GROUP 37A

POWER STEERING

CONTENTS

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WANINGS 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 paassenger (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, air bag module, 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

M1372000100412

FEATURES

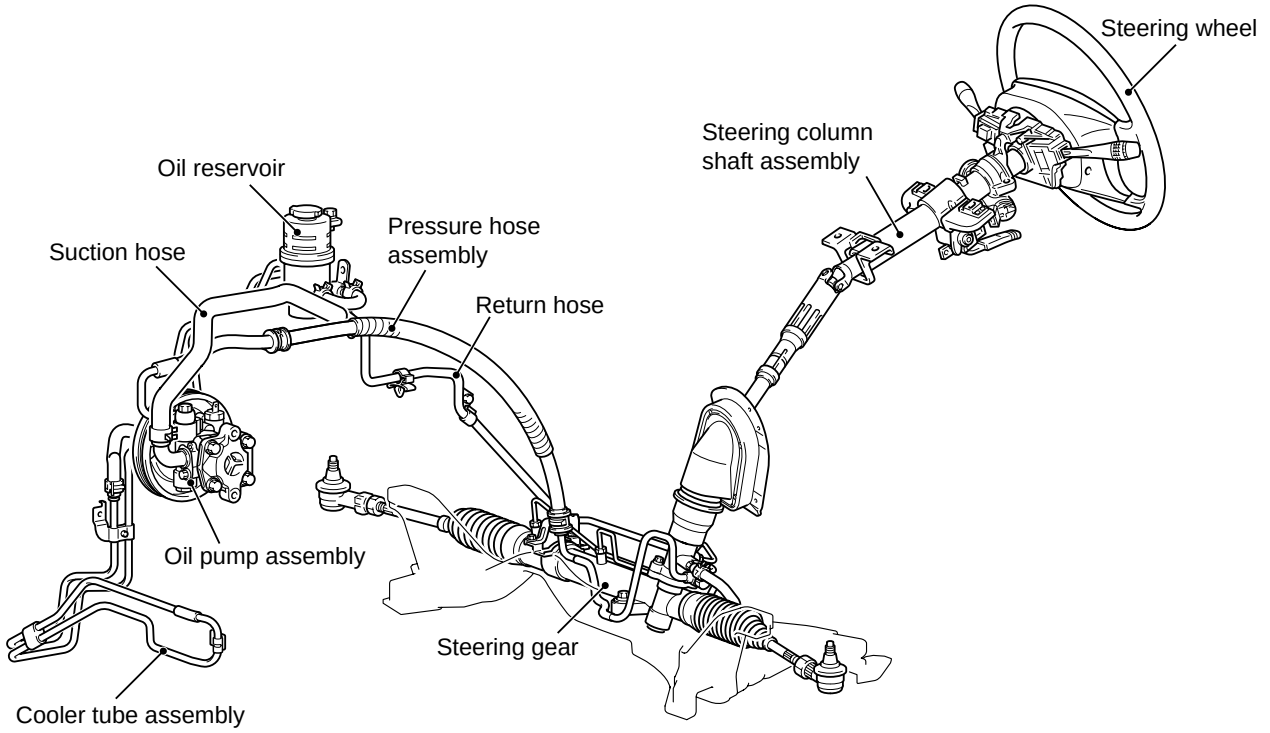
Power steering has been adopted in all vehicles to make the steering system easier to handle.

- A 4-spoke steering wheel is used.
- A steering column has a shock absorbing mechanism and a tilt steering mechanism.
- Integral-type rack and pinion gear with high rigidity and excellent response is used.
- A vane type pump with a fluid flow rate control system which change steering effort according to the engine speed is used.
- The separate plastic resin oil reservoir is used to reduce weight and to make the fluid level checking easier.
- The cooler tube assembly is installed on the power steering fluid line to improve the cooling performance of the power steering fluid.

SPECIFICATIONS

Item		Specification
Steering wheel	Type	4-spoke type
	Outside diameter mm	380
	Maximum number of turns	2.7
Steering column	Column mechanism	Shock absorbing mechanism and Tilt steering mechanism Tilt up: 20 mm Tilt down: 20 mm
Power steering type		Integral type
Oil pump	Type	Vane pump
	Basic discharge amount mL/rev.	9.6
	Relief pressure MPa	8.8
	Reservoir type	Separate type (plastic)
	Pressure switch	Equipped
Steering gear	Type	Rack and pinion
	Stroke ratio (Rack stroke/Steering wheel maximum turning radius)	51.45
	Rack stroke mm	141

CONSTRUCTION DIAGRAM



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SERVICE SPECIFICATIONS

M1372000300449

Item			Standard value	Limit
Steering wheel free play mm	With engine running		–	30
	With engine stopped		10 or less	–
Steering angle	Inside wheel		34°50' ± 1°30'	–
	Outside wheel (reference)		29°20'	–
Toe-in	At the centre of tyre tread mm		1 ± 2	–
	Toe-angle (per wheel)		0°03' ± 05'	–
Tie rod end ball joint starting torque N·m			0.5 – 2.5	–
Tie rod swing resistance N [Tie rod swing torque N·m]			6 – 19 [1.5 – 4.9]	–
Stationary steering effort N [Fluctuation allowance N]			29 or less [5.9 or less]	–
Oil pump pressure MPa (750 ± 100 r/min.)	Oil pump relief pressure		8.8 – 9.5	–
	Pressure under no-load conditions		0.8 – 1.0	–
	Steering gear retention hydraulic pressure		8.8 – 9.5	–
Oil pressure switch operating pressure MPa		OFF → ON	1.5 – 2.0	–
		ON → OFF	0.7 – 2.0	–
Steering gear total pinion torque N·m [Change in torque N·m]			0.7 – 1.6 [0.4 or less]	–
Opening dimension of special tool boot band crimping tool (MB991561) mm			2.9	–
Band crimped width mm			2.4 – 2.8	–

LUBRICANTS

M1372000400413

Item		Specified lubricant	Quantity
Power steering fluid		ATF DEXRON III or DEXRON II	Approximately 1.0 L
Steering gear	Bearing	ATF DEXRON III or DEXRON II	As required
	O-ring and seal ring		
	Oil seal		
	Special tool (MB991213)		
	Pinion and valve assembly seal ring part		
	Bellows	Silicon grease	As required
	Tie rod end ball joint	Multipurpose grease SAE J310, NLGI No.2 or equivalent	As required
Oil pump	Friction surface of rotor vane, cam ring and pump cover	ATF DEXRON III or DEXRON II	As required
	O-ring		

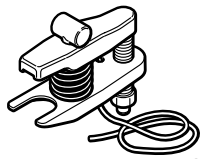
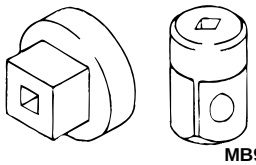
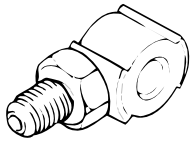
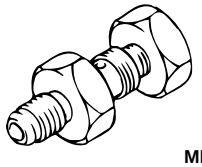
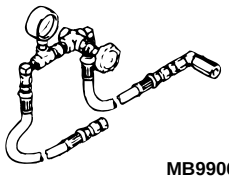
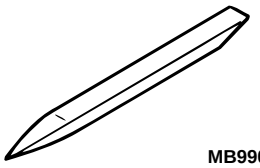
SEALANTS

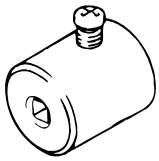
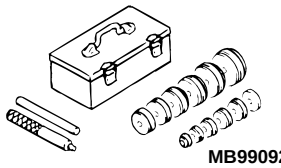
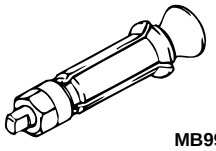
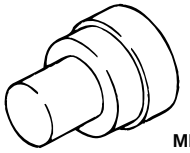
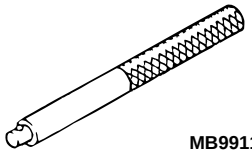
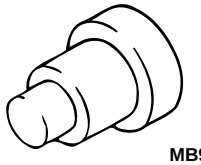
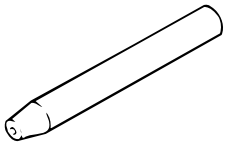
M1372000500421

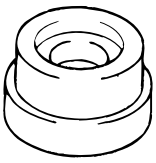
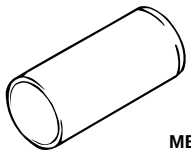
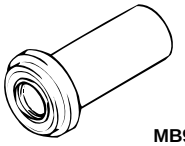
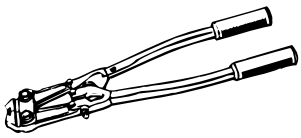
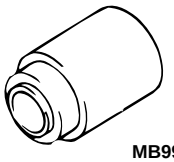
Item		Specified sealant
Steering shaft cover assembly bolt hole on the toeboard		3M ATD Part No.8513 or equivalent
Steering gear	End plug	3M ATD Part No.8661, 8663 or equivalent
	Rack support cover	

SPECIAL TOOLS

M1372000600440

Tool	Number	Name	Use
 AC106827	MB991897	Ball joint remover	Knuckle and tie rod end ball joint disconnection *NOTE: Steering linkage puller (MB990635 or MB991113) is also available to disconnect knuckle and tie rod end ball joint.*
 MB990326	MB990326	Preload socket	Tie rod end ball joint starting torque check
 MB991548	MB991548	Power steering oil pressure gauge adapter (Pump side)	Oil pump pressure test
 MB991549	MB991549	Power steering oil pressure gauge adapter (Hose side)	
 MB990662	MB990662	Power steering oil pressure gauge	
 MB990784	MB990784	Ornament remover	Cover removal

Tool	Number	Name	Use
 MB991006	MB990228 or MB991006	Preload socket	Steering gear total pinion torque check and adjustment
 MB991621	MB991621	Rack support cover wrench	• Rack support adjustment • Rack support cover removal
 MB990925	MB990925	Bearing and oil seal installer set	• Oil seal and bearing installation • MB990927, MB990938, MB990939 (For details, refer to GROUP 26, Special Tools P.26-4).
 MB991120	MB991120	Needle bearing puller	Needle roller bearing removal
 MB991199	MB991199	Oil seal and bearing installer	Oil seal installation
 MB991197	MB991197	Bar (long type)	
 MB991202	MB991202	Oil seal and bearing installer	• Needle bearing installation • Lower bearing installation
 MB991212	MB991213	Rack installer	Rack installation

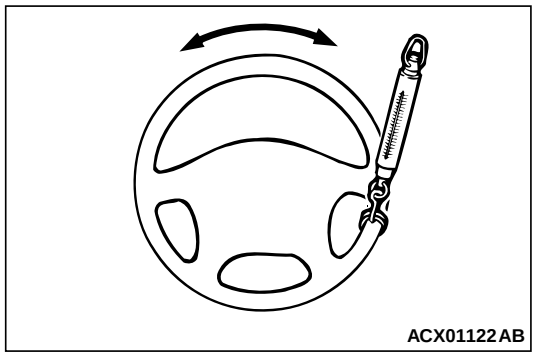
Tool	Number	Name	Use
 MB991203	MB991203	Oil seal and bearing installer	Oil seal and bearing installation
 MB991317	MB991317	Seal ring installer	Seal ring installation
 MB990941	MB990941	Torque tube bearing installer	Lower oil seal installation
 MB991561	MB991561	Boot band crimping tool	Bellows band installation
 MB990776	MB990776	Front axle base	Tie rod end ball joint dust cover installation

ON-VEHICLE SERVICE

STEERING WHEEL FREE PLAY CHECK

M1372001000399

1. With the engine running (hydraulic operation), set the front wheels straight ahead.



2. Measure the play on the steering wheel circumference before the wheels start to move when slightly moving the steering wheel in both directions.

   Limit: 30 mm

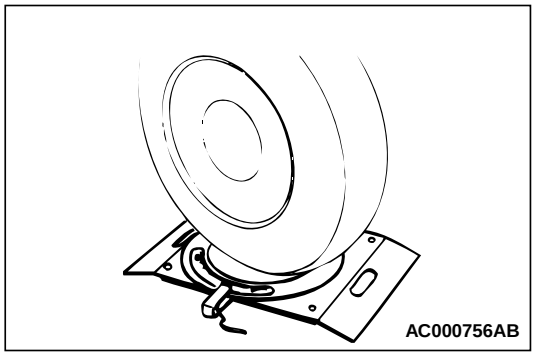
3. When the play exceeds the limit, check for the play on the steering shaft and steering linkage connection. Correct or replace.
4. If the free play still exceeds the limit value, set the steering wheel straight ahead with the engine stopped. Load 5 N towards the steering wheel circumference and check the play.

   Standard value (steering wheel play with the engine stopped): 10 mm or less

5. If the play exceeds the standard value, remove the steering gear (Refer to P.37A-21). and check the total pinion torque (Refer to P.37A-26).

STEERING ANGLE CHECK

M1372001100448



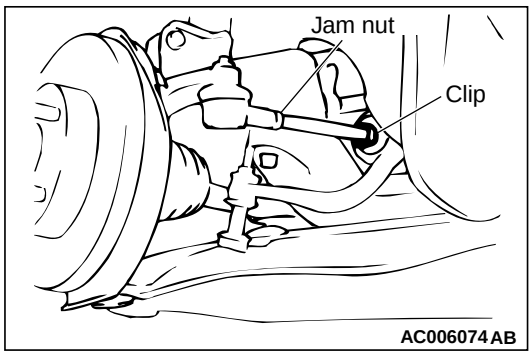
1. Place the front wheel on a turning radius gauge and measure the steering angle.

   Standard value:

Item	Specification
Inside wheel	34°50' ± 1°30'
Outside wheel (reference)	29°20'

2. If the steering angle is not within the standard value, adjust the toe-in as follows.

   Standard value:
   at the centre of tyre tread: 1 ± 2 mm
   Toe angle (per wheel): 0°03' ± 05'



3. Loosen the jam nut, and unclip the bellows.
4. Adjust the toe-in by turning the left and right tie rod turnbuckles by the same amount (in opposite directions).

   NOTE: The toe will move out as the left turnbuckle is turned toward the front of the vehicle and the right turnbuckle is turned toward the rear of the vehicle.

5. Tighten the jam nut to the specified torque, and tighten the bellows by the clip.

   Tightening torque: 52 ± 2 N·m

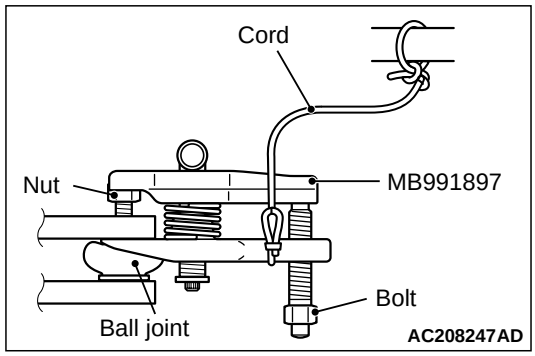
6. Recheck the steering angle.

TIE ROD END BALL JOINT STARTING TORQUE CHECK

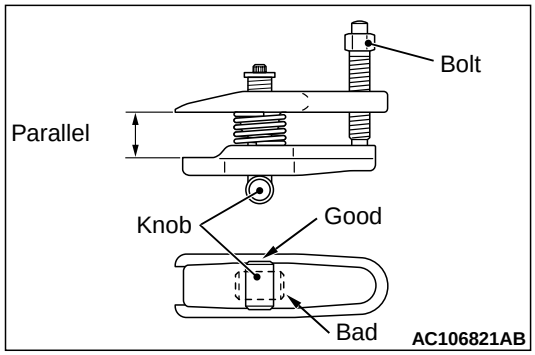
M1372001500372

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use special tool to avoid possible damage to the ball joint threads.**
- **Hang special tool with cord to prevent it from falling.**



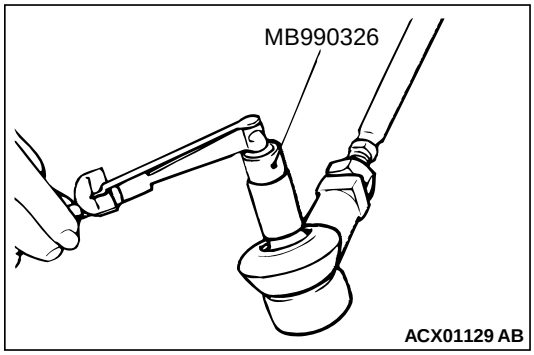
1. Install special tool ball joint remover (MB991897) as shown in the figure.



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 tie rod end.



4. Move the ball joint stud several times and install the nut on the stud. Using special tool preload socket (MB990326), measure the ball joint starting torque.

   Standard value: 0.5 – 2.5 N·m

5. If the starting torque exceeds the standard value, replace the tie rod end.
6. If the starting torque is under the standard value, check the ball joint for axial play or ratcheting. If no axial play or ratcheting, the ball joint can be re-used.

⚠ CAUTION

Always use a new ball joint nut as it is a self-locking nut.

7. Install the tie rod end to the knuckle, then tighten a new self-locking nut to the specified torque.

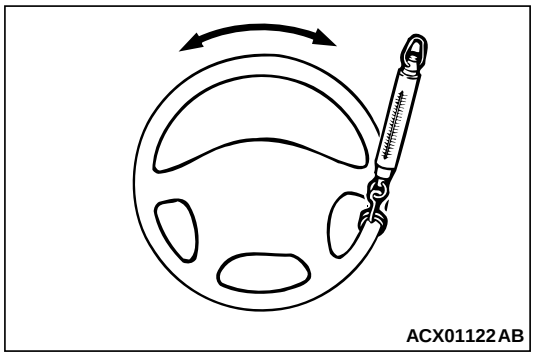
   Tightening torque: 25 ± 5 N·m

STATIONARY STEERING EFFORT CHECK

M1372001700406

1. With the vehicle stopped on a flat and paved surface, turn the steering wheel to the straight ahead position.
2. Start the engine and set the engine idle speed.

   Standard value: 750 ± 100 r/min



3. Attach a spring balance to the outer circumference of the steering wheel and measure the steering force required to turn the steering wheel from the straight ahead position to the left and right (within a range of 1.5 turns). Also check to be sure that there is no significant change in the required steering effort.

   Standard value:
   Steering effort: 29 N or less
   Fluctuation allowance: 5.9 N or less

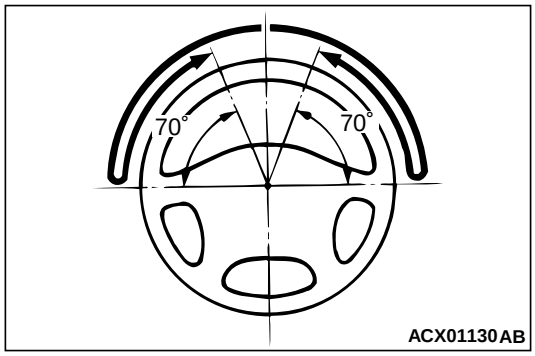
4. If the measured value exceeds the standard value, check and adjust the related parts.

STEERING WHEEL RETURN TO CENTRE CHECK

M1372001800384

Conduct a road test:

1. Make both gradual and sudden turns and check the steering wheel return.



2. At a vehicle speed of approximately 35 km/h, turn the steering wheel 90°, hold a few seconds, then release. If the steering wheel then returns 70° or more, the return can be judged satisfactory.

