

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

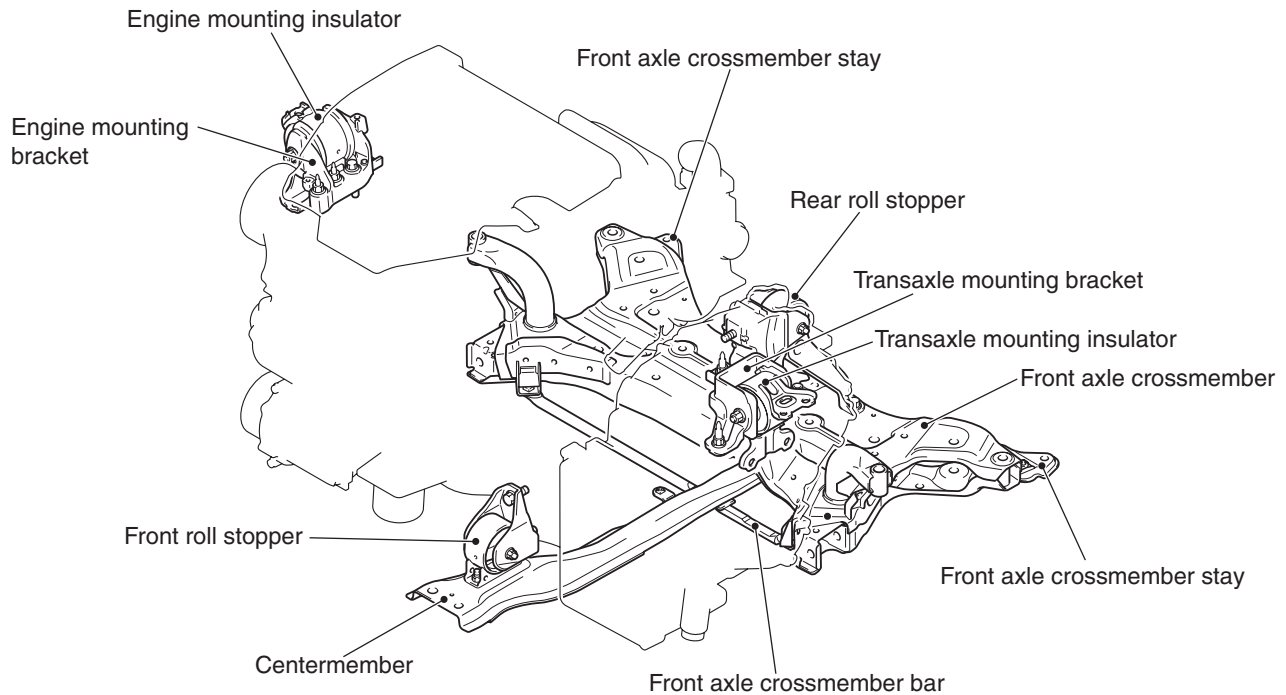
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For the power plant support, the inertial axis four-point mounting system is adopted, and the system has the following features.

- 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 and the front axle crossmember stay are added to enhance rigidity.

