

## GROUP 32

# POWER PLANT MOUNT

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## WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

**⚠ WARNING**

- *Improper service or maintenance of any component of the SRS, or any SRS-related component, can lead to personal injury or death to service personnel (from inadvertent firing of the air bag) or to the driver and passenger (from rendering the SRS inoperative).*
- *Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.*
- *MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B - Supplemental Restraint System (SRS) before beginning any service or maintenance of any component of the SRS or any SRS-related component.*

## NOTE

The SRS includes the following components: SRS air bag control unit, SRS warning light, front impact sensors, driver's and passenger's (front) air bag modules, knee air bag module, side-airbag module, curtain air bag module, side impact sensors, seat belt pre-tensioners, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (\*).

## GENERAL INFORMATION

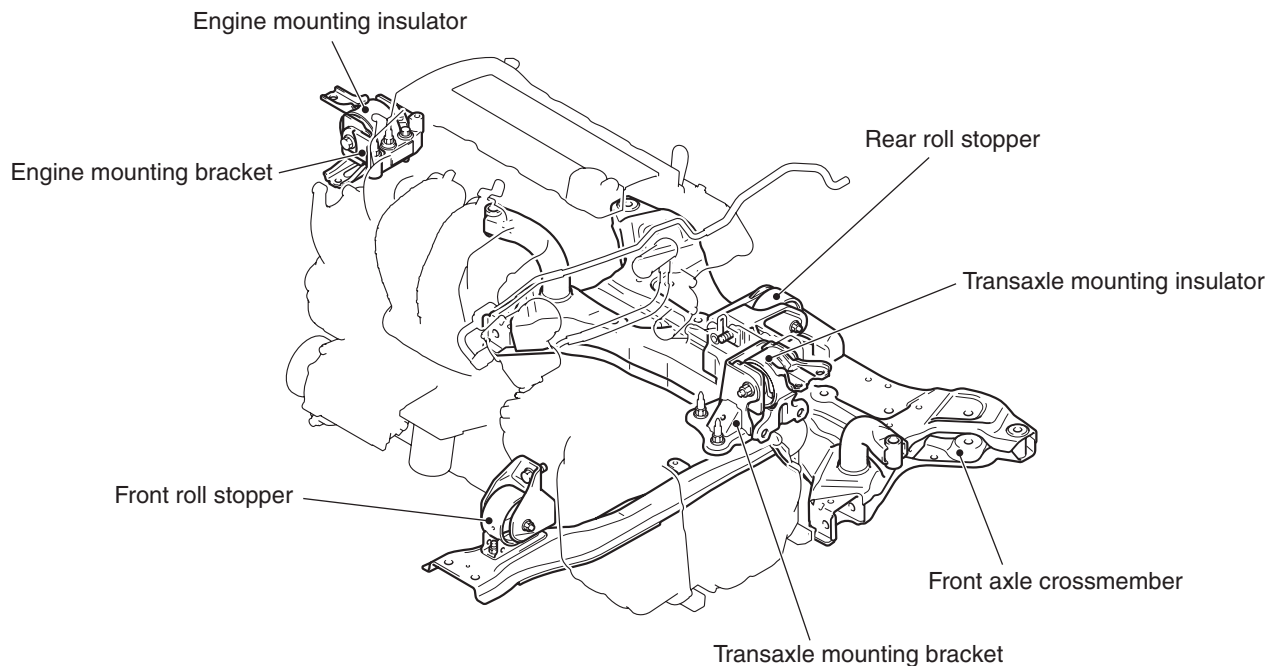
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## &lt;2.0L ENGINE NON-TURBO, 2.4L ENGINE&gt;

To support the power plant, the inertial axis four-point mount system has been adopted. The system has the following features:

- For the engine and transaxle mounting insulator, the cylindrical liquid seal mount has been adopted. It reduces the idling vibration and acceleration noise, and improves riding comfort.
- For the engine mounting bracket, lightweight and high rigidity aluminum has been adopted to reduce acceleration noise.
- For the transaxle mounting bracket, lightweight and high rigidity sheet metal has been adopted to reduce the gear noise.
- For the front and rear roll stoppers, insulators developed exclusively for M/T vehicle or CVT vehicle have been adopted. It reduces the idling vibration and acceleration/deceleration shock.
- A front axle crossmember has been adopted to improve steering ability.

## CONSTRUCTION DIAGRAM



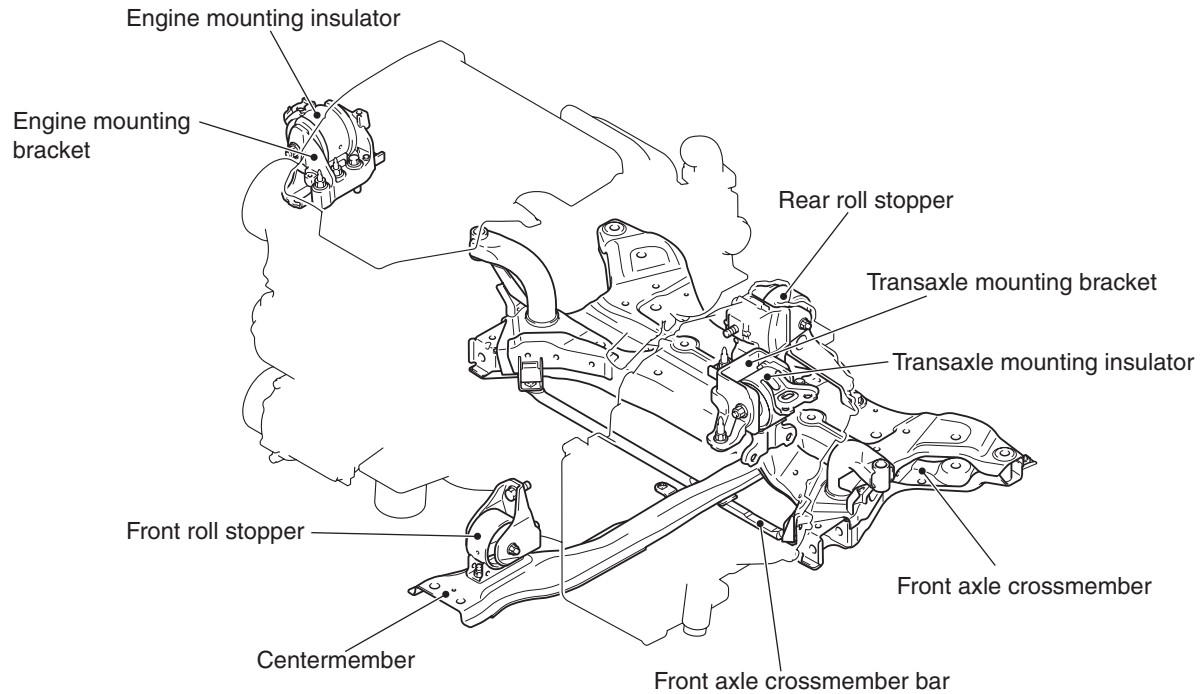
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## &lt;2.0L ENGINE TURBO&gt;

For the power plant support, the inertial axis four-point mounting system is adopted, and the system has the following features.

- Environmental-load substances are totally abolished for hexavalent chromium-free and lead-free components.
- For the engine and transaxle mounting insulator, the cylindrical liquid seal mountings are adopted. This reduces idling vibration and acceleration noise, and improves riding comfort.
- A front axle crossmember is adopted to improve steering ability.
- The mass damper is added into the centermember to reduce muffled sound during acceleration.
- The front axle crossmember bar is added to enhance rigidity.

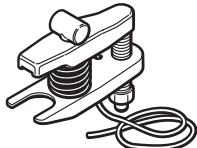
## CONSTRUCTION DIAGRAM



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## SPECIAL TOOL

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Tool	Tool number and name	Supersession	Application
 <p>MB991897</p>	<p>MB991897 or MB992011 Ball joint remover</p>	<p>MB991113-01, MB990635-01 or General service tool</p>	<p>Knuckle and tie rod end ball joint disconnection</p> <p><i>NOTE: Conventional steering linkage puller, MB991406, MB990635 or MB991113 can also be used</i></p>

