SECTION FAX
FRONT AXLE

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000013568578

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.

- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

Precautions for Removing Battery Terminal

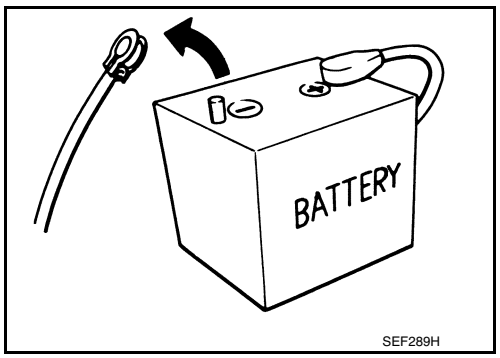
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When disconnecting the battery terminal, pay attention to the following.

- 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:

BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
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		



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

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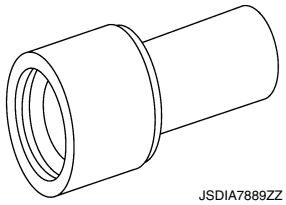
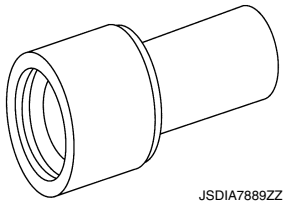
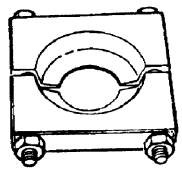
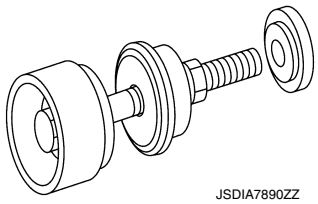
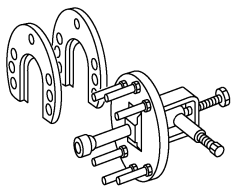
Observe the following precautions when disassembling and assembling drive shaft.
- Never disassemble joint sub-assembly because it is non-overhaul parts.
- Perform work in a location which is as dust-free as possible.
- Clean the parts, before disassembling and assembling.
- Prevent the entry of foreign objects during disassembly of the service location.
- Reassemble disassembled parts carefully in the correct order. If work is interrupted, a clean cover must be placed over parts.
- Use paper waste. Fabric shop cloths must not be used because of the danger of lint adhering to parts.
- Clean disassembled parts (except for rubber parts) with kerosene which shall be removed by blowing with air or wiping with paper waste.

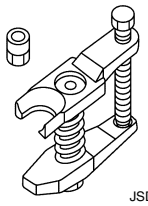
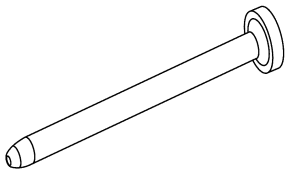
PREPARATION

PREPARATION

Special Service Tool

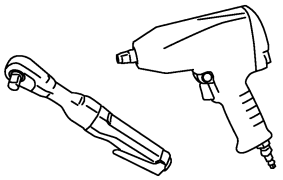
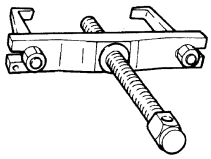
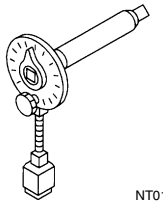
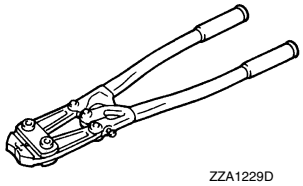
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Tool number Tool name	Description
KV38102100 (DAIMLER tool No.—) Drift  JSDIA7889ZZ	• Removing wheel hub • Removing wheel bearing inner race
KV40100610 (DAIMLER tool No.—) Drift  JSDIA7889ZZ	Removing wheel bearing
ST30021000 (DAIMLER tool No.—) Replacer  ZZA0700D	Removing wheel bearing inner race
KV405H0090 (DAIMLER tool No.124 589 05 43 00) Removal and installation  JSDIA7890ZZ	• Installing wheel bearing • Installing wheel hub
KV405H0210 (DAIMLER tool No.202 589 04 43 07) Plate  JSDIA7894ZZ	• Removing wheel hub • Removing wheel bearing inner race

Tool number Tool name	Description
KV405H0330 (DAIMLER tool No.246 589 00 33 00) Puller  JSDIA7896ZZ	Removing transverse link
KV405H0320 (DAIMLER tool No.246 589 00 15 00) Drift  JSDIA7895ZZ	Removing housing assembly

Commercial Service Tool

INFOID:0000000013568561

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts
puller  ZZA0109D	Removing drive shaft
Angle wrench  NT014	• Tightening for transverse mounting nut • Tightening for wheel hub lock bolt • Tightening for support bearing bracket
Boot band crimping tool  ZZA1229D	Installing boot band

Lubricant or/and Sealant

INFOID:0000000013568562

Name	Description
Fill NISSAN Genuine grease or equivalent	• Wheel bearing • Steering knuckle • Joint sub-assembly • Housing assembly

SYMPTOM DIAGNOSIS

NOISE, VIBRATION, AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000013568563

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

Reference page			—	FAX-23, "Inspection"	—	FAX-10, "Exploded View"	—	FAX-14, "Inspection"	NVH in FAX and FSU sections.	Refer to FRONT AXLE in this chart.	NVH in WT sections.	NVH in WT sections.	Refer to DRIVE SHAFT in this chart.	NVH in BR sections.	NVH in ST sections.
Possible cause and SUSPECTED PARTS			Excessive joint angle	Joint sliding resistance	Imbalance	Improper installation, looseness	Parts interference	Wheel bearing damage	FRONT AXLE AND FRPNT SUSPENSION	FRONT AXLE	TIRES	ROAD WHEEL	DRIVE SHAFT	BRAKES	STEERING
Symptom	DRIVE SHAFT	Noise	×	×	—	—	—	×	×	×	×	×	—	×	×
		Shake	×	—	×	—	—	×	×	×	×	×	—	×	×
	FRONT AXLE	Noise	—	—	—	×	×	×	×	—	×	×	×	×	×
		Shake	—	—	—	×	×	×	×	—	×	×	×	×	×
		Vibration	—	—	—	×	×	×	×	—	×	—	×	—	×
		Shimmy	—	—	—	×	×	—	×	—	×	×	—	×	×
		Shudder	—	—	—	×	—	—	×	—	×	×	—	×	×
		Poor quality ride or handling	—	—	—	×	×	—	×	—	×	×	—	—	—

