

GROUP 25

PROPELLER SHAFT

CONTENTS

GENERAL INFORMATION	25-2	SPECIAL TOOL	25-2
SERVICE SPECIFICATION	25-2	PROPELLER SHAFT	25-3
LUBRICANTS	25-2	REMOVAL AND INSTALLATION	25-3
SEALANT	25-2	INSPECTION	25-4
		DISASSEMBLY AND REASSEMBLY	25-5

GENERAL INFORMATION

M1251000100205

A 3 way split 4-joint type propeller shaft with centre bearing is used.

SERVICE SPECIFICATION

M1251000300209

Item	Limit
Propeller shaft run-out mm	0.5

LUBRICANTS

M1251000400303

Item	Specified lubricant	Quantity
Front propeller shaft sleeve yoke	DIA QUEEN LSD gear oil	As required
LJ assembly	Repair kit grease	75 ± 5 g

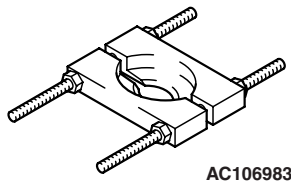
SEALANT

M1251000500117

Item	Specified sealant
Rubber packings for LJ assembly	3M Stud Locking 4170 or equivalent

SPECIAL TOOL

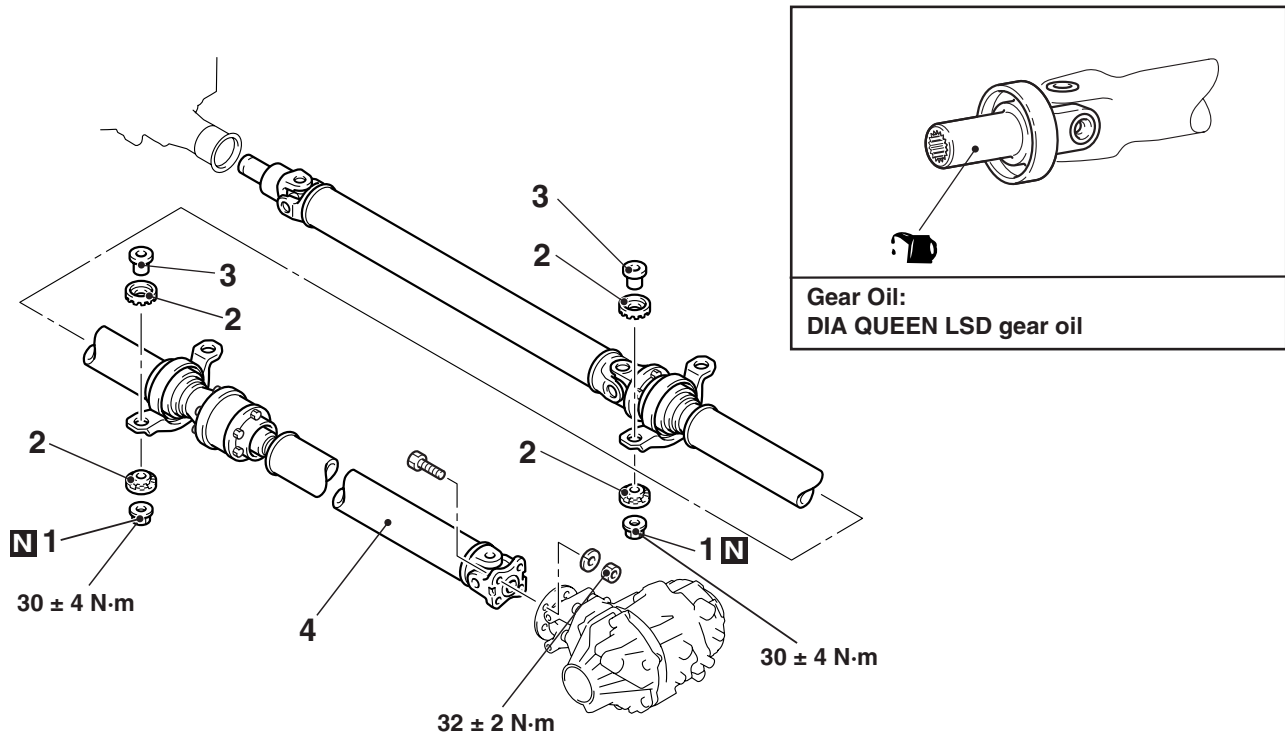
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Tool	Number	Name	Use
 AC106983	MD998801	Bearing remover	Removal of centre bearing assembly

