

SERVICE SPECIFICATIONS

ITEM

Item	Limit
Runout of propeller shaft (front, centre, rear)	Max. 0.6mm

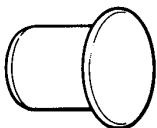
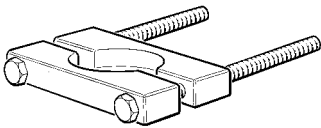
LUBRICANTS

Item	Brand	Volume
Sleeve yoke of front propeller shaft	Mitsubishi pure diaqueen super hypoid gear oil (GL-5)	As required
DOJ Assembly	Repair kit grease (NTN LJ grease)	105 – 115g
LJ Assembly	Repair kit grease (NTN LJ grease)	45 – 55g

ADHESIVES

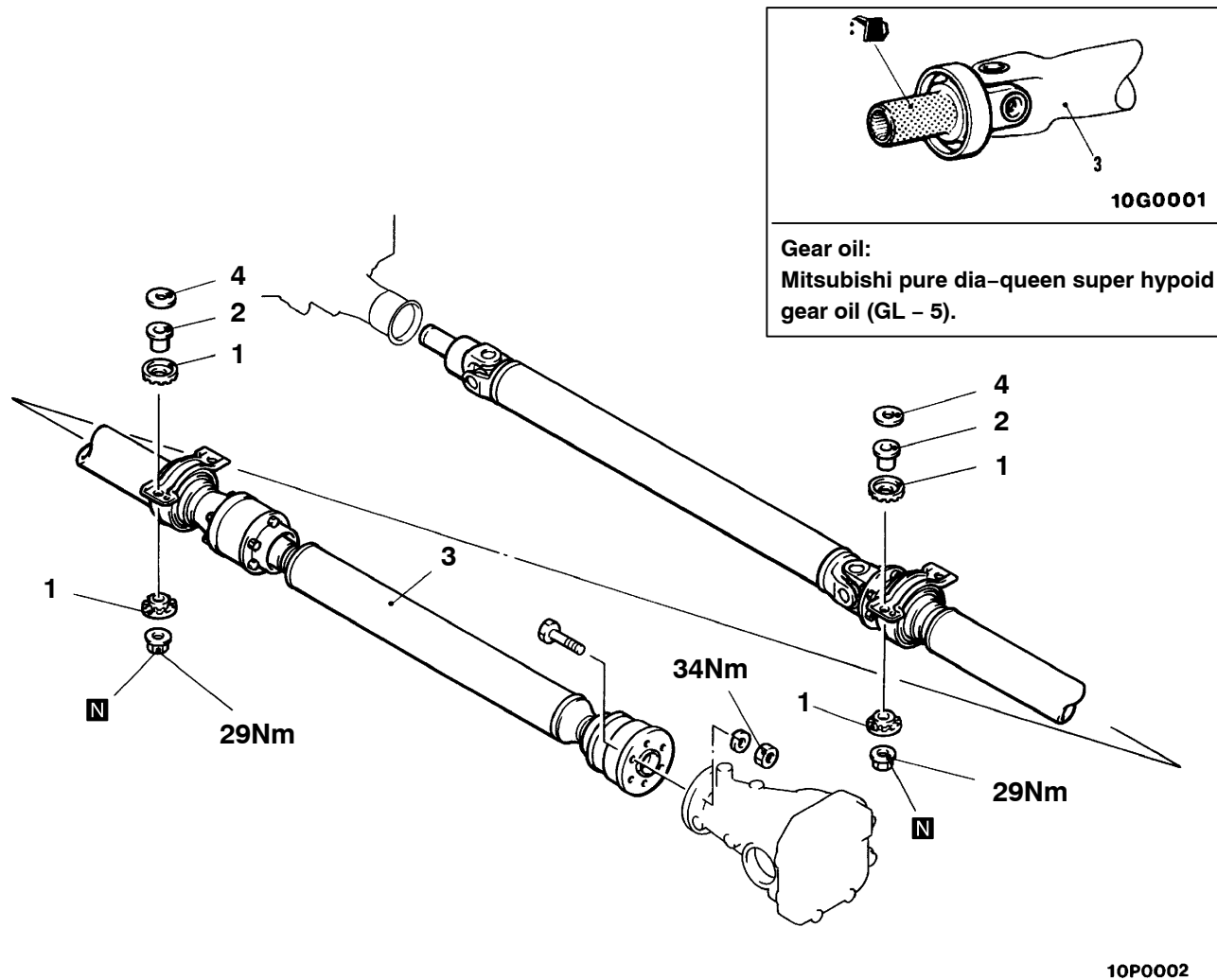
Application	Brand
Rubber packing for DOJ Assembly, LJ Assembly	Three-bond 1741 or equivalent