×: Applicable, —: Not applicable

PERIODIC MAINTENANCE

FRONT WHEEL HUB AND KNUCKLE

Inspection

INFOID:0000000013568564

COMPONENT PART

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

WHEEL HUB AND BEARING ASSEMBLY

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

- Rotate wheel hub and bearing assembly and check 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:0000000013568565

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

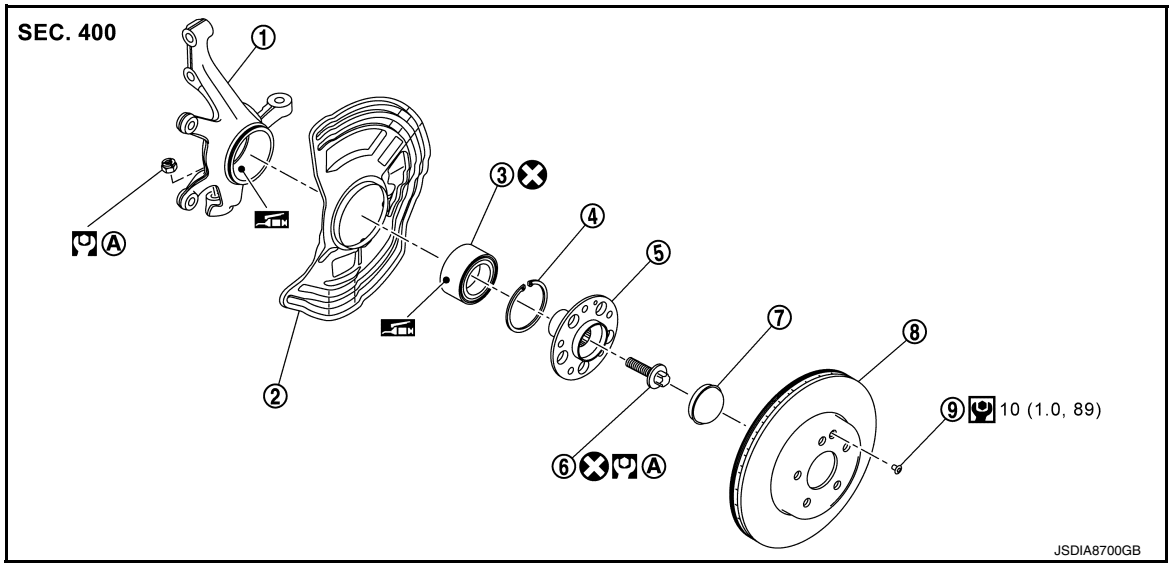
- Check drive shaft mounting point and joint for looseness and other damage.
  CAUTION:
  Replace entire drive shaft assembly when noise or vibration occurs from drive shaft.
- Check boot for cracks and other damage.

REMOVAL AND INSTALLATION

FRONT WHEEL HUB AND KNUCKLE

Exploded View

INFOID:0000000013568566



① Steering knuckle	② Splash guard	③ Wheel bearing
④ Snap ring	⑤ Wheel hub	⑥ Wheel hub lock bolt
⑦ Center cap	⑧ Disc rotor	⑨ Lock bolt

Ⓐ Tightening must be done following the installation procedure. Refer to FAX-10, "Removal and Installation".

: Fill NISSAN Genuine grease or equivalent.

: N·m (kg-m, in-lb)

: N·m (kg-m, ft-lb)

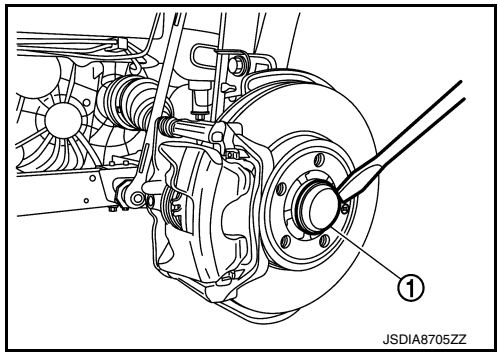
: Always replace after every disassembly.

Removal and Installation

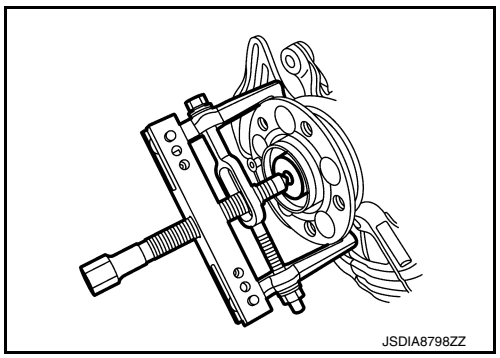
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REMOVAL

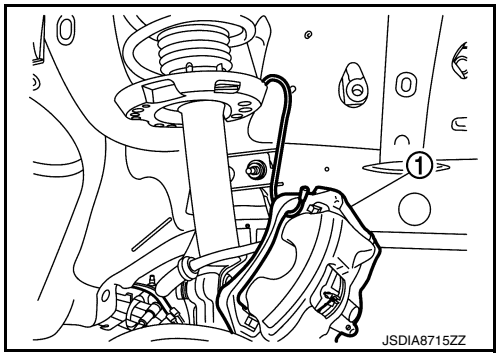
1. Remove tires with power tool (commercial service tool). Refer to WT-70, "Exploded View".
2. Remove center cap ①, using a suitable tool.
3. Remove transverse link from steering knuckle assembly, using the puller [SST: KV405H0330 (246 589 00 33 00)].
   CAUTION:
   - **Never damage rubber boot on transverse link ball joint. Otherwise the transverse link has to be replaced.**
4. Remove outer socket from steering knuckle assembly. Refer to ST-14, "Removal and Installation".



5. Remove wheel hub bolt. Separate drive shaft from wheel hub assembly. Use the puller (commercial service tool), if steering knuckle assembly and drive shaft cannot be separated after performing.
CAUTION:
Never knock seized drive shaft out of steering knuckle. Otherwise the angular contact ball bearing will be damaged.

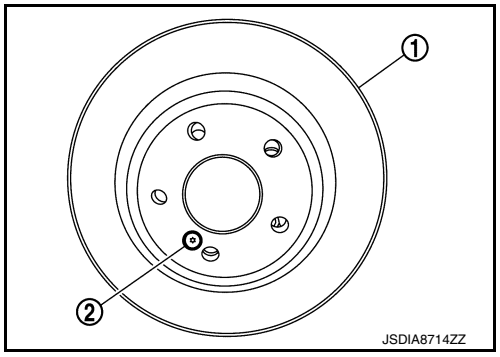


6. Remove right front brake wear sensor from caliper assembly. (Right side only) Refer to BR-35, "BRAKE PAD : Removal and Installation".
7. Remove brake hose and bracket from strut assembly. Refer to BR-20, "FRONT : Exploded View".
8. Remove front axle rpm sensor from steering knuckle. Refer to BRC-968, "FRONT AXLE RPM SENSOR : Removal and Installation".
9. Remove brake caliper assembly ①. Hang brake caliper assembly in a place where it will not interfere with work. Refer to BR-38, "BRAKE CALIPER ASSEMBLY : Removal and Installation".
CAUTION:
Never depress brake pedal while brake caliper assembly is removed.