PROPELLER SHAFT

REMOVAL AND INSTALLATION

M1251001000364



AC310408AC

Removal steps

1. Self locking nut
2. Insulator
3. Spacer
4. Propeller shaft assembly

<<A>> >>A<<

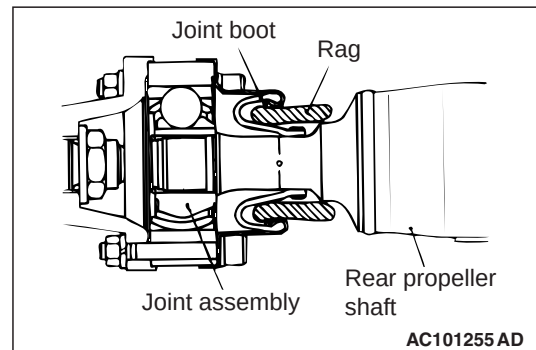
REMOVAL SERVICE POINT

<<A>> PROPELLER SHAFT ASSEMBLY REMOVAL

1. Make mating marks on the differential companion flange and the propeller shaft assembly.

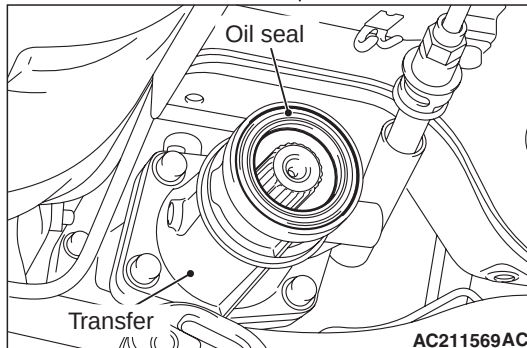
CAUTION

Be careful not to bend the joint portion when removing the propeller shaft because this will damage to the joint boot.



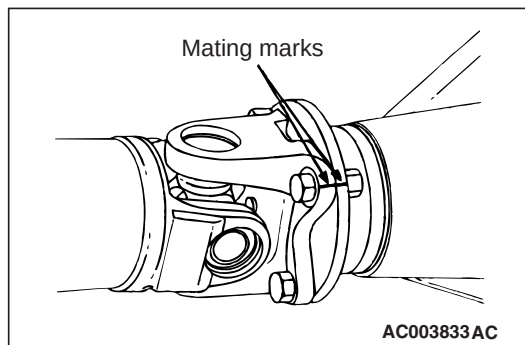
2. Insert a rag so as to avoid boot damage, and remove the propeller shaft assembly in a straight and level manner.

INSTALLATION SERVICE POINT

>>A<< PROPELLER SHAFT ASSEMBLY
INSTALLATION**⚠ CAUTION**

Do not damage the oil seal lips on the transfer case.

- Remove oil and grease from the threads of the mounting bolts and nuts before tightening, or they will loosen.
- Be careful not to bend the joint portion when removing the propeller shaft, because this will damage the joint boot.



