Clutch System

GENERAL

SPECIFICATIONS EOUB0010

Clutch disc		
Type		Dry, single plate
Outer Diameter	mm (in.)	240 (9.48) : 4D56 TCI, SIRIUS-II, T-2 254 (9.87) : A-2.5 TCI
Facing material		Non-asbestos
Spline		23 teeth
Clutch cover		
Type		Diaphragm spring type
Setting load	N (Kg, lbs.)	4067 (415,914)
Operating system		Hydraulic System
Release bearing		Self-centering type
Release cylinder diameter	mm (in.)	19.05 (0.75)

SERVICE SPECIFICATIONS EOUB0020

Item	Standard	Limit
Clutch pedal height	170.9 (6.8)	
Clutch pedal free play	6-13 (0.24-0.51)	
Distance between clutch pedal and floorboard when clutch is disengaged	55 (2.16) or more	
Clutch pedal stroke	155 (6.2)	
Clearance between clutch master cylinder and piston		0.15 (0.006)
Clutch disc facing rivet sink		0.3 (0.012)

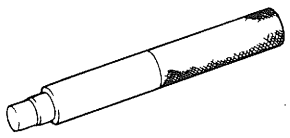
mm (in.)

TORQUE SPECIFICATIONS EOUB0030

Item	Nm	kg.cm	lb.ft
Clutch shaft nut	19 - 28	190 - 280	14 - 21
Clutch master cylinder mounting bolt	10 - 15	100 - 150	8 - 11
Clutch tube flare nut	15 - 20	150 - 200	11 - 14
Clutch release cylinder mounting bolt	30 - 42	300 - 420	22 - 30
Clutch release cylinder eye bolt	20 - 25	200 - 250	14 - 18
Clutch release cylinder bleeder screw	7 - 9	70 - 90	5 - 7
Clutch cover attaching bolt	15 - 22	150 - 220	11 - 16
Oil chamber mounting bolt	8 - 12	80 - 120	6 - 9

GENERAL

SPECIAL TOOLS EOLB0050

Tool (Number and name)	Illustration	Use
09411-43000 Clutch alignment arbor	 E1143000	Centering the clutch disc when installing

