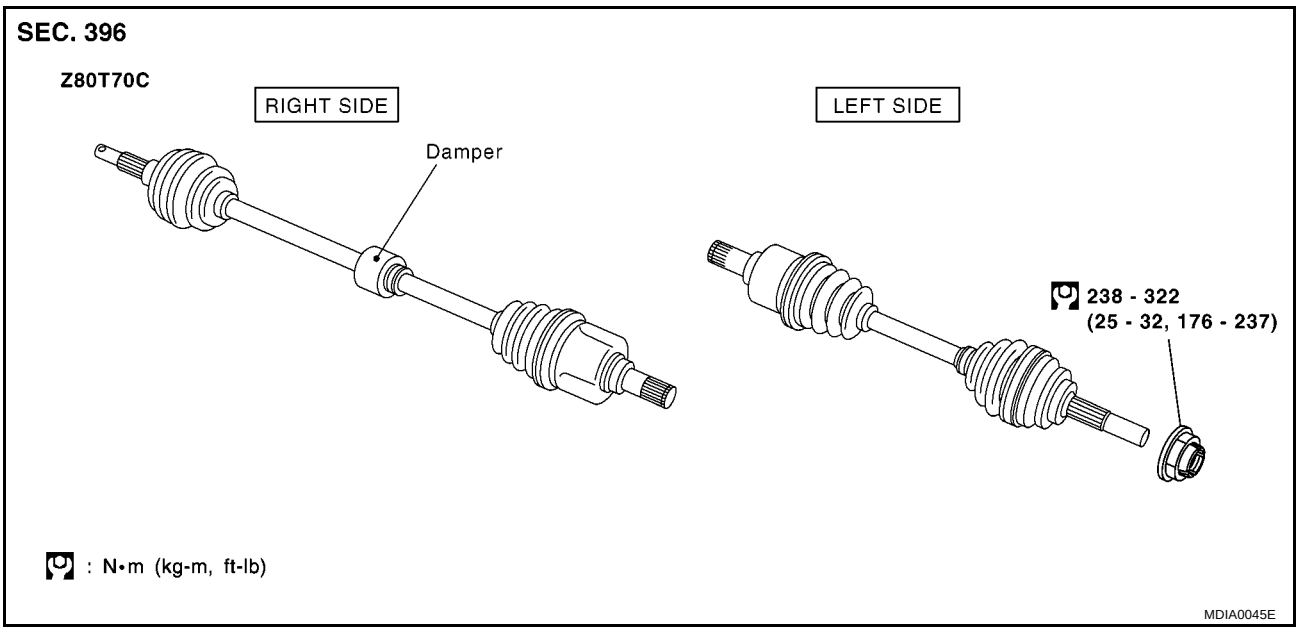
FRONT DRIVE SHAFT

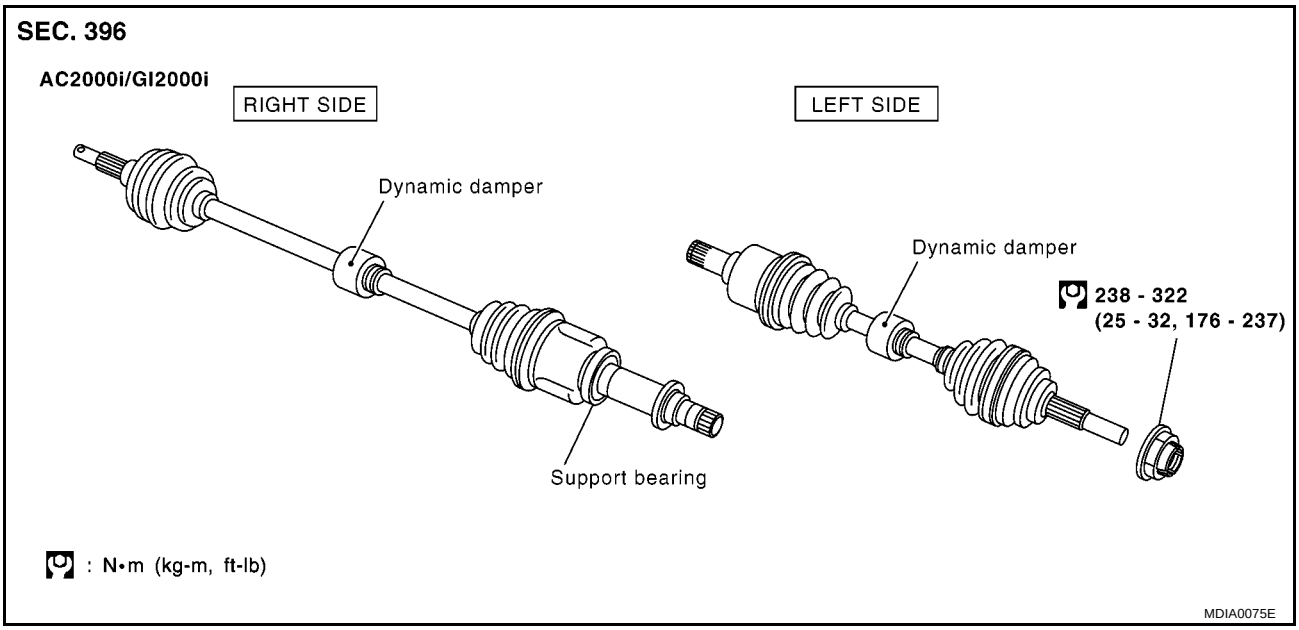
Removal and Installation

To ESM

FOR CR ENGINES:



FOR K9K ENGINES:



REMOVAL

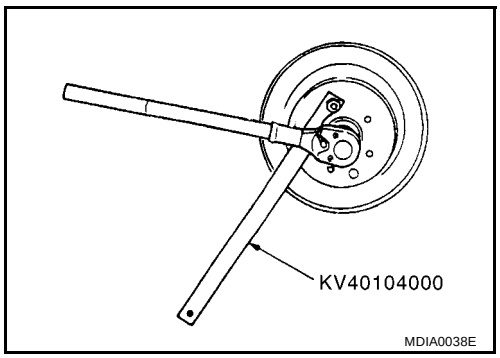
1. Lift up the vehicle and remove tire from the vehicle.
2. Remove lock plate from strut. Disconnect brake hose from strut. Refer to BR-11, “BRAKE PIPING AND HOSE” on ESM.
3. Remove the ABS wheel sensor from the steering knuckle. Refer to BRC-44, “WHEEL SENSORS” on ESM.

