GROUP 34

REAR SUSPENSION

CONTENTS

GENERAL DESCRIPTION

M1341000100289

A trailing arm type multi-link suspension is used for the rear suspension. In contrast to the trailing arm multi-link system used on the Lancer, the Lancer Evolution uses a newly developed multi-link system built on a double wishbone base to achieve superior handling stability. Optimum design of the suspension points and use of aluminum parts for the suspension arms and crossmember reduces weight. In addition, use of ball joints on the suspension arms reduce friction and creates a suspension system that exhibits superior stroke characteristics that respond well under all driving conditions.

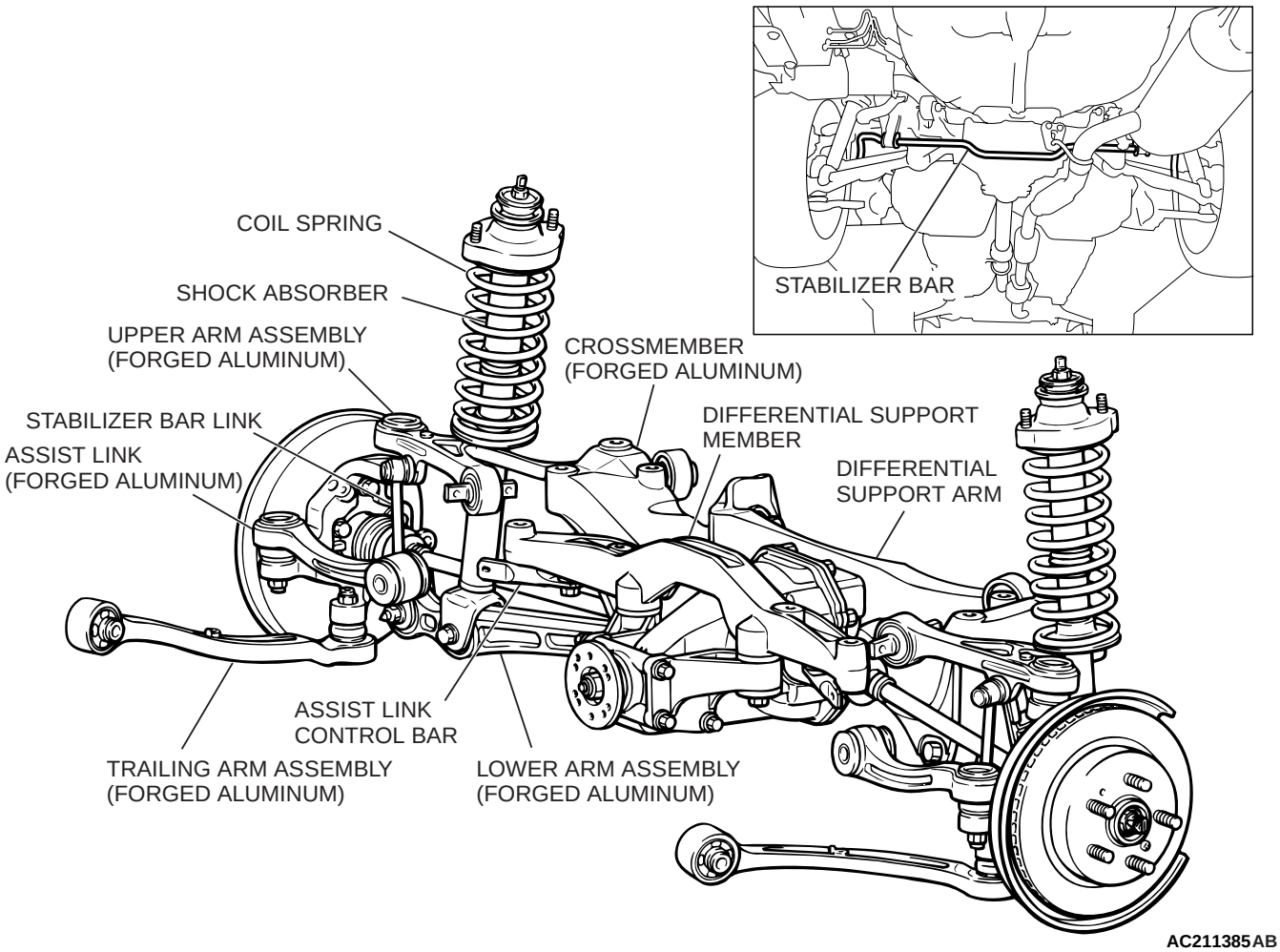
STRUCTURE

1. The A-shape upper arm assembly mounted inside the wheel combines with the three I-shaped arms including the trailing arm assembly that runs in front-rear orientation with the vehicle's body, the lower arm assembly and the assist link to support the knuckle.
2. Each arm uses a ball joint and pillow ball bushing at the knuckle end and a pillow ball bushing at the body end, and are mounted on the body via the crossmember.
3. Alignment and suspension stroke, a wider track, and optimization of roll center height improves cornering response throughout the range from initial response through to the cornering limit.

COMPONENT CHARACTERISTICS (COMPARED TO THE LANCER)

1. Suspension arm (made of forged aluminum)
   - The trailing arm assembly, upper arm assembly, lower arm assembly and assist link are made of forged aluminum to reduce weight and increase rigidity.
   - The knuckle mount and body-end mount for the lower arm assembly use pillow ball bushings for high rigidity and reduce suspension friction.
   - The body-end mount for the assist link uses a low-friction slide bushing.
2. Crossmember (made of forged aluminum)
   - The crossmember is made of forged aluminum to reduce weight and increase rigidity.
3. Shock absorber, coil spring, stabilizer, bump rubber
   - The shock absorber size was changed and the rod diameter was increased to improve stability during roll by increasing damping response.
   - Optimization of shock absorber damping, spring rate, bump rubber characteristics and bushing characteristics improves cornering response throughout the range from initial response through to the cornering limit.

CONSTRUCTION DIAGRAM



REAR SUSPENSION DIAGNOSIS

INTRODUCTION TO REAR SUSPENSION DIAGNOSIS

M1341013100223

If the rear suspension is faulty, the vehicle will not run straightforward or noise will occur. Incorrect wheel alignment, malfunction of shock absorber, stabilizer bar, coil spring, control arms or worn or out-of-balance will cause these problems.

REAR SUSPENSION DIAGNOSTIC TROUBLESHOOTING STRATEGY

M1341013200220

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a rear suspension fault.

1. Gather information from the customer.
2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

SYMPTOM CHART

M1341013500254

SYMPTOM	INSPECTION PROCEDURE	REFERENCE PAGE
Squeaks or other abnormal noise	1	P.34-4
Poor ride	2	P.34-5
Body tilting	3	P.34-5

SYMPTOM PROCEDURES

INSPECTION PROCEDURE 1: Squeaks or other Abnormal Noise

DIAGNOSIS

STEP 1. Check for loose rear suspension installation bolts and nuts.

Q: Are the rear suspension installation bolts and nuts loose?
YES : Retighten them, then go to Step 5.
NO : Go to Step 2.

STEP 2. Check the malfunction of shock absorbers (worn bushings).

Q: Are the shock absorbers (bushings) in good condition?
YES : Go to Step 3.
NO : Replace the faulty part, then go to Step 5.

STEP 3. Check the upper arms and/or lower arms and/or assist links for deformity or damage.

Q: Are the upper arms and/or lower arms and/or assist links in good condition?
YES : Go to Step 4.
NO : Replace the faulty part, then go to Step 5.

STEP 4. Check the trailing arms for deformity or damage.

Q: Are the trailing arms in good condition?
YES : Go to Step 5.
NO : Replace the faulty part, then go to Step 5.

STEP 5. Retest the system.

Q: Is the malfunction eliminated?
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 2: Poor Ride

DIAGNOSIS

STEP 1. Check the excessive tire inflation pressure.

Refer to GROUP 31, On-vehicle Service – Tire Inflation Pressure Check P.31-6.

Q: Is the tire inflation pressure in good condition?
YES : Go to Step 2.
NO : Adjust the pressure, then go to Step 4.

STEP 2. Check for malfunction of shock absorbers (weak or broken springs).

Q: Are the shock absorbers in good condition?
YES : Go to Step 3.
NO : Replace the faulty part, then go to Step 4.

STEP 3. Check the stabilizer bar and/or stabilizer bar links for deformity or damage.

Q: Are the stabilizer bar and/or stabilizer bar link deformed or damaged?
YES : Replace the faulty part, then go to Step 4.
NO : Go to Step 4.

STEP 4. Retest the system.

Q: Is the malfunction eliminated?
YES : The procedure is complete.
NO : Return to Step 1.

INSPECTION PROCEDURE 3: Body Tilting

DIAGNOSIS

STEP 1. Check for weak or deteriorated bushings.

Q: Are the bushings in good condition?
YES : Go to Step 2.
NO : Replace the faulty part, then go to Step 5.

STEP 2. Check for weak or broken springs.

