

DAIHATSU

F300

CLUTCH

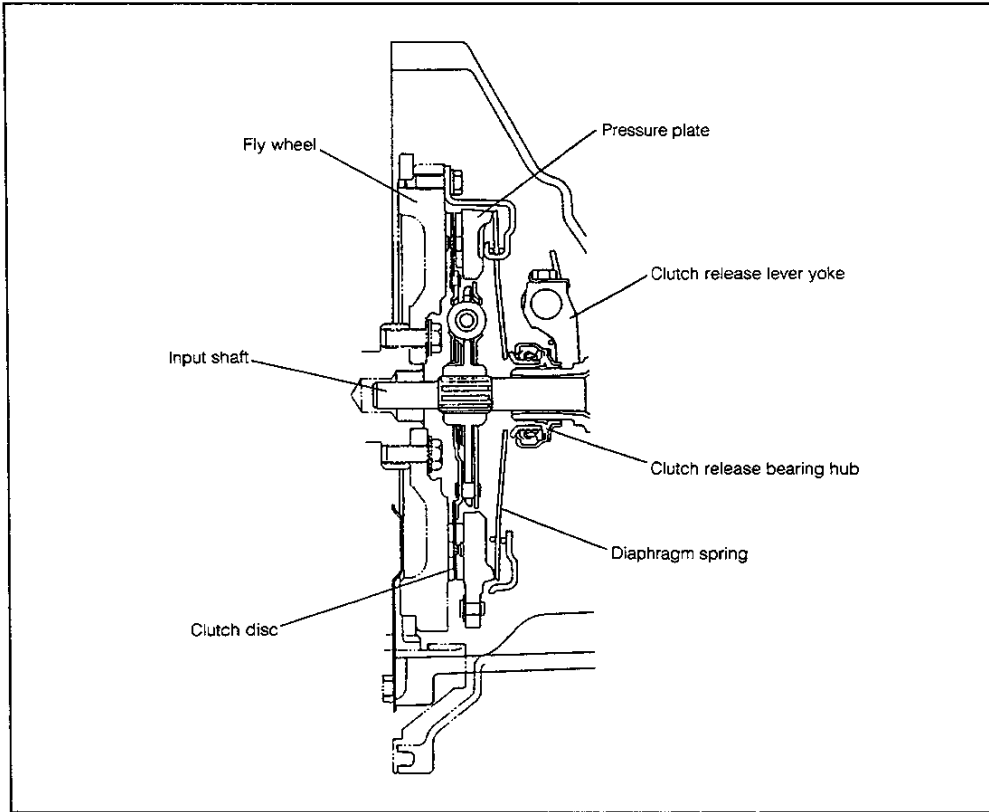
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WFE90-CL001

CLUTCH

CLUTCH

The clutch mechanism employs a dry, single-disc, diaphragm spring type. As for its operating method, it adopts a cable method which features positive operation and excellent serviceability.



WFE90-CL002

Clutch disc specifications

Clutch disc outer diameter	mm	200	
Clutch disc inner diameter	mm	140	
Thickness	Flywheel side	mm	3.5
	Pressure plate side	mm	3.5
Lining surface area	cm ²	160.14	

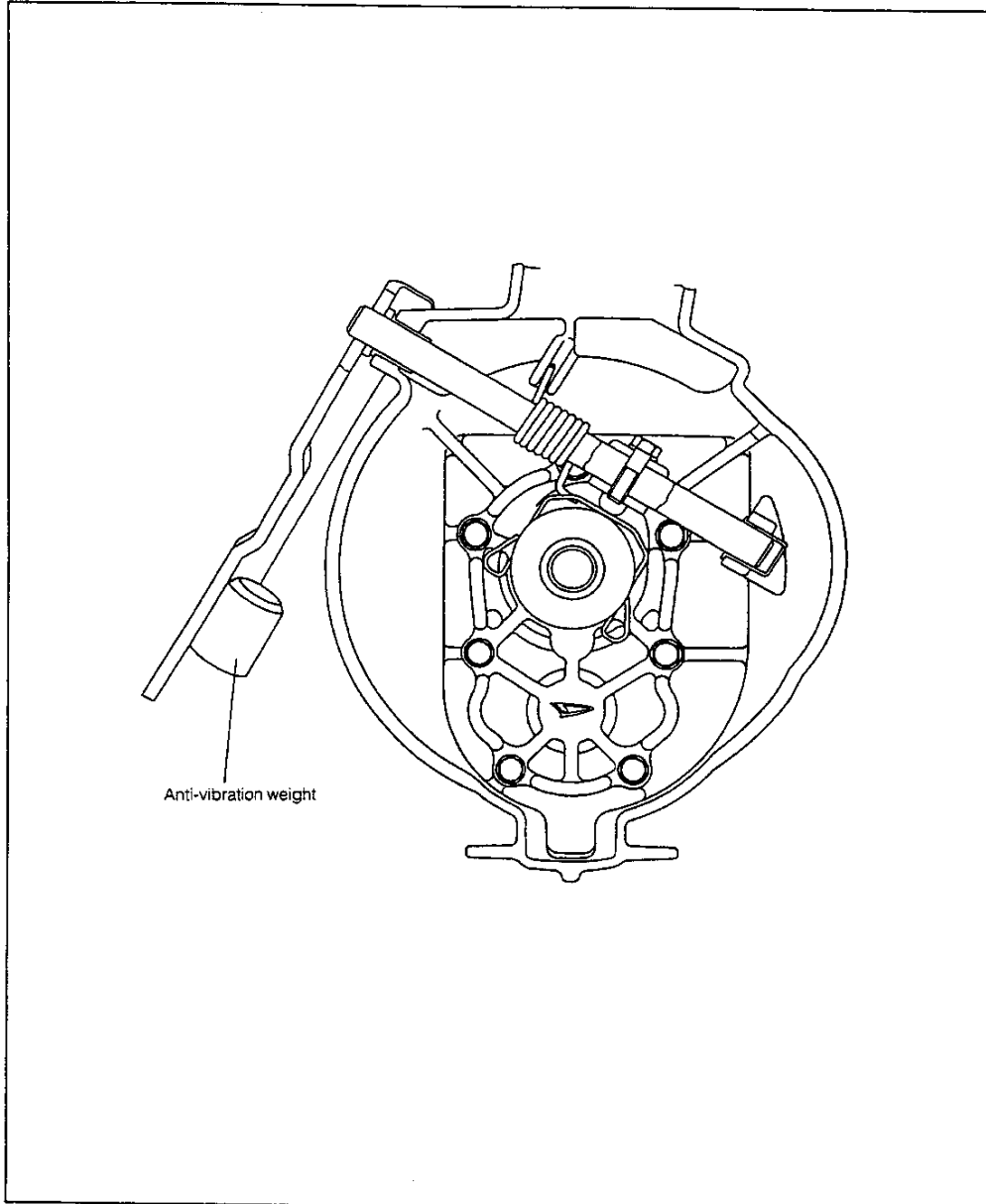
Clutch cover specifications

Clutch cover outer diameter	mm	253
Diaphragm spring load as assembled	kg	350

WFE90-CL003

CLUTCH RELEASE

The clutch release lever yoke is attached to the clutch release lever by means of a bolt. Furthermore, an anti-vibration weight is provided at the outer lever section



Anti-vibration weight

WFE90-CL004

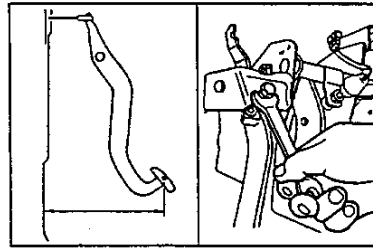
CLUTCH

CLUTCH PEDAL ADJUSTMENT

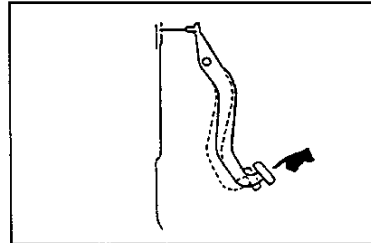
1. Check the clutch pedal for installation height.
Pedal installation height
(Distance between pedal pad upper surface's center and dash panel)
Clutch Pedal Installation Height:
L.H.D, R.H.D: 221 ± 5 mm

