

BRAKES

11-A. BRAKE PEDAL ADJUSTMENT	11 : 1
11-A-1. Adjusting of Pedal Height	11 : 1
11-A-2. Adjusting of Free Play	11 : 1
11-B. BRAKE MASTER CYLINDER	11 : 1
11-B-1. Removing of Brake Master Cylinder ..	11 : 1
11-B-2. Disassembling of Brake Master Cylinder	11 : 1
11-B-3. Checking of Brake Master Cylinder	11 : 2
11-B-4. Assembling of Brake Master Cylinder..	11 : 3
11-B-5. Installing of Brake Master Cylinder ...	11 : 3
11-C. POWER BRAKE UNIT	11 : 3
11-C-1. Checking of Power Brake Unit on Vehicle	11 : 3
11-C-2. Removing of Power Brake Unit	11 : 3
11-C-3. Disassembling of Power Brake Unit ...	11 : 4
11-C-4. Checking of Power Brake Unit	11 : 5
11-C-5. Assembling of Power Brake Unit	11 : 5
11-C-6. Installing of Power Brake Unit	11 : 5
11-D. FRONT BRAKE	11 : 5
11-D-1. Replacing of Disk Brake Shoe	11 : 5
11-D-2. Removing and Disassembling of Caliper	11 : 6
11-D-3. Checking of Caliper	11 : 7
11-D-4. Assembling and Installing of Caliper	11 : 7
11-D-5. Removing of Brake Disk	11 : 7
11-D-6. Inspecting of Brake Disk	11 : 7
11-D-7. Installing of Brake Disk	11 : 8
11-E. REAR BRAKE	11 : 8
11-E-1. Removing of Rear Brake Shoes	11 : 8
11-E-2. Inspection of Rear Brake	11 : 8
11-E-3. Installing of Rear Brake Shoes	11 : 8
11-E-4. Adjusting of Rear Brake	11 : 9
11-F. WHEEL CYLINDER	11 : 9
11-F-1. Removing of Wheel Cylinder	11 : 9
11-F-2. Disassembling of Wheel Cylinder	11 : 9
11-F-3. Checking of Wheel Cylinder	11 : 9
11-F-4. Assembling of Wheel Cylinder	11 : 9
11-F-5. Installing of Wheel Cylinder	11 : 9
11-G. AIR BLEEDING	11 : 9
11-G-1. Bleeding of Master Cylinder and Front Wheel Cylinder	11 : 9
11-G-2. Bleeding of Rear Wheel Cylinder	11 : 10
11-H. PARKING BRAKE	11 : 10
11-H-1. Adjusting of Parking Brake	11 : 10

BRAKES

MAZDA 616 is equipped with a tandem master cylinder and a power brake unit. The tandem master cylinder is so constructed that the front and rear brakes are independently actuated by oil pressure originated from the independent system, and that in the event of failure of one of the brakes, effective braking remains on two wheels, thus raising safety.

The power brake unit is a combined vacuum and hydraulic unit which utilizes intake manifold vacuum and atmospheric pressure to provide power-assisted application of vehicle brakes.

The front brake unit are of the disk brake type which assure you of still more safety.

The rear brake are of drum type with leading and trailing shoes.

The parking brake is operated by means of a brake lever and influences both rear wheels mechanically.

11-A. BRAKE PEDAL ADJUSTMENT

11-A-1. Adjusting of Pedal Height

The standard fitting position of the brake pedal is about 20 mm (0.8 in) from the toe board (insulator) as shown in Fig. 11-2. This adjustment is made by loosening the lock nut and turning the stop lamp switch. After adjusting, tighten the lock nut.

11-A-2. Adjusting of Free Play

There should always be 5 to 15 mm (0.2 to 0.6 in) free pedal travel before the compensating port is clogged by the piston cup in the master cylinder.

To adjust the free play, loosen the lock nut and turn the master cylinder push rod connected to the brake pedal. After proper adjustment is obtained, tighten the lock nut.

11-B. BRAKE MASTER CYLINDER

11-B-1. Removing of Brake Master Cylinder

If it becomes necessary to remove the master cylinder for repair or overhaul, proceed as follows:

1. Disconnect the fluid pipes at the brake master cylinder outlets.
2. Loosen the nuts that attach the brake master cylinder to the power brake unit.
3. Pull the master cylinder straight out and away from the power brake unit.

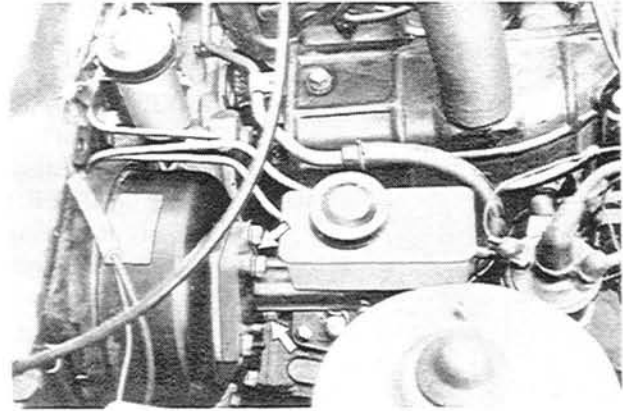


Fig. 11-1 Removing of Brake Master Cylinder

11-B-2. Disassembling of Brake Master Cylinder

1. Clean the outside of the master cylinder thoroughly and drain the brake fluid.
2. Remove the reservoir from the cylinder.
3. Remove the dust boot from the cylinder.
4. Using a suitable plier, remove the snap ring and remove the stop washer.
5. Remove the primary piston, spacer, piston cups, spring seat and return spring from the cylinder.

