

## GROUP 32

# POWER PLANT MOUNT

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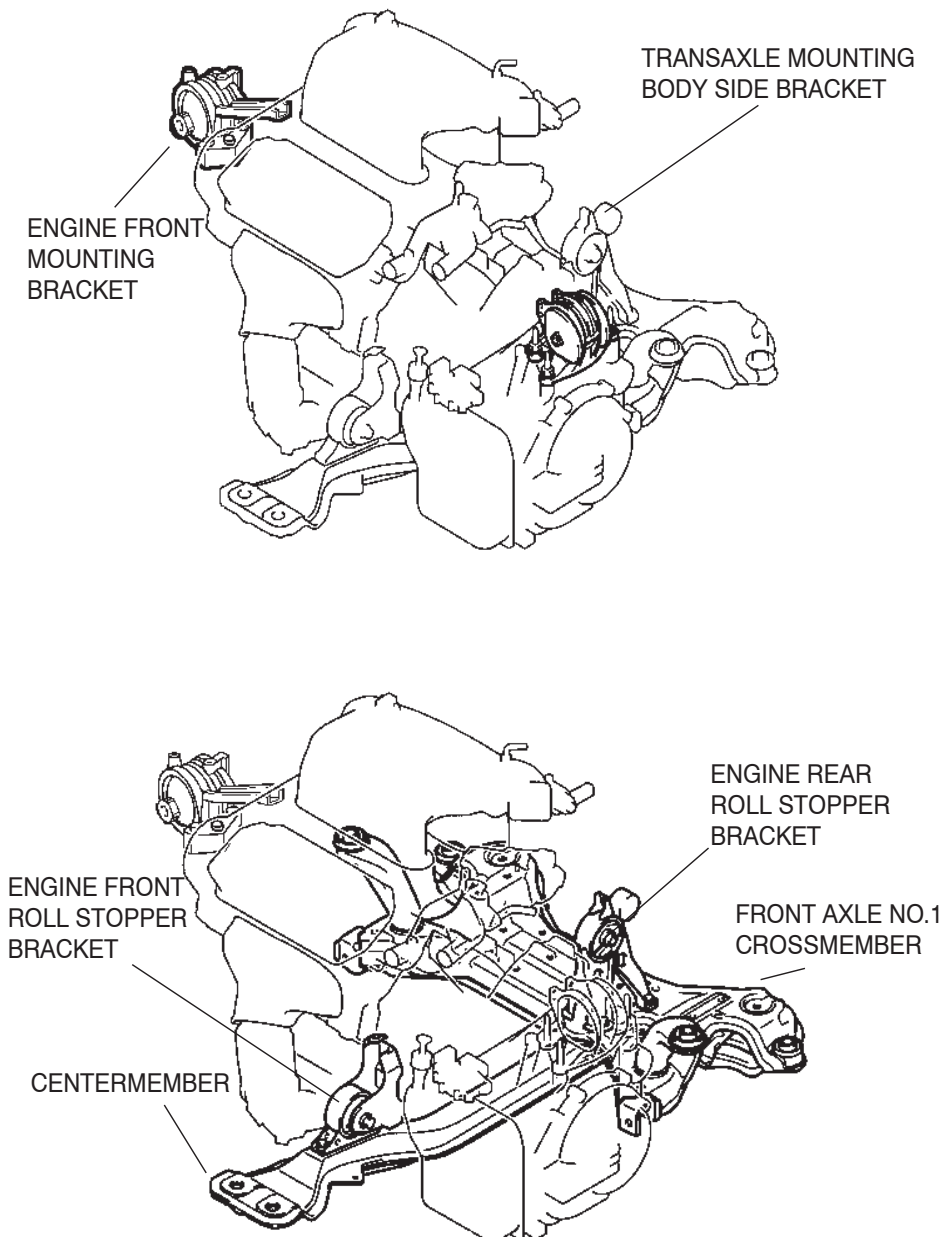
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## GENERAL DESCRIPTION

M1321000100373

- The engine front mounting bracket is a dome-shaped fluid-filled mount for improved responsiveness during acceleration and more stable vehicle performance against road disturbances.
- The liquid-filled transaxle mounting body side bracket improves riding comfort by its refined insulator.
- A roll stopper bracket in the upper area limits engine rolling. Furthermore, large diameter insulator reduces idle vibration.