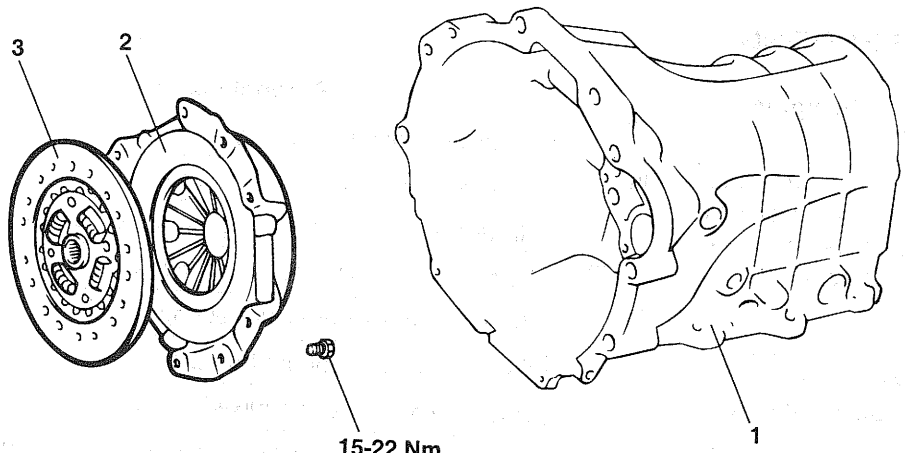
TROUBLESHOOTING EOLB0060

Symptom		Probable cause	Remedy
Clutch slipping • Vehicle will not respond to engine speed during acceleration • Insufficient vehicle speed • Lack of power during uphill driving		Insufficient pedal free play	Adjust
		Excessive wear of clutch disc facing	Replace
		Hardened clutch disc facing, or oil on surface	Replace
		Damaged pressure plate or flywheel	Replace
		Weak or broken pressure spring	Replace
Difficult gear shifting (gear noise during shifting)		Excessive clutch pedal free play	Adjust
		Bad clutch fluid, or air mixed in (hydraulic type)	Repair
		Unusual wear on corrosion of clutch disc spline	Replace
		Excessive vibration (distortion) of clutch disc	Replace
Clutch noisy	When clutch is not used	Insufficient play of clutch pedal	Adjust
		Excessive wear of clutch disc facing	Replace
	A noise is heard after clutch is disengaged	Unusual wear and/or damage of release bearing	Replace
	A noise is heard when clutch is disengaged	Insufficient grease on the sliding surface of bearing sleeve	Repair
		Improperly installed clutch assembly or release bearing	Repair
	A noise is heard when vehicle is suddenly rolled with clutch partially engaged	Damaged pilot bearing	Replace
Hard pedal effort		Insufficient lubrication of clutch shaft	Repair
		Insufficient lubrication of clutch disc spline	Replace
		Insufficient lubrication of clutch release lever shaft	Repair

CLUTCH SYSTEM

CLUTCH COVER AND DISC

COMPONENTS EOLB0280



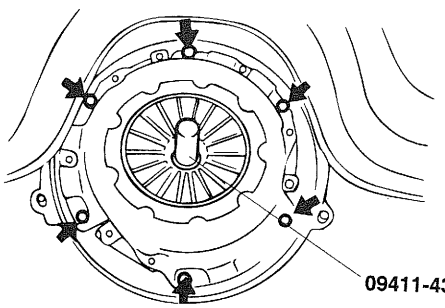
Removal steps
1. Transmission assembly
2. Clutch cover
3. Clutch disc

NOTE
Reverse the removal procedures to reinstall.

EOLB028A

REMOVAL EOLB0290

1. Insert the Special Tool in the fly-wheel pilot bearing hole to keep disc from falling off.
2. Loosen the clutch cover tightening bolt gradually in a crisscross fashion.
3. Remove the clutch cover. Then pull out the Special Tool and remove the clutch disc.



EOLB029A

INSPECTION EOLB0300

CLUTCH COVER

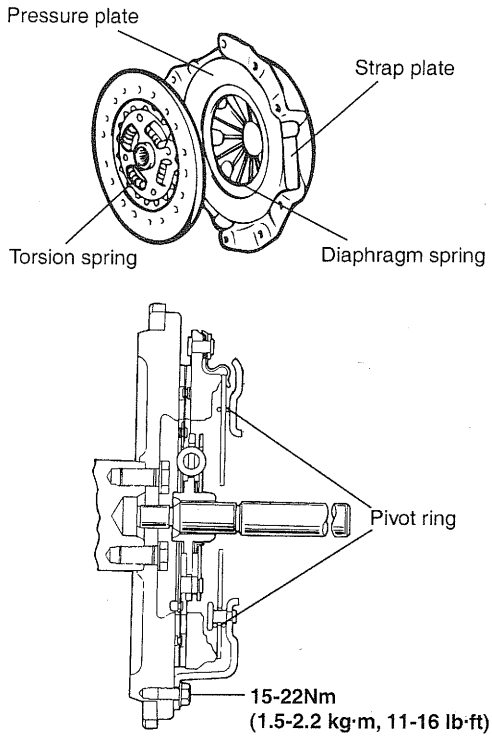
1. Check the diaphragm spring tip for wear.
2. Check strap plate rivet for looseness.
3. Check the pressure plate surface for damage.
4. Check pivot ring for wear.

NOTE

To check for pivot ring wear, shake clutch cover. If noise is produced, pivot ring is worn.

CLUTCH DISC

1. Check facing for loose rivets, uneven contact, deterioration due to seizure, and presence of oil or grease.
2. Check torsion spring and friction washer for looseness, fatigue and damage.



