

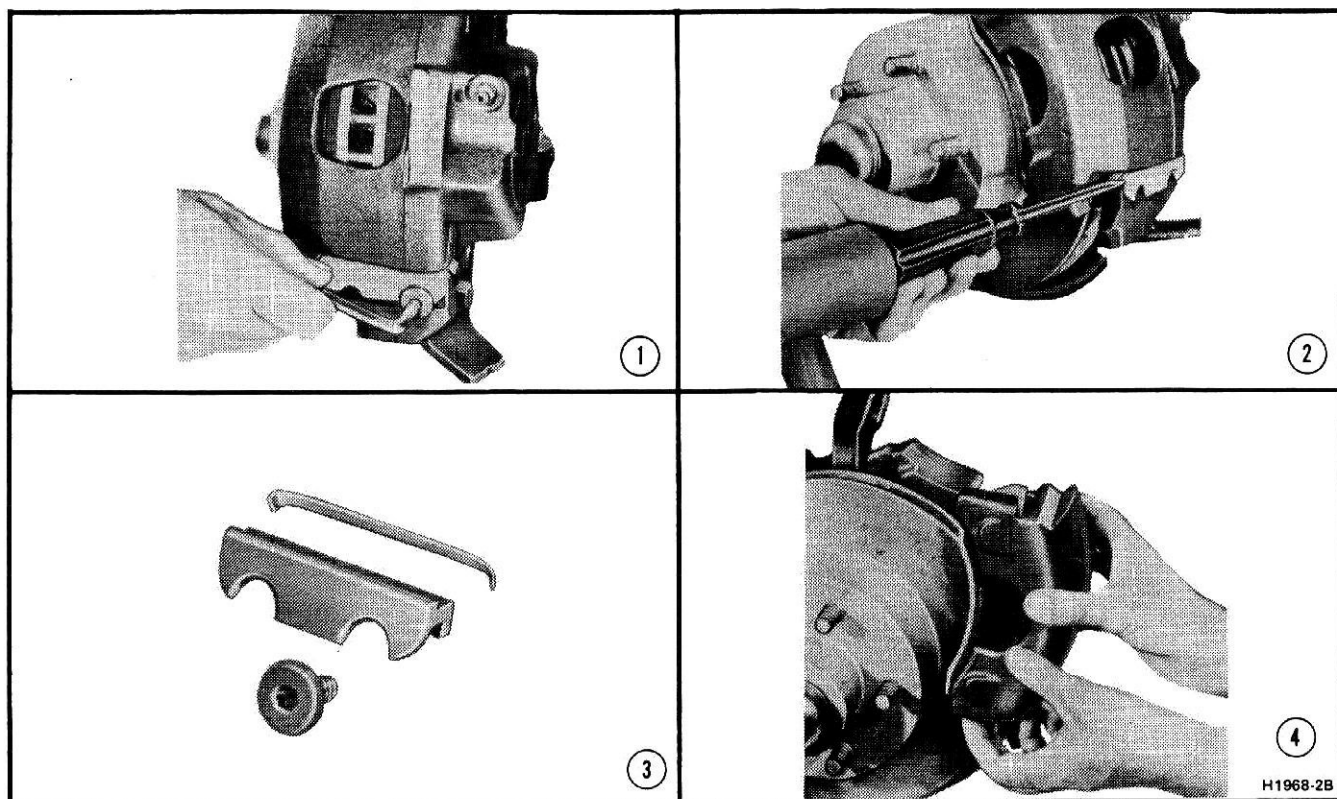


FIG. 7 Removing Front Caliper Assembly—Except Fairmont/Zephyr

leakage, excessive wear or damage. Lightly sand or wire brush any rust or corrosion from the caliper and anchor plate sliding surfaces and the inner brake shoe abutment surfaces. Inspect the brake shoes for wear. If either lining is worn to within 1/8 inch of the shoe surface, both shoe and lining assemblies must be replaced. Also, if shoes and lining are replaced on one wheel, they must be replaced on both wheels in order to maintain equal brake action.

Installation

1. Apply a thin film of (Spec. M1C172-A) grease to the V grooves in the caliper where it slides on the anchor plate (Fig. 8). Use only specified grease because a lower temperature grease may melt out and contaminate pads. Use care not to get grease where pads mount to caliper or anchor plate.
2. If new shoe and lining assemblies are to be installed, use a 4 inch C-clamp and a block of wood 1-3/4 inches x 1 inch and approximately 3/4 inch thick to seat the caliper hydraulic piston in its bore. This must be done to provide clearance for the caliper to fit over inner shoe and rotor when installed.
3. Remove the C-clamp, if used, from the caliper (the caliper piston will remain seated in its bore).
4. Be sure that the brake shoe anti-rattle clip is in place on the lower end of the inner brake shoe with the loop of the clip away from the rotor and the tab section in the shoe slot. Position the inner brake shoe and lining assembly on the anchor plate with the lining toward the rotor (Fig. 8).