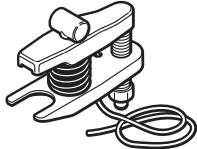
## CONSTRUCTION DIAGRAM



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**SPECIAL TOOL**

M1321000600390

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 <p>AC106827</p>	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 the knuckle and tie rod end ball joint.</i>

## ENGINE MOUNTING

### REMOVAL AND INSTALLATION

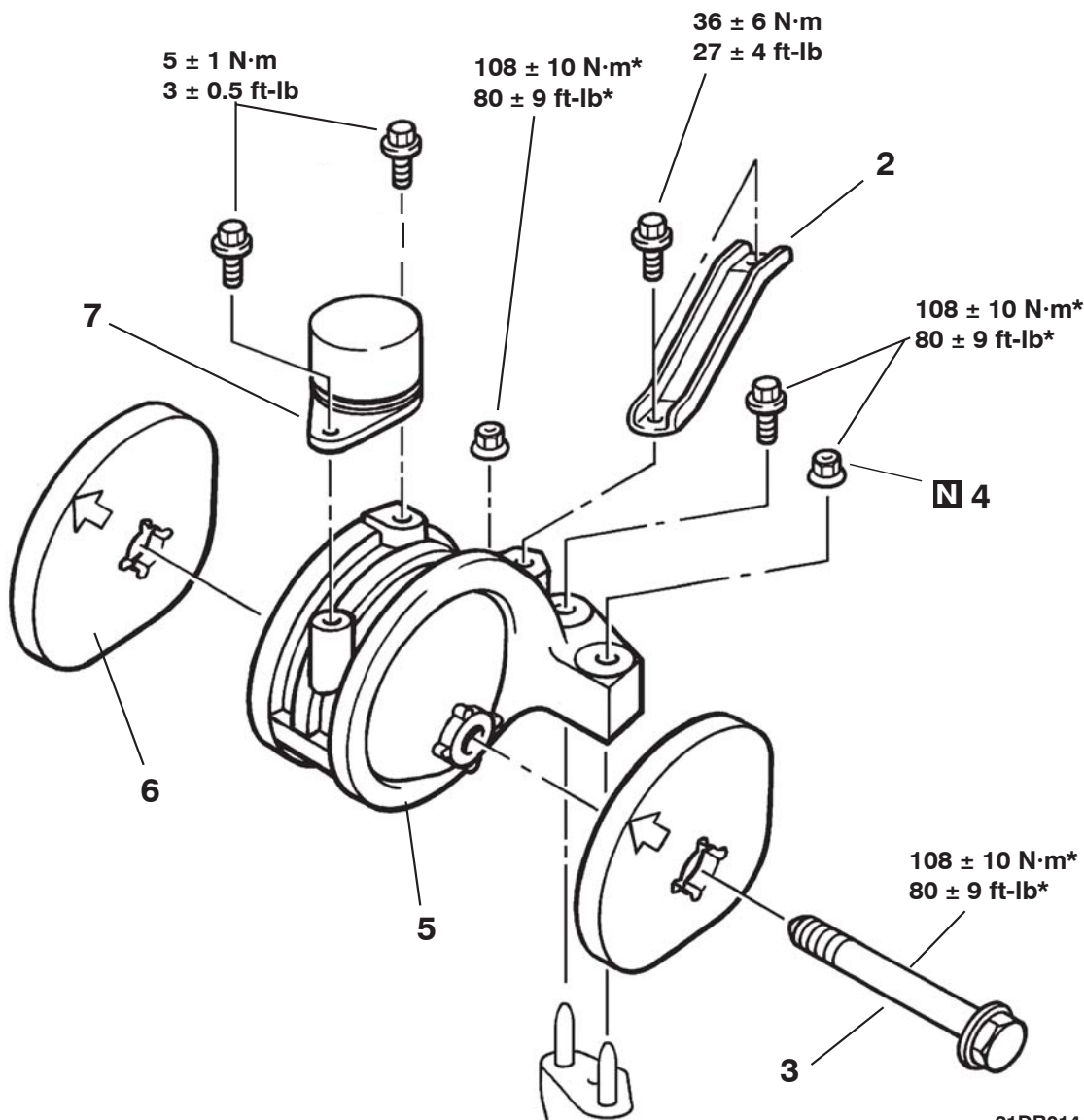
M1321001100462

#### **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

Raise the engine and transaxle assembly until its weight is not applied to the insulator, and support it securely.