EOLB030A

CLUTCH DISC FACING WEAR MEASUREMENT

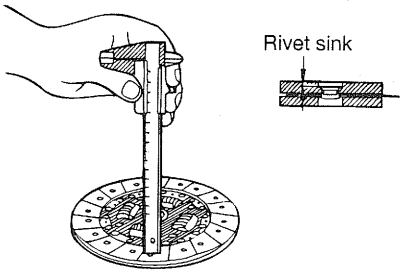
1. Use caliper gauge to measure the dimension from the facing surface to the rivet head.

Limit : 0.3 mm (0.012 in.)

2. If the measured value is below the limit, replace clutch disc.

NOTE

If facing is excessively worn, check flywheel and clutch cover pressure plate for wear.



EODA018A

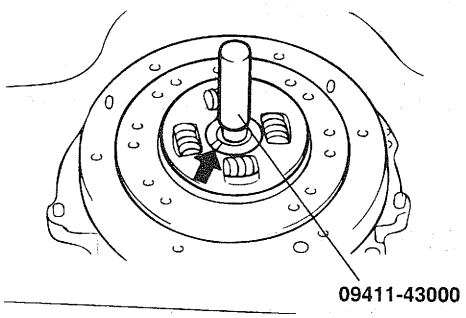
INSTALLATION EOLB0310

CLUTCH DISC

1. Apply specified grease to clutch disc spline.

Specified grease : HYUNDAI Genuine Grease

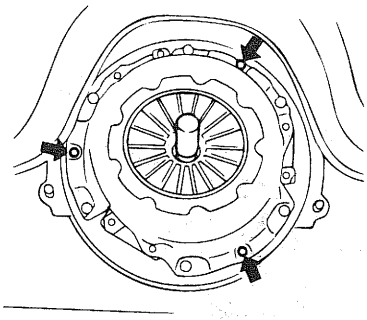
2. Use the Special Tool to set clutch disc to flywheel.
3. When installing clutch disc, be sure that surface having manufacturers stamped mark (indicated by an arrow in the illustration) is on pressure place side.



EOLB031A

CLUTCH COVER

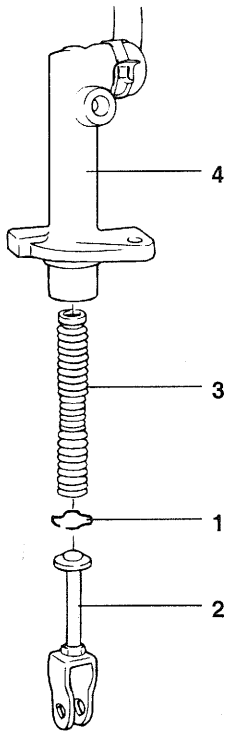
Install clutch cover with dowel pin hole in alignment with dowel pin in flywheel and tighten bolts gradually in a criss-cross fashion.



EOLB031B

CLUTCH MASTER CYLINDER

COMPONENTS EOLB0210



* **Disassembly steps**
1. Piston stopper ring
2. Push rod
3. Piston assembly
4. Clutch master cylinder

NOTE
Reverse the disassembly procedures to reassemble.

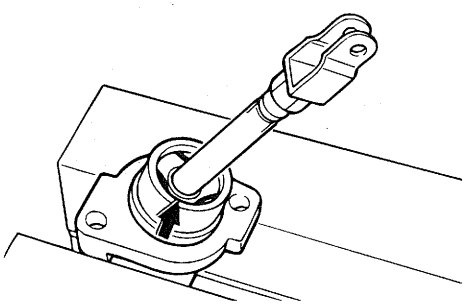
EOLB021A

DISASSEMBLY EOLB0220

1. Remove the piston stopper ring.
2. Remove the piston assembly.

CAUTION

Do not damage the master cylinder body and piston assembly. Do not disassemble piston assembly.



