

MANUAL TRANSAXLE

CONTENTS

110003818

GENERAL INFORMATION	2	SPECIAL TOOLS	5
LUBRICANTS	5	TRANSAXLE ASSEMBLY	11
SERVICE ADJUSTMENT PROCEDURES	6	TRANSAXLE CONTROL*	8
Speedometer Cable Replacement	7	TROUBLESHOOTING	6
Transaxle Oil Level Inspection	6		
Transaxle Oil Replacement	6		
SHIFT LEVER ASSEMBLY	10		

WARNINGS REGARDING SERVICING OF SUPPLEMENTAL RESTRAINT SYSTEM (SRS) EQUIPPED VEHICLES

WARNING!

- (1) 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).
- (2) Service or maintenance of any SRS component or SRS-related component must be performed only at an authorized MITSUBISHI dealer.
- (3) MITSUBISHI dealer personnel must thoroughly review this manual, and especially its GROUP 52B – Supplemental Restraint System (SRS) and GROUP 00 – Maintenance Service, 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, 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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The manual transaxles come in two models, namely, F5M21 and F5M22. These transaxles are essentially the same as the conventional models.

Items		Specifications			
Model		F5M21-2-FSAE	F5M21-2-FRAE	F5M22-2-RRKE	F5M22-2-RQKE*1
Applicable engine		4G15	4G15	4G93	4G93
Type		5-speed floor shift	5-speed floor shift	5-speed floor shift	5-speed floor shift
Gear ratio	1st	3.454	3.454	3.363	3.363
	2nd	1.947	1.947	1.947	1.947
	3rd	1.285	1.285	1.285	1.285
	4th	0.939	0.939	0.939	0.939
	5th	0.777	0.777	0.777	0.777
	Reverse	3.083	3.083	3.083	3.083
Final gear ratio		3.752	3.752	4.021	4.021
Speedometer gear ratio (driven/drive)		32/36	31/36	31/36	30/36