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#### REMOVAL STEPS

2. ENGINE MOUNTING STAY
3. MOUNTING BOLT
4. SELF LOCKING NUTS

#### REMOVAL STEPS (Continued)

5. ENGINE MOUNT BRACKET
6. ENGINE MOUNT STOPPER
7. DYNAMIC DAMPER

# TRANSAXLE MOUNTING

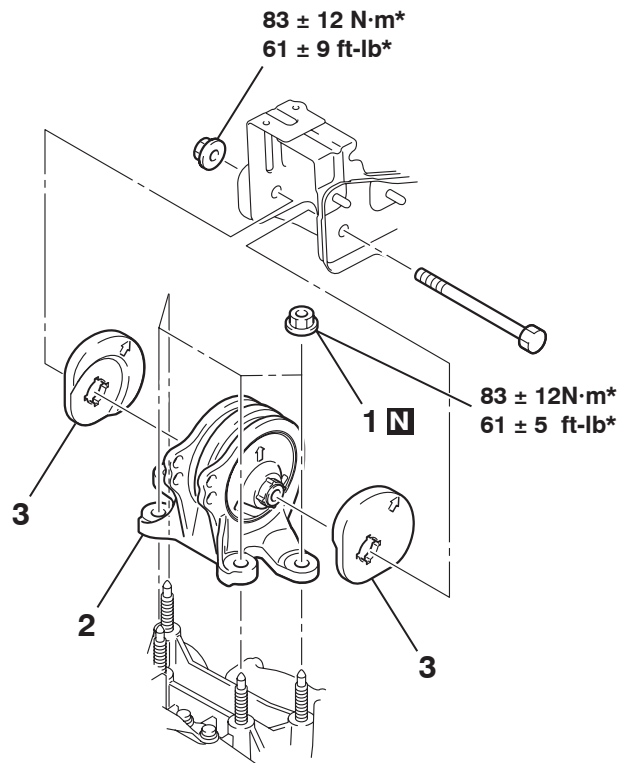
## REMOVAL AND INSTALLATION

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**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>Engine Control Unit (ECU) , Refer to GROUP 13B, Engine Control Unit (ECU) <a href="#">13A-675</a>).</li> <li>Air Cleaner Removal (Refer to GROUP 15, Air Cleaner <a href="#">P.15-4</a>).</li> <li>Battery and Battery Tray Removal</li> <li>Centremember Removal (Refer to <a href="#">P.32-7</a>).</li> <li>Engine Rear Roll Stopper Bracket Removal (Refer to <a href="#">P.32-7</a>).</li> <li>Raise the engine and transaxle assembly until its weight is not applied to the insulator, and support it securely.</li> </ul>	<ul style="list-style-type: none"> <li>Engine Rear Roll Stopper Bracket Installation (Refer to <a href="#">P.32-7</a>).</li> <li>Centremember Installation (Refer to <a href="#">P.32-7</a>).</li> <li>Battery and Battery Tray Installation</li> <li>Air Cleaner Installation (Refer to GROUP 15, Air Cleaner <a href="#">P.15-4</a>).</li> <li>Engine Control Unit (ECU) Installation, Refer to GROUP 13B, Engine Control Unit (ECU) <a href="#">13A-675</a>).</li> </ul>



**REMOVAL STEPS**

1. SELF-LOCKING NUTS

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**REMOVAL STEPS (Continued)**

