

## GENERAL INFORMATION

A multi-link type double wishbone independent suspension has been adopted as the rear suspension. Because the left and right wheels move independently with almost no change in tyre posture, the tyres contact the ground firmly, providing excellent steering stability as well as offering improved riding comfort.

### COIL SPRING

<GENERAL EXPORT (EXCEPT BRAZIL, TAIWAN, HONG KONG, SOUTH AFRICA), GCC, AUSTRALIA>

Item	Short wheelbase-GL	Short wheelbase-GLS	Long wheelbase-GLX, GLS	Long wheelbase-GL
Wire diameter × average diameter × free length mm	16 × 133 × 330	17 × 134 × 336	18 × 134 × 337	17 × 134 × 331

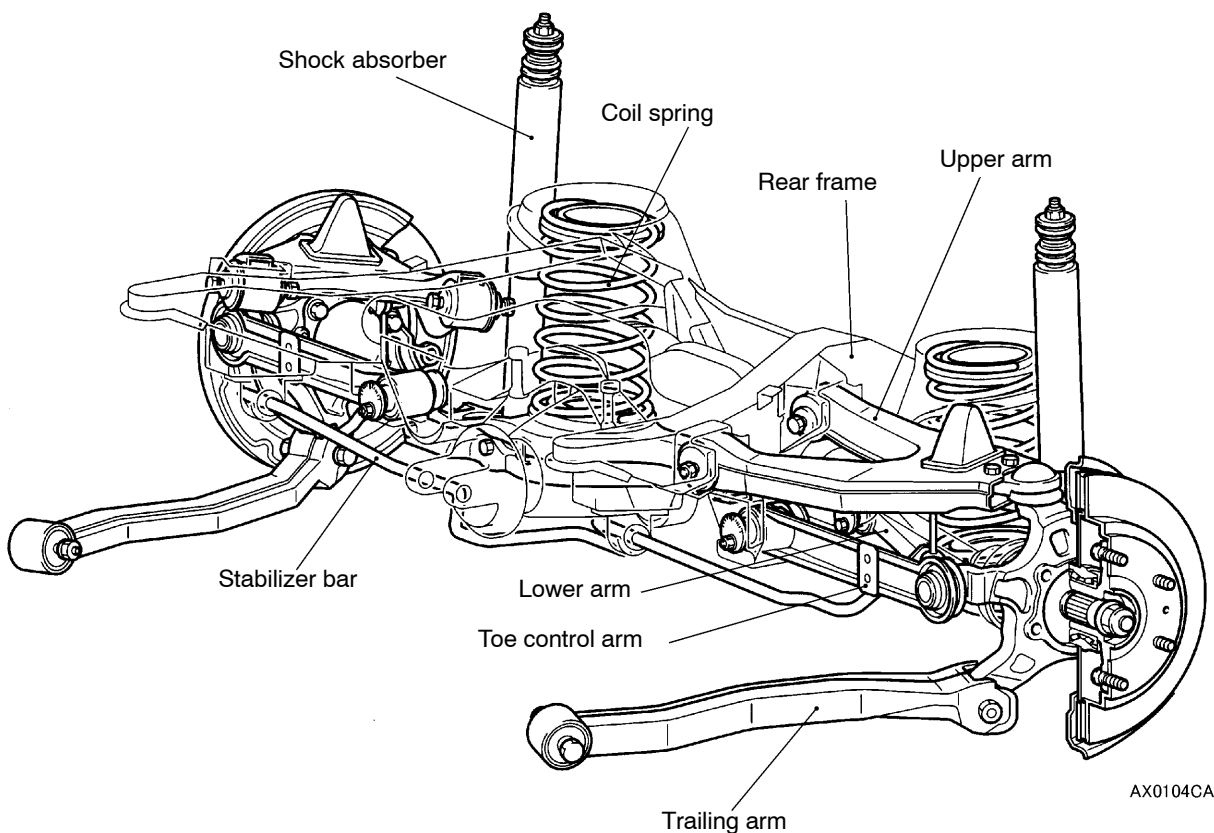
<BRAZIL, TAIWAN, HONG KONG>

Item	Specification
Wire diameter × average diameter × free length mm	18 × 134 × 337

<SOUTH AFRICA>

Item	Short wheelbase	Long wheelbase
Wire diameter × average diameter × free length mm	17 × 134 × 336	18 × 134 × 337

## CONSTRUCTION DIAGRAM



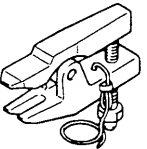
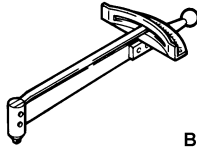
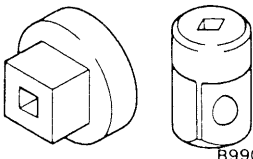
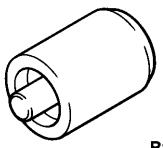
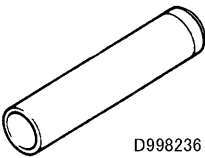
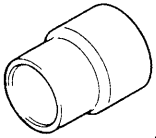
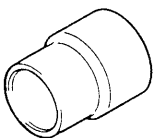
## SERVICE SPECIFICATIONS

Items		Standard value
Toe-in	At the centre of tyre tread mm	$3 \pm 3$
	Toe-angle (per wheel)	$1^{\circ} 06' \pm 1^{\circ} 06'$
Camber		$0^{\circ} \pm 30'$ *
Thrust angle		$0^{\circ} \pm 9'$
Upper arm ball joint rotation torque N·m		0.5 – 3.0
Stabilizer link ball joint turning torque N·m		0.5 – 2.0
Toe control arm ball joint turning torque N·m		1.0 – 2.5