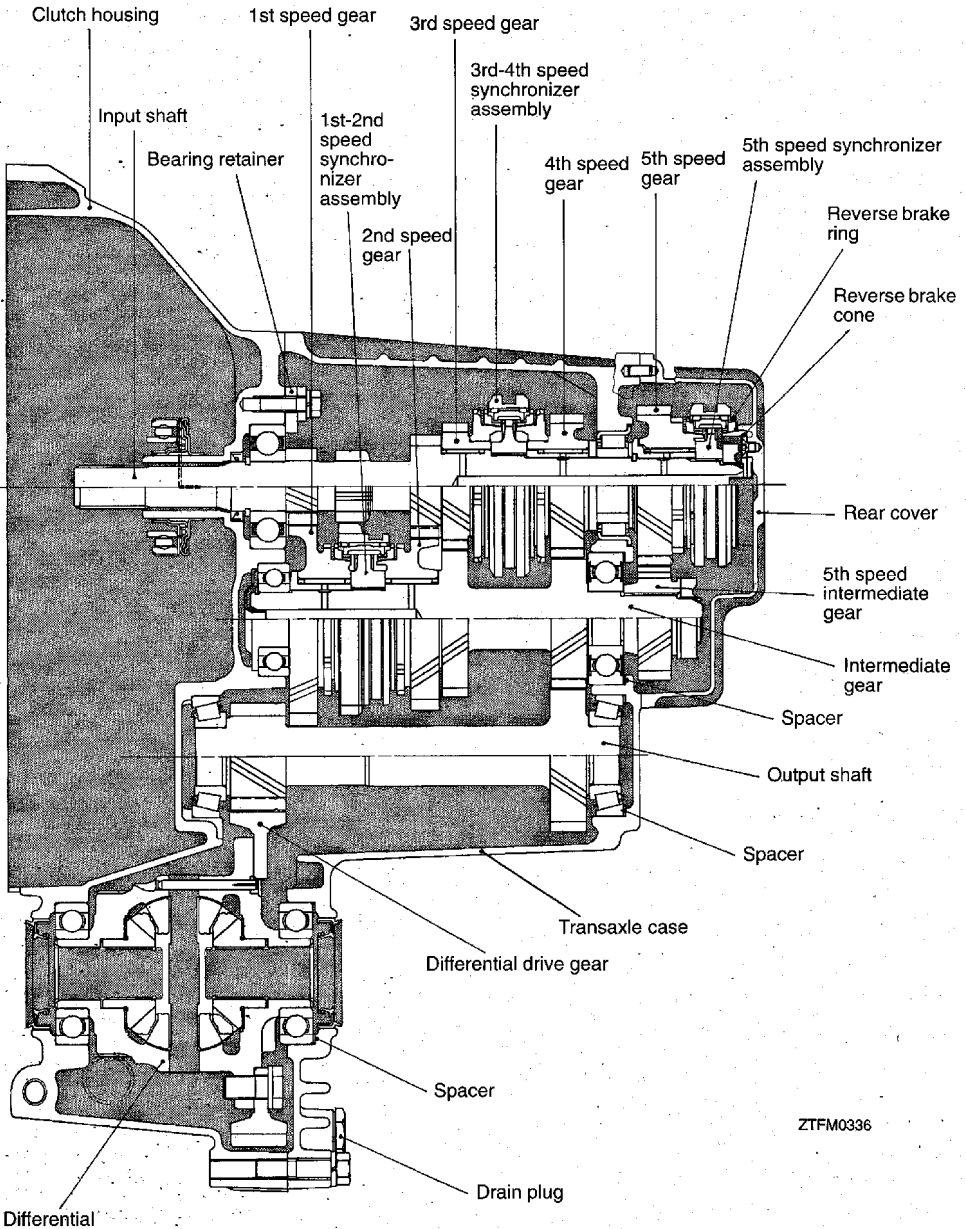
NOTE

*1: From 1994 models

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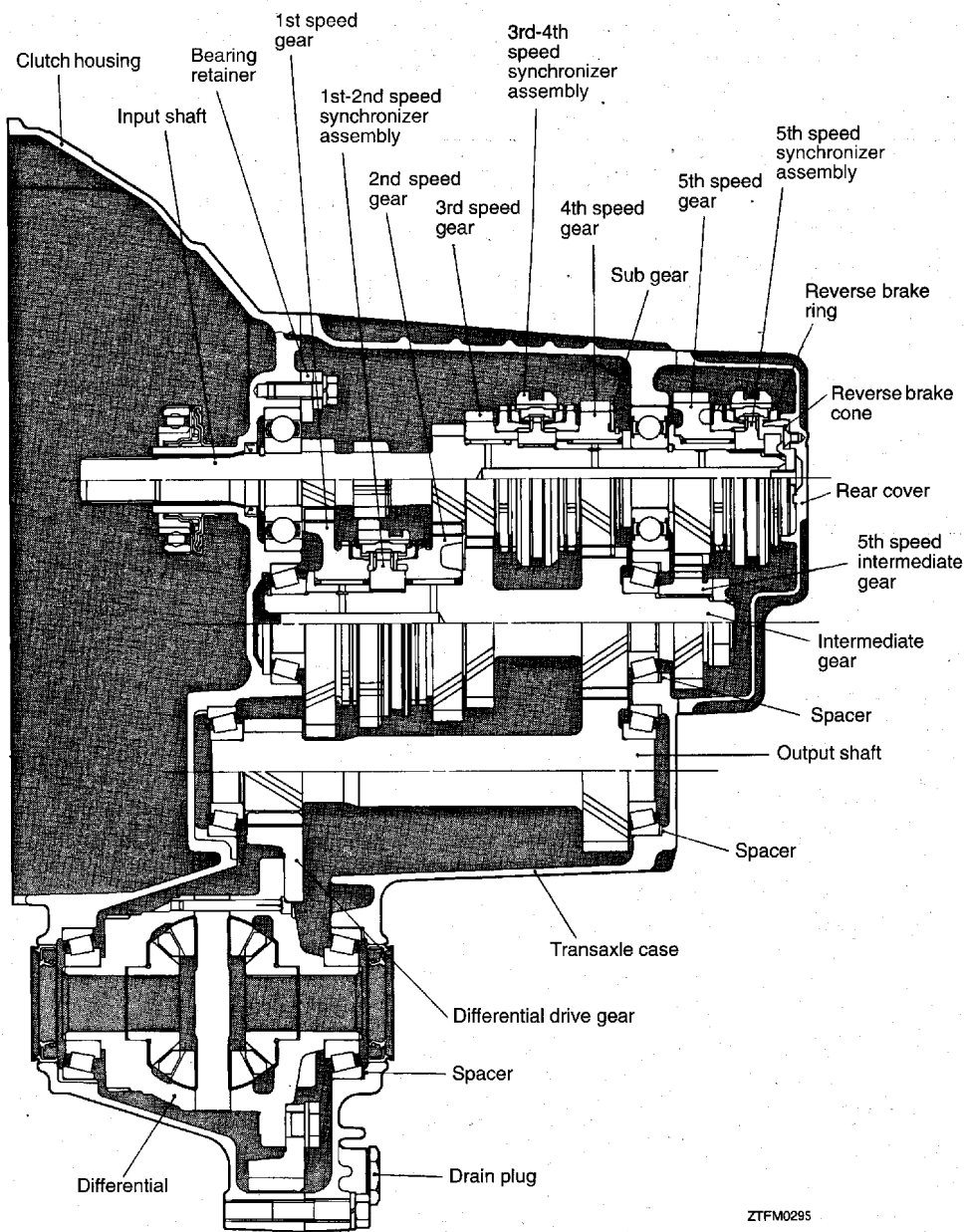
SECTIONAL VIEW