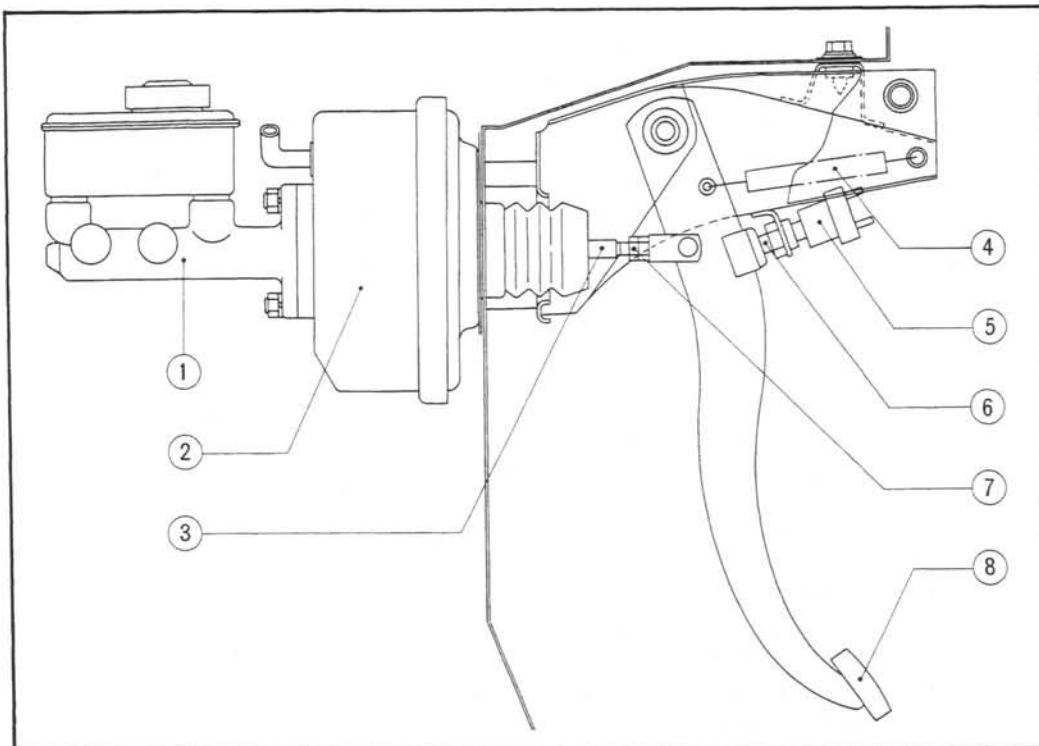


Fig. 11-2

Brake pedal

1. Master cylinder
2. Power brake unit
3. Push rod
4. Return spring
5. Stop switch
6. Lock nut
7. Lock nut
8. Brake pedal

6. Loosen the secondary piston stop bolt.
7. Pushing in the secondary piston with a screwdriver, remove the stop bolt and insert the guide pin in its place. Then, gradually take out the screwdriver and remove the secondary piston, spacer, piston cup, secondary cup, spring seat and return spring. If necessary, blow out with compressed air from the outlet hole.

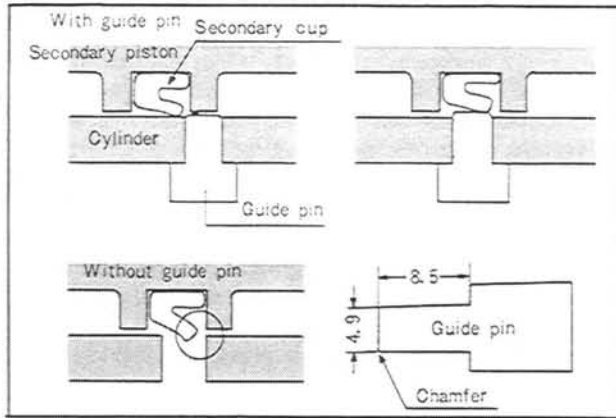


Fig. 11-3 Guide pin

11-B-3. Checking of Brake Master Cylinder

1. Wash the parts in clean alcohol or brake fluid. **Never use gasoline or kerosene.**
2. Check the piston cups and replace if they are damaged, worn, softened, or swelled.
3. Examine the cylinder bore and piston for wear, roughness or scoring.
4. Check the clearance the cylinder bore and the piston. If it is **more than 0.15 mm (0.006 in)**, replace the cylinder or piston.

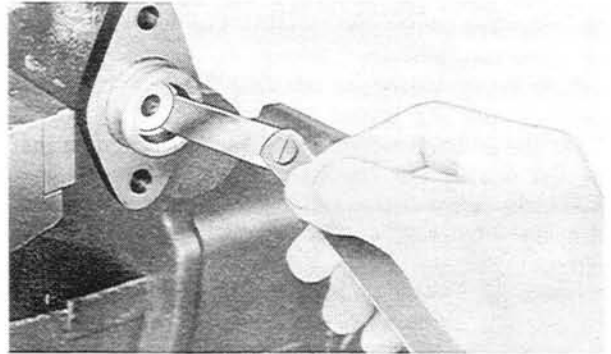


Fig. 11-4 Checking of piston clearance

8. Remove the fluid pipe fittings from the cylinder, and then remove the check valve and spring.

5. Ensure that the compensating ports on the cylinder are open.

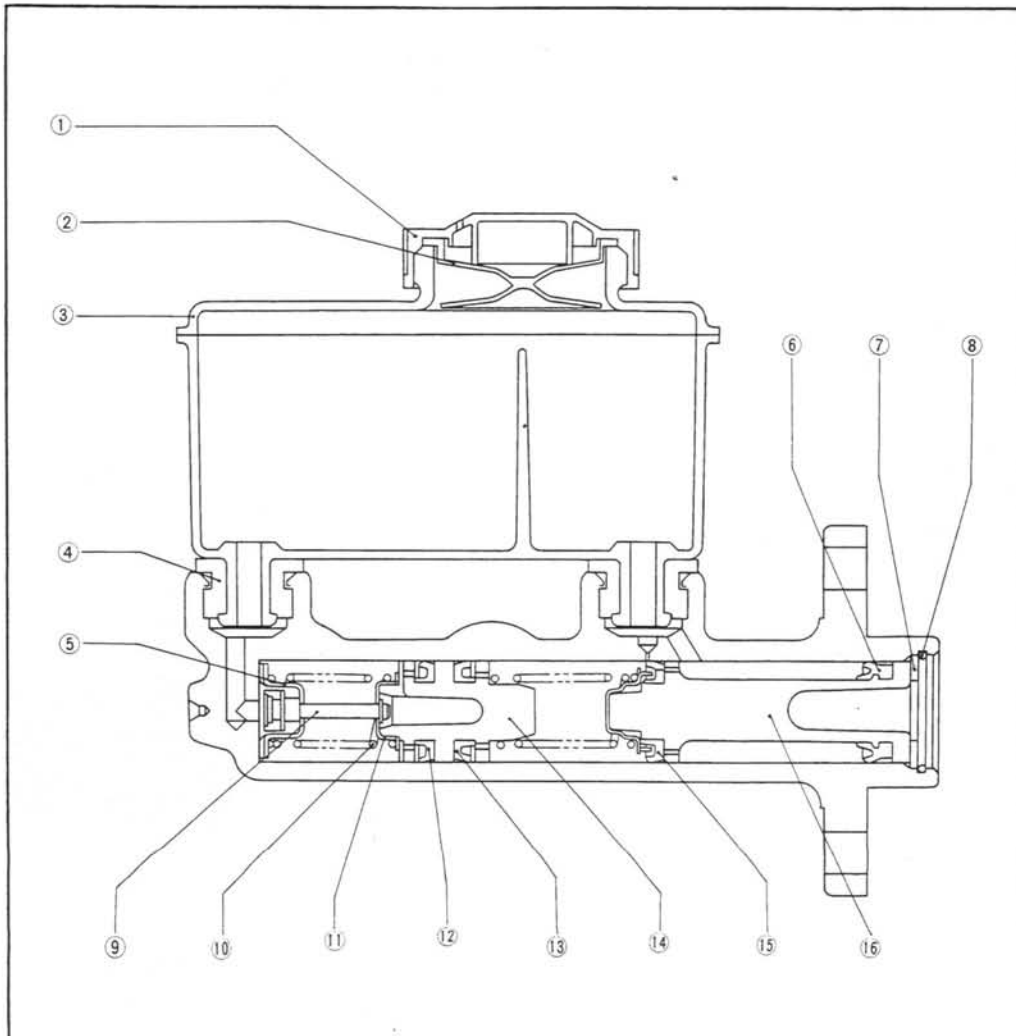


Fig. 11-5

Brake master cylinder

1. Cap
2. Oil baffle
3. Reservoir
4. Elbow joint bush
5. Valve stopper
6. Primary cup
7. Washer
8. Stop wire
9. Valve rod
10. Spring
11. Spring seat
12. Secondary cup
13. Secondary cup
14. Secondary piston
15. Primary cup
16. Primary piston

