTER REMOVAL

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

Housing and Spider Assembly

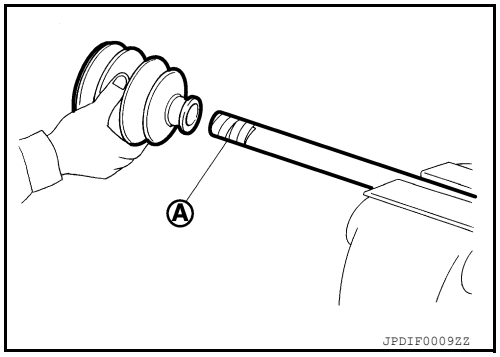
Check housing and spider assembly for scratches or wear. Replace entire drive shaft if necessary.

Boot

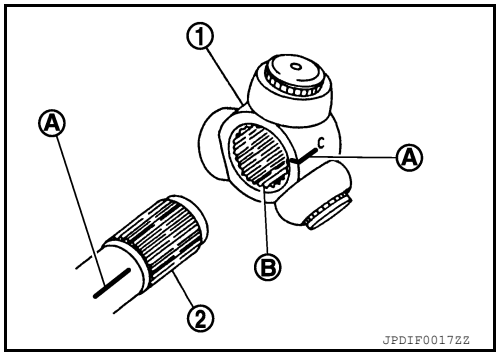
Check boot for cracks, damage, and leakage of grease. Replace boot if necessary.

INSTALLATION

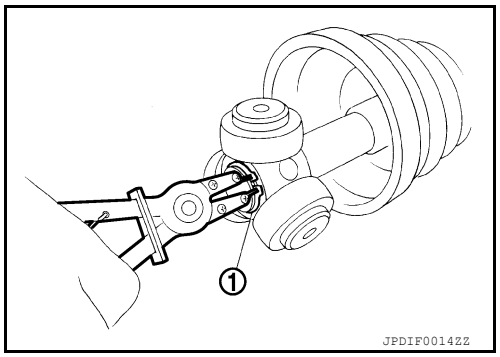
1. Install new boot and new small boot band on shaft.
   CAUTION:
   - **Do not reuse boot and boot bands.**
   - **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove protective tape wound around serrated part of shaft.



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



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



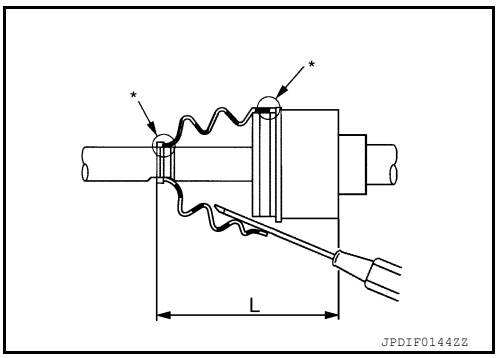
5. Assemble housing onto spider assembly making sure to align matching marks made during disassembly, and fill with specified amount of new Genuine NISSAN Grease.

   Grease quantity : Refer to FAX-38, "Drive Shaft".

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

6. Install new stopper ring to housing.
   CAUTION:
   Do not reuse stopper ring.
7. After installation, pull shaft to check engagement between housing and stopper ring.

8. 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 housing, boot may come off. Clean all grease from surfaces.



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

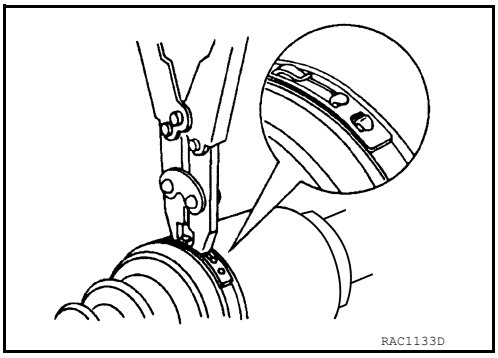
   Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

   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.**

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

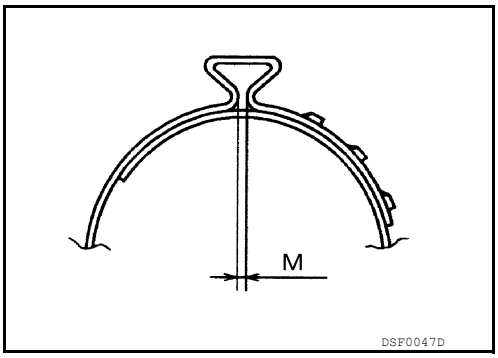
    Tool number : KV40107300 (J-51751)

    CAUTION:
    Do not reuse boot bands.



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

    Dimension (M) : Refer to FAX-39, "Boot Bands".



11. Install new dust shield to housing.
    CAUTION:
    Do not reuse dust shield.
12. Install new circular clip to housing.
    CAUTION:
    Do not reuse circular clip.
13. After installing housing and shaft, make sure boot position is correct. If boot position is not correct, remove old boot bands then reposition boot and secure with new boot bands.
    CAUTION:
    Do not reuse boot bands.
14. Install drive shaft. Refer to FAX-19, "Removal and Installation (LH)" (LH) or FAX-21, "Removal and Installation (RH)" (RH).

FRONT DRIVE SHAFT

Exploded View (LH)

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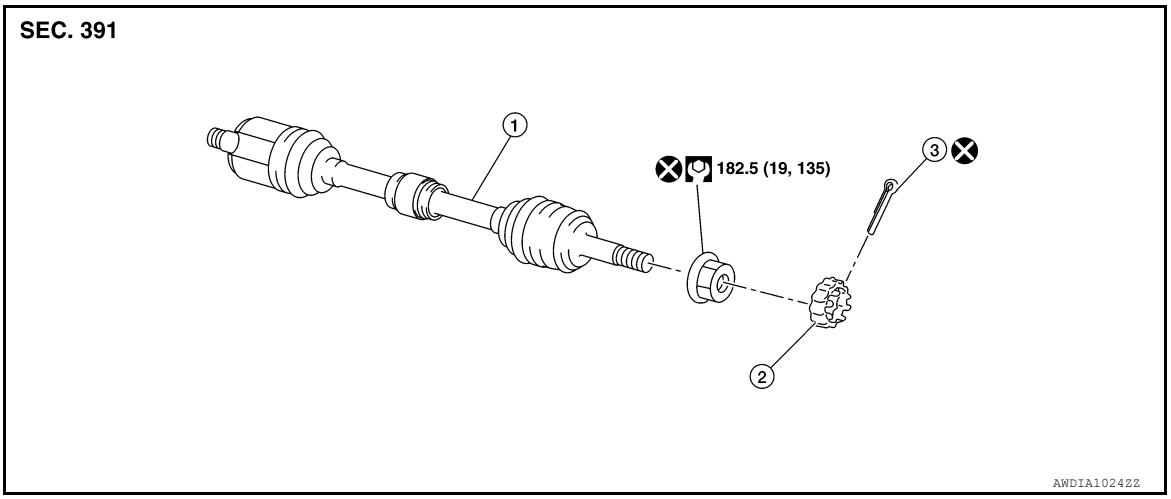


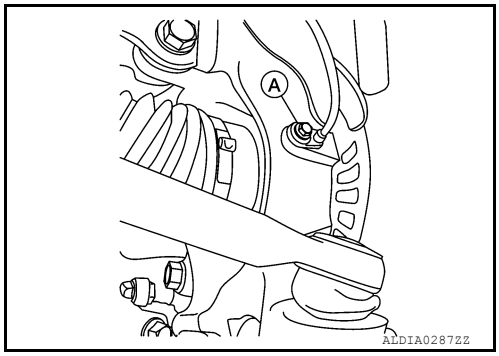
1. Drive shaft
2. Nut retainer
3. Cotter pin

Removal and Installation (LH)