F5M21



ZTFM0336

F5M22



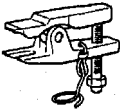

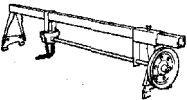
LUBRICANTS

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Items	Specified lubricant	Quantity dm ³ (qts.)
Transaxle oil	Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4	1.8 (1.9)

SPECIAL TOOLS

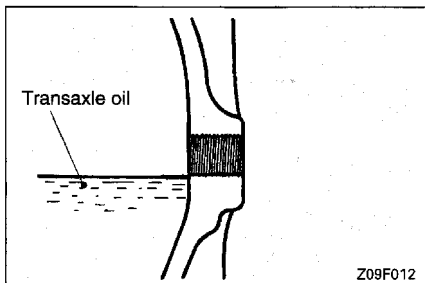
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Tool	Tool number and name	Supersession	Application
	MB991113 Steering linkage puller	MB991113-01	Disconnection of the coupling of the knuckle and lower arm ball joint Disconnection of the coupling of the knuckle and tie-rod end ball joint
	MB991460 Plug	General service tool	Preventing foreign substances from entering transaxle case
	GENERAL SERVICE TOOL MZ203827 Engine lifter	General service tool	To support the engine assembly during removal and installation of the transaxle

TROUBLESHOOTING

110003823

Symptom	Probable cause	Remedy
Vibration, noise	a. Loose or damaged transaxle and engine mounts	a. Tighten or replace mounts
	b. Inadequate shaft end play	b. Correct end play
	c. Worn or damaged gears	c. Replace gears
	d. Use of inadequate grade of oil	d. Replace with specified oil
	e. Low oil level	e. Replenish
	f. Inadequate engine idle speed	f. Adjust idle speed
Oil leakage	a. Broken or damaged, oil seal or O-ring	a. Replace oil seal or O-ring
Hard shift	a. Faulty control cable	a. Replace control cable
	b. Poor contact or wear of synchronizer ring and gear cone	b. Correct or replace
	c. Weakened synchronizer spring	c. Replace synchronizer spring
	d. Use of inadequate grade of oil	d. Replace with specified oil
Jumps out of gear	a. Worn gear shift fork or broken poppet spring	a. Replace shift fork or poppet spring
	b. Synchronizer hub to sleeve spline clearance too large	b. Replace synchronizer hub and sleeve



SERVICE ADJUSTMENT PROCEDURES

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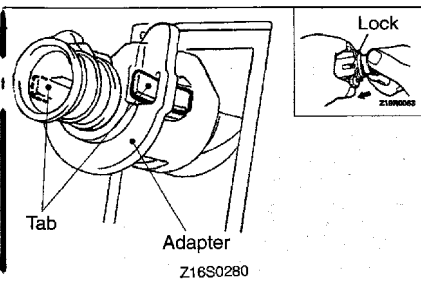
TRANSAXLE OIL LEVEL INSPECTION

Refer to GROUP 00 – Maintenance Service.

TRANSAXLE OIL REPLACEMENT

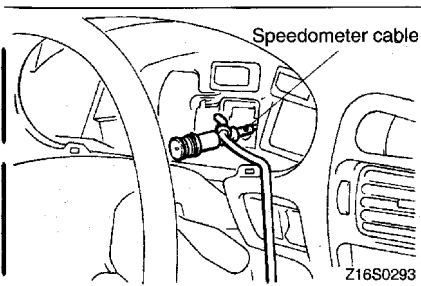
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Refer to GROUP 00 – Maintenance Service.

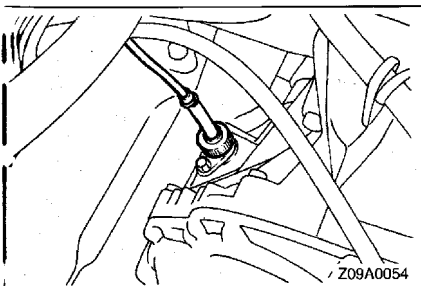


SPEEDOMETER CABLE REPLACEMENT 110003826

- (1) Remove the meter hood and combination meter.
- (2) Remove the adapter lock.
- (3) Pull the speedometer cable slightly into the passenger compartment, and remove the rear side of the adapter from the cable.
- (4) After turning the adapter so that the notched section is aligned with the tab on the cable side, remove the adapter by sliding it backwards.



