

CLUTCH

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CL-2

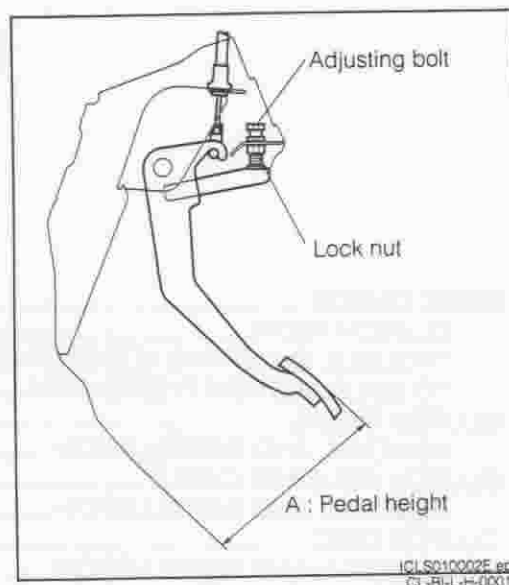
1 BASIC CHECK

1-1 CLUTCH PEDAL

1-1-1 PEDAL HEIGHT CHECK

1. Measure the distance from the center of upper surface of the pedal pad to dash panel.

SPECIFIED VALUE: A:185 - 190mm



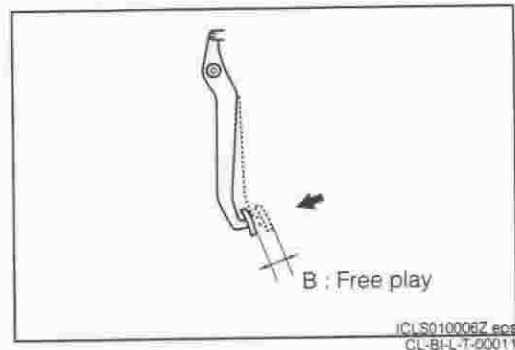
1-1-2 PEDAL HEIGHT ADJUSTMENT

1. Loosen the lock nut.
2. Turn the adjusting bolt, and adjust the pedal height.
3. Tighten the lock nut.

CL-BI-L-A-00011

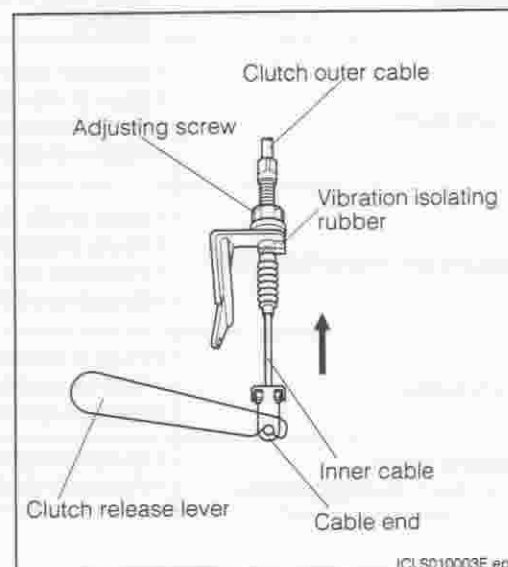
1-1-3 PEDAL FREE PLAY CHECK

1. Measure the free travel at the pedal pad upper surface.
- SPECIFIED VALUE: B:10-30mm

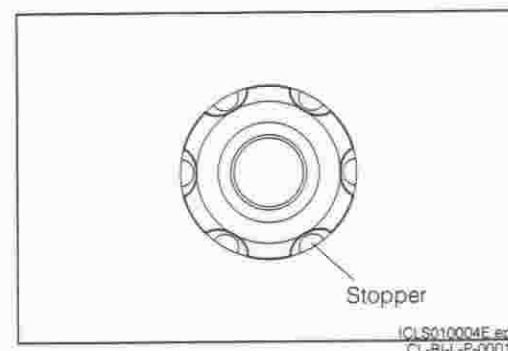


1-1-4 PEDAL FREE PLAY ADJUSTMENT

1. Move the clutch release lever to the direction showing in figure, and stop it at the position where the clutch release bearing comes in contact lightly with the diaphragm spring of the clutch cover.
2. Pull up the clutch cable outer at this condition, and maintain it at the position where slack of an inner cable disappears.
3. With holding cable, screw the adjusting screw till it comes in contact with the vibration isolating rubber .



4. At this time when protrusion of stopper does not fit with the thread position of the adjusting screw, return the adjusting screw and fit.



1-1-5 PEDAL RELEASE POINT CHECK

1. Turn the engine in idling condition.
2. Pull the parking brake lever fully.
3. Depress the clutch pedal, and put the shift lever in the first gear.
4. Releasing the clutch pedal slowly, measure the distance from the center of upper surface of the pedal pad to the dash panel just before clutch is going to engage.

