

MT

MANUAL TRANSMISSION (for K3-VE Engine)

MANUAL TRANSMISSION	MT-2
SPECIFICATIONS	MT-2
BASIC CHECK	MT-2
MANUAL TRANSMISSION	
OIL LEVEL CHECK	MT-2
MANUAL TRANSMISSION	
OIL CHANGE	MT-2
REMOVAL/INSTALLATION OF	
MANUAL TRANSMISSION	MT-3
OPERATION PRIOR TO REMOVAL	MT-3
REMOVAL AND INSTALLATION	
PROCEDURES	MT-4
MAIN POINTS OF REMOVAL	MT-5
MAIN POINTS OF INSTALLATION	MT-5
OPERATION AFTER INSTALLATION	MT-6
TOOLS	MT-7
TIGHTENING TORQUE	MT-7

JMT0001-00000

MANUAL TRANSMISSION

This manual describes the checking and servicing procedures and unit installing/removing procedure with the manual transmission mounted on the vehicle.

As for the check and service of the unit itself, refer to the service manual for Terios (No. 9710-JE).

JMT00002-00000

SPECIFICATIONS

Item		Specifications
Engine type		K3-VE
Type	Forward gears	Constant-mesh type
	Reverse gear	Selective sliding type
Gear ratio	1st gear	3.769
	2nd gear	2.045
	3rd gear	1.376
	4th gear	1.000
	5th gear	0.838
	Reverse gear	4.128
Oil used	Type	SAE 75W-85 or 75W-90 API GL-3 or GL-4
	Capacity	2.2 (including transfer) liter

JMT00003-00000

BASIC CHECK

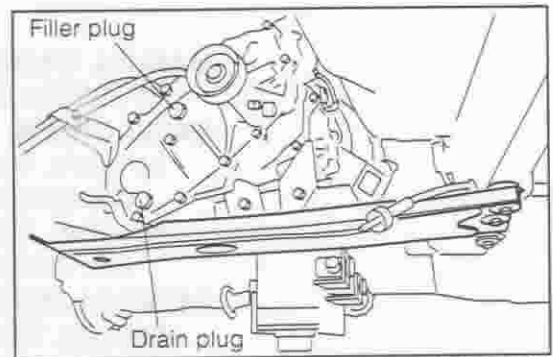
MANUAL TRANSMISSION OIL LEVEL CHECK

1. Remove the filler plug. With the vehicle placed horizontally, check that the oil level is the specified one.

Specified Value:

Between 0 - 5 mm from lower edge of filler plug hole

Tightening Torque: 29.4 - 49.0 N·m



JMT00004-00001

NOTE:

- If the oil level is too low, check to see if any oil leakage is present. The gasket is a non-reusable part.

MANUAL TRANSMISSION OIL CHANGE

Oil: Transmission gear oil SAE 75W-85 or 75W-90 (API classification GL-3 or GL-4)

Total Capacity: 4WD; Approx. 2.2 liters (including transfer section)

Specified Value: Between 0 - 5 mm from lower edge of filler plug hole

Tightening Torque: 29.4 - 49.0 N·m (Drain plug, filler plug)

NOTE:

- The gasket is a non-reusable part.

JMT00005-00000

REMOVAL/INSTALLATION OF MANUAL TRANSMISSION

OPERATION PRIOR TO REMOVAL

1. Disconnect the negative (-) terminal of the battery.

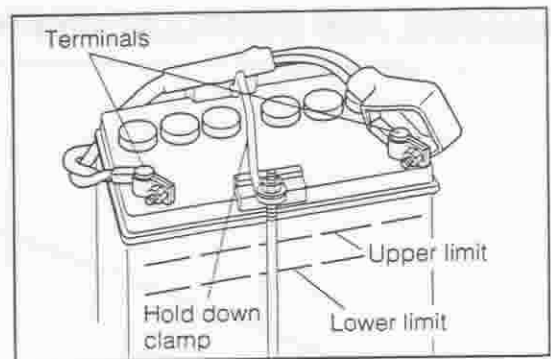
NOTE:

- It should be noted that the memories of the diagnosis, radio, etc. are erased simultaneously when the negative (-) terminal of the battery is disconnected.

