
FRONT AXLE

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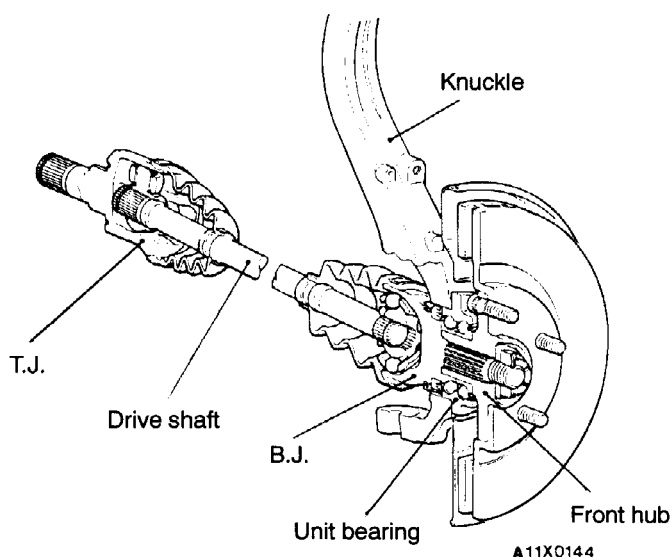
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GENERAL INFORMATION

26100010074

The front axle consists of a knuckle, front hub, unit bearing and drive shaft. The unit bearing is press-fitted to the front hub and bolted to the knuckle. Also, the unit bearing utilizes a double

row angular contact ball bearing. The drive shaft has a tripod joint (T.J.) on the transmission side and a birfield joint (B.J.) on the wheel side.



SERVICE SPECIFICATIONS

26100030094

Items		Standard value	Limit
Setting of boot length mm		84±3	—
Opening dimension of the special tool (MB991561) mm	When the B.J. boot band (small) is crimped	2.9	—
	When the B.J. boot band (big) is crimped	3.2	—
Crimped width of the B.J. boot band mm		2.4–2.8	—
Clearance between the B.J. boot (larger diameter side) and the stepped phase of the B.J. housing mm		0.1–1.55	—
Hub axial play mm		—	0.05
Wheel bearing starting torque Nm		—	1.0 or less

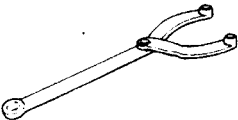
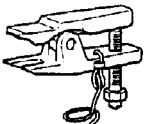
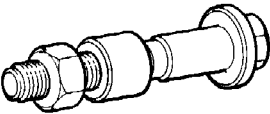
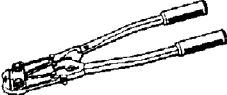
LUBRICANTS

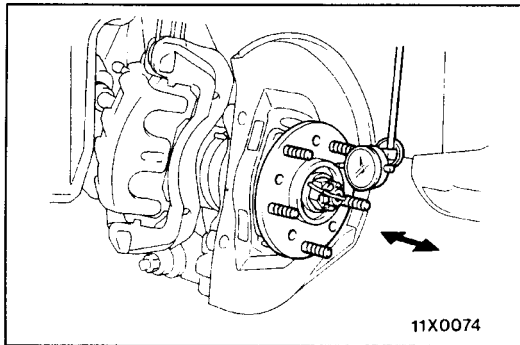
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Items	Quantity g	Specified lubricant
T.J. boot grease	105	Repair kit grease
B.J. boot grease	110	Repair kit grease

SPECIAL TOOLS

26100060093

Tool	Number	Name	Use
	MB990767	End yoke holder	Hub fixing
	MB991113	Steering linkage puller	• Upper arm ball joint and knuckle removal • Knuckle and tie rod end ball joint removal • Hub bolt replacement
	MB990998	Front hub remover and installer	• Hub removal or pressing-in • Provisional holding of the wheel bearing
	MB990326	Preload socket	Wheel bearing starting torque measurement
	MB991461	Plug	Preventing of entry of foreign objects into the transmission case
	MB991561	Boot band crimping tool	B.J. boot band installation



ON-VEHICLE SERVICE

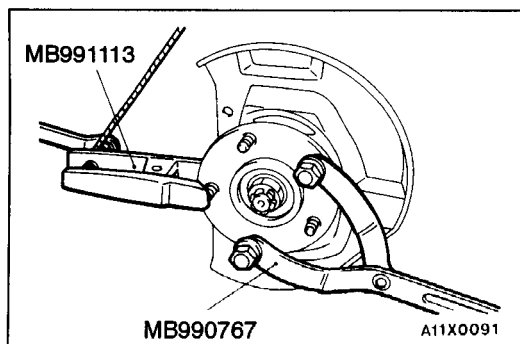
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HUB AXIAL PLAY CHECK

1. Remove the disc brake caliper and suspend it with a wire.
2. Remove the brake disc from the front hub.
3. Attach a dial gauge as shown in the illustration, and then measure axial play while moving the hub in the axial direction.

Limit: 0.05 mm

4. If the axial play exceeds the limit, replace the front hub assembly.



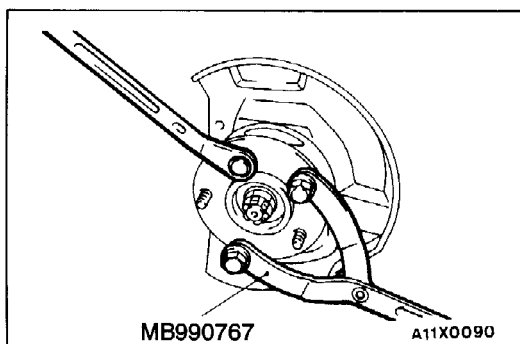
HUB BOLT REPLACEMENT

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1. Remove the caliper assembly and secure it with wire so that it does not fall.
2. Remove the brake disc.
3. Use the special tools to remove the hub bolts.

