SECTION RAX
REAR AXLE

CONTENTS

2WD

PRECAUTION 2

PRECAUTIONS 2
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 2
Precautions for Removing Battery Terminal 2

PREPARATION 4

PREPARATION 4
Special Service Tool 4
Commercial Service Tools 4

SYMPTOM DIAGNOSIS 5

NOISE, VIBRATION, AND HARSHNESS(NVH) TROUBLESHOOTING 5
NVH Troubleshooting Chart 5

PERIODIC MAINTENANCE 6

REAR WHEEL HUB AND HOUSING 6
Inspection 6

REMOVAL AND INSTALLATION 7

REAR WHEEL HUB AND HOUSING 7
Exploded View 7
Removal and Installation 7
Disassembly and Assembly 8
Inspection 9

AWD

PRECAUTION 10

PRECAUTIONS 10
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER" 10
Precautions for Removing Battery Terminal 10
Precautions for Drive Shaft 11

PREPARATION 12

PREPARATION 12
Special Service Tool 12
Commercial Service Tool 12
Lubricant or/and Sealant 13

SYMPTOM DIAGNOSIS 14

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING 14
NVH Troubleshooting Chart 14

PERIODIC MAINTENANCE 15

REAR WHEEL HUB AND HOUSING 15
Inspection 15

REAR DRIVE SHAFT 16
Inspection 16

REMOVAL AND INSTALLATION 17

REAR WHEEL HUB AND HOUSING 17
Exploded View 17
Removal and Installation 17
Disassembly and Assembly 19
Inspection 20

REAR DRIVE SHAFT 21
Exploded View 21
Removal and Installation 21
Disassembly and Assembly 22
Inspection 30

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013568606

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.

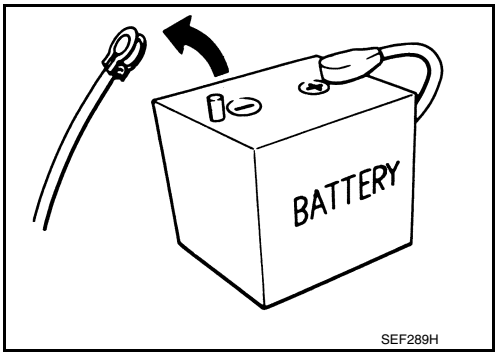
Precautions for Removing Battery Terminal

INFOID:0000000013568607

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		



SEF289H

V9X engine : 4 minutes
YD25DDTi : 2 minutes

NOTE:
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
- Driving for 30 minutes or more on a steep slope.

- 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.

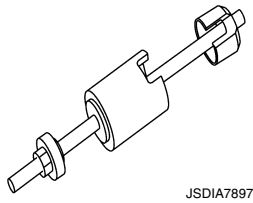
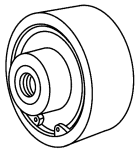
NOTE:
The removal of 12V battery may cause a DTC detection error.

PREPARATION

PREPARATION

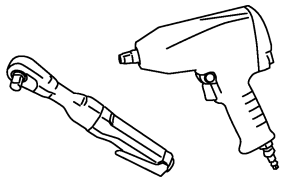
Special Service Tool

INFOID:0000000013591097

Tool number Tool name	Description
KV405H0340 (DAIMLER tool No.246 589 00 43 00) Extraction and insertion tool  JSDIA7897ZZ	Removing and installing bushing
KV40109200 (DAIMLER tool No.—) Extraction and insertion tool bearing  JSEIA1713ZZ	Removing and installing bushing

Commercial Service Tools

INFOID:0000000013644137

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

SYMPTOM DIAGNOSIS

NOISE, VIBRATION, AND HARSHNESS(NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000013568583

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

Reference page			RAX-7, "Removal and Installation"	—	RAX-9, "Inspection"	NVH in RAX and RSU sections	NVH in WT section	NVH in WT section	NVH in BR section
Possible cause and SUSPECTED PARTS			Improper installation, looseness	Parts interference	Wheel bearing damage	REAR AXLE AND REAR SUSPENSION	TIRES	ROAD WHEEL	BRAKE
Symptom	REAR AXLE	Noise	×	×	×	×	×	×	×
		Shake	×	×	×	×	×	×	×
		Vibration	×	×	×	×	×	—	—
		Shimmy	×	×	—	×	×	×	×
		Shudder	×	—	—	×	×	×	×
		Poor quality ride or handling	×	×	—	×	×	×	—

×: Applicable, —: Not applicable

PERIODIC MAINTENANCE

REAR WHEEL HUB AND HOUSING

Inspection

INFOID:0000000013568584

COMPONENT PART

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

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

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

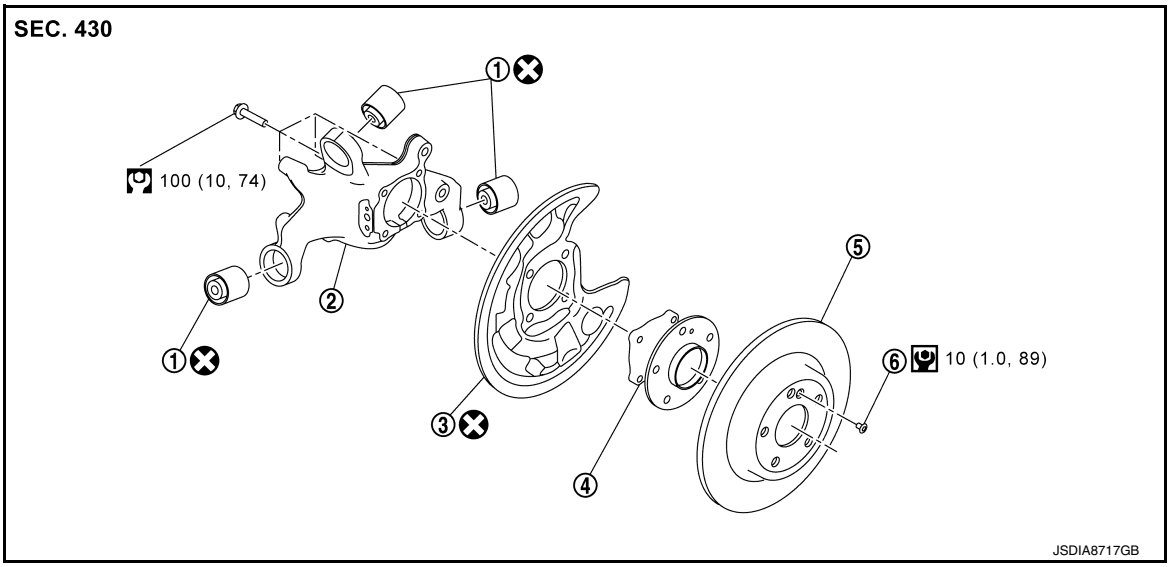
- Rotate wheel hub assembly and check there is no unusual noise or other irregular conditions. If there is any of irregular conditions, replace wheel hub assembly.

REMOVAL AND INSTALLATION

REAR WHEEL HUB AND HOUSING

Exploded View

INFOID:0000000013568585



① Bushing
② Axle housing
③ Splash guard
④ Wheel hub assembly (Bearing-integrated type)
⑤ Disc rotor
⑥ Lock bolt

: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

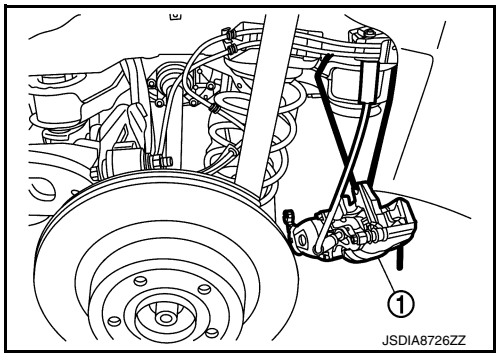
: Always replace after every disassembly.