11-B-4. Assembling of Brake Master Cylinder

1. Dip the pistons and the cups in clean brake fluid.
2. Fit the check valve on the spring and place them in the outlet hole. Install the pipe fitting to the outlet hole.
3. Insert the return spring of large coil diameter into the cylinder.
4. Fit the secondary cup and primary cup onto the secondary piston so that the flat side of the cup goes toward the piston.
5. Fit the guide pin into the stop bolt hole and insert the secondary piston assembly together with the spring seat into the cylinder.
6. Push the secondary piston as far as it will go, remove the guide pin and install the stop bolt.
7. Fit the primary cup onto the primary piston so that the flat side of the cup goes toward the piston.
8. Fit the secondary cup onto the primary piston, with the edge side of the cup facing the secondary piston.
9. Insert the return spring of small coil diameter and the primary piston assembly with the spring seat.
10. Install the stop washer and snap ring.

Note: Make sure that the piston cups do not cover the compensating ports.

11. Install the reservoir.
12. Install the dust boot to the cylinder.

11-B-5. Installing of Brake Master Cylinder

To install the master cylinder, carry out the removing operation in the reverse order. After installing, bleed the brake system, referring to Par. 11-G-1.

11-C. POWER BRAKE UNIT

11-C-1. Checking of Power Brake Unit on Vehicle

1. Road test the brakes by making a brake application at about 30 km (20 miles) to determine if the vehicle stops evenly and quickly. If pedal has a spongy feel when applying brakes, air may be present in hydraulic system. Bleed the system as described in Par. 11-G-1.
2. With the engine stopped and transmission in neutral, apply brakes several times to deplete all vacuum reserve in power brake unit. Depress brake pedal, hold light-foot pressure on the pedal and start the engine. If vacuum system is operating, pedal will tend to fall away under foot pressure and less pressure will be required to hold pedal in applied position. If no action is felt, vacuum system is not functioning.
3. Stop the engine. Again deplete all vacuum reserve in system. Depress the brake pedal and hold foot pressure on the pedal. If pedal gradually falls away under foot pressure, hydraulic system is leaking internally or externally.
4. Start the engine with brakes off and transmission in neutral. Run the engine to medium speed and turn off ignition switch. Immediately close throttle. This build up vacuum. Wait no less 90 seconds, then try brake action. If not vacuum-assisted for two or more applications, vacuum check valve is faulty or there is a leak in vacuum system.

11-C-2. Removing of Power Brake Unit

1. Disconnect the fluid pipes at the brake master cylinder outlets.
2. Disconnect the vacuum hose at the power brake unit.

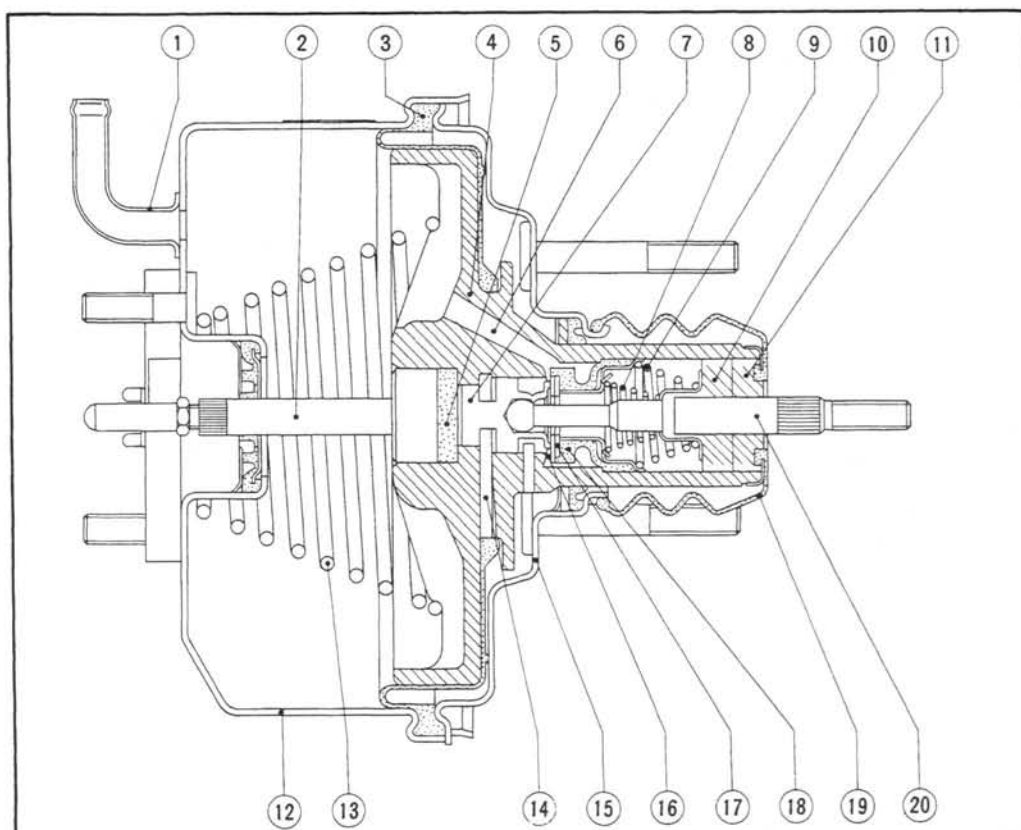


Fig. 11-6

Power brake unit

1. Check valve
2. Push rod
3. Diaphragm
4. Power piston
5. Reaction disk
6. Vacuum passage
7. Air valve plunger
8. Spring
9. Spring
10. Silencer
11. Silencer filter
12. Front shell
13. Return spring
14. Key
15. Rear shell
16. Atmospheric port
17. Air valve piston
18. Floating control valve
19. Boot
20. Valve rod and plunger

3. Disconnect the push rod from the brake pedal by removing the split pin at the fork end.
4. Loosen the nuts that attach the power brake unit to the dash panel.
5. Remove the power brake unit and master cylinder assembly from the dash panel, being careful not to allow brake fluid to drip on exterior paint.

