REAR SUSPENSION

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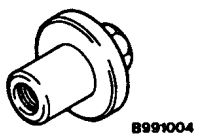
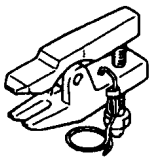
SERVICE SPECIFICATIONS

Items	Standard value
Toe-in mm	3 ± 2
Camber	–1°00 ± 30'
Rear thrust angle	0°00 ± 9'
Upper arm ball joint turning torque Nm {kgf·cm}	0.5 – 2.5 {5 – 25}
Trailing arm ball joint turning torque Nm {kgf·cm}	0.5 – 2.5 {5 – 25}
Toe control arm ball joint turning torque Nm {kgf·cm}	0.5 – 2.5 {5 – 25}
Toe control arm slide bushing operating torque Nm {kgf·cm}	0.2 – 1.5 {2 – 15}
Stabilizer link ball joint turning torque Nm {kgf·cm}	1.7 – 3.1 {17 – 32}

LUBRICANT

Items	Specified lubricant	Quantity
Inside and lips of upper arm ball joint dust cover	Molybdenum disulfide-base chassis grease: SHOWA SHELL SEKIYU SUNLITE MB2, NISSEKI CLAKNOCK FL, or equivalent	As required
Inside and lips of trailing arm ball joint dust cover		
Inside and lips of control arm ball joint dust cover		
Inside and lips of stabilizer link ball joint dust cover	SHOWA SHELL SEKIYU VARIANT R-2 or equivalent	

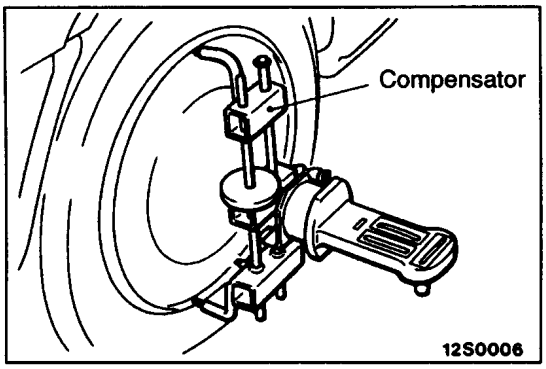
SPECIAL TOOLS

Tool	Number	Name	Use
 B991004	MB991004	Wheel alignment gauge attachment	Measurement of wheel alignment <vehicles with aluminum wheels>
B990326	MB990326	Preload socket	Measurement of ball joint turning torque
 B991113	MB990635, MB991113, or MB991406	Steering linkage puller	Disconnection of ball joint from knuckle
	MB990800	Ball joint remover & installer	Pressfitting of ball joint dust cover

ON-VEHICLE SERVICE

1. REAR WHEEL ALIGNMENT CHECK AND ADJUSTMENT

(1) The rear suspension and wheels should be serviced to the normal condition prior to measurement of wheel alignment.
(2) Measure the wheel alignment with the vehicle parked on level ground.

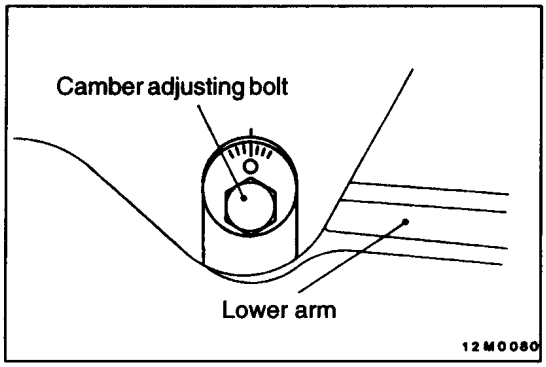


1-1 CAMBER

Standard value: –1°00' ± 30'
(The difference between the left and right wheels should be 30' or less.)

NOTE
For vehicles equipped with aluminium wheels, measure the camber using a compensator. If no compensator is available, measure the camber after tightening the special tool (MB991004) to the specified torque 196 – 255 Nm {20.0 – 26.0 kgf·m}.

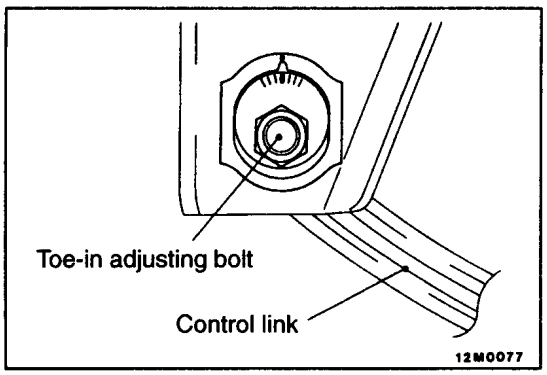
Caution
Never subject the wheel bearings to the full vehicle load when the flange nuts/drive shaft nuts are loosened.



If outside the standard value, adjust by the following procedure.
(1) Adjust by turning the camber adjusting bolt (mounting bolt for the lower arm and rear crossmember).

Left wheel: clockwise + camber
Right wheel: clockwise – camber

The scale has gradations of approximately 14'.
(2) After adjusting the camber, be sure to adjust the toe-in.



1-2 TOE-IN

Standard value:
At the centre of tyre tread 3 ± 2 mm

If outside the standard value, adjust by the following procedure.
(1) Be sure to adjust the camber before adjusting the toe-in.
(2) Adjust by turning the toe adjusting bolt (inner mounting bolt toe control arm).
LH: Turning clockwise → toe-in direction
RH: Turning clockwise → toe-out direction

The scale has gradations of approximately 3.3 mm (single side toe angle equivalent to 19').

2. BALL JOINT DUST COVER CHECK

(1) Check the dust cover for cracks or damage by pushing it with finger.
(2) If the dust cover is cracked or damaged, replace the appropriate suspension arm assembly or stabilizer link.