Removal and Installation

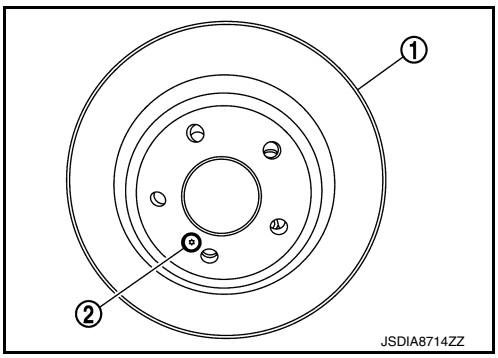
INFOID:0000000013568586

REMOVAL

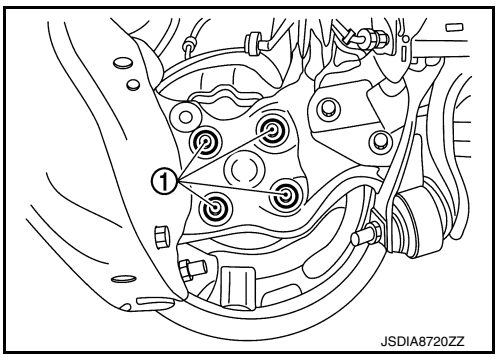
1. Remove tires with power tool (commercial service tool). Refer to WT-70, "Exploded View".
2. Remove rear axle rpm sensor. Refer to BRC-969, "REAR AXLE RPM SENSOR : Removal and Installation".
3. Remove rear electric parking brake actuator motor harness. Refer to PB-131, "Removal and Installation".
4. Remove brake caliper assembly. Hang brake caliper assembly ① in a place where it will not interfere with work. Refer to BR-46, "BRAKE CALIPER ASSEMBLY : Exploded View".
   CAUTION:
   Never depress brake pedal while brake caliper assembly is removed.



5. Remove lock bolt ② and disc rotor ①.



6. Remove bolt ① from axle housing.
7. Remove wheel hub assembly (Bearing-integrated type) and splash guard.
8. Remove shock absorber from rear lower link. Refer to RSU-9, "Removal and Installation".
9. Remove rear lower link from axle housing.
10. Remove stabilizer connecting rod from trailing arm. Refer to RSU-19, "Removal and Installation".
11. Remove front lower link from axle housing. Refer to RSU-17, "Removal and Installation".
12. Remove trailing arm from axle housing. Refer to RSU-15, "Removal and Installation".



13. Remove upper link from axle housing. Refer to RSU-21, "Removal and Installation".
14. Remove axle housing.
15. Perform inspection after removal. Refer to RAX-9, "Inspection".

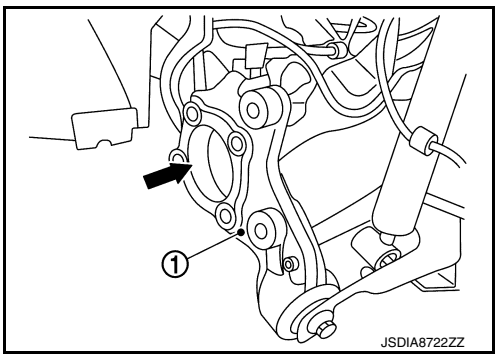
INSTALLATION

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

CAUTION:

Never reuse splash guard.

- The running surfaces (⬅) on the wheel hub assembly (Bearing-integrated type) and axle housing ①, must be free of dust and grease.



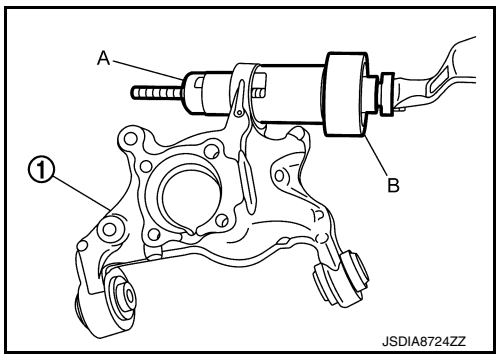
Disassembly and Assembly

INFOID:0000000013591100

DISASSEMBLY

1. Remove bushing from axle housing ①, using extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] (A) and extraction and insertion tool bearing [SST: KV40109200 (—)] (B) if necessary.

CAUTION:
Apply with mechanical oil the spindle part of the extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] regularly.



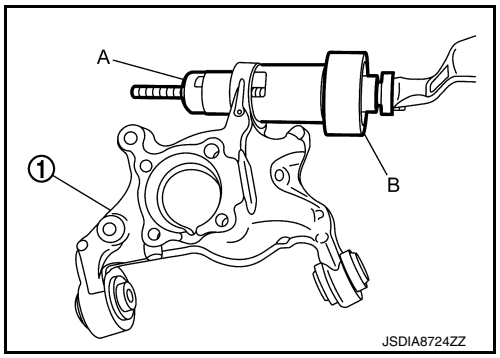
ASSEMBLY

1. Press bushing uniformly into axle housing.

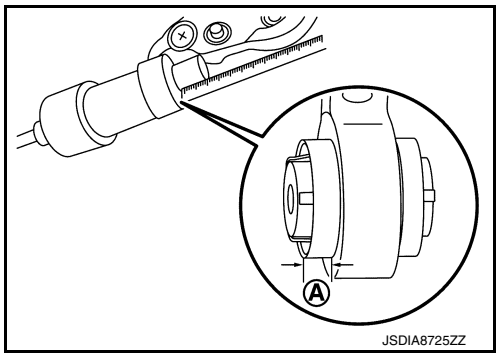
CAUTION:
Never reuse bushing.

2. Note chamfer on axle housing ①.

CAUTION:
When pressing in, the extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] (A) and extraction and insertion tool bearing [SST: KV40109200 (—)] (B) must be positioned at the chamfer side of the axle housing and pressed in.



3. When pressing in, the press-in dimension Ⓐ between the axle housing and bushing has to be checked.



- For rear lower link bushing in axle housing

  Dimension Ⓐ: 4.6 - 5.0 mm (0.181 – 0.197 in)

- For front lower link bushing in axle housing

  Dimension Ⓐ: 9.0 – 9.4 mm (0.354 – 0.370 in)

- For upper link bushing in axle housing

  Dimension Ⓐ: 8.1 - 8.5 mm (0.319 – 0.335 in)

Inspection

INFOID:0000000013568587

INSPECTION AFTER REMOVAL

Check wheel hub and bearing assembly for wear, cracks, and damage. Replace if there are.

INSPECTION AFTER INSTALLATION

1. Check Rear axle rpm sensor harness connector for proper connection. Refer to BRC-969, "REAR AXLE RPM SENSOR : Exploded View".
2. Check wheel alignment. Refer to RSU-7, "Inspection".
3. Perform test drive when adjusting wheel alignment. Refer to STC-26, "Description".

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013568610

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.

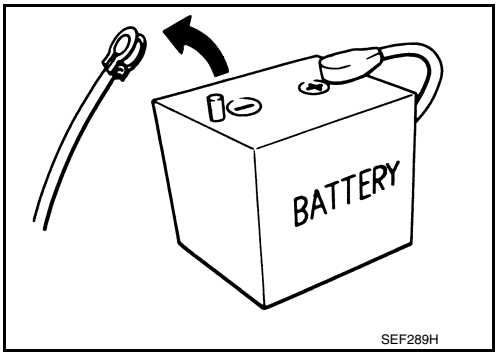
Precautions for Removing Battery Terminal

INFOID:0000000013568611

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.
- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		



V9X engine : 4 minutes
YD25DDTi : 2 minutes

NOTE:
ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
- Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
- Driving for 30 minutes or more on a steep slope.

- 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.

Precautions for Drive Shaft

INFOID:0000000013568612

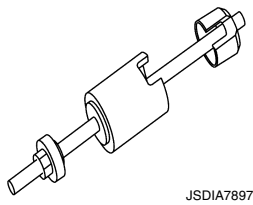
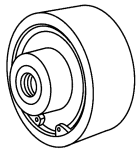
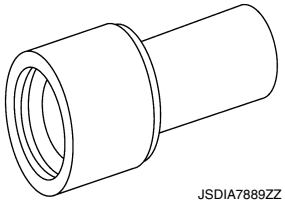
CAUTION:
Note the following precautions when disassembling and assembling drive shaft.
- **Joint sub-assembly does not disassemble because it is non-overhaul parts.**
- **Perform work in a dust-free location.**
- **Before disassembling and assembling, clean the parts.**
- **Prevent the entry of foreign 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 shop cloths must be used. Fabric shop cloths must not be used because of the danger of lint adhering to parts.**
- **Disassembled parts (except for rubber parts) should be cleaned with kerosene which shall be removed by blowing with air or wiping with paper shop cloths.**

PREPARATION

PREPARATION

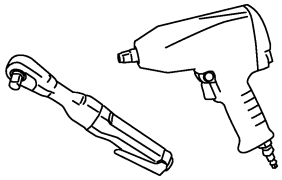
Special Service Tool

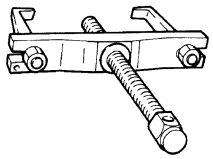
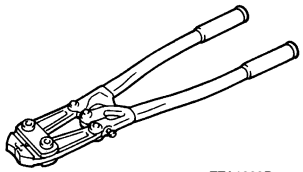
INFOID:0000000013591103

