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# MANUAL TRANSMISSION

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22109000159

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## GENERAL INFORMATION

22100010076

The manual transmission is F5M31.

| Items                                 |         | Specifications                     |
|---------------------------------------|---------|------------------------------------|
| Model                                 |         | F5M31                              |
| Type                                  |         | Manual, 5-speed, Front wheel drive |
| Gear ratio                            | 1st     | 2.846                              |
|                                       | 2nd     | 1.833                              |
|                                       | 3rd     | 1.217                              |
|                                       | 4th     | 0.888                              |
|                                       | 5th     | 0.690                              |
|                                       | Reverse | 3.166                              |
| Final gear ratio                      |         | 4.913                              |
| Speedometer gear ratio (driven/drive) |         | 29/36                              |

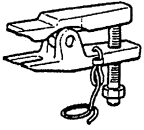
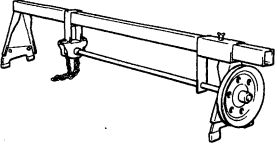
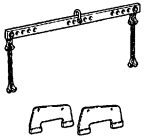
## LUBRICANT

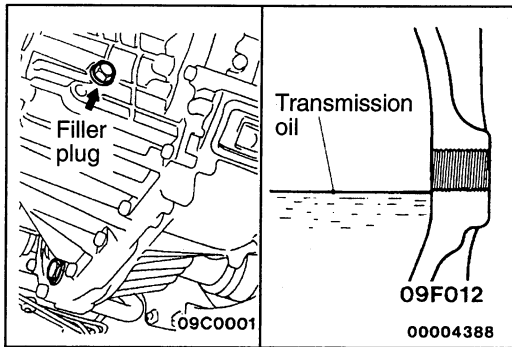
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| Item             | Specified lubricant                                                         | Quantity ℓ |
|------------------|-----------------------------------------------------------------------------|------------|
| Transmission oil | Hypoid gear oil SAE 75W-90 or 75W-85W conforming to API classification GL-4 | 2.0        |

**SPECIAL TOOLS**

22100060088

| Tool                                                                               | Number                        | Name                    | Use                                                                                |
|------------------------------------------------------------------------------------|-------------------------------|-------------------------|------------------------------------------------------------------------------------|
|   | MB990635 or MB991113          | Steering linkage puller | Tie rod end and lower arm disconnection                                            |
|   | GENERAL SERVICE TOOL MZ203827 | Engine lifter           | Supporting the engine assembly during removal and installation of the transmission |
|   | MB991453                      | Engine hanger           |                                                                                    |
|  | MB991461                      | Plug                    | Prevention of entry of foreign objects into the transmission case                  |



## ON-VEHICLE SERVICE

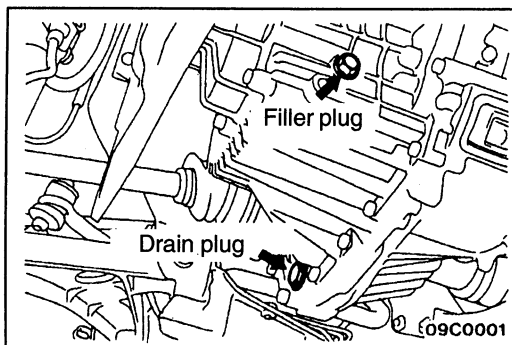
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### TRANSMISSION OIL LEVEL CHECK

Inspect each component for evidence of leakage, and check the oil level by remaining the filler plug. If the oil is contaminated, it is necessary to replace it with new oil.

1. Oil level should be at the lower portion of the filler plug hole.
2. Check that the transmission oil is not noticeably dirty, and that it has a suitable viscosity.
3. Tighten the filler plug to the specified torque.

