SECTION FAX
FRONT AXLE

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010824368

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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:0000000010824369

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- **Before removing and installing any control units, first turn the ignition power source and accessory power source to the OFF, 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 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.**

For vehicle with 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 operation 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. Open driver door.
3. Turn the ignition switch to the ON position.
   (At this time, the steering lock will be released.)
4. Turn the ignition switch to OFF position with driver door open.
5. Wait for 3 minutes or longer with driver door open.
   NOTE:
   - Do not close driver door because the steering wheel locks when driver door is closed.

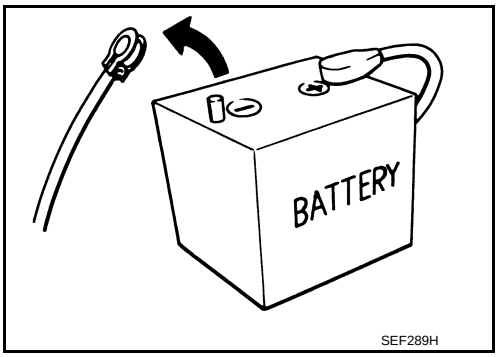
- The auto acc function is adapted to this vehicle. For this reason, even when the ignition switch is turned to OFF position, the accessory power source does not turned OFF and continues to be supplied for a certain amount of time.

6. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
7. Perform the necessary repair operation.
8. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from OFF position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
9. Perform self-diagnosis check of all control units using CONSULT.

Precautions for Removing Battery Terminal

INFOID:0000000010921119

- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.
  NOTE:
  Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.
- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.



HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.
For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

1. Open the hood.
2. Turn key switch to the OFF position with the driver side door opened.
3. Get out of the vehicle and close the driver side door.
4. Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

5. Remove 12V battery terminal.
   CAUTION:
   After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

1. Unlock the door with intelligent key or remote keyless entry.

NOTE:
At this moment, ACC power is supplied.

2. Open the driver side door.
3. Open the hood.
4. Close the driver side door.
5. Wait at least 3 minutes.
   CAUTION:
   While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.
6. Remove 12V battery terminal.
   CAUTION:
   After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

Precautions for Drive Shaft

INFOID:0000000010824371

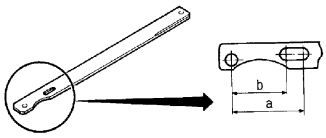
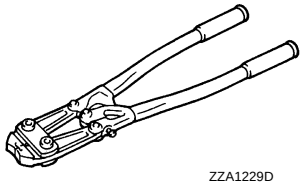
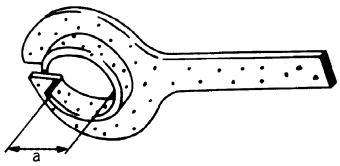
CAUTION:
Note the following precautions when disassembling and assembling drive shaft.
- **Joint sub-assembly does not disassemble because it is non-overhaul parts.**
- **Perform work in a dust-free location.**
- **Before disassembling and assembling, clean the parts.**
- **Prevent the entry of foreign objects 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 waste 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 waste.**

PREPARATION

PREPARATION

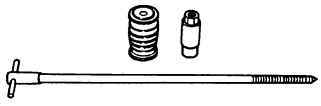
Special Service Tool

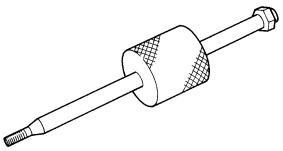
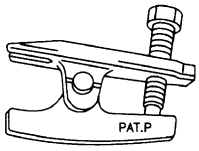
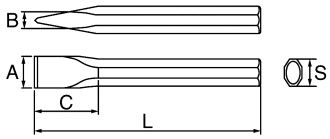
INFOID:0000000010824372

Tool number Tool name	Description
KV40104000 Hub lock nut wrench a: 85 mm (3.35 in) b: 65 mm (2.56 in)  ZZA0802D	Removing and Installing wheel hub lock nut.
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

INFOID:0000000010824373

Tool name	Description
Drive shaft puller  JPDIG0152ZZ	Removing drive shaft joint sub assembly

Sliding hammer  ZZA0023D	Removing drive shaft
Ball joint remover  NT146	Removing hub bolt
Chisel  JSEIA0915ZZ	Removing and installing steering knuckle and strut assembly A: 16 – 32 mm (0.63 – 1.26 in) B: 10 mm (0.39 in) or more C: 40 – 70 mm (1.57 – 2.76 in) L: 220 mm (7.87 in) or less S: 14 mm (0.55 in) or more

Lubricant or/and Sealant

INFOID:0000000010824374

Name	Description
Fill NISSAN Genuine grease or equivalent	• Joint sub-assembly inside • Housing inside
Apply paste [service parts (440037S000)]	• Joint sub-assembly

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000010824375

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

Reference			—	FAX-46, FAX-60	—	FAX-11	—	FAX-9	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

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000010824376

COMPONENT PART

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

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

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

- 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-62, "Wheel Bearing".

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

FRONT DRIVE SHAFT

Inspection

INFOID:0000000010824377

FRONT DRIVE SHAFT INSPECTION

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

- Check drive shaft mounting point and joint for looseness and other damage.
  CAUTION:
  Replace entire drive shaft assembly when noise or vibration occur from drive shaft.
- Check boot for cracks and other damage.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

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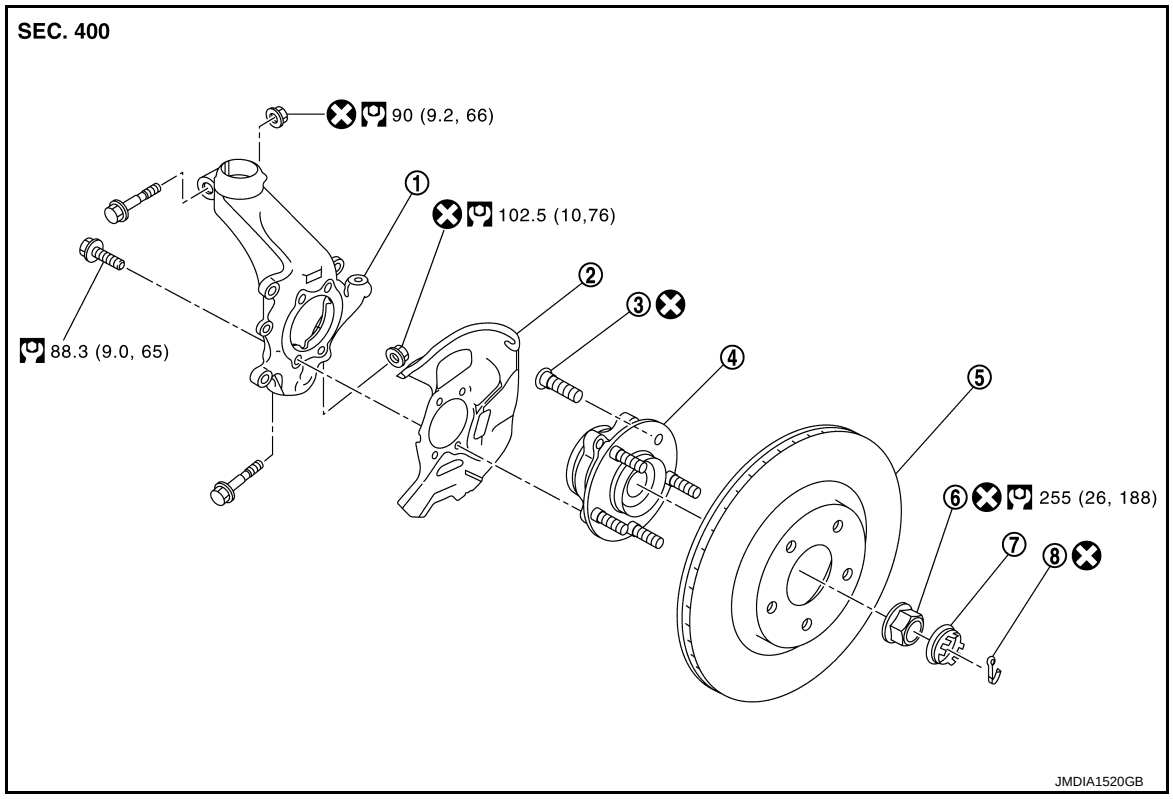


① Steering knuckle
② Splash guard
③ Hub bolt
④ Wheel hub and bearing assembly
⑤ Disc rotor
⑥ Wheel hub lock nut
⑦ Adjusting cap
⑧ Cotter pin

: N·m (kg-m, ft-lb)

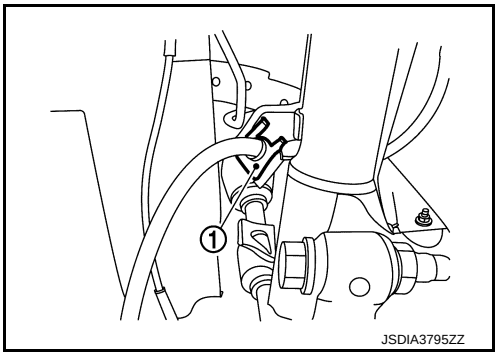
: Always replace after every disassembly.

Removal and Installation

INFOID:0000000010824379

REMOVAL

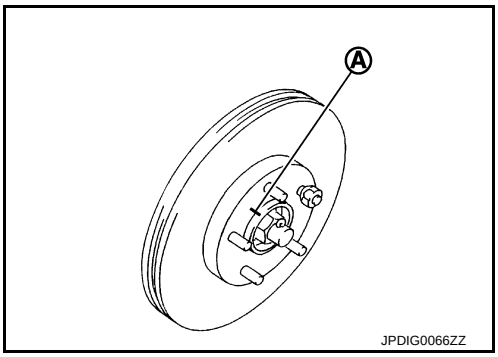
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove front wheel sensor from steering kunckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".



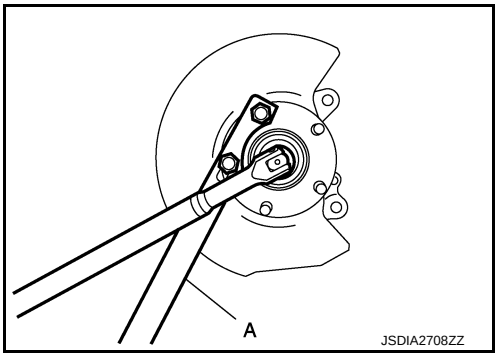
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor.

   CAUTION:
   - **Put matching marks Ⓐ on the wheel hub and bearing assembly and the disc rotor before removing the disc rotor.**
   - **Never drop disc rotor.**

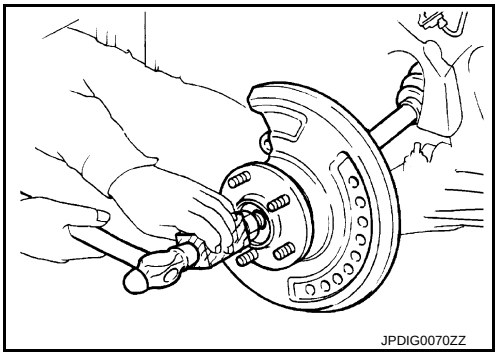


6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.

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



8. Remove wheel hub lock nut.
9. Remove wheel hub and bearing assembly.
10. Remove splash guard.
11. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
12. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
13. Separate the connection of strut assembly and steering knuckle as follows.

    CAUTION:

Be sure to keep the following procedure because steering knuckle may be damaged when you enlarge the gap of steering knuckle too much.

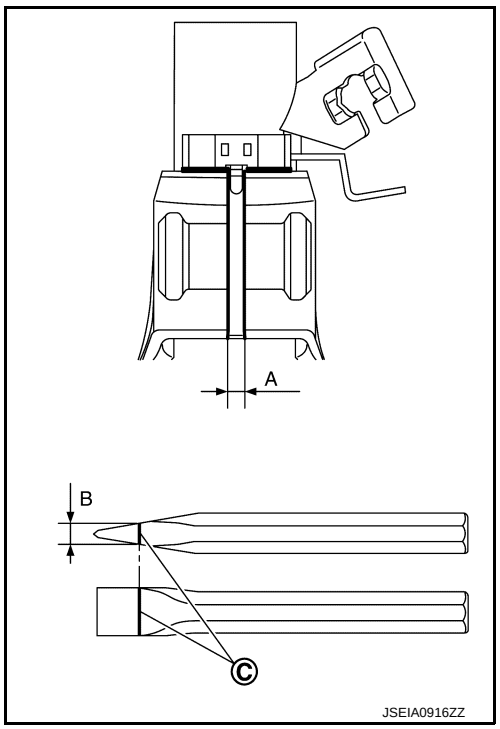
a. Remove strut mounting bolts from steering knuckle.

b. Measure the gap (A) of the steering knuckle. And then mark the enlarged limit (B) to the chisel.

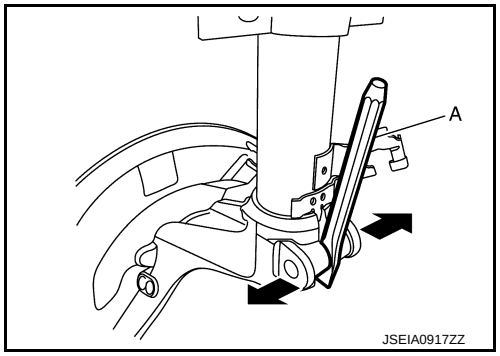
Ⓒ Marking

Enlarged limit (B) = gap (A) + 2.5 mm (0.098 in)

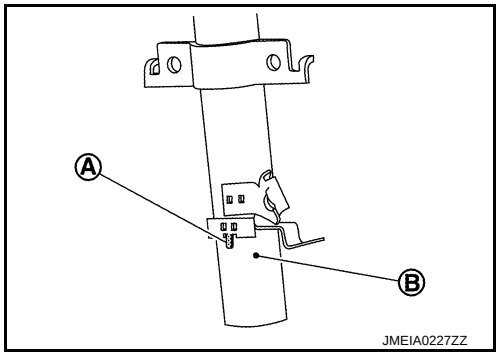
NOTE:
Standard of gap: 6.9 ± 0.5 mm (2.56 ± 0.02 in)



c. Enlarge the gap of the steering knuckle with the chisel (A) (commercial service tool) not to surpass a limit as shown in the figure.
CAUTION:
- **Never enlarge the gap more than 2.5mm (0.098in).**

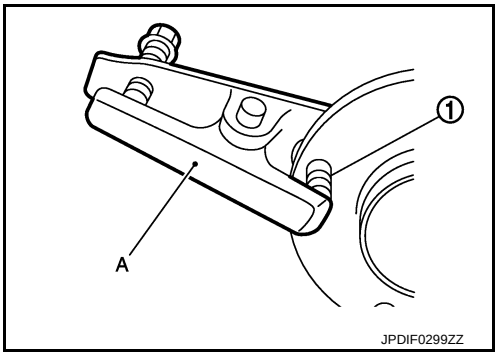


- **Be careful not to damage the projection Ⓐ and strut assembly Ⓑ with the chisel.**



d. Separate the connection of strut assembly and steering knuckle.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**
- **Never allow drive shaft to hang down without support for joint sub-assembly, shaft and the other parts.**
- **Be sure to remove lubricants if lubricant has been used to separate the connection of strut assembly and steering knuckle.**

14. Remove hub bolts ① from wheel hub and bearing assembly, using the ball joint remover (A) (commercial service tool).
CAUTION:
- **Remove hub bolt only when necessary.**
- **Never hammer the hub bolt to avoid impact to the wheel hub and bearing assembly.**
- **Pull out the hub bolt in a direction perpendicular to the wheel hub and bearing assembly.**



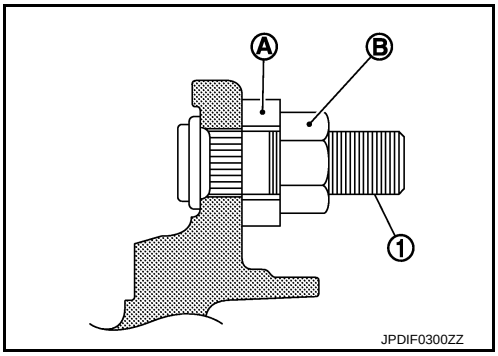
15. Perform inspection after removal. Refer to FAX-16, "Inspection".

INSTALLATION

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

Hub Bolts

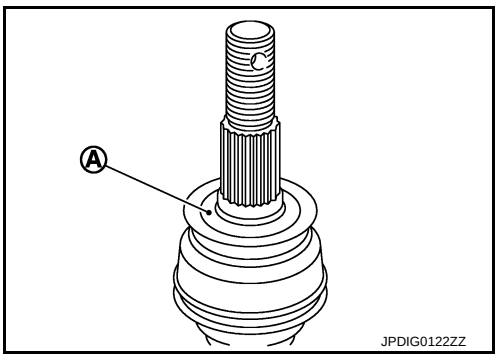
- Place a washer Ⓐ as shown in the figure to install the hub bolts ① by using the tightening force of the nut Ⓑ.
CAUTION:
- **Check that there is no clearance between wheel hub and bearing assembly, and hub bolt.**
- **Never reuse hub bolt.**



Drive shaft

- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
CAUTION:
Never apply lubricating oil to these matching surface.
- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

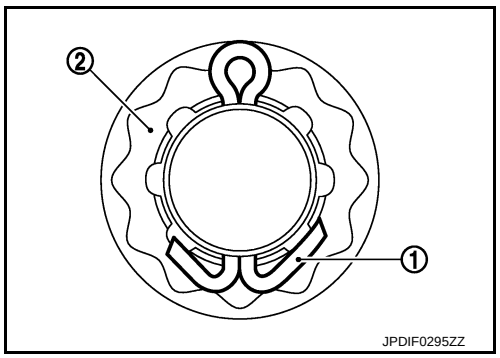
Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

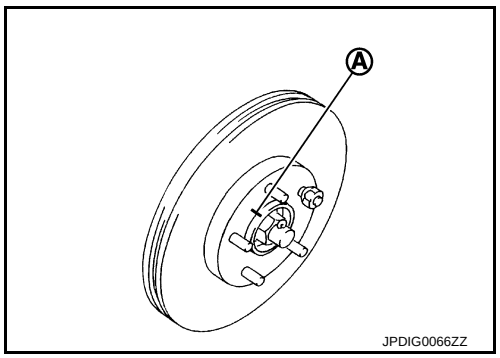
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.

CAUTION:
Never reuse cotter pin.



Disc rotor

CAUTION:
- **Align the matching marks Ⓐ made during removal when reusing the disc rotor.**
- **Never drop disc rotor.**

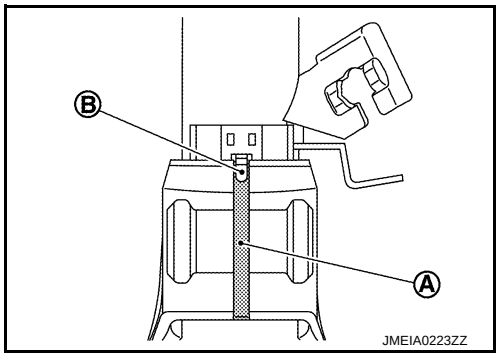


Strut Assembly and Steering Knuckle Connection

CAUTION:
Be sure to remove lubricants if lubricant has been used to separate the connection of strut assembly and steering knuckle.

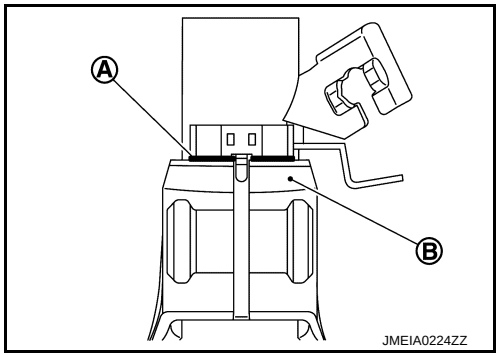
- Install the steering knuckle to strut assembly as follows.

1. Set suitable jack under steering knuckle.
2. Align the gap Ⓐ of steering knuckle to the projection part Ⓑ of strut.



3. Tighten the mounting bolt with pushing up the steering knuckle Ⓑ until contacts stopper bracket Ⓐ end face, using a suitable jack.

CAUTION:
Check the stable condition when using a jack.



- Perform inspection after installation. Refer to FAX-16, "Inspection".

Inspection

INFOID:0000000010824380

INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

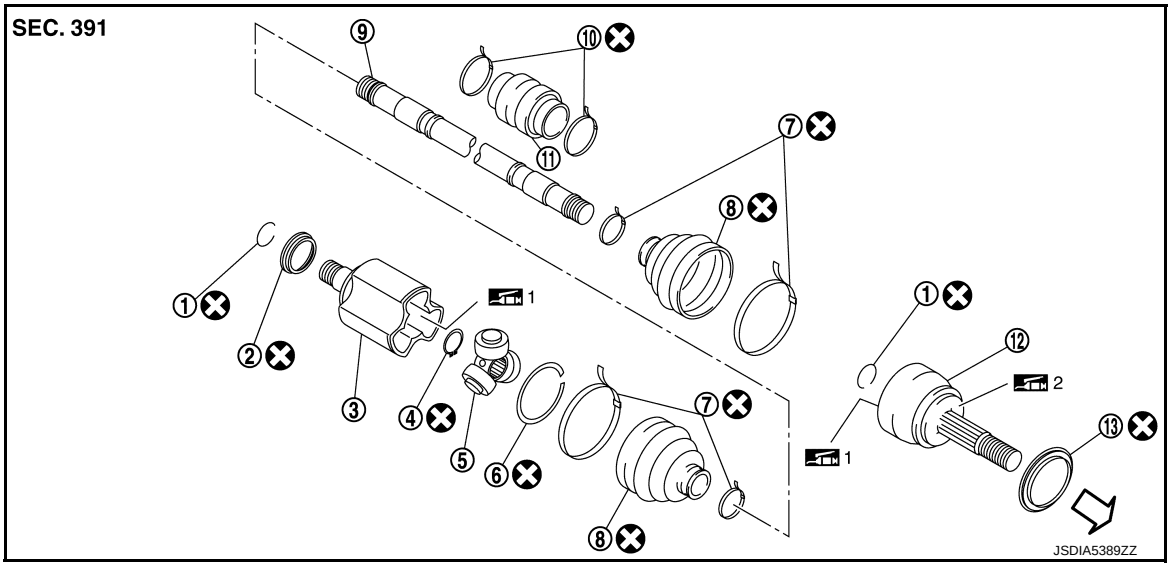
FRONT DRIVE SHAFT BOOT

MR20DD

MR20DD : Exploded View

INFOID:0000000010824381

LEFT SIDE



① Circular clip
② Dust shield
③ Housing
④ Snap ring
⑤ Spider assembly
⑥ Stopper ring
⑦ Boot band
⑧ Boot
⑨ Shaft
⑩ Damper band
⑪ Dynamic damper
⑫ Joint sub-assembly
⑬ Dust shield

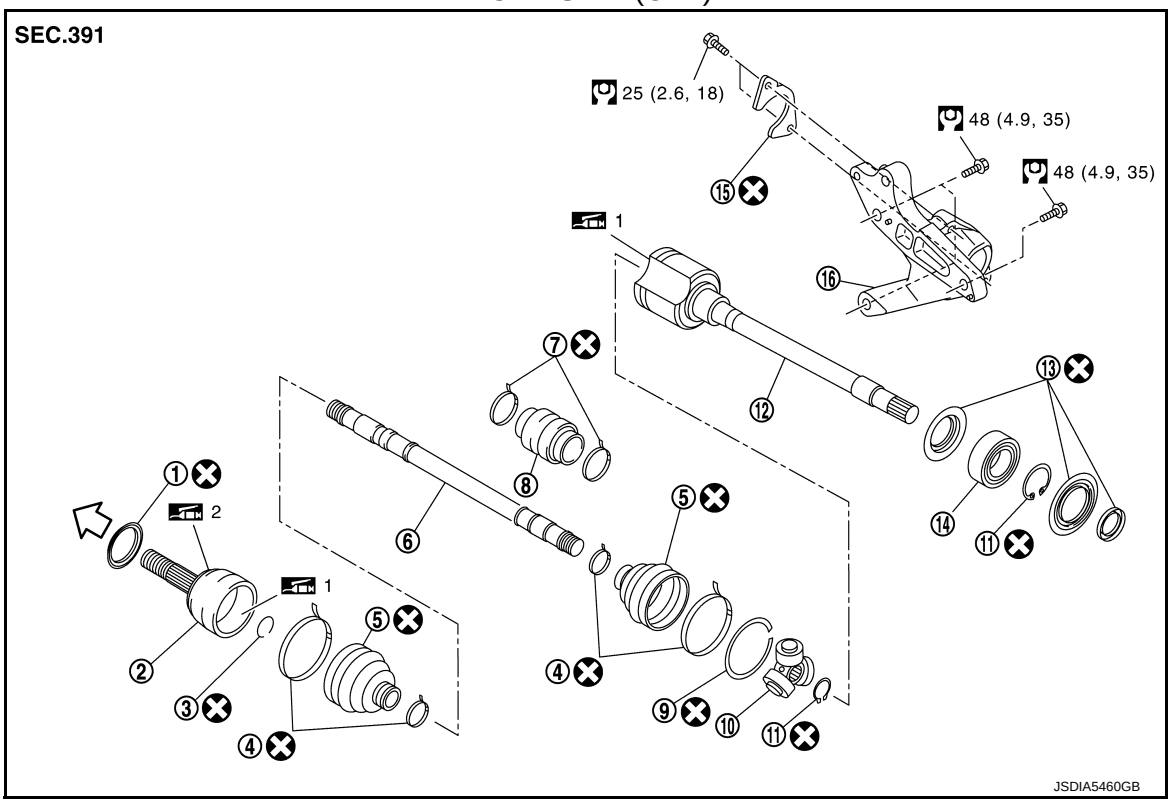
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE (CVT)



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Damper band
⑧ Dynamic damper
⑨ Stopper ring
⑩ Spider assembly
⑪ Snap ring
⑫ Housing
⑬ Dust shield
⑭ Support bearing
⑮ Retainer
⑯ Support bearing bracket

⇦ : Wheel side

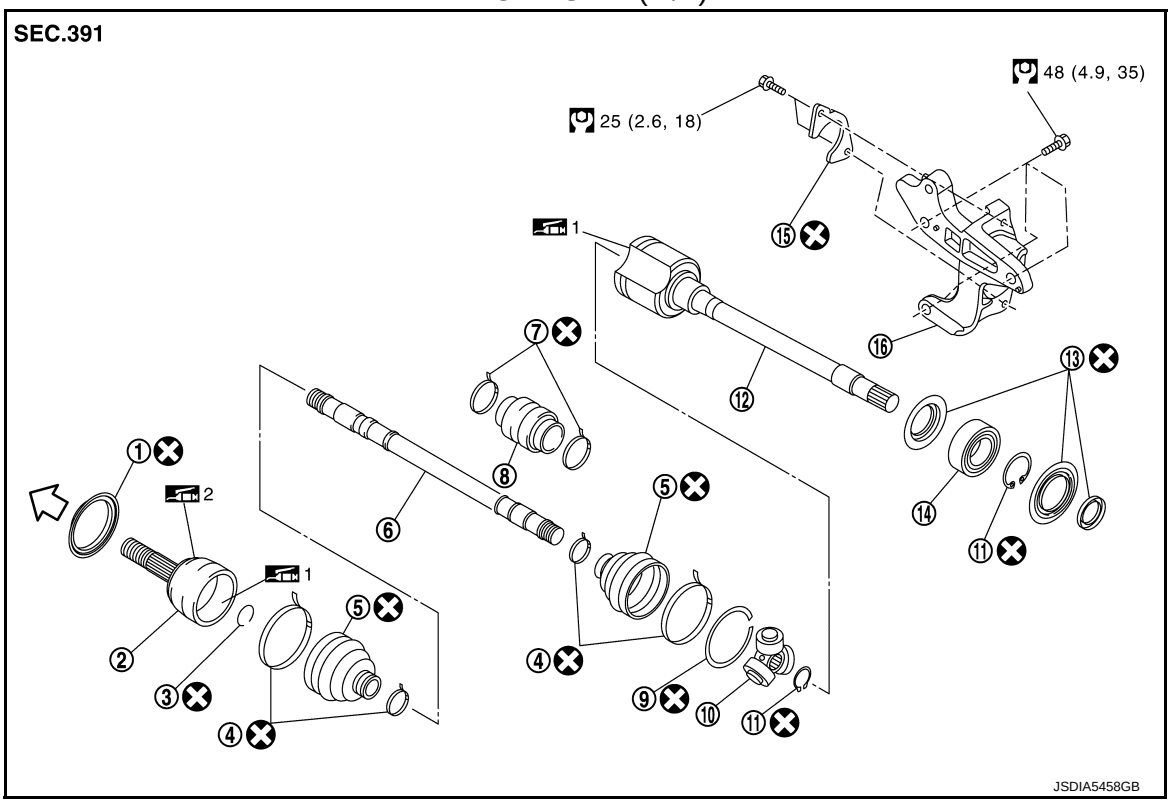
1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

RIGHT SIDE (M/T)



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Damper band	⑧ Dynamic damper	⑨ Stopper ring
⑩ Spider assembly	⑪ Snap ring	⑫ Housing
⑬ Dust shield	⑭ Support bearing	⑮ Retainer
⑯ Support bearing bracket		

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

MR20DD : Removal and Installation

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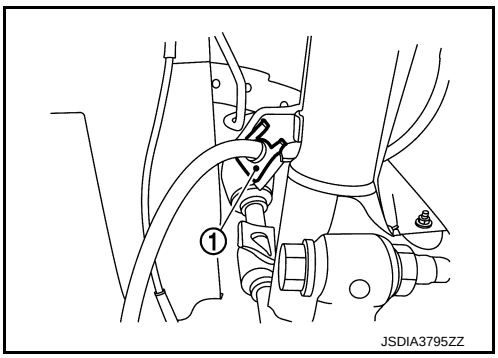
REMOVAL

Wheel Side

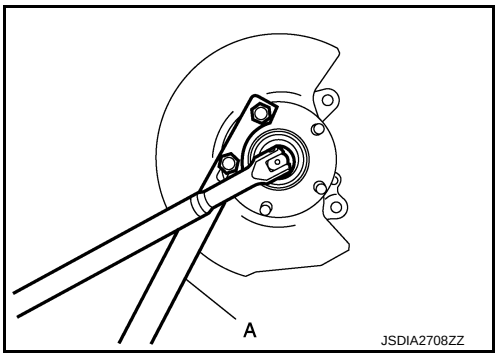
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

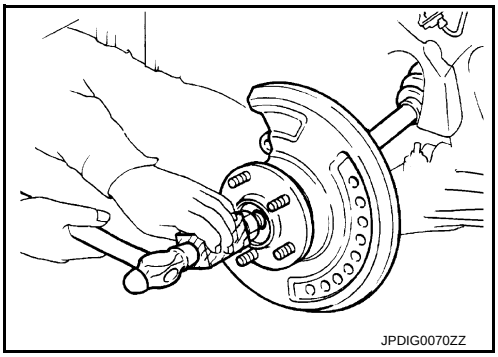


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

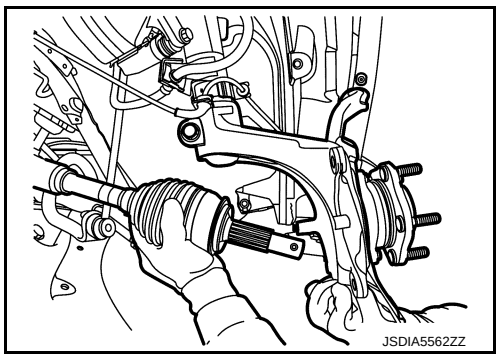


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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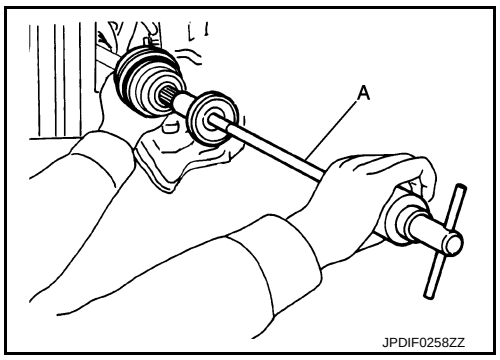
12. Remove boot bands, and then separate boot from joint sub-assembly.
13. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
CAUTION:
- **Align sliding hammer and drive shaft and remove them by pulling directory.**
- **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle. Refer to FAX-42, "MR20DD : Disassembly and Assembly".**



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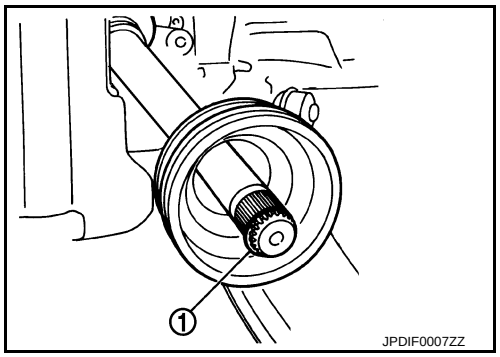
14. Remove circular clip ① from shaft.



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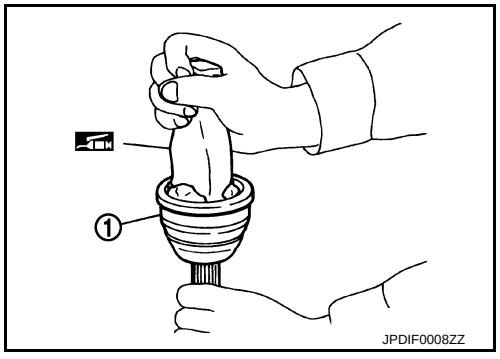
15. Remove boot from shaft.

Transaxle Side
Remove boot after removing drive shaft.
- Remove: Refer to FAX-36, "MR20DD : Removal and Installation".
- Disassembly: Refer to FAX-42, "MR20DD : Disassembly and Assembly".

INSTALLATION

Wheel Side

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 shop cloth to wipe off old grease that has oozed out.



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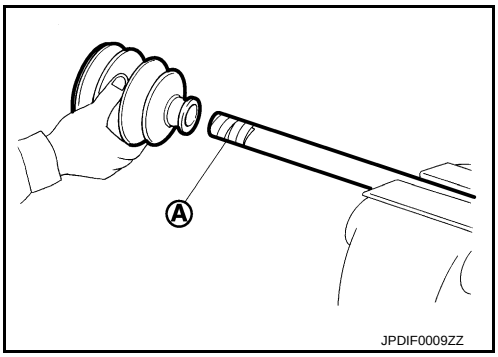
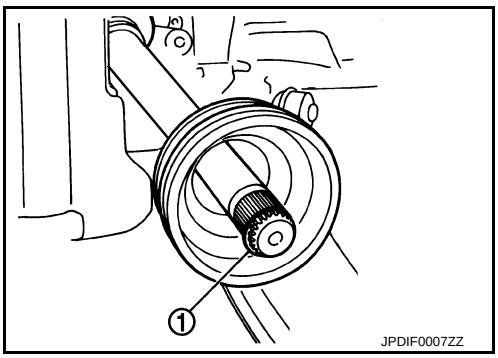
3. Install boot and boot bands to shaft.
CAUTION:
- **Never reuse boot and boot band.**
- **Wrap serration on shaft with tape Ⓐ to protect the boot from damage.**

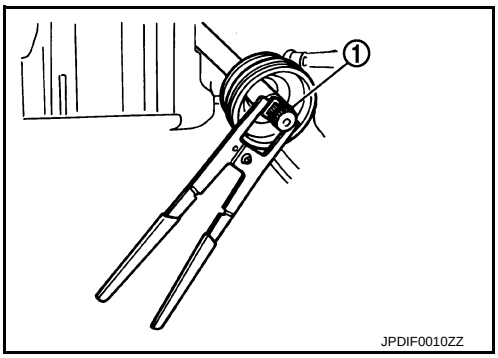


4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip ① on groove at the shaft edge.
CAUTION:
Never reuse circular clip.

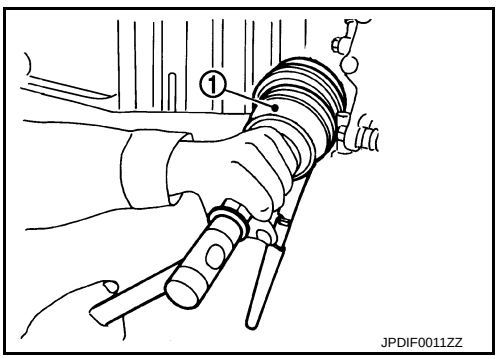


NOTE:
Drive joint inserter is recommended when installing circular clip ①.



6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.

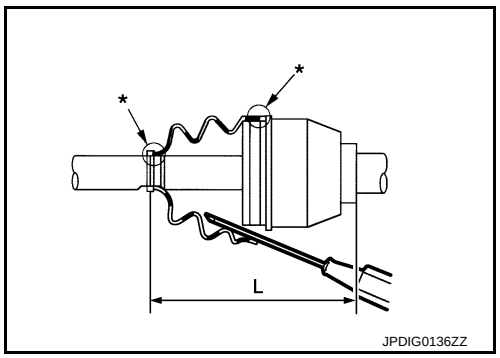
7. Install joint sub-assembly ① to shaft using plastic hammer.
CAUTION:
- **Check circular clip is properly positioned on groove of the joint sub-assembly.**
- **Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.**



8. Fill into the boot inside with the specified amount of grease from large diameter side of boot.

Grease amount : Refer to FAX-62, "Drive Shaft".

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



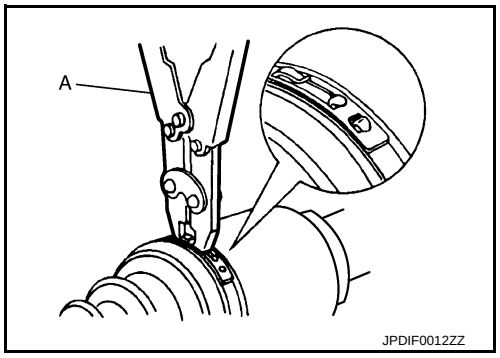
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or joint subassembly. boot may be removed. Remove all grease from the boot mounting surface.

10. To prevent the deformation of the boot, adjust the boot installation length (L) to the 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-62, "Drive Shaft".