10. Remove lock bolt ② and disc rotor ①.
11. Remove strut assembly from steering knuckle assembly. Refer to FSU-10, "Removal and Installation".
CAUTION:
- **Never place drive shaft joint at an extreme angle. Also be careful not to overextend slide joint.**
- **Never allow drive shaft to hang down without support for joint sub-assembly, shaft and the other parts.**

12. Remove steering knuckle assembly.
CAUTION:
- **Never pull drive shaft too far out of the inner constant velocity joint. Otherwise the inner constant velocity joint will be damaged.**



13. Perform inspection after removal. Refer to FAX-14, "Inspection".

INSTALLATION

Note the following, and install in the reverse order of the removal.
- Install transverse link to steering knuckle with the following procedure.
- Install transverse link to steering knuckle.
- Install transverse link mounting nut.

: 65 N·m (6.6 kg-m, 48 ft-lb)

- Turn 45 degrees clockwise (angle tightening).
CAUTION:
Check the tightening angle by using an angle wrench (commercial service tool) or protractor. Never judge by visual inspection without an angle wrench.
- Install drive shaft to steering knuckle with the following procedure.
CAUTION:
- **The wheel hub lock bolt torque must not be exceeded. Otherwise the angular contact ball bearing will be damaged.**
- **Never reuse wheel hub lock bolt.**
- Install drive shaft to steering knuckle.

- Install wheel hub lock bolt.

: **120 N·m (12 kg-m, 89 ft-lb)**

- Completely loosen wheel hub lock bolt.

: **0 N·m (0 kg-m, 0 in-lb)**

- Tighten wheel hub lock bolt.

: **150 N·m (15 kg-m, 111 ft-lb)**

- Turn 45 degrees clockwise (angle tightening).

CAUTION:
Check the tightening angle by using an angle wrench (commercial service tool) or protractor. Never judge by visual inspection without an angle wrench.

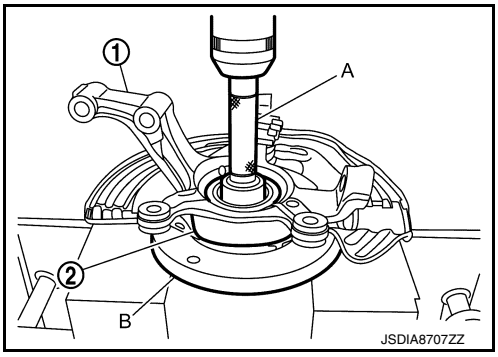
- Clean longitudinal splines and contact surface of the drive shaft.
- Spray contact surface in three passages using Teflon spray allowing to flash off in the meantime.
- Perform inspection after installation. Refer to FAX-14, "Inspection".

Disassembly and Assembly

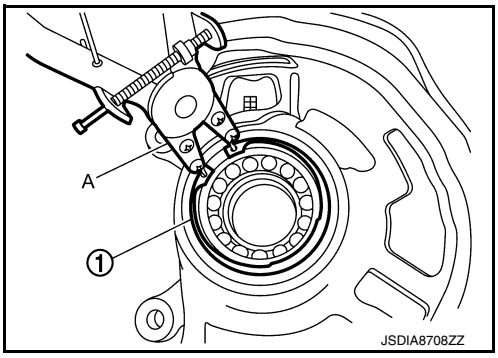
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DISASSEMBLY

1. Press out wheel hub ② with the following procedure.
   1. Use the drift (A) [SST: KV38102100 (–)] from the tool.
   2. Place the plate (B) [SST: KV405H0210 (202 589 04 43 07)] under the steering knuckle ① on the workshop press and press the wheel hub ② out of the steering knuckle ① using the drift [SST: KV38102100 (–)].



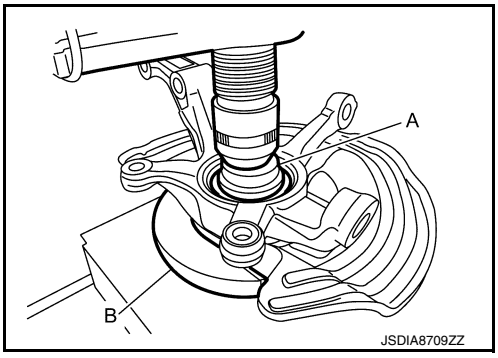
2. Remove snap ring ① from steering knuckle, using a snap ring pliers (A).



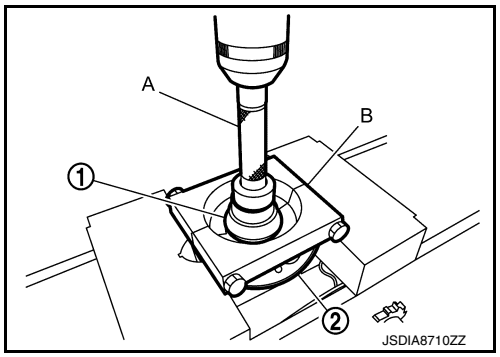
3. Press out old angular contact wheel bearing with the following procedure.

CAUTION:
Align plate (B) [SST: KV405H0210 (202 589 04 43 07)] with center of steering knuckle.
Otherwise the steering knuckle will be damaged.

   1. Use the plate (B) [SST: KV405H0210 (202 589 04 43 07)] and drift (A) [SST: KV40100610 (–)] from the extraction and insertion tool.
   2. Shim steering knuckle on press with plate (B) [SST: KV405H0210 (202 589 04 43 07)] and press out old angular contact wheel bearing with drift (A) [SST: KV40100610 (–)].



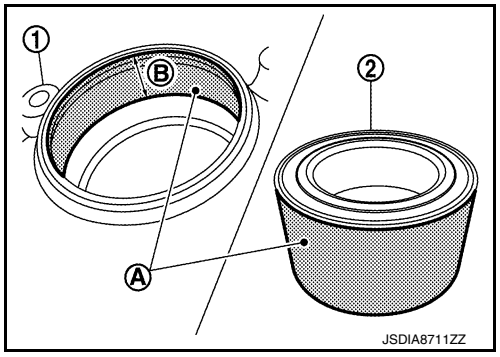
4. Remove wheel bearing inner race ① from wheel hub ②, using drift (A) [SST: KV38102100 (–)] and replacer (B) [SST: ST30021000 (–)].



