

GROUP 32

POWER PLANT
MOUNT

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GENERAL DESCRIPTION

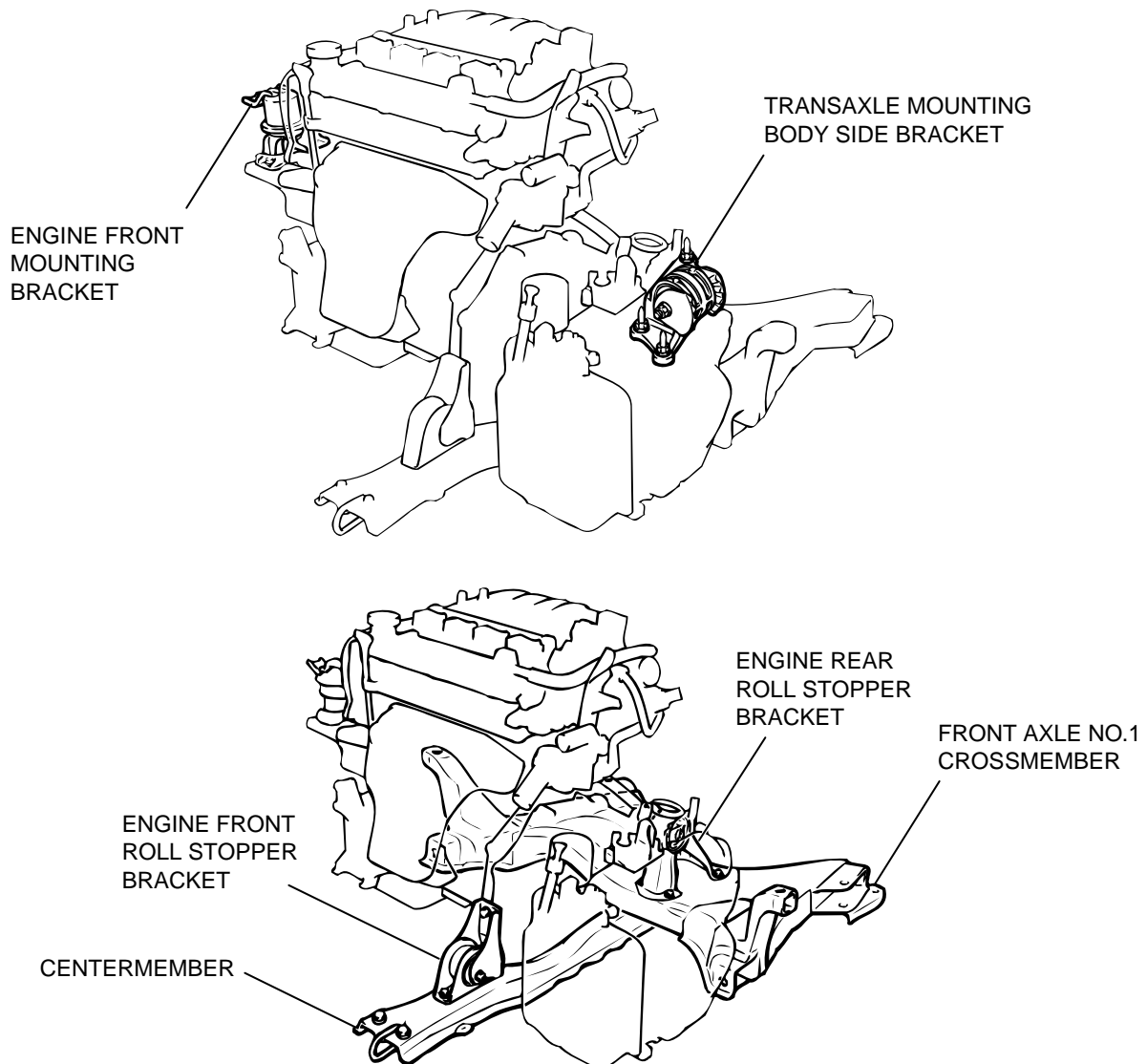
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Inertia principal axes system is incorporated into the engine mount system.

- Longitudinal installation type of cylindrical liquid-filled engine front mounting bracket is used for reduction of idle vibration and improvement of ride feeling.
- For transaxle mounting body side bracket, liquid-filled mount is used to improve ride feeling by optimizing insulator.
- Upper installation of roll stopper bracket reduces engine rolling, and increase of insulator bore also reduces idle vibration.