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

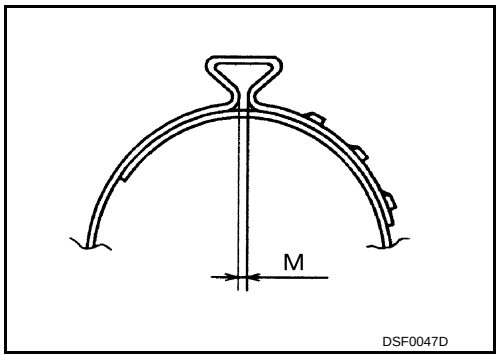
11. Secure the large and small ends of the boot with boot bands using the boot band crimping tool (A) (SST: KV40107300).



CAUTION:
Never reuse boot band.

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

M : 1.0 – 4.0 mm (0.039 – 0.157 in)



12. Check that displacement does not occur when boot is rotated with the joint sub-assembly and shaft fixed.

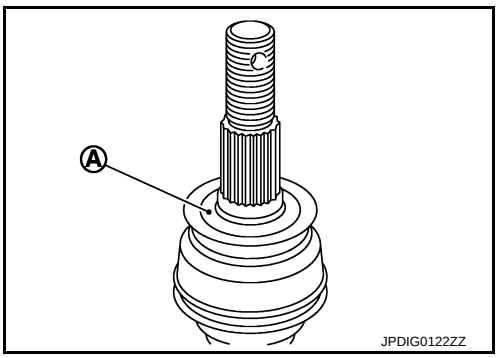
CAUTION:
- **Reinstall them using boot bands when boot installation positions become incorrect.**
- **Never reuse boot band.**

13. Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

14. Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

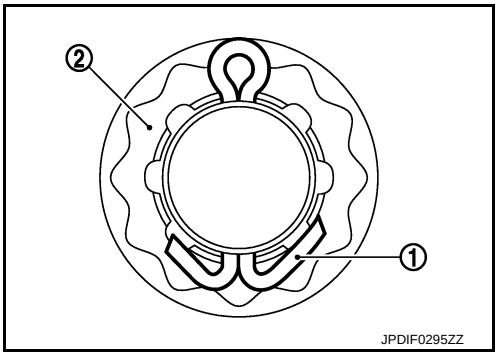


15. Insert drive shaft to wheel hub and bearing assembly, and then temporarily tighten wheel hub lock nut.
CAUTION:
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

16. Install transverse link to steering knuckle and front suspention member. Refer to FSU-17, "Exploded View".
17. Install steering outer socket to steering knuckle.
- LHD: Refer to ST-20, "LHD : Exploded View".
- RHD: Refer to ST-21, "RHD : Exploded View".

18. Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

19. When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
CAUTION:
Never reuse cotter pin.



20. Install disc rotor. Refer to FAX-11, "Removal and Installation".
21. Install caliper assembly to steering knuckle.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

22. Install lock plate to strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

23. Install wheel sensor to steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
24. Install tires to vehicle.Refer to WT-61, "Removal and Installation".
25. Perform inspection after installation. Refer to FAX-25, "MR20DD : Inspection".

Transaxle Side
- Installation: Refer to FAX-36, "MR20DD : Removal and Installation".

- Assembly: Refer to FAX-42, "MR20DD : Disassembly and Assembly".

MR20DD : Inspection

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INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

R9M

R9M : Exploded View

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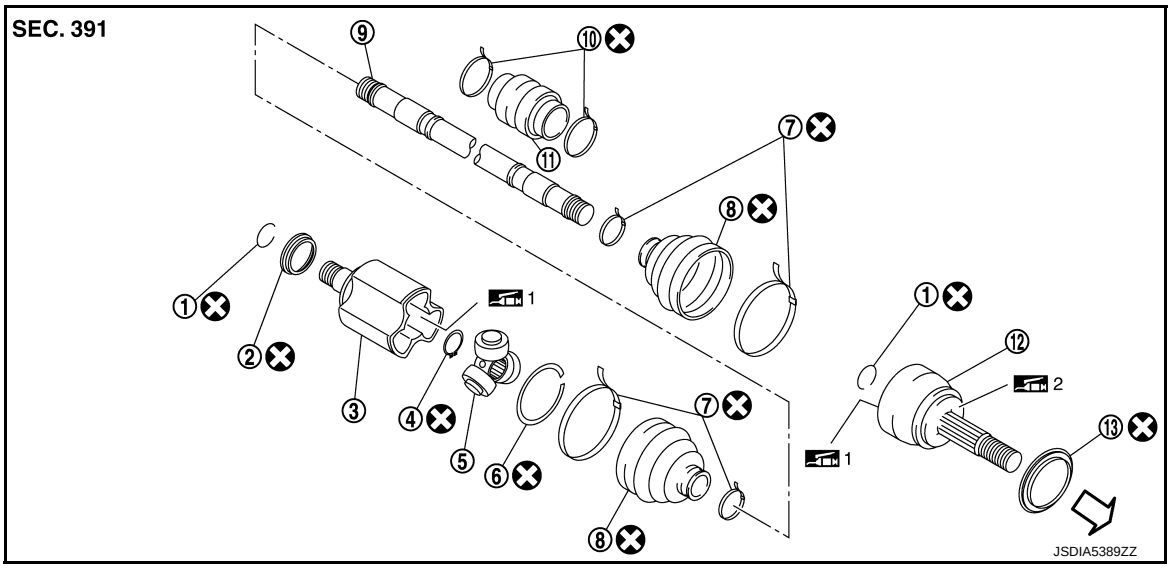
LEFT SIDE



① Circular clip	② Dust shield	③ Housing
④ Snap ring	⑤ Spider assembly	⑥ Stopper ring
⑦ Boot band	⑧ Boot	⑨ Shaft
⑩ Damper band	⑪ Dynamic damper	⑫ Joint sub-assembly
⑬ Dust shield		

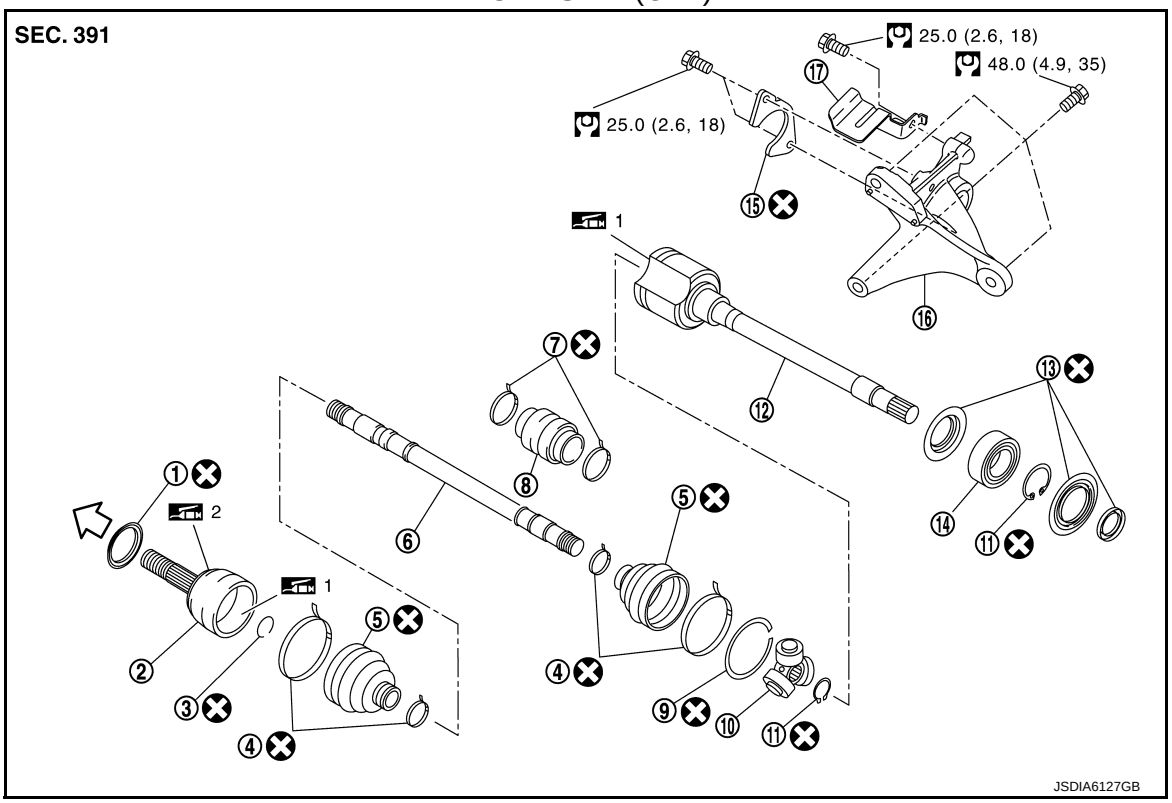
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE (CVT)



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Damper band
⑧ Dynamic damper
⑨ Stopper ring
⑩ Spider assembly
⑪ Snap ring
⑫ Housing
⑬ Dust shield
⑭ Support bearing
⑮ Retainer
⑯ Support bearing bracket
⑰ Heat insulator

⇦ : Wheel side

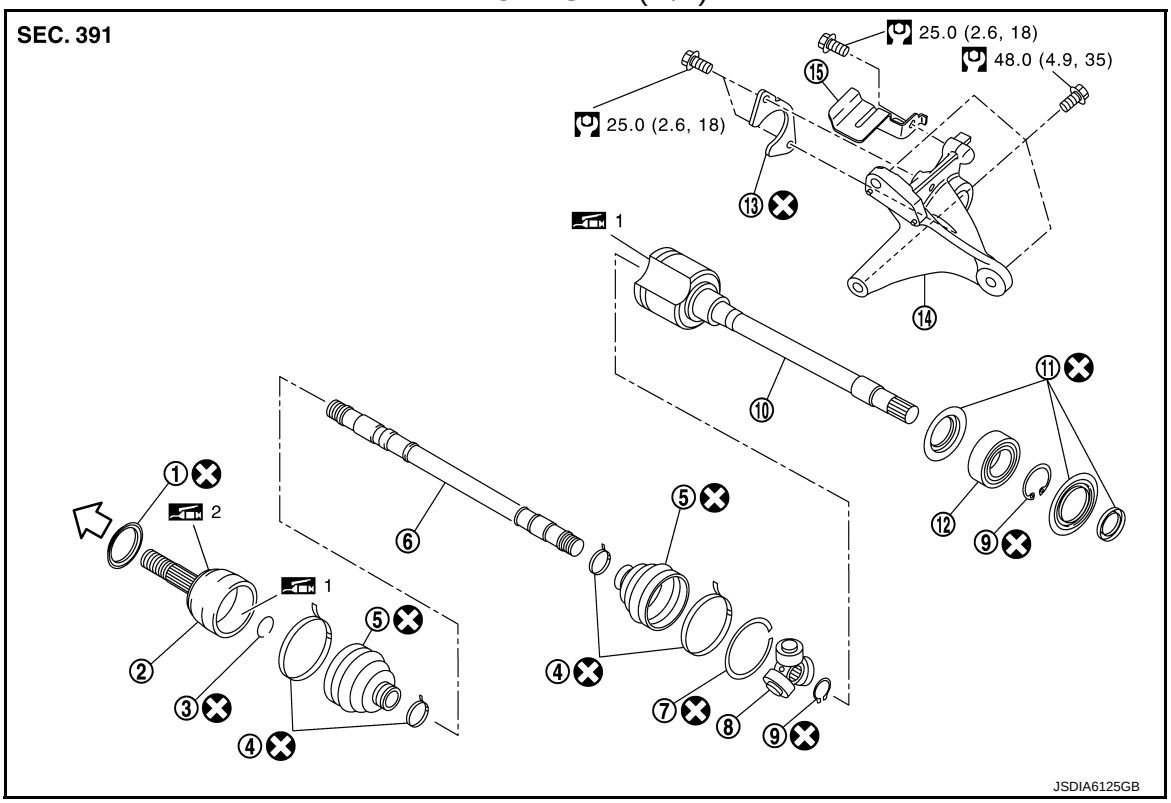
1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

RIGHT SIDE (M/T)



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Stopper ring	⑧ Spider assembly	⑨ Snap ring
⑩ Housing	⑪ Dust shield	⑫ Support bearing
⑬ Retainer	⑭ Support bearing bracket	⑮ Heat insulator

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

R9M : Removal and Installation

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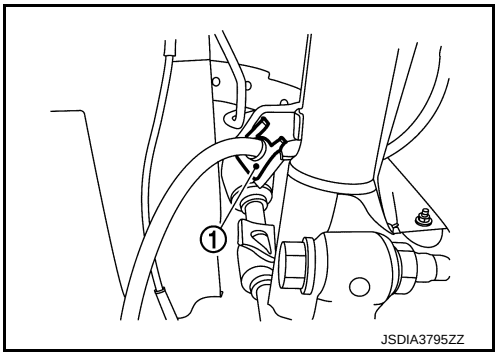
REMOVAL

Wheel Side

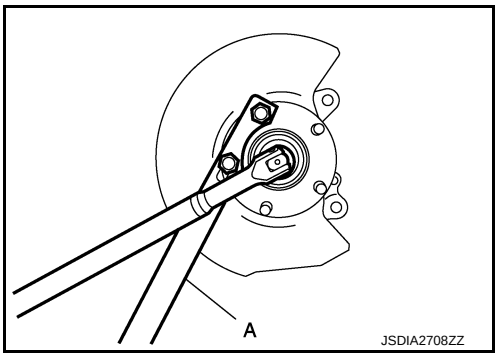
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

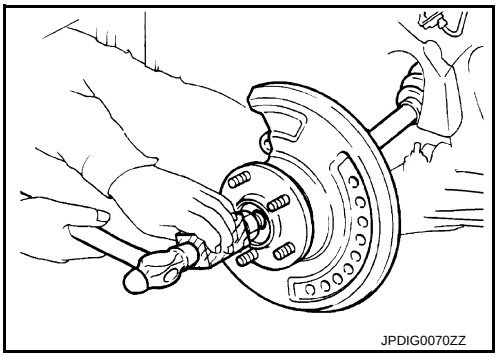


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

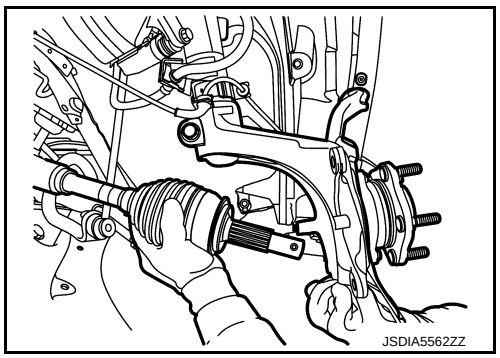


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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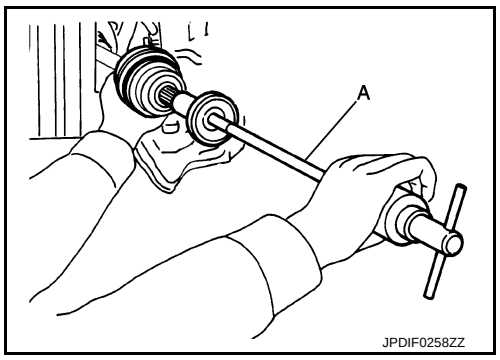
12. Remove boot bands, and then separate boot from joint sub-assembly.
13. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
CAUTION:
- **Align sliding hammer and drive shaft and remove them by pulling directory.**
- **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle. Refer to FAX-56, "R9M : Disassembly and Assembly".**



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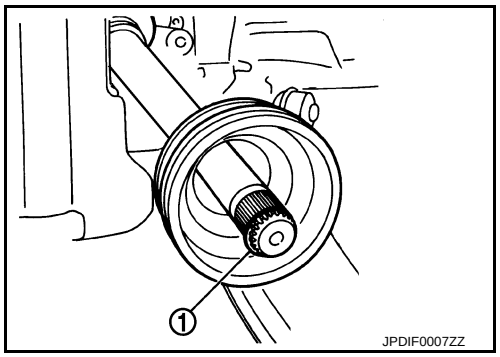
14. Remove circular clip ① from shaft.



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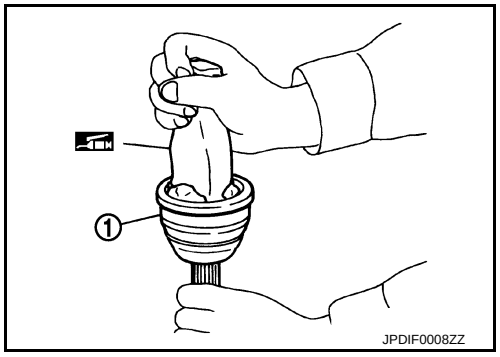
15. Remove boot from shaft.

Transaxle Side
Remove boot after removing drive shaft.
- Remove: Refer to FAX-50, "R9M : Removal and Installation".
- Disassembly: Refer to FAX-56, "R9M : Disassembly and Assembly".

INSTALLATION

Wheel Side

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 shop cloth to wipe off old grease that has oozed out.



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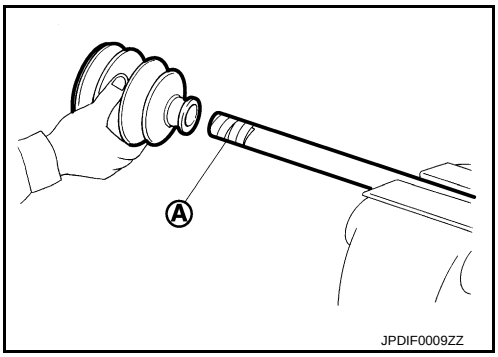
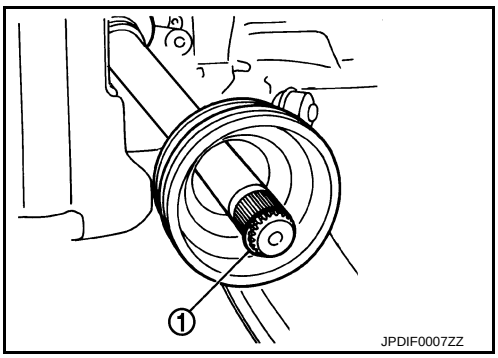
3. Install boot and boot bands to shaft.
CAUTION:
- **Never reuse boot and boot band.**
- **Wrap serration on shaft with tape Ⓐ to protect the boot from damage.**

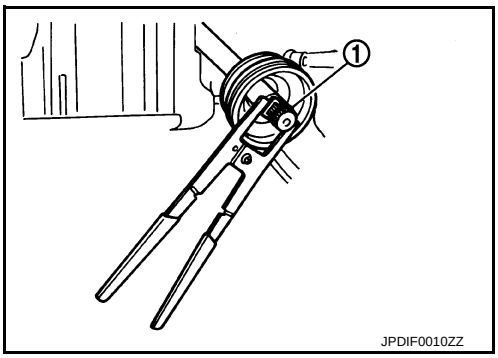


4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip ① on groove at the shaft edge.
CAUTION:
Never reuse circular clip.

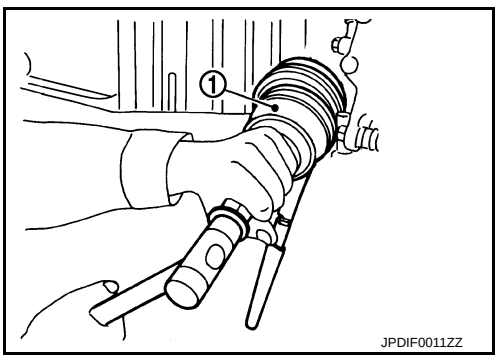


NOTE:
Drive joint inserter is recommended when installing circular clip ①.



6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.

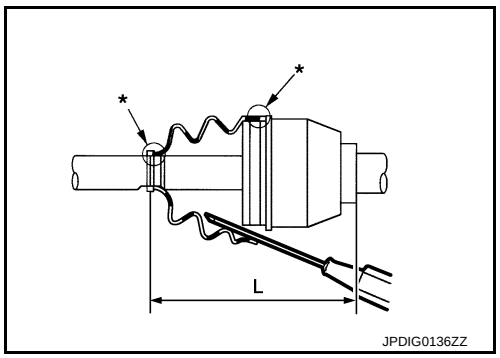
7. Install joint sub-assembly ① to shaft using plastic hammer.
CAUTION:
- **Check circular clip is properly positioned on groove of the joint sub-assembly.**
- **Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.**



8. Fill into the boot inside with the specified amount of grease from large diameter side of boot.

Grease amount : Refer to FAX-62, "Drive Shaft".

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 subassembly. boot may be removed. Remove all grease from the boot mounting surface.

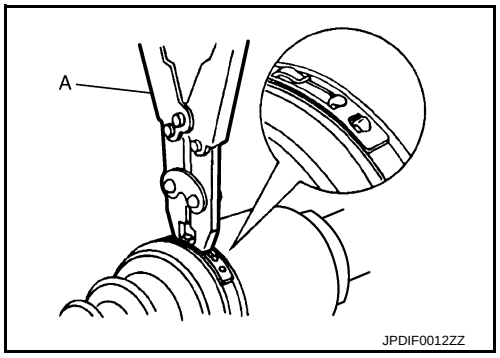


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the specified value shown below by inserting the suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.

L : Refer to FAX-62, "Drive Shaft".

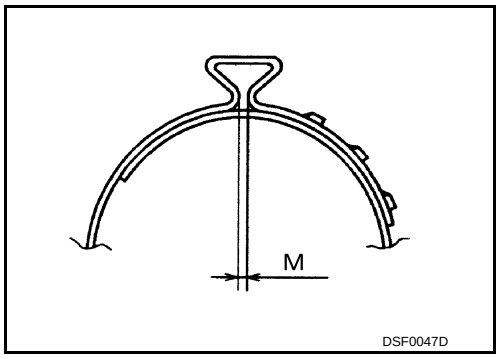
CAUTION:
- **If the boot mounting length exceeds the standard, it may cause breakage in the boot.**
- **Be careful not to touch the inside of the boot with a tip of tool.**

11. Secure the large and small 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 : 1.0 – 4.0 mm (0.039 – 0.157 in)

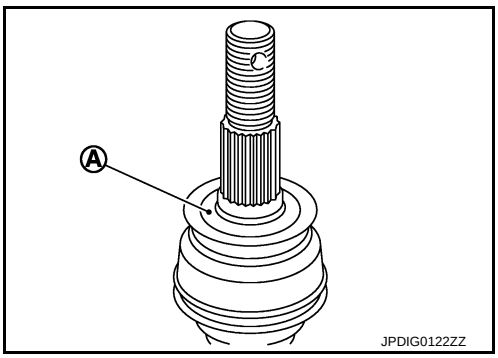


12. Check that displacement does not occur when boot is rotated with the joint sub-assembly and shaft fixed.
CAUTION:
- **Reinstall them using boot bands when boot installation positions become incorrect.**
- **Never reuse boot band.**

13. Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
CAUTION:
Never apply lubricating oil to these matching surface.

14. Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

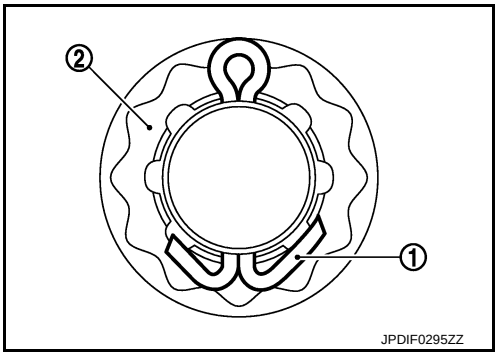


15. Insert drive shaft to wheel hub and bearing assembly, and then temporarily tighten wheel hub lock nut.
CAUTION:
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

16. Install transverse link to steering knuckle and front suspention member. Refer to FSU-17, "Exploded View".
17. Install steering outer socket to steering knuckle.
- LHD: Refer to ST-20, "LHD : Exploded View".
- RHD: Refer to ST-21, "RHD : Exploded View".

18. Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

19. When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
CAUTION:
Never reuse cotter pin.



20. Install disc rotor. Refer to FAX-11, "Removal and Installation".
21. Install caliper assembly to steering knuckle.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

22. Install lock plate to strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

23. Install wheel sensor to steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
24. Install tires to vehicle.Refer to WT-61, "Removal and Installation".
25. Perform inspection after installation. Refer to FAX-33, "R9M : Inspection".

Transaxle Side
- Installation: Refer to FAX-50, "R9M : Removal and Installation".

• Assembly: Refer to FAX-56, "R9M : Disassembly and Assembly".

R9M : Inspection

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INSPECTION AFTER REMOVAL

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

• Check components for deformation, cracks, and other damage.
• Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.
- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

FRONT DRIVE SHAFT

MR20DD

MR20DD : Exploded View

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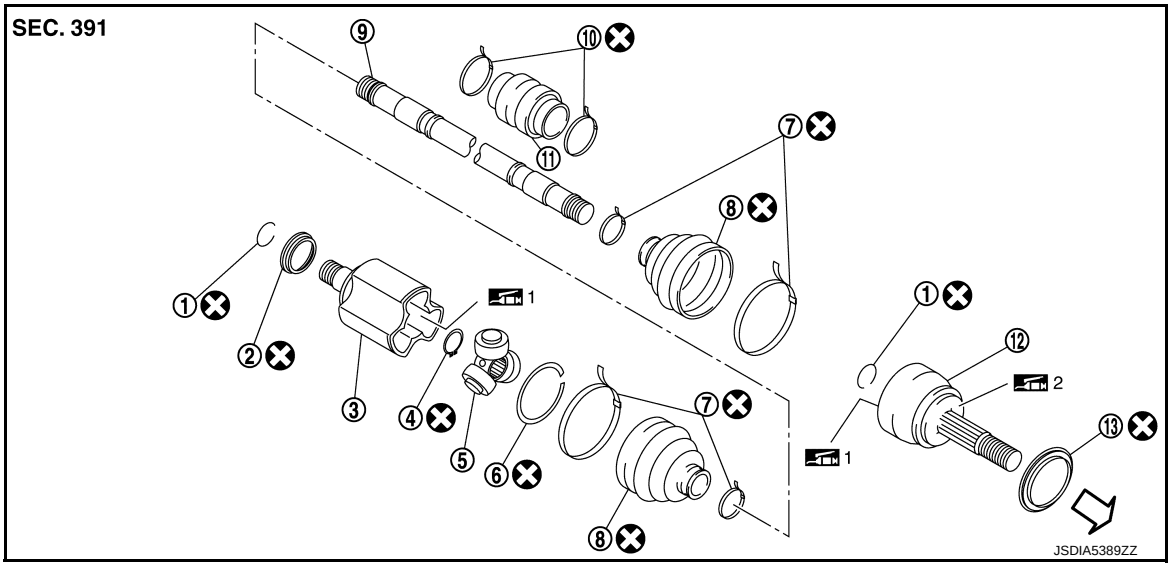
LEFT SIDE



① Circular clip
② Dust shield
③ Housing
④ Snap ring
⑤ Spider assembly
⑥ Stopper ring
⑦ Boot band
⑧ Boot
⑨ Shaft
⑩ Damper band
⑪ Dynamic damper
⑫ Joint sub-assembly
⑬ Dust shield

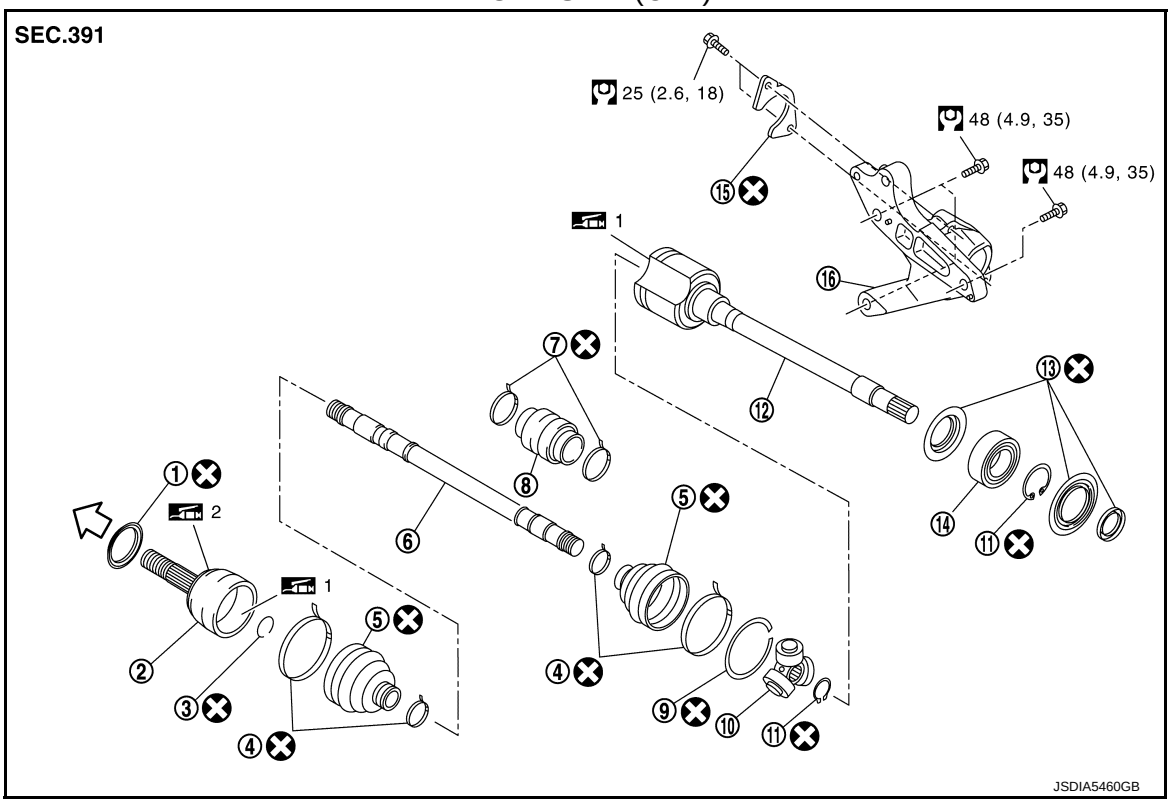
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE (CVT)



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Damper band
⑧ Dynamic damper
⑨ Stopper ring
⑩ Spider assembly
⑪ Snap ring
⑫ Housing
⑬ Dust shield
⑭ Support bearing
⑮ Retainer
⑯ Support bearing bracket

⇦ : Wheel side

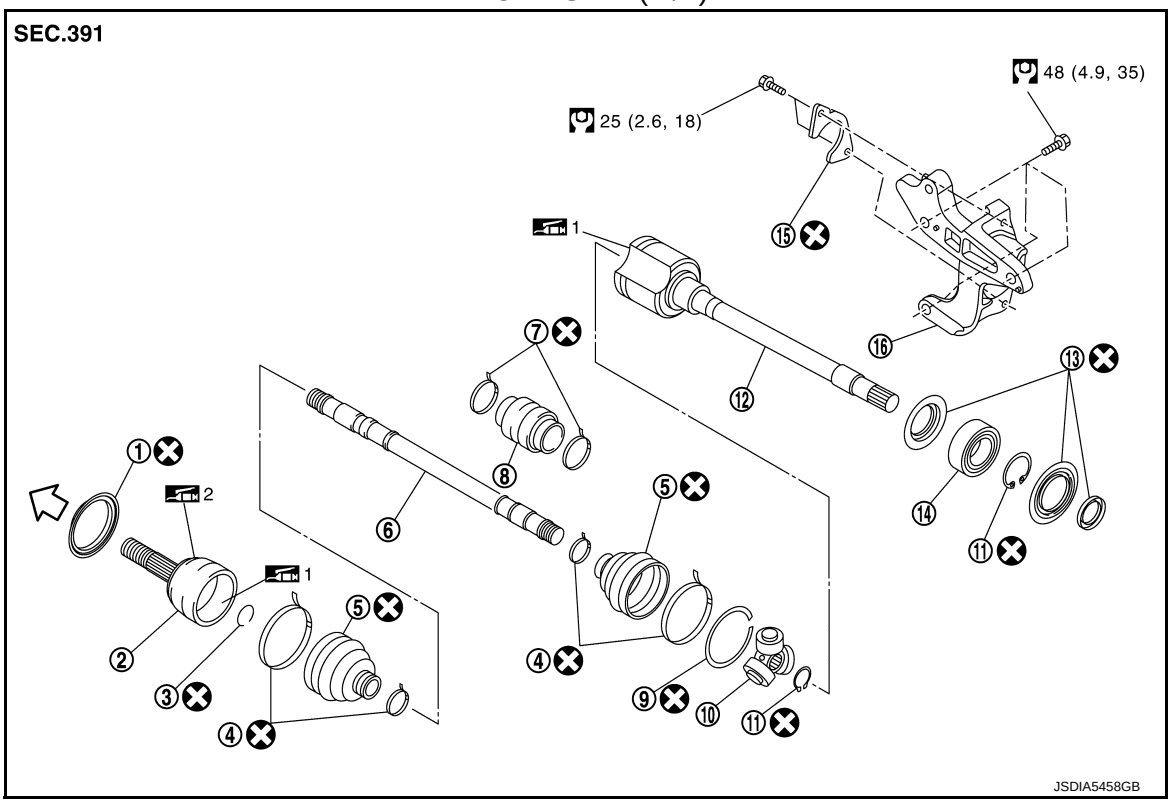
1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

RIGHT SIDE (M/T)



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Damper band	⑧ Dynamic damper	⑨ Stopper ring
⑩ Spider assembly	⑪ Snap ring	⑫ Housing
⑬ Dust shield	⑭ Support bearing	⑮ Retainer
⑯ Support bearing bracket		

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

MR20DD : Removal and Installation

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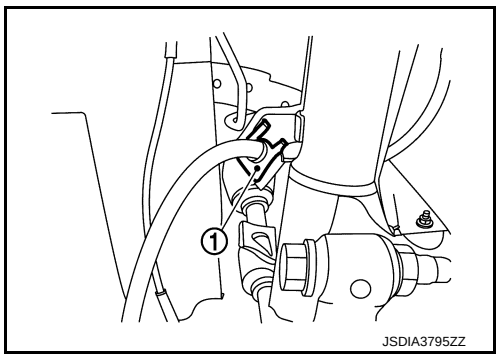
REMOVAL

Left Side

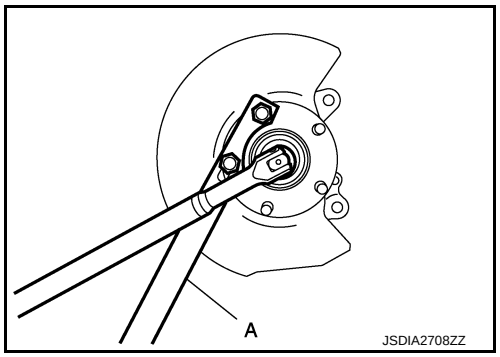
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

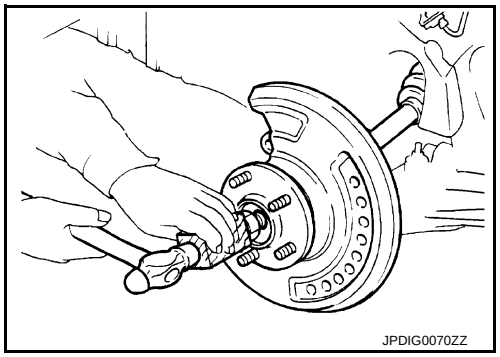


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

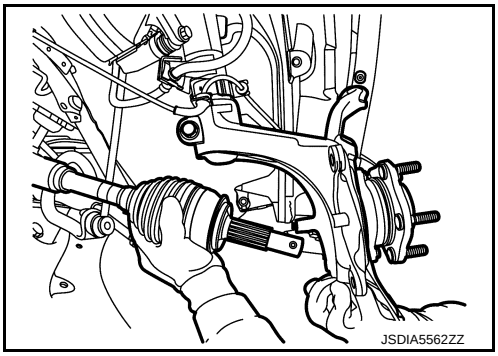


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



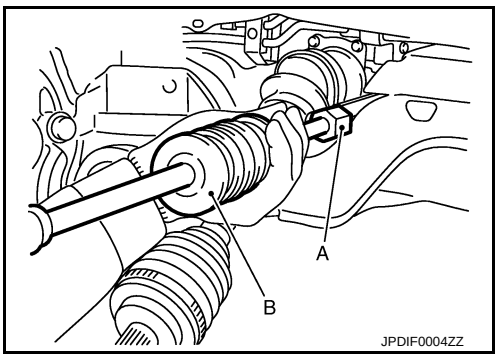
8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**



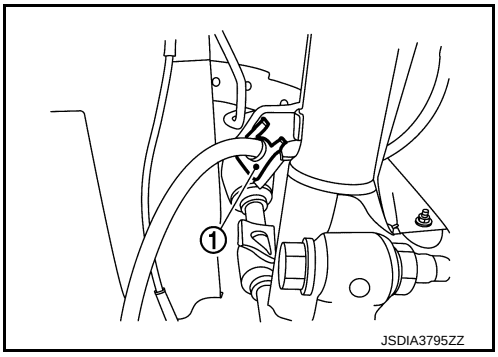
12. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and transaxle assembly.

CAUTION:
- **Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**
- **Confirm that the circular clip is attached to the drive shaft.**



Right Side

1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

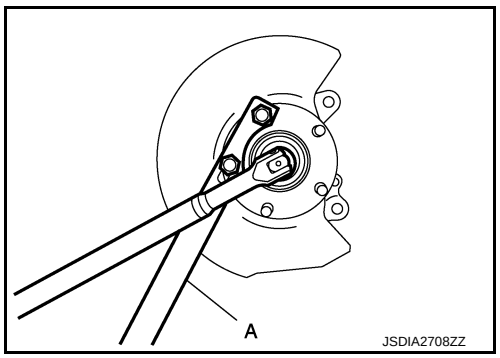


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

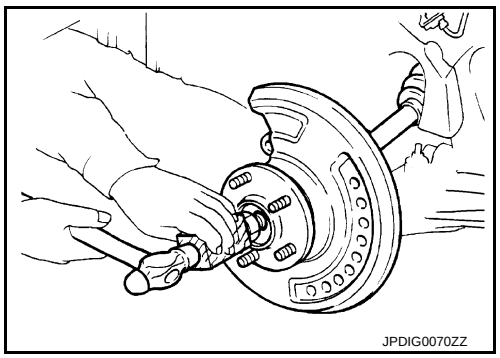
CAUTION:
Never depress brake pedal while brake caliper is removed.