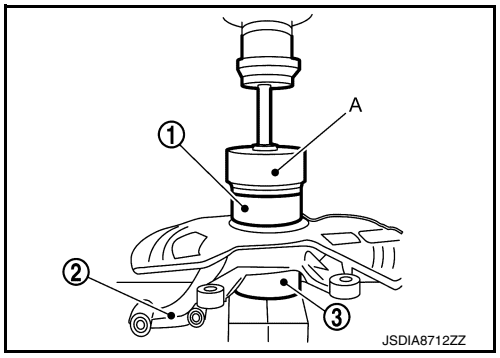
ASSEMBLY

1. Clean and grease steering knuckle ① and wheel bearing ② in area Ⓐ.
NOTE:
Apply only a thin coating of grease.

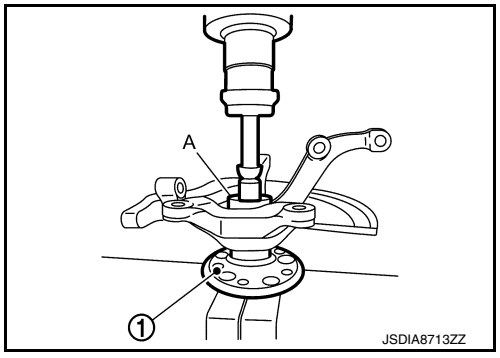
Dimension Ⓑ : 20 mm – 25 mm (0.79 in – 0.98 in)



2. Shim steering knuckle ② on press with old wheel bearing ③ and position new wheel bearing ①. Place removal and installation (A) [SST: KV405H0090 (124 589 05 43 00)] with smaller diameter onto new wheel bearing and press this in up to the end stop.
CAUTION:
Never reuse wheel bearing.
NOTE:
- The sensor rotor is integrated into the wheel bearing. Therefore observe the installation position. The magnetic side must face towards the inside of the steering knuckle. If incorrectly fitted, the front axle rpm sensor will not detect any pulse signals.
- Remove the excess grease from the steering knuckle.



3. Clean and grease new wheel bearing on insertion side.
4. Install snap ring.
CAUTION:
Never reuse snap ring.
NOTE:
Clean the groove before the snap ring is installed.
5. Press steering knuckle with removal and installation (A) [SST: KV405H0090 (124 589 05 43 00)] onto wheel hub ① up to end stop.



Inspection

INFOID:0000000013568569

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 outer socket ball joint for breakage, axial end play, and swing torque.

- Transverse link: Refer to FSU-16, "Inspection".
- Outer socket: Refer to ST-17, "Inspection".

INSPECTION AFTER INSTALLATION

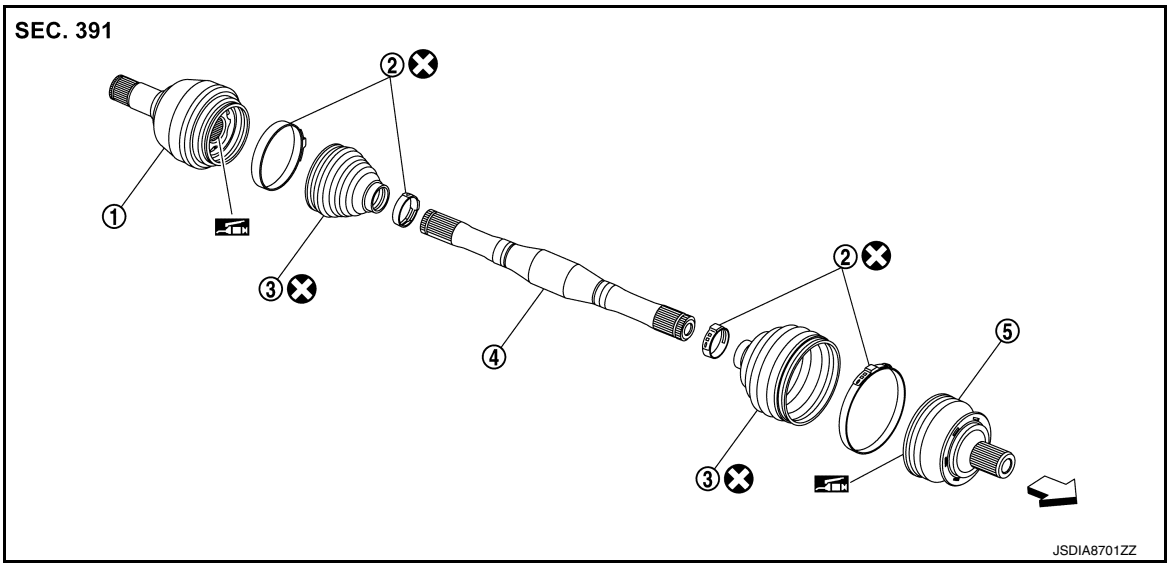
1. Check front wheel sensor harness for proper connection. Refer to BRC-967, "FRONT AXLE RPM SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Perform test drive when adjusting wheel alignment. Refer to STC-26, "Description".