EOLB022A

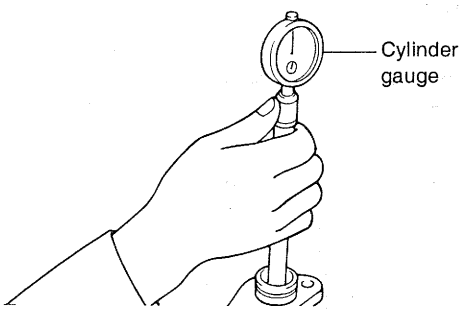
INSPECTION EOLB0230

1. Check the inside cylinder body for rust or scars.
2. Check the piston cup for wear or deformation.
3. Check the piston for rust or scars.
4. Check the clutch tube connection part for clogging.
5. Measure the master cylinder inside diameter and the piston outside diameter with a cylinder gauge and a micrometer.

Limit : 0.15 mm (0.06 in.)

NOTE

Measure the inside diameter of the master cylinder at three places (bottom, middle, and top) each in two perpendicular directions.



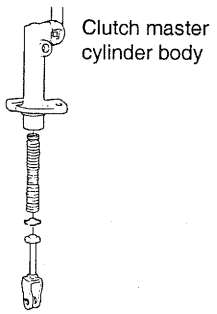
EODA014A

6. If master cylinder-to-piston clearance exceeds the limit, replace the master cylinder and/or piston assembly.

REASSEMBLY EOUB0240

1. Apply specified clutch fluid to the inner surface of the master cylinder body and to the entire periphery of the piston assembly.

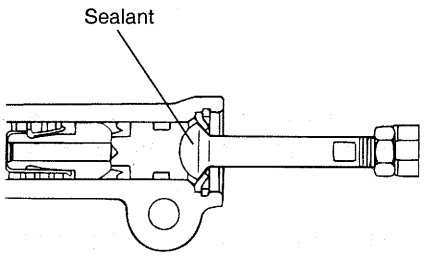
Specified clutch fluid :
Brake fluid SAE J1703 (DOT 3 or DOT 4)



EOLB024A

2. Apply the specified sealant to contact surface of piston and boot.

Specified sealant : Metal Rubber #20.



EOLB024B

CLUTCH PEDAL

CLUTCH PEDAL INSPECTION AND ADJUSTMENT EOUB0070

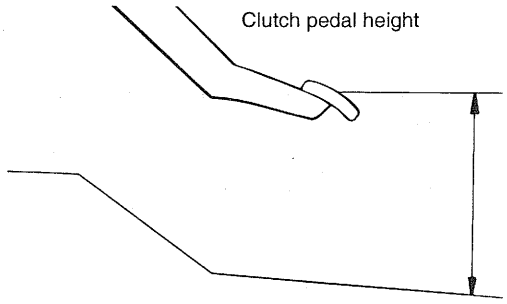
1. Measure the clutch pedal height and the clutch pedal backlash.

Clutch pedal height

Standard value : 170.9 mm (6.8 in.)

NOTE

Clutch pedal height is non-adjustable. If the height is outside the standard value, check for deformed pedal bracket, etc. and replace parts as required.

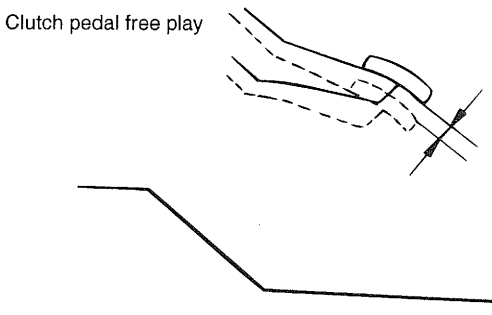


EOLB007A

2. Confirm that the clutch pedal free play and the clearance to the floor board when the clutch is disengaged, are within the standard values.

Clutch pedal free play (Including clevis pin play)

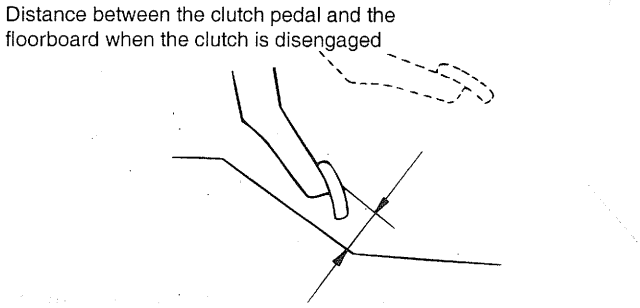
Standard value : 6 - 13 mm (0.24 - 0.51 in.)



