

## 12. CLUTCH

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## 12-1. Description

The clutch is a diaphragm-spring clutch of a dry single disc type, as shown in the cross-sectional view of Fig.12-1. The diaphragm spring is of a tapering-finger type, which is a solid ring in the outer diameter part, with a series of tapering fingers pointing inward. The disc, carrying six torsional coil springs, is slidably mounted on the transmission input shaft with a serration fit.

The clutch cover is secured to the flywheel, and carries the diaphragm spring in such a way that the peripheral edge part of the spring pushes on the pressure plate against the flywheel (with the disc in between). When the clutch release bearing (throwout bearing) is held back: This is the engaged condition of the clutch.

Depressing the clutch pedal causes the release bearing to advance and push on the tips of the tapering fingers of the diaphragm spring. When this happens, the diaphragm spring acts like the release levers of a conventional clutch, pulling the pressure plate away from the flywheel, thereby interrupting the flow of drive from flywheel through clutch disc to transmission input shaft.

The clutch construction is simple, well balanced relative to rotating speed, durable and capable of withstanding high torsional load and, what is particularly noteworthy, does not require adjustment of the kind involved in the conventional coil-pressure-spring release-lever type of clutch.

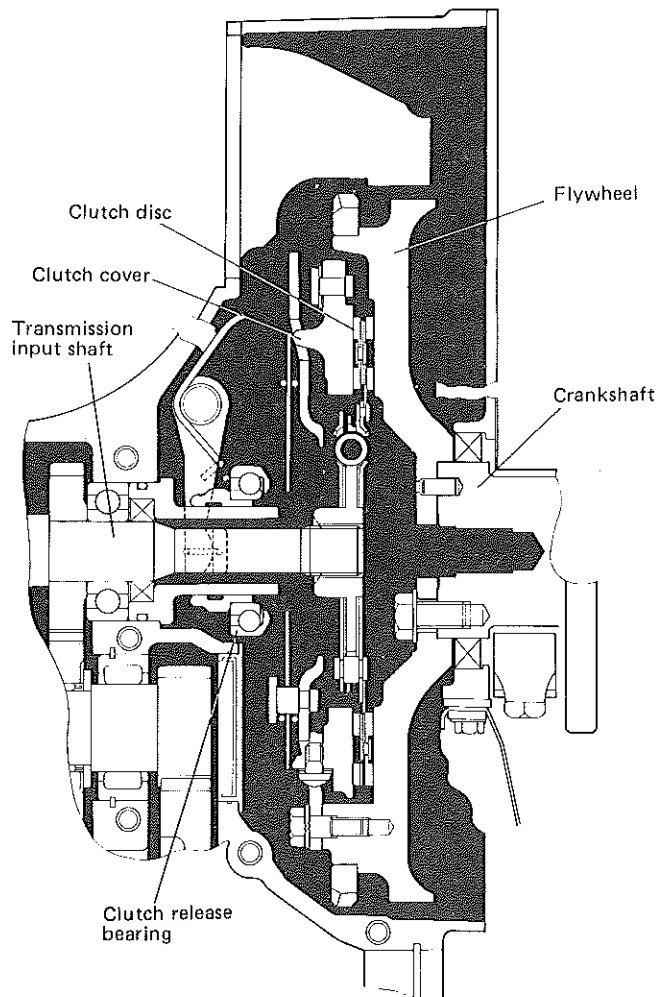


Fig. 12-1

## 12-2. Removal

Removal of the clutch presupposes that the transmission has been dismantled according to the method outlined in the section for the transmission.