   CAUTION:
   Do not pull on ABS wheel sensor harness.

4. Use a hub lock nut wrench (SST), remove lock nuts.
5. Remove tie-rod from steering knuckle. If tie-rod is not easily removed, use ball joint remover (commercial service tool).

   CAUTION:
   To prevent damage to threads and to prevent ball joint remover (commercial service tool) from sudden coming off, temporarily fix lock nuts.
6. Remove steering knuckle and strut installation bolt.

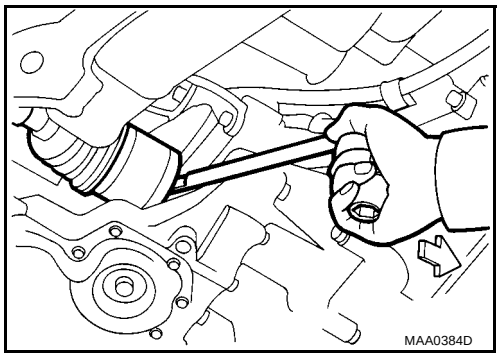
   CAUTION:
   Do not place drive shaft joint at an extreme angle (22° or more). Also, hold steering knuckle tightly and do not over-extend slide joint.



7. Using a puller (commercial service tool), remove the drive shaft from the steering knuckle.

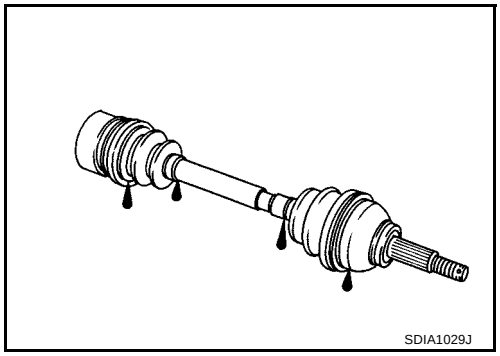
   CAUTION:
   When removing drive shaft, do not place drive shaft joint at an extreme angle (22° or more). Also be careful not to overextend slide joint.
   - **Do not lift drive shaft with axle attached by grasping countershaft only.**
   - **Do not allow drive shaft, with transaxle inserted, to hang down without support for countershaft, wheel joints, and other parts.**
8. Remove driveshaft from transaxle with a wheel wrench or equivalent, as shown in figure.

   CAUTION:
   When removing drive shaft from vehicle, be careful to avoid interfering with brake hose, ABS wheel sensor harness, and other parts.
   - Confirm that circlip is attached on the edge.



INSPECTION AFTER REMOVAL

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



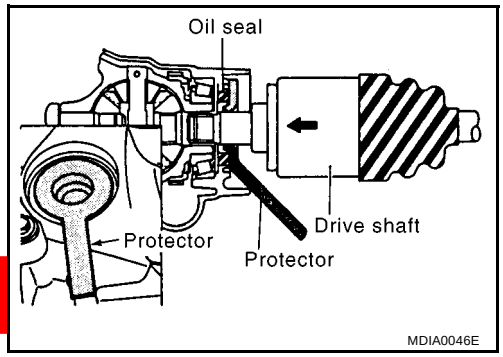
INSTALLATION

1. In order to prevent damage to differential side oil seal, first fit a protector (SST) onto oil seal before inserting drive shaft. Slide drive shaft slide joint and tap with a hammer to install securely.

   CAUTION:
   Make sure the circlip is fully engaged.

   Protector SST (special service tool) No. : KV38107900

2. For vehicles equipped with support bearing, fix drive shaft with support bearing retainer.



WARNING:
Before tightening the support bearing retainer bolts, ensure that the driveshaft support bearing is fully inserted into the support bracket. Also ensure that rubber o-ring is fitted between the support bearing and the support bracket.

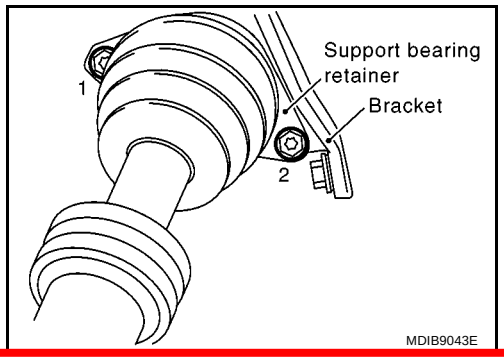
3. Tighten support bearing retainer bolts in numerical order as shown in the figure.

   Tightening torque: 18-24 N·m (1.9 - 2.4 kg-m, 14 - 17 ft-lb)

4. Retighten support bearing retainer bolts in numerical order as shown in the figure.

   Tightening torque: 18-24 N·m (1.9 - 2.4 kg-m, 14 - 17 ft-lb)

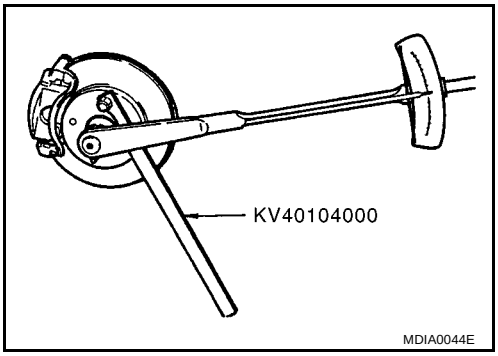
   NOTE:
   The second tightening operation should be performed with a manual torque wrench.