5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".

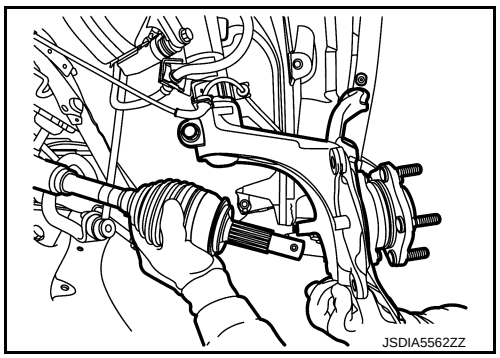
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
NOTE:
Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**



12. Remove retainer mounting bolts and retainer.
13. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (SST: KV40107500) and a sliding hammer while inserting tip of the drive shaft attachment between housing and transaxle assembly.
CAUTION:
Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.

14. If necessary, remove the support bearing bracket mounting bolts and the support bearing bracket.

INSTALLATION

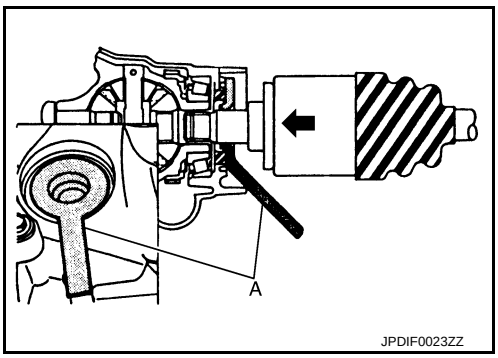
Left Side

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

CAUTION:
Always replace differential side oil seal with new one when installing drive shaft.
- **M/T: Refer to TM-38, "Removal and Installation".**
- **CVT: Refer to TM-429, "Removal and Installation".**

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

CAUTION:
- **Check that circular clip is completely engaged.**
- **Never reuse differential side oil seal.**



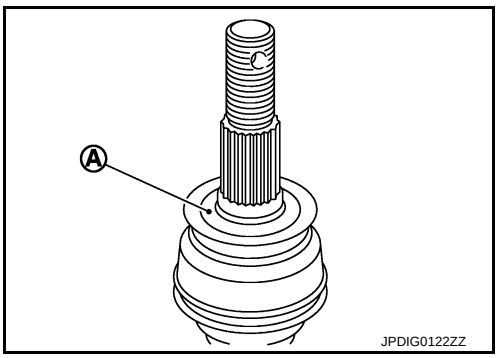
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.

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

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

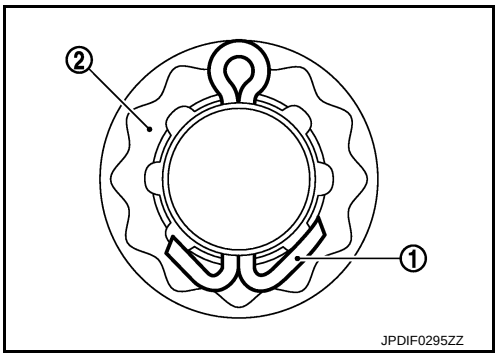


- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".

CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.

CAUTION:
Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-46, "MR20DD : Inspection".

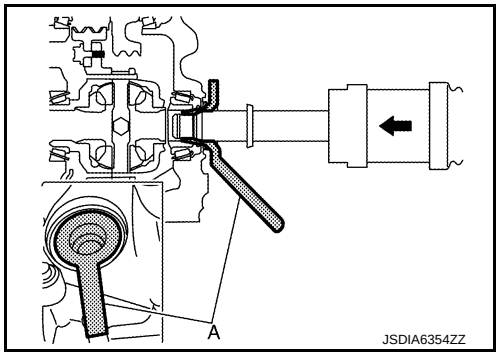
Right Side

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

CAUTION:
Always replace differential side oil seal with new one when installing drive shaft.
- **M/T: Refer to TM-38, "Removal and Installation".**
- **CVT: Refer to TM-429, "Removal and Installation".**

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

- **CAUTION:**
  Never reuse differential side oil seal.

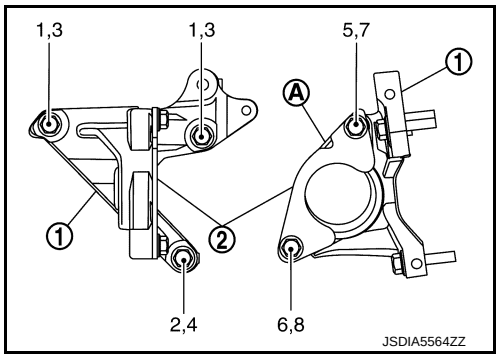


- When installing support bearing bracket tighten the mounting bolt with the following procedure.

CVT models

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4



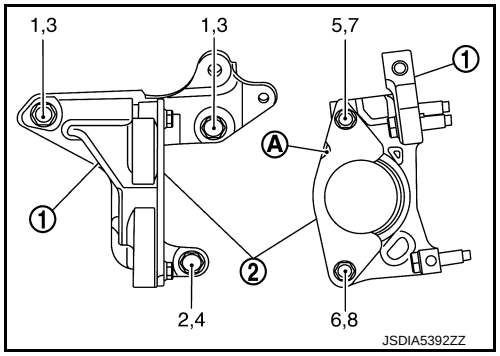
- Set plate ② so thet the notch part Ⓐ becomes upper side.
  CAUTION:
  Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 5 → 6
Final tightening (Specified torque)	: 7 → 8

M/T models

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4



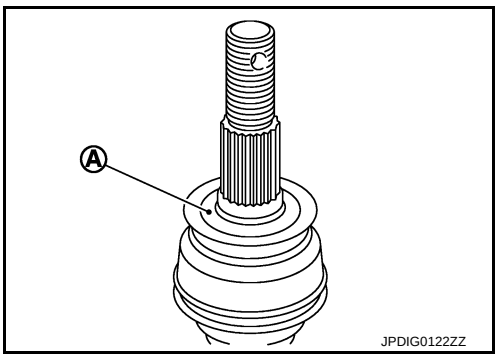
- Set plate ② so thet the notch part Ⓐ becomes upper side.
  CAUTION:
  Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 5 → 6
Final tightening (Specified torque)	: 7 → 8

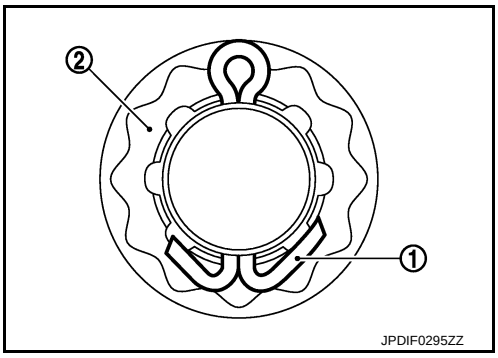
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-46, "MR20DD : Inspection".

MR20DD : Disassembly and Assembly

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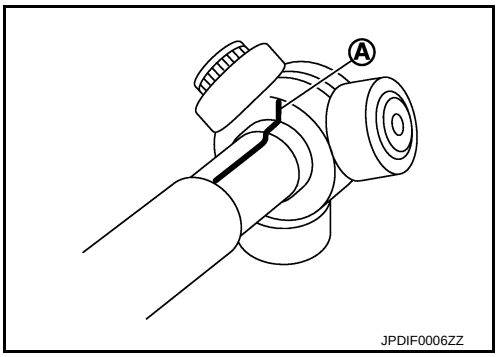
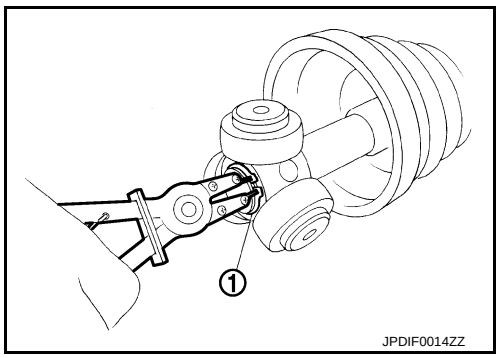
DISASSEMBLY

Transaxle Assembly Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from housing.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.
5. Put matching marks Ⓐ on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.

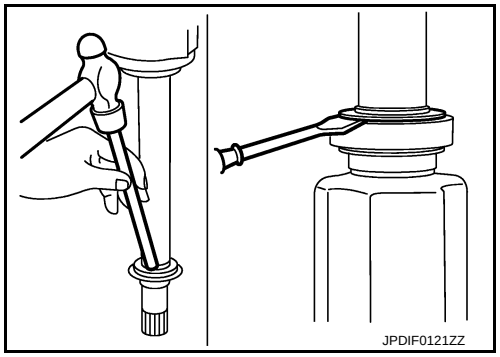


6. Remove snap ring ①, and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing (left side).
9. Remove dust shield from housing.
10. Clean old grease on housing with paper waste.

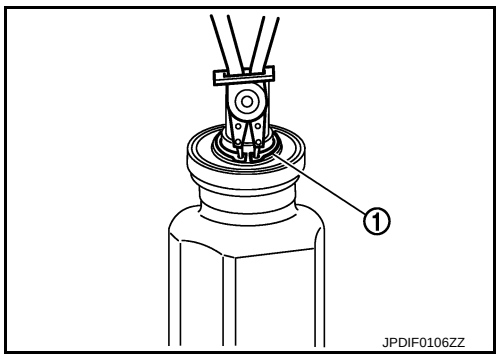


Support Bearing

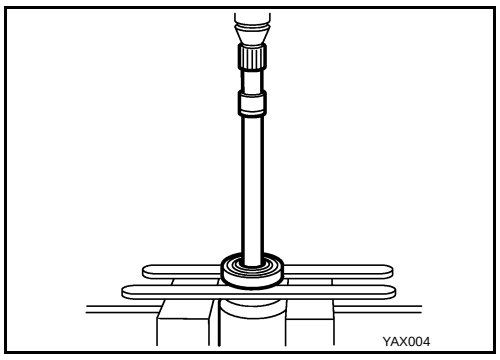
1. Remove dust shield from housing.



2. Remove snap ring ①.



3. Press out support bearing from housing.
4. Remove dust shield.



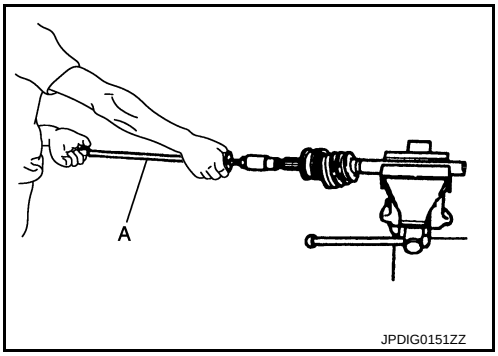
Dynamic Damper

Remove damper bands, then remove dynamic damper from shaft.

Wheel Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from joint sub-assembly.

3. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align sliding hammer and drive shaft and remove them by pulling directory.**

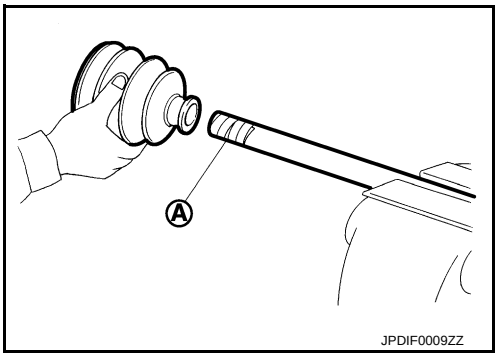


4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly with paper towels while rotating ball cage.

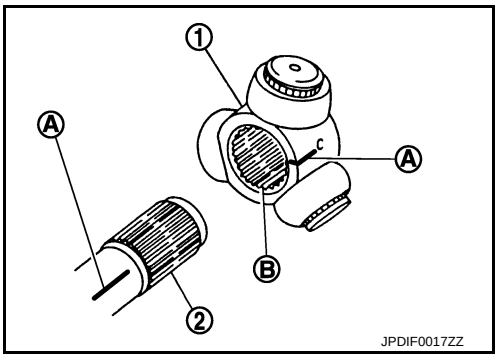
ASSEMBLY

Transaxle Assembly Side

1. Wrap serration on shaft with tape Ⓐ to protect boot from damage. Install new boot and boot bands to shaft.
   CAUTION:
   Never reuse boot and boot band.
2. Remove the tape wrapped around the serration on shaft.

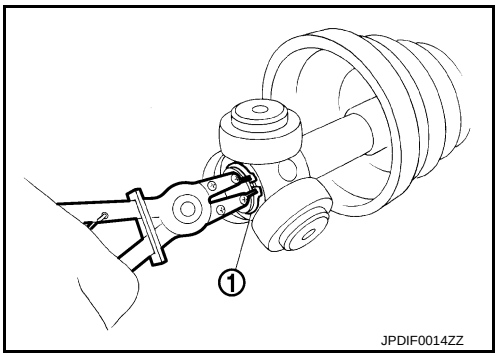


3. To install the spider assembly ①, align it with the matching marks Ⓐ on the shaft ② put during the removal, and direct the serration mounting surface Ⓑ to the shaft.



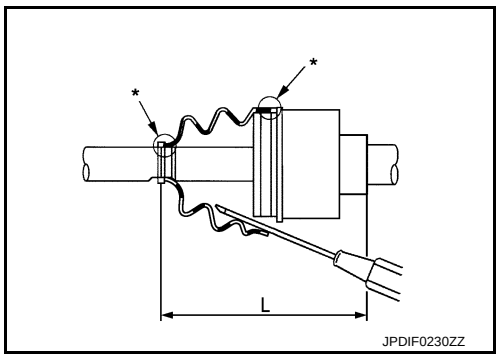
4. Secure spider assembly onto shaft with snap ring ①.
   CAUTION:
   Never reuse snap ring.
5. Apply the appropriate amount of grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the balance of the specified amount grease.

Grease amount : Refer to FAX-62, "Drive Shaft".



7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Never reuse stopper ring.

9. Install boot securely 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 be removed. Remove all grease from the surface.



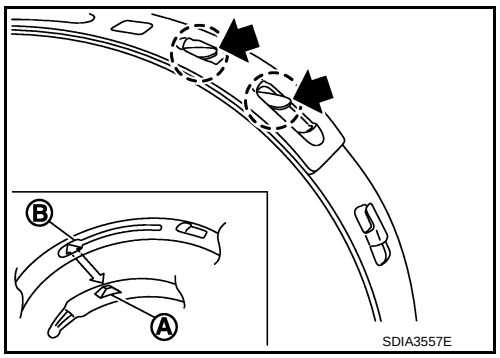
10. To prevent from deformation of the boot, adjust the boot installation length to the value shown below (L) by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

L : Refer to FAX-62, "Drive Shaft".

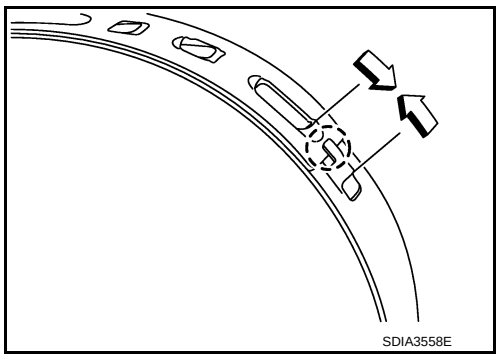
CAUTION:
- **If the boot installation length exceeds the standard, it may cause breakage in boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

11. Install new boot bands securely.
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 Ⓐ and guide slit Ⓑ at first.



b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.

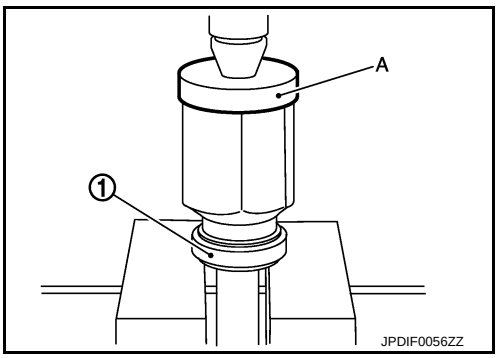


12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.
13. Install dust shield (left side).
CAUTION:
Never reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Never reuse circular clip.

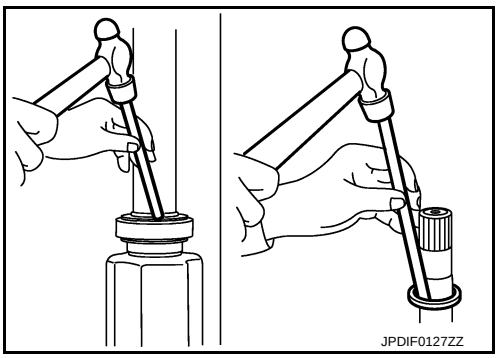
Support Bearing

1. Install dust shield on housing.
CAUTION:
Never reuse dust shield.

2. Press support bearing ① onto housing to using the suitable tool (A).
3. Install snap ring.
   CAUTION:
   Never reuse snap ring.

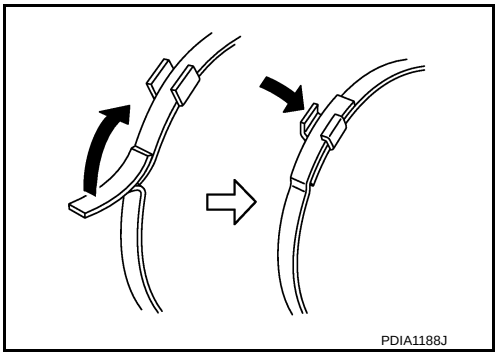


4. Install dust shields.
   CAUTION:
   Never reuse dust shields.



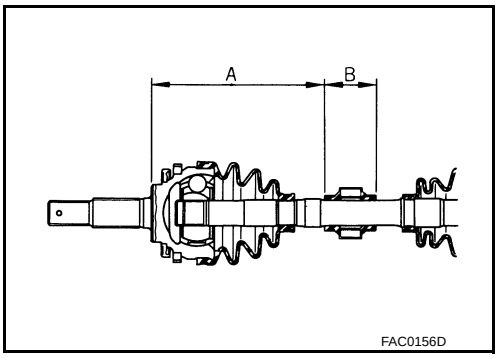
Dynamic Damper

- Install damper bands securely as shown in the figure.



- Secure dynamic damper with bands in the following specified position when removing.
  CAUTION:
  Never reuse bands.

Demission : Refer to FAX-62, "Drive Shaft".



Wheel Side

For further details, refer to the installation procedure of "FAX-19, "MR20DD : Removal and Installation"" for the drive shaft boot.

MR20DD : Inspection

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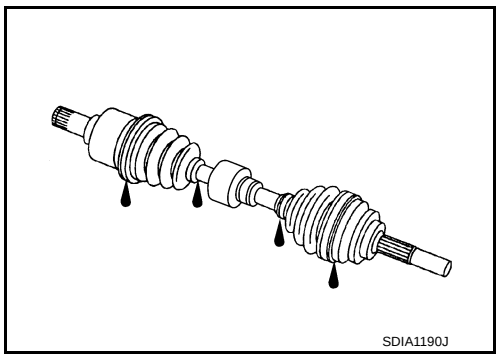
INSPECTION AFTER REMOVAL

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

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

Shaft

Check shaft for runout, cracks, or other damage. Replace if there are.

Dynamic Damper

Check damper for cracks or wear. Replace if necessary.

Joint Sub-Assembly (Wheel Side)

Check the following:

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

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

Housing and Spider assembly (Transaxle 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.

Support Bearing (Right Side)

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

Support Bearing Bracket (Right Side)

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

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

R9M

R9M : Exploded View

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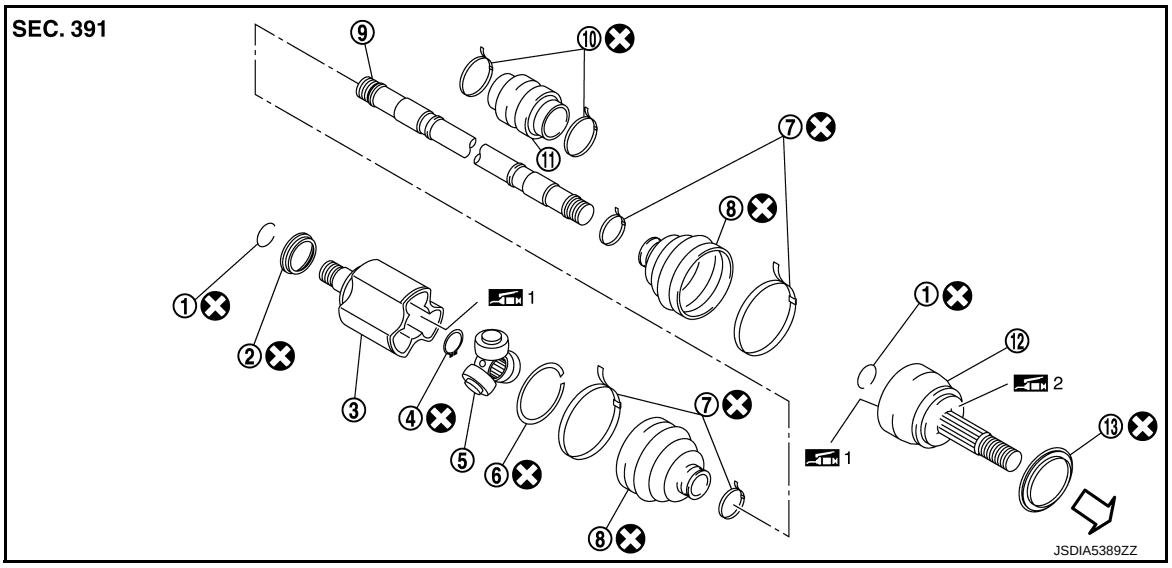
LEFT SIDE



① Circular clip
② Dust shield
③ Housing
④ Snap ring
⑤ Spider assembly
⑥ Stopper ring
⑦ Boot band
⑧ Boot
⑨ Shaft
⑩ Damper band
⑪ Dynamic damper
⑫ Joint sub-assembly
⑬ Dust shield

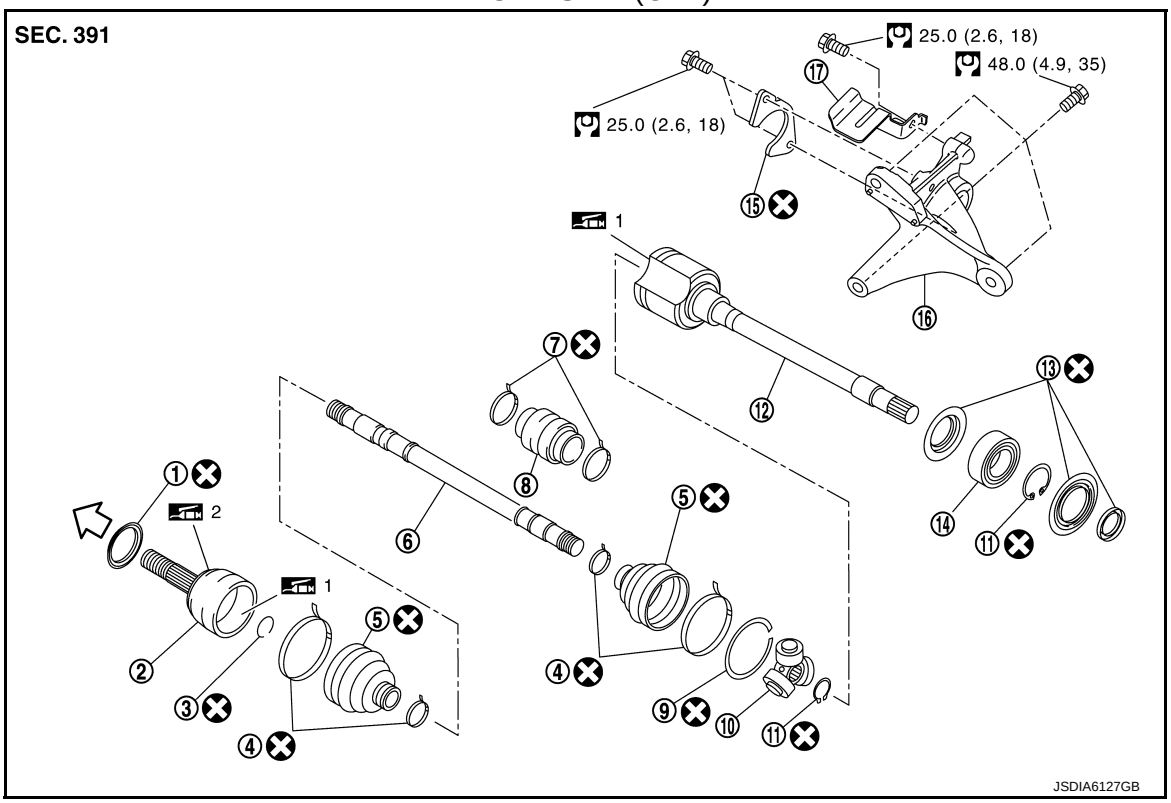
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE (CVT)



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Damper band
⑧ Dynamic damper
⑨ Stopper ring
⑩ Spider assembly
⑪ Snap ring
⑫ Housing
⑬ Dust shield
⑭ Support bearing
⑮ Retainer
⑯ Support bearing bracket
⑰ Heat insulator

⇦ : Wheel side

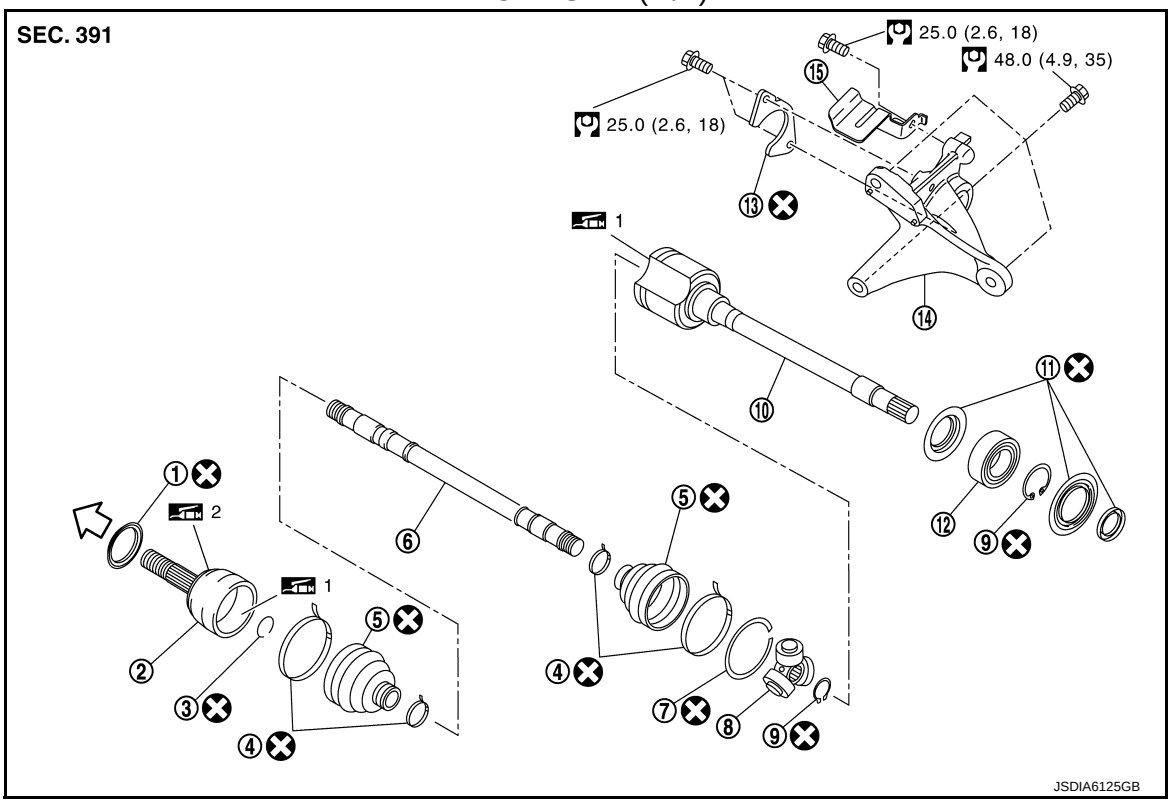
1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

RIGHT SIDE (M/T)



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Stopper ring	⑧ Spider assembly	⑨ Snap ring
⑩ Housing	⑪ Dust shield	⑫ Support bearing
⑬ Retainer	⑭ Support bearing bracket	⑮ Heat insulator

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

R9M : Removal and Installation

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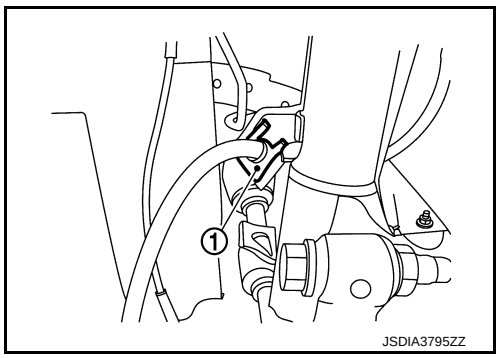
REMOVAL

Left Side

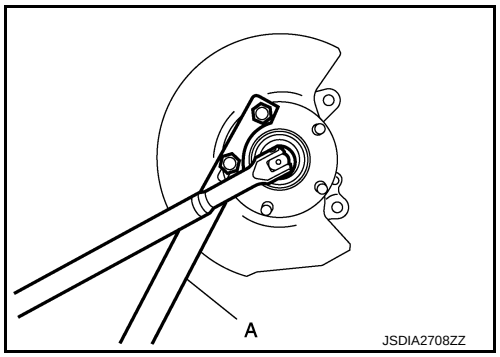
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

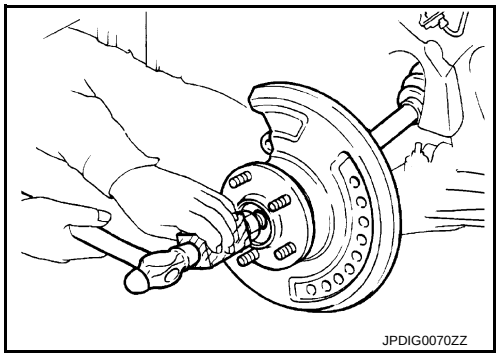


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

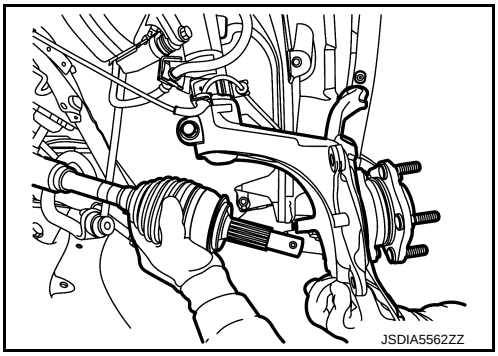


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



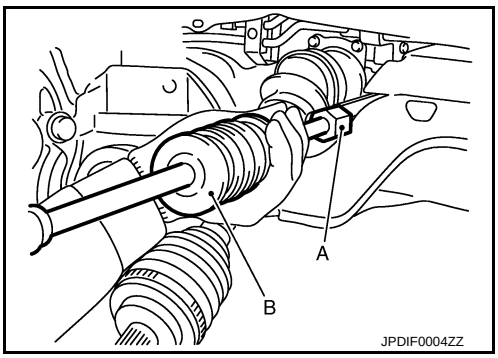
8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**



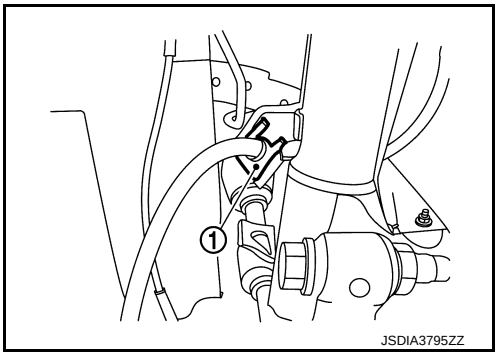
12. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and transaxle assembly.

CAUTION:
- **Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**
- **Confirm that the circular clip is attached to the drive shaft.**



Right Side

1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

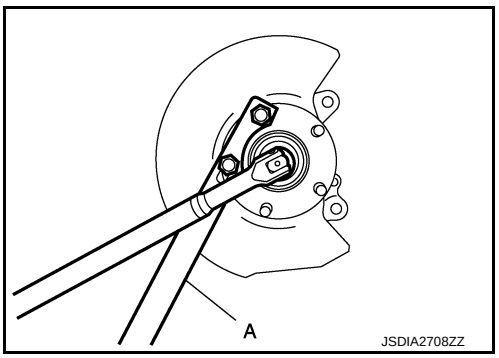


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

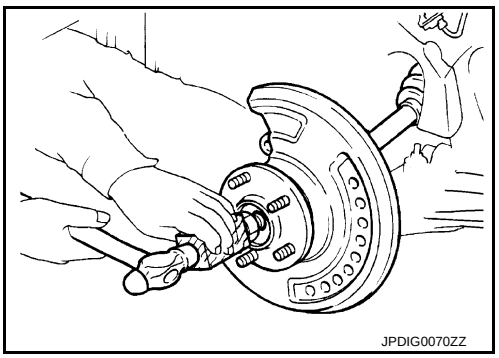
CAUTION:
Never depress brake pedal while brake caliper is removed.

5. Remove disc rotor. Refer to FAX-11, "Removal and Installation".

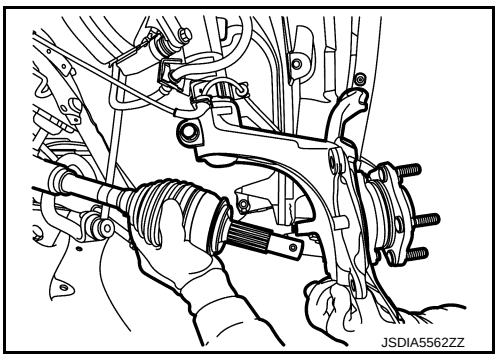
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
NOTE:
Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**



12. Remove retainer mounting bolts and retainer.
13. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (SST: KV40107500) and a sliding hammer while inserting tip of the drive shaft attachment between housing and transaxle assembly.
CAUTION:
Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.

14. If necessary, remove the support bearing bracket mounting bolts, support bearing bracket and the heat insulator.

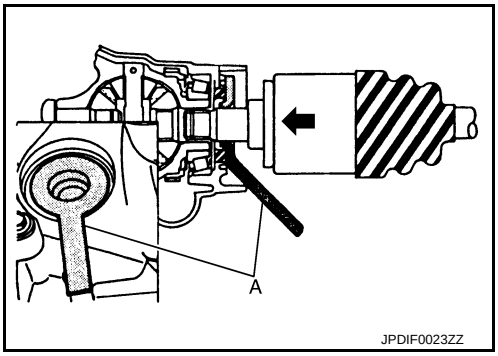
INSTALLATION

Left Side

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

CAUTION:
Always replace differential side oil seal with new one when installing drive shaft.
- **M/T: Refer to TM-118, "Removal and Installation".**
- **CVT: Refer to TM-690, "Removal and Installation".**

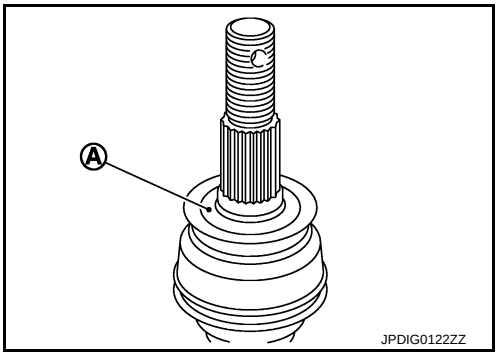
- Place the protector (A) (SST: KV38107900) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.
  CAUTION:
  - **Check that circular clip is completely engaged.**
  - **Never reuse differential side oil seal.**



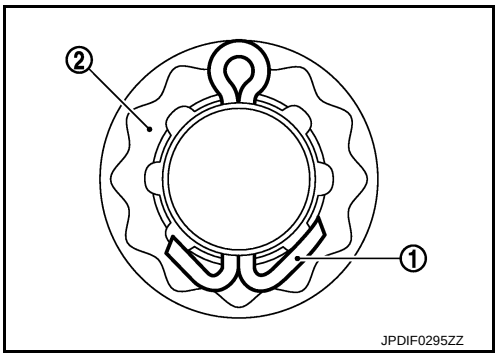
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



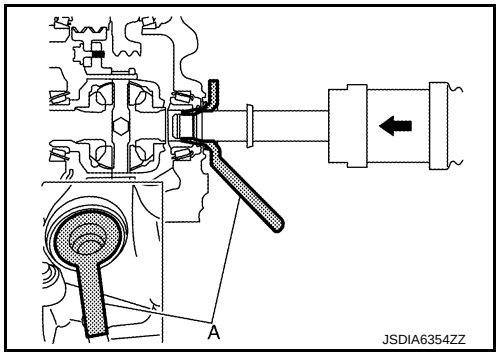
- Perform inspection after installation. Refer to FAX-60, "R9M : Inspection".

Right Side
Note the following, and install in the reverse order of removal.
CAUTION:
Always replace differential side oil seal with new one when installing drive shaft.
- **M/T: Refer to TM-118, "Removal and Installation".**
- **CVT: Refer to TM-690, "Removal and Installation".**

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

-

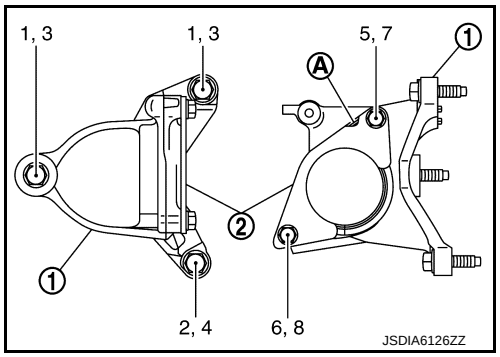
CAUTION:
Never reuse differential side oil seal.



- When installing support bearing bracket tighten the mounting bolt with the following procedure.