Remove the 6 bolts securing the clutch cover to the flywheel, and take off the cover and clutch disc. Special tool A (Flywheel stopper 09916-97820)

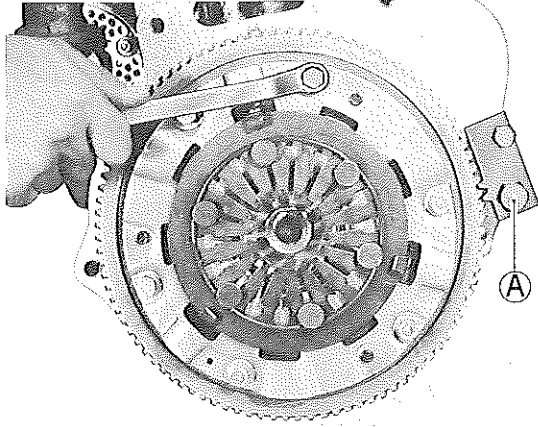


Fig. 12-2

With the clutch release bearing attached to the retainer, remove the retainer spring from the release shaft. The release bearing will come off as the spring is being removed.

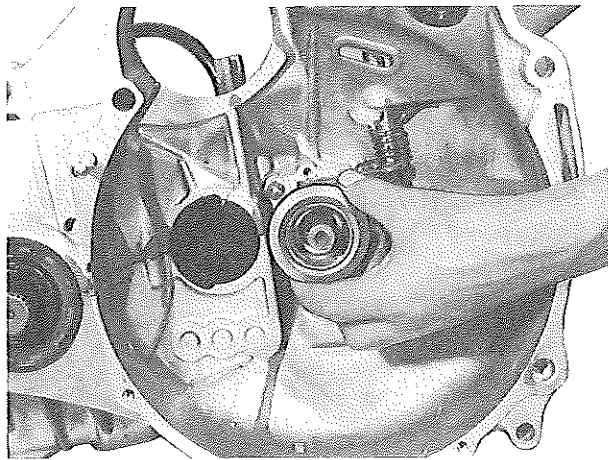


Fig. 12-3

## 12-3. Maintenance Services

### Clutch disc facing surface condition

A burnt or glazed (glass-like surface) facing can be reconditioned by grinding it with No.120~200 sandpaper. If the surface is in a condition beyond repair, replace the whole clutch disc assembly.

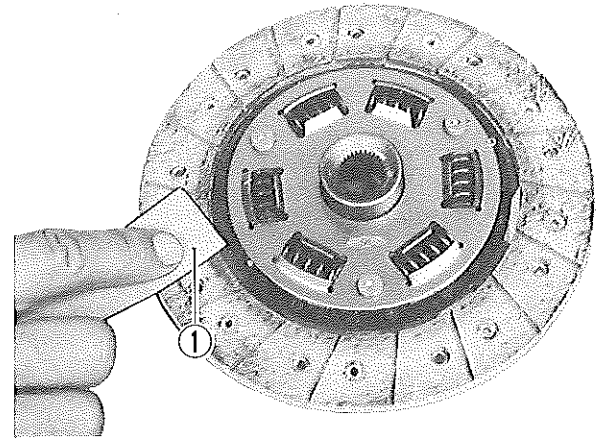


Fig. 12-4 ① Sandpaper

### Clutch facing wear

Check the wear of the facing by measuring the depth of each rivet head depression, which is the distance between rivet head and facing surface. If the depth is found to have reached the service limit at any of the holes, replace the clutch disc assembly.

Rivet head depression	Standard	Service limit
	1.2 mm (0.05 in.)	0.5 mm (0.02 in.)

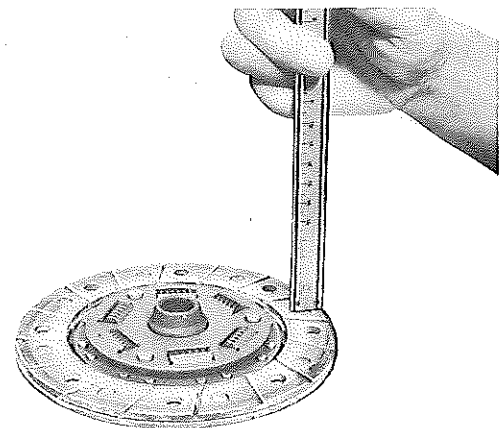


Fig. 12-5

### Backlash in disc serration fit

Check the backlash by turning the disc back and forth as mounted on the transmission input shaft. Replace the disc assembly if the backlash is noted to exceed the limit. Backlash here is a circular displacement as measured with a dial indicator.