   NOTE: There will be a momentary feeling or "heaviness" when the wheel is turned quickly, but this is not abnormal (Oil pump discharge amount is especially apt to be insufficient during idling).

DRIVE BELT TENSION CHECK

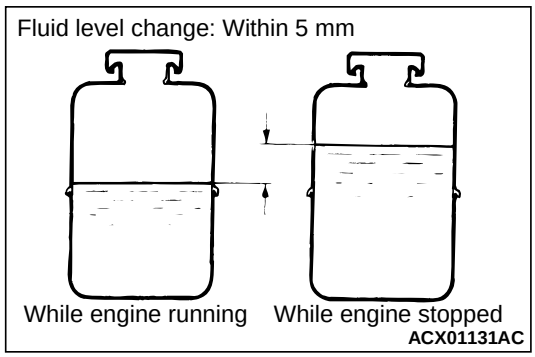
M1372001900336

Refer to GROUP 11A, On-vehicle Service – Drive Belt Tension Check <2000> P.11A-8.
Refer to GROUP 11C, On-vehicle Service – Drive Belt Tension Check <2400> P.11C-8.

FLUID LEVEL CHECK

M1372002000358

1. Park the vehicle on a flat, level surface.
2. Start the engine, and then turn the steering wheel several times to raise the temperature of the fluid to approximately 50 – 60°C.
3. With the engine running, turn the wheel all the way to the left and right several times.

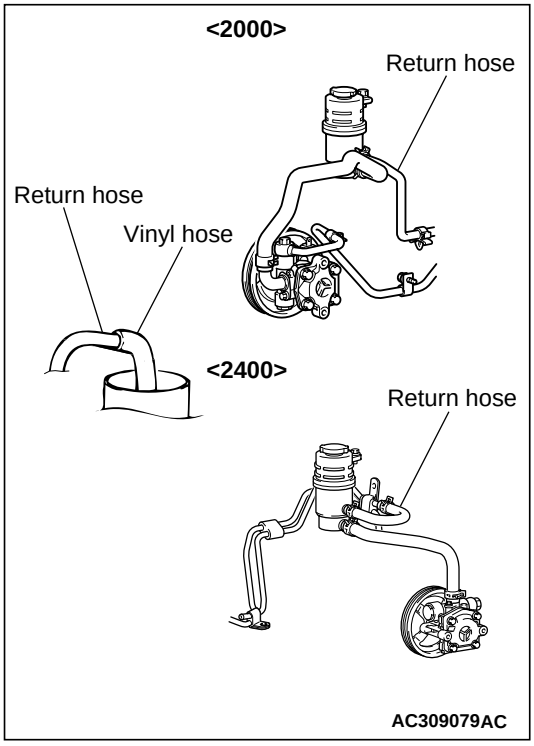


4. Check the fluid in the oil reservoir for foaming or milkiness. Check the difference of the fluid level when the engine is stopped, and while it is running. If the change of the fluid level is 5 mm or more, air bleeding should be done.

FLUID REPLACEMENT

M1372002100418

1. Raise and support the front wheels.



2. Disconnect the return hose connection, and then connect a vinyl hose to the return hose, and drain the fluid into a container.
3. Disconnect the ignition coil connectors (Refer to GROUP 16, Ignition Coil P.16-40 <2000>, P.16-41 <2400>).
4. While operating the starter motor intermittently, turn the steering wheel all the way to the left and right several times to drain all of the fluid.
5. Connect the return hose securely, and then secure with the clip.
6. Fill the oil reservoir with specified fluid up to the lower position of the filler, and then bleed the air.

   Specified fluid: ATF DEXRON III or DEXRON II

POWER STEERING SYSTEM AIR BLEEDING

M1372002200404

Perform air bleeding procedure as necessary after replacing the steering gear or the steering fluid lines.

1. Raise and support the front wheels.
2. Disconnect the ignition coil connectors (Refer to GROUP 16, Ignition Coil P.16-40 <2000>, P.16-41 <2400>).

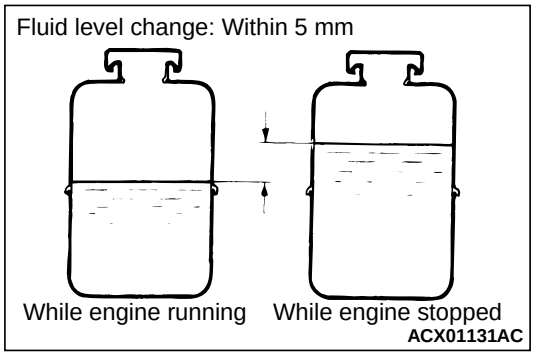
⚠ CAUTION

Perform air bleeding only while cranking the engine. If air bleeding is performed while the engine is running, air could enter the fluid. During air bleeding, refill the steering fluid supply so that the level never falls below the "MIN" mark on the oil reservoir.

3. Turn the steering wheel all the way to the left and right five or six times while using the starter motor to crank the engine intermittently several times (for 15 to 20 seconds).
4. Connect the ignition coil connectors (Refer to GROUP 16, Ignition Coil P.16-40 <2000>, P.16-41 <2400>).
5. Start the engine (idling).
6. Turn the steering wheel to the left and right until there are no air bubbles in the oil reservoir.
7. Confirm that the fluid is not milky, and that the level is between "MAX" and "MIN" marks.
8. Confirm that there is very little change in the fluid level when the steering wheel is turned left and right.

⚠ CAUTION

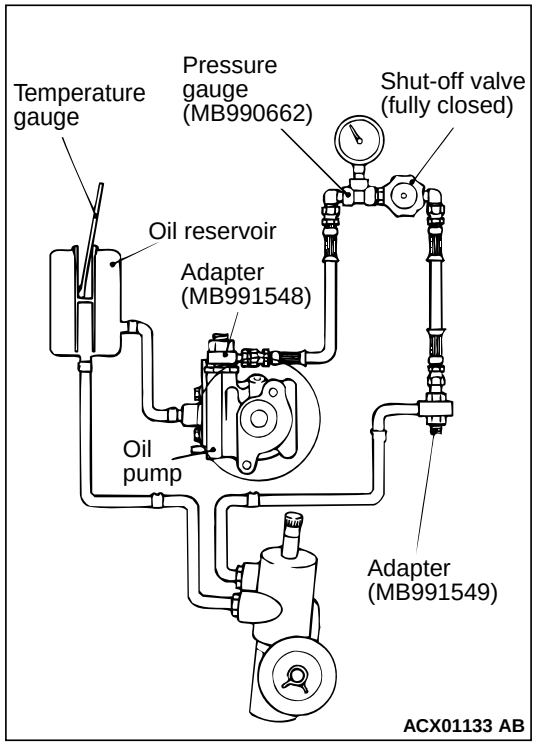
If the fluid level rises suddenly after the engine is stopped, the air has not been completely bled. If air bleeding is not complete, there will be abnormal noises from the pump and the flow-control valve, and this condition could cause reduce the life of the power steering components.



9. Confirm that the change in the fluid level is no more than 5 mm when the engine is stopped and when it is running.
10. If the change of the fluid level is 5 mm or more, the air has not been completely bled from the system. The air bleeding procedure must be repeated.

OIL PUMP PRESSURE TEST

M1372002300382



1. Disconnect the pressure hose from the oil pump, and then connect the following special tools.
   - MB990662: Power Steering Oil Pressure Gauge
   - MB991548: Power Steering Oil Pressure Gauge Adapter (Pump Side)
   - MB991549: Power Steering Oil Pressure Gauge Adapter (Hose Side)
2. Bleed air, then turn the steering wheel several times while the vehicle is not moving so that the temperature of the fluid rises to approximately 50 – 60°C.
3. Start the engine and idle it at 750 ± 100 r/min.

⚠ CAUTION

The pressure gauge shut-off valve must not remain closed for more than 10 seconds.

4. Fully close the shut-off valve of the pressure gauge and measure the oil pump relief pressure to confirm that it is within the standard value range. Open it again immediately after checking the pressure.

   Standard value: 8.8 – 9.5 MPa

5. If it is not within the standard value, replace the oil pump.
6. Check whether or not the hydraulic pressure is the standard value when no-load conditions are created by fully opening the shut-off valve of the pressure gauge.

   Standard value: 0.8 – 1.0 MPa

7. If it is not within the standard value, the probable cause is a malfunction of the oil line or steering gear, so check these parts and repair as necessary.
8. Turn the steering wheel all the way to the left or right; then check whether or not the retention hydraulic pressure is the standard value.

   Standard value: 8.8 – 9.5 MPa

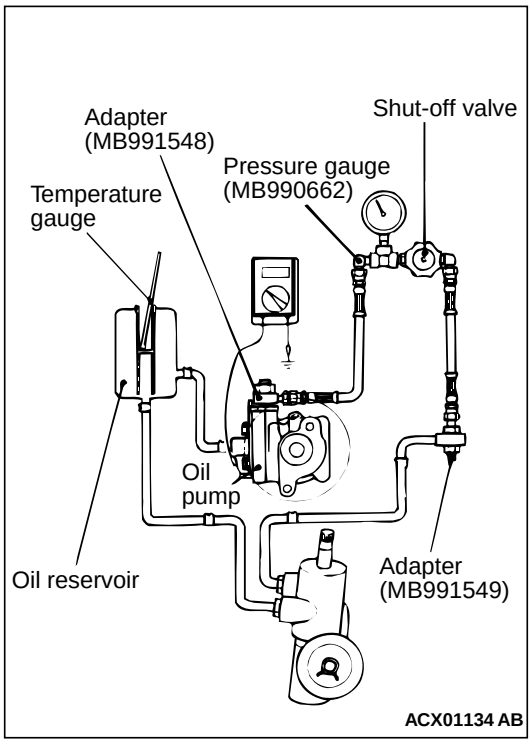
9. If not the standard value, overhaul the steering gear. Remeasure fluid pressure.
10. Remove the special tools, and then tighten the pressure hose to the specified torque.

    Tightening torque: 57 ± 7 N·m

11. Bleed the system (Refer to P.37A-12).

POWER STEERING PRESSURE SWITCH CHECK

M1372007200391



1. Disconnect the pressure hose from the oil pump, and then connect the following special tools.
   - MB990662: Power Steering Oil Pressure Gauge
   - MB991548: Power Steering Oil Pressure Gauge Adapter (Pump Side)
   - MB991549: Power Steering Oil Pressure Gauge Adapter (Hose Side)
2. Bleed air, and then turn the steering wheel several times while the vehicle is not moving so that the temperature of the fluid rises to approximately 50 – 60°C.
3. The engine should be idling.
4. Disconnect the connector for the oil pressure switch, and place an ohmmeter at the switch.
5. Gradually close the shut-off valve of the pressure gauge and increase the hydraulic pressure, then check whether or not the hydraulic pressure that activates the switch is the standard value.

   Standard value: 1.5 – 2.0 MPa
6. Gradually open the shut-off valve and reduce the hydraulic pressure; then check whether or not the hydraulic pressure that deactivates the switch is the standard value.

   Standard value: 0.7 – 2.0 MPa
7. Remove the special tools, and then tighten the pressure hose to the specified torque.

   Tightening torque: 57 ± 7 N·m
8. Bleed the system (Refer to P.37A-12).

TIE ROD END BALL JOINT DUST COVER CHECK

M1372008600336

1. Press the dust cover with your finger to check whether the dust cover is cracked or damaged.
2. If the dust cover is cracked or damaged, replace the tie rod end.

   NOTE: If the dust cover is cracked or damaged, the ball joint could be damaged.

STEERING COLUMN SHAFT ASSEMBLY SHOCK ABSORBING MECHANISM CHECK

M1372013500197

If a collision accident occurs or severe impact is applied on the steering wheel, the collision energy absorbing mechanism may have operated. Once the mechanism has operated, it will be inoperative even it has suffered no apparent damage. Determine if the steering column shaft can be reused by the following procedure. If the collision energy absorbing mechanism has already operated, replace the steering column shaft assembly.
If any excessive radial free play on the steering wheel is found with the tilt lever in the lock position, always check the steering shaft assembly.

⚠ ***WARNING***

- ***If the vehicle continues to be driven after the collision absorbing mechanism has operated, the steering column shaft may be damaged while it is in use.***
- ***If there is a slack in the one-way capsule, do not attempt to repair it but replace the steering column shaft assembly.***

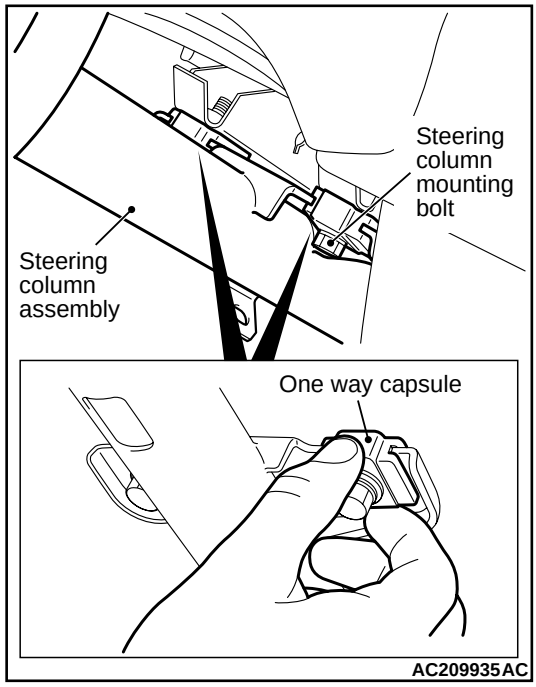
Inspection Procedure

1. Remove the lower and upper column covers.

⚠ **CAUTION**

Do not release the tilt lever until the steering column has been installed to complete this inspection procedure.

2. Ensure that the tilt lever is in the lock position.
   NOTE: If not, place the tilt lever in the lock position.
3. Loosen the two upper steering column mounting bolts by two turns.



4. Hold the one-way capsules as shown, and then try to lock them. If there is a slack in either of the capsules, replace the steering column shaft assembly.
   NOTE: When installing a new steering column shaft assembly, place the tilt lever in the lock position, if it is not in place.

⚠ **CAUTION**

- **Be careful that nothing is pinched between the one-way capsules and the body.**
- **Do not release the tilt lever until the steering column has been installed to complete this inspection procedure.**

5. If no problem is found during the inspection, tighten the steering column mounting bolts to the specified torque.
   Tightening torque: 12 ± 2 N·m

STEERING WHEEL

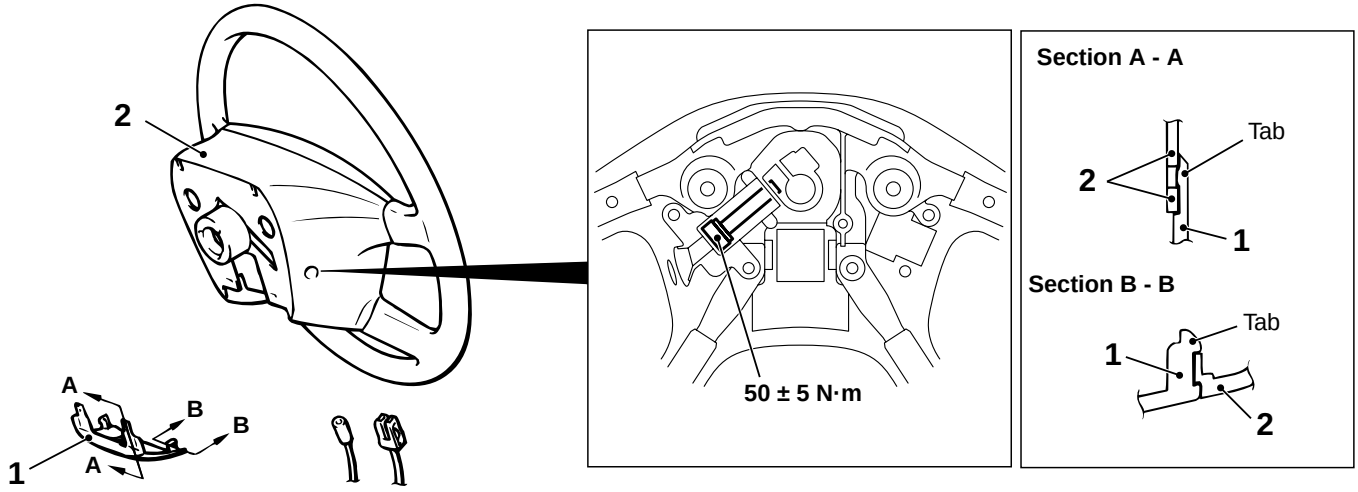
REMOVAL AND INSTALLATION

M1372011400235

⚠ WARNING

- ***Before removing the steering wheel and air bag module assembly, refer to GROUP 52B, Service Precautions (P.52B-4) and Air Bag Module and Clock Spring (P.52B-179).***
- ***When removing and installing the steering wheel, do not let it bump against the air bag module.***

Post-installation Operation
- Checking Steering Wheel Position with Wheels Straight Ahead



AC107402AB

Removal steps

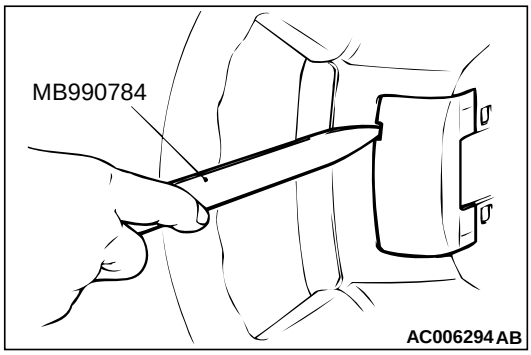
<<A>> 1. Cover

<<B>> 2. Steering wheel and air bag module assembly

NOTE: For air bag module removal, refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-179.

REMOVAL SERVICE POINTS

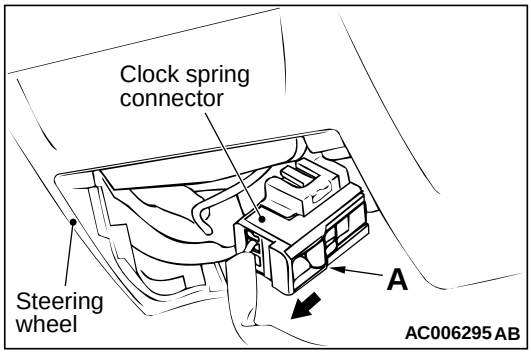
<<A>> COVER REMOVAL



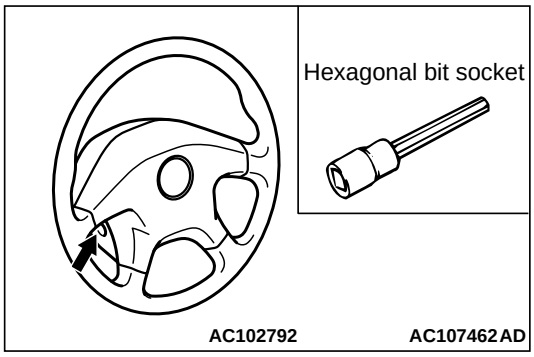
Insert special tool ornament remover (MB990784) at the indicated position to remove the cover.

NOTE: The special tool can be inserted through the notch behind the area shown.