EOLB007B

Distance between the clutch pedal and the floorboard when the clutch is disengaged

Standard value : 55 mm (2.16 in.) or more



EOLB007C

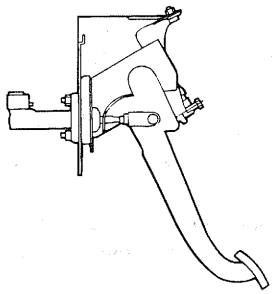
3. If the clutch pedal play exceeds the standard value, adjust the play with the double nut on the push rod on the master cylinder side.

CAUTION

Be careful not to push the push rod toward the master cylinder.

NOTE

Adjustment of the clutch pedal free play must be made by using push rod double nut on master cylinder after assembling.



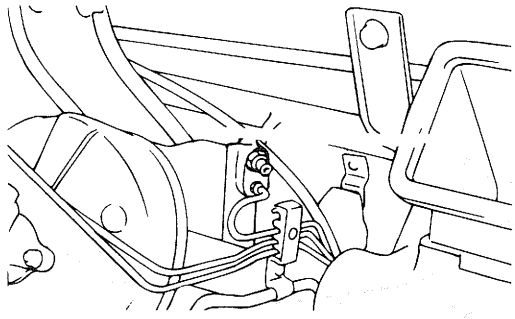
EOLB007D

BLEEDING

Whenever the clutch tube, the clutch hose, and/or the clutch master cylinder have been removed, or if the clutch pedal is spongy, bleed the system.

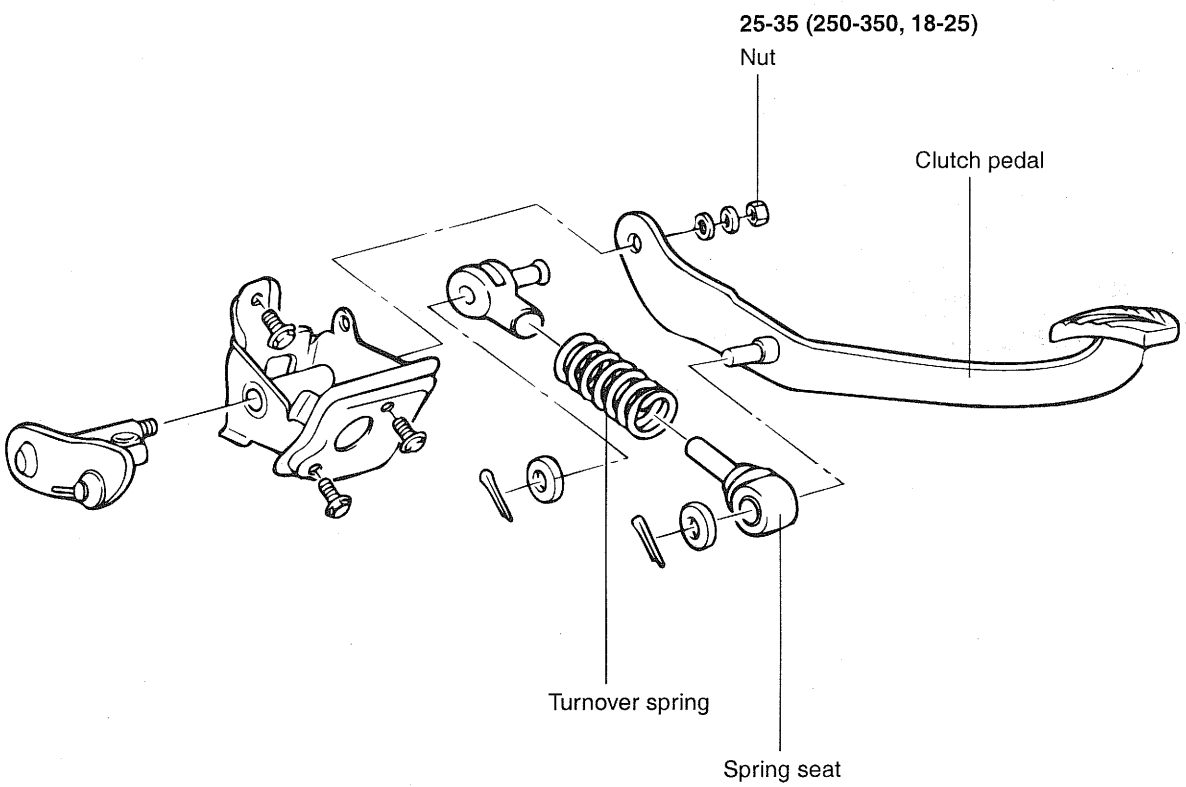
> ⚠ ***CAUTION***
>
> ***Use the specified brake fluid. Avoid using a mixture of the specification fluid and other fluid.***

