

## GROUP 32

# POWER PLANT MOUNT

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## GENERAL DESCRIPTION

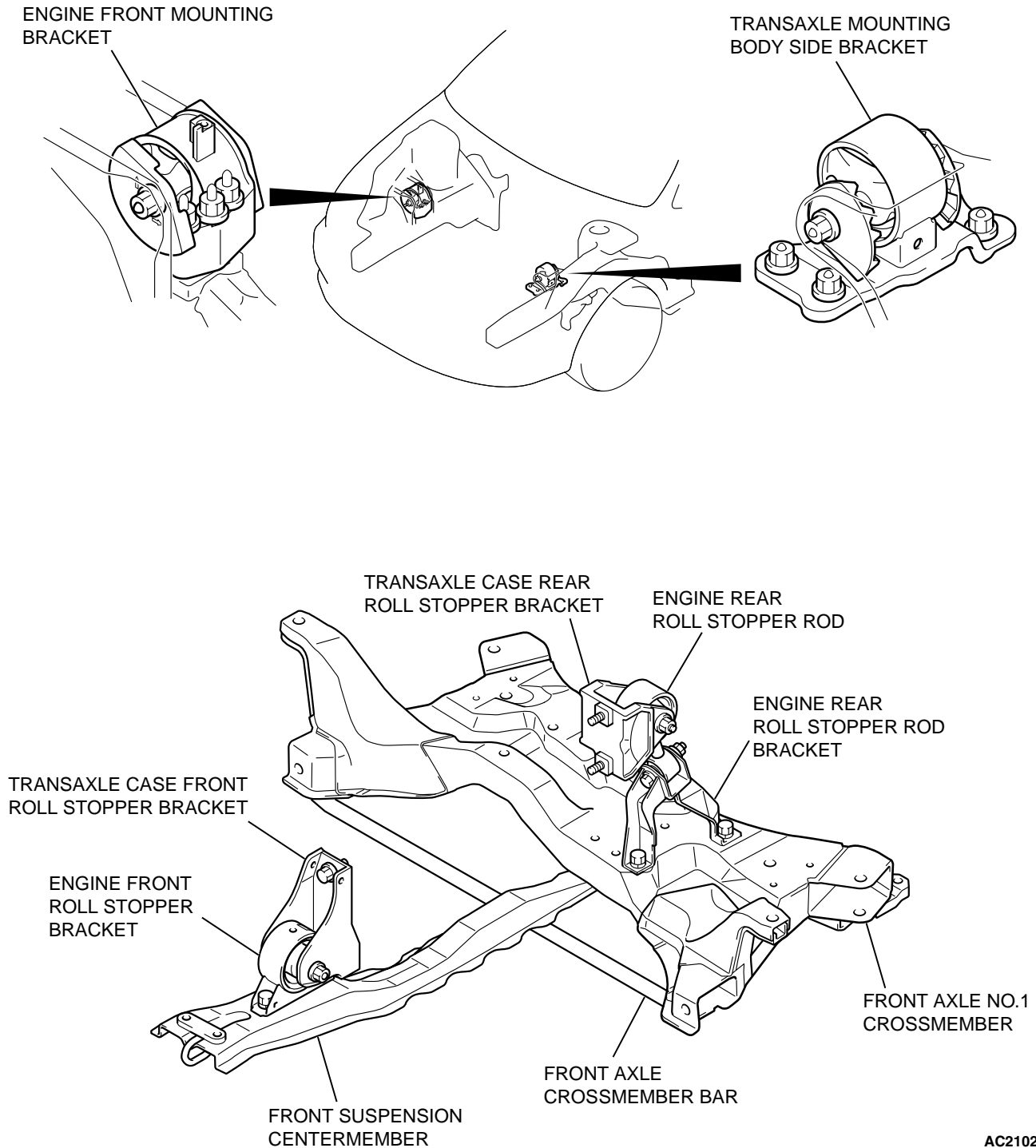
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Inertia principal axes system is incorporated into the engine mount system.

- The liquid-filled mount system have been adopted for engine mounting and transaxle mounting to improve ride feeling by optimizing the insulator.

- Installation of roll stopper in the upper area has reduced engine rolling. Furthermore, enlargement of insulator diameter has reduced idle vibration.

