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# REAR SUSPENSION

## CONTENTS

<b>GENERAL INFORMATION</b> .....	<b>2</b>	<b>UPPER ARM ASSEMBLY</b> .....	<b>8</b>
<b>SERVICE SPECIFICATIONS</b> .....	<b>3</b>	<b>TRAILING ARM ASSEMBLY</b> .....	<b>10</b>
<b>SPECIAL TOOLS</b> .....	<b>3</b>	<b>LOWER CONTROL ARM ASSEMBLY/TOE CONTROL ARM ASSEMBLY</b> .....	<b>12</b>
<b>ON-VEHICLE SERVICE</b> .....	<b>4</b>	<b>SHOCK ABSORBER ASSEMBLY</b> .....	<b>16</b>
Wheel Alignment Check and Adjustment .....	4	<b>STABILIZER BAR</b> .....	<b>19</b>
Ball Joint Dust Cover Check .....	5		
<b>REAR SUSPENSION ASSEMBLY</b> .....	<b>6</b>		

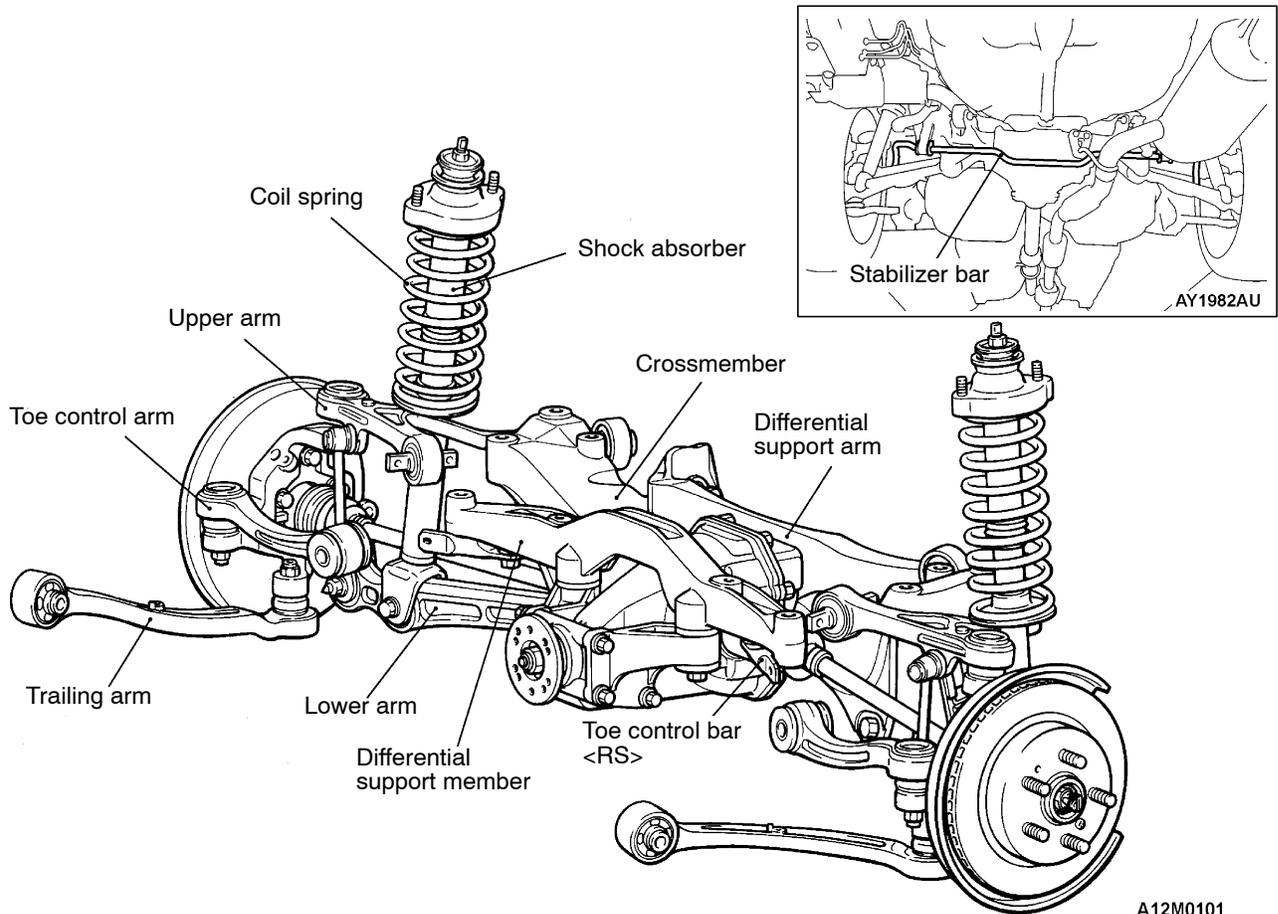
## GENERAL INFORMATION

A trailing arm type multi-link suspension has been adopted as the rear suspension. The shock absorber is a hydraulic, cylindrical double-acting type.

### COIL SPRING

Item	Specification
Wire diameter mm	9 - 12 <RS > 12 <RS-II>
Average diameter mm	88
Free length mm	287 <RS> 281 <RS-II (Vehicles without AYC)> 284 <RS-II (Vehicles with AYC)>

### CONSTRUCTION DIAGRAM



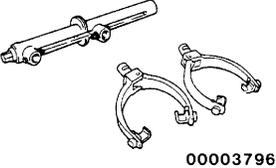
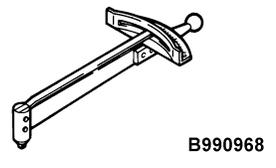
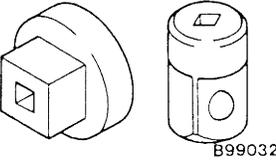
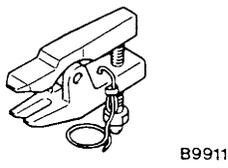
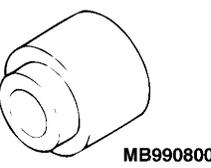
## SERVICE SPECIFICATIONS

Items		Standard value
TOE-IN	At the centre of tyre tread mm	$3 \pm 2$
	Toe-angle (per wheel)	$0^{\circ}09' \pm 06'$
Camber		$-1^{\circ}00' \pm 30'^*$
Thrust angle		$0^{\circ}00' \pm 0^{\circ}09'$
Upper arm ball joint rotation torque N·m		0.5 - 2.5
Trailing arm ball joint rotation torque N·m		0.5 - 2.5
Toe control arm ball joint rotation torque N·m		0.5 - 2.5
Toe control arm slide bushing rotation torque N·m		0.5 - 2.0
Lower arm pillow ball bushing rotation torque N·m		0.5 - 3.0
Stabilizer link ball joint turning torque N·m		1.7 - 3.1

### NOTE

\*: difference between right and left wheels: less than 30'

## SPECIAL TOOLS

Tool	Number	Name	Use
 <p>00003796</p>	A: MB991237 B: MB991239	A: Spring compressor body  B: Arm set	Coil spring compression
 <p>B990968</p>	MB990968	Torque wrench	Upper arm ball joint, lower arm ball joint and stabilizer link ball joint rotation starting torque measurement
 <p>B990326</p>	MB990326	Preload socket	
 <p>B991113</p>	MB990635, MB991113 or MB991406	Steering linkage puller	
 <p>MB990800</p>	MB990800	Ball joint remover & installer	Ball joint dust cover press-fitting

## ON-VEHICLE SERVICE

### WHEEL ALIGNMENT CHECK AND ADJUSTMENT

1. The rear suspension, wheels and tyres should be serviced to normal condition prior to measurement of wheel alignment.
2. Measure the wheel alignment with the vehicle parked on a level surface.