### NOTE

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

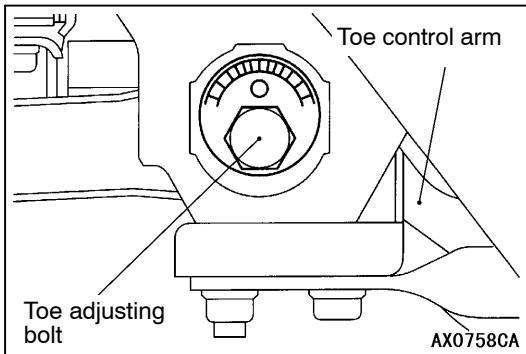
# SPECIAL TOOLS

Tool	Number	Name	Use
 B991113	MB990635, MB991113 or MB991406	Steering linkage puller	Ball joint and knuckle disconnection
 B990968	MB990968	Torque wrench	Upper arm ball joint, lower arm ball joint and stabilizer link ball joint rotation starting torque measurement
 B990326	MB990326	Preload socket	
 B990880	MB990881	Rear suspension bushing arbor	Lower arm bushing removal and press-fitting
 D998236	MD998236	Output shaft bear- ing installer	Trailing arm bushing removal and press-fitting
 B990799	MB990799	Ball joint remover & installer	Upper arm ball joint dust cover press-in
 B990799	MB990800	Ball joint remover & installer	Toe control arm ball joint dust cover press-in

## 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  $3 \pm 3$  mm**

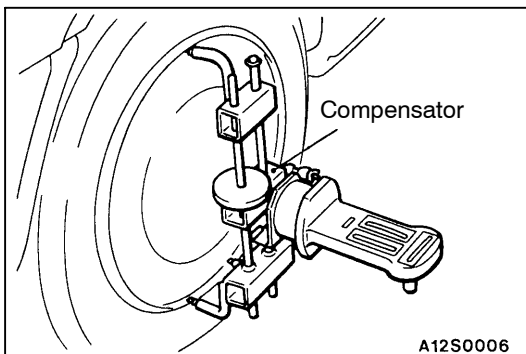
**Toe angle (per wheel)  $1^{\circ}06' \pm 1^{\circ}06'$**

If toe-in 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 faces the inside of the body).

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

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

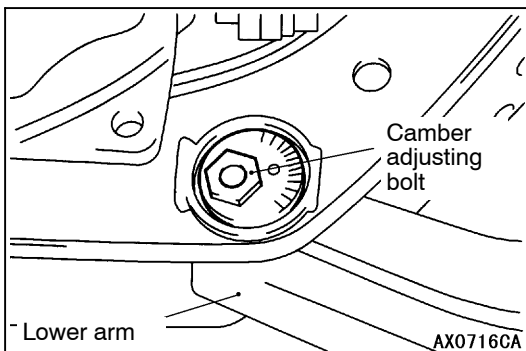


#### CAMBER

Use the compensator to measure camber.

##### Standard value:

**Camber  $0^{\circ} \pm 30'$  (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 of the lower arm.

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

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

- (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 upper arm ball joint assembly, toe control arm ball joint assembly or the stabilizer link.

**NOTE**

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

# UPPER ARM ASSEMBLY

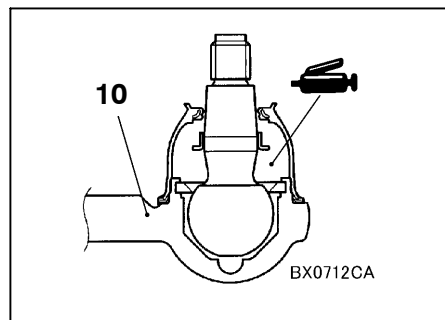
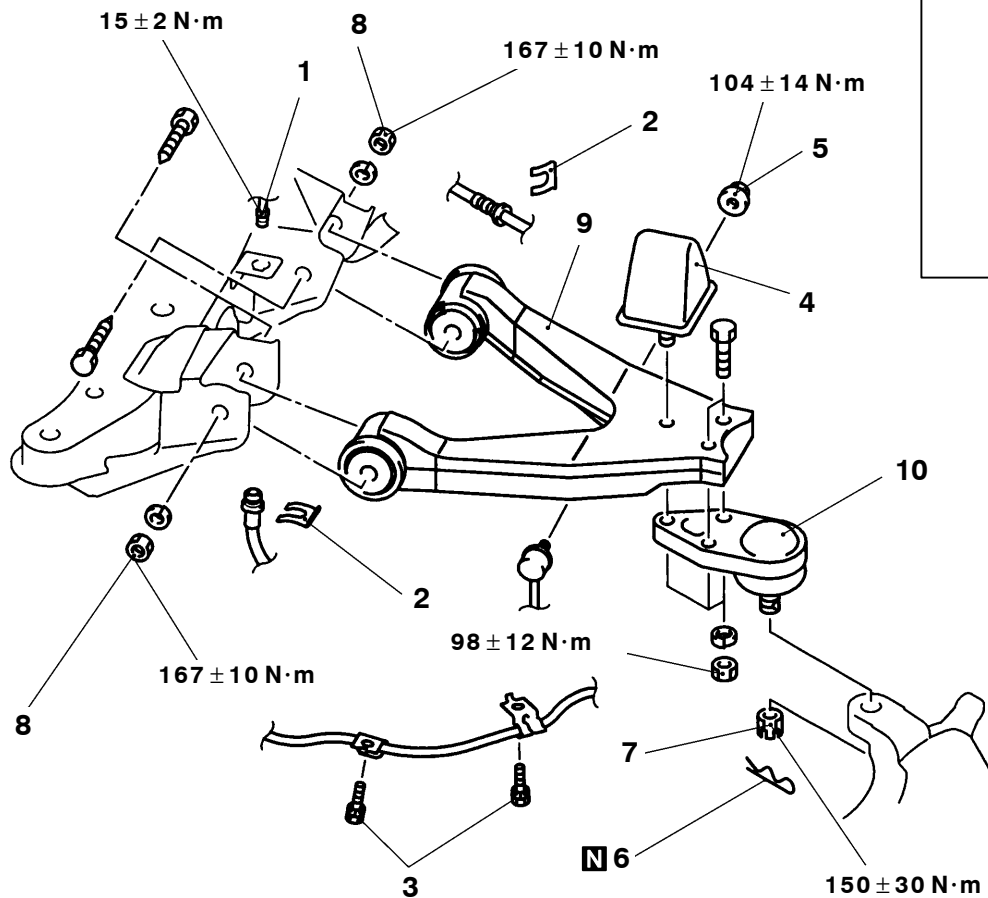
## REMOVAL AND INSTALLATION