- (5) Tie a rope to the end of the speedometer cable that is in the passenger compartment. Then remove the grommet inside the engine compartment, and pull the cable into the engine compartment.
- (6) Install the new speedometer cable, and install it securely to the adapter.



- (7) At the transaxle end of the speedometer cable, the key joint should be inserted into the transaxle, and the nut should be securely tightened.

Caution

If the cable is not correctly and securely connected, it may cause incorrect indication by the speedometer, or abnormal noise. Be sure to connect it correctly.

TRANSAXLE CONTROL

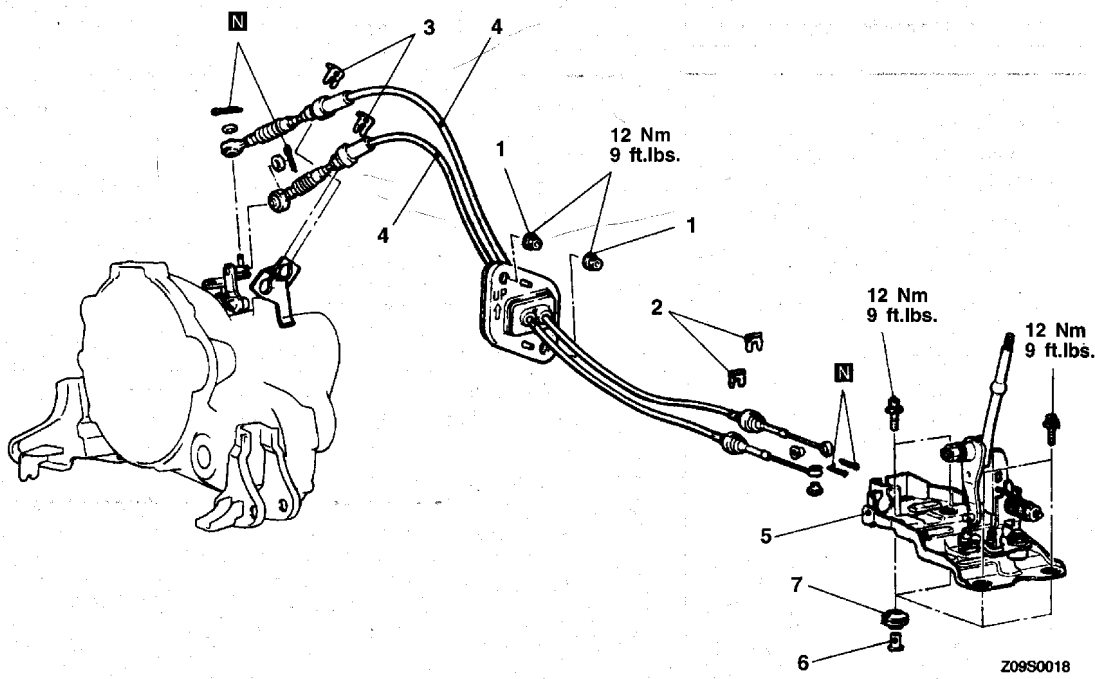
REMOVAL AND INSTALLATION

Pre-removal and Post-installation Operation

- Floor Console Assembly Removal and Installation (Refer to GROUP 52A – Floor Console.)
- Air Cleaner Assembly Removal and Installation

CAUTION: SRS

When installing or removing the floor console, don't allow any impact or shock to the SRS air bag control unit.

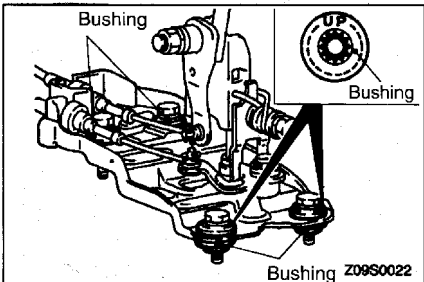


Transaxle control cable assembly removal steps

1. Nut
2. Clip (passenger compartment side)
3. Clip (engine compartment side)
4. Shift cable and select cable assembly

Shift lever assembly removal steps

2. Clip (passenger compartment side)
4. Shift cable and select cable assembly (passenger compartment side)
5. Shift lever assembly
6. Distance piece
7. Bushing



INSTALLATION SERVICE POINTS

►A◄ BUSHING INSTALLATION

Install so that the side of the bushing with the UP mark is facing upward.

▶B◀ **SHIFT CABLE AND SELECT CABLE ASSEMBLY INSTALLATION**

<SELECT CABLE>

- (1) Set the shift lever of the transaxle side at the neutral position.

NOTE

When the shift lever of the transaxle side is set at the neutral position, the select lever of the transaxle side is also set at the neutral position.

- (2) While leaving the shift lever inside the passenger compartment in the neutral position, install the select cable to the passenger compartment side of the shift lever.
- (3) Install the select cable so that the flange side of resin bushing is positioned at the edge of lever B side.