## ENGINE MOUNTING

## REMOVAL AND INSTALLATION &lt;2.0L ENGINE NON-TURBO, 2.4L ENGINE&gt;

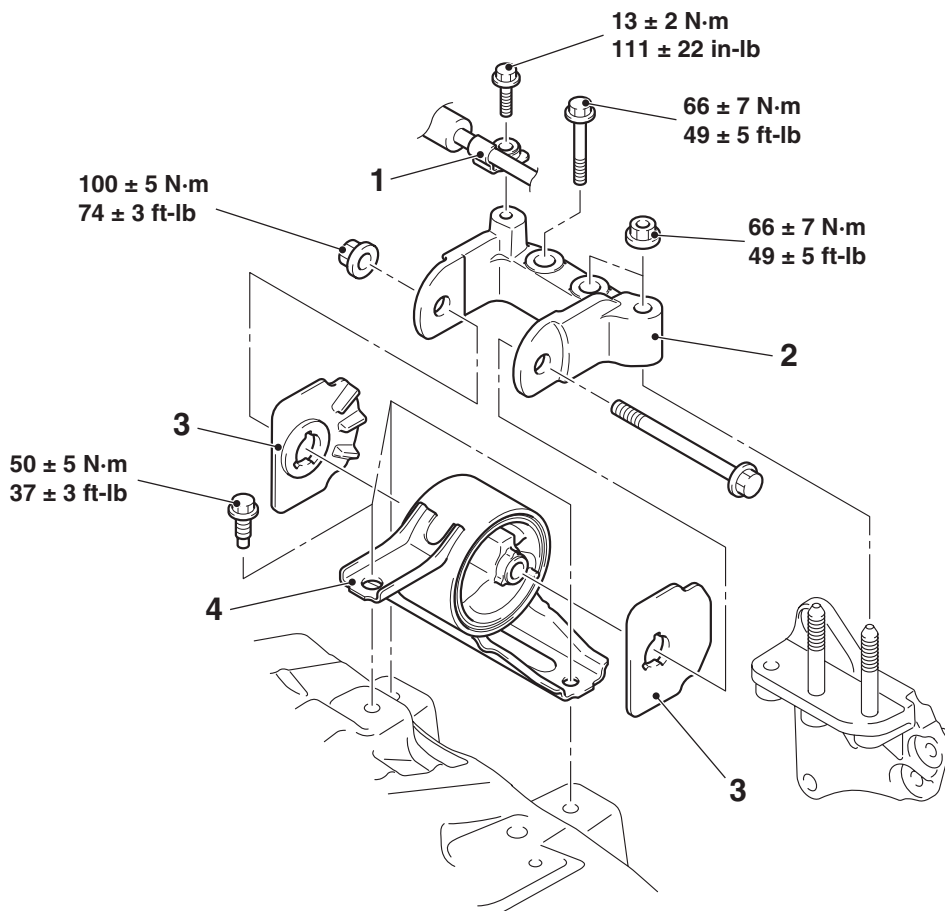
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**Pre-removal Operation**

- Engine Room Under Cover Front B and Engine Room Side Cover (RH) Removal (Refer to GROUP 51, Under Cover P.51-17.)
- Radiator Condenser Tank Removal (Refer to GROUP 14, Radiator P.14-50.)

**Post-installation Operation**

- Radiator Condenser Tank Installation (Refer to GROUP 14, Radiator P.14-50.)
- Engine Room Under Cover Front B and Engine Room Side Cover (RH) Installation (Refer to GROUP 51, Under Cover P.51-17.)



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**Removal steps**

1. Power steering pressure hose clamp connection
- Power steering oil pump assembly (Refer to GROUP 37, Power Steering Oil Pump Assembly P.37-49)

**Removal steps (Continued)**

2. Engine mounting bracket
3. Engine mounting insulator stopper
4. Engine mounting insulator

&lt;&lt;A&gt;&gt;

&lt;&lt;B&gt;&gt;

&gt;&gt;A&lt;&lt;

## REMOVAL SERVICE POINTS

<<A>> POWER STEERING OIL PUMP ASSEMBLY  
REMOVAL

Remove the power steering oil pump assembly together with the hose from the bracket.

## <<B>> ENGINE MOUNTING BRACKET REMOVAL

### CAUTION

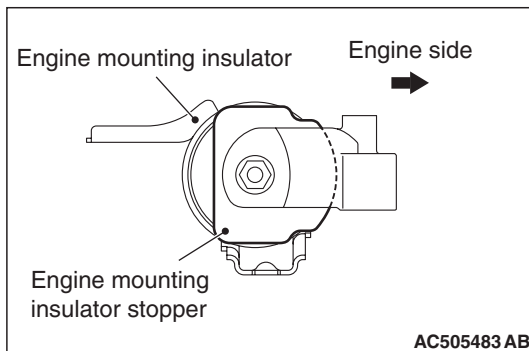
When supporting the engine and transaxle assembly with a garage jack, be careful not to deform the engine oil pan.

1. Place a garage jack against the engine oil pan with a piece of wood in between to support the engine and transaxle assembly.
2. Operate a garage jack so that the engine weight is not applied to the engine mounting insulator, and remove the engine mounting insulator.

## INSTALLATION SERVICE POINT

### >>A<< ENGINE MOUNTING INSULATOR STOPPER INSTALLATION

Install the engine mounting insulator stopper as shown in the figure.



## REMOVAL AND INSTALLATION &lt;2.0L ENGINE TURBO&gt;

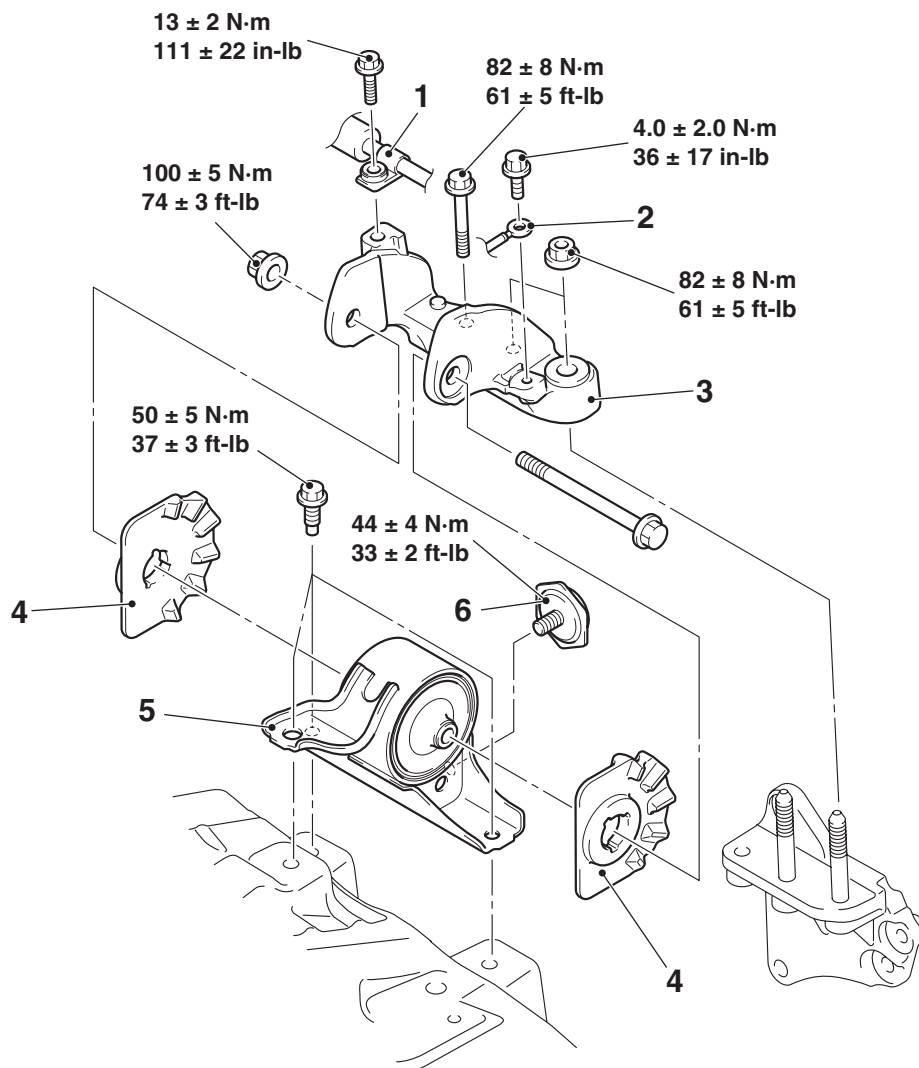
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**Pre-removal Operation**

- Engine Room Under Cover Front A, B Removal (Refer to GROUP 51, Under Cover P.51-17.)
- Radiator Condenser Tank Removal (Refer to GROUP 14, Radiator P.14-53.)
- Fuel Pump Resistor Removal (Refer to GROUP 13B, Engine Control Resistor P.13B-881.)

**Post-installation Operation**

- Fuel Pump Resistor Installation (Refer to GROUP 13B, Engine Control Resistor P.13B-881.)
- Radiator Condenser Tank Installation (Refer to GROUP 14, Radiator P.14-53.)
- Engine Room Under Cover Front A, B Installation (Refer to GROUP 51, Under Cover P.51-17.)



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**Removal steps**

1. Power steering pressure hose clamp connection
2. Grounding cable connection
3. Engine mounting bracket

**Removal steps (Continued)**

- >>A<<
4. Engine mounting insulator stopper
  5. Engine mounting insulator
  6. Engine mounting stopper

&lt;&lt;A&gt;&gt;

## REMOVAL SERVICE POINT

### <<A>> ENGINE MOUNTING BRACKET REMOVAL

#### CAUTION

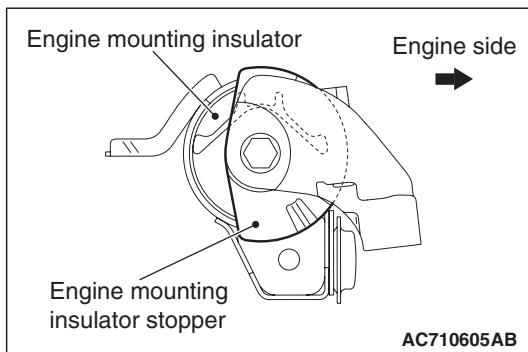
When supporting the engine and transaxle assembly by using the garage jack, pay attention not to deform the engine oil pan.