Q: Are the springs in good condition?
YES : Go to Step 3.
NO : Replace the faulty part, then go to Step 5.

STEP 3. Check the upper arms and/or lower arms and/or assist links for deformity or damage.

Q: Are the upper arms and/or lower arms and/or assist links deformed or damaged?
YES : Replace the faulty part, then go to Step 5.
NO : Go to Step 4.

STEP 4. Check the trailing arms for deformity or damage.

Q: Are the trailing arms deformed or damaged?
YES : Replace the faulty part, then go to Step 5.
NO : Go to Step 5.

STEP 5. Retest the system.

Q: Is the malfunction eliminated?
YES : The procedure is complete.
NO : Return to Step 1.

SPECIAL TOOLS

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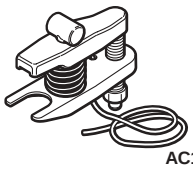
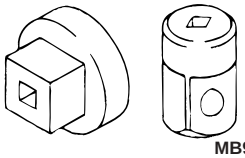
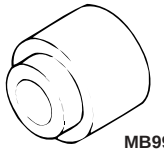
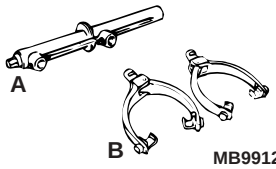
TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 AC106827	MB991897 Ball joint remover	MB991113-01, MB990635-01 or General service tool	Ball joint and Knuckle disconnection *NOTE: Steering linkage puller (MB990635 or MB991113) is also available to disconnect ball joint and Knuckle.*
 MB990326	MB990326 Preload socket	General service tool	Ball joints, side bushing and pillow ball bushing turning torque measurement
 MB990800	MB990800 Ball joint dust cover installer	MB990800-01or General service tool	Ball joint dust cover press-fitting
 A B MB991237	• A: MB991237 Spring compressor body • B: MB991239 Arm set	MIT221369 or general service tool	Coil spring removal and installation

ON-VEHICLE SERVICE

REAR WHEEL ALIGNMENT CHECK AND ADJUSTMENT

M1341011000327

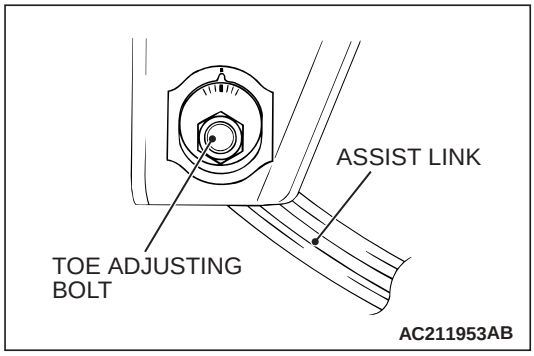
1. The rear suspension, wheels and tires should be serviced to normal condition prior to measurement of wheel alignment.
2. Measure the wheel alignment with the vehicle parked on a level surface.

TOE-IN

Standard value: 3 ± 2 mm (0.12 ± 0.07 inch)

It 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 (assist link mounting bolt which is located on the inner side of the body).

   Left wheel: Turning clockwise (+) toe-in

   Right wheel: Turning clockwise (–) toe-in

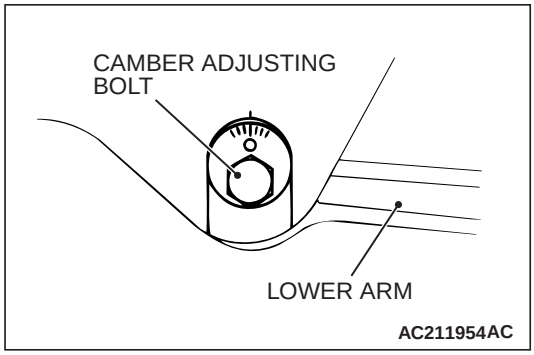
NOTE: The scale has gradations of approximately 3.3 mm (0.13 inch) (single side toe angle equivalent to 19').

CAMBER

Standard value:

– 1° 00' ± 30' (difference between right and left wheel: less than 30')

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



1. Carry out camber 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 INSPECTION

M1341012800229

Check the toe control arm assembly and the stabilizer bar link assembly ball joint dust cover as follows.

1. Check dust covers for cracks or damage by pushing it with your finger.
2. If a dust cover is cracked or damaged, replace the toe suspension arms or the stabilizer bar link assembly.

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

REAR SUSPENSION ASSEMBLY

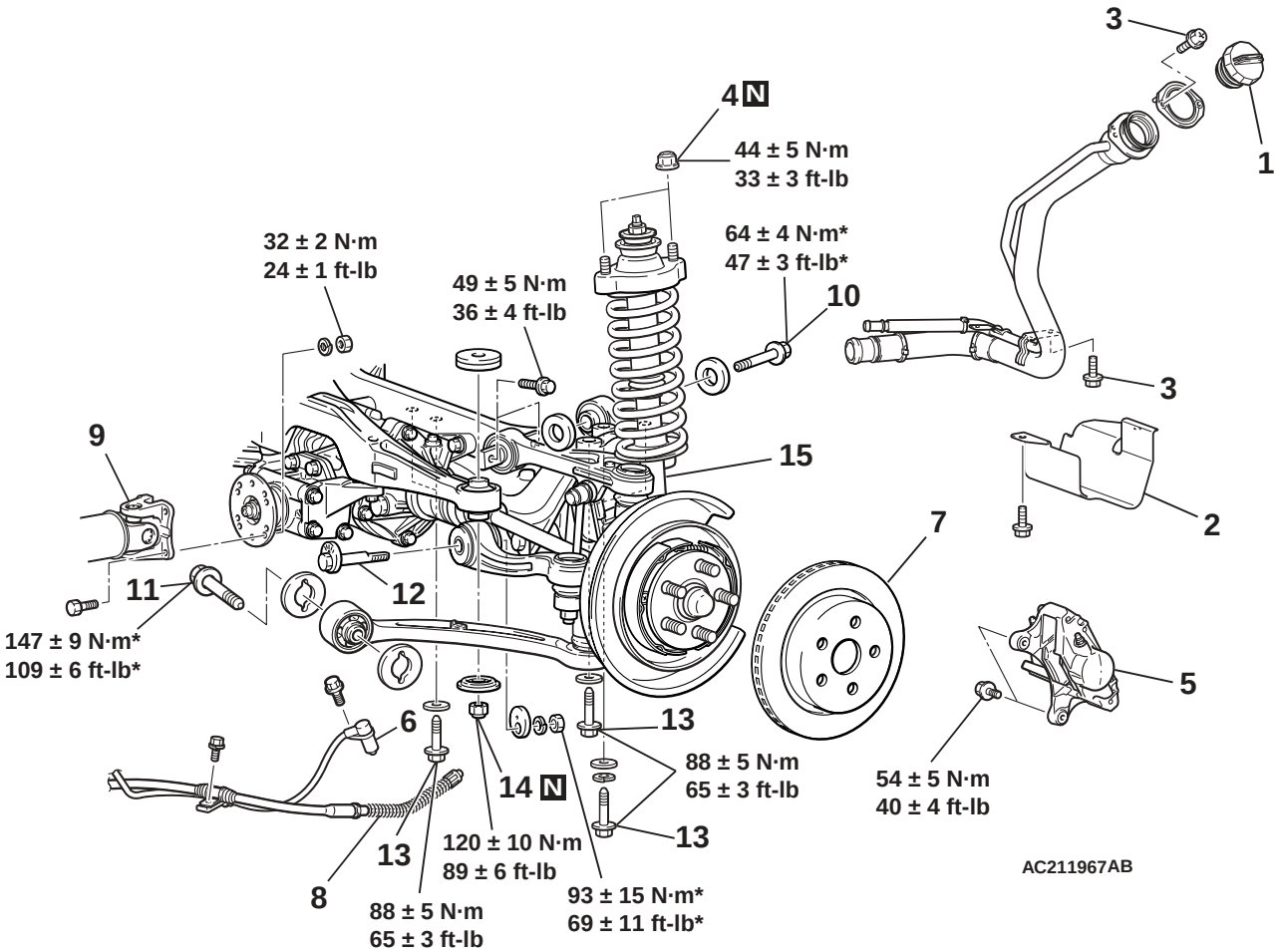
REAR SUSPENSION ASSEMBLY REMOVAL AND INSTALLATION

M1341001000133

⚠ CAUTION

- **During maintenance, take care not to contact the parts or tools to the caliper, because the paint of caliper will be scratched. And contact the parts or tools to the caliper, wipe out quickly.**
- ***: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 Operation	Post-installation Operation
• Center Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-23.)	• Center Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-23.) • Parking Brake Lever Stroke Check (Refer to GROUP36-On-Vehicle Service–Parking Brake Lever Stroke Check and Adjustment P.36-4.) • Wheel Alignment Check And Adjustment (Refer to P.34-6.)