**Tightening torque: 32 Nm**



### TRANSMISSION OIL REPLACEMENT

22100100094

1. Remove transmission drain plug.
2. Drain oil.
3. Tighten the drain plug to the specified torque.

**Tightening torque: 32 Nm**

4. Remove the filler plug and fill with specified oil till the level comes to the lower portion of filler plug hole.

**Specified oil:**

**Hypoid gear oil SAE 75W-90 or  
75W-85W conforming to API GL-4**

**Quantity: 2.0 ℓ**

5. Tighten the filler plug to the specified torque.

**Tightening torque: 32 Nm**

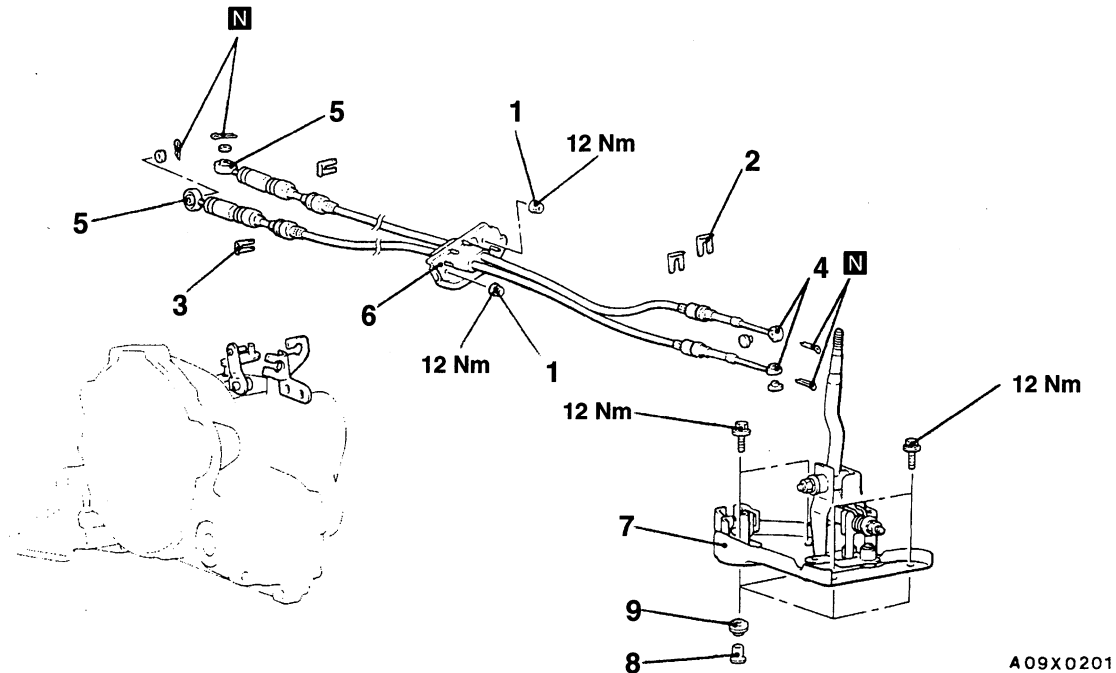
## TRANSMISSION CONTROL

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## REMOVAL AND INSTALLATION

**Caution: SRS**

Be careful not to subject the SRS-ECU unit to any shocks during removal and installation of the transmission control cable and shift lever assembly.



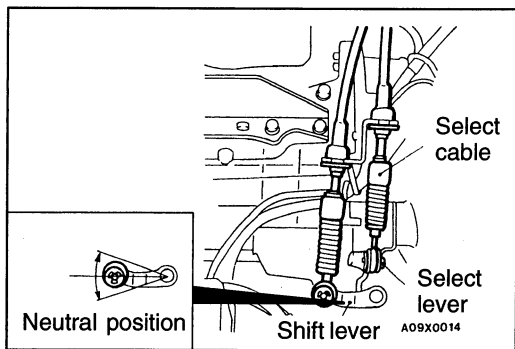
A09X0201

**Transmission control cable assembly removal steps**

- Air cleaner assembly
  - Floor console (Refer to GROUP 52A)
1. Nut
  2. Clip (passenger compartment side)
  3. Clip (transmission side)
  - ▶B◀ 4. Shift cable and select cable connection (passenger compartment side)
  - ▶A◀ 5. Shift cable and select cable connection (transmission side)
  6. Shift cable and select cable assembly

**Shift lever assembly removal steps**

- Floor console (Refer to GROUP 52A)
2. Clip (passenger compartment side)
  - ▶B◀ 4. Shift cable and select cable connection (passenger compartment side)
  7. Shift lever assembly
  8. Distance piece
  9. Bushing



## INSTALLATION SERVICE POINTS

### ►A◄ SHIFT CABLE AND SELECT CABLE CONNECTION (TRANSMISSION SIDE)

#### SELECT CABLE

- (1) Connect the select cable to the transmission side select lever.
- (2) Set the shift lever of the transmission side at the neutral position.