SPECIAL TOOLS

Tool	Tool number and name	Supersession	Application
	MB991193 Plug	–	Prevent entry of foreign objects into transmission and transfer
	MB998801 Bearing remover	–	Removal of centre bearing assembly

PROPELLER SHAFT

REMOVAL AND INSTALLATION

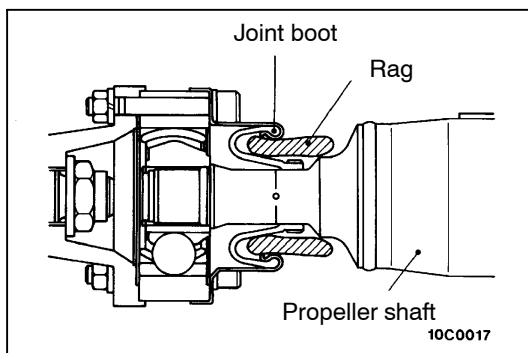


Removal steps

1. Insulator
2. Spacer



3. Propeller shaft assembly
4. Spacer



REMOVAL SERVICE POINTS

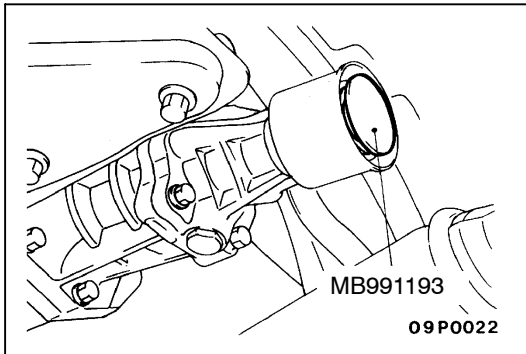
◀A▶ PROPELLER SHAFT ASSEMBLY REMOVAL

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

Caution

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

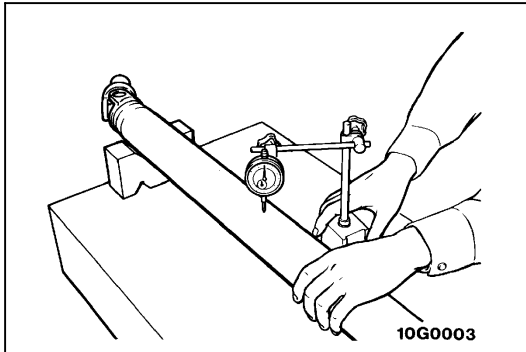
2. Insert a rag to avoid boot damage, and remove the propeller shaft in a straight and level manner.



3. Cover the transfer case using the special tool to prevent entry of foreign objects.

◀B▶ SPACER REMOVAL

1. Number of spacers may be different depending on where to install (front or rear). Record the number of spacers when they are removed to ensure correct installation.

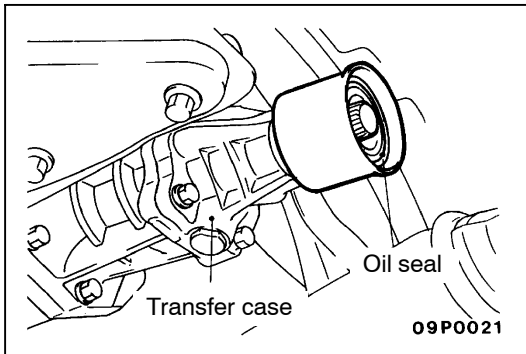


INSPECTION

RUN OUT OF PROPELLER SHAFT

Inspect the run out of front, centre and rear shafts.