### Pre-removal Operations

Brake Fluid Draining

### Post-installation Operations

- Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.
- Brake Fluid Supplying and Bleeding (Refer to GROUP 35A – On-vehicle Service)
- Wheel Alignment Check and Adjustment (Refer to P.34-5.)

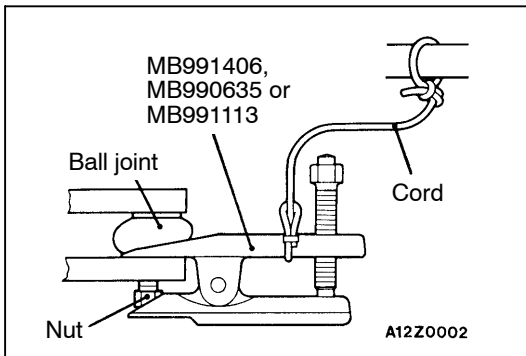


### Removal steps

1. Brake pipe connection
2. Clip
3. Rear wheel speed sensor and upper arm assembly connection <vehicles with ABS>
4. Bump stopper
5. Stabilizer link and upper arm assembly connection.



6. Split pin
7. Upper arm ball joint and knuckle connection
8. Upper arm assembly and rear frame connection
9. Upper arm
10. Upper arm ball joint



## REMOVAL SERVICE POINTS

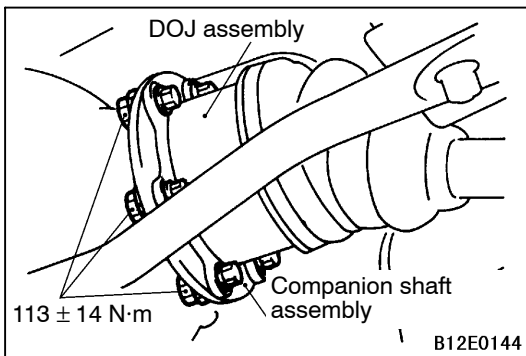
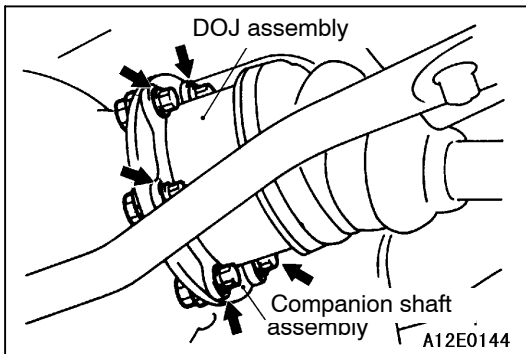
### ◀A▶ UPPER ARM BALL JOINT AND KNUCKLE DISCONNECTION

#### 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.

### ◀B▶ UPPER ARM ASSEMBLY AND REAR FRAME DISCONNECTION

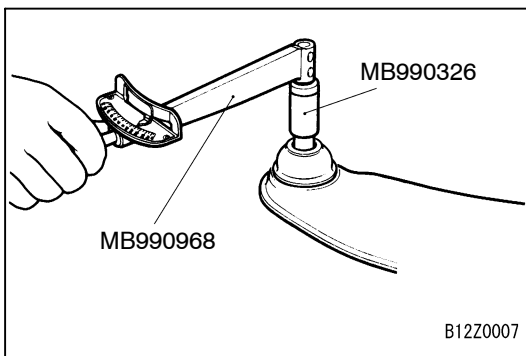
Disconnect the connection of the DOJ assembly and the companion shaft assembly.



## INSTALLATION SERVICE POINT

### ▶A◀ UPPER ARM ASSEMBLY AND REAR FRAME CONNECTION

After installing the upper arm mounting bolt, tighten the connecting bolt of the DOJ assembly and the companion shaft assembly to the specified torque.



## 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 – 3.0 N·m**

2. When the measured value exceeds the standard value, replace the upper arm ball joint 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.

