

# GROUP 22A

# MANUAL

# TRANSAXLE

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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

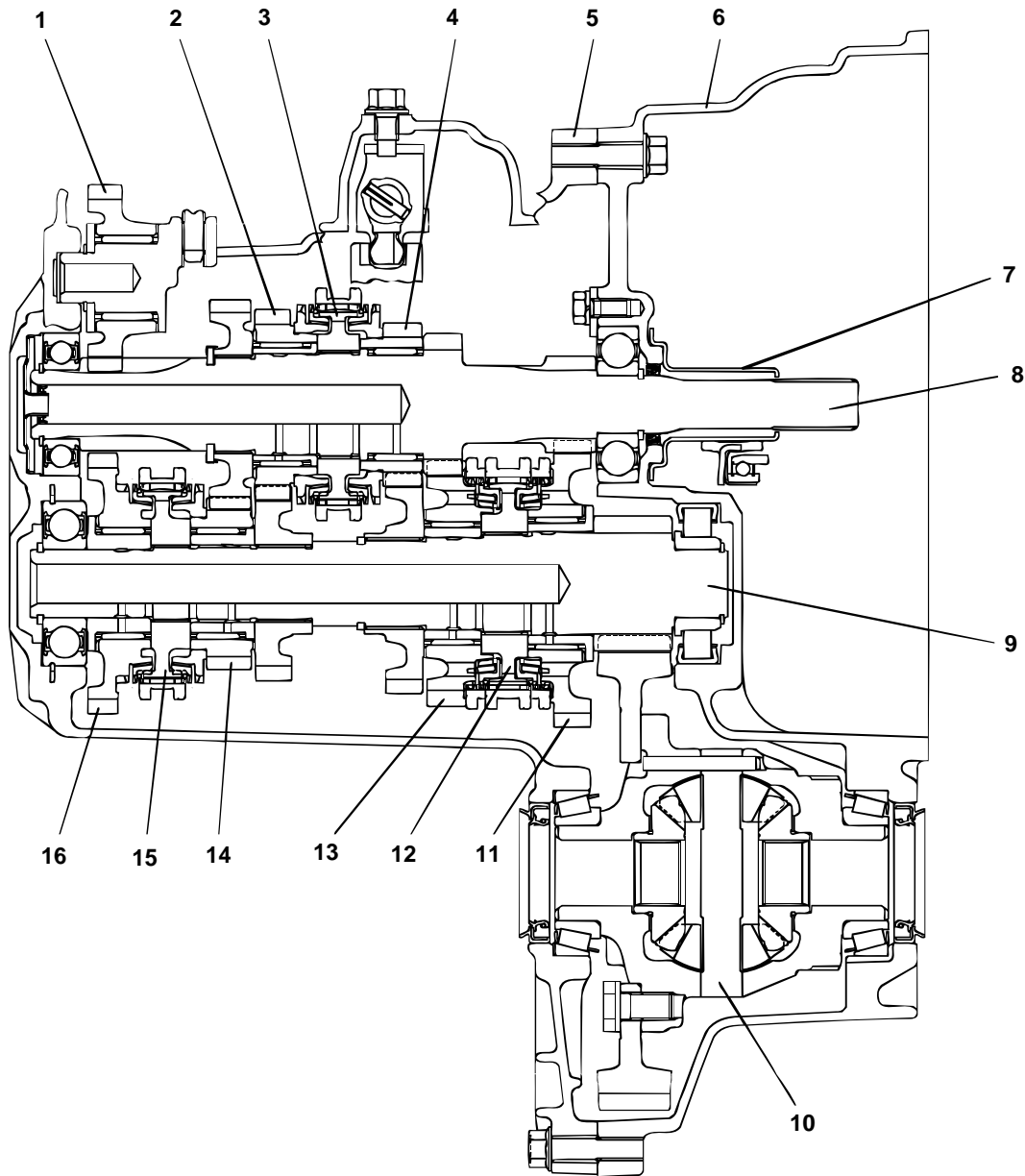
The SRS includes the following components: SRS air bag control unit, SRS warning light, front impact sensors, air bag module, clock spring, and interconnecting wiring. Other SRS-related components (that may have to be removed/installed in connection with SRS service or maintenance) are indicated in the table of contents by an asterisk (\*).

**GENERAL INFORMATION**

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ITEMS		SPECIFICATIONS		
Transaxle model		F5M42-2-F6ND	F5M51-F5N2	F5M51-S5N
Engine model		4G64 (2.4L Engine)	6G72 (3.0L Engine) <Vehicles without variable induction system>	6G72 (3.0L Engine) <Vehicles with variable induction system>
Transaxle type		5-speed forward, 1-speed reverse constant mesh		
Gear ratio	1st	3.583	3.333	2.928
	2nd	1.947	2.105	1.950
	3rd	1.379	1.407	1.407
	4th	1.030	1.031	1.031
	5th	0.767	0.761	0.720
	Reverse	3.363	3.416	3.416
Final gear ratio (Differential gear ratio)		3.722	3.736	4.111
Speedometer gear ratio		29/36	28/36	28/36