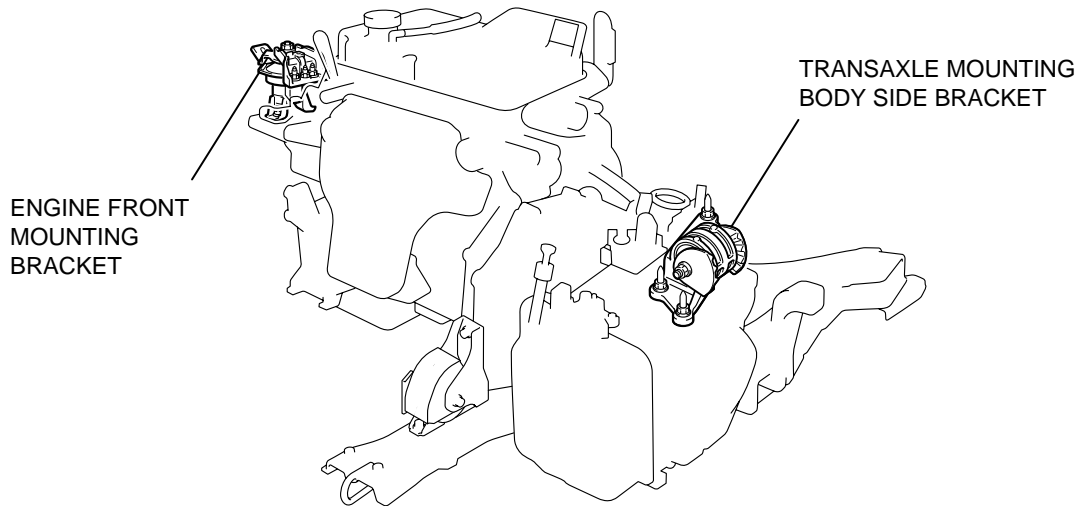
CONSTRUCTION DIAGRAM

<2.0L ENGINE>

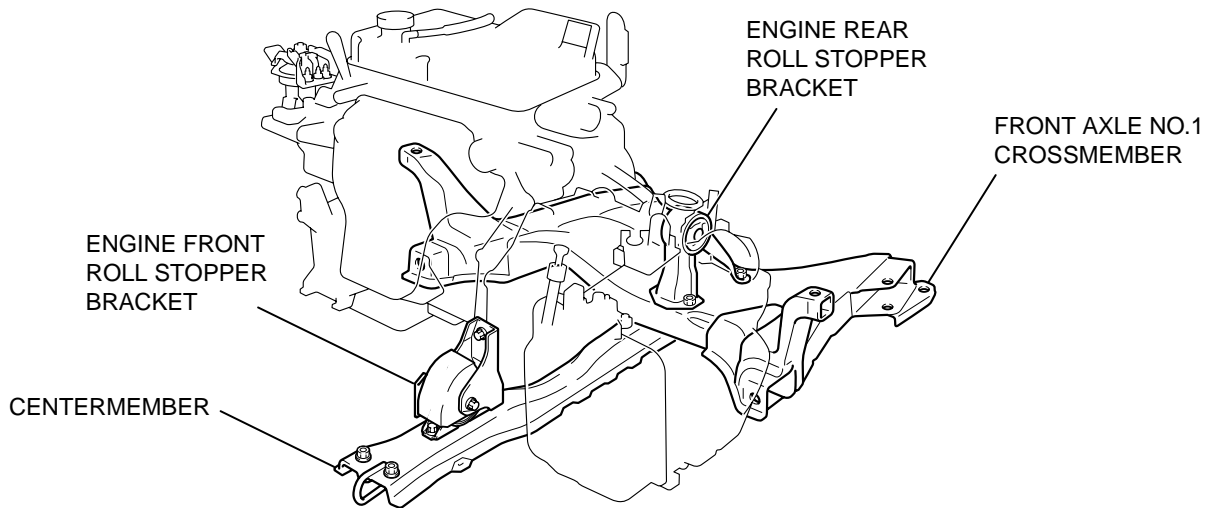


AC005862 AC

<2.4L ENGINE>



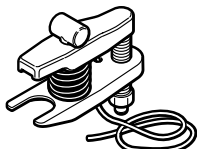
AC308229



AC308230
AC308231AB

SPECIAL TOOL

M1321000600419

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 <p>AC106827</p>	<p>MB991897 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: Steering linkage puller (MB990635 or MB991113) is also used to separate knuckle from tie rod end ball joint.</i></p>

ENGINE MOUNTING

REMOVAL AND INSTALLATION

M1321001100525

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.
- Accelerator Pedal Position Sensor Removal (Refer to GROUP 17, Accelerator Pedal Position Sensor [P.17-9](#)). <2.4L Engine>