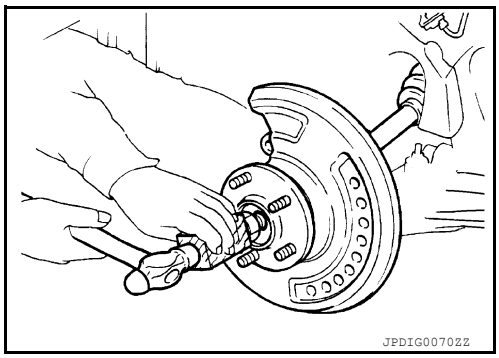
INFOID:0000000011220588

REMOVAL

1. Remove disc brake rotor. Refer to BR-40, "DISC BRAKE ROTOR : Removal and Installation".
2. Remove wheel sensor bolt (A) and position wheel sensor aside. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View".
   CAUTION:
   - **Failure to separate front wheel sensor from steering knuckle may result in damage to front wheel sensor.**
   - **Pull out front wheel sensor being careful to turn it as little as possible. Do not pull on front wheel sensor harness.**



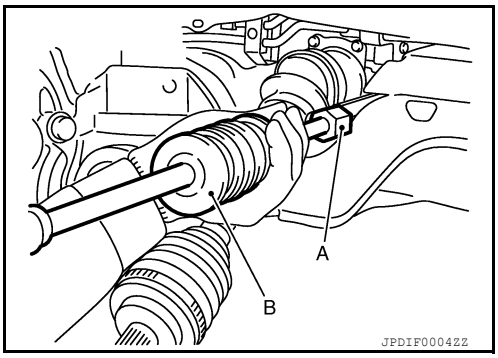
3. Remove cotter pin.
4. Remove nut retainer.
5. Loosen wheel hub lock nut from drive shaft using power tool.
6. Using a piece of wood and a suitable tool, tap on wheel hub lock nut to disengage drive shaft from wheel hub and bearing.
   CAUTION:
   - **Do not place drive shaft joint at an extreme angle.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



7. Remove wheel hub lock nut.
8. Remove lower strut bolts and nuts.

9. Separate front strut from steering knuckle. Refer to FSU-10, "Exploded View".
10. Separate drive shaft from wheel hub and bearing. Reposition drive shaft aside with wire.
11. Set Tool (A) and a suitable tool (B) between drive shaft (slide joint side) and transaxle as shown. Remove drive shaft.

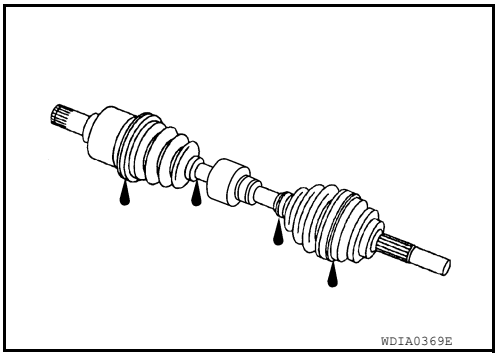
Tool number : KV40107500 (—)



12. Remove differential side oil seal. Refer to TM-209, "Removal and Installation".

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.

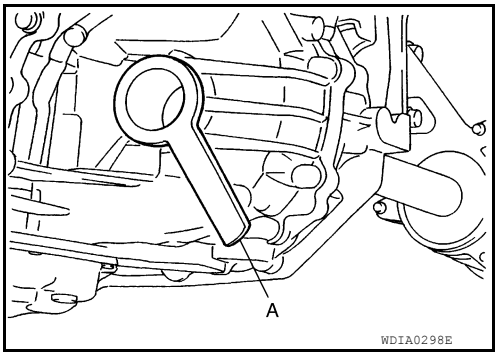


INSTALLATION

1. Install new differential side oil seal. Refer to TM-209, "Removal and Installation".
   CAUTION:
   Do not reuse differential side oil seal.
2. Install new circular clip on drive shaft in circular clip groove on transaxle side. Refer to FAX-25, "Exploded View (LH)".
   CAUTION:
   - **Do not reuse circular clip.**
   - **Make sure new circular clip on drive shaft is securely fastened.**
3. In order to prevent damage to differential side oil seal, place Tool (A) onto oil seal before inserting drive shaft as shown. Slide drive shaft into slide joint and tap with a suitable tool to install securely.

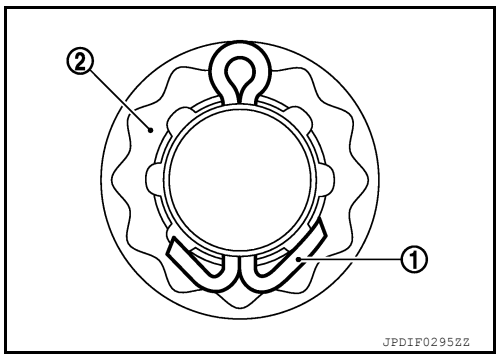
Tool number : KV38107900 (—)

NOTE:
After its insertion, try to pull flange out of slide joint by hand. If it pulls out, circular clip is not properly meshed with transaxle side gear.



4. Clean mating surfaces of wheel hub lock nut and wheel hub and bearing.
   CAUTION:
   Do not apply lubricating oil to these mating surfaces.
5. Tighten wheel hub lock nut to specification. Refer to FAX-19, "Exploded View (LH)".
   CAUTION:
   - **Do not reuse wheel hub lock nut.**
   - **Do not use a power tool to tighten wheel hub lock nut.**

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



7. Remainder of installation is in reverse order of removal.

INSPECTION AND ADJUSTMENT AFTER INSTALLATION

1. Check CVT fluid level and leakage. Refer to TM-189, "Inspection".
2. Check wheel alignment. Refer to FSU-7, "Inspection".
3. Adjust neutral position of the steering angle sensor. Refer to BRC-64, "Work Procedure".

Exploded View (RH)

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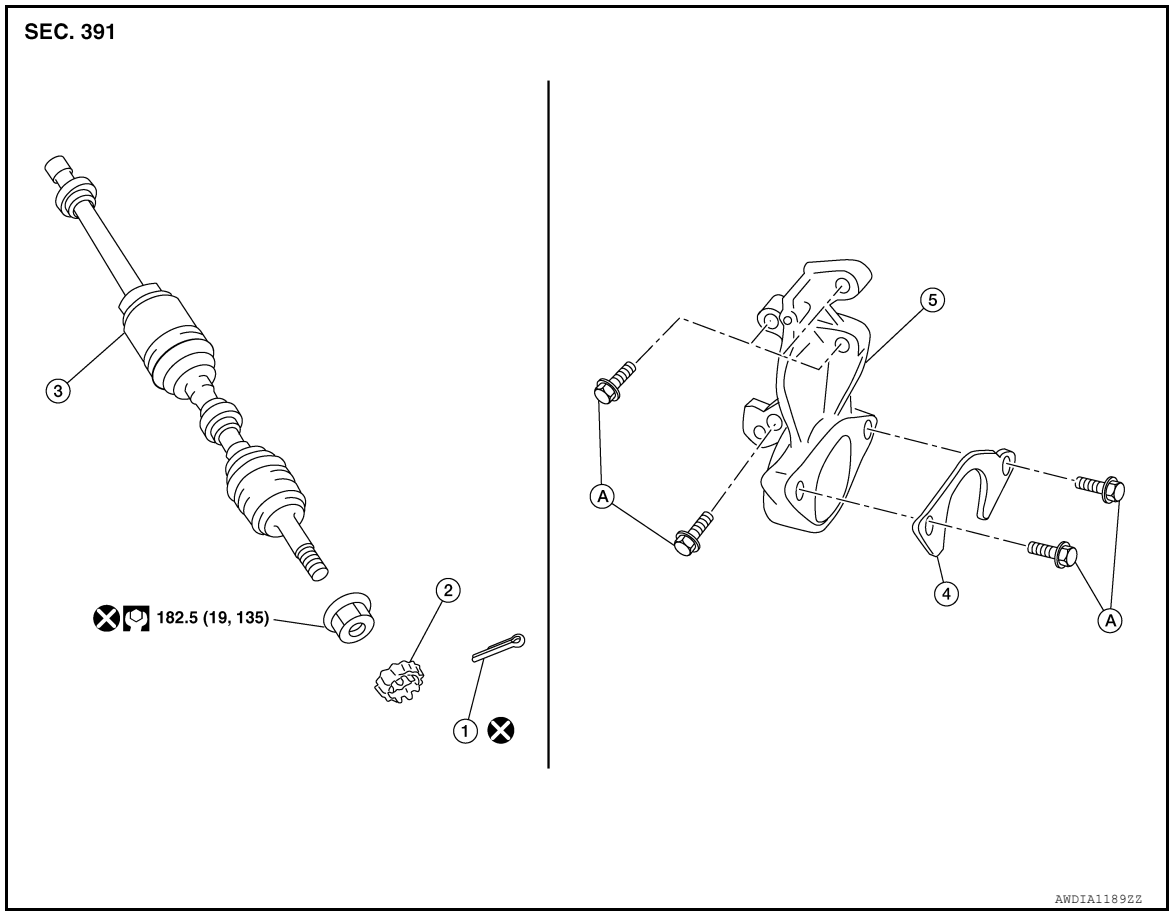