#### NOTE

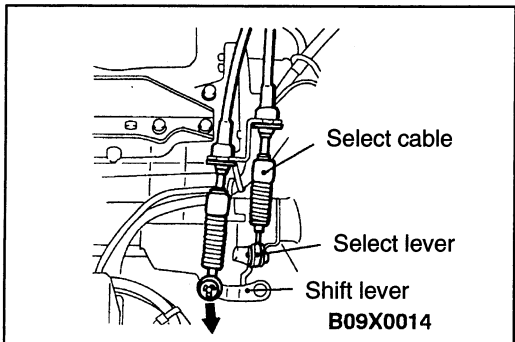
When the shift lever of the transmission side is set at the neutral position, the select lever of the transmission side is also set at the neutral position.

#### SHIFT CABLE

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

#### NOTE

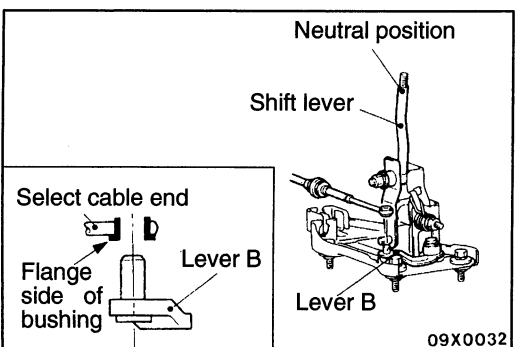
If the shift lever does not move easily, depress and hold the clutch pedal.



### ►B◄ SHIFT CABLE AND SELECT CABLE CONNECTION (PASSENGER COMPARTMENT SIDE)

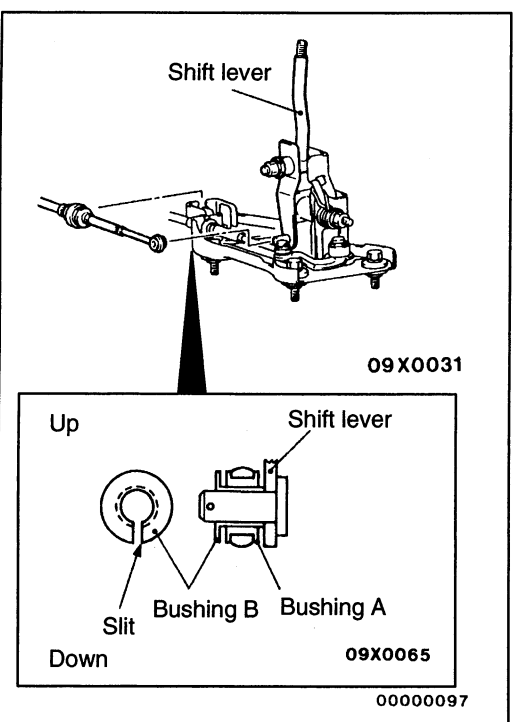
#### SELECT CABLE

- (1) 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.
- (2) Install the select cable so that the flange side of resin bushing is positioned at the edge of lever B side.