<<B>> STEERING WHEEL AND AIR BAG MODULE ASSEMBLY REMOVAL



1. By sliding section A of the clock spring connector shown in the illustration in the arrow direction, disconnect the connector.



2. Loosen the bolt completely. Then, remove the steering wheel and air bag module assembly.

   NOTE: Use a hexagonal bit socket or a hexagonal wrench having an effective length of 75 mm or more in the hexagonal section and the diameter of 8 mm or more.

STEERING SHAFT

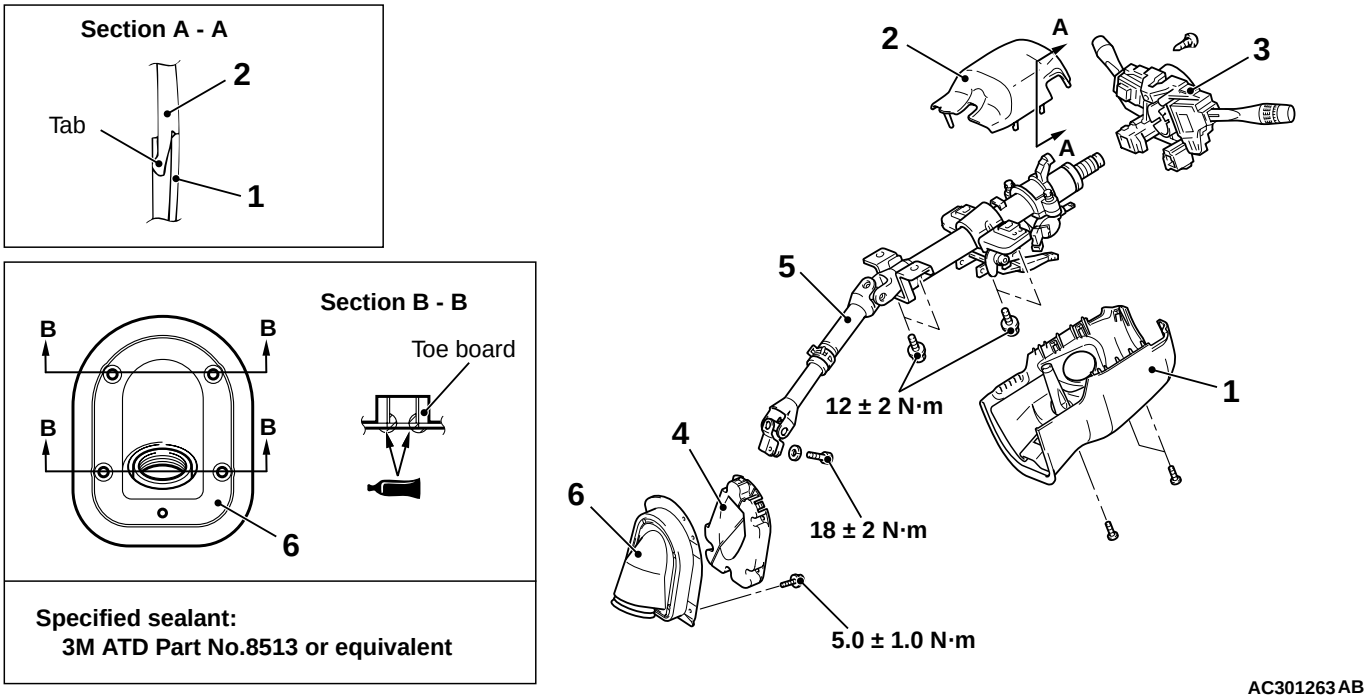
REMOVAL AND INSTALLATION

M1372011500157

⚠ WARNING

Before removing the steering wheel and air bag module assembly, refer to GROUP 52B, Service Precautions (P.52B-4) and Air Bag Module and Clock Spring (P.52B-179).

Pre-removal Operation	Post-installation Operation
• Steering Wheel and Air Bag Module Assembly Removal (Refer to P.37A-16). • Instrument Lower Panel Removal (Refer to GROUP 52A, Instrument Panel <L.H. drive vehicles> P.52A-2, <R.H. drive vehicles> P.52A-8).	• Instrument Lower Panel Installation (Refer to GROUP 52A, Instrument Panel <L.H. drive vehicles> P.52A-2, <R.H. drive vehicles> P.52A-8). • Steering Wheel and Air Bag Module Assembly Installation (Refer to P.37A-16).



Removal steps

1. Lower column cover
2. Upper column cover
3. Clock spring and column switch assembly (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-179).

Removal steps (Continued)

4. Shaft cover

<<A>> >>A<<

5. Steering column shaft assembly
6. Cover assembly

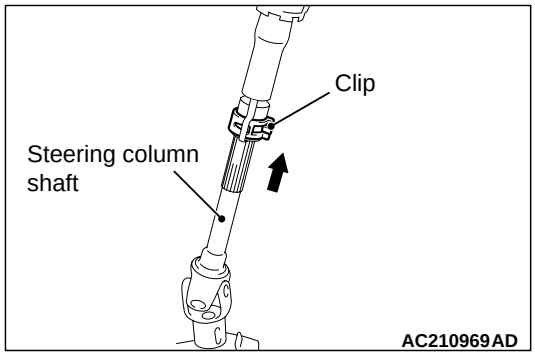
REMOVAL SERVICE POINT

<<A>> STEERING COLUMN SHAFT ASSEMBLY REMOVAL

⚠ CAUTION

The tilt lever should be held in the lock position until the steering column shaft is installed to the vehicle. If the steering column is removed with the tilt lever released, or the tilt lever is released after the steering column shaft was removed from the vehicle, the steering column can not be reinstalled correctly. If the steering column is installed incorrectly, the collision energy absorbing mechanism may be damaged.

1. Ensure that the tilt lever is in the lock position, and remove the steering column mounting bolts.



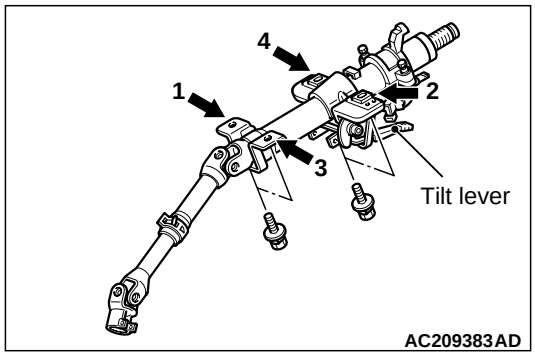
2. Pinch the steering column shaft clip with pliers, and pull up the shaft towards the direction shown to disengage the steering column shaft assembly.

INSTALLATION SERVICE POINT

>>A<< STEERING COLUMN SHAFT ASSEMBLY INSTALLATION

⚠ CAUTION

- **When reusing the steering column, do not release the tilt lever until the steering column shaft has been installed.**
- **When the steering column is replaced, do not release the tilt lever until it has been installed. Do not remove the tilt lever fixing band until the installation has completed.**
- **When installing the steering column, do not leave it fixed temporarily at only one point and make sure the column shaft is not shaken strongly. If you fail to do, the collision absorbing mechanism at the column shaft mounting location may be damaged.**

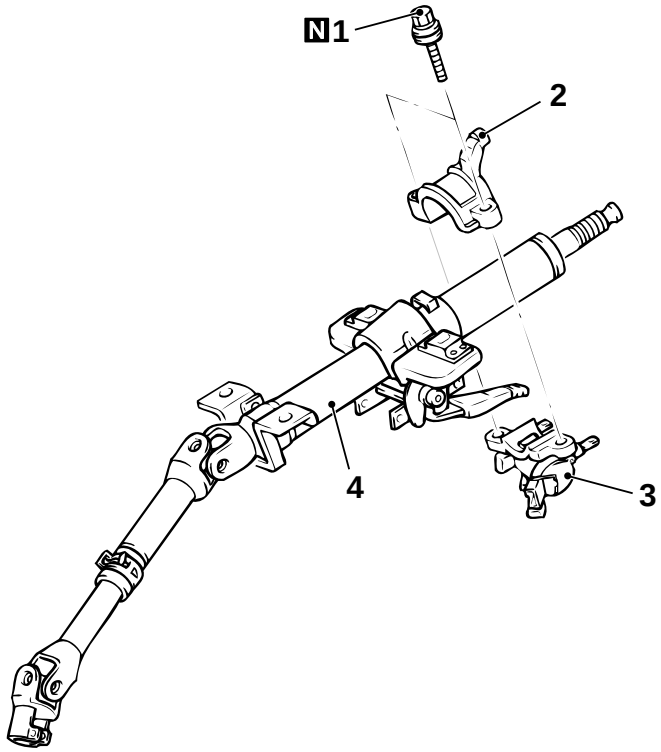


Ensure that the tilt lever is in the lock position, and install the steering column. Tighten the four bolts in the order shown by hand, and then tighten them to the specified torque in the order shown.

Tightening torque: 12 ± 2 N·m

DISASSEMBLY AND REASSEMBLY

M1372011700128



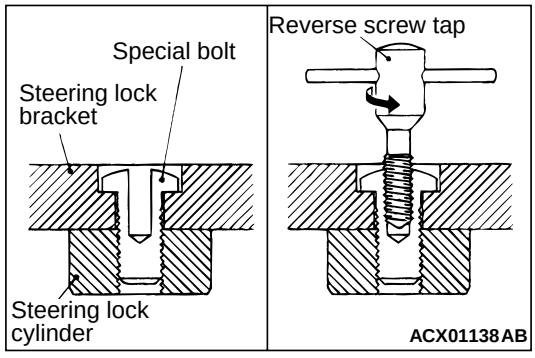
AC210967AD

Disassembly steps

<<A>> >>A<< 1. Special bolt
>>A<< 2. Steering lock bracket
>>A<< 3. Steering lock cylinder assembly
4. Steering column shaft assembly

DISASSEMBLY SERVICE POINT

<<A>> SPECIAL BOLT REMOVAL



1. Drill in the special bolt a hole deep enough for the tap to stand.
2. Remove the special bolt with a left-hand tap.

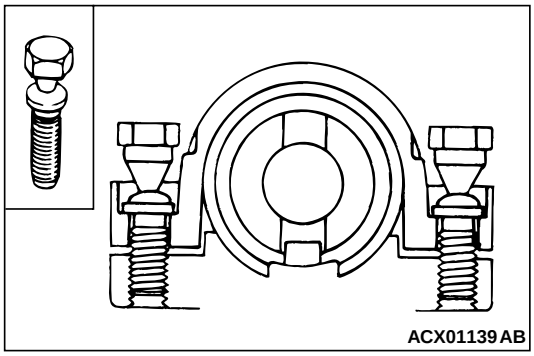
REASSEMBLY SERVICE POINT

>>A<< STEERING LOCK CYLINDER ASSEMBLY/STEERING LOCK BRACKET/SPECIAL BOLT INSTALLATION

⚠ CAUTION

The steering lock bracket and bolts must be replaced with new ones when the steering lock is installed.

1. When installing the steering lock cylinder assembly and steering lock bracket to the column tube, temporarily install the steering lock in alignment with the column boss.



2. After checking that the lock works properly, tighten the special bolts until the head twists off.

POWER STEERING GEAR BOX AND LINKAGE

REMOVAL AND INSTALLATION

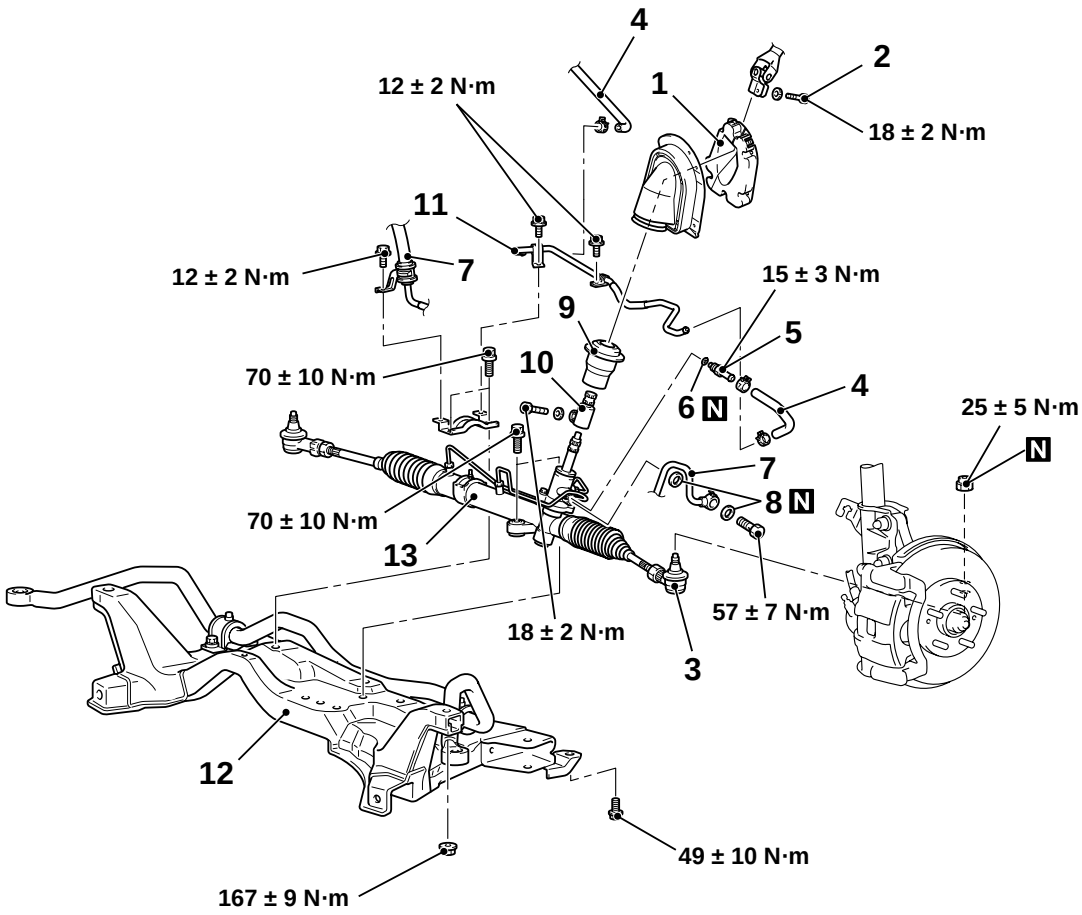
M1372010900282

⚠ WARNING

Before removing the steering gear, refer to GROUP 52B, Service Precautions (P.52B-4) and Air Bag Module and Clock Spring (P.52B-179). Centre the front wheels. Failure to do so may damage the SRS clock spring and render the SRS system inoperative, risking serious injury.

Pre-removal Operation	Post-installation Operation
• Power Steering Fluid Draining (Refer to P.37A-11). • Front Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe and Main Muffler P.15-13). • Centermember Removal (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>). • Steering Wheel and Air Bag Module Assembly Removal (Refer to P.37A-16). • Clock Spring Removal (Refer to GROUP 52B, Air Bag Module and Clock Spring P.52B-179). • Stabilizer Link Assembly and Lower Arm Assembly Removal (Refer to GROUP 33A, Lower Arm P.33-11).	• Stabilizer Link Assembly and Lower Arm Assembly Installation (Refer to GROUP 33A, Lower Arm P.33-11). • Centermember Installation (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>). • 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 Module and Clock Spring P.52B-179). • Steering Wheel and Air Bag Module Assembly Installation (Refer to P.37A-16). • Check the dust cover for cracks or damage by pushing it with your finger. • Power Steering Fluid Supplying (Refer to P.37A-11). • Power Steering Fluid Line Bleeding (Refer to P.37A-12). • Checking Steering Wheel Position with Wheels Straight Ahead. • Front Wheel Alignment Adjustment (Refer to GROUP 33A, On-vehicle Service – Front Wheel Alignment Check and Adjustment P.33-6).

<L.H. drive vehicles>



AC300496AB

Removal steps

1. Shaft cover
2. Steering column shaft assembly and steering gear connecting bolt

<<A>>

3. Tie rod end and knuckle connection
   - Rear roll stopper connecting bolt (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>.)
4. Return hose connection
5. Return tube
6. O-ring
7. Pressure hose connection

<<B>>

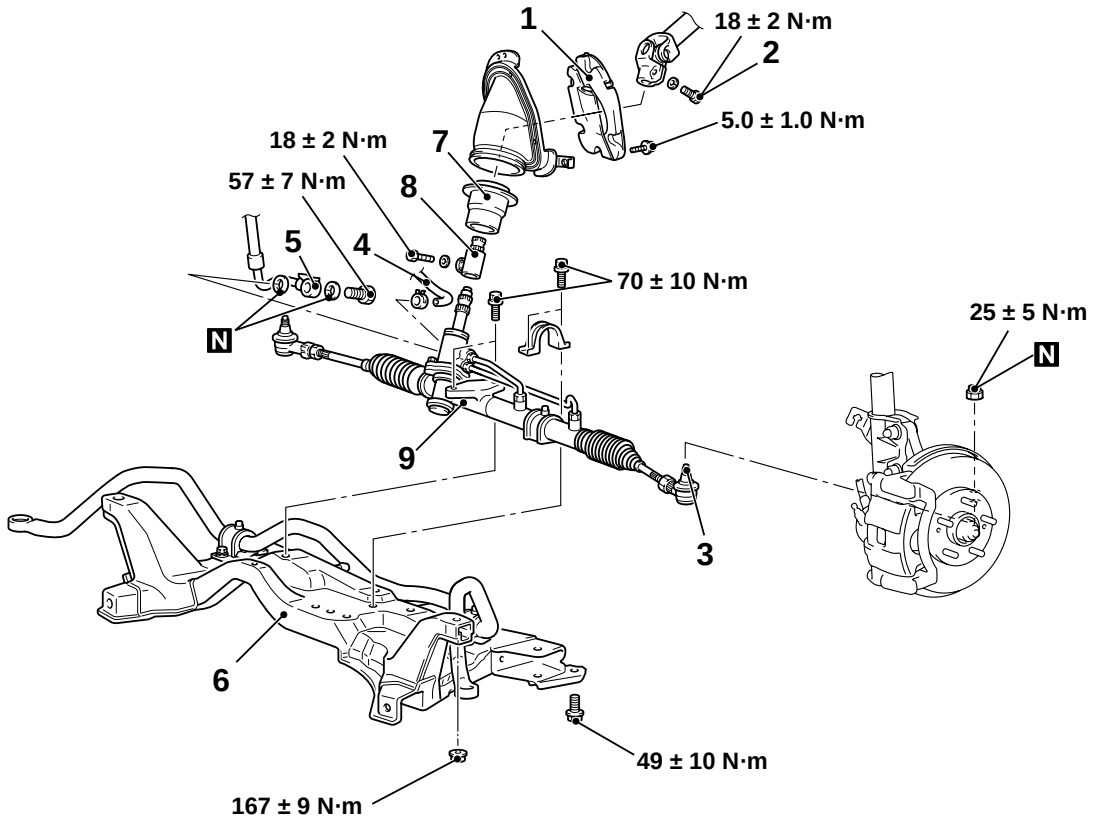
Removal steps (Continued)

8. Gasket
   - Crossmember assembly
   - Rear roll stopper (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>.)

>>A<<

9. Joint cover grommet
10. Steering extension
11. Return tube
12. Crossmember
13. Steering gear

<R.H. drive vehicles>



AC309390AC

Removal steps

1. Shaft cover
2. Steering column shaft assembly and steering gear connecting bolt

<<A>> 3. Tie rod end and knuckle connection
- Rear roll stopper connecting bolt (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>.)