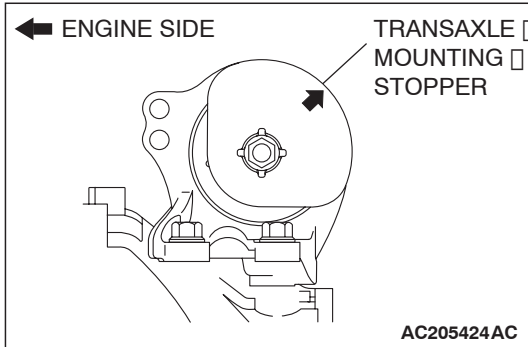
2. TRANSAXLE MOUNTING BODY SIDE BRACKET
3. TRANSAXLE MOUNTING STOPPER

>>A<<

**INSTALLATION SERVICE POINT**

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

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



# ENGINE ROLL STOPPER AND CENTREMEMBER

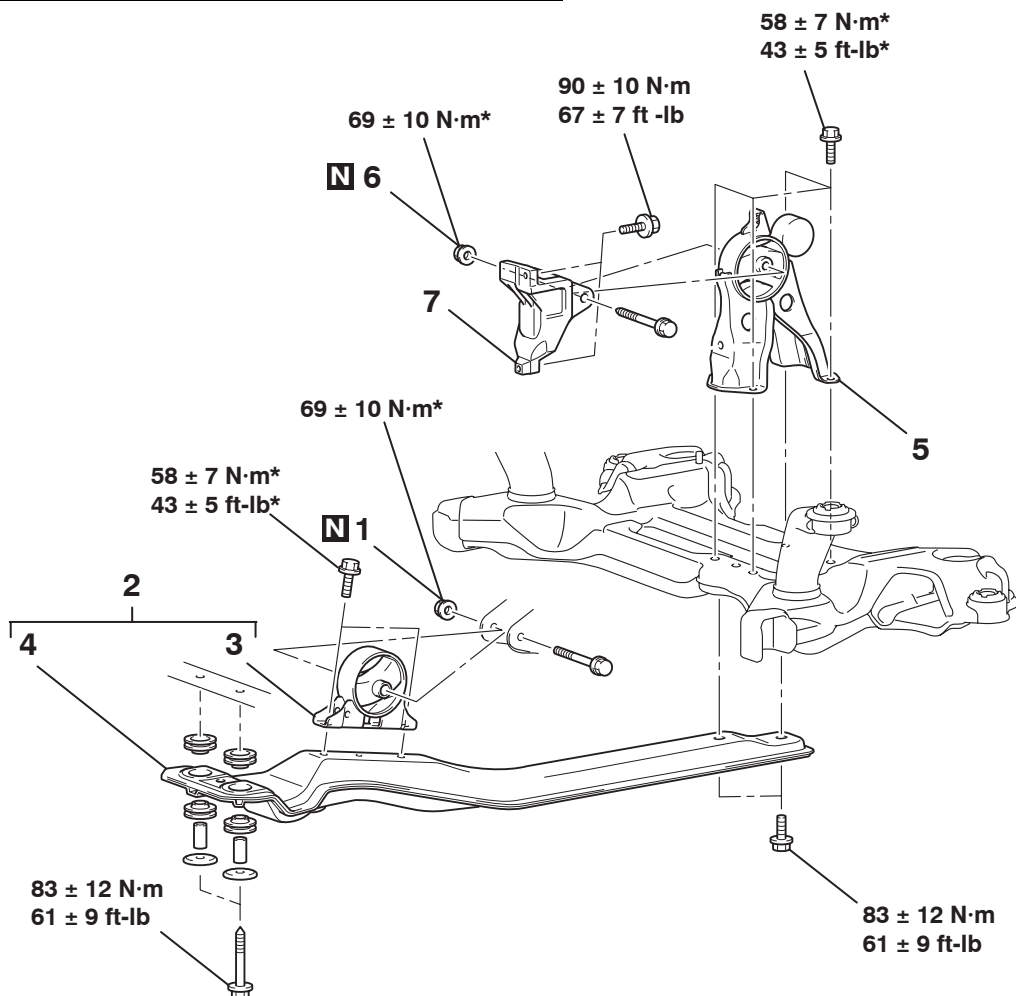
## REMOVAL AND INSTALLATION

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### 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 and Post-installation Operation**  
Side Under Cover Removal and Installation (Refer to GROUP 51, Under Cover P.51-13).



### FRONT ROLL STOPPER AND CENTREMEMBER REMOVAL STEPS

1. SELF-LOCKING NUT
2. ENGINE FRONT ROLL STOPPER BRACKET AND CENTREMEMBER
- >>B<< 3. ENGINE FRONT ROLL STOPPER BRACKET
4. CENTREMEMBER

### REAR ROLL STOPPER<sup>21DB023A</sup> REMOVAL STEPS

- FRONT AXLE NO.1 CROSSMEMBER ASSEMBLY (REFER TO P.32-9).
  - 5. ENGINE REAR ROLL STOPPER BRACKET
- ### REAR ROLL STOPPER BRACKET REMOVAL STEPS
- FRONT NO.1 EXHAUST PIPE (REFER TO GROUP 15, EXHAUST PIPE AND MAIN MUFFLER P.15-14).
  - 1. SELF-LOCKING NUT

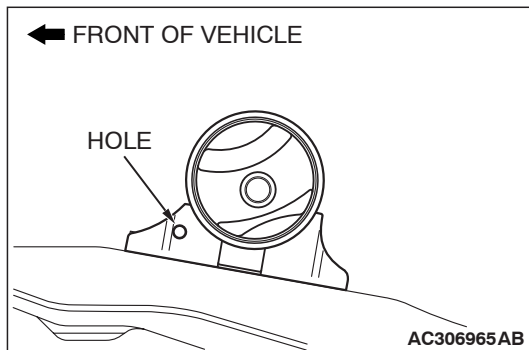
**REAR ROLL STOPPER  
BRACKET REMOVAL STEPS**

2. ENGINE FRONT ROLL STOPPER  
BRACKET AND  
CENTREMEMBER
6. SELF-LOCKING NUT
7. TRANSAXLE CASE REAR ROLL  
STOPPER BRACKET