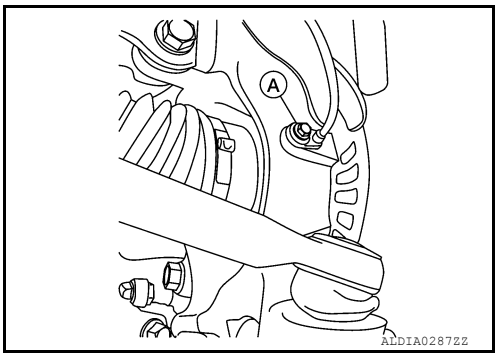
1. Cotter pin
2. Nut retainer
3. Drive shaft
4. Bearing retainer
5. Support bearing bracket
A. Refer to INSTALLATION.

Removal and Installation (RH)

INFOID:0000000011220590

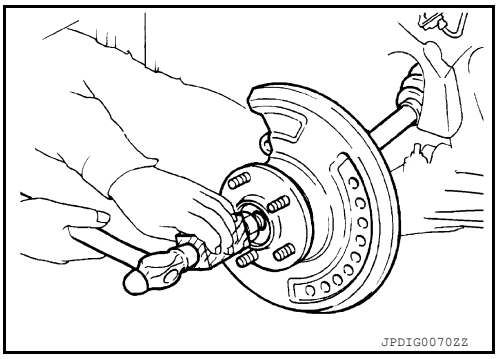
REMOVAL

1. Remove disc brake rotor. Refer to BR-40, "DISC BRAKE ROTOR : Removal and Installation".
2. Remove wheel sensor bolt (A) and position wheel sensor aside. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View".



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

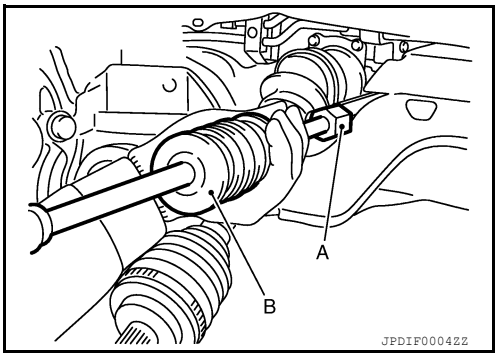
3. Remove cotter pin.
4. Remove nut retainer.
5. loosen wheel hub lock nut from drive shaft using power tool.
6. Using a piece of wood and a suitable tool, tap on wheel hub lock nut to disengage drive shaft from wheel hub and bearing.



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

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

7. Remove wheel hub lock nut.
8. Remove lower strut bolts and nuts.
9. Separate front strut from steering knuckle. Refer to FSU-10, "Exploded View".
10. Remove bearing retainer to support bearing bracket bolts.
11. Remove bearing retainer.
12. Set Tool (A) and a suitable tool (B) between drive shaft (slide joint side) and transaxle as shown. Remove drive shaft.



CAUTION:
Do not place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to over-extend slide joint.

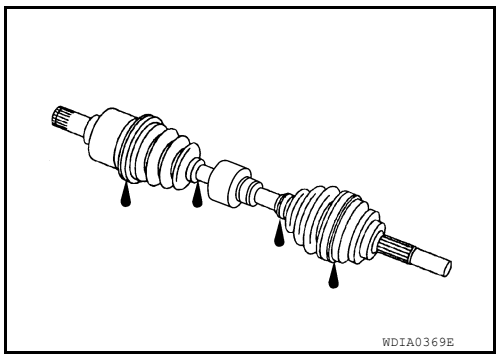
Tool number (A) : KV40107500 (—)

13. For FWD vehicles, remove differential side oil seal. Refer to TM-209, "Removal and Installation".
14. If necessary, remove support bearing bracket bolts and bracket.

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.

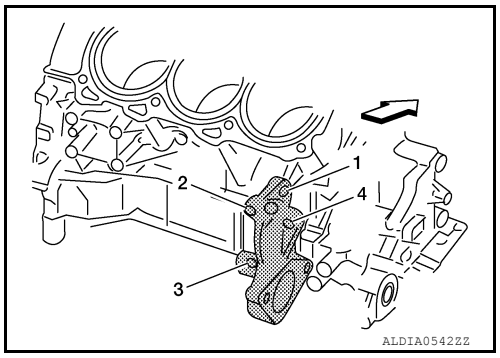


INSTALLATION

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

M10 bolt No. 1 - 4: 48.0 N·m (4.9 kg-m, 35 ft-lb)

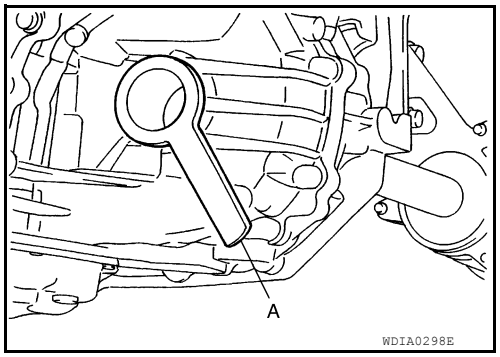
⇦ : Front



2. Install a new differential side oil seal. Refer to TM-209, "Removal and Installation".
   CAUTION:
   Do not reuse differential side oil seal.
3. Install new circular clip on drive shaft in circular clip groove on transaxle side. Refer to FAX-30, "Exploded View (RH)".
   CAUTION:
   - **Do not reuse circular clip.**
   - **Make sure new circular clip on drive shaft is securely fastened.**
4. In order to prevent damage to differential side oil seal, place Tool (A) onto oil seal before inserting drive shaft as shown. Slide drive shaft into slide joint and tap with a hammer to install securely.

Tool number : KV38107900 (—)

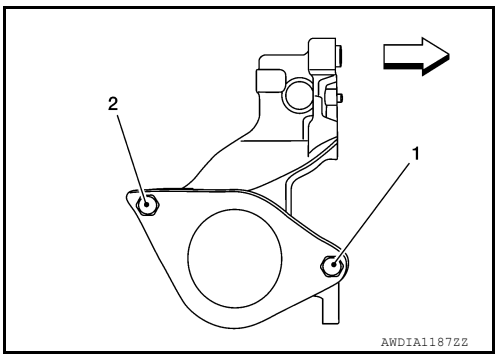
NOTE:
After its insertion, try to pull flange out of slide joint by hand. If it pulls out, circular clip is not properly meshed with transaxle side gear.



