

ENGINE MOUNTING

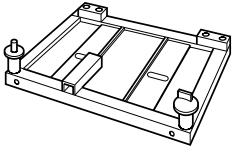
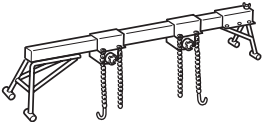
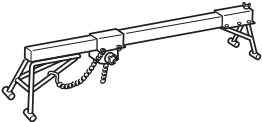
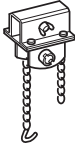
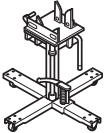
FRAME	MTG-2
REMOVAL AND INSTALLATION.....	MTG-2
ENGINE MOUNTING FRONT	
INSULATOR	MTG-9
BASIC CHECK	MTG-9
REMOVAL AND INSTALLATION.....	MTG-9
ENGINE MOUNTING LOWER	
LEFT INSULATOR	MTG-12
BASIC CHECK	MTG-12
REMOVAL AND INSTALLATION....	MTG-12
ENGINE MOUNTING REAR	
INSULATOR	MTG-15
BASIC CHECK	MTG-15
REMOVAL AND INSTALLATION....	MTG-15
TIGHTENING TORQUE	MTG-22

MTG-2

1 FRAME

1-1 REMOVAL AND INSTALLATION

1-1-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09994-87201-000 Holder, engine frame	For removal/installation of engine frame
Tool		Engine support bridge	For suspending engine and transaxle
		Engine support bridge	For suspending engine and transaxle
		Chain block	For suspending engine and transaxle (for addition to engine support bridge)
		High-transmission jack	For removal/installation of transaxle
Instrument	Torque wrench		

MTG-FRM-D-P-00011

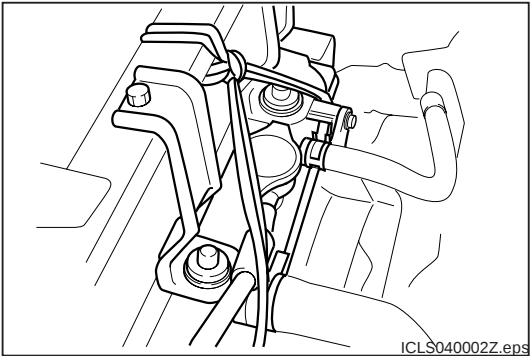
1-1-2 OPERATION BEFORE REMOVAL

1. Disconnect the battery ground cable from the negative terminal.

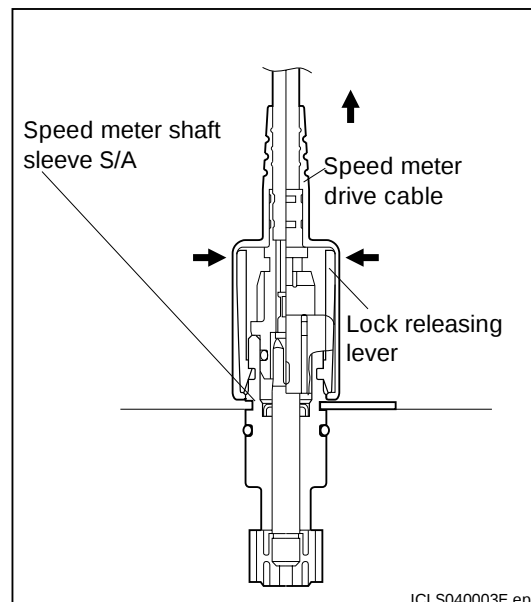
NOTE

- Memory such as troubleshooting code or radio shall be recorded to avoid being erased before disconnect the battery ground cable from the negative terminal .

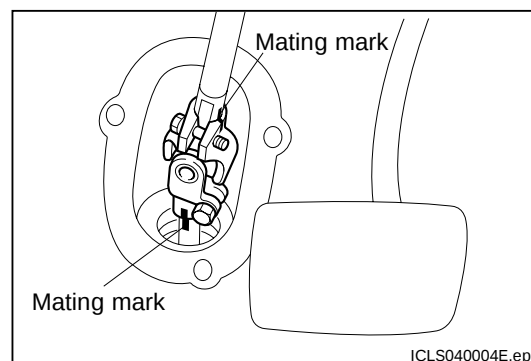
2. Disconnect the bond cable.
3. Remove the air cleaner case.
4. Separation of radiator
- (1) Remove the radiator bracket.
- (2) Fix the radiator together with the radiator fan to upper support with string etc .



5. Separation of clutch cable (For MT vehicles)
 - (1) Separate the clutch cable at transaxle side.
6. Separation of speedometer cable Ay (For the vehicle equipped the mechanical speedometer)
 - (1) Take off the lock which locate in the boot on the transaxle fitting portion by means of picking from outside.
 - (2) Pull out the cable.



7. Separation of universal joint
 - (1) Attach mating marks to universal joint and steering gear, and separate the joint portion.



8. Support engine and transaxle
 - (1) Install the engine hanger No. 1, No. 2.

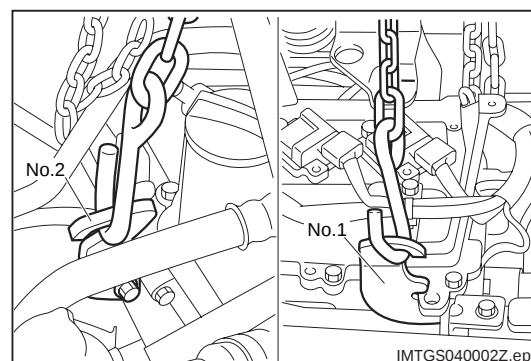
WARNING

- Do not work while the exhaust manifold is still hot to avoid getting burn.

NOTE

- The engine hanger No. 1, No. 2 and the installation bolts are supplies as replacement parts.

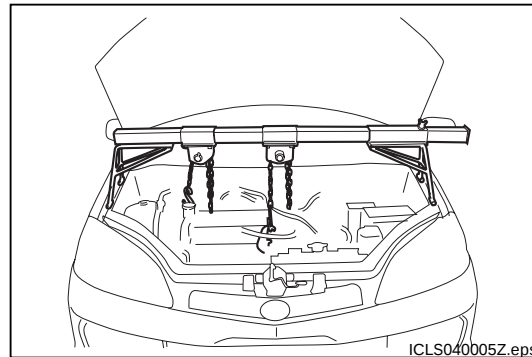
TIGHTENING TORQUE: $20.0 \pm 6.0 \text{ N}\cdot\text{m}$



MTG-4

(2) Using engine support bridge, hold engine Ay and transaxle Ay in direct coupling condition.

