HYDRAULIC BRAKE SYSTEMS

Internal Type Hydraulic Brakes— The later models of this type of hydraulic brake use a master cylinder which is always in direct contact with the source of supply of the brake fluid. Fig. 14 shows a typical master cylinder of late model cars using Internal Hydraulic Brakes.

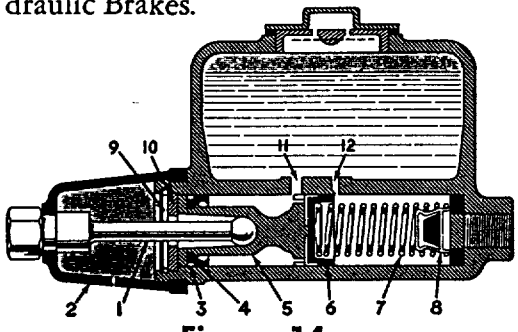

Figure 14.
Popular Type of Compensating Master Cylinder.

(1) Master cylinder link (2) Rubber boot (3) Cup ring (4) secondary cup in position on rear of (5) metal piston. (6) Primary cup is held securely against face of piston (5) by return spring (7) which also holds check valve (8) in position. Retainer spring (9) anchors piston stop (10). Piston stop (10) controls position of piston (5) so that when brakes are released intake port (11) and by-pass port (12) are open.

- **Be sure that all port holes within the cylinder itself are free of obstructions.**
- **See that the rubber cup on the piston is firm and clean and has not been affected by any mineral oil which might cause swelling or sticking.**

A cross-sectional view of the wheel cylinder used to actuate the brake shoe is shown in Fig. 15.

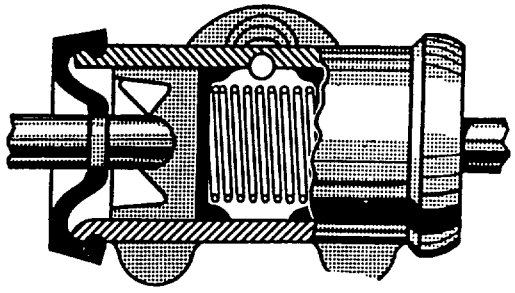

Figure 15
Equal bore Wheel Cylinder as used on Bendix and early Lockheed Brakes.

Some cars are equipped with straight bore wheel cylinders using a piston of the same diameter for operating each shoe. Other cars are equipped with

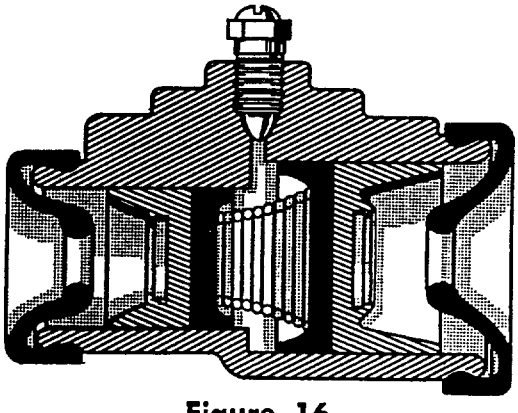

Figure 16
Sectional view of the step-bore Wheel Cylinder

stepped bore wheel cylinders which have pistons of different diameters (Fig. 16).

In cases where the manufacturer has attempted to secure more equal wear on the two shoes, we find the larger diameter piston operating the reverse shoe. In cases where the manufacturer has attempted to obtain a softer brake pedal we find the larger piston operating the forward shoe. Often the diameters of the front wheel brake cylinders are