5. Install the outer brake shoe with the lower flange ends against the caliper leg abutments and the brake shoe upper flanges over the shoulders on the caliper legs (Fig. 9). The shoe upper flanges fit tightly against the shoulder machined surfaces. If the same brake shoe and lining assemblies are reused, be certain the shoes are installed in their original positions as marked for identification prior to removal.
6. Position the caliper housing lower V-groove on the anchor plate lower abutment surface (Fig. 9, Step 1).

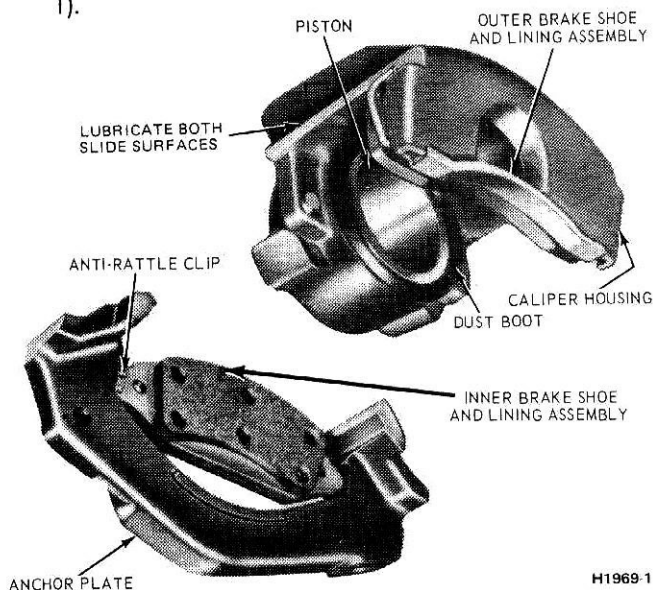


FIG. 8 Caliper and Outer Shoe Removal From Anchor Plate—Except Fairmont/Zephyr

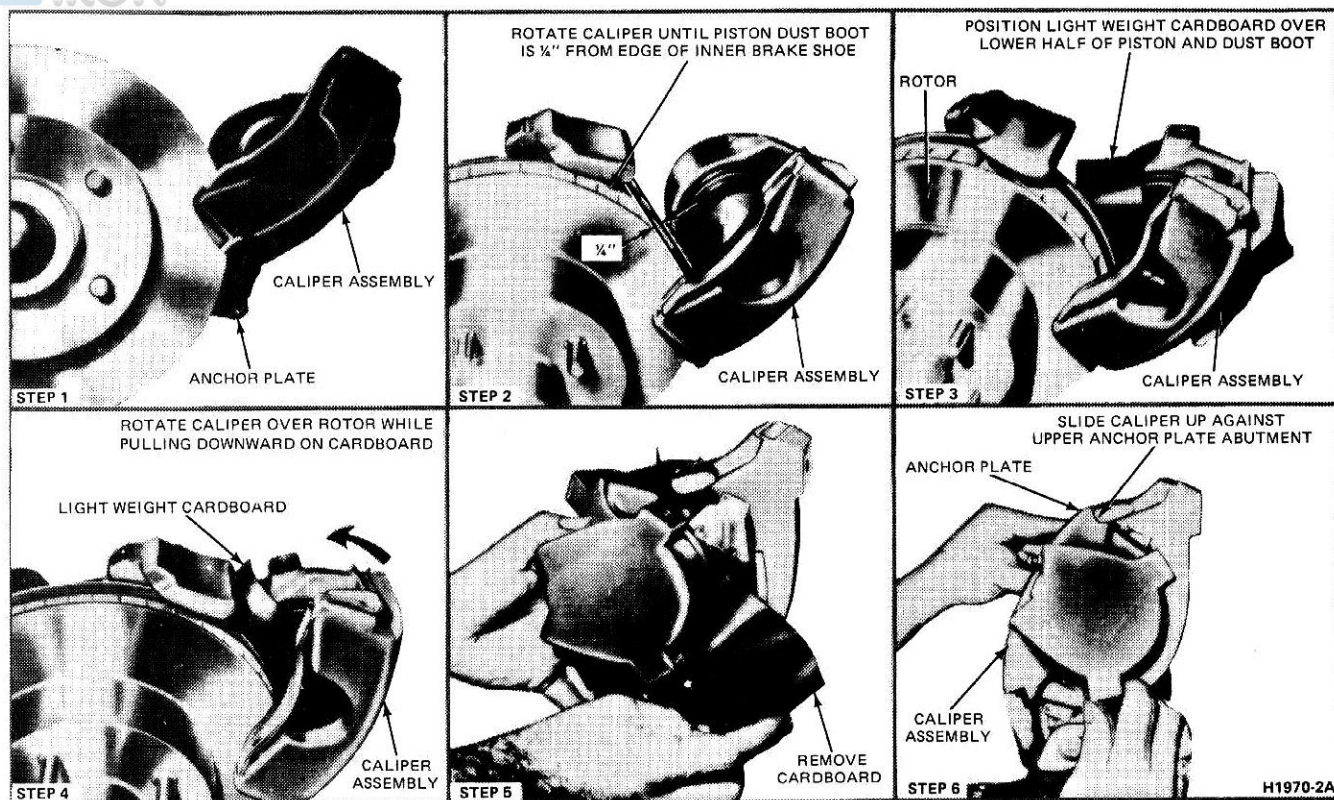


FIG. 9 Installing Front Caliper Assembly—Except Fairmont/Zephyr

7. Pivot the caliper housing upward toward the rotor until the outer edge of the piston dust boot is approximately $\frac{1}{4}$ inch from the upper edge of the inboard brake shoe (Fig. 9, Step 2).
8. To prevent pinching the dust boot between the piston and the inboard shoe during caliper installation to the rotor and anchor plate, position clean light-weight cardboard between the inboard brake shoe and over the lower half of the piston dust boot (Fig. 9, Step 3).
9. Rotate the caliper housing toward the rotor until a slight resistance is felt.
10. Pull the cardboard downward toward the rotor centerline while rotating the caliper over the rotor (Fig. 9, Step 4).
11. Remove the cardboard and rotate the caliper completely down over the rotor (Fig. 9, Step 5).
12. Slide the caliper up against the anchor plate upper abutment surfaces and center the caliper over the lower anchor plate abutment (Fig. 9, Step 6).
13. Position the caliper support spring and key in the key slot and drive them into the opening between the lower end of the caliper and the lower anchor plate abutment. Align the semi-circular slot in the key with the threaded hole in the anchor plate (Fig. 10).
14. Install the key retaining-screw and tighten, 12 to 16 ft-lb. torque.
15. Thread the flexible brake hose and gasket into its fitting on the caliper. Torque the hose fitting to 12 to 20 ft-lb.

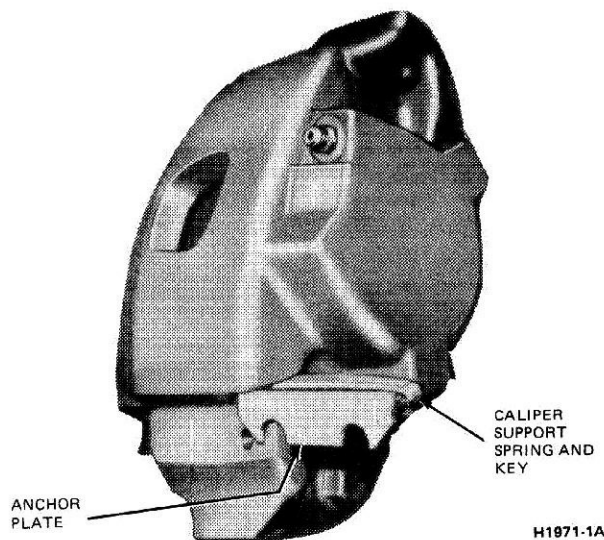


FIG. 10 Installing Front Caliper Support Spring and Retaining Key—Except Fairmont/Zephyr

