Clutch System

GENERAL

SPECIFICATION E41BDFA7

Item	SPECIFICATION	
Engine type	2.0L	2.4L
Clutch operation	Hydraulic type	
Clutch disc	Single dry with diaphragm	
Clutch cover assembly	General Diaphragm Spring Strap	Self Adjusting Clutch

TIGHTENING TORQUE

Item	Nm	Kgf.cm	lb-ft
Clutch cover (2.0L-6EA)	24.5~35.3	250~360	18.1~26.0
Clutch cover (2.4L-9EA)	11.8~14.7	120~150	8.7~10.8
Concentric slave cylinder	11.8~14.7	120~150	8.7~10.8
Stop lamp switch	7.8~9.8	80~100	5.8~7.2
Ignition lock switch	7.8~9.8	80~100	5.8~7.2
Air bleeding plug	24.5~28.4	250~290	18.1~21.0
Clutch pedal mounting	24.5~34.3	250~350	18.1~25.3

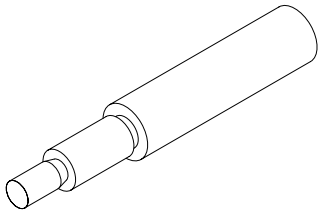
LUBRICANTS

Item	Specified lubricants	Quantity
Inner surface of clutch disc spline	CASMOLY L9508	0.2 gr.
Clutch master cylinder tube	RG 306	As required

SERVICE STANDARD

Item	Standard value
Clutch pedal stroke	145mm (5.7inch)
Clutch pedal free play	13mm (0.51inch) or less
Distance between a mat and a clutch pedal	234.7mm (9.2401inch)
Depth from a clutch lining surface to a rivet	0.3mm (0.0118inch)

SPECIAL TOOLS K40B7BB0

Tool (Number and Name)	Illustration	Use
09411-11000 Clutch disc guide	 KORE001D	Installation of the clutch disc

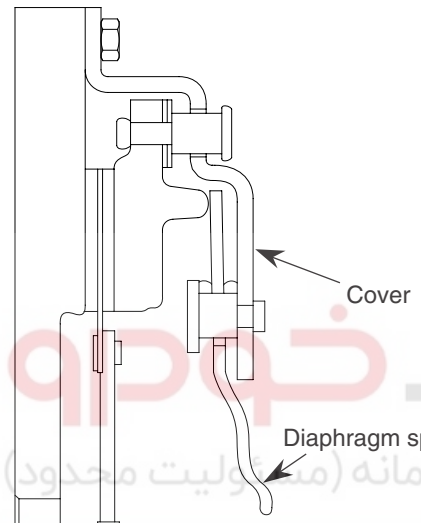
CLUTCH SYSTEM

DESCRIPTION EC4E5C54

SELF ADJUSTING CLUTCH(S.A.C.) COVER

- As a clutch disc facing is worn away according to its durability, a cover weight is increasing and a clutch pedal pressure can be more needed.
- To make up for this defect, the self adjusting clutch system makes the requsted pedal pressure minimized so that makes the maintenance cycle longer.
- Applied only in 2.4L gasoline engine vehicles.

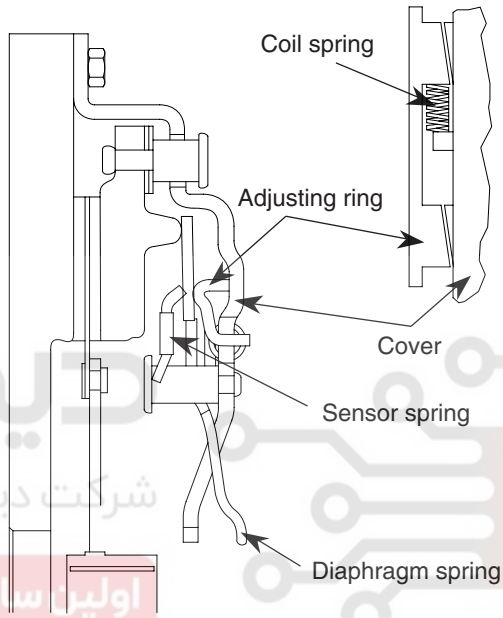
GENERAL CLUTCH COVER



· In a general clutch cover, the diaphragm spring increases the weight to the disc in proportion to abrasion.

· Applicable vehicle model: 2.0L

SELF ADJUSTING CLUTCH COVER



· In a self adjusting clutch, the adjusting ring prevents the diaphragm spring from being raised to the transmission side in spite of abrasion.

· Applicable vehicle model: 2.4L

EORE001A

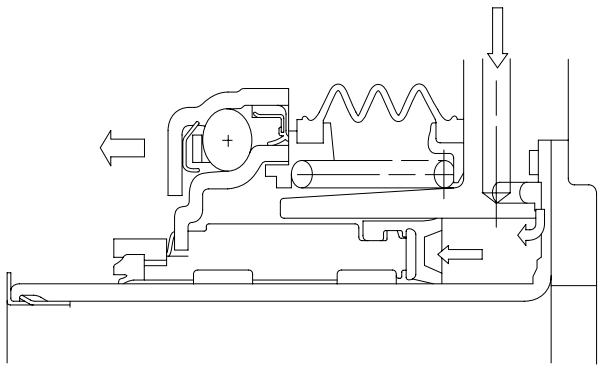
CONCENTRIC SLAVE CYLINDER-C.S.C.