Caution

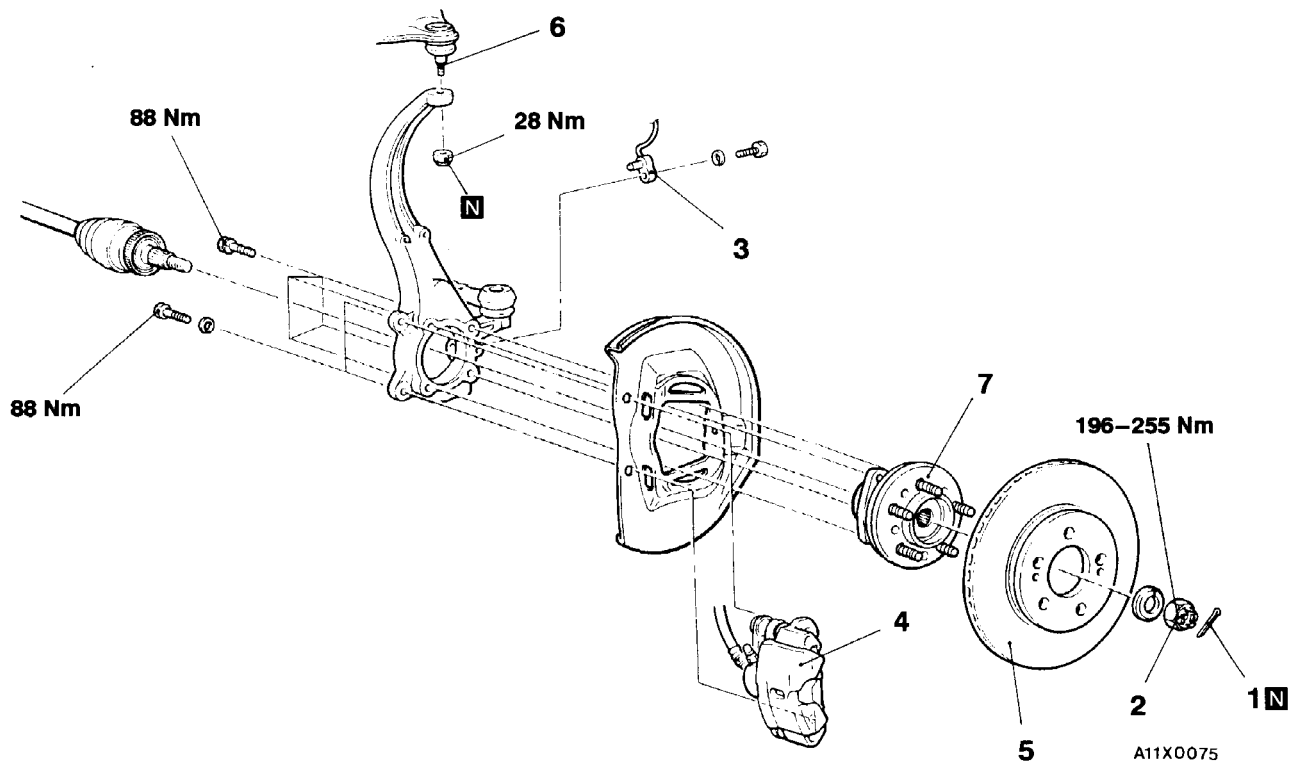
Be sure to tie the cord of the special tool to a nearby part.



4. Use the wheel nuts to securely install the new hub bolts, while being careful of the serrations of the hub bolts and hub.

FRONT HUB ASSEMBLY REMOVAL AND INSTALLATION

26100170086



Removal steps

◀A▶ ▶A▶
◀B▶

1. Split pin
2. Drive shaft nut
3. Front wheel-speed sensor
4. Caliper assembly
5. Brake disc

◀C▶
◀D▶

6. Upper arm ball joint and knuckle connection
7. Front hub assembly

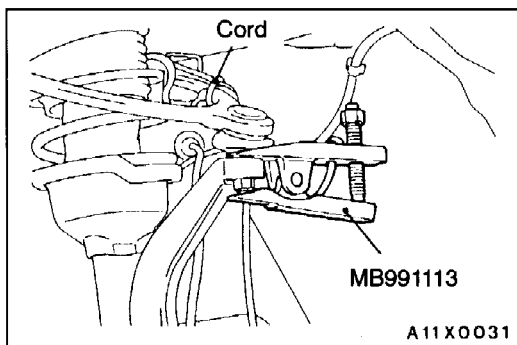
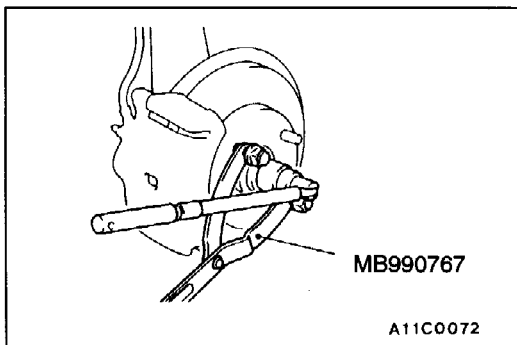
Caution

The front hub assembly should not be disassembled.

REMOVAL SERVICE POINTS

- ◀A▶ DRIVE SHAFT NUT REMOVAL
◀B▶ CALIPER ASSEMBLY REMOVAL

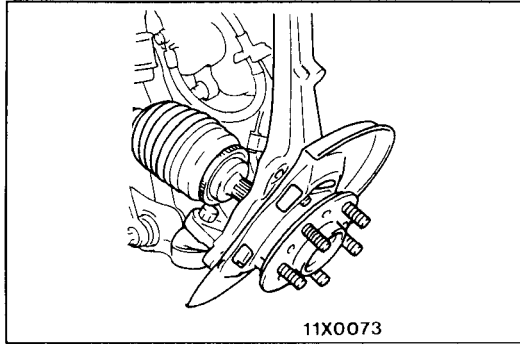
Secure the removed caliper assembly with wire so that it does not fall.



◀C▶ UPPER ARM BALL JOINT AND KNUCKLE DISCONNECTION

Caution

1. Using the special tool, loosen the tie rod end mounting nut. Only loosen the nut; do not remove it from the ball joint.
2. Support the special tool with a cord, etc. to prevent it from coming off.

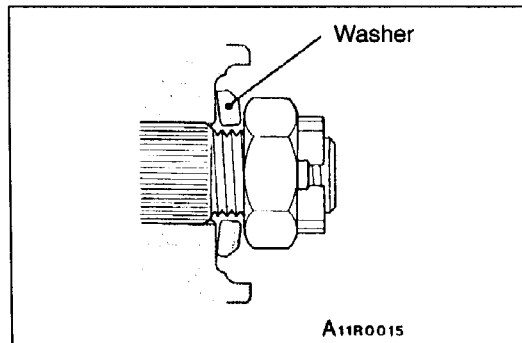


◀D▶ FRONT HUB ASSEMBLY REMOVAL

Shift the knuckle to the outside in order to maintain the clearance between the front hub assembly mounting bolts and the drive shaft.

