

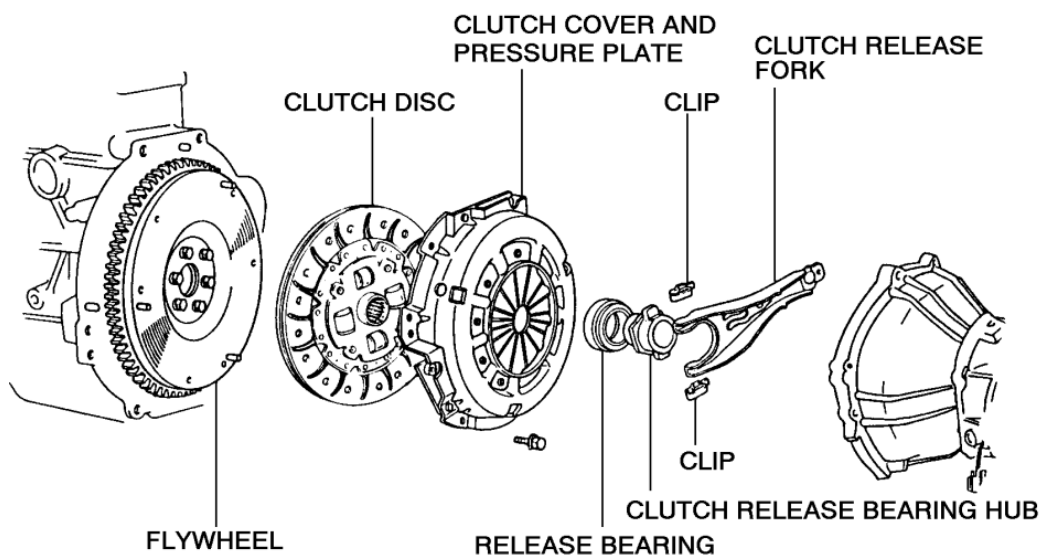
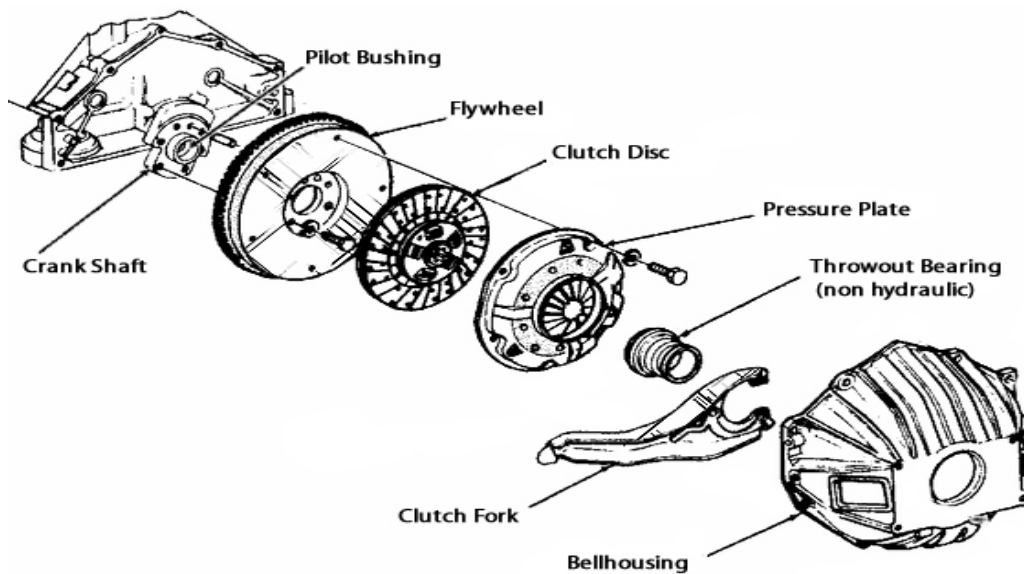


CLUTCH MAINTENANCE

Clutch maintenance is the process of regularly checking, cleaning, and repairing components of a vehicle's clutch system to keep it functioning properly. This includes checking the clutch pedal, cable, hydraulic system, flywheel, pressure plate, and disc.

The clutch must be properly maintained and correctly operated to obtain its normal life and satisfactory performance. There are two conditions which shorten clutch life:

- ✚ Continuous operation of the clutch release bearings.
- ✚ Clutch slippage.





CLEANING AND INSPECTION

- ✚ Now clean the dismantled parts of the clutch with kerosene.
- ✚ Inspect the clutch facing for wear. In case it is worn-out up to the rivets heads, replace with new one.
- ✚ Inspect the cushioning and torsion springs on the clutch plate. In case they are found to be cracked or weak, complete plate has to be replaced.
- ✚ Check the pressure springs for stiffness. If variation in case of a particular spring from the original value is more than the allowable, the same should be replaced.
- ✚ Clean and grease the thrown out bearing. Now hold the inner race and try to rotate the outer race keeping it under pressure. If the rotation is not uniform the bearing needs replacement.
- ✚ Check the pressure plate; it should have a smooth plane surface. In case it is distorted by more than 0.3 mm, or is badly scored, replace it.