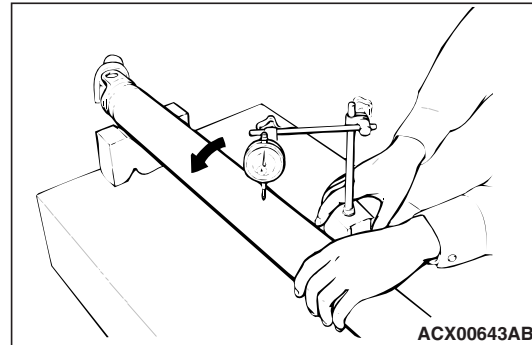
1. If reusing the propeller shaft, align the mating marks of differential companion flange and propeller shaft assembly to install.
2. When installing a new rear propeller shaft assembly, if there is no phase alignment mark on the companion flange at the differential side, assemble while adjusting the hole phases of propeller shaft flange and differential companion flange.

INSPECTION

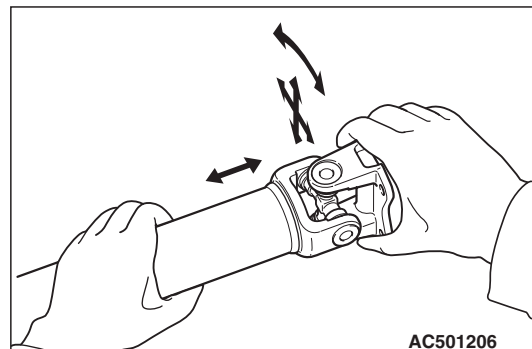
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- Check the sleeve yoke and centre yoke for wear, damage or cracks.
- Check the propeller shaft for bends, twisting or damage.
- Check the universal joint for smooth operation in all directions.
- Check the centre bearing for smooth movement.

