MAZDA, EXCEPT GLC

808 (1300 cc) Mizer
808 (1600 cc)
RX-3SP
RX-4
Cosmo
Rotary Pickup

DESCRIPTION

Clutch is a dry, single disc, diaphragm spring type. Clutch actuation is hydraulic. A firewall mounted master cylinder inconjunction with a clutch housing mounted slave cylinder is used. System uses a prelubricated clutch release bearing. All clutch assemblies are similar but, some models (808) have different clutch fork configurations. Also, 808 (1300 cc) models have adjustable clutch fork free play.

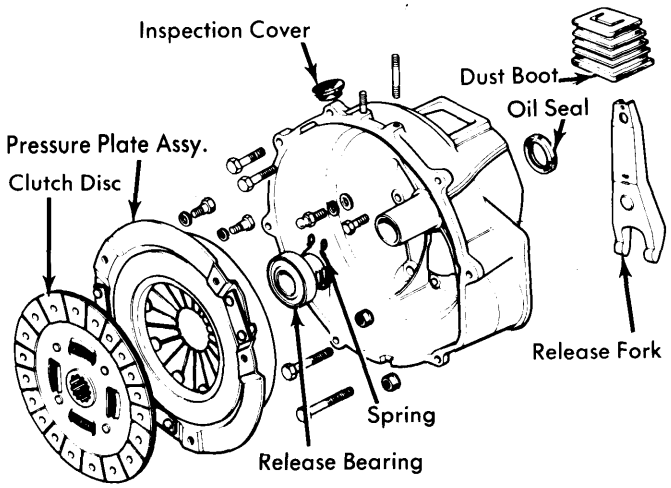

Fig. 1 Exploded View of Mazda Clutch Assembly. Illustration Shown is for Cosmo, RX-3SP, RX-4 and Rotary Pickup. 808 Models Have Clutch Release Fork Mounted Through Side of Clutch Housing.

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

NOTE – *Removal procedure outlined is designed for all models. Procedure is general. Some models may have slight individual differences.*

1) Disconnect battery ground cable. From inside driver's compartment, remove console (if equipped) and disassemble gearshift lever. Raise and suitably support engine and transmission.

2) Remove electrical leads from starter and transmission mounted switches. Disconnect power brake vacuum line from clutch housing (if equipped). Separate electrical wire harness from bracket located near starter housing. Disconnect exhaust pipe from manifold. It may be necessary to remove entire front portion of exhaust pipe on some models. Remove speedometer cable from extension housing.

3) Disconnect slave cylinder from transmission housing and remove starter. Disconnect propeller shaft at rear axle and slide shaft from transmission. Insert suitable plug (49 0259 440) into transmission to prevent fluid loss.

4) Support transmission with a jack, disconnect crossmember at transmission and side supports, and remove crossmember. Remove transmission attaching bolts, slide transmission rearward until input shaft clears clutch splines, and remove transmission.

5) Note flywheel and pressure plate index marks for reassembly reference. Install a suitable flywheel holding tool, and loosen clutch attaching bolts (noting where special bolts go) one turn at a time until spring pressure is released. Remove clutch assembly.

6) To install, reverse removal procedure and note the following:

- On piston engine models, lubricate pilot bearing in crankshaft with grease prior to installing clutch.
- Use clutch aligning tool to center disc and pressure plate on flywheel.
- Bleed hydraulic system.

CLUTCH MASTER CYLINDER

Removal & Installation – Disconnect hydraulic line from master cylinder. Remove nuts mounting cylinder to firewall. Unhook clutch pedal from cylinder push rod. Remove cylinder. To install, reverse removal procedure and bleed hydraulic system.

CLUTCH SLAVE CYLINDER

Disconnect hydraulic line from cylinder, disconnect return spring from clutch fork, remove cylinder attaching nuts and remove slave cylinder from clutch housing. To install, reverse removal procedure, adjust clutch fork free play (if applicable) and bleed hydraulic system.

CLUTCH RELEASE BEARING & FORK

With transmission removed, disconnect return spring for release bearing and slide bearing off transmission front cover. Pull release fork outward until spring clip releases from ball pivot, and remove fork from clutch housing. To install, apply a light coat of grease to all contact surfaces and reverse removal procedure. NOTE – *Bearing is prelubricated and should not be washed in any solevent or cleaning solution.*

PILOT BEARING

Rotary Engine Models – **1)** Remove nut mounting flywheel to eccentric shaft. Free flywheel from shaft. It may be necessary to use puller to remove flywheel.

2) Use suitable puller (49 0823 070A) to remove pilot bearing and seals.

3) Use same tool mentioned in step **2)** or a driver to seat new bearing into shaft. Fit new seals.

Piston Engine Models – Pilot bearing is pressed into flywheel. If replacement is required, remove using a suitable puller. To install lubricate bearing with grease and install into flywheel using a driver.

MAZDA, EXCEPT GLC (Cont.)