**INSTALLATION SERVICE POINTS**

**>>B<< ENGINE FRONT ROLL STOPPER  
BRACKET INSTALLATION**

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





## CROSSMEMBER

### REMOVAL AND INSTALLATION

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#### CAUTION

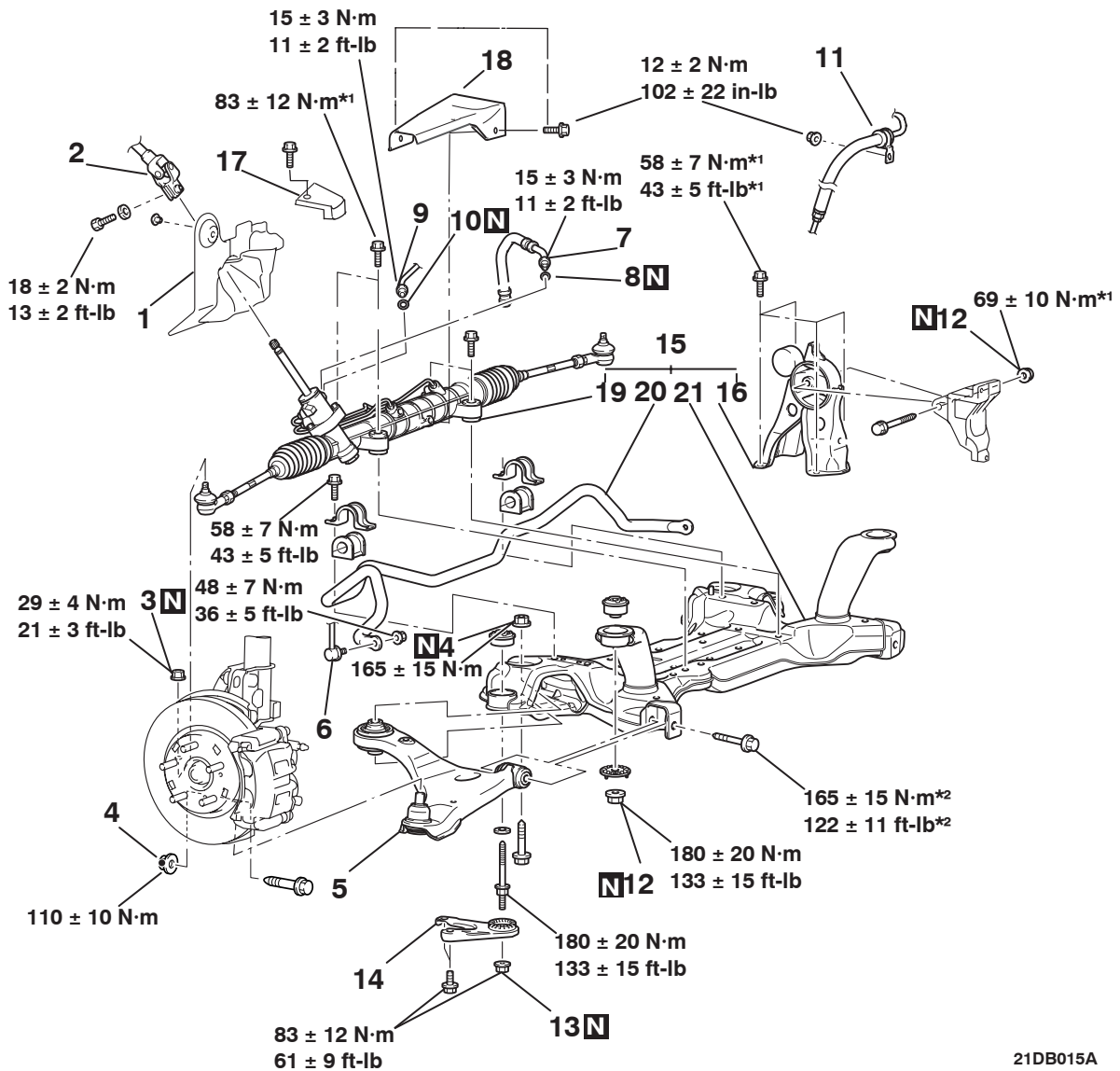
- Before removing the steering wheel and air bag module assembly, always refer to GROUP 52B - Service Precautions (P.52B-16), Air bag Module and Clock Spring (P.52B-237). Also, set the front wheels so that they are facing straight forward, and remove the ignition key. If you fail to do this, the SRS 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.

#### Pre-removal Operation

- Power Steering Fluid Draining (Refer to GROUP 37, On-vehicle Service – Fluid Replacement P.37-18).
- Power Steering Hoses Removal and Installation (Refer to GROUP 37, Power Steering Hoses P.37A-57).
- Air Bag Module and Steering Wheel Assembly Removal (Refer to GROUP 37, Steering Wheel P.37-23).
- Clock Spring Removal (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-237).
- Floor Console Assembly Removal (Refer to GROUP 52A, Floor Console Assembly P.52A-10).
- Front Scuff Plate (LH) and Cowl Side Trim (LH) Removal (Refer to GROUP 52A, Trims P.52A-11).
- Trunk Lid Release Handle Cover Removal (Refer to GROUP 42, Trunk Lid P.42-63).
- Accelerator Stopper Removal (Refer to GROUP 17, Accelerator Pedal P.17-9).
- Front Floor Carpet Removal
- Centremember Removal (Refer to P.32-7).

