SECTION FAX
FRONT AXLE

CONTENTS

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000004946538

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

Reference page			—	FAX-16, FAX-24	—	FAX-16, FAX-24	—	FAX-16, FAX-24	NVH in FAX and FSU sections	Refer to Front axle in this chart.	NVH in WT section	NVH in WT section	Refer to DRIVE SHAFT in this chart.	NVH in BR section	NVH in ST section
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	FRONT AXLE AND FRONT SUSPENSION	FRONT AXLE	TIRE	ROAD WHEEL	DRIVE SHAFT	BRAKE	STEERING
Symptom	DRIVE SHAFT	Noise	×	×				×	×	×	×	×		×	×
		Shake	×		×			×	×	×	×	×		×	×
	FRONT AXLE	Noise				×	×	×	×		×	×	×	×	×
		Shake				×	×	×	×		×	×	×	×	×
		Vibration				×	×	×	×		×		×		×
		Shimmy				×	×		×		×	×		×	×
		Judder				×			×		×	×		×	×
		Poor quality ride or handling				×	×		×		×	×			

×: Applicable

PRECAUTION

PRECAUTIONS

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

INFOID:0000000004956745

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted.
Information necessary to service the system safely is included in the “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

- **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 “SRS AIR BAG”.**
- **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 Air Bag Diagnosis Sensor Unit or other Air Bag 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 3 minutes before performing any service.**

Precaution Necessary for Steering Wheel Rotation after Battery Disconnect

INFOID:0000000004956746

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.
If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.
If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Turn the push-button ignition switch to ACC position.
   (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

General Precautions

INFOID:0000000004956747

CAUTION:
After finishing servicing, check that all the tools and waste are stored in a customary place.

Precaution for NCCB (Nissan Carbon Ceramic Brake)

INFOID:0000000005400019

CAUTION:
- **Since all the work including the handling of a disc rotor and its inspection and installation require special skills, a highly skilled professional mechanic with sufficient knowledge and specialized equipment are required. Therefore, NISSAN recommends the vehicle should be maintained by NHPC.**
- **When removing a tire, install a disc rotor protector [SST: KV40108345 (front), KV40108350 (rear)] to protect the disc rotor. Never remove the disc rotor until the tire is reinstalled.**
- **Never allow oils and dust to adhere to the disc rotor.**
- **After removing a tire, check the disc rotor for internal damage, depending on the situation.**
- **LHD: Refer to BR-92, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-99, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**
- **RHD: Refer to BR-188, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-195, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**
- **During work, never allow axle component parts, suspension component parts, or tools to interfere with the disc rotor. In addition, install a disc rotor protector [SST: KV40108345 (front), KV40108350 (rear)] before work. Never remove the protector until the work is completed.**
- **Never allow oils and dust to adhere to the disc rotor.**
- **If the disc rotor is interfered, then measure natural frequency of the disc rotor to check for internal damage.**
- **LHD: Refer to BR-92, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-99, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**
- **RHD: Refer to BR-188, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-195, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**
- **If a traffic accident affecting wheel side (axle or suspension component parts) occurs, then measure natural frequency of the disc rotor to check for internal damage.**
- **LHD: Refer to BR-92, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-99, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**
- **RHD: Refer to BR-188, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (front), BR-195, "BRAKE CALIPER ASSEMBLY : Inspection (SpecV NHPC)" (rear).**

Precautions for Wheel Hub and Bearing Assembly and Steering Knuckle (NHPC)

INFOID:0000000004946542

- Always tighten each mounting bolt and nut to the specified torque when they are cold.
- When performing removal or installation work, check for any foreign materials entered. If any, eliminate or clean them.
- Check the wheel hub and bearing assembly for looseness or smooth movement to the direction rotation.
- Tighten up wheel hub lock nut within tightening torque of 250 N·m (26 kg-m, 184 ft-lb) before and after sports driving.

Precautions for Drive Shaft (NHPC)

INFOID:0000000004946543

Observe the following precautions when disassembling and assembling drive shaft.
- Never 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 must be taken into account during disassembly of the service location.
- Reassemble disassembled parts carefully in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Use paper waste. Never fabric shop cloths must not be used because of the danger of lint adhering to parts.

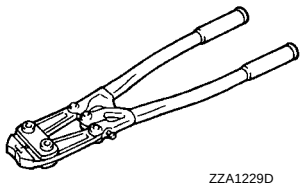
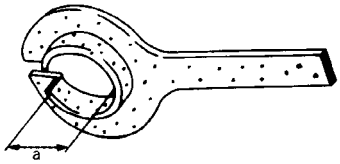
- Clean disassembled parts (except for rubber parts) with kerosene which shall be removed by blowing with air or wiping with paper waste.

PREPARATION

PREPARATION

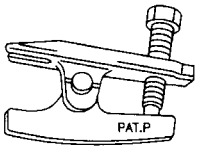
Special Service Tool (NHPC)

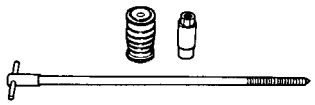
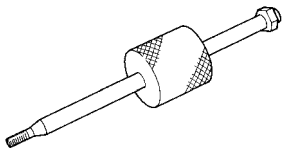
INFOID:0000000004946544

Tool number Tool name	Description
KV40107300 Boot band crimping tool  ZZA1229D	Installing boot band
KV40107500 Drive shaft attachment  ZZA1230D	Removing drive shaft
KV38107900 Protector a: 32 mm (1.26 in) dia.  PDIA1183J	Installing drive shaft

Commercial Service Tool (NHPC)

INFOID:0000000004946545

Tool name	Description
Ball joint remover  NT146	Removing ball joint for steering knuckle

Tool name	Description
Drive shaft puller  JPDIG0152ZZ	Remove drive shaft joint sub assembly
Sliding hummer  ZZA0023D	Remove drive shaft

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000004946546

MOUNTING INSPECTION

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

WHEEL BEARING INSPECTION

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

Axial end play : Refer to FAX-26, "Wheel Bearing (NHPC)".

- Rotate wheel hub and check is no unusual noise or other irregular conditions. If there is any of abnormal conditions, replace wheel hub and bearing assembly.