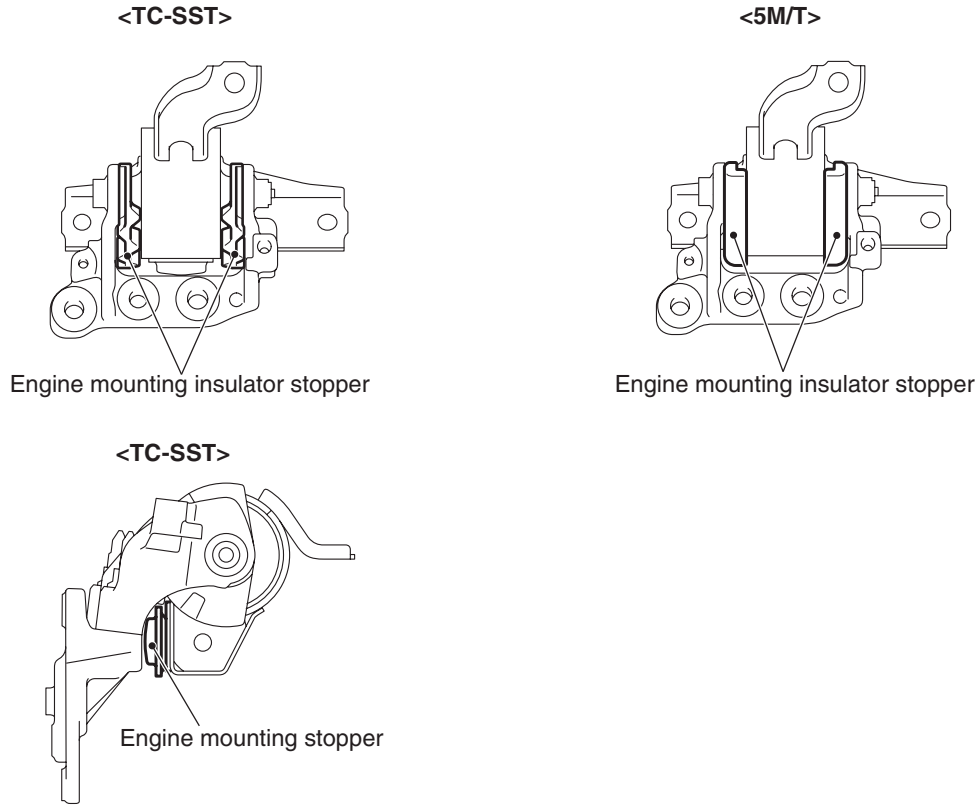
CONSTRUCTION DIAGRAM



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- The shape of engine mounting insulator stopper is optimized to reduce vibration transfer.
- The engine mounting stopper is added to the engine mounting insulator to reduce movement of engine. <TC-SST>

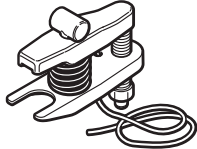
CONSTRUCTION DIAGRAM



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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 <i>NOTE: Conventional steering linkage puller, MB991406, MB990635 or MB991113 can also be used</i></p>

ENGINE MOUNTING

REMOVAL AND INSTALLATION

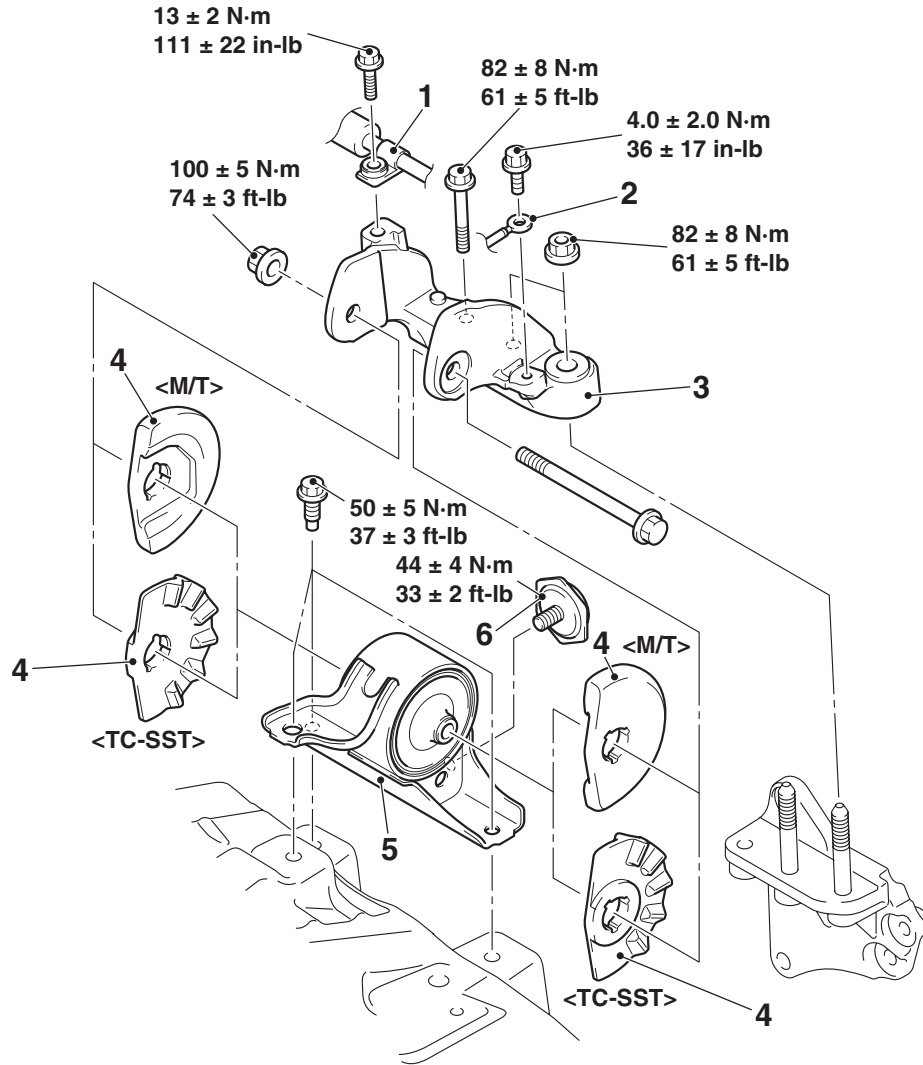
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Pre-removal Operation

- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover (RH) Removal (Refer to GROUP 51, Under Cover P.51-16).
- Radiator Condenser Tank Removal (Refer to GROUP 14, Radiator P.14-31).
- Fuel Pump Resistor Removal (Refer to GROUP 13A, Engine Control Resistor P.13A-919).

Post-installation Operation

- Fuel Pump Resistor Installation (Refer to GROUP 13A, Engine Control Resistor P.13A-919).
- Radiator Condenser Tank Installation (Refer to GROUP 14, Radiator P.14-31).
- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover (RH) Installation (Refer to GROUP 51, Under Cover P.51-16).



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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 <TC-SST>

<<A>>

REMOVAL SERVICE POINT

<<A>> ENGINE MOUNTING BRACKET REMOVAL

CAUTION

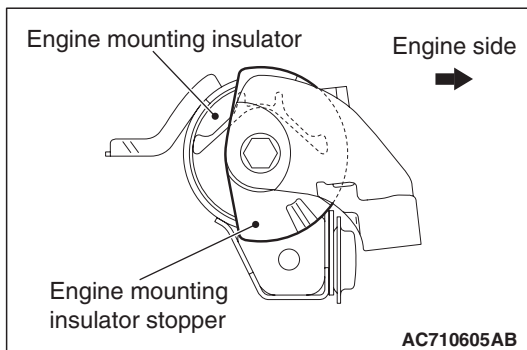
When supporting the engine and transaxle assembly by using the garage jack, pay attention not to deform the engine oil pan.