REMOVAL STEPS

1. FUEL FILLER CAP
2. PROTECTOR
3. BOLT
4. SHOCK ABSORBER MOUNTING NUT

<<A>> 5. BRAKE CALIPER ASSEMBLY

6. REAR ABS SENSOR
7. BRAKE DISC
8. PARKING BRAKE CABLE END

REMOVAL STEPS (Continued)

<<B>> >>B<< 9. PROPELLER SHAFT CONNECTION

10. UPPER ARM MOUNTING BOLT
11. TRAILING ARM MOUNTING BOLT
12. ASSIST LINK MOUNTING BOLT

<<C>> >>A<< 13. CROSSMEMBER MOUNTING BOLT

14. DIFFERENTIAL SUPPORT ASSEMBLY MOUNTING NUT
15. REAR SUSPENSION ASSEMBLY

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REMOVAL SERVICE POINTS

<<A>> BRAKE CALIPER ASSEMBLY REMOVAL

⚠ 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.

Remove the brake caliper assembly and support with wire.

<<B>> PROPELLER SHAFT DISCONNECTION

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

<<C>> CROSSMEMBER MOUNTING BOLT REMOVAL

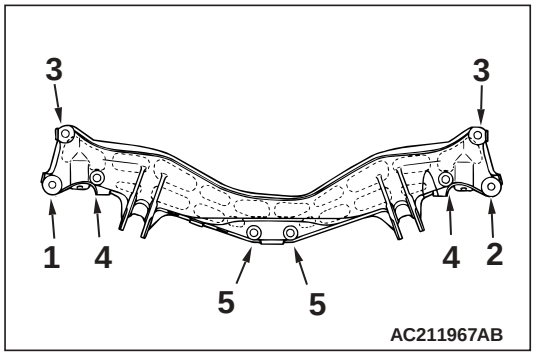
Support the differential case with garage jack or transmission jack, then remove the crossmember mounting bolt.

INSTALLATION SERVICE POINTS

>>A<< CROSSMEMBER MOUNTING BOLT INSTALLATION

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.



No.	Sort of bolt	Size of bolt (Screw diameter × Length) mm (in)
1,2,3	Flange bolt (with washer)	12×105 (0.47× 4.13)
4	Bolt (with spring washer and washer)	12×152 (0.47× 5.98)
5	Flange bolt (with washer)	12×70 (0.47× 2.76)

>>B<< PROPELLER SHAFT CONNECTION

⚠ 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.

Install the differential carrier and propeller shaft by a lining the mating mark.

UPPER ARM ASSEMBLY

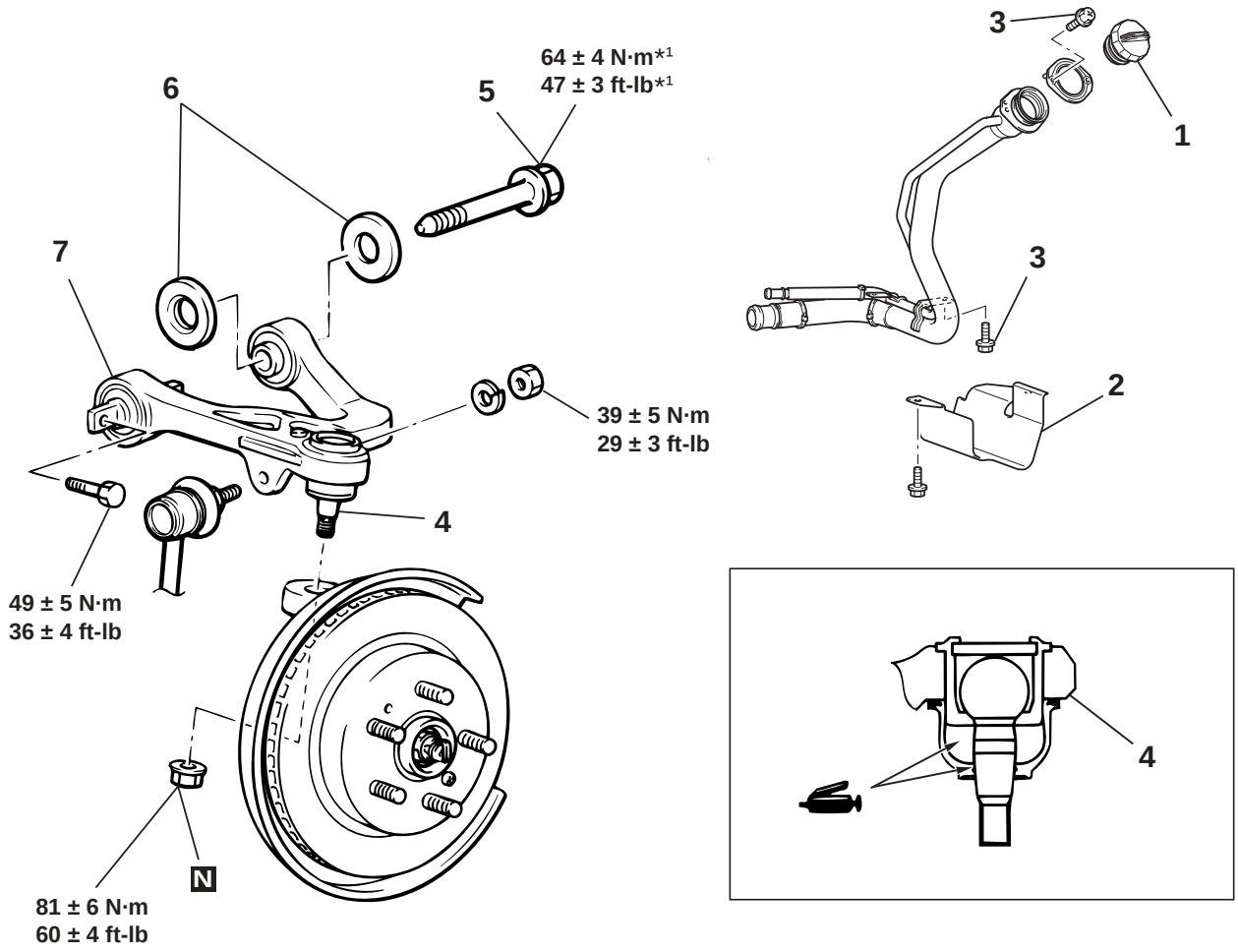
REMOVAL AND INSTALLATION

M1341003600205

⚠ CAUTION

- **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.**
- ***1: To prevent bushings from breakage, the parts indicated by *1 should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.**

Post-installation Operation
- 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.34-6.)



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REMOVAL STEPS
1. FUEL FILLER CAP*2
2. PROTECTOR*2
3. BOLT*2

<<A>> 4. UPPER ARM ASSEMBLY AND KNUCKLE CONNECTION
5. UPPER ARM ASSEMBLY MOUNTING BOLT

REMOVAL STEPS (Continued)
6. UPPER ARM STOPPER
7. UPPER ARM ASSEMBLY

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

Required Special Tool:
- MB991897: Ball Joint Remover

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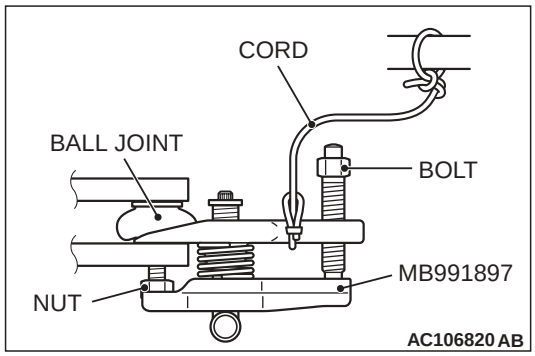
REMOVAL SERVICE POINTS

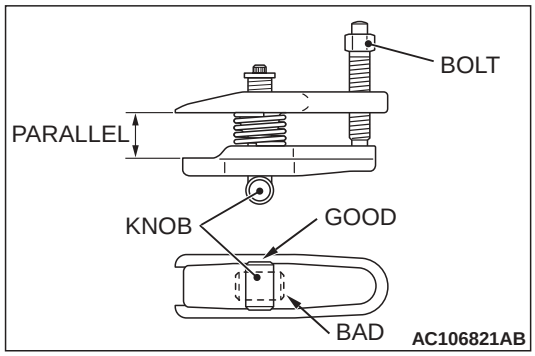
<<A>> UPPER ARM BALL JOINT AND KNUCKLE DISCONNECTION

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use special tool MB991897 to avoid possible damage to ball joint threads.**
- **Hang special tool MB991897 with a cord to prevent it from falling.**

1. Install the special tool MB991897 as shown in the figure.





2. Turn the bolt and knob as necessary to make the jaws of the special tool MB991897 parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.