FRONT DRIVE SHAFT

Inspection

INFOID:0000000004946547

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

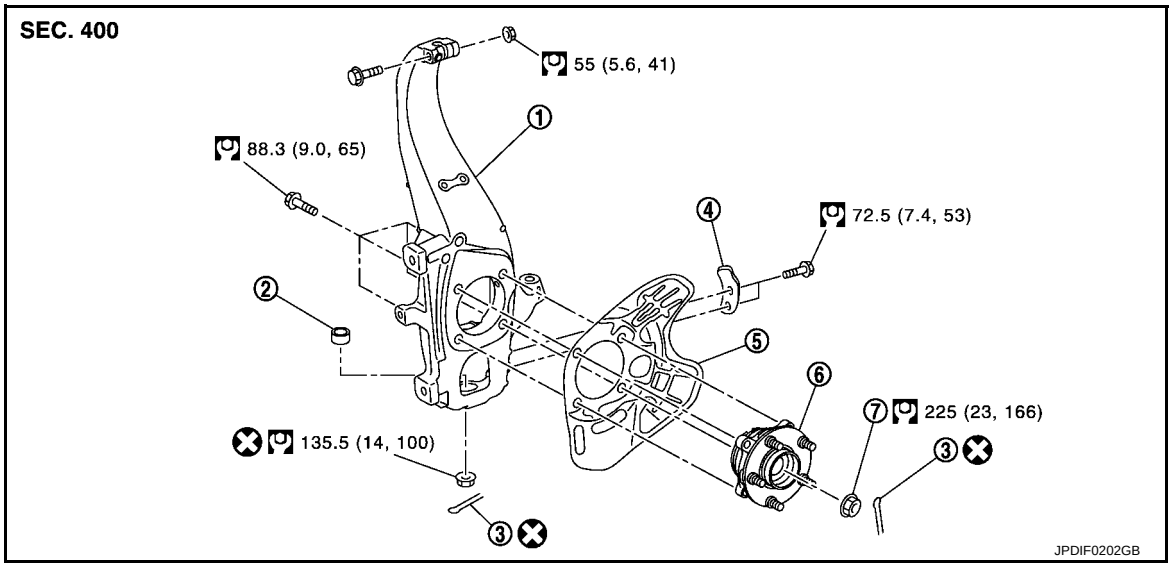
CAUTION:
Replace entire drive shaft assembly when noise or vibration occurs from drive shaft.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

INFOID:0000000004946548



1. Steering knuckle
2. Ball seat
3. Cotter pin
4. Steering support bracket
5. Splash guard
6. Wheel hub and bearing assembly
7. Wheel hub lock nut

Refer to GI-4, "Components" for the symbols in the figure.

Removal and Installation (SpecV NHPC)

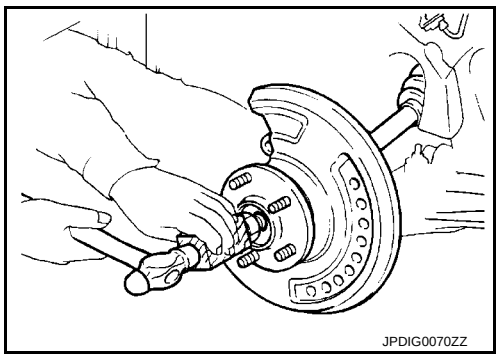
INFOID:0000000004946549

REMOVAL

1. Remove tires. Refer to WT-88, "Exploded View".
2. Remove wheel sensor and sensor harness. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View (NHPC)".
3. Remove brake hose bracket. Refer to BR-25, "FRONT : Exploded View" (CAST IRON DISC ROTOR BRAKE models for LHD), BR-72, "FRONT : Exploded View" [NCCB (Nissan Carbon Ceramic Brake) models for LHD], BR-121, "FRONT : Exploded View" (CAST IRON DISC ROTOR BRAKE models for RHD) or BR-168, "FRONT : Exploded View" [NCCB (Nissan Carbon Ceramic Brake) models for RHD].
4. Remove caliper assembly mounting bolts. Hang caliper assembly in a place where it will not interfere with work. Refer to BR-41, "BRAKE CALIPER ASSEMBLY : Exploded View (NHPC)" (CAST IRON DISC ROTOR BRAKE models for LHD), BR-88, "BRAKE CALIPER ASSEMBLY : Exploded View (SpecV NHPC)" [NCCB (Nissan Carbon Ceramic Brake) models for LHD], BR-137, "BRAKE CALIPER ASSEMBLY : Exploded View (NHPC)" (CAST IRON DISC ROTOR BRAKE models for RHD) or BR-184, "BRAKE CALIPER ASSEMBLY : Exploded View (SpecV NHPC)" [NCCB (Nissan Carbon Ceramic Brake) models for RHD].
5. Remove disc rotor. Refer to BR-41, "BRAKE CALIPER ASSEMBLY : Removal and Installation (NHPC)" (CAST IRON DISC ROTOR BRAKE models for LHD), BR-89, "BRAKE CALIPER ASSEMBLY : Removal and Installation (SpecV NHPC)" [NCCB (Nissan Carbon Ceramic Brake) models for LHD], BR-137, "BRAKE CALIPER ASSEMBLY : Removal and Installation (NHPC)" (CAST IRON DISC ROTOR BRAKE models for RHD) or BR-185, "BRAKE CALIPER ASSEMBLY : Removal and Installation (SpecV NHPC)" [NCCB (Nissan Carbon Ceramic Brake) models for RHD].
6. Remove cotter pin, and then loosen wheel hub lock nut.

7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   CAUTION:
   - **Never place drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.**
   - **Never allow drive shaft to hang down without support for counterpart such as joint sub-assembly and the other parts.**

   NOTE:
   Use a suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.


JPDIG0070ZZ

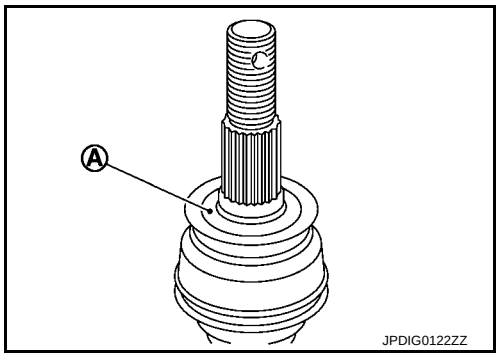
8. Remove wheel hub lock nut.
9. Remove wheel hub and bearing assembly, and then remove splash guard.
10. Remove steering outer socket. Refer to ST-18, "Exploded View".
11. Remove cotter pin of transverse link, and then loosen mounting nut.
12. Separate steering knuckle from upper link.
13. Separate transverse link from steering knuckle so as not to damage ball joint boot using the ball joint remover, and then remove steering knuckle.
    CAUTION:
    Temporarily tighten the nut to prevent damage to threads and to prevent the ball joint remover from suddenly coming off.
14. Remove steering support bracket.

INSTALLATION

Note the following, and install in the reverse order of the removal.

- When assembling the shaft, never press it, but pull it until fully seated by tightening the wheel hub lock nut.
- Check that anticorrosive oil is applied to the thread of the drive shaft. If not, apply appropriate oil such as engine oil.
- If sufficient oil is not applied to the thread of the drive shaft, the wheel hub lock nut may be seized and the tightening torque reaches the specified limit prematurely. It may cause looseness or abnormal noises.
- Clean the matching surface of drive shaft and wheel hub and bearing assembly, and then apply paste [service parts (440037S000)] to flat surface (A) of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 0.2 – 1.0 g (0.007 – 0.035 oz)



JPDIG0122ZZ

- Install drive shaft using tightening torque of wheel hub lock nut. Refer to FAX-10, "Exploded View".
  CAUTION:
  Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing wheel hub and bearing assembly and steering knuckle.
- Never reuse cotter pin.