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

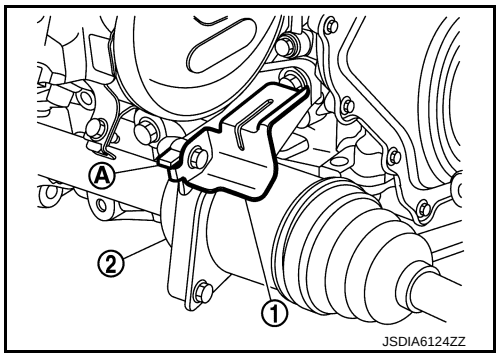
Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4



- Set plate ② so thet the notch part Ⓐ becomes upper side.
CAUTION:
Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 5 → 6
Final tightening (Specified torque)	: 7 → 8

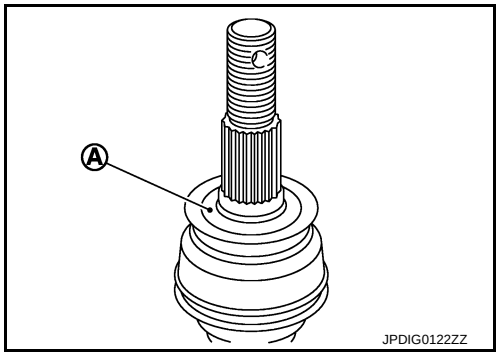
- Instal the heat insulator ① to touch a projection Ⓐ of the bracket ② as shown in figure.



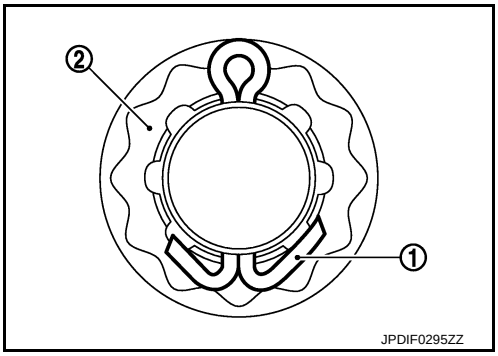
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
CAUTION:
Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-11, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-60, "R9M : Inspection".

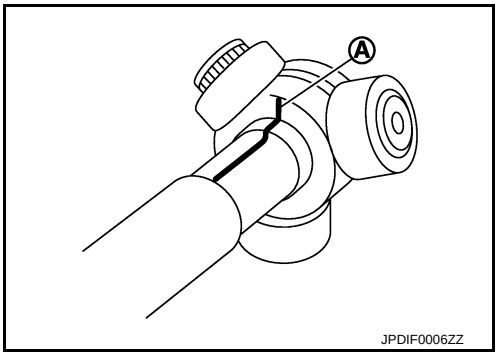
R9M : Disassembly and Assembly

INFOID:0000000010824393

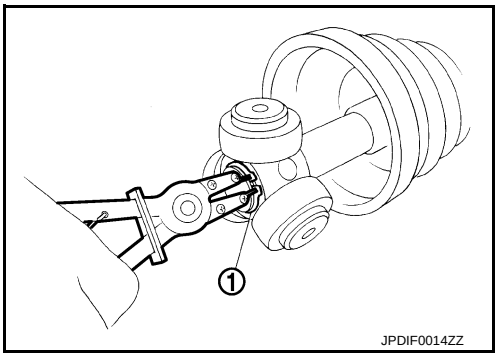
DISASSEMBLY

Transaxle Assembly Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from housing.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.
5. Put matching marks Ⓐ on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.

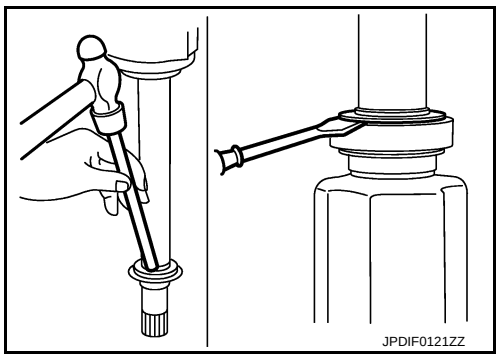


6. Remove snap ring ①, and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing (left side).
9. Remove dust shield from housing.
10. Clean old grease on housing with paper waste.

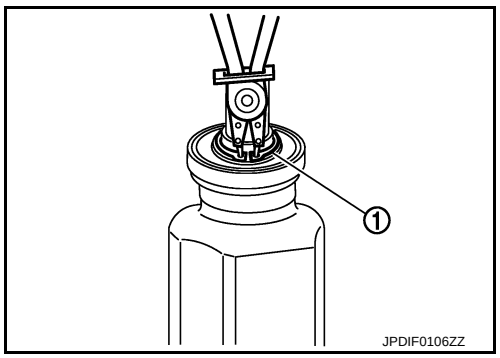


Support Bearing

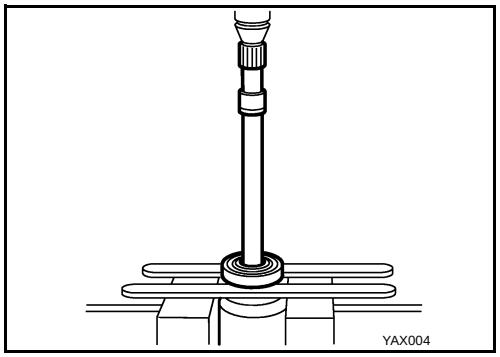
1. Remove dust shield from housing.



2. Remove snap ring ①.



3. Press out support bearing from housing.
4. Remove dust shield.

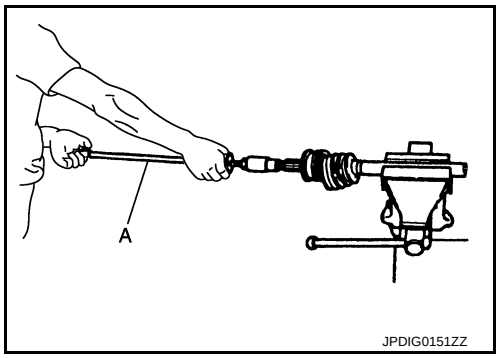


Dynamic Damper (If equipped)

Remove damper bands, then remove dynamic damper from shaft.

Wheel Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from joint sub-assembly.
3. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align sliding hammer and drive shaft and remove them by pulling directory.**

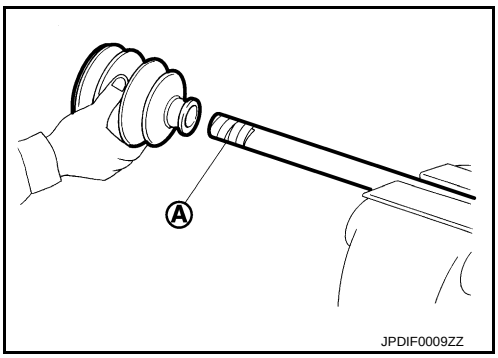


4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly with paper towels while rotating ball cage.

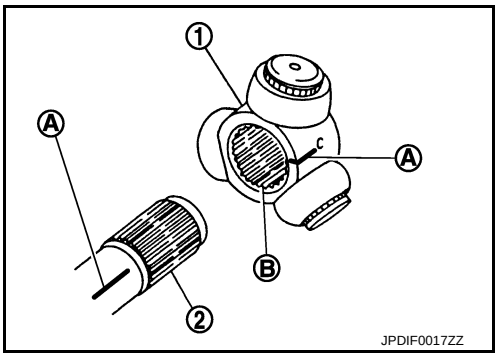
ASSEMBLY

Transaxle Assembly Side

1. Wrap serration on shaft with tape Ⓐ to protect boot from damage. Install new boot and boot bands to shaft.
   CAUTION:
   Never reuse boot and boot band.
2. Remove the tape wrapped around the serration on shaft.

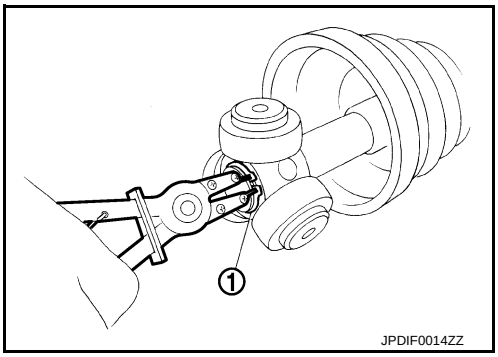


3. To install the spider assembly ①, align it with the matching marks Ⓐ on the shaft ② put during the removal, and direct the serration mounting surface Ⓑ to the shaft.



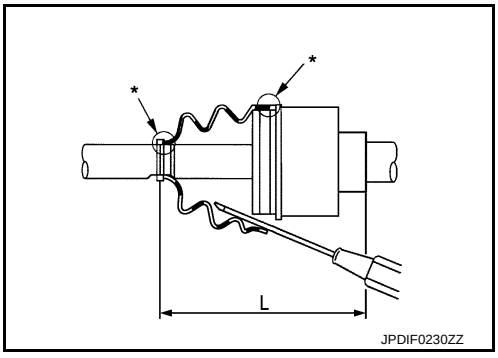
4. Secure spider assembly onto shaft with snap ring ①.
   CAUTION:
   Never reuse snap ring.
5. Apply the appropriate amount of grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the balance of the specified amount grease.

Grease amount : Refer to FAX-62, "Drive Shaft".



7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Never reuse stopper ring.
9. Install boot securely 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 be removed. Remove all grease from the surface.
10. To prevent from deformation of the boot, adjust the boot installation length to the value shown below (L) by inserting the suitable tool into the inside of boot from the large diameter side of boot and discharging inside air.

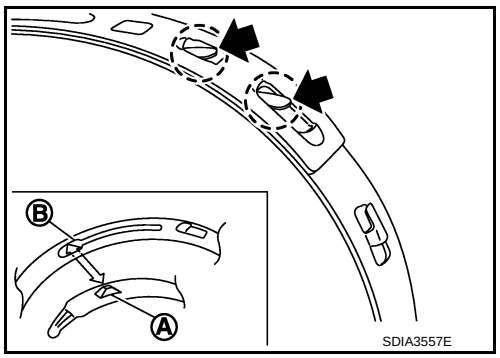
L : Refer to FAX-62, "Drive Shaft".



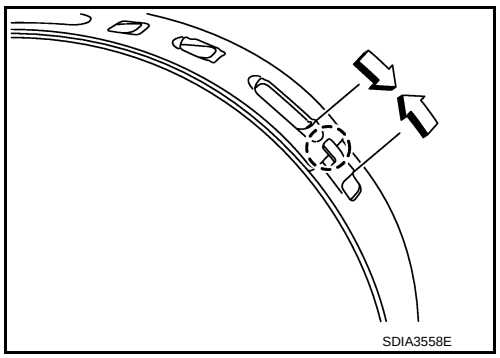
CAUTION:
- **If the boot installation length exceeds the standard, it may cause breakage in boot.**
- **Be careful not to touch the inside of the boot with the tip of tool.**

11. Install new boot bands securely.
    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 Ⓐ and guide slit Ⓑ at first.



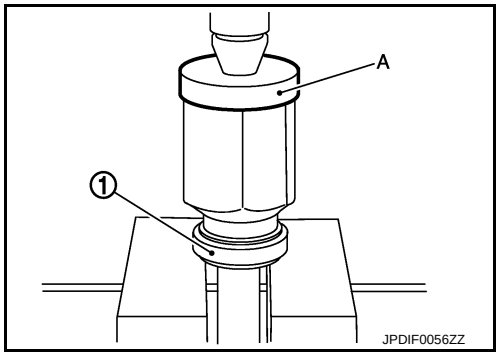
b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.



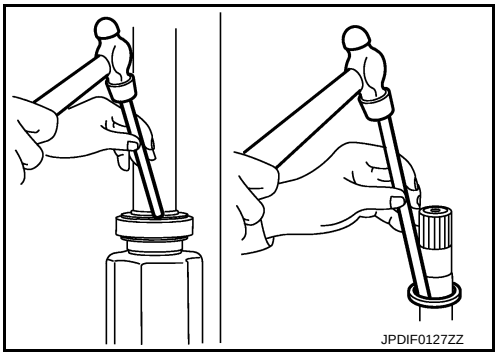
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.
13. Install dust shield (left side).
CAUTION:
Never reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Never reuse circular clip.

Support Bearing

1. Install dust shield on housing.
CAUTION:
Never reuse dust shield.
2. Press support bearing ① onto housing to using the suitable tool (A).
3. Install snap ring.
CAUTION:
Never reuse snap ring.

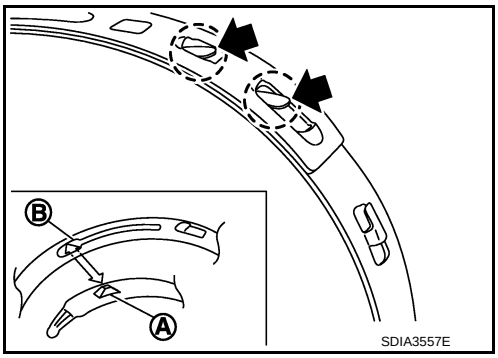


4. Install dust shields.
CAUTION:
Never reuse dust shields.

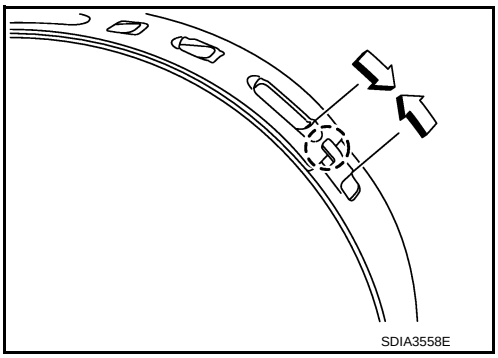


Dynamic Damper (If equipped)

- 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 Ⓐ and guide slit Ⓑ at first.

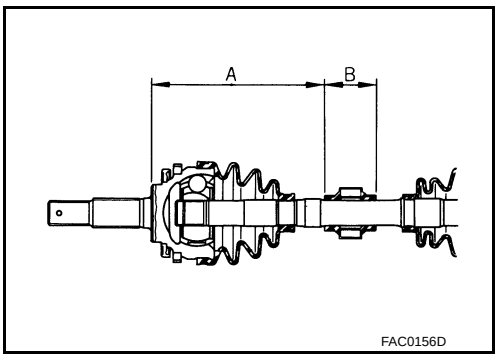


- Pinch projection on the band with suitable pliers to tighten band.
- Insert tip of band below end of the pawl.



- Secure dynamic damper with bands in the following specified position when removing.
CAUTION:
Never reuse bands.

Demission : Refer to FAX-62, "Drive Shaft".



Wheel Side
For further details, refer to the installation procedure of "FAX-27, "R9M : Removal and Installation"" for the drive shaft boot.

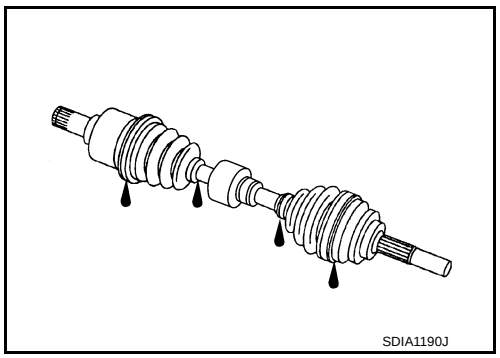
R9M : Inspection

INFOID:0000000010824394

INSPECTION AFTER REMOVAL

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

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

Shaft
Check shaft for runout, cracks, or other damage. Replace if there are.

Dynamic Damper (If equipped)
Check damper for cracks or wear. Replace if necessary.

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

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

Housing and Spider assembly (Transaxle 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.

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

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

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

INFOID:0000000010824395

Axial end play	0.05 mm (0.002 in) or less

Drive Shaft

INFOID:0000000010824396

MR20DD

CVT

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	115 – 135 g (4.06 – 4.76 oz)	
	Transaxle side	175 – 195 g (6.18 – 6.87 oz)	
Boots installed length*	Wheel side	141.5 mm (5.57 in)	
	Transaxle side	196.9 mm (7.75 in)	188.9 mm (7.44 in)
Dimension of dynamic damper*	A	273 – 279 mm (10.75 – 10.98 in)	243 – 249 mm (9.57 – 9.80 in)
	B	70 mm (2.76 in)	

*: For measuring position. Refer to FAX-42, "MR20DD : Disassembly and Assembly".

M/T

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	115 – 135 g (4.06 – 4.76 oz)	
	Transaxle side	175 – 195 g (6.18 – 6.87 oz)	
Boots installed length*	Wheel side	141.5 mm (5.57 in)	
	Transaxle side	202.1 mm (7.96 in)	188.9 mm (7.44 in)
Dimension of dynamic damper*	A	273 – 279 mm (10.75 – 10.98 in)	243 – 249 mm (9.57 – 9.80 in)
	B	70 mm (2.76 in)	

*: For measuring position. Refer to FAX-42, "MR20DD : Disassembly and Assembly".

R9M

CVT

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	145 – 165 g (5.11 – 5.82 oz)	
	Transaxle side	265 – 285 g (9.35 – 10.05 oz)	
Boots installed length*	Wheel side	145 mm (5.71 in)	
	Transaxle side	196.1 mm (7.72 in)	184.1 mm (7.25 in)
Dimension of dynamic damper*	A	255 – 261 mm (10.04 – 10.28 in)	205 – 211 mm (8.07 – 8.31 in)
	B	70 mm (2.76 in)	

*: For measuring position. Refer to FAX-56, "R9M : Disassembly and Assembly".

M/T

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	145 – 165 g (5.11 – 5.82 oz)	
	Transaxle side	265 – 285 g (9.35 – 10.05 oz)	
Boots installed length*	Wheel side	145 mm (5.71 in)	
	Transaxle side	196.1 mm (7.72 in)	184.1 mm (7.25 in)
Dimension of dynamic damper*	A	207 – 213 mm (8.15 – 8.39 in)	—
	B	70 mm (2.76 in)	—

*: For measuring position. Refer to FAX-56, "R9M : Disassembly and Assembly".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000010824397

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 “SRS AIR BAG” and “SEAT BELT” of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- **To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that 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 “SRS AIR BAG”.**
- **Never 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:

Always observe the following items for preventing accidental activation.

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the ignition ON or engine running, never 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:0000000010824398

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- **Before removing and installing any control units, first turn the ignition power source and accessory power source to the OFF, 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 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.**

For vehicle with 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 operation 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. Open driver door.
3. Turn the ignition switch to the ON position.
   (At this time, the steering lock will be released.)
4. Turn the ignition switch to OFF position with driver door open.
5. Wait for 3 minutes or longer with driver door open.
   NOTE:
   - Do not close driver door because the steering wheel locks when driver door is closed.

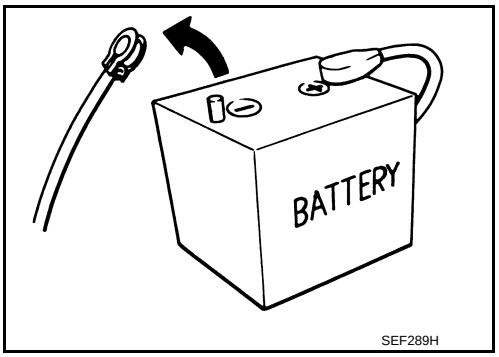
- The auto acc function is adapted to this vehicle. For this reason, even when the ignition switch is turned to OFF position, the accessory power source does not turned OFF and continues to be supplied for a certain amount of time.

6. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
7. Perform the necessary repair operation.
8. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the ignition switch from OFF position to ON position, then to LOCK position. (The steering wheel will lock when the ignition switch is turned to LOCK position.)
9. Perform self-diagnosis check of all control units using CONSULT.

Precautions for Removing Battery Terminal

INFOID:0000000010921124

- With the adoption of Auto ACC function, ACC power is automatically supplied by operating the intelligent key or remote keyless entry or by opening/closing the driver side door. In addition, ACC power is supplied even after the ignition switch is turned to the OFF position, i.e. ACC power is supplied for a certain fixed time.
- When disconnecting the 12V battery terminal, turn off the ACC power before disconnecting the 12V battery terminal, observing “How to disconnect 12V battery terminal” described below.
  NOTE:
  Some ECUs operate for a certain fixed time even after ignition switch is turned OFF and ignition power supply is stopped. If the battery terminal is disconnected before ECU stops, accidental DTC detection or ECU data damage may occur.



- For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
  NOTE:
  If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.
- After installing the 12V battery, always check "Self Diagnosis Result" of all ECUs and erase DTC.
  NOTE:
  The removal of 12V battery may cause a DTC detection error.

HOW TO DISCONNECT 12V BATTERY TERMINAL

Disconnect 12V battery terminal according to Instruction 1 or Instruction 2 described below.
For vehicles parked by ignition switch OFF, refer to Instruction 2.

INSTRUCTION 1

1. Open the hood.
2. Turn key switch to the OFF position with the driver side door opened.
3. Get out of the vehicle and close the driver side door.
4. Wait at least 3 minutes. For vehicle with the engine listed below, remove the battery terminal after a lapse of the specified time.

D4D engine	: 20 minutes
HRA2DDT	: 12 minutes
K9K engine	: 4 minutes
M9R engine	: 4 minutes
R9M engine	: 4 minutes
V9X engine	: 4 minutes

CAUTION:
While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.

5. Remove 12V battery terminal.
   CAUTION:
   After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

INSTRUCTION 2 (FOR VEHICLES PARKED BY IGNITION SWITCH OFF)

1. Unlock the door with intelligent key or remote keyless entry.

NOTE:
At this moment, ACC power is supplied.

2. Open the driver side door.
3. Open the hood.
4. Close the driver side door.
5. Wait at least 3 minutes.
   CAUTION:
   While waiting, never operate the vehicle such as locking, opening, and closing doors. Violation of this caution results in the activation of ACC power supply according to the Auto ACC function.
6. Remove 12V battery terminal.
   CAUTION:
   After installing 12V battery, always check self-diagnosis results of all ECUs and erase DTC.

Precautions for Drive Shaft

INFOID:0000000010824400

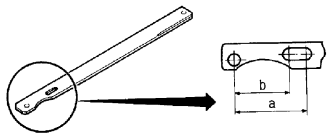
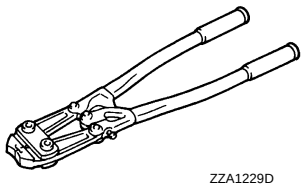
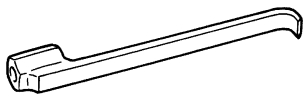
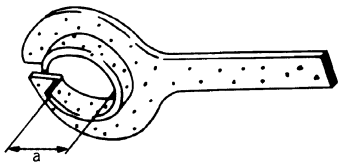
CAUTION:
Note the following precautions when disassembling and assembling drive shaft.
- **Joint sub-assembly does not disassemble because it is non-overhaul parts.**
- **Perform work in a dust-free location.**
- **Before disassembling and assembling, clean the parts.**
- **Prevent the entry of foreign objects 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 waste 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 waste.**

PREPARATION

PREPARATION

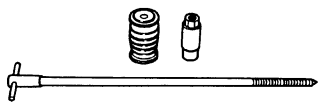
Special Service Tool

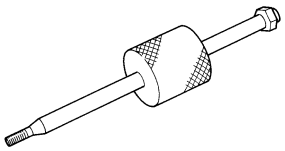
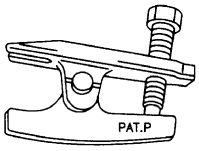
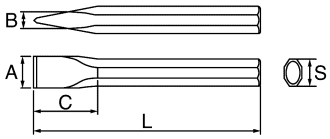
INFOID:0000000010824401

Tool number Tool name	Description
KV40104000 Hub lock nut wrench a: 85 mm (3.35 in) b: 65 mm (2.56 in)  ZZA0802D	Removing and Installing wheel hub lock nut.
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

INFOID:0000000010824402

Tool name	Description
Drive shaft puller  JPDIG0152ZZ	Removing drive shaft joint sub assembly

Sliding hammer  ZZA0023D	Removing drive shaft
Ball joint remover  NT146	Removing hub bolt
Chisel  JSEIA0915ZZ	Removing and installing steering knuckle and strut assembly A: 16 – 32 mm (0.63 – 1.26 in) B: 10 mm (0.39 in) or more C: 40 – 70 mm (1.57 – 2.76 in) L: 220 mm (7.87 in) or less S: 14 mm (0.55 in) or more

Lubricant or/and Sealant

INFOID:0000000010824403

Name	Description
Fill NISSAN Genuine grease or equivalent	• Joint sub-assembly inside • Housing inside
Apply paste [service parts (440037S000)]	• Joint sub-assembly

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000010824404

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

Reference			—	FAX-111, FAX-123	—	FAX-72	—	FAX-70	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

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000010824405

COMPONENT PART

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

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

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

- 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-137, "Wheel Bearing".

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

FRONT DRIVE SHAFT

Inspection

INFOID:0000000010824406

FRONT DRIVE SHAFT INSPECTION

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

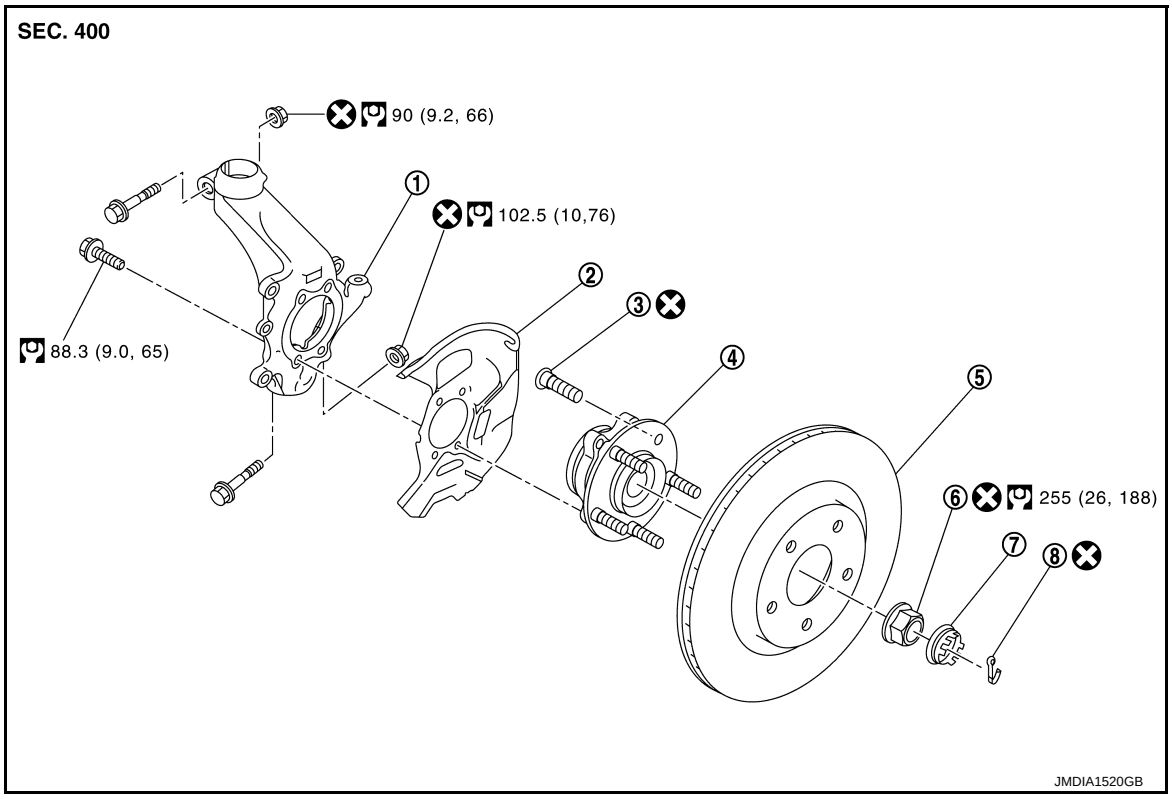
- Check drive shaft mounting point and joint for looseness and other damage.
  CAUTION:
  Replace entire drive shaft assembly when noise or vibration occur from drive shaft.
- Check boot for cracks and other damage.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

INFOID:0000000010824407



① Steering knuckle
② Splash guard
③ Hub bolt
④ Wheel hub and bearing assembly
⑤ Disc rotor
⑥ Wheel hub lock nut
⑦ Adjusting cap
⑧ Cotter pin

: N·m (kg-m, ft-lb)

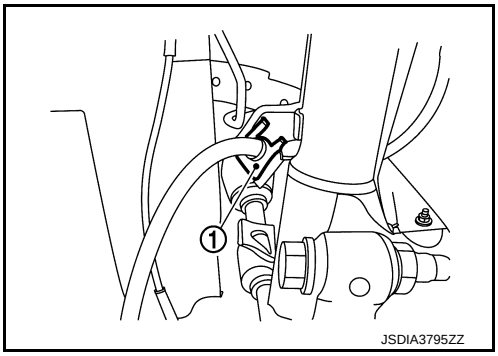
: Always replace after every disassembly.

Removal and Installation

INFOID:0000000010824408

REMOVAL

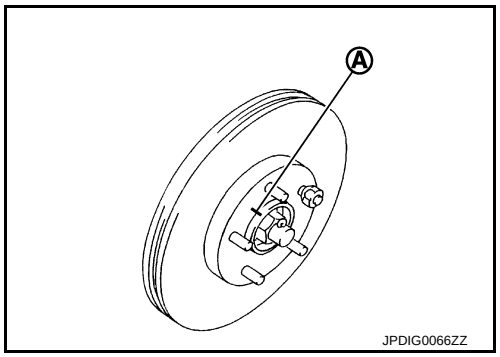
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove front wheel sensor from steering kunckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".



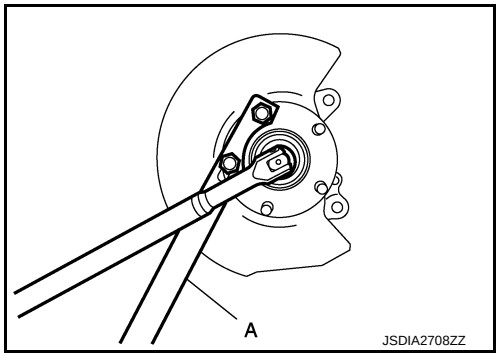
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor.

   CAUTION:
   - **Put matching marks Ⓐ on the wheel hub and bearing assembly and the disc rotor before removing the disc rotor.**
   - **Never drop disc rotor.**

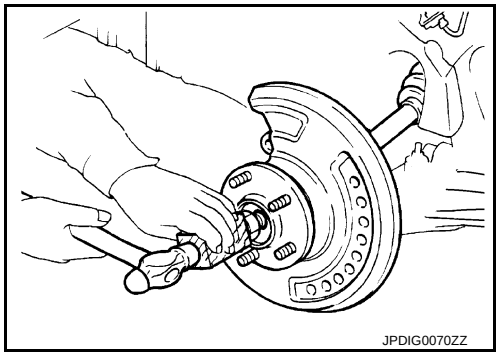


6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.

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



8. Remove wheel hub lock nut.
9. Remove wheel hub and bearing assembly.
10. Remove splash guard.
11. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
12. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
13. Separate the connection of strut assembly and steering knuckle as follows.

    CAUTION:

Be sure to keep the following procedure because steering knuckle may be damaged when you enlarge the gap of steering knuckle too much.

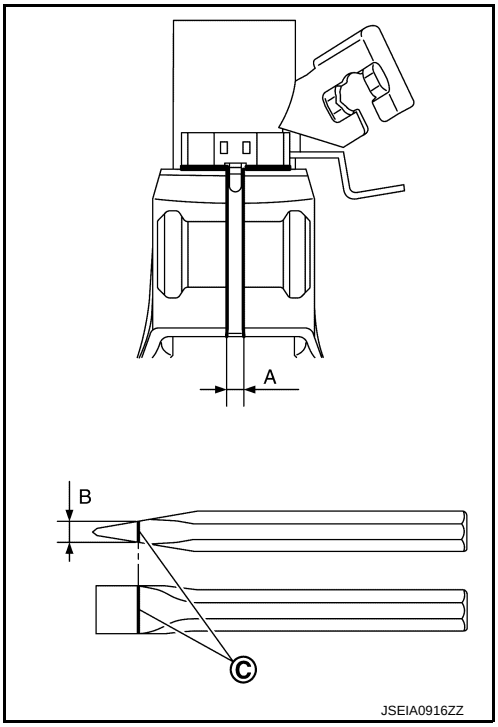
a. Remove strut mounting bolts from steering knuckle.

b. Measure the gap (A) of the steering knuckle. And then mark the enlarged limit (B) to the chisel.

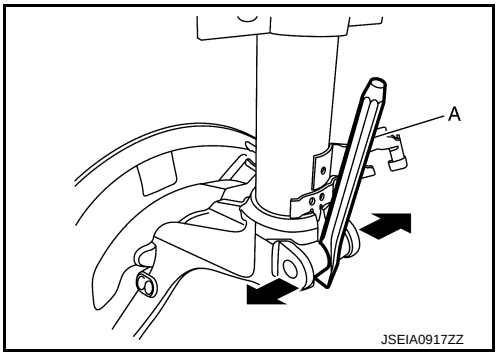
Ⓒ Marking

Enlarged limit (B) = gap (A) + 2.5 mm (0.098 in)

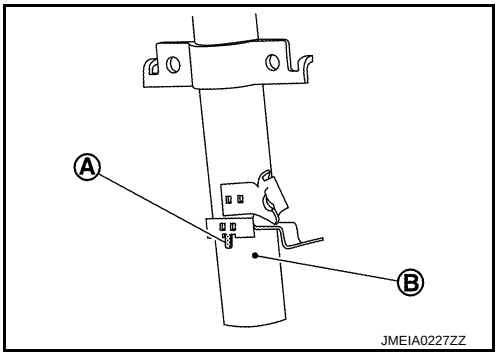
NOTE:
Standard of gap: 6.9 ± 0.5 mm (2.56 ± 0.02 in)



c. Enlarge the gap of the steering knuckle with the chisel (A) (commercial service tool) not to surpass a limit as shown in the figure.
CAUTION:
- **Never enlarge the gap more than 2.5mm (0.098in).**

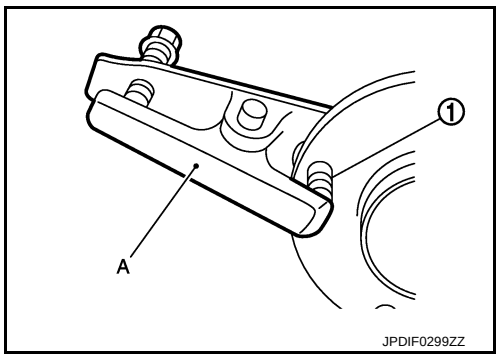


- **Be careful not to damage the projection Ⓐ and strut assembly Ⓑ with the chisel.**



d. Separate the connection of strut assembly and steering knuckle.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**
- **Never allow drive shaft to hang down without support for joint sub-assembly, shaft and the other parts.**
- **Be sure to remove lubricants if lubricant has been used to separate the connection of strut assembly and steering knuckle.**

14. Remove hub bolts ① from wheel hub and bearing assembly, using the ball joint remover (A) (commercial service tool).
CAUTION:
- **Remove hub bolt only when necessary.**
- **Never hammer the hub bolt to avoid impact to the wheel hub and bearing assembly.**
- **Pull out the hub bolt in a direction perpendicular to the wheel hub and bearing assembly.**



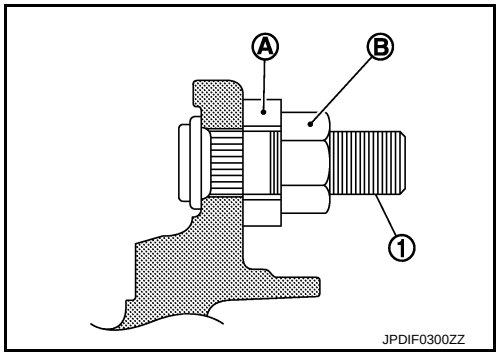
15. Perform inspection after removal. Refer to FAX-77, "Inspection".

INSTALLATION

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

Hub Bolts

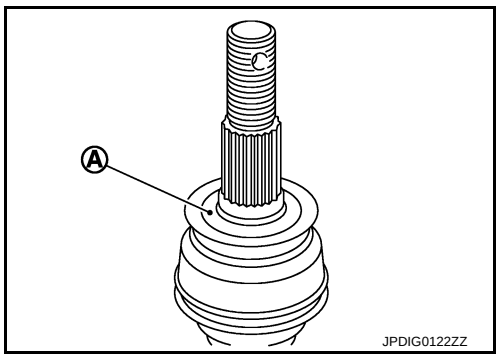
- Place a washer Ⓐ as shown in the figure to install the hub bolts ① by using the tightening force of the nut Ⓑ.
CAUTION:
- **Check that there is no clearance between wheel hub and bearing assembly, and hub bolt.**
- **Never reuse hub bolt.**



Drive shaft

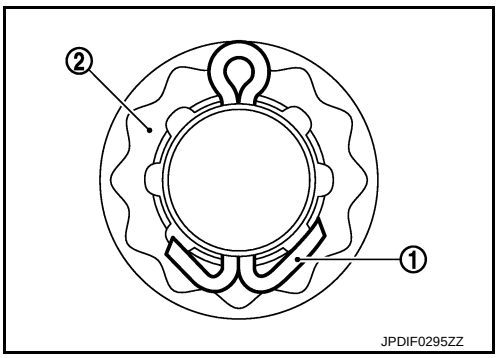
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
CAUTION:
Never apply lubricating oil to these matching surface.
- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

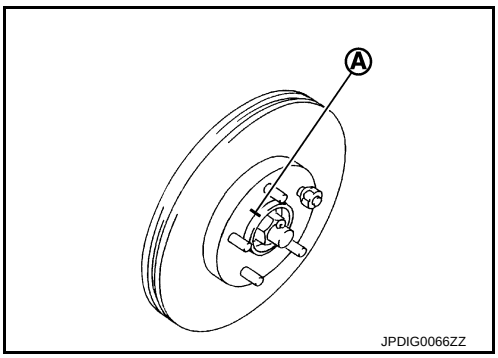
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



Disc rotor

CAUTION:

- **Align the matching marks Ⓐ made during removal when reusing the disc rotor.**
- **Never drop disc rotor.**



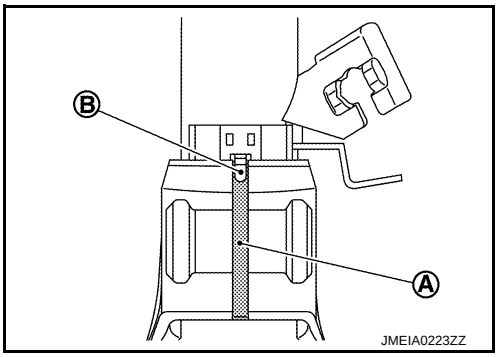
Strut Assembly and Steering Knuckle Connection

CAUTION:

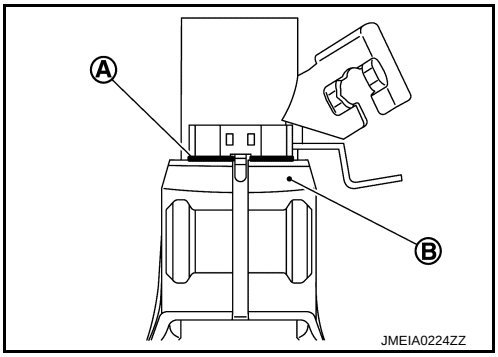
Be sure to remove lubricants if lubricant has been used to separate the connection of strut assembly and steering knuckle.