3. Tighten the bolt with a wrench to disconnect the upper arm assembly and the knuckle.

INSPECTION

M1341015500108

UPPER ARM BALL JOINT TURNING TORQUE CHECK

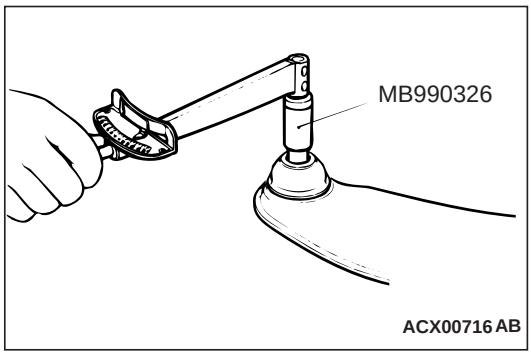
Required Special Tool:

- MB990326: Preload Socket

1. After shaking the upper arm ball joint stud several times, use special tool MB990326 to measure the turning torque of the upper arm ball joint.

   Standard value: 0.5 – 2.5 N·m (4.4 – 22 in-lb)

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 to the ball joint. When it is damaged during service work, replace the dust cover.

UPPER ARM BALL JOINT DUST COVER REPLACEMENT

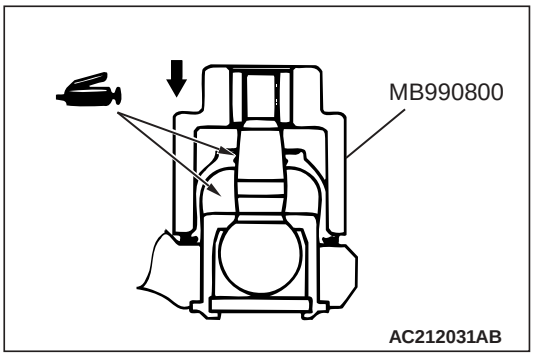
M1341010900189

Required Special Tool:

- MB990800: Ball Joint Remover and Installer

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: approximately 7g (0.247 ounce)].
3. Using the special tool MB990800, 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

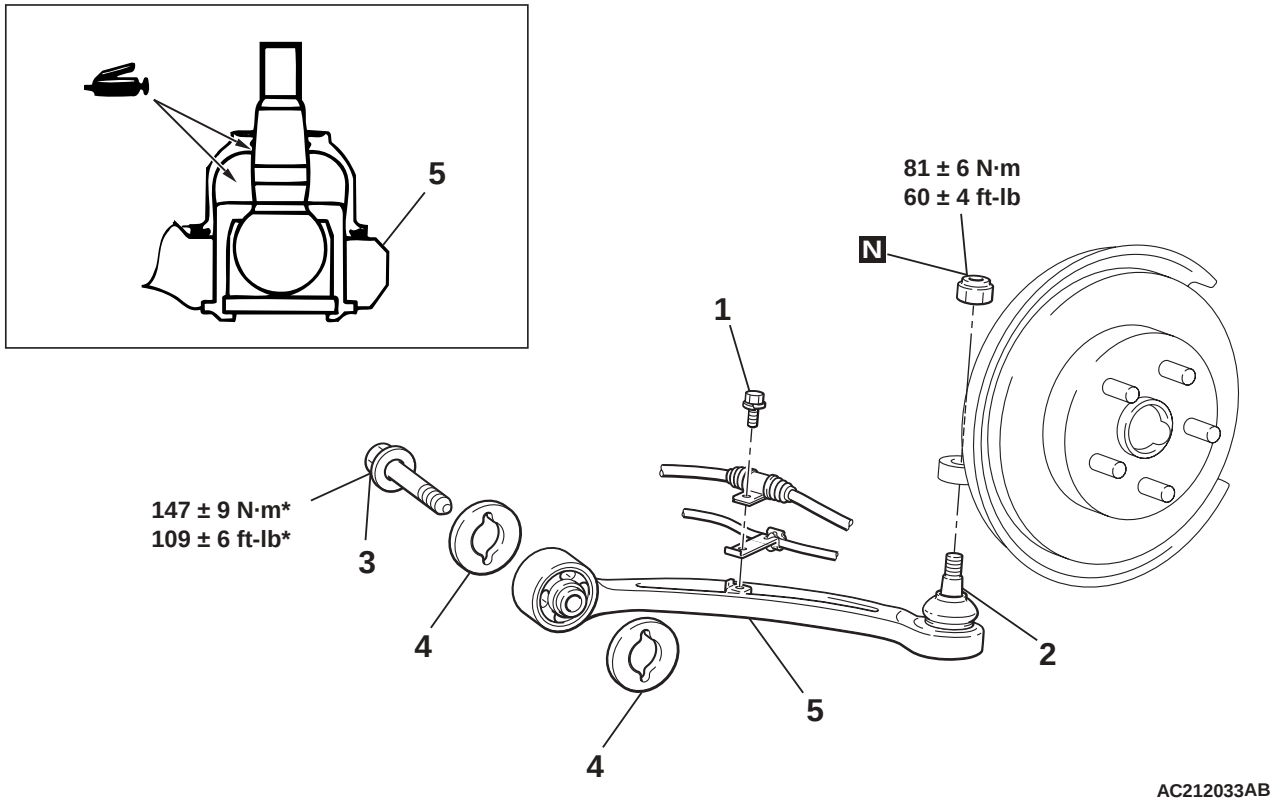
REMOVAL AND INSTALLATION

M1341002200271

⚠ CAUTION

- **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.**
- ***: 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
- 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.34-6)



REMOVAL STEPS

1. PARKING BRAKE CABLE BOLT
<<A>> 2. TRAILING ARM ASSEMBLY AND KNUCKLE CONNECTION
3. TRAILING ARM ASSEMBLY MOUNTING BOLT

REMOVAL STEPS (Continued)

4. TRAILING ARM BUSHING STOPPER
5. TRAILING ARM ASSEMBLY

Required Special Tools:

- MB991897: Ball Joint Remover

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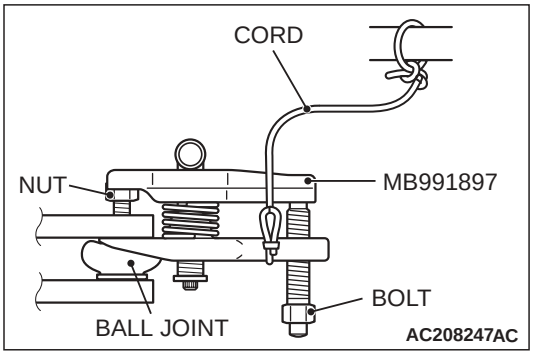
REMOVAL SERVICE POINT

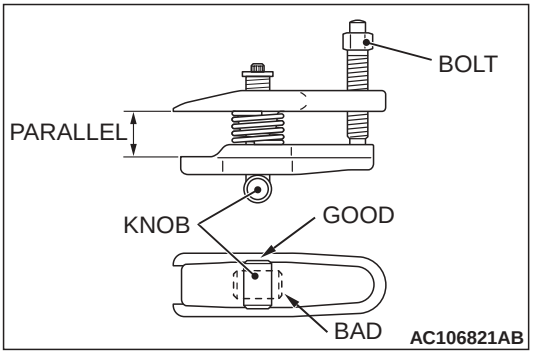
<<A>> TRAILING ARM ASSEMBLY AND KNUCKLE DISCONNECTION

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use special tool MB991897 to avoid possible damage to ball joint threads.**
- **Hang special tool MB991897 with a cord to prevent it from falling.**

1. Install the special tool MB991897 as shown in the figure.





2. Turn the bolt and knob as necessary to make the jaws of the special tool MB991897 parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.

3. Tighten the bolt with a wrench to disconnect the trailing arm assembly and the knuckle.

INSPECTION

M1341002300159

TRAILING ARM BALL JOINT TURNING TORQUE CHECK

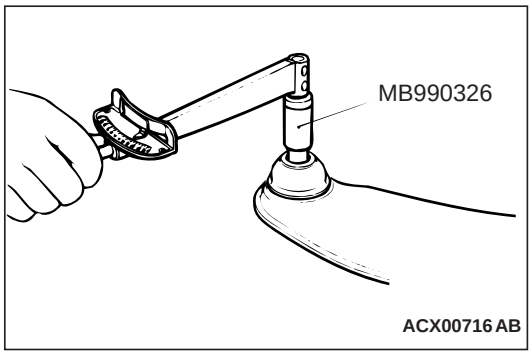
Required Special Tool:

- MB990326: Preload Socket

1. After shaking the trailing arm ball joint stud several times, use special tool MB990326 to measure the turning torque of the trailing arm ball joint.