Inspection (SpecV NHPC)

INFOID:0000000004946550

INSPECTION AFTER REMOVAL

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

Ball Joint Inspection

Check boots of transverse link, upper link and steering outer socket ball joint for breakage, axial play, and torque. Refer to FSU-22, "Inspection (SpecV NHPC)", FSU-24, "Inspection (SpecV NHPC)" and ST-25, "Inspection (SpecV NHPC)".

INSPECTION AFTER INSTALLATION

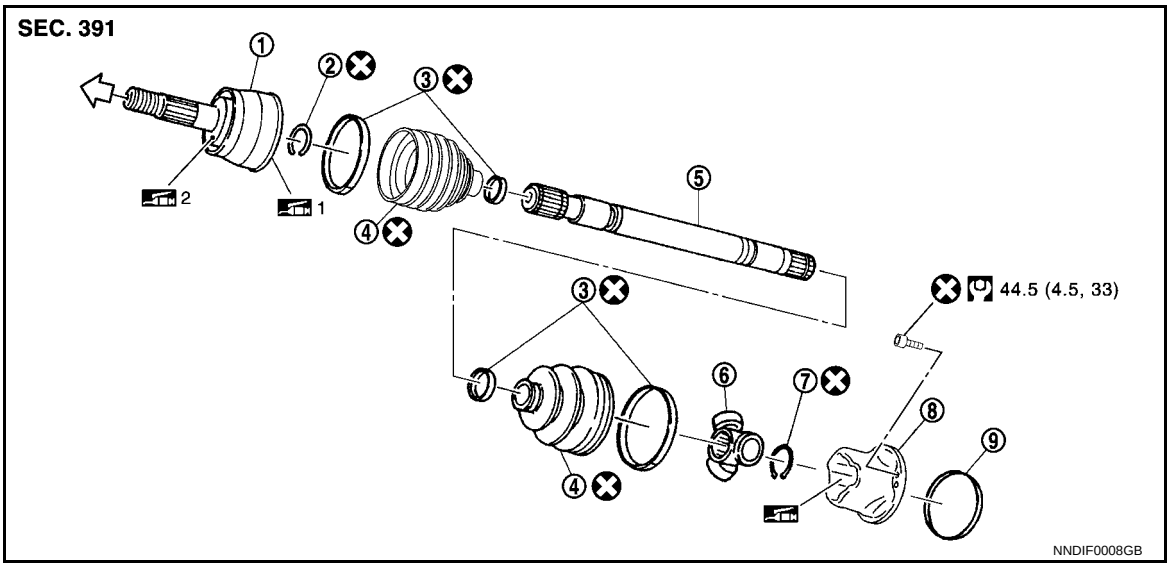
1. Check wheel sensor harness for proper connection. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View (NHPC)".
2. Check the wheel alignment. Refer to FSU-10, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-10, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement (NHPC)".

FRONT DRIVE SHAFT BOOT

Exploded View (SpecV NHPC)

INFOID:0000000004946551

LEFT SIDE



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

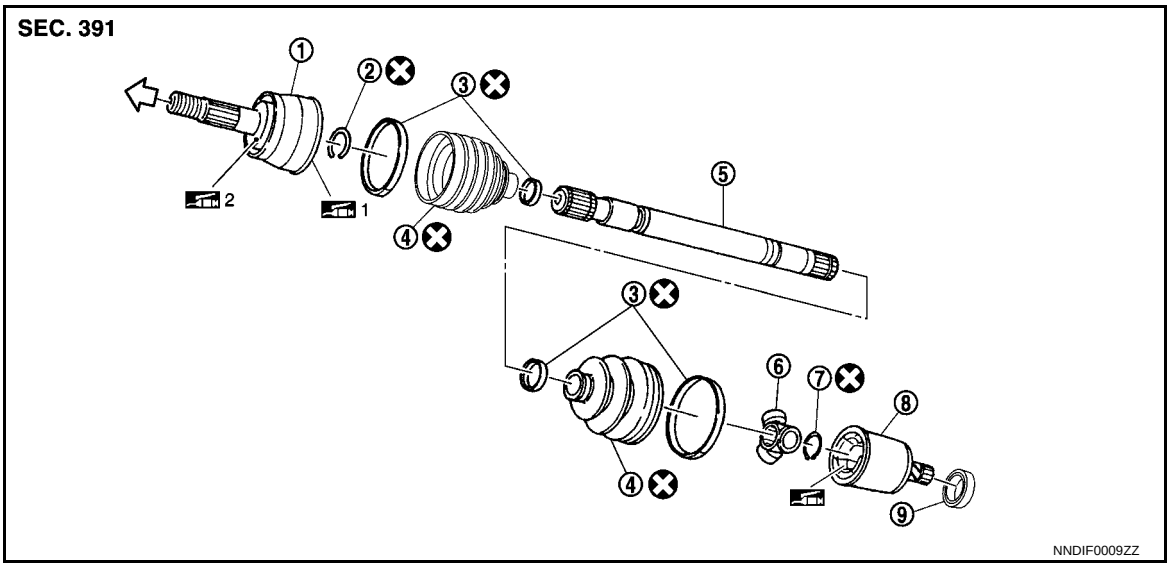
⇦ : Wheel side

1: NISSAN genuine grease or an equivalent.

2: Apply paste [service parts (440037S000)].

Refer to GI-4, "Components" for symbols not described on the above.

RIGHT SIDE



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

⇦ : Wheel side

1: NISSAN genuine grease or an equivalent.

2: Apply paste [service parts (440037S000)].

Refer to GI-4, "Components" for symbols not described on the above.

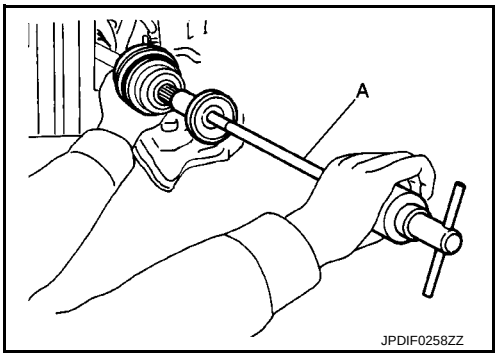
WHEEL SIDE

WHEEL SIDE : Removal and Installation (SpecV NHPC)

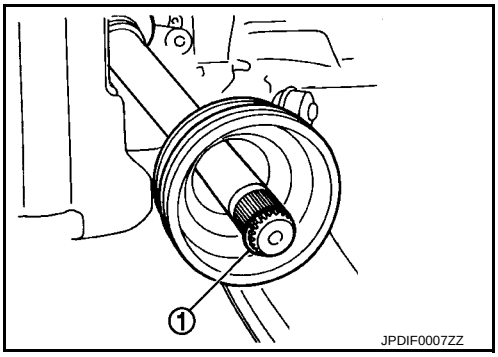
INFOID:0000000004946552

REMOVAL

1. Remove tires. Refer to WT-88, "Exploded View".
2. Remove steering knuckle. Refer to FAX-10, "Exploded View".
3. Remove boot bands, and then remove boot from joint sub-assembly.
4. Screw drive shaft puller (A) (commercial service tool) 30 mm (1.18 in) or more into the thread of joint sub-assembly, and remove joint sub-assembly from shaft.
   CAUTION:
   - **Align a drive shaft puller and drive shaft and remove them by pulling firmly and uniformly.**
   - **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle.**