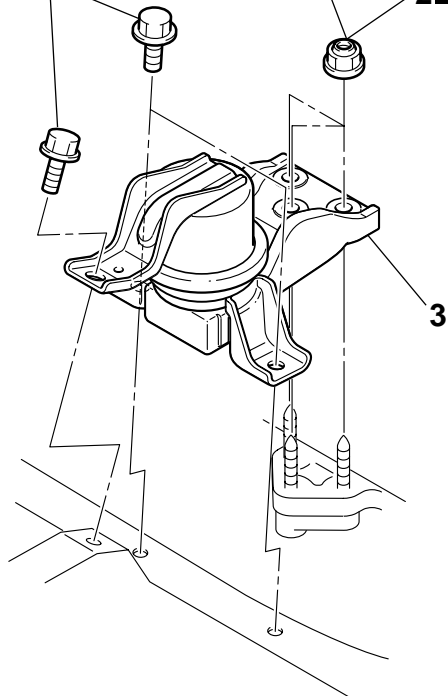
Post-installation Operation

- Accelerator Pedal Position Sensor Installation (Refer to GROUP 17, Accelerator Pedal Position Sensor [P.17-9](#)).
- Accelerator Cable Check and Adjustment (Refer to GROUP 17, On-vehicle Service [P.17-6](#)). <2.4L Engine>

<2.0L ENGINE>

$44 \pm 10 \text{ N}\cdot\text{m}^*$
 $33 \pm 7 \text{ ft}\cdot\text{lb}^*$

$67 \pm 7 \text{ N}\cdot\text{m}^*$
 $50 \pm 5 \text{ ft}\cdot\text{lb}^*$

2 

AC303999

REMOVAL STEPS

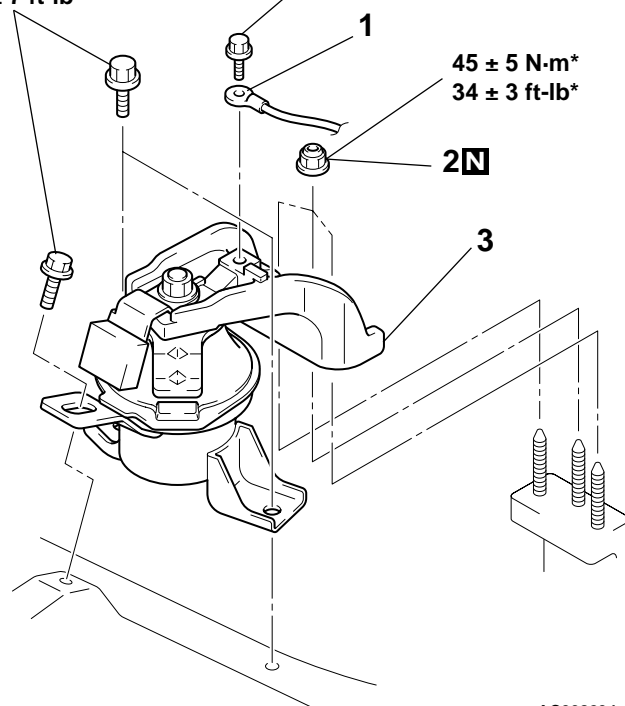
1. GROUNDING CABLE CONNECTION

<2.4L ENGINE>

$44 \pm 10 \text{ N}\cdot\text{m}^*$
 $33 \pm 7 \text{ ft}\cdot\text{lb}^*$

$12 \pm 2 \text{ N}\cdot\text{m}$
 $102 \pm 22 \text{ in}\cdot\text{lb}$

$45 \pm 5 \text{ N}\cdot\text{m}^*$
 $34 \pm 3 \text{ ft}\cdot\text{lb}^*$

2 

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AC309053AB

REMOVAL STEPS (Continued)

2. SELF-LOCKING NUTS
3. ENGINE FRONT MOUNTING BRACKET

TRANSAXLE MOUNTING

REMOVAL AND INSTALLATION

M1321001400474

⚠ 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.

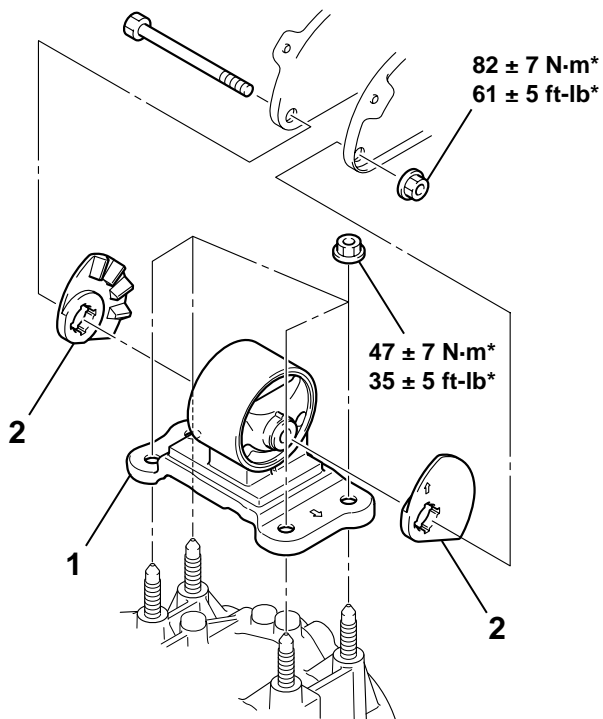
Pre-removal Operation

- Battery and Battery Tray Removal
- Air Cleaner Removal (Refer to GROUP 15, Air Cleaner P.15-4).
- Engine Rear Roll Stopper Bracket Removal (Refer to P.32-7).
- Raise the engine and transaxle assembly until its weight is not applied to the insulator, and support it securely.