A clutch disc exhibiting a large backlash will make an impact noise each time the clutch is engaged, and will prevent the clutch to engage smoothly.

Backlash in serration fit	Service limit
	0.5 mm (0.02 in.)

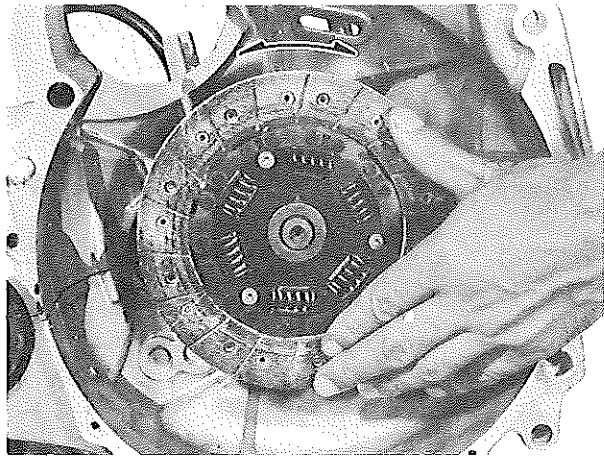


Fig. 12-6

### Clutch cover

Inspect the clutch cover for evidence of the diaphragm spring rivets getting loose. If the rivets are loose or are tending to become loose, replace the cover assembly; such a cover makes a rattling noise when the clutch pedal is depressed.

Inspect the tips of the tapering fingers (to which the release bearing exerts a push to disengage the clutch) for wear. If the tips are worn excessively, replace the cover assembly.

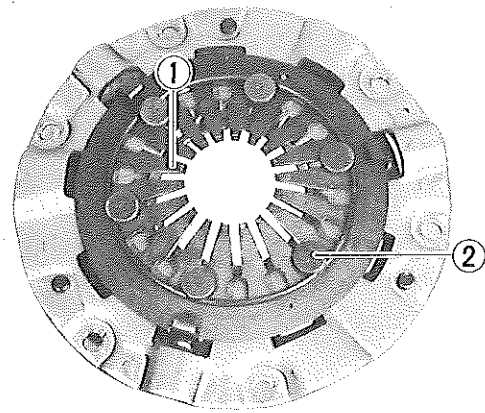


Fig. 12-7 ① Spring wear, ② Rivet

### Release bearing

Replace the release bearing if it sticks, rattles or makes an abnormal noise when spun and turned by hand.



Fig. 12-8

### Clutch cable lubrication

Apply grease to the hook part ③ of clutch cable.

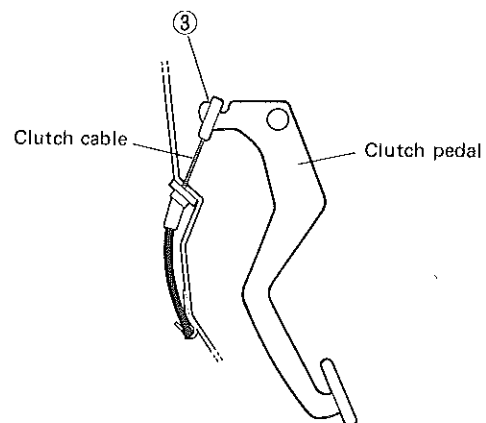


Fig. 12-9

### Clutch pedal play

Adjust the clutch pedal play with the adjuster nut ① (transmission case side). If the play is still too large after adjustment, readjust with the adjuster nut ② (clutch lever side).