#### TOE-IN

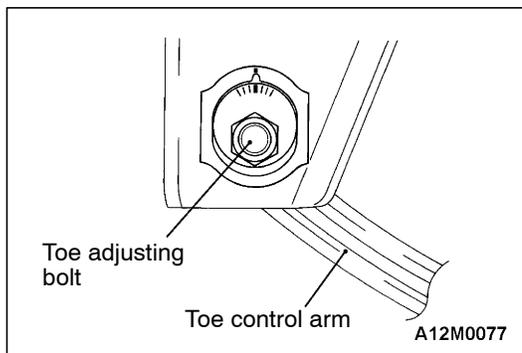
##### Standard value:

**At the centre of tyre tread  $3 \pm 2$  mm**

**Toe angle (per wheel)  $0^{\circ}09' \pm 06'$**

If toe-in is not within the standard value, adjust by following procedures.

- (1) Be sure to adjust the camber before making toe adjustment.



- (2) Carry out adjustment by turning the toe adjusting bolt (toe control arm mounting bolt which is located on the inner side of the body).

**Left wheel: Turning clockwise (+) toe-in**

**Right wheel: Turning clockwise (-) toe-in**

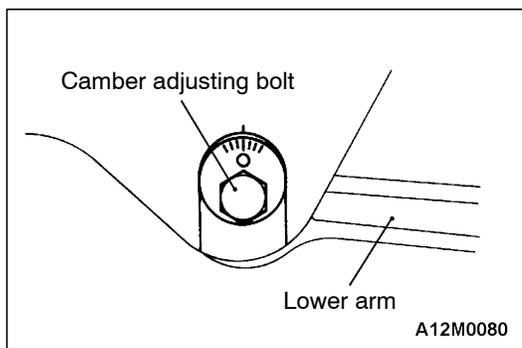
##### NOTE

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

#### CAMBER

**Standard value:  $-1^{\circ}00' \pm 30'$**

**(difference between right and left wheel: less than 30')**



If camber is not within the standard value, adjust by following procedures.

- (1) Carry out adjustment by turning the camber adjusting bolt (lower arm to rear crossmember mounting bolt).

**Left wheel: Turning clockwise (+) camber**

**Right wheel: Turning clockwise (-) camber**

##### NOTE

The scale has gradations of approximately 14'.

- (2) After adjusting the camber, the toe should be adjusted.

**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 or suspension arms.

**NOTE**

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



**Removal steps**

- 1. Fuel filler cap
- 2. Protector
- 3. Bolt
- 4. Shockabsorber mounting nut
- 5. Brake caliper assembly
- 6. Rear speed sensor  
<Vehicles with AYC>
- 7. Brake disc
- 8. Parking brake cable end
- 9. AYC fluid line connection  
<Vehicles with AYC>

- 10. Propeller shaft connection
- 11. Upper arm mounting bolt
- 12. Trailing arm mounting bolt
- 13. Toe control arm mounting bolt
- 14. Crossmember mounting bolt
- 15. Differential support assembly mounting bolt
- 16. Rear suspension assembly

**REMOVAL SERVICE POINTS**

**◀A▶ BRAKE CALIPER ASSEMBLY REMOVAL**

Remove the brake caliper assembly and support with wire.

**Caution: Brembo disc brake**

Take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.

**◀B▶ PROPELLER SHAFT SEPARATING**

1. Mark the mating mark on the companion flange of the difference career and the fringe yoke of the propeller shaft.
2. Remove the differential career mounting bolt and nut, propeller shaft mounting bolt and nut.

**◀C▶ CROSSMEMBER MOUNTING BOLT REMOVAL**

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

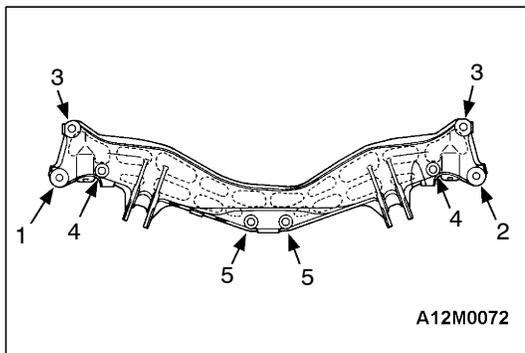
**INSTALLATION SERVICE POINTS**

**▶A◀ CROSSMEMBER MOUNTING BOLT INSTALLING**

Tighten the bolt by following the order shown as the illustration. The sort and size of each bolt is different, so tighten by following the table below.

**Note**

In order to keep the installing accuracy and to ease the installing, the attachment hall diameter of the cross member is changed on forward/rearward. So the tightening order of mounting bolt is stipulated.



A12M0072

No.	Sort of bolt	Size of bolt (Screw diameter × Length) mm
1, 2, 3	Flange bolt (with washer)	12 × 105
4	Bolt (with spring washer and washer)	12 × 152
5	Flange bolt (with washer)	12 × 70

►B◄ PROPELLER SHAFT CONNECTION

Install the difference career and propeller shaft by aligning the mating mark.

**Caution**

If there is oil or grease on the thread of the mounting bolt or nut, they will loosen. So after wiping out oil or grease of the thread, tighten the mounting bolt.