TOOL: Engine support bridge



9. Jack up the vehicle.

WARNING

- Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

10. Remove the wheel.

11. Remove the stabilizer bar.
Refer to FS-25.

12. Remove the exhaust pipe.

WARNING

- Do not work while the exhaust pipe is still hot to avoid getting burn .

13. Separation of the suspension lower arm S/A

(1) Separate the suspension lower arm from the steering knuckle.
Refer to FS-20.

14. Separation of drive shaft (For 4WD vehicles)

(1) Pull out a drive shaft from transaxle, and hang it with the wire.

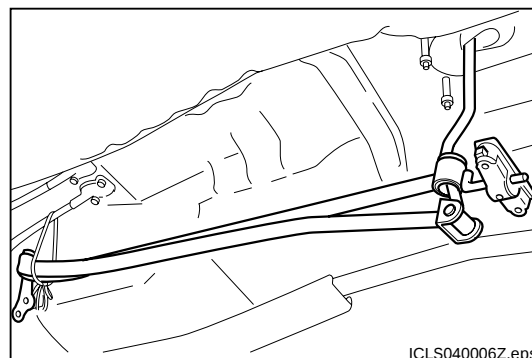
CAUTION

- Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-3.

15. Separation of shift & select rod (For MT vehicles)

(1) Separate the shift & select control rod and the extension rod at transmission side, and hang it on a vehicle.

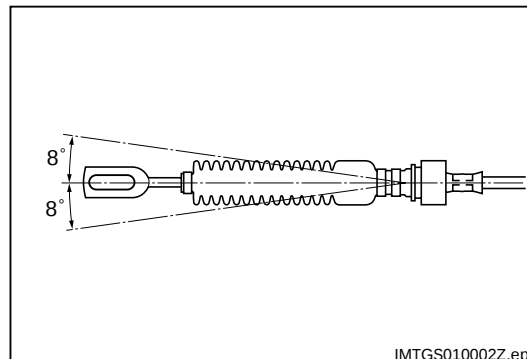


16. Separation of control cable (For AT vehicles)

(1) Separate the control cable from the control shaft lever
Ay.

CAUTION

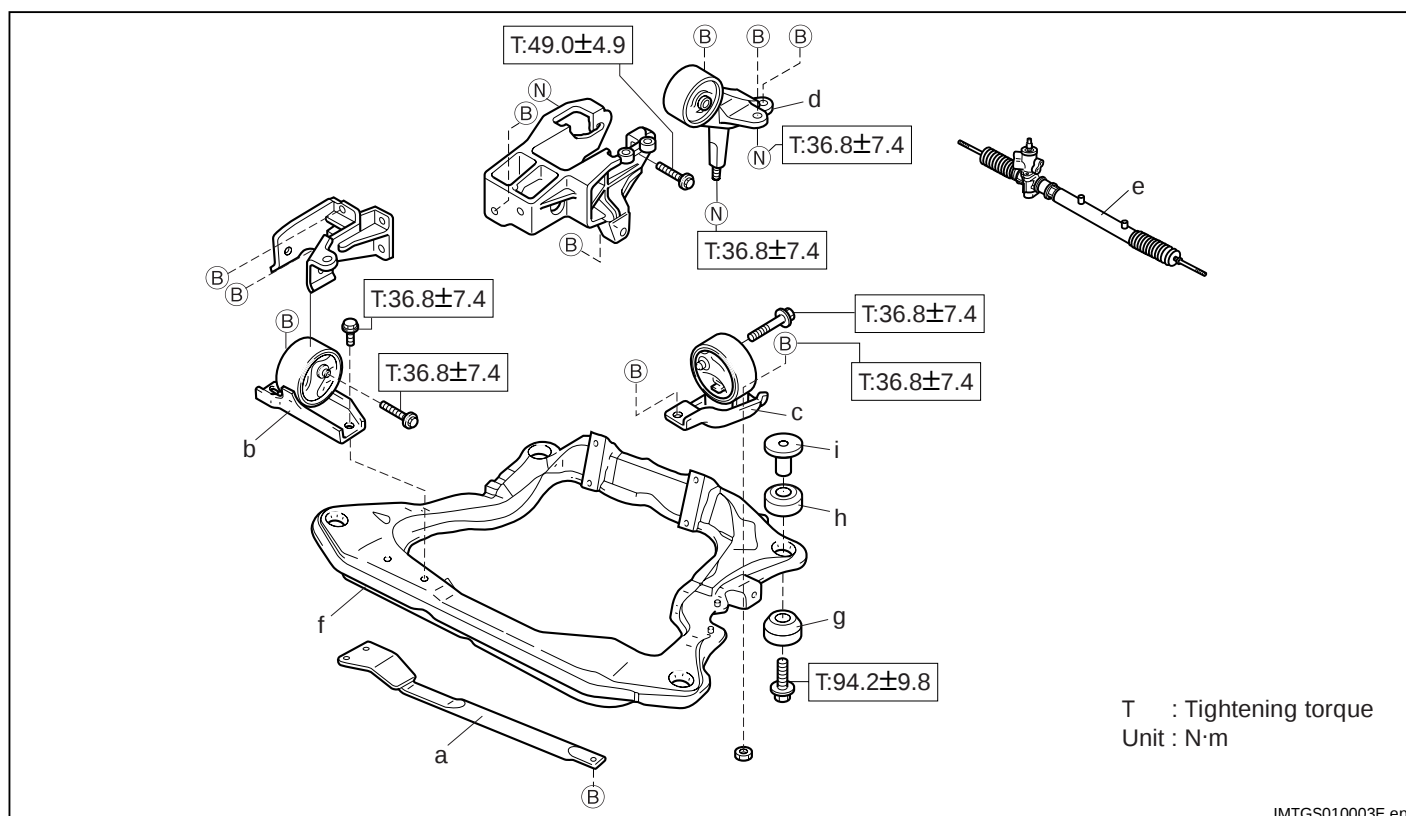
- Do not rock the control cable end (both the shift lever side and the transmission side) by 8° or more, or do not apply load.