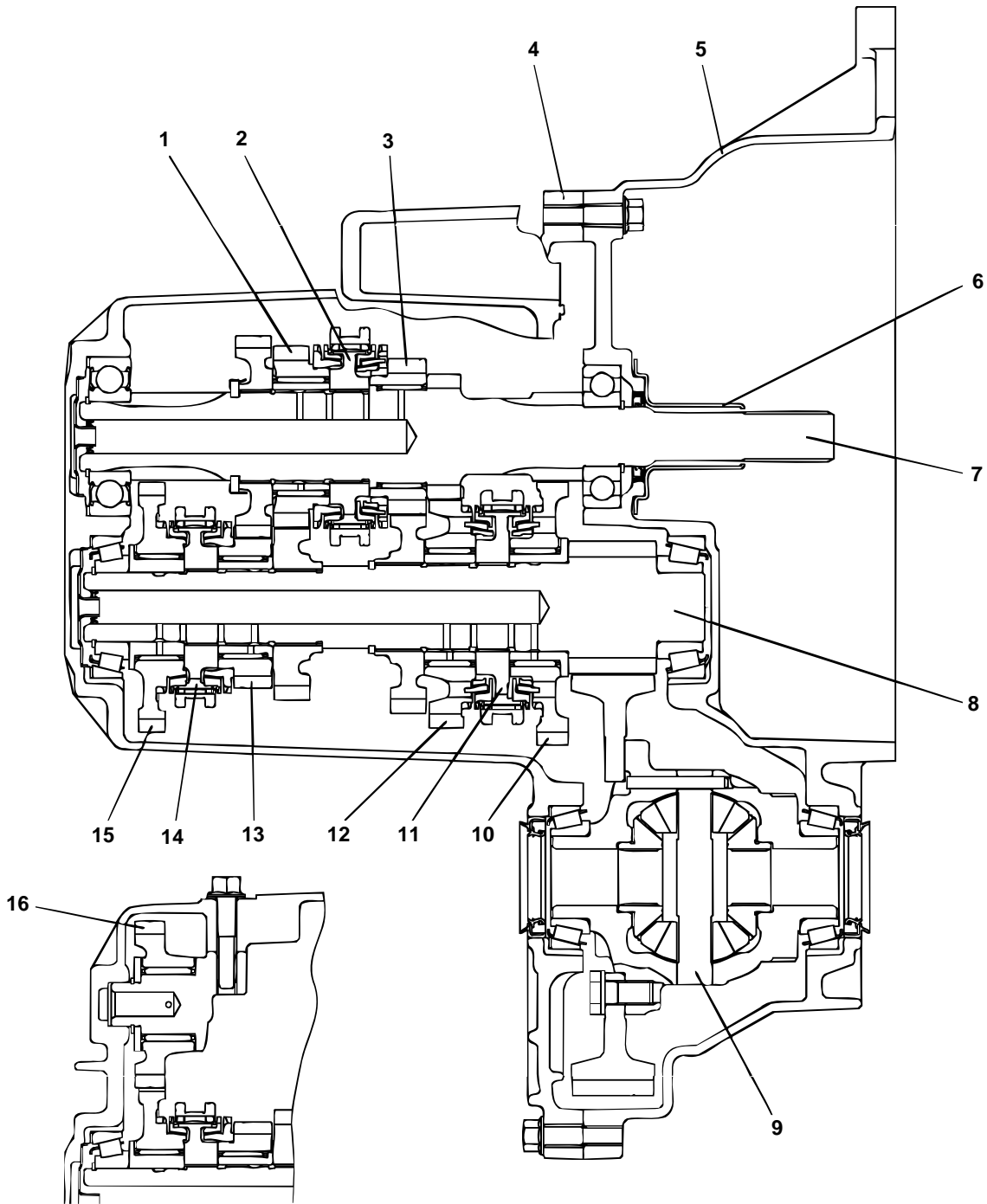
SECTIONAL VIEW <F5M42>



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- |                                   |  |
|-----------------------------------|--|
| 1. REVERSE IDLER GEAR             | 10. DIFFERENTIAL                       |
| 2. 4TH SPEED GEAR                 | 11. 1ST SPEED GEAR                     |
| 3. 3RD-4TH SPEED SYNCHRONIZER HUB | 12. 1ST-2ND SPEED SYNCHRONIZER HUB     |
| 4. 3RD SPEED GEAR                 | 13. 2ND SPEED GEAR                     |
| 5. TRANSAXLE CASE                 | 14. 5TH SPEED GEAR                     |
| 6. CLUTCH HOUSING                 | 15. 5TH-REVERSE SPEED SYNCHRONIZER HUB |
| 7. RELEASE BEARING RETAINER       | 16. REVERSE GEAR                       |
| 8. INPUT SHAFT                    |  |
| 9. OUTPUT SHAFT                   |  |

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- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. 4TH SPEED GEAR</li> <li>2. 3RD-4TH SPEED SYNCHRONIZER HUB</li> <li>3. 3RD SPEED GEAR</li> <li>4. TRANSAXLE CASE</li> <li>5. CLUTCH HOUSING</li> <li>6. RELEASE BEARING RETAINER</li> <li>7. INPUT SHAFT</li> <li>8. OUTPUT SHAFT</li> <li>9. DIFFERENTIAL</li> </ul> | <ul style="list-style-type: none"> <li>10. 1ST SPEED GEAR</li> <li>11. 1ST-2ND SPEED SYNCHRONIZER HUB</li> <li>12. 1ST-2ND SPEED SYNCHRONIZER HUB</li> <li>13. 5TH SPEED GEAR</li> <li>14. 5TH-REVERSE SPEED SYNCHRONIZER HUB</li> <li>15. REVERSE GEAR</li> <li>16. REVERSE IDLER GEAR</li> </ul> |
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## MANUAL TRANSAXLE DIAGNOSIS

### INTRODUCTION

The manual transaxle can exhibit any of the following symptoms: noise or vibration is generated, oil leaks, shifting gears is hard or troublesome, or the transaxle jumps out of gear.

The causes of these symptoms could come from: incorrect mounting, the oil level may be low, or a component of the transaxle may be faulty.

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### TROUBLESHOOTING STRATEGY

Use these steps to plan your diagnostic strategy. If you follow them carefully, you will be sure that you have exhausted most of the possible ways to find a manual transaxle fault.

1. Gather information from the customer.

2. Verify that the condition described by the customer exists.
3. Find the malfunction by following the Symptom Chart.
4. Verify malfunction is eliminated.

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### SYMPTOM CHART

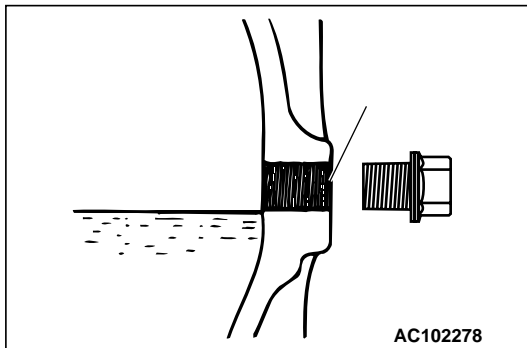
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SYMPTOMS	INSPECTION PROCEDURE	REFERENCE PAGE
Noise, vibration	1	<a href="#">P.22A-6</a>
Oil leaks	2	<a href="#">P.22A-8</a>
Hard shifting	3	<a href="#">P.22A-8</a>
Jumps out of gear	4	<a href="#">P.22A-9</a>

## SYMPTOM PROCEDURES

## INSPECTION PROCEDURE 1: Noise, Vibration

## DIAGNOSIS

**STEP 1. Check the idle speed.****Q: Does the idle speed meet the standard values?****YES :** Go to Step 2.**NO :** Refer to GROUP 11A, On-vehicle Service – Curb Idle Speed Check <2.4L ENGINE>[P.11A-7](#) or GROUP 11C, On-vehicle Service – Curb Idle Speed Check <3.0L ENGINE>[P.11C-7](#).**STEP 2. Check whether the transaxle and engine mount is loose or damaged.****Q: Are the transaxle and engine mount loose or damaged?****YES :** Tighten or replace the part. Then go to Step 7.**NO :** Go to Step 3.**STEP 3. Check that the oil level is up to the lower edge of the filler plug hole.****Q: Is the oil level up to the lower edge of the filler plug hole?****YES :** Go to Step 4.**NO :** Refill gear oil SAE 75W – 90W or 75W – 85W conforming to API classification GL-4. Then go to Step 7.**STEP 4. Check for the specified oil.****Q: Is the specified oil gear oil SAE 75W – 90W or 75W – 85W conforming to API classification GL-4?****YES :** Go to Step 5.**NO :** If in doubt, replace the oil. Refer to [P.22A-11](#). Then go to Step 7.**STEP 5. Remove the transaxle. Check the end play of the input and output shafts.****Q: Does the end play of the input and output shafts meet the standard value?****YES :** Go to Step 6.**NO :** Adjust the end play of the input and output shafts. Then go to Step 7.

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**STEP 6. Disassemble the transaxle. Check the gears for wear and damage.**

**Q: Are the gears worn or damaged?**

**YES :** Replace the gears. Go to Step 7.

**NO :** Go to Step 7.

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**STEP 7. Check trouble symptoms.**

**Q: Is the noise or vibration still there?**

**YES :** Return to Step 1.

**NO :** This diagnosis is complete.

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**INSPECTION PROCEDURE 2: Oil Leaks**


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**DIAGNOSIS****STEP 1. Visual check.**

Raise the vehicle, and check for oil leaks. If oil leak is difficult to locate, steam clean the transaxle and drive the vehicle for at 10 minutes. Then check the leak again.

**Q: Is the oil leak(s) found?**

**YES :** Go to Step 2.

**NO :** Check for the oil leak(s) around the engine. Then go to Step 4.

**STEP 2. Visual check at the clutch housing.**

**Q: Do oil leaks appear around the joint between the engine and the clutch housing?**

**YES :** Remove the transaxle. Check the input shaft oil seal, and replace if necessary. Then go to Step 4.

**NO :** Go to Step 3.

**STEP 3. Check the oil seal or O-ring for damage.**

**Q: Is the oil seal or O-ring damaged?**

**YES :** Replace the oil seal or the O-ring. Then go to Step 4.

**NO :** Go to Step 4.

**STEP 4. Check trouble symptoms.**

**Q: Is the oil still leaking?**

**YES :** Return to Step 1.

**NO :** This diagnosis is complete.

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**INSPECTION PROCEDURE 3: Hard Shifting**


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**DIAGNOSIS****STEP 1. Check the transaxle control**

**Q: Are the shift cable and the select cable in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the shift cable and the select cable. Refer to [P.22A-12](#). Then go to Step 7.