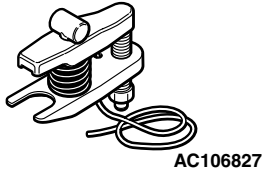
### CONSTRUCTION DIAGRAM



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# SPECIAL TOOL

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TOOL	TOOL NUMBER AND NAME	SUPERSESSON	APPLICATION
	MB991897 Ball joint remover	MB991113-01, MB990635-01 or General service tool	Knuckle and tie rod end ball joint disconnection <i>NOTE: Steering linkage puller (MB990635 or MB991113) is also used to disconnect knuckle and tie rod end ball joint.</i>

## ENGINE MOUNTING

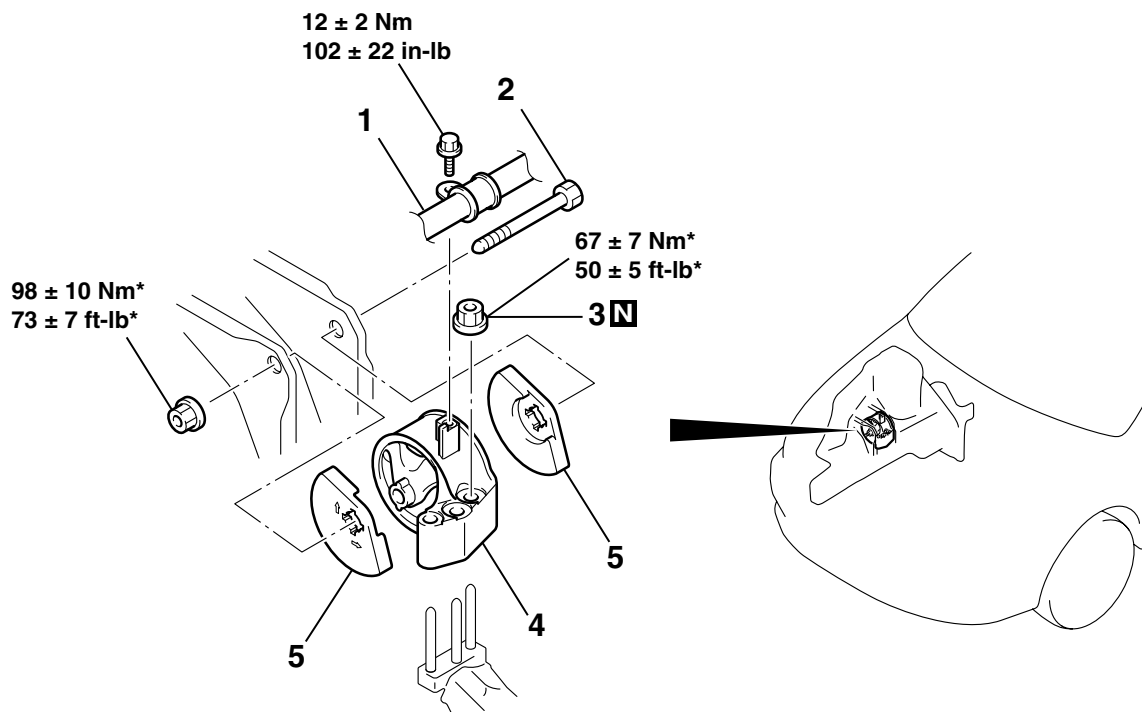
### REMOVAL AND INSTALLATION

M1321001100741

**CAUTION**

\*: Indicates parts which should be initially tightened, and then fully tightened after placing the vehicle horizontally and loading the full weight of the engine on the vehicle body.

<p><b>Pre-removal Operation</b></p> <ul style="list-style-type: none"> <li>Under Cover Removal (Refer to GROUP 51, Front Bumper P.51-2).</li> <li>Raise the engine and transaxle assembly until its weight is not applied to the insulator, and support it securely.</li> </ul>	<p><b>Post-installation Operation</b></p> <p>Under Cover Installation (Refer to GROUP 51, Front Bumper P.51-2).</p>
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- REMOVAL STEPS**
- POWER STEERING OIL PRESSURE HOSE
  - ENGINE MOUNTING BOLT
  - SELF-LOCKING NUTS

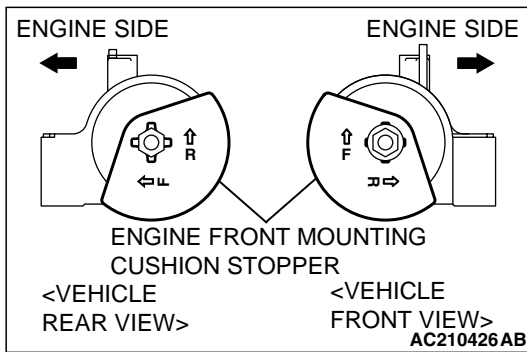
- REMOVAL STEPS (Continued)**
- ENGINE FRONT MOUNTING BRACKET
  - ENGINE FRONT MOUNTING CUSHION STOPPERS

## INSTALLATION SERVICE POINT

## &gt;&gt;A&lt;&lt; ENGINE FRONT MOUNTING CUSHION STOPPER INSTALLATION

Arrow marks on the engine front mounting cushion stopper should face the shown direction.