11-C-3. Disassembling of Power Brake Unit

1. Remove the master cylinder and the check valve from the power brake unit.
2. Place the power brake unit in a vise with push rod up. Clamp the unit firmly on the flange.
3. Scribe a mark on the bottom center of the front and rear shells to facilitate reassembly.
4. Remove the boot.

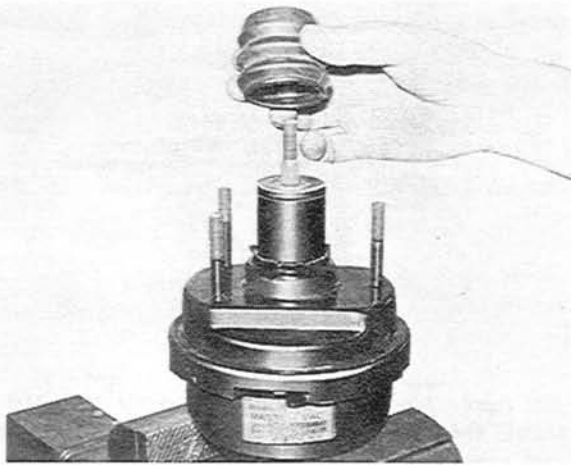


Fig. 11-7 Removing of boot

5. Attach the wrench (49 6500 090) to the studs of the rear shell as shown in Fig. 11-8. Rotate the rear shell clockwise to unlocked position. Loosen the rear shell carefully as it is spring-loaded.

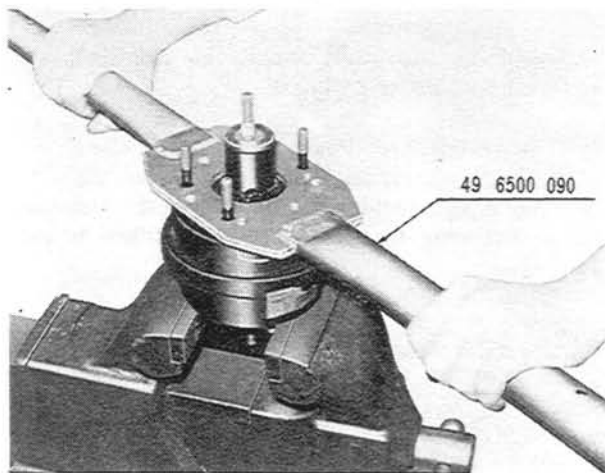


Fig. 11-8 Removing of rear shell

6. Lift the rear shell and plate and valve body, valve rod and plunger assembly from the unit. Then, remove the return spring.
7. Remove the plate, valve body, valve rod and plunger assembly from the rear shell.

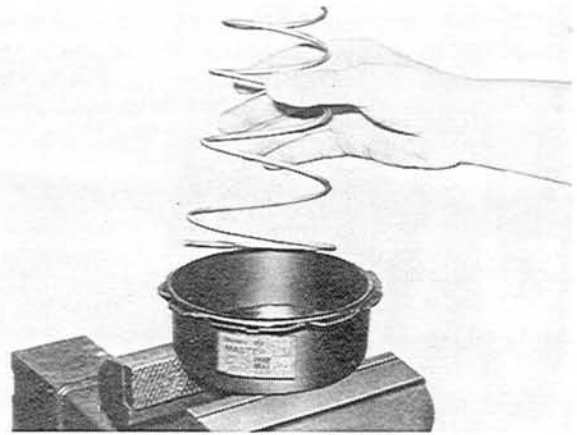


Fig. 11-9 Removing of return spring

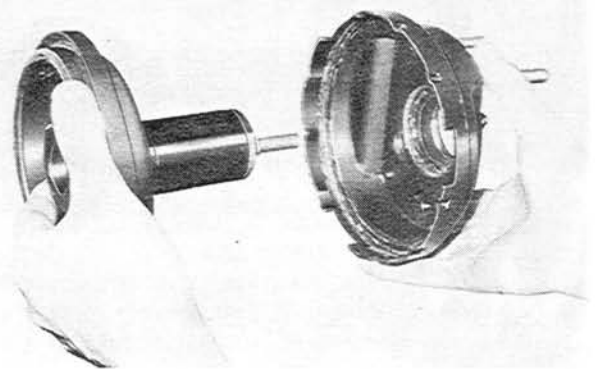


Fig. 11-10 Removing of plate and valve body assembly

Note: Do not remove the rear seal from the rear shell unless seal is defective and the new seal is available. To remove the rear seal, support the rear shell and drive out the rear seal with a punch or a screwdriver.

8. Remove the diaphragm from the plate and valve body.

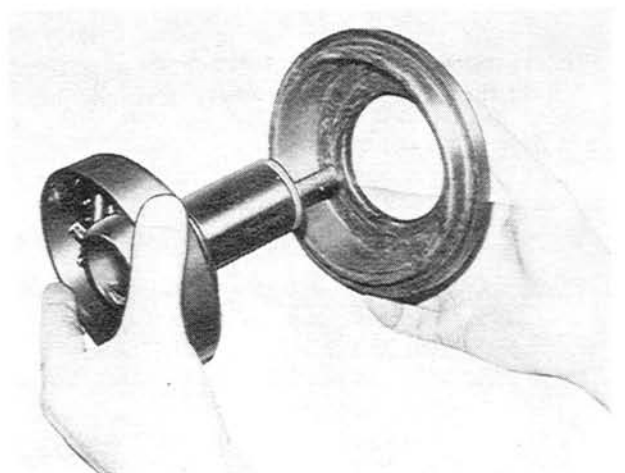


Fig. 11-11 Removing of diaphragm

9. Remove the air silencer with the air filter from the plate and valve body, being careful not to chip plastic.
10. Press in on the valve rod to remove the valve retainer key. Remove the valve rod and plunger assembly.