- Install the steering knuckle to strut assembly as follows.

1. Set suitable jack under steering knuckle.
2. Align the gap Ⓐ of steering knuckle to the projection part Ⓑ of strut.



3. Tighten the mounting bolt with pushing up the steering knuckle Ⓑ until contacts stopper bracket Ⓐ end face, using a suitable jack.
   CAUTION:
   Check the stable condition when using a jack.



- Perform inspection after installation. Refer to FAX-77, "Inspection".

Inspection

INFOID:0000000010824409

INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

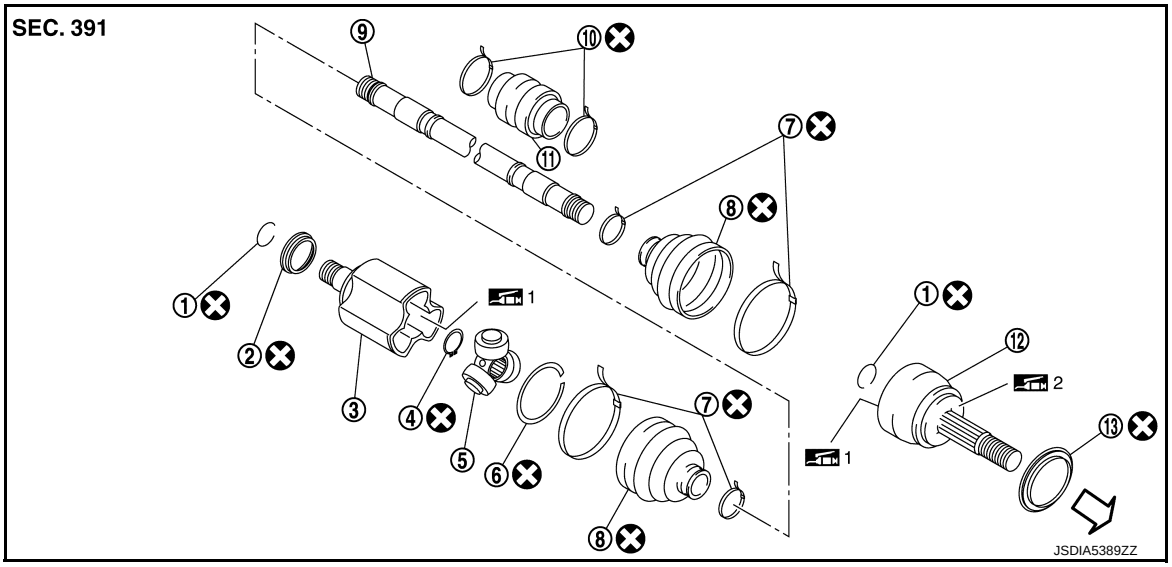
FRONT DRIVE SHAFT BOOT

MR20DD

MR20DD : Exploded View

INFOID:0000000010824410

LEFT SIDE



① Circular clip	② Dust shield	③ Housing
④ Snap ring	⑤ Spider assembly	⑥ Stopper ring
⑦ Boot band	⑧ Boot	⑨ Shaft
⑩ Damper band	⑪ Dinamic damper	⑫ Joint sub-assembly
⑬ Dust shield		

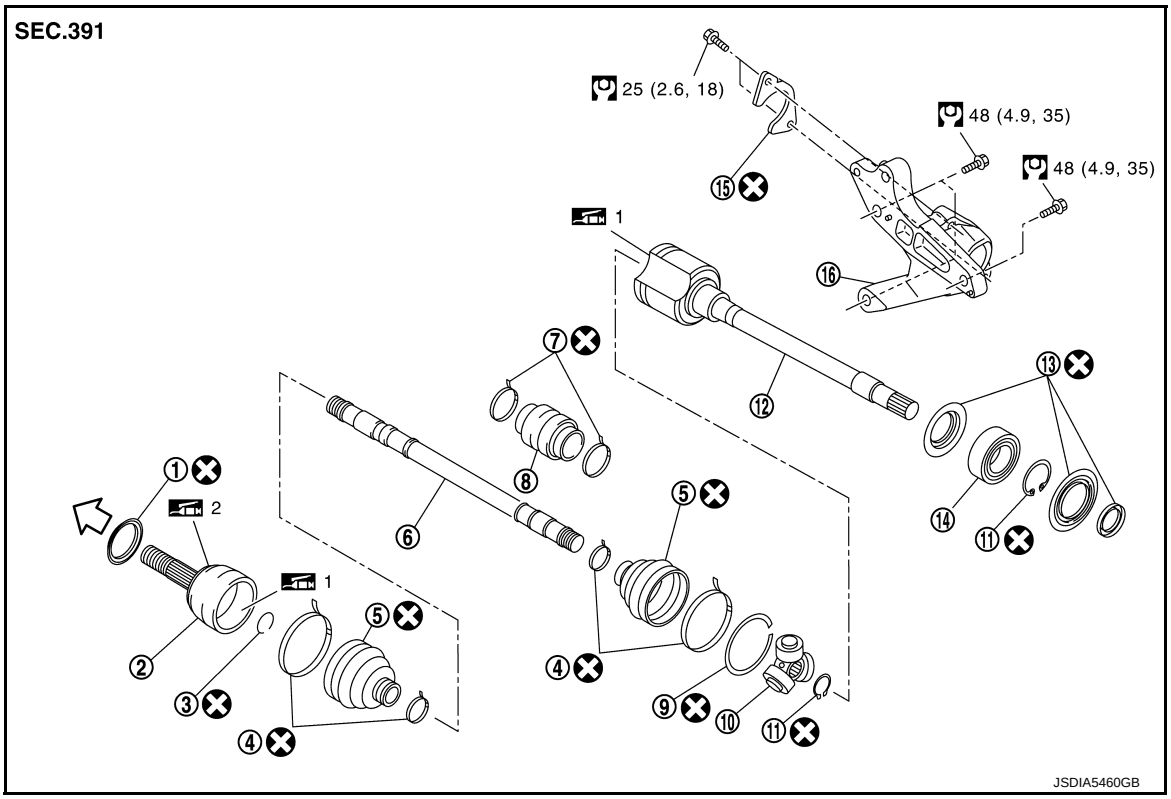
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Damper band	⑧ Dynamic damper	⑨ Stopper ring
⑩ Spider assembly	⑪ Snap ring	⑫ Housing
⑬ Dust shield	⑭ Support bearing	⑮ Retainer
⑯ Support bearing bracket		

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

MR20DD : Removal and Installation

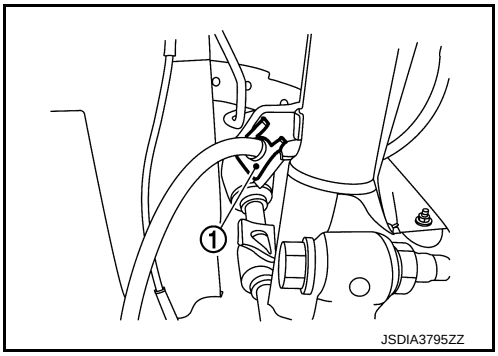
INFOID:0000000010824411

REMOVAL

Wheel Side

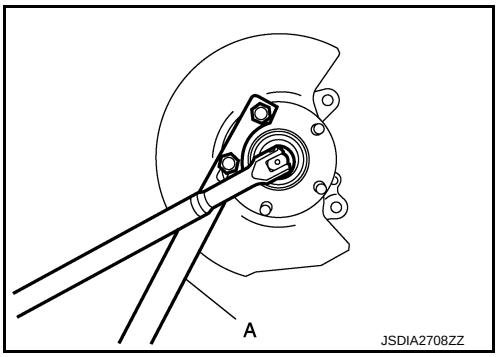
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

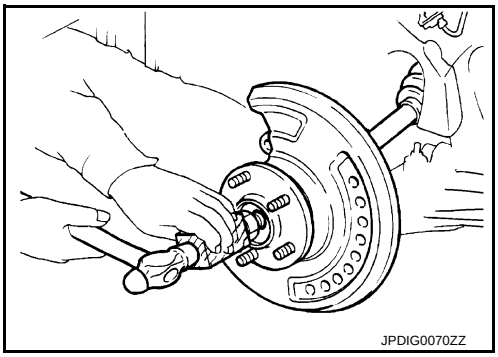


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

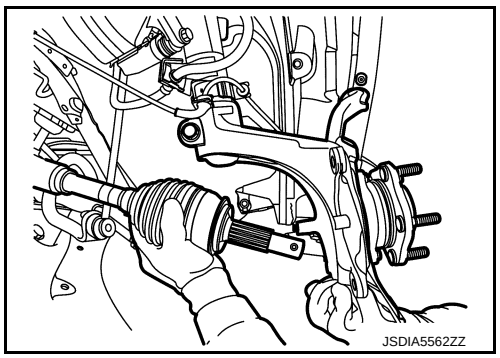


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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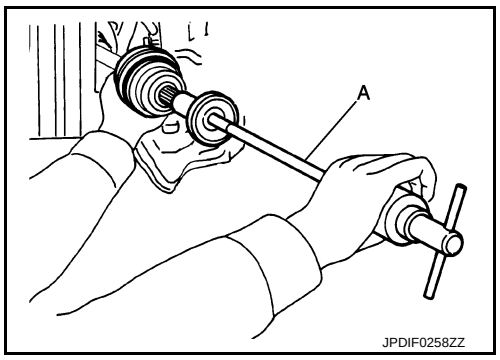
12. Remove boot bands, and then separate boot from joint sub-assembly.
13. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
CAUTION:
- **Align sliding hammer and drive shaft and remove them by pulling directory.**
- **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle. Refer to FAX-42, "MR20DD : Disassembly and Assembly".**



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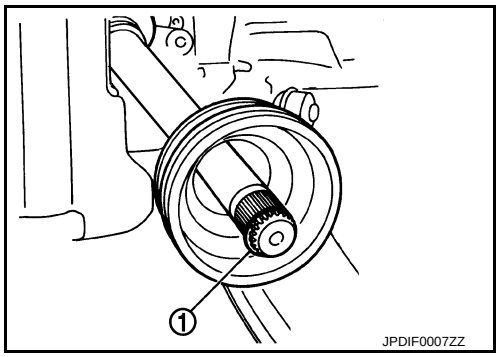
14. Remove circular clip ① from shaft.



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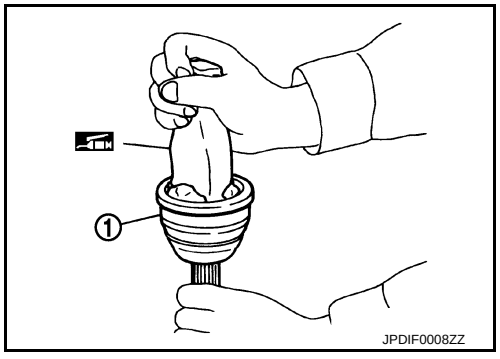
15. Remove boot from shaft.

Transaxle Side
Remove boot after removing drive shaft.
- Remove: Refer to FAX-101, "MR20DD : Removal and Installation".
- Disassembly: Refer to FAX-107, "MR20DD : Disassembly and Assembly".

INSTALLATION

Wheel Side

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 shop cloth to wipe off old grease that has oozed out.



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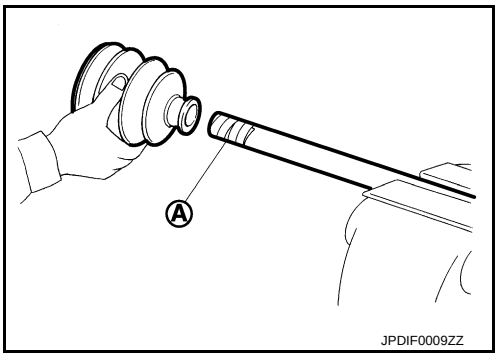
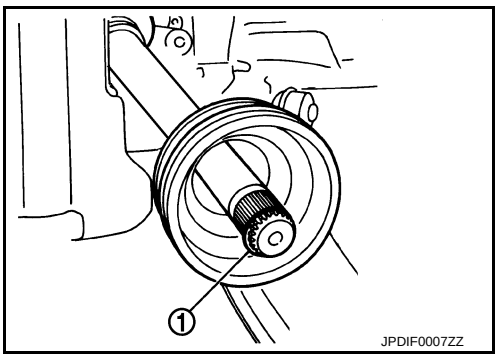
3. Install boot and boot bands to shaft.
CAUTION:
- **Never reuse boot and boot band.**
- **Wrap serration on shaft with tape Ⓐ to protect the boot from damage.**

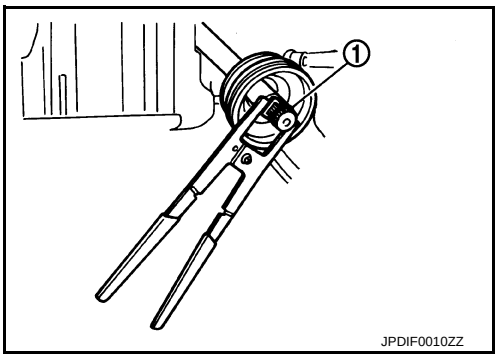


4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip ① on groove at the shaft edge.
CAUTION:
Never reuse circular clip.

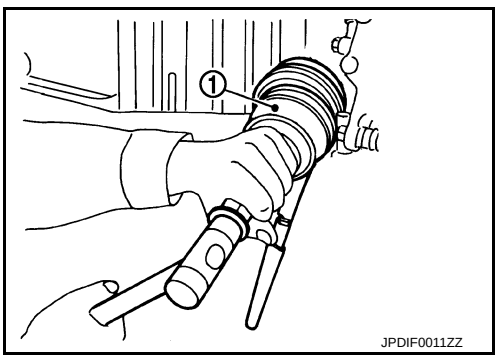


NOTE:
Drive joint inserter is recommended when installing circular clip ①.



6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.

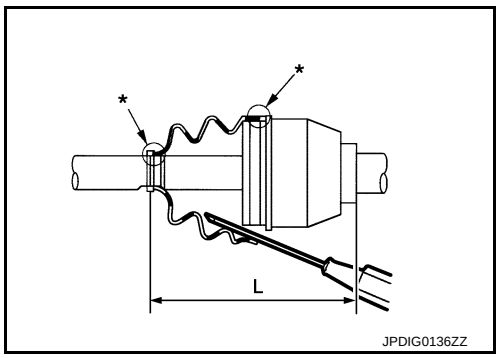
7. Install joint sub-assembly ① to shaft using plastic hammer.
CAUTION:
- **Check circular clip is properly positioned on groove of the joint sub-assembly.**
- **Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.**



8. Fill into the boot inside with the specified amount of grease from large diameter side of boot.

Grease amount : Refer to FAX-137, "Drive Shaft".

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



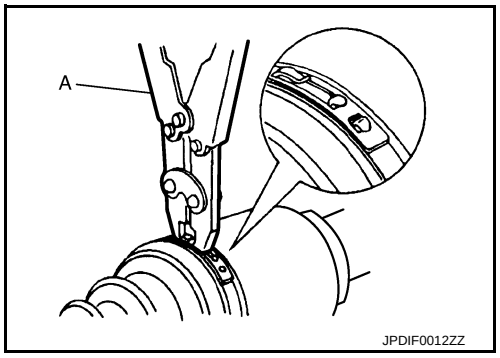
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or joint subassembly. boot may be removed. Remove all grease from the boot mounting surface.

10. To prevent the deformation of the boot, adjust the boot installation length (L) to the 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-137, "Drive Shaft".

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

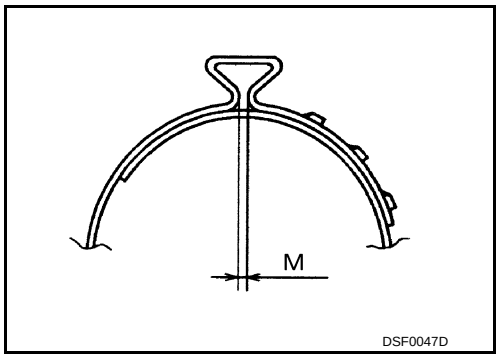
11. Secure the large and small ends of the boot with boot bands using the boot band crimping tool (A) (SST: KV40107300).



CAUTION:
Never reuse boot band.

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

M : 1.0 – 4.0 mm (0.039 – 0.157 in)



12. Check that displacement does not occur when boot is rotated with the joint sub-assembly and shaft fixed.

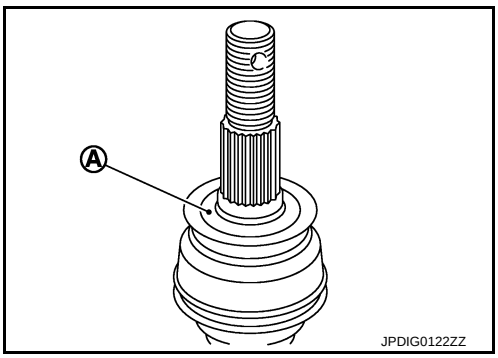
CAUTION:
- **Reinstall them using boot bands when boot installation positions become incorrect.**
- **Never reuse boot band.**

13. Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

14. Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

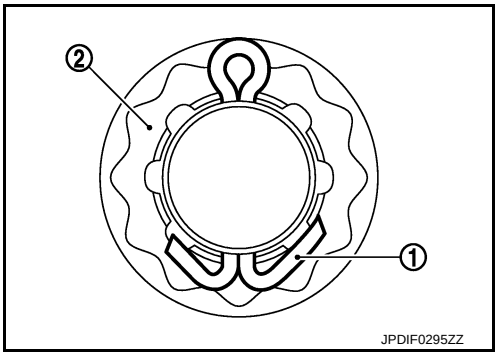


15. Insert drive shaft to wheel hub and bearing assembly, and then temporarily tighten wheel hub lock nut.
CAUTION:
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

16. Install transverse link to steering knuckle and front suspention member. Refer to FSU-17, "Exploded View".
17. Install steering outer socket to steering knuckle.
- LHD: Refer to ST-20, "LHD : Exploded View".
- RHD: Refer to ST-21, "RHD : Exploded View".

18. Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

19. When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
CAUTION:
Never reuse cotter pin.



20. Install disc rotor. Refer to FAX-72, "Removal and Installation".
21. Install caliper assembly to steering knuckle.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

22. Install lock plate to strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

23. Install wheel sensor to steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
24. Install tires to vehicle.Refer to WT-61, "Removal and Installation".
25. Perform inspection after installation. Refer to FAX-85, "MR20DD : Inspection".

Transaxle Side
- Installation: Refer to FAX-101, "MR20DD : Removal and Installation".

- Assembly: Refer to FAX-107, "MR20DD : Disassembly and Assembly".

MR20DD : Inspection

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INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

QR25DE

QR25DE : Exploded View

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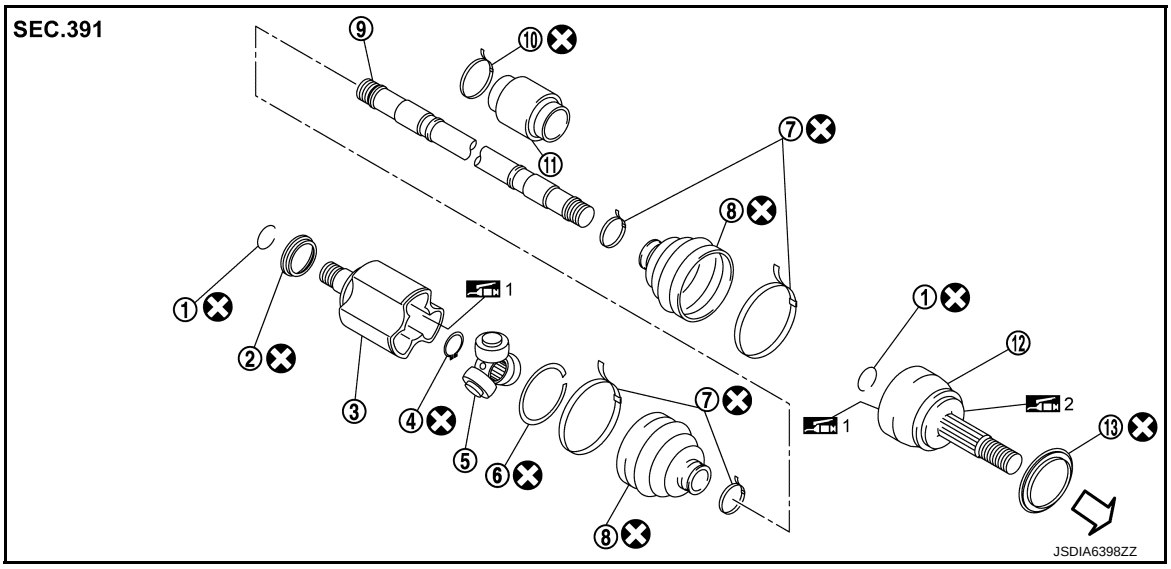
LEFT SIDE



① Circular clip	② Dust shield	③ Housing
④ Snap ring	⑤ Spider assembly	⑥ Stopper ring
⑦ Boot band	⑧ Boot	⑨ Shaft
⑩ Damper band	⑪ Dynamic damper	⑫ Joint sub-assembly
⑬ Dust shield		

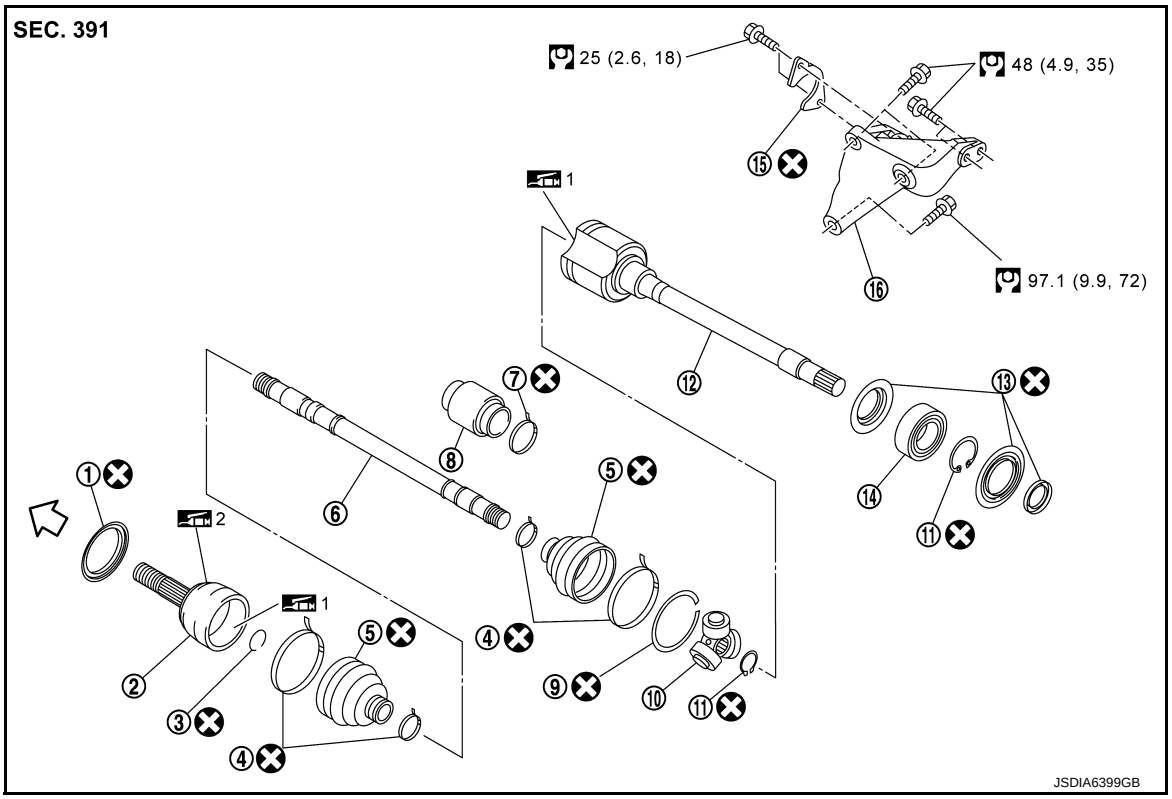
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Damper band	⑧ Dynamic damper	⑨ Stopper ring
⑩ Spider assembly	⑪ Snap ring	⑫ Housing
⑬ Dust shield	⑭ Support bearing	⑮ Retainer
⑯ Support bearing bracket		

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

QR25DE : Removal and Installation

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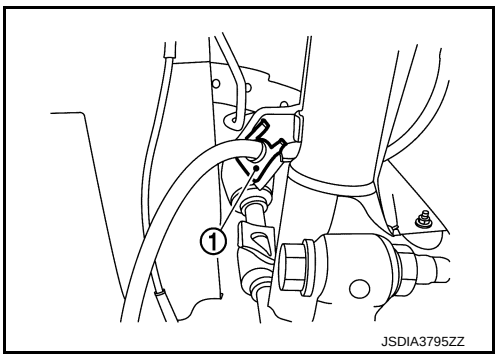
REMOVAL

Wheel Side

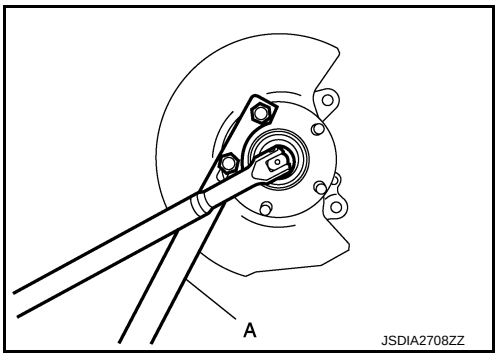
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

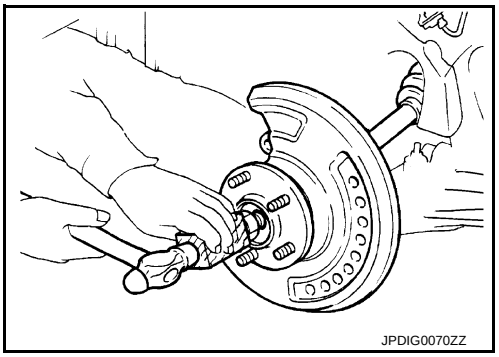


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

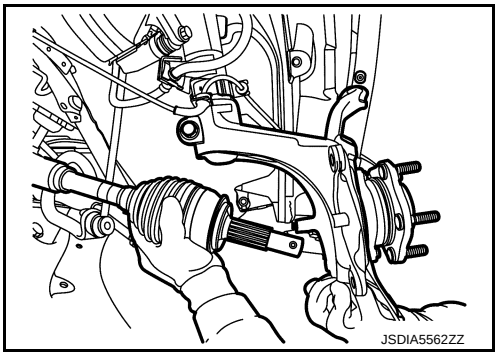


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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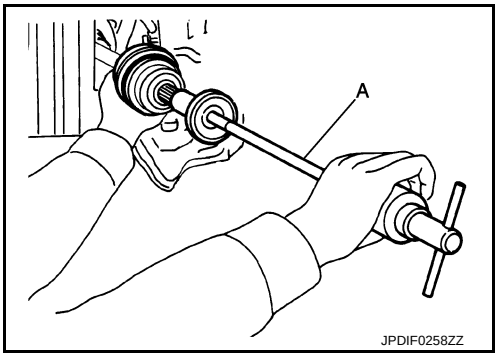
12. Remove boot bands, and then separate boot from joint sub-assembly.
13. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
CAUTION:
- **Align sliding hammer and drive shaft and remove them by pulling directory.**
- **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle. Refer to FAX-119, "QR25DE : Disassembly and Assembly".**



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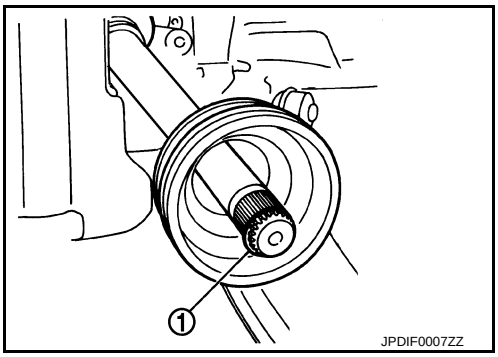
14. Remove circular clip ① from shaft.



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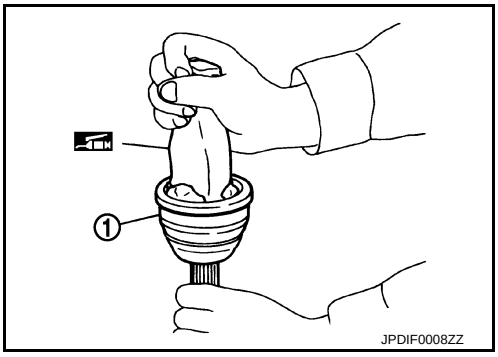
15. Remove boot from shaft.

Transaxle Side
Remove boot after removing drive shaft.
- Remove: Refer to FAX-113, "QR25DE : Removal and Installation".
- Disassembly: Refer to FAX-119, "QR25DE : Disassembly and Assembly".

INSTALLATION

Wheel Side

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 shop cloth to wipe off old grease that has oozed out.



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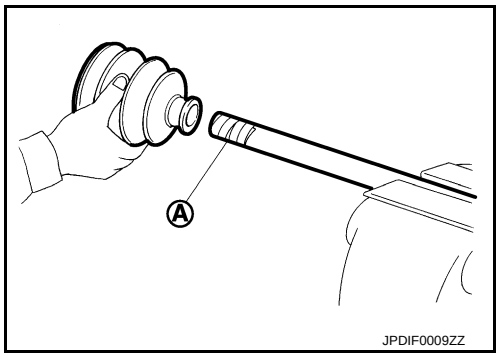
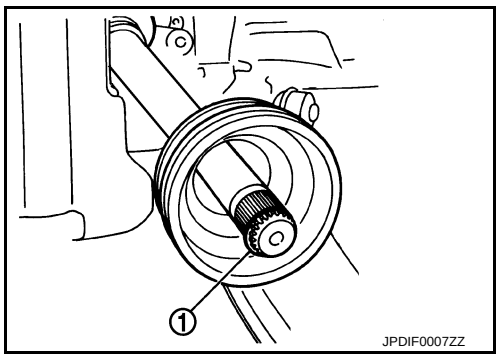
3. Install boot and boot bands to shaft.
CAUTION:
- **Never reuse boot and boot band.**
- **Wrap serration on shaft with tape Ⓐ to protect the boot from damage.**

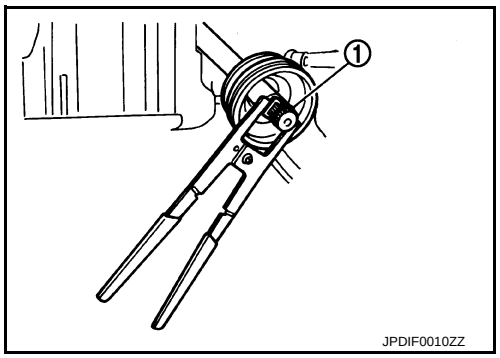


4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip ① on groove at the shaft edge.
CAUTION:
Never reuse circular clip.

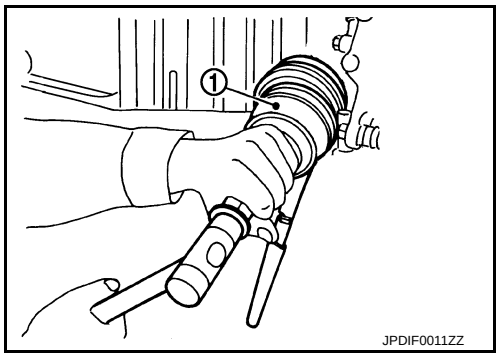


NOTE:
Drive joint inserter is recommended when installing circular clip ①.



6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.

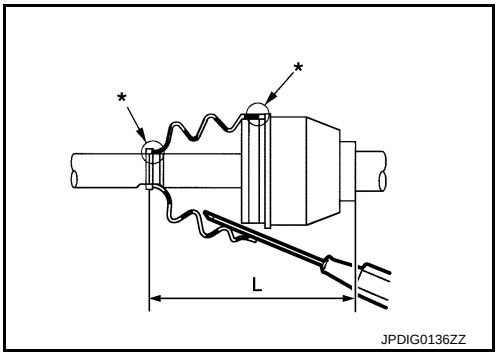
7. Install joint sub-assembly ① to shaft using plastic hammer.
CAUTION:
- **Check circular clip is properly positioned on groove of the joint sub-assembly.**
- **Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.**



8. Fill into the boot inside with the specified amount of grease from large diameter side of boot.

Grease amount : Refer to FAX-137, "Drive Shaft".

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 subassembly. boot may be removed. Remove all grease from the boot mounting surface.

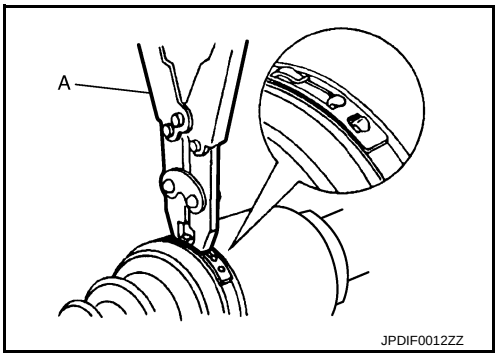


10. To prevent the deformation of the boot, adjust the boot installation length (L) to the specified value shown below by inserting the suitable tool into the inside of the boot from the large diameter side of the boot and discharging the inside air.

L : Refer to FAX-137, "Drive Shaft".

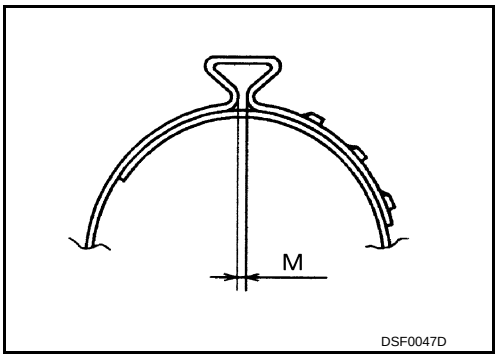
CAUTION:
- **If the boot mounting length exceeds the standard, it may cause breakage in the boot.**
- **Be careful not to touch the inside of the boot with a tip of tool.**

11. Secure the large and small 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.

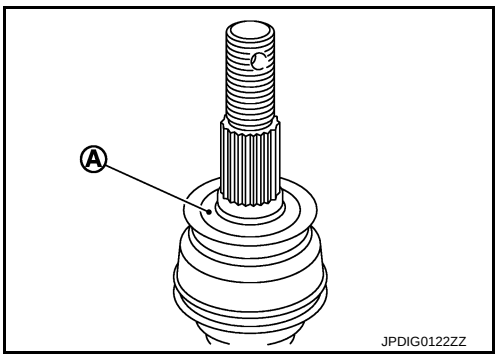
M : 1.0 – 4.0 mm (0.039 – 0.157 in)



12. Check that displacement does not occur when boot is rotated with the joint sub-assembly and shaft fixed.
    CAUTION:
    - **Reinstall them using boot bands when boot installation positions become incorrect.**
    - **Never reuse boot band.**
13. Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
    CAUTION:
    Never apply lubricating oil to these matching surface.

14. Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

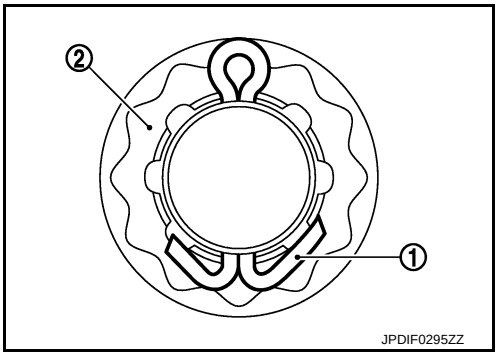


15. Insert drive shaft to wheel hub and bearing assembly, and then temporarily tighten wheel hub lock nut.
CAUTION:
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

16. Install transverse link to steering knuckle and front suspention member. Refer to FSU-17, "Exploded View".
17. Install steering outer socket to steering knuckle.
- LHD: Refer to ST-20, "LHD : Exploded View".
- RHD: Refer to ST-21, "RHD : Exploded View".

18. Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

19. When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
CAUTION:
Never reuse cotter pin.



20. Install disc rotor. Refer to FAX-72, "Removal and Installation".
21. Install caliper assembly to steering knuckle.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

22. Install lock plate to strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

23. Install wheel sensor to steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
24. Install tires to vehicle.Refer to WT-61, "Removal and Installation".
25. Perform inspection after installation. Refer to FAX-92, "QR25DE : Inspection".

Transaxle Side
- Installation: Refer to FAX-113, "QR25DE : Removal and Installation".

• Assembly: Refer to FAX-119, "QR25DE : Disassembly and Assembly".