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

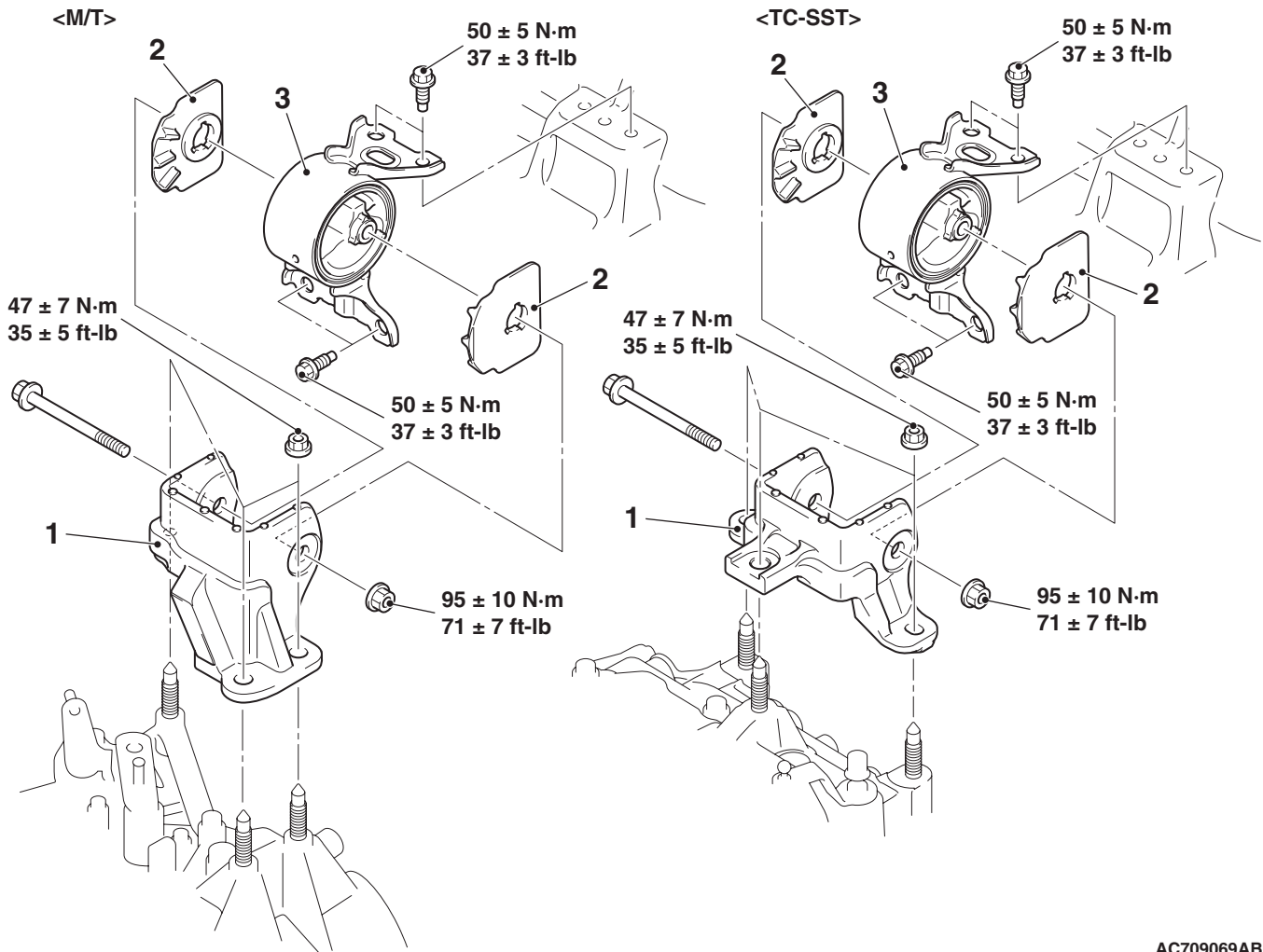
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Pre-removal operation

- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover (LH) Removal (Refer to GROUP 51, Under Cover P.51-16).
- Air Cleaner Assembly Removal (Refer to GROUP 15, Air Cleaner P.15-10).
- Engine Control Module (ECM) Removal (Refer to GROUP 13A, Engine Control Module (ECM) P.13A-920).
- Engine control harness connector bracket Removal (Refer to GROUP 54A, Battery P.54A-10).
- Relay box mounting bolts Removal.

Post-installation operation

- Relay box mounting bolts Installation.
- Engine control harness connector bracket Installation (Refer to GROUP 54A, Battery P.54A-10).
- Engine Control Module (ECM) Installation (Refer to GROUP 13A, Engine Control Module (ECM) P.13A-920).
- Air Cleaner Assembly Installation (Refer to GROUP 15, Air Cleaner P.15-10).
- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover (LH) Installation (Refer to GROUP 51, Under Cover P.51-16).



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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

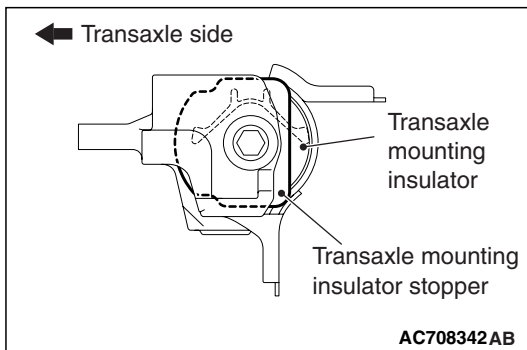
<<A>> TRANSAXLE MOUNTING BRACKET REMOVAL

1. Place a garage jack against the transaxle case with a piece of wood in between, 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.