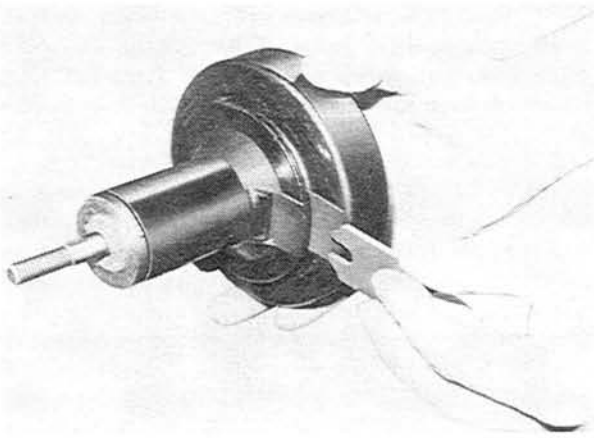


Fig. 11-12 Removing of retainer key

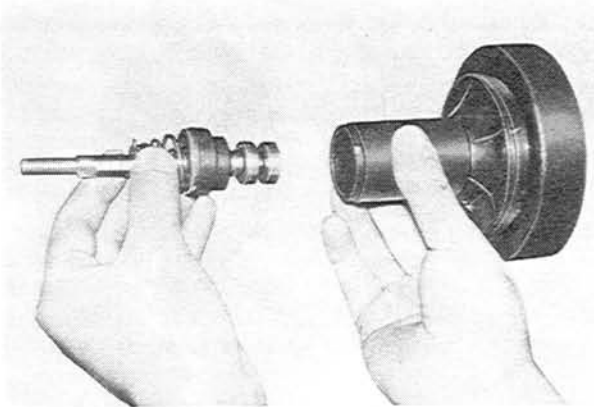


Fig. 11-13 Removing of valve rod and plunger

Note: The valve rod and plunger are serviced as an assembly only.

11. Press the reaction disk out of the valve body.
12. Remove the push rod.
13. Remove the front seal from the front shell if necessary.

11-C-4. Checking of Power Brake Unit

1. Inspect the all rubber parts. Wipe free of fluid and carefully inspect each rubber part for cuts, nicks or other damage.
2. Check the plate and valve body for cracks, distortion, chipping and damaged seats.
3. Inspect the reaction disk for deterioration of rubber.
4. Check the valve rod and plunger for all seats to be smooth and free of nicks and dents. Replace with a new one if defective.
5. Inspect the front and rear shells for scratches, scores, pits, dents or other damage.
6. Check the diaphragm for cuts or other damage.

11-C-5. Assembling of Power Brake Unit

1. Apply the power brake lubricant to the inner surface of tube section of the plate and valve body and to the surfaces of the valve rod and plunger.
2. Insert the valve rod and plunger assembly into the tube section of the plate and valve body.
3. Press down on the valve rod and align the groove

in the valve plunger with the slot of the valve body. Insert the retainer key.

4. Install the diaphragm on the plate and valve body making certain the diaphragm is seated in the groove.
5. Assemble the air filter and the air silencer over the rod and position in the valve body.
6. Apply the power brake lubricant liberally to the entire surface of the reaction disk and install the reaction disk into the plate and valve body.
7. Coat the outer bead of the diaphragm with the power brake lubricant where it bears against the outer rim of the front and rear shell to aid in assembly.
8. Apply the power brake lubricant to the seal in the rear shell and carefully guide tube end of the plate and valve body, through the seal in the rear shell.
9. Install the plate and valve body into the front shell.

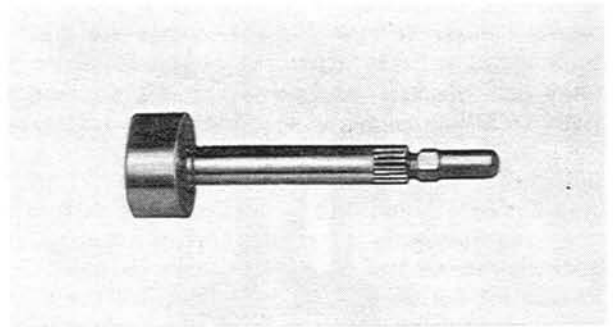


Fig. 11-14 Push rod

10. Apply power brake lubricant to the push rod and install the push rod through the front of the plate and valve body.
11. Install the return spring.
12. Install the rear shell assembly by using the wrench (49 6500 090) to rotate the front shell counter-clockwise until scribe marks align.

Note: Press the front shell down firmly, maintaining a pressure until the shell flanges are fully locked.

13. Install the boot down against the rear shell.
14. Install the master cylinder.

11-C-6. Installing of Power Brake Unit

Install the power brake unit in the reverse order of removing. After installing the unit, bleed the hydraulic system according to the procedure described in Par. 11-G-1.

11-D. FRONT BRAKE

11-D-1. Replacing of Disk Brake Shoe

The lining should be inspected whenever the wheels are removed for any reason (tire rotation, etc.). The shoe and lining should be replaced, if the thickness of the shoe and lining is **8.0 mm (0.315 in) or less** due to wear. To replace the disk brake shoes, proceed as follows:

1. Jack up the vehicle and remove the front wheel.
2. Remove the fastening clips and remove the stop plates.

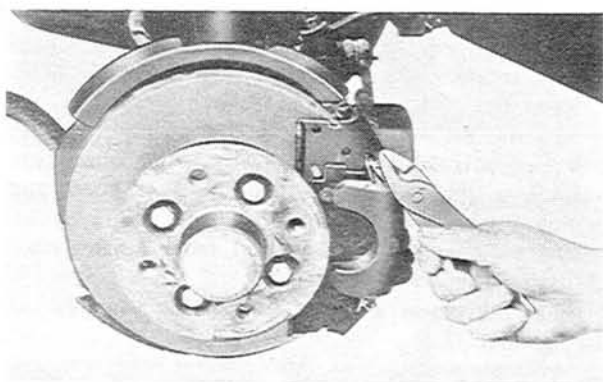


Fig. 11-15 Removing of fastening clips

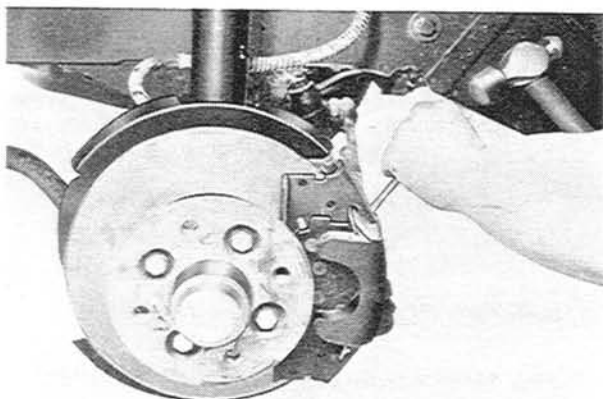


Fig. 11-16 Removing of stop plates

3. Remove the caliper and anti-rattle spring.

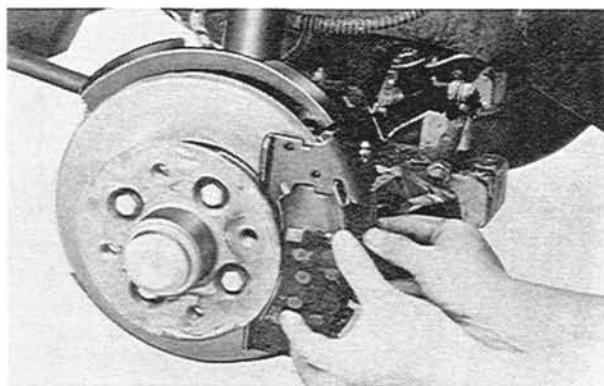


Fig. 11-17 Removing of caliper

4. Remove the shoes.

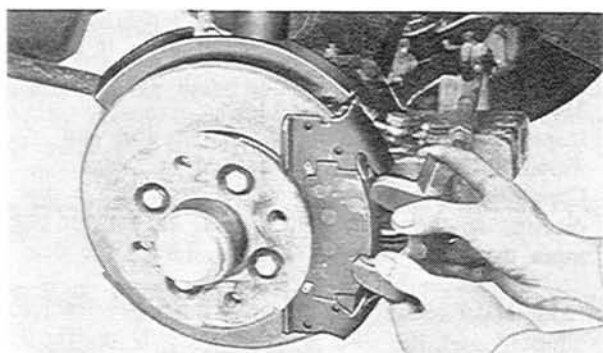


Fig. 11-18 Removing of shoes

5. Attach a vinyl pipe to the bleeder screw and submerge other end of the pipe into glass jar containing brake fluid.

6. Open the bleeder valve and press the piston into the cylinder with the **expanding tool** (49 0221 600B).

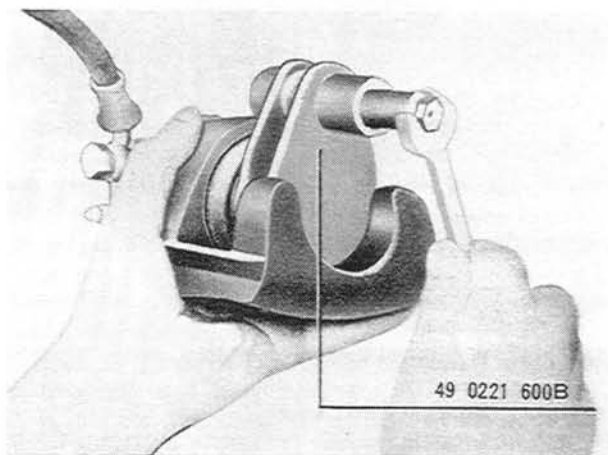


Fig. 11-19 Pressing of piston

7. Tighten the bleeder screw and remove the vinyl pipe and the tool.

8. Install the new brake shoes.

9. Refit the anti-rattle spring, caliper, stoppers and fastening clips.

10. Install the wheel and tighten the bolts to **9.0 m-kg (70 ft-lb)**.

11-D-2. Removing and Disassembling of Caliper

1. Raise the vehicle and remove the wheel.

2. Disconnect the brake fluid pipe from the caliper. Plug the end of the fluid pipe to prevent entrance of dirt and loss of fluid.

3. Remove the caliper from the brake disk, referring to Par. 11-D-1.

4. Clean the outside of the caliper and remove the boot.

5. Place a wood in the caliper pit in order to avoid damage, gradually blow compressed air from the fluid pipe hole and remove the piston.



Fig. 11-20 Removing of piston

6. Remove the piston seal from the cylinder.

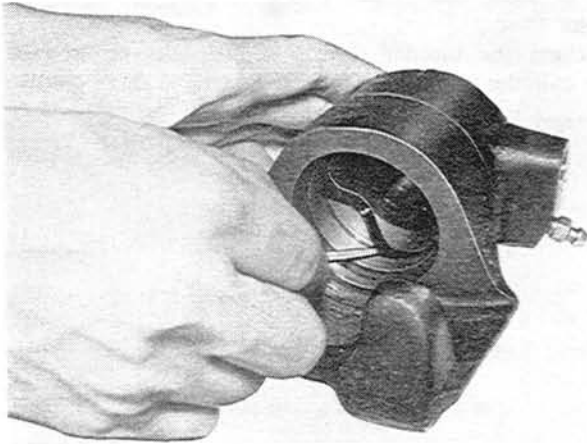


Fig. 11-21 Removing of piston seal

11-D-3. Checking of Caliper

1. Before checking, wash all parts in clean alcohol or brake fluid. **Never use gasoline or kerosene.** Blow out the fluid passages in the caliper with compressed air.
2. Check the cylinder bore and piston for scoring, scratches or rust. If any of these conditions is found, replace with new piston or caliper. Minor damage can be eliminated by means of polishing with crocus cloth.
3. The piston seal and dust boot should be replaced with new ones every time repair work is carried out on the brake caliper.

11-D-4. Assembling and Installing of Caliper

1. Apply clean brake fluid to the cylinder bore and piston.
2. Install the piston seal.
3. Install the piston carefully into the cylinder bore.



Fig. 11-22 Installing of piston

4. Fit the boot to the caliper.
5. Install the caliper in the reverse order of removing.
6. After installing, bleed the brake lines, referring to Par. 11-G-1.

11-D-5. Removing of Brake Disk

- Before removing the brake disk, check the lateral run-out of the brake disk, as detailed in Par 11-D-6.
1. Raise the vehicle and remove the wheel.
 2. Remove the bolts attaching the caliper assembly and remove the caliper assembly from the brake disk.
 3. Remove the grease cap, split pin, set cover and bearing adjusting nut.
 4. Remove the thrust washer and outer bearing from the wheel hub.
 5. Slide the wheel hub and brake disk assembly off the spindle.

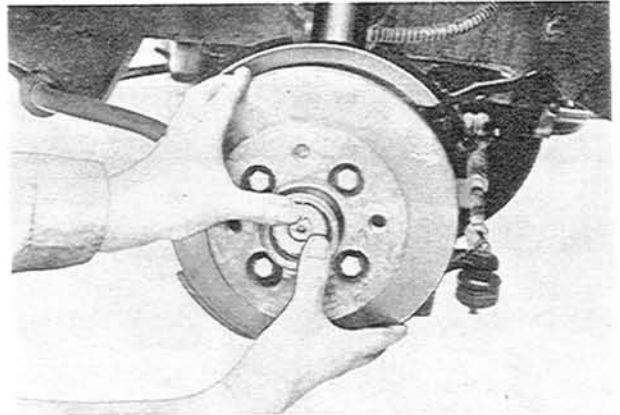


Fig. 11-23 Removing of hub and disk assembly

6. Place the wheel hub and brake disk assembly in the vise equipped with soft jaws.
7. Mark the position of brake disk and wheel hub.