4. Return hose connection
5. Pressure hose connection

Removal steps (Continued)

<<B>>
- Crossmember assembly
- Rear roll stopper (Refer to GROUP 32, Engine Roll Stopper and Centermember P.32-10 <2000>, P.32-12 <2400>.)

6. Crossmember

>>A<< 7. Joint cover grommet

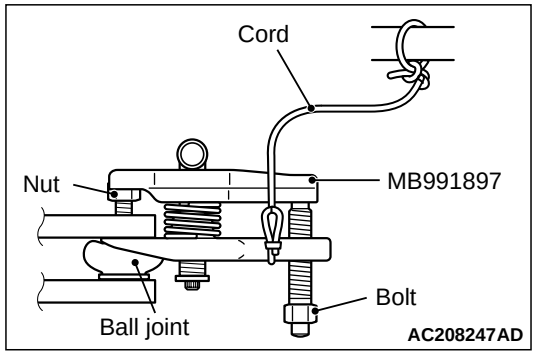
8. Steering extension
9. Steering gear

REMOVAL SERVICE POINTS

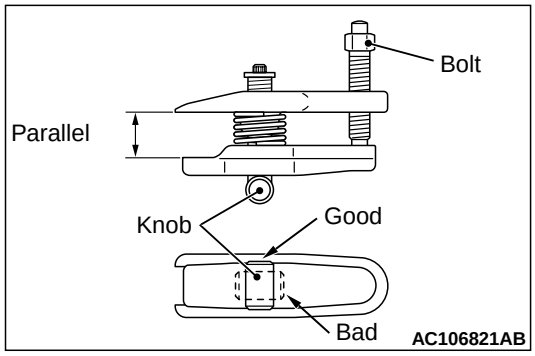
<<A>> TIE ROD END AND KNUCKLE DISCONNECTION

⚠ CAUTION

- **Do not remove the nut from ball joint. Loosen it and use special tool to avoid possible damage to ball joint threads.**
- **Hang special tool with a cord to prevent it from falling.**



1. Install the special tool ball joint remover (MB991897) as shown in the figure.

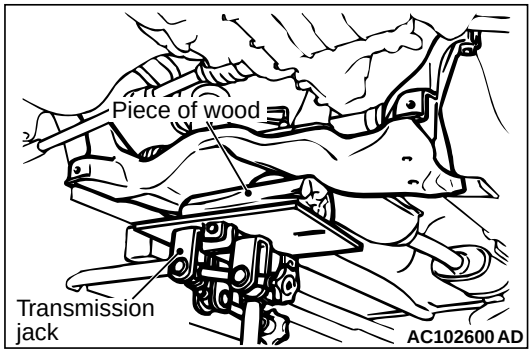


2. Turn the bolt and knob as necessary to make the jaws of the special tool parallel, tighten the bolt by hand and confirm that the jaws are still parallel.

   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 tie rod end.

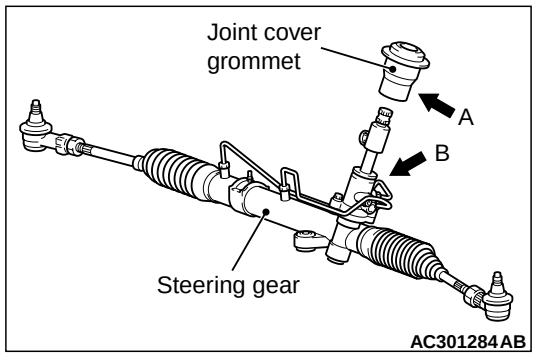
<<B>> CROSSMEMBER ASSEMBLY REMOVAL



1. Use a transmission jack to hold the crossmember, and then remove the crossmember mounting nuts and bolts.
2. Lower the crossmember with the rear roll stopper, the stabilizer bar, the return tube, and the steering gear.

INSTALLATION SERVICE POINT

>>A<< JOINT COVER GROMMET INSTALLATION



Align the joint cover grommet notch (arrow A) with the steering gear lug (arrow B), and then install the steering joint cover to the steering gear.

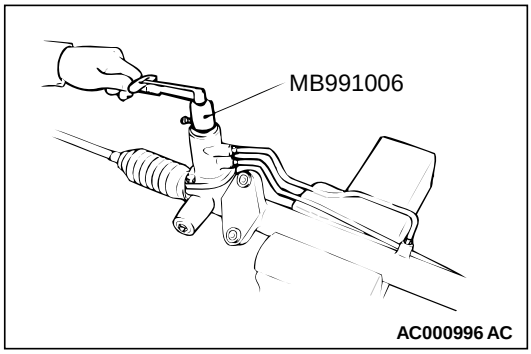
INSPECTION

M1372011000282

STEERING GEAR TOTAL PINION TORQUE CHECK

⚠ CAUTION

When holding the steering gear in a vice, secure its mounting positions. If it is secured in any other place, the gear housing may become deformed or damaged.



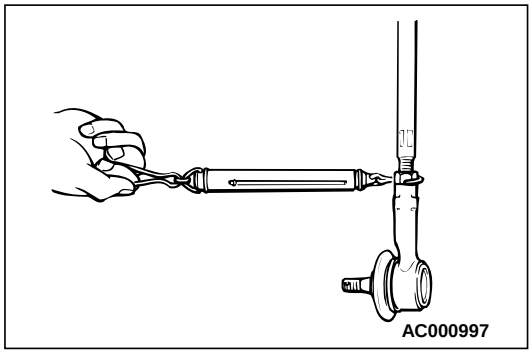
Using special tool preload socket (MB991006), rotate the pinion gear at the rate of one rotation in approximately 4 to 6 seconds to check the total pinion torque.

Standard value: 0.7 – 1.6 N·m
[Change in torque: 0.4 N·m or less]

NOTE: When measuring, remove the bellows from the rack housing. Measure the pinion torque through the whole stroke of the rack.
If the measured value is not within the standard range, first adjust the rack support cover, and then check the total pinion torque again.
If the total pinion torque cannot be adjusted to within the standard range by adjusting the rack support cover, check the rack support cover, rack support spring, rack support and replace any parts if necessary.

TIE ROD SWING RESISTANCE CHECK

1. Give 10 hard swings to the tie rod.



2. Measure the tie rod swing resistance [tie rod swing torque] with a spring balance.

   Standard value: 6 – 19 N [1.5 – 4.9 N·m]

3. If the measured value exceeds the standard value, replace the tie rod.
4. If the measured value is below the standard value, the tie rod can be re-used if it swings smoothly without excessive play.

TIE ROD END BALL JOINT DUST COVER CHECK

1. Check the dust cover for cracks or damage by pushing it with your finger.
2. If the dust cover is cracked or damaged, replace the tie rod end (Refer to P.37A-26).

   NOTE: Cracks or damage of the dust cover may damage the ball joint. If it is damaged during service work, replace the dust cover (Refer to P.37A-35).

DISASSEMBLY AND REASSEMBLY

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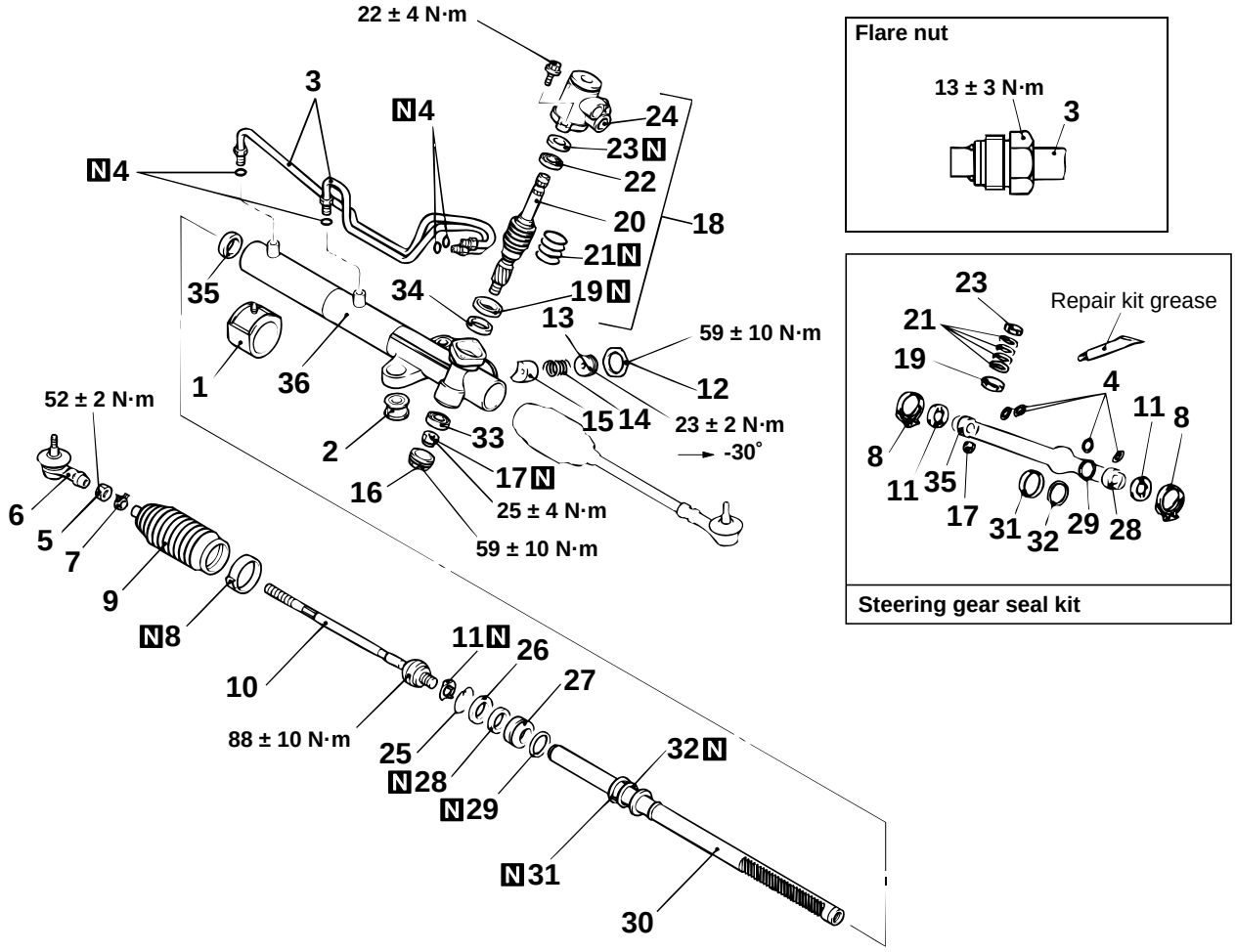
<L.H. drive vehicles>



AC100244AC

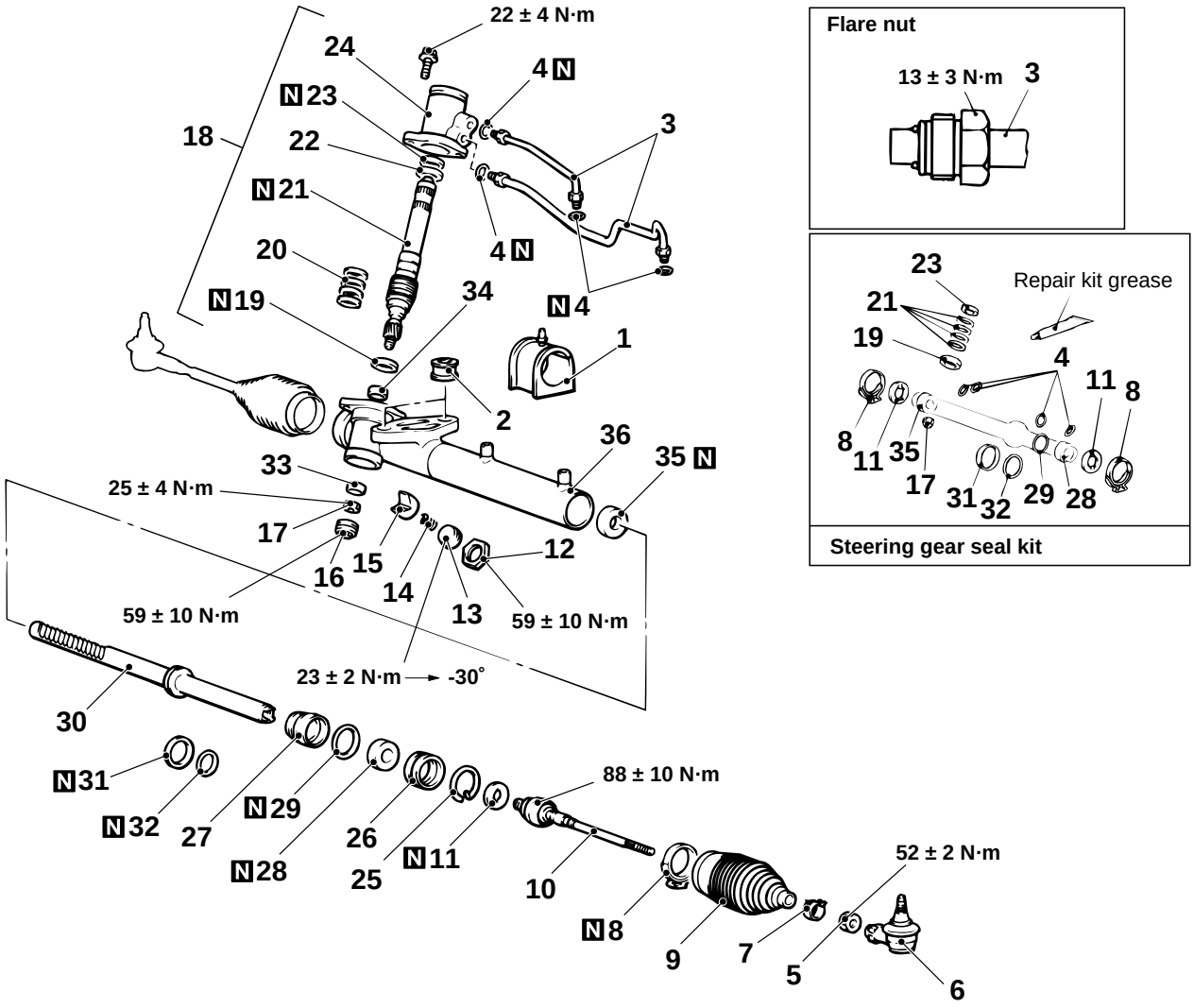
Disassembly steps

>>O<<	1.	Gear mounting rubber
	2.	Gear housing mounting bushing
	3.	Feed pipe
	4.	O-ring
>>N<<	5.	Jam nut
>>N<<	6.	Tie rod end
	7.	Clip
>>M<<	8.	Bellows band
	9.	Bellows
>>L<<	10.	Tie rod
>>L<<	11.	Tab washer
>>K<<	•	Total pinion torque adjustment
>>J<<	12.	Jam nut
<<A>> >>J<<	13.	Rack support cover
	14.	Support spring
	15.	Rack support
>>I<<	16.	End plug
	17.	Jam nut
	18.	Valve housing assembly
<<B>> >>H<<	19.	Lower oil seal

Disassembly steps (Continued)

<<B>>	20.	Pinion and valve assembly
<<C>> >>G<<	21.	Seal ring
<<D>> >>F<<	22.	Upper bearing
<<D>> >>F<<	23.	Upper oil seal
	24.	Valve housing
<<E>> >>E<<	25.	Circlip
<<F>>	26.	Rack stopper
<<F>> >>D<<	27.	Rack bushing
<<F>> >>D<<	28.	OIL SEAL
<<F>>	29.	O-ring
<<F>> >>C<<	30.	Rack assembly
<<C>>	31.	Seal ring
	32.	O-ring
<<G>> >>B<<	33.	Lower bearing
<<H>> >>B<<	34.	Needle bearing
<<I>> >>A<<	35.	Oil seal
	36.	Gear housing

<R.H. drive vehicles>



AC102865AD

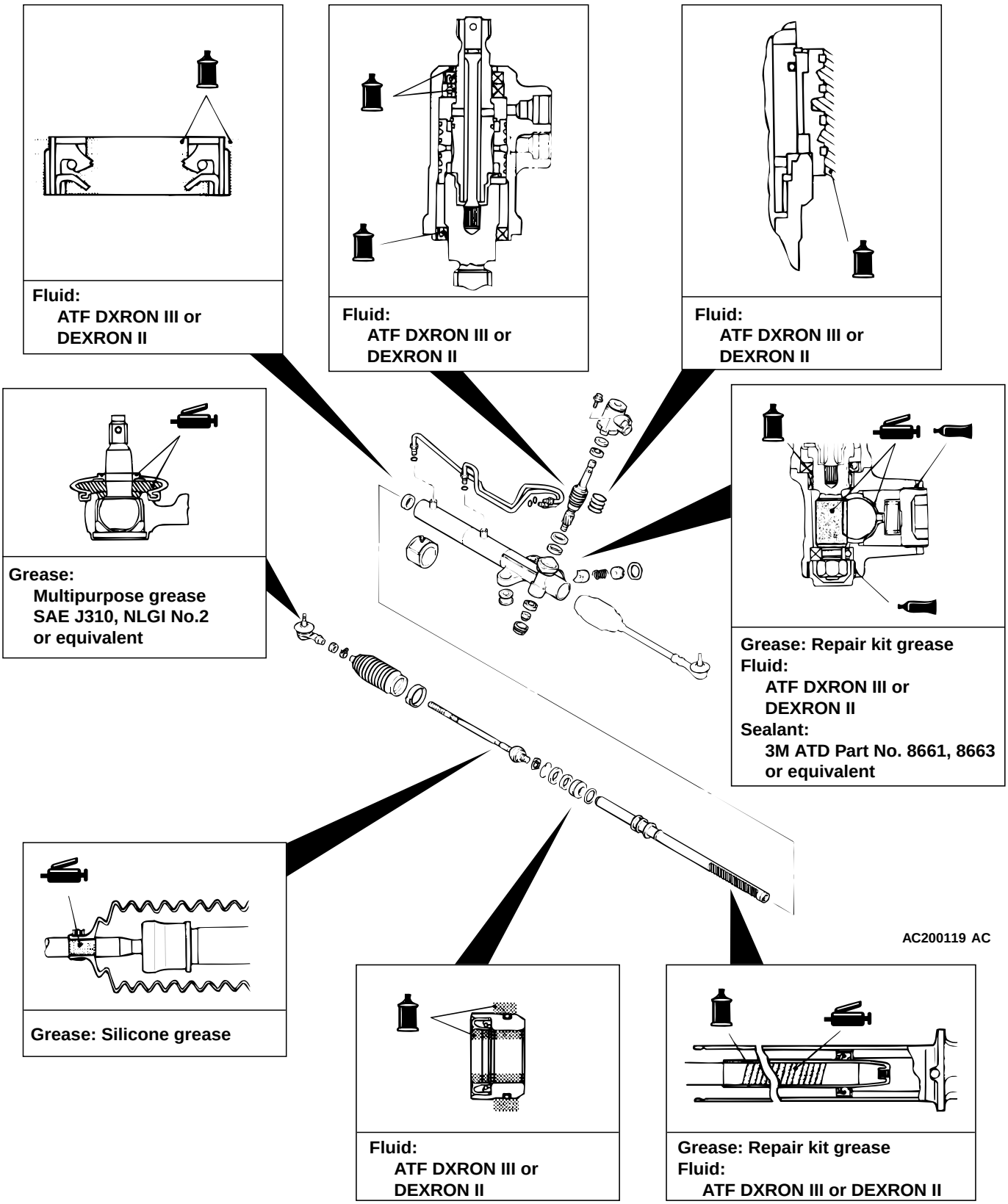
Disassembly steps

>>O<<	1.	Gear mounting rubber
	2.	Gear housing mounting bushing
	3.	Feed pipe
	4.	O-ring
>>N<<	5.	Jam nut
>>N<<	6.	Tie rod end
	7.	Clip
>>M<<	8.	Bellows band
	9.	Bellows
>>L<<	10.	Tie rod
>>L<<	11.	Tab washer
>>K<<	•	Total pinion torque adjustment
>>J<<	12.	Jam nut
<<A>> >>J<<	13.	Rack support cover
	14.	Support spring
	15.	Rack support
>>I<<	16.	End plug
	17.	Jam nut