*NOTE: Disregard F and R stamped as a shared part.*



## INSPECTION

M1321001200179

- Check the engine front mounting insulator for cracks, separation or deformation.
- Check the engine front mounting cushion stoppers for deformation.

# TRANSAXLE MOUNTING

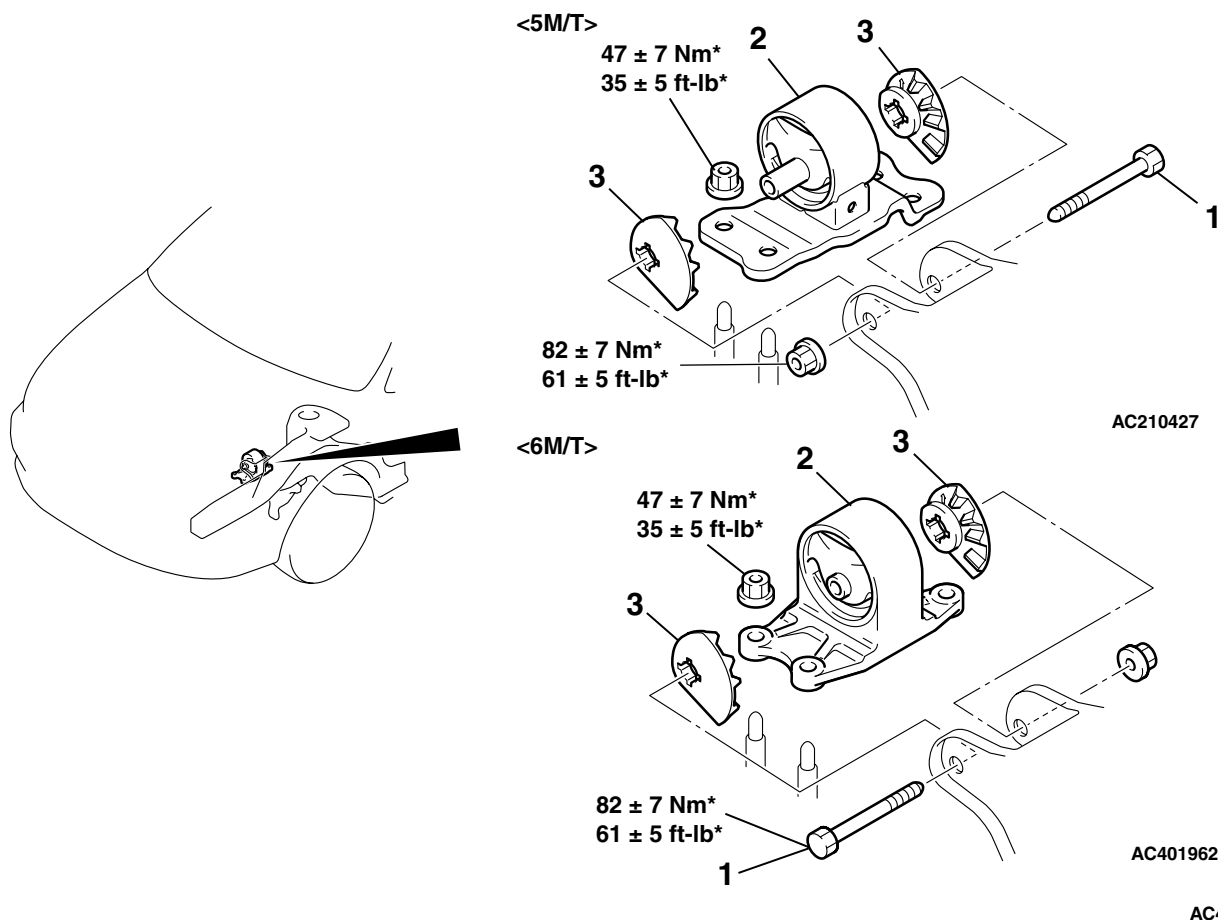
## REMOVAL AND INSTALLATION

M1321001400645

### CAUTION

\*: Indicates parts which should be initially tightened, and then fully tightened after placing the vehicle horizontally and loading the full weight of the engine on the vehicle body.