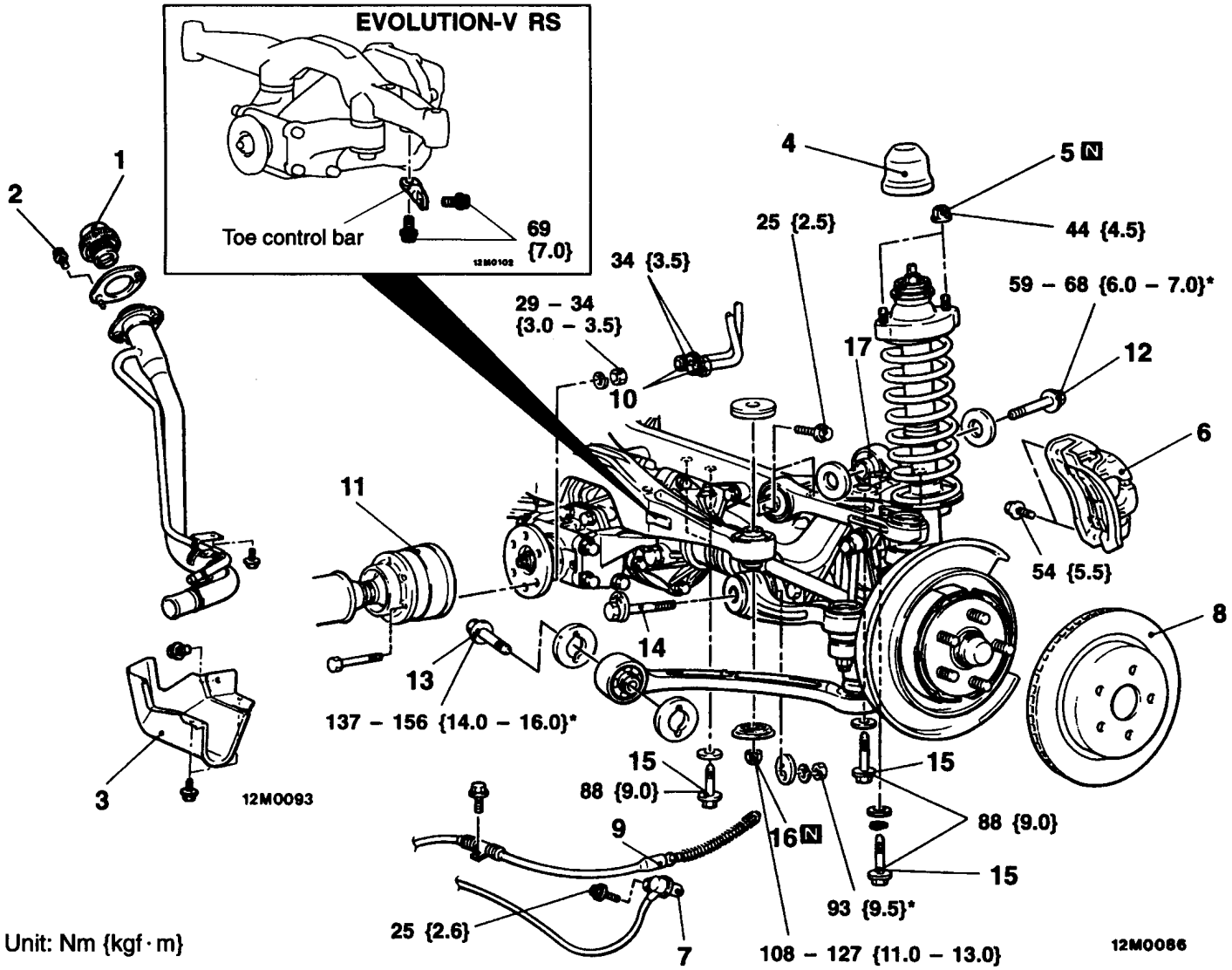
NOTE
Cracks or damage of the dust cover may cause damage of the ball joint.

REAR SUSPENSION ASSEMBLY

REMOVAL AND INSTALLATION

Pre-removal Operation
(1) Center Exhaust Pipe Removal
(Refer to GROUP 15.)
(2) Trunk Room Side Trim Removal <GSR>
(3) AYC Fluid Draining
(Refer to GROUP 27 – On-vehicle Service.)

Post-installation Operation
(1) AYC Fluid Refilling and Bleeding
(Refer to GROUP 27 – On-vehicle Service.)
(2) Center Exhaust Pipe Installation
(Refer to GROUP 15.)
(3) AYC Operation Check
(4) Parking Brake Cable Stroke Check
(Refer to GROUP 36 – On-vehicle Service.)
(5) Wheel Alignment Check and Adjustment
(Refer to P.34-3.)



Unit: Nm {kgf·m}

Removal steps

1. Fuel filler cap
2. Bolt
3. Filler neck protector
4. Cap
5. Shock absorber mounting nut

◀A▶ 6. Brake caliper assembly

7. Rear speed sensor <vehicles with AYC>
8. Brake disc
9. Parking brake cable end (Refer to GROUP 36.)
10. AYC fluid line connection <vehicles with AYC>

◀B▶ ▶B◀ 11. Propeller shaft connection
12. Upper arm mounting bolt
13. Trailing arm mounting bolt
14. Toe control arm mounting bolt

◀C▶ ▶A◀ 15. Crossmember mounting bolt
16. Differential support assembly mounting bolt
17. Rear suspension assembly

Caution
The parts marked with * should be first temporarily tightened, then torqued to specification with the vehicle on the ground in unloaded condition.

REMOVAL SERVICE POINTS

◀A▶ BRAKE CALIPER ASSEMBLY REMOVAL

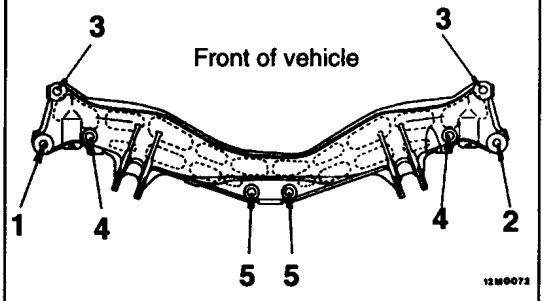
Remove the brake caliper assembly and secure it with a wire.

◀B▶ PROPELLER SHAFT DISCONNECTION

(1) Make an alignment mark on the differential carrier companion flange and propeller shaft flange yoke.
(2) Remove the mounting bolts and nuts of the differential carrier and propeller shaft.

◀C▶ CROSSMEMBER MOUNTING BOLT REMOVAL

Support the differential case with a garage jack or transmission jack and then remove the crossmember mounting bolt.