1. Place a garage jack against the engine oil pan with a piece of wood in between, and support the engine and transaxle assembly.
2. Operate the garage jack so that the engine and transaxle assembly weight is not applied to the engine mounting insulator, and then remove the engine mounting bracket.

## INSTALLATION SERVICE POINT

### >>A<< ENGINE MOUNTING INSULATOR STOPPER INSTALLATION

Install the engine mounting insulator stopper as shown in the figure.



## TRANSAXLE MOUNTING

## REMOVAL AND INSTALLATION &lt;2.0L ENGINE NON-TURBO, 2.4L ENGINE&gt;

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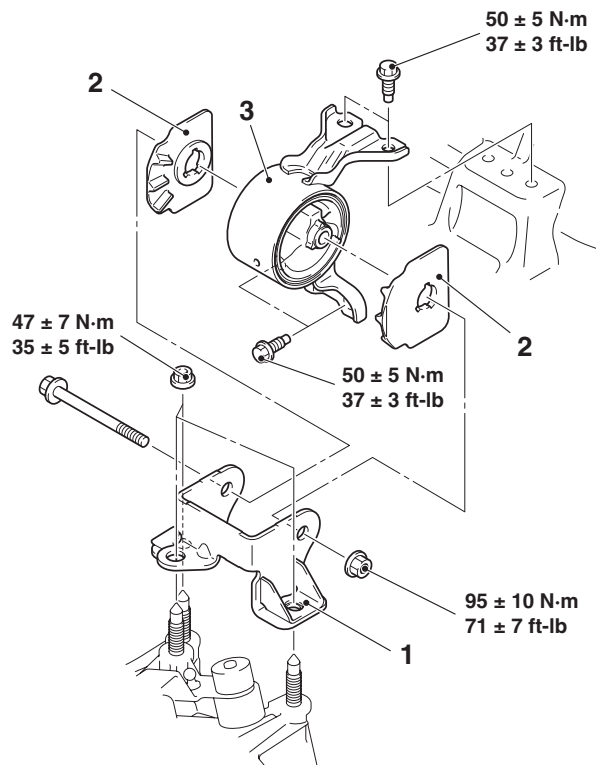
**Pre-removal operation**

- Battery and Battery Tray Removal (Refer to GROUP 54A, Battery [P.54A-10.](#))
- Air Cleaner Assembly and Air Cleaner Bracket Removal (Refer to GROUP 15, Air Cleaner [P.15-9.](#))
- Engine Control Module (ECM) Removal [Refer to GROUP 13A, Engine Control Module (ECM) [P.13A-985.](#)] <2.0L ENGINE Non-turbo>
- Engine Control Module (ECM) Removal [Refer to GROUP 13C, Engine Control Module (ECM) [P.13C-972.](#)] <2.4L ENGINE>
- Relay box mounting bolts Removal.
- Engine Room Under Cover Front B Removal (Refer to GROUP 51, Under Cover [P.51-17.](#))
- Centermember Removal (Refer to [P.32-12.](#)) <CVT>
- Backbone Brace Removal (Refer to GROUP 42A, Loose panel [P.42A-199.](#)) <CVT>
- Front Exhaust Pipe and Center Exhaust Pipe Connection Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler [P.15-30.](#)) <CVT>
- Transaxle Case Rear Roll Stopper Bracket Removal (Refer to GROUP 22A, Transaxle Assembly [P.22A-13.](#)) <M/T>
- Transaxle Case Rear Roll Stopper Bracket Removal (Refer to GROUP 23A, Transaxle Assembly [P.23A-155.](#)) <CVT>

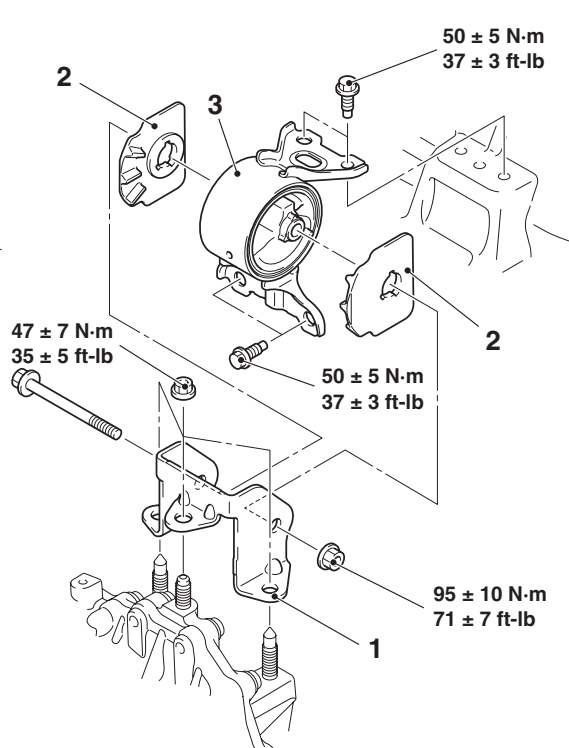
**Post-installation operation**

- Transaxle Case Rear Roll Stopper Bracket Installation (Refer to GROUP 22A, Transaxle Assembly [P.22A-13.](#)) <M/T>
- Transaxle Case Rear Roll Stopper Bracket Installation (Refer to GROUP 23A, Transaxle Assembly [P.23A-155.](#)) <CVT>
- Front Exhaust Pipe and Center Exhaust Pipe Connection Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler [P.15-30.](#)) <CVT>
- Backbone Brace Installation (Refer to GROUP 42A, Loose panel [P.42A-199.](#)) <CVT>
- Centermember Installation (Refer to [P.32-12.](#)) <CVT>
- Relay box mounting bolts Installation.
- Engine Room Under Cover Front B Installation (Refer to GROUP 51, Under Cover [P.51-17.](#))
- Engine Control Module (ECM) Installation [Refer to GROUP 13A, Engine Control Module (ECM) [P.13A-985.](#)] <2.0L ENGINE Non-turbo>
- Engine Control Module (ECM) Installation [Refer to GROUP 13C, Engine Control Module (ECM) [P.13C-972.](#)] <2.4L ENGINE>
- Air Cleaner Assembly and Air Cleaner Bracket Installation (Refer to GROUP 15, Air Cleaner [P.15-9.](#))
- Battery and Battery Tray Installation (Refer to GROUP 54A, Battery [P.54A-10.](#))

&lt;M/T&gt;



&lt;CVT&gt;



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AC613531  
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<<A>>

**Removal steps**

1. Transaxle mounting bracket

>>A<<

**Removal steps (Continued)**

2. Transaxle mounting insulator stopper
3. Transaxle mounting insulator

**REMOVAL SERVICE POINT**

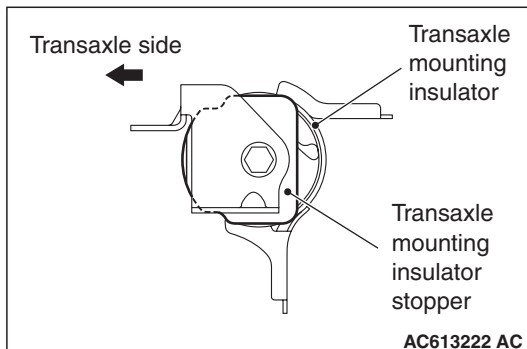
**<<A>> TRANSAXLE MOUNTING BRACKET  
REMOVAL**

1. Place a garage jack against the transaxle case with a piece of wood in between to support the engine and transaxle assembly.
2. Operate a garage jack so that the transaxle weight is not applied to the transaxle mounting insulator, and remove the transaxle mounting bracket.

**INSTALLATION SERVICE POINT**

**>>A<< TRANSAXLE MOUNTING INSULATOR  
STOPPER INSTALLATION**

Install the transaxle mounting insulator stopper as shown in the figure.