Tool number Tool name	Description
KV405H0340 (DAIMLER tool No.246 589 00 43 00) Extraction and insertion tool  JSDIA7897ZZ	Removing and installing bushing
KV40109200 (DAIMLER tool No.—) Extraction and insertion tool bearing  JSEIA1713ZZ	Removing and installing bushing
KV405H0030 (DAIMLER tool No.116 589 15 15 00) Drift  JSDIA7889ZZ	Disassembly joint hub

Commercial Service Tool

INFOID:0000000013568592

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

puller  ZZA0109D	Removing drive shaft
Boot band crimping tool  ZZA1229D	Installing boot band

Lubricant or/and Sealant

INFOID:0000000013568593

Name	Description
Fill NISSAN Genuine grease or equivalent	• Joint sub-assembly inside • Housing assembly inside

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000013568594

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

Reference			—	RAX-30	—	RAX-21	—	NVH in DLN section	NVH in DLN section	NVH in RAX and RSU sections	Refer to REAR AXLE in this chart	NVH in WT section	NVH in WT section	Refer to DRIVE SHAFT in this chart	NVH in BR section
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	PROPELLER SHAFT	DIFFERENTIAL	REAR AXLE AND REAR SUSPENSION	REAR AXLE	TIRE	ROAD WHEEL	DRIVE SHAFT	BRAKE
Symptom	DRIVE SHAFT	Noise	×	×	—	—	—	×	×	×	×	×	×	—	×
		Shake	×	—	×	—	—	×	—	×	×	×	×	—	×
	REAR AXLE	Noise	—	—	—	×	×	×	×	×	—	×	×	×	×
		Shake	—	—	—	×	×	×	—	×	—	×	×	×	×
		Vibration	—	—	—	×	×	×	—	×	—	×	—	×	—
		Shimmy	—	—	—	×	×	—	—	×	—	×	×	—	×
		Judder	—	—	—	×	—	—	—	×	—	×	×	—	×
		Poor quality ride or handling	—	—	—	×	×	—	—	×	—	×	×	—	—

×: Applicable, —: Not applicable

PERIODIC MAINTENANCE

REAR WHEEL HUB AND HOUSING

Inspection

INFOID:0000000013568595

COMPONENT PART

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

WHEEL HUB ASSEMBLY (BEARING-INTEGRATED TYPE)

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

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

REAR DRIVE SHAFT

Inspection

INFOID:0000000013568596

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

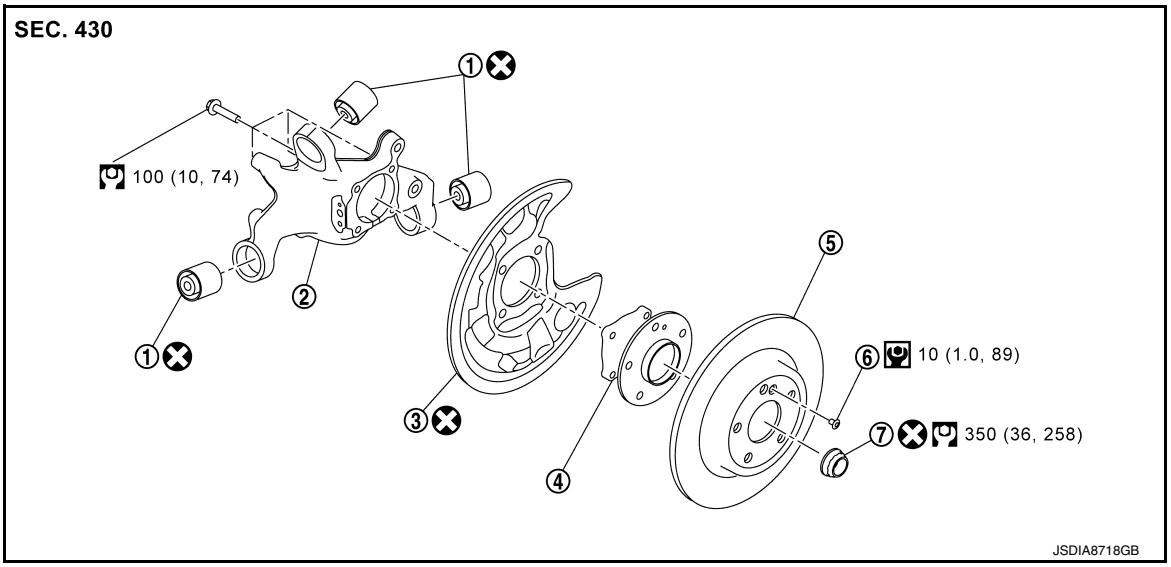
- Check drive shaft mounting point and joint for looseness and other damage.
  CAUTION:
  Replace entire drive shaft assembly when noise or vibration occur from drive shaft.
- Check boot for cracks and other damage.

REMOVAL AND INSTALLATION

REAR WHEEL HUB AND HOUSING

Exploded View

INFOID:0000000013568597



① Bushing
② Axle housing
③ Splash guard
④ Wheel hub assembly (Bearing-integrated type)
⑤ Disc rotor
⑥ Lock bolt
⑦ Wheel hub lock nut

: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

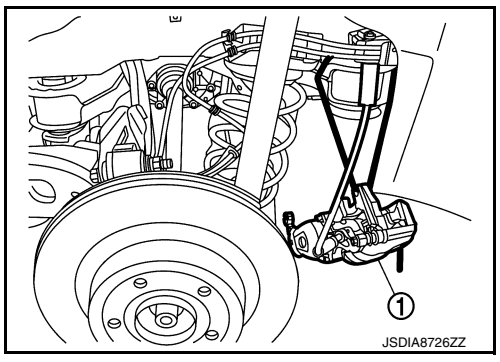
Removal and Installation

INFOID:0000000013568598

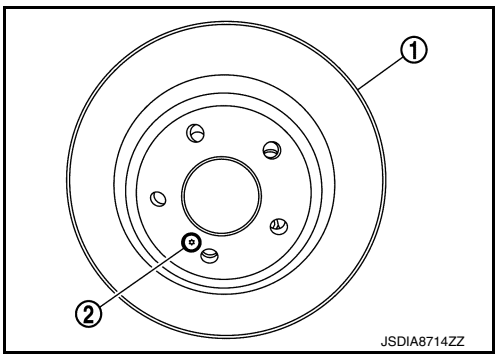
REMOVAL

1. Remove tires with power tool. Refer to WT-70, "Exploded View".
2. Remove wheel hub lock nut.
3. Remove rear axle rpm sensor. Refer to BRC-969, "REAR AXLE RPM SENSOR : Removal and Installation".
4. Remove rear electric parking brake actuator motor harness. Refer to PB-131, "Removal and Installation".
5. Remove brake caliper assembly. Hang brake caliper assembly ① in a place where it will not interfere with work. Refer to BR-46, "BRAKE CALIPER ASSEMBLY : Exploded View".

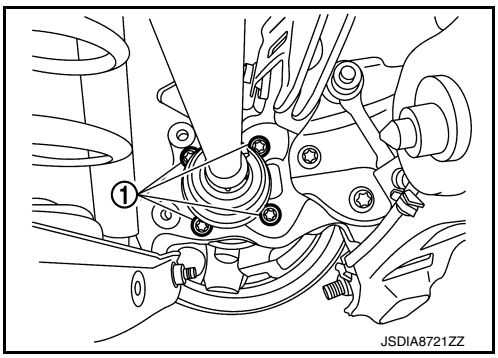
CAUTION:
Never depress brake pedal while brake caliper assembly is removed.



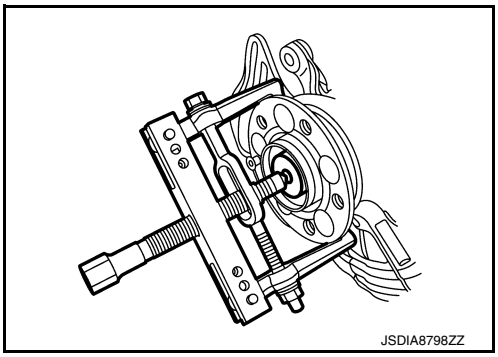
6. Remove lock bolt ② and disc rotor ①.