Post-installation Operation

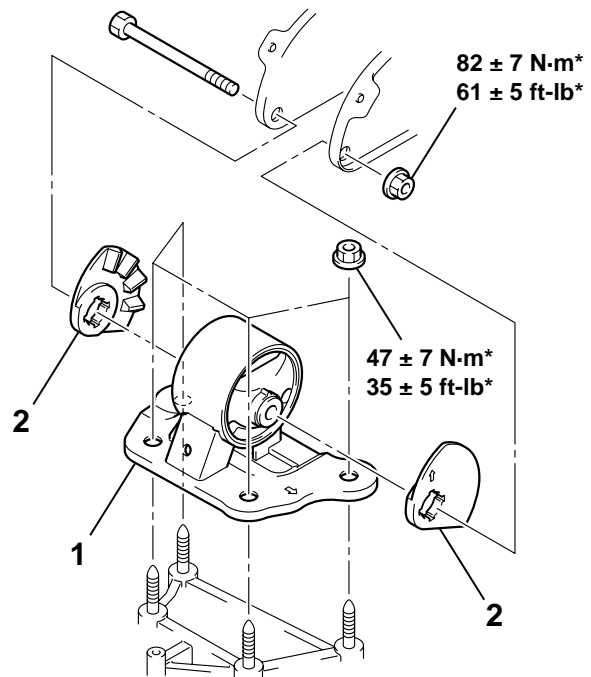
- Engine Rear Roll Stopper Bracket Installation (Refer to P.32-7).
- Air Cleaner Installation (Refer to GROUP 15, Air Cleaner P.15-4).
- Battery and Battery Tray Installation