Disassembly steps (Continued)

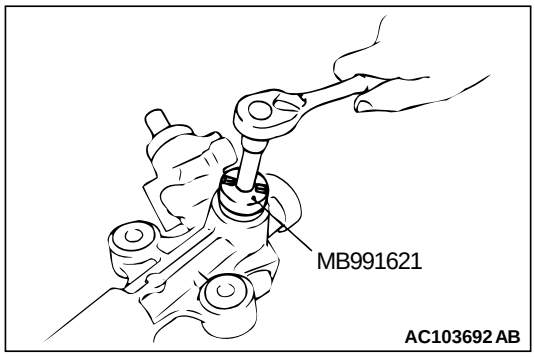
	18.	Valve housing assembly
<<B>> >>H<<	19.	Lower oil seal
<<B>>	20.	Pinion and valve assembly
<<C>> >>G<<	21.	Seal ring
<<D>> >>F<<	22.	Upper bearing
<<D>> >>F<<	23.	Upper oil seal
	24.	Valve housing
<<E>> >>E<<	25.	Circlip
<<F>>	26.	Rack stopper
<<F>> >>D<<	27.	Rack bushing
<<F>> >>D<<	28.	OIL SEAL
<<F>>	29.	O-ring
<<F>> >>C<<	30.	Rack assembly
<<C>>	31.	Seal ring
	32.	O-ring
<<G>> >>B<<	33.	Lower bearing
<<H>> >>B<<	34.	Needle bearing
<<I>> >>A<<	35.	Oil seal
	36.	Gear housing

LUBRICATION AND SEALING POINTS



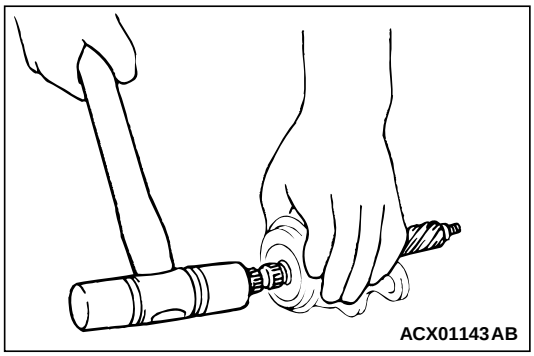
DISASSEMBLY SERVICE POINTS

<<A>> RACK SUPPORT COVER REMOVAL



Using special tool rack support cover wrench (MB991621), remove the rack support cover from the steering gear.

<<B>> LOWER OIL SEAL/PINION AND VALVE ASSEMBLY REMOVAL

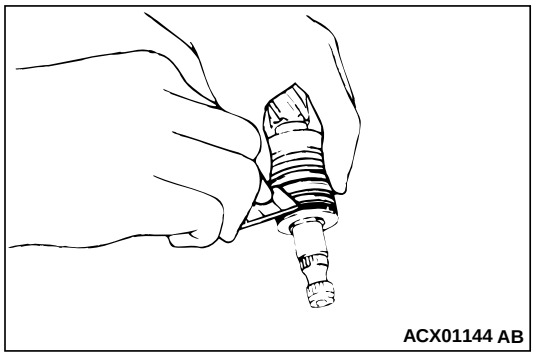


Using a plastic hammer, gently tap the pinion to remove it.

<<C>> SEAL RING REMOVAL

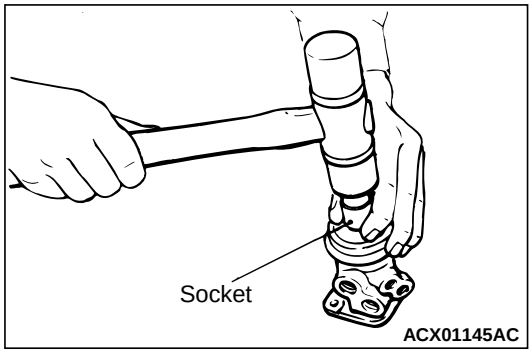
⚠ CAUTION

When cutting the seal ring, be careful not to damage the pinion and valve assembly or the rack.



Cut the seal ring and remove it from the pinion and valve assembly or the rack.

<<D>> UPPER BEARING/UPPER OIL SEAL REMOVAL

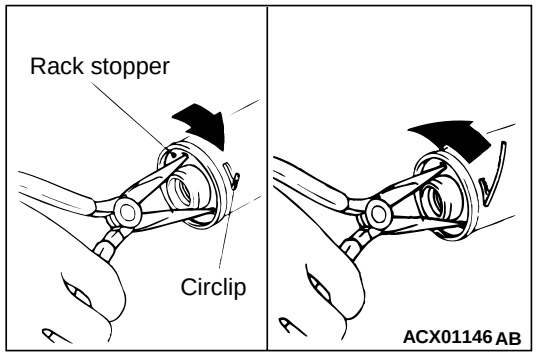


Using a socket, remove the oil seal and the ball bearing from the valve housing simultaneously.

<<E>> CIRCLIP REMOVAL

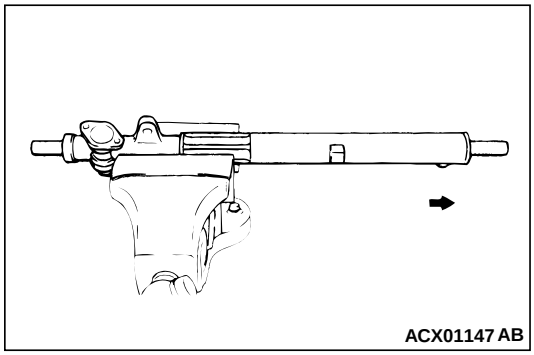
⚠ CAUTION

If the rack stopper is first turned counterclockwise, the circlip will get caught in the slot in the housing and the rack stopper will not turn.



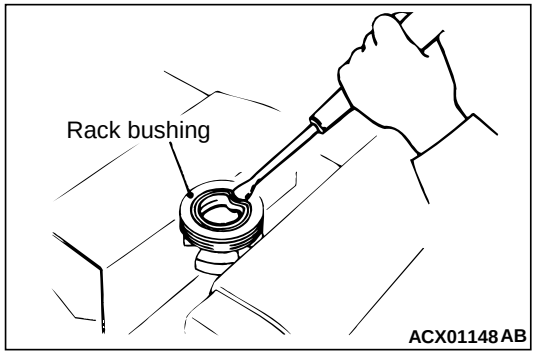
1. Turn the rack stopper clockwise until the end of the circlip comes out of the slot in the rack housing.
2. Turn the rack stopper counterclockwise to remove the circlip.

<<F>> RACK STOPPER/RACK BUSHING/OIL SEAL/O-RING/RACK ASSEMBLY REMOVAL



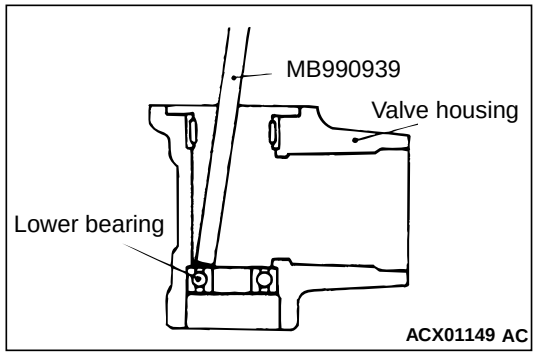
1. Pull out the rack slowly. Take out the rack stopper and the rack bushing at the same time.

⚠ CAUTION
Do not damage the oil seal press fitting surface.



2. Partially bend the oil seal and remove it from the rack bushing.

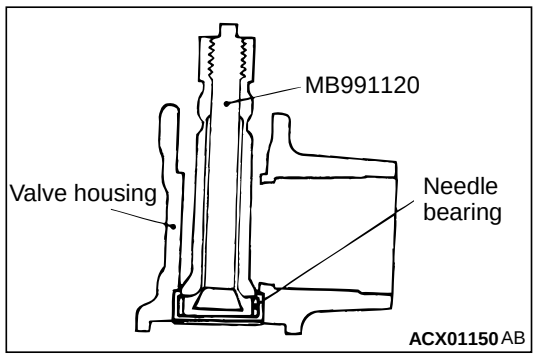
<<G>> LOWER BEARING REMOVAL



Use a brass bar or special tool brass bar (MB990939) to remove the ball bearing from the gear housing.

<<H>> NEEDLE BEARING REMOVAL

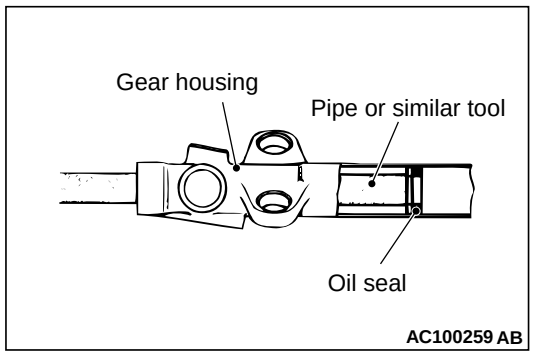
⚠ CAUTION
Do not open special tool excessively to prevent damaging housing interior.



Use special tool needle bearing puller (MB991120) to remove the needle bearing from the rack housing.

<<I>> OIL SEAL REMOVAL

⚠ CAUTION
Be careful not to damage the inner surface of the rack cylinder of the gear housing.

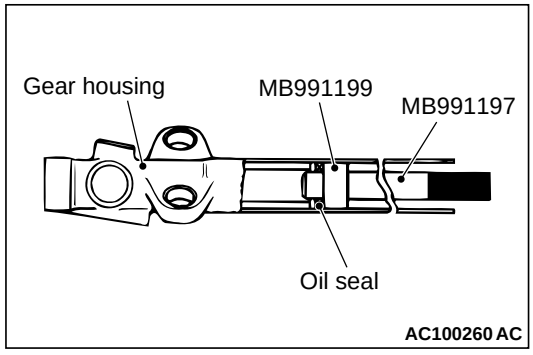


Use a piece of pipe or similar tool to remove the oil seal from the gear housing.

REASSEMBLY SERVICE POINTS

>>A<< OIL SEAL INSTALLATION

1. Apply a coating of ATF DEXRON III or DEXRON II to the both sides of the oil seal.



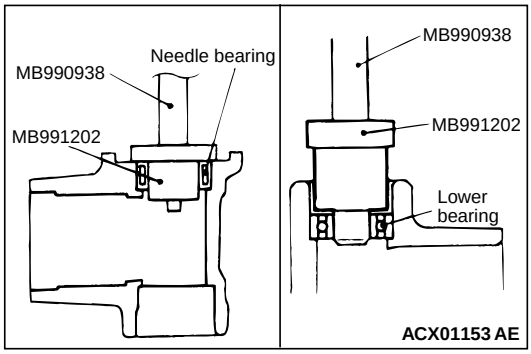
2. Using the following special tools, press the oil seal into the rack housing.
   - MB991197: Bar (Long type)
   - MB991199: Oil Seal and Bearing Installer

>>B<< NEEDLE BEARING/LOWER BEARING INSTALLATION

1. Apply ATF DEXRON III or DEXRON II to housing, bearing and oil seal press fitting surface.

⚠ CAUTION

Press-fit straight. The valve housing is aluminium, and may become deformed if press-fit on an angle.

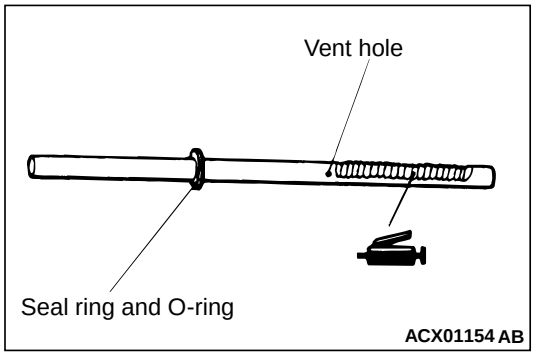


2. Press fit needle bearing with the following special tools.
   - MB990938: Bar (Snap-in type)
   - MB991202: Oil Seal and Bearing Installer

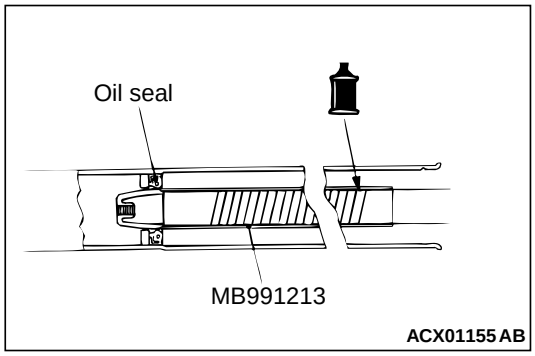
>>C<< RACK ASSEMBLY INSTALLATION

⚠ CAUTION

Do not close the vent hole in the rack with grease.

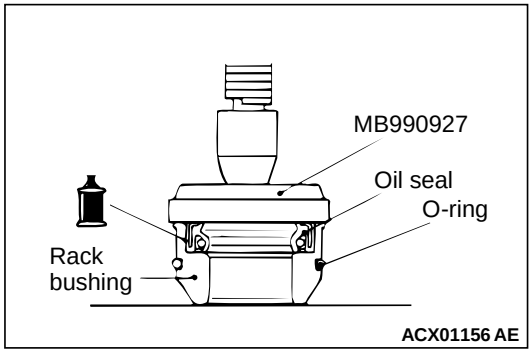


1. Apply a coating of repair kit grease to the rack teeth face.

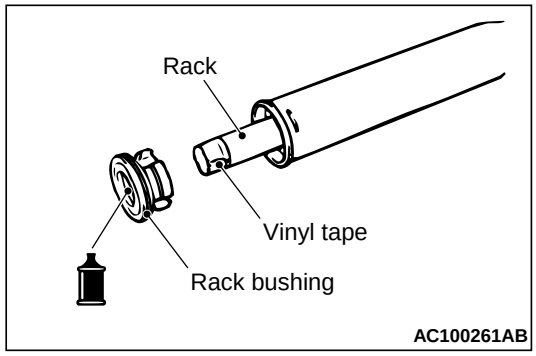


2. Cover rack serrations with special tool rack installer (MB991213).
3. Apply ATF DEXRON III or DEXRON II to special tool, and to the outer surface of the seal ring and the O-ring.
4. Align the centre of the oil seal with the rack to prevent the retainer spring from slipping. Slowly insert the rack from power cylinder side.

>>D<< OIL SEAL/RACK BUSHING INSTALLATION



1. Apply ATF DEXRON III or DEXRON II to the outer surface of the oil seal. Using the special tool installer adapter (MB990927), press in the oil seal until it is flush with the bushing end face.

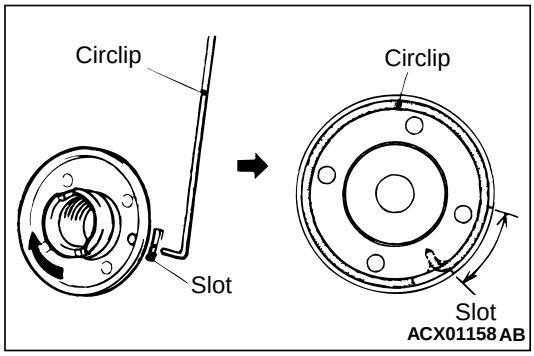


2. Apply ATF DEXRON III or DEXRON II to the oil seal inner surface and the O-ring.
3. Wrap the rack end with plastic tape, and push the rack bushing onto the rack.

>>E<< CIRCLIP INSTALLATION

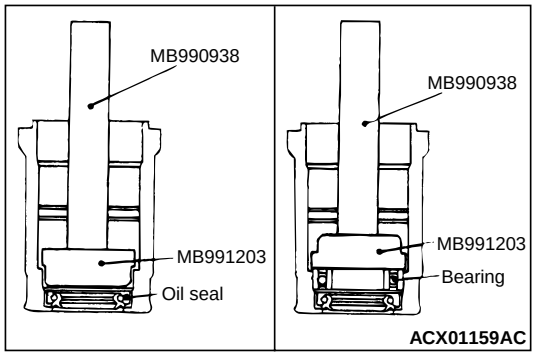
⚠ CAUTION

Insert the circlip to the rack stopper hole while turning the rack stopper clockwise.



Insert the circlip to the rack stopper hole through cylinder hole. Turn the rack stopper clockwise and insert the circlip firmly.

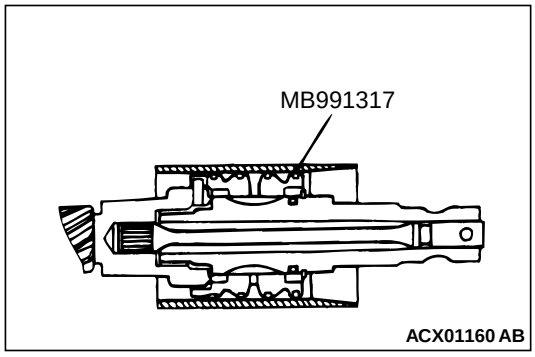
>>F<< UPPER OIL SEAL/UPPER BEARING INSTALLATION



Apply a coating of ATF DEXRON III or DEXRON II to the outside of the upper oil seal/upper bearing. Using the following special tools, press the upper oil seal/upper bearing into the valve housing.

- MB990938: Bar (Snap-in type)
- MB991203: Oil Seal and Bearing Installer

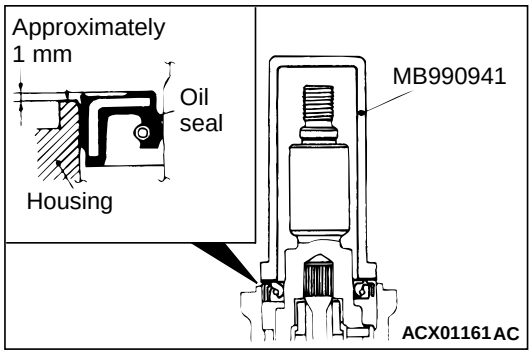
>>G<< SEAL RING INSTALLATION



Because the seal rings expand after installation, tighten after installing by using special tool seal ring installer (MB991317) to compress the rings, or press down by hand.