<SHIFT CABLE>

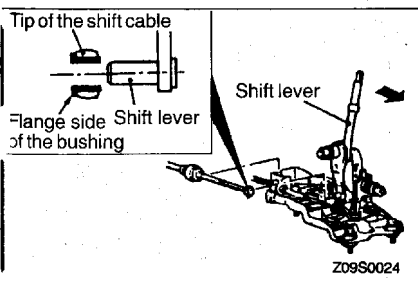
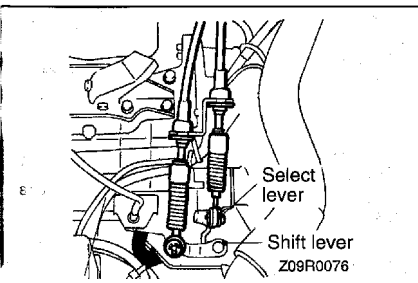
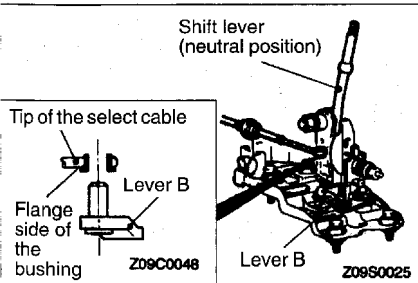
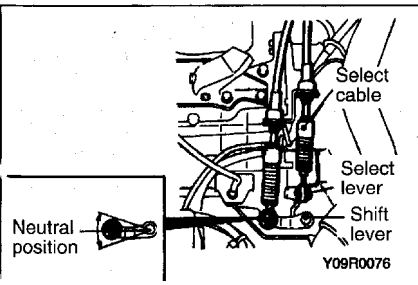
- (1) While leaving the select lever at the transaxle side in the neutral position, move the shift lever at the transaxle side in the direction of the arrow in the illustration to set it to 4th gear.

NOTE

If the shift lever does not move easily, depress and hold the clutch pedal.

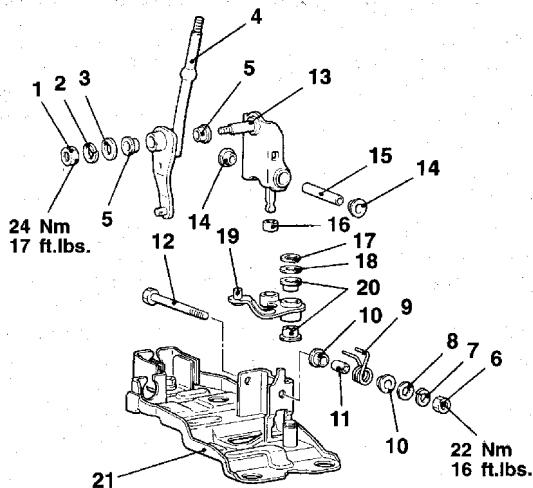
- (2) Pull the shift lever at the passenger compartment side fully in the direction shown in the illustration (4th gear position), and install the shift cable to the shift lever at the passenger compartment side. Furthermore, install the resin bushing on the tip of the shift cable so that the flange side is facing the split pin.

- (3) Put the shift lever to all the positions and make sure that the operation is smooth.

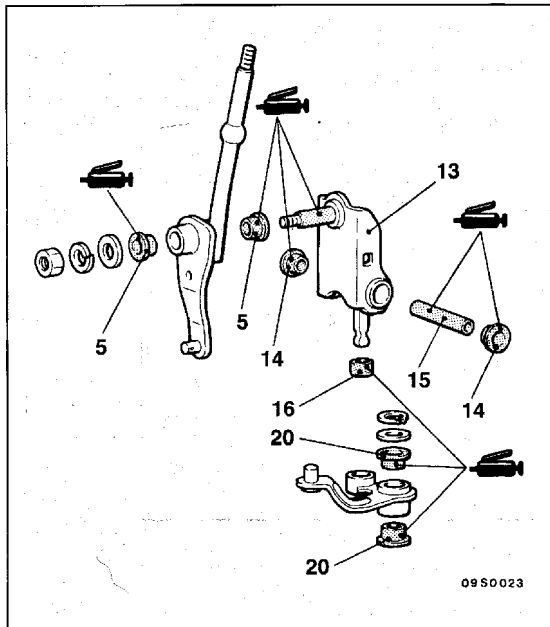


SHIFT LEVER ASSEMBLY

DISASSEMBLY AND REASSEMBLY



09S0005



09S0023

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Disassembly steps

1. Nut
2. Spring washer
3. Plain washer
4. Shift lever
5. Bushing
6. Nut
7. Spring washer
8. Plain washer
9. Return spring
10. Bushing