<M/T>



AC303988

<A/T>



AC303989

AC304258AC

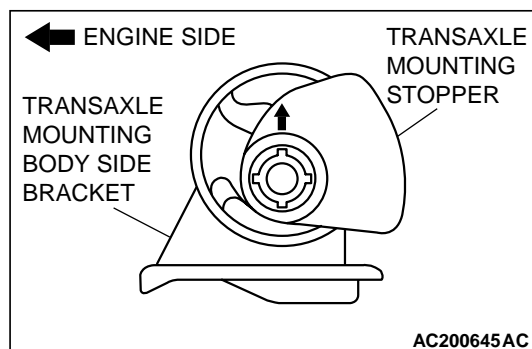
REMOVAL STEPS

1. TRANSAXLE MOUNTING BODY SIDE BRACKET
- >>A<< 2. TRANSAXLE MOUNTING STOPPER

INSTALLATION SERVICE POINT

>>A<< TRANSAXLE MOUNTING STOPPER INSTALLATION

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



INSPECTION

M1321001500158

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

ENGINE ROLL STOPPER AND CENTERMEMBER

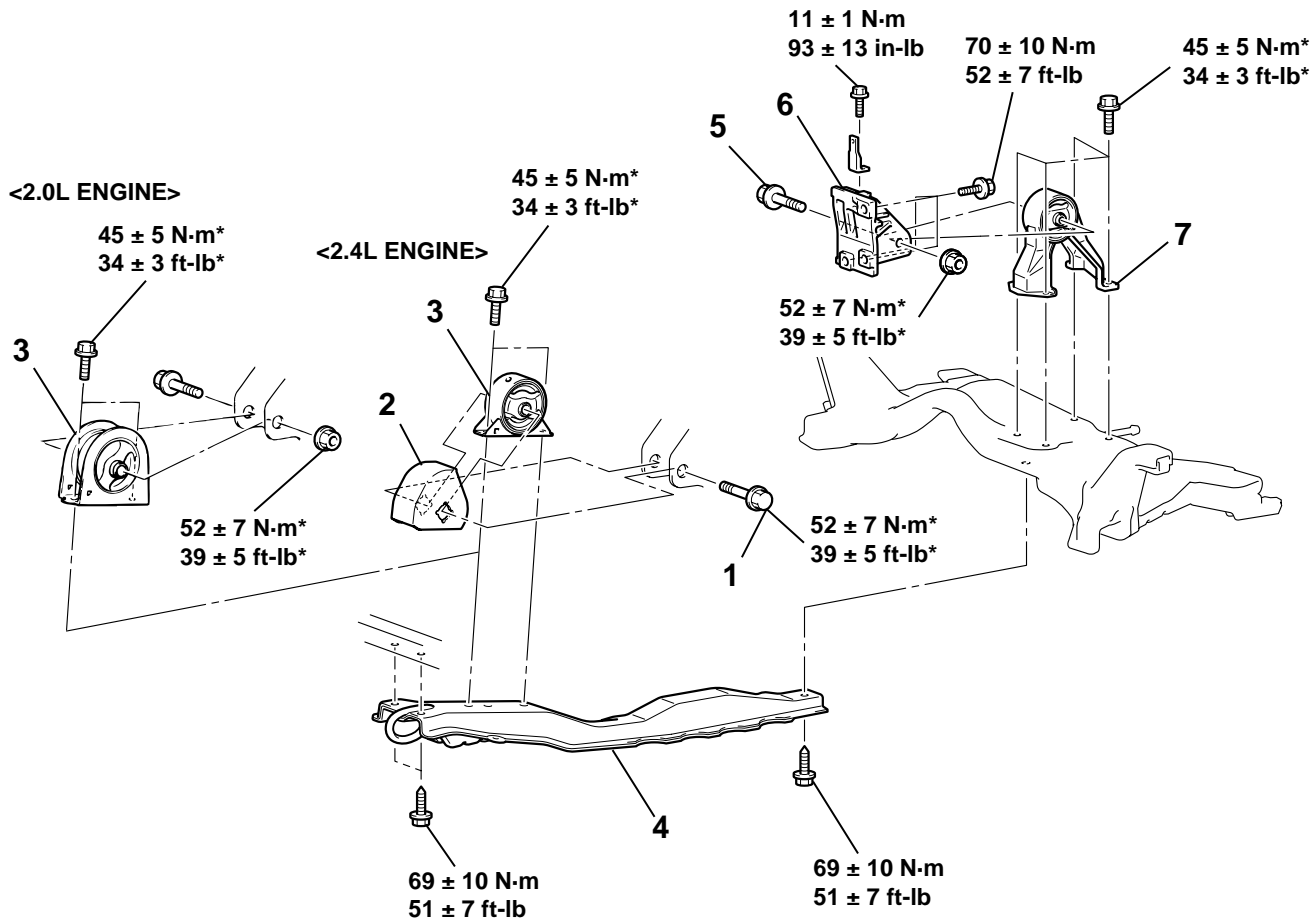
REMOVAL AND INSTALLATION

M1321002300328

⚠ 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
Under Cover Removal and Installation



AC309183 AB

FRONT ROLL STOPPER AND CENTERMEMBER REMOVAL STEPS

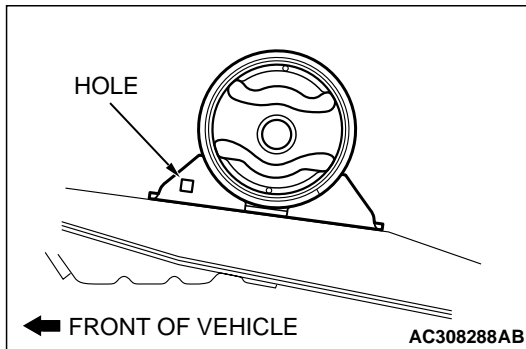
1. ENGINE FRONT ROLL STOPPER BRACKET CONNECTING BOLT
- >>B<< 2. ENGINE FRONT MOUNTING CUSHION STOPPER <2.4L ENGINE>
- >>A<< 3. ENGINE FRONT ROLL STOPPER BRACKET
4. CENTERMEMBER

REAR ROLL STOPPER REMOVAL STEPS

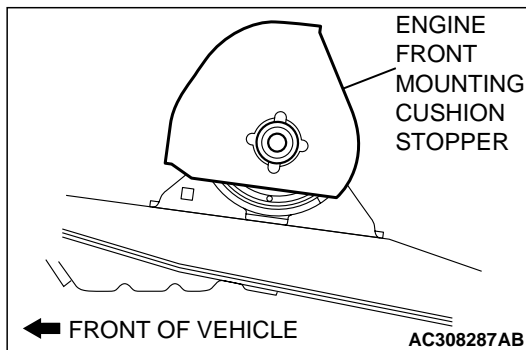
5. ENGINE REAR ROLL STOPPER BRACKET CONNECTING BOLT
6. TRANSAXLE CASE REAR ROLL STOPPER BRACKET
7. ENGINE REAR ROLL STOPPER BRACKET

INSTALLATION SERVICE POINTS**>>A<< 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.

**>>B<< ENGINE FRONT MOUNTING CUSHION STOPPER
INSTALLATION <2.4L ENGINE>**

Install the engine front mounting cushion stopper as shown.