Specified brake fluid :
Brake fluid SAE J1703 (DOT 3 or DOT 4)



EOKA004A

COMPONENTS EOLB0170

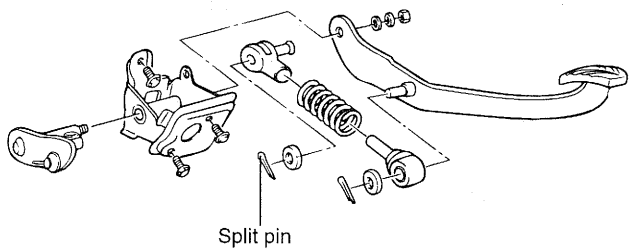


TORQUE : N·m (kg·cm, lb·ft)

EOLB017A

REMOVAL EOUC0180

1. Loosen nut on the clutch shaft before removing the split pin to reduce the turn over spring force.
2. Remove the split pin of the spring assist rod.



EOUC018A

INSPECTION EOLB0190

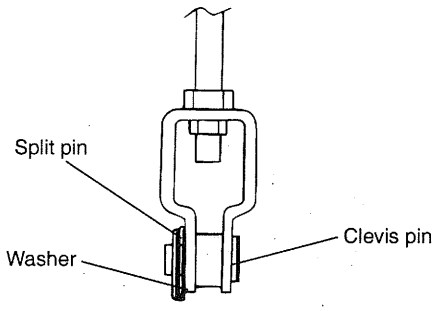
1. Check the pedal shaft bushing for wear.
2. Check the pedal shaft for bend.
3. Check the pedal arm for bend or torsion.
4. Check the clutch tube and reservoir hose for cracks or clogging.
5. Check the turnover spring for deterioration.
6. Check the pedal pad for damage or wear.

INSTALLATION EOUC0200

MASTER CYLINDER

Apply specified grease to clevis pin and washer.

Multipurpose grease :
SUN LIGHT #2 or RETINAX A.

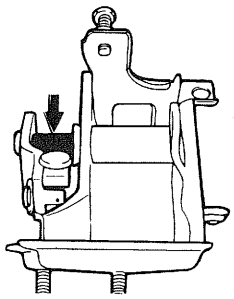


EOLB020A

CLUTCH PEDAL AND CLUTCH SHAFT

Apply specified grease to all connecting and sliding parts before assembly.