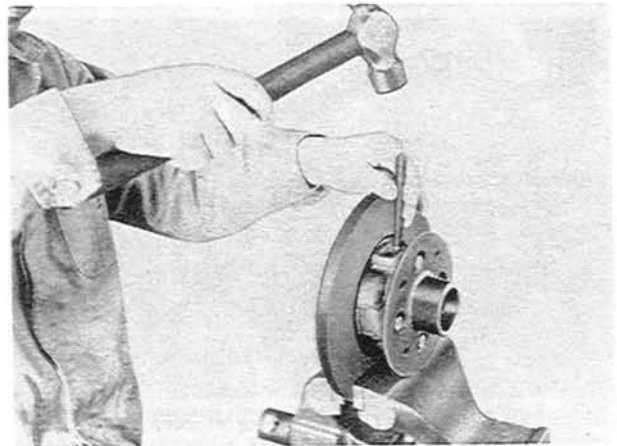


Fig. 11-24 Applying of identification marks

8. Remove the attaching bolts and separate the brake disk from the wheel hub. **Do not** drive it off.

11-D-6. Inspecting of Brake Disk

Inspect the friction surfaces of the disk and recondition if they are scored, scratched or rusted. Check the lateral run-out of the disk with a dial indicator, as shown in Fig. 11-25. If the run-out is **more than 0.06 mm (0.0024 in)**, reface the disk.

Note: Make certain that the wheel bearings are correctly adjusted and the disk is fitted securely on the hub, before checking the run-out of the disk.

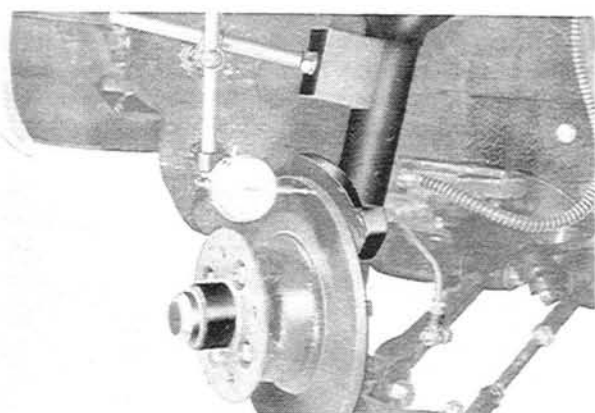


Fig. 11-25 Checking of disk run-out

When refacing the disk, remove only so much material as is necessary to clean up the disk. The thickness of the disk after refacing must not be less than 11 mm (0.4331 in).

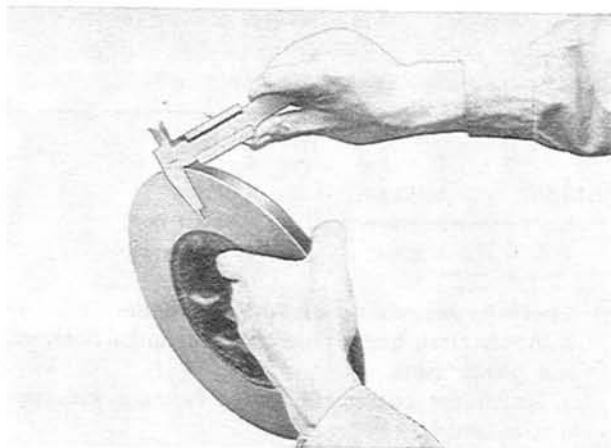


Fig. 11-26 Checking of disk thickness

11-D-7. Installing of Brake Disk

Carry out the removing operation in the reverse order. After installing, adjust the bearing preload, as instructed in Par. 12-F-4.

11-E. REAR BRAKE

11-E-1. Removing of Rear Brake Shoes

1. Raise the vehicle and remove the wheel.
2. Remove the drum attaching bolts and fit them into the tapped holes and screw them in evenly to force the drum away from the axle shaft flange.
3. Remove the brake shoe return springs.
4. Remove the brake shoe retaining spring and guide pin by compressing the retaining spring and turning the guide pin 90 degrees.
5. Remove the brake shoes.
6. Disengage the parking brake cable from the operating lever on the brake shoe.

11-E-2. Inspection of Rear Brake

a. Inspection of brake drum

Inspect the brake drum and recondition if it is rough or

scored. Check the out of roundness with a dial indicator. If it is 0.15 mm (0.0059 in) or more, reface the drum. When refacing the drum, remove only so much material as is necessary to obtain a smooth surface on the drum. Do not reface more than 1.0 mm (0.0394 in). The standard inner diameter of the drum is 200 mm (7.8741 in).

b. Inspection of brake linings

1. Inspect the brake linings and replace with new parts if the linings are badly burned or worn.
2. Examine the lining contact pattern. For inspection, chalk the entire inner surface of the brake drum and slide the lining along the chalked surface. The lining should show a uniform contact across the entire width, extending from toe to heel. Shoes having sufficient lining but lack of contact should be ground properly.
3. If oil or grease is evident on the lining, wash off oil or grease in a suitable solvent. Then, correct the cause of leakage. However, if the lining is saturated with oil or grease, replace it.

c. Inspection of wheel cylinders

Examine whether the exterior of the wheel cylinder boots is wet with brake fluid. Excessive amounts of fluid at this point indicates leakage past the piston cups. Therefore, the wheel cylinder must be overhauled.

d. Inspection of brake lines

Inspect all brake lines for leakage with the foot brake applied. Check all brake pipes, hoses and connections for signs of chafing, deterioration or other damage.

11-E-3. Installing of Rear Brake Shoes

1. Lubricate the adjusting screw threads, mating surfaces of the shoes and backing plate edges with a small amount of grease.
2. Install the eye of the parking brake cable onto the parking brake operating lever installed to the rear side shoe.
3. Installing the operating strut between the slots of the shoes, engage the brake shoes with the slots in the adjusting screw and the wheel cylinder piston.
4. Hold the brake shoes to the backing plate with the retaining springs and pins.

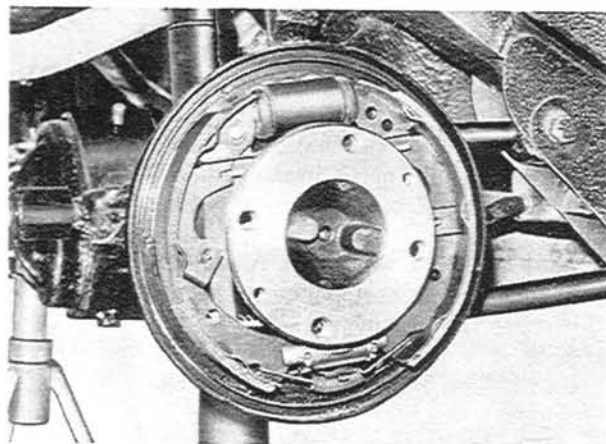


Fig. 11-27 Rear brake

5. Install the shoe return springs.
6. Sand the linings lightly to remove any trace of dirt or grease.
7. Install the brake drum to the axle shaft flange and tighten the attaching bolts.
8. Apply the brake pedal several times and adjust the brake, as instructed in Par. 11-E-4.
9. Install the wheel.

11-E-4. Adjusting of Rear Brake

1. Jack up the vehicle until the wheels are free to turn.
2. Remove the adjusting hole covers from the backing plate.
3. Be sure the parking brake lever is fully released.
4. Insert a screwdriver into the star wheel of the adjuster and turn the star wheel toward the arrow direction marked on the brake backing plate until the wheel is locked. Then, back off the star wheel 5 notches. Which will obtain a brake shoe clearance is 0.1 mm (0.004 in).