IMTGS010002Z.eps
MTG-FRM-D-B-00011

1-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



IMTGS010003E.eps

(2) REMOVAL AND INSTALLATION PROCEDURES

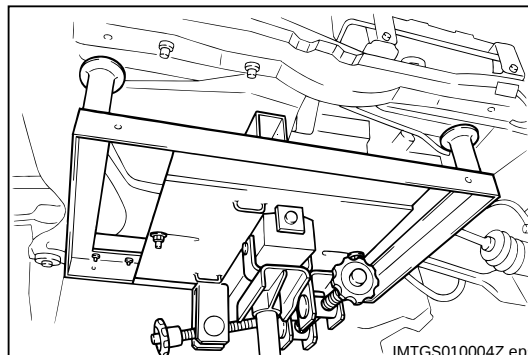
- | | | | | | | | |
|---|---|---|-----------------------------------|---|---|---|--|
| 1 | 9 | a | Rod, lower arm bracket connecting | 6 | 4 | f | Frame |
| 2 | 8 | b | Insulator, front | 7 | 3 | g | Cushion, front frame lower (EJ) |
| 3 | 7 | c | Insulator, lower left | 8 | 2 | h | Cushion, front frame (EJ) |
| 4 | 6 | d | Insulator, rear | 9 | 1 | i | Spacer S/A, suspension member, FR (EJ) |
| 5 | 5 | e | Gear S/A, steering | | | | |

MTG-FRM-D-T-00011

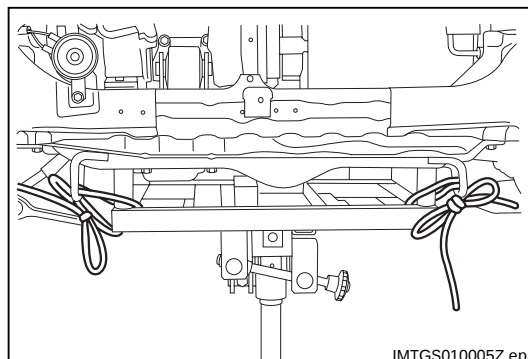
MTG-6

1-1-4 POINTS OF REMOVAL

1. Separation of frame
 - (1) Support the frame by using the high-transmission jack.SST: 09994-87201-000
TOOL: High-transmission jack



2. Fix the frame by using rope or chain.

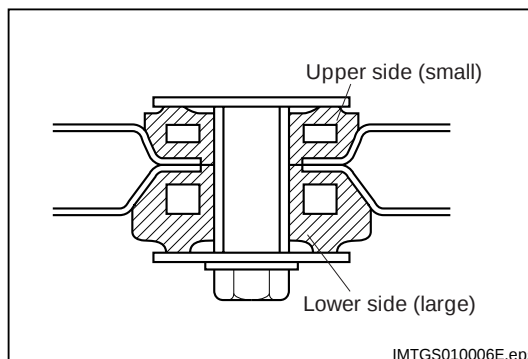


- (1) Separate the engine mounting front insulator from the frame.
 - (2) Separate the engine mounting lower left insulator from the frame.
 - (3) Remove the engine mounting rear stay. (Only for equipped vehicles.)
 - (4) Separate the engine mounting rear insulator from the frame.
 - (5) Remove the installation bolts of the front frame.
 - (6) Lower the front frame by operating the high-transmission jack.
3. Removal of steering gear
 - (1) Remove the steering gear, and hang it on the brace.

MTG-FRM-D-D-00011

1-1-5 POINTS OF INSTALLATION

1. Installation of steering gear
 - (1) Raise the frame until the operating position by using the high-transmission jack.
 - (2) Install the steering gear Ay to the steering rack housing bracket while cut off section set upper side.
 - (3) Install the steering gear Ay to the frame.
2. Installation of frame
 - (1) Install the bush to the frame as a figure. (For the vehicle mounted EJ engine.)



- (2) Bring the frame close to the body by operating the high-transmission jack.
- (3) Install the engine mounting rear insulator to the frame.
- (4) Install the engine mounting rear stay. (only for vehicle equipped with the stay)
- (5) Install the engine mounting lower left insulator to the frame.
- (6) Install the engine mounting front insulator to the frame.
- (7) Install the frame to the body.

MTG-FRM-D-S-00011

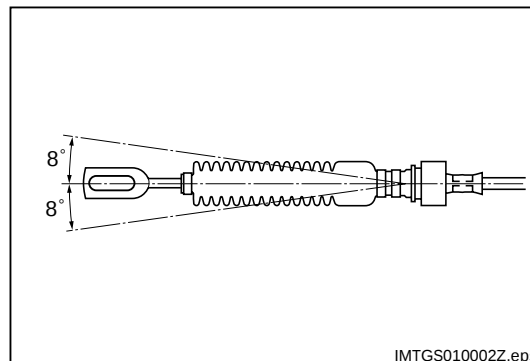
1-1-6 OPERATION AFTER INSTALLATION

1. Connect the control cable. (For AT vehicle)

CAUTION

- Do not rock the control cable end (both the shift lever side and the transmission side) by 8° or more, or do not apply load.

Refer to AT-35.



IMTGS010002Z.eps

MTG-8

2. Connect the shift & select rod connection. (For MT vehicle)

Refer to MT-15.

3. Install the propeller shaft. (For 4WD vehicle)

CAUTION

- Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-26.

4. Install the suspension lower arm S/A.

Refer to FS-20.

5. Install the exhaust pipe.

6. Install the stabilizer bar.

Refer to FS-25.

7. Install the wheels.

TIGHTENING TORQUE: $103.0 \pm 14.7\text{N}\cdot\text{m}$

8. Jack down the vehicle.

9. Remove the engine support bridge.

10. Remove the engine hanger.

11. Connection of universal joint

(1) Align the mating marks and connect the joint portion.