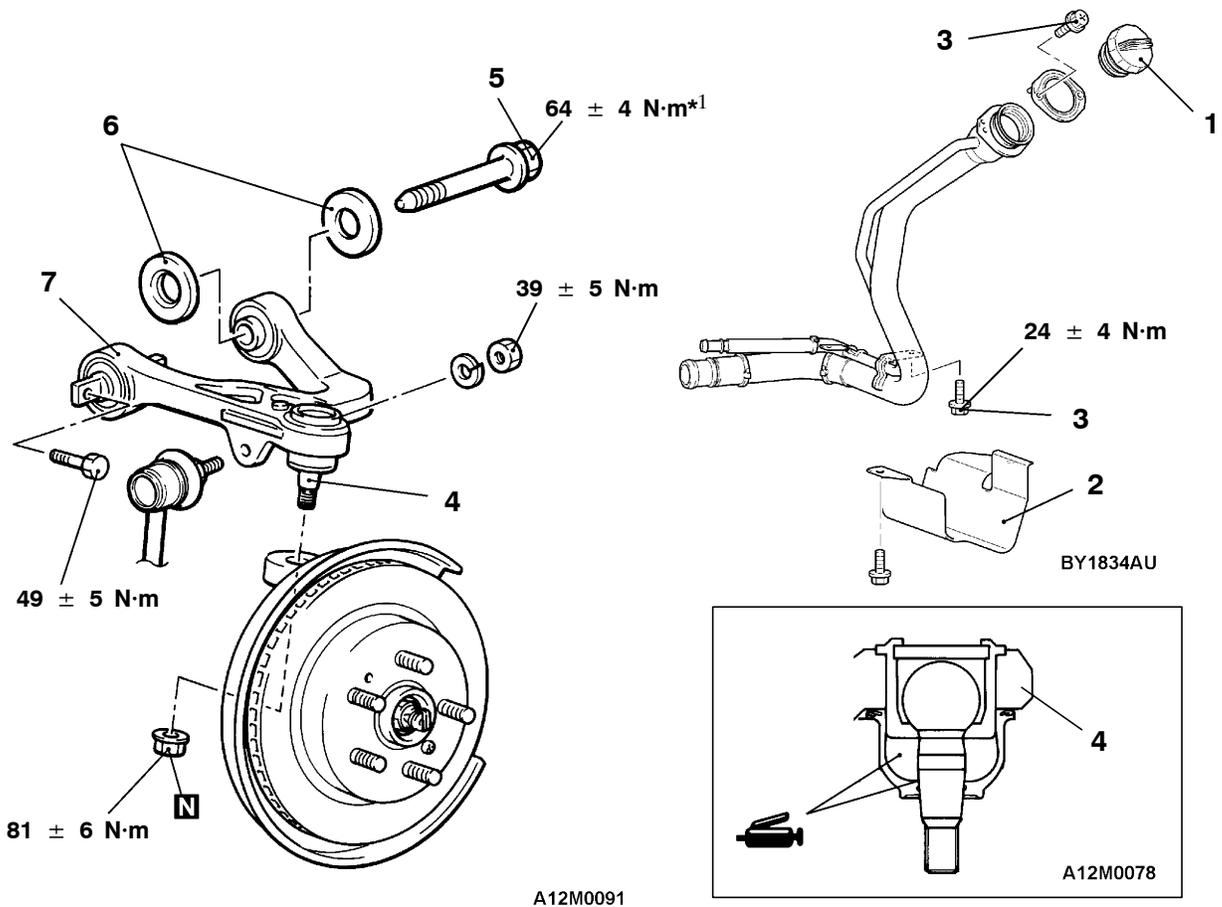
**UPPER ARM ASSEMBLY  
REMOVAL AND INSTALLATION**

**Caution**

1. If the vehicle is equipped with the Brembo disc brake, during maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.
2. \*1: To prevent bushings from breakage, the parts indicated by \* should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

**Post-installation Operations**

- Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.
- Wheel Alignment Check and Adjustment (Refer to P.34-4.)



A12M0091

A12M0078

**Removal steps**

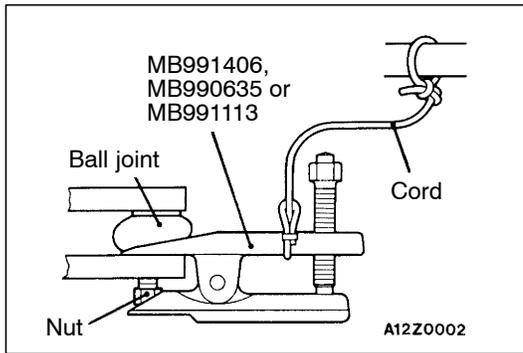
1. Fuel filler cap\*2
2. Protector\*2
3. Bolt\*2
4. Upper arm assembly and knuckle connection
5. Upper arm assembly mounting bolt

6. Stopper
7. Upper arm assembly

**Note**

Install/remove the parts with the mark "2" when installing/removing the LH side upper arm assembly.



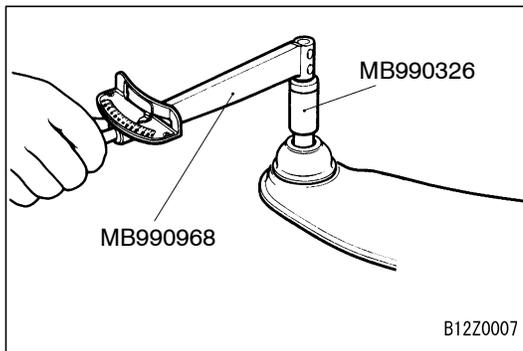


**REMOVAL SERVICE POINTS**

**◀▶ UPPER ARM BALL JOINT AND KNUCKLE DISCONNECTION**

**Caution**

1. To prevent the ball joint thread from damage, only loosen but do not remove the nut securing the upper arm to the knuckle from the ball joint and use the special tool.
2. The special tool should be suspended from a cord to prevent it from being dropped.



**INSPECTION**

**UPPER ARM BALL JOINT ROTATION TORQUE CHECK**

1. After shaking the upper arm ball joint stud several times, use the special tool to measure the rotation torque of the upper arm ball joint.

**Standard value: 0.5 - 2.5 N·m**

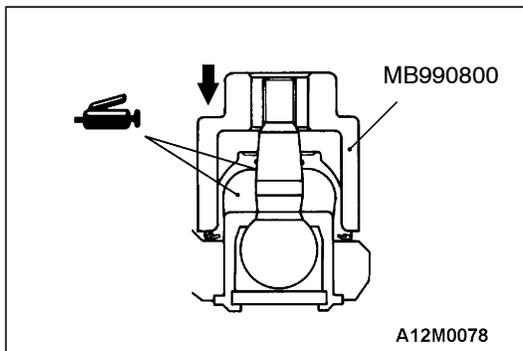
2. When the measured value exceeds the standard value, replace the upper arm assembly.
3. When the measured value is lower than the standard value, check that the upper arm ball joint turns smoothly without excessive play. If there is no excessive play, the ball joint can be reused.

**UPPER ARM 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 upper arm assembly.

**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.



**UPPER ARM 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 dust cover.
2. Fill the multipurpose grease in the dust cover and lubricate the lip. (Amount of filling grease in the dust cover: approx. 7g)
3. Using the special tool, punch the dust cover until it contacts the snap ring.
4. Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.