## REMOVAL AND INSTALLATION &lt;2.0L ENGINE TURBO&gt;

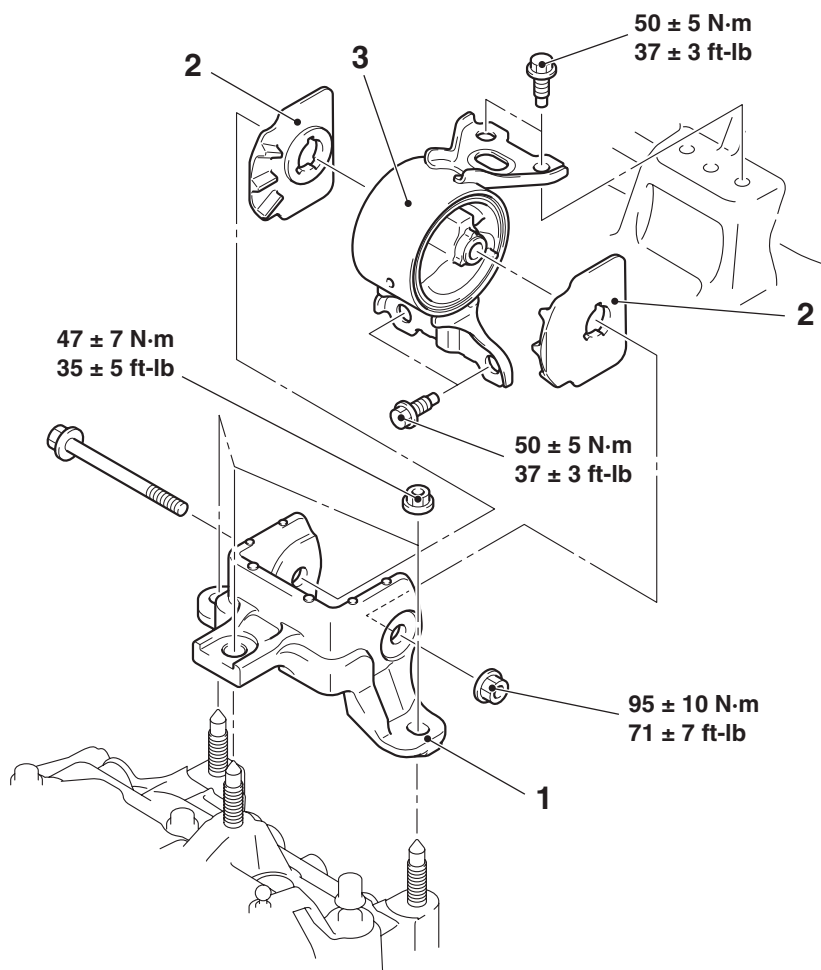
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**Pre-removal operation**

- Engine Room Under Cover Front A, B and Engine Room Side Cover (LH) Removal (Refer to GROUP 51, Under Cover P.51-17.)
- Air Cleaner Assembly Removal (Refer to GROUP 15, Air Cleaner P.15-10.)
- Engine Control Module (ECM) Removal [Refer to GROUP 13B, Engine Control Module (ECM) P.13B-883.]
- Battery and Battery Tray Removal (Refer to GROUP 54A, Battery P.54A-10.)
- Relay box mounting bolts Removal.

**Post-installation operation**

- Relay box mounting bolts Installation.
- Battery and Battery Tray Installation (Refer to GROUP 54A, Battery P.54A-10.)
- Engine Control Module (ECM) Installation [Refer to GROUP 13B, Engine Control Module (ECM) P.13B-883.]
- Air Cleaner Assembly Installation (Refer to GROUP 15, Air Cleaner P.15-10.)
- Engine Room Under Cover Front A, B and Engine Room Side Cover (LH) Installation (Refer to GROUP 51, Under Cover P.51-17.)



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&lt;&lt;A&gt;&gt;

**Removal steps**

1. Transaxle mounting bracket

&gt;&gt;A&lt;&lt;

**Removal steps (Continued)**

2. Transaxle mounting insulator stopper
3. Transaxle mounting insulator

## REMOVAL SERVICE POINT

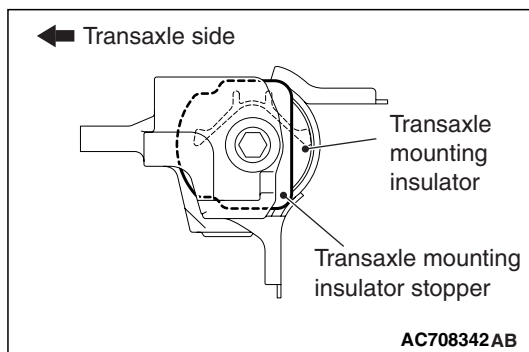
### <<A>> TRANSAXLE MOUNTING BRACKET REMOVAL

1. Place a garage jack against the transaxle case with a piece of wood in between, and support the engine and transaxle assembly.
2. Operate the garage jack so that the engine and transaxle assembly weight is not applied to the transaxle mounting insulator, and then remove the transaxle mounting bracket.

## INSTALLATION SERVICE POINT

### >>A<< TRANSAXLE MOUNTING INSULATOR STOPPER INSTALLATION

Install the transaxle mounting insulator stopper as shown in the figure.



# ENGINE ROLL STOPPER AND CENTERMEMBER

## <2.0L ENGINE Non-turbo, 2.4L ENGINE>

### REMOVAL AND INSTALLATION

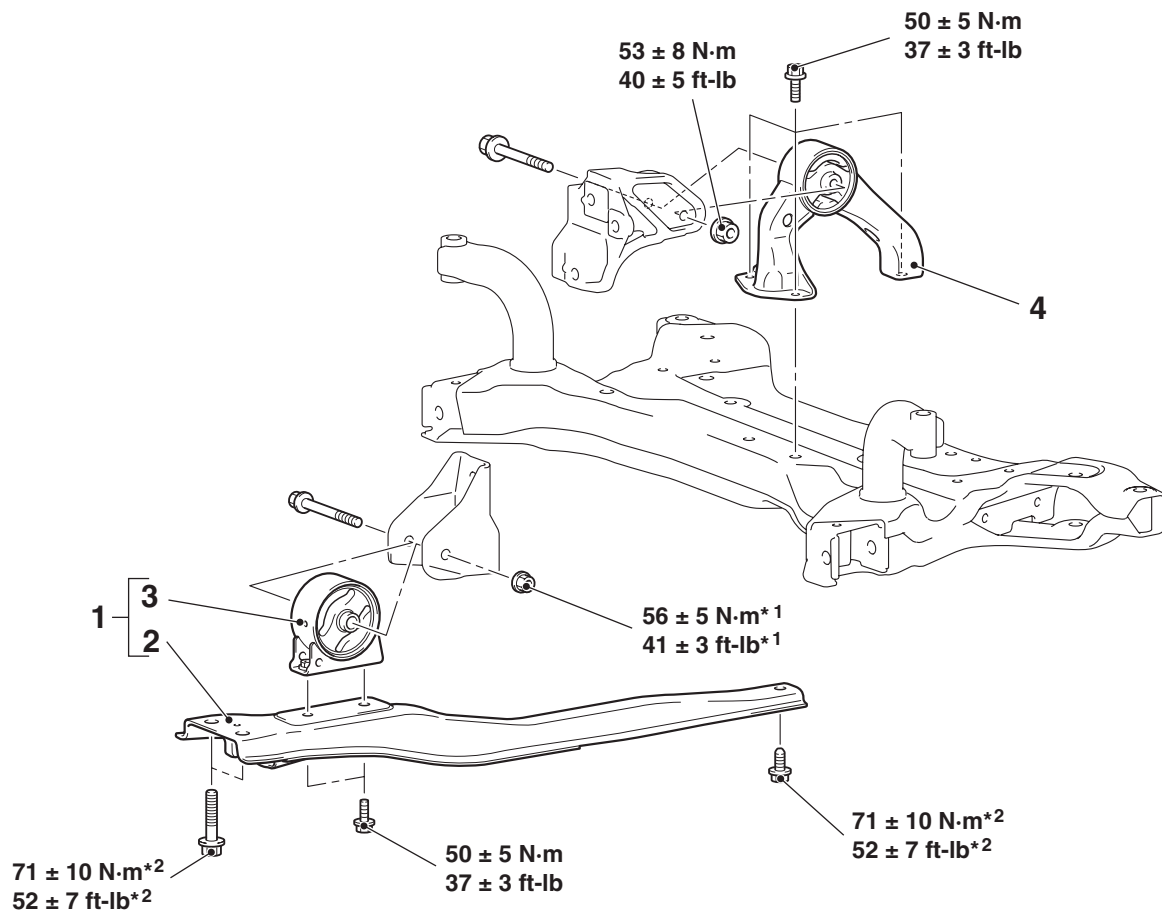
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#### ⚠ CAUTION

- The part indicated by the \*<sup>1</sup> mark should be temporarily tightened, and then fully tightened with the engine and transaxle assembly weight applied on the vehicle body.
- The parts indicated by the \*<sup>2</sup> are the bolts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from bearing and thread surfaces, and tighten them to the specified torque.

#### Pre-removal and post-installation operation

- Engine Room Under Cover Front A, B Removal and Installation (Refer to GROUP 51, Under Cover [P.51-17.](#))



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#### Front roll stopper and centermember removal steps

1. Centermember and front roll stopper assembly
  2. Centermember
  3. Front roll stopper
- >>A<<

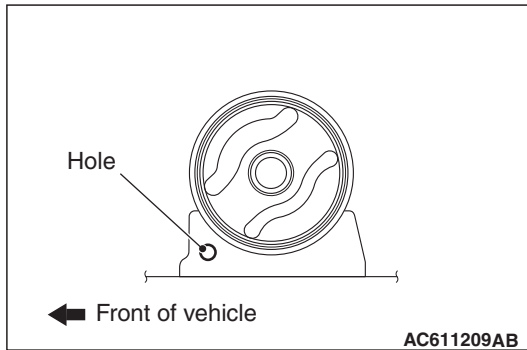
#### Rear roll stopper removal steps

- Front floor backbone brace B (Refer to GROUP 42A, Loose Panel [P.42A-199.](#))
- 4. Rear roll stopper

## INSTALLATION SERVICE POINT

### >>A<< FRONT ROLL STOPPER INSTALLATION

Install the front roll stopper so that the hole faces toward the vehicle front.