Bolt size (thread dia. × length mm)
1 to 3: Flange bolt (with washer) 12 × 70
4: Flange bolt (with washer) 12 × 152
5: Bolt (with spring washer + washer) 12 × 105

INSTALLATION SERVICE POINTS

▶A◀ CROSSMEMBER MOUNTING BOLT INSTALLATION

Tighten the mounting bolts in the numerical order shown.

NOTE
To ensure both good installation accuracy and ease of installation, the crossmember mounting holes have different diameters between front and rear. This is the reason for specifying the tightening sequence of the mounting bolts.

▶B◀ PROPELLER SHAFT CONNECTION

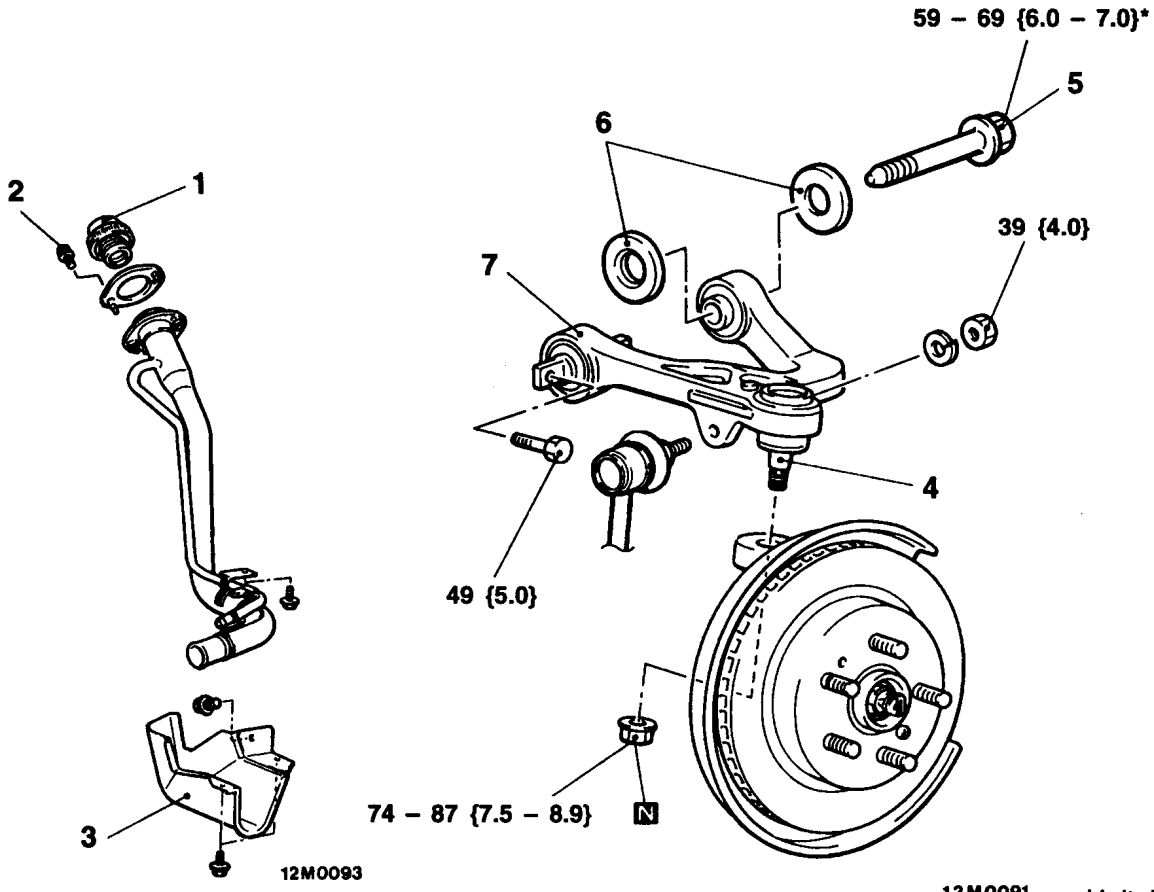
Align the alignment mark on the differential carrier with that of the propeller shaft at installation.

Caution
Oil or grease on the threads of the mounting bolt or nut can allow the bolt or nut to come loose. Be sure to degrease the threads before installation.

UPPER ARM ASSEMBLY

REMOVAL AND INSTALLATION

Post-installation Operation
(1) Push the Dust Cover of the Upper Arm Ball Joint with a Finger to Check for Possible Cracks or Damage.
(2) Wheel Alignment Check and Adjustment (Refer to P.34-3.)

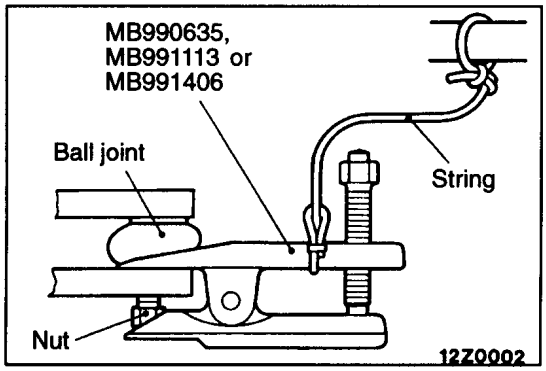


Unit: Nm {kgf·m}

Removal steps
1. Fuel filler cap*
2. Bolt*
3. Filler neck protector*
◀A▶ 4. Upper arm assembly to knuckle coupling
5. Upper arm assembly mounting bolt
6. Stopper
7. Upper arm assembly

NOTE
Parts marked with * apply only when RH side is removed and installed.

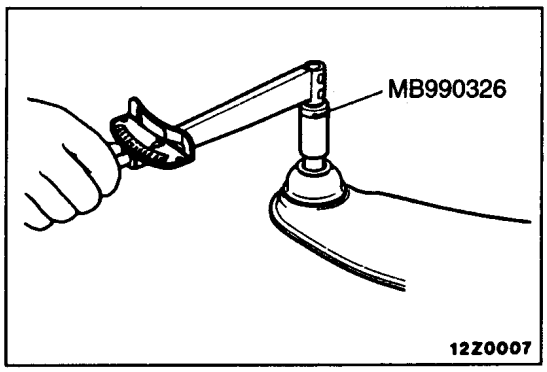
Caution
The part marked with * should be first temporarily tightened, then torqued to specification with the vehicle on the ground in unloaded condition.