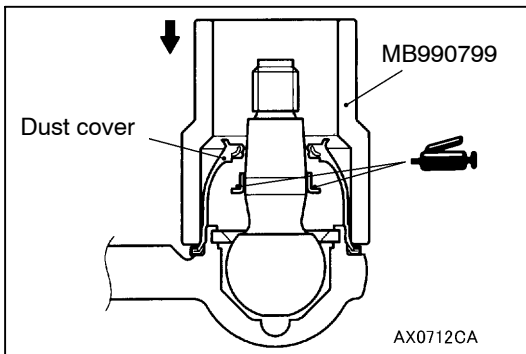
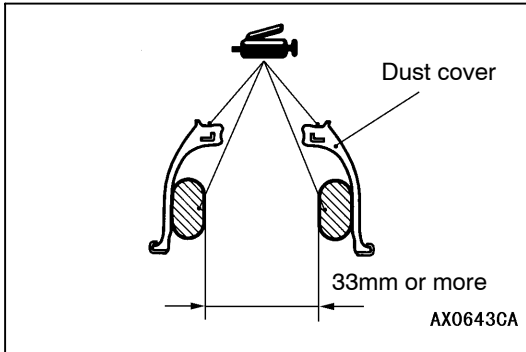
### UPPER ARM BALL JOINT DUST COVER REPLACEMENT

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 inside of the dust cover with the specified grease as shown in the illustration.
3. Apply the specified grease to the dust cover and ball joint stud as shown in the illustration.
4. Wrap plastic tape around the lower arm ball joint stud, and then install the dust cover to the upper arm ball joint.

#### Caution

**Do not apply grease to the place (tapered section) where the threaded section of the ball joint connects with the knuckle. Wipe away any grease which gets on this section.**



5. Using the special tool, drive the dust cover into the position shown in the illustration.

#### Caution

**To prevent the grease to be applied on the ball joint connection (taper) with knuckle, do not compress the dust cover before installation.**

6. Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.



# SHOCK ABSORBER/COIL SPRING/LOWER ARM ASSEMBLY

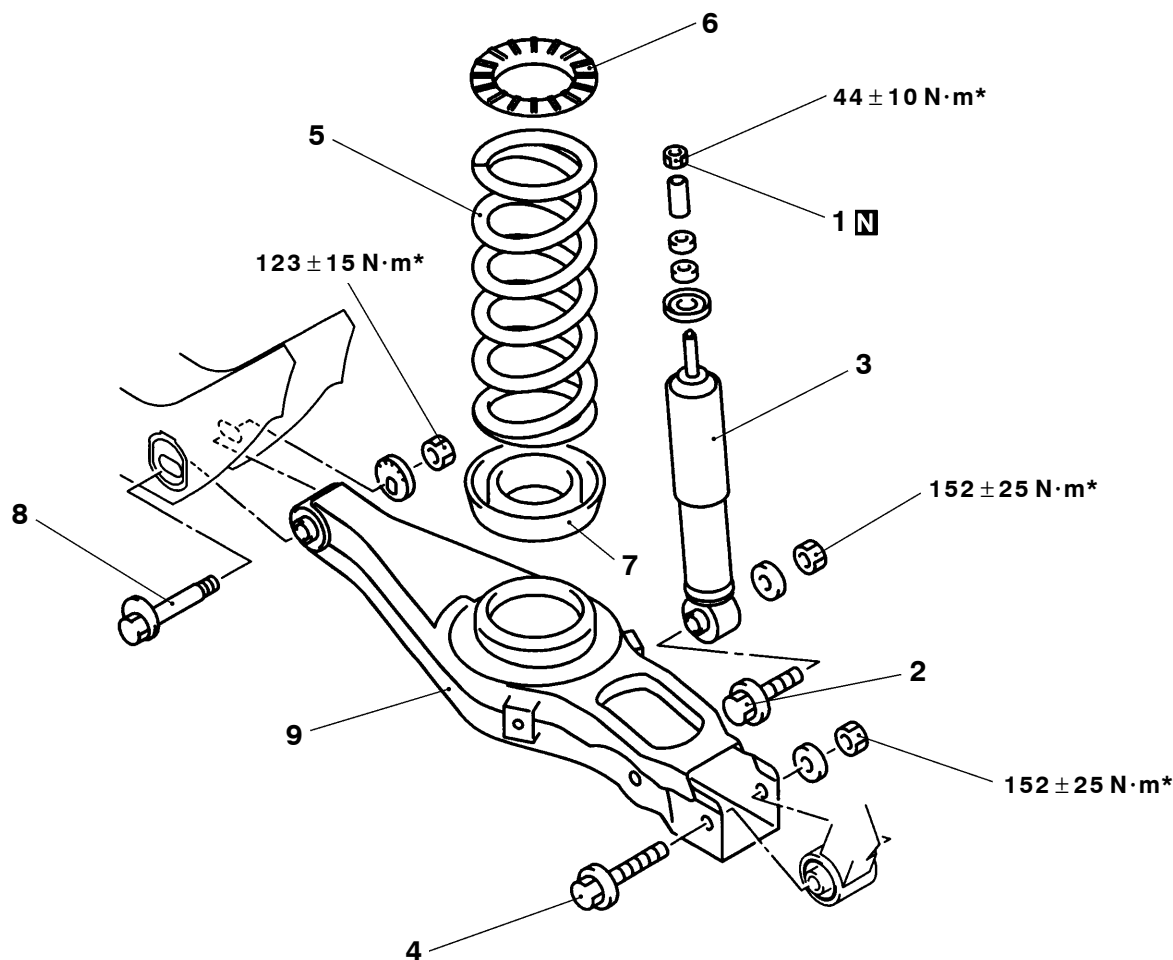
## REMOVAL AND INSTALLATION

### Caution

\*: 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 Operation

Wheel Alignment Check And Adjustment  
(P.34-5.)