# FRONT ROLL STOPPER AND CENTER MEMBER <2.0L ENGINE Turbo>

## REMOVAL AND INSTALLATION

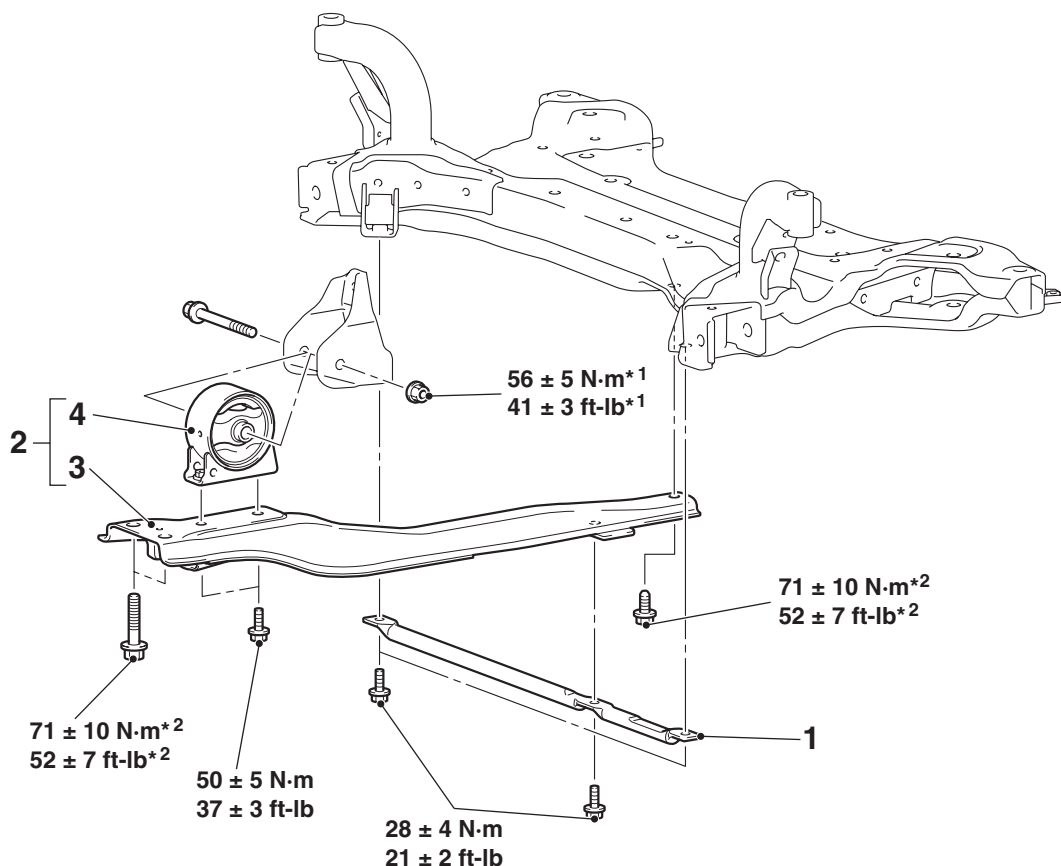
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### ⚠ CAUTION

- The part indicated by the \*<sup>1</sup> mark should be temporarily tightened, and then fully tightened with the engine and transaxle assembly weight applied on the vehicle body.
- The parts indicated by the \*<sup>2</sup> are the bolts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from bearing and thread surfaces, and tighten them to the specified torque.

#### Pre-removal and post-installation operation

- Engine Room Under Cover Front A, B Removal and Installation (Refer to GROUP 51, Under Cover [P.51-17.](#))



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#### Removal steps

1. Front axle crossmember bar
2. Centermember and front roll stopper assembly

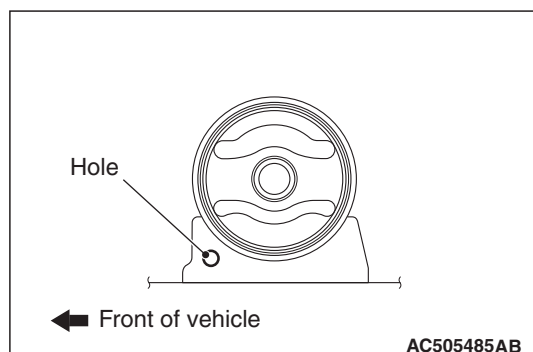
#### Removal steps (Continued)

- >>A<<
3. Centermember
  4. Front roll stopper

## INSTALLATION SERVICE POINT

### >>A<< FRONT ROLL STOPPER INSTALLATION

Install the front roll stopper so that the hole faces toward the vehicle front.



# CROSSMEMBER <2.0L ENGINE Non-turbo, 2.4L ENGINE> REMOVAL AND INSTALLATION

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**⚠ CAUTION**

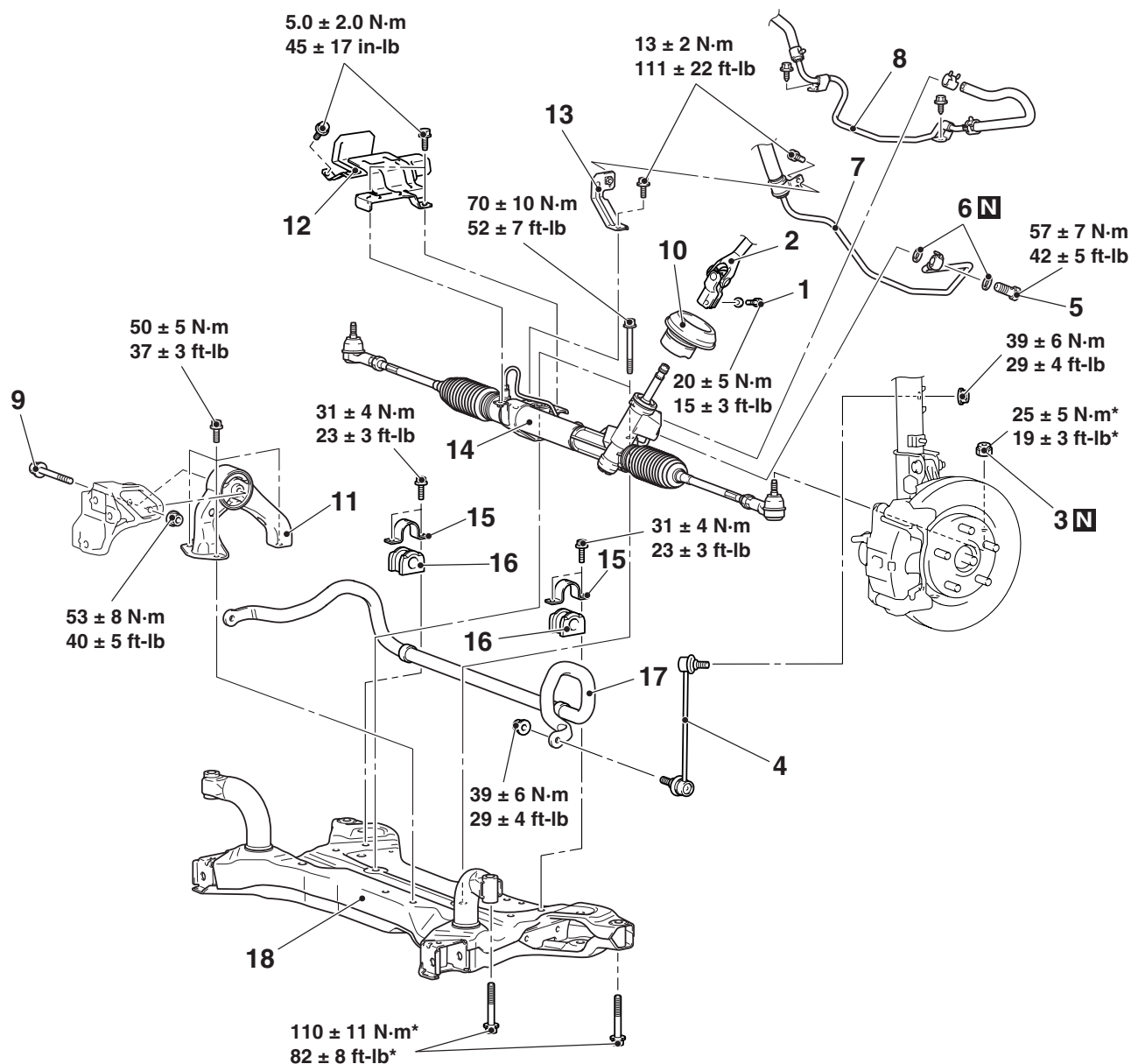
- Before removing the steering wheel assembly and driver's air bag module assembly, always refer to GROUP 52B, Service Precautions [P.52B-26](#), and Driver's Air Bag Module and Clock Spring [P.52B-419](#). Also, position the front wheels in a straight ahead direction, and remove the ignition key. If you fail to do this, clock spring for SRS may get damage, making the SRS (air bag) inoperative, and it may cause a serious injury to the driver.
- The parts indicated by \* are the bolts/nuts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from the bearing and thread surfaces, and tighten them to the specified torque.
- After the installation, perform a calibration for the ASC-ECU to learn the steering wheel sensor neutral point (Refer to GROUP 35C, On-vehicle Service –Steering Wheel Sensor Calibration [P.35C-295](#).)