   Standard value: 0.5 – 2.5 N·m (4.4 – 22 in-lb)

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

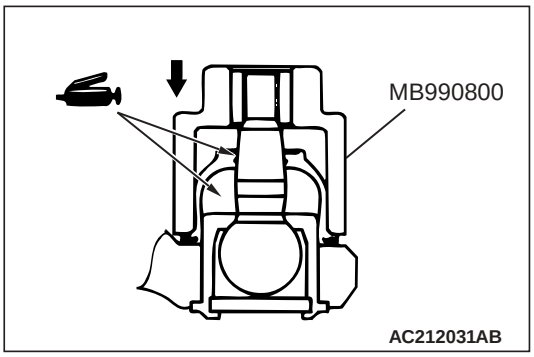
TRAILING ARM BALL JOINT DUST COVER REPLACEMENT

M1341010900156

Required Special Tool:

- MB990800: Ball Joint Remover and Installer

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: approximately 7g (0.247 ounce)].
3. Using special tool MB990800, 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 ARM ASSEMBLY AND ASSIST LINK

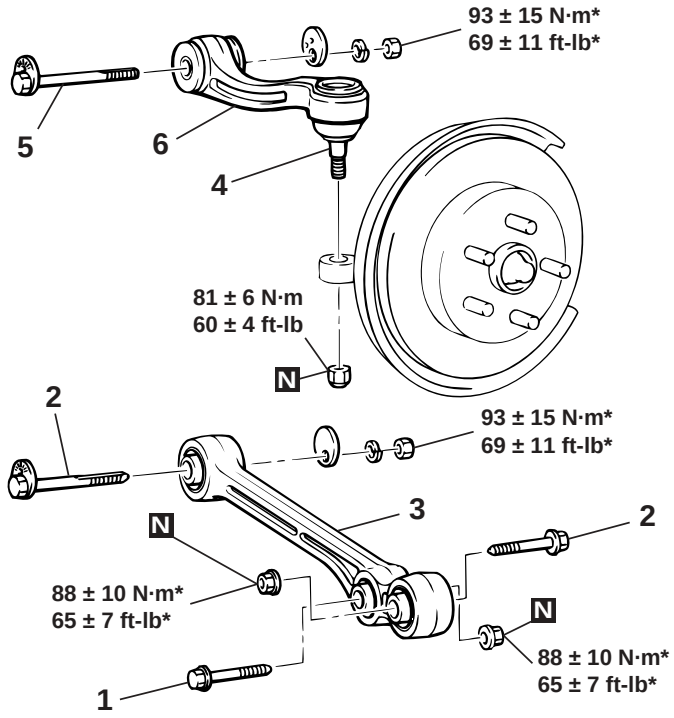
REMOVAL AND INSTALLATION

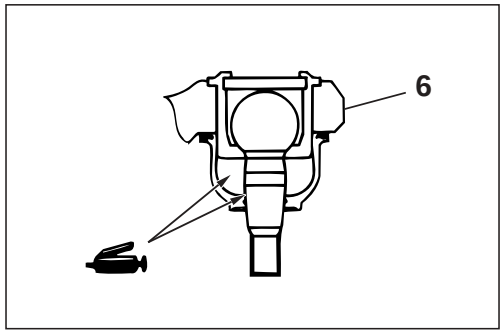
M1341017100010

⚠ CAUTION

- **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.**
- ***: 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
- 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.34-6)





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LOWER ARM ASSEMBLY REMOVAL STEPS
1. LOWER ARM ASSEMBLY TO SHOCK ABSORBER CONNECTING BOLT

<<A>> 2. LOWER ARM ASSEMBLY MOUNTING BOLT

>>A<< 3. LOWER ARM ASSEMBLY

ASSIST LINK REMOVAL STEPS

<<B>> 4. ASSIST LINK AND KNUCKLE CONNECTION

<<C>> 5. ASSIST LINK MOUNTING BOLT

6. ASSIST LINK ASSEMBLY

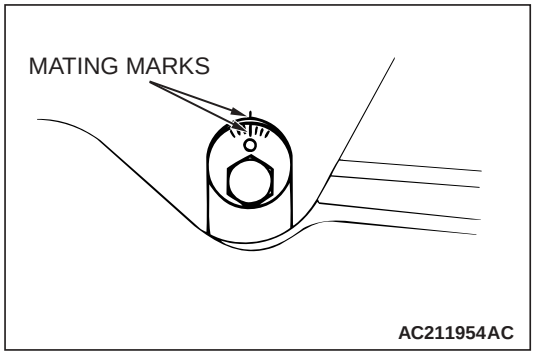
Required Special Tool:
- MB991897: Ball Joint Remover

TSB Revision

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.

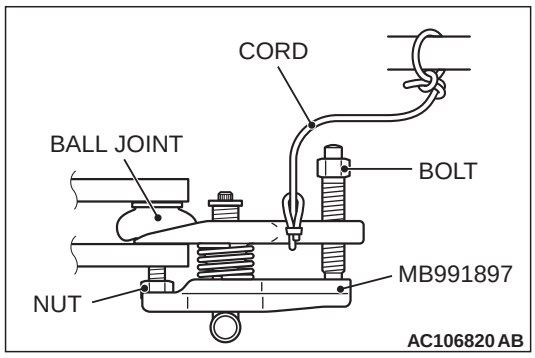


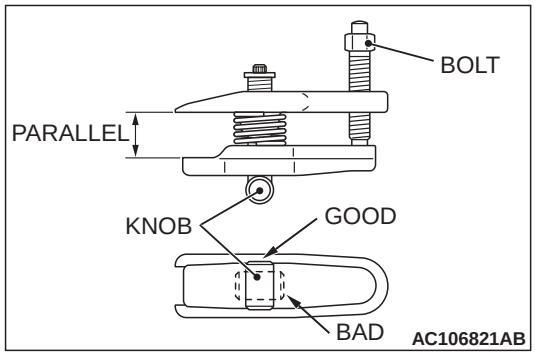
<<B>> ASSIST LINK AND KNUCKLE DISCONNECTION

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use special tool MB991897 to avoid possible damage to ball joint threads.**
- **Hang special tool MB991897 with a cord to prevent it from falling.**

1. Install special tool MB991897 as shown in the figure.

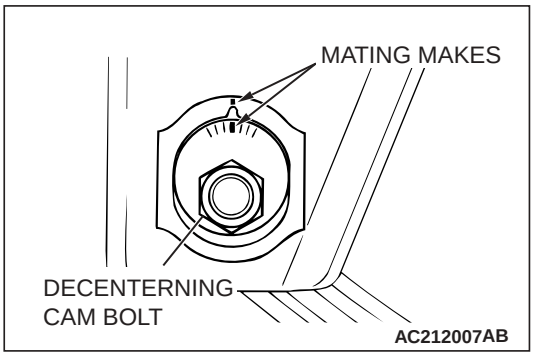




2. Turn the bolt and knob as necessary to make the jaws of special tool MB991897 parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.

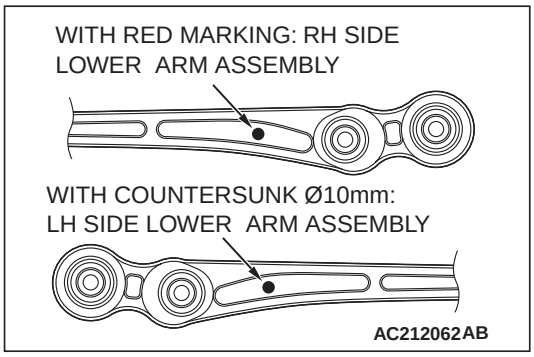
3. Tighten the bolt with a wrench to disconnect the assist link assembly and the knuckle.



<<C>> ASSIST LINK MOUNTING BOLT REMOVAL

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

INSTALLATION SERVICE POINT



>>A<< LOWER ARM ASSEMBLY INSTALLATION

Check the identification mark, install the lower arm assembly.

INSPECTION

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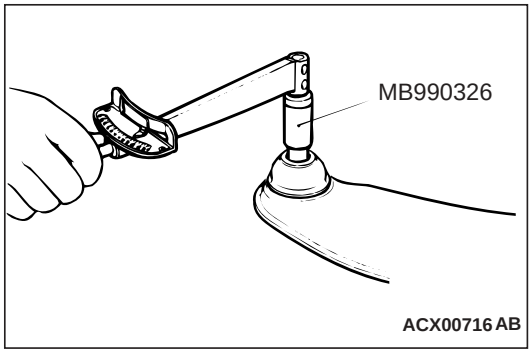
ASSIST LINK BALL JOINT TURNING TORQUE CHECK



Required Special Tool:

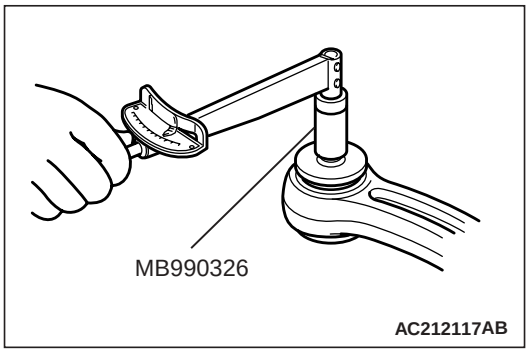
- MB990326: Preload Socket

1. After shaking the assist link ball joint stud several times, measure the turning torque of the assist link ball joint by using special tool MB990326.