It improves working efficiency and lowers the number and the weight of part by unifing clutch release control parts(clutch release bearing ~ clutch release cylinder) in a manual transaxle.

OPERATION E3DBBDB3

CONCENTRIC SLAVE CYLINDER-C.S.C

When the clutch pedal is pressed, oil pressure is transmitted along the arrow directions shown below and that moves the clutch slave cylinder and the diaphragm spring of the clutch cover.



KORE001B

SERVICE ADJUSTMENT PROCEDURE EFBFAD84

STOP LAMP SWITCH

1. Disconnect the 2P connector from the stop lamp switch.
2. Remove the stop lamp switch.
3. Check for continuity between the terminals according to the table.

Clutch pedal position	Stop lamp switch	Continuity
Released	Pressed	YES
Pressed	Released	NO

If the continuity is not as specified, replace the stop lamp switch.
If OK, install the stop lamp switch and adjust the pedal height.

TORQUE :
7.8~9.8Nm (80~100Kgf.cm, 5.8~7.2lb-ft)

IGNITION LOCK SWITCH

1. Disconnect 2P-connector from a ignition lock switch.
2. Disconnect the ignition lock switch. (if you can install a tester with the switch fixed, this step can be omissible)
3. Check for continuity between terminals. (refer to the table below)

Clutch pedal position	Ignition lock switch	Continuity
Released	Released	NO
Pressed	Pressed	YES

If there is difference between what tested and the table above, replace the ignition lock switch with a new one.
If not, install the ignition lock switch and adjust the clutch pedal.

TORQUE :
7.8~9.8Nm (80~100Kgf.cm, 5.8~7.2lb-ft)

CONCENTRIC SLAVE CYLINDER AIR BLEEDING PROCEDURE

1. After disconnecting a cap from the concentric slave cylinder air bleeder, insert a vinyl hose in the plug.
2. Loosening the plug screw, press and release the clutch pedal about 10 times.

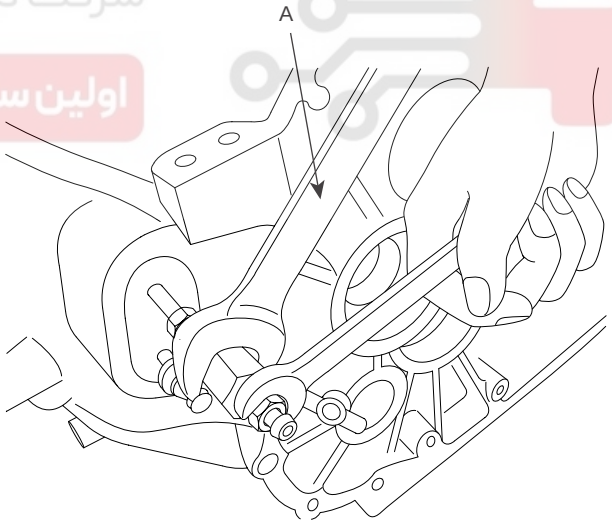
NOTE

Hold the air bleeder body not to rotate with a spanner(A). The holding is needed when the plug loosened or tightened.

3. Tighten the plug during the clutch pedal pressed. Afterwards, raise the pedal with a hand.

TORQUE :
24.5~28.4Nm (80~100Kgf.cm, 18.1~21.0lb-ft)

4. After pressing the clutch pedal 3 times more, loosen the plug and retighten it with the pedal pressed. Raise it again, then.
5. Repeat the step 4 two or three times. (until there is no bubble in the fluid)



KORE001C

CAUTION

1. Do not clamp the pipe of a concentric slave cylinder.
2. Be careful not to damage O-rings.

CLUTCH PEDAL AND IGNITION LOCK SWITCH

NOTE

- *Inspect a ignition lock switch.*
- *Remove the driver's seat mat to adjust a clutch pedal.*
- *No gap between a clutch master cylinder pistion and push rod can cause clutch slip.*

1. Loosen and draw out the bolt until it is off the pedal surface.
2. Push and pull a clutch master cylinder push rod to satisfy the specification below.