5. Insert the drive shaft to the steering knuckle, and tighten the lock nut.
6. Install bolts securing steering knuckle to the strut. For tightening torque, refer to FSU-5, “FRONT SUSPENSION ASSEMBLY” on ESM.
7. Fix the brake hose onto the strut with the lock plate.
8. Install tie-rod to steering knuckle. For tightening torque, refer to FSU-5, “FRONT SUSPENSION ASSEMBLY” on ESM.
9. Install ABS wheel sensor. Refer to BRC-44, “WHEEL SENSORS” on ESM.
10. Using a hub lock nut wrench (SST), tighten lock nut to the specified torque.

    Tightening torque : 238 - 322 N·m (25 - 32 kg·m, 176 - 237 ft-lb)

11. Mount tire and lower lift.



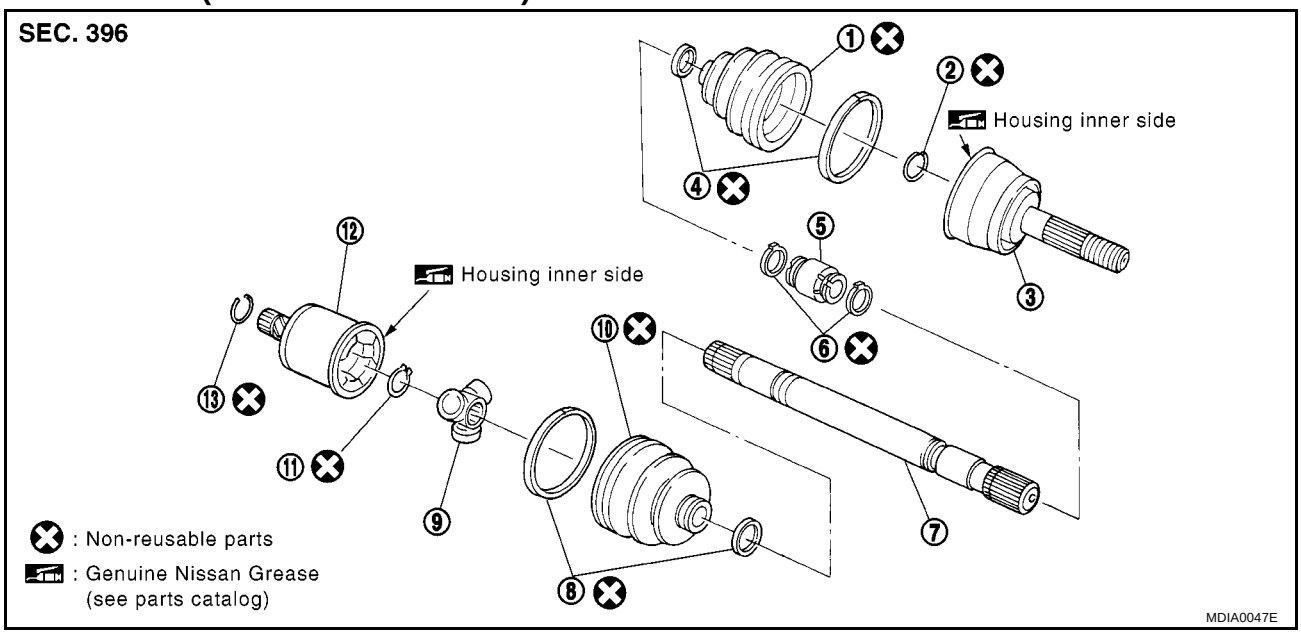
Disassembly and Assembly

INSPECTION BEFORE DISASSEMBLY

To ESM

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

DISASSEMBLY (CR ENGINE MODELS)



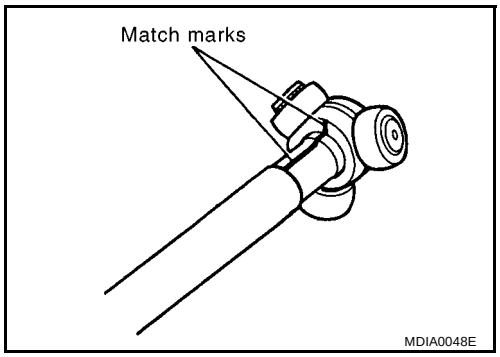
1. Boot
2. Circlip
3. Joint subassembly (fixed joint)
4. Boot band
5. Dynamic damper (right side only)
6. Band
7. Shaft
8. Boot band
9. Spider assembly
10. Boot
11. Snap rings
12. Housing (slide joint)
13. Circlip

Transaxle Side

1. Remove the boot bands.
2. Fix shaft on a vise. Remove stopper ring and housing.

   CAUTION:
   When securing in a vise, use aluminum plates, copper plates or something similar to protect the shaft.
3. Put mating marks onto the shaft and spider assembly.

   CAUTION:
   Use paint or similar substance for alignment marks. Do not scratch the surface.
4. Remove the snap ring, and remove the spider assembly from the shaft.
5. Remove boot from shaft.