NOTE:

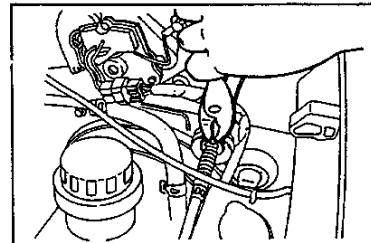
- Ensure that the clutch pedal installation height is 5.8 mm higher than the brake pedal surface. Adjust the clutch pedal installation height, as required. Then, adjust the clutch pedal installation height to the following specification.
- The figure above is the dimension form the body metal section to the pedal. It is, therefore, necessary to roll up the carpet and floor mat prior to the measurement.
Tightening Torque: 17.7 - 29.4 N·m (1.8 - 3.0 kgf·m)



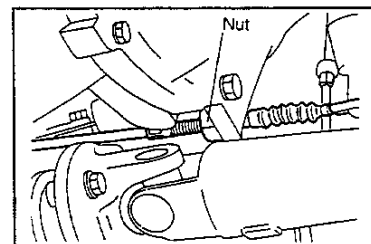
2. Adjust the pedal installation height, as required.
(1) Slacken the lock nut. Turn the stopper bolt until the installation height conforms to the specification.
(2) Tighten the lock nut.
3. Clutch pedal free travel
(1) Depress the clutch pedal gradually until you feel a resistance from the clutch. Measure the depressing distance up to this point.
Specified Clutch Pedal Free Travel: 18 - 27 mm



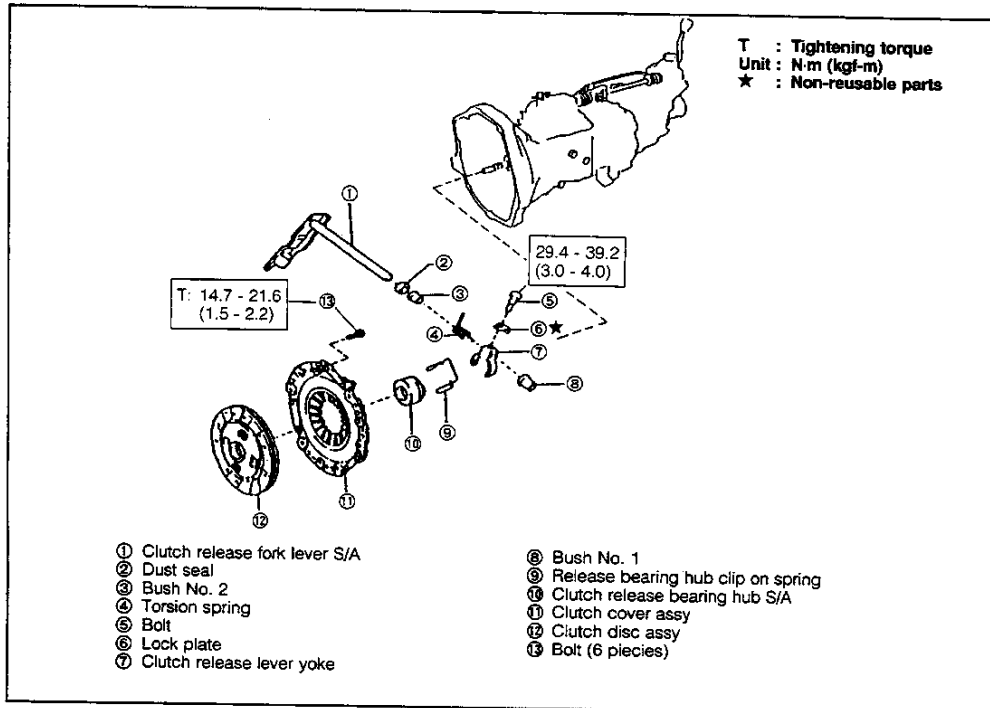
If the free travel of the clutch pedal fails to conform to the specification, adjust it to the specified value by changing the clip position of the clutch cable.



R.H.D vehicle only



CLUTCH UNIT COMPONENTS



TROUBLE SHOOTING

WPES0-CL009

Symptom	Possible causes	Remedies
Dragging clutch	<ul style="list-style-type: none"> • Excessive free travel or clutch pedal travel improperly adjusted • Deformed clutch disc • Clutch disc spline malfunctioning 	<ul style="list-style-type: none"> • Adjust free travel or clutch pedal travel. • Check clutch disc. • Check clutch disc.
Clutch judder	<ul style="list-style-type: none"> • Abnormal surface of clutch disc • Excessive runout of clutch disc • Unevenness of clutch cover diaphragm spring heights • Faulty clutch release bearing 	<ul style="list-style-type: none"> • Check clutch disc. • Check clutch disc runout. • Check clutch cover. • Check clutch release bearing.
Slipping clutch	<ul style="list-style-type: none"> • Worn clutch disc • Excessively worn clutch pressure plate • Faulty clutch cover diaphragm springs 	<ul style="list-style-type: none"> • Check clutch disc. • Check pressure plate. • Check clutch cover.

WPES0-CL010

CLUTCH

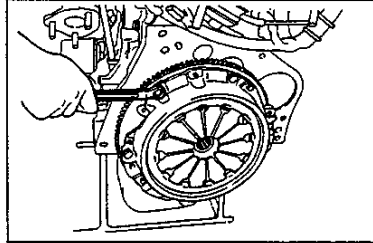
REMOVAL

1. Remove the transmission from the vehicle.

See page
MT-Section.

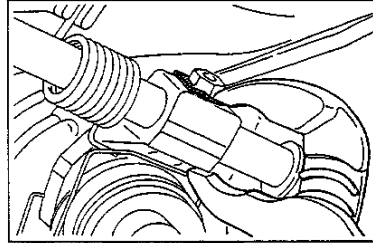
WFE90-CL011

2. Remove the clutch disc by removing the clutch cover with the six bolts.



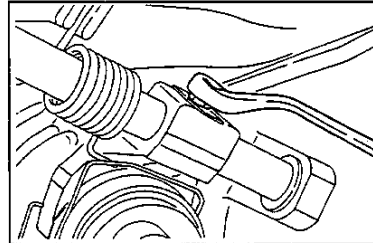
WFE90-CL012

3. Raise the lock plate by means of a common tool of water pump pliers.
CAUTION:
 - Never reuse the lock washer.



WFE90-CL013

4. Remove the bolt tightened to the clutch release lever.

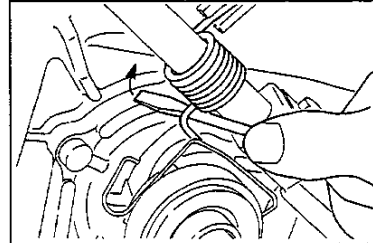


WFE90-CL014

5. Remove the torsion spring from the release lever yoke, using a standard screwdriver.

NOTE:

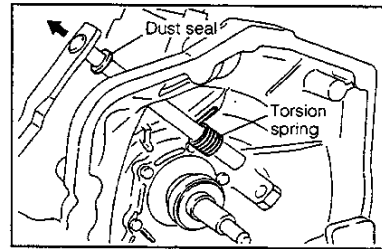
- Care must be exercised so that the torsion spring and standard screwdriver may not interfere with the release bearing hub clip when removing the torsion spring.