**Pre-removal operation**

- Power Steering Fluid Draining (Refer to GROUP 37, On-vehicle Service –Power Steering Fluid Replacement [P.37-24](#).)
- Steering Wheel and Air Bag Module Assembly Removal (Refer to GROUP 37, Steering Wheel [P.37-32](#).)
- Steering Shaft Cover Removal (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-37](#).)
- Engine Room Under Cover Front A, B and Engine Room Side Cover Removal (Refer to GROUP 51, Under Cover [P.51-17](#).)
- Centermember and Front Roll Stopper Assembly Removal (Refer to [P.32-12](#).)
- Lower Arm Assembly Removal (Refer to GROUP 33, Lower Arm [P.33-17](#).)

**Post-installation operation**

- Using Your Fingers, Press The Tie-rod End Ball Joint Dust Cover to Check for a Crack or Damage (Refer to GROUP 37, On-vehicle Service –Ball Joint Dust Cover Check [P.37-22](#).)
- Using Your Fingers, Press The Stabilizer Link Ball Joint Dust Cover to Check for a Crack or Damage (Refer to GROUP 33, On-vehicle Service –Ball Joint Dust Cover Check [P.33-10](#).)
- Lower Arm Assembly Installation (Refer to GROUP 33, Lower Arm [P.33-17](#).)
- Centermember and Front Roll Stopper Assembly Installation (Refer to [P.32-12](#).)
- Engine Room Under Cover Front A, B and Engine Room Side Cover Installation (Refer to GROUP 51, Under Cover [P.51-17](#).)
- Steering Shaft Cover Installation (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-37](#).)
- Steering Wheel and Air Bag Module Assembly Installation (Refer to GROUP 37, Steering Wheel [P.37-32](#).)
- Power Steering Fluid Air Bleeding (Refer to GROUP 37, On-vehicle Service –Power Steering System Air Bleeding [P.37-25](#).)
- Steering Wheel Straight-ahead Position Check.
- Front Wheel Alignment Check and Adjustment (Refer to GROUP 33, On-vehicle Service –Front Wheel Alignment Check and Adjustment [P.33-8](#).)
- Steering Wheel Sensor Calibration (Refer to GROUP 35C, On-vehicle Service –Steering Wheel Sensor Calibration [P.35C-295](#).)



AC803173 AB

**Removal steps**

- <<A>> >>C<< 1. Steering column bolt
- <<A>> >>C<< 2. Steering column shaft assembly and steering gear and linkage assembly connection
- <<B>> 3. Self-lock nut (Tie-rod end and knuckle connection)
4. Stabilizer link assembly
5. Eye bolt
6. Gasket
7. Pressure hose assembly
8. Return hose connection
9. Rear roll stopper center bolt

<<C>>

**Removal steps (Continued)**

- Front floor backbone brace B (Refer to GROUP 42A, Loose Panel [P.42A-199](#))
  - Front axle crossmember assembly
- >>B<< 10. Joint cover grommet
11. Rear roll stopper
12. Heat protector
13. Power steering oil line bracket
- >>A<< 14. Steering gear and linkage assembly
- >>A<< 15. Stabilizer bar bracket
- >>A<< 16. Stabilizer bushing
17. Stabilizer bar
18. Front axle crossmember

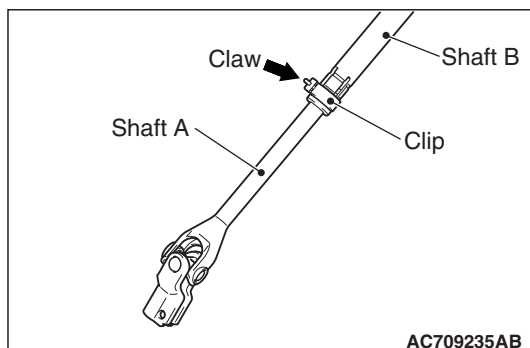
**Required Special Tool:**

- MB991897 or MB992011: Ball Joint Remover

## REMOVAL SERVICE POINTS

<<A>> STEERING COLUMN SHAFT ASSEMBLY  
AND STEERING GEAR AND LINKAGE DISCON-  
NECTION

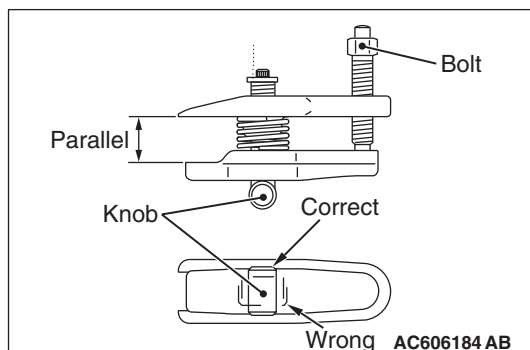
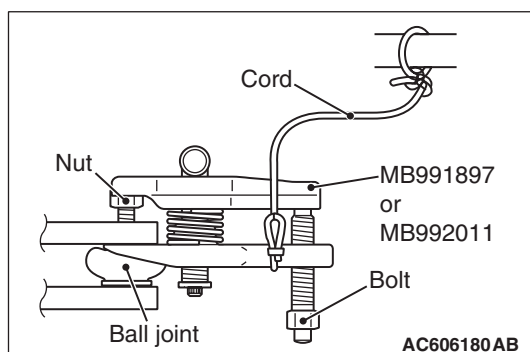
Disconnect the steering gear from the steering column assembly while sliding the shaft A to the shaft B with the clip claw as shown in the figure is pinched.

<<B>> TIE-ROD END AND KNUCKLE  
DISCONNECTION

## ⚠ CAUTION

- Do not remove the nut from the ball joint, but only loosen it, and use the special tool.
- To prevent the special tool from dropping off, suspend it with a cord.

1. Install special tool MB991897 or MB992011 as shown in the figure.



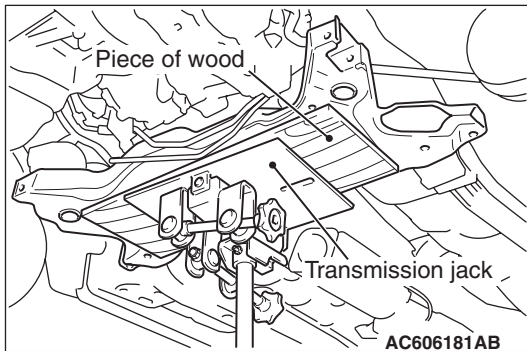
2. Turn the bolt and knob to make the special tool jaws parallel, then hand-tighten the bolt. After tightening, check that the jaws are still parallel.

**NOTE:** To adjust the special tool jaws to be parallel, set the knob as shown in the figure so that it functions as a fulcrum of the jaws.

3. Turn the bolt and disconnect the tie-rod end from the steering knuckle.

## <<C>> FRONT AXLE CROSSMEMBER ASSEMBLY REMOVAL

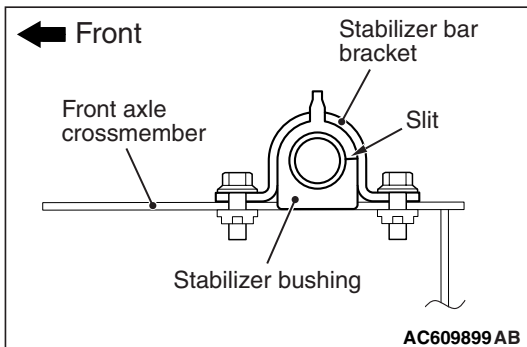
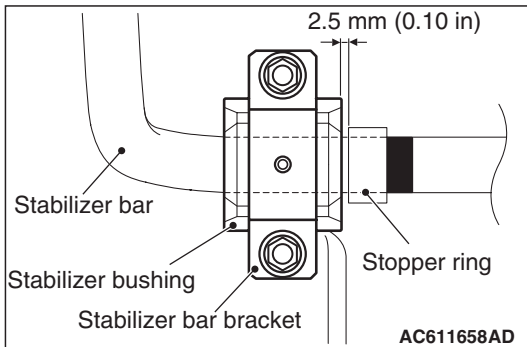
1. Jack up and support the front axle crossmember, remove the front axle crossmember mounting bolt.
2. Check the hoses and harnesses for roughness, and then remove the front axle crossmember assembly with the rear roll stopper, steering gear and linkage and stabilizer bar installed.