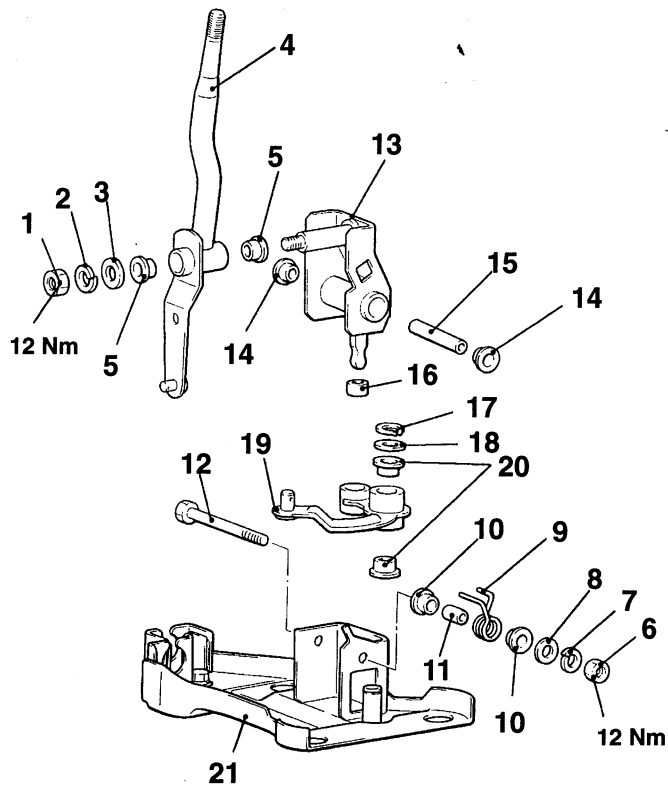
#### SHIFT CABLE

- (1) 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. Install so that the slit section of the bushing B is facing either up or down.
- (2) Put the shift lever to all the positions and make sure that the operation is smooth.

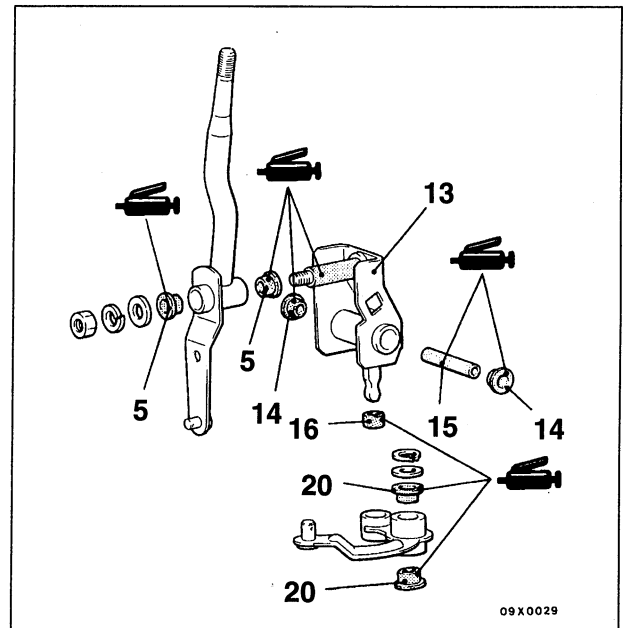


# SHIFT LEVER ASSEMBLY DISASSEMBLY AND REASSEMBLY

22100400064



09X0030



09X0029

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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