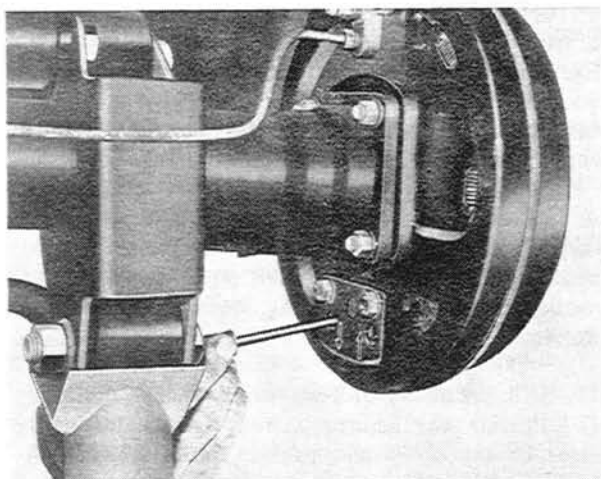


Fig. 11-28 Adjusting of rear brake

5. Repeat the above adjustment on each wheel. The adjustments must be equal at all wheels.
6. Install the adjusting hole covers in the backing plate.

11-F. WHEEL CYLINDER

11-F-1. Removing of Wheel Cylinder

1. Remove the brake shoes, as described in Par. 11-E-1.
2. Disconnect the brake fluid pipe at the wheel cylinder. Plug the end of the brake fluid pipe.
3. Remove the nuts attaching the wheel cylinder to the backing plate. Remove the wheel cylinder.

11-F-2. Disassembling of Wheel Cylinder

1. Remove the dust boots and pistons from the both ends of the cylinder.
2. Press in the piston cup and force out the piston cups, filling blocks and return spring.

11-F-3. Checking of Wheel Cylinder

1. Wash all parts in clean alcohol or brake fluid.

Never use gasoline or kerosene.

2. Examine the cylinder bore and pistons for wear, roughness or scoring.
3. Check the clearance between the cylinder and piston. If it is more than 0.15 mm (0.006 in), replace with new parts.
4. Inspect the piston cups for wear, softening, swelling and other damage. If any of these conditions exists, replace the cups.

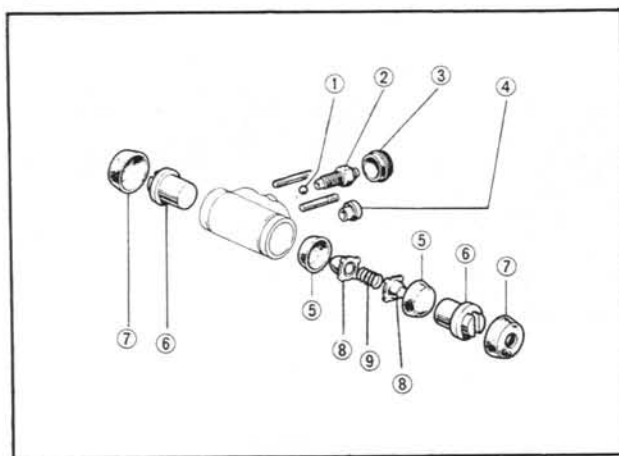


Fig. 11-29 Wheel cylinder

- | | |
|------------|------------------|
| 1. Valve | 5. Piston cup |
| 2. Bleeder | 6. Piston |
| 3. Cap | 7. Dust boot |
| 4. Seat | 8. Filling block |
| | 9. Return spring |

11-F-4. Assembling of Wheel Cylinder

1. Apply clean brake fluid to the cylinder bore, pistons and piston cups.
2. Install the piston cup in the cylinder with the flat side outward.
3. Install the filling block, return spring, filling block, piston cup and pistons in sequence.
4. Install the dust boots.

11-F-5. Installing of Wheel Cylinder

1. Install the wheel cylinder to the backing plate and connect the fluid pipe.
2. Install the brake shoes and the drum, as described in Par. 11-E-3.
3. Bleed the brake lines as detailed in Par. 11-G-2.

11-G. AIR BLEEDING

Whenever the wheel cylinder or master cylinder is overhauled, or air enters the system, air bleeding must be carried out. The correct sequence of bleeding is to bleed master cylinder first and either front or rear wheel cylinder second.

Note: During bleeding operation, the reservoir of the master cylinder must be kept at least 3/4 full of the brake fluid.

11-G-1. Bleeding of Master Cylinder and Front Wheel Cylinder

1. Remove the bleeder valve cap and connect a vinyl pipe to the bleeder valve. Submerge the other end

of the pipe in the brake fluid in a glass jar.
 2. Open the bleeder valve. Depress the brake pedal a full stroke and allow it to return slowly. Continue this pumping action until air bubbles cease to appear in the jar.

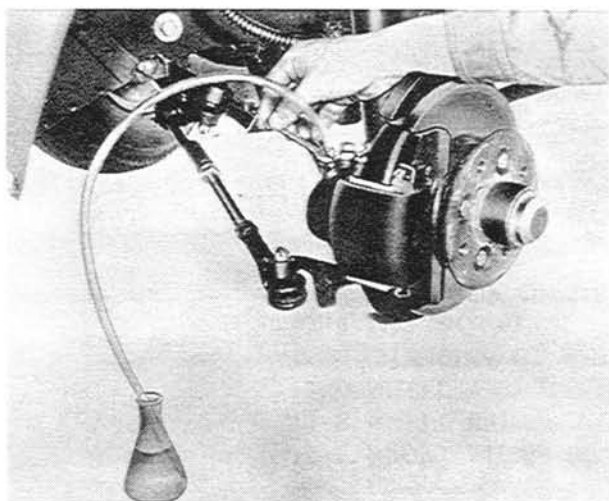


Fig. 11-30 Air bleeding

3. When bleeding operation is completed, close the bleeder valve, remove the vinyl pipe and fit the cap to the bleeder valve.

11-G-2. Bleeding of Rear Wheel Cylinder

1. Depress the brake pedal several times quickly. And then, with the brake pedal depressed, open the bleeder valve to expel the air. Close the valve before releasing the pedal.
2. Repeat above operation until the brake fluid is expelled in a solid stream, without any air bubbles.

11-H. PARKING BRAKE

11-H-1. Adjusting of Parking Brake

The service brakes must be properly adjusted before adjusting the parking brake.

Adjust the length of the front cable with the adjusting nut on the rear end of the front cable so that the brake is locked when the parking brake lever is pulled 2 or 3 notches. After adjustment, apply the parking brake several times, then release and make sure that the rear wheels rotate freely without dragging.

SPECIAL TOOLS

49 6500 090	Wrench
49 0221 600B	Expanding tool