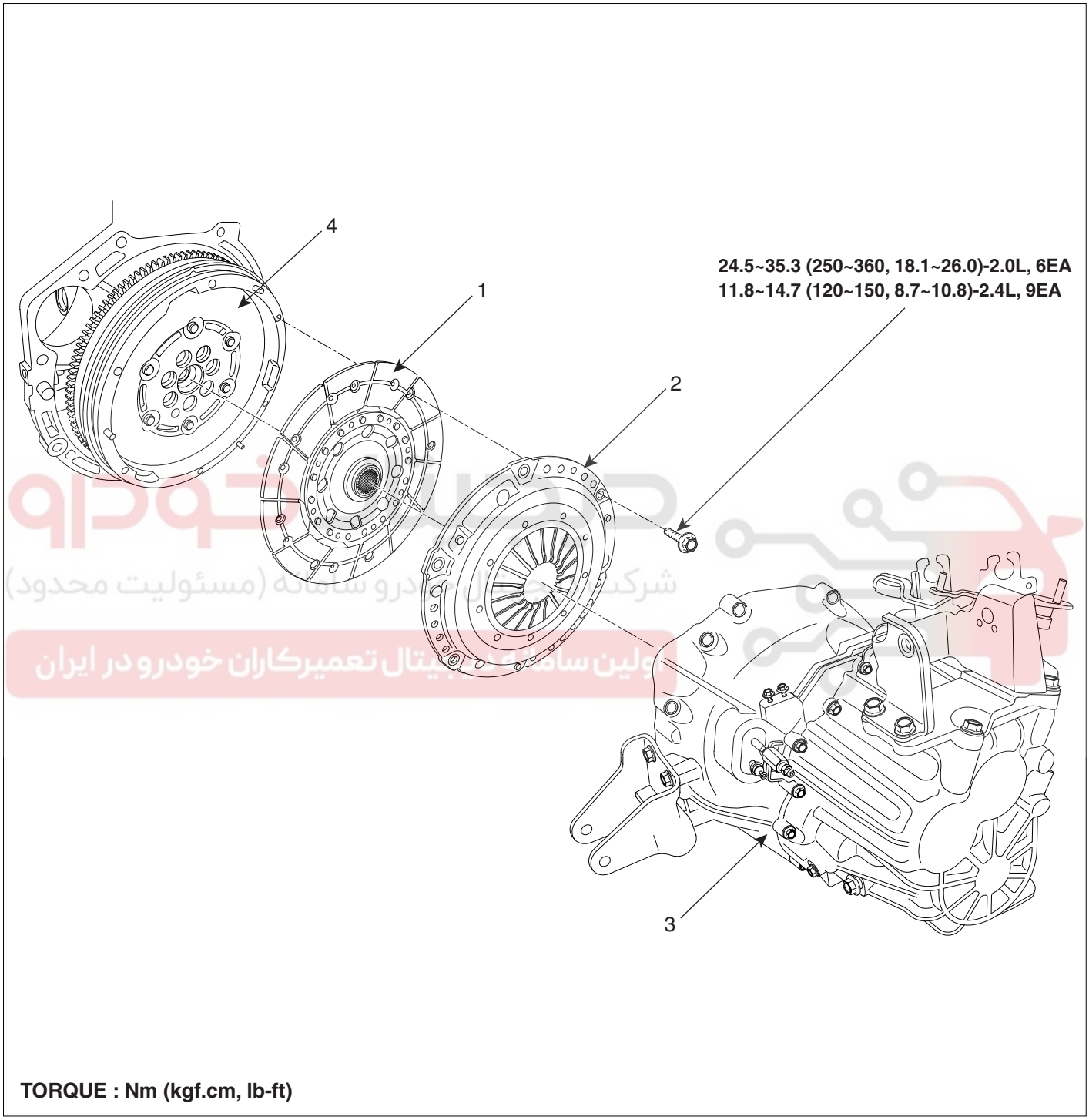
Specification:
Clutch pedal stroke - 145mm(5.7087inch)
Clutch pedal free play - 13mm(0.5118inch)
Clutch pedal distance - 234.7mm(9.2401inch)

3. With no pressure on a clutch pedal, tighten the bolt until it contacts on the pedal.
4. Fix the bolt with a nut.
5. Press the clutch pedal to the seat ground.
6. Adjust the ignition lock switch position with the pedal a little(3~5mm) raised.
7. Install the ignition lock switch firmly.

TORQUE:
7.8~9.8Nm (80~100Kgf.cm, 5.8~7.2lb-ft)