**STEP 2. Check the transaxle oil.**

**Q: Is the oil dirty?**

**YES :** Replace the oil. Refer to [P.22A-11](#). Then go to Step 7 .

**NO :** Go to Step 3.

**STEP 3. Check the clutch system.**

**Q: Is the clutch system normal?**

**YES :** Go to Step 4.

**NO :** Repair or replace the clutch system. Refer to [P.21A-2](#). Then go to Step 7.

**STEP 4. Remove and disassemble the transaxle. Check the control housing.**

**Q: Is the control housing in good condition?**

**YES :** Go to Step 5.

**NO :** Repair or replace the control housing. Refer to GROUP 22B, Transaxle [P.22B-8](#). Then go to Step 7.

**STEP 5. Check for poor meshing of worn synchronizer ring and gear cone.**

**Q: Is poor meshing or worn synchronizer ring and gear cone found?**

**YES :** Repair or replace the synchronizer ring and gear cone. Then go to Step 7.

**NO :** Go to Step 6.

**STEP 6. Check the synchronizer spring for weakness.**

**Q: Is the synchronizer spring weak?**

**YES :** Replace the synchronizer spring. Then go to Step 7.

**NO :** Go to Step 7.



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**STEP 7. Check trouble symptoms.**

**Q: Is the shifting of the gears still hard?**

**YES :** Return to Step 1.

**NO :** This diagnosis is complete.

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**INSPECTION PROCEDURE 4: Jumps Out of Gear**

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**DIAGNOSIS**

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**STEP 1. Check the transaxle control**

**Q: Are the shift cable and the select cable in good condition?**

**YES :** Go to Step 2.

**NO :** Repair or replace the shift cable and the select cable. Refer to [P.22A-12](#). Then go to Step 6.

---

**STEP 2. Remove and disassemble the transaxle. Check the poppet spring for breakage.**

**Q: Is the poppet spring broken?**

**YES :** Replace the poppet spring. Refer to GROUP 22B, Transaxle [P.22B-8](#). Then go to Step 6.

**NO :** Go to Step 3.

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**STEP 3. Check the control housing.**

**Q: Is the control housing in good condition?**

**YES :** Go to Step 4.

**NO :** Repair or replace the control housing. Refer to GROUP 22B, Transaxle [P.22B-8](#). Then go to Step 6.

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**STEP 4. Check the gear shift forks for wear.**

**Q: Is the gear shift forks worn?**

**YES :** Replace the gear shift fork. Refer to GROUP 22B, Transaxle [P.22B-8](#). Then go to Step 6.

**NO :** Go to Step 5.

---

**STEP 5. Check the clearance.**

**Q: Is the clearance between the synchronizer hub and sleeve excessive?**

**YES :** Replace the synchronizer hub or sleeve. Refer to GROUP 22B, Input Shaft [P.22B-23](#), Output Shaft [P.22B-33](#). Then go to Step 6.

**NO :** Go to Step 6.

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**STEP 6. Check trouble symptoms.**

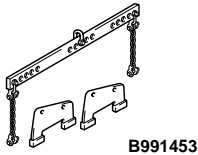
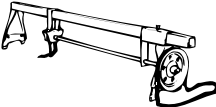
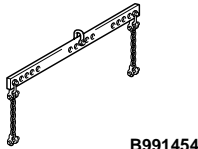
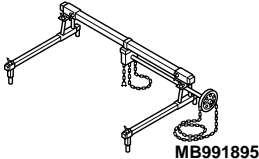
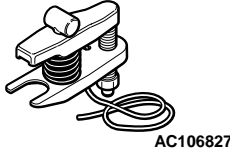
**Q: Does the transaxle still jumps out of gear?**

**YES :** Return to Step 1.

**NO :** This diagnosis is complete.

## SPECIAL TOOLS

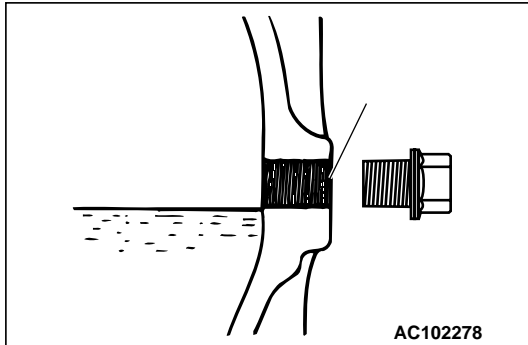
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TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 B991453	MB991453 Engine hanger attachment set	MZ203827-01	When an engine lifter is used: Supporting the engine assembly during removal and installation of the transaxle
 MZ203827	GENERAL SERVICE TOOL MZ203827 Engine lifter	MZ203827-01	
 B991454	MB991454 Engine hanger balancer	MZ203827-01	When the engine hanger is used: Supporting the engine assembly during removal and installation of the transaxle  <i>NOTE: Special tool MB991454 is a part of engine hanger attachment set MB991453.</i>
 MB991895	MB991895 Engine hanger	—	
 AC106827	MB991897 Ball joint remover	MB991113-01, MB990635-01 or general service tool	Knuckle and tie rod end ball joint breakaway torque check  <i>NOTE: Steering linkage puller(MB990635 or MB991113)is also used to disconnect knuckle and tie rod end ball joint.</i>

## ON-VEHICLE SERVICE

### TRANSAXLE OIL LEVEL CHECK

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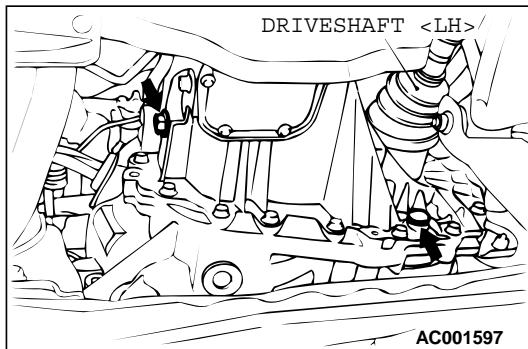


1. Remove the filler plug.
2. Check that the oil level is up to the lower edge of the filler plug hole.
3. Check that the oil is not noticeably dirty.
4. Tighten the filler plug to the specified torque.

**Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)**

### TRANSAXLE OIL REPLACEMENT

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1. Remove the filler plug.
2. Remove the drain plug and drain the oil.
3. Tighten the drain plug to the specified torque.
4. Fill with gear oil SAE 75W – 90W or 75W – 85W conforming to API classification GL-4 until the level comes to the lower portion of filler plug hole.

**Quantity:**

**<F5M42> 2.2 dm<sup>3</sup> (2.3 quarts)**

**<F5M51> 2.8 dm<sup>3</sup> (3.0 quarts)**

5. Tighten the filler plug to the specified torque.

**Tightening torque: 32 ± 2 N·m (24 ± 1 ft-lb)**

# TRANSAXLE CONTROL

## REMOVAL AND INSTALLATION

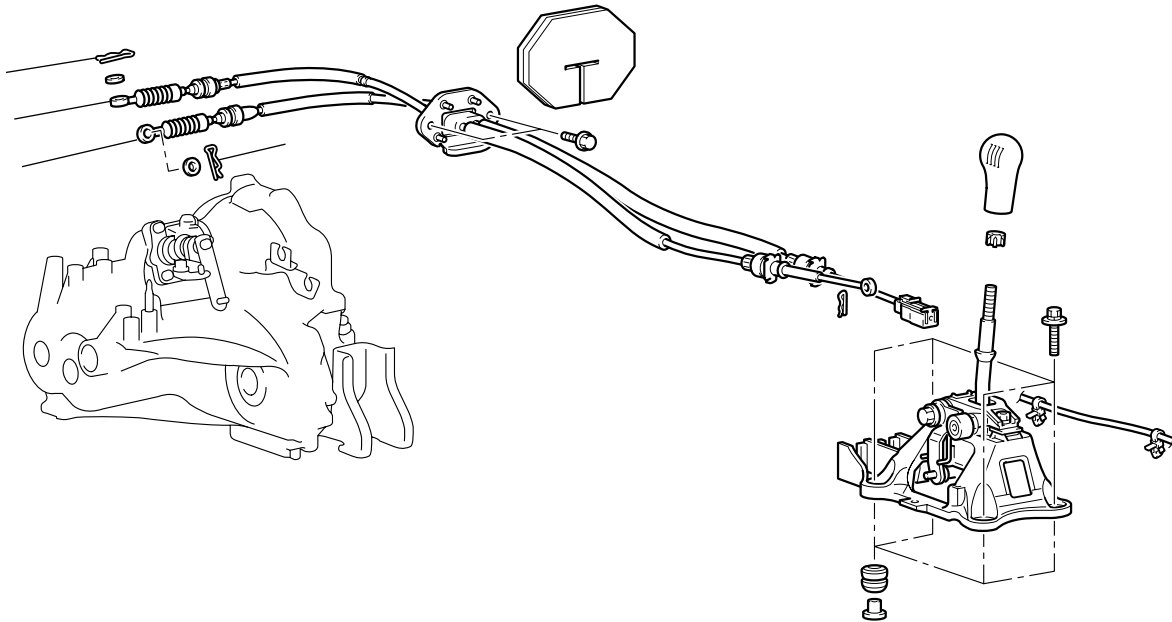
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**⚠ WARNING**

**Be careful not to subject the SRS-ECU to any shocks during removal and installation of the shift cable and select cable assembly.**

**Pre-removal and Post-installation Operation**

- Air Cleaner Assembly Removal and Installation (Refer to GROUP 15, Air Cleaner P.15-6.)
- Battery and Battery Tray Removal and Installation. (Refer to GROUP 54A, Battery P.54A-8.)