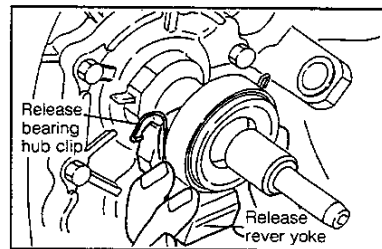
WFE90-CL015

CLUTCH

6. While pulling out the clutch release lever subassembly, remove the torsion spring.
7. Remove the clutch release lever subassembly, with the dust seal attached, from the transmission case.



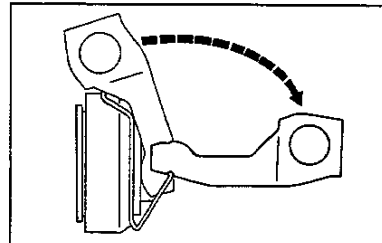
8. Remove the release lever yoke, release bearing hub clip and clutch release bearing hub assembly as a set from the front bearing retainer.



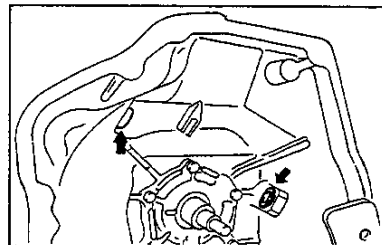
9. Remove the release lever yoke from the release bearing hub clip by turning the release lever yoke clockwise.

CAUTION:

- If the release bearing hub clip should be removed using a method other than the procedure above, it will cause the clip deformation.

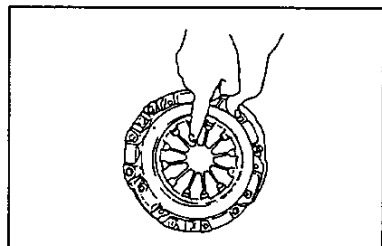


10. Remove the two bushes from the clutch housing.



INSPECTION

1. Check the diaphragm spring for damage or wear.

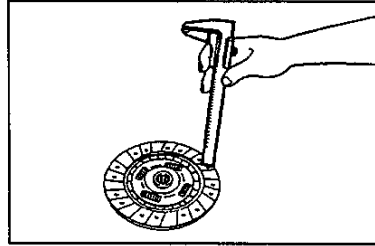


CLUTCH

2. Check of clutch disc for wear

Measure the height of the clutch disc from each rivet. Compare the lowest height against the the allowable use limit below.

Allowable Use Limit: 0.3 mm



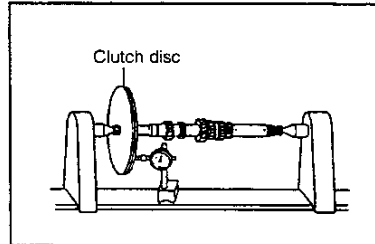
WFES0-CL021

3. Check of clutch disc for runout

Allowable Runout Limit

(Longitudinal Runout): 1.0 mm

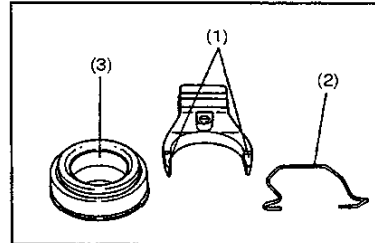
(Lateral Runout): 0.7 mm



WFES0-CL022

4. Check the following parts.

- (1) Contact surface of release lever yoke with release bearing for wear
- (2) Release bearing hub clip for damage
- (3) Inner race of release bearing for wear

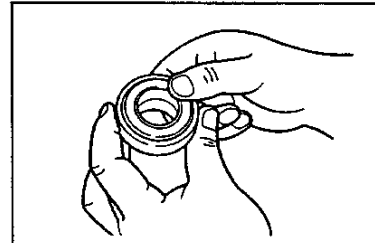


WFES0-CL023

5. Rotate the release bearing with your fingers. Ensure that the release bearing rotates smoothly without any binding.

NOTE:

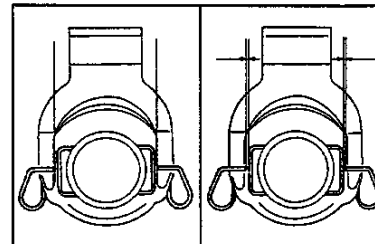
- Since the release bearing is packed with grease, never clean it, using oil.



WFES0-CL024

6. Assemble the release lever yoke, release bearing hub clip and clutch release bearing hub assembly as a set. (See page CL-10.)

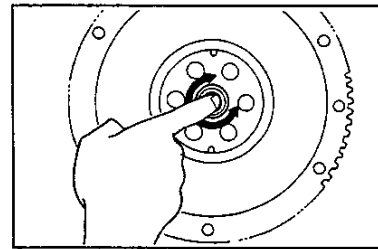
- Visually inspect whether the release bearing hub clip comes at the end section of the release lever yoke within the range indicated in the right figure.



WFES0-CL025

7. Rotate the pilot bearing with your fingers. Prior to the installation of the clutch disc, ensure that the pilot bearing rotates smoothly without any binding.

* As for the installation and removal of the pilot bearing, refer to the EM section.



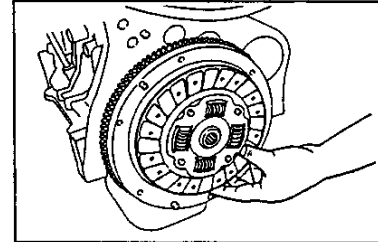
WFES0-CL026

INSTALLATION

1. Install the clutch disc.

CAUTION:

- Do not allow oil grease to get on the rubbing face.

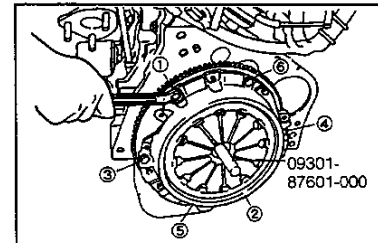


WFES0-CL027

2. Install the clutch cover, using the following SST.
 SST: 09301-87601-000
 Tightening Torque: 14.7 - 21.6 N-m (1.5 - 2.2 kgf-m)

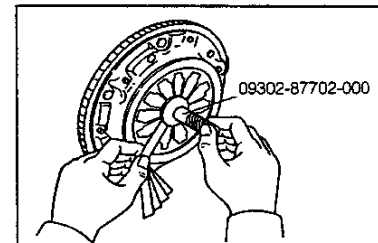
CAUTION:

- Be sure to tighten the bolts diagonally within the tightening torque range above so that the clutch cover may be tightened evenly.
 (The right figure shows a typical example of tightening sequence.)



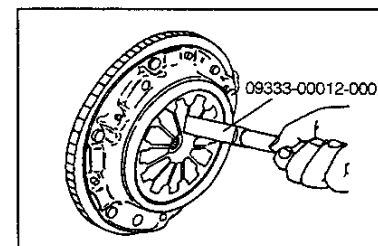
WFES0-CL028

3. Check the diaphragm spring fingers for unevenness in height, using the following SST.
 Allowable Limit of Unevenness in Height: 0.8 mm
 SST: 09302-87702-000



WFES0-CL029

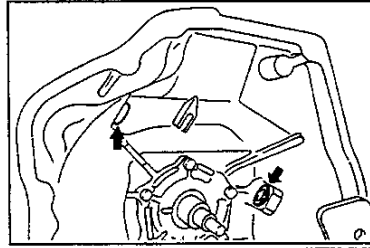
4. If the inspection results reveal that the unevenness in height exceeds the allowable limit, correct the unevenness, using the following SST.
 SST: 09333-00012-000



WFES0-CL030

CLUTCH

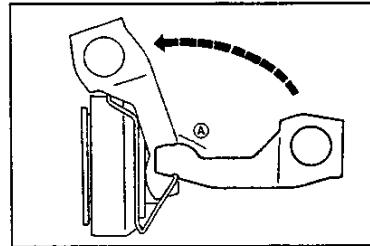
5. Apply Lithium base multi purpose grease to the entire periphery of the inner surface of the bush.
6. Insert the bush into the transmission case.