PROPELLER SHAFT RUNOUT



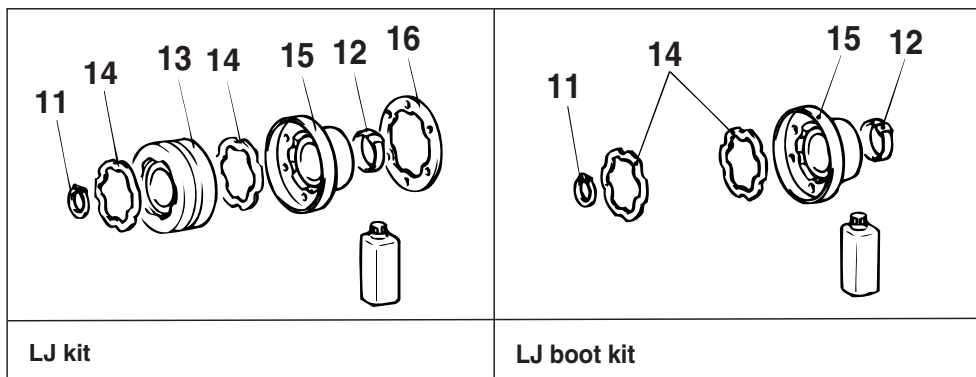
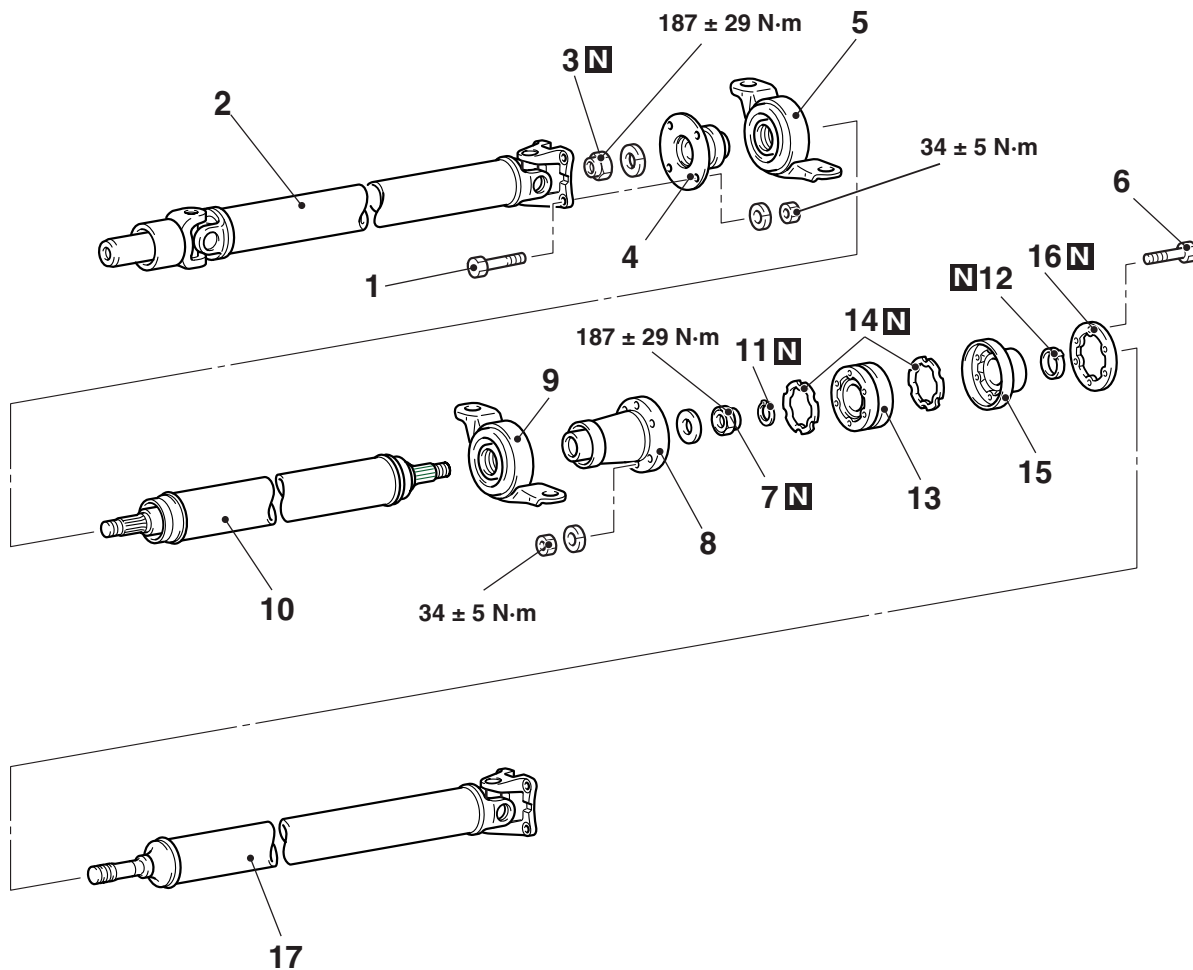
Limit: 0.5 mm

PROPELLER SHAFT UNIVERSAL JOINT
PLAY CHECK

1. Hold the tube of propeller shaft by one hand, and apply force by the other hand to the flange yoke or sleeve yoke in rotative direction, axial direction, and perpendicular direction for checking looseness.
2. If looseness is recognized, replace the propeller shaft with a new one.