## TRANSMISSION ASSEMBLY

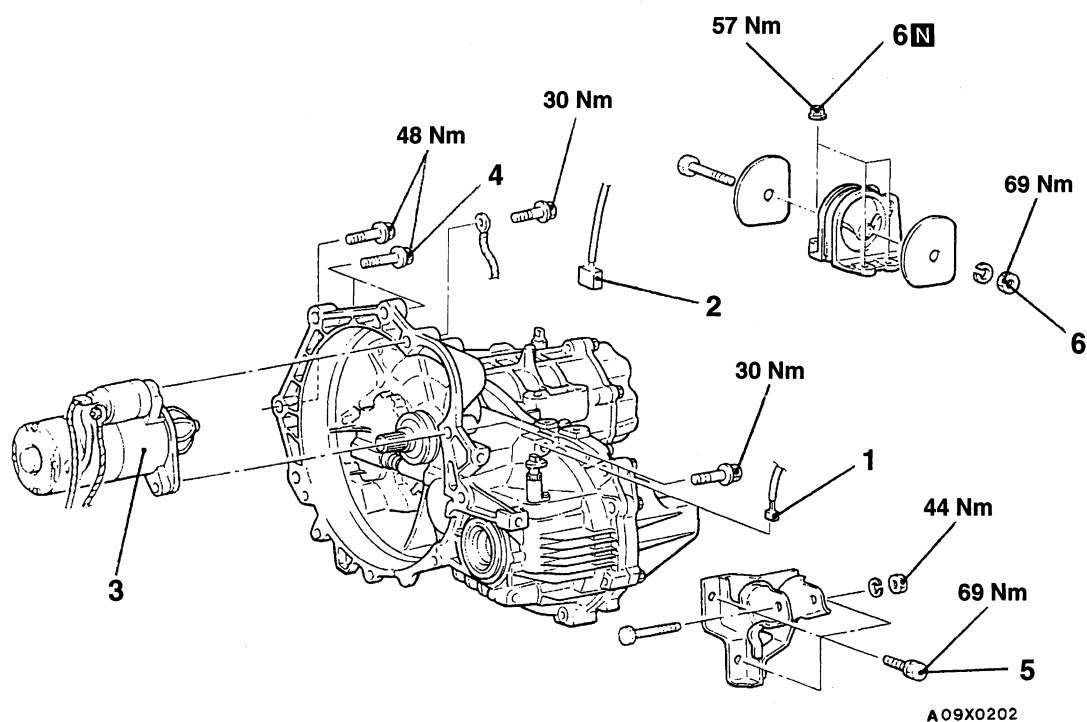
## REMOVAL AND INSTALLATION

**Pre-removal Operation**

- (1) Transmission Oil Draining (Refer to P.22-4.)
- (2) Under Cover Removal
- (3) Air Cleaner Assembly and Air Intake Hose Removal
- (4) Battery Removal
- (5) Canister Removal (Refer to GROUP 17.)
- (6) Shift Cable and Select Cable Assembly Removal (Refer to P.22-5.)

**Post-installation Operation**

- (1) Shift Cable and Select Cable Assembly Installation (Refer to P.22-5.)
- (2) Canister Installation (Refer to GROUP 17.)
- (3) Battery Installation
- (4) Air Cleaner Assembly and Air Intake Hose Installation
- (5) Under Cover Installation
- (6) Transmission Oil Supplying (Refer to P.22-4.)
- (7) Shift Lever Operation Check
- (8) Speedometer Operation Check

**Removal steps**

1. Vehicle speed sensor connector
2. Backup lamp switch connector
3. Starter motor
4. Transmission assembly mounting bolts



5. Rear roll stopper bracket mounting bolts
6. Transmission mounting bracket mounting nuts
- Supporting engine assembly



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- ◀C▶**

- ◀D▶**

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**\*1:** Indicates parts which should be temporarily tightened, and then fully tightened with the vehicle on the ground in the unladen condition.

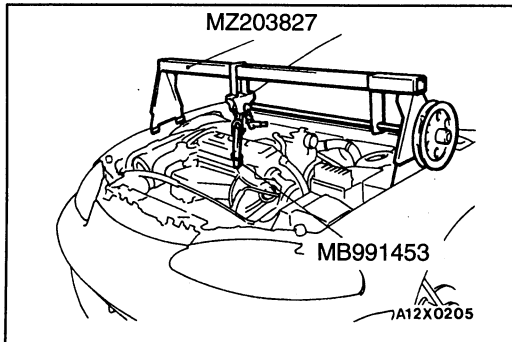
**\*2:** For tightening locations indicated by the symbol, first tighten temporarily, and then make the final tightening with the entire weight of the engine applied to the vehicle body.

**REMOVAL SERVICE POINTS****◀A▶ TRANSMISSION MOUNTING BRACKET  
MOUNTING NUT REMOVAL**

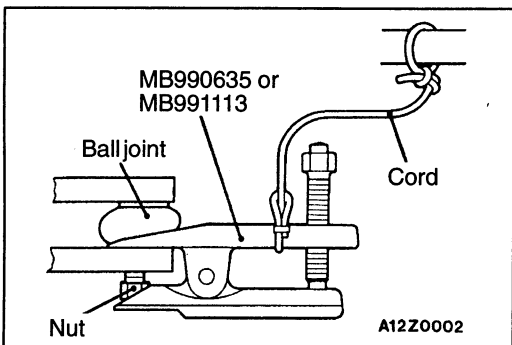
Jack up the transmission assembly gently with a garage jack, and then remove the transmission mounting bracket nuts.

**Caution**

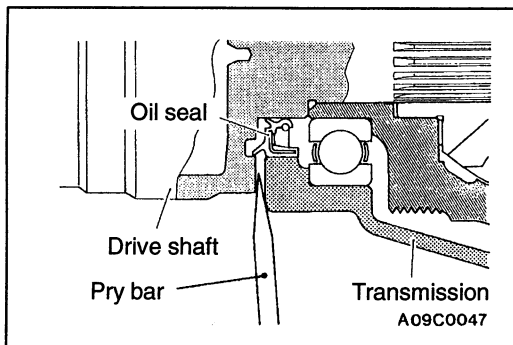
Be sure not to tilt the transmission assembly.