CLUTCH COVER AND DISC

COMPONENTS E20BA2A5

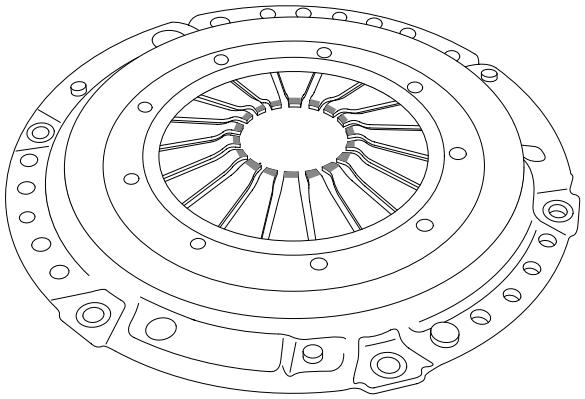


1. Clutch disc
2. Clutch cover
3. Manual transaxle
4. Engine flywheel

EORE002A

INSPECTION E8A9C621

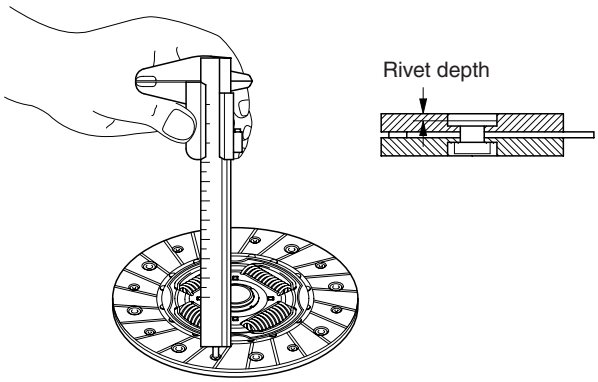
1. Inspect diaphragm spring wear which is in contact with a concentric slave cylinder bearing.



KORE002I

2. Check the clutch cover and disc surface for wear or crack.
3. Check the clutch disc lining for slipping or oil mark.
4. Measure the depth from a clutch lining surface to a rivet. If the measured value is less than the specification below, replace it.

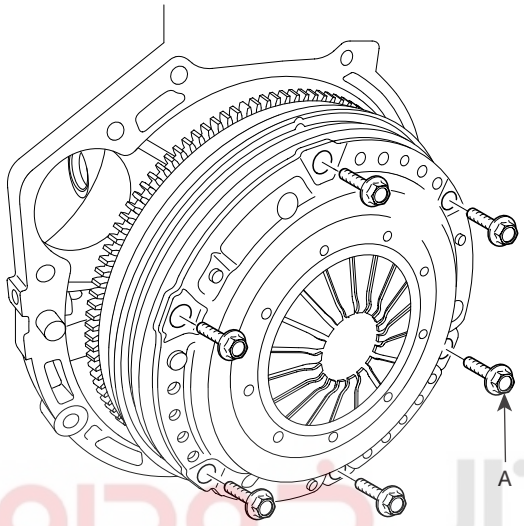
Specification: 0.3mm(0.0118inch)



EORE002J

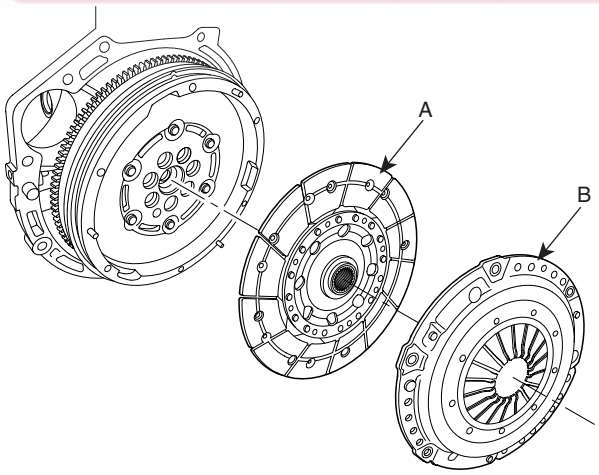
REPLACEMENT EAFB05D6

1. Remove a transaxle assembly (refer to 'MT'-group).
2. Remove the clutch cover bolts(A). Not to be bent or twisted, loosen them in diagonal directions(the figures below are on the base of 2.0L gasoline vehicles).



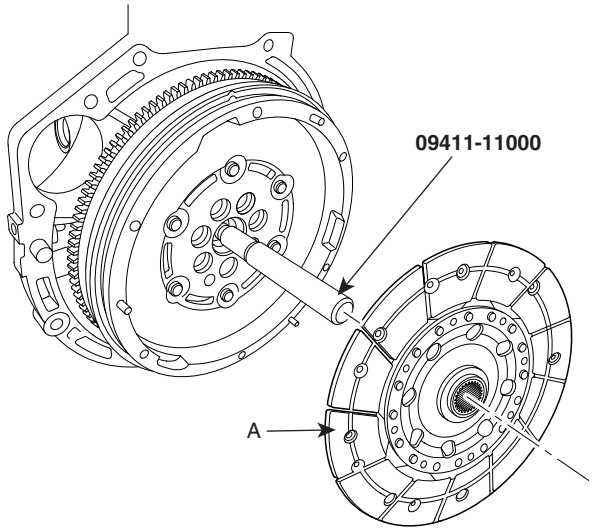
KORE002B

3. Remove the clutch cover(A) and disc(B).



KORE002C

4. Using the SST(09411-11000), install a disc(A).



KORE002D

CAUTION

- ***On vehicles with 2.4L gasoline engines, replace a clutch cover and disc as a set.***