16. Position the upper end of the flexible brake hose in its bracket and install the retaining clip. Do not twist the hose. Remove the plug from the brake tube. Connect the brake tube to the hose with the tube fitting nut and tighten to 10 to 15 ft-lb.
17. Bleed the brake system. Apply the brakes several times to properly position the caliper and brake shoes.

18. Install the wheel and tire assembly. Torque the wheel lug nuts to 70 to 115 ft-lb. Install the wheel cover. Remove the safety stands and lower the car.
19. Pump the brake pedal until a firm brake pedal application is obtained, then road test the car for proper brake operation.

DISC BRAKE CALIPER ASSEMBLY—FRONT—FAIRMONT/ZEPHYR

Removal

1. Remove the wheel and tire assembly from the hub. Use care to avoid damage or interference with the bleeder screw fitting during removal.
2. Disconnect the flexible brake hose from the caliper (Fig. 13). To disconnect the hose, loosen the tube fitting which connects it to the brake tube at its bracket on the frame and plug the brake tube. Remove the horseshoe-type retaining clip from the hose and bracket, disengage the hose from the bracket; then unscrew the entire hose assembly from the caliper. Mark the left and right caliper assemblies with chalk prior to removal from the vehicle.
3. Remove the caliper locating pins (Fig. 3).
4. Lift the caliper from the integral spindle and anchor plate and rotor.

Installation

1. Install the caliper assembly over the rotor with the outer brake shoe against the rotor braking surface during installation in the integral spindle and anchor plate to prevent pinching the piston boot between the inner brake shoe and the piston. Check that the correct caliper is installed on the correct anchor plate as marked during disassembly.
2. Connect the locating pins to the integral spindle/anchor plate and the caliper insulators. Be sure the locating pins are free of oil, grease or dirt.
3. Torque the caliper locating pins 30-40 ft-lb.
4. Thread the flexible brake hose into its fitting on the caliper. This is a special self-sealing fitting that **does not require a gasket**. Torque hose fitting to 20-30 ft-lb. (See Fig. 13).