QR25DE : Inspection

INFOID:0000000010824415

INSPECTION AFTER REMOVAL

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

• Check components for deformation, cracks, and other damage.
• Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.
- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

R9M

R9M : Exploded View

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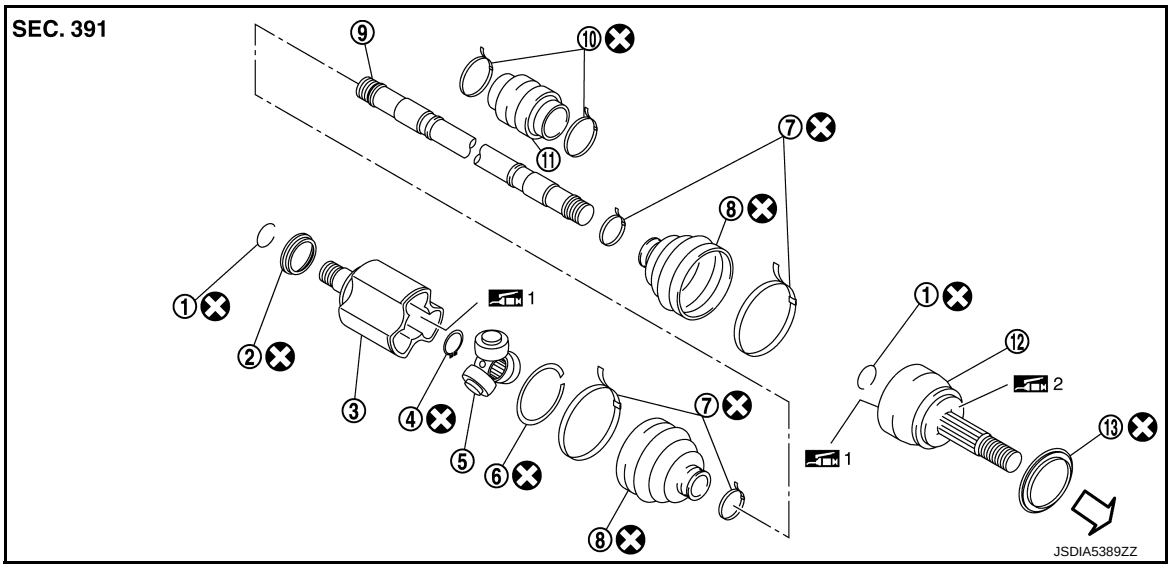
LEFT SIDE



① Circular clip	② Dust shield	③ Housing
④ Snap ring	⑤ Spider assembly	⑥ Stopper ring
⑦ Boot band	⑧ Boot	⑨ Shaft
⑩ Damper band	⑪ Dynamic damper	⑫ Joint sub-assembly
⑬ Dust shield		

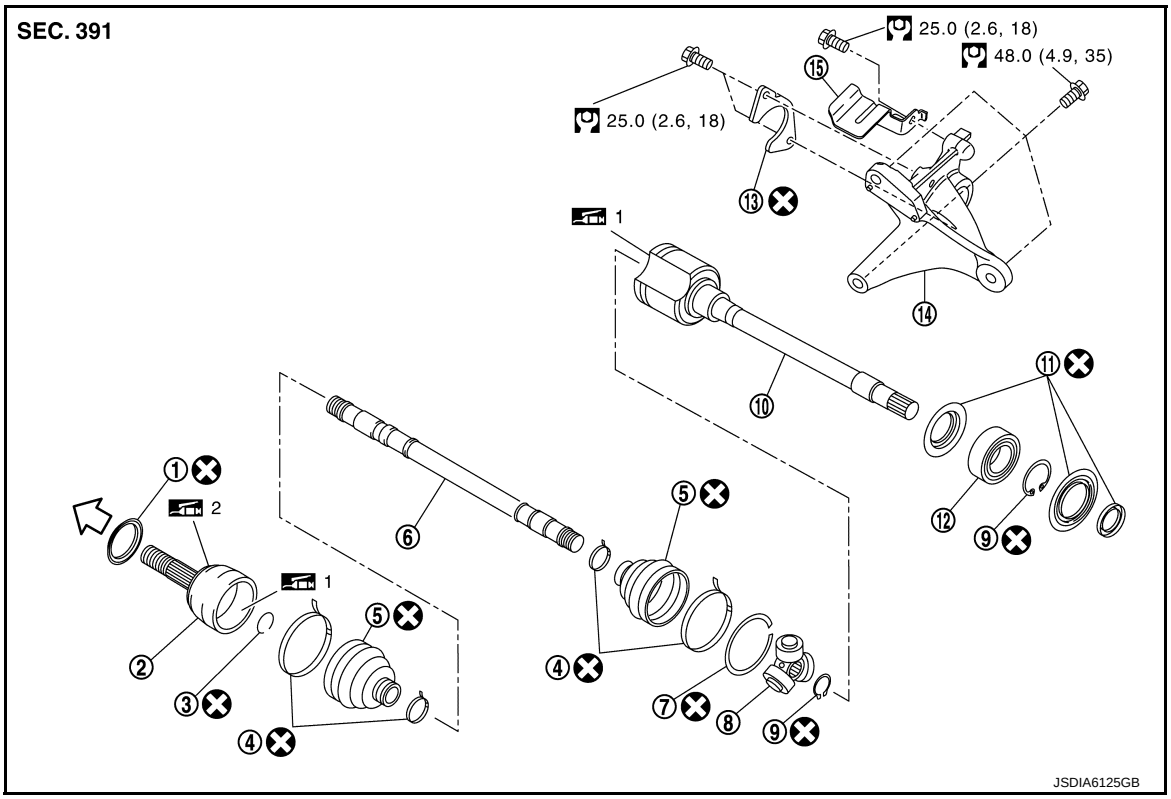
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

⊗: Always replace after every disassembly.

RIGHT SIDE



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Stopper ring	⑧ Spider assembly	⑨ Snap ring
⑩ Housing	⑪ Dust shield	⑫ Support bearing
⑬ Retainer	⑭ Support bearing bracket	⑮ Heat insulator

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

R9M : Removal and Installation

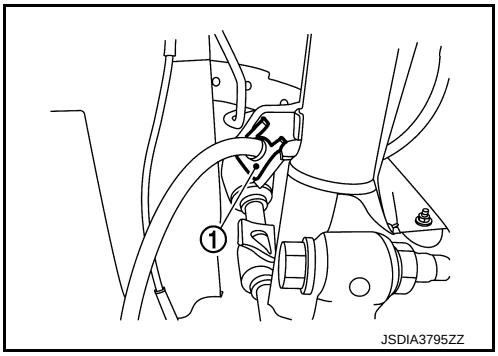
INFOID:0000000010826888

REMOVAL

Wheel Side

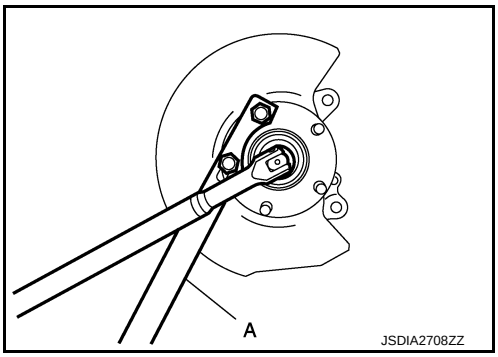
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

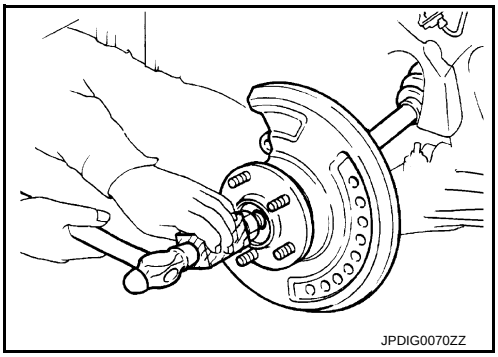


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

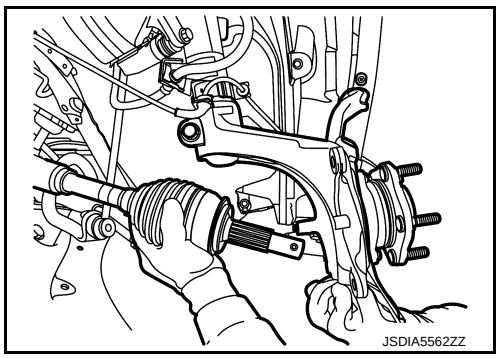


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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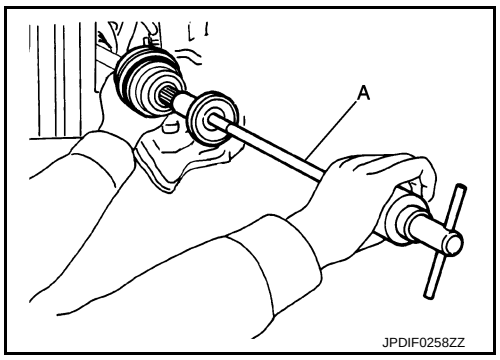
12. Remove boot bands, and then separate boot from joint sub-assembly.
13. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
CAUTION:
- **Align sliding hammer and drive shaft and remove them by pulling directory.**
- **If joint sub-assembly cannot be pulled out, try after removing drive shaft from vehicle. Refer to FAX-131, "R9M : Disassembly and Assembly".**



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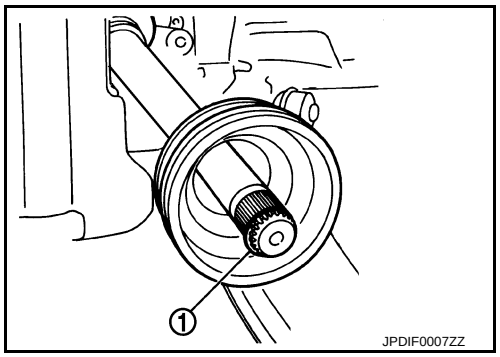
14. Remove circular clip ① from shaft.



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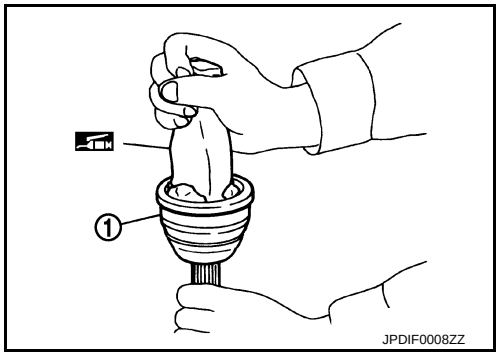
15. Remove boot from shaft.

Transaxle Side
Remove boot after removing drive shaft.
- Remove: Refer to FAX-125, "R9M : Removal and Installation".
- Disassembly: Refer to FAX-131, "R9M : Disassembly and Assembly".

INSTALLATION

Wheel Side

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 shop cloth to wipe off old grease that has oozed out.



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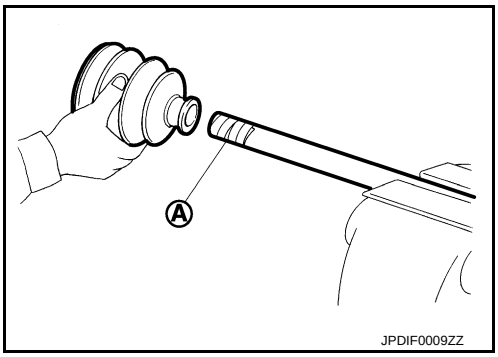
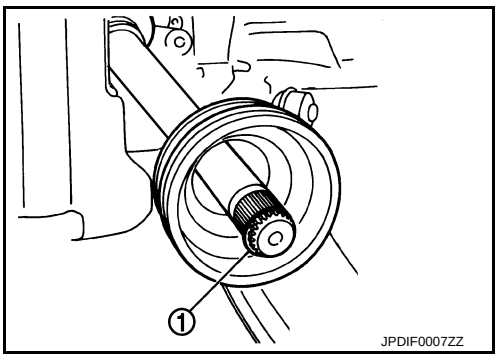
3. Install boot and boot bands to shaft.
CAUTION:
- **Never reuse boot and boot band.**
- **Wrap serration on shaft with tape Ⓐ to protect the boot from damage.**

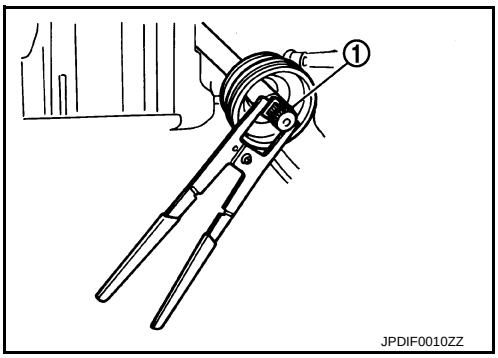


4. Remove the tape wrapped around the serration on shaft.

5. Position the circular clip ① on groove at the shaft edge.
CAUTION:
Never reuse circular clip.

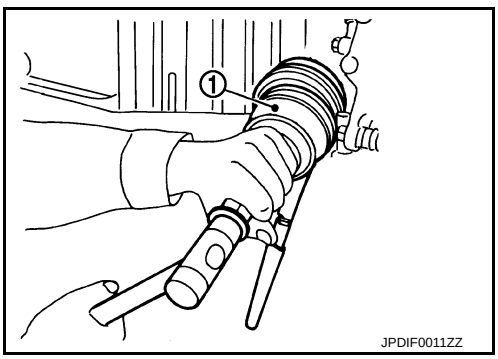


NOTE:
Drive joint inserter is recommended when installing circular clip ①.



6. Align both center axles of the shaft edge and joint sub-assembly. Then assemble shaft with joint sub-assembly holding circular clip.

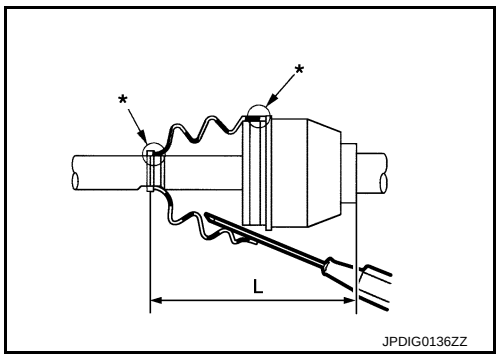
7. Install joint sub-assembly ① to shaft using plastic hammer.
CAUTION:
- **Check circular clip is properly positioned on groove of the joint sub-assembly.**
- **Confirm that joint sub-assembly is correctly engaged while rotating drive shaft.**



8. Fill into the boot inside with the specified amount of grease from large diameter side of boot.

Grease amount : Refer to FAX-137, "Drive Shaft".

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



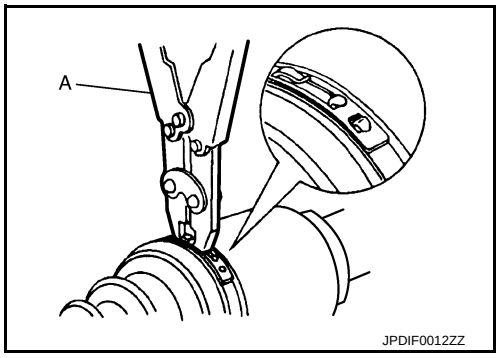
CAUTION:
If grease adheres to the boot mounting surface (indicated by "*" mark) on the shaft or joint subassembly. boot may be removed. Remove all grease from the boot mounting surface.

10. To prevent the deformation of the boot, adjust the boot installation length (L) to the 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-137, "Drive Shaft".

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

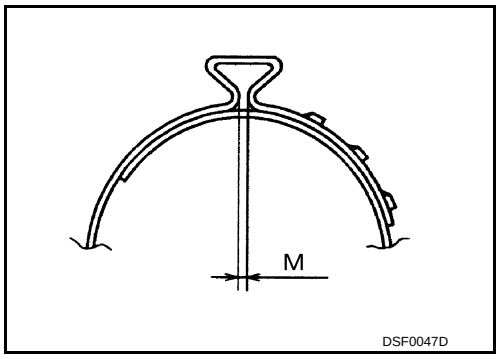
11. Secure the large and small ends of the boot with boot bands using the boot band crimping tool (A) (SST: KV40107300).



CAUTION:
Never reuse boot band.

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

M : 1.0 – 4.0 mm (0.039 – 0.157 in)



12. Check that displacement does not occur when boot is rotated with the joint sub-assembly and shaft fixed.

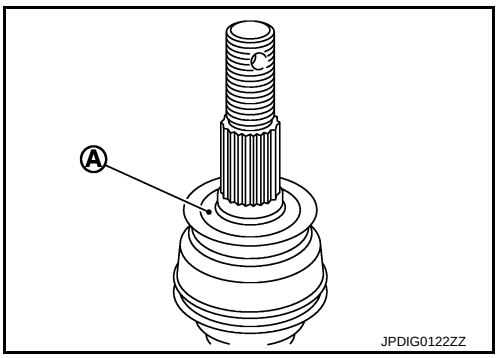
CAUTION:
- **Reinstall them using boot bands when boot installation positions become incorrect.**
- **Never reuse boot band.**

13. Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

14. Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

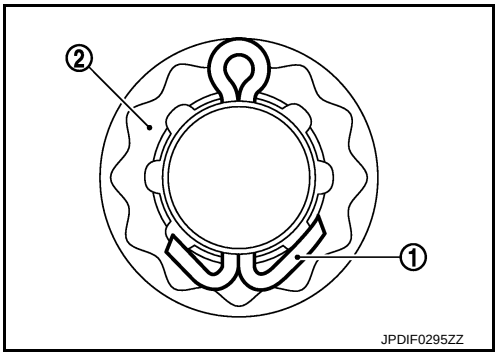


15. Insert drive shaft to wheel hub and bearing assembly, and then temporarily tighten wheel hub lock nut.
CAUTION:
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

16. Install transverse link to steering knuckle and front suspention member. Refer to FSU-17, "Exploded View".
17. Install steering outer socket to steering knuckle.
- LHD: Refer to ST-20, "LHD : Exploded View".
- RHD: Refer to ST-21, "RHD : Exploded View".

18. Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

19. When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
CAUTION:
Never reuse cotter pin.



20. Install disc rotor. Refer to FAX-72, "Removal and Installation".
21. Install caliper assembly to steering knuckle.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

22. Install lock plate to strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".

23. Install wheel sensor to steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
24. Install tires to vehicle.Refer to WT-61, "Removal and Installation".
25. Perform inspection after installation. Refer to FAX-99, "R9M : Inspection".

Transaxle Side
- Installation: Refer to FAX-125, "R9M : Removal and Installation".

- Assembly: Refer to FAX-131, "R9M : Disassembly and Assembly".

R9M : Inspection

INFOID:0000000010826889

INSPECTION AFTER REMOVAL

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

- Check components for deformation, cracks, and other damage.
- Check boots of transverse link and steering outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-18, "Inspection".
- Steering outer socket: Refer to ST-26, "Inspection".

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

FRONT DRIVE SHAFT

MR20DD

MR20DD : Exploded View

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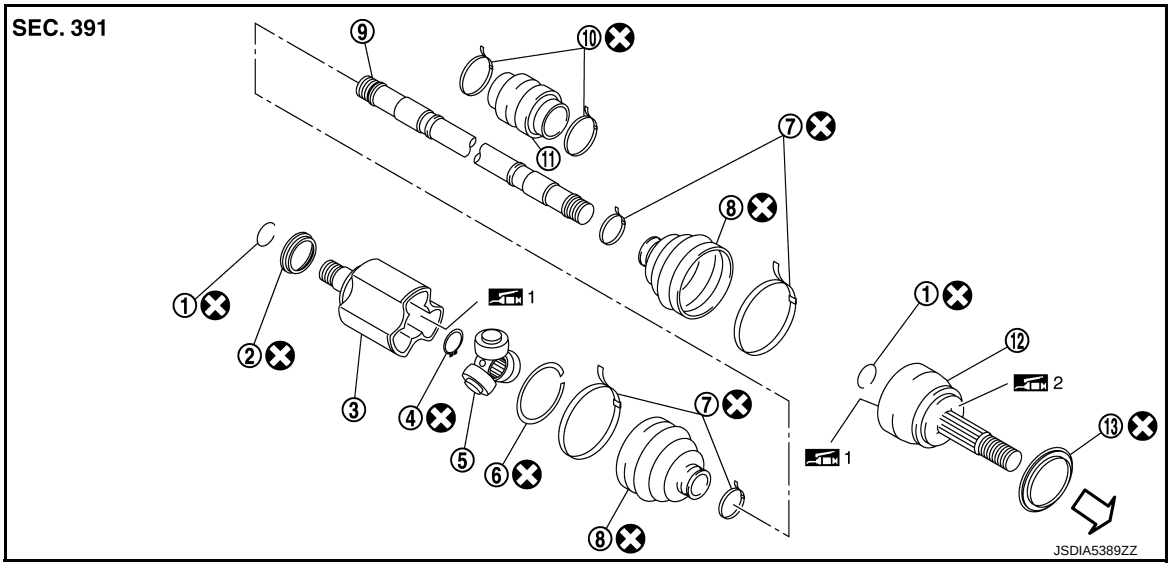
LEFT SIDE



① Circular clip	② Dust shield	③ Housing
④ Snap ring	⑤ Spider assembly	⑥ Stopper ring
⑦ Boot band	⑧ Boot	⑨ Shaft
⑩ Damper band	⑪ Dinamic damper	⑫ Joint sub-assembly
⑬ Dust shield		

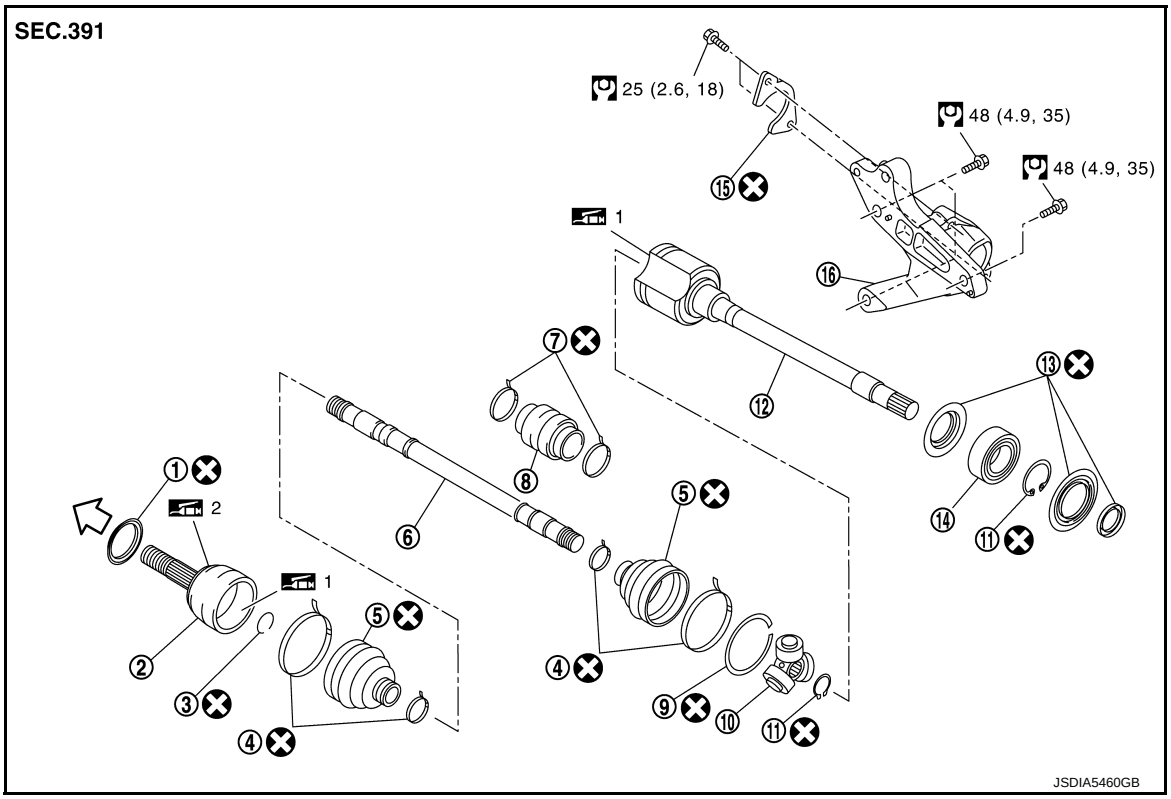
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE



① Dust shield	② Joint sub-assembly	③ Circular clip
④ Boot band	⑤ Boot	⑥ Shaft
⑦ Damper band	⑧ Dynamic damper	⑨ Stopper ring
⑩ Spider assembly	⑪ Snap ring	⑫ Housing
⑬ Dust shield	⑭ Support bearing	⑮ Retainer
⑯ Support bearing bracket		

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

MR20DD : Removal and Installation

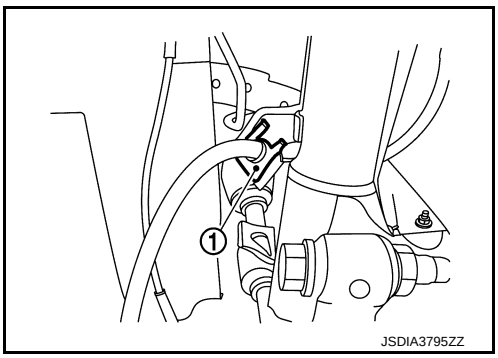
INFOID:0000000010824417

REMOVAL

Left Side

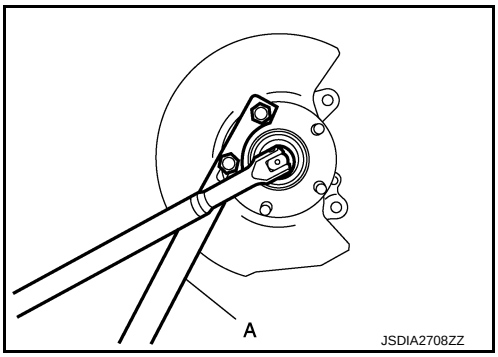
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

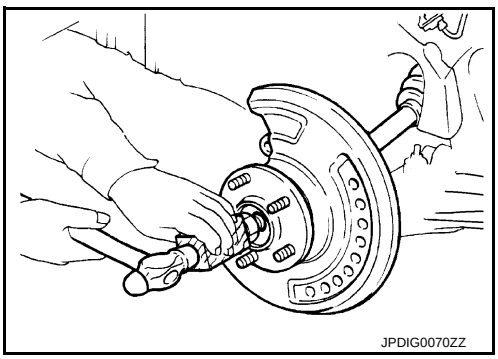


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

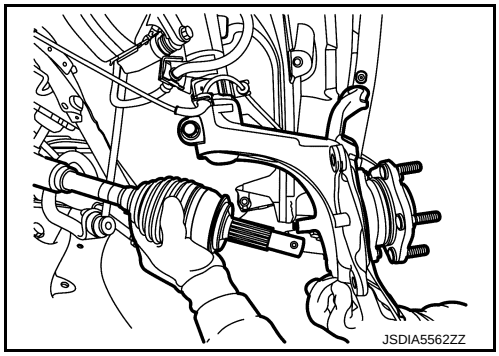


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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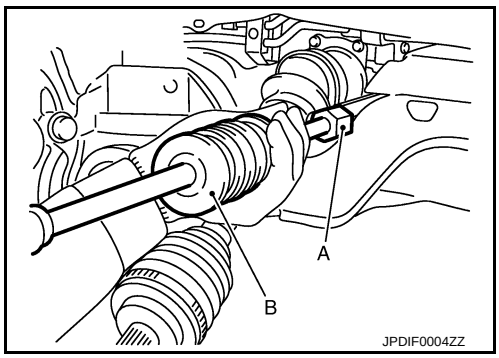
12. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and transaxle assembly.

CAUTION:
- **Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**
- **Confirm that the circular clip is attached to the drive shaft.**



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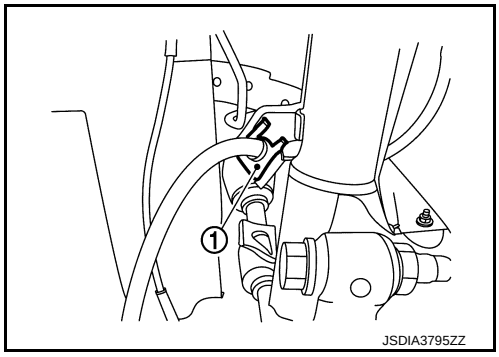
Right Side

1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".



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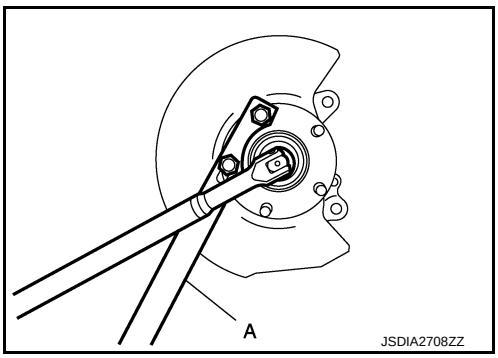
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

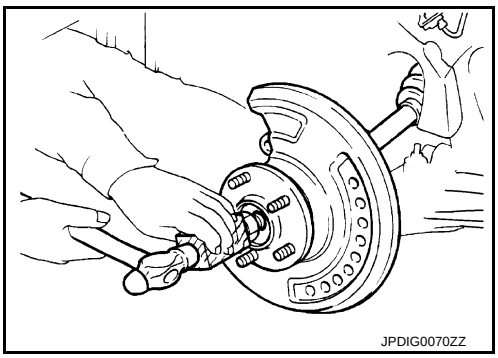
CAUTION:
Never depress brake pedal while brake caliper is removed.

5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".

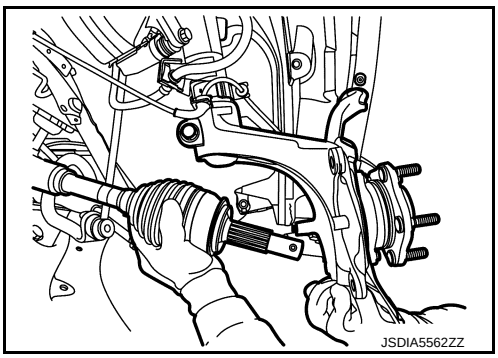
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
11. Remove drive shaft from wheel hub and bearing assembly.
    CAUTION:
    - **Never place drive shaft joint at an extreme angle.**
    - **Be careful not to overextend slide joint.**



12. Remove retainer mounting bolts and retainer.
13. Remove drive shaft from transfer assembly.
    - Use the drive shaft attachment (SST: KV40107500) and a sliding hammer while inserting tip of the drive shaft attachment between housing and transfer assembly.
      CAUTION:
      Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.
14. If necessary, remove the support bearing bracket mounting bolts and the support bearing bracket.

INSTALLATION

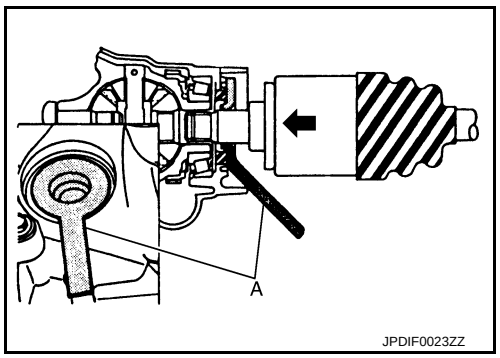
Left Side

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

CAUTION:

Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-429, "Removal and Installation".

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

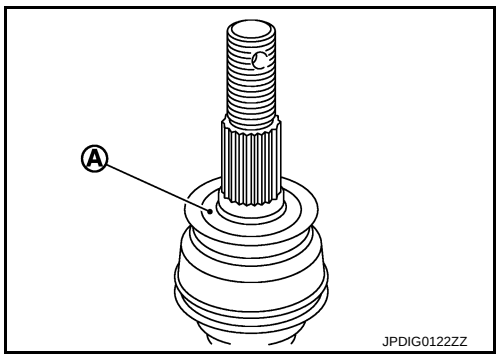


CAUTION:
- **Check that circular clip is completely engaged.**
- **Never reuse differential side oil seal.**

- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.



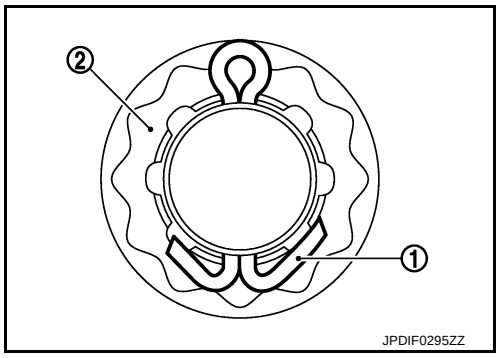
CAUTION:
Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".

CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.



CAUTION:
Never reuse cotter pin.

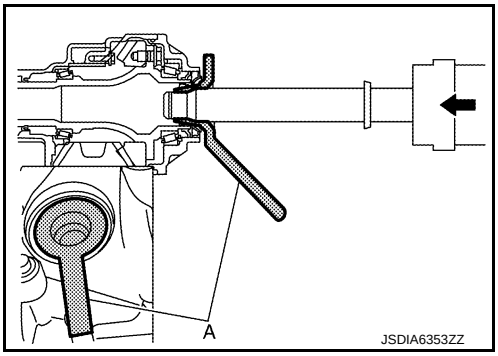
- Perform inspection after installation. Refer to FAX-111, "MR20DD : Inspection".

Right Side

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

CAUTION:
Always replace transfer cover oil seal (inner) and transfer cover oil seal (outer) with new one when installing drive shaft. Refer to DLN-78, "MR20DD : Removal and Installation".

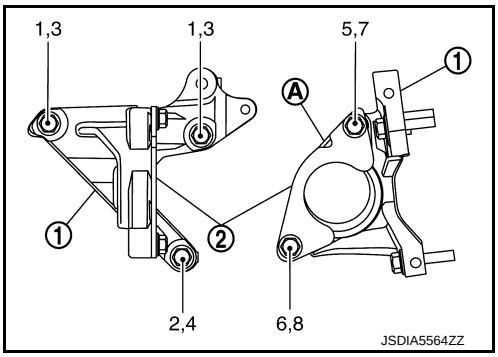
- Place the protector (A) (SST: KV38107900) onto transfer assembly to prevent damage to the transfer cover oil seal (inner) and transfer cover oil seal (outer) while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.
  CAUTION:
  Never reuse transfer cover oil seal (inner) and transfer cover oil seal (outer).



- When installing support bearing bracket tighten the mounting bolt with the following procedure.

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4



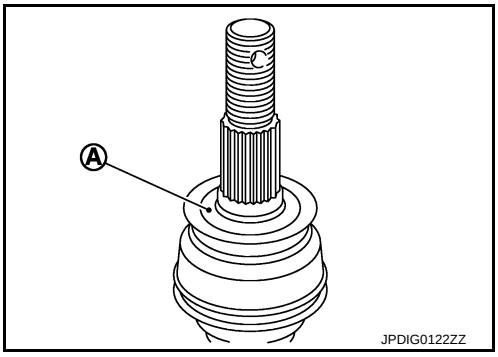
- Set plate ② so thet the notch part Ⓐ becomes upper side.
  CAUTION:
  Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 5 → 6
Final tightening (Specified torque)	: 7 → 8

- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.

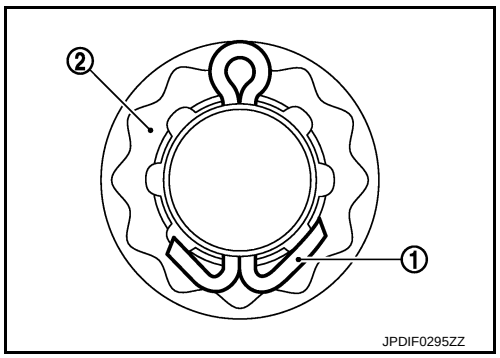
- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-111, "MR20DD : Inspection".

MR20DD : Disassembly and Assembly

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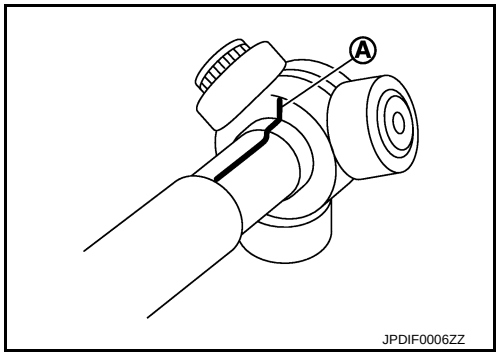
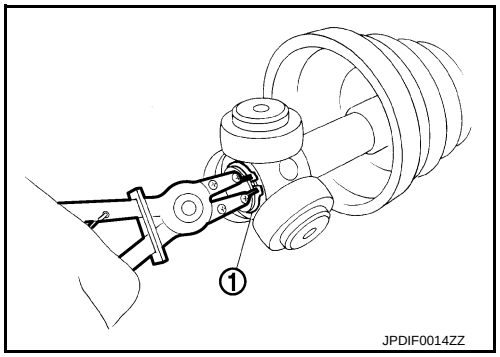
DISASSEMBLY

Transaxle Assembly Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from housing.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.
5. Put matching marks Ⓐ on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.

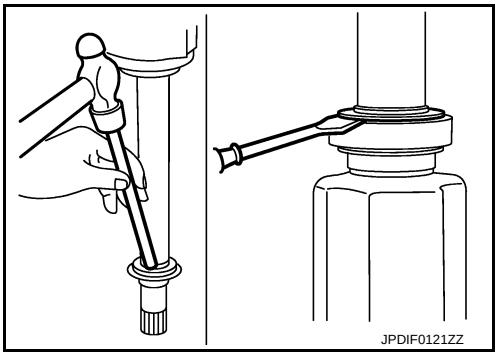


6. Remove snap ring ①, and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing (left side).
9. Remove dust shield from housing.
10. Clean old grease on housing with paper waste.

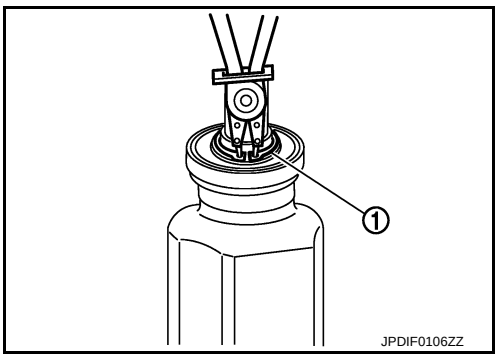


Support Bearing

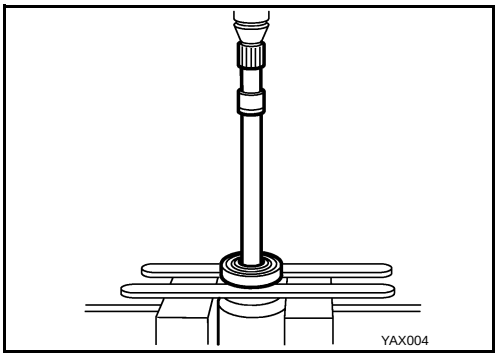
1. Remove dust shield from housing.