CAUTION

- If mating marks disappeared, align roll connector when put the wheel center together. (For vehicles equipped with air bag)

12. Connect the speedometer cable. (For vehicles equipped with mechanical speedometer)

13. Connect the clutch cable. (For MT vehicles)

14. Install the radiator.

15. Install the air cleaner case.

16. Connect the bond cable.

17. Connect the battery negative terminal.

18. Perform the basic check of the clutch pedal.

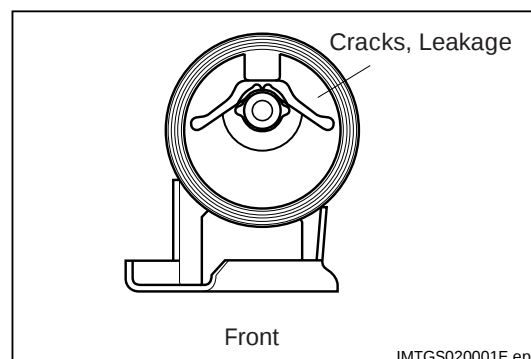
Refer to CL-3.

2 ENGINE MOUNTING FRONT INSULATOR

2-1 BASIC CHECK

2-1-1 ENGINE MOUNTING FRONT INSULATOR

1. Check each portion for no abnormal condition.



IMTGS020001E.eps
MTG-FIN-I-M-00011

2-2 REMOVAL AND INSTALLATION

2-2-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09994-87201-000 Holder, engine frame	For removal/installation of engine frame
Tool		Engine support bridge	For suspending engine and transaxle
		Engine support bridge	For suspending engine and transaxle
		Chain block	For suspending engine and transaxle (for addition to engine support bridge)
		High-transmission jack	For removal/installation of transaxle
Instrument	Torque wrench		

MTG-10

2-2-2 OPERATION BEFORE REMOVAL

1. Disconnect the battery ground cable from the negative terminal.

NOTE

- Memory such as troubleshooting code or radio shall be recorded to avoid being erased before disconnect the battery ground cable from the negative terminal .

2. Remove the air cleaner case.
3. Support of engine and transaxle

(1) Install the engine hanger No. 1 and No. 2.

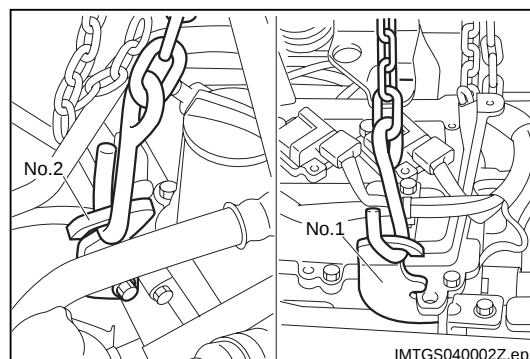
WARNING

- Do not work while the exhaust manifold is still hot so as to avoid getting burn.

NOTE

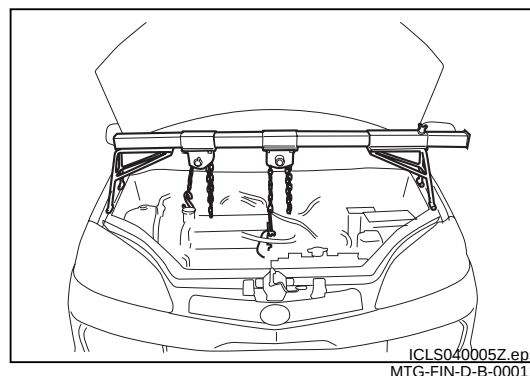
- The engine hanger No. 1, No. 2 and the installation bolts are supplies as replacement parts.

TIGHTENING TORQUE: $20.0 \pm 6.0 \text{ N}\cdot\text{m}$



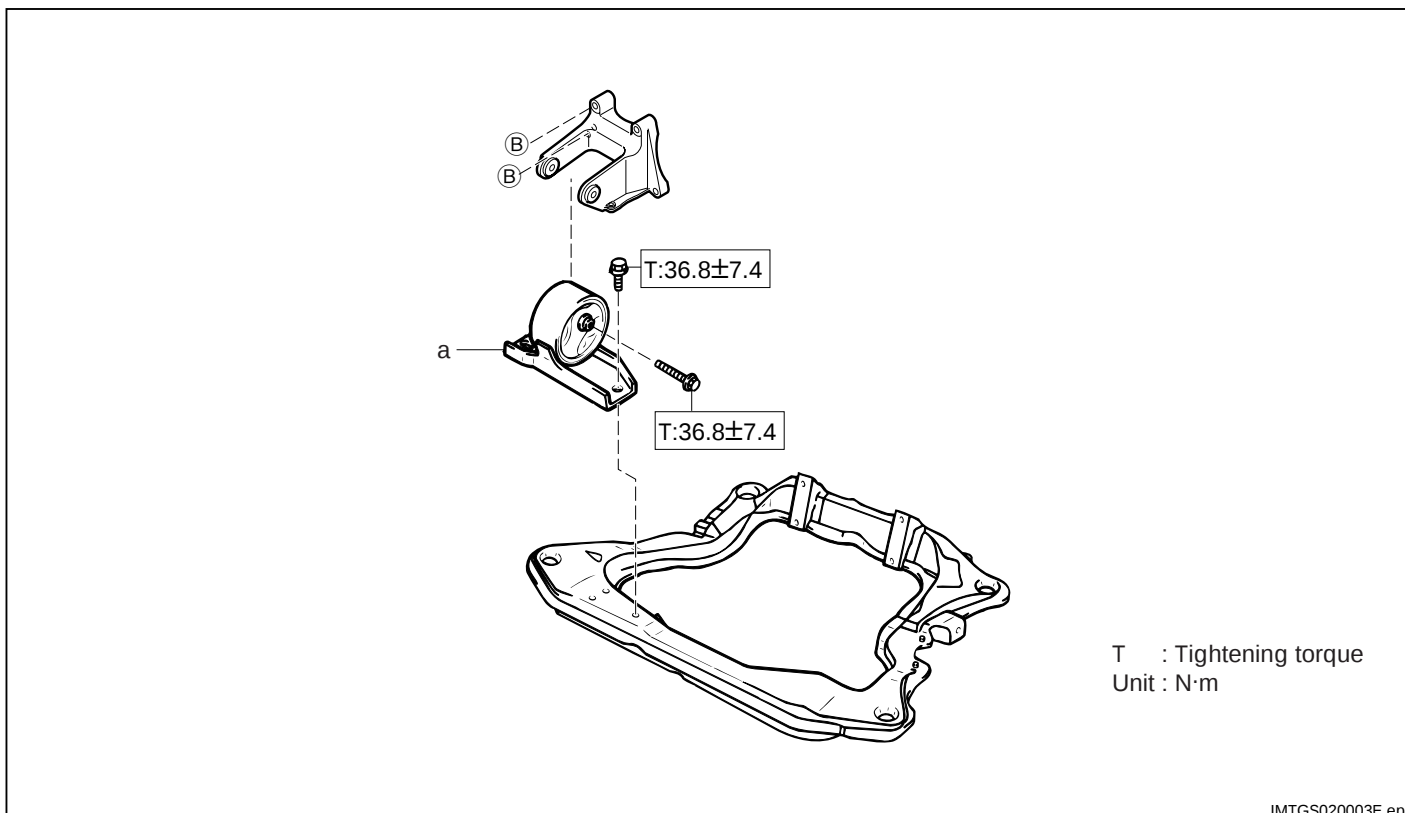
- (2) Using engine support bridge, hold engine Ay and transaxle Ay in direct coupling condition.