REMOVAL SERVICE POINT

◀A▶ UPPER ARM ASSEMBLY DISCONNECTION FROM KNUCKLE

Caution
(1) Only loosen the nut, and not remove it from the ball joint, and use the special tool.
(2) Hang the special tool with a string to prevent the parts including the tool from falling apart.



INSPECTION

1. UPPER ARM BALL JOINT TURNING TORQUE CHECK

(1) Rock the upper arm ball joint stud several times; then, mount a nut to the stud and, using the special tool, measure the turning torque of the upper arm ball joint.

Standard value: 0.5 – 2.5 Nm {5 – 25 kgf·cm}

(2) If the measurement exceeds the standard value, replace the upper arm assembly.

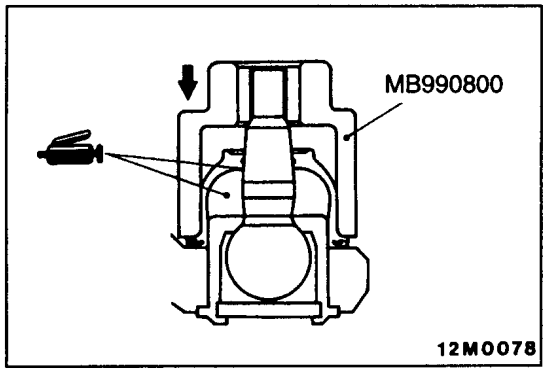
(3) If the measurement falls short of the standard value, check that the ball joint turns smoothly without excessive play. If so, the ball joint should still be in good condition for continued use.

2. UPPER ARM BALL JOINT DUST COVER CHECK

(1) Check the dust cover for cracks or damage by pushing it with a finger.

(2) If the dust cover is cracked or damaged, replace the upper arm assembly.

NOTE
A cracked or damaged dust cover can lead to a damaged ball joint.
If the dust cover is damaged during servicing, replace it with a new one.



UPPER ARM BALL JOINT DUST COVER REPLACEMENT

Only when the dust cover is damaged accidentally during service work, follow these steps to replace it with a new one.

(1) Remove the dust cover.

(2) Pack and apply the specified grease to the inside and lips of the dust cover.

Molybdenum disulfide-base chassis grease:
SHOWA SHELL SEKIYU SUNLITE MB2, NISSEKI CLAKNOCK FL, or equivalent

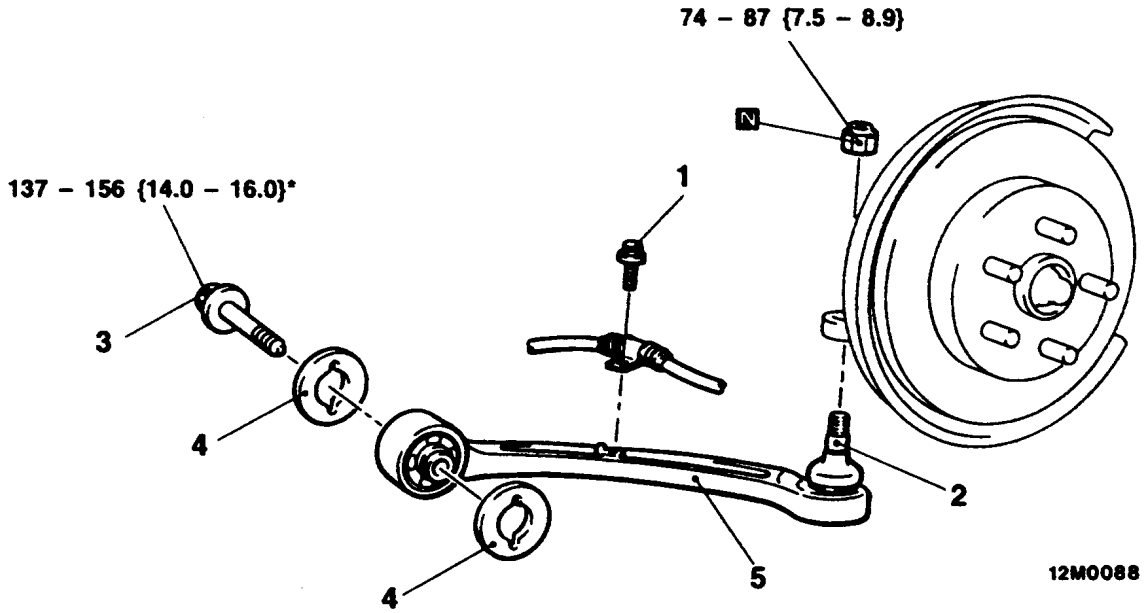
(3) Using the special tool, press the dust cover until it contacts the snap ring.

(4) Push the dust cover with a finger to ensure that it is free from cracks or damage.

TRAILING ARM ASSEMBLY

REMOVAL AND INSTALLATION

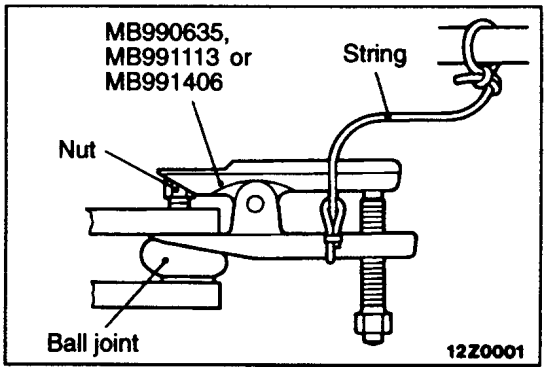
Post-installation Operation
(1) Push the Dust Cover of the Trailing Arm Ball Joint with a Finger to Check for Possible Cracks or Damage.
(2) Wheel Alignment Check and Adjustment (Refer to P.34-3.)