FRONT DRIVE SHAFT

Exploded View

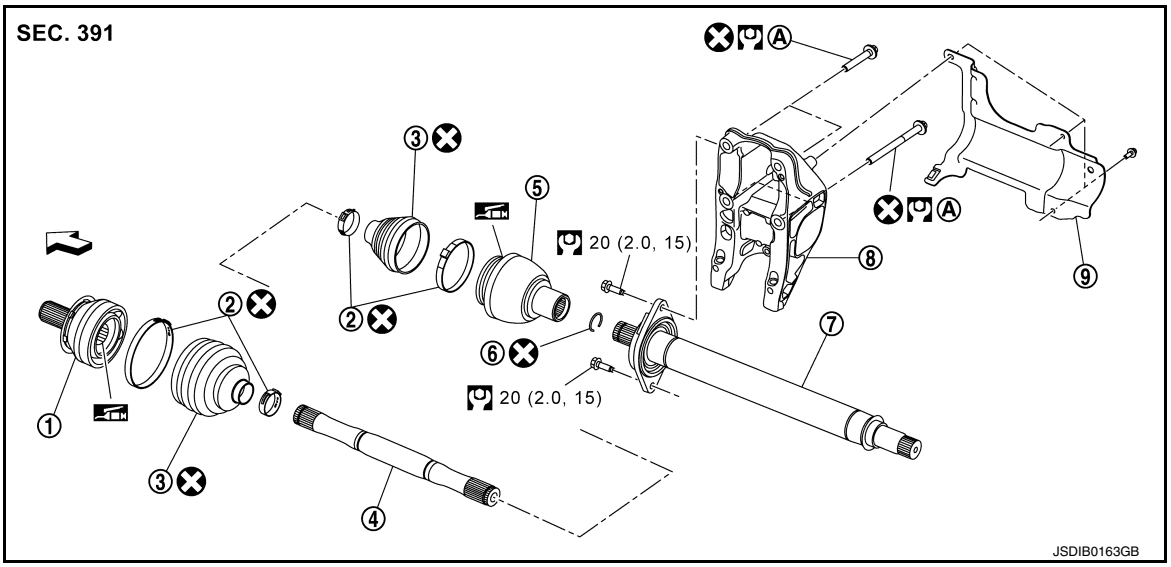
INFOID:0000000013568570

LEFT SIDE



① Housing assembly ② Boot band ③ Boot
④ Shaft ⑤ Joint sub-assembly
⇦ : Wheel side
: Fill NISSAN Genuine grease or equivalent.
: Always replace after every disassembly.

RIGHT SIDE



① Joint sub-assembly ② Boot band ③ Boot
④ Shaft ⑤ Housing assembly ⑥ Circular clip
⑦ Support shaft assembly ⑧ Support bearing bracket ⑨ Heat insulator
Ⓐ: Tightening must be done following the installation procedure. Refer to FAX-19, "RIGHT SIDE : Removal and Installation".
⇦ : Wheel side

: Fill NISSAN Genuine grease or equivalent.

: N·m (kg-m, ft-lb)

: Always replace after every disassembly.

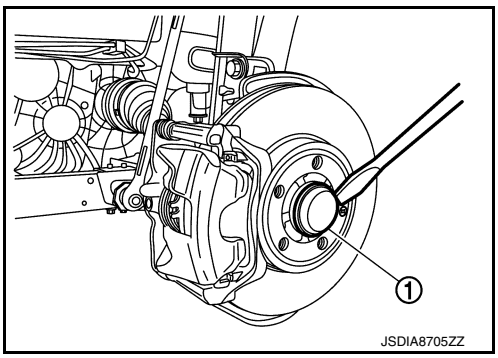
LEFT SIDE

LEFT SIDE : Removal and Installation

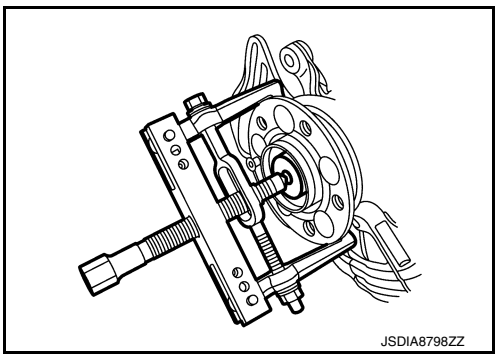
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REMOVAL

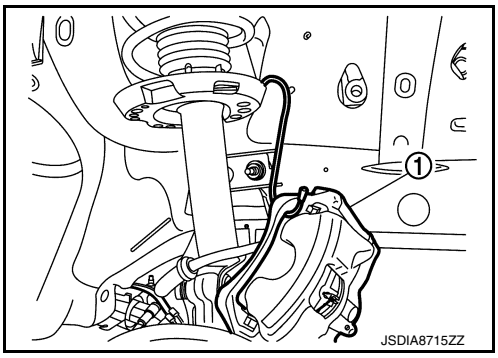
1. Remove tires with power tool (commercial service tool). Refer to WT-70, "Exploded View".
2. Remove center cap ①, using a suitable tool.
3. Remove transverse link from steering knuckle assembly, using the puller [SST: KV405H0330 (246 589 00 33 00)].
   CAUTION:
   - **Never damage rubber boot on transverse link ball joint. Otherwise the transverse link has to be replaced.**
4. Remove outer socket from steering knuckle assembly. Refer to ST-14, "Removal and Installation".



5. Remove wheel hub lock bolt. Separate drive shaft from wheel hub assembly. Use the puller (commercial service tool), if steering knuckle assembly and drive shaft cannot be separated after performing.
   CAUTION:
   Never knock seized drive shaft out of steering knuckle. Otherwise the angular contact ball bearing will be damaged.
6. Remove brake hose and bracket from strut assembly. Refer to BR-20, "FRONT : Exploded View".
7. Remove front axle rpm sensor from steering knuckle. Refer to BRC-968, "FRONT AXLE RPM SENSOR : Removal and Installation".



8. Remove brake caliper assembly ①. Hang brake caliper assembly in a place where it will not interfere with work. Refer to BR-38, "BRAKE CALIPER ASSEMBLY : Removal and Installation".
   CAUTION:
   Never depress brake pedal while brake caliper assembly is removed.
9. Remove drive shaft from steering knuckle assembly.
   CAUTION:
   - **Never place drive shaft joint at an extreme angle.**
   - **Be careful not to overextend slide joint.**
10. Remove drive shaft from transaxle assembly.



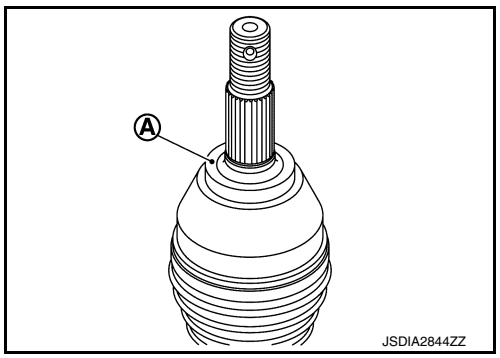
INSTALLATION

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

- Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-219, "Removal and Installation".

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

- Clean longitudinal splines and contact surface Ⓐ of the drive shaft.
- Spray contact surface in three passages using Teflon spray allowing to flash off in the meantime.
- Install drive shaft using tightening torque of wheel hub lock bolt. Refer to FAX-10, "Removal and Installation".
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing wheel hub assembly and axle housing.