NOTE: When hose is correctly torqued there should be 1 or 2 threads of the fitting still showing at the caliper. It is not necessary for the hose fitting to be flush with the caliper for sealing; therefore, do not overtorque.

5. Position the upper end of the flexible brake hose in its bracket and install the retaining clip. Do not twist the hose. **Remove the plug from the brake tube**. Connect the brake tube to the hose with the tube fitting nut and tighten to 10-18 ft-lb.
6. Bleed the brake system and centralize the brake pressure differential valve using existing Shop Manual procedures.
7. Fill the master cylinder as required to within 1/4" of the top of the reservoir.
8. Install the wheel and tire assembly and torque the wheel nuts to specifications.
9. Apply the brake pedal prior to moving the vehicle to position the brake linings.
10. Road test vehicle.

DISC BRAKE SHOE AND LINING—FRONT—ALL EXCEPT FAIRMONT/ZEPHYR

Removal

1. Raise the car and install safety stands. Block both rear wheels if a jack is used.
2. Remove the wheel and tire assembly from the hub.
3. Remove the retaining screw from the caliper retaining key (Fig. 1).
4. Slide the caliper retaining key and support spring either inward or outward from the anchor plate. Use a hammer and drift, if necessary, and be careful to avoid damaging the key and spring.
5. Lift the caliper assembly away from the anchor plate by pushing the caliper downward against the plate, and rotating the upper end upward and out of the anchor plate. **Use care so that the flexible brake hose is not stretched or twisted.**
6. Remove the inner shoe and lining assembly from the anchor plate. If the brake shoe anti-rattle clip (inner shoe only) becomes displaced, re-position it on the lower end of the inner shoe with the loop of the clip away from the rotor and the tab section in the shoe slot. Tap lightly on the outer shoe and lining assembly to free it from the caliper.
7. Clean the caliper, anchor plate and rotor assemblies, and inspect for signs of brake fluid leakage, excessive wear or damage. Inspect the brake shoe and lining assemblies for wear. If either lining is worn to within 1/8 inch of the shoe, both shoe and lining assemblies must be replaced. **Also, if necessary to replace the shoes and lining on one wheel, they must be replaced on both wheels in order to maintain equal brake action.**

Installation

Follow previous instructions under Disc Brake Caliper Assembly: Installation—Steps 1-14, and return to this Section for Steps 15-17.

Remove the master cylinder cover during this operation to avoid a residual overfill of the reservoir.

15. Depress the brake pedal several times to properly position the caliper and brake shoe assemblies. Check the fluid level in the master cylinder and install the reservoir cover. Check for signs of brake fluid leaks around the caliper and flexible brake hose. Perform repairs if necessary.
16. Install the wheel and tire assembly. Torque the wheel lug nuts, 70 to 115 ft-lb. Install wheel cover, remove safety stands, and lower the car.
17. Be sure a firm brake pedal application is obtained and then road test the car for proper brake operation.

DISC BRAKE SHOE AND LINING—FRONT—FAIRMONT/ZEPHYR

Removal

1. Remove the master cylinder cap and check the fluid level in the primary (large) reservoir. Remove brake fluid until the reservoir is half full. Discard this fluid.

2. Remove the wheel and tire assembly from the hub. Be careful to avoid damage or interference with the caliper splash shield or bleeder screw fitting.
3. Remove the caliper locating pins (See Fig. 3).
4. Lift the caliper assembly from the integral spindle anchor plate and rotor. Remove the outer shoe from the caliper assembly (See Fig. 11).
5. Remove the inner shoe and lining assembly and inspect both rotor braking surfaces (See Fig. 12). Minor scoring, or build-up of lining material does not require machining or replacement of the rotor.
6. Suspend the caliper inside the fender housing with a wire hooked through the outer leg button hole of the caliper. Be careful not to damage the caliper or stretch the brake hose.
7. Remove and discard the plastic sleeves that are located inside the caliper locating pin insulators (See Fig. 11). These parts **must not** be reused.
8. Remove and discard the caliper locating insulators (See Fig. 11). These parts **must not** be reused.

Installation

1. Use a 4" C-clamp and a block of wood 2 3/4" x 1" and approximately 3/4" thick to seat the caliper hydraulic piston in its bore. This must be done to provide clearance for the caliper assembly to fit over the rotor when installed. Remove the C-clamp from the caliper (the caliper piston will remain seated in its bore).
2. Install new locating pin insulators and plastic sleeves in the caliper housing. Check to see that both insulator flanges straddle the housing holes and that the plastic sleeves are bottomed in the insulators as well as slipped under the upper lip (See Fig. 11 for proper installation and an installation tool that can help with insulator installation).
3. Install the correct inner shoe and lining assembly in the caliper piston(s). **The inner shoes are marked LH or RH and must be installed in the proper caliper.** Also, care should be taken not to bend the shoe clips too far during installation in the piston or distortion and rattles can result.
4. Install the correct outer brake shoe and lining assembly (RH/LH), also making sure that the clip and buttons located on the shoe are properly seated. The outer shoe can be identified as right hand or left hand by the wear indicator which must always be installed toward the front of the vehicle (See Fig. 11). Refill master cylinder.
5. Install the wheel and tire assembly and torque the wheel nuts to specifications.
6. Pump the brake pedal prior to moving the vehicle to position the brake linings.
7. Road test the vehicle.

