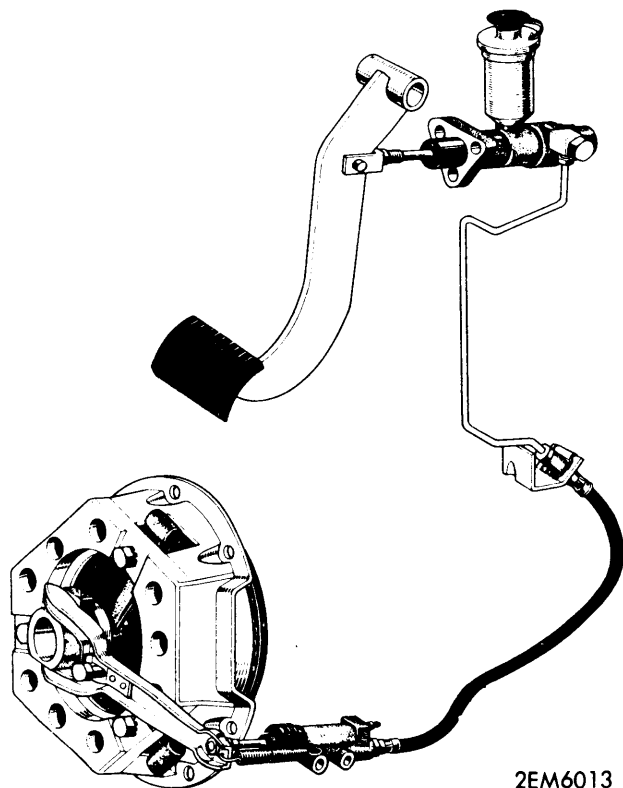


1965-73 TOYOTA LAND CRUISER

FJ 40 Series (1965-73)
FJ 43 Series (1965-72)
FJ 45 Series (1965-67)
FJ 55 Series (1968-73)

DESCRIPTION

Clutch is a dry, single disc, coil spring type. Clutch is engaged or disengaged by a hydraulic system actuated by clutch pedal. A pre-lubricated clutch release bearing is also employed.



CLUTCH COMPONENTS (TYPICAL)

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

- 1) Raise vehicle and support front and rear with safety stands. Remove protective cover from under transmission. Drain oil from transmission and transfer case.
- 2) Remove passenger front seat on FJ 40 and 43 series. Remove front seat on FJ 45 series. Remove fuel tank on FJ 40 and 43 series. Remove transmission cover.
- 3) Disconnect parking brake cable at lever. Disconnect speedometer cable and vacuum diaphragm hoses at diaphragm cylinder body.
- 4) Disconnect intermediate rods at transmission for remote control transmission models. Disconnect wires at front drive indicator switch.
- 5) Disconnect high and low shift rods from transfer lever. Disconnect inner low shift lever at transfer case cover. Remove clutch housing cover.

6) Disconnect front and rear universal joint yokes from propeller shafts. Remove bolts retaining transmission to clutch housing. Slide transmission to rear and down to remove from vehicle.

7) Disconnect clutch fork return spring, and high and low shift lever from engine. Remove slave cylinder but do not disconnect flex line.

8) Remove clutch release bearing retaining clips and remove release bearing and hub. Remove clutch fork assembly. Punch a reference mark on clutch cover and flywheel for reassembly.

9) Remove clutch assembly retaining bolts and remove clutch assembly. To install, reverse removal procedure. Use a suitable pilot shaft (09302-55011 for FJ 55 series and 09301-55021 all others) to align clutch when tightening retaining bolts.

CLUTCH MASTER CYLINDER

1) Remove pin connecting master cylinder push rod to clutch pedal. Plug master cylinder reservoir inlet hole. Disconnect flex line at master cylinder.

2) Remove bolts retaining master cylinder to firewall and remove cylinder. Take care not spill fluid on any painted surfaces.

3) To install, reverse removal procedure. Bleed all air from hydraulic system. See *Hydraulic System Bleeding*. Adjust pedal height and free play. See *appropriate story in Adjustment Section*.

CLUTCH SLAVE CYLINDER

1) Plug master cylinder reservoir inlet hole and disconnect clutch fork return spring. Remove nut and disconnect high and low shift lever from lever shaft.