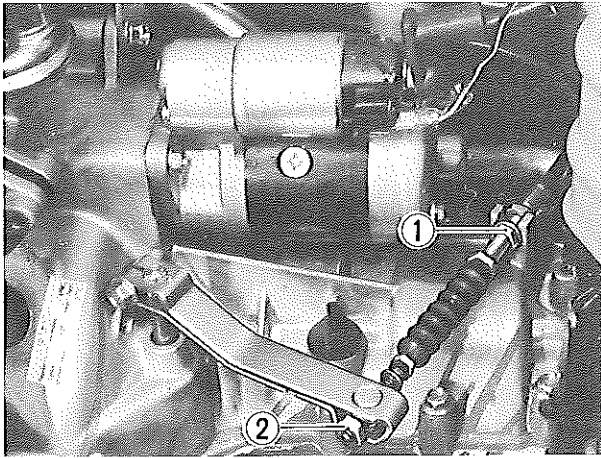


Fig. 12-10

#### NOTE:

If there is no clutch pedal play the clutch cable must be adjusted. If this is necessary, a worn clutch disc is considered to be a possible cause. If clutch operation is still not smooth after adjustment of cable play, check the disc for wear.

Clutch pedal play ③	15 ~ 25 mm (0.6 ~ 1.0 in.)
Clutch release arm play	2~4 mm (0.08~0.16 in.)

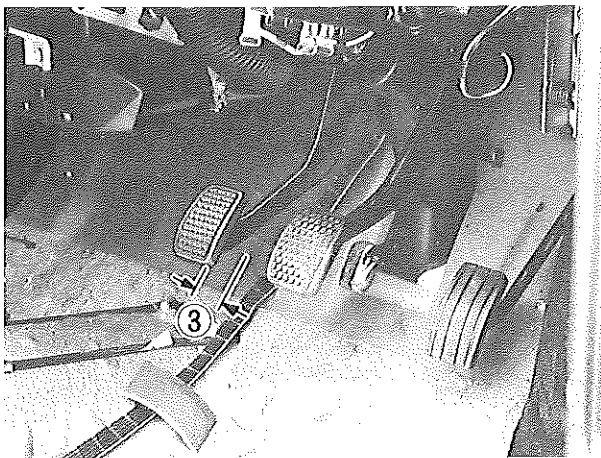


Fig. 12-11

### Clutch pedal height

Adjust the height of the clutch pedal with the stopper bolt above the clutch pedal, so that the pedal is level with the brake pedal.

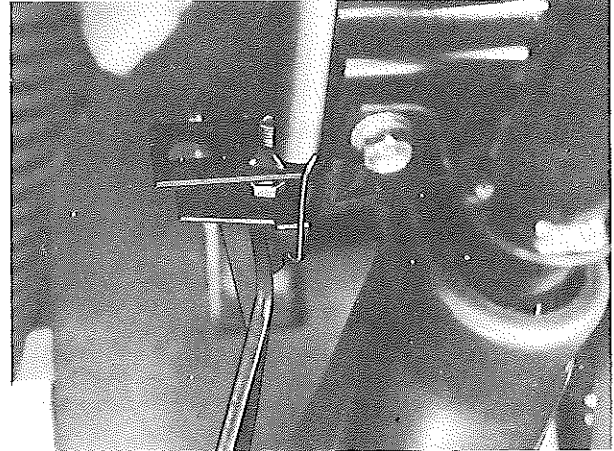


Fig. 12-12

### Clutch cable

Check the clutch cable for breaks, clamping condition, working condition, etc., and replace if any defect is found.

## 12-4. Installation

The clutch is to be installed by reversing the removal procedure. Some important steps will be explained in detail.

### Clutch disc and clutch cover

A special tool must be used to install the disc and cover, in order to align the two to the transmission input shaft. The tool is a sort of dummy; insert it into the crankshaft and flywheel (as if it were the transmission input shaft). Then mount the disc and cover and, after bolting up the cover to the flywheel, draw off the mounting tool **A**.