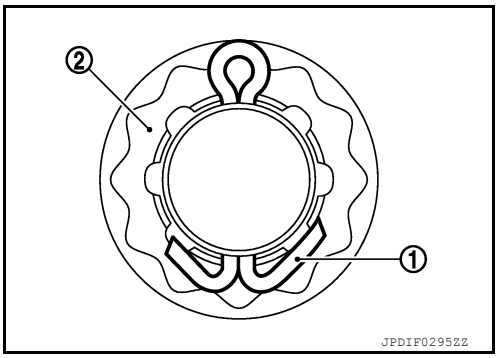
5. Install bearing retainer.
   - Tighten bearing retainer bolts in numerical order shown.

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

⇦ : Front



6. Clean mating surfaces of wheel hub lock nut and wheel hub and bearing.
   CAUTION:
   Do not apply lubricating oil to these surfaces.
7. Tighten wheel hub lock nut to specification. Refer to FAX-21, "Exploded View (RH)".
   CAUTION:
   - **Do not reuse wheel hub lock nut.**
   - **Do not use power tools to tighten wheel hub lock nut.**
8. When installing cotter pin (1) and nut retainer (2), securely bend cotter pin to prevent rattles.
   CAUTION:
   Do not reuse cotter pin.



Installation of remaining components is in reverse order of removal.

INSPECTION AND ADJUSTMENT AFTER INSTALLATION

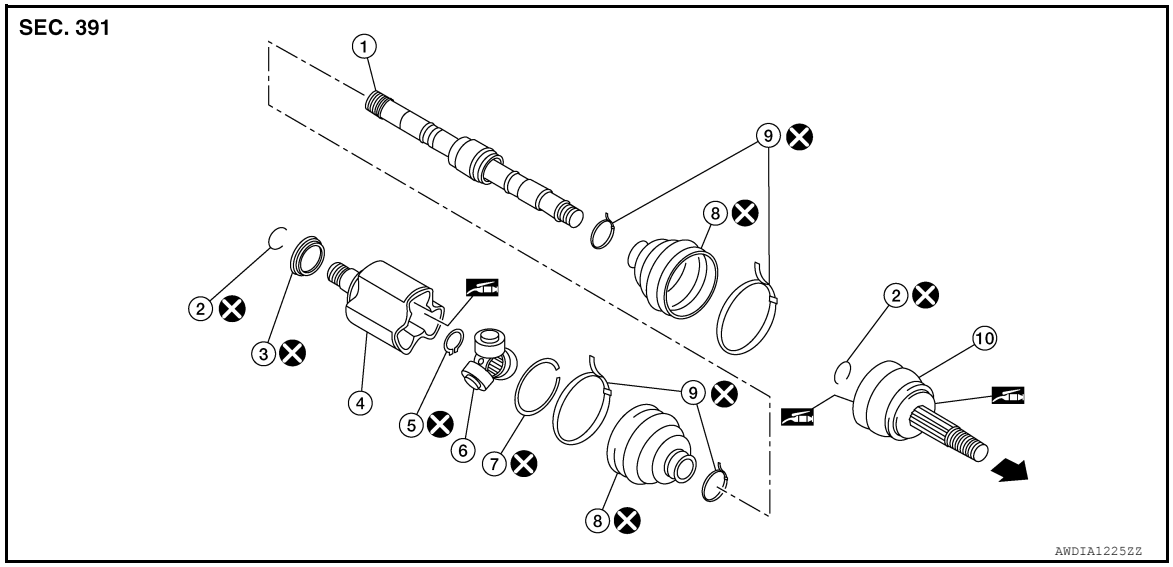
1. For FWD vehicles, check CVT fluid level and leakage. Refer to TM-189, "Inspection".
2. For AWD vehicles, check transfer case fluid level. Refer to DLN-56, "Inspection".
3. Check wheel alignment. Refer to FSU-7, "Inspection".
4. Adjust neutral position of the steering angle sensor. Refer to BRC-64, "Work Procedure".

UNIT DISASSEMBLY AND ASSEMBLY

FRONT DRIVE SHAFT

Exploded View (LH)

INFOID:0000000011506456



1. Shaft with damper
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
- Fill with Genuine NISSAN Grease.

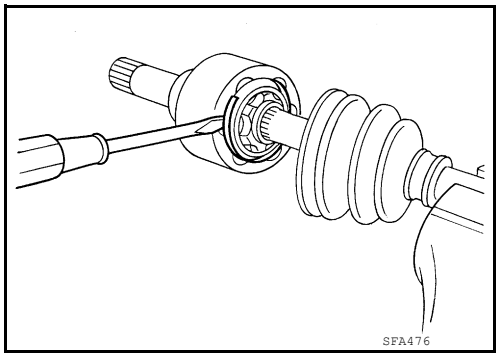
Disassembly and Assembly (LH)

INFOID:0000000011220591

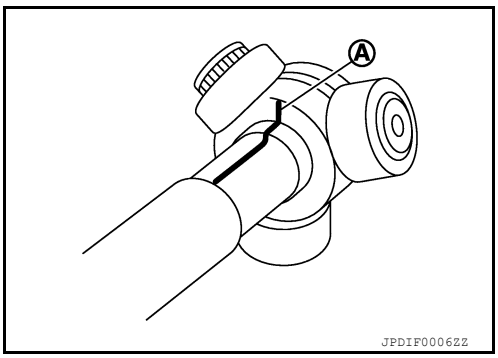
DISASSEMBLY

Transaxle Side

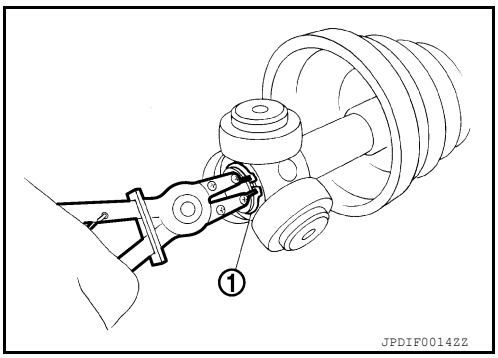
1. Secure front drive shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide boot back.
3. Put matching marks on housing and shaft before separating housing.
   CAUTION:
   Use paint or an equivalent for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



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



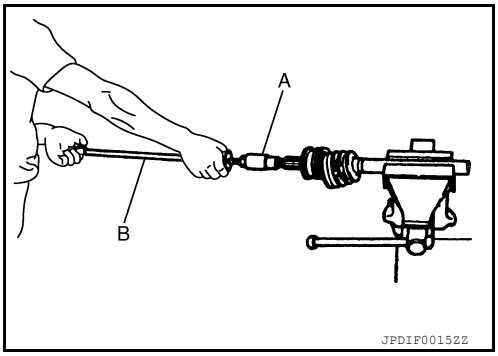
7. Remove snap ring (1) using a suitable tool.
8. Remove spider assembly from shaft.



9. Remove boot from shaft.
10. Remove circular clip from housing.
11. Remove dust shield from housing.
12. Clean old grease off slide joint housing.

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 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. While rotating ball cage, clean old grease off joint sub-assembly.

INSPECTION AFTER DISASSEMBLY

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

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.

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, or fractures of sliding surface.

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

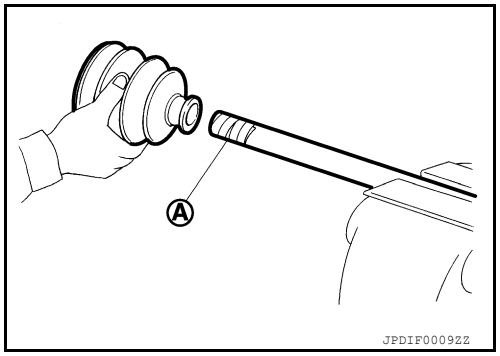
Inner Race
- Check ball sliding surface for compression scars, cracks or fractures.
- Make sure there is no damage to serrated part.