7. Place the cut-out section of the release lever yoke on the release bearing hub clip. Turn the release lever yoke counterclockwise so as to set the clutch release bearing hub assembly, release bearing hub clip and release lever yoke.

NOTE:

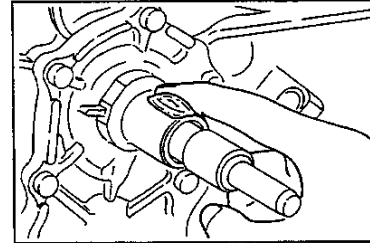
- Prior to the setting, apply a suitable amount of Lithium base multi purpose grease (A section) to the clutch release bearing hub or to the sliding surface with the release lever yoke.



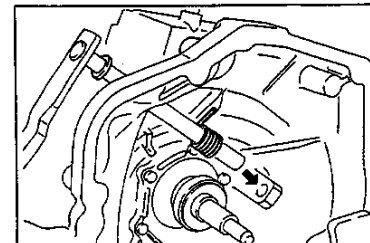
8. Apply molybdenum disulphide lithium base grease to the surface of the front retainer bearing sliding section.

CAUTION:

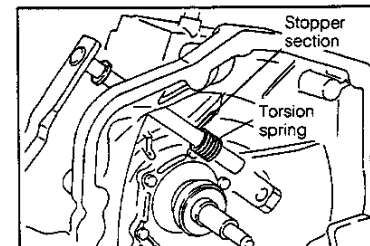
- Excessive application of grease may cause clutch slippage.



9. Attach the dust seal to the clutch release lever subassembly.
10. Insert the clutch release lever subassembly into the transmission case.

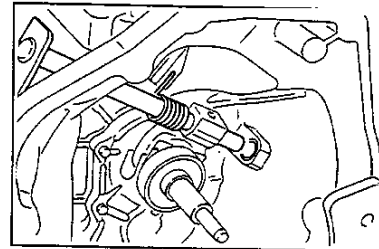


11. Align the torsion spring with the stopper of the transmission case.

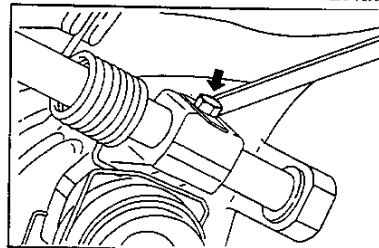


CLUTCH

12. Pass the clutch release lever subassembly through the release lever yoke provided with the release bearing hub clip and clutch release bearing hub assembly.



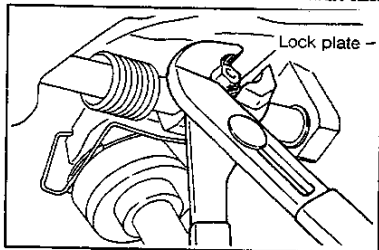
13. Tighten the bolt. (Use the new lock plate.)
Tightening Torque: 29.4 - 39.2 N·m (3.0 - 4.0 kgf·m)



14. After tightening the bolt, positively bend the lock plate along the side of the bolt, using a common tool of water pump pliers.

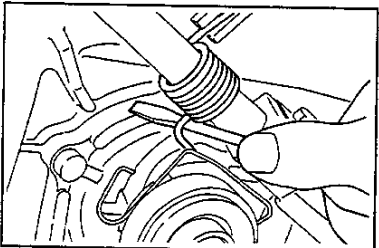
NOTE:

- Never use a chisel for this operation. If a chisel or the like should be used for bending the lock plate, the release bearing hub clip may be detached.

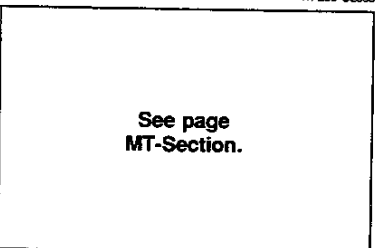


15. Apply the torsion spring to the release lever yoke by means of a standard screwdriver.

16. Move the clutch release lever subassembly in a fore-&-aft direction by hand. Thus, visually inspect the clutch release bearing hub assembly, release bearing hub clip, release lever yoke and spring torsion operate as a set. Also, ensure that they move smoothly.