SPECIFIED VALUE: Not less than 20mm

CL-BL-L-R-00011

CL-4

1-2 TROUBLE SHOOTING ACCORDING TO MALFUNCTION PHENOMENA

Gear shifting is hard or impossible	• Excessive clutch pedal free way. • Excessive clutch disk runout, or damaged lining. • Faulty clutch pressure plate. • Input shaft or disk splined section contaminated or sticking.	• Adjust clutch pedal free travel. • Check clutch disc. • Repair, as required. • Replace clutch cover.
Slipping clutch	• Improper clutch pedal free travel. • Worn or oily clutch disc linings. • Faulty pressure plate. • Flattened diaphragm spring.	• Adjust clutch pedal free travel. • Replace clutch disc. • Replace clutch cover. • Replace clutch cover.
Grabbing and chattering clutch	• Worn or oily clutch disc linings. • Faulty pressure plate. • Flattened disc torsion spring. • Bent diaphragm spring.	• Check clutch disk and replace, as required. • Replace clutch cover. • Replace clutch disk. • Replace clutch cover.
Clutch noises	• Parts in housing loose. • Worn or contaminated release bearing. • Release fork and linkage seized.	• Repair, as required. • Replace release bearing. • Repair, as required.
Dragging clutch (Poor clutch disengagement)	• Clutch pedal free travel improperly adjusted. • Flattened diaphragm spring, or worn tip end of spring.	• Adjust clutch pedal free travel. • Replace clutch cover.

CL-BI-T-Z-00011



2 CLUTCH PEDAL

2-1 REMOVAL AND INSTALLATION

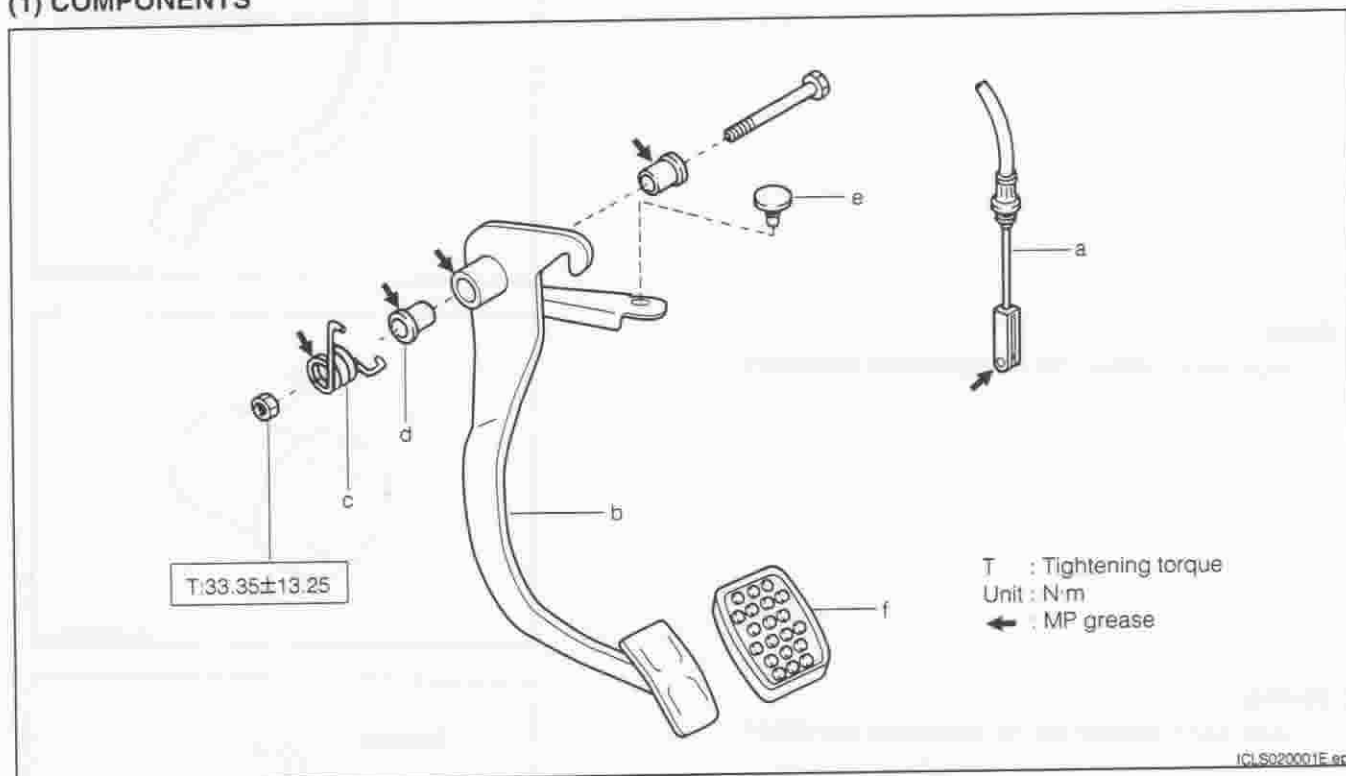
2-1-1 PREPARATION TOOLS

Instrument	Torque wrench
Lubricant	MP grease

CL-CP-D-P-00011

2-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

- 1 6 a Cable Ay, clutch release
- 2 5 b Pedal S/A, clutch
- 3 4 c Spring
- 4 3 d Bush
- 5 ② e Cushion