Caution

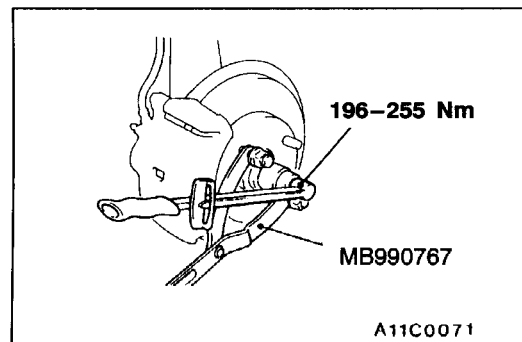
1. Do not damage the ball joint boot.
2. Be careful not to damage the rotor.



INSTALLATION SERVICE POINT

▶A◀ DRIVE SHAFT NUT INSTALLATION

- (1) Install the drive shaft washer in the specified direction.

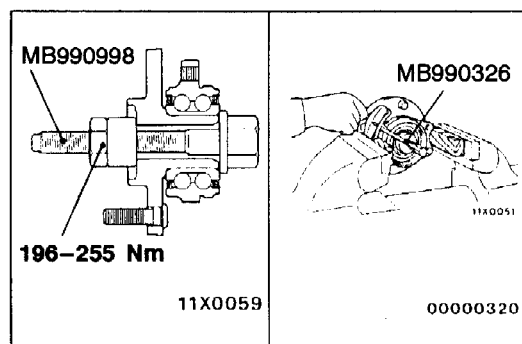


- (2) Use the special tool to tighten the drive shaft nut.

Caution

Before securely tightening the drive shaft nuts, make sure there is no load on the wheel bearings.

- (3) If the position of the split pin holes does not match, tighten the nut up to 255 Nm in maximum.
- (4) Install the split pin in the first matching holes and bend it securely.



INSPECTION

26100180072

WHEEL BEARING STARTING TORQUE CHECK

- (1) Install the special tool to the front hub assembly and tighten the nut to the specified torque 196–255 Nm.
- (2) Use the special tool to measure the wheel bearing starting torque.

Limit: 1.0 Nm or less

- (3) The wheel bearing starting torque should be within the limit value range, and there should be no engagement or feeling of roughness.

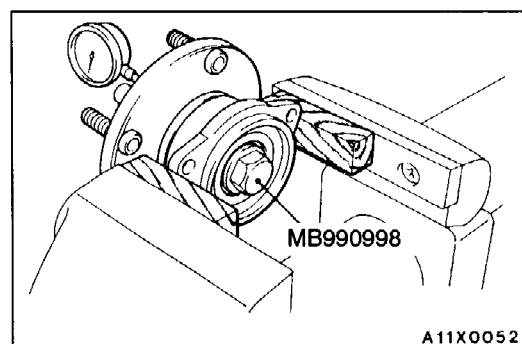
HUB AXIAL PLAY CHECK

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- (1) Install the special tool to the front hub assembly and tighten the nut to the specified torque 196–255 Nm.
- (2) Measure the play in the hub axial direction.

Limit: 0.05 mm

- (3) If the limit value of hub axial play cannot be obtained, replace the front hub assembly.



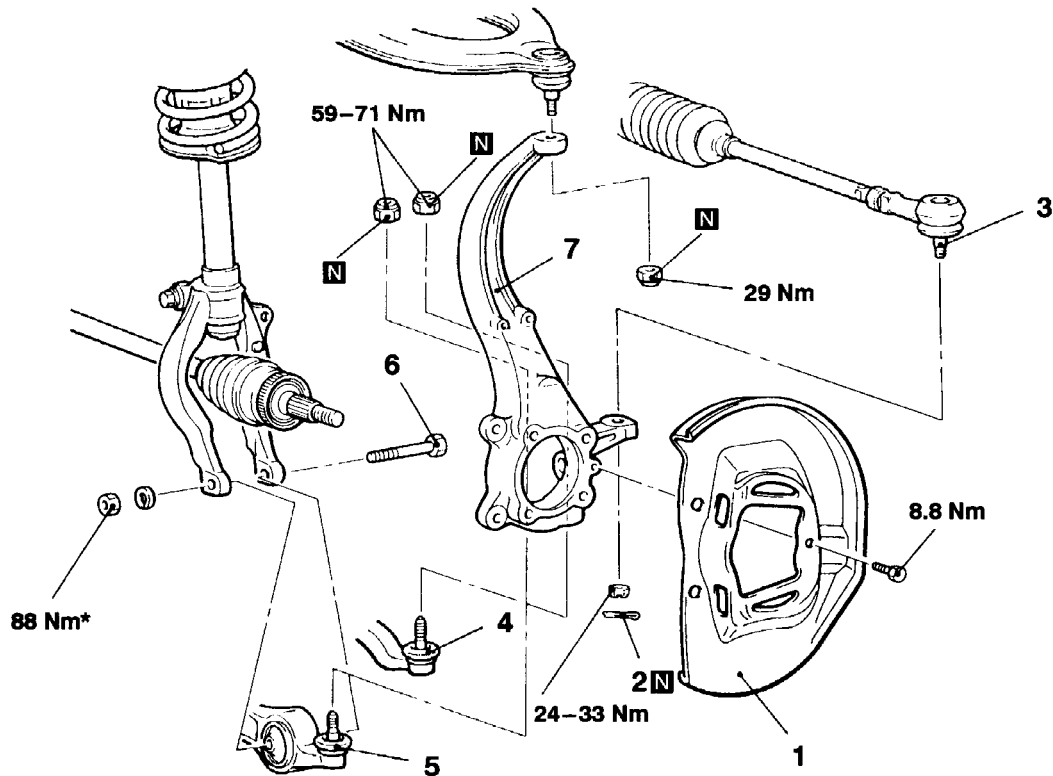
KNUCKLE

26100240077

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- (1) Front Wheel Speed Sensor Removal and Installation
- (2) Front Hub Assembly Removal and Installation (Refer to P.26-5.)