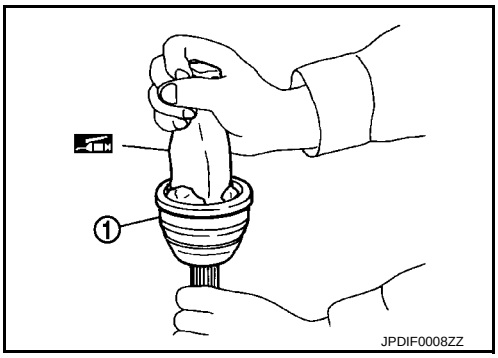


5. Remove circular clip (1) from shaft.
6. Remove boot from shaft.



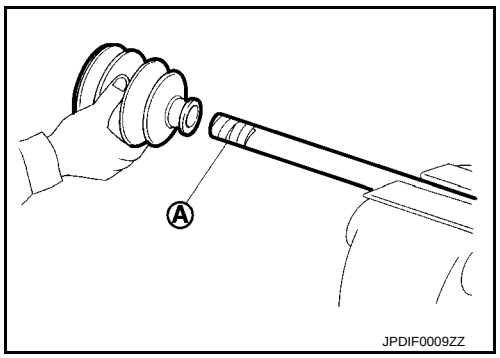
INSTALLATION

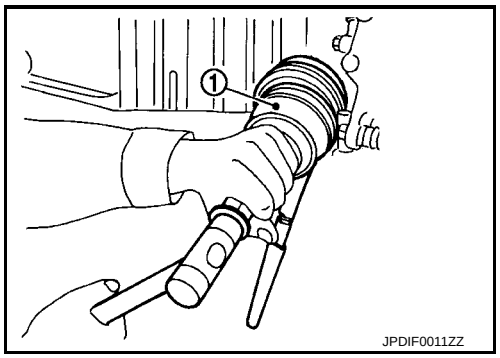
1. Clean the old grease on joint sub-assembly with paper waste.
2. Fill serration slot joint sub-assembly (1) with NISSAN genuine grease or equivalent until the serration slot and ball groove become full to the brim.
   CAUTION:
   After applying grease, use a paper waste to wipe it out old grease that has oozed out.



3. Install boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape (A) to protect the boot from damage.**
   - **Never reuse boot and boot band.**
4. Remove the tape wrapped around the serration on shaft.
5. Position circular clip on groove at the shaft edge.
   CAUTION:
   Never reuse circular clip.
   NOTE:
   Drive joint inserter is recommended when installing circular clip.
6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.
7. Install joint sub-assembly (1) to shaft using plastic hammer.
   CAUTION:
   Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.
8. Apply the specified amount of grease into the boot inside from large diameter side of boot.

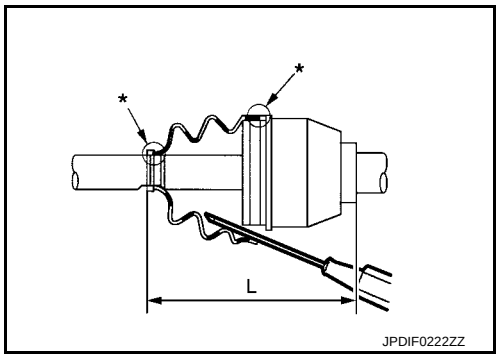
   Grease amount : Refer to FAX-26, "Drive Shaft (NHPC)".





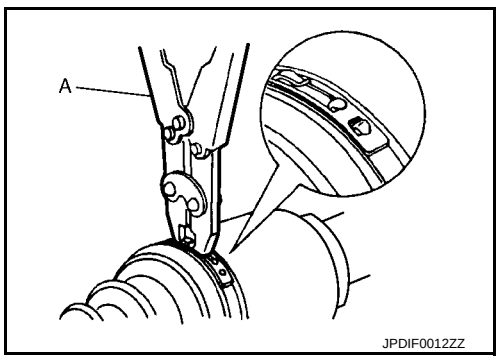
9. Install the boot into grooves (indicated by “*” marks) shown in the figure.
   CAUTION:
   If grease adheres to the boot mounting surface (indicated by “*” mark) on the shaft or joint sub-assembly, boot may come off. Remove all grease from the surface.
10. To prevent the deformation of the boot, adjust the boot installation length (L) to the specified value shown below by inserting the suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.

    L : Refer to FAX-26, "Drive Shaft (NHPC)".



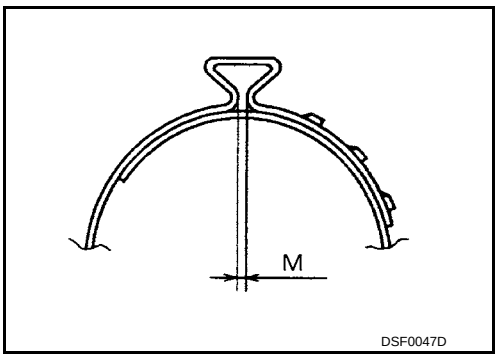
CAUTION:
- **If the boot installation length is outside the standard, it may cause breakage of the boot.**
- **Be careful not to touch the inside of the boot with a tip of tool.**

11. Secure the ends of the boot with boot bands using the boot band crimping tool (A) (SST: KV40107300).
    CAUTION:
    Never reuse boot band.



NOTE:

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



M : 2.0 – 3.0 mm (0.079 – 0.118 in)

12. Secure joint sub-assembly and shaft, and then check that they are in the correct position when rotating boot. Install them with boot band when boot installation positions become incorrect.
CAUTION:
Never reuse boot band.
13. Install steering knuckle. Refer to FAX-10, "Exploded View".
14. Install tires. Refer to WT-88, "Exploded View".

FINAL DRIVE SIDE

FINAL DRIVE SIDE : Removal and Installation (SpecV NHPC)

INFOID:0000000004946553

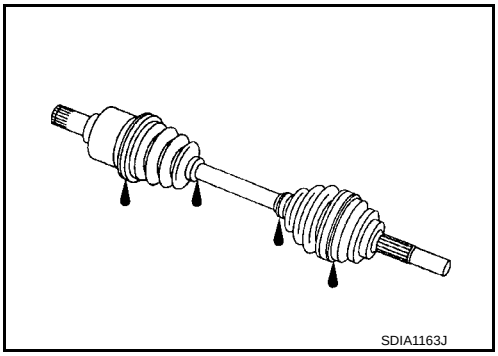
NOTE:
Remove boot after removing drive shaft.
- Remove: refer to FAX-18, "LEFT SIDE : Removal and Installation (SpecV NHPC)" (left side), FAX-18, "RIGHT SIDE : Removal and Installation (SpecV NHPC)" (right side).
- Disassembly: refer to FAX-21, "FINAL DRIVE SIDE : Disassembly and Assembly (SpecV NHPC)".

Inspection (SpecV NHPC)

INFOID:0000000004946554

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 abnormal condition.