## TRAILING ARM ASSEMBLY

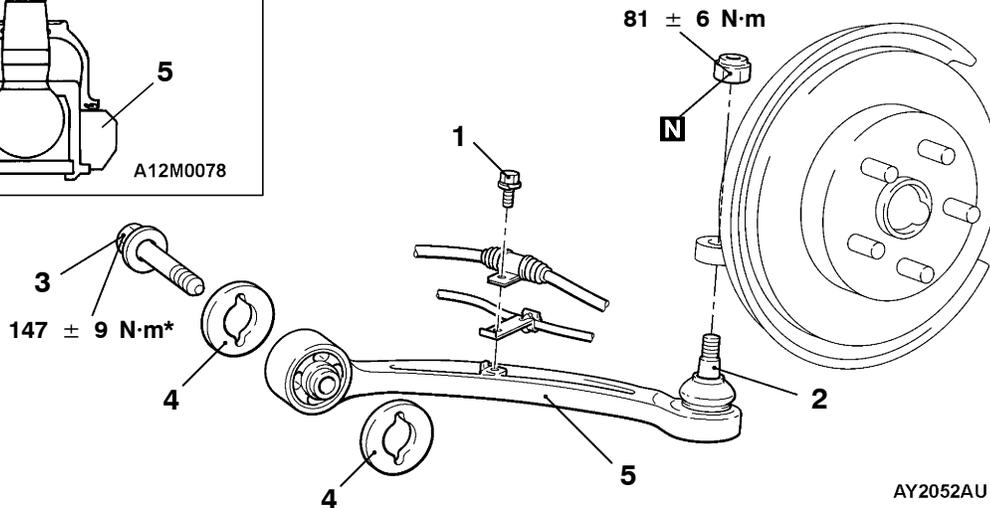
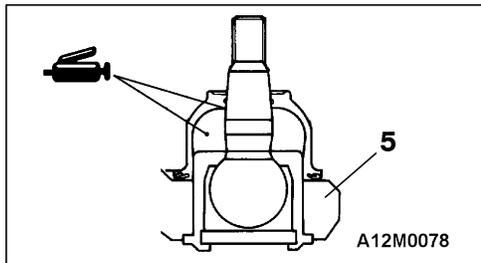
## REMOVAL AND INSTALLATION

## Caution

1. If the vehicle is equipped with the Brembo disc brake, during maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.
2. \*:To prevent bushings from breakage, the parts indicated by \* should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

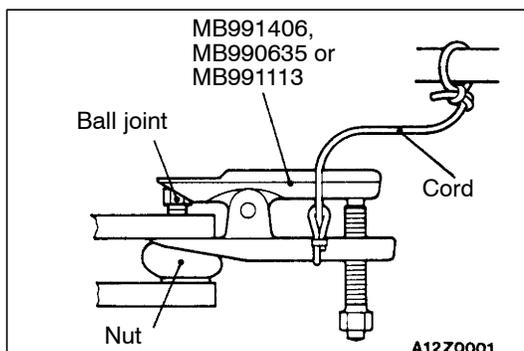
## Post-installation Operations

- Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.
- Wheel Alignment Check and Adjustment (Refer to P.34-4.)



## Removal steps

- |     |  |     |  |
|-----|--|-----|--|
| ◀A▶ | <ol style="list-style-type: none"> <li>1. Parking brake cable bolt</li> <li>2. Trailing arm assembly and knuckle connection</li> </ol> | ▶B▶ | <ol style="list-style-type: none"> <li>3. Trailing arm assembly mounting bolt</li> <li>4. Stopper</li> <li>5. Trailing arm assembly</li> </ol> |
|-----|--|-----|--|

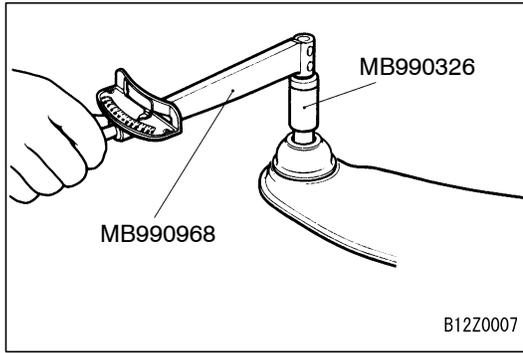


## REMOVAL SERVICE POINTS

## ◀A▶ TRAILING ARM ASSEMBLY AND KNUCKLE DISCONNECTION

## Caution

1. To prevent the ball joint thread from damage, only loosen but do not remove the nut securing the upper arm to the knuckle from the ball joint and use the special tool.
2. The special tool should be suspended from a cord to prevent it from being dropped.



## INSPECTION

### TRAILING ARM BALL JOINT ROTATION TORQUE CHECK

1. After shaking the trailing arm ball joint stud several times, use the special tool to measure the rotation torque of the trailing arm ball joint.

**Standard value: 0.5 - 2.5 N·m**

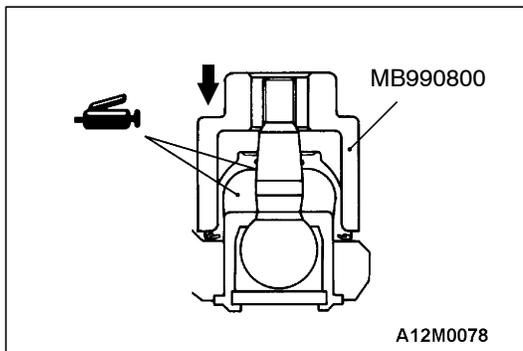
2. When the measured value exceeds the standard value, replace the trailing arm assembly.
3. When the measured value is lower than the standard value, check that the trailing arm ball joint turns smoothly without excessive play. If there is no excessive play, the ball joint can be reused.

### TRAILING ARM 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 trailing arm assembly.

#### 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.



### TRAILING ARM 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 dust cover.
2. Fill the multipurpose grease in the dust cover and lubricate the lip. (Amount of filling grease in the dust cover: approx. 7g)
3. Using the special tool, punch the dust cover until it contacts the snap ring.
4. Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.