Limit: Max 0.6 mm



INSTALLATION SERVICE POINT

▶A◀ PROPELLER SHAFT ASSEMBLY INSTALLATION

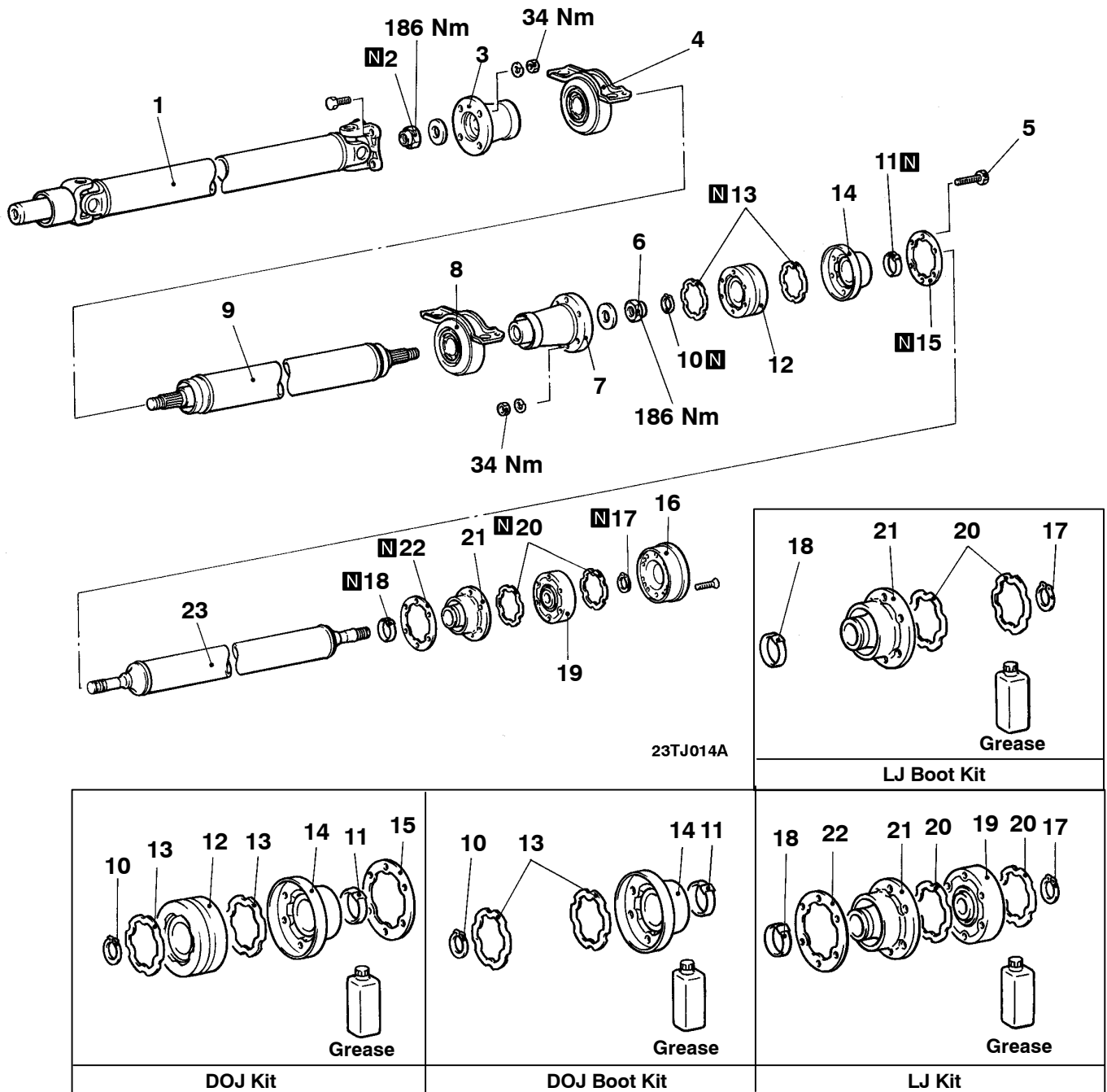
1. Align the mating marks and fit propeller shaft to companion flange.