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**SHIFT CABLE AND SELECT CABLE ASSEMBLY REMOVAL STEPS**

- >>B<< 1. SHIFT KNOB
- >>B<< 2. SLEEVE
  - FLOOR CONSOLE BOX (REFER TO GROUP 52A, FLOOR CONSOLE P.52A-8.)
- 3. SNAP PIN
- 4. SELECT CABLE CONNECTION (SHIFT LEVER SIDE)
- <<A>> >>A<< 5. SHIFT CABLE CONNECTION (SHIFT LEVER SIDE)
- 6. SNAP PIN
- >>C<< 7. SELECT CABLE CONNECTION (TRANSAXLE SIDE)
- >>C<< 8. SHIFT CABLE CONNECTION (TRANSAXLE SIDE)
  - HEATER/COOLER UNIT (REFER TO GROUP 55, HEATER/COOLER UNIT, HEATER CORE AND EVAPORATOR P.55-35.)

**SHIFT CABLE AND SELECT CABLE ASSEMBLY REMOVAL STEPS (Continued)**

- >>C<< 9. SHIFT CABLE AND SELECT CABLE ASSEMBLY

**SHIFT LEVER ASSEMBLY REMOVAL STEPS**

- >>B<< 1. SHIFT KNOB
- >>B<< 2. SLEEVE
  - FLOOR CONSOLE BOX (GROUP 52A, FLOOR CONSOLE P.52A-8.)
- 3. SNAP PIN
- 4. SELECT CABLE CONNECTION (SHIFT LEVER SIDE)
- <<A>> >>A<< 5. SHIFT CABLE CONNECTION (SHIFT LEVER SIDE)
- 6. SHIFT LEVER ASSEMBLY

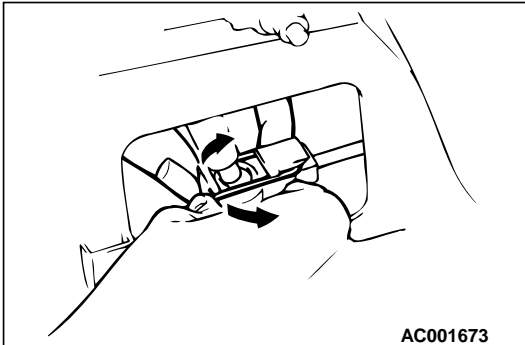
## REMOVAL SERVICE POINT

### <<A>> SHIFT CABLE CONNECTION (SHIFT LEVER SIDE) REMOVAL

**⚠ CAUTION**

Be careful not to disengage the clip from the shift cable or deform it.

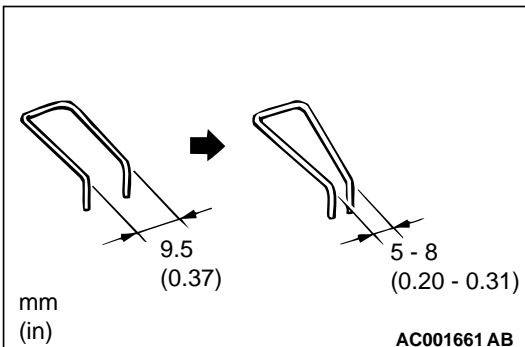
Expand the clip at the shift cable end toward the arrow direction, and remove the cable from the shift lever by pushing the shift cable down.



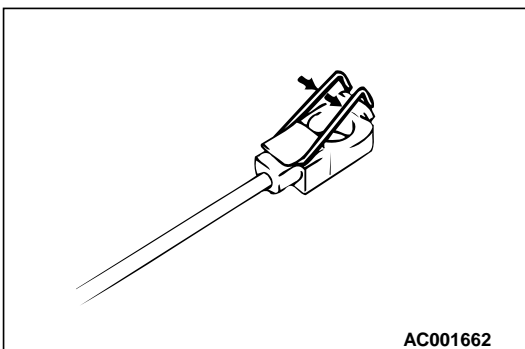
## INSTALLATION SERVICE POINTS

### >>A<< SHIFT CABLE CONNECTION (SHIFT LEVER SIDE) INSTALLATION

1. Make sure that there is no excessive play at the shift cable end clip. If there is excessive play or the clip is disengaged from the shift cable end, check the clip opening gap. If the gap is more than 9.5 mm (0.37 inch), squeeze the clip until the relaxed gap reaches 5 to 8 mm (0.20 to 0.31 inch).



2. Engage the clip with the shift cable hook securely, and push the clip with your thumbs until it clicks in place.
3. Install the shift cable to the shift lever.

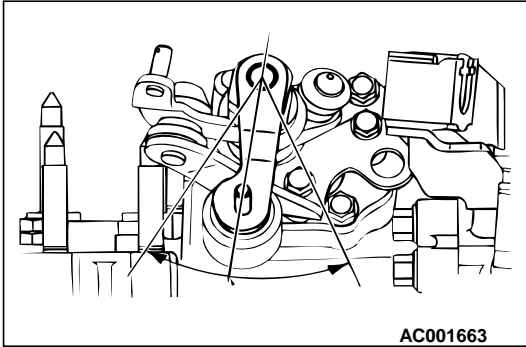


### >>B<< SLEEVE/SHIFT KNOB INSTALLATION

1. Place the sleeve over the shift lever end.
2. Place the shift knob over the sleeve.
3. Screw in the shift knob. When the shift knob is hard to turn (approximately seven turns), screw in the shift knob four additional turns until its shift pattern faces forward.

**>>C<< SHIFT CABLE AND SELECT CABLE ASSEMBLY/  
SHIFT CABLE CONNECTION/SELECT CABLE  
CONNECTION**

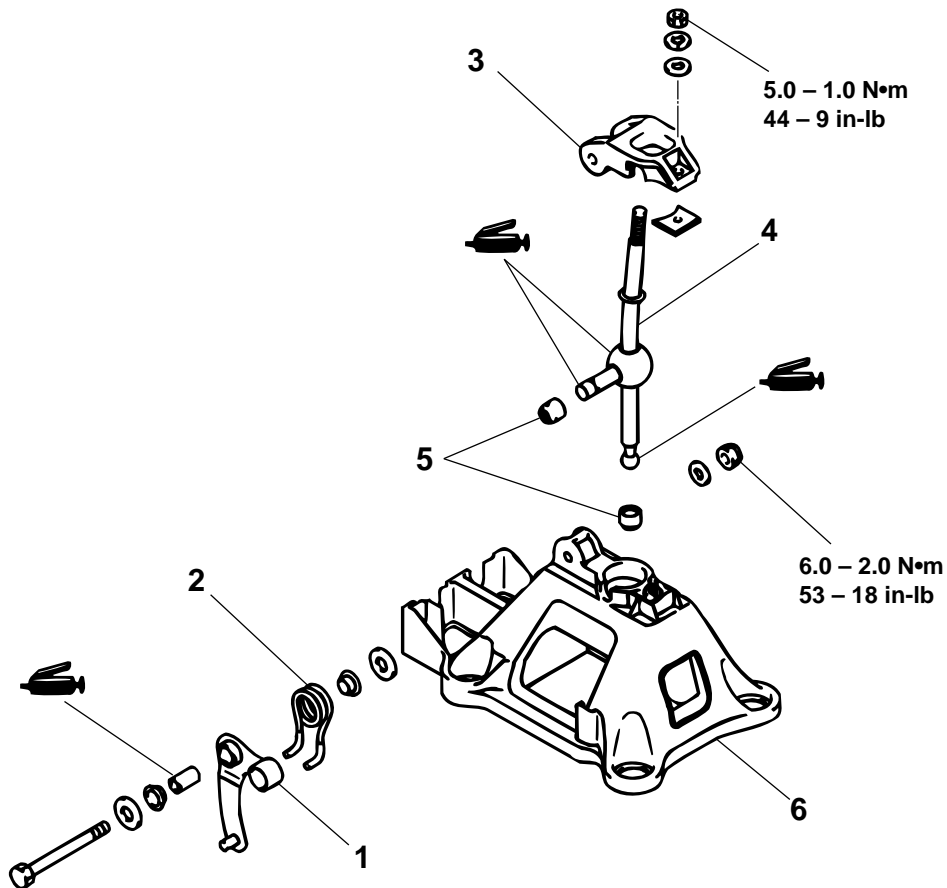
1. Set the transaxle side shift lever and the passenger compartment side shift lever to the neutral position.
2. For the transaxle side, the white and yellow paint marks on the shift and select cable ends should face the snap pins.
3. Move the shift lever to all positions and check that the operation is smooth.