A11X0025

Removal steps

1. Dust shield
2. Split pin
3. Tie rod end ball joint and knuckle connection
4. Compression lower arm ball joint and knuckle connection
5. Lateral lower arm ball joint and knuckle connection
6. Connecting bolt of damper fork and lateral lower arm
7. Knuckle

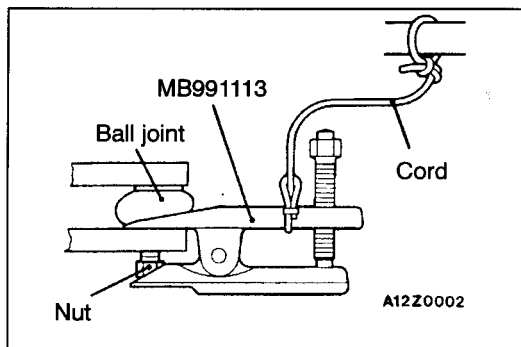
Caution

*: Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

◀A▶

◀A▶

◀A▶



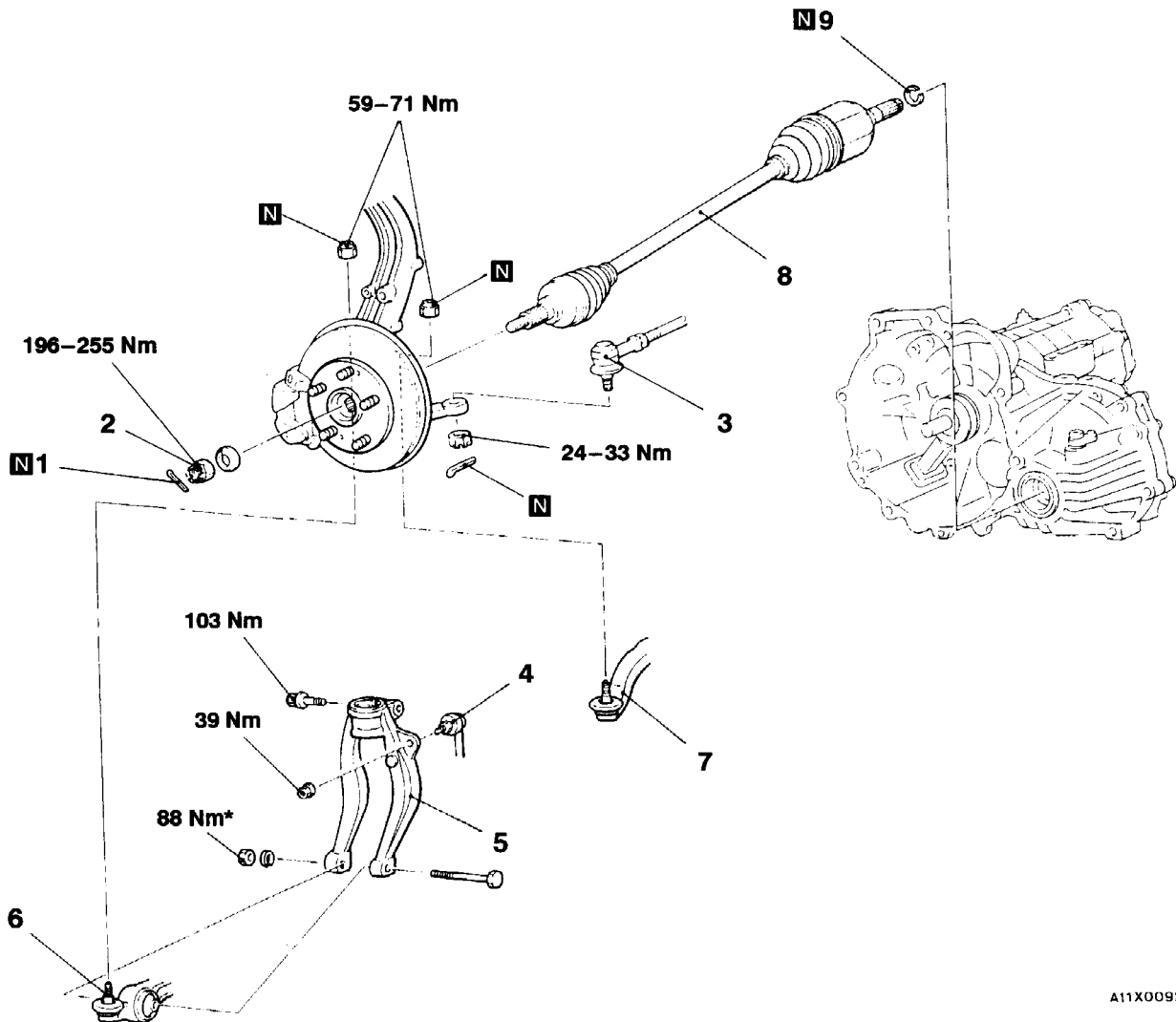
REMOVAL SERVICE POINT

- ◀A▶ TIE ROD END BALL JOINT AND KNUCKLE/COMPRESSION LOWER ARM BALL JOINT AND KNUCKLE/LATERAL LOWER ARM BALL JOINT AND KNUCKLE DISCONNECTION

Caution

1. Use the special tool to loosen the tie rod end mounting nut. Only loosen the nut; do not remove it from the ball joint.
2. Support the special tool with a cord, etc. to prevent it from coming off.

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DRIVE SHAFT
REMOVAL AND INSTALLATION

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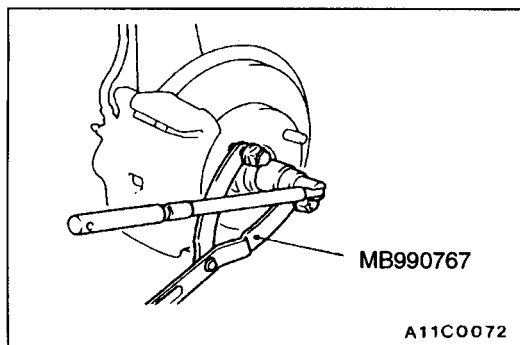
Removal steps

- ◀A▶ ▶A▶
1. Split pin
 2. Drive shaft nut
 - ◀B▶ 3. Tie rod end ball joint and knuckle connection
 4. Stabilizer link ball joint and damper fork connection
 5. Damper fork
 - ◀B▶ 6. Lateral lower arm ball joint and knuckle connection

- ◀B▶ 7. Compression lower arm ball joint and knuckle connection
- ◀C▶ 8. Drive shaft
9. Circlip

Caution

*: Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

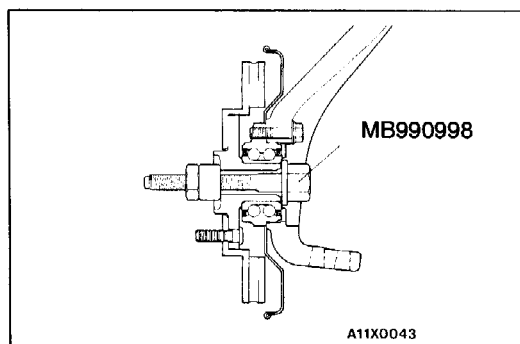


REMOVAL SERVICE POINTS

◀A▶ DRIVE SHAFT NUT REMOVAL

Caution

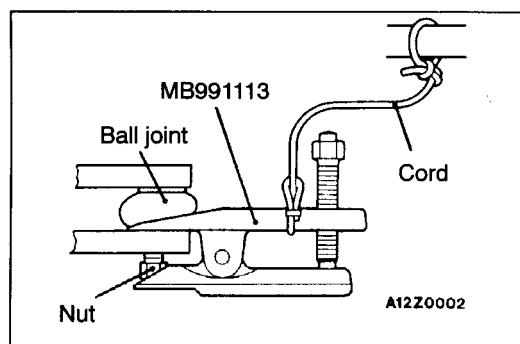
Do not apply the vehicle weight to the wheel bearing while loosening the drive shaft nut. If, however, the vehicle weight must be applied to the bearing (because of moving the vehicle), temporarily secure the wheel bearing by using the special tool, MB990998, etc.