DISASSEMBLY AND REASSEMBLY

M1251001200249



Disassembly steps

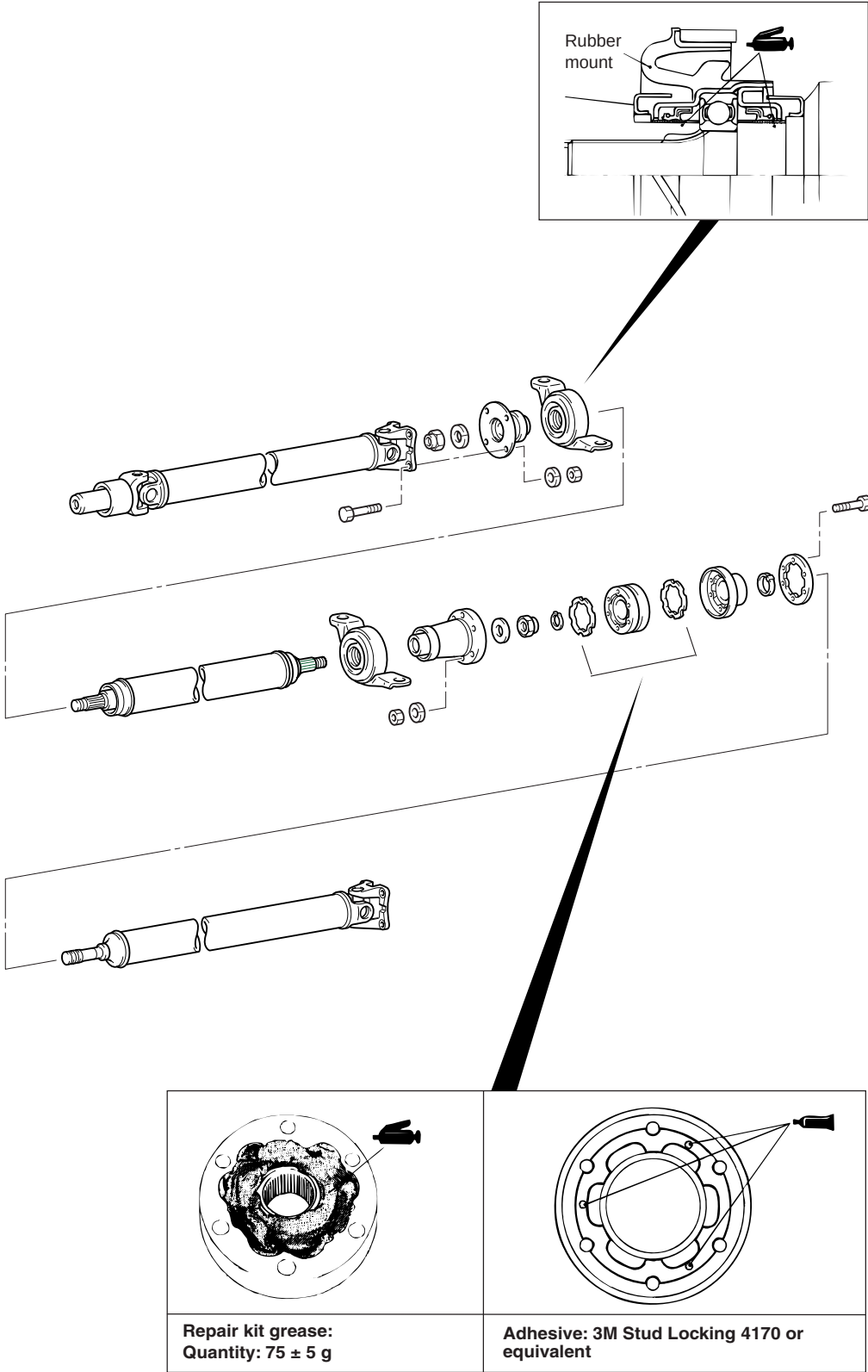
- | | |
|-------|-----------------------------------|
| | 1. Bolt |
| | 2. Front propeller shaft assembly |
| <<A>> | >>E<< 3. Self locking nut |
| <> | >>E<< 4. Companion flange |
| <<C>> | >>E<< 5. Centre bearing assembly |
| | 6. Bolt |
| | >>D<< 7. Self locking nut |
| <<A>> | >>D<< 8. Companion flange |
| | >>D<< 9. Centre bearing assembly |

Disassembly steps (Continued)

- | | |
|-------|----------------------------|
| | 10. Centre propeller shaft |
| | 11. Snap ring |
| >>C<< | 12. Boot band |
| <<D>> | >>B<< 13. LJ assembly |
| | 14. Rubber packing |
| <<E>> | >>A<< 15. LJ boot |
| | 16. Washer |
| | 17. Rear propeller shaft |