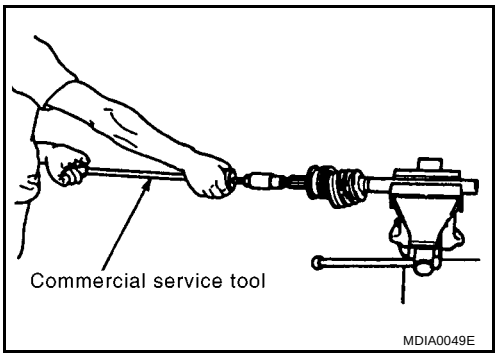
Wheel Side

1. Using a vise, secure the shaft.

   CAUTION:
   When securing in a vise, use aluminum plates, copper plates or something similar to protect the shaft.
2. Remove boot bands and remove boot from the joint subassembly.

3. Screw the drive shaft puller (commercial service tool) 30 mm (1.18 in) or more over the thread on joint subassembly, and pull the joint subassembly out of the shaft.

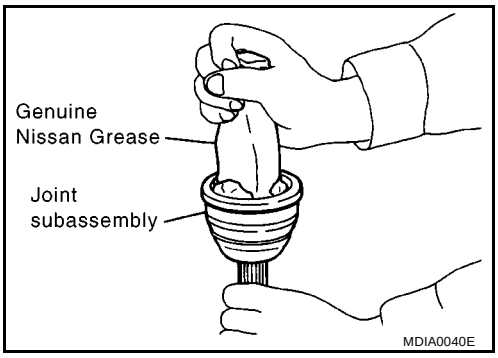
   CAUTION:
   - **Align sliding hammer and drive shaft and remove them by pulling firmly and uniformly.**
   - **If joint subassembly cannot be removed after five or more unsuccessful attempts, replace entire drive shaft assembly.**



4. Remove boot from shaft.
5. Remove circlip from the shaft.

6. While rotating ball cage, remove old grease on joint subassembly with paper towels.

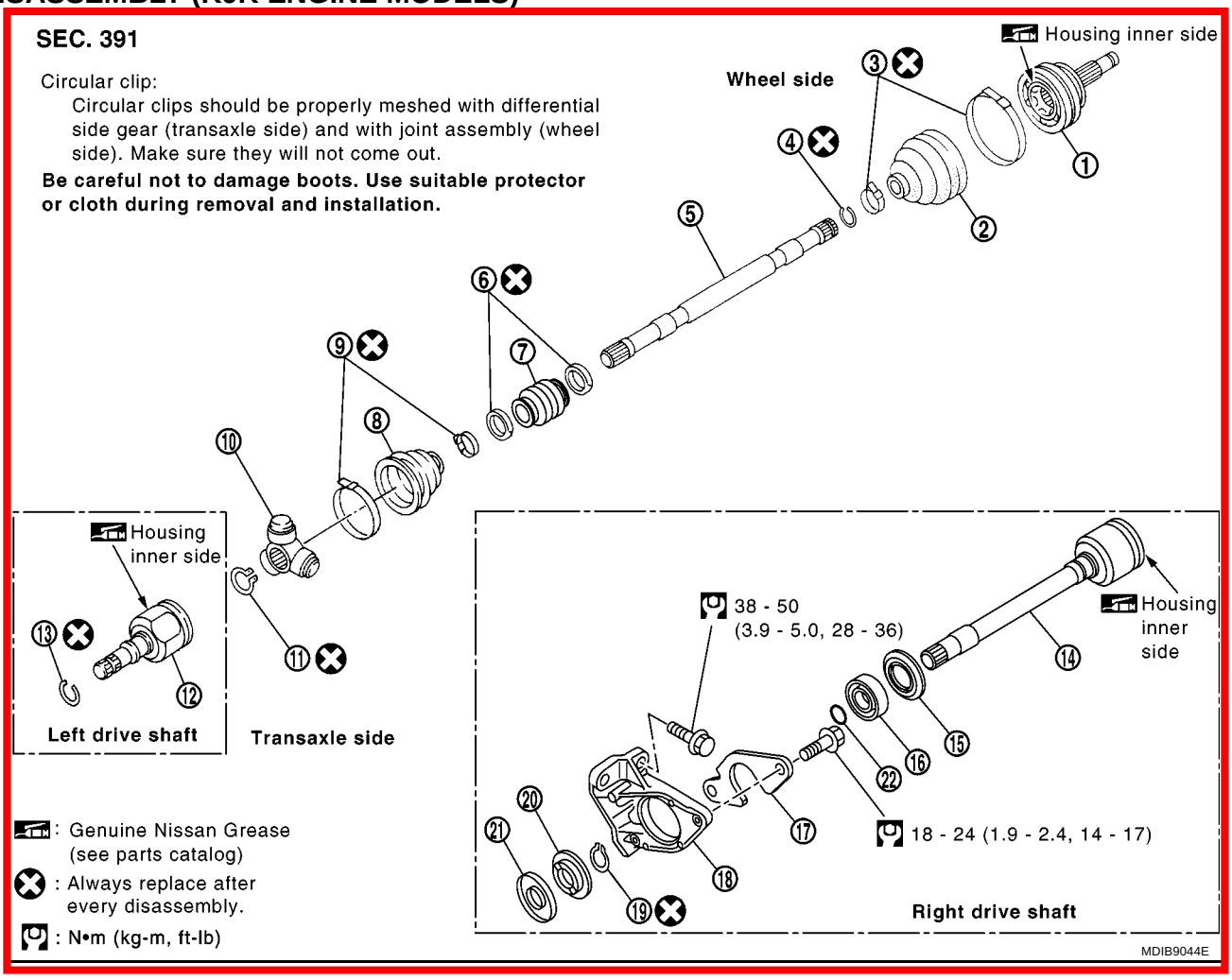
   CAUTION:
   Visually check joint subassembly for compression scar, cracks, fractures. If any non-standard condition is detected, replace entire joint subassembly.



Dynamic Damper (Right drive shaft)

- Remove band. Then, remove dynamic damper from shaft.