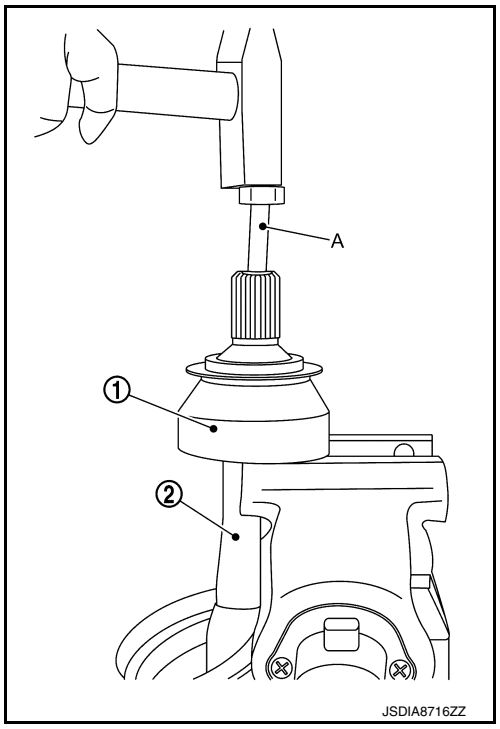
LEFT SIDE : Disassembly and Assembly

INFOID:0000000013568572

DISASSEMBLY

Gear side

1. Clamp shaft in vise.
   NOTE:
   Use soft vise jaws.
2. Remove boot bands.
3. Cut open boot and remove.
4. Mark housing assembly relative to shaft.
   CAUTION:
   Before dismantling the housing assembly all parts must be marked relative to each other. Different assignment during assembly can lead to noise and increased wear.
5. Pry out housing assembly ① from shaft ②, using the drift (A) [SST: KV405H0320 (246 589 00 15 00)].
6. Mark housing assembly, constant velocity shaft relative to each other and disassemble.



Wheel side

1. Clamp shaft in vise.
   NOTE:
   Use soft vise jaws.
2. Remove boot bands.
3. Cut open boot and remove.
4. Mark joint sub-assembly relative to shaft.
   CAUTION:
   Before dismantling the joint sub-assembly all parts must be marked relative to each other.

Different assignment during assembly can lead to noise and increased wear.

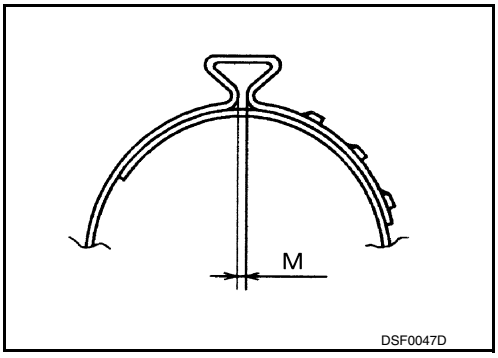
5. Pry out joint sub-assembly from shaft, using drift.
6. Mark joint sub-assembly, constant velocity shaft relative to each other and disassemble.

ASSEMBLY

Gear side

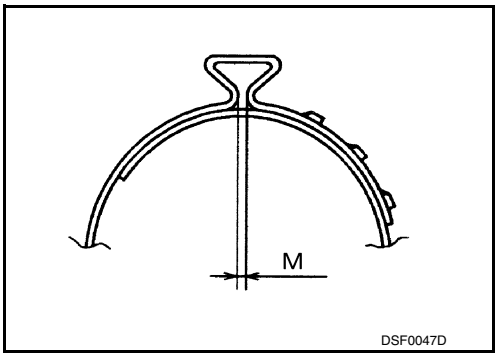
1. Slide boot bands and boot to shaft.
   CAUTION:
   Never reuse boot band and boot.
2. Fill housing assembly half-full with grease.
   NOTE:
   Only use grease from the repair kit.
3. Slide housing assembly onto shaft
   NOTE:
   Observe markings.
4. Fill housing assembly with remaining grease.
   NOTE:
   Only use quantity of grease from repair kit.
5. Slide boot with boot bands onto housing assembly.
6. Position raised bead of boot in the radial groove of housing assembly.
7. Fasten boot band (large) using boot band crimping tool (commercial service tool).

   Dimension (M) : 2.5 mm (0.098 in) or less



8. Align boot with shaft.
9. Position the raised bead of the boot in the radial groove of the shaft.
10. Ventilate housing assembly by slightly lifting the raised bead.
    CAUTION:
    - **Never damage raised bead and radial groove.**
    - **Leaks can occur on the housing assembly otherwise.**
11. Fasten boot band (small) using boot band crimping tool (commercial service tool).

    Dimension (M) : 2.5 mm (0.098 in) or less

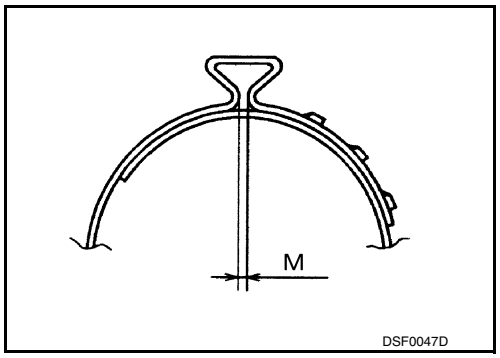


Wheel side

1. Slide boot bands and boot to shaft.
   CAUTION:
   Never reuse boot band and boot.
2. Fill joint sub-assembly half-full with grease.
   NOTE:
   Only use grease from the repair kit.
3. Slide joint sub-assembly onto shaft
   NOTE:
   Observe markings.
4. Fill joint sub-assembly with remaining grease.
   NOTE:
   Only use quantity of grease from repair kit.

5. Slide boot with boot bands onto joint sub-assembly.
6. Position raised bead of boot in the radial groove of joint sub-assembly.
7. Fasten boot band (large) using boot band crimping tool (commercial service tool).

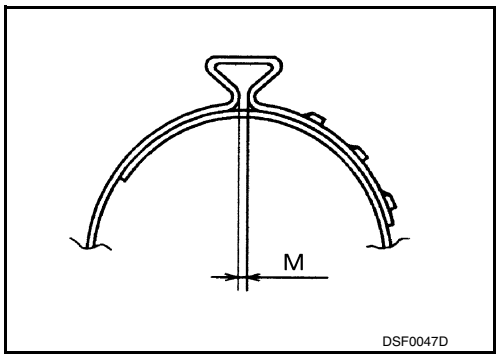
Dimension (M) : 2.5 mm (0.098 in) or less



8. Align boot with shaft.
9. Position the raised bead of the boot in the radial groove of the shaft.
10. Ventilate joint sub-assembly by slightly lifting the raised bead.
CAUTION:
- **Never damage raised bead and radial groove.**
- **Leaks can occur on the joint sub-assembly otherwise.**