Caution

1. Try not to damage the oil seal lip of transfer case.
2. If installation bolts and nuts have oil or grease on the threads, remove it before installation to avoid loosening.

PROPELLER SHAFT

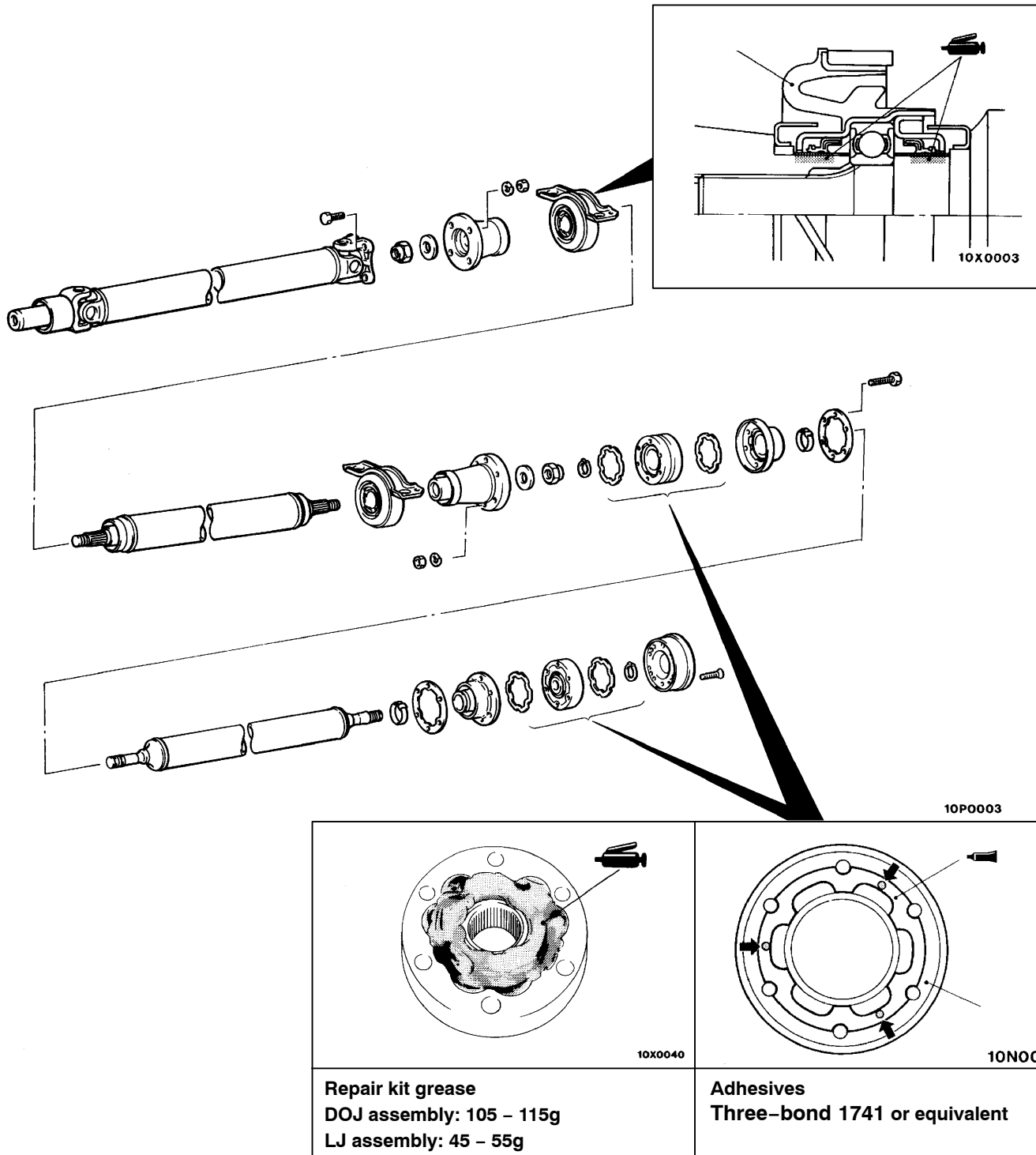
REMOVAL AND INSTALLATION



Removal steps

- | | | | |
|---------|----------------------------|---------|--------------------------|
| ◀A▶ | 1. Front propeller shaft | ◀F▶ ▶A▶ | 13. Rubber packing |
| ◀B▶ ▶E▶ | 2. Self locking nut | | 14. DOJ boot |
| ◀C▶ ▶E▶ | 3. Companion flange | | 15. Washer |
| ◀D▶ ▶E▶ | 4. Centre bearing assembly | | 16. Plate |
| | 5. Bolt | ◀G▶ ▶C▶ | 17. Snap ring |
| ◀B▶ ▶E▶ | 6. Self locking nut | ◀H▶ ▶B▶ | 18. Boot band |
| ◀C▶ ▶E▶ | 7. Companion flange | ◀F▶ ▶A▶ | 19. LJ assembly |
| | 8. Centre bearing flange | | 20. Rubber packing |
| | 9. Centre propeller shaft | | 21. LJ boot |
| | 10. Snap ring | | 22. Washer |