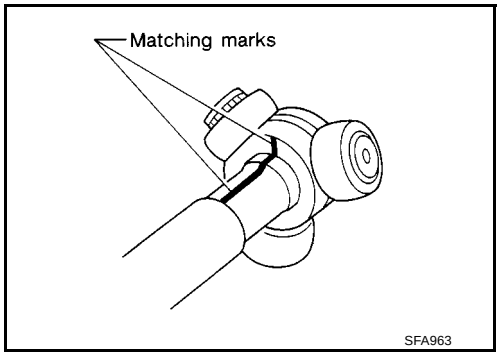
DISASSEMBLY (K9K ENGINE MODELS)



1. Joint assembly
2. Boot
3. Boot band
4. Circular clip
5. Drive shaft
6. Dynamic damper band
7. Dynamic damper
8. Boot
9. Boot band
10. Spider assembly
11. Snap ring
12. Slide joint housing
13. Circular clip
14. Slide joint housing with extension shaft
15. Dust shield
16. Support bearing
17. Support bearing retainer
18. Bracket
19. Snap ring
20. Dust shield
21. Dust shield
22. O-ring

Transaxle Side

1. Remove the boot bands.
2. Put matching marks on slide joint housing and drive shaft before separating joint assembly.
3. Put matching marks on spider assembly and drive shaft.
4. Remove slide joint housing.

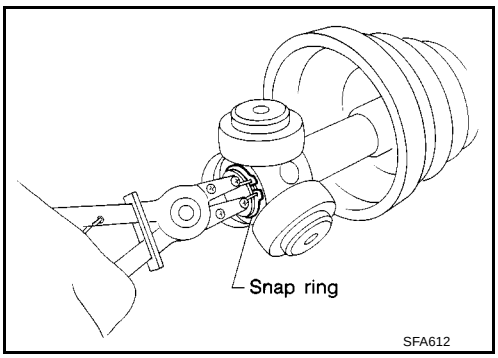


5. Pry off snap ring, then remove spider assembly.

CAUTION:
Do not disassemble spider assembly.

6. Draw out boot.

CAUTION:
Cover drive shaft serration with tape to prevent damage to the boot.



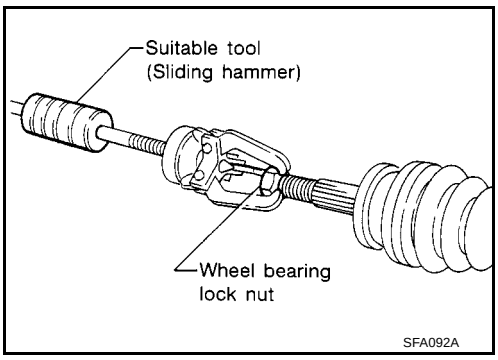
Wheel Side

CAUTION:
The joint on the wheel side cannot be disassembled.

1. Before separating joint assembly, put matching marks on drive shaft and joint assembly.
2. Separate joint assembly with a suitable tool.

CAUTION:
Be careful not to damage threads on drive shaft.

3. Remove boot bands.
4. Draw out boot.

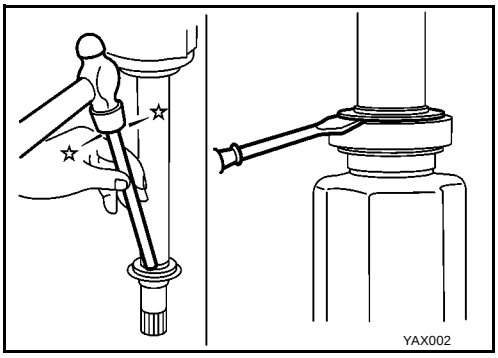


Dynamic Damper

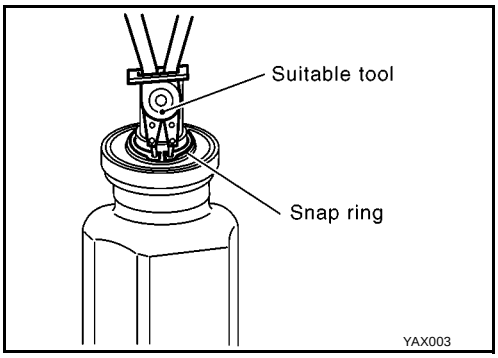
Remove bands. Then, remove dynamic damper from drive shaft.

Support Bearing

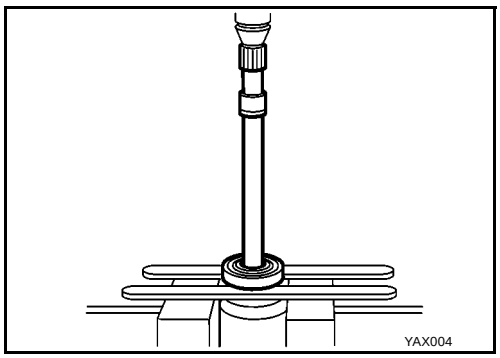
1. Remove dust shield.



2. Remove dust shield. Then, remove snap ring.



3. Press support bearing assembly off of drive shaft.
4. Remove dust shield.



INSPECTION AFTER DISASSEMBLY (CR ENGINE MODELS)

Shaft

- If the shaft has runout, cracks, or damage, replace the shaft.

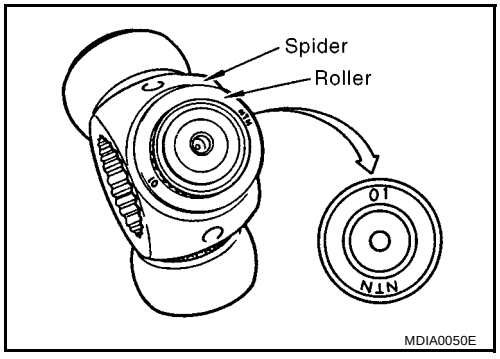
Joint Subassembly (Fixed Joint)

- Check the joint for rough rotation and abnormal axial looseness.
- Check if there is any compression scar, cracks, or fractures.