   Standard value: 0.5 – 2.5 N·m (4.4 – 22 in-lb)

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

ASSIST LINK SLIDE BUSHING TURNING TORQUE CHECK



Required Special Tool:

- MB990326: Preload Socket

1. After inserting the bolt to the assist link 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 turning torque of the assist link slide bushing by using special tool MB990326.

   Standard value: 0.5 – 2.0 N·m (4.4 – 17 in-lb)

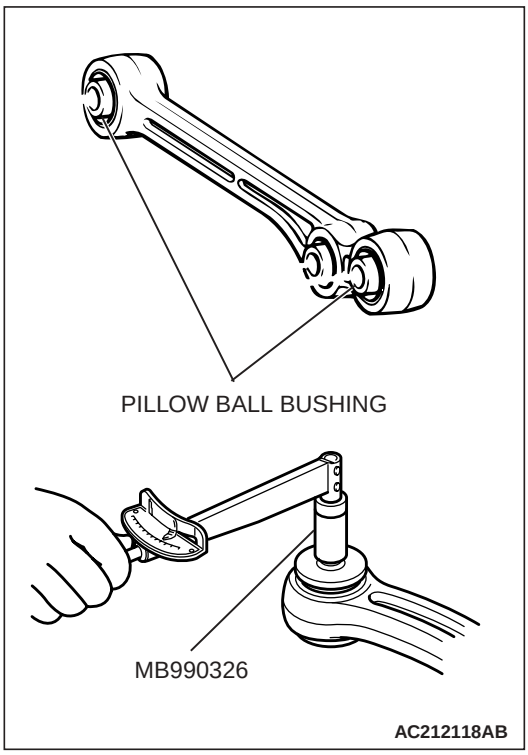
2. When the measured value exceeds the standard value, replace the assist link.
3. When the measured value is lower than the standard value, check that the assist link slide bushing turns smoothly without excessive play. If there is no excessive play, the slide bushing can be reused.

ASSIST 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 trailing arm assembly.

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

LOWER ARM PILLOW BALL BUSHING TURNING TORQUE CHECK



Required Special Tool:

- MB990326: Preload Socket

1. Insert the bolt to the lower arm pillow ball bushing, in the opposite direction, insert the washer then install the nut. After rotating the inner sleeve (contained washer) several times, measure the turning torque of the lower arm below ball bushing using special tool MB990326.

   Standard value: 0.5 – 3.0 N·m (4.4 – 26 in-lb)

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.

ASSIST LINK BALL JOINT DUST COVER REPLACEMENT

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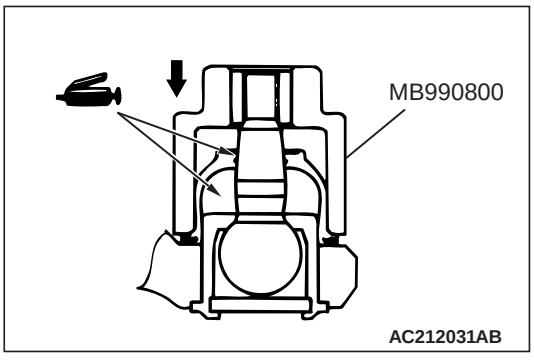


Required Special Tool:

- MB990800: Ball Joint Remover and Installer

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: approximately 7g (0.247 ounce)].
3. Using special tool MB990800, 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.

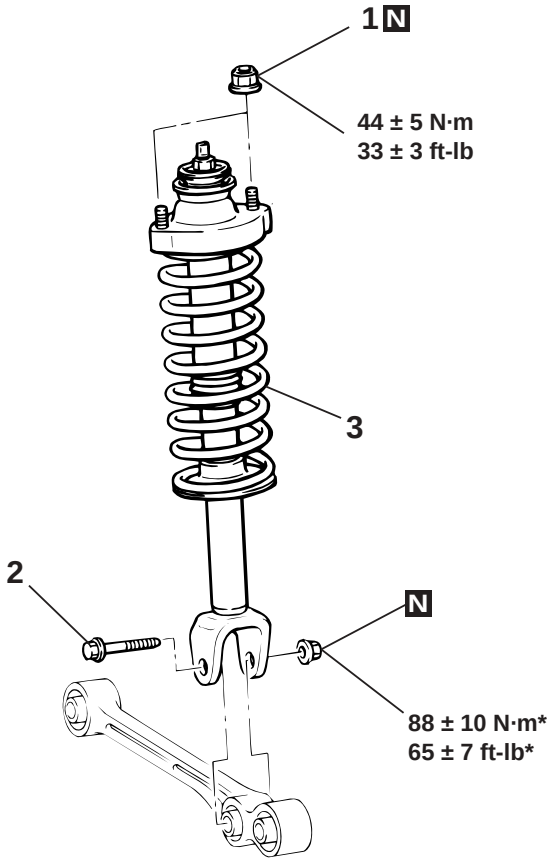
SHOCK ABSORBER ASSEMBLY

REMOVAL AND INSTALLATION

M1341002500216

⚠ CAUTION

- **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.**
- ***: 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.**



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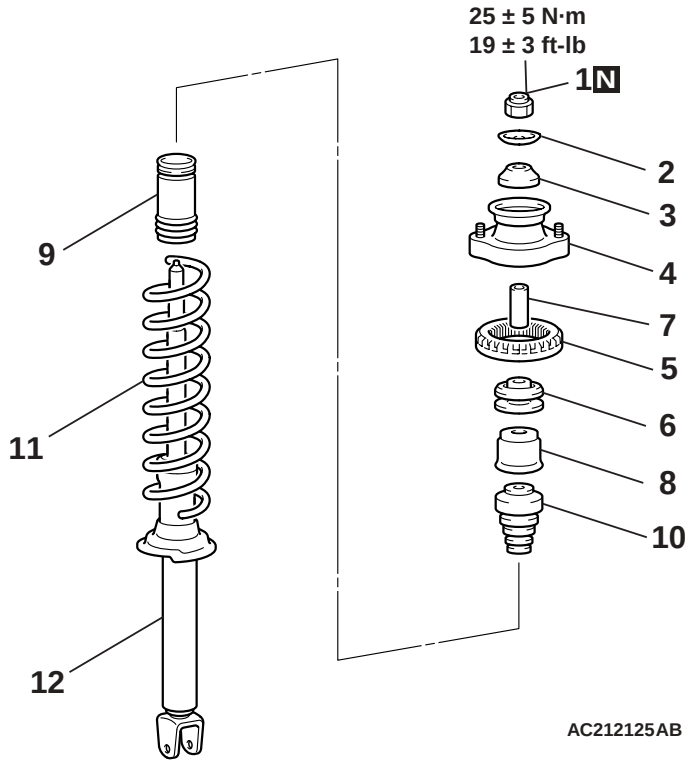
REMOVAL STEPS
1. COIL SPRING NUT

REMOVAL STEPS (Continued)
2. COIL SPRING BOLT
3. SHOCK ABSORBER ASSEMBLY

DISASSEMBLY AND ASSEMBLY

M1341005300192



DISASSEMBLY STEPS

<<A>> >>D<< 1. COIL SPRING NUT
2. COIL SPRING WASHER
3. COIL SPRING BUSHING
>>C<< 4. SHOCK ABSORBER INSULATOR
>>B<< 5. SPRING UPPER PAD
6. COIL SPRING BUSHING
7. COIL SPRING COLLAR
8. SHOCK ABSORBER CUP
9. SHOCK ABSORBER COVER

DISASSEMBLY STEPS (Continued)

10. SHOCK ABSORBER DAMPER
>>A<< 11 COIL SPRING
12 SHOCK ABSORBER ASSEMBLY

Required Special Tools:

- MB991237: Spring Compressor Body
- MB991239: Arm Set

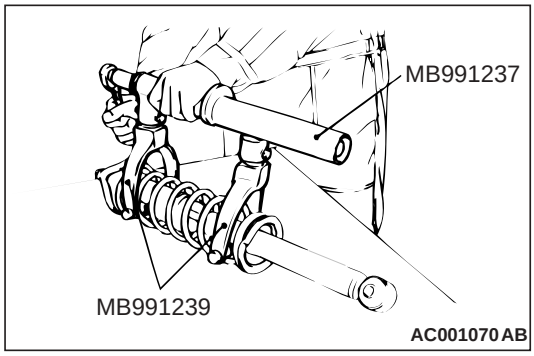
DISASSEMBLY SERVICE POINT

<<A>> COIL SPRING NUT REMOVAL

⚠ CAUTION

- **Install special tools MB991237 and MB991239 evenly, and so that the maximum length will be attained within the installation range.**
- **Do not use an impact wrench as it will cause the bolt of special tool MB991237 to be seized.**

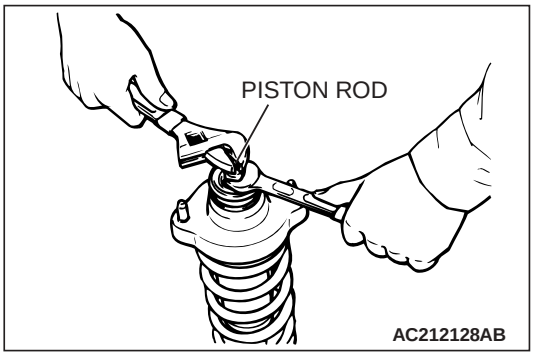
1. Use special tools MB991237 and MB991239 to compress the coil spring.