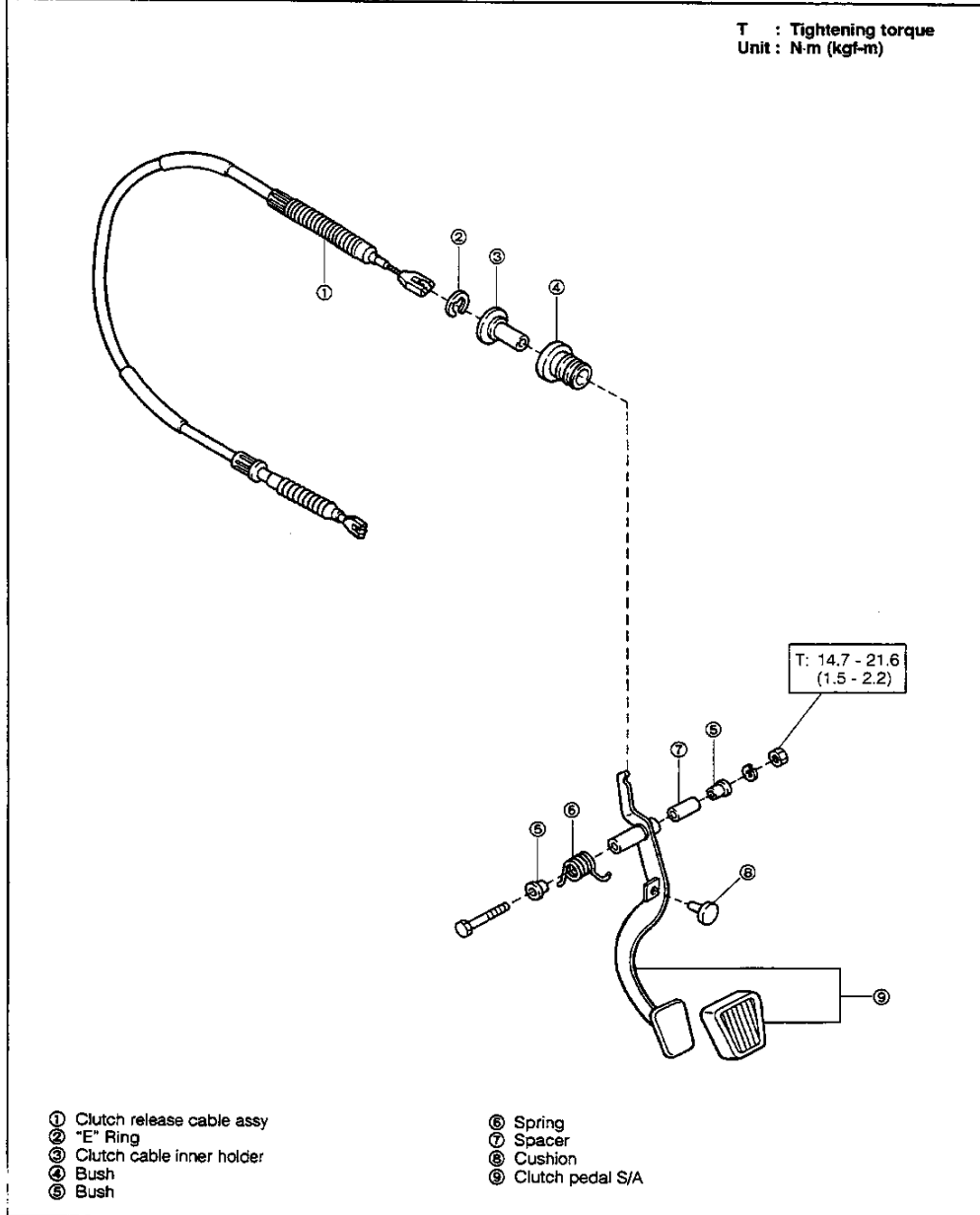


17. Install the transmission on the vehicle.



CLUTCH

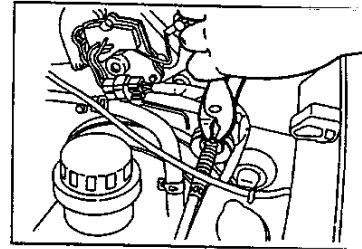
CLUTCH PEDAL (L.H.D) COMPONENTS



WFE90-CLD41

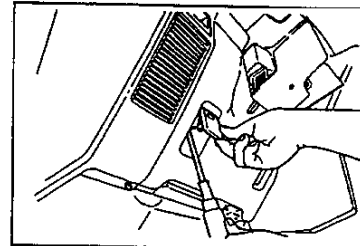
REMOVAL

1. Remove the clutch cable and the clip of the clutch cable.



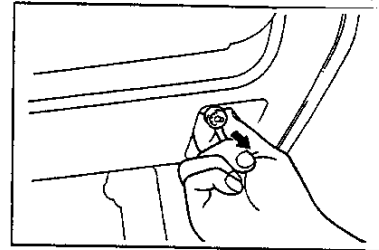
WF290-CL03

2. Remove the handle of the hood opener cable by removing the two screws.



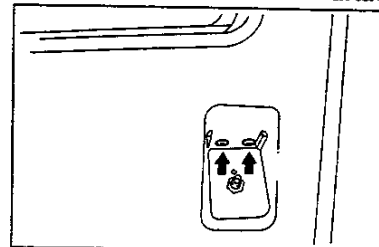
WF290-CL04

3. Pull out the instrument light control switch knob toward you.



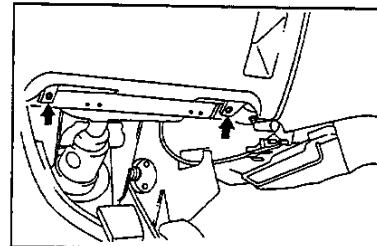
WF290-CL04A

4. Remove the two screws at the instrument panel light control switch.



WF290-CL04B

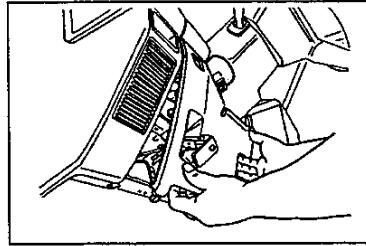
5. Remove the two screws located under the instrument panel finish lower panel.



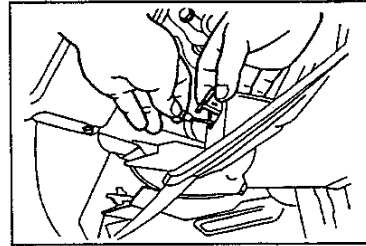
WF290-CL04C

CLUTCH

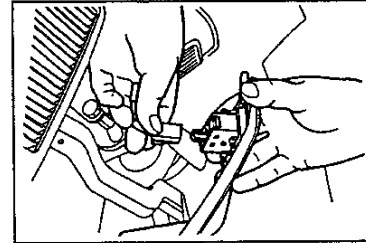
6. Push up the instrument panel finish lower panel. Then, pull out them lightly toward you.



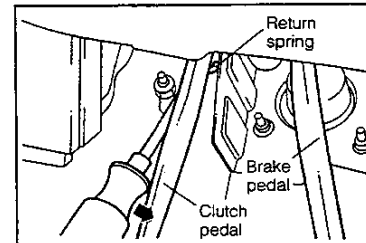
7. Remove the hood opener cable.



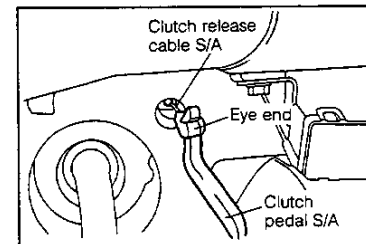
8. Disconnect the coupler of the instrument panel light control switch.



9. Insert a standard screwdriver into between the return spring and the clutch pedal. Release the return spring which hooks at the clutch pedal by lowering the standard screwdriver.

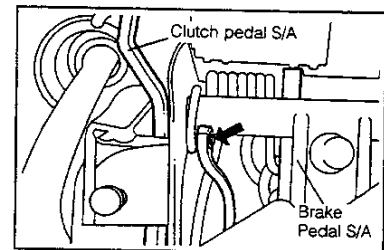


10. At the lower side of the back of the instrument panel assembly, disconnect the eye end section of the clutch release cable subassembly from the forward end of the clutch pedal subassembly.

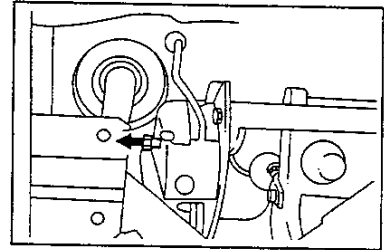


CLUTCH

11. Removal of clutch pedal
(1) Remove the clutch pedal shaft bolt by removing a nut.

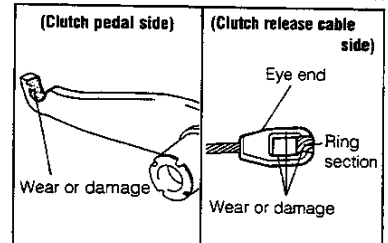


- (2) Remove the shaft bolt from the clutch pedal assembly.
(3) Remove the clutch pedal assembly with the return spring installed.

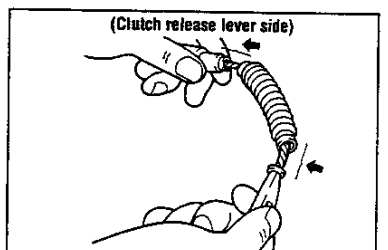
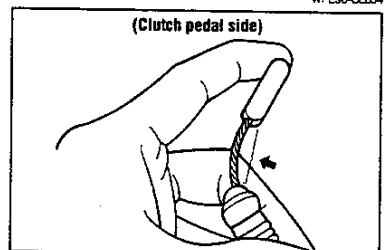


INSPECTION (Clutch pedal & Release cable)

1. Visually inspect the eye end's ring section of the clutch release cable assembly and clutch pedal assembly for wear or damage.

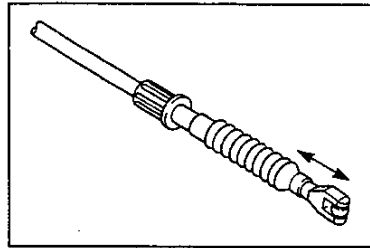


2. Visually inspect the inner cable at the clutch pedal and clutch release lever sides for damage, open wire and rust formation by bending the cable by hands.

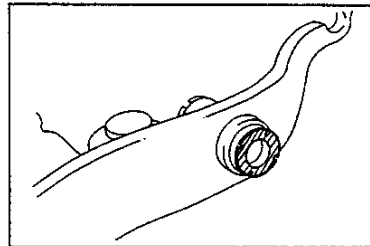


CLUTCH

3. Holding the eye end section of the inner cable by hands, move the inner cable in a fore-&-aft direction. Thus, check that the cable moves smoothly.