◀B▶ TIE ROD END BALL JOINT AND KNUCKLE/LATERAL LOWER ARM BALL JOINT AND KNUCKLE/COMPRESSION LOWER ARM BALL JOINT AND KNUCKLE DISCONNECTION

Caution

1. Use the special tool to loosen the tie rod end mounting nut. Only loosen the nut; do not remove it from the ball joint.
2. Support the special tool with a cord, etc. to prevent it from coming off.

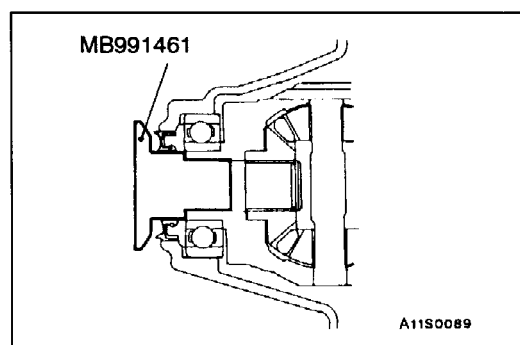
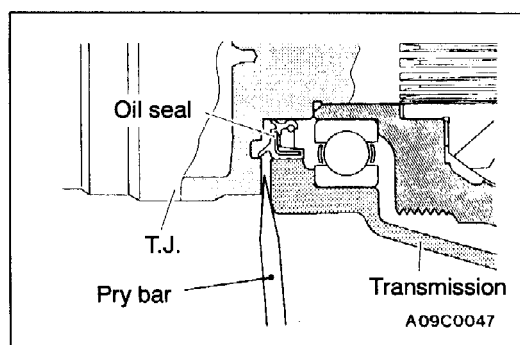


◀C▶ DRIVE SHAFT REMOVAL

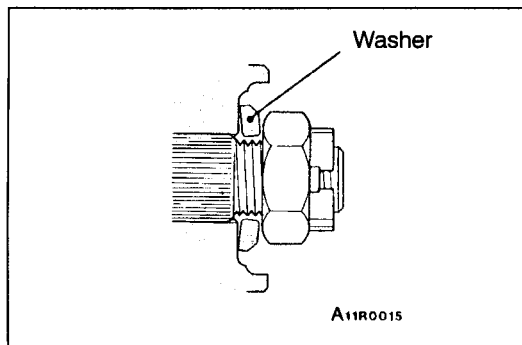
- (1) Insert a pry bar between the transmission case and the drive shaft, and then pry the drive shaft from the transmission.

Caution

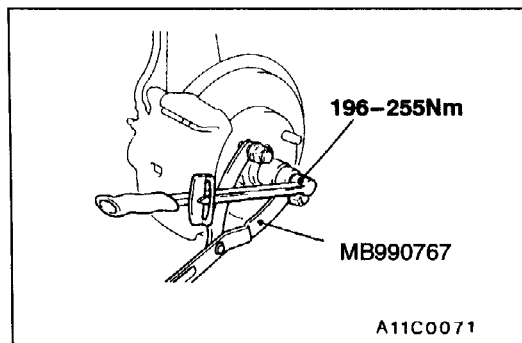
1. Always use a pry bar to remove the drive shaft, or the T.J. will be damaged.
2. Do not insert the pry bar so deep as to damage the oil seal.



- (2) Use the special tool as a cover not to let foreign objects get into the transmission case.

**INSTALLATION SERVICE POINT****►A◄ DRIVE SHAFT NUT INSTALLATION**

- (1) Install the drive shaft washer in the specified direction.



- (2) Use the special tool to tighten the drive shaft nut.

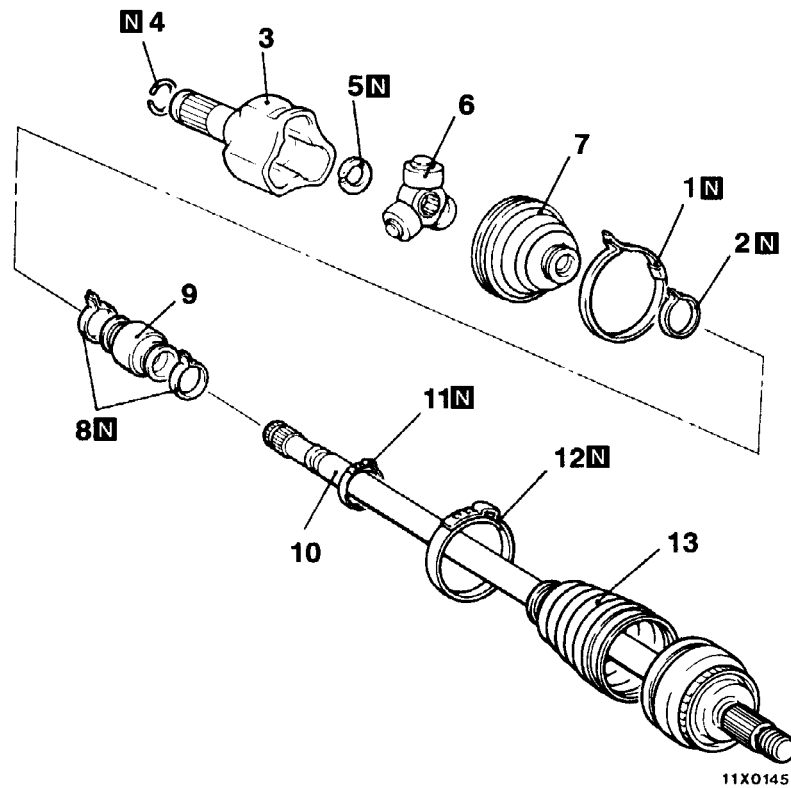
Caution

Before securely tightening the drive shaft nuts, make sure there is no load on the wheel bearings.