⚠ WARNING

To prevent the piston rod lock nut inside the shock absorber from loosening, do not use an impact wrench when the coil spring nut is loosened.

2. Holding the piston rod, remove the coil spring nut.



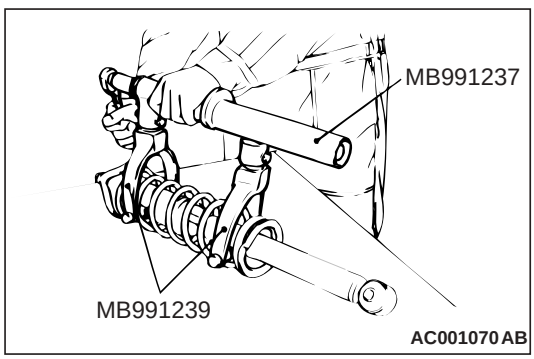
ASSEMBLY SERVICE POINTS

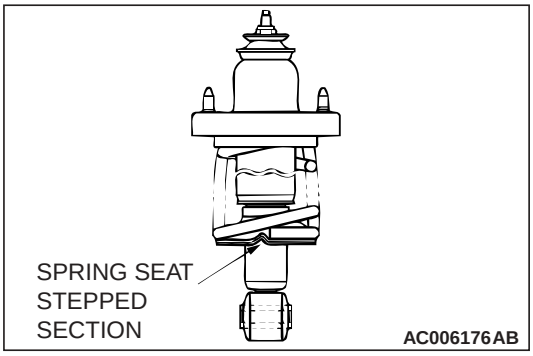
>>A<< COIL SPRING INSTALLATION

⚠ CAUTION

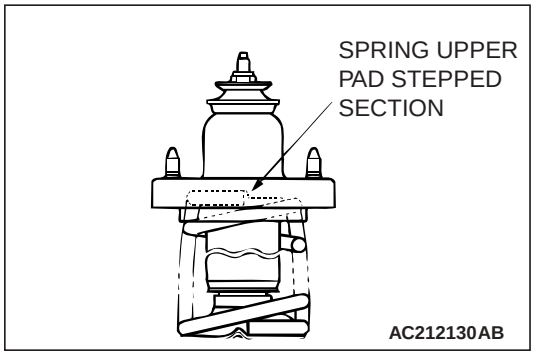
Do not use an impact wrench as it will cause the bolt of the special tool MB991237 to be seized.

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



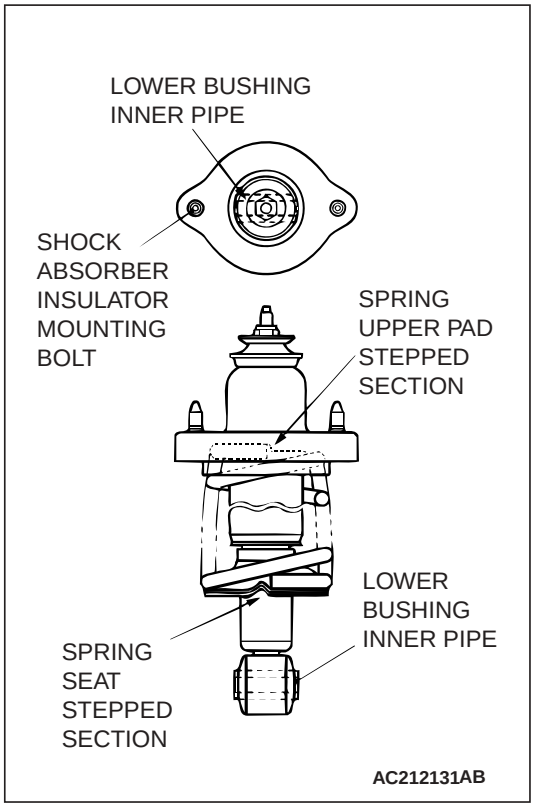


2. Align the end of the coil spring with the stepped section of the spring seat of the shock absorber.



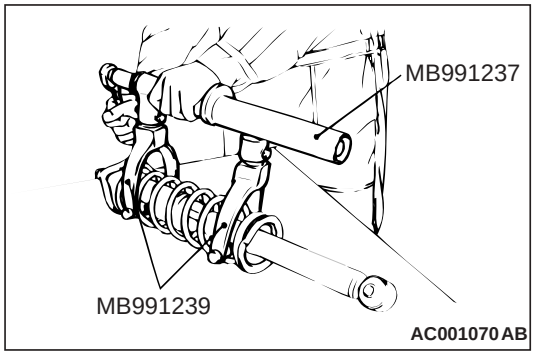
>>B<< SPRING UPPER PAD INSTALLATION

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



>>C<< SHOCK ABSORBER INSULATOR INSTALLATION

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



>>D<< COIL SPRING NUT INSTALLATION

⚠ CAUTION

To prevent the piston rod lock nut inside the shock absorber from loosening, do not use an impact wrench when the coil spring nut is tightened.

1. Provisionally tighten the coil spring nut.
2. After removing special tools MB991237 and MB991239, tighten the coil spring nut to 25 ± 5 N·m (19 ± 3 in-lb).

STABILIZER BAR

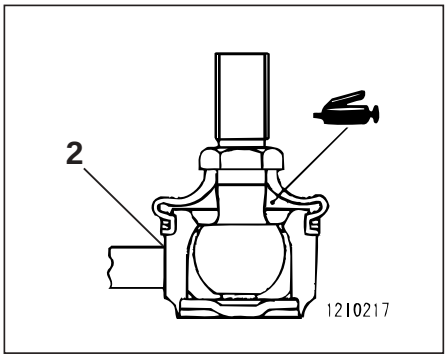
REMOVAL AND INSTALLATION

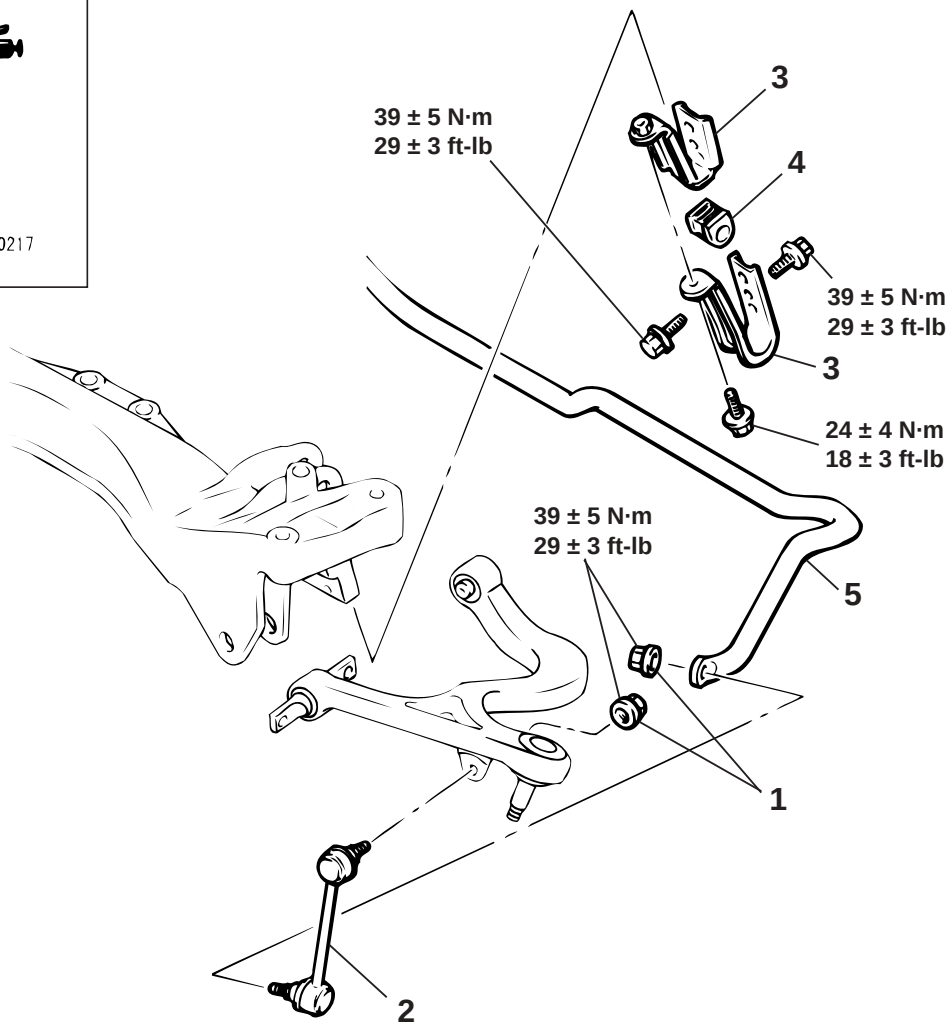
M1341003000214

⚠ CAUTION

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 Operation
- 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 NUT
2. STABILIZER BAR LINK