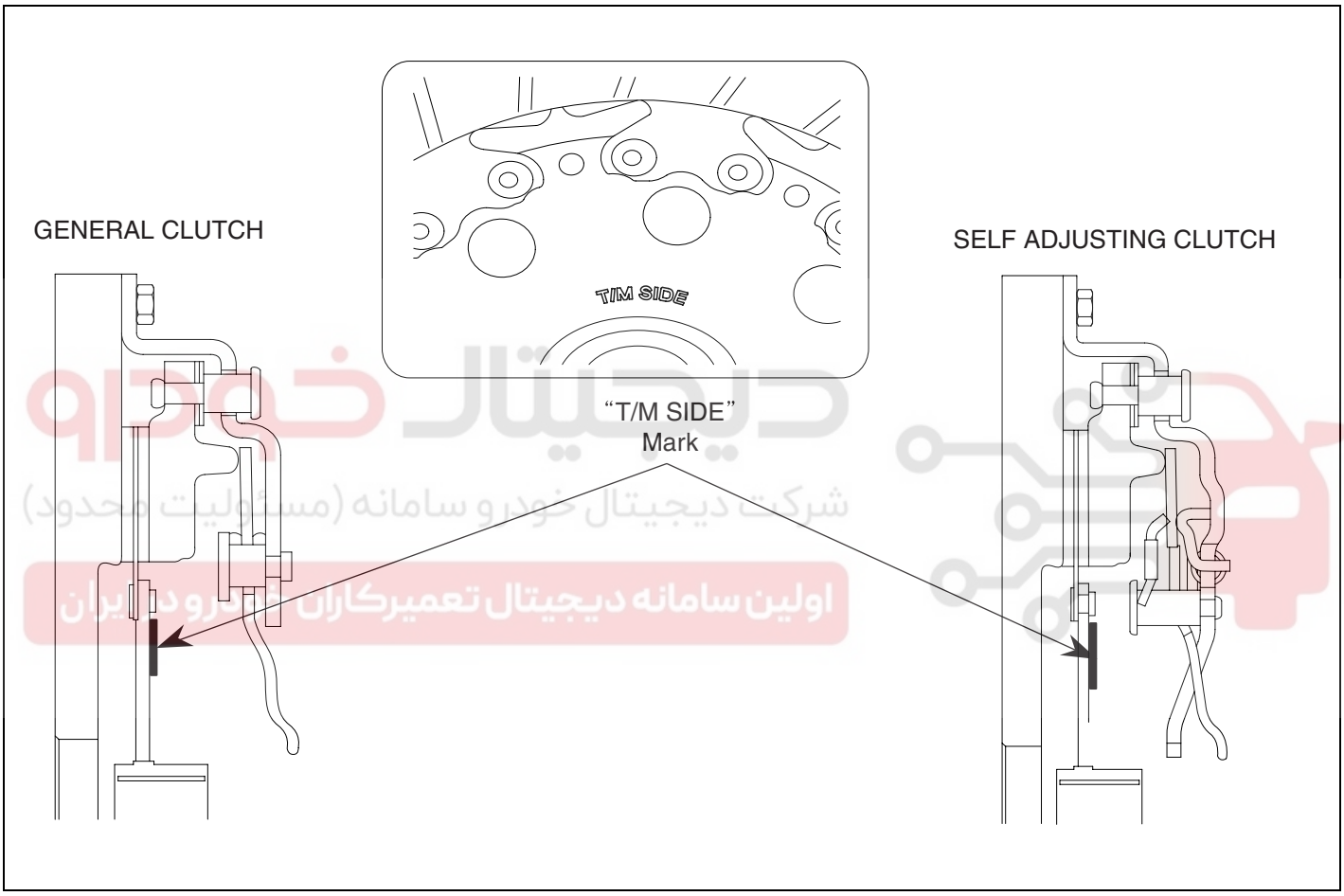
**** Possible problems when not following the caution***

- ***When replacing only a disc, slip problem can occur because of the initial clamp load loss by the adjusting ring's unusual work.***
- ***When replacing only a disc, it can be difficult to cut power because the thickness of the disc cannot be permitted.***
- ***On vehicles with 2.4L gasoline engines and self adjusting clutches, it is necessary to replace a clutch cover and disc together.***

- ***Apply grease on a disc spline part and transmission input shaft spline part as required.***
  → How to do: apply grease(CASMOLY L9508) 0.2gr. on the transmission input shaft spline part.

  **** Possible problems when not following***
  - ***When not applying: Excessively wear of splines and bad clutch operation***
  - ***When excessively applying: Scattered grease by centrifugal force conteminates the clutch disc. Loss of friction force can cause a slip***

- ***The 'T/M SIDE' marked surface should face the transaxle.***
  → If the surface face the opposite side, there can be an interference between a disc and a flywheel surface.