#### Post-installation Operation

- Centremember Installation (Refer to P.32-7).
- Front Floor Carpet Installation
- Accelerator Stopper Installation (Refer to GROUP 17, Accelerator Pedal P.17-9).
- Trunk Lid Release Handle Cover Installation (Refer to GROUP 42, Trunk Lid P.42-63).
- Front Scuff Plate (LH) and Cowl Side Trim (LH) Installation (Refer to GROUP 52A, Trims P.52A-11).
- Floor Console Assembly Installation (Refer to GROUP 52A, Floor Console Assembly P.52A-10).
- Clock Spring Installation (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-237).
- Steering Wheel Assembly and Air Bag Module Installation (Refer to P.37-23).
- Check the dust cover for cracks or damage by pushing it with your finger.
- Power Steering Fluid Supplying (Refer to GROUP 37, On-vehicle Service – Fluid Replacement P.37-18).
- Power Steering Fluid Line Bleeding (Refer to P.37-18).
- Checking Steering Wheel Position with Wheels Straight Ahead.
- Front Wheel Alignment Adjustment (Refer to GROUP 33, On-vehicle Service – Front Wheel Alignment Check and Adjustment P.33-6).



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**REMOVAL STEPS**

**REMOVAL STEPS (Continued)**

- |  |   |   |  |
|--|---|---|--|
| <p>&lt;&lt;A&gt;&gt;</p> <p>&lt;&lt;B&gt;&gt;</p> <p>&lt;&lt;B&gt;&gt;</p> | <ol style="list-style-type: none"> <li>1. STEERING SHAFT PAD</li> <li>2. STEERING COLUMN ASSEMBLY AND STEERING GEAR CONNECTION</li> <li>3. SELF LOCKING NUTS (CONNECTION FOR TIE ROD END)</li> <li>4. SELF LOCKING NUTS (CONNECTION FOR LOWER ARM BALL JOINT)</li> <li>5. LOWER ARM ASSEMBLY</li> <li>6. STABILIZER LINK CONNECTION</li> <li>7. RETURN TUBE CONNECTION</li> <li>8. O-RING</li> <li>9. PRESSURE HOSE CONNECTION</li> <li>10. O-RING</li> <li>11. PRESSURE HOSE CLAMP</li> <li>12. SELF LOCKING NUTS</li> </ol> | <p>&lt;&lt;D&gt;&gt;</p> <p>&lt;&lt;C&gt;&gt;</p> <p>&lt;&lt;E&gt;&gt;</p> <p>&gt;&gt;A&lt;&lt;</p> | <ol style="list-style-type: none"> <li>13. SELF LOCKING NUTS</li> <li>14. FRONT AXLE CROSSMEMBER STAY</li> <li>15. ENGINE REAR ROLL STOPPER BRACKET, POWER STEERING GEAR AND LINKAGE, STABILIZER BAR AND FRONT AXLE NO.1 CROSSMEMBER ASSEMBLY</li> <li>16. ENGINE REAR ROLL STOPPER BRACKET</li> <li>17. HEAT PROTECTOR "A"</li> <li>18. HEAT PROTECTOR "B"</li> <li>19. POWER STEERING GEAR AND LINKAGE</li> <li>20. STABILIZER BAR</li> <li>21. FRONT AXLE NO.1 CROSSMEMBER</li> </ol> |
|--|---|---|--|

**Required Special Tool:**

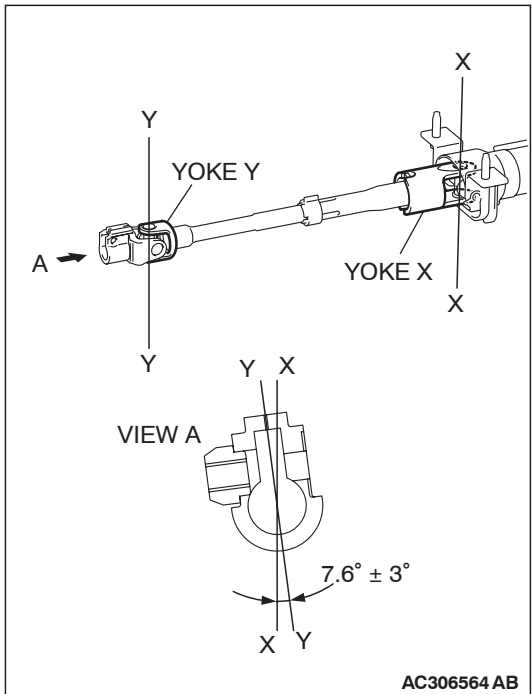
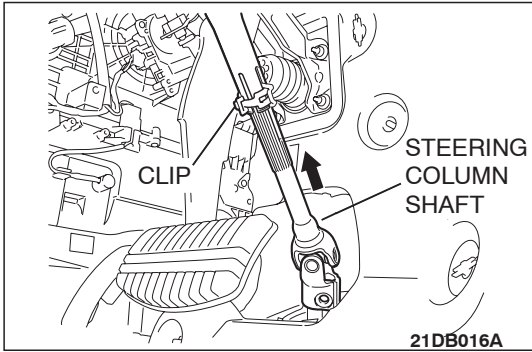
- MB991897: Ball Joint Remover

**REMOVAL SERVICE POINTS**

**<<A>> STEERING COLUMN ASSEMBLY AND STEERING GEAR DISCONNECTION**

Pinch the steering column shaft clip with pliers, and pull up the shaft in the direction shown to disengage the steering column assembly.