7. Remove bolt ① from axle housing.



8. Separate drive shaft from wheel hub assembly (Bearing-integrated type). Use the puller (Commercial service tool), if axle housing assembly and drive shaft cannot be separated after performing.
CAUTION:
Never knock seized drive shaft out of axle housing. Otherwise the angular contact ball bearing will be damaged.
9. Remove wheel hub assembly (Bearing-integrated type) and splash guard.
10. Remove shock absorber from rear lower link. Refer to RSU-9, "Removal and Installation".

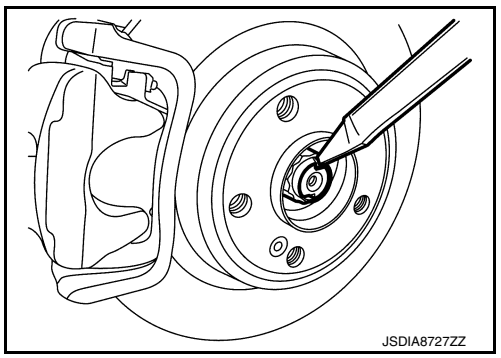


11. Remove rear lower link from axle housing.
12. Remove stabilizer connecting rod from trailing arm. Refer to RSU-19, "Removal and Installation".
13. Remove front lower link from axle housing. Refer to RSU-17, "Removal and Installation".
14. Remove trailing arm from axle housing. Refer to RSU-15, "Removal and Installation".
15. Remove upper link from axle housing. Refer to RSU-21, "Removal and Installation".
16. Remove axle housing.
17. Perform inspection after removal. Refer to RAX-20, "Inspection".

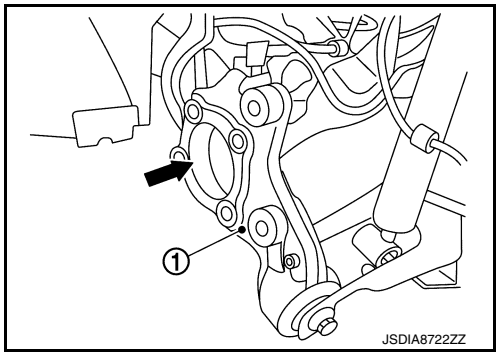
INSTALLATION

Note the following, and install in the reverse order of removal.
CAUTION:
Never reuse splash guard.
- Clean thread of rear drive shaft.

- Install wheel hub lock nut, using crimp punch.
  CAUTION:
  Never reuse wheel hub lock nut.



- The running surfaces (⬅) on the wheel hub assembly (Bearing-integrated type) and axle housing ①, must be free of dust and grease.

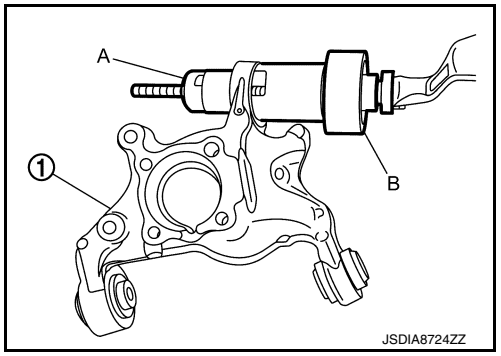


Disassembly and Assembly

INFOID:0000000013568599

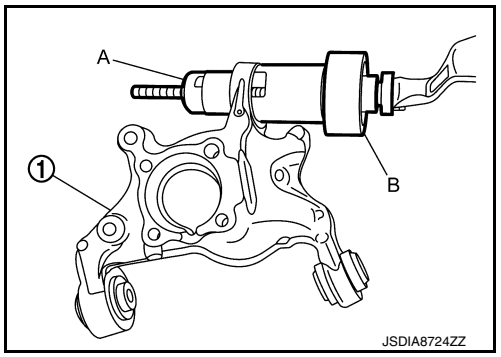
DISASSEMBLY

1. Remove bushing from axle housing ①, using extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] (A) and extraction and insertion tool bearing [SST: KV40109200 (—)] (B) if necessary.
   CAUTION:
   Apply with mechanical oil the spindle part of the extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] regularly.

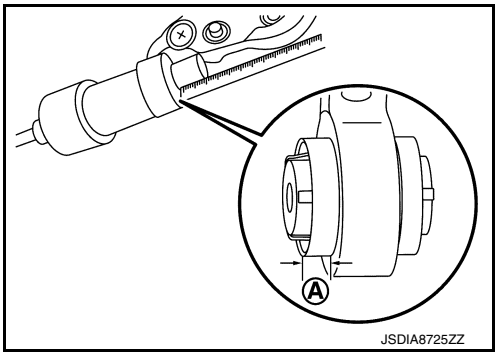


ASSEMBLY

1. Press bushing uniformly into axle housing.
   CAUTION:
   Never reuse bushing.
2. Note chamfer on axle housing ①.
   CAUTION:
   When pressing in, the extraction and insertion tool [SST: KV405H0340 (246 589 00 43 00)] (A) and extraction and insertion tool bearing [SST: KV40109200 (—)] (B) must be positioned at the chamfer side of the axle housing and pressed in.



3. When pressing in, the press-in dimension Ⓐ between the axle housing and bushing has to be checked.



- For rear lower link bushing in axle housing

  Dimension Ⓐ: 4.6 – 5.0 mm (0.181 – 0.197 in)

- For front lower link bushing in axle housing

  Dimension Ⓐ: 9.0 – 9.4 mm (0.354 – 0.370 in)

- For upper link bushing in axle housing

  Dimension Ⓐ: 8.1 – 8.5 mm (0.319 – 0.335 in)

Inspection

INFOID:0000000013568600

INSPECTION AFTER REMOVAL

Check wheel hub and bearing assembly for wear, cracks, and damage. Replace if there are.

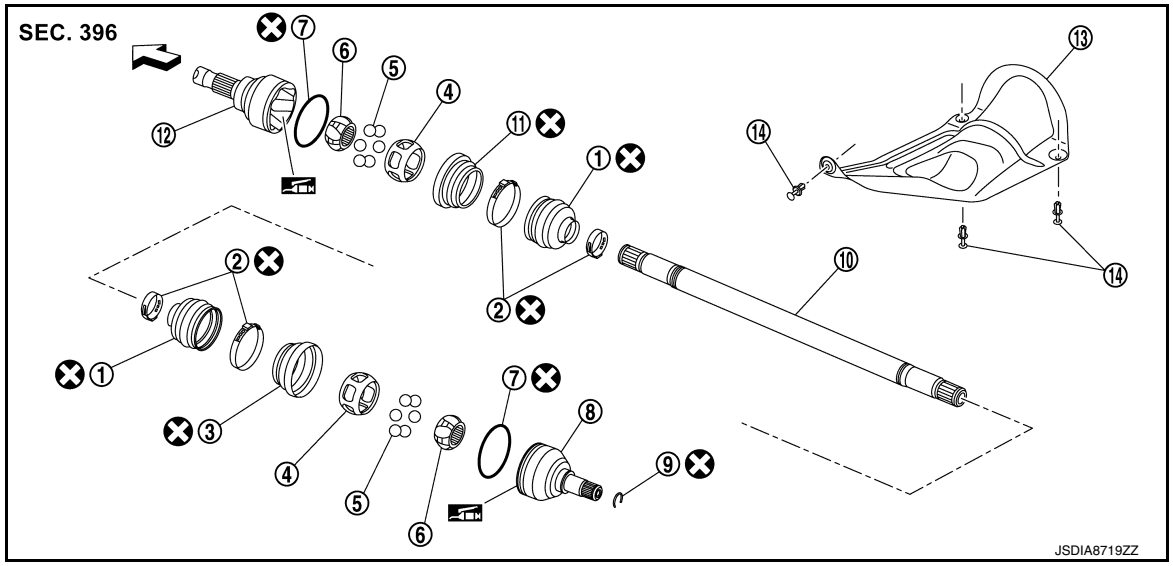
INSPECTION AFTER INSTALLATION

1. Check Rear axle rpm sensor harness connector for proper connection. Refer to BRC-969, "REAR AXLE RPM SENSOR : Exploded View".
2. Check wheel alignment. Refer to RSU-7, "Inspection".
3. Perform test drive when adjusting wheel alignment. Refer to STC-26, "Description".