# SHIFT LEVER ASSEMBLY

## DISASSEMBLY AND ASSEMBLY

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### DISASSEMBLY STEPS

1. SELECT LEVER
2. RETURN SPRING
3. RETAINER

### DISASSEMBLY STEPS

4. SHIFT LEVER
5. SHIFT LEVER BUSHING
6. LEVER BASE

# TRANSAXLE ASSEMBLY

## REMOVAL AND INSTALLATION

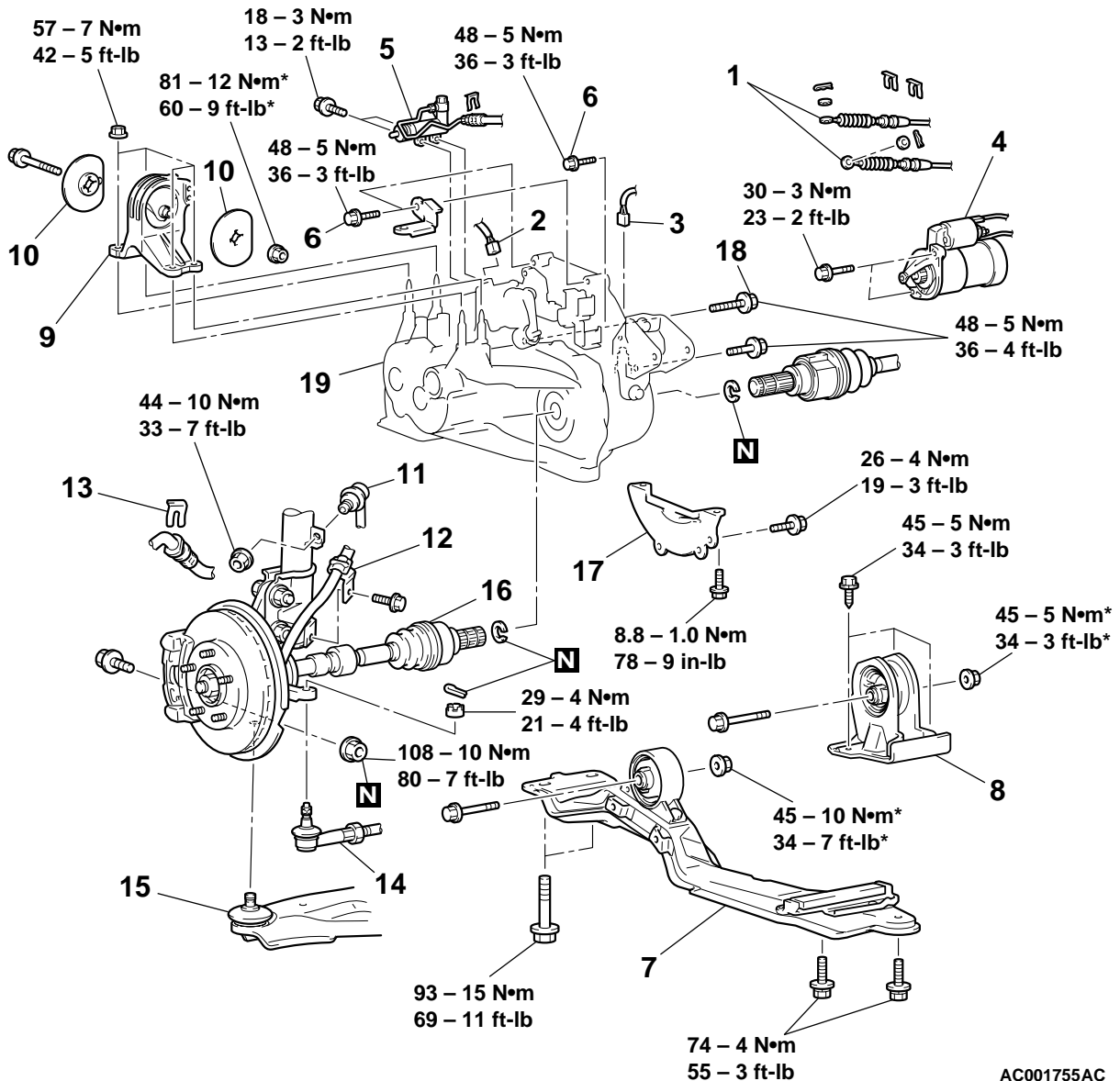
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### <2.4L ENGINE>

**CAUTION**

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

Pre-removal Operation	Post-installation Operation
<ul style="list-style-type: none"> <li>• Transaxle Oil Draining (Refer to P.22A-11.)</li> <li>• Battery and Battery Tray Removal (Refer to GROUP 54A, Battery P.54A-8.)</li> <li>• Air Cleaner Assembly Removal (Refer to GROUP 15, Air Cleaner P.15-6.)</li> </ul>	<ul style="list-style-type: none"> <li>• Air Cleaner Assembly Installation (Refer to GROUP 15, Air Cleaner P.15-6.)</li> <li>• Battery and Battery Tray Installation (Refer to GROUP 54A, Battery P.54A-8.)</li> <li>• Transaxle Oil Refilling (Refer to P.22A-11.)</li> <li>• Check the Dust Cover for Cracks or Damage by Pushing it with Finger</li> <li>• Shift Lever Operation Check</li> <li>• Speedometer Operation Check</li> <li>• Wheel Alignment Adjustment (Refer to GROUP 33, On-vehicle Service – Wheel Alignment Check and Adjustment P.33A-6.)</li> </ul>



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**REMOVAL STEPS**

**REMOVAL STEPS (Continued)**

- |       |   |       |   |
|-------|---|-------|---|
|       | 1. SHIFT CABLE AND SELECT CABLE CONNECTION (REFER TO P.22A-12.) | >>C<< | 10. TRANSAXLE MOUNT STOPPER                                 |
|       | 2. BACKUP LIGHT SWITCH CONNECTOR                                |       | 11. STABILIZER LINK CONNECTION <STRUT SIDE>                 |
|       | 3. VEHICLE SPEED SENSOR CONNECTOR                               |       | 12. WHEEL SPEED SENSOR CABLE CONNECTION <VEHICLES WITH ABS> |
| <<A>> | 4. STARTER MOTOR  | <<E>> | 13. BRAKE HOSE CLAMP  |
| <<B>> | 5. CLUTCH RELEASE CYLINDER CONNECTION                           | <<E>> | 14. TIE ROD END CONNECTION                                  |
|       | 6. TRANSAXLE ASSEMBLY UPPER PART COUPLING BOLTS                 | <<G>> | 15. LOWER ARM CONNECTION                                    |
| <<C>> | 7. CENTERMEMBER ASSEMBLY  |       | 16. DRIVESHAFT CONNECTION                                   |
|       | 8. REAR ROLL STOPPER  |       | 17. BELL HOUSING COVER                                      |
| <<D>> | 9. TRANSAXLE MOUNT BRACKET                                      | <<H>> | 18. TRANSAXLE ASSEMBLY LOWER PART COUPLING BOLTS            |
|       |   |       | 19. TRANSAXLE ASSEMBLY                                      |

**Required Special Tools:**

- MB991113: Steering Linkage Puller
- MB991453: Engine hanger attachment set
- MZ203827: Engine Lifter
- MB991454: Engine hanger balancer (MB991453, part of the engine hanger attachment set)
- MB991895: Engine Hanger