TOOL: Engine support bridge



2-2-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

- 1 1 a Insulator, engine mounting front

MTG-FIN-D-T-00011

2-2-4 OPERATION AFTER INSTALLATION

1. Remove the engine support bridge.
2. Remove the engine hanger.
3. Install the air cleaner case.
4. Connect the battery negative terminal.

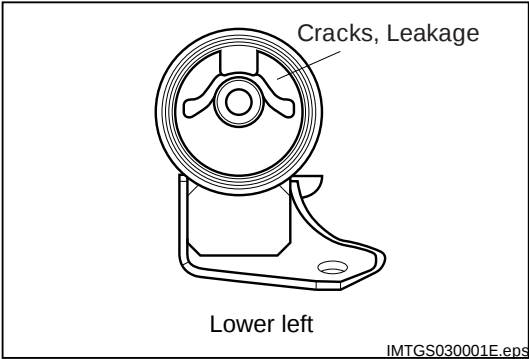
MTG-FIN-D-A-00011

3 ENGINE MOUNTING LOWER LEFT INSULATOR

3-1 BASIC CHECK

3-1-1 ENGINE MOUNTING LOWER LEFT INSULATOR

- 1. Check each portion for no abnormal condition.



3-2 REMOVAL AND INSTALLATION

3-2-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
Tool		Engine support bridge	For suspending engine and transaxle
		Engine support bridge	For suspending engine and transaxle
		Chain block	For suspending engine and transaxle (for addition to enginr support bridge)
		High-transmission jack	For removal/installation of transaxle
Instrument	Torque wrench		

3-2-2 OPERATION BEFORE REMOVAL

1. Disconnect the battery ground cable from the negative terminal.

NOTE

- Memory such as troubleshooting code or radio shall be recorded to avoid being erased before disconnect the battery ground cable from the negative terminal .

2. Remove the air cleaner case.

3. Support of engine and transaxle

- (1) Install the engine hanger No. 1 and No. 2.

WARNING

- Do not work while the exhaust manifold is still hot so as to avoid getting burn.

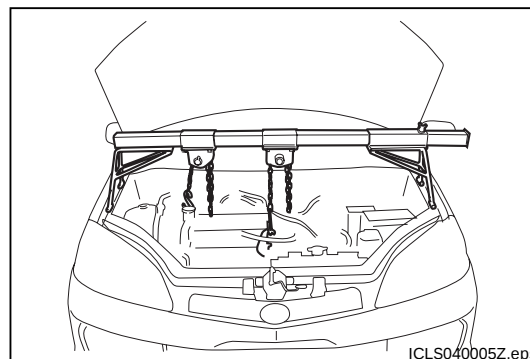
NOTE

- The engine hanger No. 1, No. 2 and the installation bolts are supplies as replacement parts.

TIGHTENING TORQUE: $20.0 \pm 6.0 \text{ N}\cdot\text{m}$

- (2) Using engine support bridge, hold engine Ay and transaxle Ay in direct coupling condition.

TOOL: Engine support bridge



4. Jack up the vehicle.

WARNING

- Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

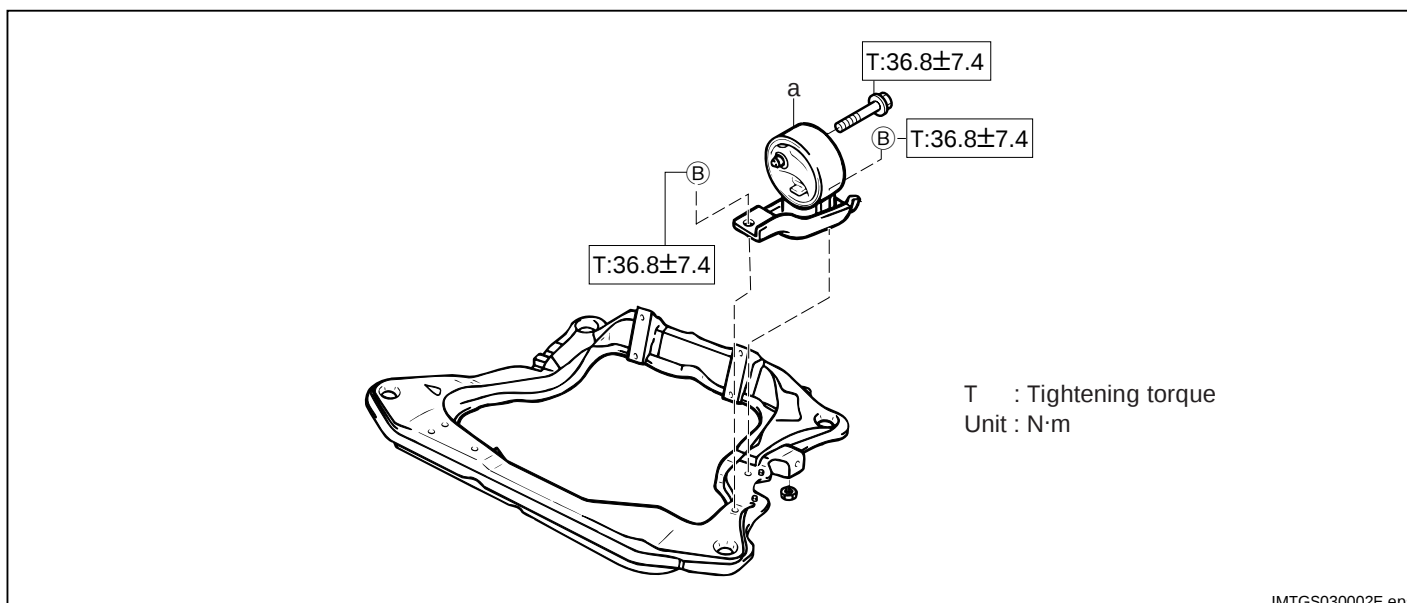
5. Remove the wheels.