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

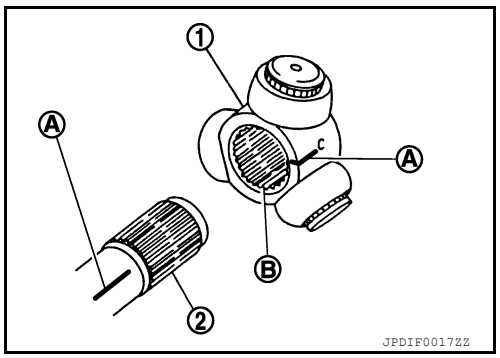
ASSEMBLY

Transaxle Side

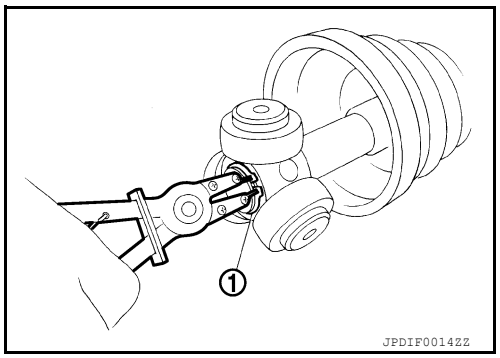
1. Install new boot and new small boot band on shaft.
   CAUTION:
   - **Do not reuse boot and boot bands.**
   - **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove protective tape wound around serrated part of shaft.



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



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



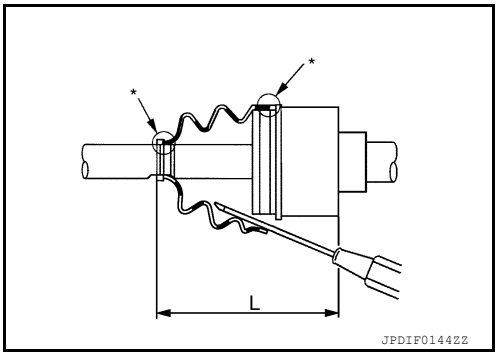
5. Assemble housing onto spider assembly making sure to align matching marks made during disassembly, and fill with specified amount of new Genuine NISSAN Grease.

Grease quantity : Refer to FAX-38, "Drive Shaft".

NOTE:

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

6. Install new stopper ring to housing.
   CAUTION:
   Do not reuse stopper ring.
7. After installation, pull shaft to check engagement between housing and stopper ring.
8. 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 housing, boot may come off. Clean all grease from surfaces.
9. Make sure boot installation length (L) is length specified below. Insert a suitable tool into large end of boot. Bleed air from boot to prevent boot deformation.

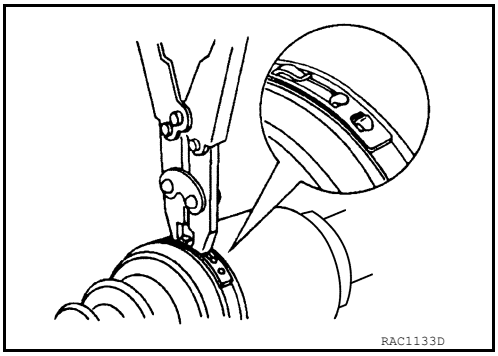


Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

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.**

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

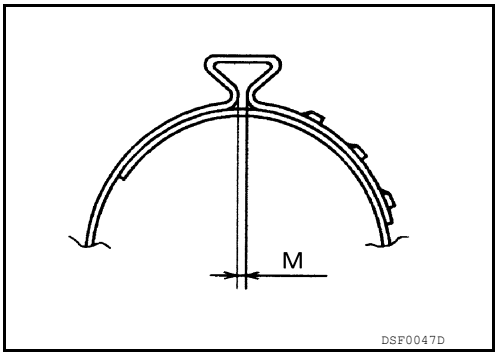
Tool number : KV40107300 (J-51751)



CAUTION:
Do not reuse boot bands.

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

Dimension (M) : Refer to FAX-39, "Boot Bands".

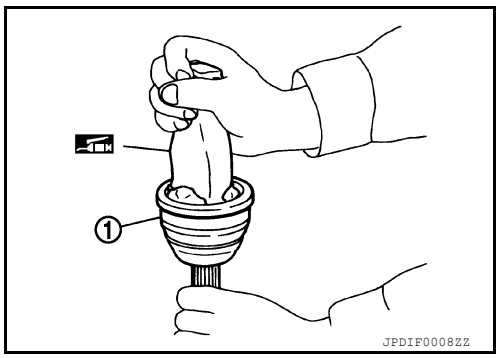


11. Install new dust shield to housing.
    CAUTION:
    Do not reuse dust shield.
12. Install new circular clip to housing.
    CAUTION:
    Do not reuse circular clip.
13. After installing slide joint housing and shaft, make sure boot position is correct. If boot position is not correct, remove old boot bands then reposition boot and secure with new boot bands.
    CAUTION:
    Do not reuse boot bands.

Wheel Side

1. Insert Genuine NISSAN Grease into joint sub-assembly (1) serration hole until grease begins to ooze from ball groove and serration hole.

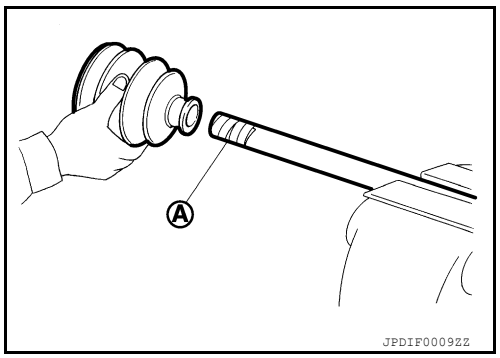
CAUTION:
After inserting grease, use a paper shop cloth to wipe off old grease that has oozed out.
NOTE:
Always check with the Parts Department for the latest parts information.



2. Install new boot and new small boot band on shaft.

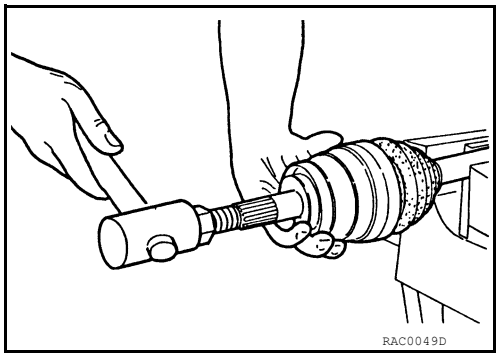
CAUTION:
- **Do not reuse boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**

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



4. Attach new circular clip to shaft. Circular clip must fit securely into shaft groove. Attach nut to joint sub-assembly.
Use a suitable tool to press-fit.

CAUTION:
Do not reuse circular clip.



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

Grease quantity : Refer to FAX-38, "Drive Shaft".

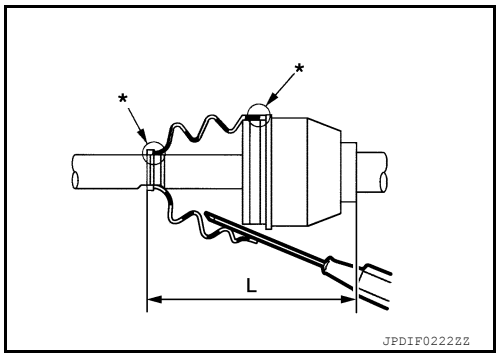
NOTE:
Always check with the Parts Department for the latest parts information.

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 specified length indicated below. Insert a suitable tool into large end of boot. Bleed air from boot to prevent boot deformation.

Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

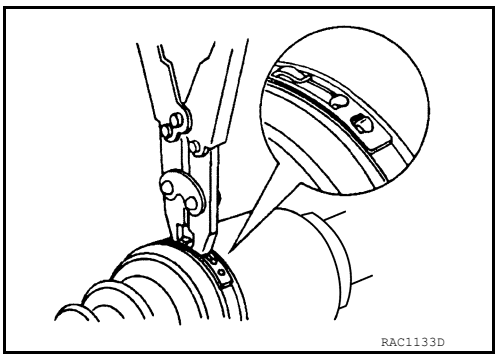


CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

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

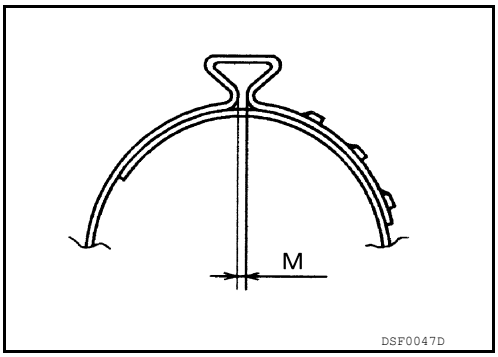
Tool number : KV40107300 (J-51751)

CAUTION:
Do not reuse boot bands.



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

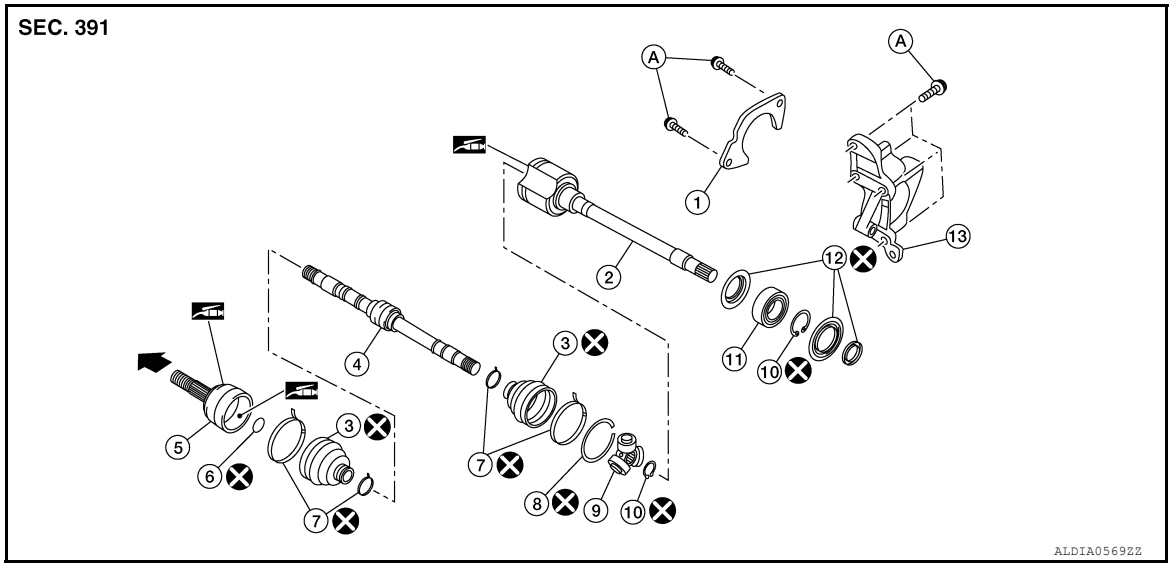
Dimension (M) : Refer to FAX-39, "Boot Bands".



9. Attempt to rotate boot to check whether or not boot bands are securing boot. If boot is not secure, remove boot bands, reposition boot, and install new boot bands.
CAUTION:
Do not reuse boot bands.

Exploded View (RH)

INFOID:0000000011506457



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

Fill with Genuine NISSAN grease.

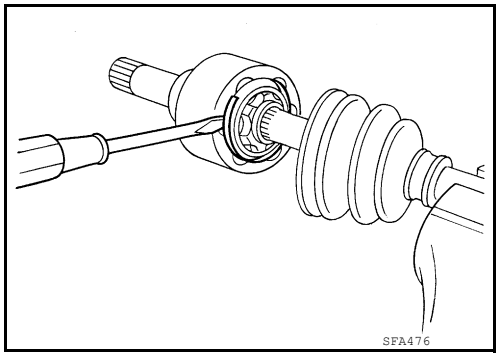
Disassembly and Assembly (RH)

INFOID:0000000011220592

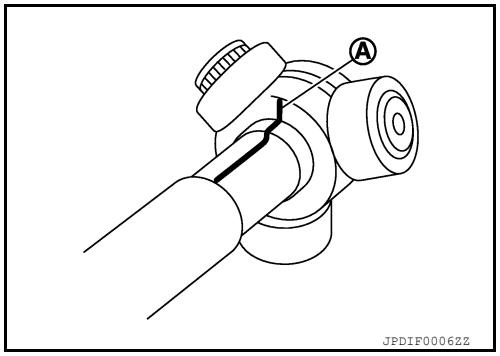
DISASSEMBLY

Transaxle Side

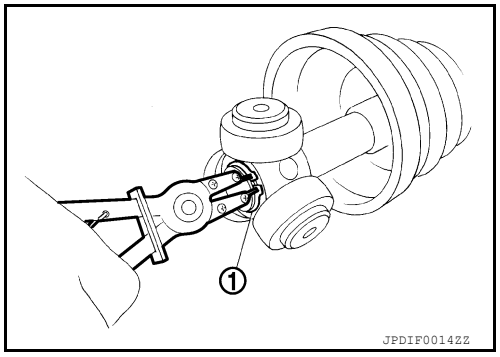
1. Secure shaft in a vise.
   CAUTION:
   When securing shaft in a vise, always use copper or aluminum plates between vise and shaft.
2. Remove boot bands and slide boots back.
3. Put matching marks on housing and shaft before separating housing.
   CAUTION:
   Use paint or an equivalent for matching marks. Do not scratch surfaces.
4. Remove stopper ring using a suitable tool.
5. Pull out housing.



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



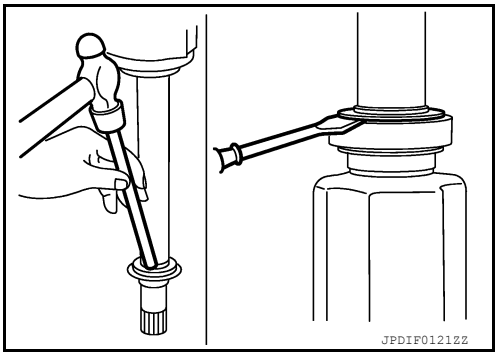
7. Remove snap ring (1) using a suitable tool.
8. Remove spider assembly from shaft.



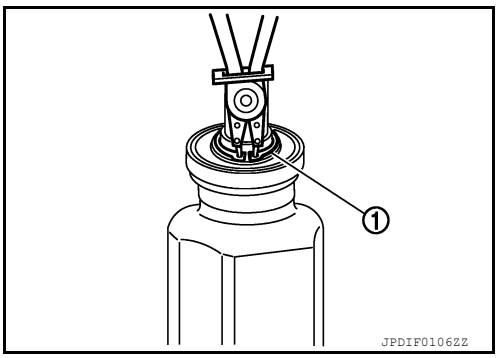
9. Remove boot from shaft.
10. Remove circular clip from housing.
11. Remove dust shield from housing.
12. Clean old grease off housing.