| ◀E▶ ▶C▶ | 11. Boot band | | 23. Rear propeller shaft |
| ◀D▶ ▶E▶ | 12. DOJ assembly | | |

LUBRICATION AND ADHESIVE POINTS



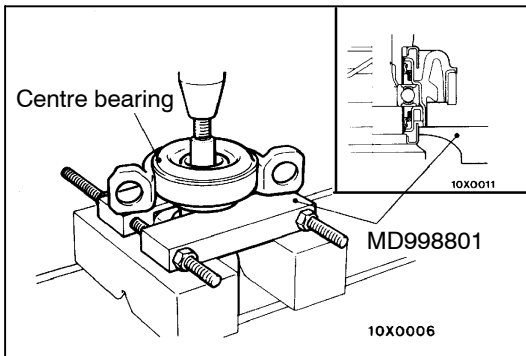
DISASSEMBLY SERVICE POINTS

◀A▶ FRONT PROPELLER SHAFT ASSEMBLY
REMOVAL

1. Make mating marks on the flange yoke of the front propeller shaft and companion flange, and remove the front propeller shaft assembly.

◀B▶ COMPANION FLANGE REMOVAL

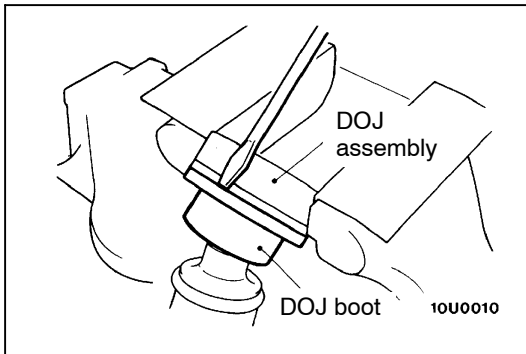
1. Make mating marks on the companion flange and centre propeller shaft, and remove the companion flange.



◀C▶ CENTRE BEARING ASSEMBLY REMOVAL

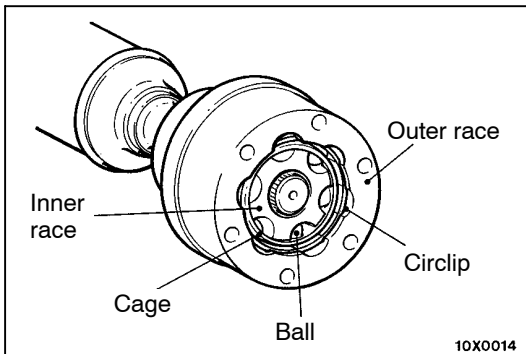
◀D▶ BOLT REMOVAL

1. Make mating marks on the rear propeller shaft, DOJ assembly, and companion flange, and remove the bolts.



◀E▶ DOJ ASSEMBLY REMOVAL

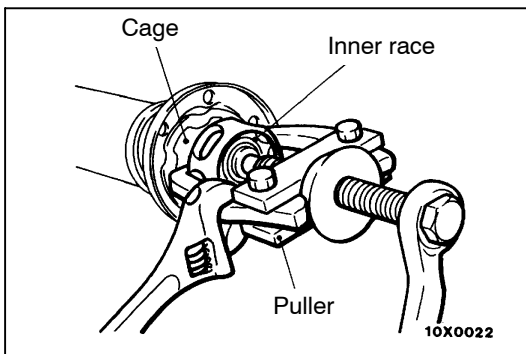
1. Remove DOJ boot from DOJ assembly.