Pre-removal Operation	Post-installation Operation
<ul style="list-style-type: none"> <li>Under Cover Removal (Refer to GROUP 51, Front Bumper P.51-2).</li> <li>Raise the engine and transaxle assembly until its weight is not applied to the insulator, and support it securely.</li> <li>Battery and Battery Tray Removal</li> <li>Air Cleaner Removal (Refer to GROUP 15, Air Cleaner P.15-7).</li> <li>Radiator Assembly Removal (Refer to GROUP 14, Radiator P.14-23).</li> <li>Air Pipe C, Air By-pass Hose, Air Hose D Removal (Refer to GROUP 15, Charge Air Cooler P.15-8).</li> <li>Rear Roll Stopper Removal (Refer to P.32-7).</li> </ul>	<ul style="list-style-type: none"> <li>Rear Roll Stopper Installation (Refer to P.32-7).</li> <li>Air Pipe C, Air By-pass Hose, Air Hose D Installation (Refer to GROUP 15, Charge Air Cooler P.15-8).</li> <li>Radiator Assembly Installation (Refer to GROUP 14, Radiator P.14-23).</li> <li>Air Cleaner Installation (Refer to GROUP 15, Air Cleaner P.15-7).</li> <li>Battery and Battery Tray Installation</li> <li>Under Cover Installation (Refer to GROUP 51, Front Bumper P.51-2).</li> </ul>



### REMOVAL STEPS

1. TRANSAXLE MOUNTING BOLT

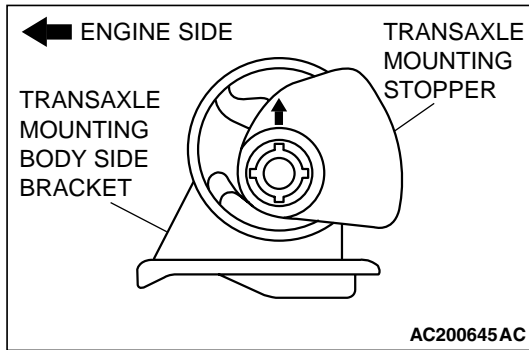
### REMOVAL STEPS (Continued)

2. TRANSAXLE MOUNTING BODY SIDE BRACKET
3. TRANSAXLE MOUNTING STOPPER

>>A<<

**INSTALLATION SERVICE POINT****>>A<< TRANSAXLE MOUNTING STOPPER  
INSTALLATION**

Install the transaxle mounting stopper so that its arrow points upward.

**INSPECTION**

M1321001500114

- Check the transaxle mounting insulator for cracks, separation or deformation.
- Check the transaxle mounting stoppers for deformation.

# ENGINE ROLL STOPPER AND CENTERMEMBER

## REMOVAL AND INSTALLATION

M1321002300243

### CAUTION

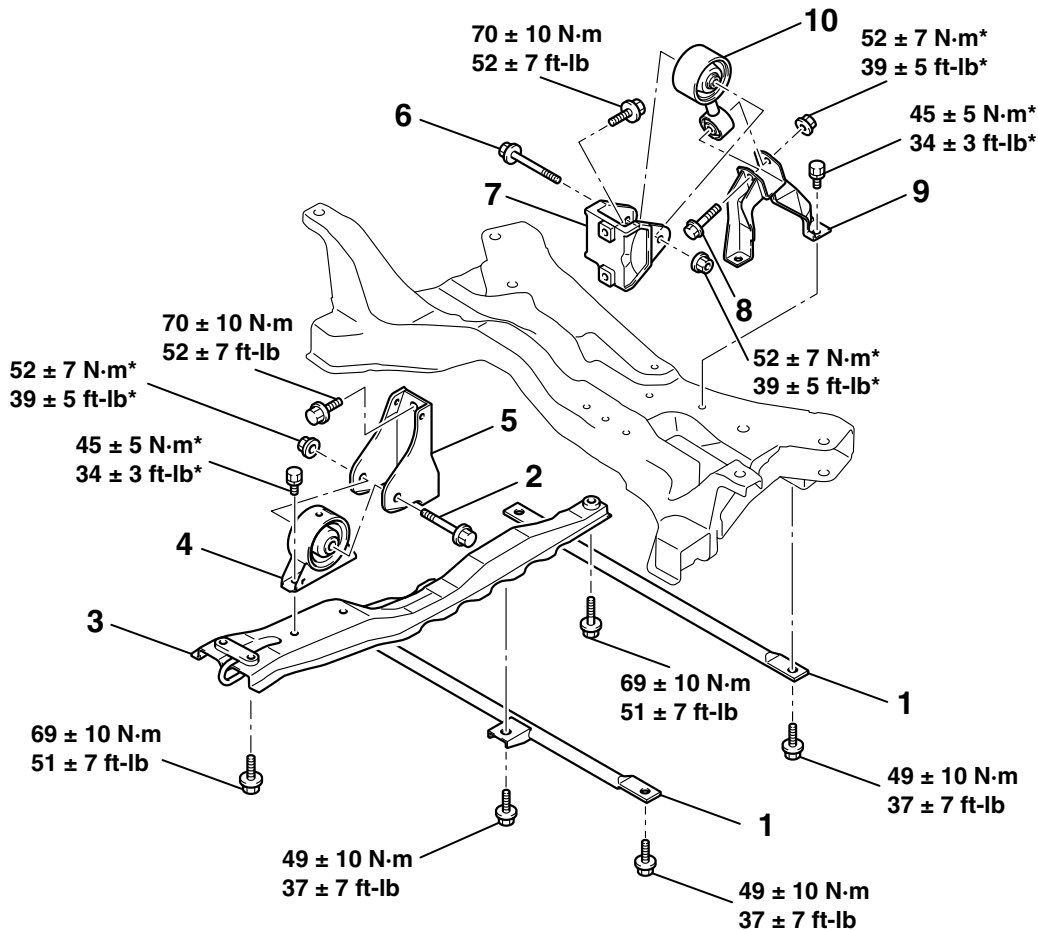
\*: Indicates parts which should be initially tightened, and then fully tightened after placing the vehicle horizontally and loading the full weight of the engine on the vehicle body.