- 6 1 f Pad, clutch pedal

CL-CP-D-T-00011

CL-6

2-1-3 INSPECTION

(1) Clutch pedal S/A

1. Check each portion for no abnormal condition.



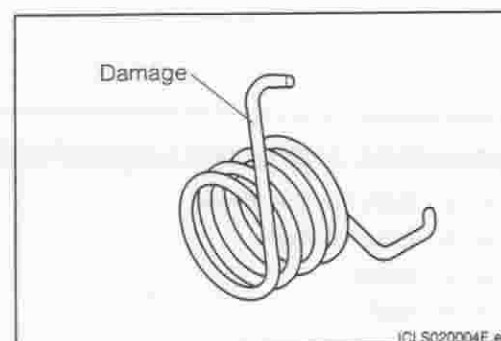
(2) Bush

1. Check each portion for no abnormal condition.



(3) Spring

1. Check each portion for no abnormal condition.



2-1-4 POINTS OF INSTALLATION

1. Installation of the cushion
(1) Put the soapy water on nose of the cushion, and install to the clutch pedal S/A.

CL-CP-D-S-00011

2-1-5 OPERATION AFTER INSTALLATION

1. Perform the basic check for clutch pedal.
Refer to CL-2.

CL-CP-D-A-00011

3 CLUTCH RELEASE CABLE

3-1 REMOVAL AND INSTALLATION

3-1-1 PREPARATION TOOLS

Instrument	Torque wrench
Lubricant	MP grease

CL-CC-D-P-00011

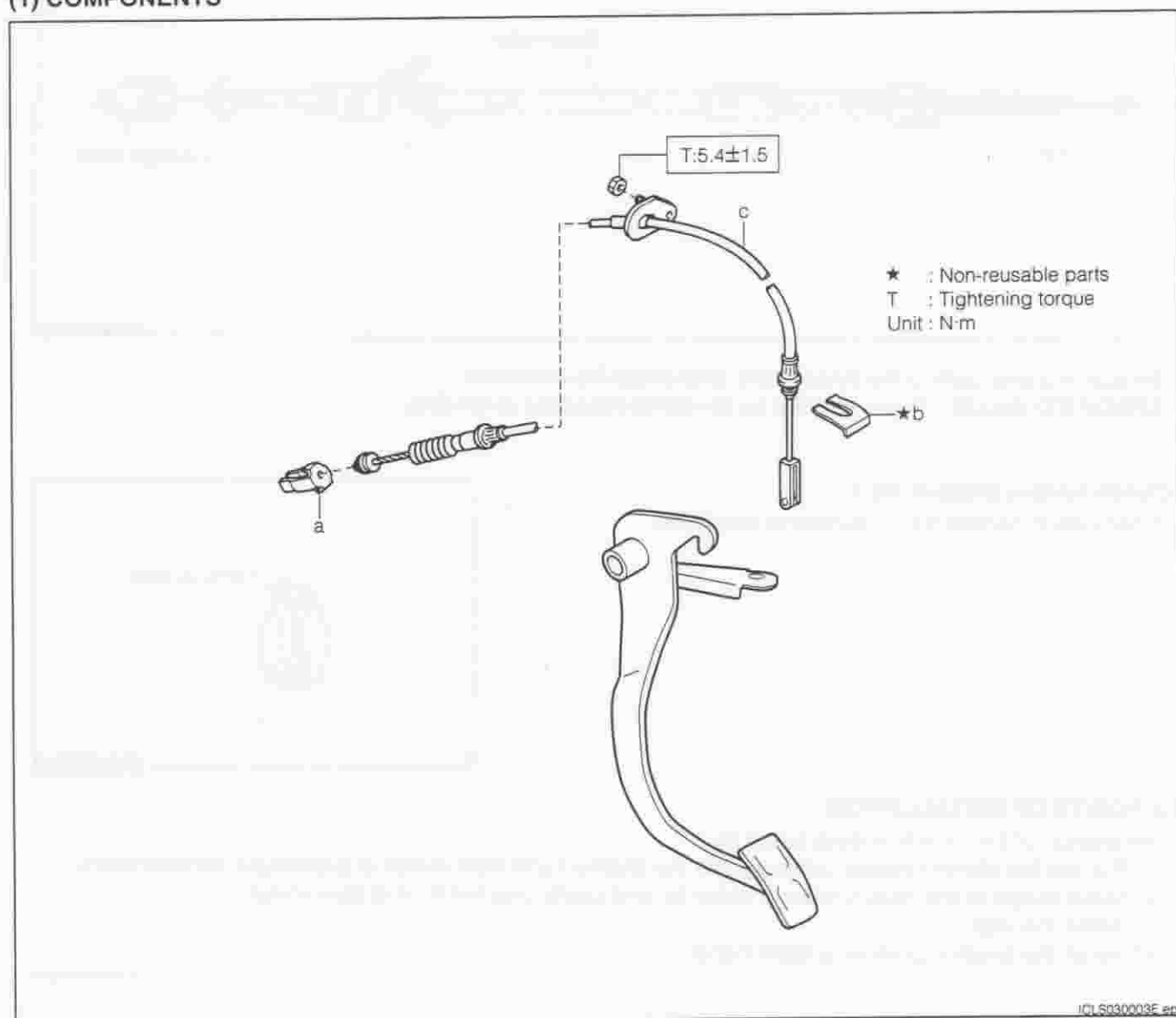
3-1-2 OPERATION AFTER INSTALLATION

1. Perform the basic inspection of clutch pedal.
Refer to CL-2.

CL-CC-D-A-00011

3-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



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(2) REMOVAL AND INSTALLATION PROCEDURES