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

NOTE

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



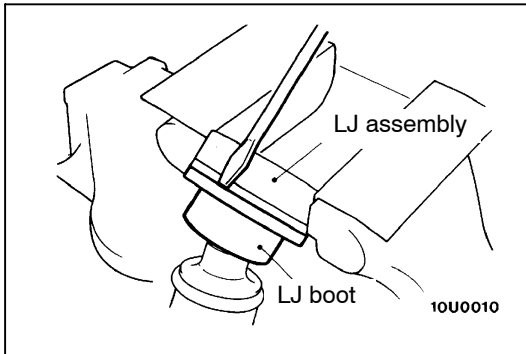
3. Remove the inner race and cage from the propeller shaft assembly by using a puller.
4. Wipe off the grease and wash the outer race, inner race, cage and balls.

◀F▶ DOJ BOOT AND LJ BOOT REMOVAL

1. When reusing the DOJ boot or LJ boot, wrap tape around the spline of the propeller shaft, and then remove the boot.

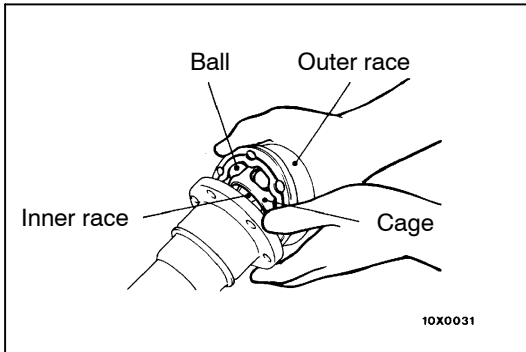
◀G▶ SNAP RING REMOVAL

1. Make mating marks on the rear propeller shaft and LJ assembly, and remove the snap ring.



◀H▶ LJ ASSEMBLY REMOVAL

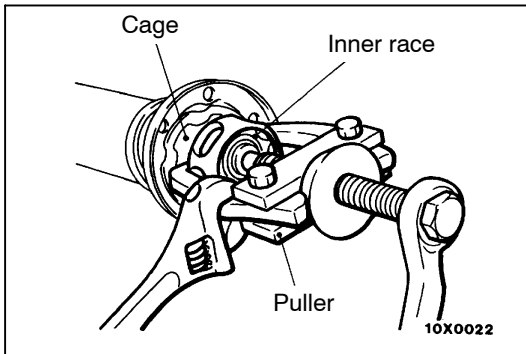
1. Remove the LJ boot from the LJ assembly.



2. Make mating marks on the outer race, cage and inner race, and remove the outer race and balls.

NOTE

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



3. Remove the inner race and cage from the propeller shaft assembly by using a puller.
4. Wipe off the grease and wash the outer race, inner race, cage and balls.

REASSEMBLY SERVICE POINTS

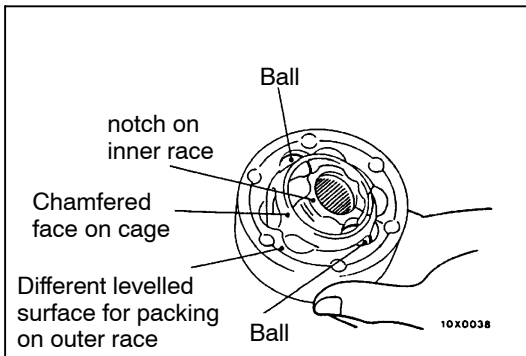
▶A◀ LJ BOOT AND DOJ BOOT INSTALLATION

1. Set the boot band.
2. Wrap tape around the spline of the rear propeller shaft, and install the LJ boot or DOJ boot.

▶B◀ LJ ASSEMBLY INSTALLATION

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

Repair kit grease: NTN LJ grease

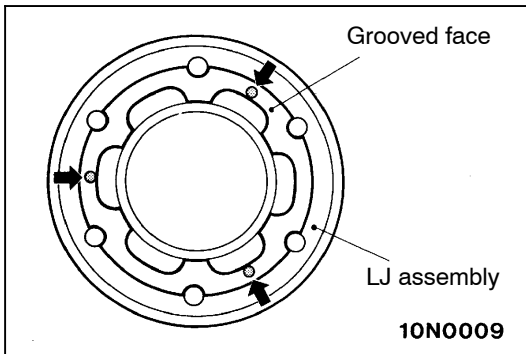


2. Align the marks on the inner race and cage, and install 2 balls in the same positions diagonally as before disassembly.
3. Align the marks on the inner race, cage and outer race to put them together.