INSPECTION AFTER INSTALLATION

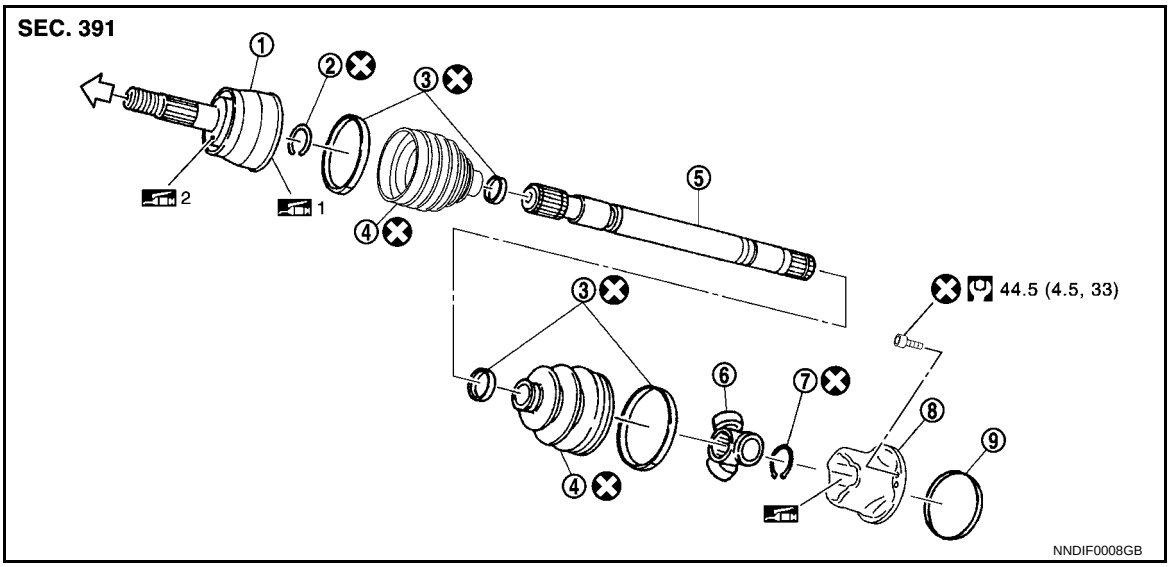
1. Check wheel sensor harness for proper connection. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View (NHPC)".
2. Check the wheel alignment. Refer to FSU-10, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-10, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement (NHPC)".

FRONT DRIVE SHAFT

Exploded View (SpecV NHPC)

INFOID:0000000004946555

LEFT SIDE



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

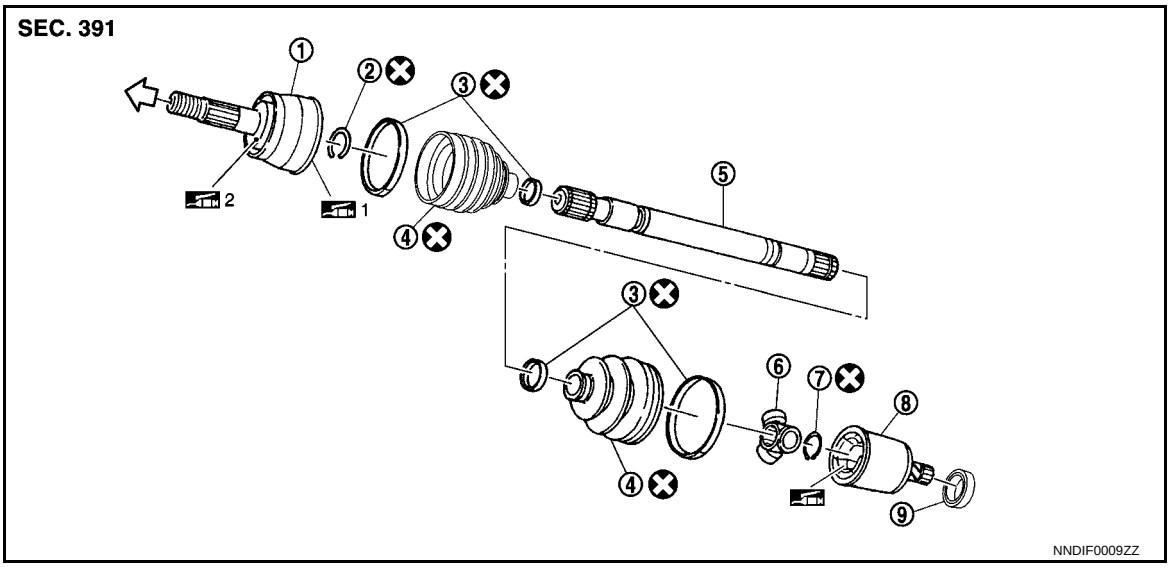
⇦ : Wheel side

1: NISSAN genuine grease or an equivalent.

2: Apply paste [service parts (440037S000)].

Refer to GI-4, "Components" for symbols not described on the above.

RIGHT SIDE



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

⇦ : Wheel side

1: NISSAN genuine grease or an equivalent.

2: Apply paste [service parts (440037S000)].

Refer to GI-4, "Components" for symbols not described on the above.

LEFT SIDE

LEFT SIDE : Removal and Installation (SpecV NHPC)

INFOID:0000000004946556

REMOVAL

1. Remove tires. Refer to WT-88, "Exploded View".
2. Remove under cover. Refer to EXT-36, "FRONT UNDER COVER : Exploded View".
3. Remove steering knuckle. Refer to FAX-10, "Exploded View".
4. Remove stabilizer connecting rod. Refer to FSU-26, "EXCEPT SpecV : Exploded View" (EXCEPT SpecV) or FSU-27, "SpecV : Exploded View" (SpecV).
5. Remove shock absorber. Refer to FSU-14, "EXCEPT SpecV : Exploded View" (EXCEPT SpecV) or FSU-18, "SpecV : Exploded View" (SpecV).
6. Remove mounting bolts, and then remove drive shaft from vehicle.

INSTALLATION

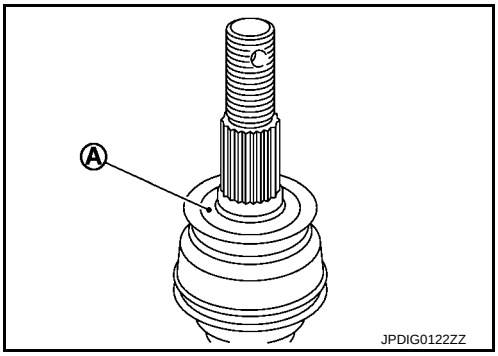
Note the following, and install in the reverse order of the removal.

- When assembling the shaft, never press it, but pull it until fully seated by tightening the wheel hub lock nut.
- Check that anticorrosive oil is applied to the thread of the drive shaft. If not, apply appropriate oil such as engine oil.
- If sufficient oil is not applied to the thread of the drive shaft, the wheel hub lock nut may be seized and the tightening torque reaches the specified limit prematurely. It may cause looseness or abnormal noises.
- Clean the matching surface of drive shaft and wheel hub and bearing assembly, and then apply paste [service parts (440037S000)] to flat surface (A) of joint sub-assembly of drive shaft.