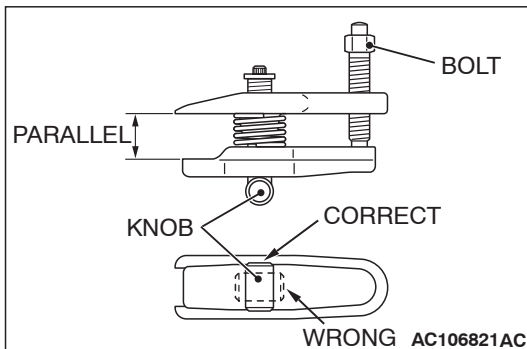
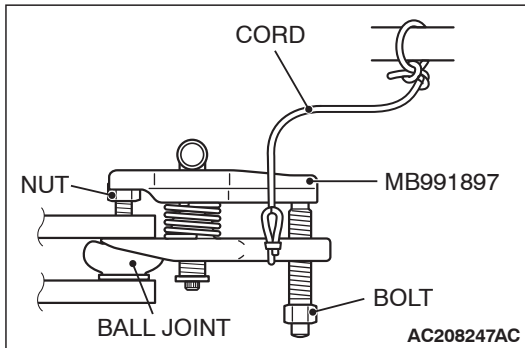
**NOTE:**



*If the steering column shaft is removed accidentally, remove the steering column assembly and be sure to insert the steering column shaft into the steering column as shown in the figure.*

<<B>> SELF LOCKING NUTS (CONNECTION FOR  
TIE ROD END AND LOWER ARM BALL JOINT)  
REMOVAL**⚠ 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. Replace the self locking nut for lower arm ball joint with a regular nut, because the original one is a little bit large to install special tool MB991897. Install special tool MB991897 as shown in the figure.

2. Turn the bolt and knob as necessary to make the jaws of special tool 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.*

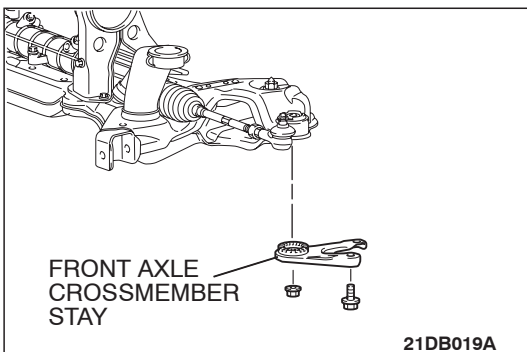
3. Tighten the bolt with a wrench to disconnect the lower arm ball joint, tie rod end and remove the self locking nut.

<<C>> FRONT AXLE CROSSMEMBER STAY  
REMOVAL

Remove the self locking nut and two bolts attaching the stay. The crossmember mounting bolt will need to be checked for torque loss after removing the stay nut, when only replacing the crossmember stopper.

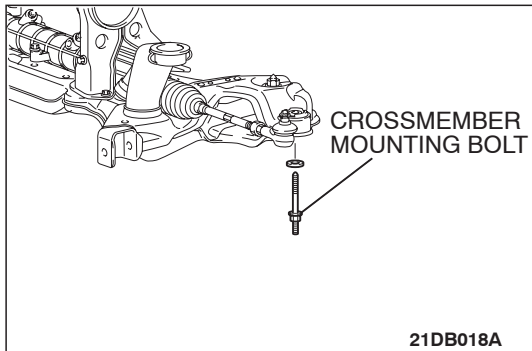
**⚠ CAUTION**

**Always fit new self locking nuts after removal.**



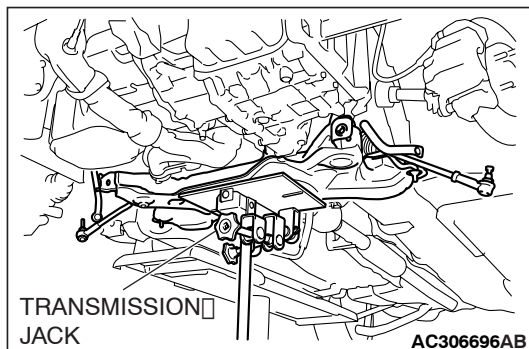
**<<D>> FRONT AXLE CROSSMEMBER  
MOUNTING BOLT REMOVAL**

Remove the crossmember mounting bolt.