# LOWER CONTROL ARM ASSEMBLY/TOE CONTROL ARM ASSEMBLY

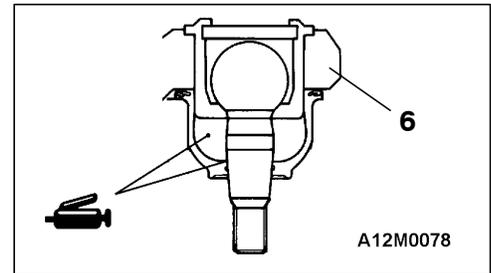
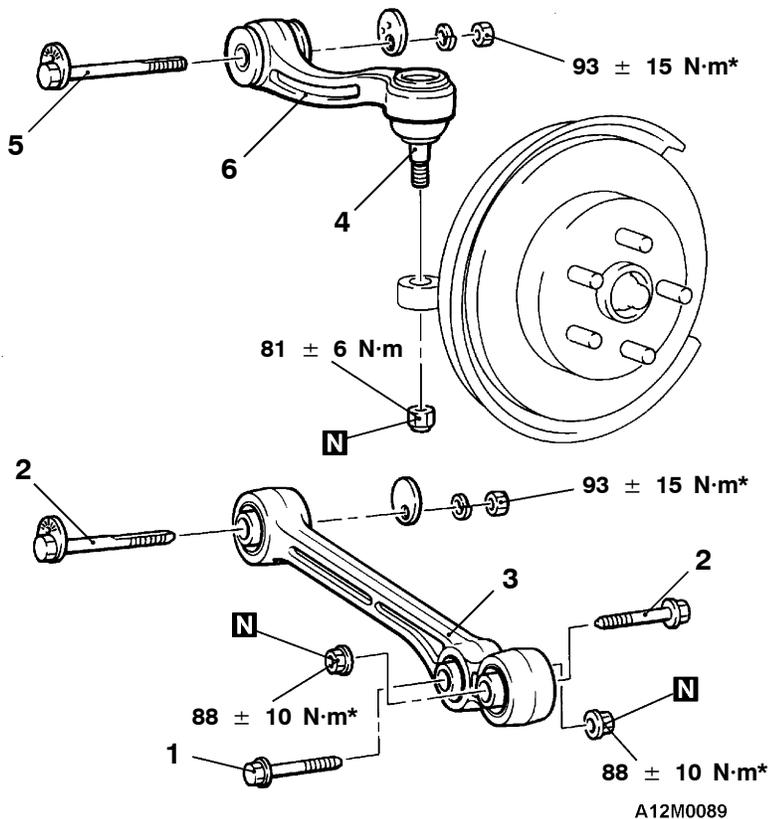
## REMOVAL AND INSTALLATION

### Caution

1. If the vehicle is equipped with the Brembo disc brake, during maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.
2. \*:To prevent bushings from breakage, the parts indicated by \* should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

### Post-installation Operations

- Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.
- Wheel Alignment Check and Adjustment (Refer to P.34-4.)



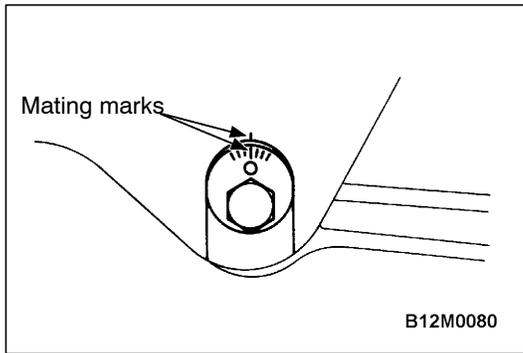
### Lower arm assembly removal steps

1. Lower arm assembly to shock absorber connecting bolt
2. Lower arm assembly mounting bolt
3. Lower arm assembly



### Toe control arm assembly removal steps

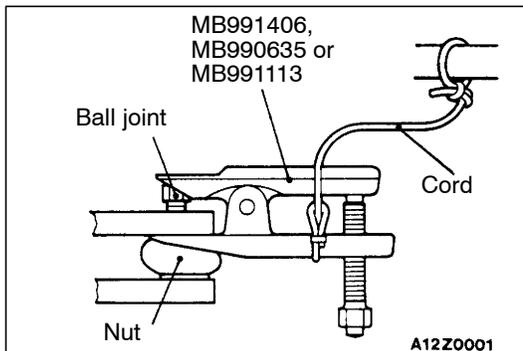
4. Toe control arm assembly and knuckle connection
5. Toe control arm assembly mounting bolt
6. Toe control arm assembly



## REMOVAL SERVICE POINTS

### ◀A▶ LOWER ARM ASSEMBLY MOUNTING BOLT REMOVAL

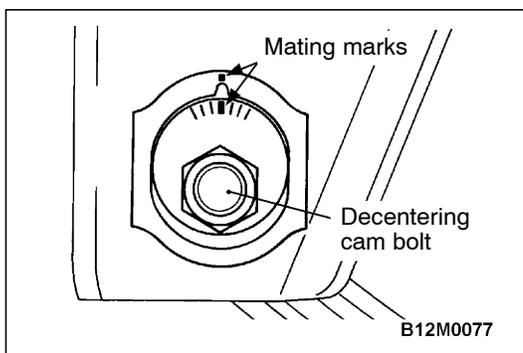
Mark the mating marks on the lower arm and the decentering cam bolt, then remove the lower arm and the decentering cam bolt.



### ◀B▶ TOE CONTROL ARM ASSEMBLY AND KNUCKLE DISCONNECTION

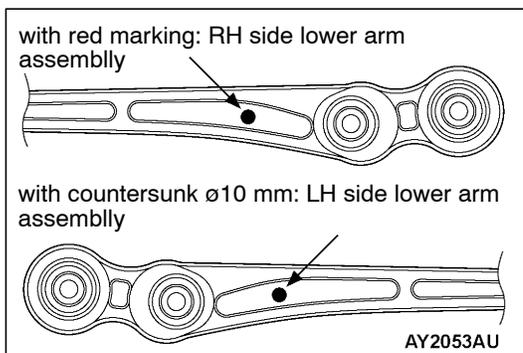
#### Caution

1. To prevent the ball joint thread from damage, only loosen but do not remove the nut securing the upper arm to the knuckle from the ball joint and use the special tool.
2. The special tool should be suspended from a cord to prevent it from being dropped.



### ◀C▶ TOE CONTROL ARM ASSEMBLY MOUNTING BOLT REMOVAL

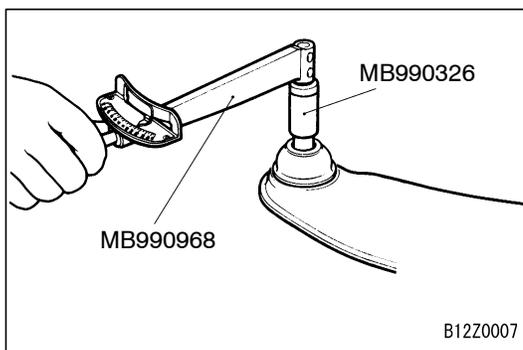
Mark the mating mark on the toe control arm and the decentering cam bolt, then remove the toe control arm and the decentering cam bolt.



## INSTALLATION SERVICE POINTS

### ▶A◀ LOWER ARM ASSEMBLY INSTALLATION

Check the identification mark, install the lower arm assembly.