#### Pre-removal Operation

- Under Cover Removal (Refer to GROUP 51, Front Bumper P.51-2).

#### Post-installation Operation

- Under Cover Installation (Refer to GROUP 51, Front Bumper P.51-2).



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#### FRONT ROLL STOPPER BRACKET AND CENTERMEMBER REMOVAL STEPS

1. FRONT AXLE CROSSMEMBER BARS
2. ENGINE FRONT ROLL STOPPER BRACKET BOLT
3. FRONT SUSPENSION CENTERMEMBER
4. ENGINE FRONT ROLL STOPPER BRACKET
5. TRANSAXLE CASE FRONT ROLL STOPPER BRACKET

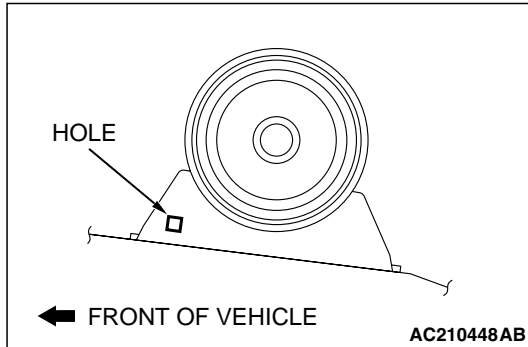
>>A<<

#### REAR ROLL STOPPER ROD REMOVAL STEPS

6. ENGINE REAR ROLL STOPPER ROD BOLT
7. TRANSAXLE CASE REAR ROLL STOPPER BRACKET
8. ENGINE REAR ROLL STOPPER ROD BOLT
9. ENGINE REAR ROLL STOPPER ROD BRACKET
10. ENGINE REAR ROLL STOPPER ROD

**INSTALLATION SERVICE POINT****>>A<< ENGINE FRONT ROLL STOPPER  
BRACKET INSTALLATION**

Install the front roll stopper so that its hole points towards the front side of the vehicle.

**INSPECTION**

M1321002400024

- Check the engine roll stopper insulators for cracks, separation or deformation.