FRONT ROLL STOPPER AND CENTERMEMBER

REMOVAL AND INSTALLATION

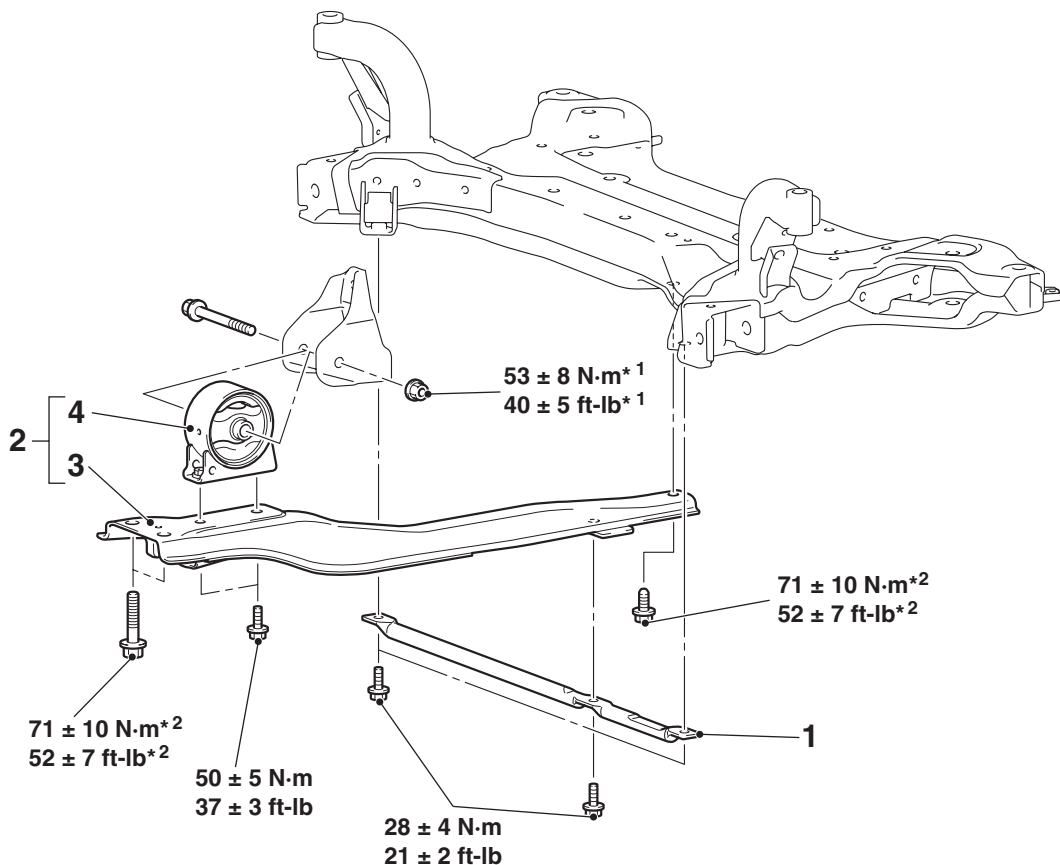
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CAUTION

- The part indicated by the *1 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 *2 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 and Engine Room Under Cover Center Removal and Installation (Refer to GROUP 51, Under Cover P.51-16).



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Removal steps

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

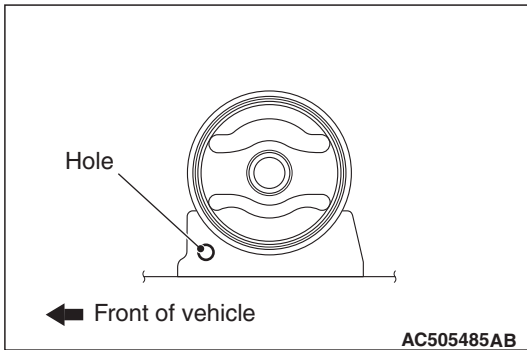
Removal steps (Continued)

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.