<3.0L ENGINE>

**CAUTION**

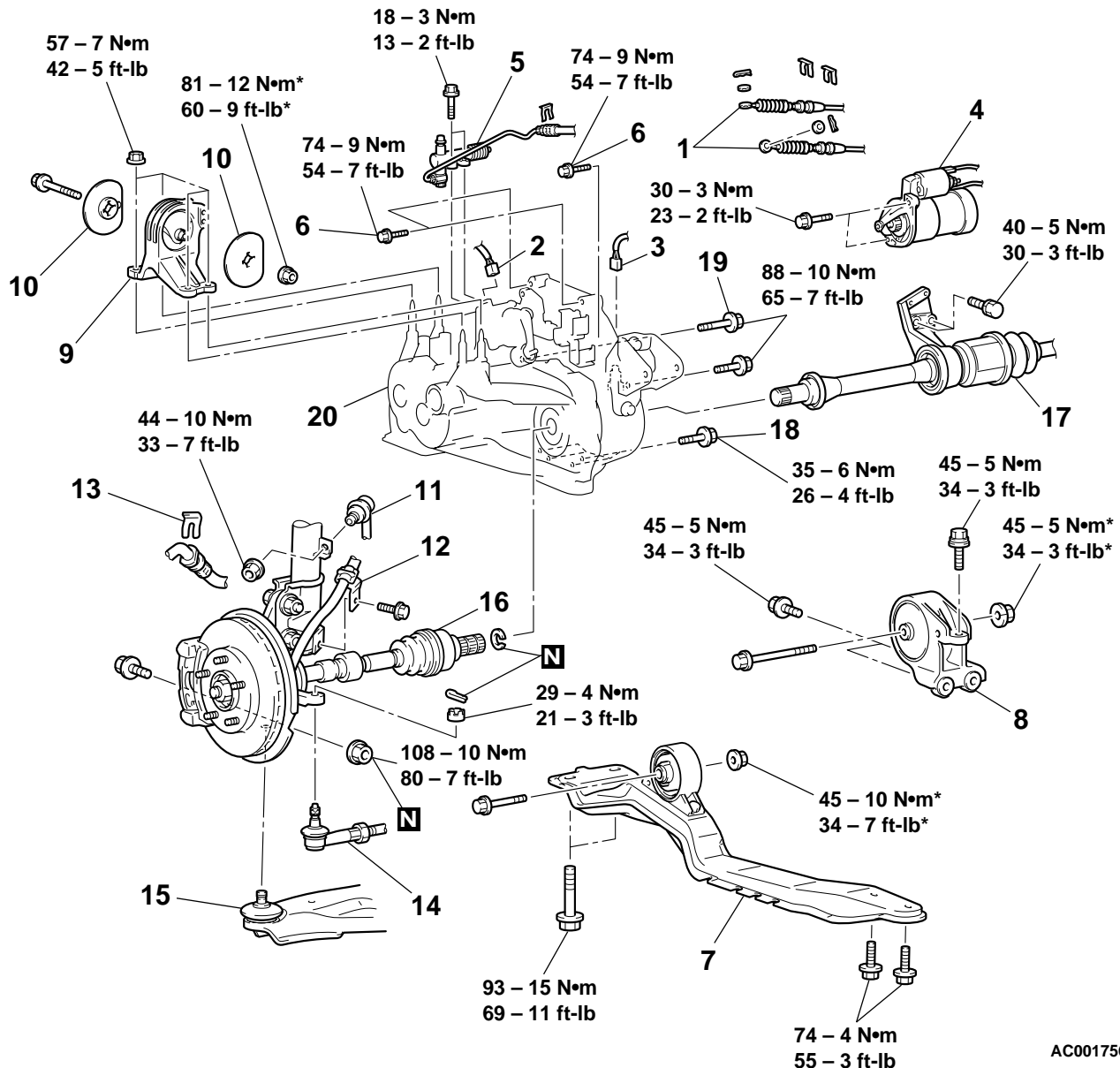
\*: Indicates parts which should be temporarily tightened, and then fully tightened after placing the vehicle horizontally and loading the full weight of the engine on the vehicle body.

**Pre-removal Operation**

- Transaxle Oil Draining (Refer to P.22A-11.)
- Battery and Battery Tray Removal (Refer to GROUP 54A, Battery P.54A-8.)
- Air Cleaner Assembly Removal (Refer to GROUP 15, Air Cleaner P.15-6.)
- Front Exhaust Pipe Removal (Refer to GROUP 15, Exhaust Pipe P.15-22.)

**Post-installation Operation**

- Air Cleaner Assembly Installation (Refer to GROUP 15, Air Cleaner P.15-6.)
- Battery and Battery Tray Installation (Refer to GROUP 54A, Battery P.54A-8.)
- Transaxle Oil Refilling (Refer to P.22A-11.)
- Check the Dust Cover for Cracks or Damage by Pushing it with Finger
- Shift Lever Operation Check
- Speedometer Operation Check
- Wheel Alignment Adjustment (Refer to GROUP 33A, On-vehicle Service – Wheel Alignment Check and Adjustment P.33A-6.)
- Front Exhaust Pipe Installation (Refer to GROUP 15, Exhaust Pipe P.15-22.)



AC001756AC

**REMOVAL STEPS**

**REMOVAL STEPS (Continued)**

- |       |     |  |       |       |     |   |
|-------|-----|--|-------|-------|-----|---|
|       | 1.  | SHIFT CABLE AND SELECT CABLE CONNECTION (REFER TO P.22A-12.) |       |       | 12. | WHEEL SPEED SENSOR CABLE CONNECTION <VEHICLES WITH ABS> |
|       | 2.  | BACKUP LIGHT SWITCH CONNECTOR                                | <<E>> |       | 13. | BRAKE HOSE CLAMP  |
|       | 3.  | VEHICLE SPEED SENSOR CONNECTOR                               | <<E>> |       | 14. | TIE ROD END CONNECTION                                  |
| <<A>> | 4.  | STARTER MOTOR  | <<F>> | >>B<< | 15. | LOWER ARM CONNECTION                                    |
| <<B>> | 5.  | CLUTCH RELEASE CYLINDER CONNECTION                           | <<G>> |       | •   | CLUTCH RELEASE BEARING ENGAGEMENT                       |
|       | 6.  | TRANSAXLE ASSEMBLY UPPER PART COUPLING BOLTS                 | <<G>> |       | 16. | DRIVESHAFT CONNECTION                                   |
| <<C>> | 7.  | CENTERMEMBER ASSEMBLY  |       |       | 17. | DRIVESHAFT AND INNER SHAFT CONNECTION                   |
| <<D>> | 8.  | REAR ROLL STOPPER  |       |       | 18. | UPPER OIL PAN CONNECTING BOLT                           |
|       | 9.  | TRANSAXLE MOUNT BRACKET                                      |       |       | 19. | TRANSAXLE ASSEMBLY LOWER PART COUPLING BOLTS            |
| >>C<< | 10. | TRANSAXLE MOUNT STOPPER                                      | <<H>> | >>A<< | 20. | TRANSAXLE ASSEMBLY                                      |
|       | 11. | STABILIZER LINK CONNECTION <STRUT SIDE>                      |       |       |     |   |

**Required Special Tools:**

- MB991113: Steering Linkage Puller
- MB991453: Engine hanger attachment set
- MZ203827: Engine Lifter
- MB991454: Engine hanger balancer (MB991453, part of the engine hanger attachment set)
- MB991895: Engine Hanger

**REMOVAL SERVICE POINTS****<<A>> STARTER MOTOR REMOVAL**

Remove the starter motor with the starter motor harness still connected and secure it inside the engine compartment.

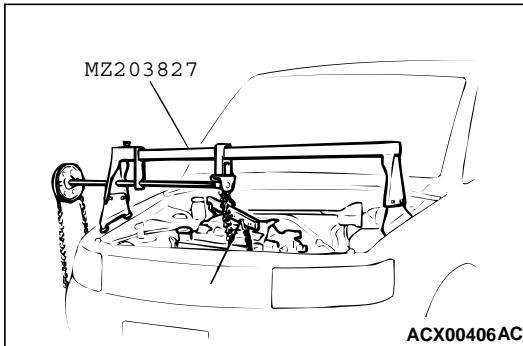
**<<B>> CLUTCH RELEASE CYLINDER REMOVAL**

Remove the clutch release cylinder without disconnecting the oil line connection, and fix it to the vehicle chassis.