## INSTALLATION SERVICE POINTS

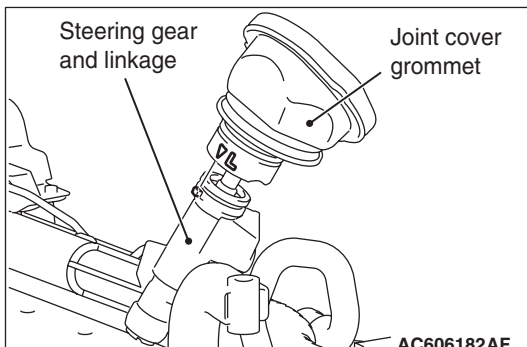
### >>A<< STABILIZER BAR/STABILIZER BUSH- ING/STABILIZER BAR BRACKET INSTALLATION

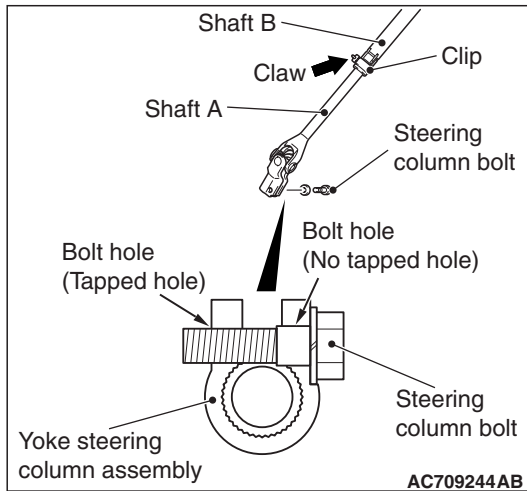
1. Install the stabilizer bar as shown in the figure.
2. Install the stabilizer bushing as shown in the figure.



### >>B<< JOINT COVER GROMMET INSTALLATION

Install the joint cover grommet to the steering gear and linkage by aligning the mating marks as shown in the figure.



**>>C<< STEERING COLUMN SHAFT ASSEMBLY  
AND STEERING GEAR AND LINKAGE ASSEMBLY  
CONNECTION/STEERING COLUMN BOLT  
INSTALLATION**

1. Pinch the claw of the clip shown in the figure. While sliding shaft A from shaft B, connect the steering column shaft assembly with the steering gear and linkage assembly.
2. Insert the steering column bolt into the non-threaded bolt hole, and tighten it to the specified torque.

**Tightening torque:  $20 \pm 5$  N·m ( $15 \pm 3$  ft-lb)**

# REAR ROLL STOPPER AND CROSSMEMBER <2.0L ENGINE Turbo>

## REMOVAL AND INSTALLATION

M1321006100092

### CAUTION

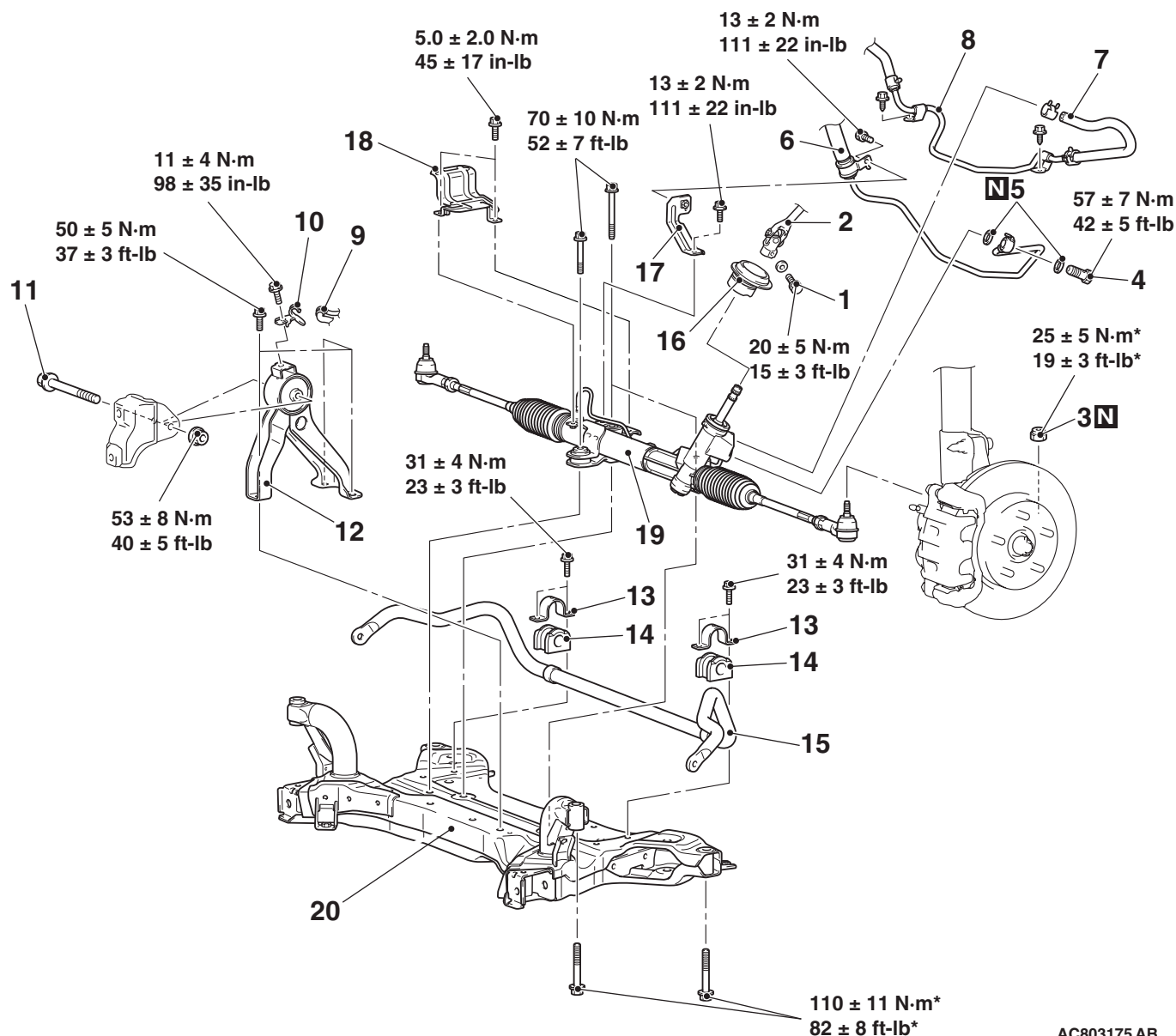
- Before removing the steering wheel assembly and driver's air bag module assembly, always refer to GROUP 52B, Service Precautions [P.52B-26](#), and Driver's Air Bag Module and Clock Spring [P.52B-427](#). Also, position the front wheels in a straight ahead direction, and remove the ignition key.If you fail to do this, clock spring for SRS may get damage, making the SRS (air bag) inoperative, and it may cause a serious injury to the driver.
- The parts indicated by \* are the bolts/nuts with friction coefficient stabilizer. In removal, ensure there is no damage, clean dust and soiling from the bearing and thread surfaces, and tighten them to the specified torque.
- After the installation, perform a calibration for the ASC-ECU to learn the steering wheel sensor neutral point (Refer to GROUP 35C, On-vehicle Service –Steering Wheel Sensor Calibration [P.35C-295](#).)

#### Pre-removal operation

- Power Steering Fluid Draining (Refer to GROUP 37, On-vehicle Service –Power Steering Fluid Replacement [P.37-24](#).)
- Steering Wheel and Air Bag Module Assembly Removal (Refer to GROUP 37, Steering Wheel [P.37-32](#).)
- Steering Shaft Cover Removal (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-37](#).)
- Engine Room Under Cover Front A, B and Engine Room Side Cover Removal (Refer to GROUP 51, Under Cover [P.51-17](#).)
- Stabilizer Link Removal (Refer to GROUP 33, Stabilizer Bar [P.33-21](#).)
- Lower Arm Assembly Removal (Refer to GROUP 33, Lower Arm [P.33-17](#).)
- Centermember and Front Roll Stopper Assembly Removal (Refer to [P.32-14](#)).

#### Post-installation operation

- Using Your Fingers, Press The Tie-rod End Ball Joint Dust Cover to Check for a Crack or Damage (Refer to GROUP 37, On-vehicle Service –Ball Joint Dust Cover Check [P.37-22](#).)
- Using Your Fingers, Press The Stabilizer Link Ball Joint Dust Cover to Check for a Crack or Damage (Refer to GROUP 33, On-vehicle Service –Ball Joint Dust Cover Check [P.33-10](#).)
- Centermember and Front Roll Stopper Assembly Installation (Refer to [P.32-14](#).)
- Lower Arm Assembly Installation (Refer to GROUP 33, Lower Arm [P.33-17](#).)
- Stabilizer Link Installation (Refer to GROUP 33, Stabilizer Bar [P.33-21](#).)
- Engine Room Under Cover Front A, B and Engine Room Side Cover Installation (Refer to GROUP 51, Under Cover [P.51-17](#).)
- Steering Shaft Cover Installation (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-32](#).)
- Steering Wheel and Air Bag Module Assembly Installation (Refer to GROUP 37, Steering Wheel [P.37-32](#).)
- Power Steering Fluid Air Bleeding (Refer to GROUP 37, On-vehicle Service –Power Steering System Air Bleeding [P.37-25](#).)
- Steering Wheel Straight-ahead Position Check.
- Front Wheel Alignment Check and Adjustment (Refer to GROUP 33, On-vehicle Service –Front Wheel Alignment Check and Adjustment [P.33-8](#).)
- Steering Wheel Sensor Calibration (Refer to GROUP 35C, On-vehicle Service –Steering Wheel Sensor Calibration [P.35C-295](#).)