>>H<< LOWER OIL SEAL INSTALLATION

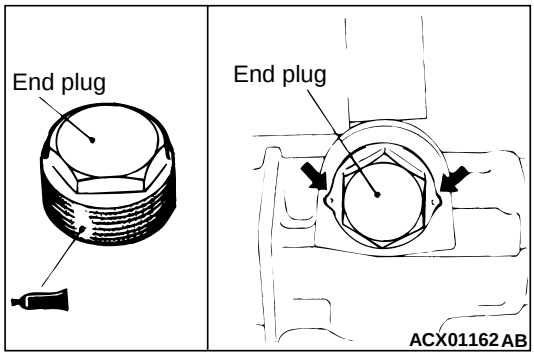
⚠ CAUTION



To eliminate a seal malfunction at the valve housing alignment surface, the upper surface of the oil seal should project outward approximately 1 mm from the housing edge surface.

Using special tool torque tube bearing installer (MB990941), press the oil seal into the valve housing.

>>I<< END PLUG INSTALLATION



1. Apply specified sealant to the threaded part of the end plug.

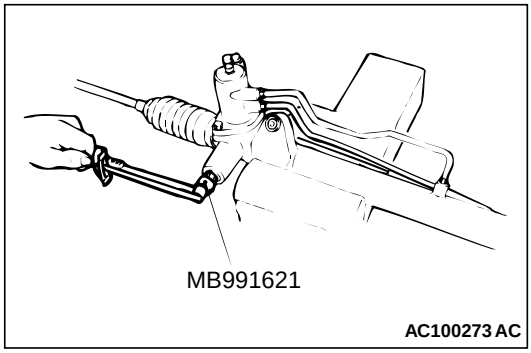
   Specified sealant:
   3M ATD Part No.8661, 8663 or equivalent

2. Secure the threaded portion of the end plug at two places by using a punch.

>>J<< RACK SUPPORT COVER/JAM NUT INSTALLATION

1. Position the rack at its centre.
2. Apply specified sealant to the threaded part of the rack support cover.

   Specified sealant:
   3M ATD Part No.8661, 8663 or equivalent

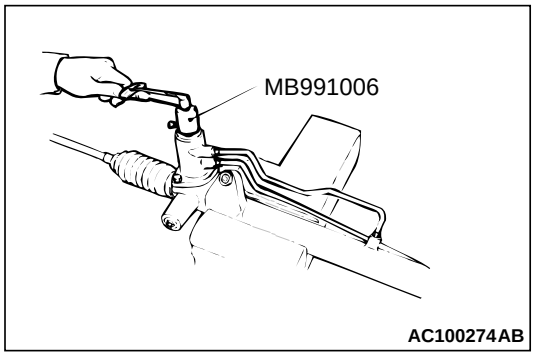


3. Use special tool rack support cover wrench (MB991621) to tighten the rack support cover to 23 ± 2 N·m.
4. Turn the rack support cover 30° counterclockwise.
5. Use the special tool to hold the rack support cover, and then tighten the jam nut to 59 ± 10 N·m.

>>K<< TOTAL PINION TORQUE ADJUSTMENT

⚠ CAUTION

- **Be sure there is no ratcheting or catching when operating the rack towards the shaft.**
- **Measure the total pinion torque through the whole stroke of the rack.**



1. Using special tool preload socket (MB991006), rotate the pinion shaft at the rate of one rotation in four to six seconds to check the total pinion torque and the change in torque.

   Standard value:
   Total pinion torque: 0.7 – 1.6 N·m
   [Change in torque: 0.4 N·m or less]

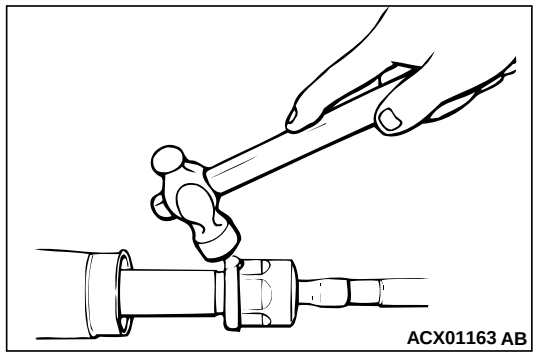
⚠ CAUTION

When adjusting, set at the highest value of the standard value range.

NOTE: If the total pinion toque cannot be adjusted to the standard value within the specified return angle, check the rack support cover components and replace any parts if necessary.

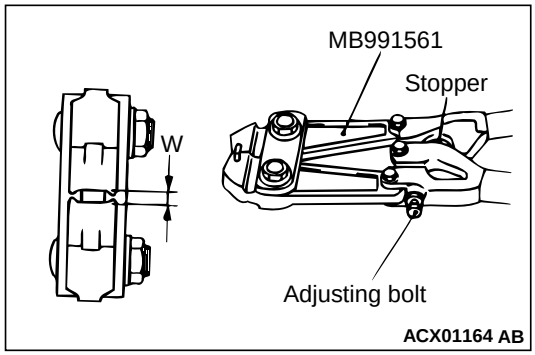
2. If the total pinion torque or the change in torque is outside the standard value, move the rack support cover 0 – 30°, and adjust the pinion torque again.

>>L<< TAB WASHER/TIE ROD INSTALLATION



After installing the tie rod to the rack, fold tab washer end (two locations) to tie rod notch.

>>M<< BELLOWS BAND INSTALLATION



1. Turn the adjusting bolt of special tool boot band crimping tool (MB991561) to adjust the opening dimension (W) to the standard value.

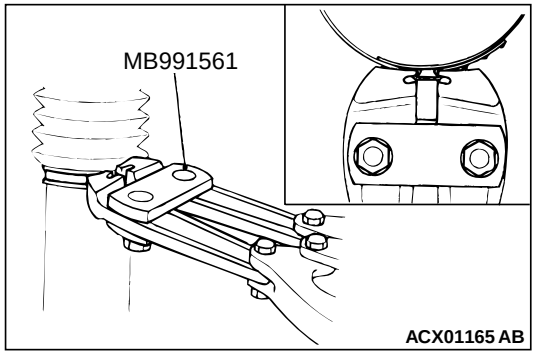
   NOTE: The dimension (W) is adjusted by approximately 0.7 mm per one turn.

   NOTE: Do not turn the adjusting bolt more than one turn.

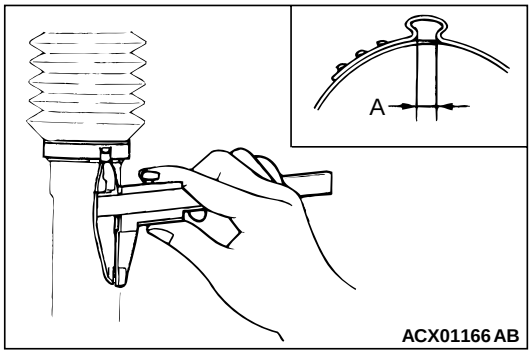
   Standard value (W): 2.9 mm
   <When more than 2.9 mm>: Screw in the adjusting bolt.
   <When less than 2.9 mm>: Loosen the adjusting bolt.

⚠ CAUTION

- **Hold the rack housing, and use special tool to crimp the bellows band securely.**
- **Crimp the bellows band until special tool touches the stopper.**



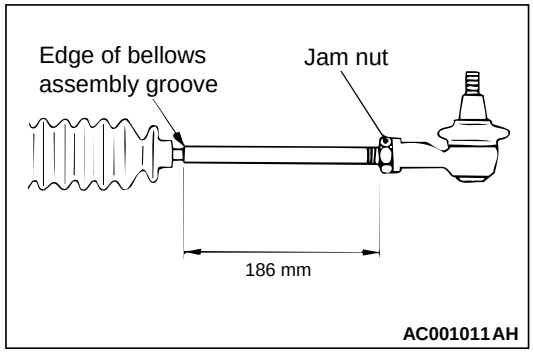
2. Use special tool boot band crimping tool (MB991561) to crimp the bellows band.



3. Check that crimped width (A) is within the standard value.

   Standard value (A): 2.4 – 2.8 mm
   <When more than 2.8 mm>: Readjust the dimension (W) of step (1) to the value calculated by the following equation, and repeat step (2).
   W = 5.5 mm – A [Example: if (A) is 2.9 mm, (W) is 2.6 mm.]
   <When less than 2.4 mm>: Remove the bellows band, readjust the dimension (W) of step (1) to the value calculated by the following equation, and use a new bellows band to repeat steps (2) to (3).
   W = 5.5 mm – A [Example: if (A) is 2.3 mm, (W) is 3.2 mm.]

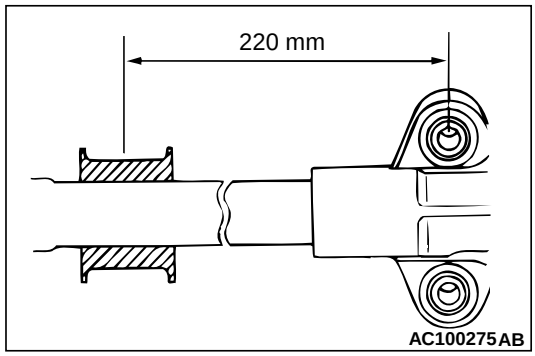
>>N<< TIE ROD END/JAM NUT INSTALLATION



Screw in the tie rod end to achieve the right and left length as illustrated. Lock with the jam nut.

NOTE: The jam nuts must be tightened securely only after the steering gear is installed to the vehicle and toe-in is adjusted.

>>O<< GEAR MOUNTING RUBBER INSTALLATION

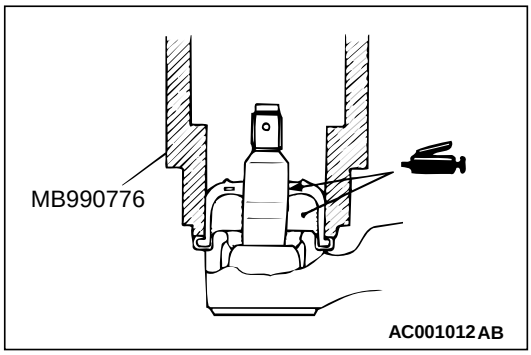


Install the gear mounting rubber to the rack housing so that the distance is as shown in the illustration.

TIE ROD END BALL JOINT DUST COVER REPLACEMENT

M1372008200383

If the dust cover is damaged accidentally during service work, replace the dust cover as follows:



1. Apply specified grease to the lip and inside of the dust cover.

   Specified grease:
   Multipurpose grease SAE J310, NLGI No.2 or equivalent

2. Drive in the dust cover with special tool front axle base (MB990776) until it is fully seated.
3. Check the dust cover for cracks or damage by pushing it with your finger.

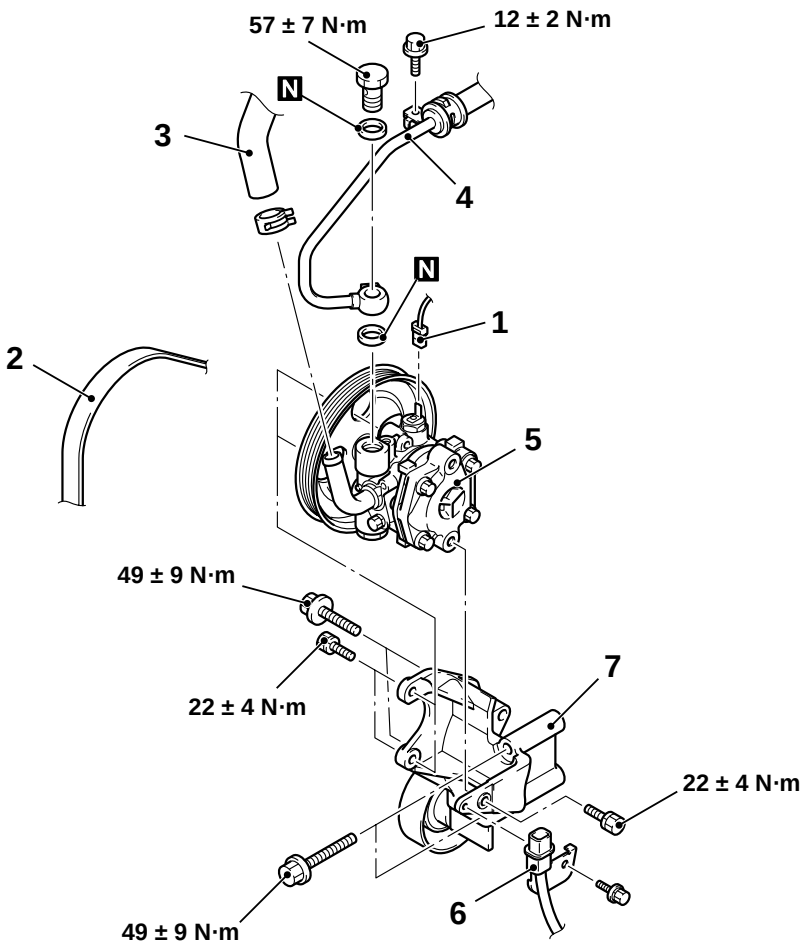
POWER STEERING OIL PUMP ASSEMBLY

REMOVAL AND INSTALLATION

M1372005200395

Pre-removal Operation	Post-installation Operation
• Front Under Cover (RH) and Side Under Cover (RH) Removal (Refer to GROUP 51, Under Cover P.51-19). • Power Steering Fluid Draining (Refer to P.37A-11).	• Power Steering Fluid Supplying and Bleeding (Refer to P.37A-12). • Drive Belt Tension Check (Refer to GROUP 11A, On-vehicle Service – Drive Belt Tension Check P.11A-8 <2000>, Refer to GROUP 13A, On-vehicle Service - Drive Belt Tensioner P.11C-8 <2400>). • Front Under Cover (RH) and Side Under Cover (RH) Installation (Refer to GROUP 51, Under Cover P.51-19).

<2000>



AC200116 AB

Removal steps

1. Pressure switch connector
2. Drive belt (Refer to GROUP 11A, Engine assembly P.11A-49.)

>>A<< 3. Suction hose

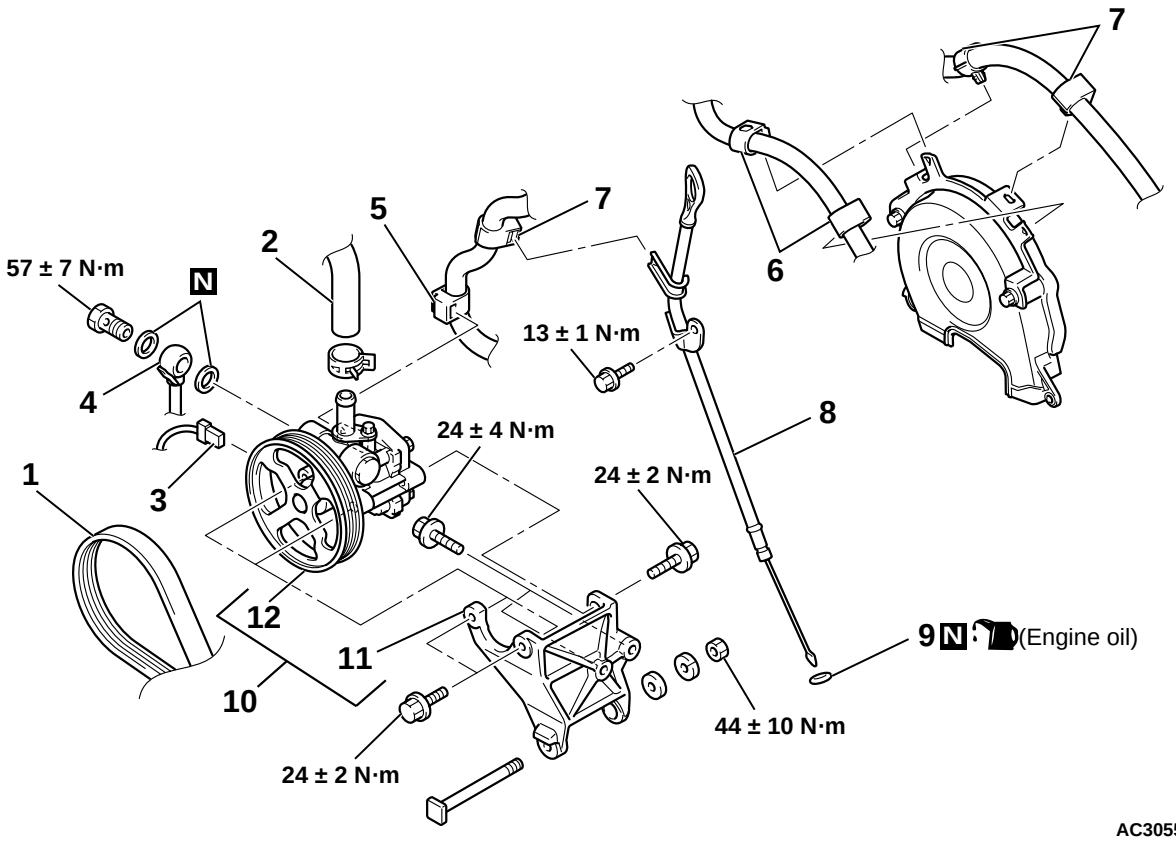
4. Pressure hose

<<A>>

Removal steps (Continued)

5. Oil pump assembly
6. A/C compressor harness
7. Power steering pump bracket

<2400>



AC305528AD

REMOVAL STEPS

1. Drive belt (Refer to GROUP 11C, Engine assembly P.11C-47.)

>>A<< 2. Suction hose
3. Pressure switch connector
4. Pressure hose
5. Power steering oil pressure sensor harness clamp
6. Control wiring harness clamp
7. Battery wiring harness clamp
8. Engine oil dipstick and dipstick guide
9. O-ring

REMOVAL STEPS (Continued)

10. Oil pump and bracket assembly
11. Bracket

<<A>> 12. Oil pump assembly

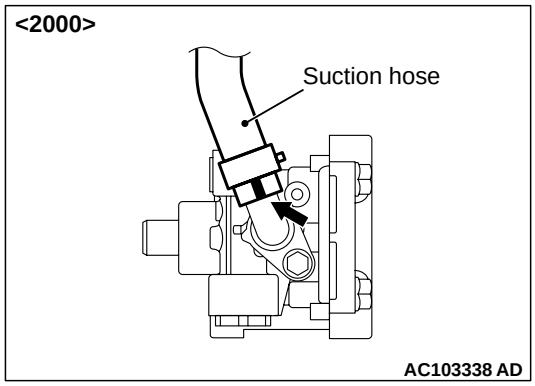
REMOVAL SERVICE POINT

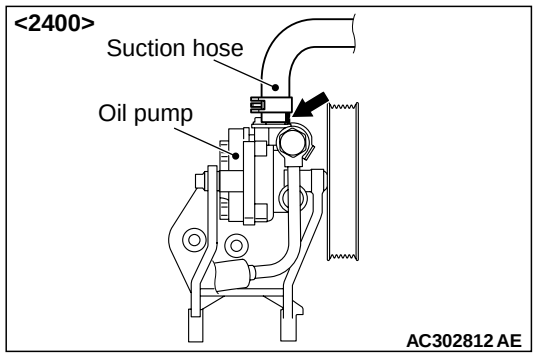
<<A>> OIL PUMP ASSEMBLY REMOVAL

With the engine lifted by the jack, remove the oil pump assembly mounting bolt (lower side) at the pulley side.