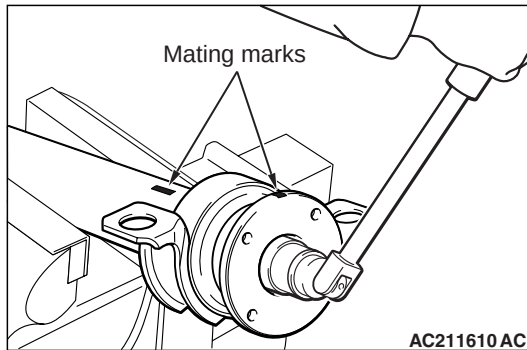
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Lubrication and Adhesive Points



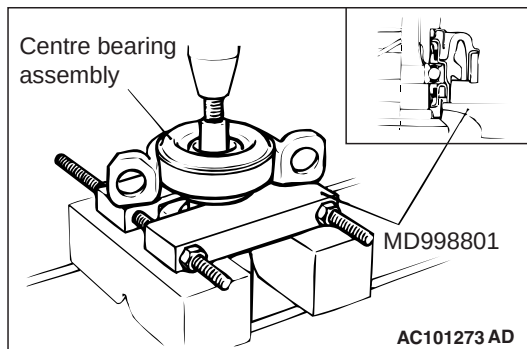
DISASSEMBLY SERVICE POINTS

<<A>> COMPANION FLANGE REMOVAL



Make mating marks on the companion flange and centre propeller shaft, and then remove the companion flange.

<>CENTRE BEARING ASSEMBLY REMOVAL

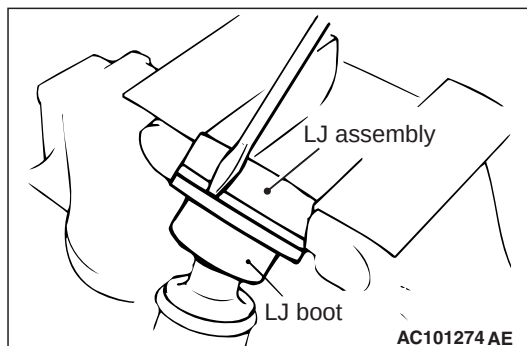


Use special tool bearing remover (MD998801) to remove the centre bearing assembly from the centre propeller shaft.

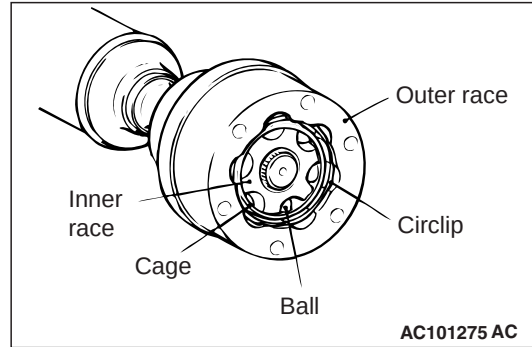
<<C>> BOLT REMOVAL

Make mating marks on the rear propeller shaft, LJ assembly and companion flange, and then remove the bolt.

<<D>>LJ ASSEMBLY REMOVAL

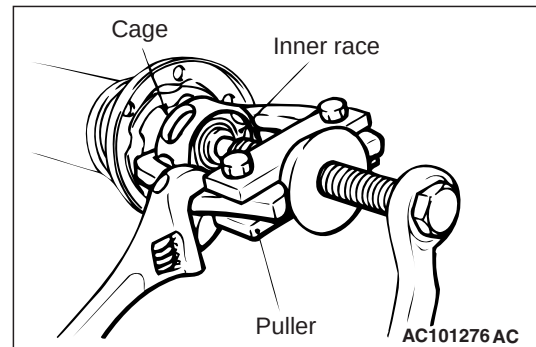


1. Remove the LJ boot from the LJ assembly.



2. Make mating marks on the outer race, cage and inner race, and then remove the circlip, outer race and ball.

NOTE: Note the positions of the balls so that they can be reinstalled in their original positions.