REAR DRIVE SHAFT

Exploded View

INFOID:0000000013568601



① Boot	② Boot band	③ Cap seal
④ Ball retainer	⑤ Ball	⑥ Joint hub
⑦ O-ring	⑧ Housing assembly	⑨ Circular clip
⑩ Shaft	⑪ Cap seal	⑫ Joint sub-assembly
⑬ Heat insulator	⑭ Clip	

⇦: Wheel side

: Fill NISSAN genuine grease or an equivalent.

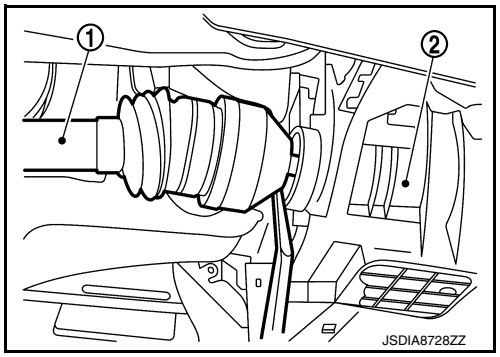
: Always replace after every disassembly.

Removal and Installation

INFOID:0000000013568602

REMOVAL

1. Remove tires with power tool. Refer to WT-70, "Exploded View".
2. Remove wheel hub lock nut.
   CAUTION:
   - **Never use a power tool.**
   - **When rotation of locknut does not turn smoothly, release stacked area is performed again.**
3. Remove axle housing. Refer to RAX-17, "Removal and Installation".
4. Remove heat insulator. (Right side only)
5. Remove rear drive shaft ① assembly from rear final drive ②, using a suitable tool.



6. Perform inspection after removal. Refer to RAX-30, "Inspection".

INSTALLATION

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

CAUTION:

Always replace side oil seal with new one when installing drive shaft. Refer to DLN-107, "Removal and Installation".

- Perform final tightening of bolts and nuts at suspension arm (rubber bushing), under unladen conditions with tires on level ground.
- Tighten the wheel hub lock nut to the specified torque. Refer to RAX-17, "Exploded View".
- Perform inspection after installation. Refer to RAX-30, "Inspection".

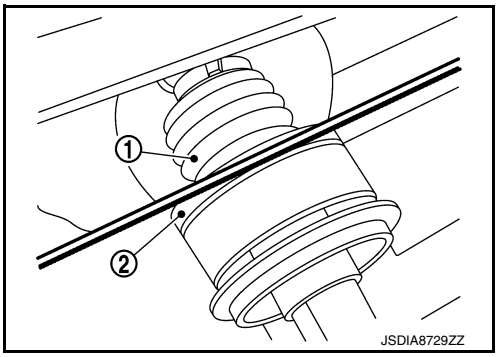
Disassembly and Assembly

INFOID:0000000013568603

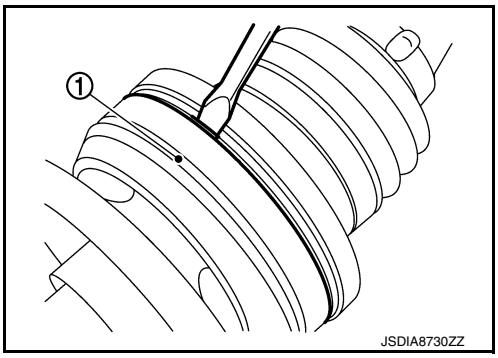
DISASSEMBLY

Final Drive Side

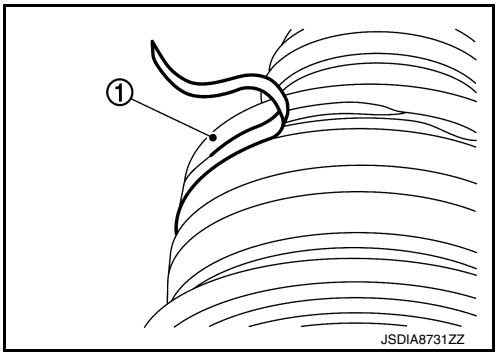
1. Remove circular clip.
2. Fix shaft with a vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
3. Using a hand coping saw, saw cup seal ② radially in the groove on the press-in edge so that a notch arises.
   CAUTION:
   Saw carefully. Otherwise the housing assembly and boot ① will be damaged.



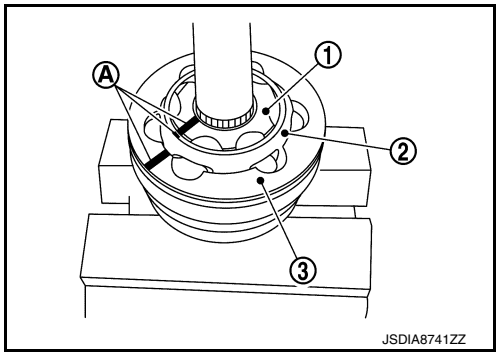
4. Use a suitable tool to lift the notched area. (①: Housing assembly)



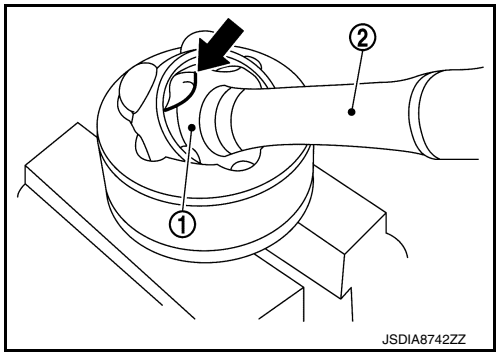
5. Starting at the standing away end, unscrew cup seal ① using suitable tool until it is possible to lift the cup seal off the housing assembly.
   NOTE:
   Make sure that the drive shaft does not drop out of the housing assembly before the parts have been marked relative to each other.
6. Remove boot band.
7. Pull boot with cup seal off housing assembly and slide back onto shaft.



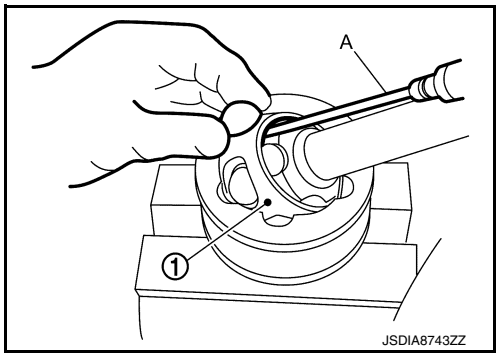
8. Mark the position Ⓐ of the housing assembly ③, joint hub ① and ball retainer ② in relation to one another.



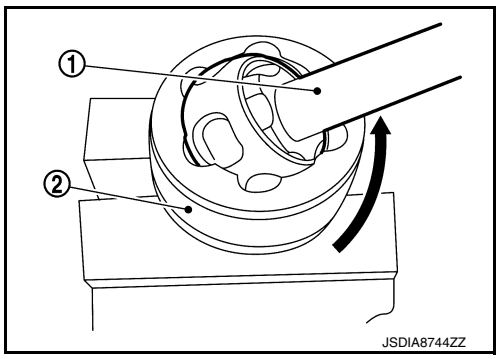
9. Position shaft ② so that the narrow bar (⬅) of the joint hub ① faces upwards.



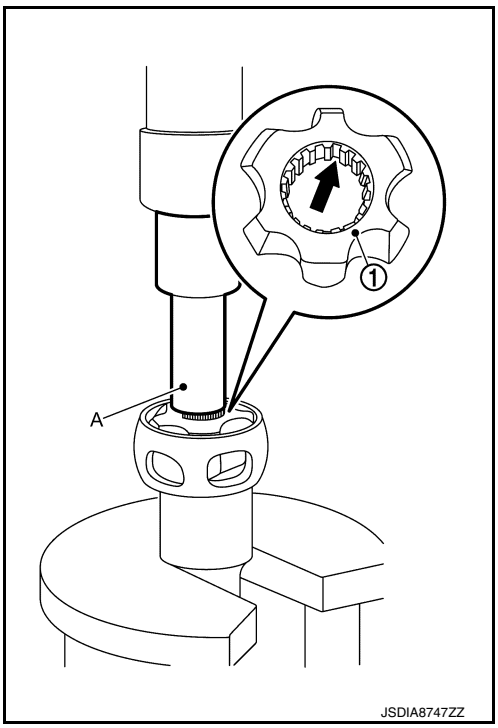
10. Use a suitable tool (A) to press the two top balls out of their race. (①: ball retainer)



11. Position shaft ① as shown and turn (⬅) slightly to remove from housing assembly ②.
NOTE:
Hold the remaining balls in place when removing.
12. Remove remaining balls from housing assembly.

