Master Cylinders

FORD DUAL PISTON MASTER CYLINDER

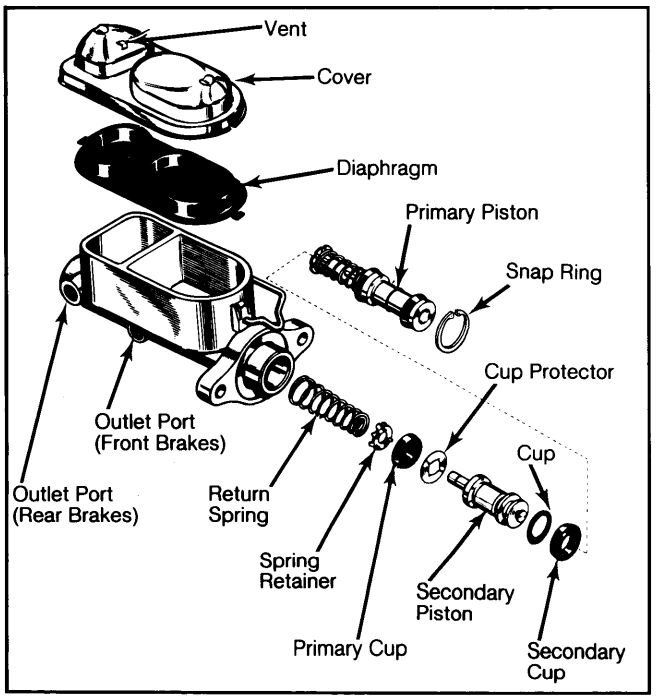
All Models

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 unit push rod clearance is not correct. See appropriate Power Brake Unit article in this section.

REMOVAL & INSTALLATION

MASTER CYLINDER

Removal (All With Power Brakes)

Depress brake pedal to expel 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 With Manual Brakes)

Disconnect wires from stoplight switch. Remove retaining nut, shoulder bolt, spacers and bushing securing master cylinder push rod to brake pedal. Remove stoplight switch from brake pedal. Disconnect fluid lines. Remove master cylinder to dash panel screws and remove master cylinder. Remove master cylinder push rod boot.

Installation (All Models)

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 remaining fluid from cylinder. Remove dust boot (if equipped). Remove snap ring retaining piston assemblies.

2) Remove push rod (if 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. DO NOT place fingers in front of piston. Remove return spring, spring retainer, cup protector and cups from secondary piston.

Inspection

1) 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.

2) 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) Lubricate all components, including cylinder bore, with clean brake fluid prior to assembly. Install 2 secondary cups, back-to-back, on secondary piston. Assemble 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) On vehicles equipped with standard brakes, position boot, snap ring and push rod retainer on push rod. Seat assembly in primary piston. Install primary piston assembly into cylinder bore.

3) On vehicles equipped with power brakes, position stop plate and snap ring on primary piston. Install primary piston and snap ring in cylinder bore.

4) Before installing master cylinder to vehicle, bleed the unit as follows: Support assembly in a vise and fill both reservoirs with fluid. Install plugs in brake outlet ports. Loosen plug in rear outlet port and depress primary piston slowly to force air out of cylinder. Tighten plug while piston is depressed to prevent air from entering cylinder.

5) Repeat procedure until no air is evident. Tighten plug. Repeat proceedure at front outlet port. Piston travel will be greatly restricted when all air is expelled. Remove plugs, install cover and diaphragm.