## CROSSMEMBER

### REMOVAL AND INSTALLATION

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#### CAUTION

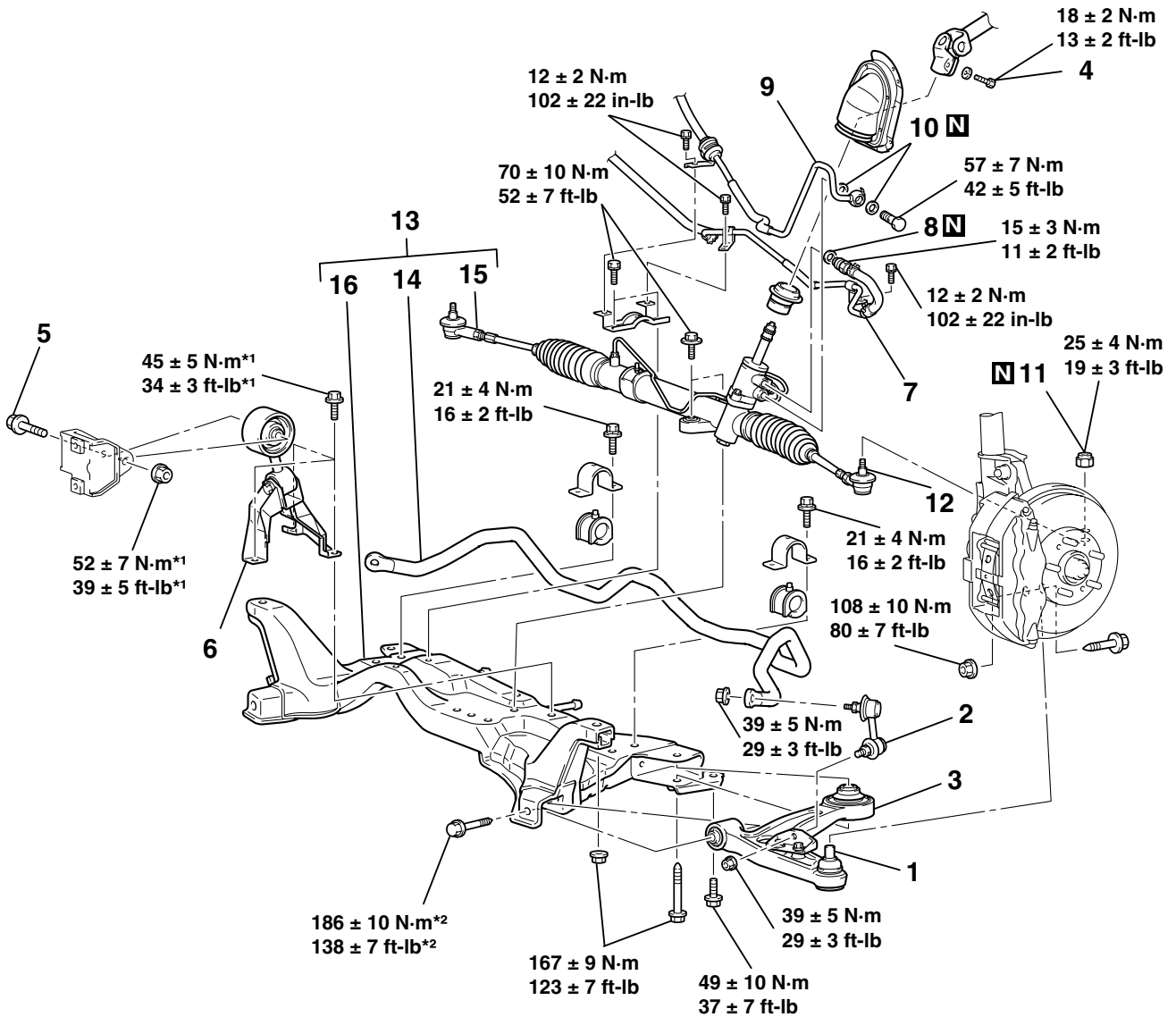
- Before removing the steering wheel and air bag module assembly, always refer to GROUP 52B - Service Precautions, Air bag Module and Clock Spring. Also, set the front wheels so that they are facing straight forward, and remove the ignition key. If you fail to do this, the SRS clock spring will be damaged, causing the SRS air bag to be inoperative and serious injury.
- \*1: Indicates parts which should be initially tightened, and then fully tightened after placing the vehicle horizontally and loading the full weight of the engine on the vehicle body.
- \*2: Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.
- If the vehicle is equipped with the Brembo™ disc brake, during maintenance, take care not to contact the parts or tools to the caliper because the paint of caliper will be scratched.

#### Pre-removal Operation

- Under Cover Removal (Refer to GROUP 51, Front Bumper P.51-2).
- Front Axle Crossmember Bar, Front Suspension Center-member Removal (Refer to P.32-7).
- Front Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-16).
- Steering Wheel Air Bag Module Assembly Removal (Refer to GROUP 37, Steering Wheel P.37-26).
- Power Steering Fluid Draining (Refer to GROUP 37, On-vehicle Service – Fluid Replacement P.37-21).