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### Shock absorber removal steps

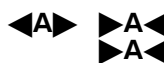
1. Shock absorber mounting nut
2. Shock absorber mounting bolt
3. Shock absorber

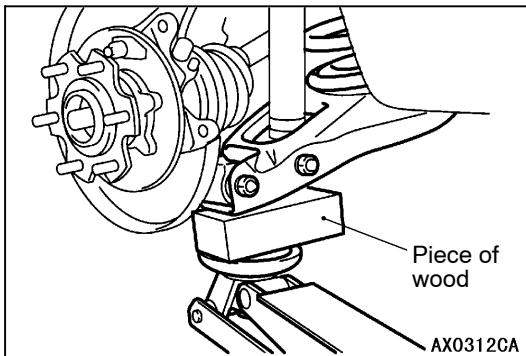
### Coil spring removal steps

2. Shock absorber mounting bolt
4. Lower arm mounting bolt
5. Coil spring
6. Spring upper pad
7. Spring lower pad

### Lower arm removal steps

2. Shock absorber mounting bolt
4. Lower arm mounting bolt
5. Coil spring
6. Spring upper pad
7. Spring lower pad
8. Bolt assembly (for camber adjustment)
9. Lower arm

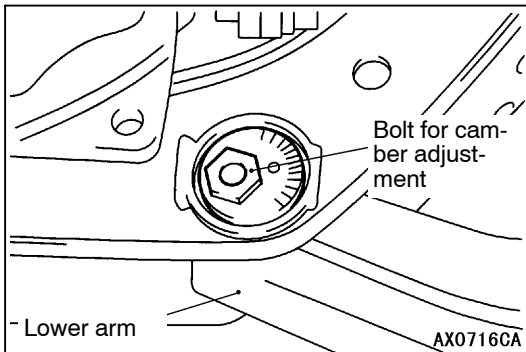




## REMOVAL SERVICE POINTS

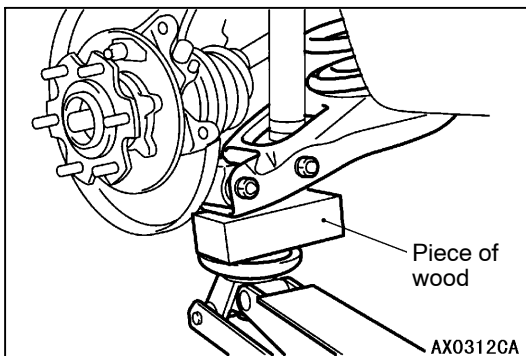
### ◀A▶ LOWER ARM MOUNTING BOLT REMOVAL

1. Place a piece of wood at the lower arm as shown in the illustration. Using the floor jack, compress the coil spring to remove the lower arm mounting bolt.
2. Lower the floor jack slowly, and then remove the coil spring.



### ◀B▶ BOLT ASSEMBLY (FOR CAMBER ADJUSTMENT) REMOVAL

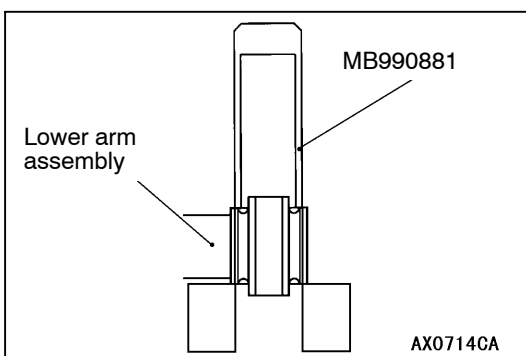
Make the mating marks to the bracket and the camber adjusting bolt, and then remove the camber adjusting bolt.



## INSTALLATION SERVICE POINT

### ▶A◀ COIL SPRING/LOWER ARM MOUNTING BOLT INSTALLATION

1. The identification colour of the coil spring should be located at the lower side.
2. Align the coil spring end with the spring lower pad cavity.
3. Place a piece of wood at the lower arm as shown in the illustration. Using the floor jack, compress the coil spring to remove the lower arm mounting bolt.



## BUSHING REPLACEMENT

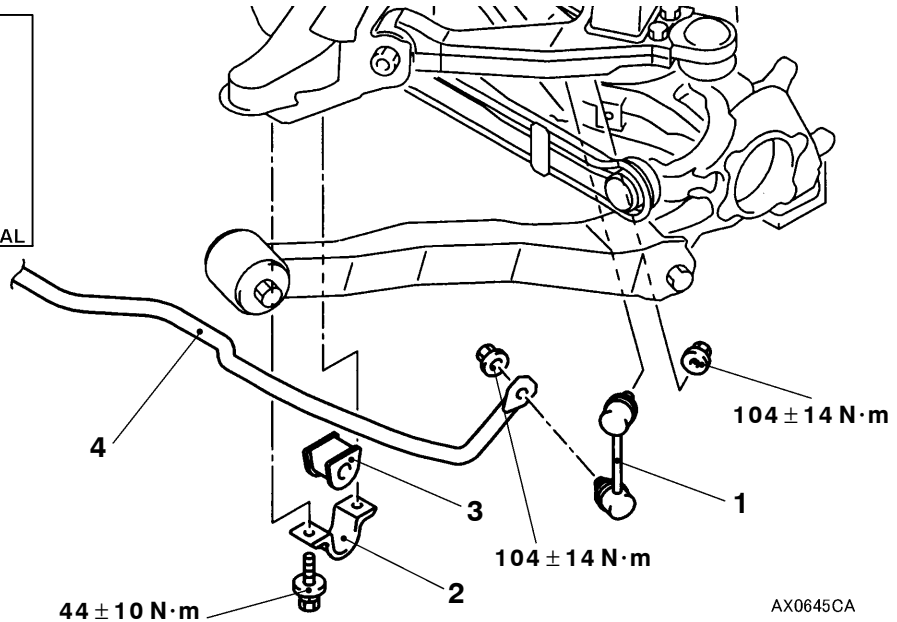
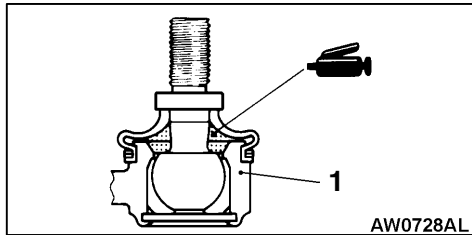
Use the special tool to drive out and press fit the lower arm bushing.