  CAUTION:

  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 0.2 – 1.0 g (0.007 – 0.035 oz)



- Install drive shaft using tightening torque of wheel hub lock nut. Refer to FAX-10, "Exploded View".

  CAUTION:

  Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing wheel hub and bearing assembly and steering knuckle.
- Never reuse cotter pin.

RIGHT SIDE

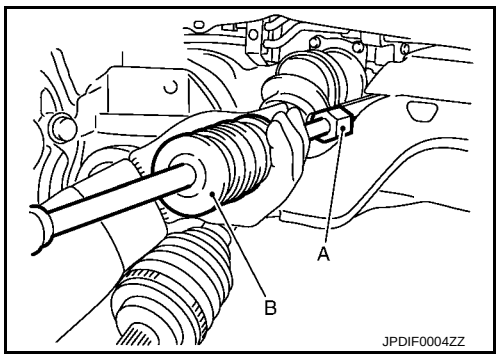
RIGHT SIDE : Removal and Installation (SpecV NHPC)

INFOID:0000000004946557

REMOVAL

1. Remove tires. Refer to WT-88, "Exploded View".
2. Remove under cover. Refer to EXT-37, "FLOOR UNDER COVER : Exploded View".
3. Remove steering knuckle. Refer to FAX-10, "Exploded View".
4. Remove stabilizer connecting rod. Refer to FSU-26, "EXCEPT SpecV : Exploded View" (EXCEPT SpecV) or FSU-27, "SpecV : Exploded View" (SpecV).
5. Remove shock absorber. Refer to FSU-14, "EXCEPT SpecV : Exploded View" (EXCEPT SpecV) or FSU-18, "SpecV : Exploded View" (SpecV).

6. Remove drive shaft from front final drive using the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and front final drive.
CAUTION:
Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.

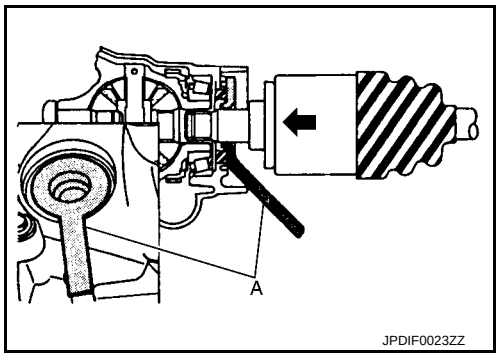


INSTALLATION

Note the following, and install in the reverse order of removal.

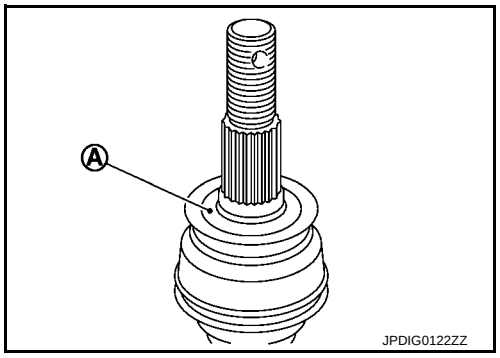
CAUTION:
Always replace final drive oil seal with new one when installing drive shaft. Refer to DLN-89, "RIGHT SIDE : Exploded View (SpecV NHPC)".

- Place the protector (A) (SST: KV38107900) onto final drive to prevent damage to the oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install.



- When assembling the shaft, never press it, but pull it until fully seated by tightening the wheel hub lock nut.
- Check that anticorrosive oil is applied to the thread of the drive shaft. If not, apply appropriate oil such as engine oil.
- If sufficient oil is not applied to the thread of the drive shaft, the wheel hub lock nut may be seized and the tightening torque reaches the specified limit prematurely. It may cause looseness or abnormal noises.
- Clean the matching surface of drive shaft and wheel hub and bearing assembly, and then apply paste [service parts (440037S000)] to flat surface (A) of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 0.2 – 1.0 g (0.007 – 0.035 oz)



- Install drive shaft using tightening torque of wheel hub lock nut. Refer to FAX-10, "Exploded View".
CAUTION:
Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing wheel hub and bearing assembly and steering knuckle.
- Never reuse cotter pin.

WHEEL SIDE

WHEEL SIDE : Disassembly and Assembly (SpecV NHPC)

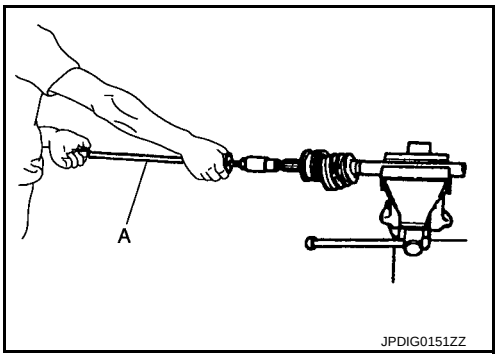
INFOID:0000000004946558

DISASSEMBLY

1. Fix shaft with a vise.
CAUTION:

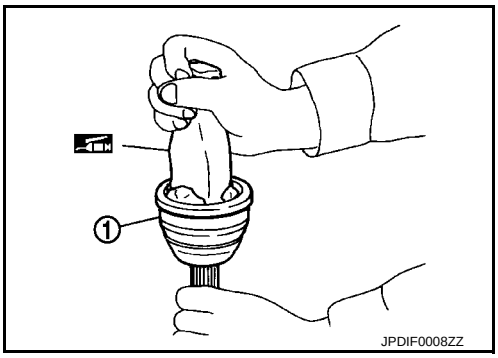
Protect shaft when fixing with a vise using aluminum or copper plates.

2. Remove boot bands, and then remove boot from joint sub-assembly.
3. Screw drive shaft puller (A) (commercial service tool) 30 mm (1.18 in) or more into the thread of joint sub-assembly, and remove joint sub-assembly from shaft.
   CAUTION:
   - **Align drive shaft puller and drive shaft and remove them by pulling firmly and uniformly.**
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
4. Remove circular clip from shaft.
5. Remove boot from shaft.

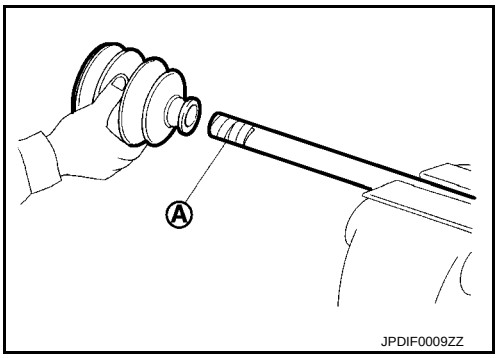


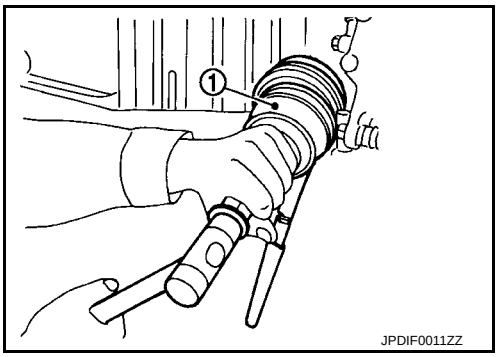
ASSEMBLY

1. Clean the old grease on joint sub-assembly with paper waste.
2. Fill serration slot joint sub-assembly (1) with NISSAN genuine grease or equivalent until the serration slot and ball groove become full to the brim.
   CAUTION:
   After applying grease, use a paper waste to wipe it out old grease that has oozed out.