## INSPECTION

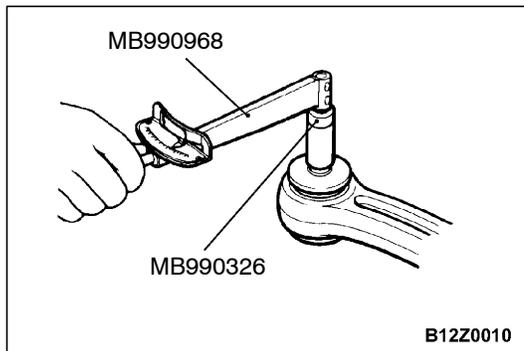
### TOE CONTROL ARM BALL JOINT ROTATION TORQUE CHECK

1. After shaking the toe control arm ball joint stud several times, use the special tool to measure the rotation torque of the toe control arm ball joint.

**Standard value: 0.5 - 2.5 N·m**

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 toe control arm ball joint turns smoothly without excessive play. If there is no excessive play, the ball joint can be reused.



#### TOE CONTROL ARM SLIDE BUSHING ROTATION TORQUE CHECK

1. After inserting the bolt to the toe control arm slide bush and attaching the washer in the opposite direction, install the nut. After rotating the inner sleeve (include the washer) several times, measure the rotation torque of the toe control arm slide bush by using the special tool.

**Standard value: 0.5 - 2.0 N·m**

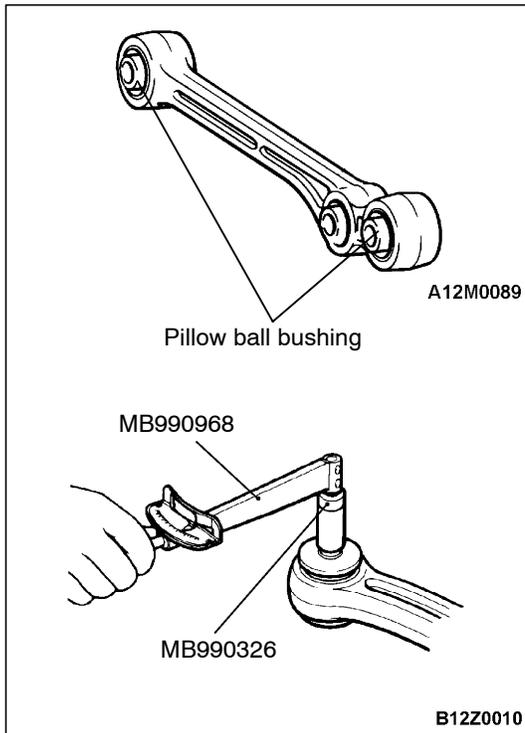
2. When the measured value exceeds the standard value, replace the toe control arm assembly.
3. When the measured value is lower than the standard value, check that the toe control arm slide bushing turns smoothly without excessive play. If there is no excessive play, the slide bushing can be reused.

#### TOE CONTROL ARM 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 trailing arm assembly.

#### 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.

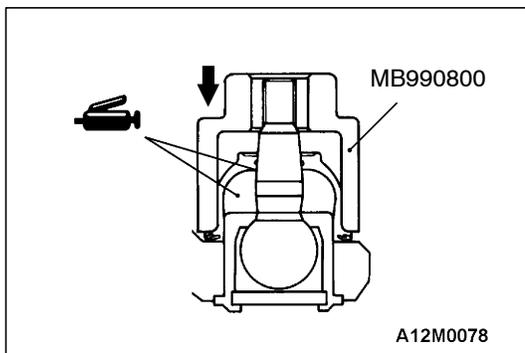


**LOWER ARM PILLOW BALL ROTATION TORQUE CHECK**

1. Insert the bolt to the lower arm pillow ball bush, in the opposite direction, insert the washer then install the nut. After rotating the inner sleeve (contained washer) several times, measure the rotation torque of the lower arm below ball bush using the special tool.

**Standard value: 0.5 - 3.0 N·m**

2. When the measured value exceeds the standard value, replace the lower arm assembly.
3. When the measured value is lower than the standard value, check that the lower arm pillow ball bushing turns smoothly without excessive play. If there is no excessive play, the pillow ball bushing can be reused.



**TOE CONTROL ARM 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 dust cover.
2. Fill the multipurpose grease in the dust cover and lubricate the lip. (Amount of filling grease in the dust cover: approx. 7g)
3. Using the special tool, punch the dust cover until it contacts the snap ring.
4. Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.

## SHOCK ABSORBER ASSEMBLY

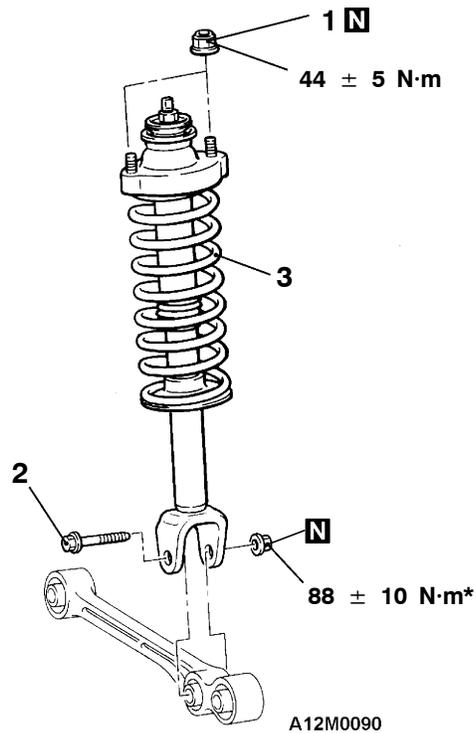
### REMOVAL AND INSTALLATION

#### Caution

1. If the vehicle is equipped with the Brembo disc brake, during maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.
2. \*:To prevent bushings from breakage, the parts indicated by \* should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

#### Pre-removal and Post-installation Operations

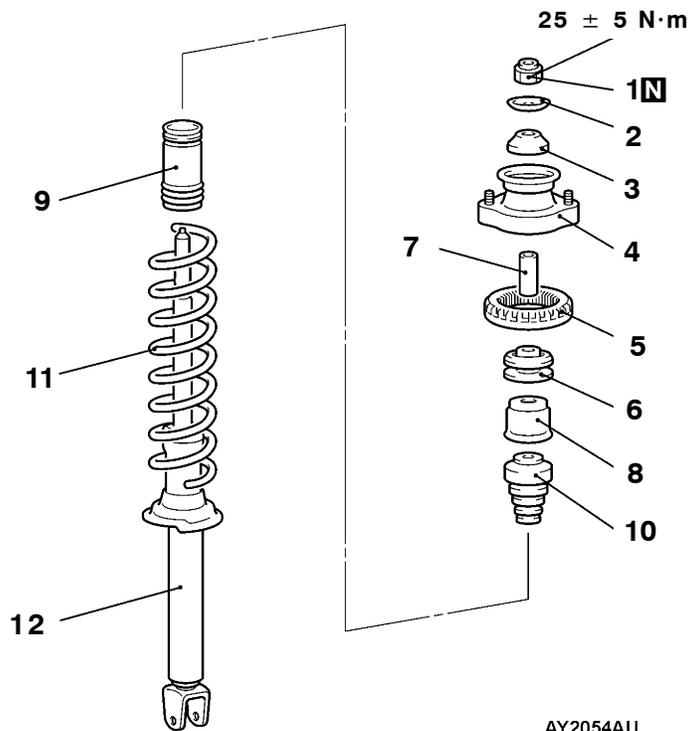
Trunk room side trim removal and installation <Vehicles with AYC> (Refer to GROUP52A.)