NOTE

Confirm that the notched face on the inner race, the level-differed face for packing on outer race and chamfered face of cage are on the same surface, and that the positions of the outer race and inner race are as indicated in the diagram.

4. Put the rest of the balls into the cage in the same positions as before disassembly.
5. Confirm that the outer race and inner race work smoothly.



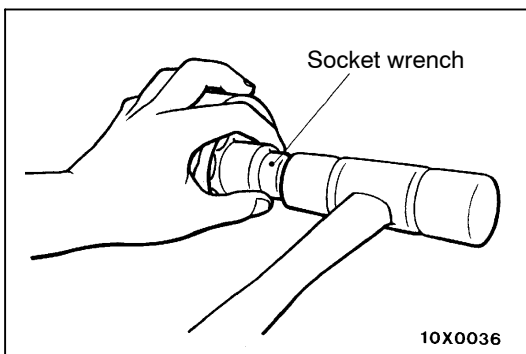
6. Apply the specified grease evenly to LJ assembly.

Repair kit grease:

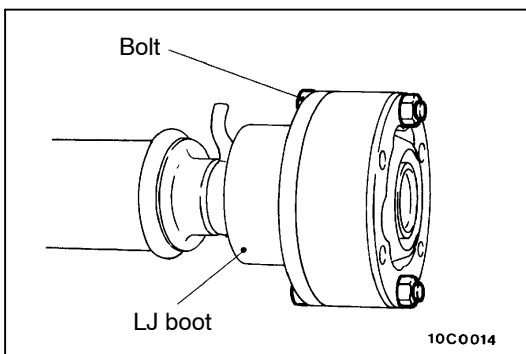
NTN LJ grease: Specified amount: 45 – 55g

7. Apply a small amount of the specified adhesive in the locations pointed by arrows in the diagram on the grooved face for packing of the LJ assembly to fix the rubber packing.

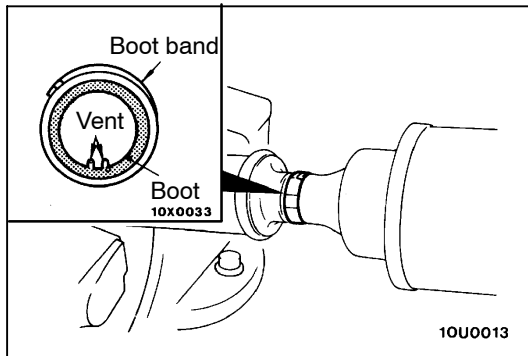
Specified adhesive: Three-bond 1741 or equivalent.



8. Fit LJ assembly with the grooved surface for packing facing the LJ boot.
9. Align the marks on the LJ assembly and rear propeller shaft, put LJ assembly into the rear propeller shaft using a socket wrench.



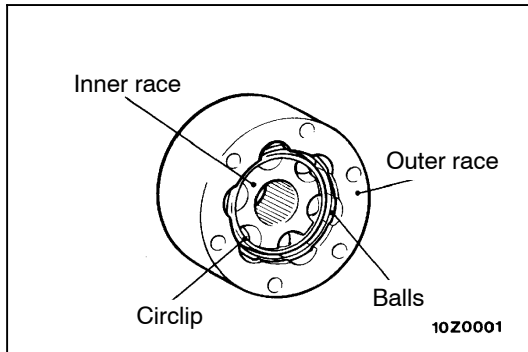
10. Fit LJ boot to LJ assembly using the bolts to align the holes.
11. Fix the rubber packing of the plate side to the plate as instructed in step 7.