6. Remove the engine under cover LH.

MTG-LLI-D-B-00011

3-2-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



IMTGS030002E.eps

MTG-14

(2) REMOVAL AND INSTALLATION PROCEDURES

- 1 1 a Insulator, engine mounting, lower left

MTG-LLI-D-T-00011

3-2-4 OPERATION AFTER INSTALLATION

1. Install the engine under cover LH.
2. Install the wheels.
3. Jack down the vehicle.
4. Remove the engine support bridge.
5. Remove the engine hanger.
6. Install the air cleaner case.
7. Connect the battery negative terminal.

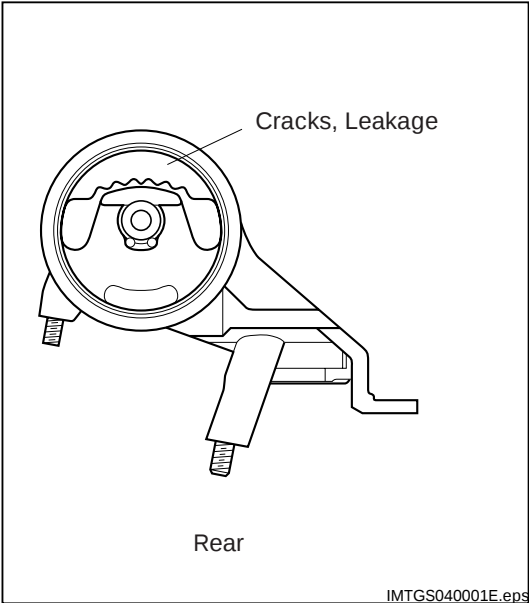
MTG-LLI-D-A-00011

4 ENGINE MOUNTING REAR INSULATOR

4-1 BASIC CHECK

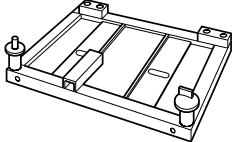
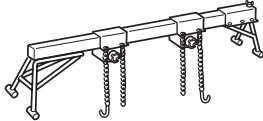
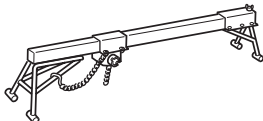
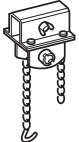
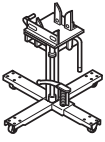
4-1-1 ENGINE MOUNTING REAR INSULATOR

- 1. Check each portion for no abnormal condition.



4-2 REMOVAL AND INSTALLATION

4-2-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09994-87201-000 Holder, engine frame	For removal/installation of engine frame
Tool		Engine support bridge	For suspending engine and transaxle
		Engine support bridge	For suspending engine and transaxle
		Chain block	For suspending engine and transaxle (for addition to enginr support bridge)
		High-transmission jack	For removal/installation of transaxle
Instrument	Torque wrench		

MTG-16

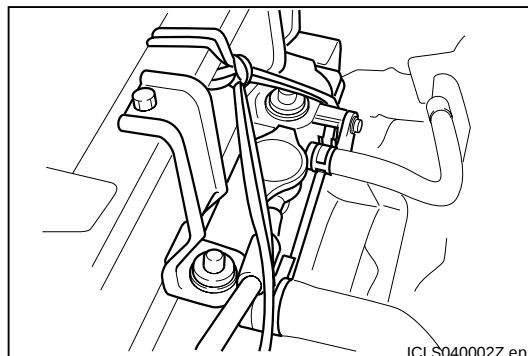
4-2-2 OPERATION BEFORE REMOVAL

1. Disconnect the battery ground cable from the negative terminal.

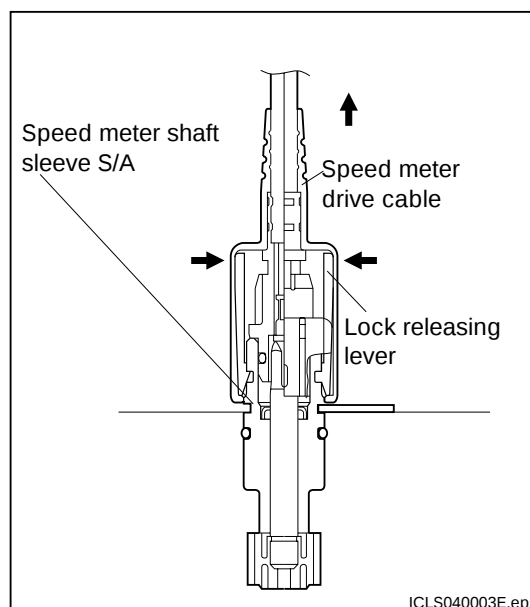
NOTE

- Memory such as troubleshooting code or radio shall be recorded to avoid being erased before disconnect the battery ground cable from the negative terminal .

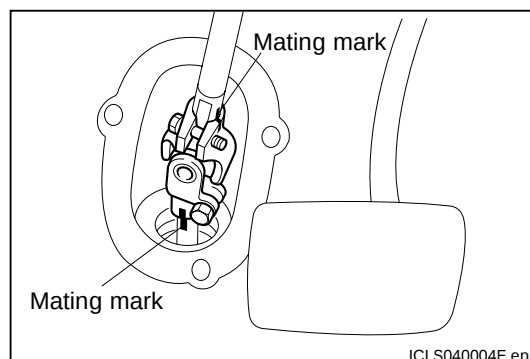
2. Disconnect the bond cable.
3. Remove the air cleaner case.
4. Separation of radiator
 - (1) Remove the radiator bracket.
 - (2) Fix the radiator together with the radiator fan to upper support with string etc .