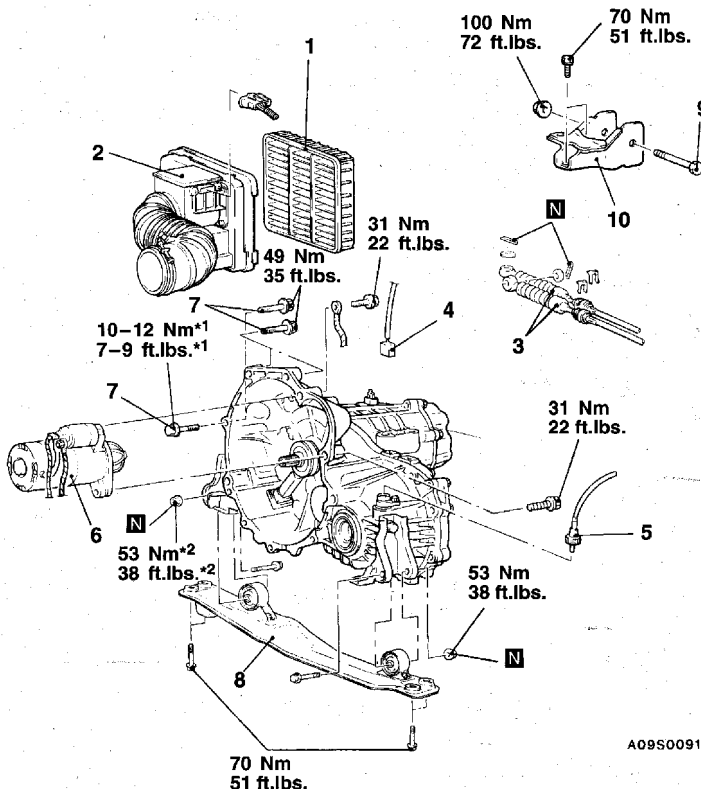
11. Pipe
12. Bolt
13. Lever A
14. Bushing
15. Collar
16. Bushing
17. Snap ring
18. Washer
19. Lever B
20. Bushing
21. Bracket assembly

TRANSAXLE ASSEMBLY

REMOVAL AND INSTALLATION

Post-installation Operation

- Transaxle Oil Supplying
(Refer to GROUP 00 – Maintenance Service.)
- Shift Lever Operation Checking
- Meters and Gauges Operation Checking



A09S0091

Removal steps

1. Air cleaner element
2. Air cleaner cover and hose assembly
3. Shift cable and select cable connection
4. Backup light switch connector
5. Speedometer cable connection
6. Starter motor
7. Transaxle assembly upper part coupling bolt



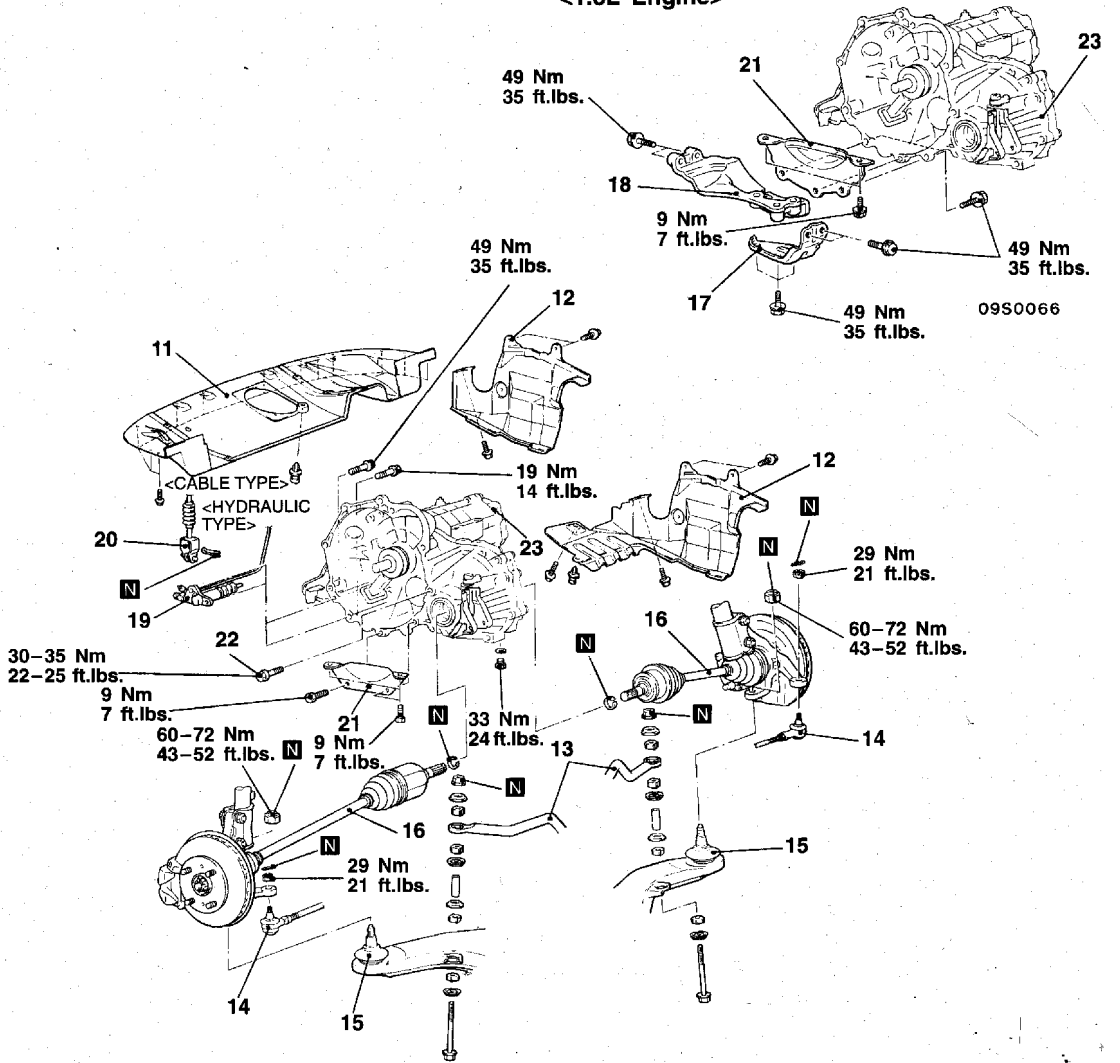
- Supporting engine assembly
- 8. Centermember assembly
- 9. Transaxle mount bolt
- 10. Transaxle mount bracket