3. Remove the inner race with cage from the centre propeller shaft assembly by using a puller (commercially available).
4. Wipe off the grease and clean the outer race, inner race, cage and balls.

<<E>> LJ BOOT REMOVAL

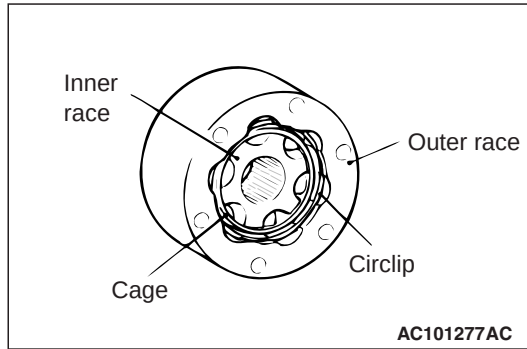
When the LJ boot is reused, tape the spline part on the centre propeller shaft and then remove the LJ boot.

REASSEMBLY SERVICE POINTS

>>A<< LJ BOOT INSTALLATION

1. Install the boot band.
2. Wrap a plastic tape around the spline part on the centre propeller shaft and then install the LJ boot.

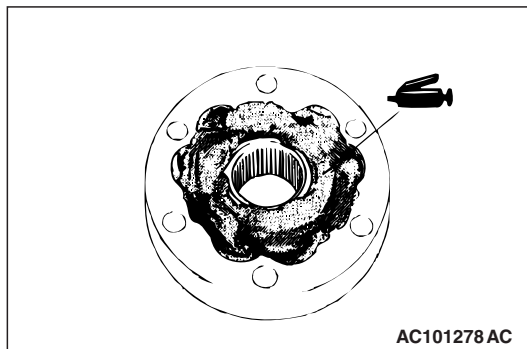
>>B<< LJ ASSEMBLY INSTALLATION



1. Apply a thin coat of the specified grease to the ball grooves of the inner and outer races.

Specified grease: Repair kit grease

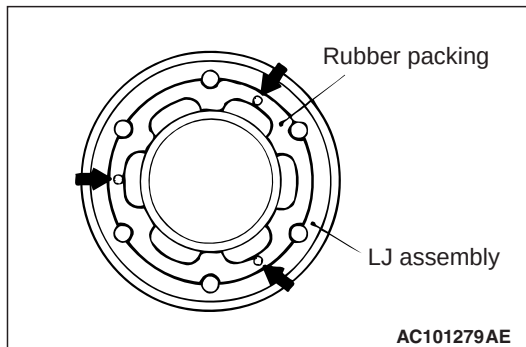
2. Assemble the LJ assembly as follows:
 - (1) Assemble the outer race, cage, balls, and inner race with their mating marks aligned.
 - (2) Install the circlip.



3. Apply specified grease to the LJ assembly.

Specified grease: Repair kit grease

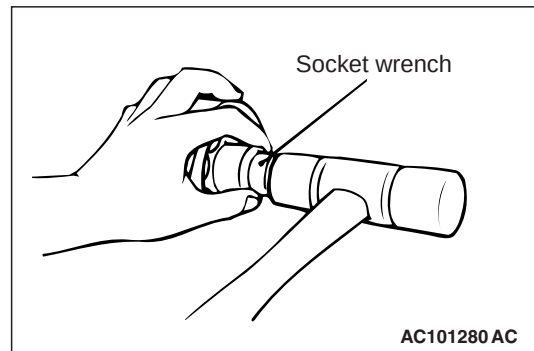
Amount to use: 75 ± 5 g



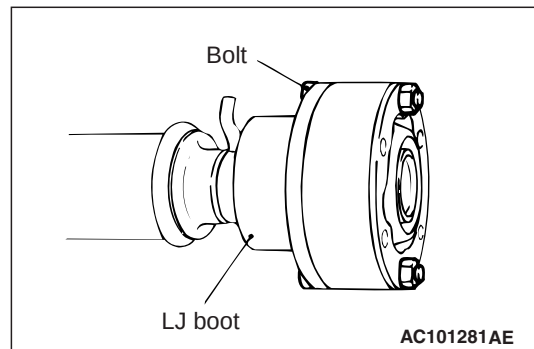
4. Apply a thin coat of specified adhesive to the groove side of LJ assembly (shown by arrows in the figure) and install the rubber packing.