CAUTION:
If there are any non-standard conditions of joint assembly component parts, replace the joint assembly.

Joint Assembly (Sliding Joint)

- If there is scratching or wear of housing roller contact surface or spider roller contact surface, replace housing and spider assembly.
- If there is circumferential looseness or rough rotation of spider roller, replace spider assembly.
- As shown in the figure, the spider roller has a stamped number which corresponds to a part number. Select a suitable replacement part with the same stamp number from the table below.
- If there are any non-standard conditions of joint assembly component parts, replace the joint assembly.
- For housing replacement, spider assembly and joint assembly are in a set.



Stamped number	Part No.	Type
00	3972051E00	T70C
01	3972051E01	
02	3972051E02	
03	3972051E03	

Housing (Slide Joint)

- Check the ball rolling surface for damage and abnormal wear.
- Check the shaft thread for damage.
- Check the boot mount for deformation.

Dynamic Damper (Right Drive Shaft)

- Check for cracks, wear, and damage. Replace if necessary.

INSPECTION AFTER DISASSEMBLY (K9K ENGINE MODELS)

Thoroughly clean all parts in cleaning solvent, and dry with compressed air. Check parts for evidence of deformation or other damage.

Drive Shaft

Replace drive shaft if it is twisted or cracked.

Boot

Check boot for fatigue, cracks or wear. Replace boot with new boot bands.

Joint Assembly (Transaxle side)

- Check spider assembly for needle bearing and washer damage. Replace if necessary.
- Check roller surfaces for scratches, wear or other damage. Replace if necessary.
- Check serration for deformation. Replace if necessary.
- Check slide joint housing for any damage. Replace if necessary.

Joint Assembly (Wheel side)

Replace joint assembly if it is deformed or damaged.

Support Bearing

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

Support Bearing Bracket

Check support bearing bracket for cracks with a magnetic exploration or dyeing test.

Dynamic Damper

Check dynamic damper for cracks, wear, and damage. Replace if necessary.

ASSEMBLY (CR ENGINE MODELS)

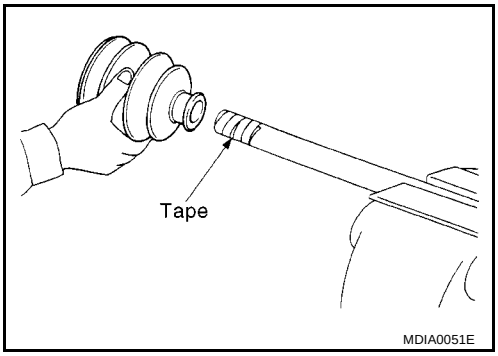
Wheel Side

For mounting, perform steps 13 to 20 of On-Vehicle Inspection and Service, FAX-10, “On-Vehicle Inspection and Service”on ESM.

Transaxle Side

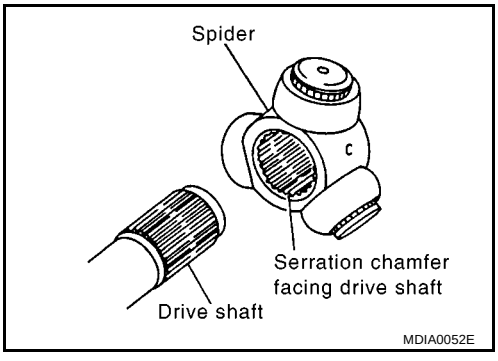
1. Cover drive shaft serration with tape so as not to damage boot during installation. Install new boot and boot bands to the shaft.

   CAUTION:
   Do not reuse the boot bands and boot.



2. Remove the tape wrapped around the serration on the shaft.
3. Align mating marks painted when spider assembly was removed. Install spider assembly with serrated mounting surface facing drive shaft.
4. Secure the spider assembly with a snap ring.

   CAUTION:
   Do not reuse the snap ring.
5. Apply Genuine Nissan Grease (refer to the part catalog) onto the spider assembly and sliding surface.
6. Assemble the sliding joint housing onto spider assembly, and add enough grease to equal the value mentioned below.

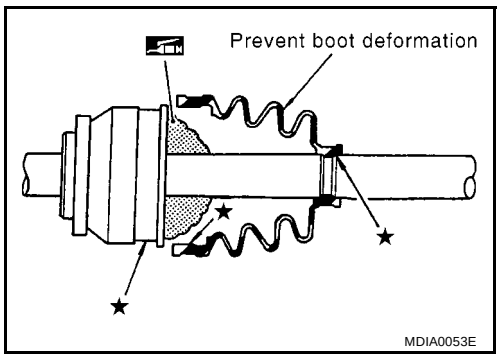


Grease quantity : 115±5 g

7. Install boot securely into grooves (indicated by * marks) shown in figure.

CAUTION:

If grease adheres to the boot mounting surface (with * mark) on the joint, the boot may come off. Remove all grease from the surface.

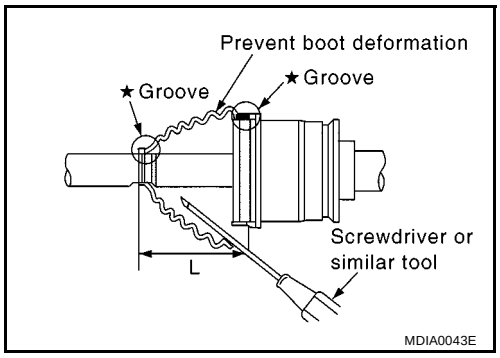


8. Make sure boot installation length “L” is the length indicated below. Insert a screwdriver or similar tool into the large-diameter side. Bleed air out of the inside boot (to adjust pressure outside and inside of boot) to prevent deformation of boot.