HUB AND ROTOR—FRONT—EXCEPT FAIRMONT/ZEPHYR

Removal

1. Remove the caliper and brake shoes. **Refer to Brake Shoe and Lining Removal.** If no repair is necessary on the caliper assembly, it is not necessary to disconnect the flexible brake hose from the caliper. The caliper can be temporarily

secured to the upper suspension arm. **Do not remove the anchor plate. Be careful not to stretch or twist the flexible brake hose.**

2. Remove the grease cap from the hub.
3. Remove the cotter key, nut lock, and adjusting nut.
4. Grasp the hub and rotor assembly and pull it outward far enough to loosen the washer and outer wheel bearing. Push the hub and rotor back onto the spindle and remove the washer and outer wheel bearing.
5. Then, slide the wheel hub and rotor assembly off the wheel spindle.

Installation

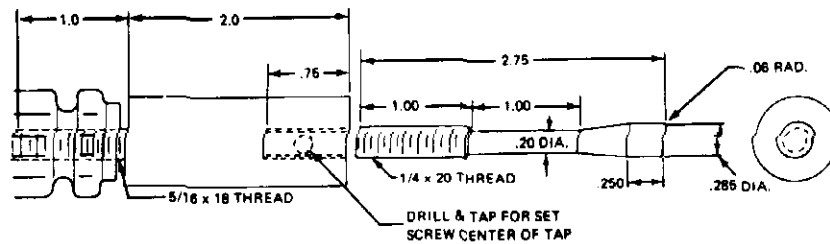
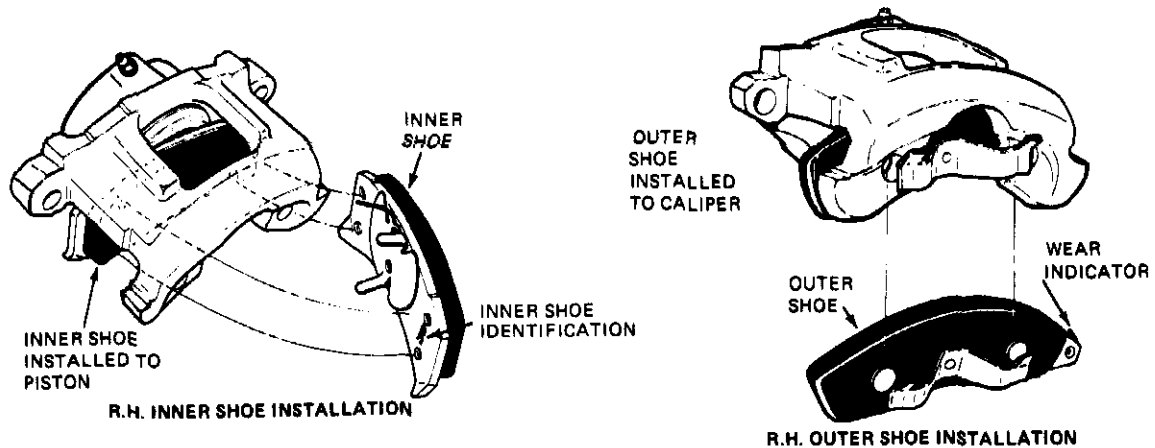
1. If the rotor is being replaced, remove the protective coating from the new rotor with carburetor degreaser. Flush bearings with specified grease (C1AZ-19590-A or equivalent), and install the inner bearing cone and roller assembly in the inner cup. Apply a film of grease between the lips of a new grease seal and install the seal.
2. If the original rotor is being installed, make sure that the inner bearing and grease seal are lubricated and in good condition, and that the rotor braking surfaces are clean.
3. Slide the hub and rotor assembly onto the spindle. Keep the assembly centered on the spindle to prevent damage to the inner grease retainer or the spindle threads.
4. Place the outer wheel bearing and the flat washer on the spindle and start the wheel bearing adjusting nut.
5. Adjust the wheel bearings as outlined in Part 11-10.
6. Install the caliper, brake shoes and linings. **Refer to preceding Brake Shoe and Lining Installation.**
7. Install the wheel and tire assembly. Remove the safety stand(s), lower the car, and torque the wheel stud nuts to 70 to 115 ft-lb.
8. Install the hub cap or wheel cover.
9. Apply the brakes several times to properly position the brake shoe and lining assemblies; then, test the car for proper brake operation.