11. Fasten boot band (small) using boot band crimping tool (commercial service tool).

Dimension (M) : 2.5 mm (0.098 in) or less



RIGHT SIDE

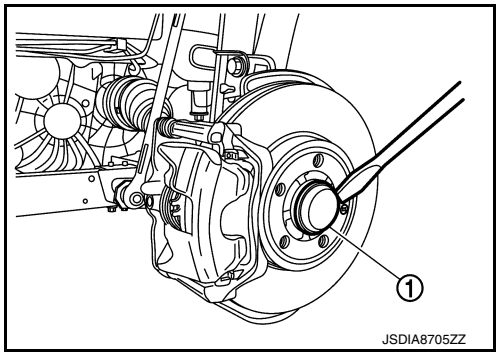
RIGHT SIDE : Removal and Installation

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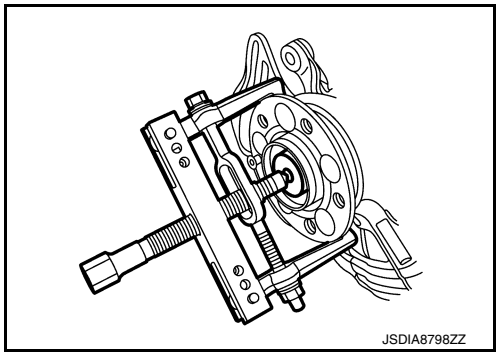
REMOVAL

1. Remove tires with power tool (commercial service tool). Refer to WT-70, "Exploded View".
2. Remove center cap ①, using a suitable tool.
3. Remove transverse link from steering knuckle assembly, using the puller [SST: KV405H0330 (246 589 00 33 00)].
CAUTION:
- **Never damage rubber boot on transverse link ball joint. Otherwise the transverse link has to be replaced.**

4. Remove outer socket from steering knuckle assembly. Refer to ST-14, "Removal and Installation".

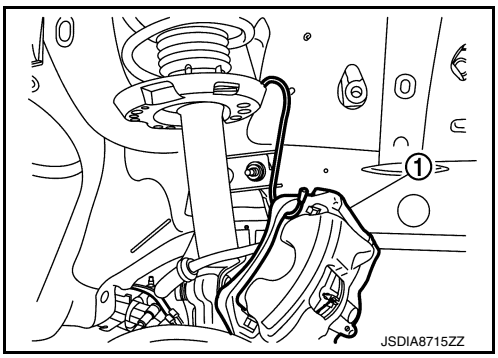


5. Remove wheel hub lock bolt. Separate drive shaft from wheel hub assembly. Use the puller (commercial service tool), if steering knuckle assembly and drive shaft cannot be separated after performing.
CAUTION:
Never knock seized drive shaft out of steering knuckle. Otherwise the angular contact ball bearing will be damaged.



6. Remove right brake wear sensor from caliper assembly. Refer to BR-35, "BRAKE PAD : Removal and Installation".
7. Remove brake hose and bracket from strut assembly. Refer to BR-20, "FRONT : Exploded View".
8. Remove front axle rpm sensor from steering knuckle. Refer to BRC-968, "FRONT AXLE RPM SENSOR : Removal and Installation".

9. Remove brake caliper assembly ①. Hang brake caliper assembly in a place where it will not interfere with work. Refer to BR-38, "BRAKE CALIPER ASSEMBLY : Removal and Installation".
   CAUTION:
   Never depress brake pedal while brake caliper assembly is removed.
10. Remove drive shaft from steering knuckle assembly.
    CAUTION:
    - **Never place drive shaft joint at an extreme angle.**
    - **Be careful not to overextend slide joint.**
11. Remove support shaft assembly mounting bolts from support bearing bracket.
12. Remove drive shaft from transaxle assembly.
13. Remove support bearing bracket.



INSTALLATION

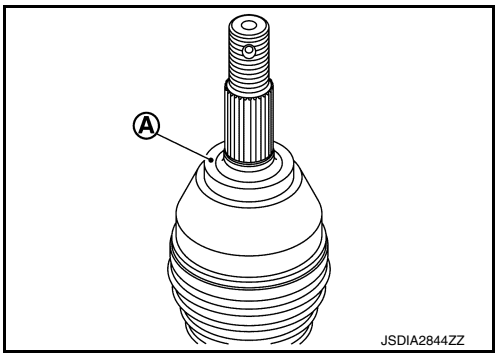
Note the following, and install in the reverse order of removal.

- Always replace differential side oil seal with new one when installing drive shaft. Refer to TM-219, "Removal and Installation".
- Clean the matching surface of wheel hub lock bolt and wheel hub assembly.
  CAUTION:
  Never apply lubricating oil to these matching surface.
- Clean longitudinal splines and contact surface Ⓐ of the drive shaft.
- Spray contact surface in three passages using Teflon spray allowing to flash off in the meantime.
- Install support bearing bracket with the following procedure.

- Tighten support bearing bracket mounting bolts.
  CAUTION:
  Never reuse support bearing bracket mounting bolt.

  : 58 N·m (5.9 kg-m, 43 ft-lb)

- Turn 90 degrees clockwise (angle tightening).
  CAUTION:
  Check the tightening angle by using an angle wrench (commercial service tool) or protractor. Never judge by visual inspection without an angle wrench.



- Install support shaft assembly mounting bolts.
- Install drive shaft using tightening torque of wheel hub lock bolt. Refer to FAX-10, "Removal and Installation".
- Perform the final tightening of each of parts under unladen conditions, which were removed when removing wheel hub assembly and axle housing.

RIGHT SIDE : Disassembly and Assembly

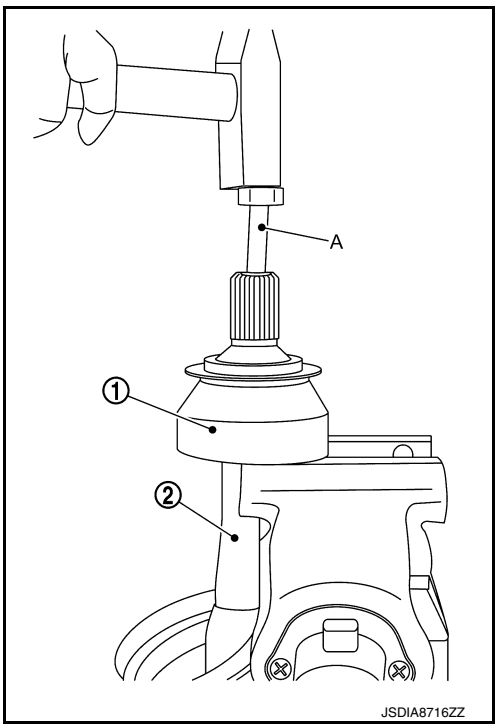
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DISASSEMBLY

Gear side

1. Clamp shaft in vise.
   NOTE:
   Use soft vise jaws.
2. Remove boot bands.
3. Cut open boot and remove.
4. Mark housing assembly relative to shaft.
   CAUTION:
   Before dismantling the housing assembly all parts must be marked relative to each other. Different assignment during assembly can lead to noise and increased wear.