NOTE

- (1) The *1 mark indicates tightening torques for 1.5L engines.
- (2) For tightening locations indicated by the *2 symbol, first tighten temporarily, and then make the final tightening with the entire weight of the engine applied to the vehicle body.



<1.8L Engine>



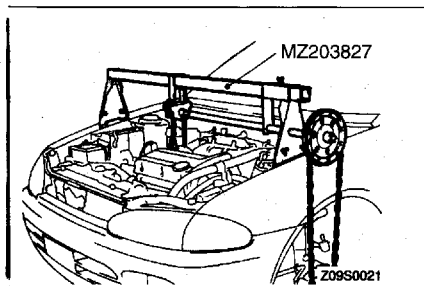
- Transaxle oil draining
- 11. Venturi plate
- 12. Under cover (RH)
- 13. Connection for stabilizer bar
- 14. Connection for tie rod end
- 15. Connection for lower arm ball joint
- 16. Connection for drive shaft
- 17. Transaxle stay B

- 18. Transaxle stay A
- 19. Connection for clutch release cylinder
- 20. Connection for clutch cable
- 21. Bell housing cover
- 22. Transaxle assembly lower part coupling bolts
- 23. Transaxle assembly

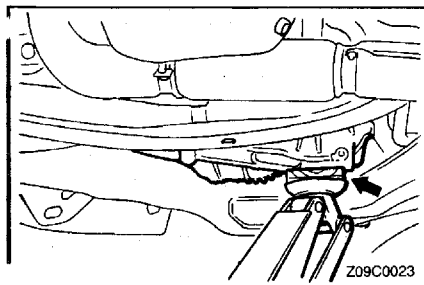


REMOVAL SERVICE POINTS**◀A▶ STARTER MOTOR REMOVAL**

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

**◀B▶ SUPPORTING ENGINE ASSEMBLY**

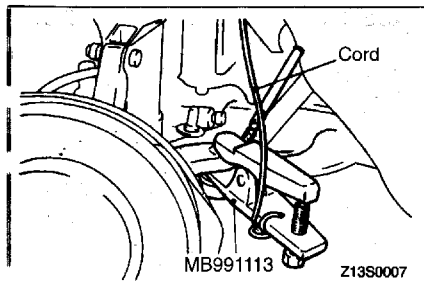
Set the special tool to the vehicle to support the engine assembly.

**◀C▶ TRANSAXLE MOUNT BOLT REMOVAL**

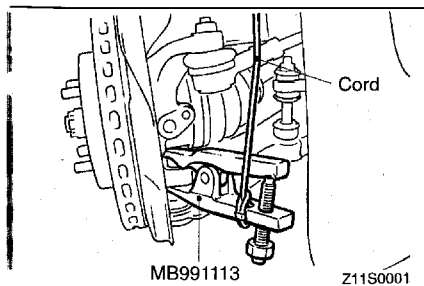
Use a garage jack to raise the transaxle assembly until there is no load on the transaxle mounting insulator, and then remove the transaxle mounting bolts.