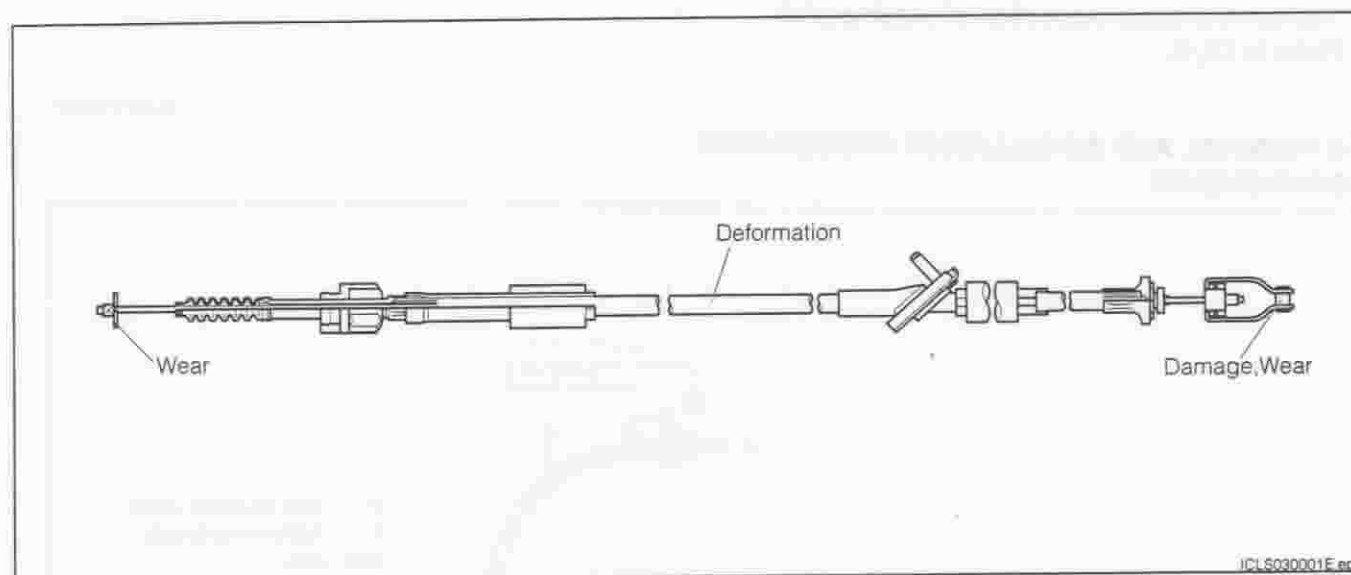
- 1 3 a Bracket, clutch release, No.1
- 2 2 b Clip
- 3 ① c Cable Ay, clutch release

CL-CC-D-T-00011

3-1-4 INSPECTION

(1) Clutch release cable Ay

1. Check each portion for no abnormal condition.



2. By pushing and pulling the inner cable, and check it's condition.
SPECIFIED VALUE: There shall be no abnormal response or binding.

(2) Clutch release bracket No.1

1. Check each portion for no abnormal condition.



3-1-5 POINTS OF INSTALLATION

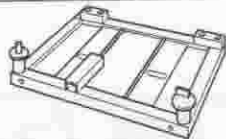
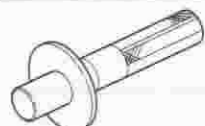
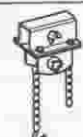
1. Installation of the clutch release cable Ay
 - (1) Pull out the clutch release cable Ay into the engine room from inside of passenger compartment.
 - (2) Make shape of the clutch release cable Ay and pedal bracket fit, and then install.
 - (3) Install the clip.
 - (4) Install the bracket portion to dash panel.

CL-CC-D-S-00011

4 CLUTCH DISC

4-1 REMOVAL AND INSTALLATION

4-1-1 PREPARATION TOOLS

	Shape	Part number, part name	Use
SST		09994-87201-000 Holder, engine frame	For removal/installation of engine frame
		09210-87701-000 Holder, flywheel	For prevention from turning of flywheel
		09301-87703-000 Tool, clutch guide	For installation of clutch cover & clutch cover
		09302-87701-000 Gauge, clutch diaphragm spring height No.4	For check of clutch cover diaphragm springs for uneven height
		09333-00013-000 Analyzer, clutch diaphragm spring	For correction of clutch cover diaphragm springs unevenness
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	Dial gauge, Calipers, Thickness gauge, Torque wrench		
Lubricant	EP grease, MP grease, clutch grease, Gear oil SAE75W-85 or 75W-90(GL-3 or GL-4)		