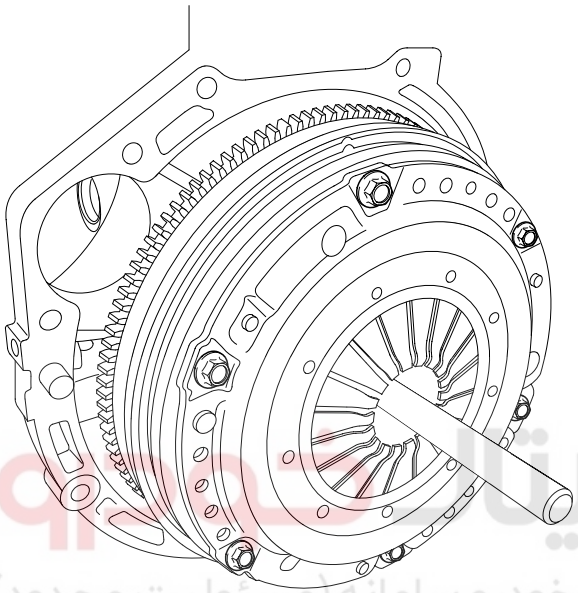
EORE002E

5. Tighten the clutch cover.

TORQUE:
24.5~35.3Nm (250~360kgf.cm, 18.1~26.0lb-ft)
(2.0L-6EA)
11.8~14.7Nm (120~150kgf.cm, 8.7~10.8lb-ft)
(2.4L-9EA)

**** Possible problems when not following***

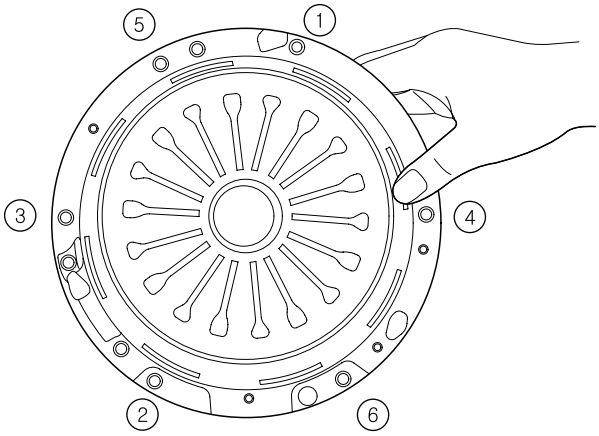
- ***When tightening the bolt completely at a time: the clutch cover can be twisted and vibration can occur.***
- ***On vehicles with 2.4L gasoline engines and self adjusting clutches, it is necessary to follow this caution.***
- ***Not following tightening torque: There can be bad torque transmission in clutch and relaxation possibility of bolts.***



KORE002G

CAUTION

When installing the clutch cover, tighten the bolts in diagonal directions not to be bent or twisted.