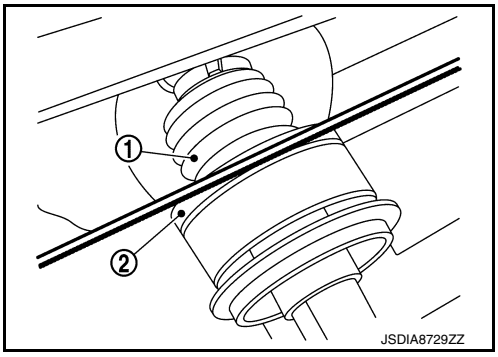


13. Press off joint hub ① with half shells and drift (A) [SST: KV405H0030 (116 589 15 15 00)] from shaft.
Check splined profile on joint hub and shaft for damage.
NOTE:
The joint hub can be used again if, on its splined profile (⬅), no more than 3 teeth per caulking have broken out, up to a maximum length of 6 mm. If more teeth are broken out, the shaft has to be replaced.
14. Clean all parts.
15. Perform inspection after disassembly. Refer to RAX-30, "Inspection".

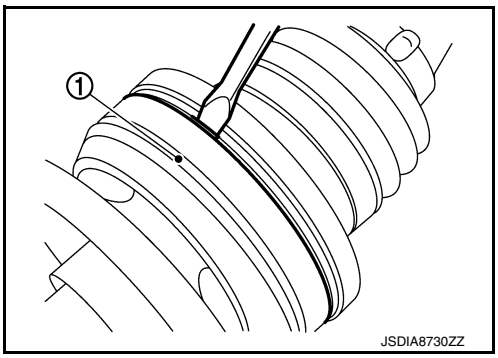


Wheel Side

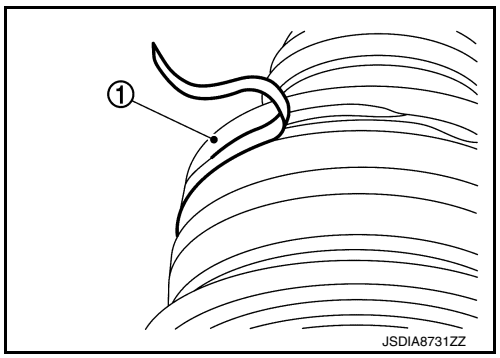
1. Fix shaft with a vise.
CAUTION:
Protect shaft using aluminum or copper plates when fixing with a vise.
2. Using a hand coping saw, saw cup seal ② radially in the groove on the press-in edge so that a notch arises.
CAUTION:
Saw carefully. Otherwise the joint sub-assembly and boot ① will be damaged.



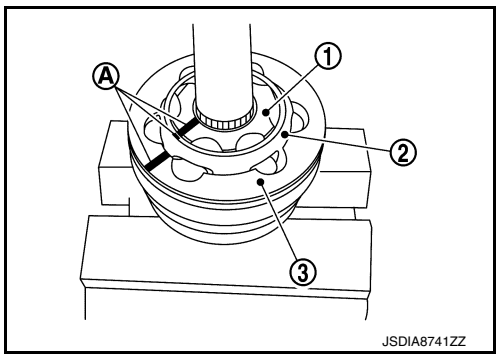
3. Use a suitable tool to lift the notched area. (①: joint sub-assembly)



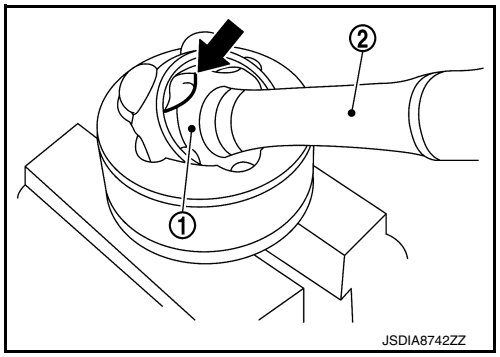
4. Starting at the standing away end, unscrew cup seal ① using suitable tool until it is possible to lift the cup seal off the joint sub-assembly.
NOTE:
Make sure that the drive shaft does not drop out of the joint sub-assembly before the parts have been marked relative to each other.
5. Remove boot band.
6. Pull boot with cup seal off joint sub-assembly and slide back onto shaft.



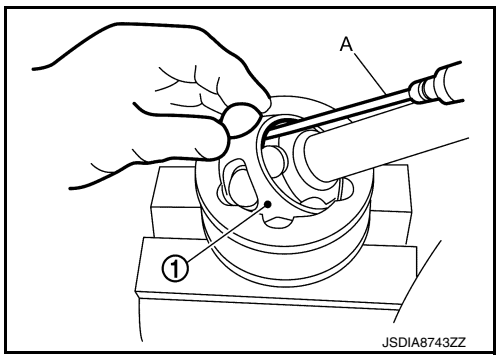
7. Mark the position Ⓐ of the joint sub-assembly ③, joint hub ① and ball retainer ② in relation to one another.



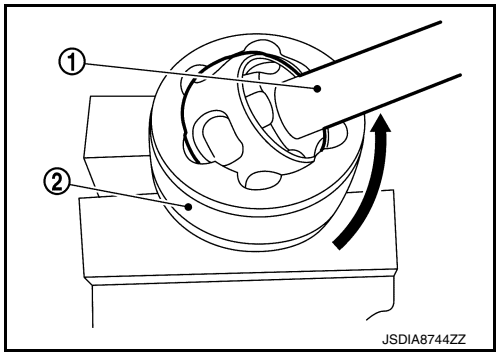
8. Position shaft ② so that the narrow bar (⬅) of the joint hub ① faces upwards.



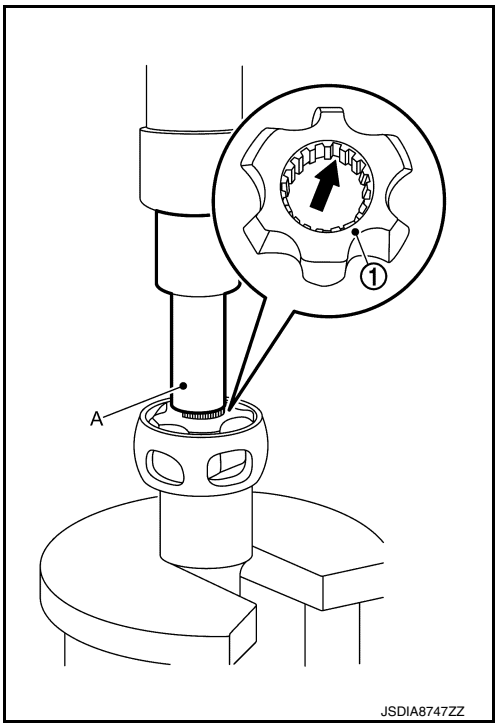
9. Use a suitable tool (A) to press the two top balls out of their race. (①: ball retainer)



10. Position shaft ① as shown and turn (⬅) slightly to remove from joint sub-assembly ②.
NOTE:
Hold the remaining balls in place when removing.
11. Remove remaining balls from joint sub-assembly.



12. Press off joint hub ① with half shells and drift (A) [SST: KV405H0030 (116 589 15 15 00)] from shaft.
    Check splined profile on joint hub and shaft for damage.
    NOTE:
    The joint hub can be used again if, on its splined profile (⬅), no more than 3 teeth per caulking have broken out, up to a maximum length of 6 mm. If more teeth are broken out, the shaft has to be replaced.
13. Clean all parts.
14. Perform inspection after disassembly. Refer to RAX-30, "Inspection".

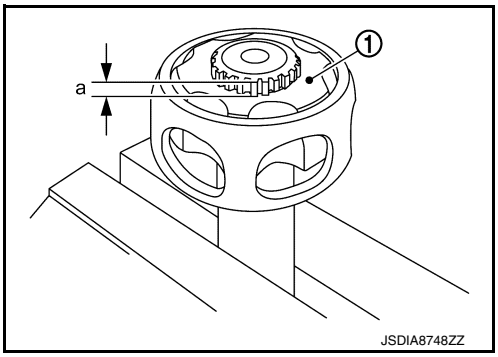


ASSEMBLY

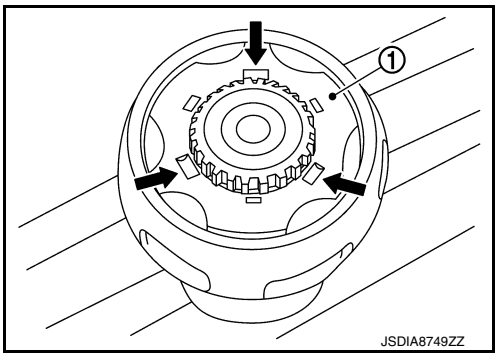
Final drive Side

1. Clean old grease on housing assembly with paper waste.
2. Clamp shaft using protective jaws into vise.
   CAUTION:
   Protect shaft using aluminum or copper plates when fixing with a vise.
3. Press on joint hub ① using suitable tool until dimension (a) is reached.