2) Disconnect flex hose from flex line and remove clip. Remove slave cylinder retaining bolts and remove clutch slave cylinder.

3) To install slave cylinder, reverse removal procedure. Bleed all air from hydraulic system. See *Hydraulic System Bleeding*. Adjust clutch fork free play. See *Clutch Fork Free play*.

CLUTCH RELEASE BEARING

1) With clutch release bearing removed as previously outlined, rotate bearing and check for roughness or rotation or excessive noise. If bearing is defective, press old bearing off hub and install new bearing.

2) When installing, lubricate hub and clutch fork ball. Apply grease to contact points on clutch release bearing.

PILOT BEARING

1) With transmission, clutch housing, and clutch assembly removed as previously outlined, rotate pilot bearing in end of crankshaft to check for roughness of movement or excessive noise.

2) If pilot bearing is found defective, pull of crankshaft with a suitable puller (09303-55011). To install, lubricate bearing and drive in crankshaft with a suitable driver (09304-30010).

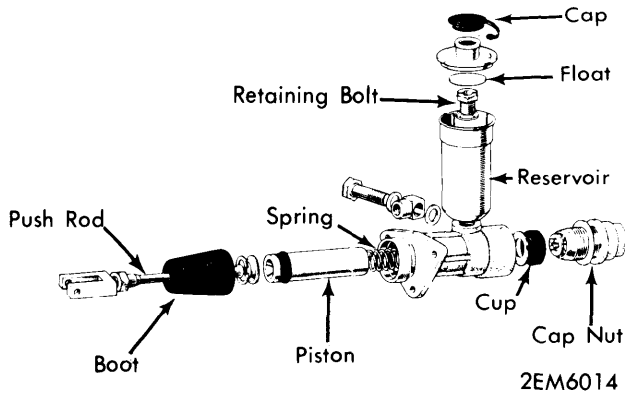
OVERHAUL

CLUTCH MASTER CYLINDER

1) With master cylinder removed as previously outlined. Remove reservoir cap and drain fluid. Remove float, reservoir retaining bolt and remove reservoir.

2) Disconnect boot from cylinder and remove snap ring. Withdraw push rod, boot and piston stop plate. Remove piston and return spring from cylinder.

1965-73 TOYOTA LAND CRUISER (Cont.)



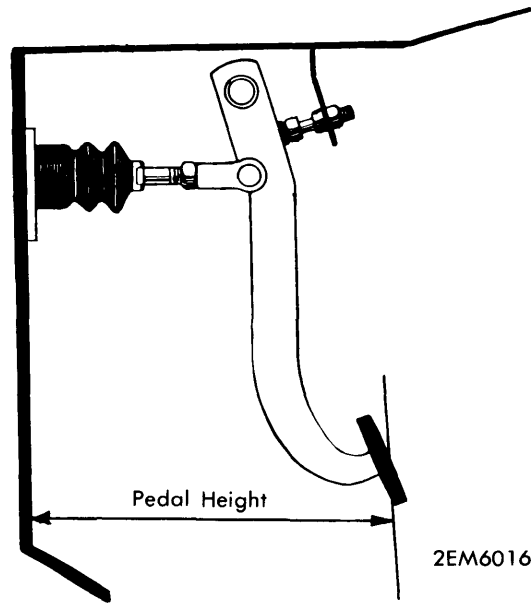
CLUTCH MASTER CYLINDER COMPONENTS

3) Secure cylinder in a vise and remove cap nut from end. With cap removed, withdraw cup spacer from cylinder. Thoroughly clean and inspect all components.

4) Measure piston-to-cylinder clearance. If clearance exceeds .006" (.15 mm), replace piston or cylinder housing. Check piston or bore in cylinder for damage or signs of scoring.

5) Check return spring for wear or cracking. Replace spring if length of spring is less than 3.31" (84 mm) at 4.5 ft. lbs. (.62 mkg) of applied pressure. Inspect base of reservoir for damage.

6) To assembly, soak all components in brake fluid and reverse disassembly procedure. Tighten reservoir retaining bolt to specification.