Support Bearing

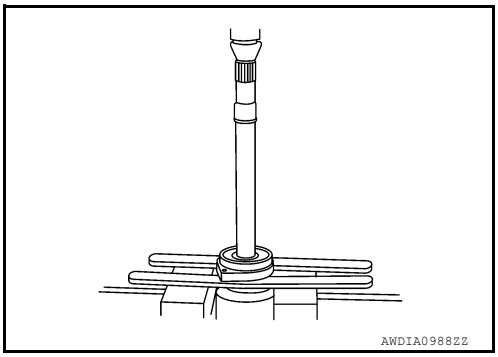
1. Remove dust shield from housing using a suitable tool.



2. Remove snap ring (1) using a suitable tool.



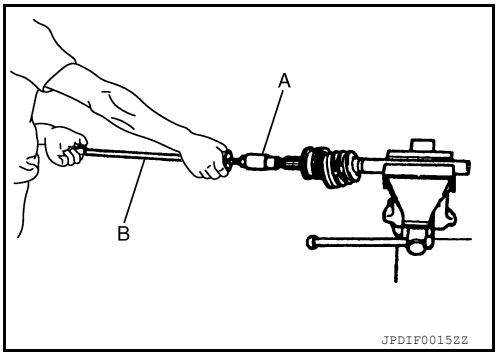
3. Press support bearing off housing using a suitable tool.



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 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. While rotating ball cage, clean old grease off joint sub-assembly.

INSPECTION AFTER DISASSEMBLY

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

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.

Housing and Spider Assembly
- Check surfaces for scratches or wear; replace entire drive shaft if necessary.

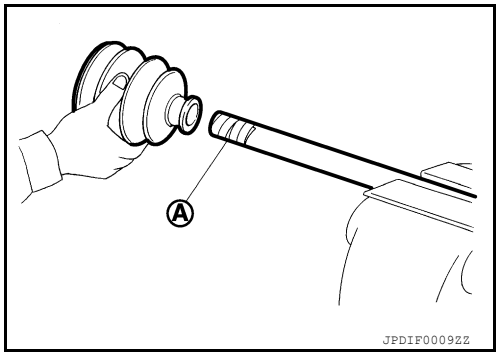
Support Bearing
- Make sure support bearing rolls freely and is free from noise, cracks, pitting or wear.

CAUTION:
If there are any irregular conditions of components, replace entire drive shaft.

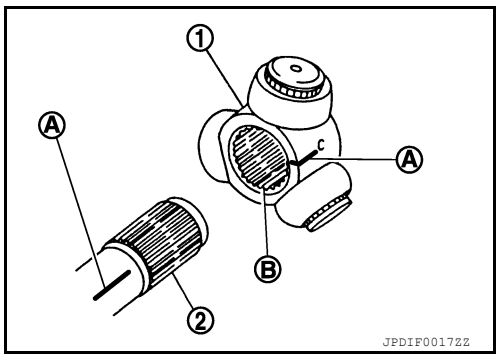
ASSEMBLY

Transaxle Side

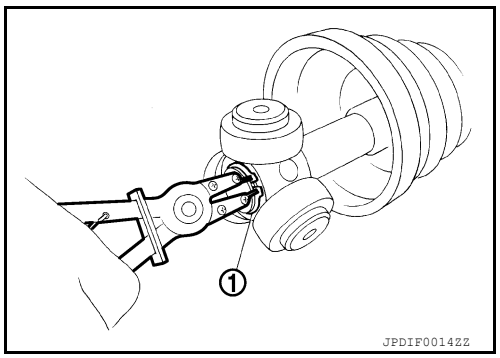
1. Install new boot and new small boot band on shaft.
   CAUTION:
   - **Do not reuse boot and boot bands.**
   - **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**
2. Remove protective tape wound around serrated part of shaft.



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



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

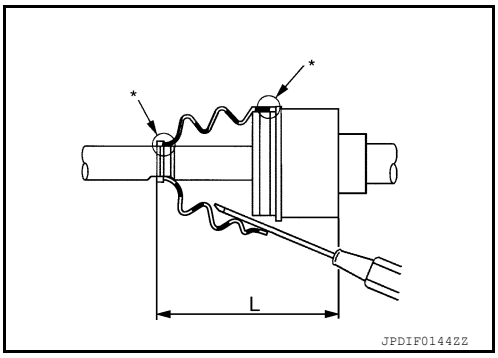


5. Assemble housing onto spider assembly making sure to align matching marks made during disassembly, and fill with specified amount of Genuine NISSAN Grease.

Grease quantity : Refer to FAX-38, "Drive Shaft".

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

6. Install new stopper ring to housing.
   CAUTION:
   Do not reuse stopper ring.
7. After installation, pull shaft to check engagement between housing and stopper ring.
8. 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 housing, boot may come off. Remove all grease from surfaces.



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

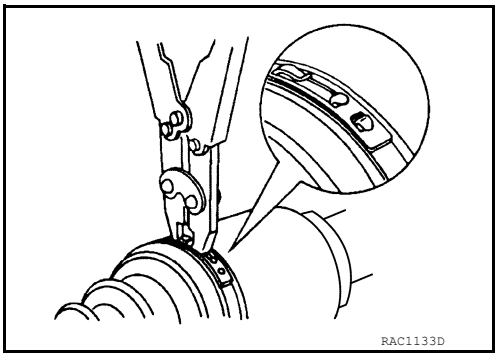
   Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

   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.**

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

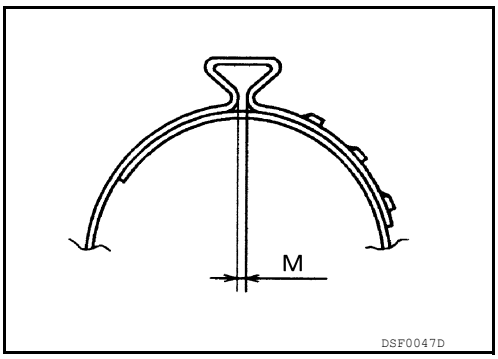
    Tool number : KV40107300 (J-51751)

    CAUTION:
    Do not reuse boot bands.



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

Dimension (M) : Refer to FAX-39, "Boot Bands".

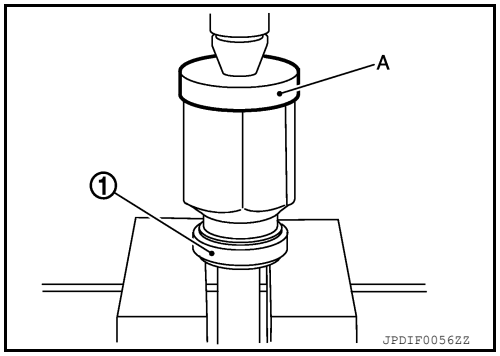


11. Install new dust shield to housing.
    CAUTION:
    Do not reuse dust shield.
12. Install new circular clip to housing.
    CAUTION:
    Do not reuse circular clip.
13. After installing housing and shaft, rotate boot to check whether or not actual position is correct. If boot position is not correct, remove old boot bands then reposition boot and secure with new boot bands.
    CAUTION:
    Do not reuse boot bands.

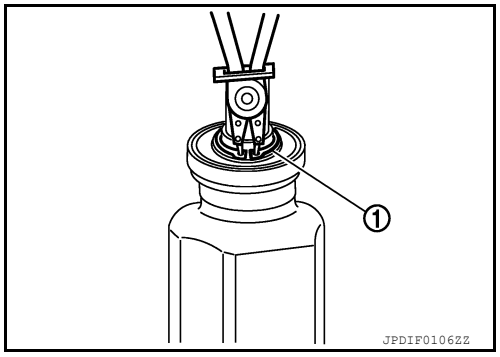
Support Bearing

1. Install dust shield on housing.
CAUTION:
Do not reuse dust shield.

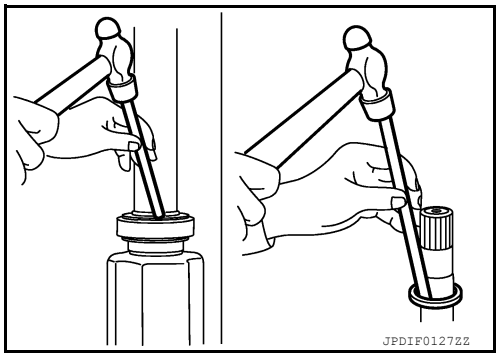
2. Press support bearing (1) onto housing using a suitable tool (A).