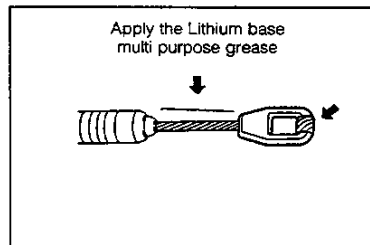


4. Visually inspect the bush for wear due to lack of grease.

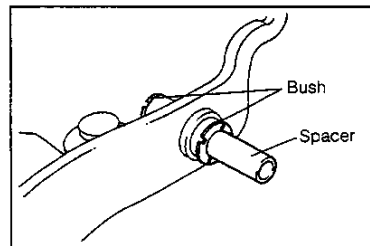


INSTALLATION

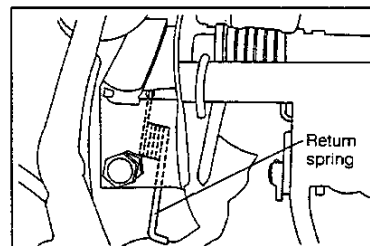
1. Apply Lithium base multi purpose grease to the eye end section of the clutch cable and inner cable.
2. Temporarily insert the clutch cable into the cable insertion hole.



3. After applying Lithium base multi purpose grease, install the two bushes and spacer to the clutch pedal subassembly.

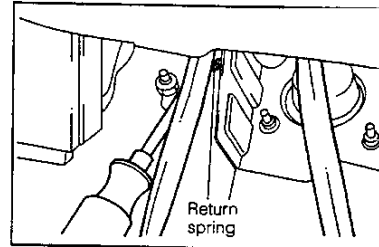


4. Hook the return spring to the hook position of the pedal bracket.



CLUTCH

5. Install the clutch pedal subassembly to the return spring which has been hooked to the pedal bracket.



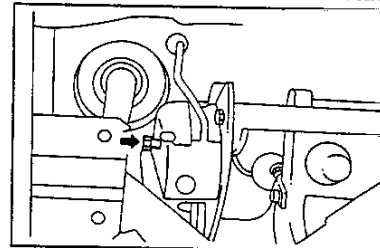
WFES0-CL06

6. Insert the clutch pedal shaft bolt from the left side of the pedal bracket. Proceed to install and tighten the clutch pedal.

NOTE:

- Apply Lithium base multi purpose grease to the clutch pedal.

Tightening Torque: 14.7 - 21.6 N·m (1.5 - 2.2 kgf·m)



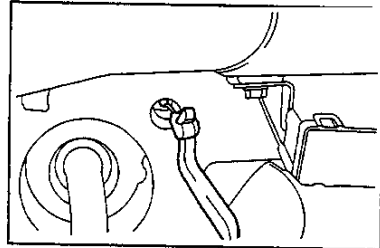
WFES0-CL06

7. Connect the clutch release cable subassembly to the clutch pedal subassembly.

8. Attach the return spring to the clutch pedal and pedal bracket, using a common tool of a standard screwdriver.

NOTE:

- Apply Lithium base multi purpose grease to the clutch cable and the installation section of the pedal.

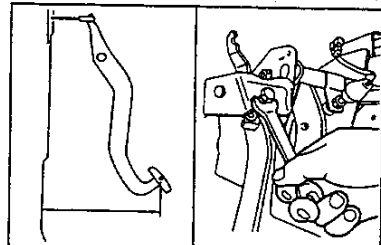


WFES0-CL06

9. Adjust the clutch pedal height by means of the set bolt.
Clutch Pedal Installation Height: 221 ± 5 mm

NOTE:

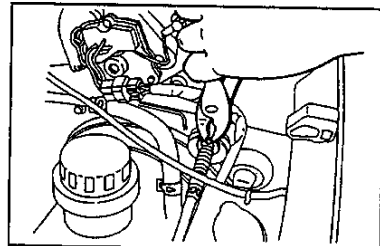
- The figure above is the dimension from the body metal section to the pedal. It is, therefore, necessary to roll up the carpet and floor mat prior to the measurement.



WFES0-CL06

10. Adjust the clutch free travel by moving the clip of the clutch cable.

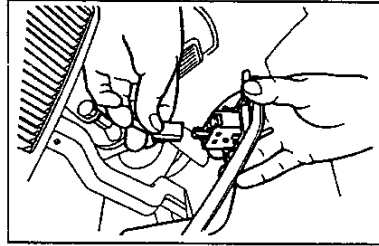
Specified Clutch Pedal Free Travel: 18 - 27 mm



WFES0-CL06

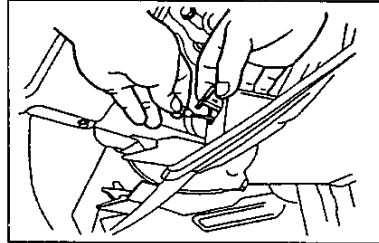
CLUTCH

11. Connect the coupler of the instrument panel light control switch.



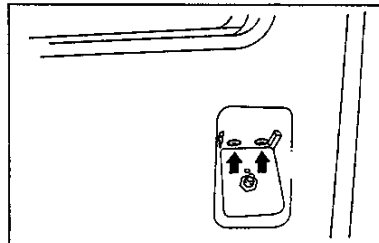
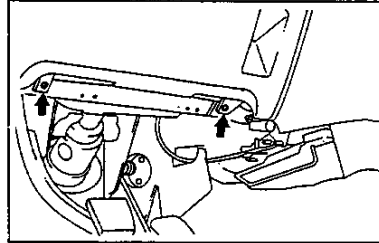
WFE90-CL066