2. Remove snap ring ①.



3. Press out support bearing from housing.
4. Remove dust shield.

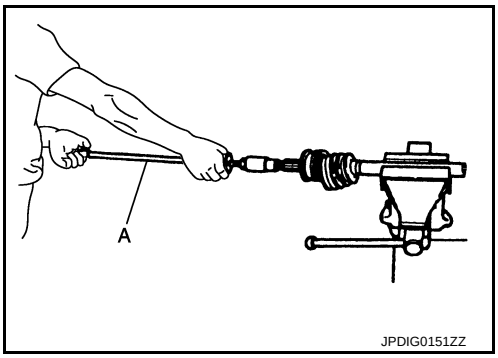


Dynamic Damper

Remove damper bands, then remove dynamic damper from shaft.

Wheel Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from joint sub-assembly.
3. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align sliding hammer and drive shaft and remove them by pulling directory.**

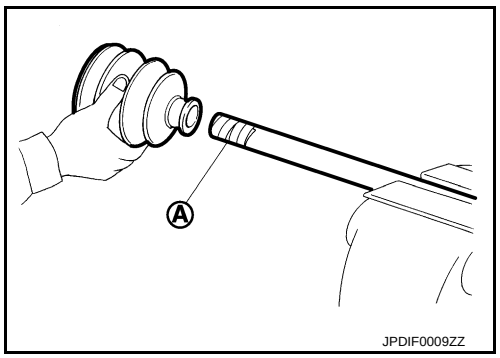


4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly with paper towels while rotating ball cage.

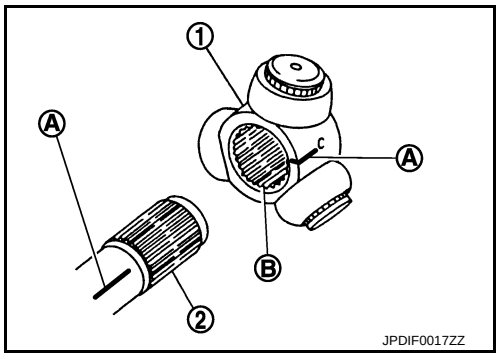
ASSEMBLY

Transaxle Assembly Side

1. Wrap serration on shaft with tape Ⓐ to protect boot from damage. Install new boot and boot bands to shaft.
   CAUTION:
   Never reuse boot and boot band.
2. Remove the tape wrapped around the serration on shaft.

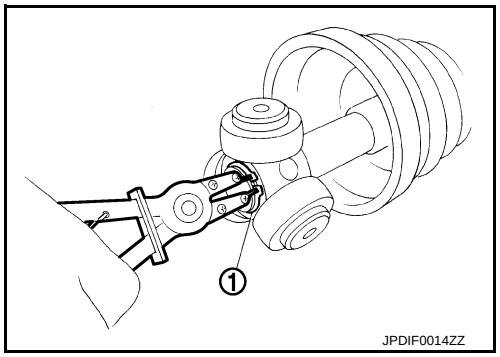


3. To install the spider assembly ①, align it with the matching marks Ⓐ on the shaft ② put during the removal, and direct the serration mounting surface Ⓑ to the shaft.



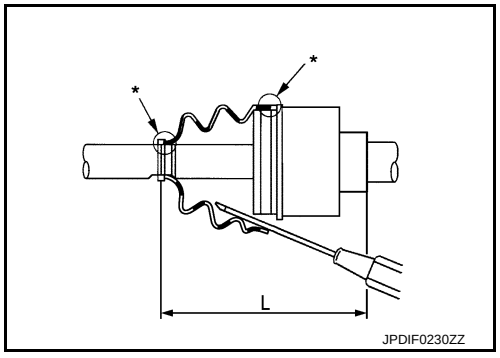
4. Secure spider assembly onto shaft with snap ring ①.
   CAUTION:
   Never reuse snap ring.
5. Apply the appropriate amount of grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the balance of the specified amount grease.

   Grease amount : Refer to FAX-137, "Drive Shaft".



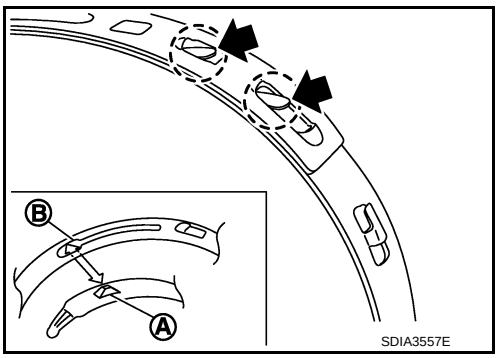
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Never reuse stopper ring.
9. Install boot securely into grooves (indicated by “*” marks) shown in the figure.
   CAUTION:
   If grease adheres to the boot mounting surface (indicated by “*” mark) on shaft or housing, boot may be removed. Remove all grease from the surface.
10. To prevent from deformation of the boot, adjust the boot installation length to the value shown below (L) 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-137, "Drive Shaft".

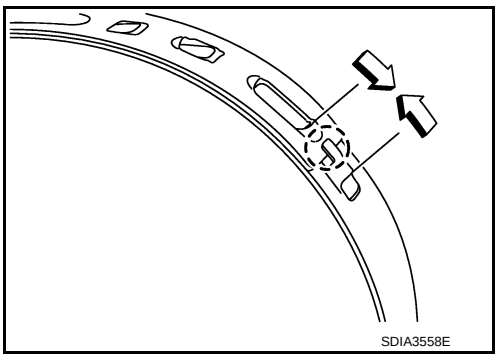


   CAUTION:
   - **If the boot installation length exceeds the standard, it may cause breakage in boot.**
   - **Be careful not to touch the inside of the boot with the tip of tool.**
11. Install new boot bands securely.
    CAUTION:
    Never reuse boot band.

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 Ⓐ and guide slit Ⓑ at first.



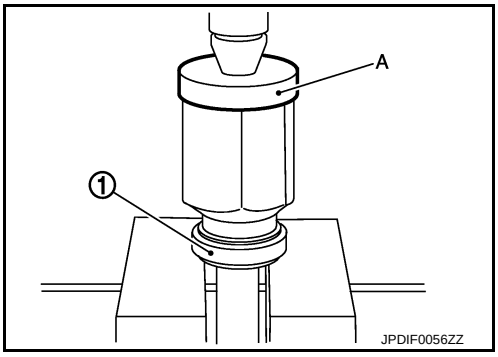
b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.



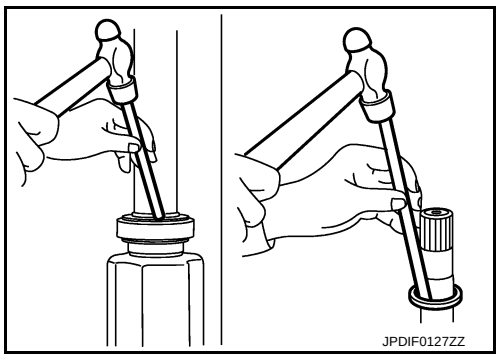
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.
13. Install dust shield (left side).
CAUTION:
Never reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Never reuse circular clip.

Support Bearing

1. Install dust shield on housing.
CAUTION:
Never reuse dust shield.
2. Press support bearing ① onto housing to using the suitable tool (A).
3. Install snap ring.
CAUTION:
Never reuse snap ring.



4. Install dust shields.
CAUTION:
Never reuse dust shields.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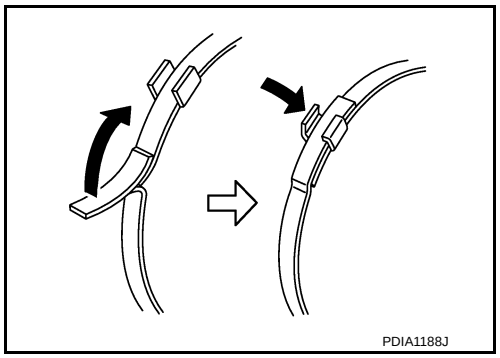
Dynamic Damper
- Install damper bands securely as shown in the figure.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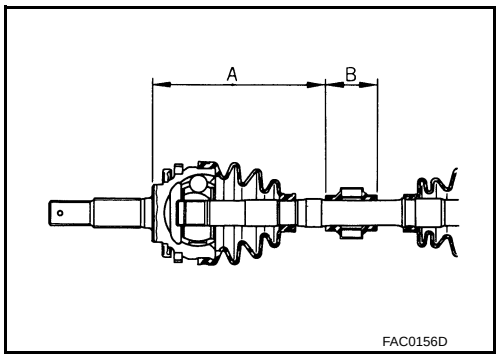
- Secure dynamic damper with bands in the following specified position when removing.
CAUTION:
Never reuse bands.

Demission : Refer to FAX-137, "Drive Shaft".



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Wheel Side
For further details, refer to the installation procedure of "FAX-79, "MR20DD : Removal and Installation"" for the drive shaft boot.

MR20DD : Inspection

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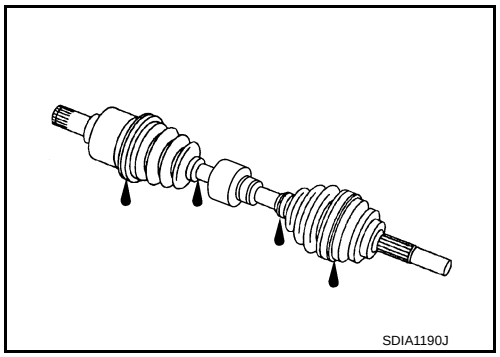
INSPECTION AFTER REMOVAL
- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.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

Shaft
Check shaft for runout, cracks, or other damage. Replace if there are.

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

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

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

Housing and Spider assembly (Transaxle 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.

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

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

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

QR25DE

QR25DE : Exploded View

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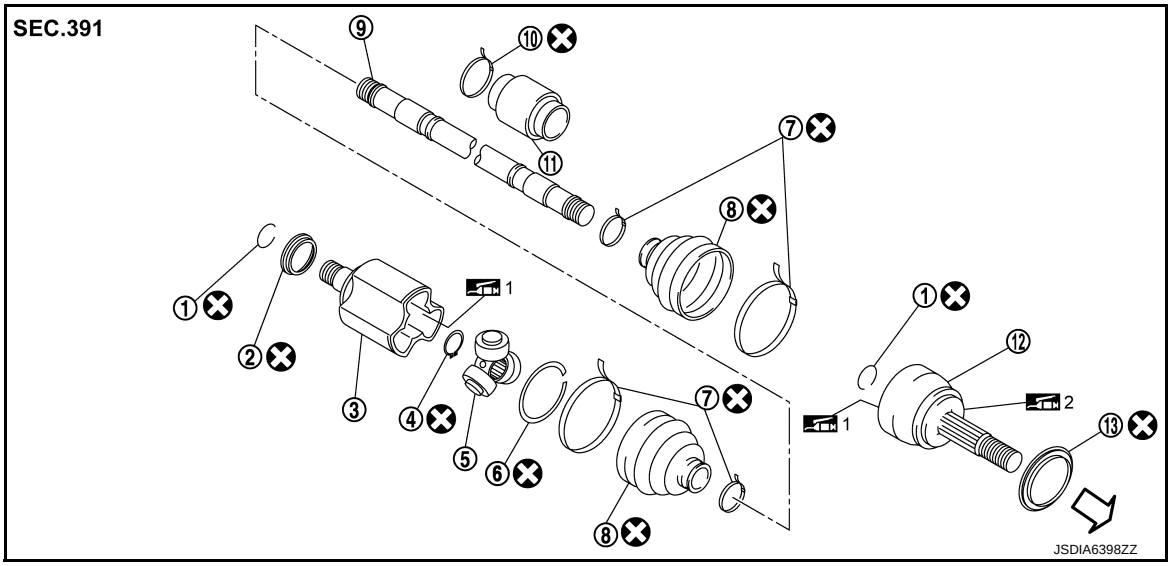
LEFT SIDE



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

⑬ Dust shield

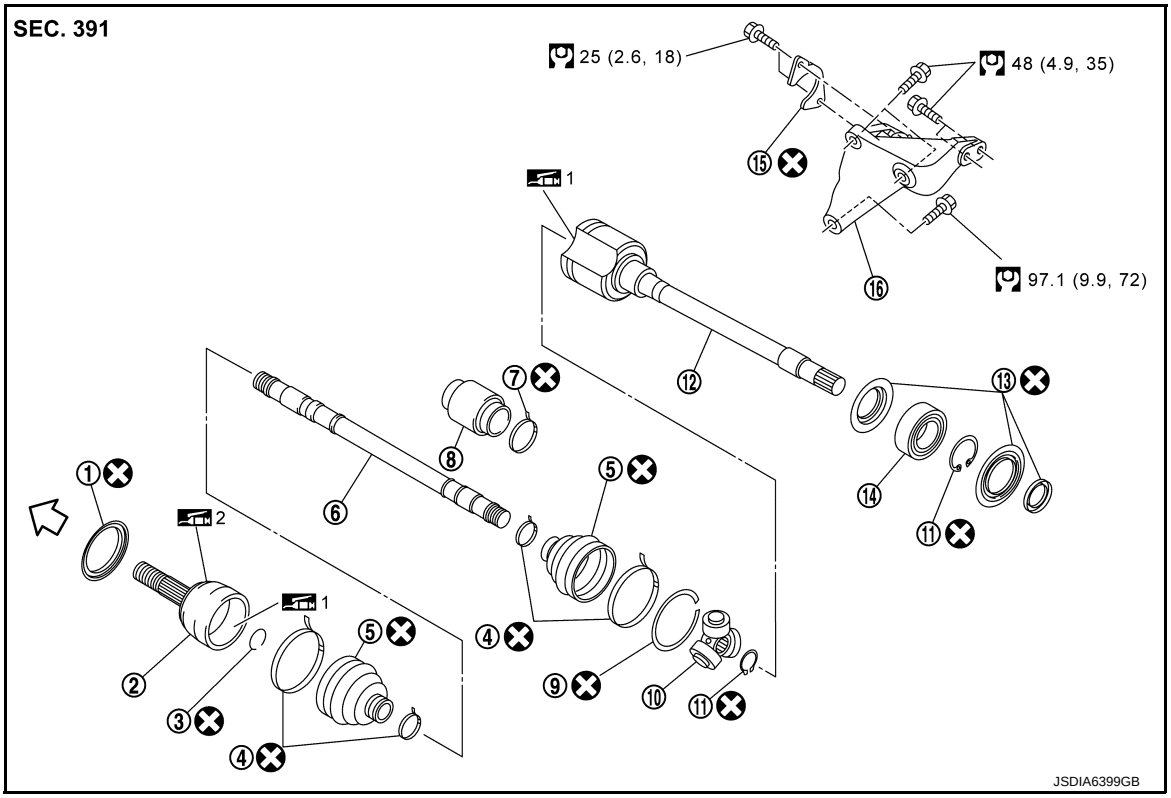
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

⊗: Always replace after every disassembly.

RIGHT SIDE



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Damper band
⑧ Dynamic damper
⑨ Stopper ring
⑩ Spider assembly
⑪ Snap ring
⑫ Housing
⑬ Dust shield
⑭ Support bearing
⑮ Retainer
⑯ Support bearing bracket

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

⊗: Always replace after every disassembly.

QR25DE : Removal and Installation

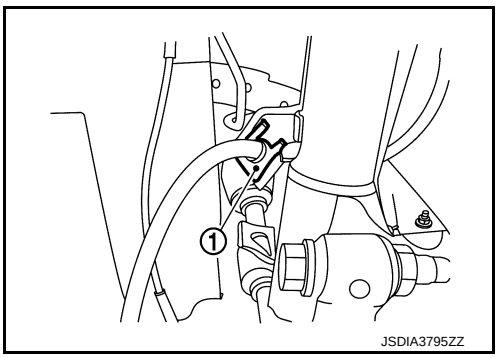
INFOID:0000000010824421

REMOVAL

Left Side

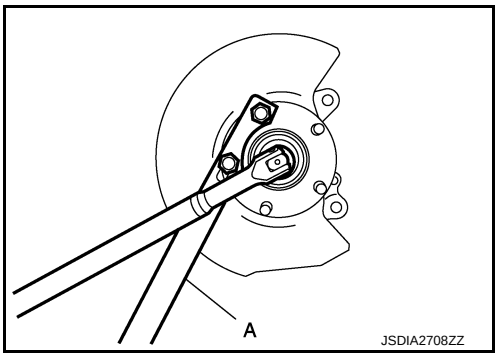
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

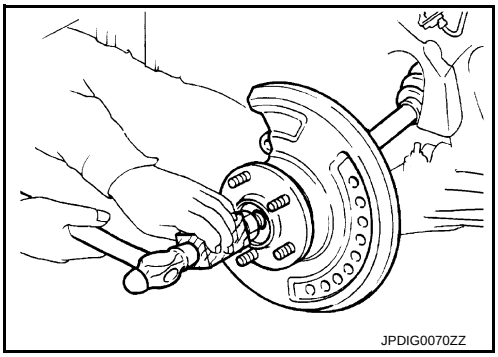


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

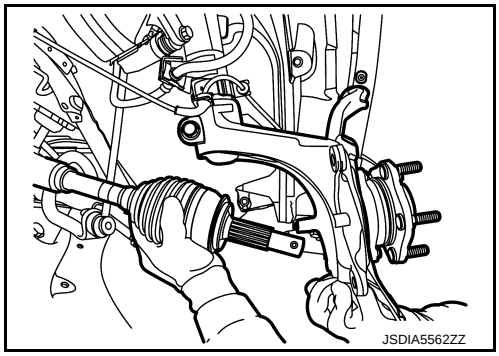


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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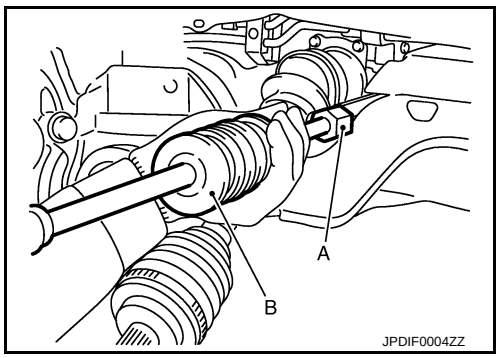
12. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and transaxle assembly.

CAUTION:
- **Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**
- **Confirm that the circular clip is attached to the drive shaft.**



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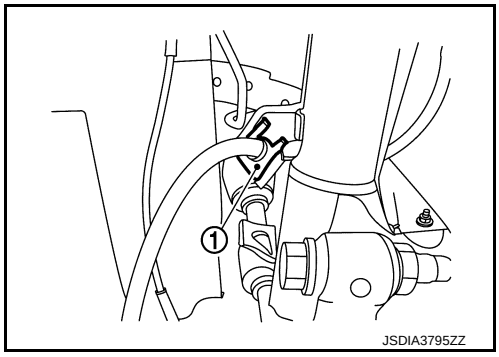
Right Side

1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".



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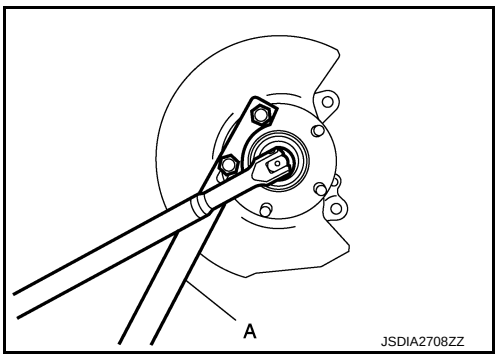
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

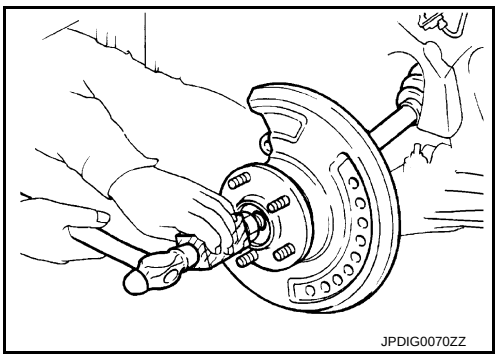
CAUTION:
Never depress brake pedal while brake caliper is removed.

5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".

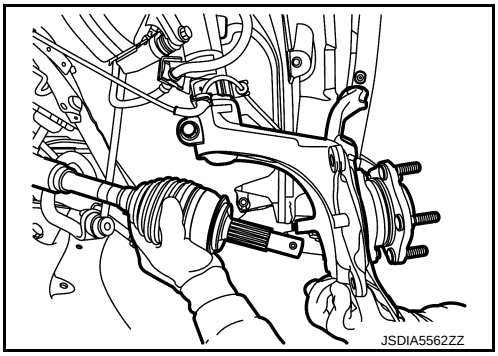
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
11. Remove drive shaft from wheel hub and bearing assembly.
    CAUTION:
    - **Never place drive shaft joint at an extreme angle.**
    - **Be careful not to overextend slide joint.**



12. Remove retainer mounting bolts and retainer.
13. Remove drive shaft from transfer assembly.
    - Use the drive shaft attachment (SST: KV40107500) and a sliding hammer while inserting tip of the drive shaft attachment between housing and transfer assembly.
      CAUTION:
      Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.
14. If necessary, remove the support bearing bracket mounting bolts and the support bearing bracket.

INSTALLATION

Left Side

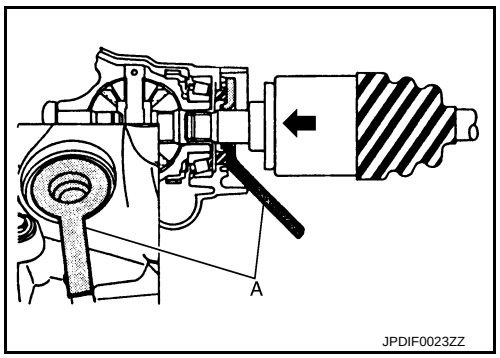
Note the following, and install in the reverse order of removal.

CAUTION:

Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-429, "Removal and Installation".

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

CAUTION:
- **Check that circular clip is completely engaged.**
- **Never reuse differential side oil seal.**



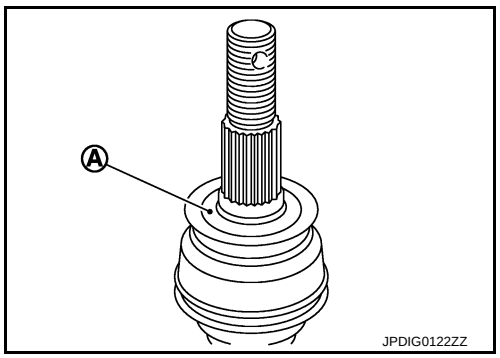
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.

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

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

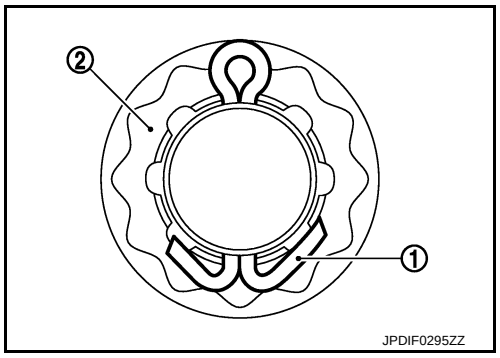


- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".

CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.

CAUTION:
Never reuse cotter pin.



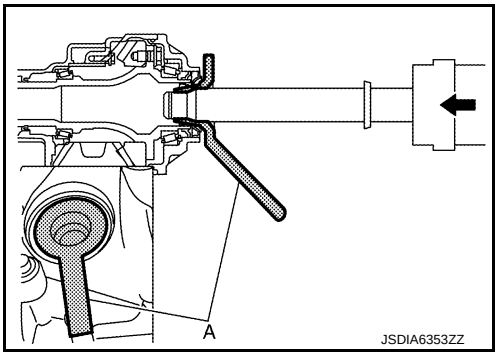
- Perform inspection after installation. Refer to FAX-123, "QR25DE : Inspection".

Right Side

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

CAUTION:
Always replace transfer cover oil seal (inner) and transfer cover oil seal (outer) with new one when installing drive shaft. Refer to DLN-79, "QR25DE : Removal and Installation".

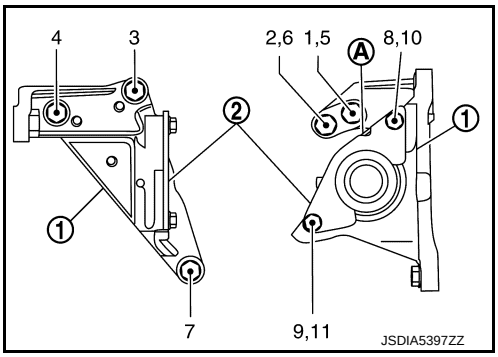
- Place the protector (A) (SST: KV38107900) onto transfer assembly to prevent damage to the transfer cover oil seal (inner) and transfer cover oil seal (outer) while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.
  CAUTION:
  Never reuse transfer cover oil seal (inner) and transfer cover oil seal (outer).



- When installing support bearing bracket tighten the mounting bolt with the following procedure.

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4 → 5 → 6 → 7



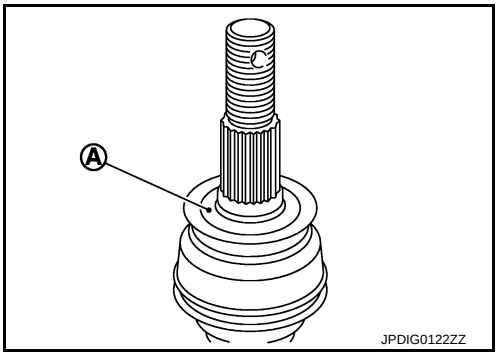
- Set plate ② so thet the notch part Ⓐ becomes upper side.
  CAUTION:
  Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 8 → 9
Final tightening (Specified torque)	: 10 → 11

- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.

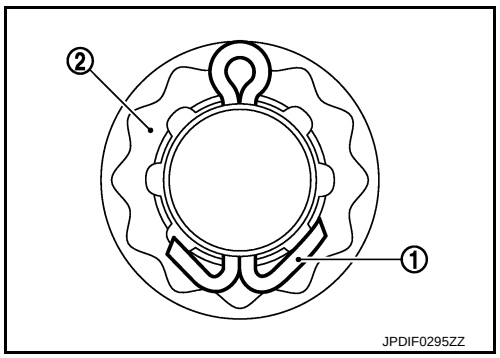
- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-123, "QR25DE : Inspection".

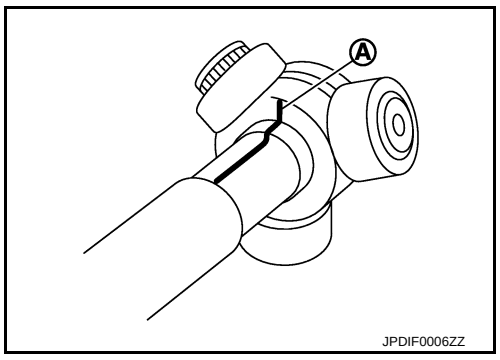
QR25DE : Disassembly and Assembly

INFOID:0000000010824422

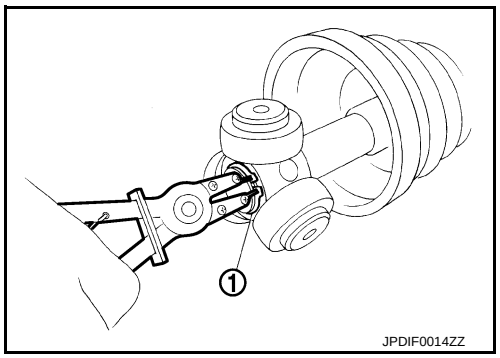
DISASSEMBLY

Transaxle Assembly Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from housing.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.
5. Put matching marks Ⓐ on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.

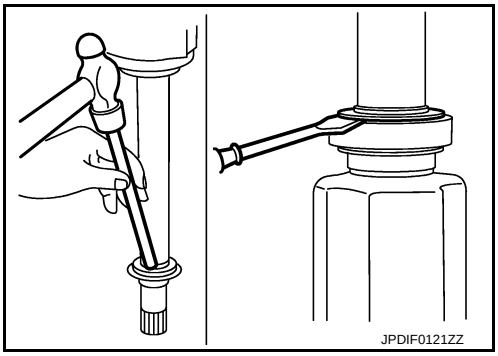


6. Remove snap ring ①, and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing (left side).
9. Remove dust shield from housing.
10. Clean old grease on housing with paper waste.

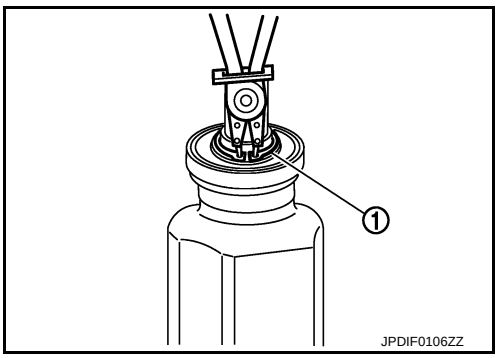


Support Bearing

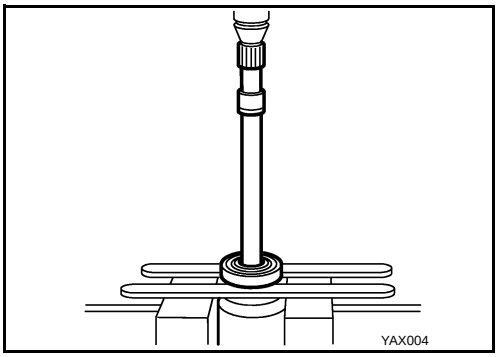
1. Remove dust shield from housing.



2. Remove snap ring ①.



3. Press out support bearing from housing.
4. Remove dust shield.

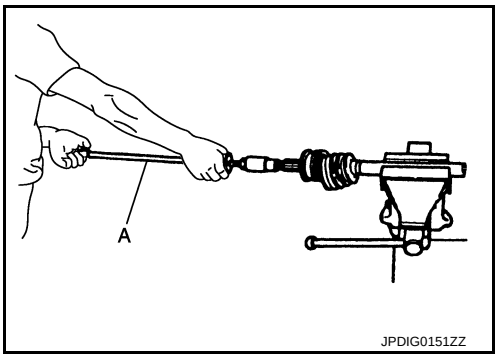


Dynamic Damper

Remove damper bands, then remove dynamic damper from shaft.

Wheel Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from joint sub-assembly.
3. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align sliding hammer and drive shaft and remove them by pulling directory.**

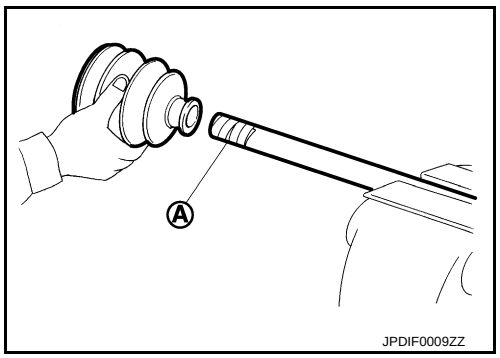


4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly with paper towels while rotating ball cage.

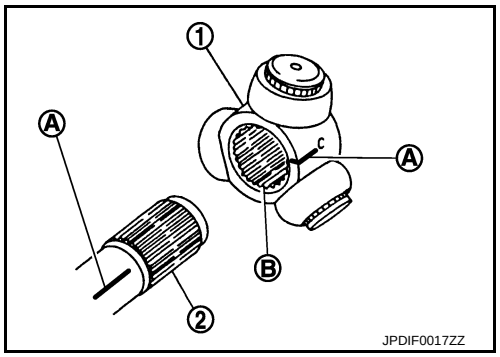
ASSEMBLY

Transaxle Assembly Side

1. Wrap serration on shaft with tape Ⓐ to protect boot from damage. Install new boot and boot bands to shaft.
   CAUTION:
   Never reuse boot and boot band.
2. Remove the tape wrapped around the serration on shaft.

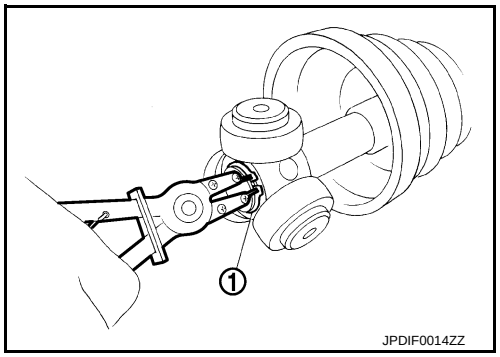


3. To install the spider assembly ①, align it with the matching marks Ⓐ on the shaft ② put during the removal, and direct the serration mounting surface Ⓑ to the shaft.



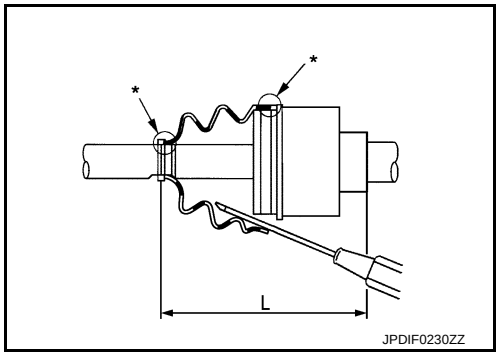
4. Secure spider assembly onto shaft with snap ring ①.
   CAUTION:
   Never reuse snap ring.
5. Apply the appropriate amount of grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the balance of the specified amount grease.

   Grease amount : Refer to FAX-137, "Drive Shaft".



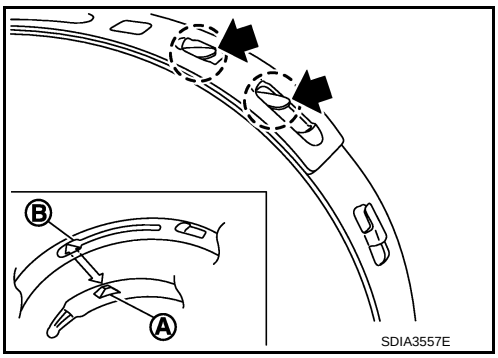
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Never reuse stopper ring.
9. Install boot securely into grooves (indicated by “*” marks) shown in the figure.
   CAUTION:
   If grease adheres to the boot mounting surface (indicated by “*” mark) on shaft or housing, boot may be removed. Remove all grease from the surface.
10. To prevent from deformation of the boot, adjust the boot installation length to the value shown below (L) 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-137, "Drive Shaft".

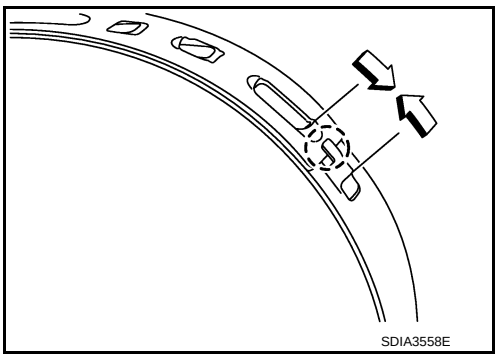


   CAUTION:
   - **If the boot installation length exceeds the standard, it may cause breakage in boot.**
   - **Be careful not to touch the inside of the boot with the tip of tool.**
11. Install new boot bands securely.
    CAUTION:
    Never reuse boot band.

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 Ⓐ and guide slit Ⓑ at first.



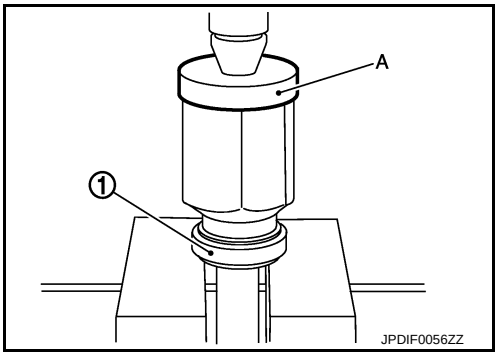
b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.



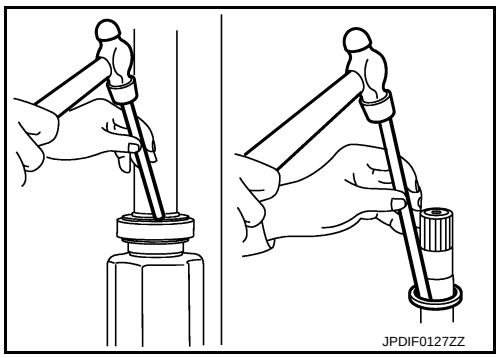
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.
13. Install dust shield (left side).
CAUTION:
Never reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Never reuse circular clip.

Support Bearing

1. Install dust shield on housing.
CAUTION:
Never reuse dust shield.
2. Press support bearing ① onto housing to using the suitable tool (A).
3. Install snap ring.
CAUTION:
Never reuse snap ring.



4. Install dust shields.
CAUTION:
Never reuse dust shields.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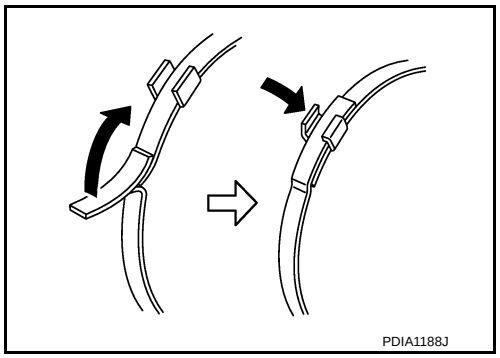
Dynamic Damper
- Install damper bands securely as shown in the figure.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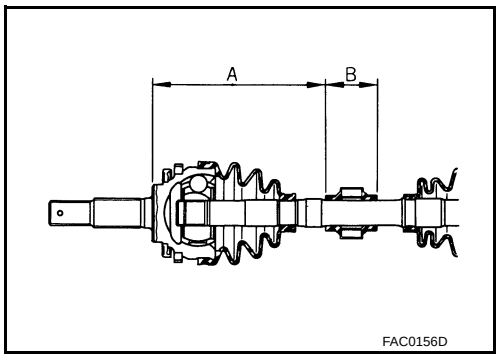
- Secure dynamic damper with bands in the following specified position when removing.
CAUTION:
Never reuse bands.

Demission : Refer to FAX-137, "Drive Shaft".



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Wheel Side
For further details, refer to the installation procedure of "FAX-86, "QR25DE : Removal and Installation"" for the drive shaft boot.