Unit: Nm {kgf·m}

Removal steps
1. Parking brake cable bolt
◀A▶ 2. Trailing arm assembly to knuckle coupling
3. Trailing arm assembly mounting bolt
4. Stopper
5. Trailing arm assembly

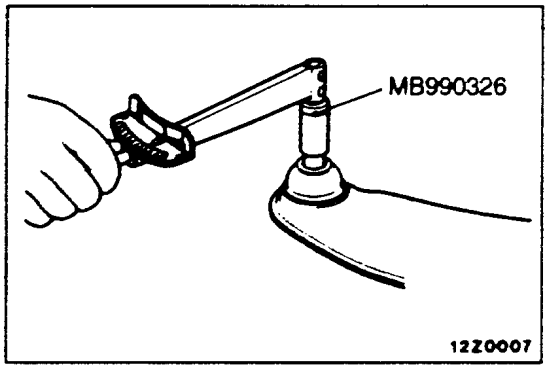
Caution
The part marked with * should be first temporarily tightened, then torqued to specification with the vehicle on the ground in unloaded condition.



REMOVAL SERVICE POINT

◀A▶ TRAILING ARM ASSEMBLY DISCONNECTION FROM KNUCKLE

Caution
(1) Only loosen the nut, and not remove it from the ball joint, and use the special tool.
(2) Hang the special tool with a string to prevent the parts including the tool from falling apart.



INSPECTION

1. TRAILING ARM BALL JOINT TURNING TORQUE CHECK

(1) Rock the trailing arm ball joint stud several times; then, mount a nut to the stud and, using the special tool, measure the turning torque of the ball joint.

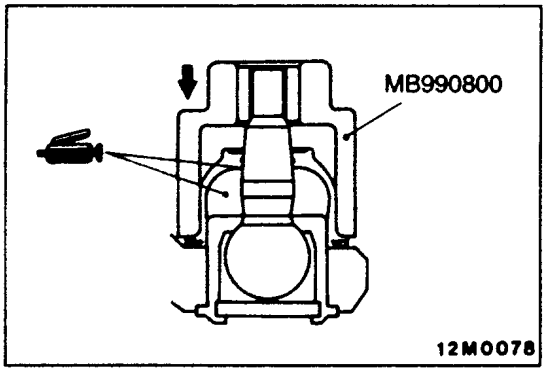
Standard value: 0.5 – 2.5 Nm {5 – 25 kgf·cm}

(2) If the measurement exceeds the standard value, replace the trailing arm assembly.
(3) If the measurement falls short of the standard value, check that the ball joint turns smoothly without excessive play. If so, the ball joint should still be in good condition for continued use.

2. TRAILING ARM BALL JOINT DUST COVER CHECK

(1) Check the dust cover for cracks or damage by pushing it with a finger.
(2) If the dust cover is cracked or damaged, replace the trailing arm assembly.

NOTE
A cracked or damaged dust cover can lead to a damaged ball joint.
If the dust cover is damaged during servicing, replace it with a new one.



TRAILING ARM BALL JOINT DUST COVER REPLACEMENT

Only when the dust cover is damaged accidentally during service work, follow these steps to replace it with a new one.
(1) Remove the dust cover.
(2) Pack and apply the specified grease to the inside and lips of the dust cover.

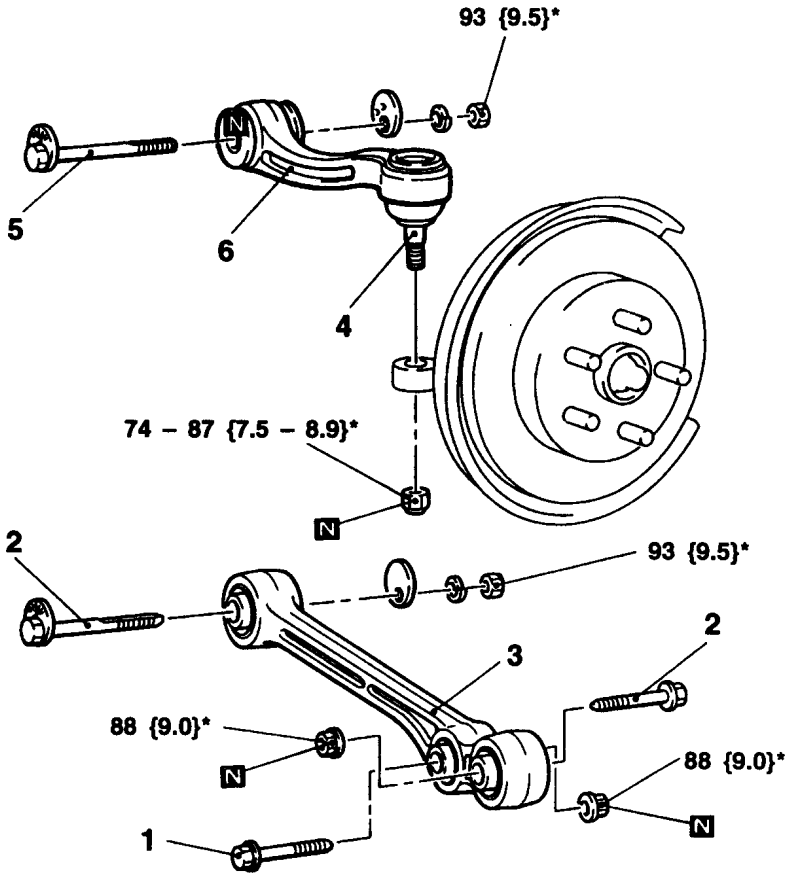
Molybdenum disulfide-base chassis grease:
SHOWA SHELL SEKIYU SUNLITE MB2, NISSEKI CLAKNOCK FL, or equivalent

(3) Using the special tool, press the dust cover until it contacts the snap ring.
(4) Push the dust cover with a finger to ensure that it is free from cracks or damage.

LOWER ARM AND TOE CONTROL ARM ASSEMBLIES

REMOVAL AND INSTALLATION

Post-Installation Operation
(1) Check the Toe Control Arm Ball Joint Dust Cover for Cracks or Damage by Pushing it with Finger
(2) Wheel Alignment Check and Adjustment (Refer to P.34-3.)