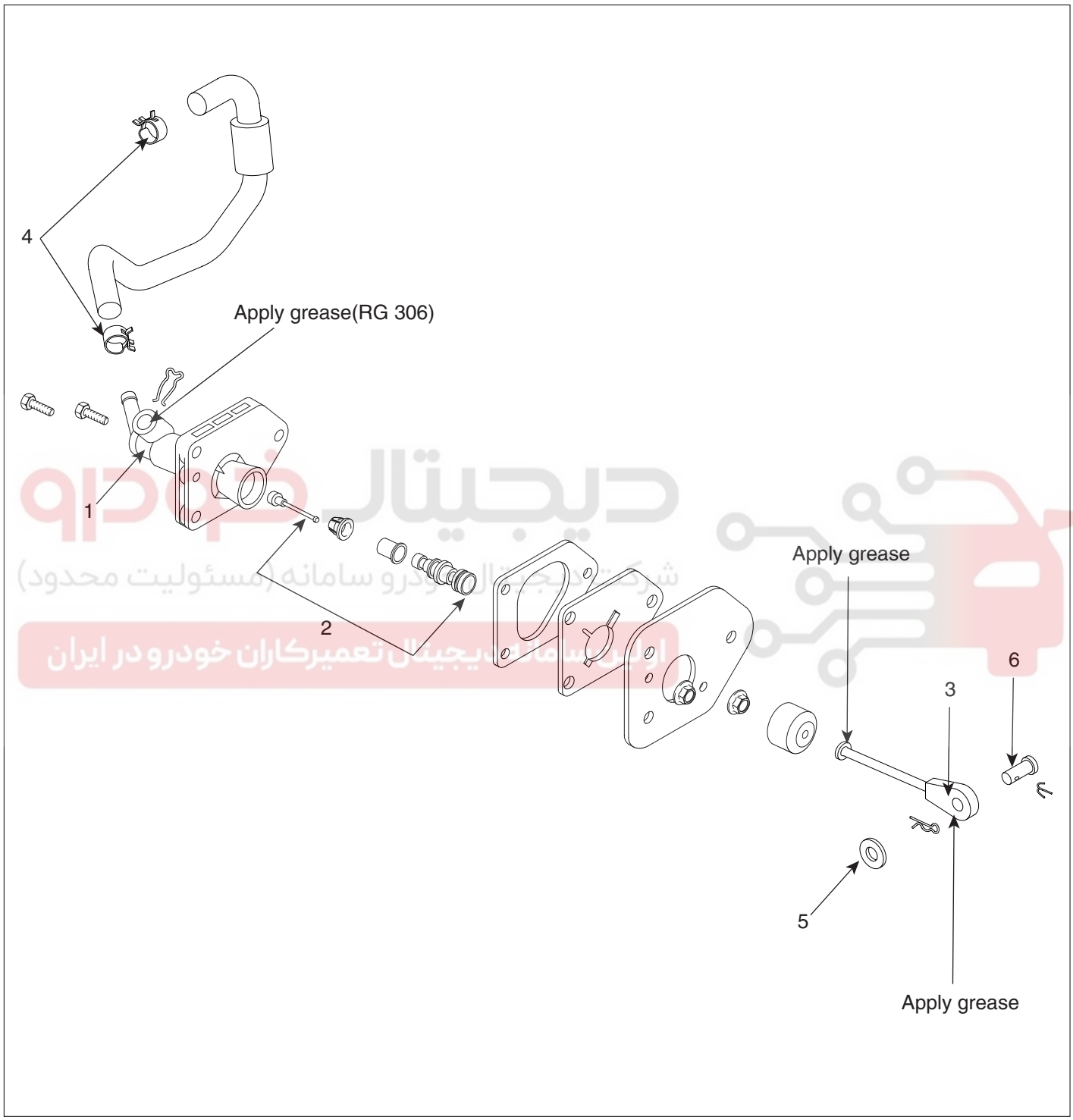


<2.0L gasoline>

EORE002H

CLUTCH MASTER CYLINDER

COMPONENTS E6FA42CC



1. Body assembly
2. Piston & cup assembly
3. Push rod
4. Hose clip
5. Washer
6. Self-locking pin

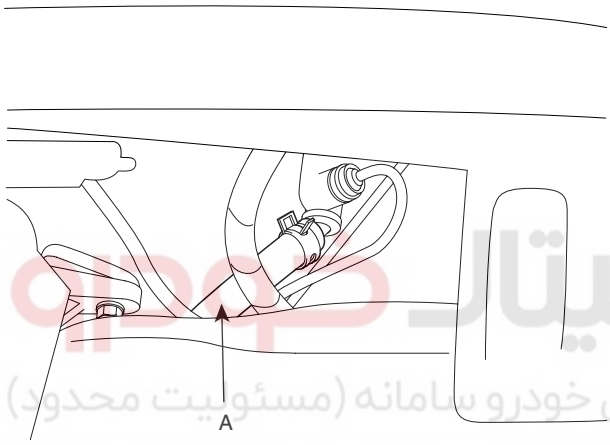
EORE003A

REMOVAL E0D1FDC6

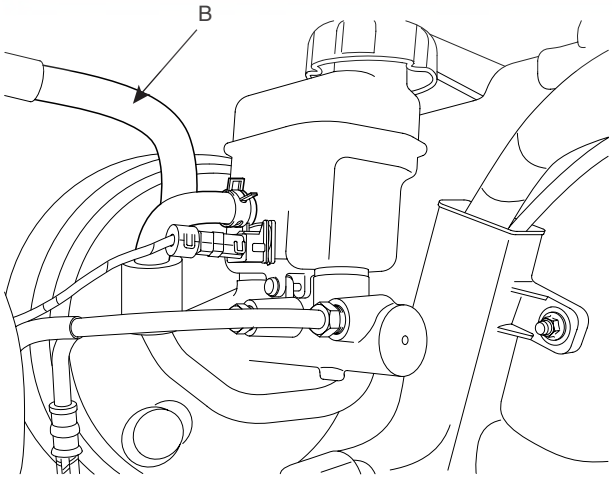
NOTE

Do not spill brake fluid on the vehicle; it may damage the paint; if brake fluid does contact the paint, wash it off immediately with water.

1. Remove the brake fluid fron the clutch master cylinder reservoir with a syringe.
2. Clamp the clutch master cylinder hose(A). If there is no enough room for clamping, you can also clamp the hose(B) from the brake master cylinder side.

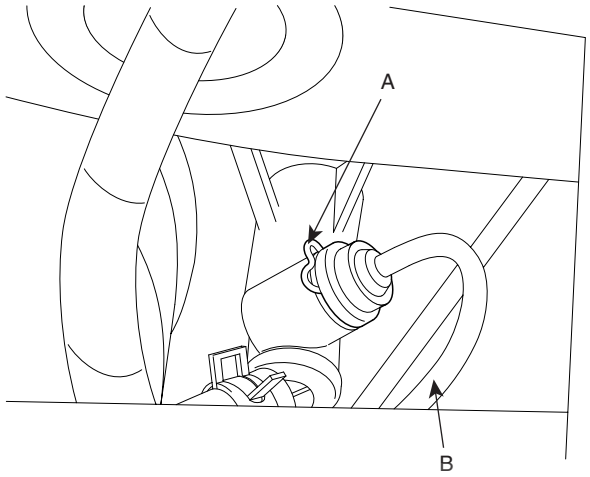


KORE003B



KORE003C

3. Disconnect the hose from the cylinder by releasing the clutch master cylinder clamp.
4. Remove the clip(A) and disconnect the clutch tube(B).