CROSSMEMBER

REMOVAL AND INSTALLATION

M1321003200409

CAUTION

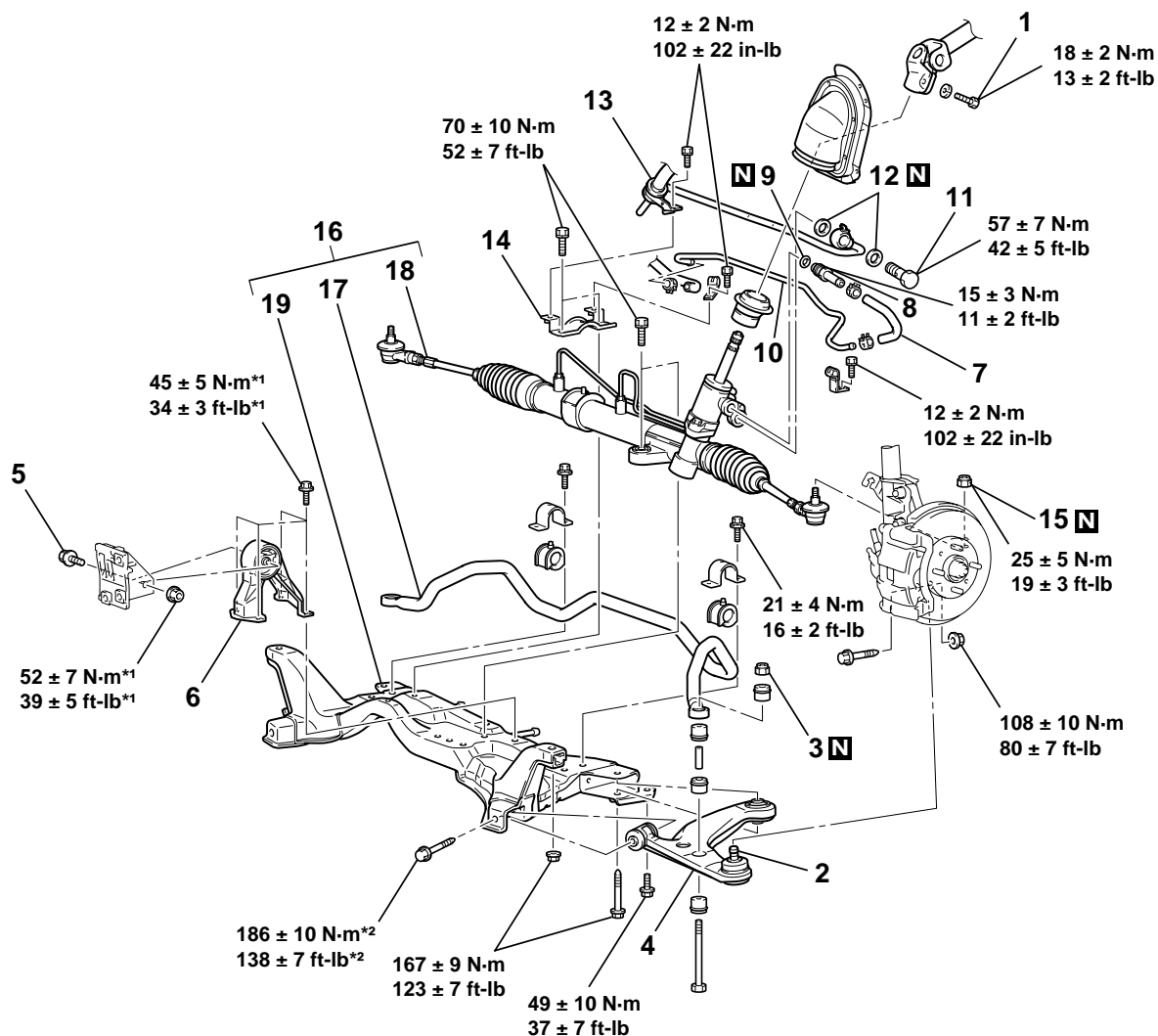
- Before removing the steering wheel and air bag module assembly, always refer to GROUP 52B – Service Precautions (P.52B-16), Air bag Module and Clock Spring (P.52B-205). Also, set the front wheels so that they are facing straight forward, and remove the ignition key. If you fail to do this, the SRS 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 37A, On-vehicle Service – Fluid Replacement P.37A-19).
- Steering Wheel and Air Bag Module Assembly Removal (Refer to GROUP 37A, Steering Wheel and Shaft Assembly P.37A-25).
- Clock Spring Removal (Refer to GROUP 52B, Air Bag Modules and Clock Spring P.52B-205).
- Front Exhaust Pipe Remove (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-13).
- Centermember Removal (Refer to P.32-7).