INSTALLATION SERVICE POINT

>>A<< SUCTION HOSE INSTALLATION





Install the suction hose so that the marking is positioned as shown in the illustration.

INSPECTION

M1372005300240

- Check the drive belt for cracks.
- Check the pulley for uneven rotation.

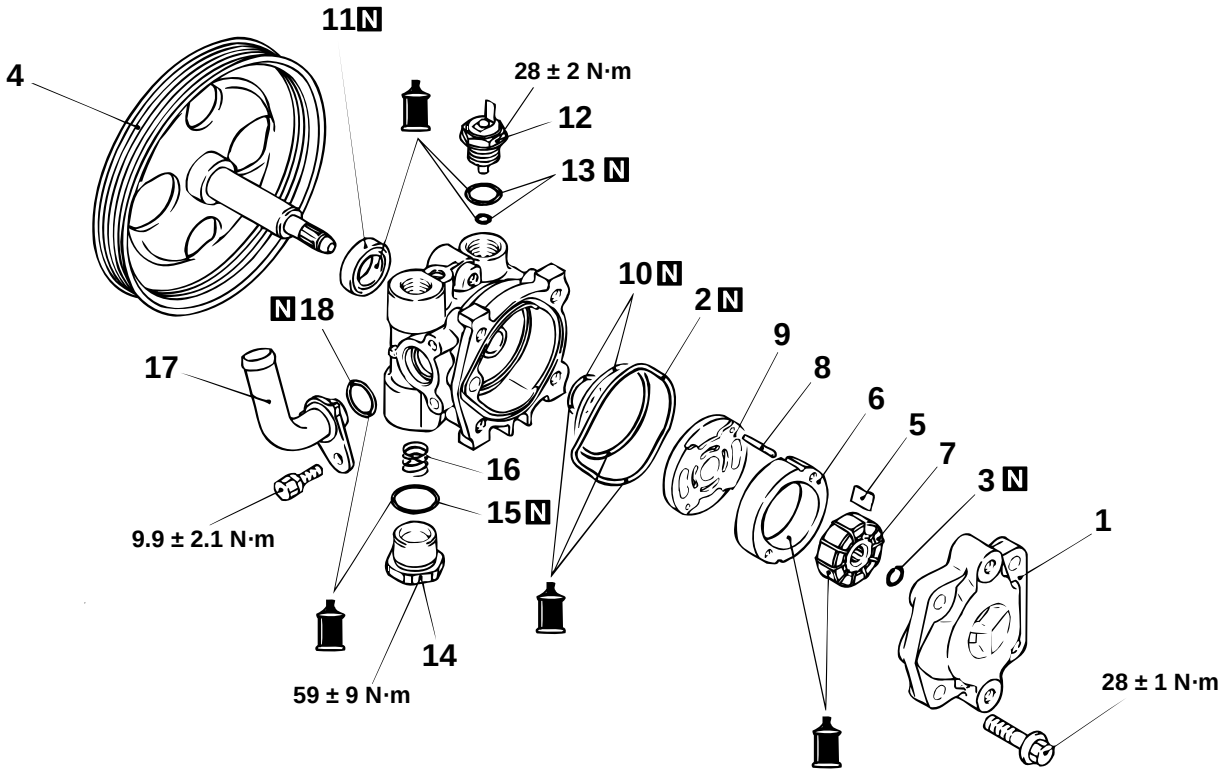
DISASSEMBLY AND REASSEMBLY

M1372005400366

⚠ CAUTION

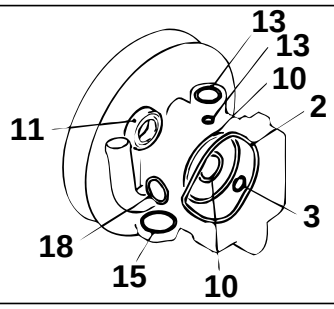
Never disassemble the terminal assembly. It cannot be reassembled.

<2000>

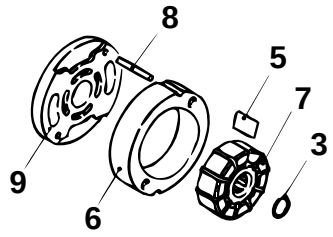


: ATF DEXRON III or DEXRON II

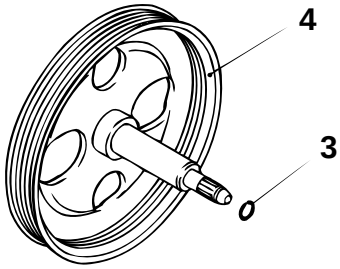
AC100143 AE



Oil pump seal kit



Oil pump cartridge kit



Oil pump pulley and shaft kit

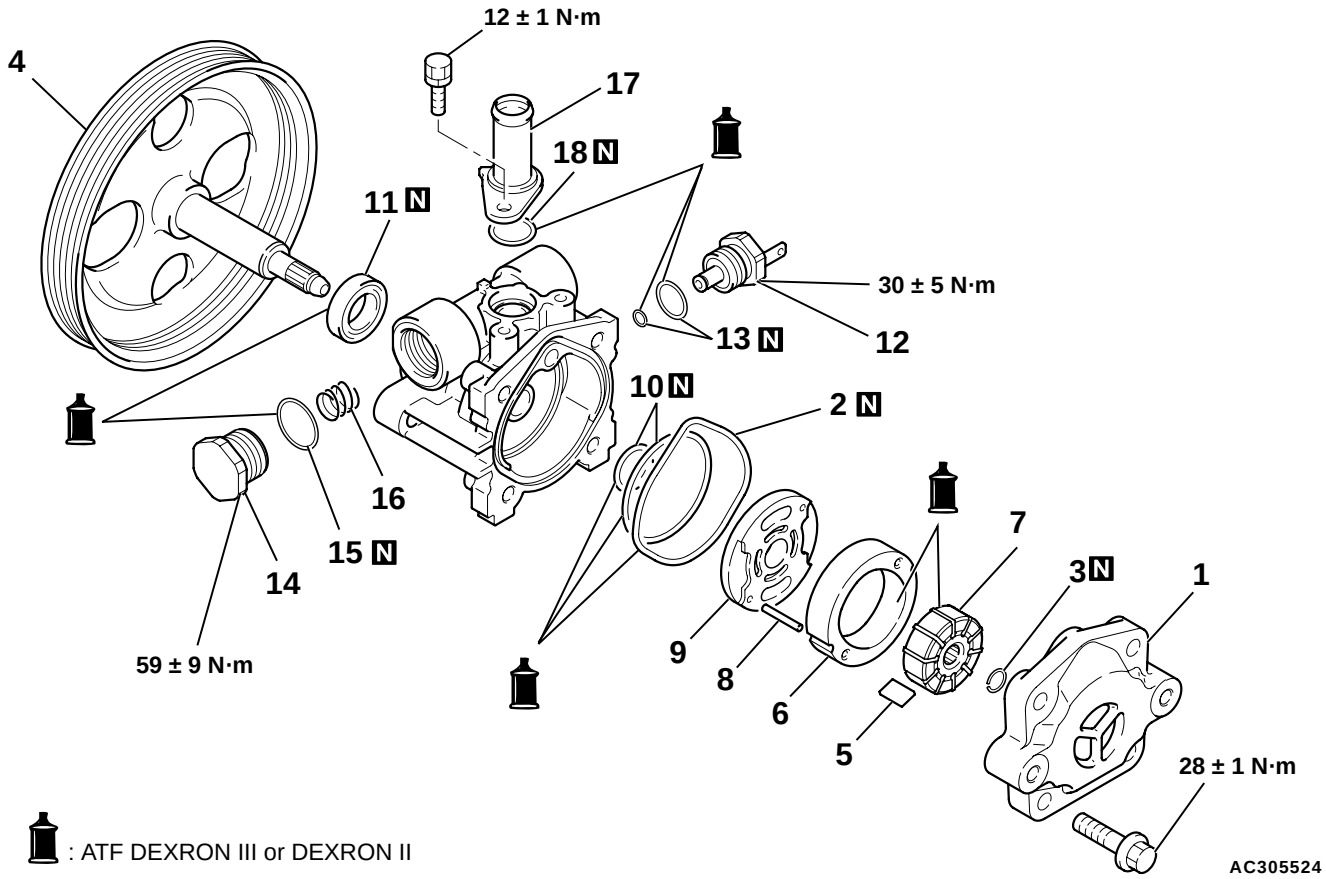
Disassembly steps

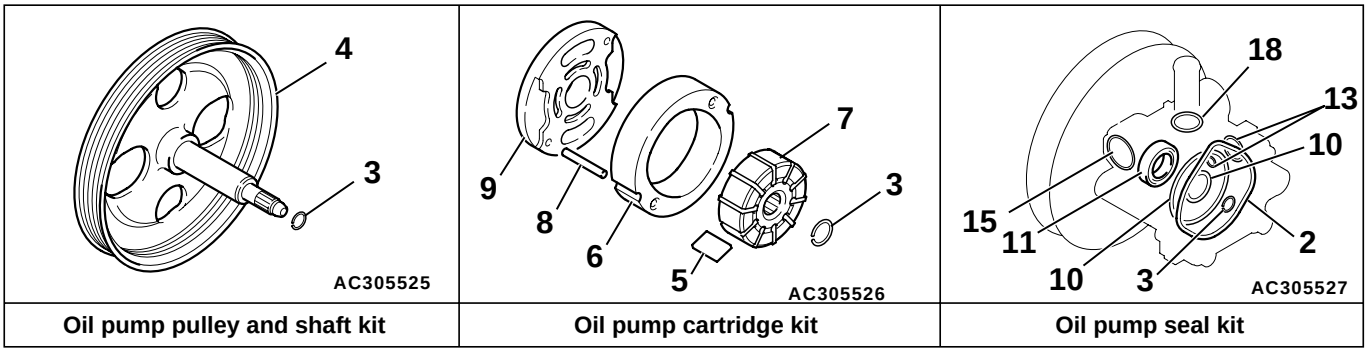
1. Pump cover
2. O-ring
3. Snap ring
4. Pulley and shaft
5. Vanes
>>C<< 6. Cam ring
7. Rotor
8. Pin
9. Side plate
>>A<< 10. O-ring

Disassembly steps (Continued)

>>B<< 11. Oil seal
12. Terminal assembly
>>A<< 13. O-ring
14. Plug assembly
>>A<< 15. O-ring
16. Flow control spring
17. Suction connector
>>A<< 18. O-ring

<2400>





Oil pump pulley and shaft kit	Oil pump cartridge kit	Oil pump seal kit

AC305771AC

DISASSEMBLY STEPS

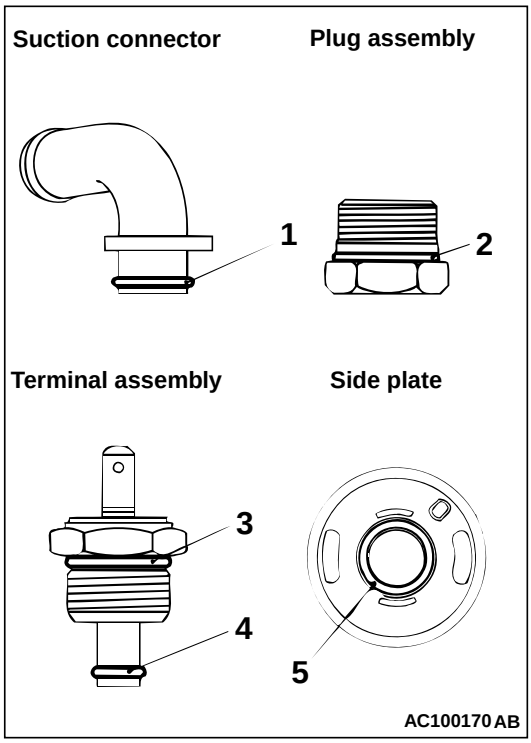
1. Pump cover
2. O-ring
3. Snap ring
4. Pulley and shaft
5. Vanes
>>C<< 6. Cam ring
7. Rotor
8. Pin
9. Side plate

DISASSEMBLY STEPS (Continued)

>>A<< 10. O-ring
>>B<< 11. Oil seal
12. Terminal assembly
>>A<< 13. O-ring
14. Plug assembly
>>A<< 15. O-ring
16. Flow control spring
17. Suction connector
>>A<< 18. O-ring

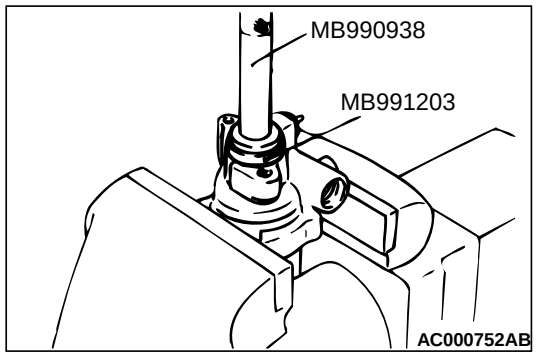
REASSEMBLY SERVICE POINTS

>>A<< O-RING INSTALLATION



No.	ID × Width mm
1	15.8 × 2.4
2	21.0 × 1.9
3	14.8 × 2.4
4	3.8 × 1.9
5	14.8 × 1.9

>>B<< OIL SEAL INSTALLATION



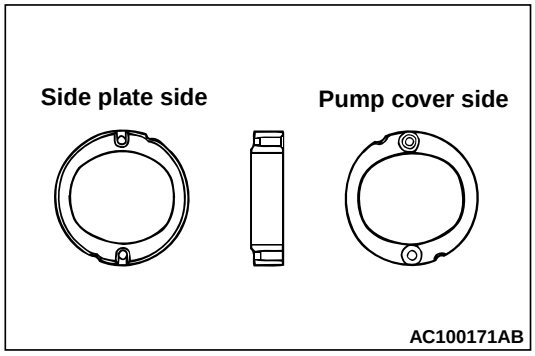
Use following special tool to install the oil seal.

- MB990938: Bar (Snap-in type)
- MB991203: Oil Seal and Bearing Installer

>>C<< CAM RING INSTALLATION

⚠ CAUTION

Be sure to install the cam ring in the correct direction as shown.



Install the cam ring as shown in the illustration.

INSPECTION

M1372005500244

- Check the flow control valve of the pump body for clogging.
- Check the pulley and shaft for wear or damage.
- Check the rotor and vane groove for "stepped" wear.
- Check the contact surface of cam ring and vanes for "stepped" wear.
- Check the vanes for damage.

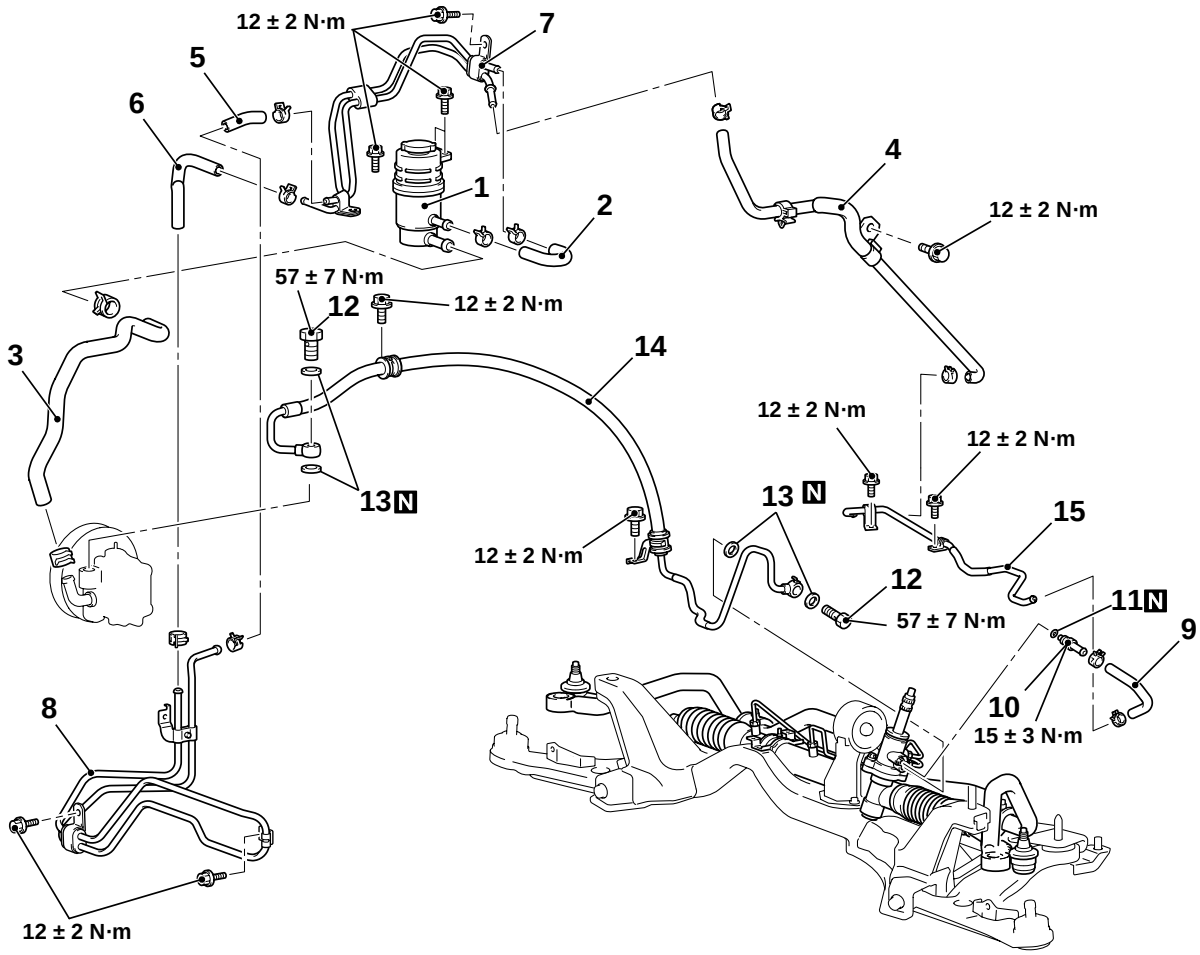
POWER STEERING HOSES

REMOVAL AND INSTALLATION <L.H. drive vehicles>

M1372005700497

Pre-removal and Post-installation Operation
- Power Steering Fluid Draining and Refilling (Refer to P.37A-11). and Bleeding (Refer to P.37A-12).