**<<C>> CENTERMEMBER ASSEMBLY REMOVAL**

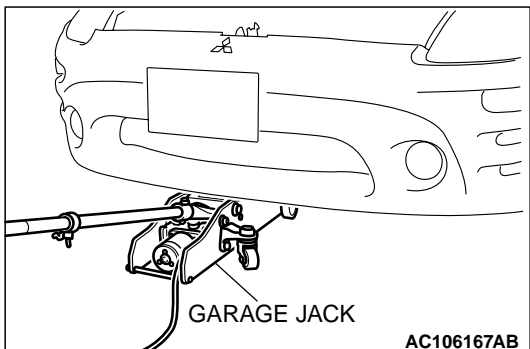
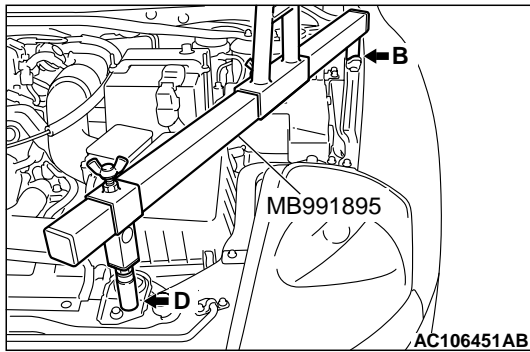
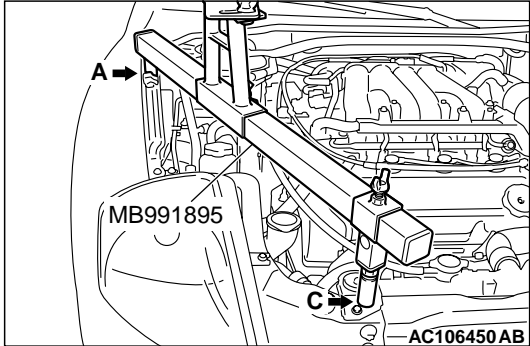
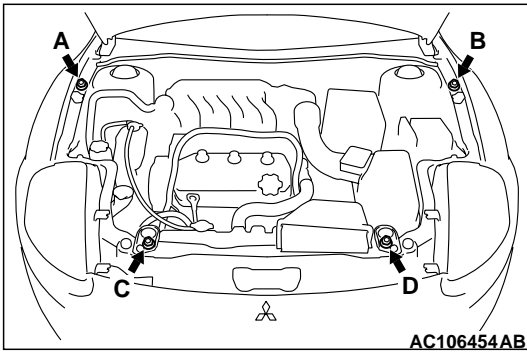
1. <Engine lifter MZ203827 is used>

Set the special tools MB991453 and MZ203827 to the vehicle to support the engine assembly.



2. <Engine hanger MB991895 is used>

- (1) Set special tool MB991895 to the front fender mounting bolts (A and B) and the radiator support upper insulator mounting bolts (C and D), which are located in the engine compartment, as shown.



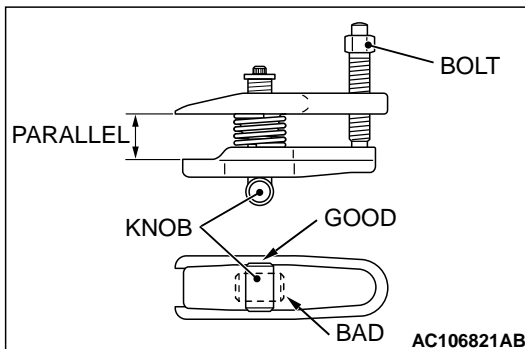
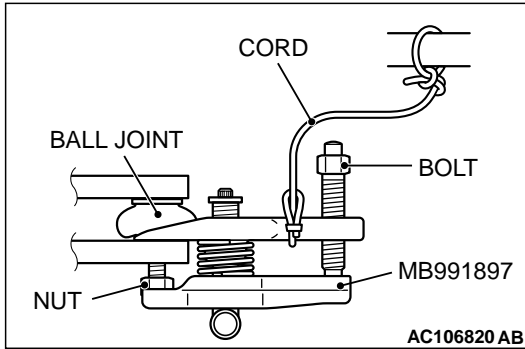
**<<D>> TRANSAXLE MOUNT BRACKET REMOVAL**

Jack up the transaxle assembly gently with a garage jack, and then remove the transaxle mount bracket.

<<E>> TIE ROD END/LOWER ARM BALL JOINT  
DISCONNECTION**⚠ CAUTION**

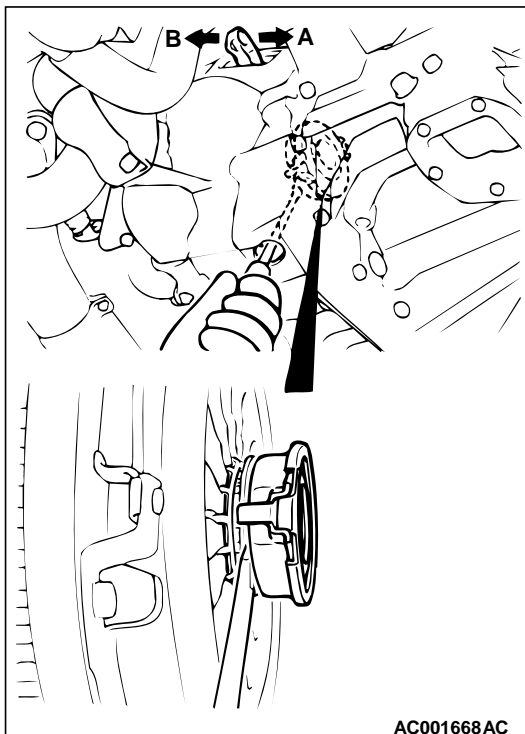
- Do not remove the nut from ball joint. Loosen it and use special tool MB991897 to avoid possible damage to ball joint threads.
- Hang special tool MB991897 with rope or wire to prevent them from falling.

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



2. After turning the bolt and knob to adjust the insert arms of the special tool MB991897 in parallel, tighten the bolt by hand and confirm that the insert arms are parallel.

*NOTE: When adjusting the insert arms in parallel, turn the knob in the direction shown in the figure.*



## &lt;&lt;F&gt;&gt; CLUTCH RELEASE BEARING DISENGAGEMENT

1. Remove the service hole plug at the clutch housing.
2. Insert a flat-tipped screwdriver into space between the release bearing and the wedge collar while pushing the release fork to the "A" direction by hand slightly.

**⚠ CAUTION**

**Do not insert the screwdriver before pushing the release fork to the "A" direction.**

3. Disengage the wedge collar from the release bearing by using the flat-tipped screwdriver to pry gently (twisting the screwdriver handle 90 degree).

*NOTE: If the release bearing is disengaged, the release fork will move fully to the "B" direction via the return spring.*

**⚠ CAUTION**

**If the screwdriver cannot be twisted easily (the release bearing cannot be disengaged), remove the screwdriver, and push the release fork to the "A" direction two or three times to try again. If the clutch release bearing is pried forcibly, it will be damaged.**

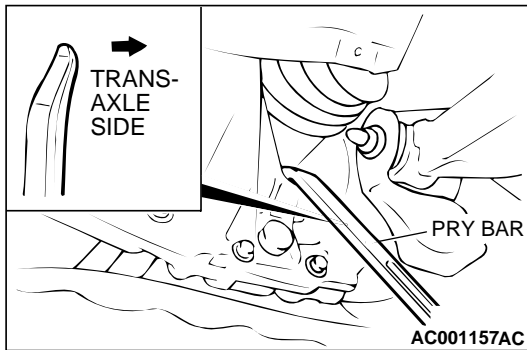
<<G>> DRIVESHAFT/DRIVESHAFT AND INNER SHAFT  
DISCONNECTION

**⚠ CAUTION**

- Do not pull on the drive shaft; doing so will damage the TJ; be sure to use a pry bar.
- Do not insert a pry bar so deep as to damage the oil seal.
- Do not damage the transaxle oil seal with the spline of the drive shaft.

<2.4L ENGINE, 3.0L ENGINE – LH>

1. Insert a pry bar between the transaxle case and the drive shaft as shown to remove the drive shaft.

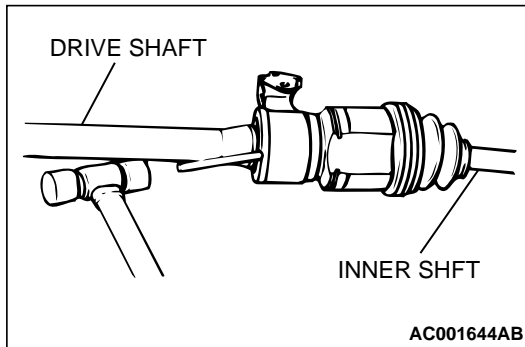


**⚠ CAUTION**

Do not damage the transaxle oil seal with the spline of the inner shaft.

