

## FORD MOTOR CO. DUAL PISTON MASTER CYLINDER

### All Models

### DESCRIPTION

Ford tandem dual piston master cylinder is a single casting with front and rear piston and a separate reservoir and outlet for each piston. Rear piston is operated by a push rod connected to brake pedal. Front, or floating, piston is operated by rear piston. In a combination drum and disc system, reservoir which feeds disc brakes is larger, to correspond with large size of disc brake caliper cylinders. Master cylinder outlet which feeds drum brake has a residual valve under tube seat. Disc brake outlet has no valve, since disc brakes must not have any residual pressure.

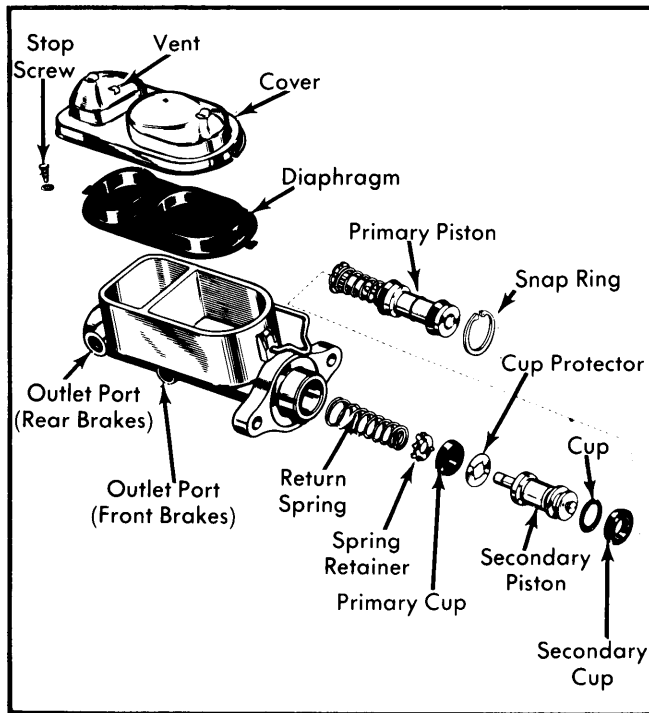


Fig. 1 Exploded View of Master Cylinder Assembly

### ADJUSTMENT

#### BRAKE PEDAL

On dual piston master cylinder or brake mounted vacuum booster equipped vehicles, brake systems are designed to permit full stroke of master cylinder, therefore no brake pedal clearance adjustment is required. **NOTE** — Pedal free-travel will not be correct if power brake booster push rod clearance is not correct. See appropriate Power Brake Unit article in this Section.

### REMOVAL & INSTALLATION

#### MASTER CYLINDER

**Removal** — All Power Brake Models — Depress brake pedal to dispell vacuum from brake booster. Disconnect all hydraulic lines at master cylinder. Remove nuts retaining master cylinder to brake booster and remove master cylinder.

**Removal** — All Non-Power Brake Models — Disconnect wires from stoplight switch. Remove dust boot from rear of master cylinder at dash panel. Disconnect master cylinder push rod from brake pedal. Remove stoplight switch from brake pedal assembly. Separate push rod from brake pedal and remove dust boot. Disconnect all hydraulic lines at master cylinder. Remove bolts securing master cylinder to dash panel and remove master cylinder.

**Installation** — All Models — **NOTE** — On vehicle equipped with power booster, adjust push rod length prior to installation of master cylinder (See appropriate article in this Section). To install, reverse removal procedure, centralize pressure differential valve, and bleed system. See Hydraulic Brake Bleeding in this Section.

### OVERHAUL

#### MASTER CYLINDER

**Disassembly** — 1) With master cylinder removed from vehicle, clean outside of cylinder, remove filler cap and diaphragm, and drain any fluid still in cylinder. Remove piston stop from cylinder, and remove "O" ring seal from stop.

2) Remove dust boot, then remove snap ring retaining piston assemblies. Remove push rod (if so equipped) and primary piston assembly from cylinder bore. Apply air pressure to forward outlet port of cylinder and carefully blow secondary piston assembly out of bore. Remove return spring, spring retainer, cup protector, and cups from secondary piston.

**Inspection** — Clean all parts with denatured alcohol, and blow dry with compressed air. Inspect all parts for chipping, excessive wear, or damage. Check all recesses, openings, and internal passages to be sure they are clean and open. Inspect master cylinder bore for signs of corrosion, pitting, etching, or scoring. If any of these conditions exist, manufacturer recommends replacement of master cylinder assembly.

**Reassembly** — 1) Dip all components, except cylinder housing, in clean brake fluid prior to final assembly. Install two secondary cups, back-to-back, on secondary piston. Now assembly cup protector, primary cup, spring retainer and secondary piston return spring on opposite end of piston. Insert secondary piston assembly into bore in cylinder.

2) Install new "O" ring on piston stop, and start stop into cylinder body. On vehicles equipped with standard brakes, position boot, snap ring, and push rod retainer on push rod, and seat assembly in primary piston. Install primary piston in cylinder bore, tighten secondary piston stop screw and install snap ring in end of cylinder bore.

3) On vehicles equipped with power assisted brakes, position stop plate and snap ring on primary piston, and install assembly in bore of master cylinder.

4) Before installing master cylinder assembly on vehicle, bleed as follows: Support master cylinder in a vise and fill both fluid reservoirs. Loosely install plugs in both outlet ports, then depress primary piston several times until air bubbles cease to appear in fluid reservoirs. Tighten plugs and attempt to depress piston. Piston travel will be greatly restricted when all air is expelled. Remove plugs, install cover and diaphragm, and remove assembly from vise.