- (3) If the position of the split pin holes does not match, tighten the nut up to 255 Nm in maximum.
- (4) Install the split pin in the first matching holes and bend it securely.

DISASSEMBLY AND REASSEMBLY

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11X0147	11U0077	11X0068
B.J. boot repair kit	T.J. boot repair kit	T.J. repair kit

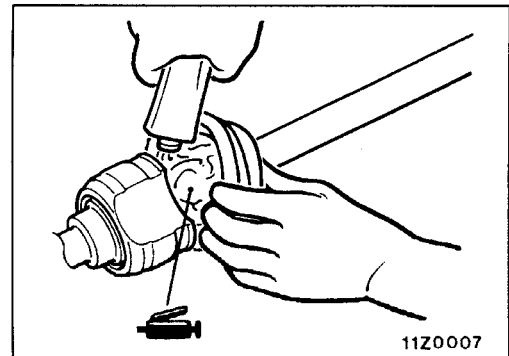
Disassembly steps

- ▶D◀ 1. T.J. boot band (large)
- ▶D◀ 2. T.J. boot band (small)
- ◀A▶▶C◀ 3. T.J. case
- ▶C◀ 4. Circlip
- ◀B▶▶C◀ 5. Snap ring
- ▶B▶▶C◀ 6. Spider assembly
- ▶C◀ 7. T.J. boot
- ▶B▶ 8. Damper band <L.H.>
- ▶B▶ 9. Dynamic damper <L.H.>

- ▶D▶▶A◀ 10. B.J. assembly
- ▶D▶▶A◀ 11. B.J. boot band (small)
- ▶D▶▶A◀ 12. B.J. boot band (large)
- ▶A▶▶A◀ 13. B.J. boot

Caution
Do not disassemble the B.J. assembly except replacement of the B.J. boot.

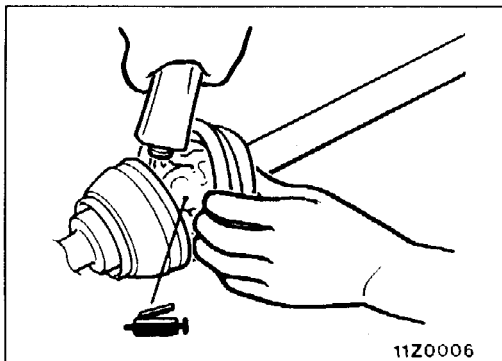
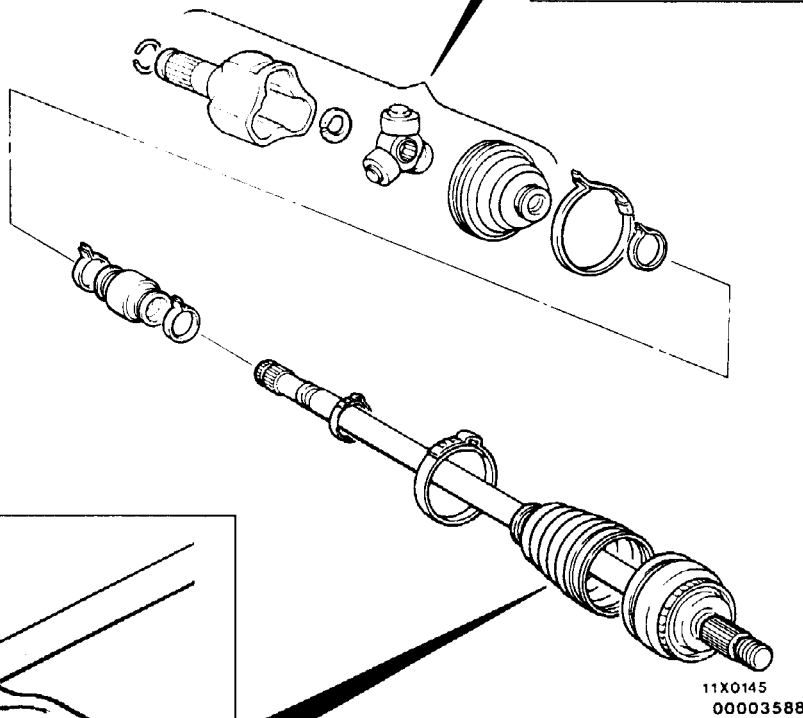
LUBRICANT POINTS



Grease: Repair kit grease 105g

Caution

The drive shaft joint uses special grease. Do not mix old and new or different types of grease.



Grease: Repair kit grease 110g

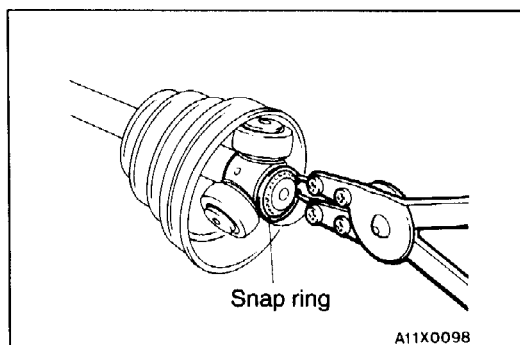
Caution

The drive shaft joint uses special grease. Do not mix old and new or different types of grease.

DISASSEMBLY SERVICE POINTS

◀A▶ T.J. CASE REMOVAL

Remove the T.J. case from the B.J. assembly, and wipe off the grease inside the T.J. case.

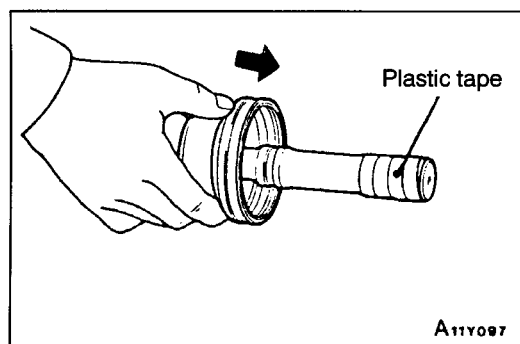


◀B▶ SNAP RING/SPIDER ASSEMBLY REMOVAL

- (1) Remove the snap ring from the drive shaft with the snap ring pliers.
- (2) Take out the spider assembly from the drive shaft.
- (3) Clean the spider assembly.