**◀B▶ SUPPORTING ENGINE ASSEMBLY**

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

**◀C▶ TIE ROD END BALL JOINT AND KNUCKLE/  
LATERAL LOWER ARM BALL JOINT AND  
KNUCKLE/COMPRESSION LOWER ARM BALL  
JOINT AND KNUCKLE DISCONNECTION****Caution**

1. Using the special tool, loosen the tie rod end mounting nut. Only loosen the nut; do not remove it from the ball joint.
2. Support the special tool with a cord, etc. to prevent it from coming off.

**◀D▶ DRIVE SHAFT DISCONNECTION**

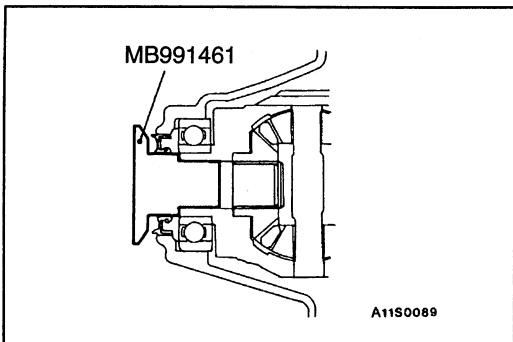
- (1) Insert a pry bar between the transmission case and the drive shaft to remove the drive shaft.

**NOTE**

Do not remove the hub and knuckle from the drive shaft.

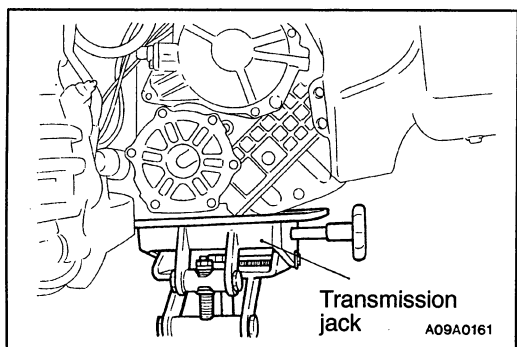
**Caution**

1. Use a pry bar to remove the drive shaft from the B.J. assembly, or the T.J. assembly may be damaged.
2. Do not insert the bar too far, or the oil seal may be damaged.
- (2) Suspend the removed drive shaft with wire so that there are no sharp bends in any of the joints.
- (3) Use the special tool as a cover not to let foreign objects get into the transmission case.



**◀E▶ CLUTCH RELEASE CYLINDER DISCONNECTION**

Remove the clutch release cylinder without disconnecting the oil line, and suspend it to a nearby parts with a wire, etc.

**◀F▶ TRANSMISSION ASSEMBLY MOUNTING BOLT/TRANSMISSION ASSEMBLY REMOVAL**

- (1) Use a transmission jack to support the transmission assembly.

**Caution**

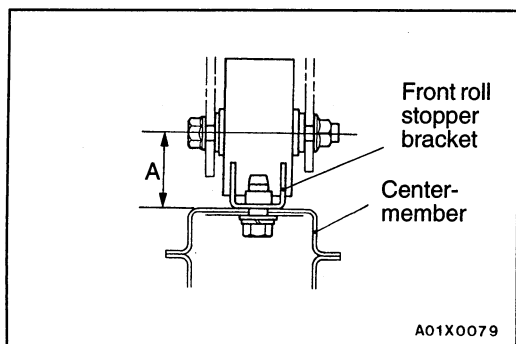
**Support the transmission case side, not the oil pan.**

- (2) Remove the transmission assembly mounting bolt and lower the transmission assembly.

**INSTALLATION SERVICE POINTS****▶A◀ CENTERMEMBER ASSEMBLY INSTALLATION**

If the dimension shown in the illustration is outside the standard value when the weight of the engine is on the body, replace the front roll stopper bracket assembly.

**Standard value (A):  $43 \pm 3$  mm**

**▶B◀ DRIVE SHAFT CONNECTION**

Temporarily install the drive shaft so that the T.J. case of the drive shaft is perpendicular to the transmission.

**Caution**

**Do not damage the oil seal lip by the serrated part of the drive shaft.**

NOTES