REAR ROLL STOPPER AND CROSSMEMBER**REMOVAL AND INSTALLATION**

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⚠ CAUTION

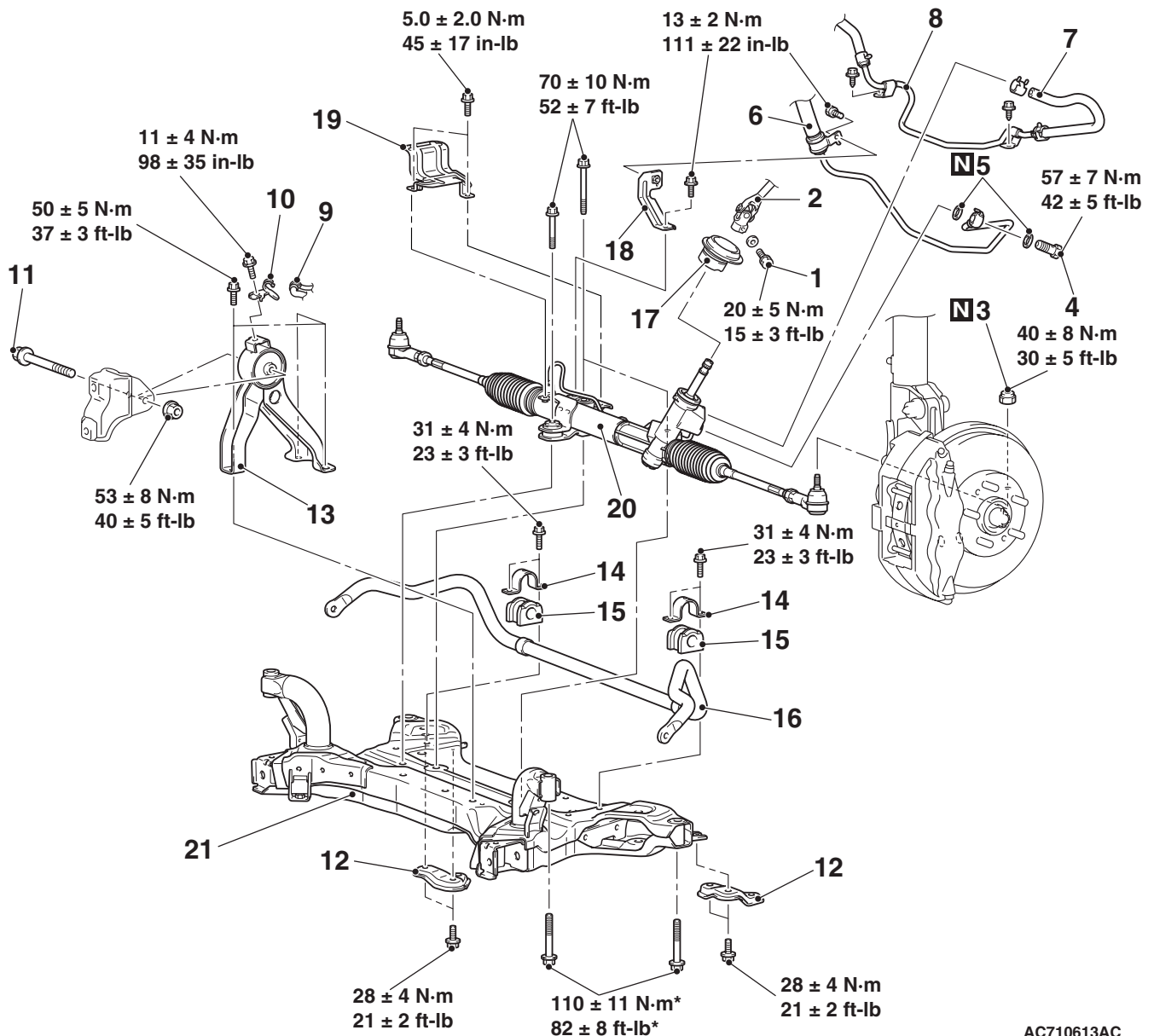
- Before removing the steering wheel assembly and driver's air bag module assembly, always refer to GROUP 52B –Service Precautions [P.52B-25](#), and Air Bag Module(s) and Clock Spring [P.52B-386](#). Also, position the front wheels in a straight ahead direction, and remove the ignition key. If you fail 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 installation, perform calibration to make ASC-ECU learn the neutral position of the steering wheel sensor. (Refer to GROUP 35C, On-vehicle Service –Steering Wheel Sensor Calibration [P.35C-267](#)).