- A** : Clutch disc center guide (09923-37810)
- B** : Flywheel stopper (09916-97820)

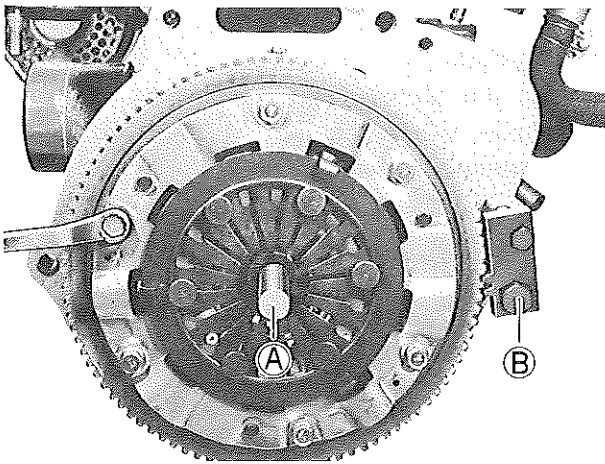


Fig. 12-13

When mounting the clutch cover on the flywheel, do not forget the 2 reamer bolts **1**.

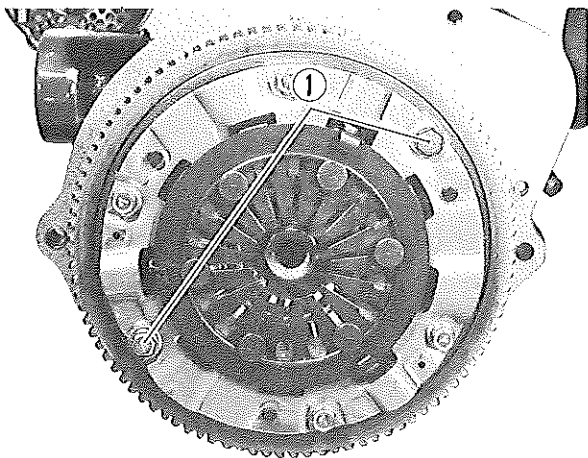


Fig. 12-14

### Clutch release bearing retainer

Before installing the retainer, apply SUZUKI SUPER GREASE "A" to the inner surface.

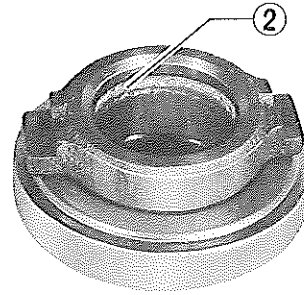


Fig. 12-15 **2** Grease

### Clutch release arm

Install the clutch release arm on the clutch release shaft in such a way that the punched mark on the clutch release arm is shifted toward the front side by one notch from the punched mark on the clutch release shaft.

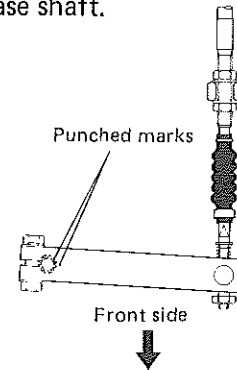


Fig. 12-16

### Clutch cable (Right hand steering vehicle)

Clamp the clutch cable securely.

The clearance between the clutch cable and the body must be more than 15 mm (0.59 in.).

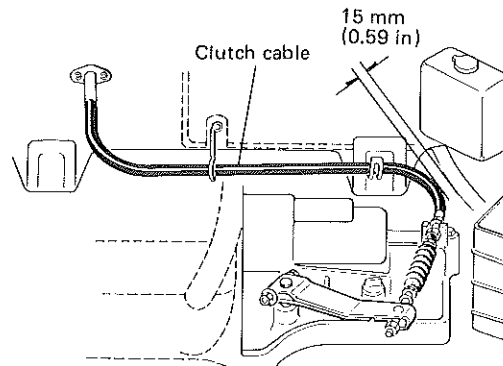


Fig. 12-17