12. Install the hood opener cable.



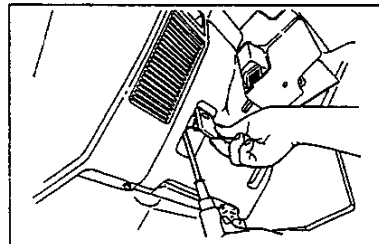
WFE90-CL067

13. Install the instrument panel finish lower panel with the four screws.



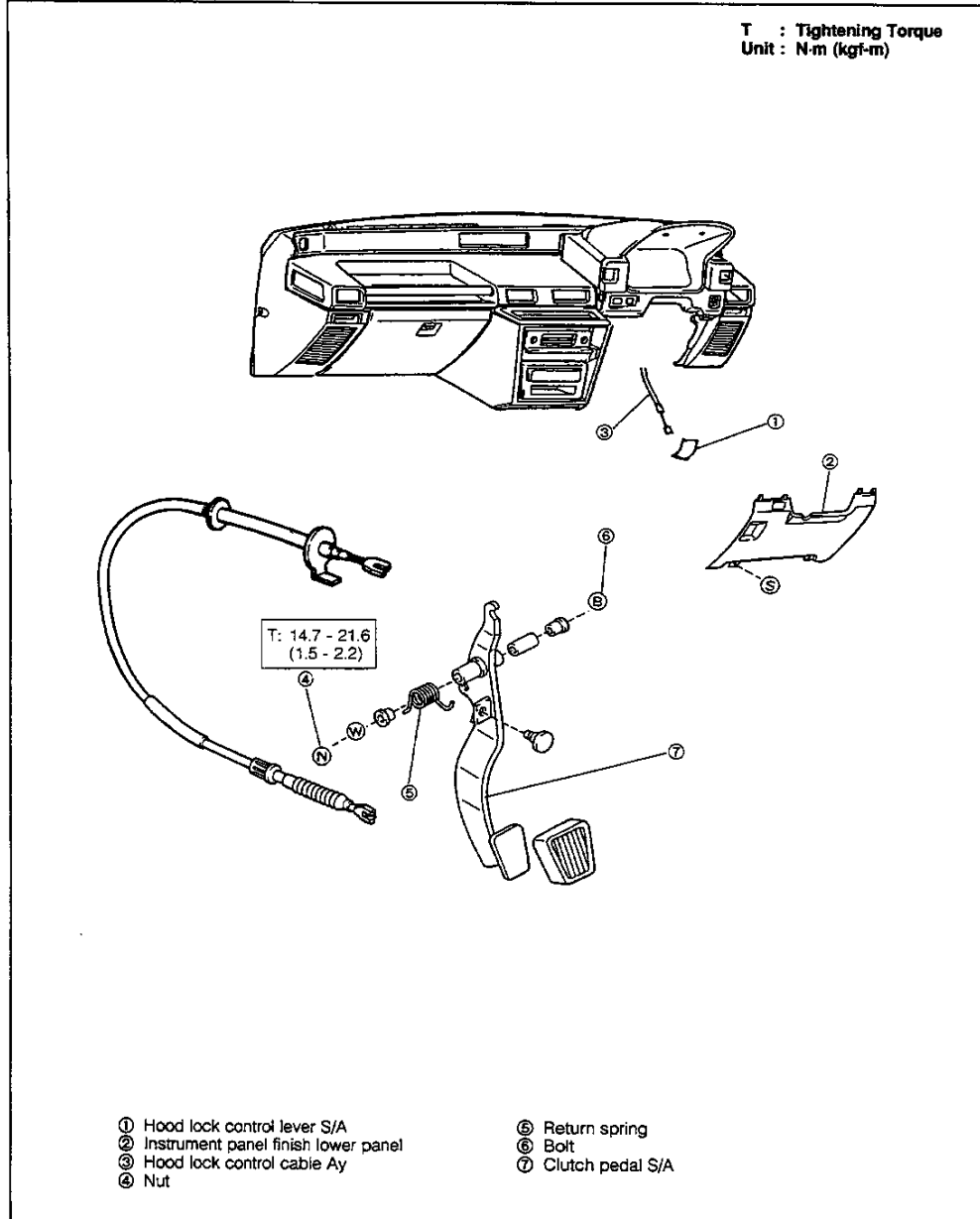
WFE90-CL068

14. Install the handle of the hood opener cable with the two screws.
15. Insert the instrument panel light control switch knob.



WFE90-CL069

CLUTCH PEDAL (R.H.D)
COMPONENTS

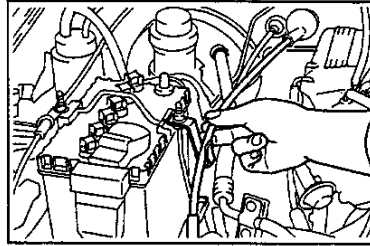


WFE90-CL070

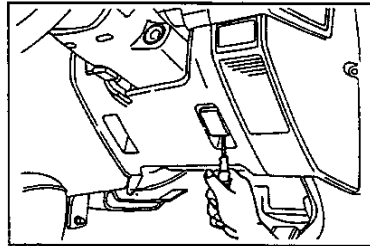
CLUTCH

REMOVAL

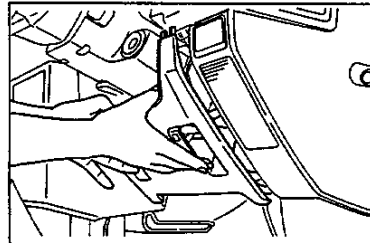
1. Detach the clamp. Remove the clutch cable assembly and clutch cable inner holder from the engine compartment side.



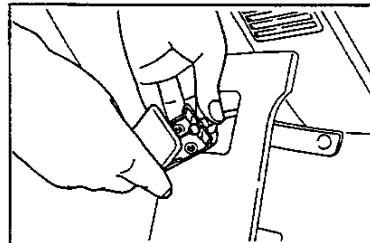
2. Remove the hood opener cable handle.



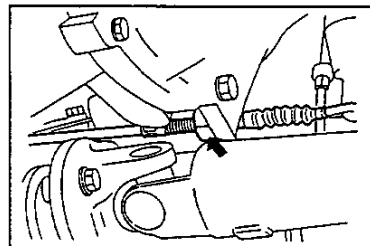
3. Remove the instrument panel finish lower panel.



4. Disconnect the hood opener cable.

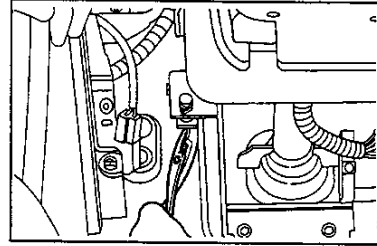


5. Loosen the nut.



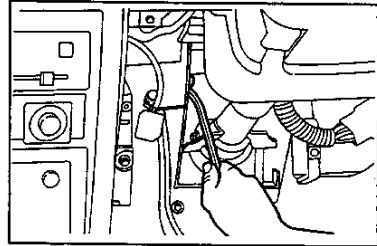
CLUTCH

6. Remove the return spring.



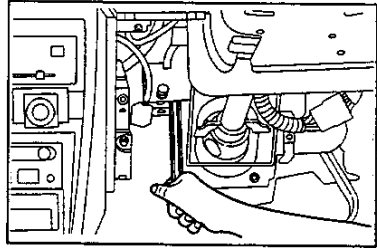
WF290-CL076

7. Remove the clutch pedal shaft bolt.



WF290-CL077

8. Remove the clutch pedal subassembly.

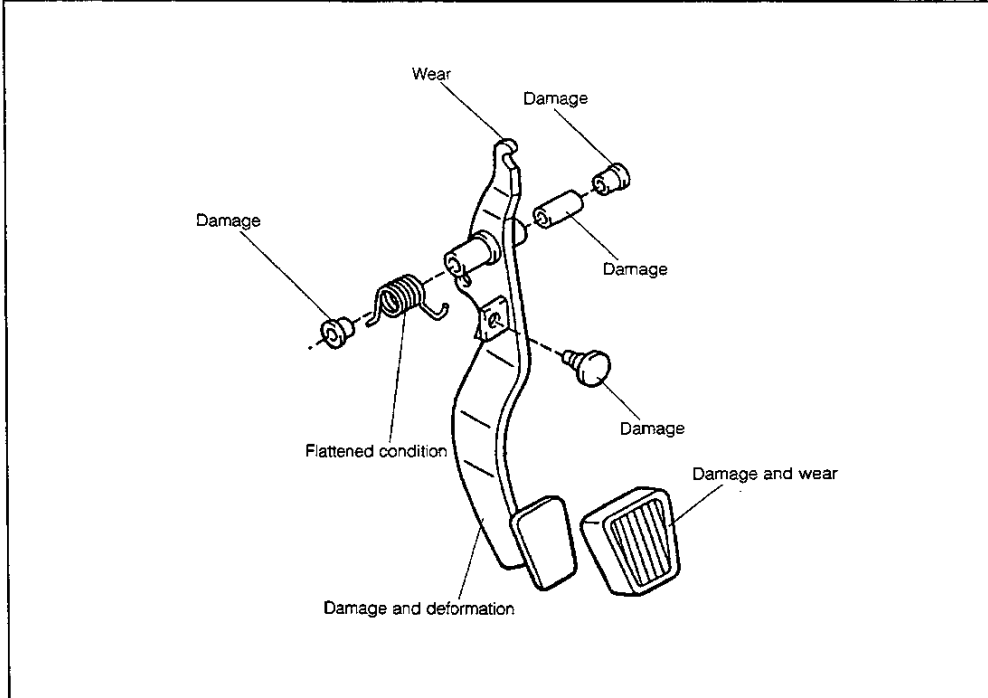


WF290-CL078

CLUTCH

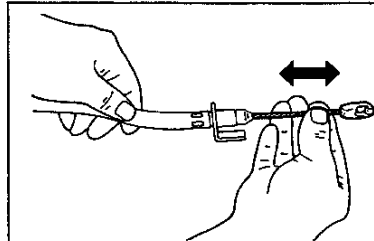
INSPECTION

1. Check each section given below. Replace any defective parts.

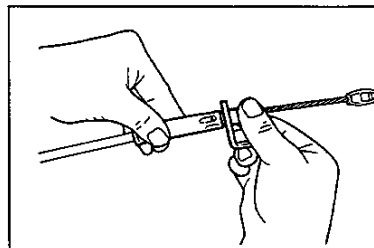


Check the items given below. Replace any defective parts.