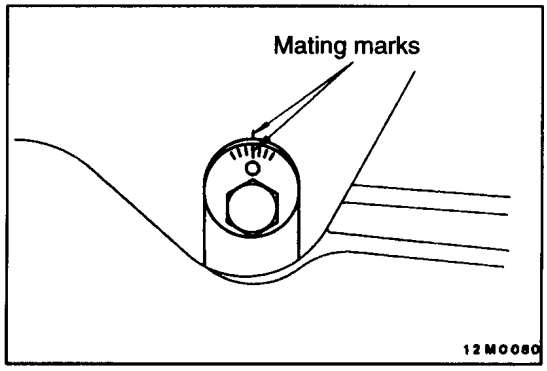


Unit: Nm {kgf·m}

Lower arm assembly removal steps
1. Lower arm assembly and shock absorber connecting bolt
◀A▶ 2. Lower arm assembly mounting bolt
▶A◀ 3. Lower arm assembly

Toe control arm assembly removal steps
◀B▶ 4. Toe control arm and knuckle connection
◀C▶ 5. Toe control arm assembly mounting bolt
6. Toe control arm assembly

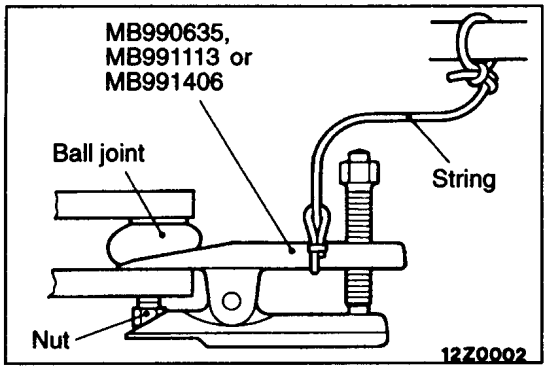
Caution
The part marked with * should be first temporarily tightened, then torqued to specification with the vehicle on the ground in unloaded condition.



REMOVAL SERVICE POINTS

◀A▶ LOWER ARM ASSEMBLY MOUNTING BOLT REMOVAL

Place mating marks on the lower arm and the eccentric cam bolt before removal.

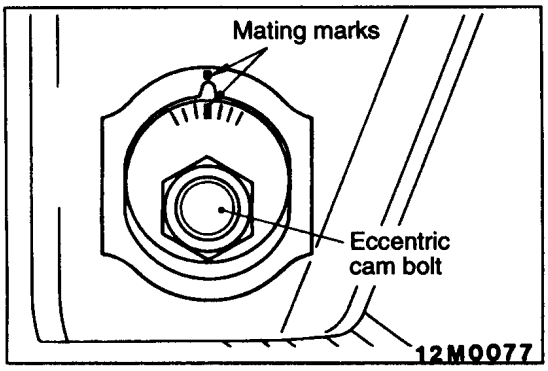


◀B▶ TOE CONTROL ARM AND KNUCKLE DISCONNECTION

Caution

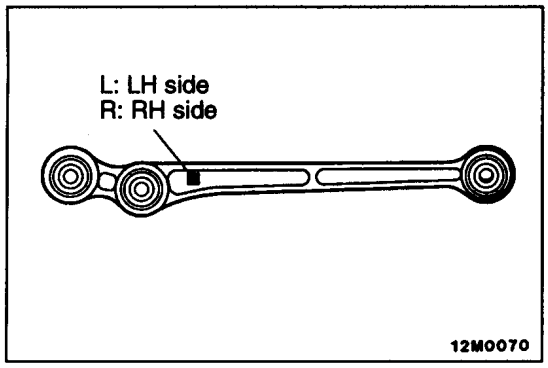
(1) Use the special tool to loosen the nut only; do not removal it from the ball joint.

(2) Tie the special tool with a cord not to let it fall off.



◀C▶ TOE CONTROL ARM ASSEMBLY MOUNTING BOLT REMOVAL

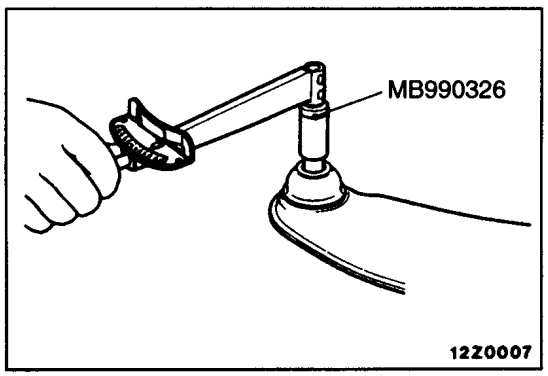
Place mating marks on the toe control arm and the eccentric cam bolt before removal.



INSTALLATION SERVICE POINT

▶A◀ LOWER ARM ASSEMBLY INSTALLATION

Install the lower arm assemblies according to the identification mark stamped in the illustrated position.



INSPECTION

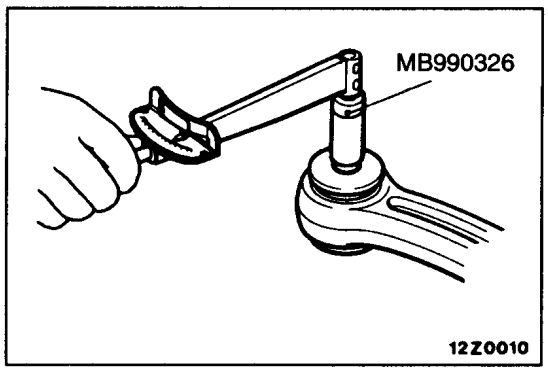
1. TOE CONTROL ARM BALL JOINT TURNING TORQUE CHECK

(1) After shaking the ball joint stud several times, install the nut to the stud and use the special tool to measure the turning torque of the ball joint.

Standard value: 0.5 – 2.5 Nm {5 – 25 kgf·cm}

(2) When the measured value exceeds the standard value, replace the toe control arm assembly.

(3) When the measured value is lower than the standard value, check that the ball joint turns smoothly without excessive play. If so, it is possible to use that ball joint.



2. TOE CONTROL ARM SLIDE BUSHING OPERATING TORQUE CHECK

(1) Insert a bolt into the slide bushing of the toe control arm. Fit a washer onto the bolt from the opposite end and screw a nut onto it. Turn the inner cylinder (together with the washer) several turns, then measure the toe control arm slide bushing operating torque using the special tool.

Standard value: 0.2 – 1.5 Nm {2 – 15 kgf·cm}

(2) If the measurement exceeds the standard value, replace the toe control arm assembly.