Caution

1. Do not disassemble the spider assembly.
2. Use care in handling so as not to damage the drive shaft.

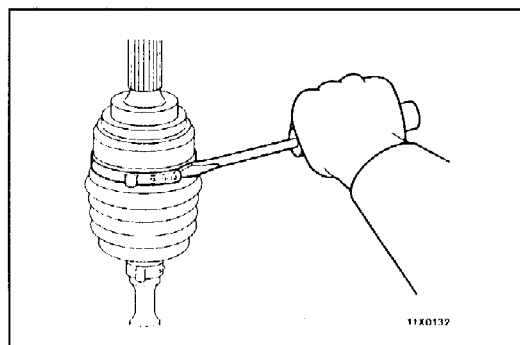


◀C▶ T.J. BOOT REMOVAL

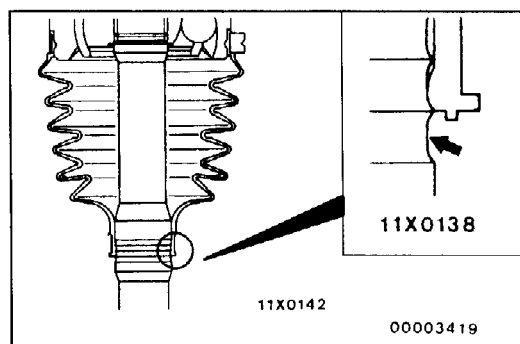
- (1) Wipe the grease off of the spline portion.
- (2) Remove the T.J. boot.

NOTE

If the boot is reused, wrap plastic tape around the drive shaft spline so that the boot is not damaged when it is removed.



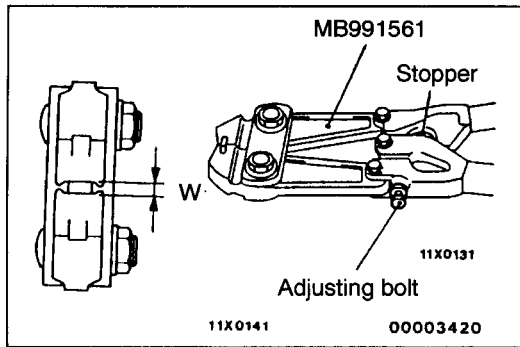
◀D▶ B.J. BOOT BAND (SMALL)/B.J. BOOT BAND (LARGE) REMOVAL



REASSEMBLY SERVICE POINTS

▶A◀ B.J. BOOT/B.J. BOOT BAND (LARGE)/B.J. BOOT BAND (SMALL) INSTALLATION

- (1) Wrap plastic tape around the spline part on the drive shaft, and then install the B.J. boot band (small) and B.J. boot.
- (2) Install the smaller side of the B.J. boot band so that one shaft groove can be seen.



- (3) Turn the adjusting bolt of the special tool to adjust the opening dimension (W) to the standard value.

Standard value (W): 2.9 mm

<When more than 2.9 mm>

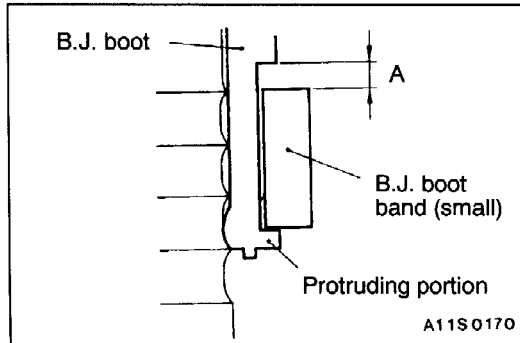
Screw in the adjusting bolt.

<When less than 2.9 mm>

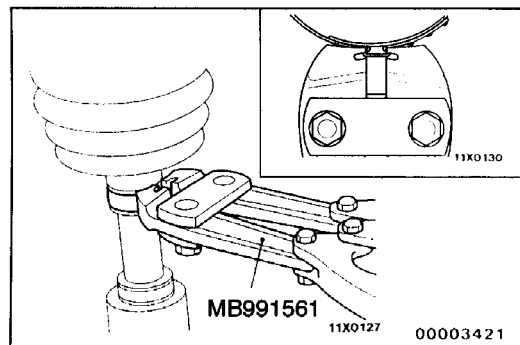
Loosen the adjusting bolt.

NOTE

- (1) The dimension (W) is adjusted by approx. 0.7 mm per one turn.
 (2) Do not turn the adjusting bolt more than one turn.



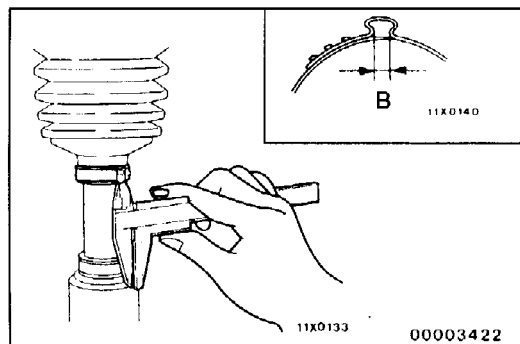
- (4) Place the boot band (small) along the protruding portion, and install it so that there is some clearance (A) along the other side.



- (5) Use the special tool to crimp the B.J. boot band (small).

Caution

- (1) **Hold the drive shaft perpendicularly, and use the special tool to crimp the B.J. boot band securely.**
 (2) **Crimp the B.J. boot band until the special tool touches the stopper.**



- (6) Check that the crimped width (B) is within the standard value.

Standard value (B): 2.4 – 2.8 mm

<When more than 2.8 mm>

Readjust the dimension (W) of step (3) to the value calculated by the following equation, and repeat step (5).

$$W = 5.5 \text{ mm} - B$$

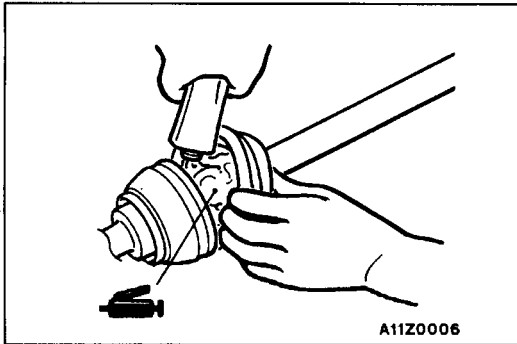
Example: If (B) is 2.9 mm, (W) is 2.6 mm.

<When less than 2.4 mm>

Remove the B.J. boot band, readjust the dimension (W) of step (3) to the value calculated by the following equation, and use a new B.J. boot band to repeat steps (4) to (5).

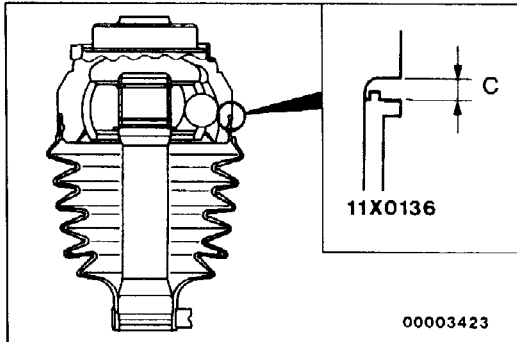
$$W = 5.5 \text{ mm} - B$$

Example: If (B) is 2.3 mm, (W) is 3.2 mm.