#### Removal steps

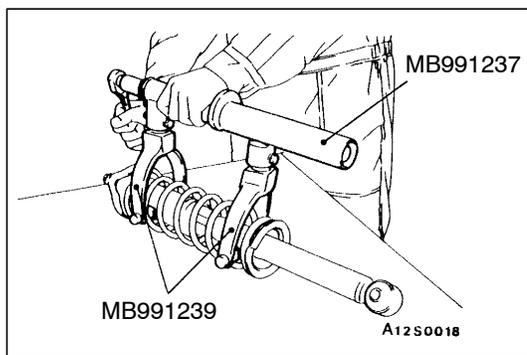
1. Self locking flange nut
2. Bolt
3. Shock absorber assembly

DISASSEMBLY AND REASSEMBLY



- Disassembly steps**
- ◀A▶ ▶D▶ 1. Self-locking nut
  - 2. Washer
  - ▶C▶ ▶B▶ 3. Upper bushing B
  - ▶B▶ 4. Bracket assembly
  - 5. Upper spring pad
  - 6. Upper bushing A

- 7. Collar
- 8. Cup assembly
- 9. Dust cover
- ▶A▶ 10. Bump rubber
- 11. Coil spring
- 12. Shock absorber



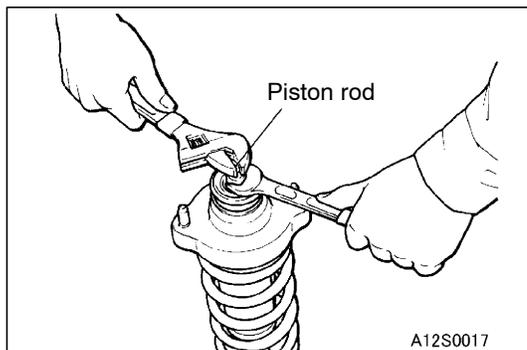
DISASSEMBLY SERVICE POINT

◀A▶ SELF-LOCKING NUT REMOVAL

1. Use the special tools to compress the coil spring.

**Caution**

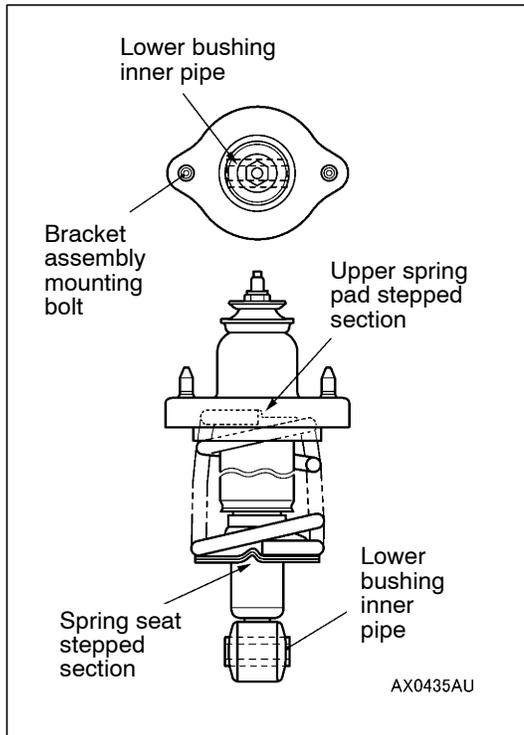
- (1) Install the special tools evenly, and so that the maximum length will be attained within the installation range.
- (2) Do not use an impact wrench as it will cause the bolt of the special tool to be seized.



2. Holding the piston rod, remove the self-locking nut.

**Caution**

To prevent the piston rod lock nut inside the strut from loosening, do not use an impact wrench when the self-locking nut is loosened.



## REASSEMBLY SERVICE POINTS

### ►A◄ COIL SPRING INSTALLATION

1. Use the special tools (MB991237, MB991239) to compress the coil spring, and install it to the spring seat of the shock absorber.

#### Caution

**Do not use an impact wrench as it will cause the bolt of the special tool to be seized.**

2. Align the end of the coil spring with the stepped section of the spring seat of the shock absorber.

### ►B◄ UPPER SPRING PAD INSTALLATION

Align the stepped section of the upper spring pad with the end of the coil spring, and install the upper spring pad.

### ►C◄ BRACKET ASSEMBLY INSTALLATION

Install the bracket assembly so that the lower bushing inner pipe of the shock absorber and the line between the bracket mounting bolts are straight when looking from above.

### ►D◄ SELF-LOCKING NUT INSTALLATION

1. Provisionally tighten the self-locking nut.
2. After removing the special tools (MB991237, MB991239), tighten the self-locking nut to the specified torque.

**Specified torque: 25 ± 5 N·m**

#### Caution

**To prevent the piston rod lock nut inside the strut from loosening, do not use an impact wrench when the self-locking nut is tightened.**