>>A<< 3. STABILIZER BAR BRACKET

REMOVAL STEPS (Continued)

>>A<< 4. STABILIZER BUSHING

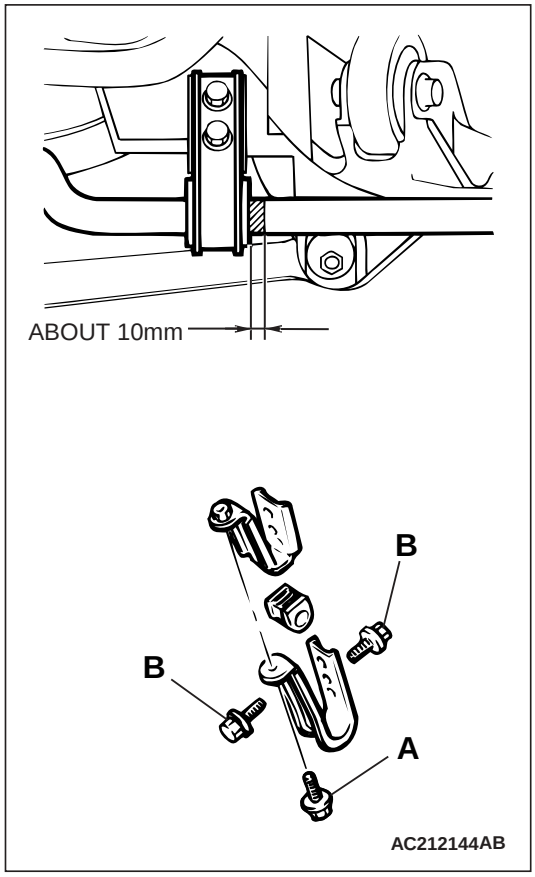
>>A<< 5. STABILIZER BAR

TSB Revision

INSTALLATION SERVICE POINT

>>A<< STABILIZER BAR/STABILIZER BUSHING/STABILIZER BAR BRACKET INSTALLATION

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



INSPECTION

M1341001400250

STABILIZER BAR LINK BALL JOINT TURNING TORQUE CHECK

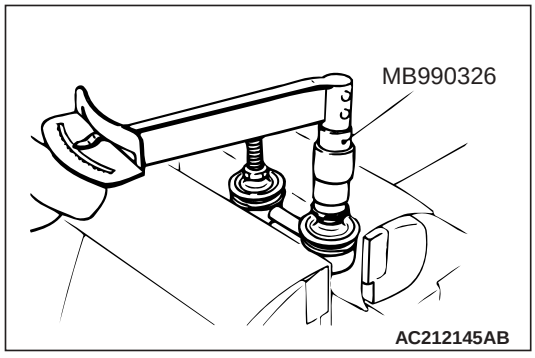
Required Special Tool:

- MB990326: Preload Socket

1. After shaking the stabilizer bar link ball joint stud several times, install the stabilizer nut to the stud and use special tool MB990326 to measure the turning torque of the stabilizer bar link ball joint.

   Standard value: 1.7 – 3.0 N·m (15 – 27 in-lb)

2. When the measured value exceeds the standard value, replace the stabilizer bar 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 BAR 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 bar link.

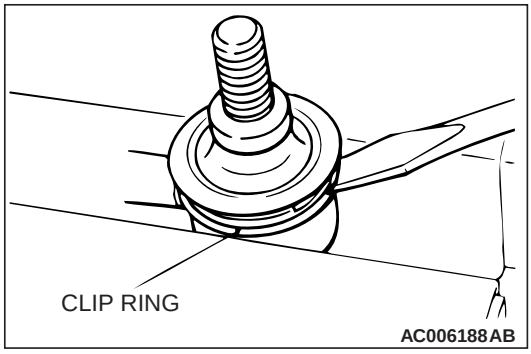
   NOTE: Cracks or damage of the dust cover may cause damage of the ball joint. When it is damaged during service work, replace the dust cover.

STABILIZER BAR LINK BALL JOINT DUST COVER REPLACEMENT

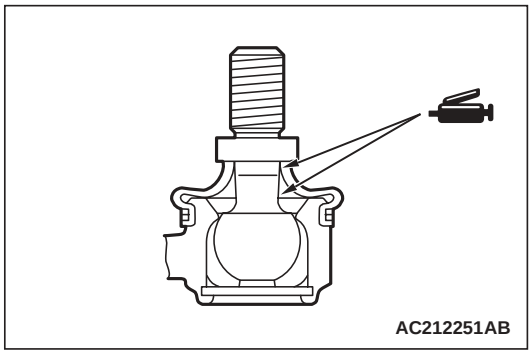
M1341010900208

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

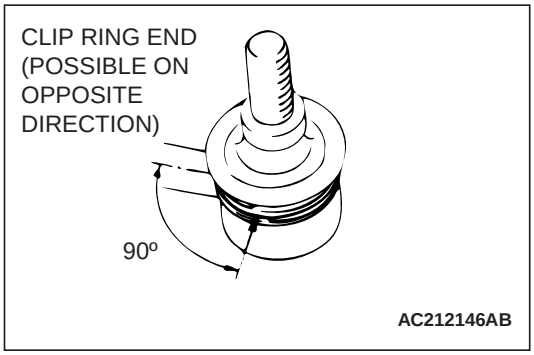
1. Remove the clip ring and the dust cover.



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



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



SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1341012700277

ITEM	SPECIFICATION
Assist link	
Assist link mounting nut	93 ± 15 N·m (69 ± 11 ft-lb)
Assist link to knuckle nut	81 ± 6 N·m (60 ± 4 ft-lb)
Lower arm assembly	
Lower arm assembly to crossmember nut	93 ± 15 N·m (69 ± 11 ft-lb)
Lower arm assembly to knuckle nut	88 ± 10 N·m (65 ± 7 ft-lb)
Lower arm assembly to shock absorber nut	88 ± 10 N·m (65 ± 7 ft-lb)
Rear suspension assembly	
Crossmember mounting bolt	88 ± 5 N·m (65 ± 3 ft-lb)
Differential support assembly mounting nut	120 ± 10 N·m (89 ± 6 ft-lb)
Propeller shaft mounting nut	32 ± 2 N·m (24 ± 1 ft-lb)
Rear brake caliper mounting bolt	54 ± 5 N·m (40 ± 4 ft-lb)
Shock absorber assembly	
Shock absorber assembly to body nut	44 ± 5 N·m (33 ± 3 ft-lb)
Shock absorber self-locking nut (Coil spring nut)	25 ± 5 N·m (19 ± 3 ft-lb)
Stabilizer bar	
Stabilizer bar link mounting nut	39 ± 5 N·m (29 ± 3 ft-lb)
Stabilizer bracket bolt	24 ± 4 N·m (18 ± 3 ft-lb)
Stabilizer bracket to crossmember bolt	39 ± 5 N·m (29 ± 3 ft-lb)
Trailing arm assembly	
Trailing arm assembly to knuckle nut	81 ± 6 N·m (60 ± 4 ft-lb)
Trailing arm assembly to body bolt	147 ± 9 N·m (109 ± 6 ft-lb)
Upper arm assembly	
Upper arm assembly mounting bolt (front)	49 ± 5 N·m (36 ± 4 ft-lb)
Upper arm assembly mounting bolt (rear)	64 ± 4 N·m (47 ± 3 ft-lb)
Upper arm assembly to knuckle nut	81 ± 6 N·m (60 ± 4 ft-lb)

GENERAL SPECIFICATIONS

M1341000200264

COIL SPRING

ITEM	SPECIFICATION
Wire diameter mm (in)	12 (0.5)
Average diameter mm (in)	88 (3.5)
Free length mm (in)	287 (11.03)

SERVICE SPECIFICATIONS

M1341000300357

ITEM	STANDARD VALUE
Toe-in mm (in)	3 ± 2 (0.12 ± 0.07)
Camber	–1°00' ± 30' (Difference between right and left within 30')
Thrust angle	0°00' ± 0°09'
Upper arm ball joint turning torque N·m (in-lb)	0.5 – 2.5 (4.4 – 22)
Trailing arm ball joint turning torque N·m (in-lb)	0.5 – 2.5 (4.4 – 22)
Assist link ball joint turning torque N·m (in-lb)	0.5 – 2.5 (4.4 – 22)
Assist link slide bushing turning torque N·m (in-lb)	0.5 – 2.0 (4.4 – 17)
Lower arm pillow ball bushing turning N·m (in-lb)	0.5 – 3.0 (4.4 – 26)
Stabilizer bar link ball joint turning torque N·m (in-lb)	1.7 – 3.1 (15 – 27)