Post-installation Operation

- Centermember Installation (Refer to P.32-7).
- Front Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-13).
- Clock Spring Installation (Refer to GROUP 52B, Air Bag Modules and Clock Spring P.52B-205).
- Steering Wheel and Air Bag Module Assembly Installation (Refer to 37A, Steering Wheel and Shaft Assembly P.37A-25).
- Check the dust cover for cracks or damage by pushing it with your finger.
- Power Steering Fluid Supplying (Refer to GROUP 37A, On-vehicle Service – Fluid Replacement P.37A-19).
- Power Steering Fluid Line Bleeding (Refer to GROUP 37A, On-vehicle Service – Power Steering System Air Bleeding P.37A-20).
- 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.33A-7).



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REMOVAL STEPS

1. STEERING SHAFT ASSEMBLY AND GEAR BOX CONNECTING BOLT
2. LOWER ARM AND KNUCKLE CONNECTION
3. SELF-LOCKING NUTS
4. LOWER ARM ASSEMBLY
5. ENGINE REAR ROLL STOPPER BRACKET CONNECTION BOLT
6. ENGINE REAR ROLL STOPPER BRACKET
7. RETURN HOSE
8. RETURN PIPE
9. O-RING
10. RETURN PIPE
11. EYE BOLT
12. GASKETS

REMOVAL STEPS (Continued)

13. PRESSURE HOSE CONNECTION
14. POWER STEERING GEAR AND LINKAGE CLAMP
15. SELF-LOCKING NUTS (TIE ROD END AND KNUCKLE CONNECTION)
16. STABILIZER BAR, POWER STEERING GEAR AND LINKAGE AND FRONT AXLE NO.1 CROSSMEMBER ASSEMBLY
17. STABILIZER BAR
18. POWER STEERING GEAR AND LINKAGE
19. FRONT AXLE NO.1 CROSSMEMBER

<<A>>
>>B<<

<>

<<C>>

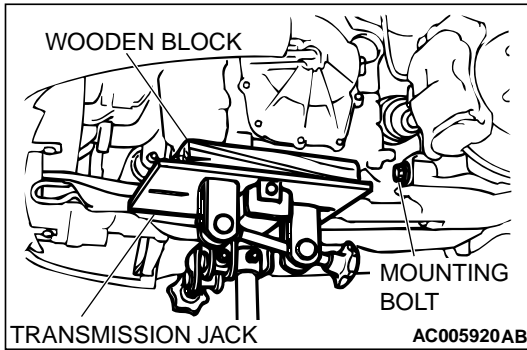
>>A<<

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 bolts on the left lower arm assembly.

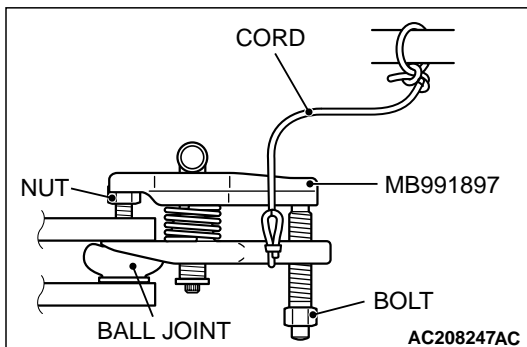


<> SELF LOCKING NUTS (TIE ROD END AND KNUCKLE CONNECTION) REMOVAL

⚠ 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.

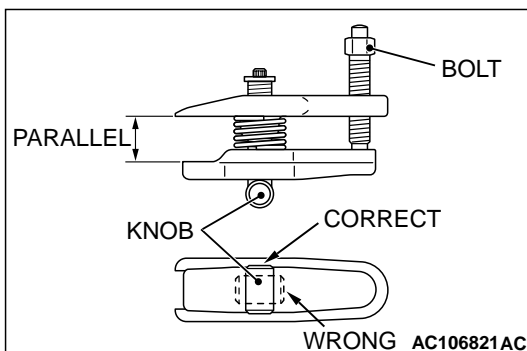
1. Install special tool MB991897 as shown in the figure.



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.

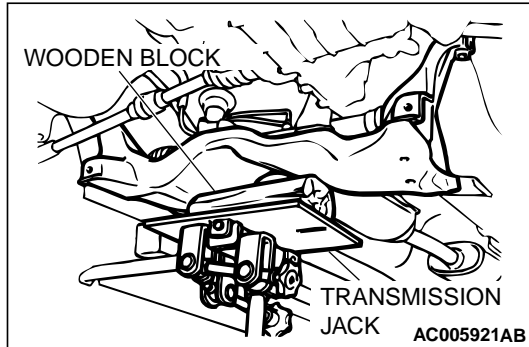
NOTE: When adjusting the jaws in parallel, make sure the knob is in the position shown in the figure.