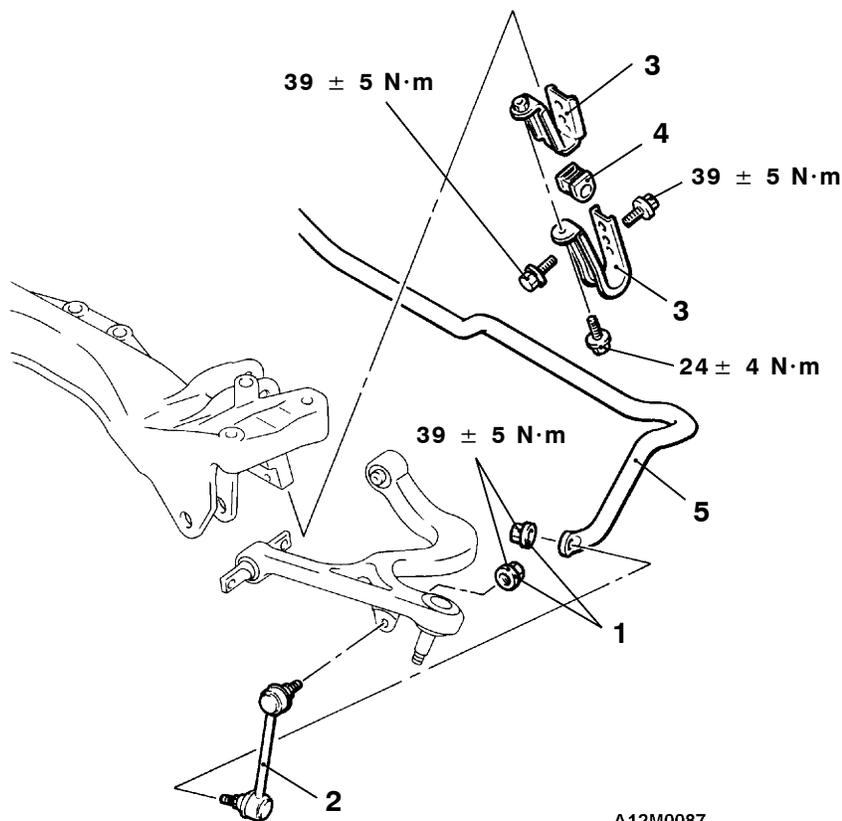
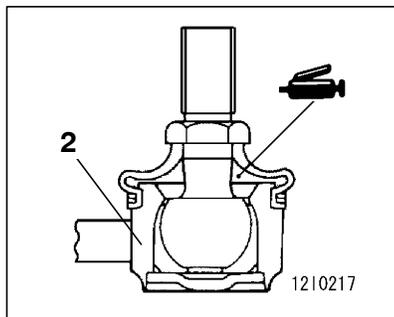
# STABILIZER BAR

## REMOVAL AND INSTALLATION

### Caution

If the vehicle is equipped with the Brembo disc brake, during maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And if there is brake fluid on the caliper, wipe out quickly.

**Post-installation Operations**  
 Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.

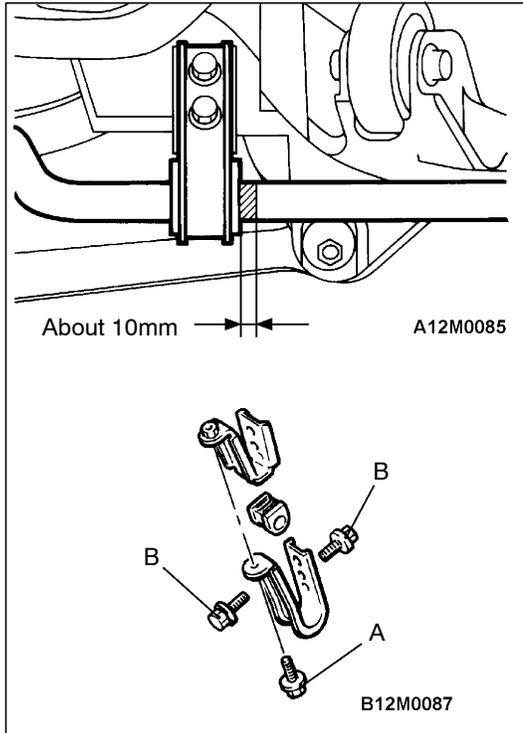


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### Removal steps

- 1. Stabilizer link mounting nut
- 2. Stabilizer link
- ▶A◀ 3. Stabilizer bar bracket

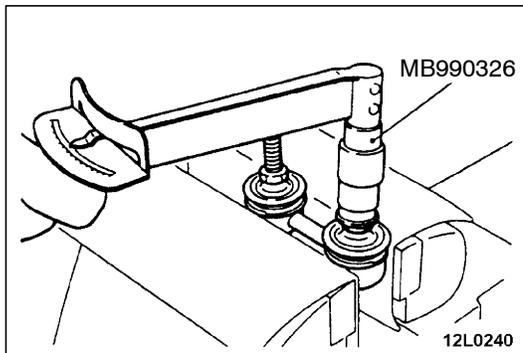
- ▶A◀ 4. Bushing
- ▶A◀ 5. Stabilizer bar



## INSTALLATION SERVICE POINTS

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

Align the stabilizer bar until the identification color of the stabilizer bar is out of the dimension shown as the illustration from the bush to the vehicle center, after tightening the stabilizer bracket mounting bolt A, tighten the mounting bolt B.



## INSPECTION

### STABILIZER LINK BALL JOINT TURNING TORQUE CHECK

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

**Standard value: 1.7 - 3.1 N·m**

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 reuse that ball joint.

### 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.

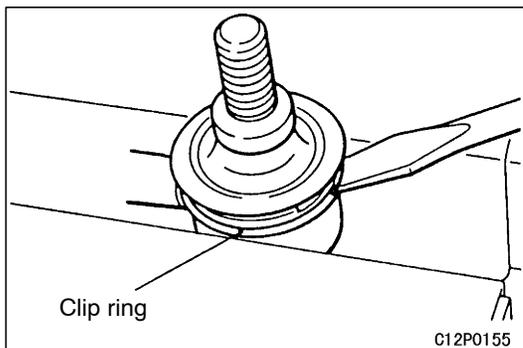
#### NOTE

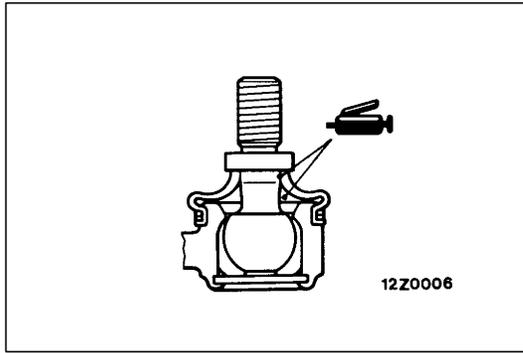
Cracks or damage of the dust cover may cause damage of the ball joint. When it is damaged during service work, replace the dust cover.

### STABILIZER LINK BALL JOINT DUST COVER REPLACEMENT

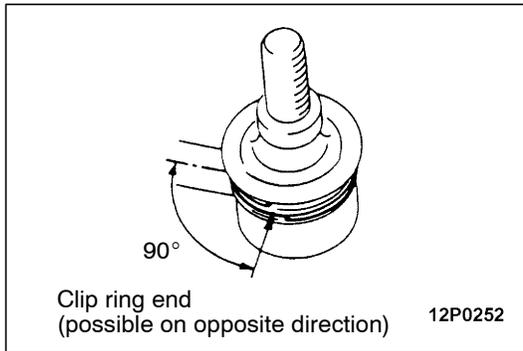
Only when the dust cover is damaged accidentally during service work, replace the dust cover as follows:

1. Remove the clip ring and the dust cover.





2. Apply multipurpose grease to the inside of the dust cover.



3. Wrap plastic tape around the stabilizer link stud, and then install the dust cover to the stabilizer link.
4. Secure the dust cover by the clip ring. Then install the clip ring end in order to position on 90 degrees toward the axis of the link.
5. Check the dust cover for cracks or damage by pushing it with finger.

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## NOTES