PEDAL HEIGHT MEASURING POINT

Pedal Height

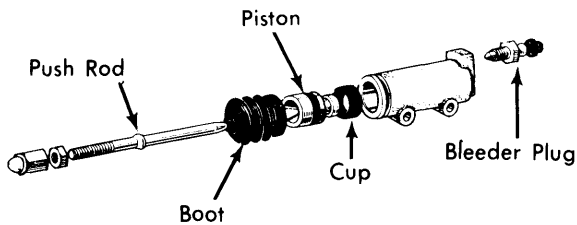
Application

	Height
FJ 40, 43 & 45 Series	9.6" (244 mm)
FJ 55 Series	6.7" (170 mm)

CLUTCH FORK FREE PLAY

1) To obtain correct clearance between clutch release bearing and fingers on clutch, there must be a correct amount of free play between push rod and slave cylinder piston.

2) Raise vehicle and support front with safety stands. Remove clutch fork return spring. Turn adjuster in push rod until specified free play is obtained (see illustration).



SLAVE CYLINDER COMPONENTS

CLUTCH SLAVE CYLINDER

1) With clutch slave cylinder removed as previously outlined, remove both push rod sections and boot from slave cylinder. Withdraw piston with cup and remove bleeder plug.

2) Thoroughly clean and inspect all components. Measure clearance between piston and cylinder, if clearance exceeds .006" (.15 mm), replace piston or cylinder housing.

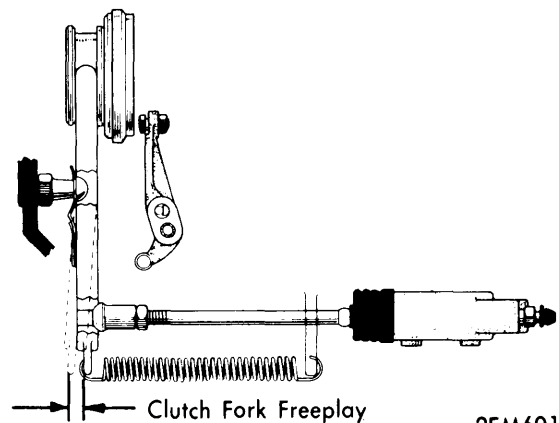
3) Check piston and bore in cylinder for damage or signs of scoring. Check spring for wear or cracking. Check bleeder plug seat in cylinder and bleeder plug for damage.

4) To assemble, soak all components in brake fluid and reverse disassembly procedure.

ADJUSTMENT

PEDAL HEIGHT

Pedal height is measured from floor mat to top of pedal pad (see illustration). Adjust stop bolt at top of pedal assembly until specified pedal height is obtained.



CLUTCH FORK FREE PLAY MEASURING POINT

Clutch Fork Free Play

Application

	Free Play
FJ 40, 43 & 45 Series12" (3.0 mm)
FJ 55 Series21" (5.3 mm)

1965-73 TOYOTA LAND CRUISER (Cont.)

CLUTCH PEDAL FREE PLAY

FJ 55 Series Only — Clutch pedal free play is measured from full up position of pedal to point where push rod of master cylinder contacts piston. Adjust master cylinder push rod to allow pedal 1.38" (35 mm) free play.

HYDRAULIC SYSTEM BLEEDING

- 1) Make sure master cylinder is full of fluid. Raise rear of vehicle and support with safety stands. Install a flexible tube on end of bleeder plug.
- 2) Insert opposite end of tube in a container approximately half full of brake fluid. Pump clutch pedal several times and when fully depressed open bleeder plug one-third to one-half turn.

3) With plug open, air in system will bleed into container causing air bubbles in fluid. Repeat procedure until air bubbles are no longer seen in fluid.

4) Make sure bleeder plug is tight and install cap. Recheck fluid level in master cylinder. Check system for leaks after bleeding procedure is completed.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Master Cylinder Reservoir Bolt.....	10-13 (1.4-1.8)
Clutch Assembly Retaining Bolts.....	11-16 (1.5-2.2)
Trans.-to-Clutch Housing Bolts	50-57 (7.0-7.9)
Clutch Fork Lever Pin Bolt.....	25-30 (3.5-4.2)