HUB AND ROTOR—FRONT—FAIRMONT/ZEPHYR

Refer to Fig. 12

Removal

1. Remove the wheel and tire from the hub. Be careful to avoid damage or interference with the bleeder screw fitting and caliper splash shield.
2. Remove the caliper assembly from the spindle and the rotor. If the caliper does not require servicing, it is not necessary to disconnect the brake hose or remove the caliper from the vehicle. Position the caliper out of the way and support it with a wire to avoid damaging the caliper or stretching the hose. Insert a clean cardboard spacer between the linings to prevent the piston from coming out of the cylinder bore while the caliper is removed.
 Handle the rotor and caliper assemblies in such a way as to avoid deformation of the rotor and



FABRICATE INSULATOR INSTALLATION TOOL AS SHOWN

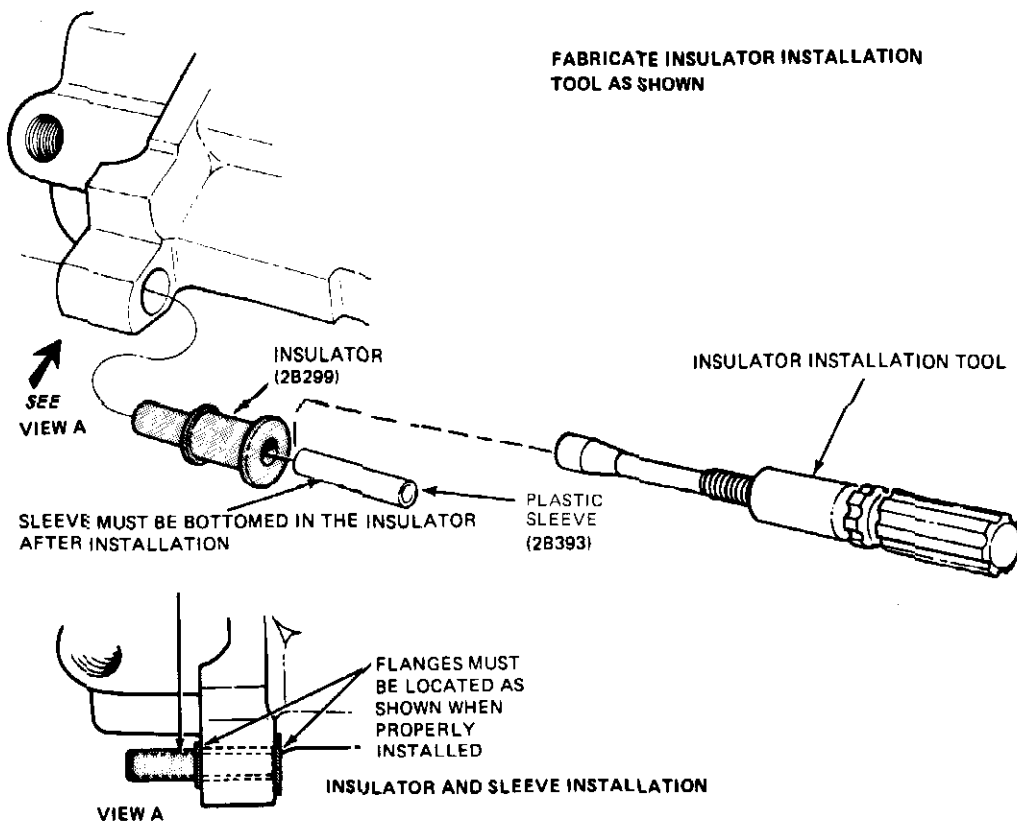
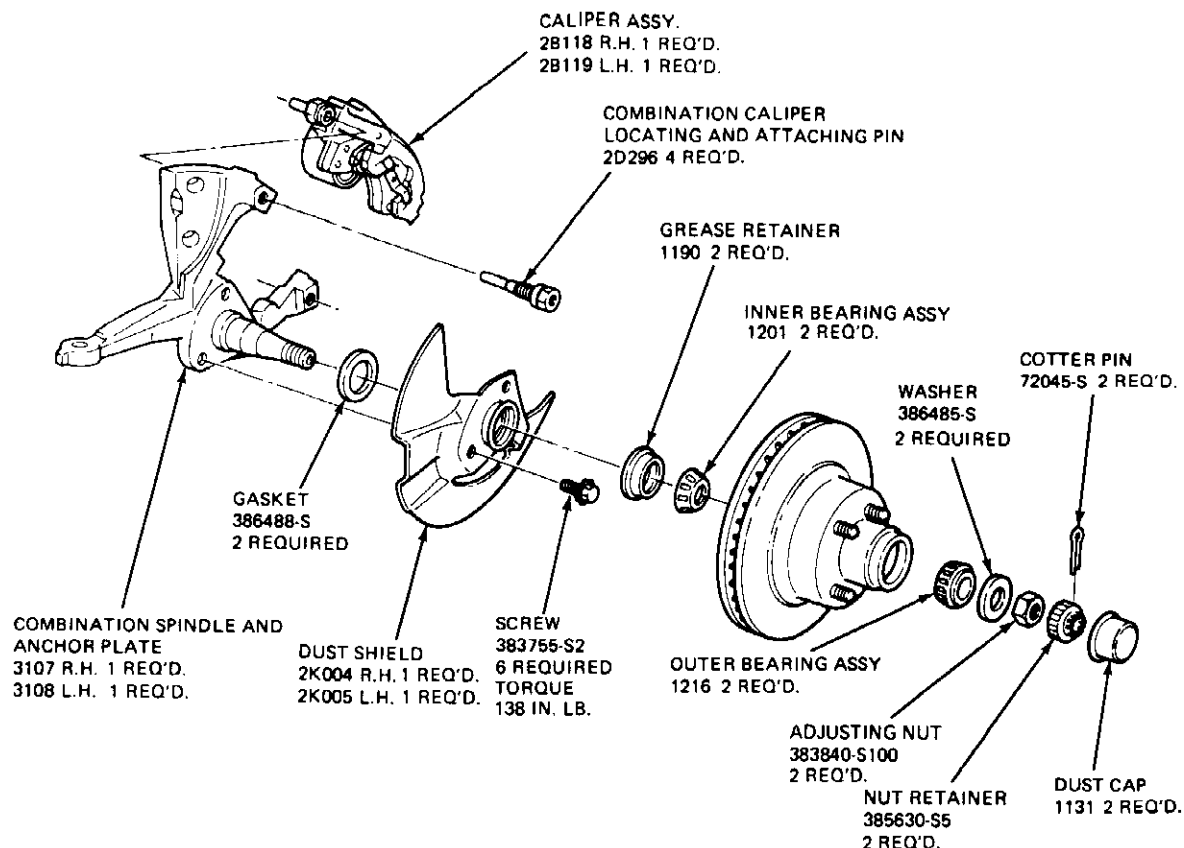