<2000>



AC300498AC

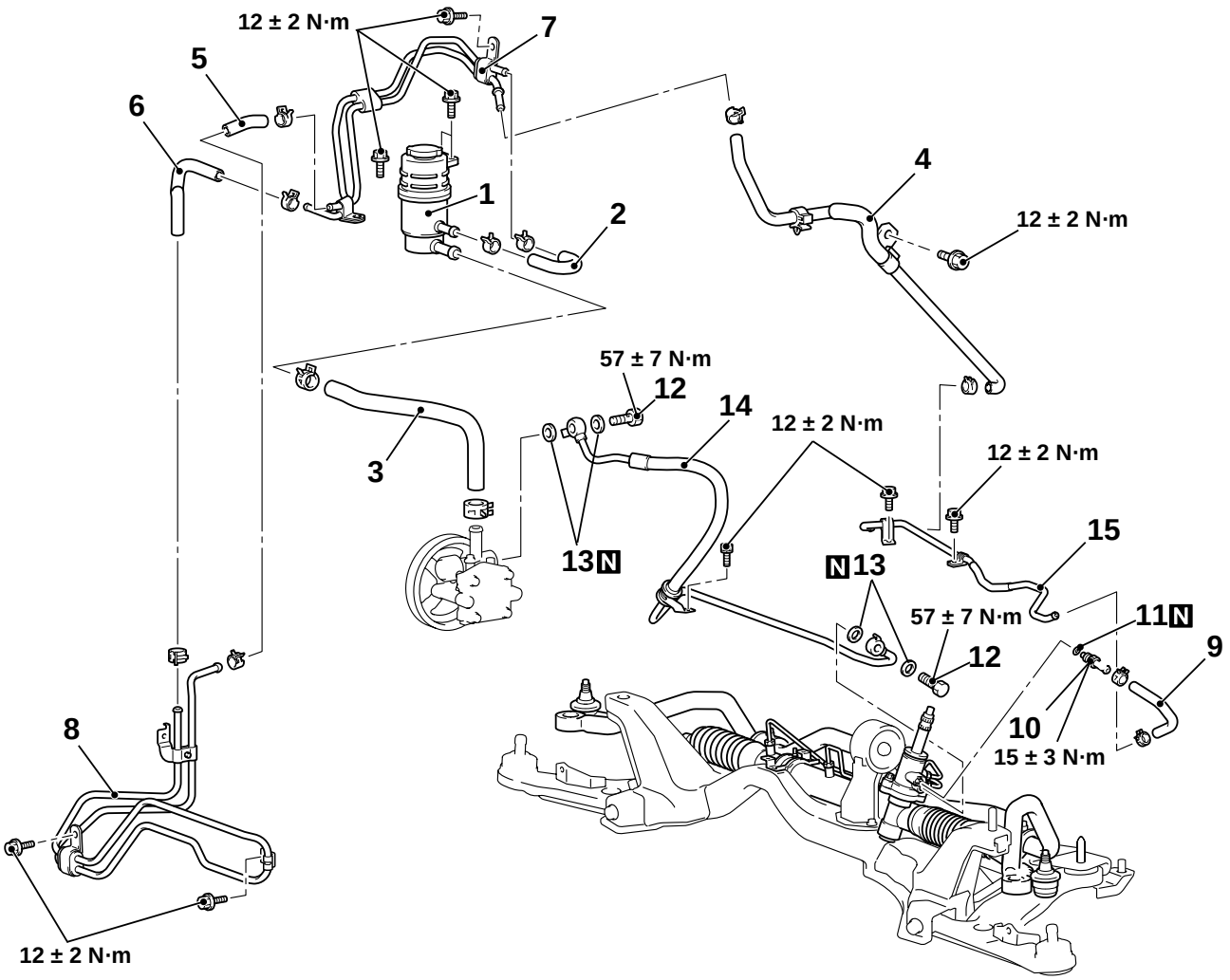
Removal steps
1. Oil reservoir
>>F<< 2. Return hose
>>E<< 3. Suction hose
>>D<< 4. Return hose
>>C<< 5. Return hose
>>B<< 6. Return hose
7. Return tube assembly
- Front bumper assembly (Refer to GROUP 51, Front Bumper Assembly P.51-3).

8. Cooler tube assembly

Removal steps (Continued)
- Tie rod end and knuckle connection (Refer to P.37A-21).
- Stabilizer link (Refer to GROUP 33A, Stabilizer Bar P.33-14).

>>A<< 9. Return hose
10. Return tube
11. O-ring
12. Eye bolt
13. Gasket
14. Pressure hose assembly
15. Return tube

<2400>



AC309400AB

Removal steps

1. Oil reservoir
>>F<< 2. Return hose
>>E<< 3. Suction hose
>>D<< 4. Return hose
>>C<< 5. Return hose
>>B<< 6. Return hose
7. Return tube assembly
- Front bumper assembly (Refer to GROUP 51, Front Bumper Assembly P.51-3).

8. Cooler tube assembly

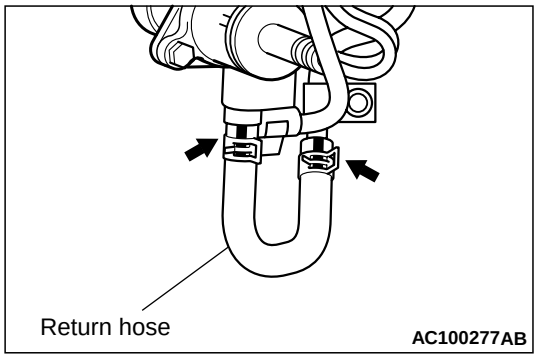
Removal steps (Continued)

- Tie rod end and knuckle connection (Refer to P.37A-21).
- Stabilizer link (Refer to GROUP 33A, Stabilizer Bar P.33-14).

>>A<< 9. Return hose
10. Return tube
11. O-ring
12. Eye bolt
13. Gasket
14. Pressure hose assembly
15. Return tube

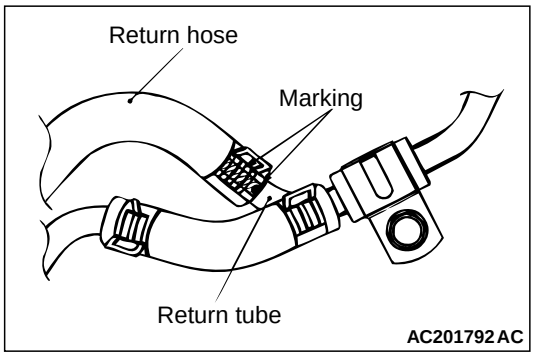
INSTALLATION SERVICE POINTS

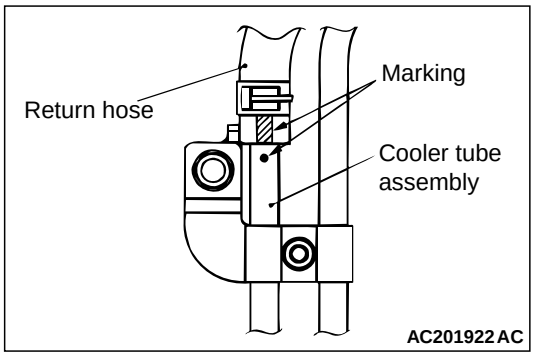
>>A<< RETURN HOSE INSTALLATION



Install the return hose so that the marking is positioned as shown in the illustration.

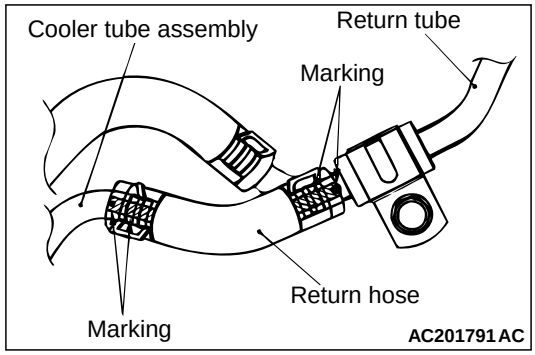
>>B<< RETURN HOSE INSTALLATION



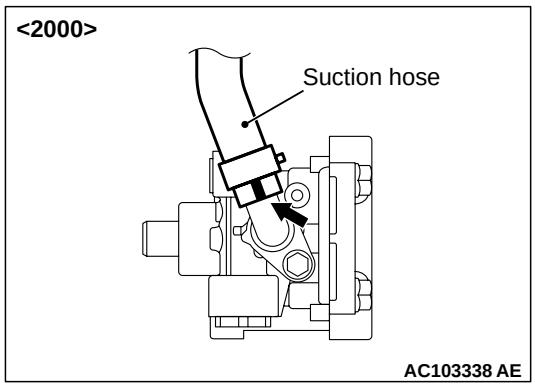


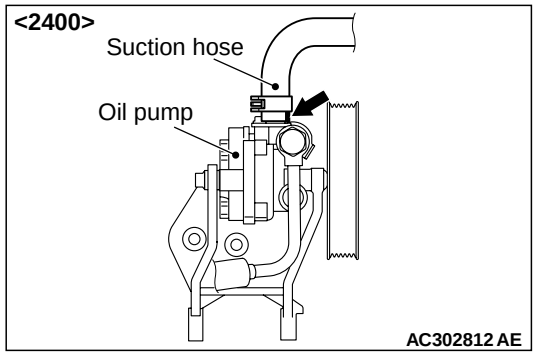
Install the return hose so that the marking is positioned as shown in the illustration.

>>C<< RETURN HOSE INSTALLATION



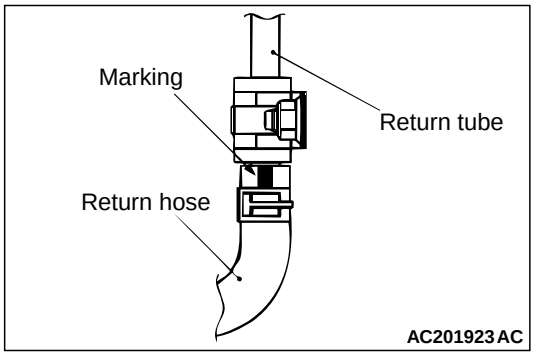
>>E<< SUCTION HOSE INSTALLATION





Install the suction hose so that the marking is positioned as shown in the illustration.

>>F<< RETURN HOSE INSTALLATION

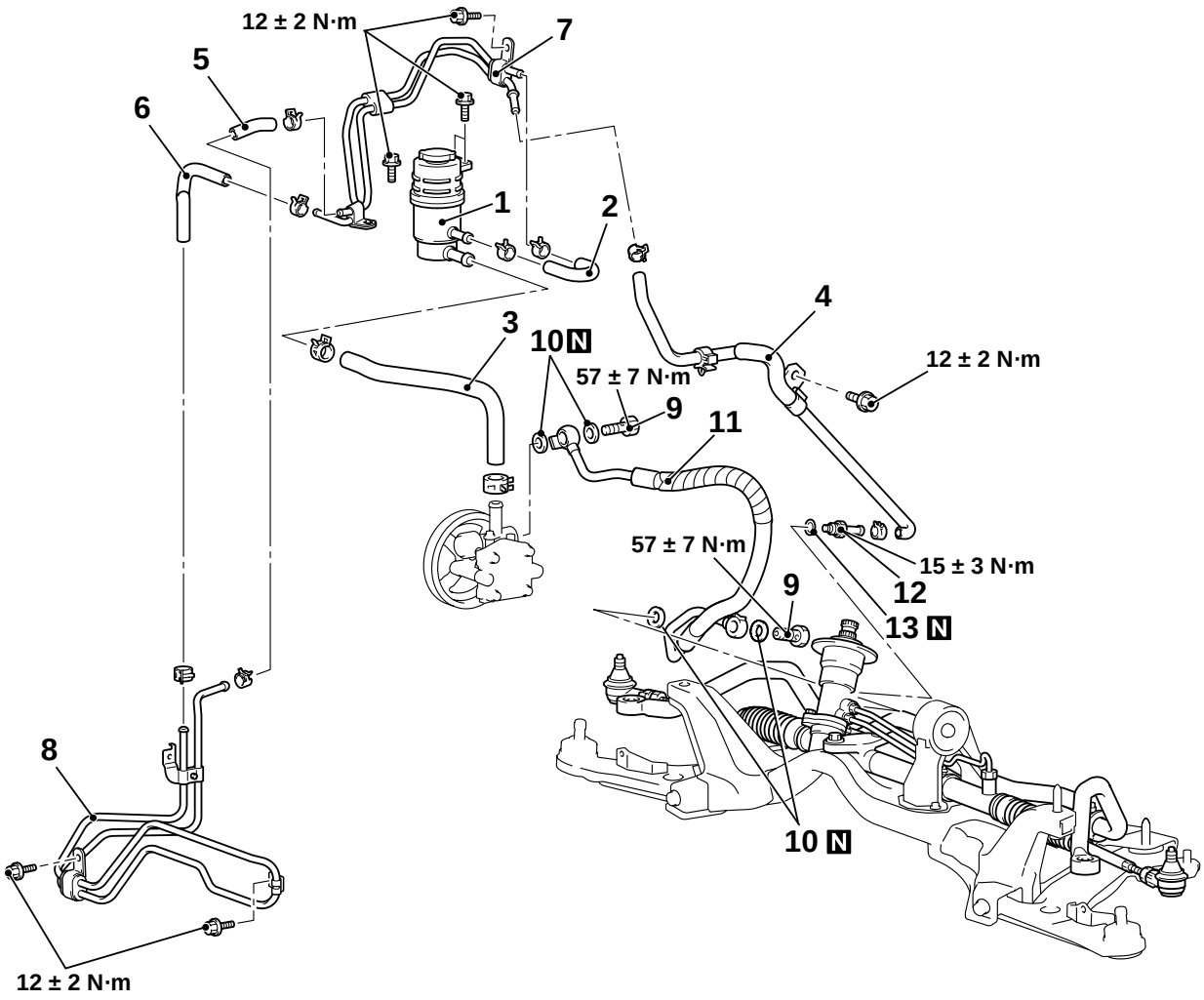


Install the return hose so that the markings are positioned as shown in the illustration.

REMOVAL AND INSTALLATION <R.H. drive vehicles>

M1372005700505

Pre-removal and Post-installation Operation
- Power Steering Fluid Draining and Refilling (Refer to P.37A-11.) and Bleeding (Refer to P.37A-12.)



AC309399AB

Removal steps
1. Oil reservoir
>>F<< 2. Return hose
>>E<< 3. Suction hose
>>D<< 4. Return hose
>>C<< 5. Return hose
>>B<< 6. Return hose
7. Return tube assembly
- Front bumper assembly (Refer to GROUP 51, Front Bumper Assembly P.51-3.)

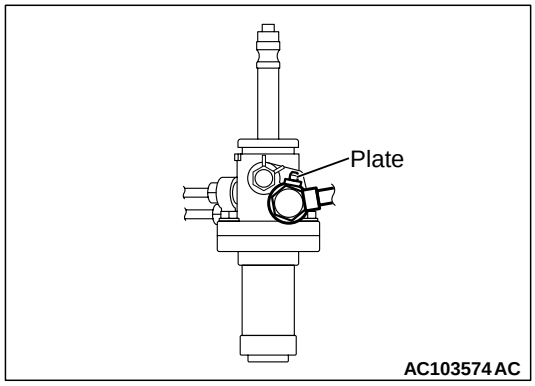
8. Cooler tube assembly

Removal steps (Continued)
- Tie rod end and knuckle connection (Refer to P.37A-21.)
- Stabilizer link (Refer to GROUP 33A, Stabilizer Bar P.33-14.)

9. Eye bolt
10. Gasket
>>A<< 11. Pressure hose assembly
12. Return tube
13. O-ring

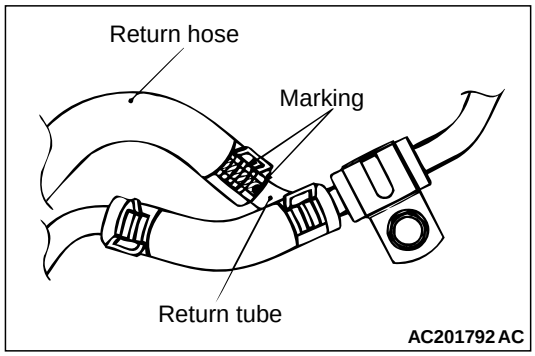
INSTALLATION SERVICE POINTS

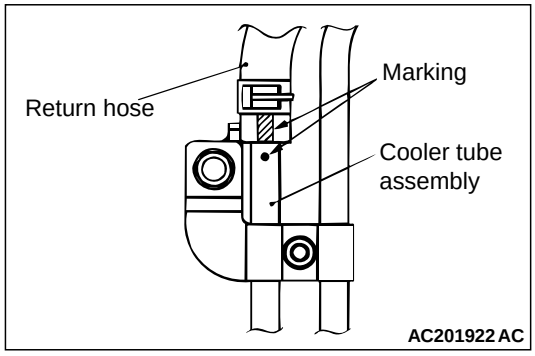
>>A<< PRESSURE HOSE ASSEMBLY INSTALLATION



Install the pressure hose assembly so that its plate is positioned as shown in the illustration.

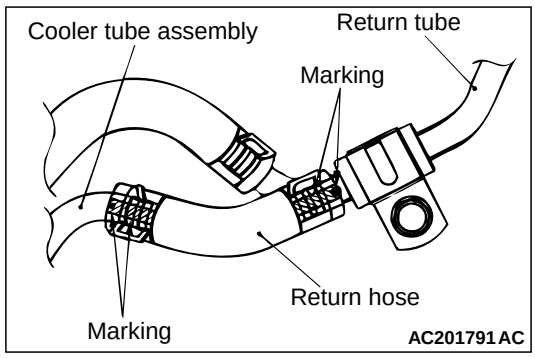
>>B<< RETURN HOSE INSTALLATION





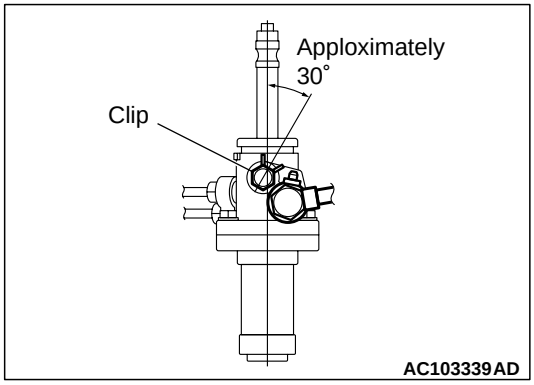
Install the return hose so that the marking is positioned as shown in the illustration.

>>C<< RETURN HOSE INSTALLATION



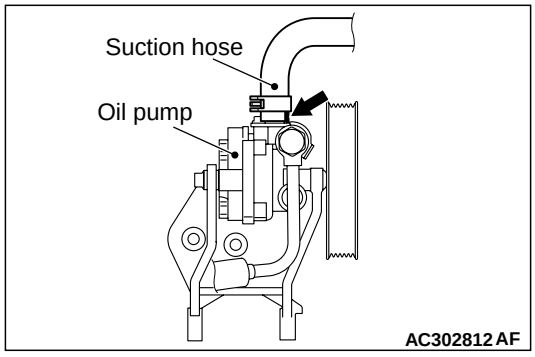
Install the return hose so that the marking is positioned as shown in the illustration.

>>D<< RETURN HOSE INSTALLATION



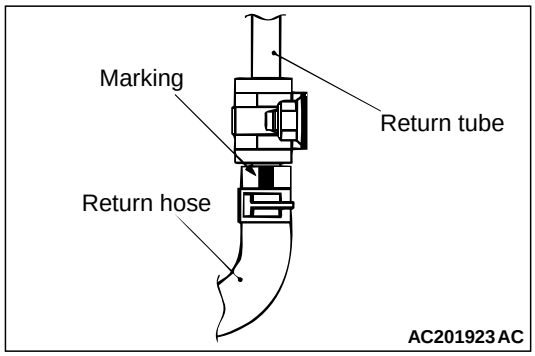
Install the return hose so that the clip is positioned as shown in the illustration.

>>E<< SUCTION HOSE INSTALLATION



Install the suction hose so that the marking is positioned as shown in the illustration.

>>F<< RETURN HOSE INSTALLATION



Install the return hose so that the markings are positioned as shown in the illustration.