5. Pry out housing assembly ① from shaft ②, using the drift (A) [SST: KV405H0320 (246 589 00 15 00)].
6. Remove circular clip.
7. Mark housing assembly, constant velocity shaft relative to each other and disassemble.



Wheel side

1. Clamp shaft in vise.
   NOTE:
   Use soft vise jaws.
2. Remove boot bands.
3. Cut open boot and remove.
4. Mark joint sub-assembly relative to shaft.
   CAUTION:
   Before dismantling the joint sub-assembly all parts must be marked relative to each other. Different assignment during assembly can lead to noise and increased wear.
5. Pry out joint sub-assembly from shaft, using drift.
6. Mark joint sub-assembly, constant velocity shaft relative to each other and disassemble.

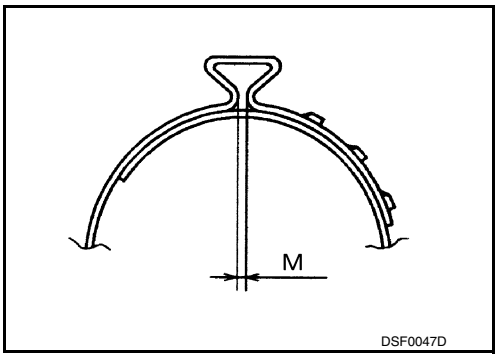
ASSEMBLY

Gear side

1. Assemble housing assembly.
   NOTE:
   If housing assembly had been disassembled for cleaning.
2. Slide boot bands and boot to shaft.
   CAUTION:
   Never reuse boot band and boot.
3. Install circular clip.
   CAUTION:
   Never reuse circular clip.
4. Fill housing assembly half-full with grease.
   NOTE:
   Only use grease from the repair kit.
5. Slide housing assembly onto shaft
   NOTE:
   Observe markings.
6. Fill housing assembly with remaining grease.
   NOTE:
   Only use quantity of grease from repair kit.

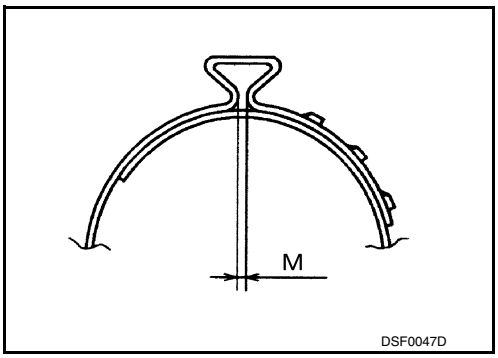
7. Slide boot with boot bands onto housing assembly.
8. Position raised bead of boot in the radial groove of housing assembly.
9. Fasten boot band (large) using boot band crimping tool (commercial service tool).

Dimension (M) : 2.5 mm (0.098 in) or less



10. Align boot with shaft.
11. Position the raised bead of the boot in the radial groove of the shaft.
12. Ventilate housing assembly by slightly lifting the raised bead.
    CAUTION:
    - **Never damage raised bead and radial groove.**
    - **Leaks can occur on the housing assembly otherwise.**
13. Fasten boot band (small) using boot band crimping tool (commercial service tool).

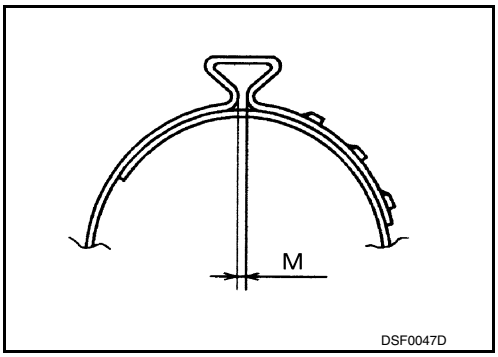
Dimension (M) : 2.5 mm (0.098 in) or less



Wheel side

1. Slide boot bands and boot to shaft.
   CAUTION:
   Never reuse boot band and boot.
2. Fill joint sub-assembly half-full with grease.
   NOTE:
   Only use grease from the repair kit.
3. Slide joint sub-assembly onto shaft
   NOTE:
   Observe markings.
4. Fill joint sub-assembly with remaining grease.
   NOTE:
   Only use quantity of grease from repair kit.
5. Slide boot with boot bands onto joint sub-assembly.
6. Position raised bead of boot in the radial groove of joint sub-assembly.
7. Fasten boot band (large) using boot band crimping tool (commercial service tool).

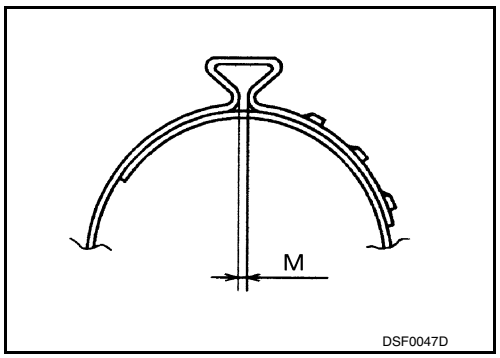
Dimension (M) : 2.5 mm (0.098 in) or less



8. Align boot with shaft.
9. Position the raised bead of the boot in the radial groove of the shaft.
10. Ventilate joint sub-assembly by slightly lifting the raised bead.
    CAUTION:
    - **Never damage raised bead and radial groove.**
    - **Leaks can occur on the joint sub-assembly otherwise.**

11. Fasten boot band (small) using boot band crimping tool (commercial service tool).

Dimension (M) : 2.5 mm (0.098 in) or less



Inspection

INFOID:0000000013568575

INSPECTION AFTER REMOVAL

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

- 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.

INSPECTION AFTER DISASSEMBLY

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

Shaft

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

Dynamic Damper

Check damper for cracks or wear.

Joint Sub-Assembly

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 or housing assembly (Gear Side)

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

Support Bearing (Right Side)

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

INSPECTION AFTER INSTALLATION

1. Check front wheel sensor harness for proper connection. Refer to BRC-967, "FRONT AXLE RPM SENSOR : Exploded View".
2. Check the wheel alignment. Refer to FSU-8, "Inspection".
3. Perform test drive when adjusting wheel alignment. Refer to STC-26, "Description".