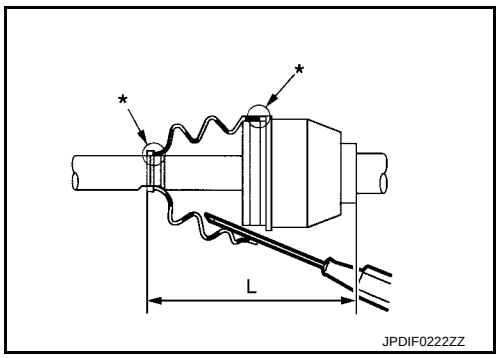
3. Install boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape (A) to protect the boot from damage.**
   - **Never reuse boot and boot band.**
4. Remove the tape wrapped around the serration on shaft.
5. Position circular clip on groove at the shaft edge.
   CAUTION:
   Never reuse circular clip.
   NOTE:
   Drive joint inserter is recommended when installing circular clip.
6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.
7. Install joint sub-assembly (1) to shaft using plastic hammer.
   CAUTION:
   Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.
8. Apply the specified amount of grease into the boot inside from large diameter side of boot.





Grease amount : Refer to FAX-26, "Drive Shaft (NHPC)".

9. Install the boot securely into grooves (indicated by "*" marks) shown in the figure.
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or joint sub-assembly, boot may come off. Remove all grease from the surface.

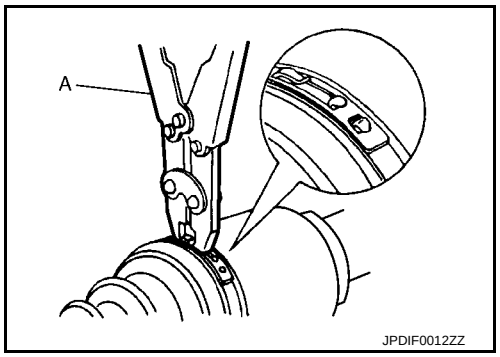


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the specified value shown below by inserting the suitable tool into inside of the boot from the large diameter side of the boot and discharging the inside air.

L : Refer to FAX-26, "Drive Shaft (NHPC)".

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

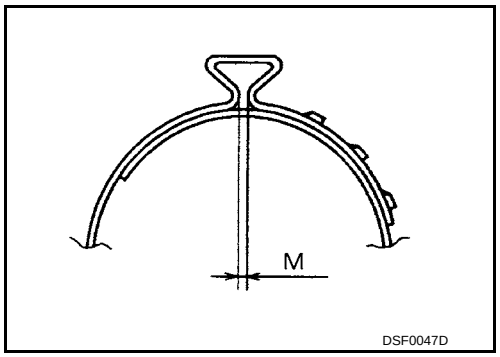
11. Secure the ends of the boot with boot bands using the boot band crimping tool (A) (SST: KV40107300).
CAUTION:
Never reuse boot band.



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

M : 2.0 – 3.0 mm (0.079 – 0.118 in)

12. Secure joint sub-assembly and shaft, and then check that they are in the correct position when rotating boot. Install them with boot band when boot installation positions become incorrect.
CAUTION:
Never reuse boot band.



FINAL DRIVE SIDE

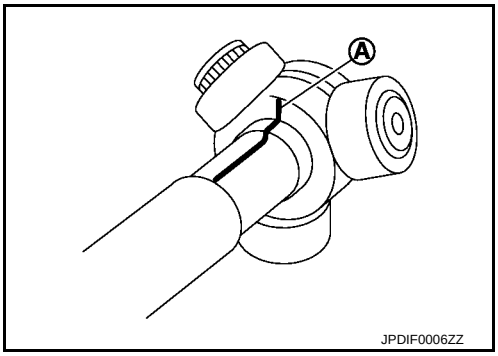
FINAL DRIVE SIDE : Disassembly and Assembly (SpecV NHPC)

INFOID:0000000004946559

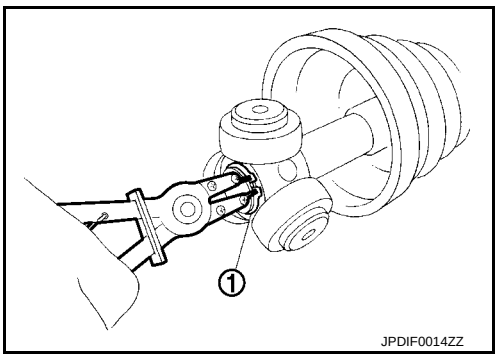
DISASSEMBLY

1. Fix shaft with a vise.
CAUTION:
Protect shaft when fixing with a vise using aluminum or copper plates.
2. Remove boot bands, and then remove boot from housing.
3. If plug needs to be removed, remove with a screw. (Left side)
4. Remove dust shield. (Right side)
5. Put matching marks on housing and shaft, and then pull out housing from shaft.
CAUTION:
Use paint or similar substance for matching marks. Never scratch the surfaces.

6. Put matching marks (A) on the spider assembly and shaft.
   CAUTION:
   Use paint or similar substance for matching marks. Never scratch the surfaces.

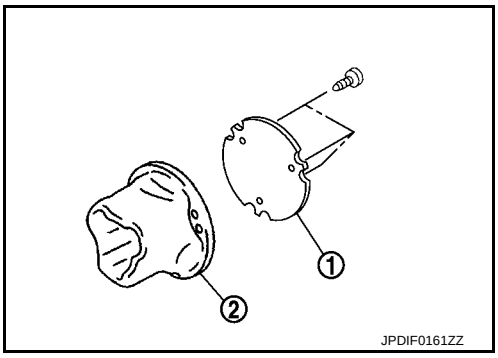


7. Remove snap ring (1), and then remove spider assembly from the shaft.
8. Remove boot from the shaft.

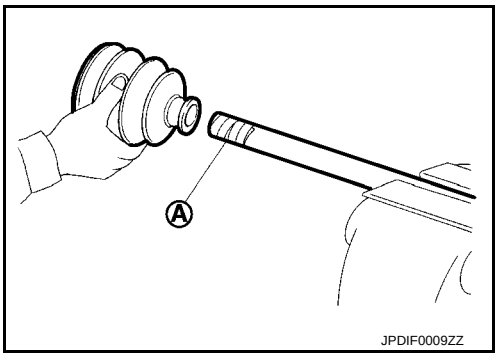


ASSEMBLY

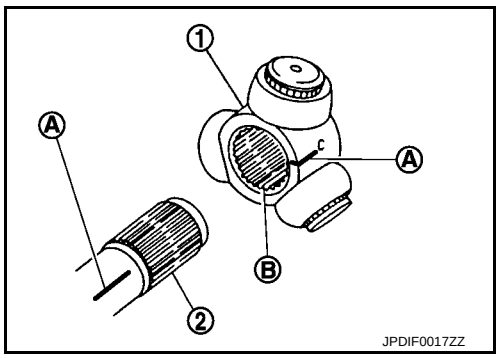
1. Clean old grease on housing with paper waste.
2. Plug (1) has been removed, install a plug to housing (2) with a screw. (Left side)
3. Install dust shield to housing. (Right side)
   CAUTION:
   Never reuse dust shield.