CL-CD-D-P-00011

CL-10

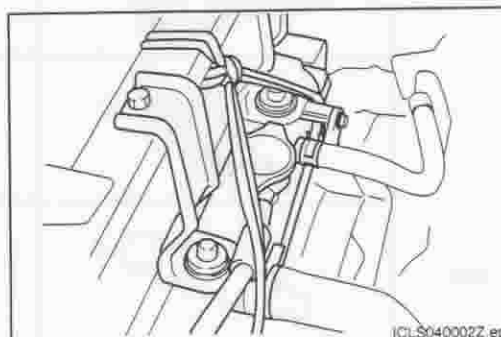
4-1-2 OPERATION BEFORE REMOVAL

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

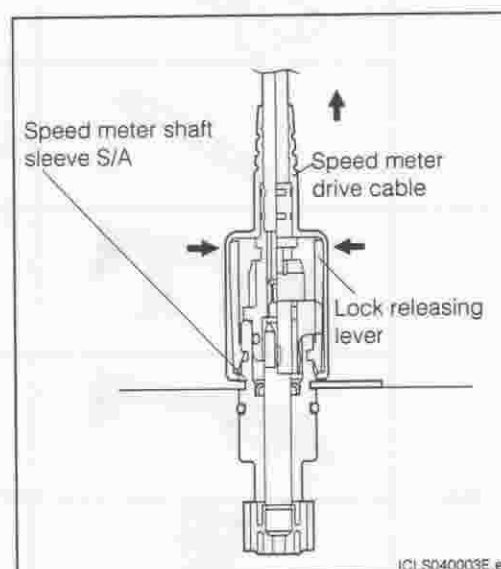
NOTE

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

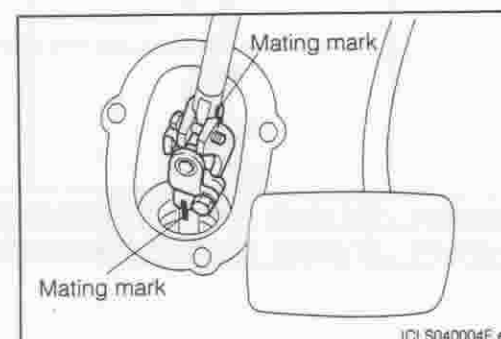
2. Disconnect the bond cable.
3. Remove the air cleaner case.
4. Separation of radiator.
 - (1) Remove the radiator bracket.
 - (2) Fix the radiator together with the radiator fan to upper support with string etc.



5. Disengagement of the 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 out side.
 - (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 the engine and the transaxle
 - (1) Install the engine hanger No. 1, No. 2.

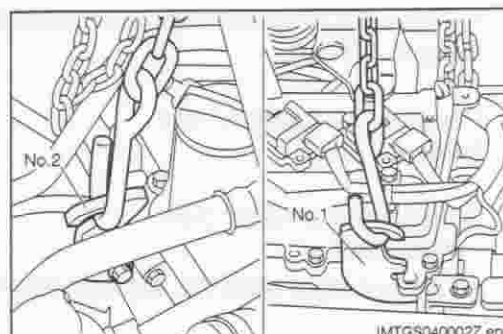
WARNING

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

NOTE

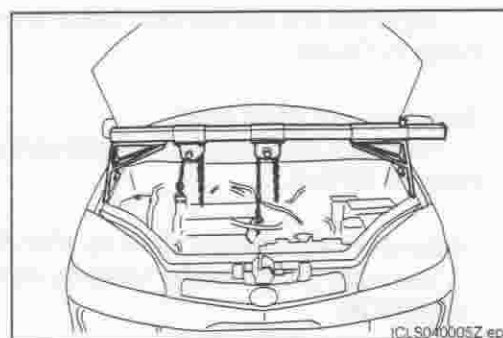
- The engine hanger No. 1, No. 2 and the installation bolts are supplies as replacement parts.

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



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

TOOL: Engine support bridge



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9. Jackup the vehicle.

WARNING

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

10. Remove the wheels.

11. Drain the transmission oil.

Refer to MT-2.

12. Remove the lower arm bracket connecting rod.

Refer to MTG-5.

13. Remove the stabilizer bar.

Refer to FS-20.

14. Remove the exhaust pipe.

WARNING

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

15. Separation of the suspension lower arm S/A

- (1) Separate the suspension lower arm from the steering knuckle.

Refer to FS-20.

16. Separation of drive shaft

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

Refer to DPS-3.

17. Separation of propeller shaft Ay (For 4WD wheel)

- (1) Separate the propeller shaft Ay at transfer side, and hang it on a vehicles.

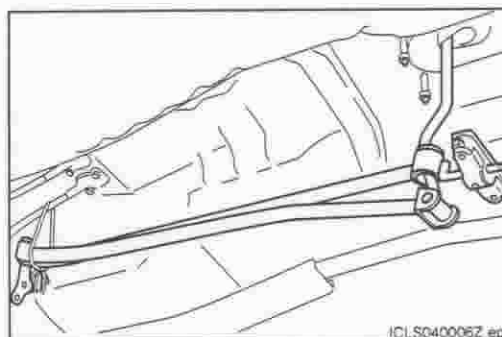
CAUTION

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

Refer to DPS-26.

18. Separation of shift & select rod (For MT vehicle)

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



19. Removal of frame and suspension lower arm S/A

- (1) Remove the frame and the suspension lower arm S/A together.

Refer to MTG-5.