KORE003D

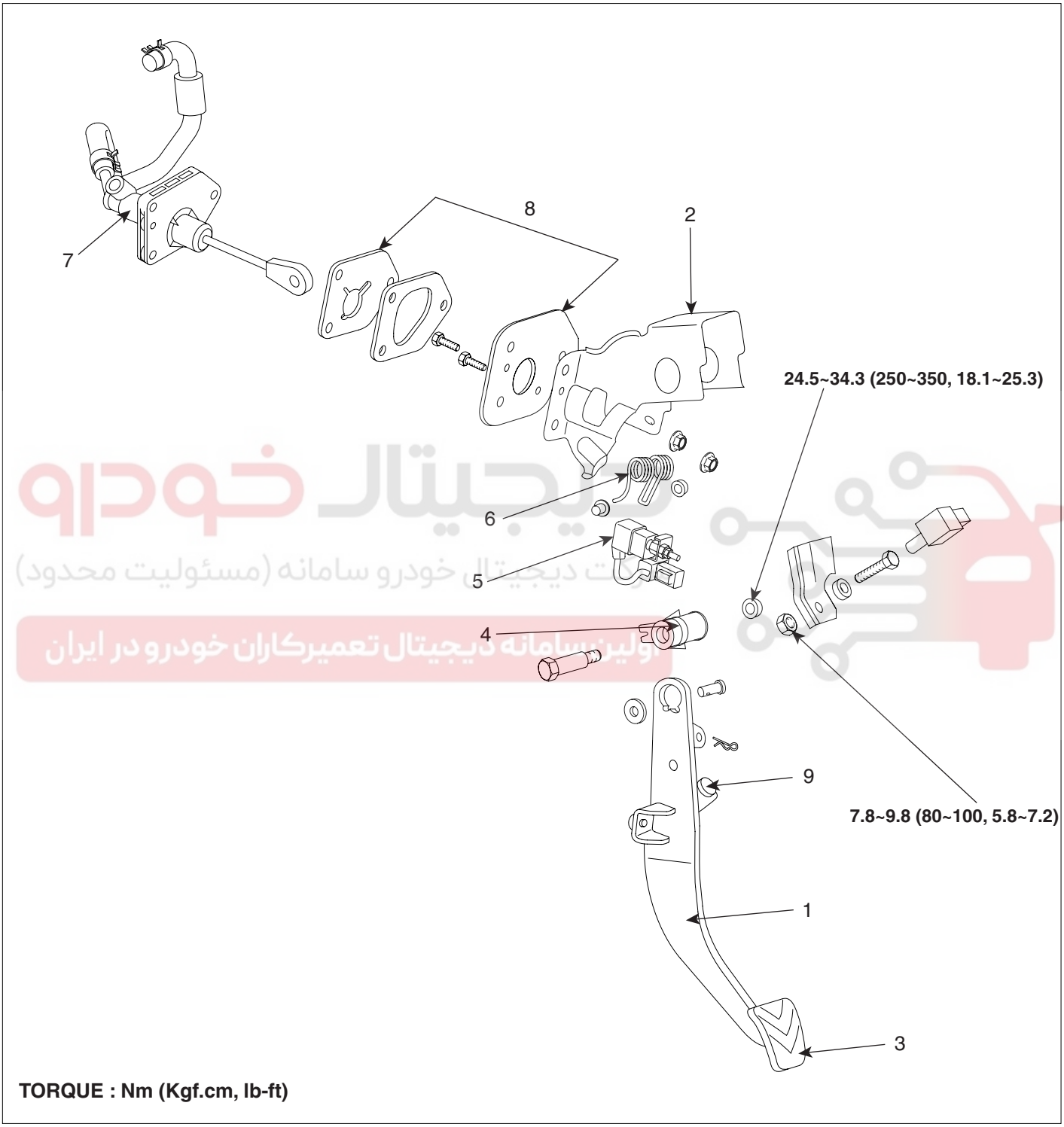
5. Remove the pin and washer which connect the clutch pedal with the clutch master cylinder.
6. After loosening the clutch master cylinder assembly mounting bolts under the driver's seat, remove the clutch master cylinder. It can be helpful to do this step after removing the clutch pedal mounting bracket.

INSTALLATION E5DE05DE

Installation is in the reverse order of removal.
After installation, bleed the clutch hydaulic system.

CLUTCH PEDAL

COMPONENTS EEFBE94E



1. Clutch arm
2. Clutch member
3. Pedal pad
4. Bush
5. Turn over spring
6. Ignition lock switch
7. Clutch master cylinder assembly
8. Sealer
9. Stopper

EORE004A

REPLACEMENT EBE33D7A

1. Remove a bolt and ignition lock switch.
2. Remove the lock pin and the pin which connects the clutch master cylinder push rod with the clutch pedal.
3. Remove the mounting nuts from the clutch master cylinder and the clutch pedal.
4. Remove the clutch pedal.
5. Tighten the mounting bolts to the clutch pedal and the clutch master cylinder.
6. Apply grease to the pin connecting the clutch pedal with the clutch master cylinder and install the pin and a new lock pin in it.
7. Adjust the clutch pedal and the ignition lock switch.