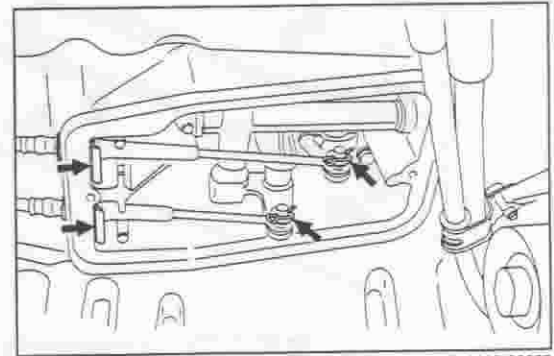
2. Suspend the front side of the engine assembly, using the engine support bridge.

Tool: Engine support bridge

3. Lift up the vehicle.
4. Drain the transmission oil.
5. Remove the front exhaust pipe assembly.
6. Remove the propeller shaft assembly and propeller front shaft assembly (4WD vehicle).
7. Remove the clutch release cylinder.
8. Remove the shift cable assembly and select cable assembly (floor shift assembly side).



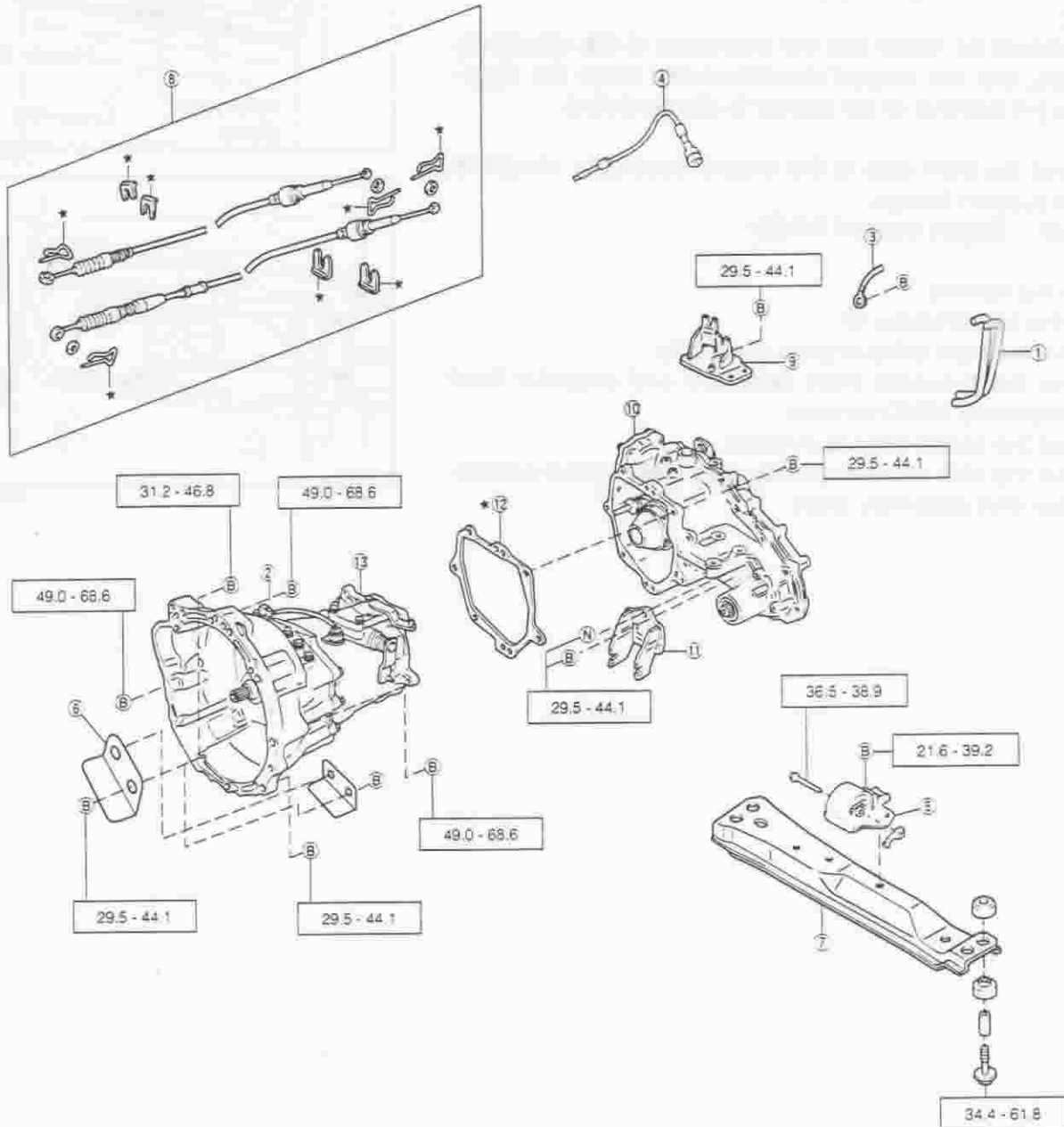
JMT00006-00002



JMT00007-00003

REMOVAL AND INSTALLATION PROCEDURES

□ : Tightening torque
 ★ : Non-reusable parts
 Unit : N·m



- ① Vacuum hose
- ② Connector (back-up lamp switch harness)
- ③ Earth wire (transmission rear end)
- ④ Speedometer drive cable assembly
- ⑤ Engine mounting rear insulator
- ⑥ Under-cover
- ⑦ Engine rear support member subassembly
- ⑧ Shift & select cable assembly
- ⑨ Transmission control bracket
- ⑩ Transfer assembly
- ⑪ Engine mounting rear bracket
- ⑫ Extension housing gasket
- ⑬ Manual transmission assembly

MAIN POINTS OF REMOVAL

1. Disconnect the back-up light switch harness connector ①.

NOTE:

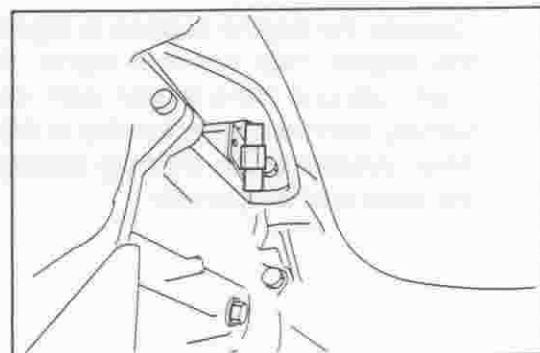
- Be sure not to forget to remove this harness connector, for it is located at a place easily to be overlooked.

2. With the transmission assembly supported with a transmission jack or the like, remove the engine mounting rear insulator.
3. Lower the transmission assembly with transfer assembly to such a level that it makes contact with the engine rear support member subassembly. Under this state, remove the bolts (two upper bolts retaining the transmission to the engine), using a long extension bar from the rearward of the transmission.
4. Remove the engine rear support member subassembly, while supporting it securely with a transmission jack or the like.

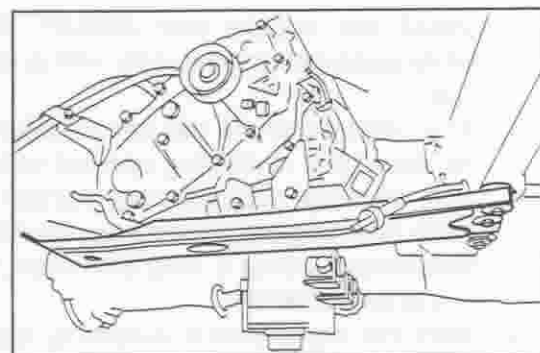
5. Remove the transfer assembly and extension housing gasket from the transmission assembly by removing the seven bolts.

NOTE:

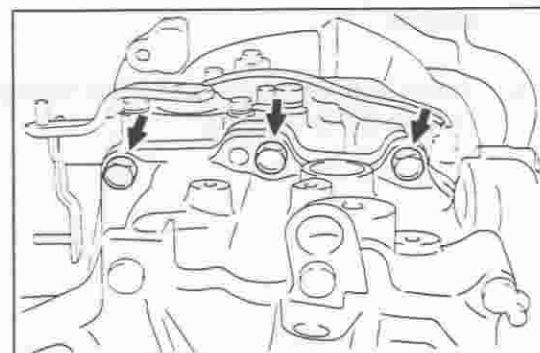
- When removing the transfer assembly, tap the rib section of the transfer case with a plastic hammer or the like.
- Be very careful not to drop the needle roller bearings located at the forward end of the output shaft of the transmission assembly.