OVERHAUL

CLUTCH MASTER CYLINDER

1) Clean outside of master cylinder thoroughly and drain brake fluid. Remove dust boot, retaining clip, and retaining washer. Remove piston assembly, primary cup and return spring from cylinder. Remove reservoir from cylinder.

2) Wash all parts in clean alcohol or brake fluid. CAUTION – *Do not use gasoline or kerosene.* Check all parts for wear or damage, replace as necessary. Check clearance between piston and cylinder bore. If clearance exceeds .006", replace piston or cylinder as necessary. Ensure that compensating port on cylinder is open.

3) To assemble, reverse disassembly procedure and note the following: Before assembly, dip piston and cups in clean brake fluid. Install primary cup so that flat side of cup is against piston. When assembled, fill reservoir with brake fluid and operate piston with a screwdriver until fluid is ejected at outlet port.

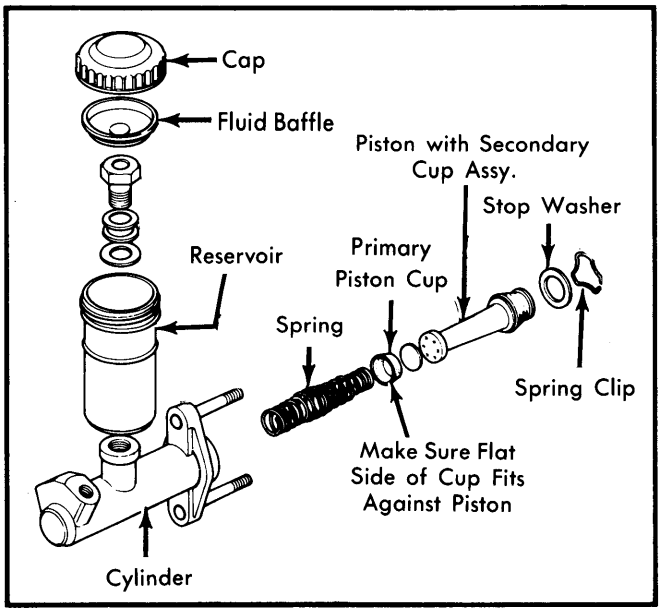

Fig. 2 Exploded View of Clutch Master Cylinder. All Models Use Same Basic Master Cylinder 808 Models Have Slightly Different Fluid Reservoir.

CLUTCH SLAVE CYLINDER

Adjustable Type-1) Clean outside of slave cylinder thoroughly, and remove dust boot, release rod, and spring assembly. Remove piston and cups from cylinder. NOTE – *If necessary, apply compressed air to fluid inlet passage to remove piston and cups.*

2) Inspect all parts for wear or damage. Wash all parts in clean alcohol or brake fluid. CAUTION – *Do not use gasoline or kerosene.*Check clearance between piston and cylinder bore. If clearance exceeds .006", replace cylinder or piston as necessary.

3) Coat all components with clean brake fluid. Fit cups to piston and install into cylinder. Install rubber dust boot and bleeder valve assembly. Install clutch release rod.

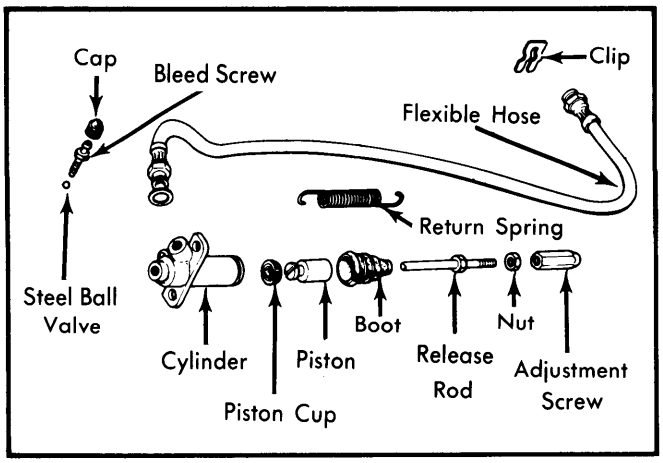

Fig. 3 Exploded View of Adjustable Type Slave Cylinder. Only 808 (1300 cc) Uses this Type of Unit.

Nonadjustable Type-1) Clean outside of slave cylinder. Remove dust boot and release rod. Remove piston and cup assembly with compressed air, if necessary. Remove spring and bleeder screw/valve assembly.

2) Inspect all parts for damage or wear. Wash all components in clean alcohol or brake fluid. CAUTION – *Do not use gasoline or kerosene.* Check clearance between piston and cylinder bore. If clearance exceeds .006" (.15 mm), replace cylinder or piston as necessary.

3) Install spring into cylinder. Fit piston cup to piston and slip them into cylinder. Install release rod into cylinder and fit dust boot. Install valve and bleeder screw.

