

two rubber brake cylinder cups, and a piston return spring which is installed between the cups. Each end of each wheel cylinder is sealed by a rubber brake cylinder boot. Hydraulic fluid pressure, acting against the inner end of each wheel cylinder piston cup, forces the pistons outward to actuate the brake shoes.

The front wheel cylinders have a larger diameter than the rear wheel cylinders to provide a higher braking ratio on the front wheels than on the rear. Therefore, the front and rear wheel cylinders are not interchangeable.

Each wheel cylinder is equipped with a bleeder screw to facilitate the brake bleeding operation. The construction of the bleeder screw is shown in fig. 4.

Complete service information on the wheel cylinders is given under the headings, "(1) Removal," "(2) Disassembly and Inspection," "(3) Assembly," and "(4) Installation."

(1) **REMOVAL.** Disconnect the brake hose (front) or brake pipe (rear) from the wheel cylinder. Remove the wheel and the brake drum. Install a wheel cylinder clamp or wire the wheel cylinder boots to the cylinder body. Remove the brake shoe retracting springs with the tool shown in fig. 12. Remove the cap screws and lockwashers which attach the wheel cylinder to the brake carrier plate, then remove the wheel cylinder. Remove the wheel cylinder clamp or wire from the cylinder.

(2) **DISASSEMBLY AND INSPECTION.** Remove the wheel cylinder to brake shoe links from the cylinder boots.

Remove the rubber brake cylinder boots from the wheel cylinder housing, then remove the pistons, cups and piston return spring from the housing (fig. 5). Thread the bleeder screw out of the housing.

Clean all parts of the wheel cylinder in pure alcohol. Do not use kerosene or gasoline as a cleaner.

Inspect the cylinder bore for rust, scores, or other damage and replace the cylinder if necessary. Inspect the pistons, piston cups, and cylinder boots for wear, deterioration, incorrect size (growth), rough edges, and damage. Replace all parts that are not in good condition. Check the passage in the bleeder screw to make sure it is clean and open. Wheel cylinder repair kits are available (fig. 6) which contain the piston cups and boots needed to rebuild two wheel cylinders.

(3) **ASSEMBLY.** Coat all wheel cylinder parts with

clean brake fluid before installation in the cylinder. Place the pistons, cups, and return spring in the cylinder bore, then install the boots. For the correct position of the wheel cylinder parts, refer to (fig. 5). Thread the bleeder screw into the wheel cylinder housing. Install the wheel cylinder to brake shoe links in the cylinder boots, then install a wheel cylinder clamp or wire the boots to the cylinder.

(4) **INSTALLATION.** Position the wheel cylinder on the brake carrier plate, then install the lockwashers and cap screws which attach the cylinder to the plate. Tighten the cap screws to 15-20 foot-pounds torque. Position the ends of the brake shoes in the slots in the wheel cylinder to brake shoe links, then install the brake shoe retracting springs with the tool shown in (fig. 13). Remove the wheel cylinder clamp or wire, then install the brake drum and the wheel. Connect the brake hose (front) or brake pipe (rear) to the wheel cylinder, then bleed the brakes.

d. Master Cylinder.

The master cylinder is mounted on the dash panel in the engine compartment. The function of the master cylinder is to maintain a constant volume of brake fluid in the system at all times, and to convert physical pressure on the brake pedal to hydraulic pressure on the wheel-cylinder pistons.

The master cylinder contains the brake fluid reservoir and the master cylinder operating mechanism in an integral housing. The detailed construction features of the master cylinder are shown in fig. 7.

The piston is equipped with a rubber cup at the push rod end. The brake master cylinder primary cup is held against the piston by the piston return spring and retainer. A check valve is used at the output end of the master cylinder to control the return flow of the hydraulic fluid from the wheel cylinders.

The master cylinder push rod seats in a depression in the piston, thus transferring movement of the brake pedal to the piston. The piston end of the master cylinder is sealed with a flexible rubber boot.

(1) **REMOVAL.** Disconnect the brake line (fig. 8) from the master cylinder and depress the brake pedal a few times to force all the fluid from the master cylinder.

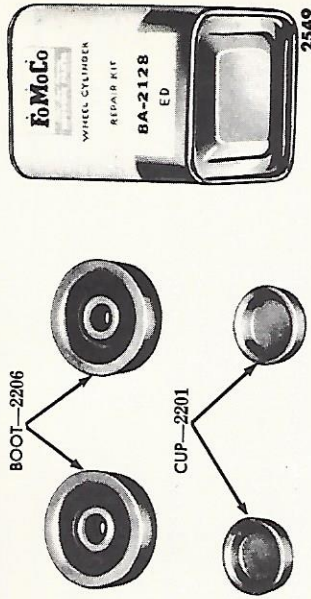


Fig. 6—Wheel Cylinder Repair Kit

der. Disconnect the wires leading to the stop light switch, then remove the stop light switch. Remove the eccentric bolt which attaches the master cylinder push rod to the brake pedal. Remove the cap screws and lockwashers which attach the master cylinder to the dash panel, then remove the master cylinder.

(2) **DISASSEMBLY.** Clean all dirt from the outside of the cylinder assembly, then remove the filler cap and gasket. Remove the rubber boot and the push rod from the cylinder bore. Remove the stop light switch adapter, the brake pipe connector, and the gaskets from the master cylinder. Remove the snap ring, then push the stop plate, piston assembly, primary cup, piston return spring, check valve, and valve seat out of the cylinder bore (fig. 7).

Clean all parts in alcohol. Make sure the by-pass port, intake port, and the air vent in the filler cap are open. Inspect the cylinder walls for scores or rust and recondition if required. Do not hone beyond allowable limits or any more than necessary to remove scores or rust and obtain a smooth cylinder wall, since oversize pistons and cups are not available. Be sure to remove any burrs caused by honing from the by-pass port and intake ports.