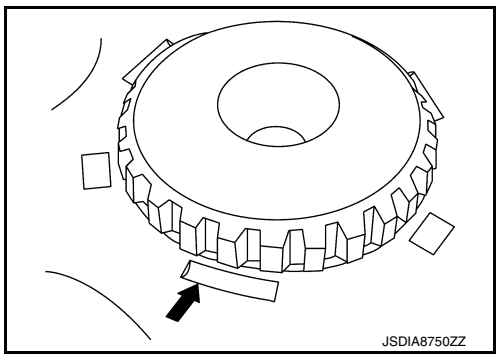
   Dimension (a): 4.2 mm (0.165 in)



4. Clamp the drive shaft in the vise so that the joint hub ① is resting on the half shells and the ball retainer can still be rotated. (⬅: caulkings)

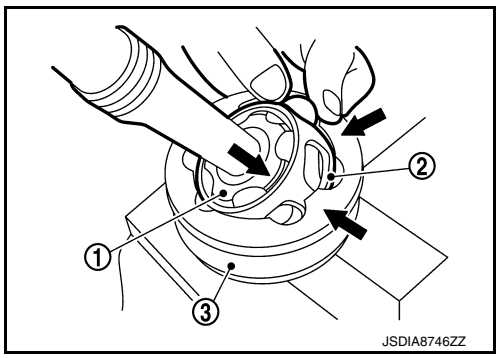


5. Mount new caulkings (⬅) using suitable tool in the center between the caulkings already there.
NOTE:
In order to prevent damage of the ball raceways, the caulkings must be made as close as possible to the splined profile.
6. Before inserting the joint hub, pack half the grease provided in the housing assembly.



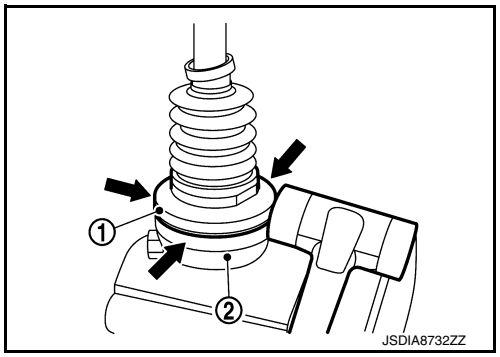
7. Insert shaft with joint hub ① and ball retainer ② into housing assembly ③ and position so that the balls can be inserted.
NOTE:
Note the applied markings (⬅). If markings were not made, the ball retainer has to be positioned on the joint hub such that a wide bar of the joint hub is always opposite a narrow bar of the housing assembly.
8. Insert balls one after the other.
9. Replace O-ring on housing assembly.
CAUTION:
- **Never reuse O-ring.**
- **Never oil or grease the O-ring.**

NOTE:
Rub O-ring with spirit to make it easier to install the cup seal.

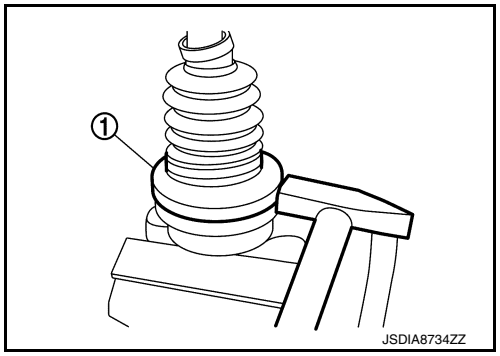


10. Mount cup seal ① with boot band and slide on as far as the end stop on the housing assembly ②.
CAUTION:
- **Never reuse cup seal.**
- **Never boot band.**
- **Push on the cup seal carefully.**

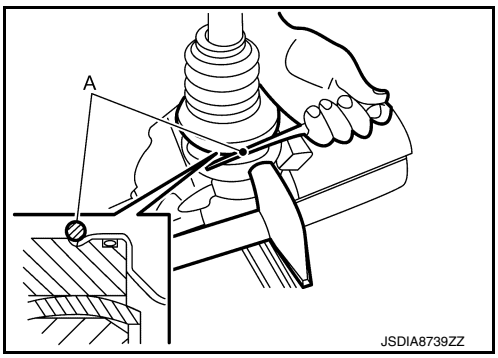
NOTE:
If necessary, drive fully home by tapping gently (⬅) with a plastic mallet.
11. Fix cup seal in circumferential groove of housing assembly by applying four blows around circumference (each blow offset by 90°).



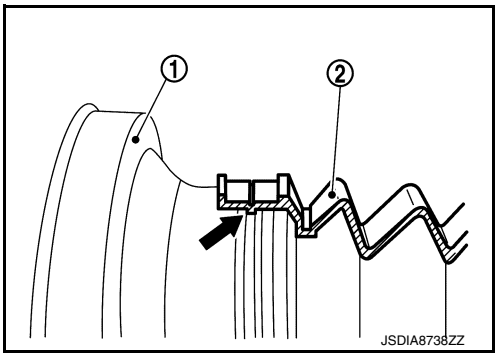
12. Drive cup seal ① using a hammer and applying even blows into the circumferential groove of the housing assembly.
NOTE:
Ensure that the boot cap seats properly.



13. By positioning a suitable tool (A) and applying even blows with the hammer, reposition the cup seal in the groove.
14. Fill joint with new grease.



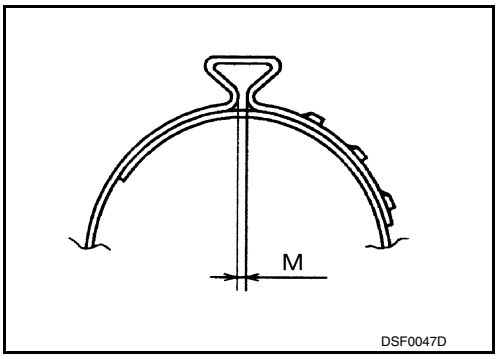
15. Slide boot ② onto cup seal ①.
NOTE:
Ensure that the ridge (⬅) on the boot is resting between the ridges on the boot cap. After the boot is pushed on, no groove on the rear axle shaft should be visible at the small diameter of the boot. This indicates that the raised bead of the boot is fixed in the first groove.



16. Fasten boot band using boot band crimping tool (Commercial service tool).

Dimension (M): 2.0mm (0.079 in) – 2.5mm (0.098 in)

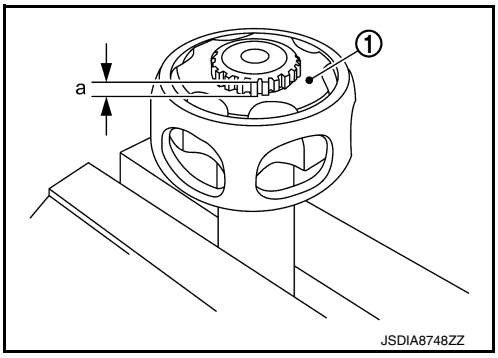
17. Install circular clip.
CAUTION:
Never reuse circular clip.
18. Perform inspection after assembly. Refer to RAX-30, "Inspection".



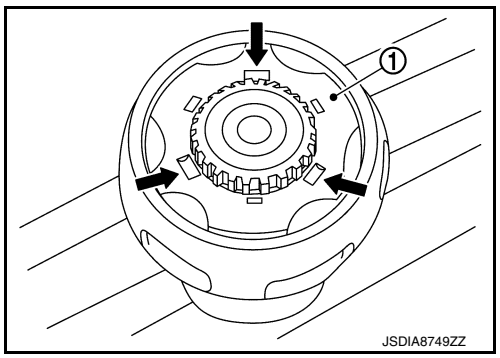
Wheel Side

1. Clean old grease on joint sub-assembly with paper waste.
2. Clamp shaft using protective jaws into vise.
CAUTION:
Protect shaft using aluminum or copper plates when fixing with a vise.
3. Press on joint hub ① using suitable tool until dimension (a) is reached.