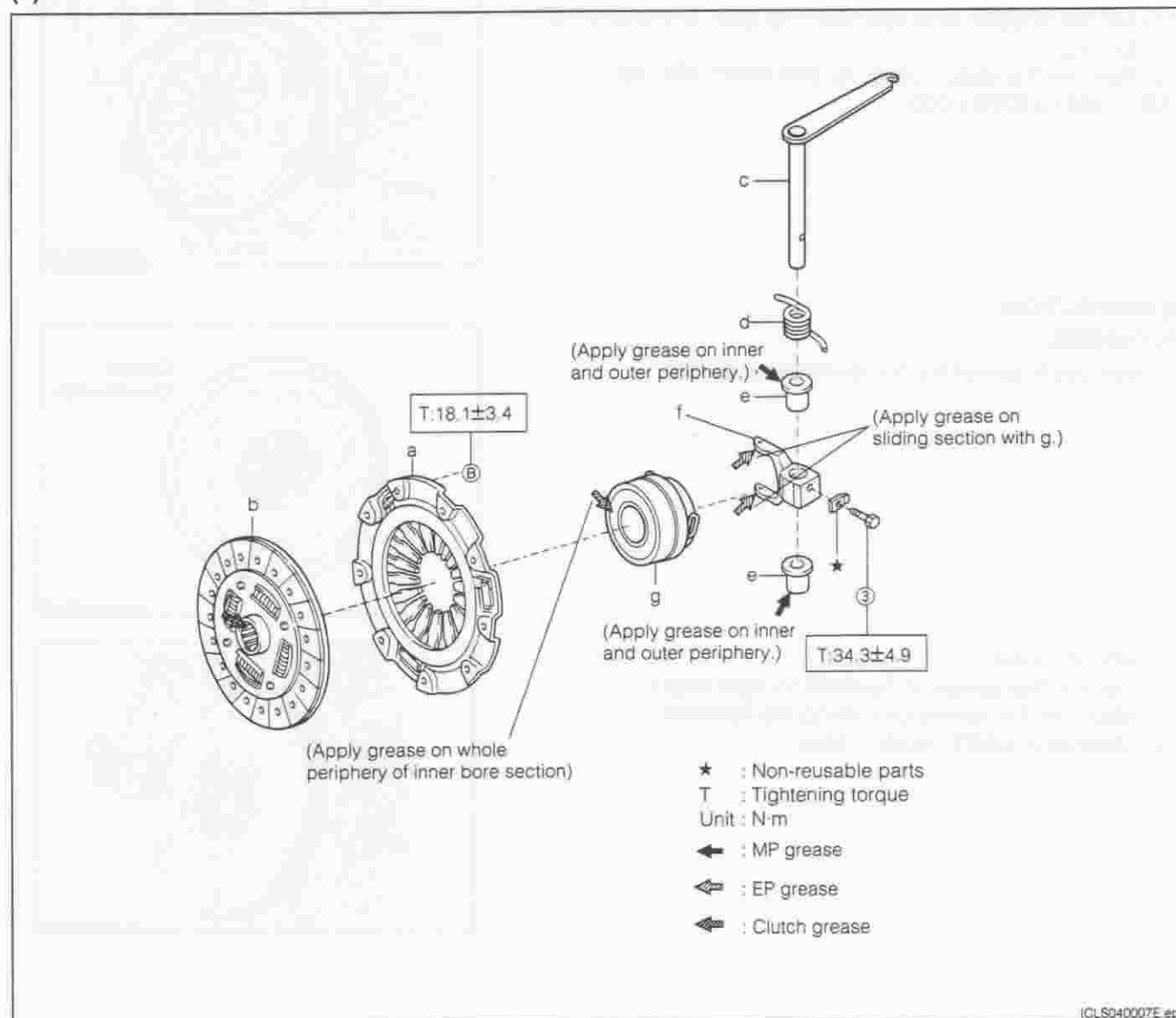
20. Remove the transaxle Ay.

Refer to MT-6.

CL-CD-D-B-00011

4-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

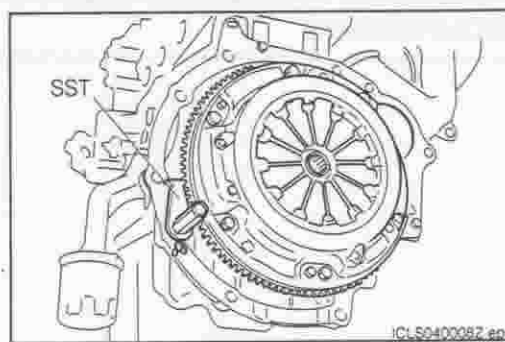
- | | | | |
|-------|---------------------------|-------|--------------------------------|
| ① ⑦ a | Cover Ay, clutch | 6 2 f | Yoke, release lever |
| ② ⑥ b | Disc Ay, clutch | 7 1 g | Hub Ay, clutch release bearing |
| 3 5 c | Lever S/A, clutch release | | |
| 4 4 d | Spring, torsion | | |
| 5 3 e | Bush | | |

CL-CD-D-T-00011

CL-14

4-1-4 POINTS OF REMOVAL

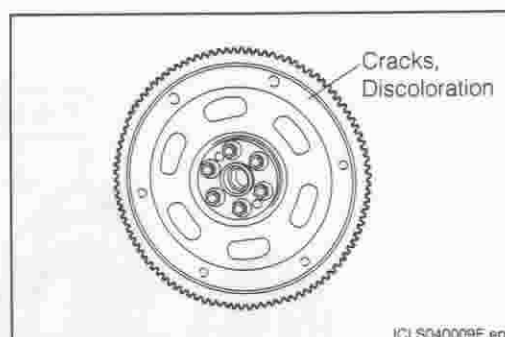
1. Removal of clutch cover Ay and clutch disc Ay
 - (1) Set the stopper onto flywheel ring gear to prevent from turning.
 - (2) Remove the clutch cover Ay and clutch disc Ay.SST: 09210-87701-000