#### Post-installation Operation

- Front Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-16).
- Front Axle Crossmember Bar, Front Suspension Center-member Installation (Refer to P.32-7).
- Steering Wheel Air Bag Module Assembly Installation (Refer to 37, Steering Wheel P.37-26).
- Power Steering Fluid Supplying (Refer to GROUP 37, On-vehicle Service – Fluid Replacement P.37-21).
- Power Steering Fluid Line Bleeding (Refer to GROUP 37, On-vehicle Service – Power Steering System Air Bleeding P.37-21).
- Press the dust cover with a finger to check whether the dust cover cracked or damaged.
- Checking Steering Wheel Position with Wheels Straight Ahead.
- Front Wheel Alignment Check and Adjustment (Refer to GROUP 37, On-vehicle Service – Steering Angle Check P.37-18).
- Under Cover Installation (Refer to GROUP 51, Front Bumper P.51-2).



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**REMOVAL STEPS**

1. LOWER ARM AND KNUCKLE CONNECTION
2. STABILIZER LINK
3. LOWER ARM ASSEMBLY
4. STEERING SHAFT ASSEMBLY AND GEAR BOX CONNECTING BOLT
5. ENGINE REAR ROLL STOPPER ROD BOLT
6. ENGINE REAR ROLL STOPPER ROD AND BRACKET ASSEMBLY
7. RETURN HOSE AND RETURN PIPE
8. O-RING

**REMOVAL STEPS (Continued)**

9. PRESSURE HOSE CONNECTION
10. GASKETS
11. SELF-LOCKING NUT
12. TIE ROD END AND KNUCKLE CONNECTION
13. FRONT AXLE NO.1 CROSSMEMBER ASSEMBLY
14. STABILIZER BAR
15. STEERING GEAR AND LINKAGE
16. FRONT AXLE NO.1 CROSSMEMBER

<<A>>

<<B>>

<<C>>

>>A<<

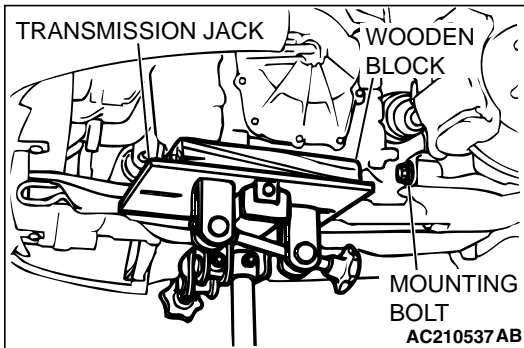
**Required Special Tool:**

- MB991897: Ball Joint Remover

REMOVAL SERVICE POINTS

<<A>> LOWER ARM ASSEMBLY REMOVAL

Lift the transaxle with a transmission jack, and then withdraw the front mounting bolt on the left lower arm assembly.

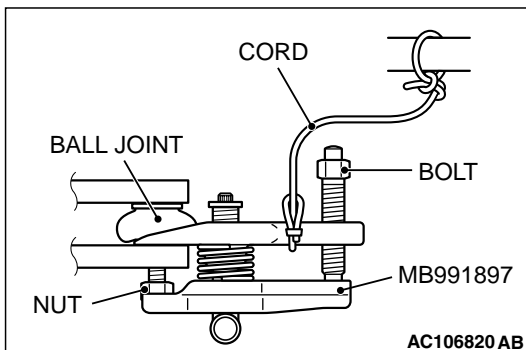


<<B>> TIE ROD END AND KNUCKLE DISCONNECTION

**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 cord to prevent it from falling.

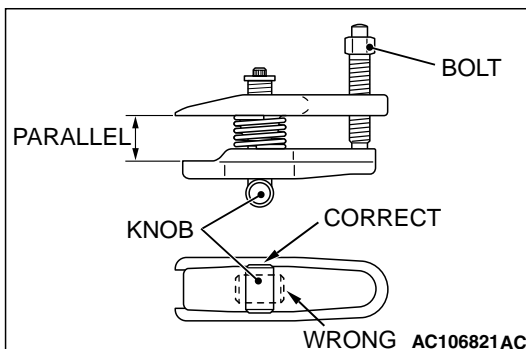
1. Install the special tool MB991897 as shown in the figure.