►C◄ BOOT BAND INSTALLATION

Caution

1. Clamp the boot by holding down the lever at a position nearly opposite to the vent groove provided.
2. Be sure to remove grease, if present, from around the vent groove. Grease obstructs the ventilation air passage.



►D◄ DOJ ASSEMBLY INSTALLATION

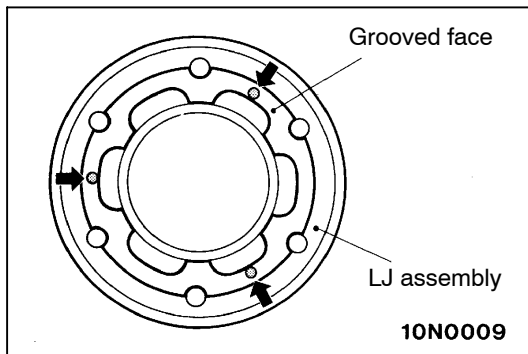
1. Apply the specified grease thinly to the outer and inner races on the locus where the balls move.

Repair kit grease: NTN LJ grease

2. Align the mating marks, fit the outer race, cage, balls and inner race together.
3. Fit circlips.
4. Apply the specified grease evenly to DOJ assembly.

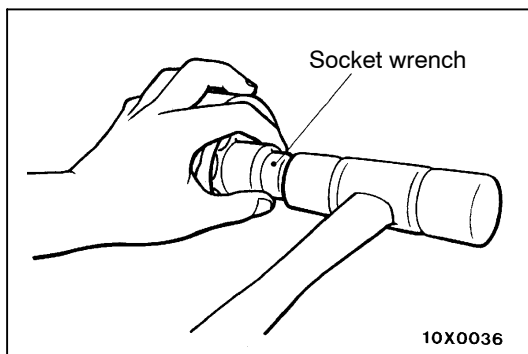
Repair kit grease:

NTN LJ grease: Specified amount: 105 – 115g

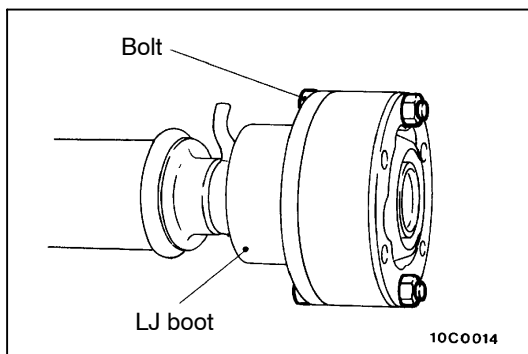


5. Apply a small amount of the specified adhesive in the locations pointed by arrows in the diagram on the grooved face for packing of the DOJ assembly to fix the rubber packing.

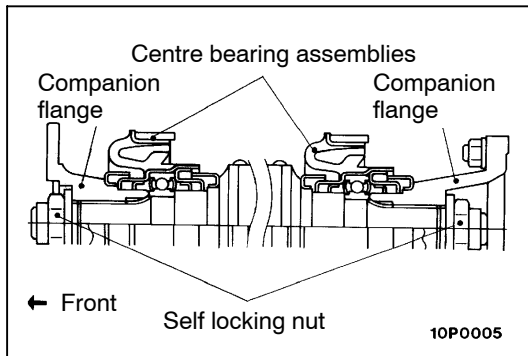
Specified adhesive: Three-bond 1741 or equivalent.



6. When fitting the LJ assembly, the grooved surface for packing faces the LJ boot.
7. Align the marks on the DOJ assembly and rear propeller shaft, put LJ assembly into the rear propeller shaft using a socket wrench.



8. Fit DOJ boot to DOJ assembly with bolts through the bolt holes of the DOJ boot and DOJ assembly.
9. Glue the rubber packing to the companion flange as instructed in step 5.



►E◄ INSTALLATION OF CENTRE BEARING ASSEMBLIES, COMPANION FLANGE AND SELF LOCKING NUTS

1. Fit the centre bearing assembly to the centre propeller shaft as shown in the diagram.
2. Align the mating marks of the companion flange and centre propeller shaft.
3. Tightening the self locking nut, press fit the centre bearing assembly with the companion flange.