Boot mounting length : 96.5±1 mm

CAUTION:

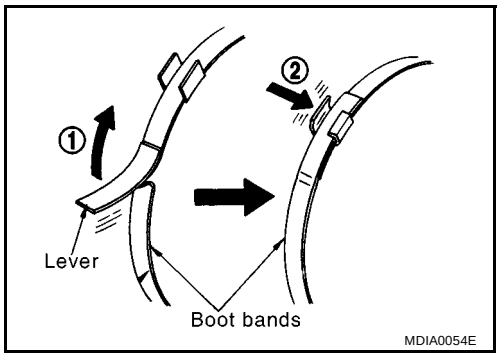
- **If boot mounting length is outside the standard, it may cause breakage in the boot.**
- **Be careful not to touch inside of the boot with the tip of a screwdriver.**



9. Secure big and small ends of boot with new boot bands as shown in figure.

CAUTION:

Rotate housing and check if boot installation position does not change. If position changes, reinstall boot bands.



Dynamic Damper (Right Drive Shaft)

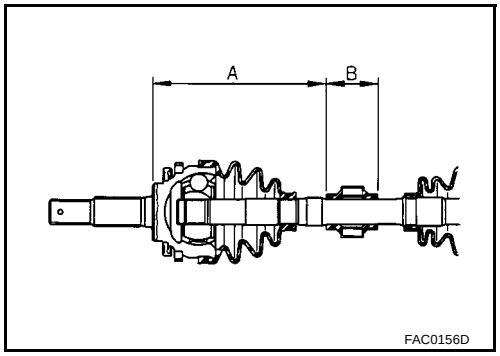
- When dynamic damper has been removed, secure with bands as shown in figure so that measurements from fixed-joint side are as listed below.

CAUTION:

Do not reuse dynamic damper bands.

Dimension A : 434 - 440 mm (17.09 - 17.32 in)

Dimension B : 70 mm (2.76 in)



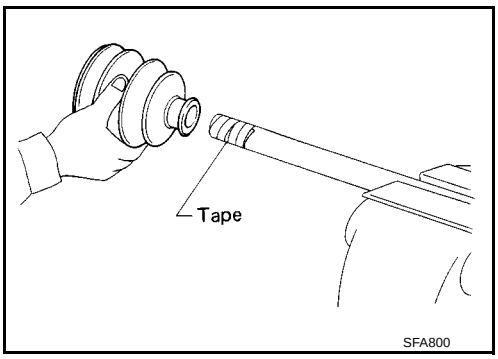
ASSEMBLY (K9K ENGINE MODELS)

- **After drive shaft has been assembled, ensure that it moves smoothly over its entire range without binding.**
- **Use NISSAN GENUINE GREASE or equivalent after every overhaul.**

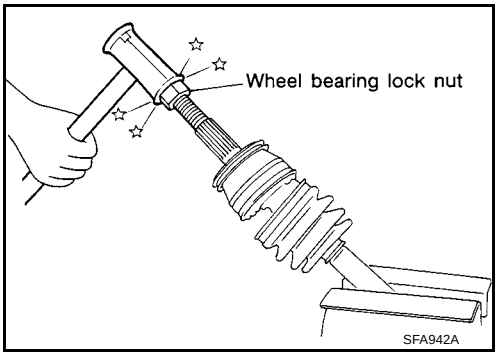
Wheel Side

1. Install boot and new small boot band on drive shaft.

   CAUTION:
   Cover drive shaft serration with tape so as not to damage boot during installation.



2. Set joint assembly onto drive shaft by lightly tapping it. Install joint assembly securely, ensuring marks which were made during disassembly are properly aligned.

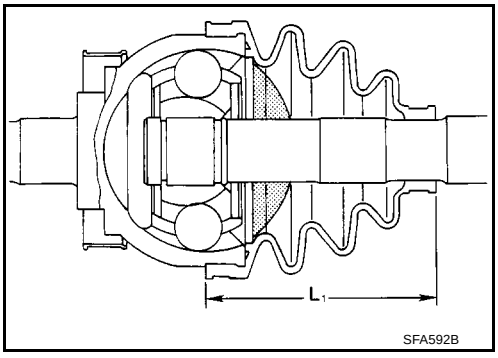


3. Pack drive shaft with specified amount of grease.

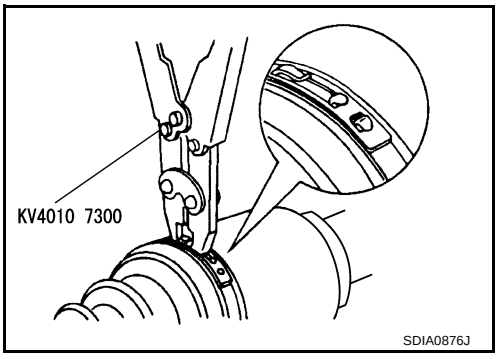
   Specified amount of grease : 40 - 50 g (1.41 - 1.76 oz)

4. Make sure that boot is properly installed on the drive shaft groove.
   Set boot so that it does not swell and deform when its length is "L_1".

   Length "L_1" : 90 mm (3.54 in)



5. Secure the big and small ends of the boot with new boot bands.



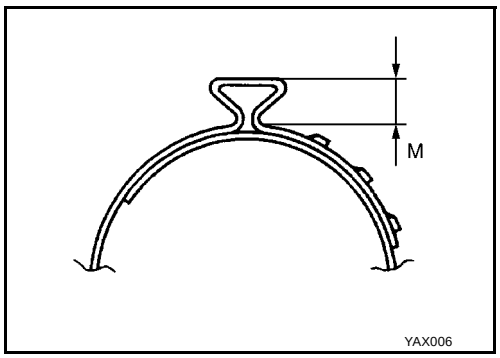
6. Rotate joint part and confirm that mounting position of boot does not deviate. When it deviates, mount a new boot band again.