2. Move the inner cable of the clutch release cable in a fore-&-aft direction. Ensure that no abnormal resistance or binding is present.

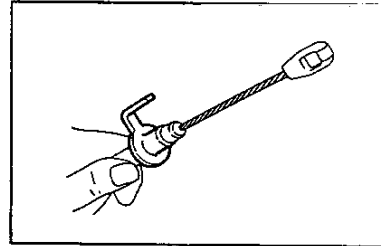


3. While holding the guide pipe section by hand, lightly turn the outer casing of the clutch release cable. Ensure that the outer casing will not turn.

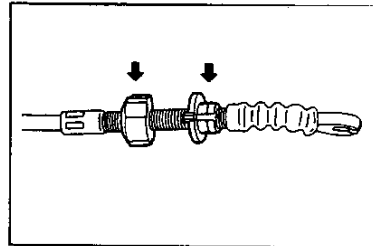


CLUTCH

4. Ensure that the clutch cable inner holder exhibits no deformation.



5. Ensure that each of cushions and nuts exhibits no damage.

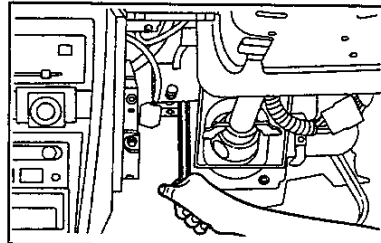


INSTALLATION

1. Connect the clutch cable. Then, install the clutch pedal assembly.

NOTE:

- Apply Lithium base multi purpose grease to the clutch cable installation section of the clutch pedal.

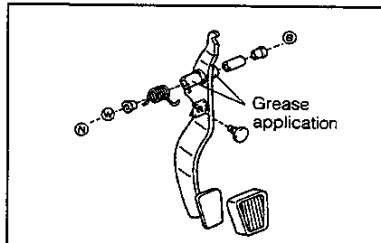


2. Insert the clutch pedal shaft bolt from the left side of the pedal bracket. Tighten the bolt.

Tightening Torque: 14.7 - 21.6 N·m (1.5 - 2.2 kgf·m)

NOTE:

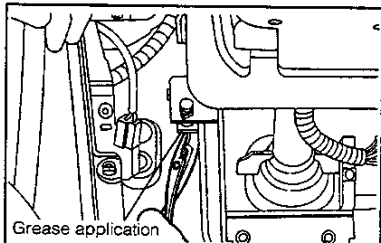
- Apply lithium base multi purpose grease to the parts of the clutch pedal indicated in the right figure.



3. Install the return spring.

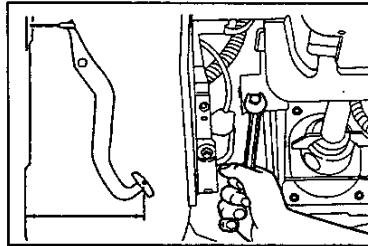
NOTE:

- Apply lithium base multi purpose grease to the return spring.



CLUTCH

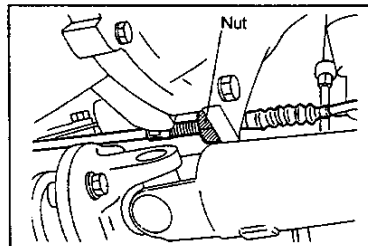
4. Adjust the clutch pedal height.
Clutch Pedal Installation Height: 221 ± 5 mm



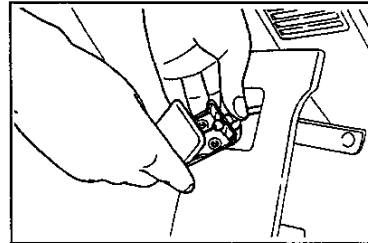
5. Connect the clutch cable to the clutch pedal. Adjust the nut so that the pedal free travel may conform to the specified value.
Pedal Free Travel: 18 - 27 mm

NOTE:

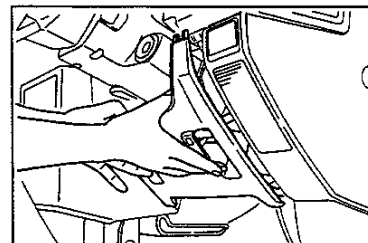
- Apply Lithium base multi purpose grease to the clutch pedal installation section of the clutch cable.



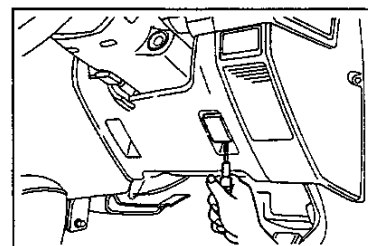
6. Connect the hood opener cable.



7. Install the instrument panel finish lower panel.

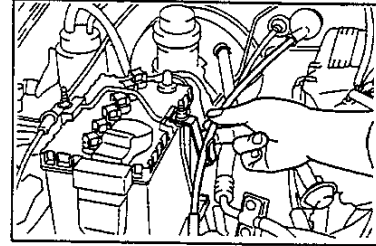


8. Install the hood opener cable handle.



CLUTCH

9. Detach the clamp. Remove the clutch cable assembly and clutch cable inner holder from the engine compartment side.

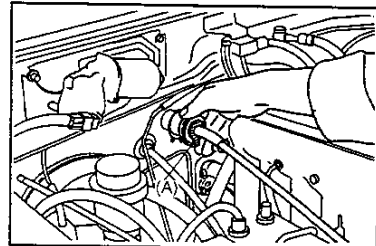


WFES0-CL092

10. Install the clutch cable inner holder and clutch cable assembly. Then, install them to the clamp.

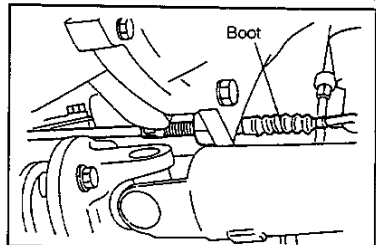
NOTE:

- Ensure that the clutch cable inner holder (A) should be inserted to the cut-off section of the dash panel.



WFES0-CL093


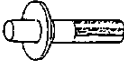

11. Install the clutch cable at the clutch release lever side. Install the clutch cable assembly to the transmission case.
12. Install the clutch pedal. (Refer to page CL-23.)
13. Adjustment of clutch pedal (Refer to page CL-4.)
14. Ensure that the boot at the clutch cable side is not detached. Positively install the boot if it is detached.



WFES0-CL094

CLUTCH

SSTs

Figure	Parts No.	Parts name
	09301-87601-000	Clutch guide tool
	09302-87702-000	Clutch diaphragm spring height No. 5 gauge
	09333-00012-000	Clutch diaphragm spring aligner

WFE90-CL095

SERVICE SPECIFICATIONS

Unit: mm

Item		Specified value	Allowable limit	Remarks
Clutch disc	Rivet depth	—	0.3	Remaining lining
	Runout	—	1.0	Longitudinal
		—	0.7	Lateral
Clutch cover	Variation height of diaphragm spring	—	0.8	
	Height	221 ± 5	—	RHD LHD
	Free travel	18 - 27	—	

WFE90-CL096

TIGHTENING TORQUE

Tightening components	Tightening torque		
	N·m	kgf·m	ft·lb
Clutch cover A/y × Flywheel	14.7 - 21.6	1.5 - 2.2	10.8 - 15.9
Clutch release fork lever S/A × clutch release lever yoke	29.4 - 39.2	3.0 - 4.0	21.7 - 28.9
Clutch height adjusting bolt × brake pedal bracket	17.7 - 29.4	1.8 - 3.0	13.0 - 21.7
Clutch pedal × shaft bolt	14.7 - 21.6	1.5 - 2.2	10.8 - 15.9

WFE90-CL097