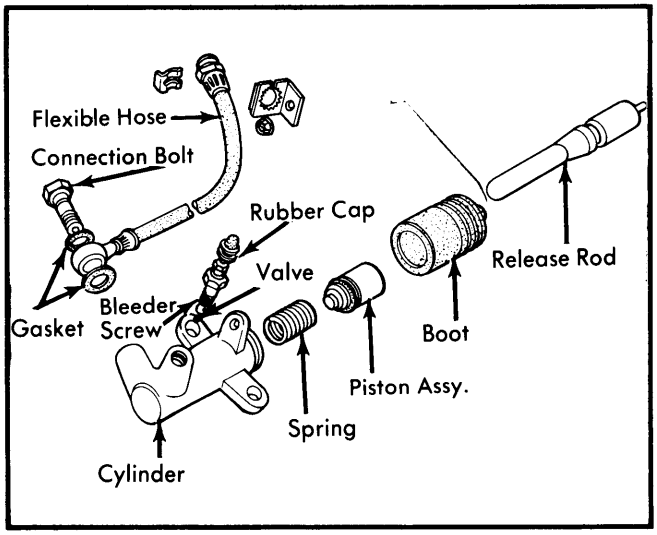

Fig. 4 Exploded View of Nonadjustable Slave Clyinder. Only 808 (1300 cc) DOES NOT Use This Type Unit.

MAZDA, EXCEPT GLC (Cont.)

ADJUSTMENT

CLUTCH PEDAL FREE PLAY

Loosen lock nut and turn push rod until clutch pedal free play is .02-.12" (.5-3.0 mm).

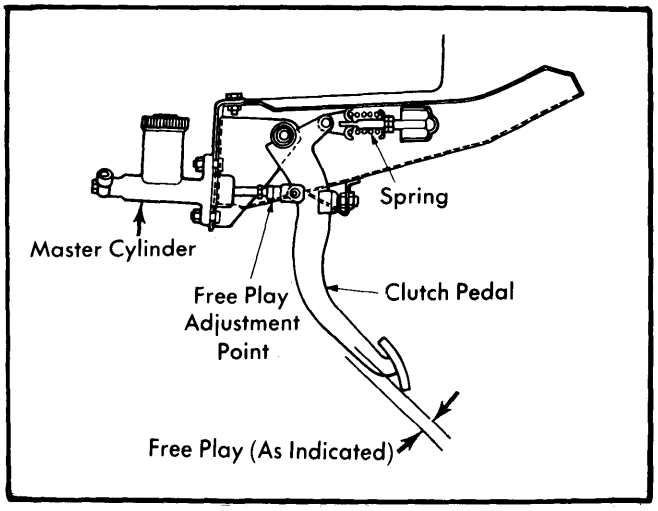

Fig. 5 Clutch Pedal Free Play Adjustment Location

CLUTCH FORK FREE PLAY

808 (1300 cc) Models – Remove clutch fork return spring. Loosen lock nut. Turn adjustment nut until free play is approximately .010-.140" (2.5-3.5 mm). Tighten lock nut. Reconnect return spring to clutch fork.

HYDRAULIC SYSTEM BLEEDING

1) Clutch hydraulic system must be bled whenever a fluid line has been disconnected or air has entered system. To bleed system, remove rubber cap on slave cylinder bleeder screw and attach a hose.

2) Place opposite end of hose into a jar partially filled with brake fluid. Open bleeder screw, depress clutch pedal, and allow pedal to return slowly. Continue operation until air bubbles cease to appear in discharged fluid, then close bleeder screw. NOTE – *During bleeding operation, master cylinder reservoir must be kept at least ¾ full of brake fluid.*

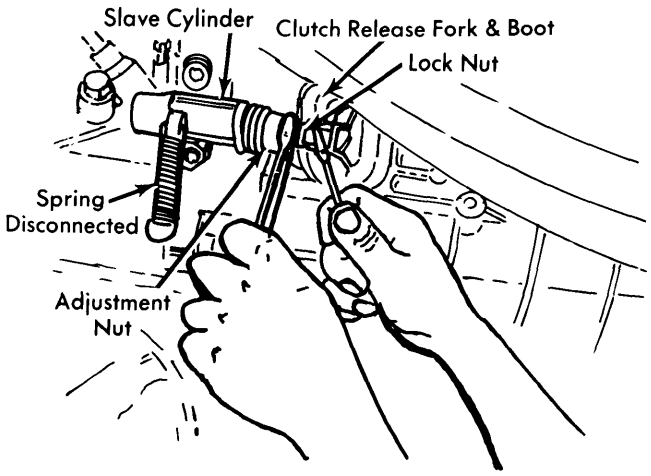

Fig. 6 Making Clutch Release Fork Free Play Adjustment on 808 (1300 cc) Models

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Flywheel-to-Crankshaft (Piston Engines)	112-118 (15.5-16.3)
Flywheel-to-Eccentric Shaft (Rotary Engines)	289-362 (40-50)
Clutch-to-Flywheel	13-20 (1.8-2.7)