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

M diameter

Large diameter side: 5 mm (0.20 in)

Small diameter side: 5 mm (0.20 in)

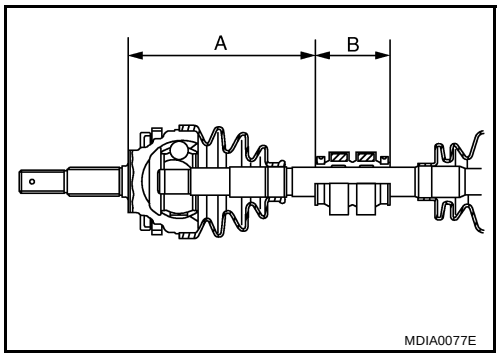


Dynamic Damper

1. Use new damper bands when installing.
2. Install dynamic damper from stationary-joint side while holding it securely.

Dimension A : 207 - 213 mm (8.15 - 8.39 in)

Dimension B : 70 mm (2.76 in)



Transaxle Side

1. Install boot and new small boot band on drive shaft.

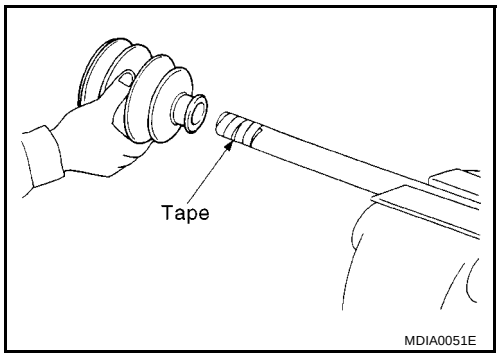
CAUTION:
Cover drive shaft serration with tape so as not to damage boot during installation.

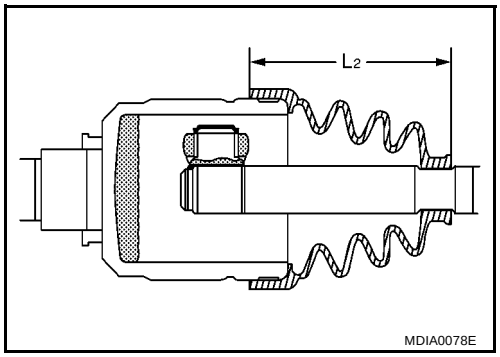
2. Install spider assembly as a unit, making sure the marks which were made during disassembly are properly aligned.
3. Install new snap ring.
4. Pack drive shaft with specified amount of grease.

Specified amount of grease : 113 - 123 g (3.98 - 4.34 oz)

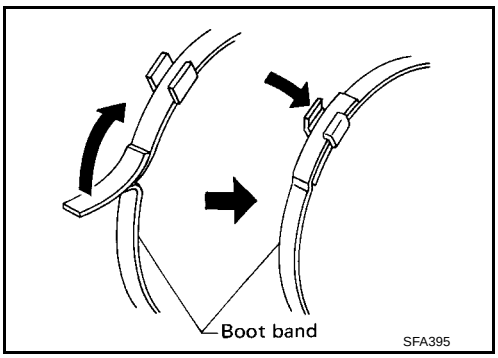
5. Install slide joint housing.
6. Make sure that boot is properly installed on the drive shaft.
Set boot so that it does not swell and deform when its length is "L_2".

Length "L_2" : 90 mm (3.54 in)

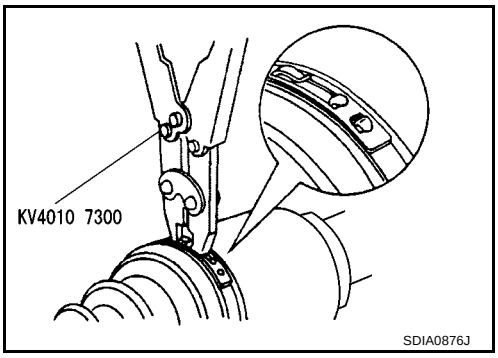




7. Lock new larger boot band securely with a suitable tool.



8. Secure the smaller end of the boot with new boot band.



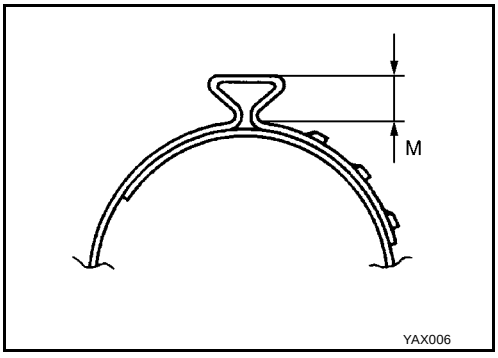
9. Rotate joint part of smaller end boot band and confirm that mounting position of boot does not deviate. When it deviates, mount a new boot band again.

CAUTION:

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

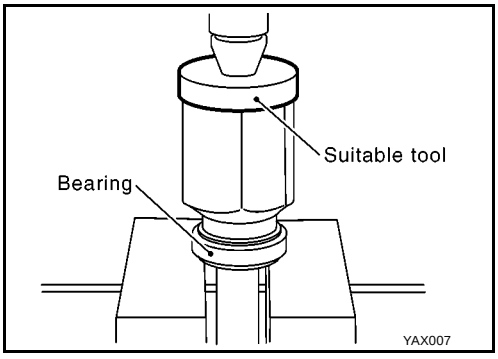
M diameter

Small diameter side: 5 mm (0.20 in)



Support Bearing

- Install new dust shield on drive shaft.
- Press drive shaft into bearing.



- Install new snap ring.
- Install new dust shields.