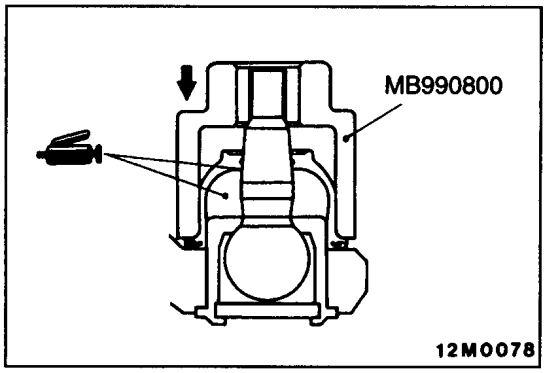
(3) If the measurement falls short of the standard value, check that the slide bushing turns smoothly without excessive play. If so, the slide bushing should still be in good condition for continued use.

3. TOE CONTROL ARM BALL JOINT DUST COVER CHECK

(1) Check the dust cover for cracks or damage by pushing it with a finger.

(2) If the dust cover is cracked or damaged, replace the toe control arm assembly.

NOTE
A cracked or damaged dust cover can lead to a damaged ball joint.
If the dust cover is damaged during servicing, replace it with a new one.



TOE CONTROL ARM BALL JOINT DUST COVER REPLACEMENT

Only when the dust cover is damaged accidentally during service work, follow these steps to replace it with a new one.

(1) Remove the dust cover.

(2) Pack and apply the specified grease to the inside and lips of the dust cover.

Molybdenum disulfide-base chassis grease:
SHOWA SHELL SEKIYU SUNLITE MB2, NISSEKI CLAKNOCK FL, or equivalent

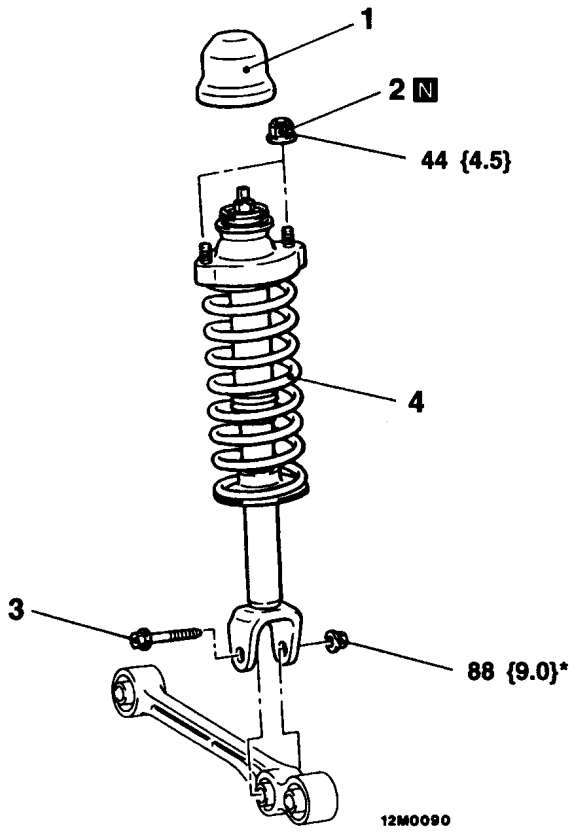
(3) Using the special tool, press the dust cover until it contacts the snap ring.

(4) Push the dust cover with a finger to ensure that it is free from cracks or damage.

SHOCK ABSORBER ASSEMBLY

REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation
- Trunk Room Side Trim Removal and Installation <GSR>



Unit: Nm {kgf·m}

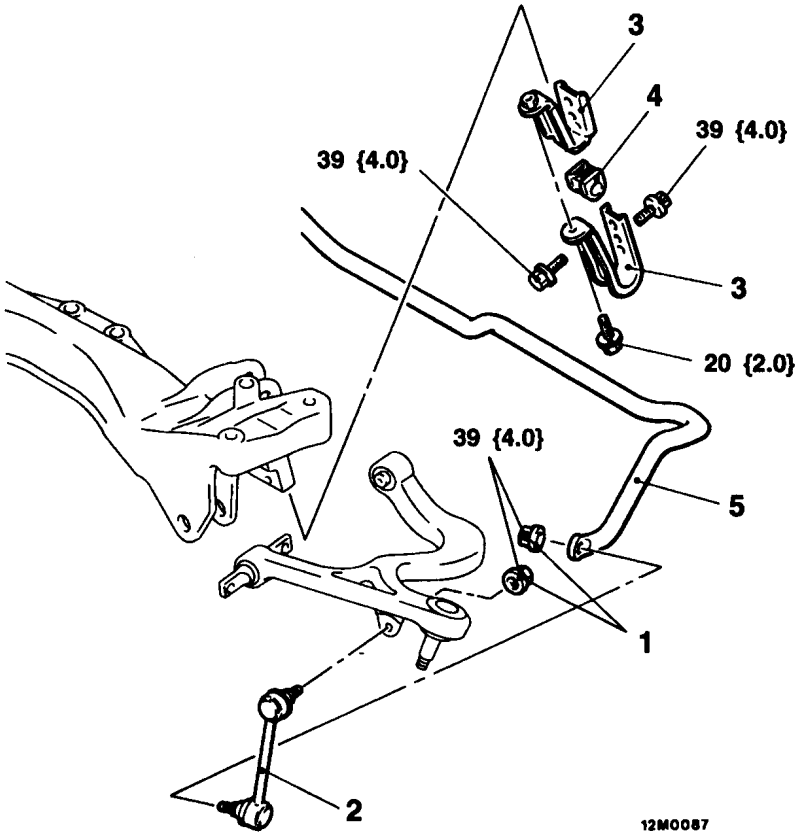
Removal steps
1. Cap
2. Shock absorber mounting nuts
3. Bolt
4. Shock absorber assembly

Caution
The part marked with * should be first temporarily tightened, then torqued to specification with the vehicle on the ground in unloaded condition.