Caution

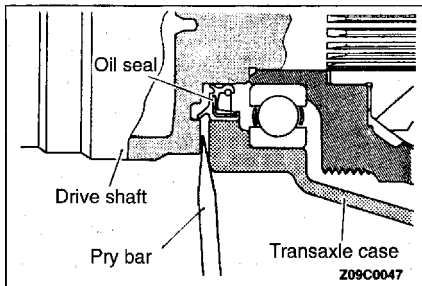
When jacking up the transaxle assembly, support it over a wide area so force is not applied to only one part of it.

**◀D▶ TIE ROD END REMOVAL****Caution**

1. Loosen the nut only, don't remove it from the tie rod end.
2. Suspend the special tool by a cord not to let it come off.

**◀E▶ LOWER ARM BALL JOINT REMOVAL****Caution**

1. Loosen the nut only, don't remove it from the knuckle.
2. Suspend the special tool by a cord not to let it come off.



◀F▶ DRIVE SHAFT DISCONNECTION

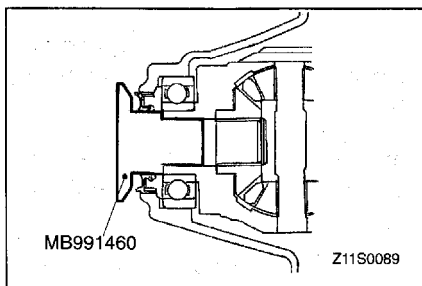
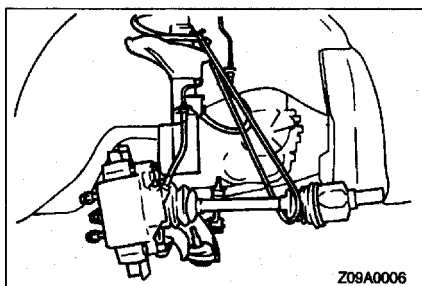
- (1) Insert a pry bar between the transaxle case and the drive shaft, and then pry the drive shaft from the transaxle.

NOTE

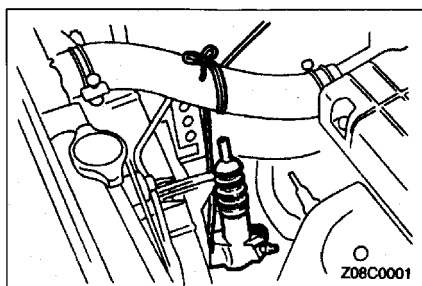
Take out the drive shaft with the hub and knuckle, etc. still attached.

Caution

1. Always use a pry bar to remove the drive shaft, or the inboard joint can be damaged.
2. Do not insert the pry bar so deep as to damage the oil seal.
- (2) Suspend the removed drive shaft with wire so that there are no sharp bends in any of the joints.
- (3) Turn the right hand drive shaft 90° toward the front of the vehicle so that it will not be a hindrance.

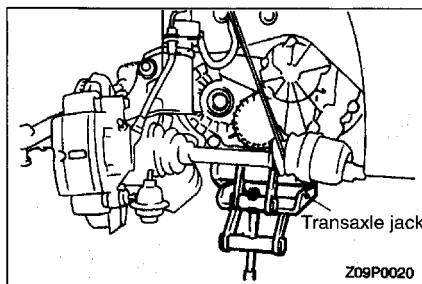


- (4) Use the special tool as a cover to prevent the entry of foreign objects into the transaxle case.



◀G▶ CLUTCH RELEASE CYLINDER DISCONNECTION

Remove the clutch release cylinder and then secure at the body side without disconnecting the oil line coupling.

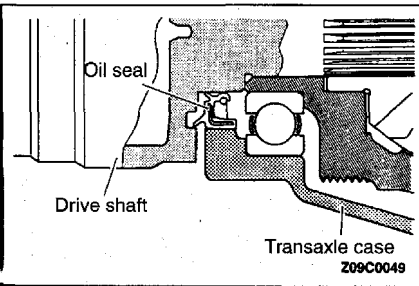


◀H▶ TRANSAXLE ASSEMBLY REMOVAL

Support the transaxle assembly by using transaxle jack; then, after moving the transaxle assembly to the right, lower it.

Caution

Do not tilt the transaxle assembly.



INSTALLATION SERVICE POINT

▶A◀ DRIVE SHAFT INSTALLATION

Temporarily install the drive shaft so that the inboard joint part of the drive shaft is perpendicular to the transaxle.

Caution

Be careful not to damage the oil seal by the serrated part of the drive shaft.