4. Install boot and boot bands to shaft.
   CAUTION:
   - **Wrap serration on shaft with tape (A) to protect boot from damage.**
   - **Never reuse boot and boot band.**
5. Remove the tape wrapped around the serration on shaft.

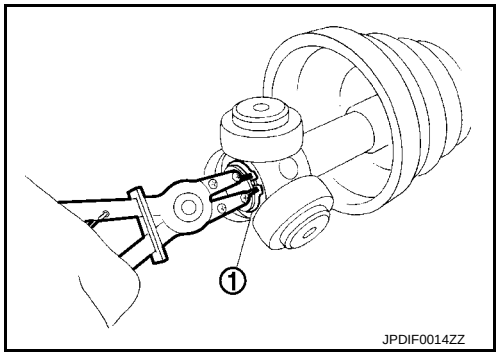


6. Install the spider assembly (1), align it with the matching marks (A) on the shaft (2) during the removal, and direct the serration mounting surface (B) to the shaft.

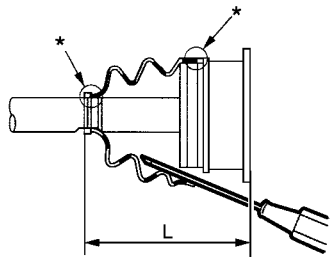
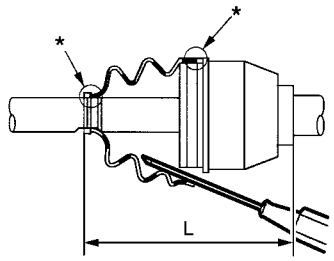


7. Assemble spider assembly onto shaft with snap ring (1).
   CAUTION:
   Never reuse snap ring.
8. Apply the appropriate amount of grease to spider assembly and sliding surface.
9. Assemble the housing onto spider assembly, and apply the specified amount grease.

   Grease amount : Refer to FAX-26, "Drive Shaft (NHPC)".



10. Align matching marks painted when housing was removed.
11. Install the boot into grooves (indicated by “*” marks) shown in the figure.
    CAUTION:
    If grease adheres to the boot mounting surface (indicated by “*” mark) on shaft or housing, boot may come off. Remove all grease from the surface.

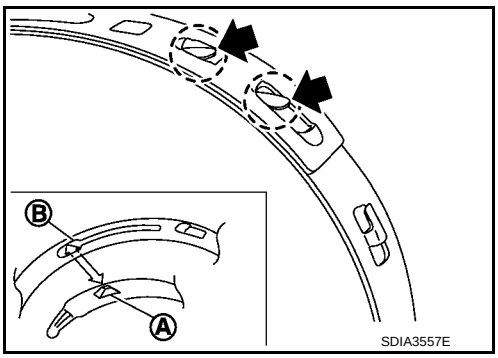
Left side	Right side
	

12. 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.

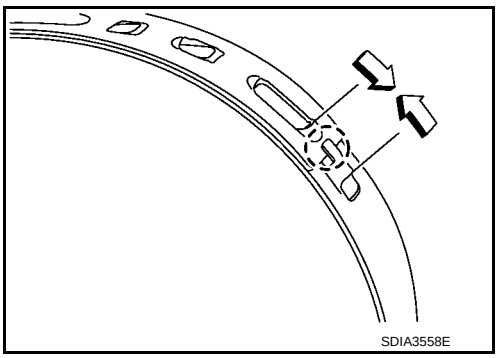
    L : Refer to FAX-26, "Drive Shaft (NHPC)".

    CAUTION:
    - **If the boot installation length is outside the standard, it may cause breakage of the boot.**
    - **Be careful not to touch the inside of the boot with the tip of tool.**
13. Install boot bands.
    CAUTION:
    Never reuse boot band.

a. Put boot band in the groove on drive shaft boot. Then fit pawls (⬅) into holes to temporary installation.
NOTE:
For the large diameter side, fit projection (A) and guide slit (B) at first.



b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.
14. Secure housing and shaft, and then check that they are in the correct position when rotating boot. Install them with boot band when the mounting positions become incorrect.

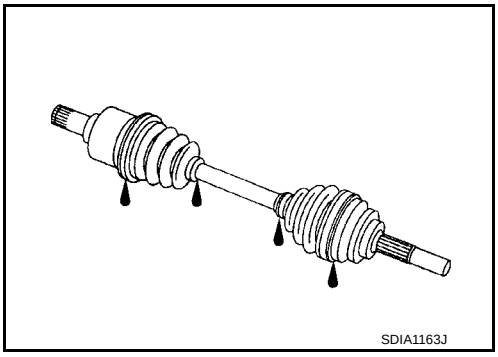


Inspection (SpecV NHPC)

INFOID:0000000004946560

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 abnormal condition.



INSPECTION AFTER INSTALLATION

1. Check shock absorber actuator harness connector for proper connection (EXCEPT SpecV). Refer to FSU-14, "EXCEPT SpecV : Removal and Installation (NHPC)".
2. Check wheel sensor harness for proper connection. Refer to BRC-137, "FRONT WHEEL SENSOR : Exploded View (NHPC)".
3. Check the wheel alignment. Refer to FSU-10, "Inspection".
4. Adjust neutral position of steering angle sensor. Refer to BRC-10, "ADJUSTMENT OF STEERING ANGLE SENSOR NEUTRAL POSITION : Special Repair Requirement (NHPC)".

INSPECTION AFTER DISASSEMBLY

Shaft

Check shaft for runout, cracks and other damage. Replace it if necessary.

Joint Sub-Assembly (Wheel Side)

Check the following items, replace the parts if necessary.

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

Replace joint sub-assembly if there are any abnormal conditions of components.

Housing and Spider assembly (Final Drive side)

Replace housing and spider assembly if there is scratching or wear of housing roller contact surface or spider roller contact surface.

NOTE:

Housing and spider assembly are used in a set.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing (NHPC)

INFOID:0000000004946561

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

Drive Shaft (NHPC)

INFOID:0000000004946562

Item		Left side	Right side
Grease quantity	Wheel side	77 – 97 g (2.72 – 3.42 oz)	
	Final drive side	95 – 105 g (3.36 – 3.70 oz)	113 – 123 g (3.99 – 4.33 oz)
Boots installed length	Wheel side	136 mm (5.35 in)	135.5 mm (5.33 in)
	Final drive side	151.9 mm (5.98 in)	158.6 mm (6.24 in)