# STABILIZER BAR

## REMOVAL AND INSTALLATION

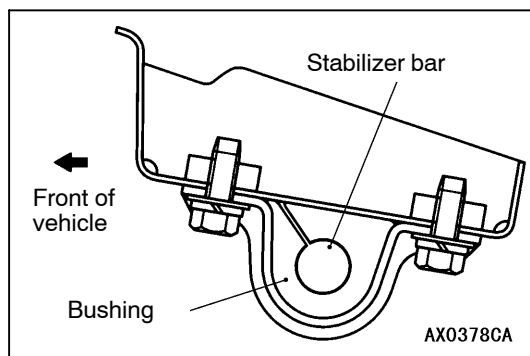
### Post-installation Operations

Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.



### Removal steps

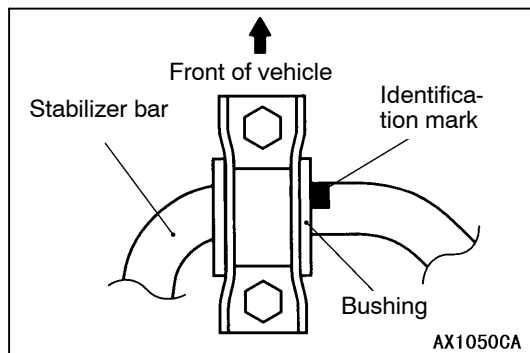
1. Stabilizer link assembly
2. Stabilizer clamp
3. Bushing
4. Stabilizer bar

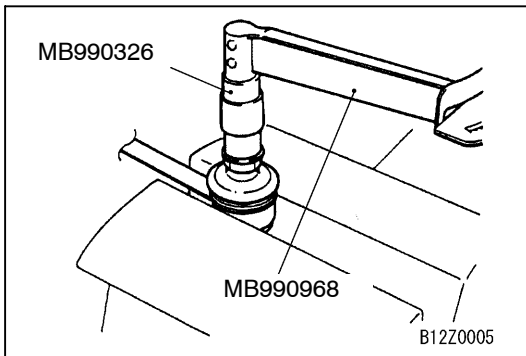


### INSTALLATION SERVICE POINT

#### BUSHING INSTALLATION

1. Install the stabilizer bar so that its identification mark faces the left side of the vehicle.
2. Install the bushing so that its slit faces the direction shown in the illustration.
3. Align the end of the identification mark with the end of the bushing, before tightening the mounting screws.





## INSPECTION

### 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 tools to measure the turning torque of the ball joint.

**Standard value: 0.5 – 2.0 N·m**

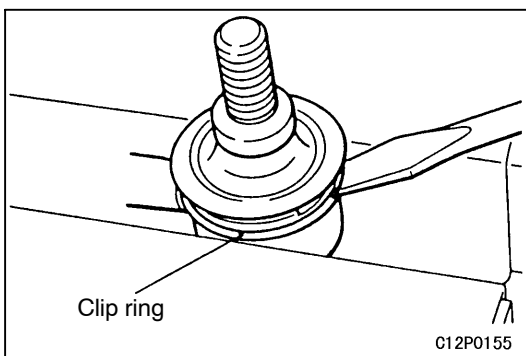
2. When the measured value exceeds the standard value, replace the stabilizer link.
3. When the measured value is lower than the standard value, check that the ball joint turns smoothly without excessive play. If so, it is possible to reuse that ball joint.