3. Install snap ring (1) using a suitable tool.
CAUTION:
Do not reuse snap ring.

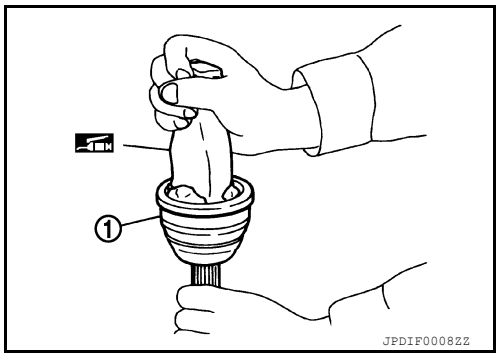


4. Install dust shields.
CAUTION:
Do not reuse dust shields.



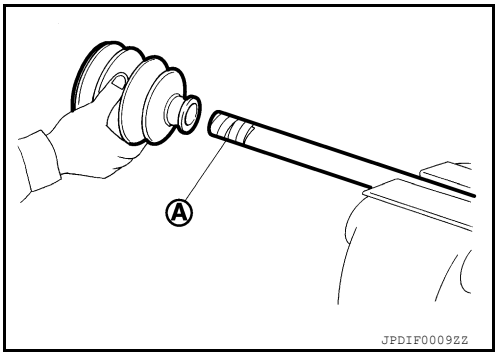
Wheel Side

1. Insert Genuine NISSAN Grease into joint sub-assembly serration hole until grease begins to ooze from ball groove and serration hole.
CAUTION:
After inserting 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.

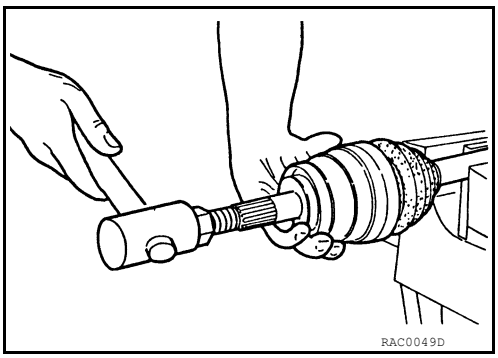


2. Install new boot and new small boot band on shaft.
CAUTION:
- **Do not reuse boot and boot bands.**
- **Cover drive shaft serration with protective tape (A) to prevent damage to boot during installation.**

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



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



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

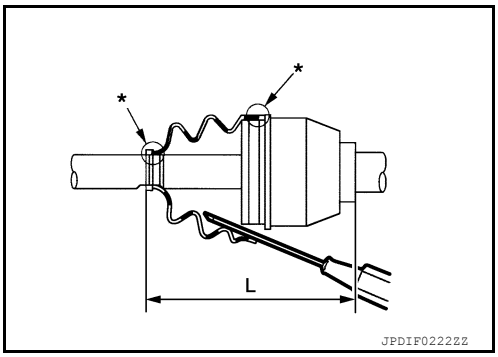
Grease quantity : Refer to FAX-38, "Drive Shaft".

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 specified length. Insert a suitable tool into large end of boot. Bleed air from boot to prevent boot deformation.

Boot installation length (L) : Refer to FAX-38, "Drive Shaft".

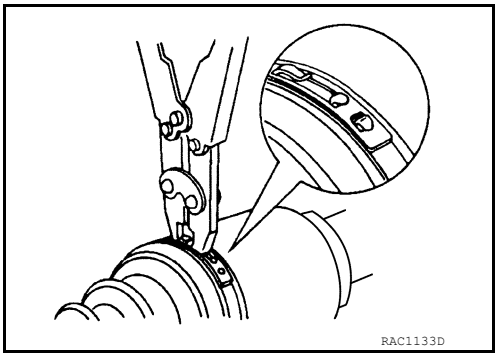


CAUTION:
- **Boot may break if boot installation length is less than standard value.**
- **Be careful that suitable tool does not contact inside surface of boot.**

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

Tool number : KV40107300 (J-51751)

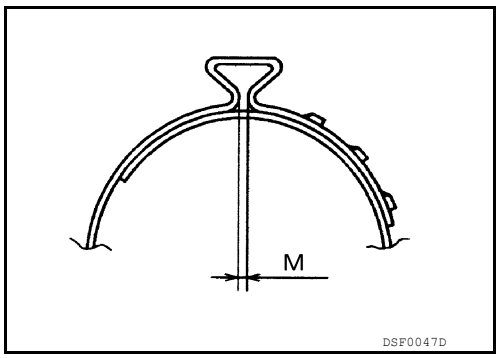
CAUTION:
Do not reuse boot bands.



NOTE:

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

Dimension (M) **: Refer to FAX-39, "Boot Bands".**



9. Attempt to rotate boot to check whether or not boot bands are securing boot. If boot is not secure, remove boot bands, reposition boot, and install new boot bands.
CAUTION:
Do not reuse boot bands.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

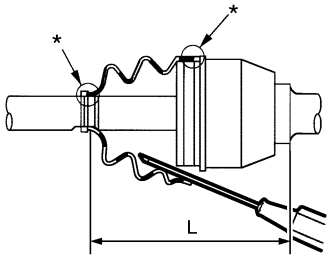
Wheel Bearing

INFOID:0000000011220593

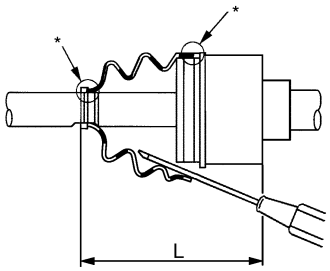
Item	Standard
Axial end play	0.05 mm (0.002 in) or less

Drive Shaft

INFOID:0000000011220594



JPDIF0142ZZ



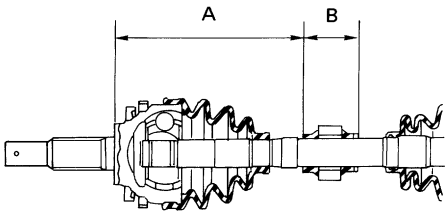
JPDIF0144ZZ

Joint type	Wheel side	Transaxle side
Grease quantity	115 ± 10 g (4.06 ± 0.35 oz)	190 ± 10 g (6.70 ± 0.35 oz)
Boot installed length (L)	135.1 mm (5.32 in)	177.9 mm (7.00 in)

* : Boot installation grooves

Dynamic Damper

INFOID:0000000011220595

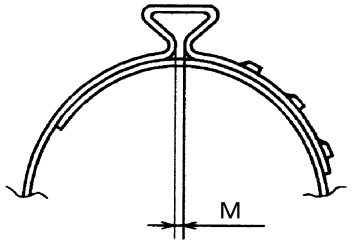


SFA313B

	FWD	
	LH	RH
Dimension (A)	228.5 ± 3 mm (9.00 ± 0.12 in)	205± 3 mm (8.07 ± 0.12 in)
Dimension (B)	70 mm (2.76 in)	70 mm (2.76 in)
	AWD	
	LH	RH
Dimension (A)	228.5 ± 3 mm (9.00 ± 0.12 in)	227.5 ± 3 mm (8.96 ± 0.12 in)
Dimension (B)	70 mm (2.76 in)	70 mm (2.76 in)

Boot Bands

INFOID:0000000011220596



DSF0047D

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