Specified adhesive: 3M Stud Locking 4170 or equivalent

5. Set the groove side of LJ assembly (for packing) toward the LJ boot side and install them.

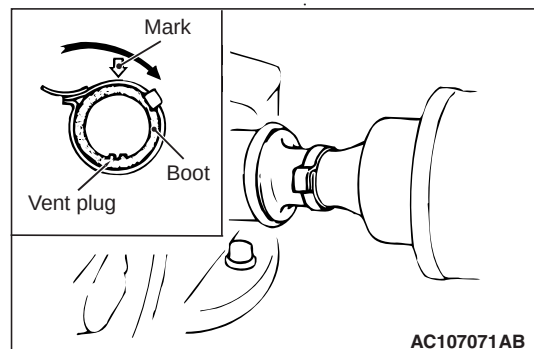


6. Lining up the mating marks on the LJ assembly and the centre propeller shaft and using the socket wrench, install the LJ assembly to the centre propeller shaft.



7. Using the bolt, align the bolt holes of the LJ boot and the LJ assembly and install LJ boot to the LJ assembly.
8. Install the rubber packing of the companion flange side in the same manner as described in (4) above.

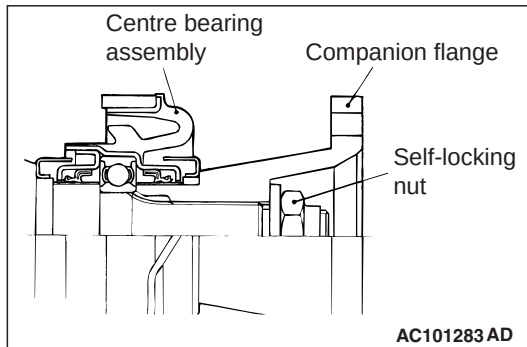
>>C<< BOOT BAND INSTALLATION

CAUTION

Clamp the boot by holding down the lever at a position nearly opposite to the vent groove provided in the LJ boot (at arrow marked position on boot).

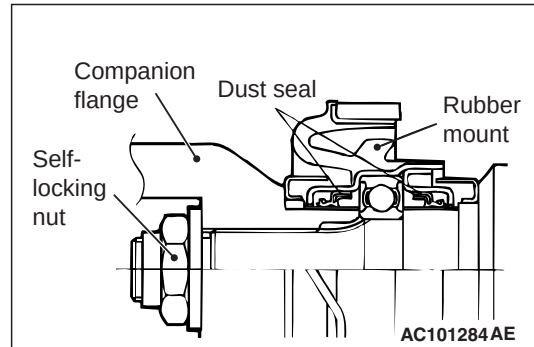
- **Be sure to remove grease, if present, from around the vent groove. Grease obstructs the ventilation air passage.**

>>D<< CENTRE BEARING ASSEMBLY/COMPANION FLANGE/SELF-LOCKING NUT INSTALLATION



1. Set the centre bearing assembly in the direction shown in the figure and install it to the centre propeller shaft.
2. Install, lining up the mating marks on the companion flange and the centre propeller shaft.
3. While tightening the self-locking nut, install the centre bearing assembly with the companion flange.

>>E<<CENTRE BEARING ASSEMBLY/COMPANION FLANGE/SELF-LOCKING NUT INSTALLATION



1. Set the centre bearing assembly in the direction shown in the figure and install it to the centre propeller shaft.
2. Align the mating marks on the companion flange and the centre propeller shaft.
3. While tightening the self-locking nut, install the centre bearing assembly with the companion flange.

NOTES