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**Removal steps**

- >>C<< 1. Steering column bolt  
 <<A>> >>C<< 2. Steering column shaft assembly and steering gear and linkage assembly connection  
 <<B>> 3. Self-lock nut (Tie-rod end and knuckle connection)  
 • Front floor backbone brace B (Refer to GROUP 42A, Loose Panel P.42A-199.)  
 4. Eye bolt  
 5. Gasket  
 6. Pressure hose assembly  
 7. Return hose connection  
 8. Return hose assembly

&lt;&lt;C&gt;&gt;

**Removal steps (Continued)**

9. Transaxle control cable bracket connection  
 10. Transaxle control cable bracket  
 11. Rear roll stopper center bolt  
 • Front axle crossmember assembly  
 12. Rear roll stopper  
 >>B<< 13. Stabilizer bar bracket  
 >>B<< 14. Stabilizer bushing  
 >>B<< 15. Stabilizer bar  
 >>A<< 16. Joint cover grommet  
 17. Power steering pressure hose bracket  
 18. Heat protector  
 19. Steering gear and linkage assembly  
 20. Front axle crossmember

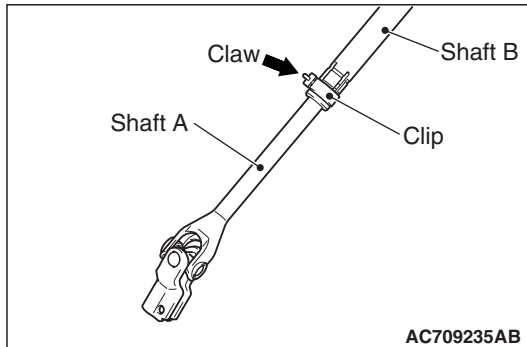
**Required Special Tool:**

- MB991897 or MB992011: Ball Joint Remover

## REMOVAL SERVICE POINTS

### <<A>> STEERING COLUMN SHAFT ASSEMBLY AND STEERING GEAR AND LINKAGE DISCONNECTION

Disconnect the steering gear from the steering column assembly while sliding the shaft A to the shaft B with the clip claw as shown in the figure is pinched.

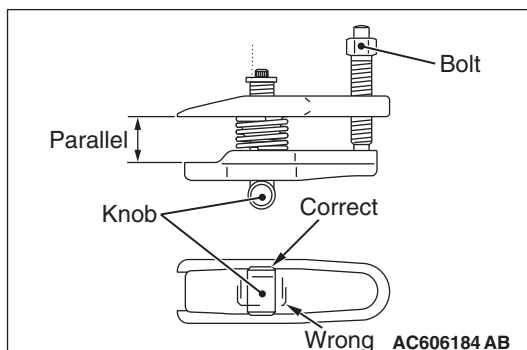
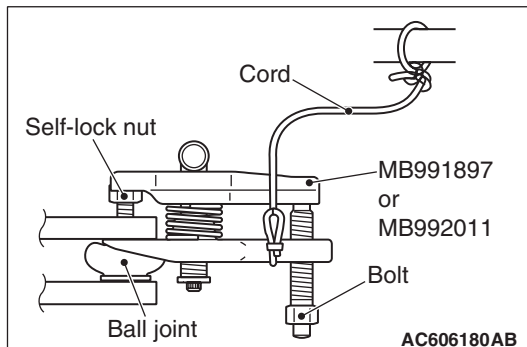


### <<B>> SELF-LOCK NUT (TIE-ROD END AND KNUCKLE CONNECTION) REMOVAL

#### ⚠ CAUTION

- Do not remove the self-lock nut from the ball joint, but only loosen it, and use the special tool.
- To prevent the special tool from dropping off, suspend it with a cord.

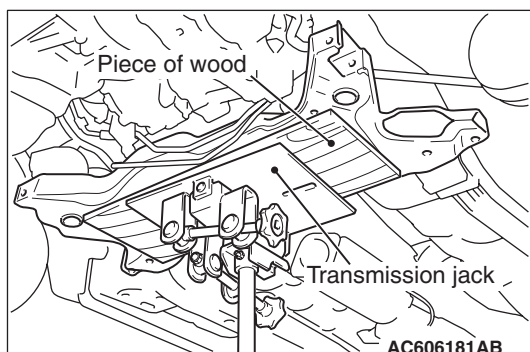
1. Install special tool MB991897 or MB992011 as shown in the figure.



2. Turn the bolt and knob to make the special tool jaws parallel, then hand-tighten the bolt. After tightening, check that the jaws are still parallel.

**NOTE:** To adjust the special tool jaws to be parallel, set the knob as shown in the figure so that it functions as a fulcrum of the jaws.

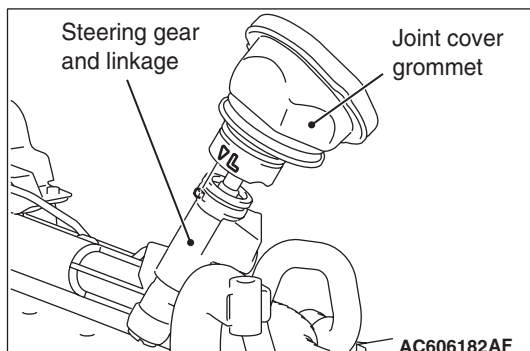
3. Turn the bolt and disconnect the tie-rod end from the steering knuckle.

**<<C>> FRONT AXLE CROSSMEMBER  
ASSEMBLY REMOVAL**

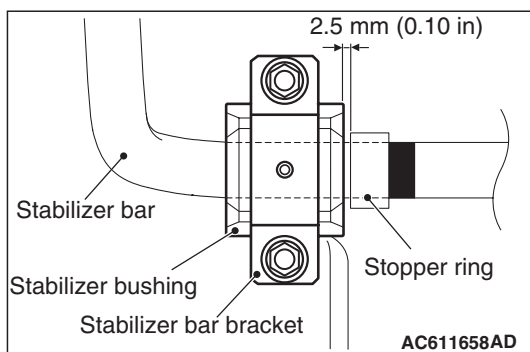
1. Jack up and support the front axle crossmember, remove the front axle crossmember mounting bolts.
2. Check the hoses and harnesses for roughness, and then remove the front axle crossmember assembly with the rear roll stopper, steering gear and linkage and stabilizer bar installed.

**INSTALLATION SERVICE POINTS****>>A<< JOINT COVER GROMMET INSTALLATION**

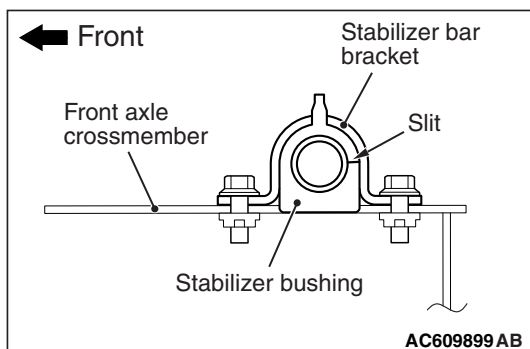
Install the joint cover grommet by aligning the projection of the steering gear and linkage assembly with the mating mark of the joint cover grommet as shown in the figure.

**>>B<< STABILIZER BAR/STABILIZER  
BUSHING/STABILIZER BAR BRACKET  
INSTALLATION**

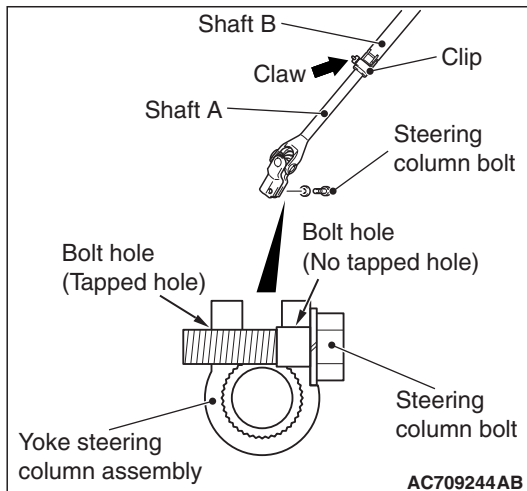
1. Install the stabilizer bar as shown in the figure.



2. Install the stabilizer bushing as shown in the figure.



### >>C<< STEERING COLUMN SHAFT ASSEMBLY AND STEERING GEAR AND LINKAGE ASSEMBLY CONNECTION/STEERING COLUMN BOLT INSTALLATION



1. Pinch the claw of the clip shown in the figure. While sliding shaft A from shaft B, connect the steering column shaft assembly with the steering gear and linkage assembly.
2. Insert the steering column bolt into the no-tapped bolt hole, and tighten it to the specified torque.

**Tightening torque:  $20 \pm 5$  N·m ( $15 \pm 3$  ft-lb)**

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## NOTES