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

# TOE CONTROL ARM ASSEMBLY/TOE CONTROL TOWER BAR

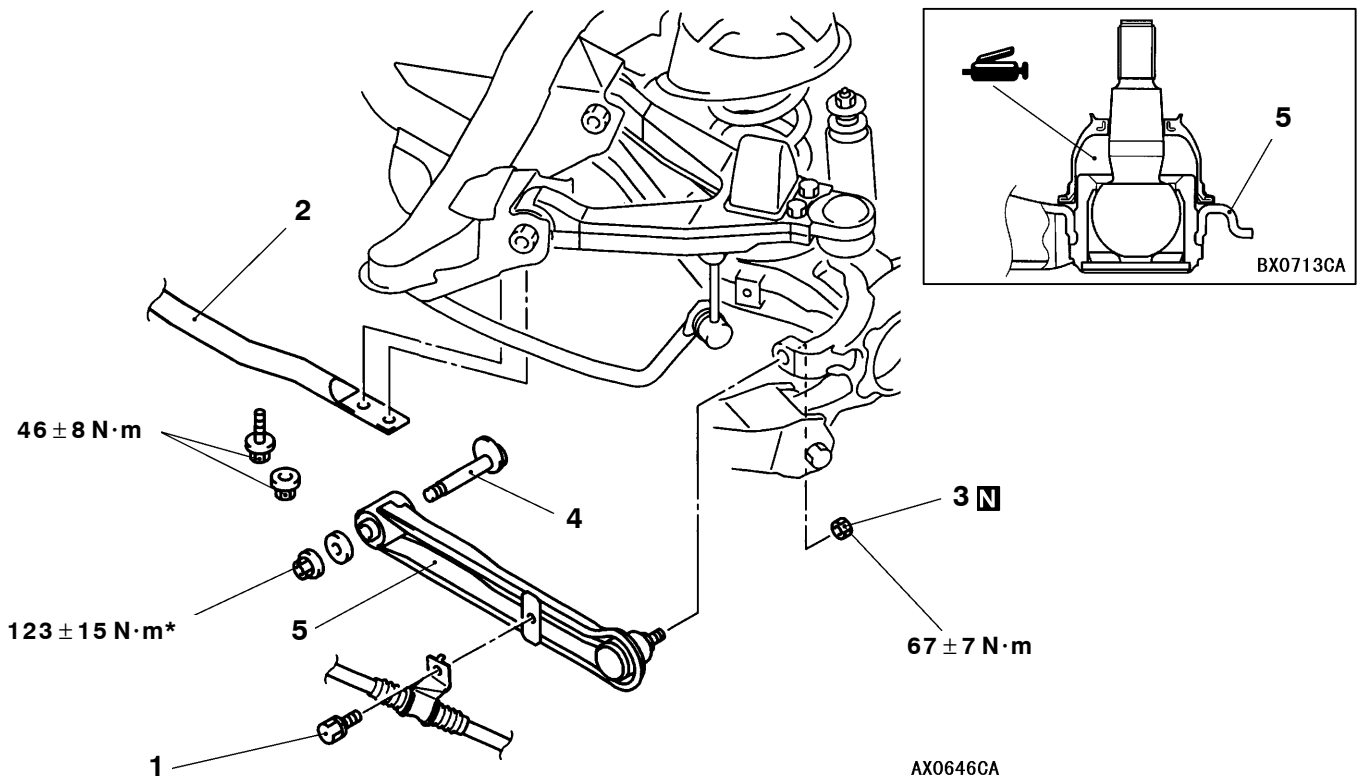
## REMOVAL AND INSTALLATION

### Caution

- \*: 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.34-5.)

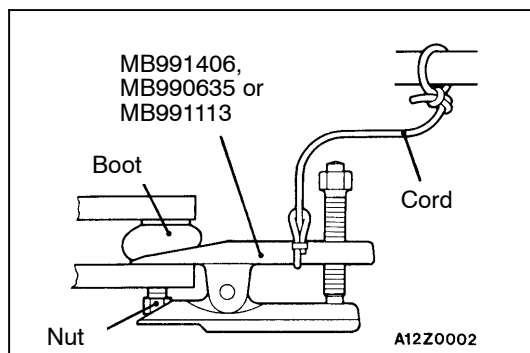


#### Removal steps

- Parking brake cable mounting bolt
- Toe control tower bar
- Toe control arm ball joint and knuckle connection



- Bolt assembly (for toe adjustment)
- Toe control arm assembly

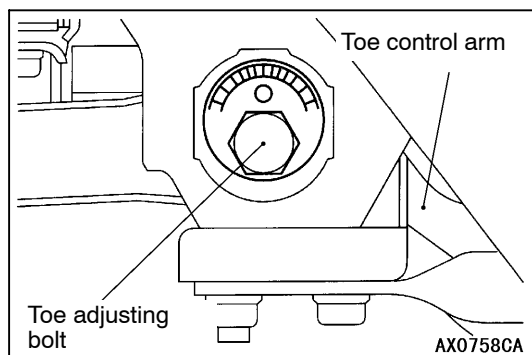


#### REMOVAL SERVICE POINTS

#### TOE CONTROL ARM BALL JOINT AND KNUCKLE SEPARATION

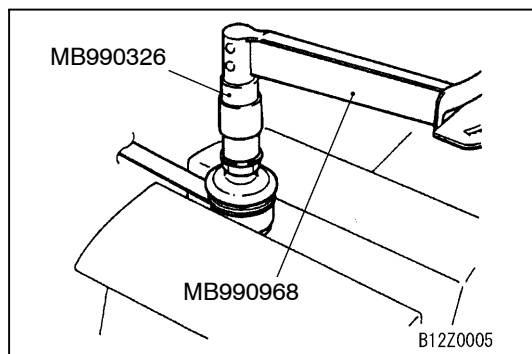
#### Caution

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



## ◀B▶ BOLT ASSEMBLY (FOR TOE ADJUSTMENT) REMOVAL

Make mating marks on the bracket and the toe adjusting bolt, and then remove the bolt.



## INSPECTION

### TOE CONTROL ARM BALL JOINT TURNING TORQUE CHECK

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

**Standard value: 1.0 – 2.5 N·m**

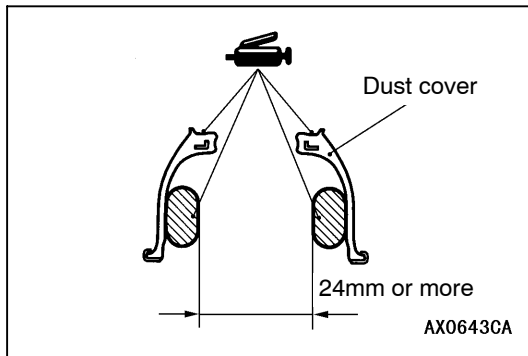
2. When the measured value exceeds the standard value, replace the toe control arm ball joint assembly.
3. When the measured value is lower than the standard value, check that the toe control arm ball joint turns smoothly without excessive play. If there is no excessive play, the ball joint can be reused.