FIG. 11 Servicing Pin Slider Caliper—Fairmont/Zephyr

H2580-2A



BEARING ADJUSTMENT

TIGHTEN ADJUSTING NUT **A** WHILE ROTATING HUB AND ROTOR ASSY. TO 17-25 FOOT POUNDS TORQUE. BACK OFF ADJUSTING NUT 1/2 TURN. RETIGHTEN TO 10-15 IN-LB (FINGER TIGHT). SELECTIVELY POSITION NUT RETAINER **B** ON ADJUSTING NUT SO THAT A SET OF SLOTS ARE IN LINE WITH COTTER PIN HOLE. ADJUSTING NUT MUST NOT BE ROTATED IN THIS OPERATION. LOCK ADJUSTING NUT AND NUT RETAINER WITH COTTER PIN **C**.

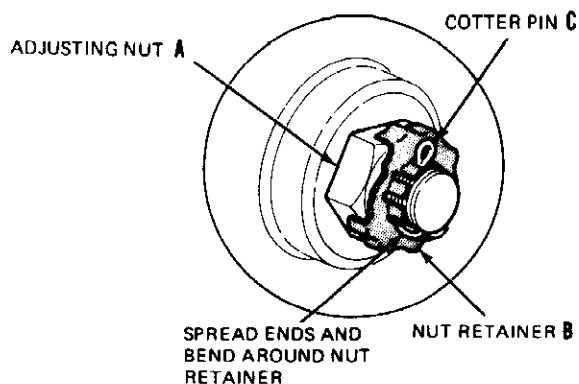


FIG. 12 Caliper, Shield and Rotor—Pin Slider Caliper

nicking, scratching or contamination of the brake linings.

3. Remove the grease cap from the hub. Remove the cotter pin, nut lock, adjusting nut, and flat washer from the spindle. Remove the outer bearing cone and roller assembly (Fig. 12).
4. Remove the hub and rotor assembly from the spindle.

Installation:

1. If the rotor is being replaced, remove the protective coating from the new rotor with carburetor degreaser. Pack a new set of bearings with specified grease (C1AZ-19590-A or equivalent), and install the inner bearing cone and roller assembly in the inner cup. Pack grease lightly between the lips of a new grease seal and install the seal.

If the original rotor is being installed, make sure that the grease in the hub is clean and adequate, that the inner bearing and grease seal are lubricated and in good condition, and that the rotor braking surfaces are clean.

2. Install the hub and rotor assembly on the spindle.
3. Lubricate and install the outer wheel bearing, washer and adjusting nut.
4. Adjust the wheel bearings to specification, and then install the nut lock, cotter pin, and grease cap. **The wheel bearing adjustment is especially important with disc brakes.**
5. Mount the caliper assembly on the spindle following the Fairmont/Zephyr Disc Brake Caliper Assembly Installation procedure in this Part.

ANCHOR PLATE—FRONT—ALL EXCEPT FAIRMONT/ZEPHYR

Removal

1. Remove the caliper assembly. **Refer to Disc Brake Caliper Assembly—Removal.**
2. Remove and discard both the upper and lower anchor plate-to-spindle mounting bolts. Remove the anchor plate.