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

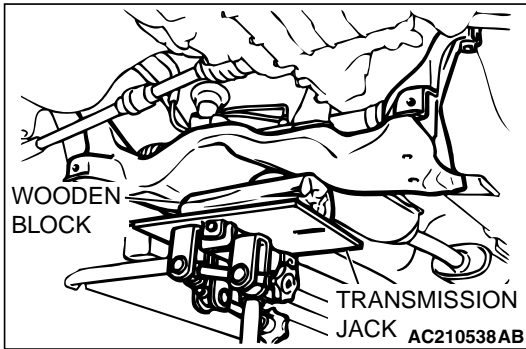
*NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.*

3. Tighten the bolt with a wrench to disconnect the tie rod end.

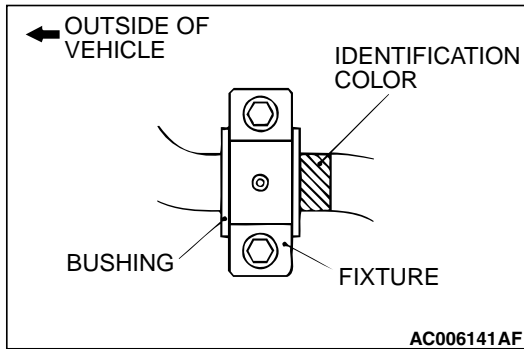


**<<C>> FRONT AXLE NO.1 CROSSMEMBER  
ASSEMBLY REMOVAL**

Retain the crossmember with a transmission jack, and then remove the crossmember mounting bolt.

**INSTALLATION SERVICE POINT****>>A<< STABILIZER BAR INSTALLATION**

Align the identification color on the left side of the stabilizer bar with the right end of the bushing.

**INSPECTION**

M1321003300150

- Check the front axle No.1 crossmember for cracks or damage.

## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

M1321004100364

ITEM	SPECIFICATION
<b>Crossmember</b>	
Engine rear roll stopper rod bracket bolt	45 ± 5 N·m (34 ± 3 ft-lb)
Engine rear roll stopper rod nut	52 ± 7 N·m (39 ± 5 ft-lb)
Front axle No.1 crossmember bolt	49 ± 10 N·m (37 ± 7 ft-lb)
Front axle No.1 crossmember nut	167 ± 9 N·m (123 ± 7 ft-lb)
Lower arm and front axle No.1 crossmember connecting bolt front	186 ± 10 N·m (138 ± 7 ft-lb)
Lower arm and front axle No.1 crossmember connecting bolt rear	167 ± 9 N·m (123 ± 7 ft-lb)
Lower arm and knuckle connecting nut	108 ± 10 N·m (80 ± 7 ft-lb)
Pressure hose eye bolt	57 ± 7 N·m (42 ± 5 ft-lb)
Pressure hose bolt	12 ± 2 N·m (102 ± 22 in-lb)
Return hose and return pipe bolt	12 ± 2 N·m (102 ± 22 in-lb)
Return hose and return pipe nut	15 ± 3 N·m (11 ± 2 ft-lb)
Stabilizer bar bracket bolt	21 ± 4 N·m (16 ± 2 ft-lb)
Stabilizer link nut	39 ± 5 N·m (29 ± 3 ft-lb)
Steering gear and linkage bolt	70 ± 10 N·m (52 ± 7 ft-lb)
Steering shaft assembly and gear box connecting bolt	18 ± 2 N·m (13 ± 2 ft-lb)
Tie rod end and knuckle connecting nut	25 ± 4 N·m (19 ± 3 ft-lb)
<b>Engine mounting</b>	
Engine front mounting bracket nut	67 ± 7 N·m (50 ± 5 ft-lb)
Engine mounting nut	98 ± 10 N·m (73 ± 7 ft-lb)
Power steering oil pressure hose bolt	12 ± 2 N·m (102 ± 22 in-lb)
<b>Engine roll stopper, centermember</b>	
Engine front roll stopper bracket bolt	45 ± 5 N·m (34 ± 3 ft-lb)
Engine front roll stopper bracket nut	52 ± 7 N·m (39 ± 5 ft-lb)
Engine rear roll stopper rod bracket bolt	45 ± 5 N·m (34 ± 3 ft-lb)
Engine rear roll stopper rod nut	52 ± 7 N·m (39 ± 5 ft-lb)
Front axle crossmember bar bolt	49 ± 10 N·m (37 ± 7 ft-lb)
Front suspension centermember bolt	69 ± 10 N·m (51 ± 7 ft-lb)
Transaxle case front roll stopper bracket bolt	70 ± 10 N·m (52 ± 7 ft-lb)
Transaxle case rear roll stopper bracket bolt	70 ± 10 N·m (52 ± 7 ft-lb)
<b>Transaxle mounting</b>	
Transaxle mounting body side bracket nut	47 ± 7 N·m (35 ± 5 ft-lb)
Transaxle mounting nut <5M/T>	82 ± 7 N·m (61 ± 5 ft-lb)
Transaxle mounting bolt <6M/T>	82 ± 7 N·m (61 ± 5 ft-lb)

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## NOTES