5. Disconnection of clutch cable (For MT vehicle)
 - (1) Disconnect the clutch cable at the transaxle side.
6. Separation of speedometer cable Ay (For the vehicle equipped the mechanical speedometer)
 - (1) Take off the lock which locate in the boot on the transaxle fitting portion by means of picking from outside.
 - (2) Pull out the cable.



7. Separation of universal joint
 - (1) Attach mating marks to universal joint and steering gear, and separate the joint portion.



8. Support engine and transaxle

(1) Install the engine hanger No. 1, No. 2.

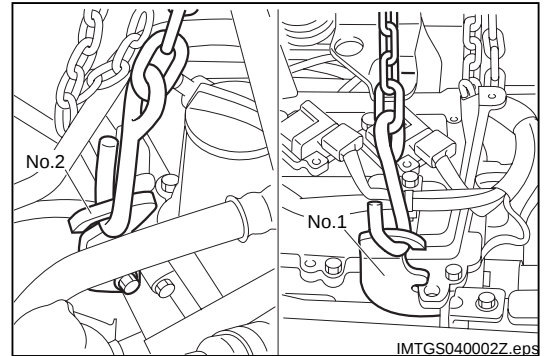
WARNING

- Do not work while the exhaust manifold is still hot so as to avoid getting burn.

NOTE

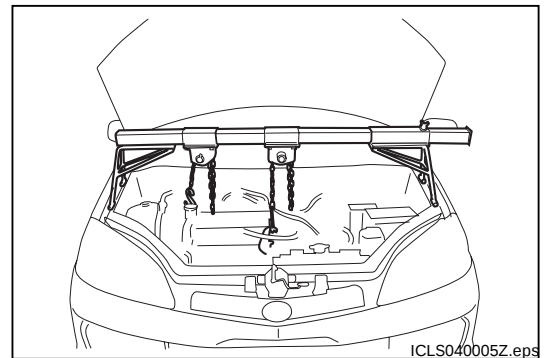
- The engine hanger No. 1, No. 2 and the installation bolts are supplies as replacement parts.

TIGHTENING TORQUE: $20.0 \pm 6.0 \text{ N}\cdot\text{m}$



(2) Using engine support bridge, hold engine Ay and transaxle Ay in direct coupling condition.

TOOL: Engine support bridge



MTG-18

9. Jack up the vehicle.

WARNING

n Keep the position of the jackup point to avoid causing serious accident due to inclining of the vehicle.

10. Remove the wheels.

11. Remove the lower arm bracket connecting rod.

Refer to MTG-5.

12. Remove the stabilizer bar.

Refer to FS-25.

13. Remove the exhaust pipe.

WARNING

n Do not work while the exhaust pipe is still hot so as to avoid getting burn.

14. Separate the suspension lower arm S/A from the frame.

Refer to FS-20.

15. Separation of propeller shaft (For 4WD vehicles)

(1) Separate the transfer side of the propeller shaft Ay and hang it on the vehicle.

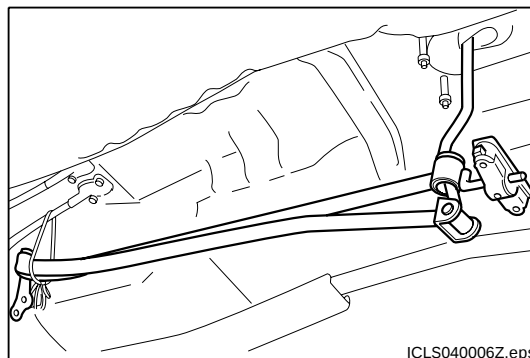
CAUTION

n Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-26.

16. Separation of shift & select rod (For MT vehicles)

(1) Separate the shift & select control rod and the extension rod at the transmission side and hang them on the vehicle.

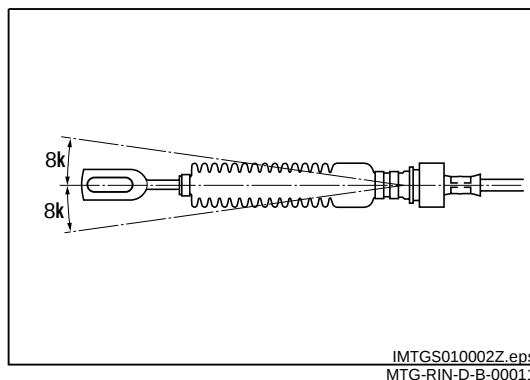


17. Disconnection of control cable (For AT vehicle)

(1) Disconnect the control cable from the control shaft lever Ay.