**<<E>> ENGINE REAR ROLL STOPPER BRACKET,  
POWER STEERING GEAR AND LINKAGE,  
STABILIZER BAR AND FRONT AXLE NO.1  
CROSSMEMBER ASSEMBLY REMOVAL**

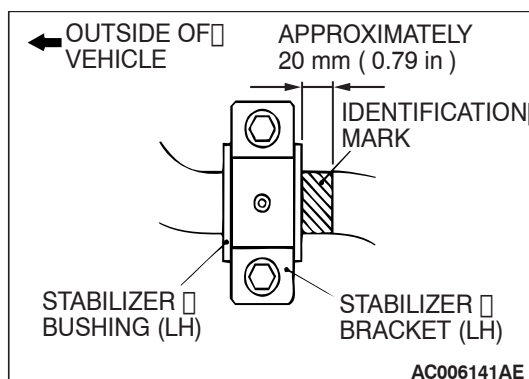
Support the front axle number 1 crossmember with a transmission jack, and then remove the crossmember mounting nuts and bolts.

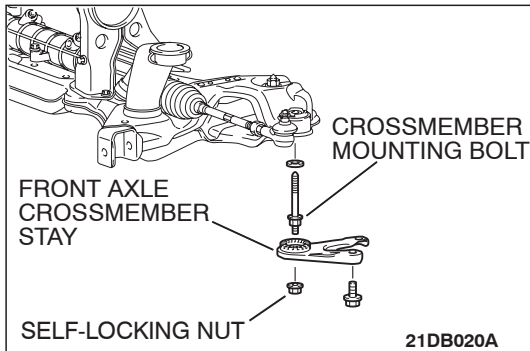


**INSTALLATION SERVICE POINTS**

**>>A<< STABILIZER BAR INSTALLATION**

Align the stabilizer bar identification mark with the right end of the bushing (LH).



**>>D<< FRONT AXLE CROSSMEMBER BOLT/  
STAY/SELF-LOCKING NUTS INSTALLATION**

1. Ensure that the crossmember mounting bolts have been tightened to specification. .
2. Install the front crossmember stay/stopper and tighten self locking nuts and bolts to specification.

** CAUTION**

**Always fit new self locking nuts after removal.**

**INSPECTION**

- Check the crossmembers for cracks or damage.

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## SPECIFICATIONS

### FASTENER TIGHTENING SPECIFICATIONS

M1321004100308

ITEM		SPECIFICATION
<b>Crossmember</b>		
Engine rear roll stopper bracket bolt		58 ± 7 N·m
Front axle crossmember stay bolt and nut		83 ± 12 N·m (61 ± 9 ft-lb)
Front axle No.1 crossmember bolt and nut		180 ± 20 N·m (133 ± 15 ft-lb)
Lower arm assembly bolt		165 ± 15 N·m (122 ± 11 ft-lb)
Lower arm assembly nut (flange nut, self-locking)	M14	165 ± 15 N·m (122 ± 11 ft-lb)
Lower arm ball joint clamp assembly nut		110 ± 10 N·m
Power steering gear and linkage bolt		83 ± 12 N·m (61 ± 9 ft-lb)
Power steering gear bracket bolt	M12	83 ± 12 N·m (61 ± 9 ft-lb)
Pressure hose clamp bolt and nut		12 ± 2 N·m (102 ± 22 in-lb)
Pressure hose nut		15 ± 3 N·m (11 ± 2 ft-lb)
Return tube clamp bolt and nut		12 ± 2 N·m (102 ± 22 in-lb)
Return tube nut		15 ± 3 N·m (11 ± 2 ft-lb)
Stabilizer bracket bolt		58 ± 7 N·m (43 ± 5 ft-lb)
Stabilizer link nut		48 ± 7 N·m (36 ± 5 ft-lb)
Steering column assembly bolt		18 ± 2 N·m (13 ± 2 ft-lb)
Steering gear and linkage protector bolt		12 ± 2 N·m (102 ± 22 in-lb)
Tie rod end nut		29 ± 4 N·m (21 ± 3 ft-lb)
<b>Engine mounting</b>		
Engine mounting thru bolt	M12	108 ± 10 N·m (80 ± 9 ft-lb)
Engine front mounting bracket bolt and nut	M12	108 ± 10 N·m (80 ± 9 ft-lb)
Engine mounting stay bolt		36 ± 6 N·m (27 ± 4 ft-lb)
<b>Engine roll stopper and centremember</b>		
Centremember bolt		83 ± 12 N·m (61 ± 9 ft-lb)
Engine front roll stopper thru bolt and nut		69 ± 10 N·m (61 ± 9 ft-lb)
Engine rear roll stopper thru bolt and nut		69 ± 10 N·m (61 ± 9 ft-lb)
Transaxle case rear roll stopper bracket bolt		90 ± 10 N·m (67 ± 7 ft-lb)
<b>Transaxle mounting</b>		
Transaxle mounting body side bracket nut (nut, flange)	M12	83 ± 12 N·m (61 ± 9 ft-lb)
Transaxle mounting body side bracket nut (nut, self-locking)	M12	83 ± 12 N·m (61 ± 9 ft-lb)