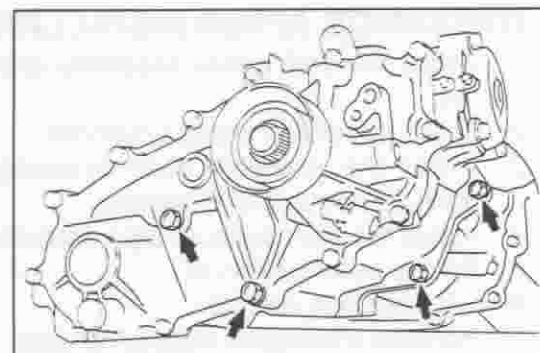
JMT00009-00005



JMT00000-00006



JMT00010-00007



JMT00000-00008

MAIN POINTS OF INSTALLATION

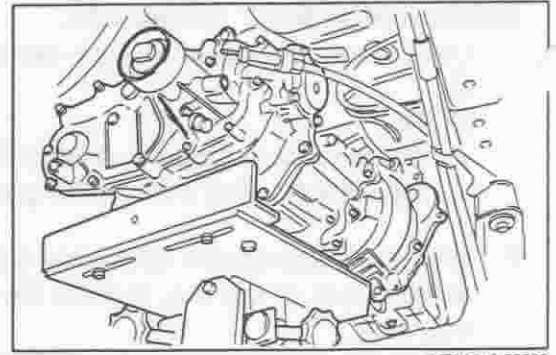
1. After having installed a new extension housing gasket, install the transfer assembly to the transmission assembly.

NOTE:

- Be very careful not to drop the needle roller bearings located at the forward end of the output shaft of the transmission assembly.
- Care must be exercised that the oil supply pipe of the transfer transmission will not be disconnected.

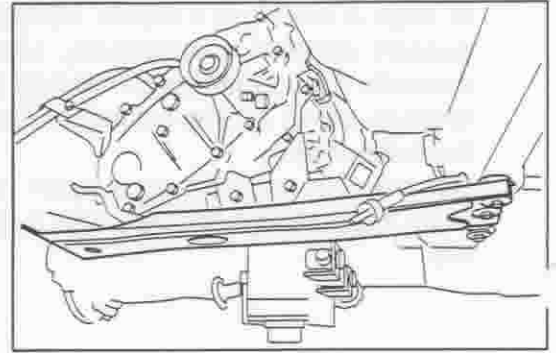
JMT00011-00000

2. Operate the engine support bridge so that the front end of the engine may become higher relative to the vehicle. Then, using a transmission jack, set the transmission assembly with transfer assembly to the direct connecting position (knocking pin aligning position). Proceed to tighten the bolts and temporarily.



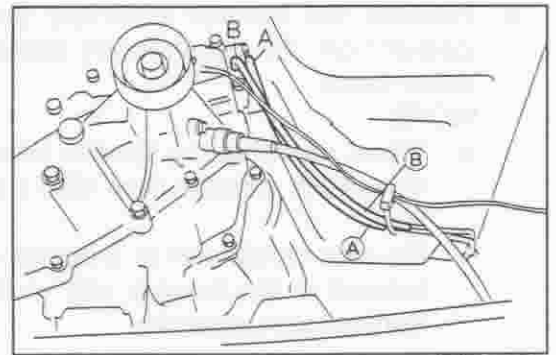
JMT00012-00009

3. Install the engine rear support member subassembly, while supporting it securely with a transmission jack or the like.
4. At a position where the transmission assembly with transfer assembly is making contact with the engine rear support member subassembly, tighten the bolts (two upper bolts retaining the transmission to the engine) to the specified torque, using a long extension bar from the rearward of the transmission.
5. With the transmission assembly supported with a transmission jack or the like, install the engine mounting rear insulator.



JMT00013-00010

6. Install the vacuum hoses, as indicated in the right figure (A with Ⓐ, B with Ⓑ).






JMT00014-00011

OPERATION AFTER INSTALLATION

1. Install the shift cable assembly and select cable assembly.
2. Install the clutch release cylinder.
3. Install the propeller shaft assembly and propeller front shaft assembly (4WD vehicle).
4. Install the front exhaust pipe assembly.
5. Fill the transmission oil.
6. Lift down the vehicle.
7. Remove the engine support bridge.
8. Connect the negative (-) terminal of the battery.

JMT00015-00000

TOOLS

	Shape	Part number, part name	Use
Tools		Engine support bridge	For suspending engine and transmission
		Engine support bridge	For suspending engine and transmission
		High transmission jack	For removing/installing transmission
Instrument	Torque wrench		

JMT00016-00012

TIGHTENING TORQUE

Tightening component	Tightening torque	
	N·m	kgf·m
Filler plug	29.4 - 49.0	3.0 - 5.0
Drain plug	29.4 - 49.0	3.0 - 5.0

JMT00017-00000