Pre-removal operation

- Power Steering Fluid Draining (Refer to GROUP 37, On-vehicle Service –Power Steering Fluid Replacement [P.37-18](#)).
- Steering Wheel and Air Bag Module Assembly Removal (Refer to GROUP 37, Steering Wheel [P.37-22](#)).
- Steering Shaft Cover Removal (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-22](#)).
- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover Removal (Refer to GROUP 51, Under Cover [P.51-16](#)).
- Centermember and Front Roll Stopper Assembly Removal (Refer to [P.32-8](#)).
- Stabilizer Link Removal (Refer to GROUP 33, Stabilizer Bar [P.33-17](#)).
- Lower Arm Assembly Removal (Refer to GROUP 33, Lower Arm [P.33-15](#)).

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 Inspection [P.37-15](#)).
- 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 –Lower Arm Ball Joint Dust Cover Inspection [P.33-8](#)).
- Lower Arm Assembly Installation (Refer to GROUP 33, Lower Arm [P.33-15](#)).
- Stabilizer Link Installation (Refer to GROUP 33, Stabilizer Bar [P.33-17](#)).
- Centermember and Front Roll Stopper Assembly Installation (Refer to [P.32-8](#)).
- Engine Room Under Cover Front A, B, Engine Room Under Cover Center and Engine Room Side Cover Installation (Refer to GROUP 51, Under Cover [P.51-16](#)).
- Steering Shaft Cover Installation (Refer to GROUP 37, Steering Column Shaft Assembly [P.37-22](#)).
- Steering Wheel and Air Bag Module Assembly Installation (Refer to GROUP 37, Steering Wheel [P.37-22](#)).
- Clock Spring Centering (Refer to GROUP 52B, Driver's Air Bag Modules and Clock Spring [P.52B-386](#)).
- Power Steering Fluid Air Bleeding (Refer to GROUP 37, On-vehicle Service –Power Steering System Air Bleeding [P.37-19](#)).
- 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.33-7](#)).



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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
- <> 3. Self-lock nut (Tie-rod end and knuckle connection)
 - Front floor backbone brace (Refer to GROUP 42A, Loose Panel P.42A-192).
- 4. Eye bolt
- 5. Gasket
- 6. Pressure hose assembly
- 7. Return hose connection
- 8. Return hose assembly

Removal steps (Continued)

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

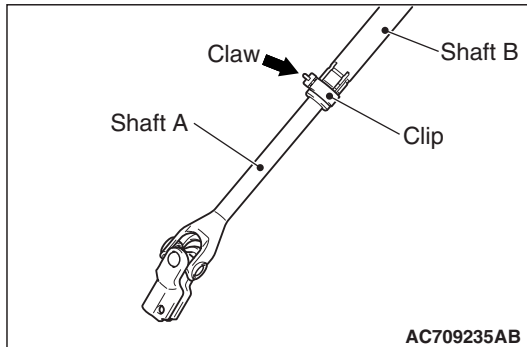
Required Special Tool:

- MB991897 or MB992011: Ball Joint Remover

REMOVAL SERVICE POINTS

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

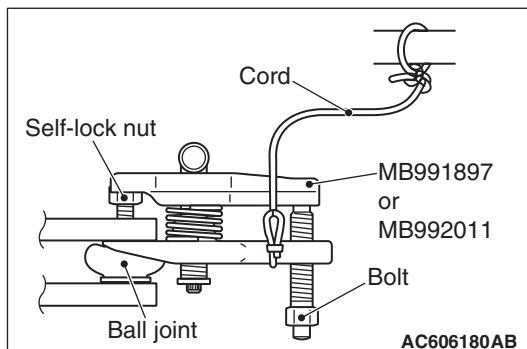
Disconnect the steering gear from the steering column assembly while sliding the shaft A to the shaft B with the clip claw as shown in the figure is pinched.

<> 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.