Installation

1. Clean all foreign material and locking compound residue from the mating surfaces of the spindle and anchor plate.
2. Position the anchor plate on the spindle. Install new upper and lower mounting bolts finger tight.
3. Tighten the upper mounting bolt to 90 to 120 ft-lb.
4. Tighten the lower mounting bolt, 90 to 120 ft-lb. on LTD II, Cougar, Ford, Mercury, Continental Mark V, and Lincoln Continental; 55 to 75 ft-lb. on Pinto, Bobcat, Mustang II, Granada, Monarch, and Versailles. The upper anchor plate-to-spindle mounting bolt must be tightened first to prevent anchor plate distortion and to ensure proper brake operation.

NOTE: Fairmont/Zephyr vehicles are not equipped with a separate anchor plate.

DISC BRAKE ROTOR SPLASH SHIELD—FRONT—ALL EXCEPT FAIRMONT/ZEPHYR

Removal

1. Remove the caliper and the hub and rotor assembly as outlined in preceding instructions. (It is not necessary to disconnect hydraulic lines.)
2. Remove bolts that attach splash shield to spindle, and discard the gasket.

Installation

1. Install a new splash shield to spindle gasket.
2. If the shield is bent, straighten it out before installation. Position the shield to the mounting bracket, install attaching bolts and nuts, and torque, 9 to 14 ft-lb.
3. Install hub and rotor assembly and the caliper.

DISC BRAKE ROTOR SPLASH SHIELD—FRONT—FAIRMONT/ZEPHYR

Removal: Refer to Fig. 12

1. Remove the caliper and the hub and rotor assembly as outlined under Removal in the foregoing procedures (it is not necessary to disconnect hydraulic connections).
2. Remove the three bolts that attach the splash shield to the spindle, and remove the shield.
3. Remove and discard the splash shield to spindle gasket.

Installation

1. Install a new splash shield to spindle gasket.
2. If the shield is bent, straighten it out before installation. Position the shield on the mounting bracket, install the attaching bolts, nuts and torque them to specification.
3. Install the hub and rotor assembly and the caliper as outlined under Installation in the foregoing procedure.

DISC BRAKE CALIPER ASSEMBLY—REAR

After any service work, obtain a firm brake pedal before moving the vehicle. Riding the brake pedal (common on left foot application) must be avoided when driving the vehicle.

Removal

1. Raise the car and install safety stands. Block both front wheels if a jack is used.
2. Remove the wheel and tire assembly from the axle.
3. Remove the flexible hose from the caliper. To remove the brake hose, first disconnect the fitting on the rear brake tube from the hose end fitting at the frame or axle-mounted bracket. Plug the end of the brake tube to prevent loss of fluid and entry of air into the system. Remove the horseshoe-shaped retaining clip from the hose fitting and disengage the hose from the bracket. On Granada, Monarch and Versailles models, disconnect the hose bracket from the axle spring seat. On Lincoln Continental, Ford and Mercury cars, unscrew the hose end fitting from the caliper. On Continental Mark V, Granada, Monarch and Versailles cars,

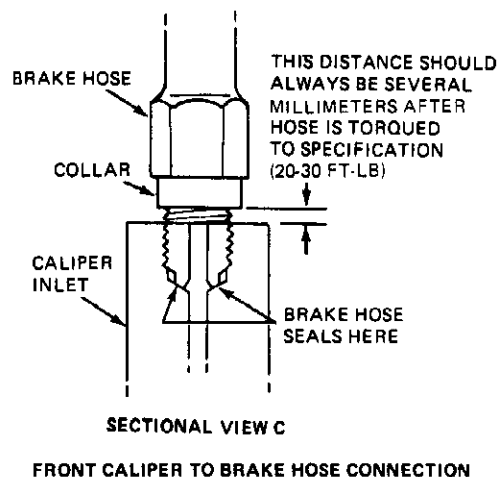
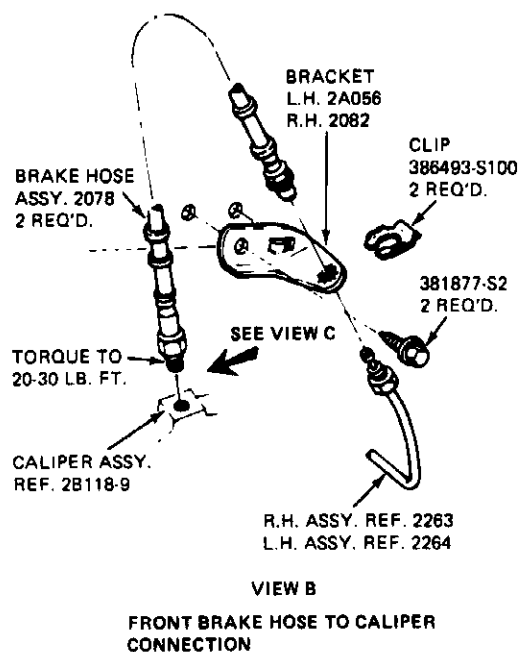


FIG. 13 Hydraulic Connections—Pin Slider Caliper—Fairmont/Zephyr

H2626-2A