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

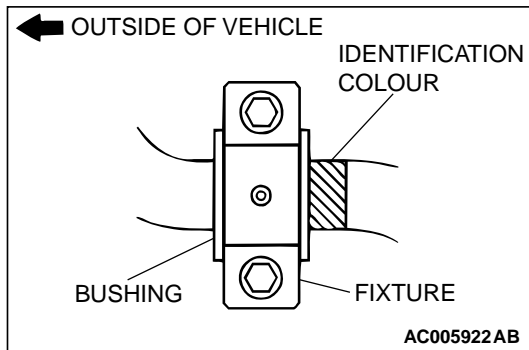


<<C>> STABILIZER BAR, POWER STEERING GEAR AND LINKAGE AND FRONT AXLE NO.1 CROSSMEMBER ASSEMBLY REMOVAL

Support the front axle No.1 crossmember with a transmission jack, and then remove the crossmember mounting nuts and bolts.

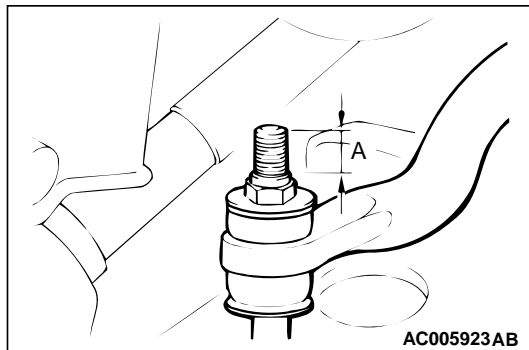
**INSTALLATION SERVICE POINTS****>>A<< STABILIZER BAR INSTALLATION**

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

**>>B<< SELF-LOCKING NUTS INSTALLATION**

Tighten the self-locking bolt until its protruding length meets the standard value.

Standard value (A): 22 ± 1.5 mm (0.87 ± 0.05 inch)

**INSPECTION**

M1321003300213

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

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1321004100320

ITEM		SPECIFICATION
Crossmember		
Engine rear roll stopper bracket bolt		45 ± 5 N·m (34 ± 3 ft-lb)
Engine rear roll stopper bracket 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 assembly bolt	M14 × 97	186 ± 10 N·m (138 ± 7 ft-lb)
	M14 × 120	167 ± 9 N·m (123 ± 7 ft-lb)
Lower arm assembly nut		108 ± 10 N·m (80 ± 7 ft-lb)
Power steering gear and linkage bolt		70 ± 10 N·m (52 ± 7 ft-lb)
Power steering gear and linkage clamp bolt		70 ± 10 N·m (52 ± 7 ft-lb)
Pressure hose bolt (bolt, eye)		57 ± 7 N·m (42 ± 5 ft-lb)
Pressure hose bolt (bolt, washer assembled)		12 ± 2 N·m (102 ± 22 in-lb)
Return pipe clamp bolt		12 ± 2 N·m (102 ± 22 in-lb)
Return pipe nut		15 ± 3 N·m (11 ± 2 ft-lb)
Stabilizer bracket bolt		21 ± 4 N·m (16 ± 2 ft-lb)
Steering shaft assembly bolt		18 ± 2 N·m (13 ± 2 ft-lb)
Tie rod end nut		25 ± 5 N·m (19 ± 3 ft-lb)
Engine mounting		
Engine front mounting bracket bolt		44 ± 10 N·m (33 ± 7 ft-lb)
Engine front mounting bracket nut <2.0L ENGINE>		67 ± 7 N·m (50 ± 5 ft-lb)
Engine front mounting bracket nut <2.4L ENGINE>		45 ± 5 N·m (34 ± 3 ft-lb)
Grounding cable bolt		12 ± 2 N·m (102 ± 22 in-lb)
Engine roll stopper and centermember		
Centermember bolt		69 ± 10 N·m (51 ± 7 ft-lb)
Engine front roll stopper bracket bolt		45 ± 5 N·m (34 ± 3 ft-lb)
Engine front roll stopper bracket nut <2.0L ENGINE>		52 ± 7 N·m (39 ± 5 ft-lb)
Engine front roll stopper bracket bolt <2.4L ENGINE>		52 ± 7 N·m (39 ± 5 ft-lb)
Engine rear roll stopper bracket bolt		45 ± 5 N·m (34 ± 3 ft-lb)
Engine rear roll stopper bracket nut		52 ± 7 N·m (39 ± 5 ft-lb)
Harness clamp bolt		11 ± 1 N·m (93 ± 13 in-lb)
Transaxle case rear roll stopper bracket bolt		70 ± 10 N·m (52 ± 7 ft-lb)
Transaxle mounting		
Transaxle mounting body side bracket nut		47 ± 7 N·m (35 ± 5 ft-lb)
Transaxle mounting stopper nut		82 ± 7 N·m (61 ± 5 ft-lb)

SERVICE SPECIFICATION

M1321000300366

ITEM	SPECIFICATION
Protruding length of stabilizer bar mounting bolt mm (in)	22 ± 1.5 (0.87 ± 0.05)

NOTES