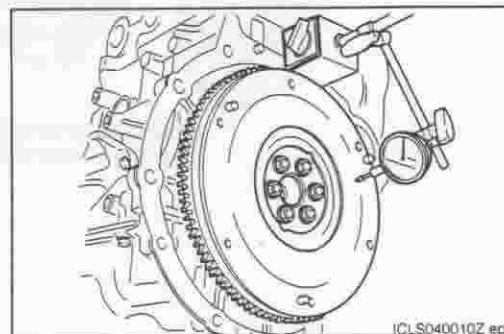
4-1-5 INSPECTION

(1) FLYWHEEL

1. Check each portion for no abnormal condition.

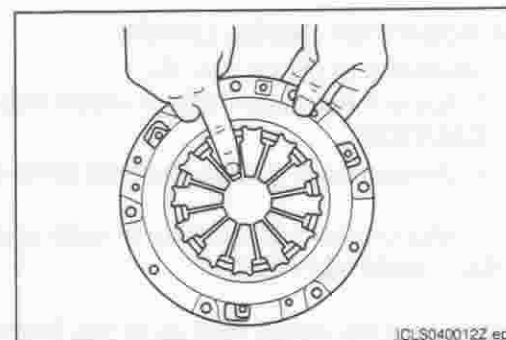
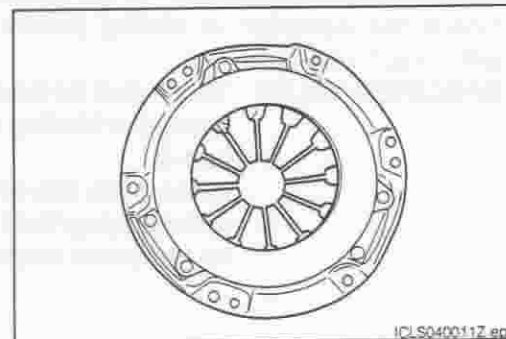


2. Check of runout
 - (1) Set the dial gauge to flywheel on right angle .
 - (2) Measure the runout by turning the flywheel .ALLOWABLE LIMIT: MAX 0.10mm



(2) CLUTCH COVER

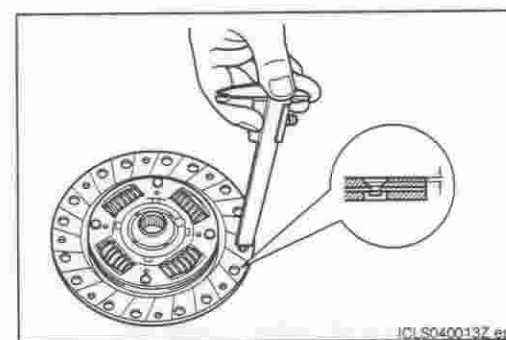
1. Check each portion for no abnormal condition.



(3) CLUTCH DISC

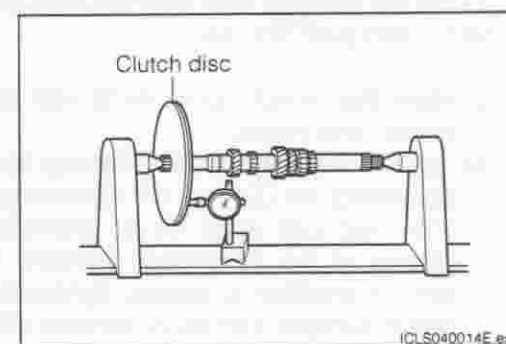
1. Check the wear condition
 - (1) Measure the sagged value of rivet portion.

ALLOWABLE LIMIT: MAX 0.3mm



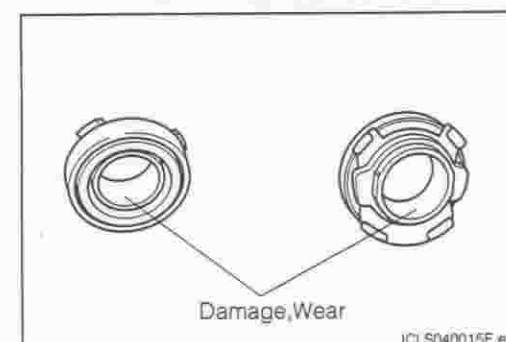
2. Check the lateral runout
 - (1) Install new input shaft to the clutch disc Ay.
 - (2) Set the dial-gauge to clutch disc Ay on right angle.
 - (3) Measure the lateral runout by turning clutch disc Ay.

ALLOWABLE LIMIT: MAX 1.0mm



(4) CLUTCH RELEASE BEARING HUB

1. Check each portion for no abnormal condition.

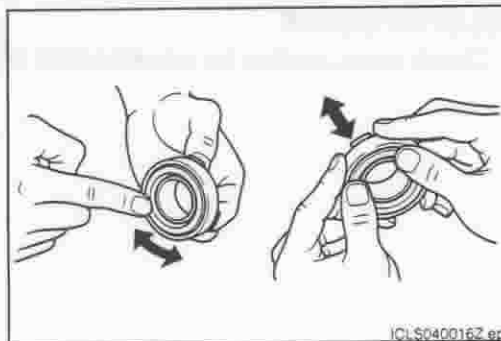


CL-16

2. Check the condition of sliding portion (Contact surface with clutch cover).

SPECIFIED VALUE: There shall be no abnormal response or binding when attempt to turn it.

When push it to direction of rotation with applying force, there shall be no abnormal response or binding.



ICLS040016Z.eps
CL-CD-D-C-00011

4-1-6 POINTS OF INSTALLATION

1. Installation of clutch disc Ay

(1) Apply the grease thinly to inside hub of clutch disc Ay (a spline portion) from clutch cover side.