<3.0L ENGINE – RH>

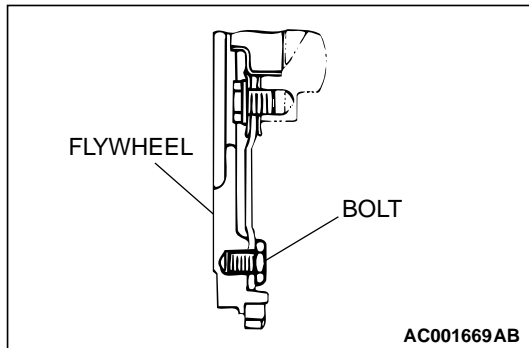
2. If the inner shaft and transaxle are tightly joined, tap the center bearing bracket lightly with a plastic hammer, etc. to remove the drive shaft and inner shaft from the transaxle.
3. Cover the transaxle case with a shop towel to prevent foreign material from entering it.



## &lt;&lt;H&gt;&gt; TRANSAXLE ASSEMBLY REMOVAL

**⚠ CAUTION**

Do not remove the flywheel mounting bolt shown by the arrow. If this bolt is removed, the flywheel will become out of balance and damaged.

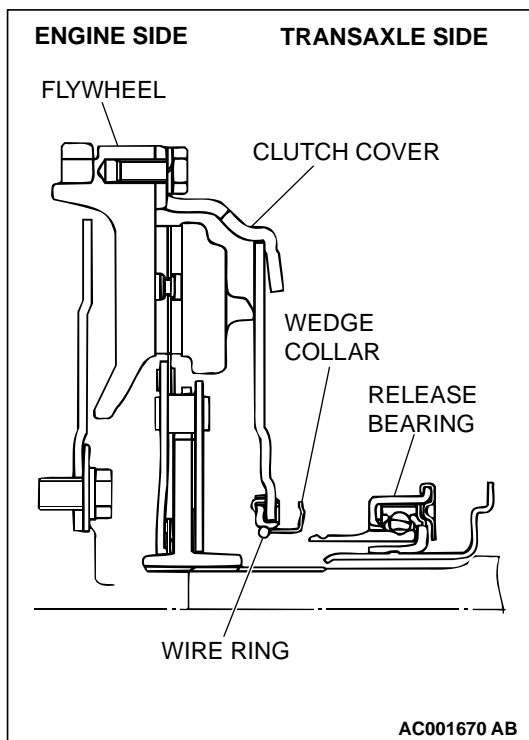


## INSTALLATION SERVICE POINTS

## &gt;&gt;A&lt;&lt; TRANSAXLE ASSEMBLY INSTALLATION

**⚠ CAUTION**

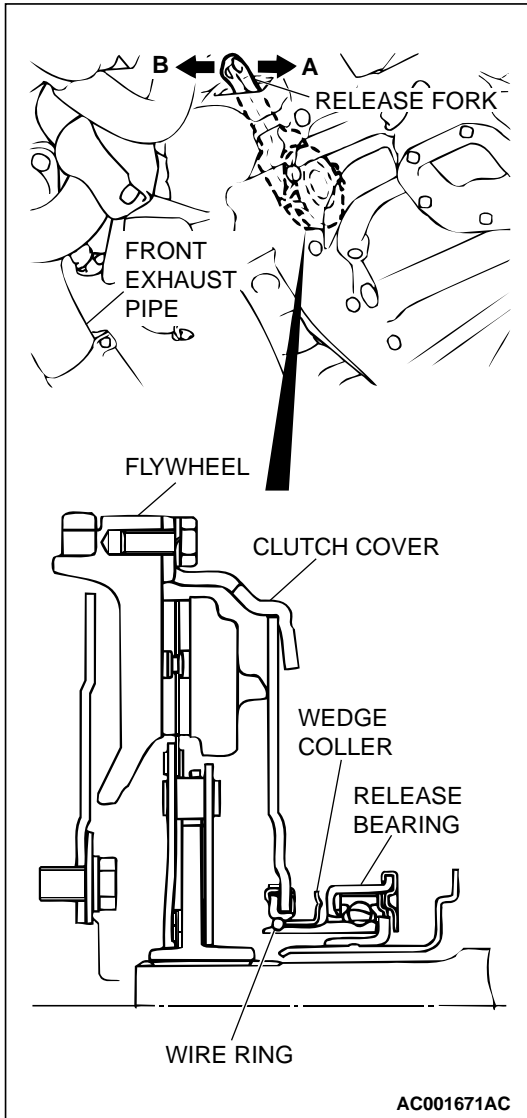
On the pull-type clutch, do not roll the transaxle assembly when installing it to the engine. If the transaxle assembly is rolled, the wedge collar and the wire ring will be deformed, causing a clutch malfunction due to improper engagement of the wedge collar and the wire ring.





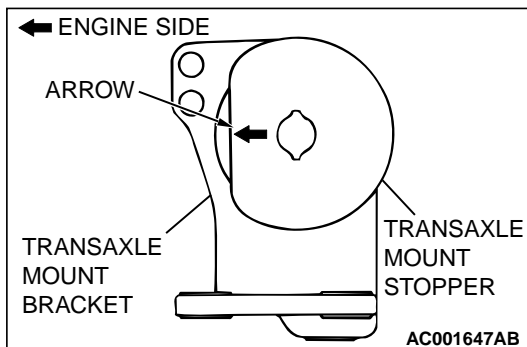
**>>B<< CLUTCH RELEASE BEARING CONNECTION**

1. Move the release fork to the "A" direction, and engage the release bearing with the wedge collar.
2. When the release fork is moved to the "B" direction, the release fork should drag.



**>>C<< TRANSAXLE MOUNT STOPPER INSTALLATION**

Install the transaxle mount stopper so that the arrow points as shown in the illustration.



**SPECIFICATIONS****FASTENER TIGHTENING SPECIFICATIONS**

M1221006600089

ITEM		SPECIFICATION
<b>Transaxle assembly</b>		
Bell housing cover (to engine)		8.8 ± 1.0 N·m (78 ± 9 in-lb)
Bell housing cover (to transaxle)		26 ± 4 N·m (19 ± 3 ft-lb)
Center bearing bolt		40 ± 5 N·m (30 ± 3 ft-lb)
Centermember attaching bolt	front side	93 ± 15 N·m (69 ± 11 ft-lb)
	rear side	74 ± 4 N·m (55 ± 3 ft-lb)
Clutch release cylinder		18 ± 3 N·m (13 ± 2 ft-lb)
Front roll stopper bracket nut		45 ± 10 N·m (34 ± 7 ft-lb)
Lower arm nut		108 ± 10 N·m (80 ± 7 ft-lb)
Rear roll stopper bracket attaching bolt		45 ± 5 N·m (34 ± 3 ft-lb)
Rear roll stopper bracket nut		45 ± 5 N·m (34 ± 3 ft-lb)
Stabilizer link nut		44 ± 10 N·m (33 ± 7 ft-lb)
Starter motor		30 ± 3 N·m (23 ± 2 ft-lb)
Tie rod end nut		29 ± 4 N·m (21 ± 4 ft-lb)
Transaxle assembly lower part coupling bolt	2.4L ENGINE	48 ± 5 N·m (36 ± 4 ft-lb)
	3.0L ENGINE	88 ± 10 N·m (65 ± 7 ft-lb)
Transaxle assembly upper part coupling bolt		2.4L ENGINE 48 ± 5 N·m (36 ± 3 ft-lb)
Transaxle assembly upper part coupling bolt (bolt, flange)		3.0L ENGINE 74 ± 9 N·m (54 ± 7 ft-lb)
Transaxle assembly upper part coupling bolt (bolt, washer assembly)		3.0L ENGINE 88 ± 10 N·m (65 ± 7 ft-lb)
Transaxle mount bracket attaching nut		57 ± 7 N·m (42 ± 5 ft-lb)
Transaxle mount stopper attaching nut		81 ± 12 N·m (60 ± 9 ft-lb)
Transmission oil drain plug		32 ± 2 N·m (24 ± 1 ft-lb)
Transmission oil filler plug		32 ± 2 N·m (24 ± 1 ft-lb)
<b>Transaxle control</b>		
Lever base bracket attaching bolt		12 ± 2 N·m (102 ± 22 in-lb)
M/T cable attaching bolt		12 ± 2 N·m (102 ± 22 in-lb)
Retainer nut		5.0 ± 1.0 N·m (44 ± 9 in-lb)
Select lever attaching bolt		6.0 ± 2.0 N·m (53 ± 18 in-lb)

**LUBRICANT**

M1221000400087

ITEM		SPECIFIED LUBRICANTS	QUANTITY
Transaxle oil dm <sup>3</sup> (qt)	F5M42	Gear oil SAE 75W-90W or 75W-85W conforming to API classification GL-4	2.2 (2.3)
	F5M51		2.8 (3.0)