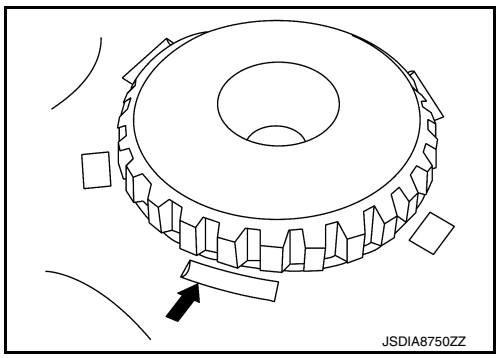
Dimension (a): 4.2 mm (0.165 in)



4. Clamp the drive shaft in the vise so that the joint hub ① is resting on the half shells and the ball retainer can still be rotated. (⬅: caulkings)

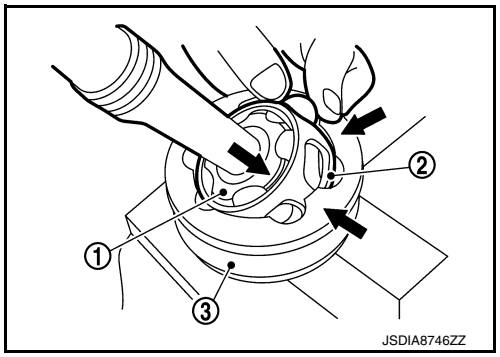


5. Mount new caulkings (⬅) using suitable tool in the center between the caulkings already there.
NOTE:
In order to prevent damage of the ball raceways, the caulkings must be made as close as possible to the splined profile.
6. Before inserting the joint hub, pack half the grease provided in the joint sub-assembly.



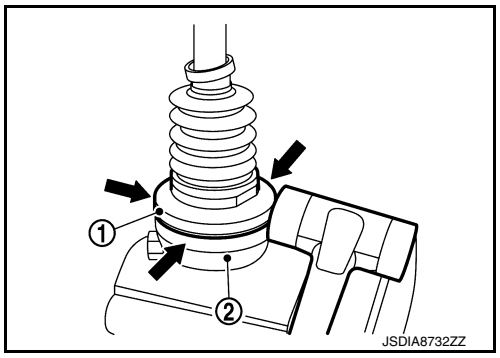
7. Insert shaft with joint hub ① and ball retainer ② into joint sub-assembly ③ and position so that the balls can be inserted.
NOTE:
Note the applied markings (⬅). If markings were not made, the ball retainer has to be positioned on the joint hub such that a wide bar of the joint hub is always opposite a narrow bar of the joint sub-assembly.
8. Insert balls one after the other.
9. Replace O-ring on joint sub-assembly.
CAUTION:
- **Never reuse O-ring.**
- **Never oil or grease the O-ring.**

NOTE:
Rub O-ring with spirit to make it easier to install the cup seal.

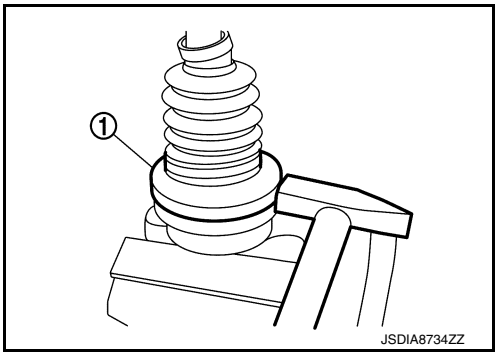


10. Mount cup seal ① with boot band and slide on as far as the end stop on the joint sub-assembly ②.
CAUTION:
- **Never reuse cup seal.**
- **Never boot band.**
- **Push on the cup seal carefully.**

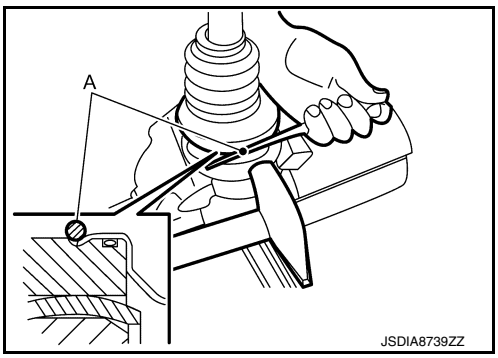
NOTE:
If necessary, drive fully home by tapping gently (⬅) with a plastic mallet.
11. Fix cup seal in circumferential groove of joint sub-assembly by applying four blows around circumference (each blow offset by 90°).



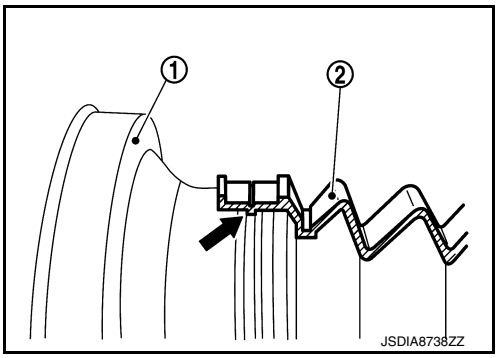
12. Drive cup seal ① using a hammer and applying even blows into the circumferential groove of the joint sub-assembly.
NOTE:
Ensure that the boot cap seats properly.



13. By positioning a suitable tool (A) and applying even blows with the hammer, reposition the cup seal in the groove.
14. Fill joint with new grease.



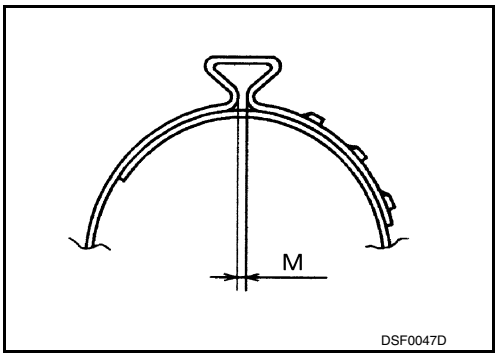
15. Slide boot ② onto cup seal ①.
NOTE:
Ensure that the ridge (⬅) on the boot is resting between the ridges on the boot cap. After the boot is pushed on, no groove on the rear axle shaft should be visible at the small diameter of the boot. This indicates that the raised bead of the boot is fixed in the first groove.



16. Fasten boot band using boot band crimping tool (Commercial service tool).

Dimension (M): 2.0mm (0.079 in) – 2.5mm (0.098 in)

17. Perform inspection after assembly. Refer to RAX-30, "Inspection".



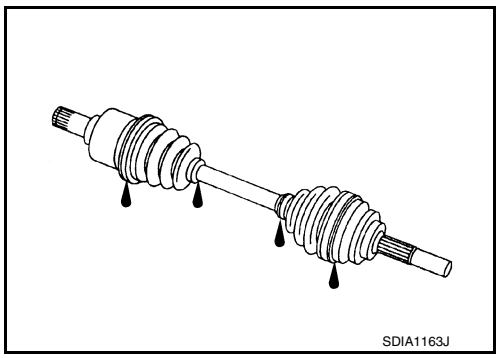
Inspection

INFOID:0000000013568604

INSPECTION AFTER REMOVAL

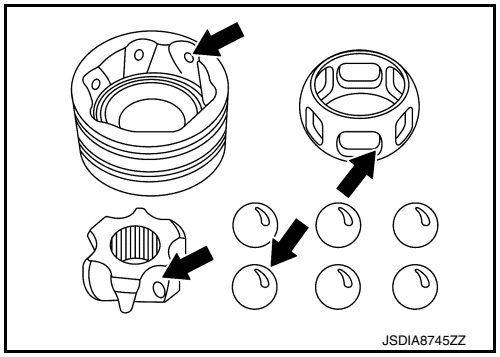
- Move joint up/down, left/right, and in the axial direction. Check for motion that is not smooth and for significant looseness.

- Check boot for cracks or other damage, and also for grease leakage.
- If a malfunction is found, disassemble drive shaft, and then replace with new one.


SDIA1163J

INSPECTION AFTER DISASSEMBLY

- Check ball raceways of joint sub-assembly, housing assembly, joint hub, ball retainer and balls on inner constant velocity joint for recesses and signs of wear (⬅).


JSDIA8745ZZ

INSPECTION AFTER INSTALLATION

1. Check rear wheel sensor harness for proper connection. Refer to BRC-969, "REAR AXLE RPM SENSOR : Exploded View".
2. Check wheel alignment. Refer to RSU-7, "Inspection".
3. Perform test drive when adjusting wheel alignment. Refer to STC-26, "Description".