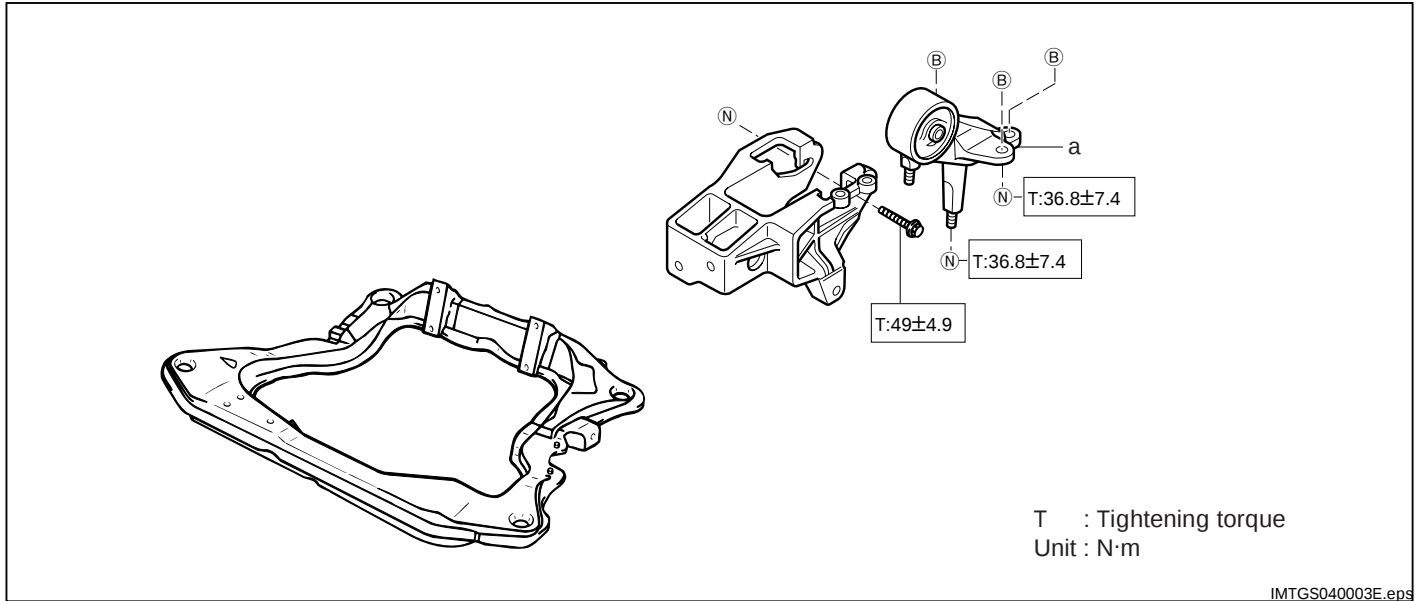
CAUTION

n Do not rock the control cable end (both the shift lever side and the transmission side) by 8k or more, or do not apply load.



4-2-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

① 1 a Insulator

MTG-RIN-D-T-00011

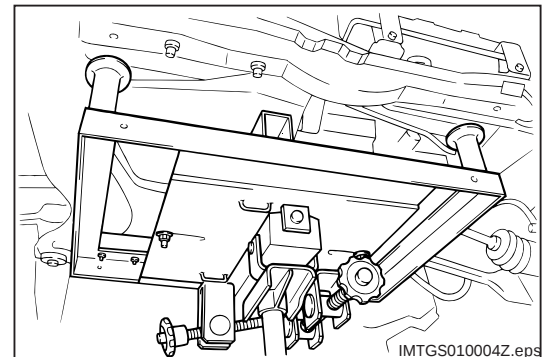
4-2-4 POINTS OF REMOVAL

1. Removal of frame

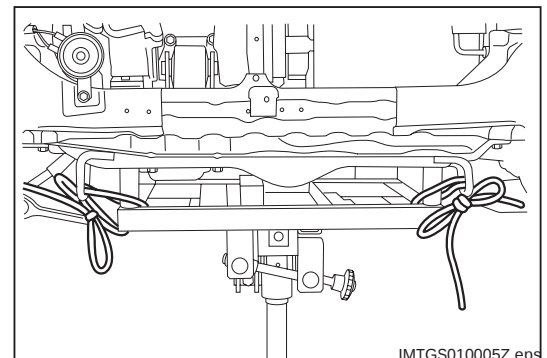
(1) Support the frame by using the high-transmission jack.

SST: 09994-87201-000

TOOL: High-transmission jack



(2) Fix the frame with string or chain to avoid slipping off of the frame.



(3) Remove the fitting bolt of the frame.

(4) Lower the front frame with it inclined backward by using the high-transmission jack.

MTG-RIN-D-D-00011

MTG-20

4-2-5 POINTS OF INSTALLATION

1. Installation of frame
 - (1) Install the bush to the frame as shown in the drawing. (vehicle equipped with EJ engine)
 - (2) Install the frame to the body.

MTG-RIN-D-S-00011

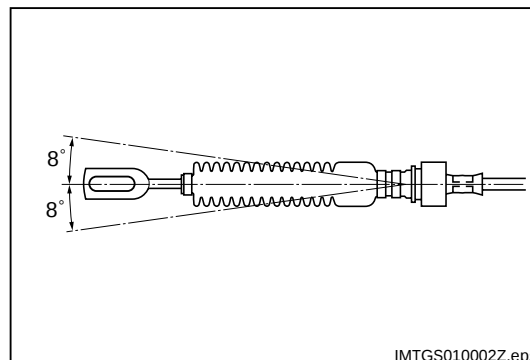
4-2-6 OPERATION AFTER INSTALLATION

1. Connect the control cable. (For AT vehicle)

CAUTION

- Do not rock the control cable end (both the shift lever side and the transmission side) by 8° or more, or do not apply load.

Refer to AT-35.



2. Connect the shift & select rod. (For MT vehicle)
Refer to MT-15.

3. Install the propeller shaft. (For 4WD vehicle)

CAUTION

- Be very careful not to apply load to the center support bearing and second joint section.

Refer to DPS-26.

4. Install the suspension lower arm S/A.
Refer to FS-20.

5. Install the exhaust pipe.

6. Install the stabilizer bar.
Refer to FS-25.

7. Install the lower arm bracket connecting rod.
Refer to MTG-5.

8. Install the wheels.
TIGHTENING TORQUE: $103.0 \pm 14.7\text{N}\cdot\text{m}$

9. Jack down the vehicle.

10. Remove the engine support bridge.

11. Remove the engine hanger.

12. Connection of universal joint

(1) Align the mating marks and connect the joint portion.

CAUTION

- If mating marks disappeared, align roll connector when put the wheel center together. (For vehicle equipped with air bag)

13. Connect the speedometer cable. (vehicle equipped with mechanical speedometer)

14. Connect the clutch cable. (For MT vehicle)

15. Install the radiator.

16. Install the air cleaner case.

17. Connect the bond cable.

18. Connect the battery negative terminal.

19. Perform the basic check of the clutch pedal.
Refer to CL-3.

MTG-22

5 TIGHTENING TORQUE

Tightening components			N·m	kgf·cm
Frame	×	Body	94.2 ± 9.8	960 ± 100
Front insulator	×	Frame	36.8 ± 7.4	375 ± 75
Front insulator	×	Engine mounting front bracket	36.8 ± 7.4	375 ± 75
Lower left insulator	×	Frame	36.8 ± 7.4	375 ± 75
Lower left insulator	×	Engine mounting lower left bracket	36.8 ± 7.4	375 ± 75
Rear insulator	×	Frame	36.8 ± 7.4	375 ± 75
Rear insulator	×	Engine mounting lower left bracket	49.0 ± 4.9	500 ± 50

MTG-TQE-Z-Z-00011