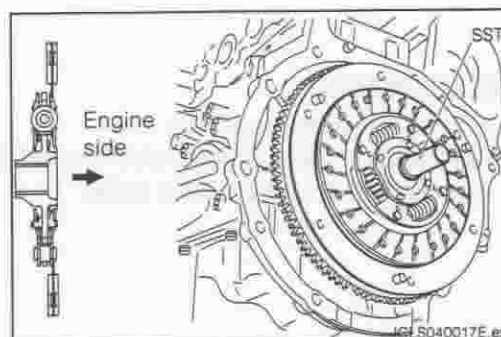
CAUTION

- Unnecessary grease shall not come out to the flywheel side.

(2) Affix one turn of the tape to nose end of SST.

SST: 09301-87703-000

(3) Install the clutch disc Ay to the flywheel.



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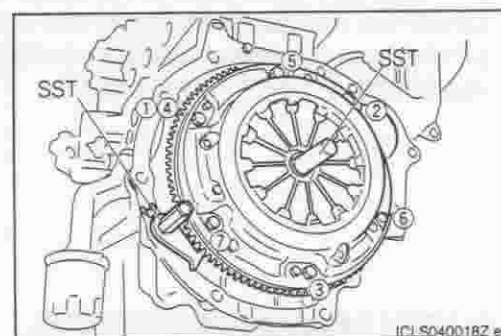
2. Installation of clutch cover Ay

(1) Set the stopper onto flywheel ring gear to prevent from turning.

SST: 09210-87701-000

(2) Make the clutch cover Ay fit with dowel pin of the flywheel, and install.

(3) Tighten the bolts in the following sequences. Temporal tightening on ① and full tightening in ② through ⑦. (The first bolt shall be at arbitrary location in three places of the installation portions near to the dowel pin.) In addition to above, tighten bolts till the bolt flat beam surface comes in contact with the clutch cover as temporary tightening.



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CL-CD-D-S-00011

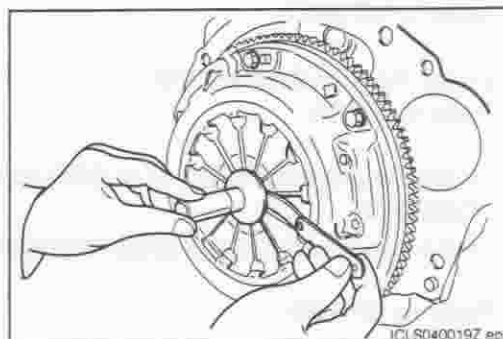
4-1-7 OPERATION AFTER INSTALLATION

1. Correction for unevenness of height of diaphragm spring portion

(1) Measure the unevenness of the height of diaphragm spring portion.

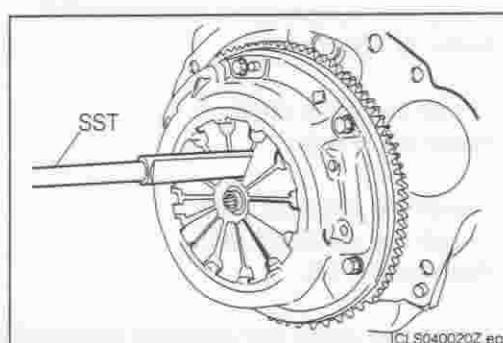
SST: 09302-87701-000

SPECIFIED VALUE: 0.7mm



(2) Correct the unevenness of the height when exceed the limit.

SST: 09333-00013-000



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2. Install the transaxle Ay.
Refer to MT-6.
3. Install the frame and suspension lower arm S/A.
Refer to MTG-5.
4. Install the shift & select rod.
Refer to MT-15.
5. Install the propeller shaft. (For 4WD vehicles)
CAUTION
 - Be very careful not to apply load to the center support bearing and second joint section.Refer to DPS-26.
6. Install the suspension lower arm S/A.
Refer to FS-20.
7. Install the drive shaft.
Refer to DPS-3.
8. Install the exhaust pipe.
9. Install the stabilizer bar.
Refer to FS-26.
10. Install the lower arm bracket connecting rod.
Refer to MTG-5.
11. Fill the transmission oil.
Refer to MT-2.
12. Install the wheels.
TIGHTENING TORQUE: $103.0 \pm 14.7\text{N}\cdot\text{m}$
13. Jack down the vehicle.
14. Remove the engine support bridge.
15. Remove the engine hanger
16. Connection of universal joint
(1) Fit the mating marks together, and connect the joint portion.
CAUTION
 - Align the position of roll connector when fit wheel centre together, in case mating mark is disappeared (For the vehicle equipped with the air bag) .
17. Connect the speedometer cable (For the vehicles equipped with the mechanical speedometer)
18. Connect the clutch cable. (For MT vehicles)
19. Install the radiator.
20. Install the air cleaner case.
21. Connect the bond cable.
22. Connect the battery negative terminal.
23. Perform the basic inspection of clutch pedal.
Refer to CL-3.

CL-CD-D-A-00011

5 TIGHTENING TORQUE

Tightening components		N·m	kgf·cm
Clutch cover	× Flywheel	18.1 ± 3.4	185 ± 35
Release yoke lever	× Clutch release lever	34.3 ± 4.9	350 ± 50
Clutch pedal bolt	× Nut	33.25 ± 13.25	340 ± 135

CL-TQE-Z-Z-00011