ADJUSTMENT OF CLUTCH

Although the clutch is fitted and set very accurately on the initial assembly of the vehicle, however, it requires some adjustments after a considerable time of use due to the wear of the friction surfaces. Usually the following four adjustments are made on most of the clutches, three of which can be made without removing the clutch from the car and the fourth after the clutch assembly has been removed:

- 1. Floor board clearance adjustment:** This adjustment is required to prevent the pedal arm from resting against the floor board when the clutch is engaged. This adjustment is made with the help of a screw located near the lower end of the clutch pedal.
- 2. Clutch pedal travel adjustment:** This adjustment is required to ensure complete clutch disengagement when the clutch is thrown out. This adjustment is made by raising or lowering the pedal assembly upper stop in the suspended clutch pedal.



3. Free adjustment play: This adjustment is required to keep a specified amount of free play in the pedal after the clutch has been engaged. This adjustment is generally made by changing the length of one rod located somewhere in the clutch linkage. It should be made only after the correct floor board clearance or clutch pedal travel has been made.

4. Clutch release lever adjustment: This adjustment is made only after removing the clutch from the vehicle. Also, this adjustment should be made every time the clutch is removed from the vehicle. For making this adjustment to factory specification, a clutch rebuilding machine equipped with a dial gauge or a gauge plate is used.

CLUTCH PEDAL PLAY ADJUSTMENT

Clutch pedal free play (2 to 4 mm) is adjusted from clutch release arm with clutch operating flexible cable coming from clutch pedal. While fitting clutch release arm on the clutch release shaft, fix up the arm such that the punched mark on the clutch release is shifted towards the front side but one notch from the punched mark on the clutch release shaft, after tightening the arm fix up the cable and adjust clutch pedal free play through adjuster nut 1. It is not possible to get the desired play then adjust with adjuster nut 2.

CLUTCH REPAIRS AND INSPECTION

S.No	Complaints	Possible Cause	Check (or) correction
1	Clutch slips while engaged	<ul style="list-style-type: none"> ✚ Broken or weak pressure springs ✚ Broken engine mount ✚ Warped clutch disc ✚ Grease or oil on disk facing 	<ul style="list-style-type: none"> ✚ Replace ✚ Replace ✚ Replace ✚ Replace facing or disk
2	Clutch chatters when engaged	<ul style="list-style-type: none"> ✚ Warped clutch disc ✚ Broken engine mount ✚ Binding in clutch release linkage 	<ul style="list-style-type: none"> ✚ Replace ✚ Replace ✚ Adjust and lubricate
3	Clutch noises	<ul style="list-style-type: none"> ✚ Misalignment of engine and transmission ✚ Friction disc hub loose on the clutch shaft 	<ul style="list-style-type: none"> ✚ Realign ✚ Replace worn parts ✚ Re-adjust(or) Replace the assembly

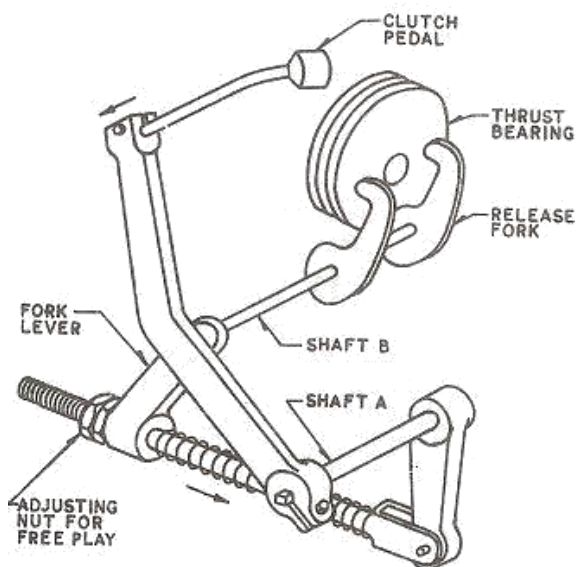


MAINTENANCE AND SERVICING OF CLUTCH

		<ul style="list-style-type: none">✚ Release lever not properly adjusted	
4	Clutch pedal pulsations	<ul style="list-style-type: none">✚ Engine and transmission not aligned✚ Flywheel not seated on the crankshaft flange	<ul style="list-style-type: none">✚ Realign✚ Seat properly
5	Friction disc facing wear	<ul style="list-style-type: none">✚ Driver rides clutch✚ Excessive and incorrect use of clutch✚ Crack in flywheel	<ul style="list-style-type: none">✚ Keep foot off clutch except when necessary✚ Reduce use✚ Replace
6	Clutch pedal stiff	<ul style="list-style-type: none">✚ Clutch linkage lacks lubricant✚ Misaligned linkage plate✚ Bent clutch pedal	<ul style="list-style-type: none">✚ Lubricate✚ Realign✚ Replace

Clutch pedal play adjustment

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MAINTENANCE AND SERVICING OF CLUTCH



Clutch Repairs and Inspection

1. Clutch facing and service limit
2. Loose holding down rivets
3. Check up the torque spring
4. Check for distortion or crack on clutch
5. Check for flat run out (<0.4 mm)
6. Check for lateral run out (<0.7 mm)