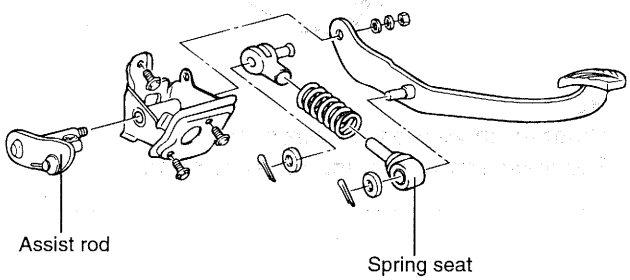
Specified grease :
Chassis grease SAE J310, NLGI NO.0



EOLB020B

ATTACHING NUT AND SPRING ASSIST ROD

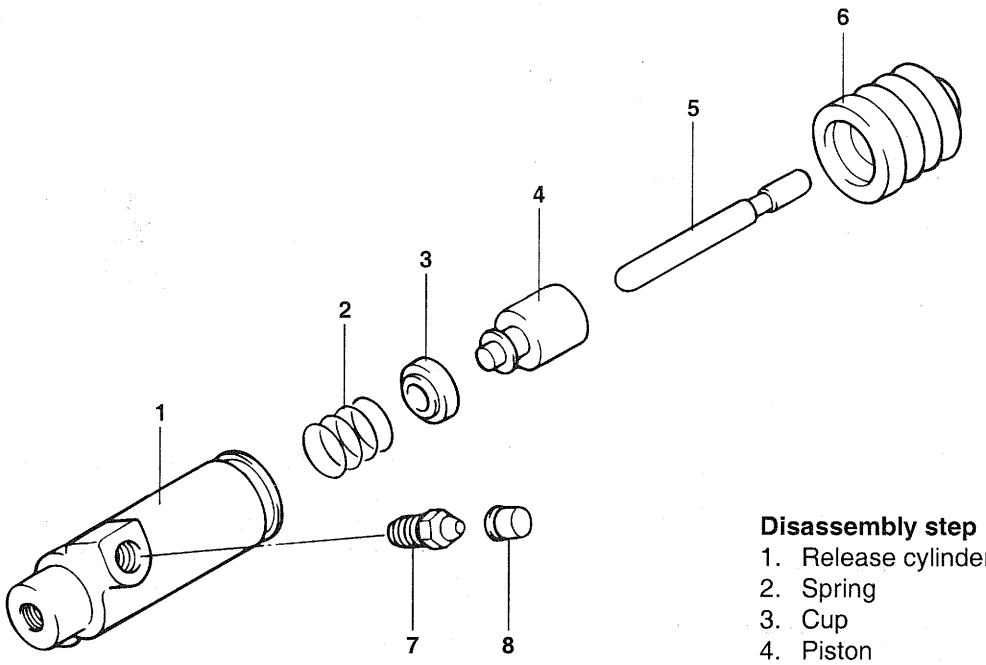
After installing the clutch shaft and the clutch pedal, install the spring and the spring assist rod.



EOUC020A

CLUTCH RELEASE CYLINDER

COMPONENTS EOLB0250



Disassembly step
1. Release cylinder
2. Spring
3. Cup
4. Piston
5. Rod
6. Boot
7. Air bleeder
8. Cup

NOTE
Number show order of removal.
For reassembly, reverse order of removal.

EOKA013A

DISASSEMBLY EOLB0260

1. Before removing the clutch tube, discharge the clutch fluid at the bleeder screw of the release cylinder.

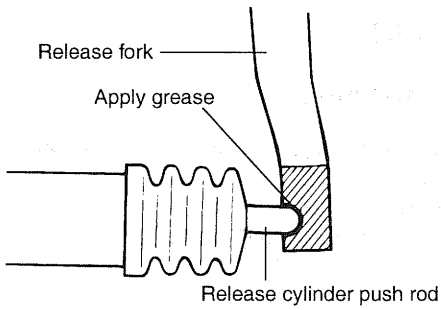
INSPECTION

1. Check the clutch release cylinder for fluid leakage.
2. Check the clutch release cylinder boot for damage.

REASSEMBLY EOLB0270

1. Apply a coating of the specified grease to the contact parts of the release fork and release cylinder push rod.

Specified grease :
Wheel bearing grease SAE J310, NLGI NO.2



EOLB027A

2. Fill reservoir tank with specified fluid after attaching clutch tube.

Specified grease :
Brake fluid SAE J1703 (DOT 3 or DOT 4)

3. Purge air and check for leaks.