### TOE CONTROL ARM 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 toe control arm ball joint 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.



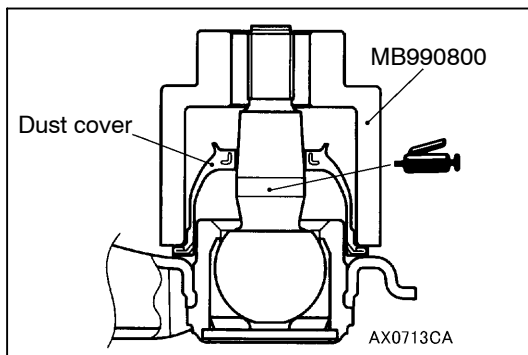
## TOE CONTROL ARM BALL JOINT DUST COVER REPLACEMENT

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 inside of the dust cover with the specified grease as shown in the illustration.
3. Apply the specified grease to the dust cover and ball joint stud as shown in the illustration.
4. Wrap plastic tape around the lower arm ball joint stud, and then install the dust cover to the toe control arm ball joint.

### Caution

**Do not apply grease to the place (tapered section) where the threaded section of the ball joint connects with the knuckle. Wipe away any grease which gets on this section.**



5. Using the special tool, drive the dust cover into the position shown in the illustration.

### Caution

**To prevent the grease to be applied on the ball joint connection (taper) with knuckle, do not compress the dust cover before installation.**

6. Press the dust cover with your finger to check that there are no cracks or damage in the dust cover.

# TRAILING ARM ASSEMBLY

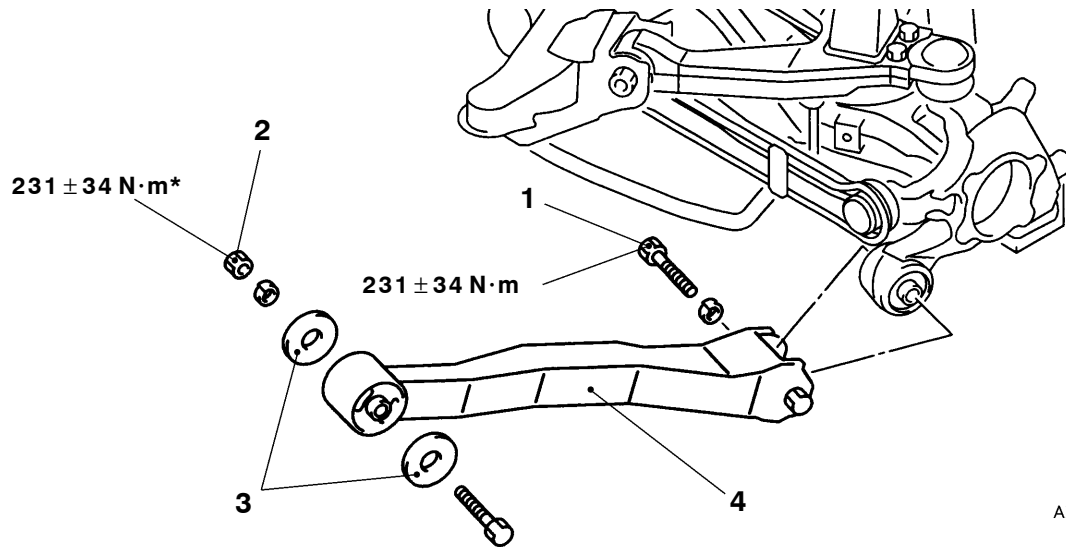
## REMOVAL AND INSTALLATION

### Caution

\*: 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

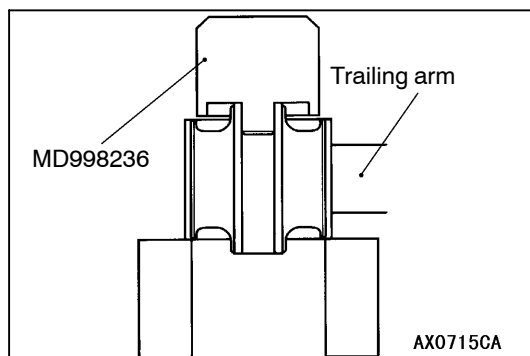
Wheel Alignment Check and Adjustment (Refer to P.34-5.)



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### Removal steps

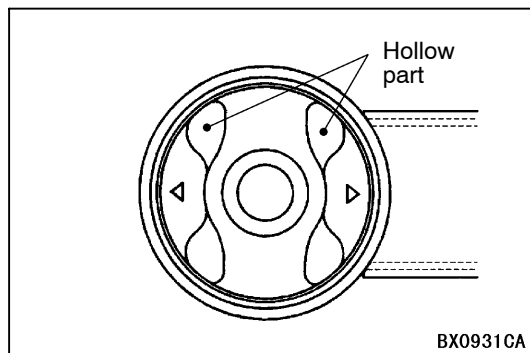
1. Trailing arm and knuckle connecting bolt
2. Trailing arm and rear frame connecting nut
3. Stopper
4. Trailing arm



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## BUSHING REPLACEMENT

1. Use the special tool to drive out and press fit the trailing arm bushing.



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2. Apply a sufficient amount of soapy solution to the bushing and the inner surface of the trailing arm, and then press fit the bushing so that its hollow part is as shown and it protrudes by a same amount from the trailing arm.