QR25DE : Inspection

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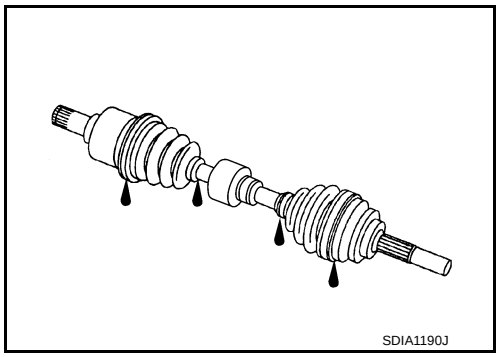
INSPECTION AFTER REMOVAL
- Move joint up/down, left/right, and in the axial directions. Check for motion that is not smooth and for significant looseness.
- Check boot for cracks, damage, and leakage of grease.
- Disassemble drive shaft and exchange malfunctioning part if there is a non-standard condition.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

Shaft
Check shaft for runout, cracks, or other damage. Replace if there are.

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

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

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

Housing and Spider assembly (Transaxle 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.

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

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

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

R9M

R9M : Exploded View

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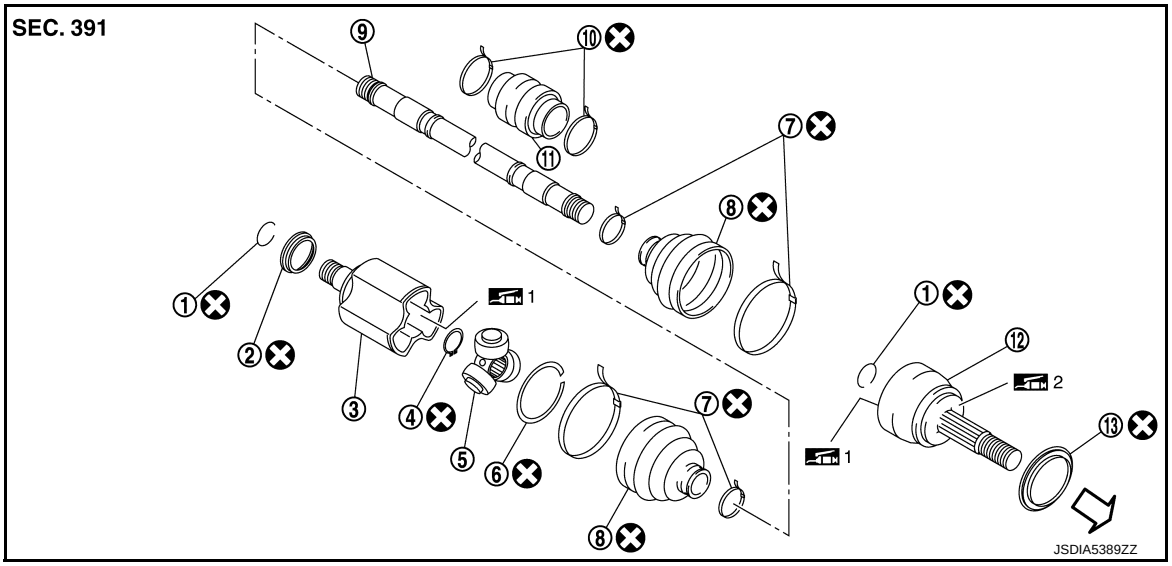
LEFT SIDE



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

⑬ Dust shield

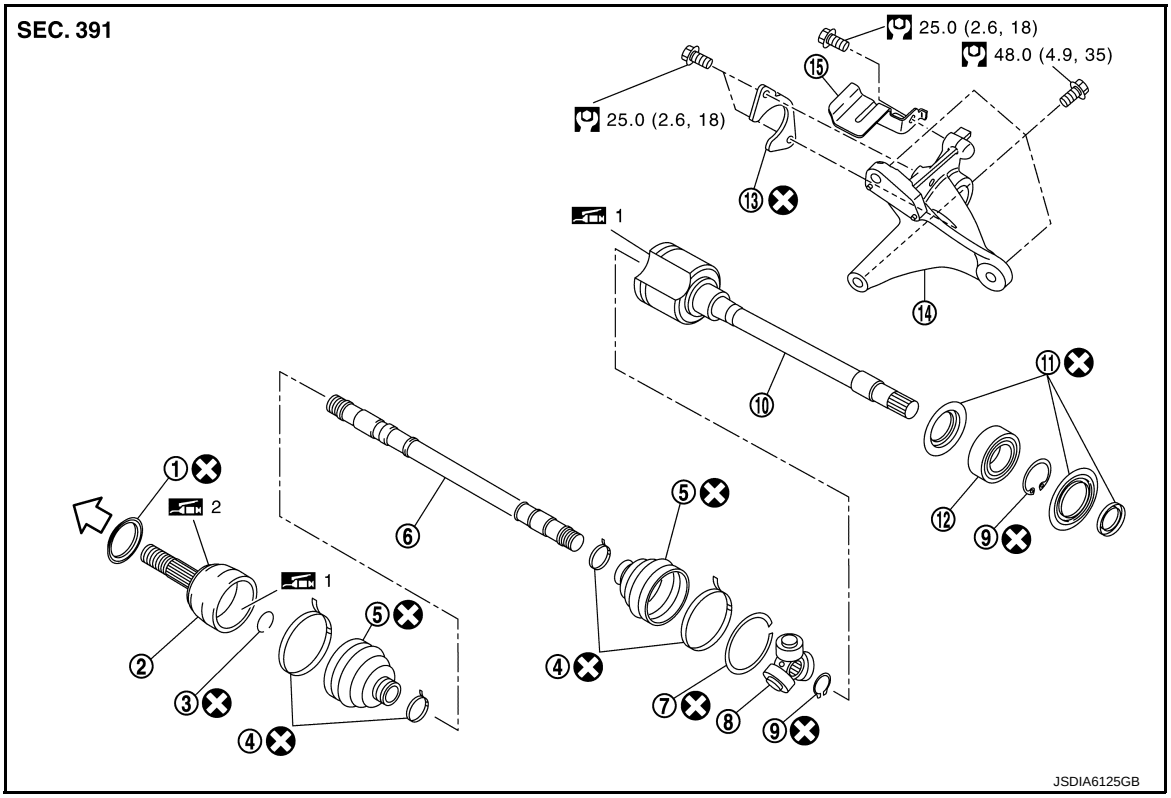
⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: Always replace after every disassembly.

RIGHT SIDE



① Dust shield
② Joint sub-assembly
③ Circular clip
④ Boot band
⑤ Boot
⑥ Shaft
⑦ Stopper ring
⑧ Spider assembly
⑨ Snap ring
⑩ Housing
⑪ Dust shield
⑫ Support bearing
⑬ Retainer
⑭ Support bearing bracket
⑮ Heat insulator

⇦ : Wheel side

1: Fill NISSAN Genuine grease or equivalent.

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

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

R9M : Removal and Installation

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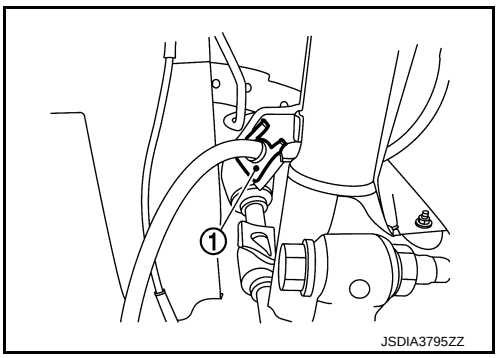
REMOVAL

Left Side

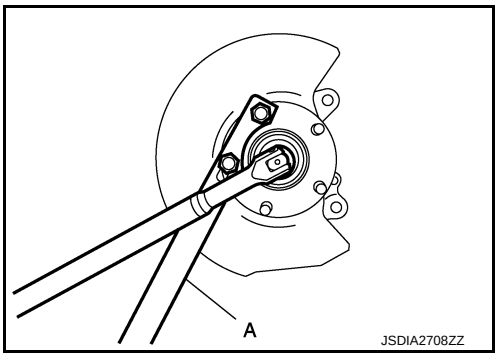
1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".

3. Remove lock plate ① from strut assembly.
   - LHD: Refer to BR-24, "FRONT : Exploded View".
   - RHD: Refer to BR-88, "FRONT : Exploded View".

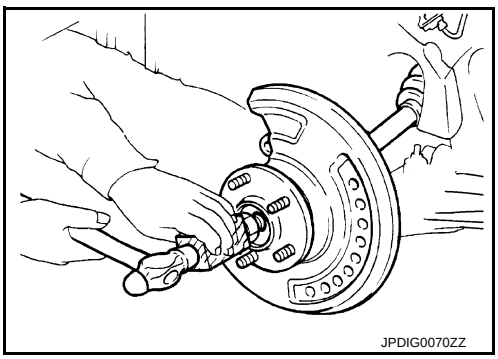


4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
   - LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
   - RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
   - RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

   CAUTION:
   Never depress brake pedal while brake caliper is removed.
5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).

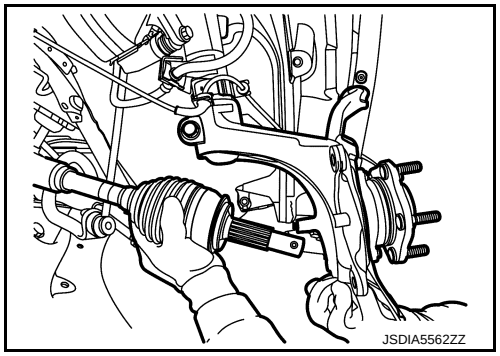


7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
   NOTE:
   Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".

11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**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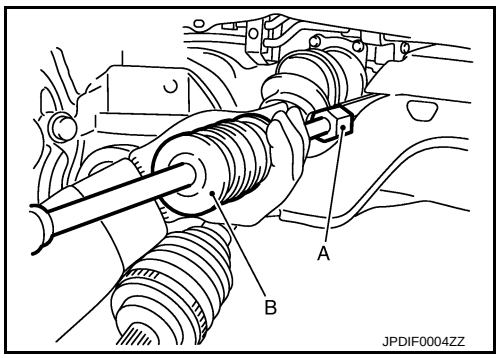
12. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (A) (SST: KV40107500) and a sliding hammer (B) (commercial service tool) while inserting tip of the drive shaft attachment between housing and transaxle assembly.

CAUTION:
- **Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.**
- **Confirm that the circular clip is attached to the drive shaft.**



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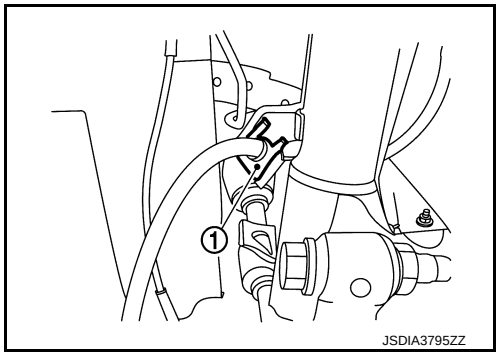
Right Side

1. Remove tires. Refer to WT-61, "Removal and Installation".
2. Remove wheel sensor from steering knuckle. Refer to BRC-212, "FRONT WHEEL SENSOR : Removal and Installation".
3. Remove lock plate ① from strut assembly.
- LHD: Refer to BR-24, "FRONT : Exploded View".
- RHD: Refer to BR-88, "FRONT : Exploded View".



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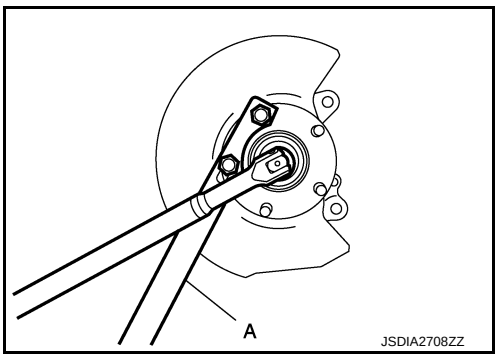
4. Remove caliper assembly. Hang caliper assembly in a place where it will not interfere with work.
- LHD (1 PISTON TYPE): Refer to BR-51, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- LHD (2 PISTON TYPE): Refer to BR-56, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".
- RHD (1 PISTON TYPE): Refer to BR-111, "BRAKE CALIPER ASSEMBLY (1 PISTON TYPE) : Removal and Installation".
- RHD (2 PISTON TYPE): Refer to BR-116, "BRAKE CALIPER ASSEMBLY (2 PISTON TYPE) : Removal and Installation".

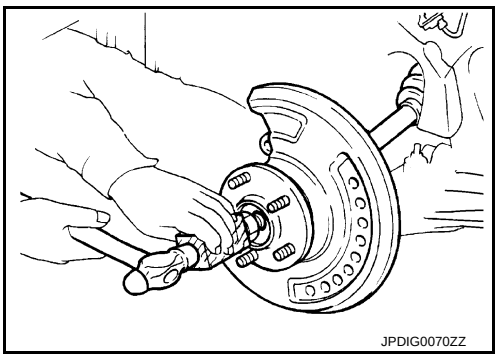
CAUTION:
Never depress brake pedal while brake caliper is removed.

5. Remove disc rotor. Refer to FAX-72, "Removal and Installation".

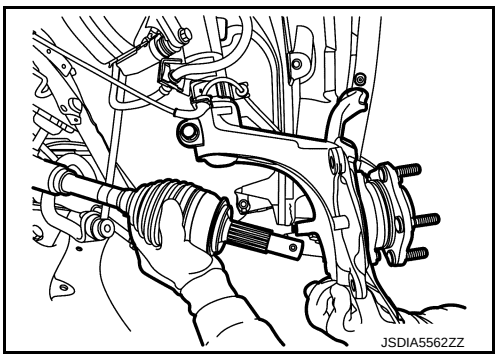
6. Remove cotter pin, adjusting cap and then loosen wheel hub lock nut, using a hub lock nut wrench (A) (SST: KV40104000).



7. Patch wheel hub lock nut with a piece of wood. Hammer the wood to disengage wheel hub and bearing assembly from drive shaft.
NOTE:
Use suitable puller, if wheel hub and bearing assembly and drive shaft cannot be separated even after performing the above procedure.



8. Remove wheel hub lock nut.
9. Remove transverse link from steering knuckle and front suspension member. Refer to FSU-17, "Removal and Installation".
10. Separate steering outer socket from steering knuckle. Refer to ST-22, "Removal and Installation".
11. Remove drive shaft from wheel hub and bearing assembly.
CAUTION:
- **Never place drive shaft joint at an extreme angle.**
- **Be careful not to overextend slide joint.**



12. Remove retainer mounting bolts and retainer.
13. Remove drive shaft from transaxle assembly.
- Use the drive shaft attachment (SST: KV40107500) and a sliding hammer while inserting tip of the drive shaft attachment between housing and transaxle assembly.
CAUTION:
Never place drive shaft joint at an extreme angle when removing drive shaft. Also be careful not to overextend slide joint.

14. If necessary, remove the support bearing bracket mounting bolts, support bearing bracket and the heat insulator.

INSTALLATION

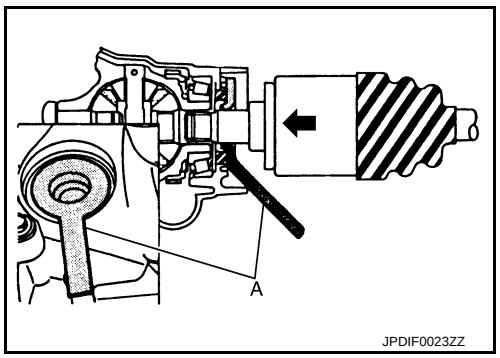
Left Side

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

CAUTION:
Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-118, "Removal and Installation".

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

CAUTION:
- **Check that circular clip is completely engaged.**
- **Never reuse differential side oil seal.**



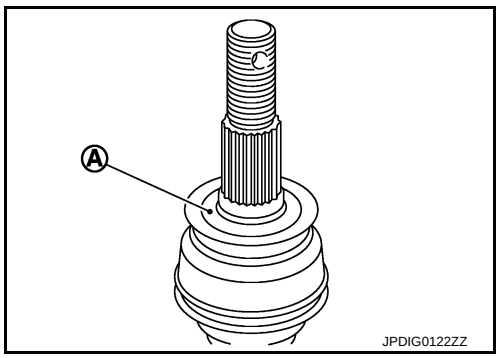
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.

CAUTION:
Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.

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

Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)

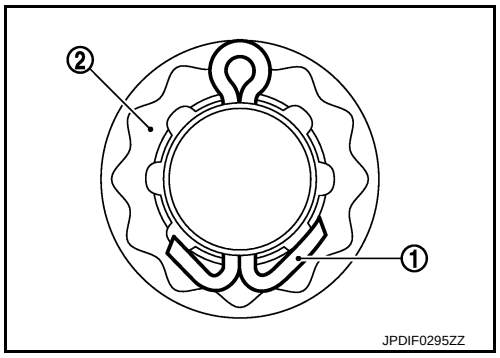


- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".

CAUTION:
- **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
- **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
- **Never reuse wheel hub lock nut.**

- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.

CAUTION:
Never reuse cotter pin.



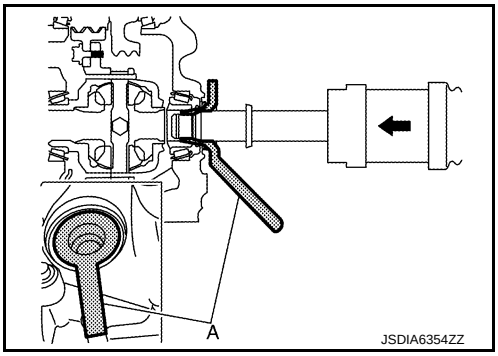
- Perform inspection after installation. Refer to FAX-135, "R9M : Inspection".

Right Side

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

CAUTION:
Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-118, "Removal and Installation".

- Place the protector (A) (SST: KV38107900) onto transaxle assembly to prevent damage to the differential side oil seal while inserting drive shaft. Slide drive shaft sliding joint and tap with a hammer to install securely.
  CAUTION:
  Never reuse differential side oil seal.



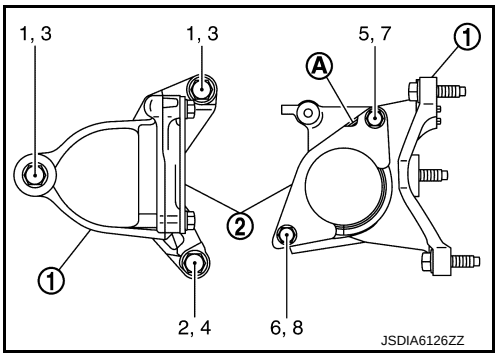
- When installing support bearing bracket tighten the mounting bolt with the following procedure.

- To install support bearing bracket ① and mounting bolts, temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

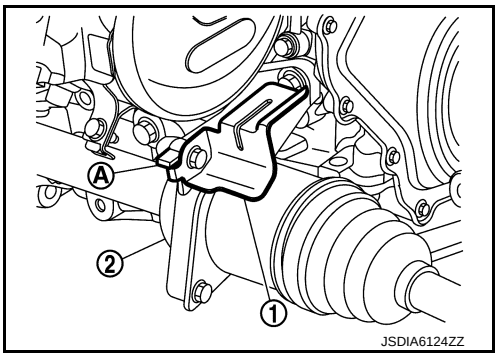
Temporary tightening	: 1 → 2
Final tightening (Specified torque)	: 3 → 4

- Set plate ② so thet the notch part Ⓐ becomes upper side.
  CAUTION:
  Never reuse plate.
- Temporarily tighten the bolts before tightening to the specified torque, referring to the tightening method and the numerical order shown below:

Temporary tightening	: 5 → 6
Final tightening (Specified torque)	: 7 → 8



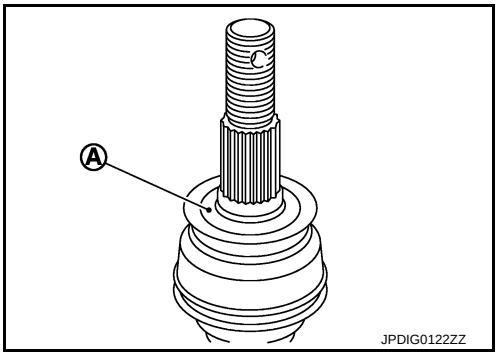
- Instal the heat insulator ① to touch a projection Ⓐ of the bracket ② as shown in figure.



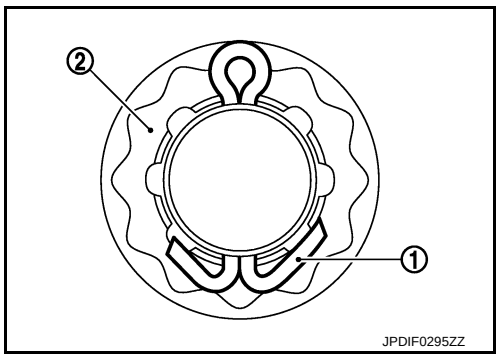
- Clean the matching surface of wheel hub lock nut and wheel hub and bearing assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.

- Clean the matching surface of drive shaft and wheel hub and bearing assembly. And then apply paste [service parts (440037S000)] to surface Ⓐ of joint sub-assembly of drive shaft.
  CAUTION:
  Apply paste to cover entire flat surface of joint sub-assembly of drive shaft.

  Amount paste : 1.0 – 3.0 g (0.04 – 0.10 oz)



- Tighten the wheel hub lock nut to the specified torque. Refer to FAX-72, "Exploded View".
  CAUTION:
  - **Since the drive shaft is assembled by press-fitting, use the tightening torque range for the wheel hub lock nut.**
  - **Be sure to use torque wrench to tighten the wheel hub lock nut. Never use a power tool.**
  - **Never reuse wheel hub lock nut.**
- When installing a cotter pin ① and adjusting cap ②, securely bend the basal portion to prevent rattles.
  CAUTION:
  Never reuse cotter pin.



- Perform inspection after installation. Refer to FAX-135, "R9M : Inspection".

R9M : Disassembly and Assembly

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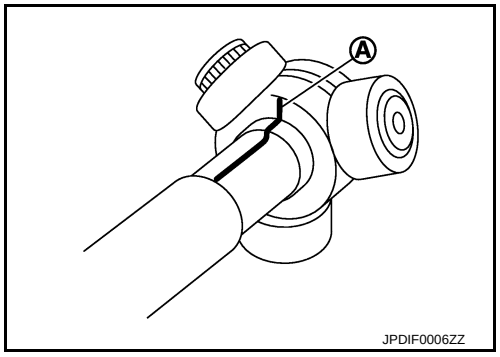
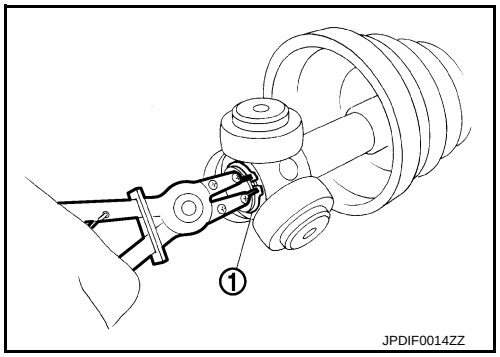
DISASSEMBLY

Transaxle Assembly Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from housing.
3. Remove stopper ring.
4. Put matching marks on housing and shaft, and then pull out housing from shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.
5. Put matching marks Ⓐ on the spider assembly and shaft.
   CAUTION:
   Use paint or an equivalent for matching marks. Never scratch the surfaces.

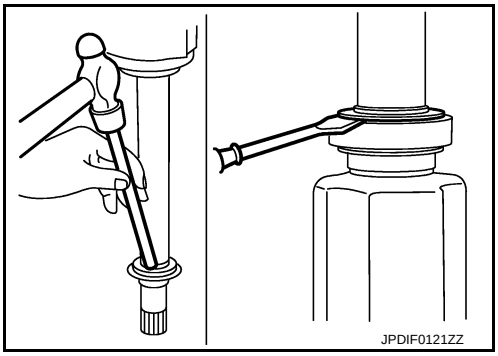


6. Remove snap ring ①, and then remove spider assembly from shaft.
7. Remove boot from shaft.
8. Remove circular clip from housing (left side).
9. Remove dust shield from housing.
10. Clean old grease on housing with paper waste.

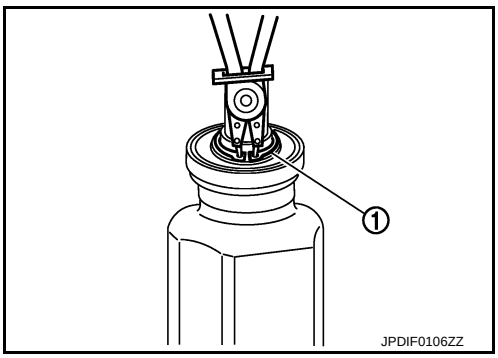


Support Bearing

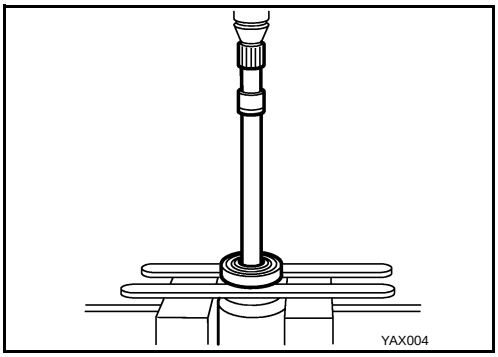
1. Remove dust shield from housing.



2. Remove snap ring ①.



3. Press out support bearing from housing.
4. Remove dust shield.

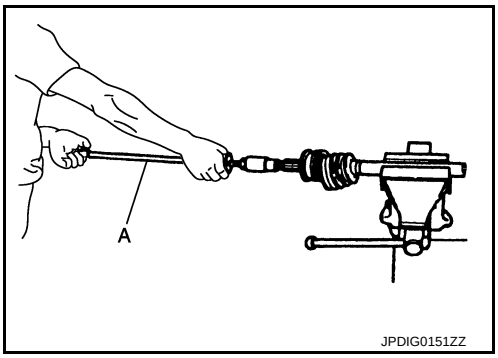


Dynamic Damper (If equipped)

Remove damper bands, then remove dynamic damper from shaft.

Wheel Side

1. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
2. Remove boot bands, and then remove boot from joint sub-assembly.
3. Screw drive shaft puller (A) (commercial service tool) into joint sub-assembly screw part to a length of 30 mm (1.18 in) or more. Support drive shaft with one hand and pull out joint sub-assembly from shaft.
   CAUTION:
   - **If joint sub-assembly cannot be removed after five or more unsuccessful attempts, replace shaft and joint sub assembly as a set.**
   - **Align sliding hammer and drive shaft and remove them by pulling directory.**

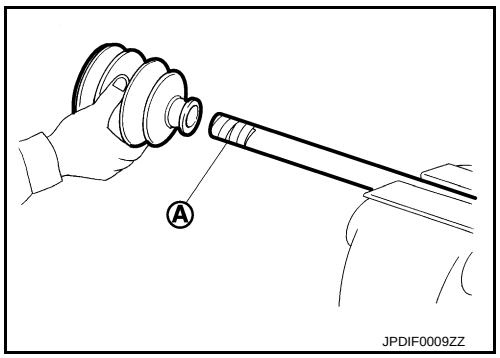


4. Remove circular clip from shaft.
5. Remove boot from shaft.
6. Clean old grease on joint sub-assembly with paper towels while rotating ball cage.

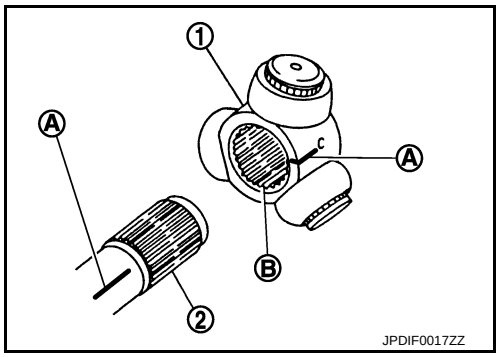
ASSEMBLY

Transaxle Assembly Side

1. Wrap serration on shaft with tape Ⓐ to protect boot from damage. Install new boot and boot bands to shaft.
   CAUTION:
   Never reuse boot and boot band.
2. Remove the tape wrapped around the serration on shaft.

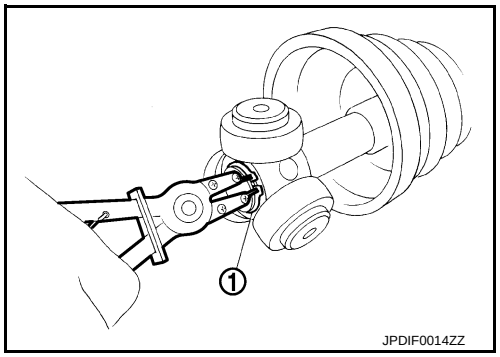


3. To install the spider assembly ①, align it with the matching marks Ⓐ on the shaft ② put during the removal, and direct the serration mounting surface Ⓑ to the shaft.



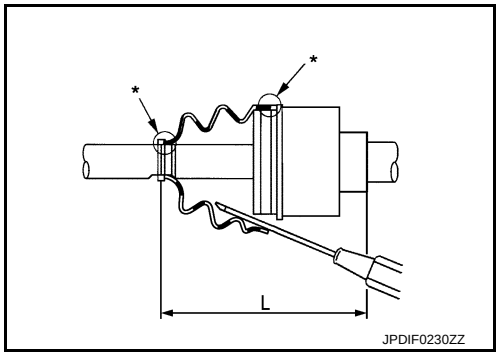
4. Secure spider assembly onto shaft with snap ring ①.
   CAUTION:
   Never reuse snap ring.
5. Apply the appropriate amount of grease to spider assembly and sliding surface.
6. Assemble the housing onto spider assembly, and apply the balance of the specified amount grease.

   Grease amount : Refer to FAX-137, "Drive Shaft".



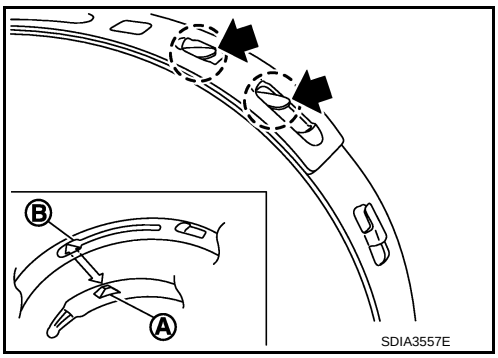
7. Align matching marks put during the removal of housing.
8. Install stopper ring.
   CAUTION:
   Never reuse stopper ring.
9. Install boot securely into grooves (indicated by “*” marks) shown in the figure.
   CAUTION:
   If grease adheres to the boot mounting surface (indicated by “*” mark) on shaft or housing, boot may be removed. Remove all grease from the surface.
10. To prevent from deformation of the boot, adjust the boot installation length to the value shown below (L) 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-137, "Drive Shaft".

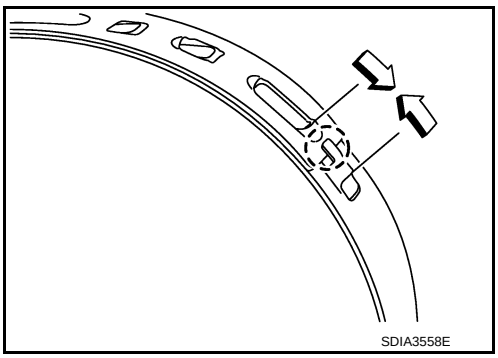


   CAUTION:
   - **If the boot installation length exceeds the standard, it may cause breakage in boot.**
   - **Be careful not to touch the inside of the boot with the tip of tool.**
11. Install new boot bands securely.
    CAUTION:
    Never reuse boot band.

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 Ⓐ and guide slit Ⓑ at first.



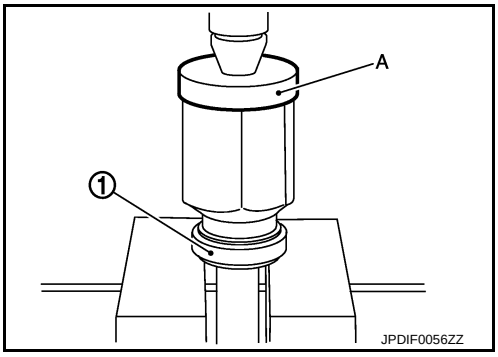
b. Pinch projection on the band with suitable pliers to tighten band.
c. Insert tip of band below end of the pawl.



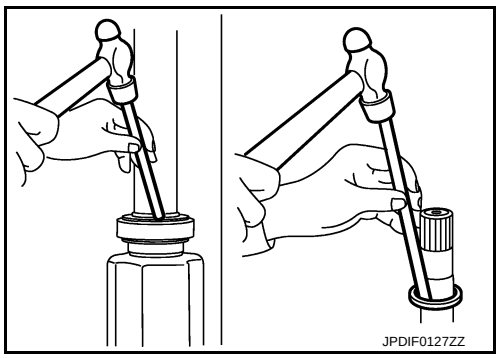
12. Secure housing and shaft, and then make sure that they are in the correct position when rotating boot. Install them with new boot band when the mounting positions become incorrect.
13. Install dust shield (left side).
CAUTION:
Never reuse dust shield.
14. Install circular clip to housing (left side).
CAUTION:
Never reuse circular clip.

Support Bearing

1. Install dust shield on housing.
CAUTION:
Never reuse dust shield.
2. Press support bearing ① onto housing to using the suitable tool (A).
3. Install snap ring.
CAUTION:
Never reuse snap ring.

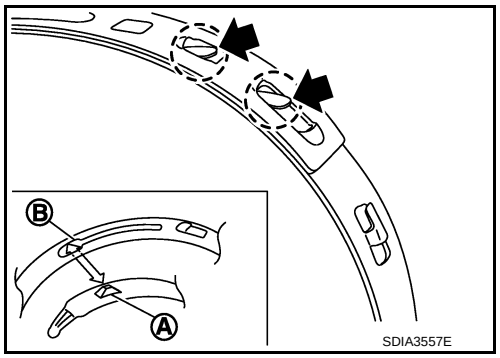


4. Install dust shields.
CAUTION:
Never reuse dust shields.

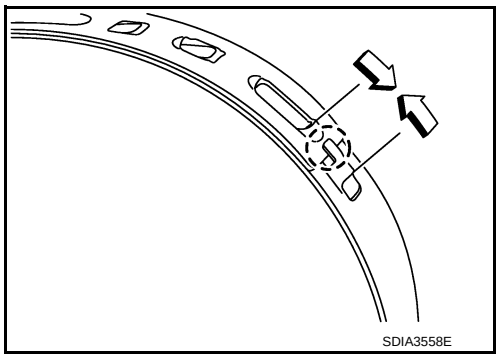


Dynamic Damper (If equipped)

- 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 Ⓐ and guide slit Ⓑ at first.

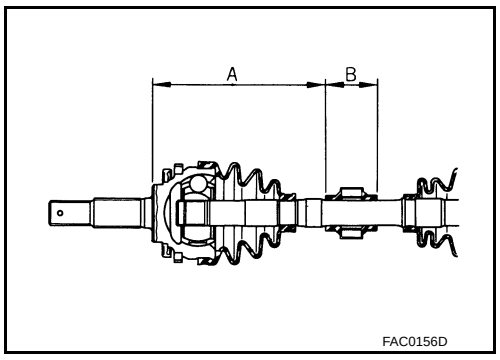


- Pinch projection on the band with suitable pliers to tighten band.
- Insert tip of band below end of the pawl.



- Secure dynamic damper with bands in the following specified position when removing.
CAUTION:
Never reuse bands.

Demission : Refer to FAX-137, "Drive Shaft".



Wheel Side
For further details, refer to the installation procedure of "FAX-86, "QR25DE : Removal and Installation"" for the drive shaft boot.

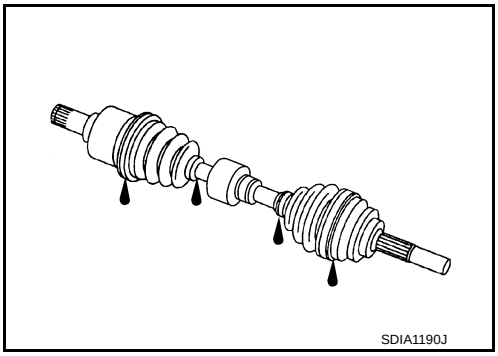
R9M : Inspection

INFOID:0000000010871277

INSPECTION AFTER REMOVAL

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

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



INSPECTION AFTER DISASSEMBLY

Shaft
Check shaft for runout, cracks, or other damage. Replace if there are.

Dynamic Damper (If equipped)
Check damper for cracks or wear. Replace if necessary.

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

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

Housing and Spider assembly (Transaxle 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.

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

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

INSPECTION AFTER INSTALLATION

1. Check wheel sensor harness for proper connection. Refer to BRC-212, "FRONT WHEEL SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Adjust neutral position of steering angle sensor. Refer to BRC-99, "Work Procedure".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Wheel Bearing

INFOID:0000000010824424

Axial end play	0.05 mm (0.002 in) or less

Drive Shaft

INFOID:0000000010824425

MR20DD

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	115 – 135 g (4.06 – 4.76 oz)	
	Transaxle side	175 – 195 g (6.18 – 6.87 oz)	
Boots installed length*	Wheel side	141.5 mm (5.57 in)	
	Transaxle side	196.9 mm (7.75 in)	188.9 mm (7.44 in)
Dimension of dynamic damper*	A	273 – 279 mm (10.75 – 10.98 in)	243 – 249 mm (9.57 – 9.80 in)
	B	70 mm (2.76 in)	

*: For measuring position. Refer to FAX-107, "MR20DD : Disassembly and Assembly".

QR25DE

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	115 – 135 g (4.06 – 4.76 oz)	
	Transaxle side	175 – 195 g (6.18 – 6.87 oz)	
Boots installed length*	Wheel side	141.5 mm (5.57 in)	
	Transaxle side	196.9 mm (7.75 in)	188.9 mm (7.44 in)
Dimension of dynamic damper*	A	240 – 246 mm (9.45 – 9.68 in)	
	B	70 mm (2.76 in)	50 mm (1.97 in)

*: For measuring position. Refer to FAX-119, "QR25DE : Disassembly and Assembly".

R9M

Item		Standard	
		Left side	Right side
Grease quantity	Wheel side	145 – 165 g (5.11 – 5.82 oz)	
	Transaxle side	265 – 285 g (9.35 – 10.05 oz)	
Boots installed length*	Wheel side	145 mm (5.71 in)	
	Transaxle side	196.1 mm (7.72 in)	184.1 mm (7.25 in)
Dimension of dynamic damper*	A	207 – 213 mm (8.15 – 8.39 in)	—
	B	70 mm (2.76 in)	—

*: For measuring position. Refer to FAX-131, "R9M : Disassembly and Assembly".