- (7) Check that the B.J. boot band is secured correctly. If the band is secured incorrectly, repeat steps (4) to (6) to replace it.
- (8) Apply the specified amount of grease to the boot.

Specified grease: Repair kit grease 110g

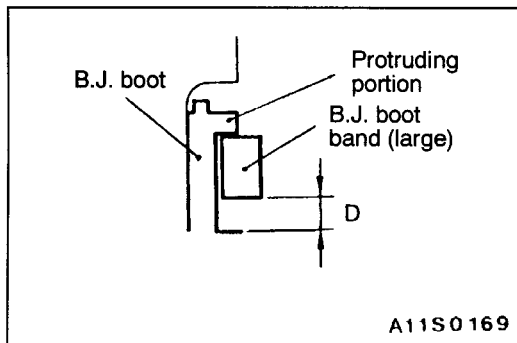


- (9) Install the B.J. boot to adjust the clearance (C) between the B.J. boot end and the stepped phase of the B.J. housing is within the standard value.

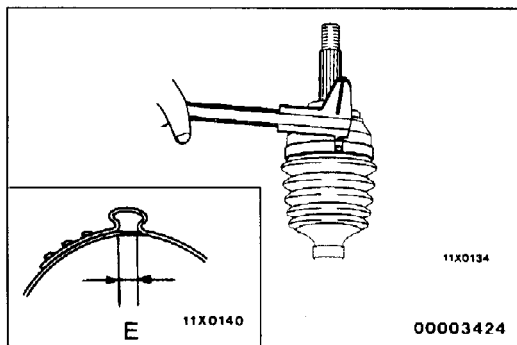
Standard value (C): 0.1 – 1.55 mm

- (10) Adjust the opening dimension (W) to the standard value as mentioned at the step (3).

Standard value (W): 3.2 mm



- (11) Place the B.J. boot band (large) along the protruding portion, and install it so that there is some clearance (D) along the other side.
- (12) Use the special tool to crimp the B.J. boot band (large) in the same way as the step (5).



- (13) Check that the crimped width (E) is within the standard value.

Standard value (E): 2.4 – 2.8 mm

<When more than 2.8 mm>

Readjust the dimension (W) of step (10) to the value calculated by the following equation, and repeat step (12).

$$W = 5.8 \text{ mm} - E$$

Example: If (E) is 2.9 mm, (W) is 2.9 mm

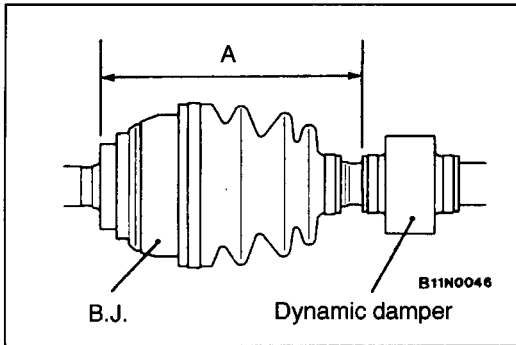
<When less than 2.4 mm>

Remove the B.J. boot band, readjust the dimension (W) of step (10) to the value calculated by the following equation, and use a new B.J. boot band to repeat steps (11) to (12).

$$W = 5.8 \text{ mm} - E$$

Example: If (E) is 2.3 mm, (W) is 3.5 mm

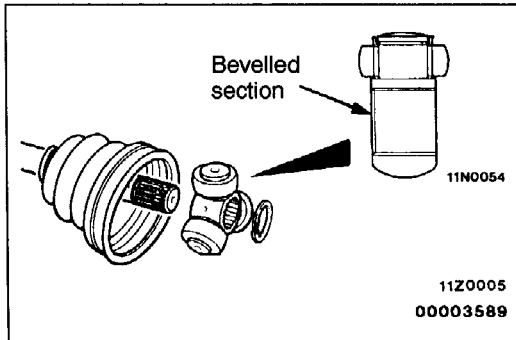
- (14) Check that the boot band is secured correctly. If the band is secured incorrectly, repeat steps (11) to (13) to replace it.



►B◄ DYNAMIC DAMPER INSTALLATION

Install the dynamic damper in the position shown in the illustration.

Standard value (A): 365 ± 3



►C◄ SPIDER ASSEMBLY/T.J. CASE INSTALLATION

- (1) Install the spider assembly to the shaft from the direction of the spline bevelled section.
- (2) After applying specified grease to the T.J. case, insert the drive shaft and apply grease again.

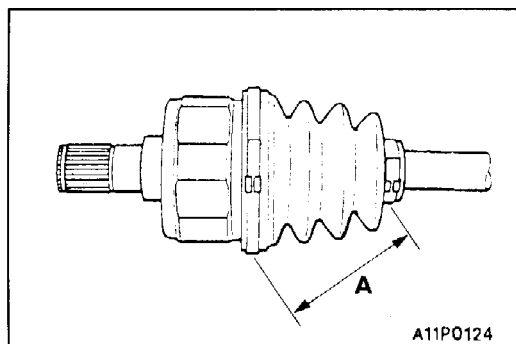
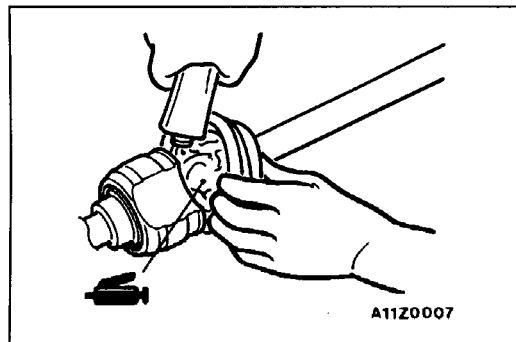
Specified grease: Repair kit grease 105g

NOTE

The grease in the repair kit should be divided in half for use, respectively, at the joint and inside the boot.

Caution

The drive shaft joint uses special grease. Do not mix old and new or different types of grease.



►D◄ T.J. BOOT BAND (SMALL)/T.J. BOOT BAND (LARGE) INSTALLATION

Set the T.J. boot bands at the specified distance in order to adjust the amount of air inside the T.J. boot, and then tighten the T.J. boot bands securely.

Standard value (A) : 84 ± 3 mm