STABILIZER BAR

REMOVAL AND INSTALLATION

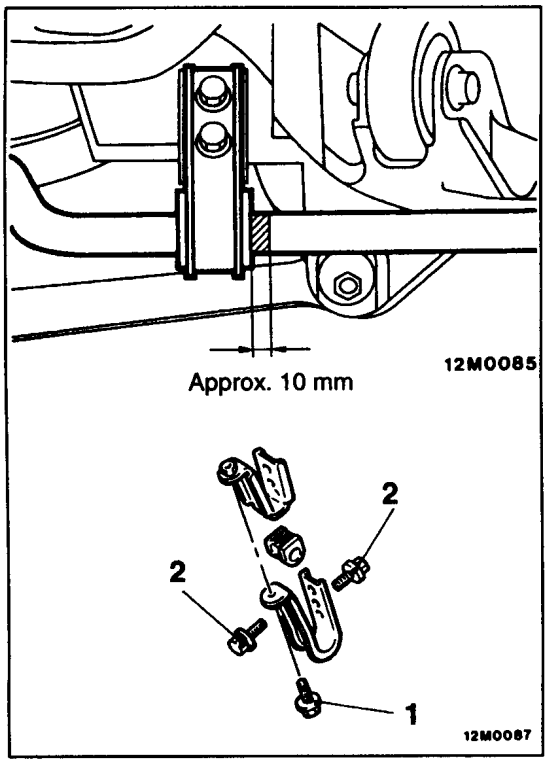
Post-installation Operation
- Check the Stabilizer Link Ball Joint Dust Cover for Cracks or Damage by Pushing it with Finger.



Unit: Nm {kgf·m}

Removal steps

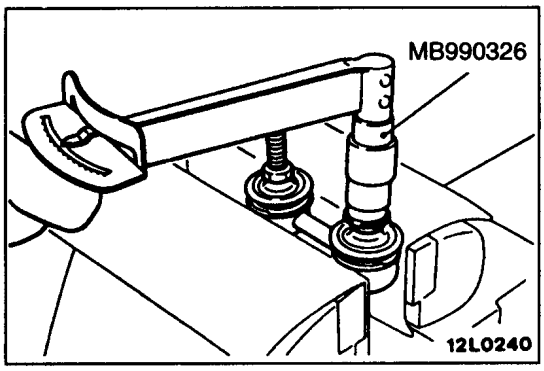
1. Stabilizer link mounting nuts
2. Stabilizer link
▶A◀ 3. Stabilizer bar bracket
▶A◀ 4. Bushing
▶A◀ 5. Stabilizer bar



INSTALLATION SERVICE POINT

▶A◀ STABILIZER BAR / BUSHING / STABILIZER BAR BRACKET INSTALLATION

Position the stabilizer bar such that the identification mark may protrude toward the vehicle center as shown in the figure, and tighten first the stabilizer bar bracket mounting bolt 1 then the mounting bolt 2.



INSPECTION

1. STABILIZER LINK BALL JOINT TURNING TORQUE CHECK

(1) After shaking the ball joint stud several times, install the nut to the stud and use the special tool to measure the turning torque of the ball joint.

Standard value: 1.7 – 3.1 Nm {17 – 32 kgf·cm}

(2) When the measured value exceeds the standard value, replace the stabilizer link.

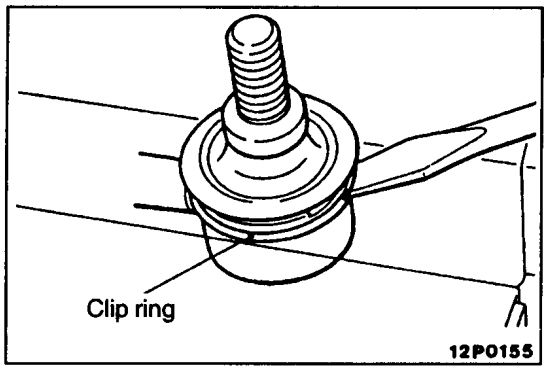
(3) When the measured value is lower than the standard value, check that the ball joint turns smoothly without excessive play. If so, it is possible to use that ball joint.

2. STABILIZER LINK BALL JOINT DUST COVER CHECK

(1) Check the dust cover for cracks or damage by pushing it with finger.

(2) If the dust cover is cracked or damaged, replace the stabilizer link.

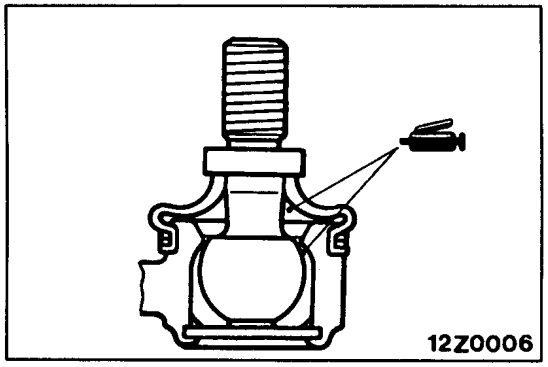
NOTE
Cracks or damage of the dust cover may cause damage of the ball joint. When it is damaged during service work, replace the dust cover.



STABILIZER LINK BALL JOINT DUST COVER REPLACEMENT

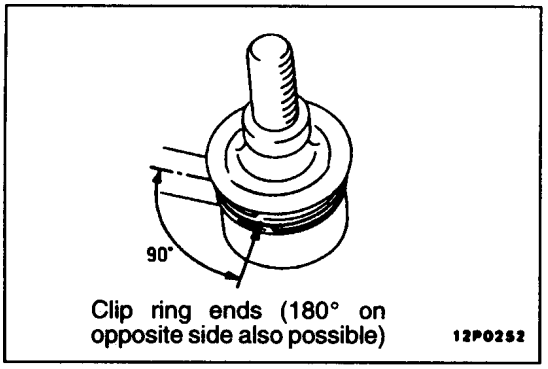
Only when the dust cover is damaged accidentally during service work, replace the dust cover as follows:

(1) Remove the clip ring and the dust cover.



(2) Apply the specified grease to the lip and inside of the dust cover.

Specified grease:
SHOWA SHELL SEKIYU VARIANT R-2 or equivalent



(3) Wrap plastic tape on the stabilizer link threads as shown in the illustration, and then install the dust cover to the stabilizer link.

(4) Secure the dust cover with the clip ring.
When installing the clip ring, align the ends at a 90° angle from the axis of the stabilizer link.

(5) Check the dust cover for cracks or damage by pushing it with finger.