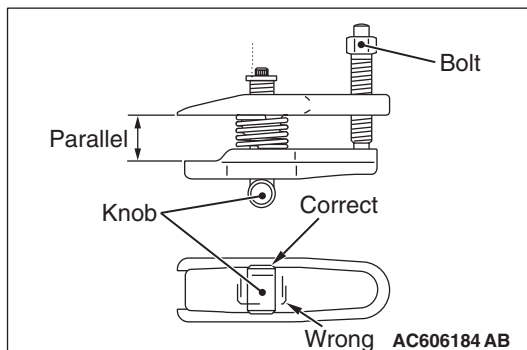
1. Install special tool MB991897 or MB992011 as shown in the figure.



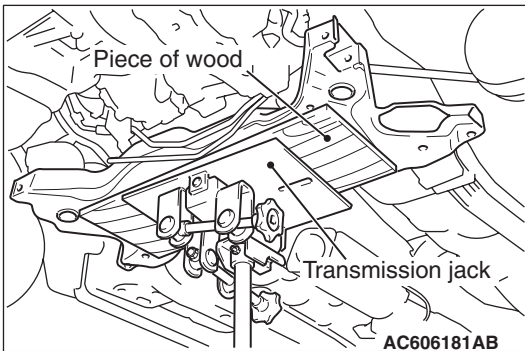
2. Turn the bolt and knob to make the special tool jaws parallel, then hand-tighten the bolt. After tightening, check that the jaws are still parallel.

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**

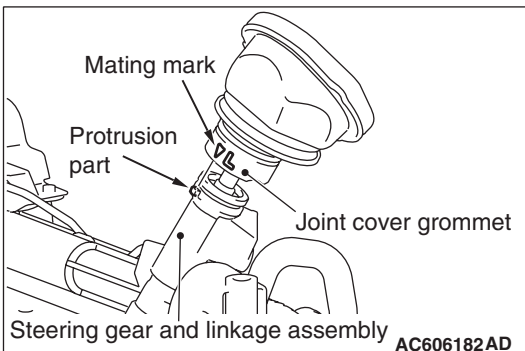


1. Jack up and support the front axle crossmember, remove the front axle crossmember mounting bolt.
2. Check the hoses and harnesses for roughness, and then remove the front axle crossmember assembly with the rear roll stopper and the steering gear and linkage installed.

INSTALLATION SERVICE POINTS

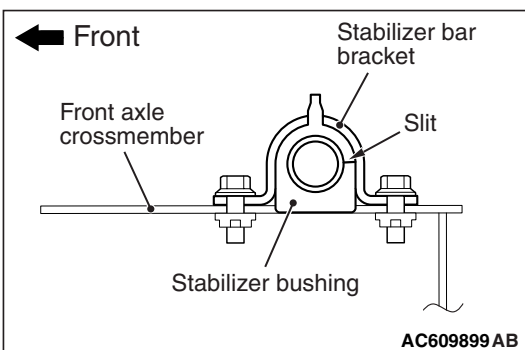
>>A<< JOINT COVER GROMMET INSTALLATION

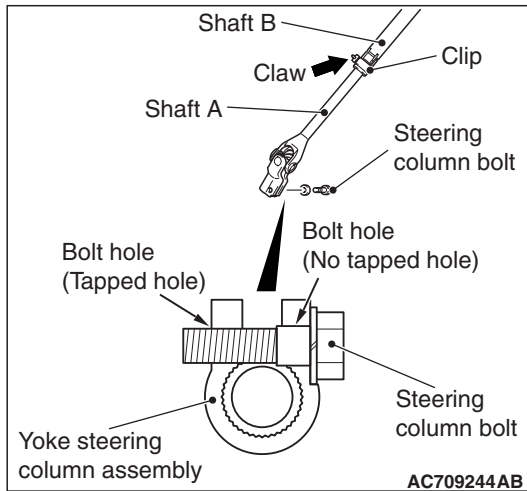
Install the joint cover grommet by aligning the projection of the steering gear and linkage assembly with the mating mark of the joint cover grommet as shown in the figure.



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

Install the stabilizer bar, the stabilizer bushing and the stabilizer bar bracket 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 ± 5 N·m (15 ± 3 ft-lb)