FIESTA

Fiesta

DESCRIPTION

The Fiesta braking system is hydraulically operated on all four wheels. All models incorporate disc brakes on the front and drum type brakes on the rear. The hydraulic pressure originates at the master cylinder as the brake pedal is depressed.

Fiesta braking system is different than other Ford models in that the system is split diagonally. In most dual-circuit brake systems, the front and rear wheels are separated by the two circuits. The Fiesta system ties the left front and right rear wheel into one circuit, and the right front and left rear wheel into the other circuit.

Front disc brake calipers are a single piston design and are not adjustable. The rear drum brakes consist of a primary and secondary shoe operated by a double-acting cylinder. Rear brakes are self-adjusting. The parking brake operates the rear brakes only.

The master cylinder is a tandem type, located on left side of engine compartment. Primary chamber provides fluid pressure for the right front/left rear circuit, while the secondary chamber provides fluid for the left front/right rear circuit.

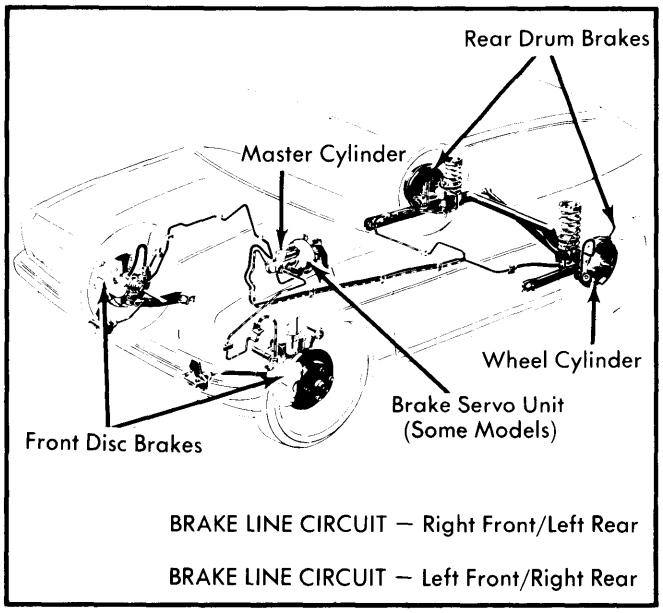

Fig. 1 Fiesta Brake System — Overall View

BRAKE WARNING SYSTEM

A low fluid level indicator, operating from either circuit, will warn the vehicle operator of a fluid loss. The warning light is located on the dash panel. Check fluid level if warning light is ON with engine running and parking brake released.

Warning light can be tested by depressing switch on top of master cylinder filler cap. Light should come ON, with engine running. If not, replace bulb or check cap assembly for defects.

ADJUSTMENTS

FRONT DISC BRAKE PADS

Front disc brakes are self-adjusting; therefore, no adjustment in service is required.

REAR BRAKE SHOES

After brake shoe installation, brakes can be adjusted by depressing brake pedal several times. Check brakes on road test.

PARKING BRAKE

1) Jack up vehicle and place on safety stands.

2) Release parking brake.

3) Loosen adjuster nut "A" See *Fig. 2*.

4) Rotate cable adjuster "B" to allow slack in cable.

5) With parking brake in OFF position, tighten cable by turning adjuster until all slack is out of cable.

6) After parking brake levers have just begun to move, turn adjuster THREE MORE complete turns and secure lock nut "A".

NOTE — *When adjustment is completed, machined groove "C" must not protrude past lock nut "A".*

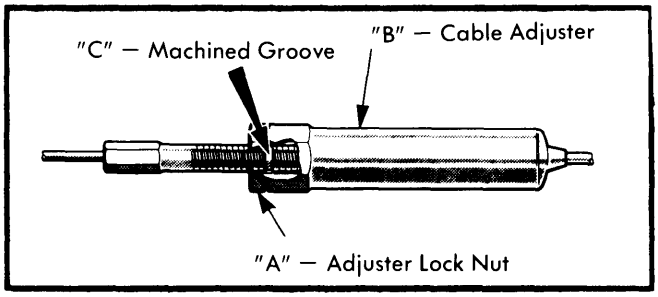

Fig. 2 Fiesta Parking Brake Adjuster

BRAKE BLEEDING

1) Cover fenders and raise vehicle.

2) Remove brake fluid reservoir cap and fill as necessary.

3) Both chambers should be full of suitable brake fluid.

CAUTION — *If brake fluid comes in contact with painted surfaces, wash with cold water immediately.*

4) Remove rubber dust cap from left front wheel brake bleeding nipple. Install suitable bleed tube.

5) Run other end of bleed tube into fluid resistant container partially filled with approved brake fluid (clean).
NOTE — *Keep end of bleed tube immersed in fluid during entire bleeding operation.*

6) Unscrew bleed valve about ½ turn. Depress brake pedal completely. Allow pedal to return to normal OFF position.

FIESTA (Cont.)

7) Brake fluid or air bubbles should have been pumped into container. If not, open bleed valve further and repeat procedure.

8) With a three second pause between strokes, continue to depress and release brake pedal until fluid entering container is clear and free of air bubbles.

9) Press pedal to floor and hold while tightening bleed valve.

10) Check master cylinder fluid level and fill as needed.

11) Remove bleed tube and install rubber dust cap.

12) Bleed right rear wheel brake following same procedure. NOTE – *When bleeding rear brakes, parking brake should be ON.*

13) Release parking brake.

14) Bleed right front wheel brake following same procedure.

15) Apply parking brake and bleed left rear wheel brake.

16) Release hand brake. Fill master cylinder with approved brake fluid.
CAUTION – *Do not fill master cylinder reservoir above 'MAX' mark.*

17) Check brake operation during road test.

Brake Line Bleeding

Sequence	Wheel
First	Left Front
Second	Right Rear
Third	Right Front
Fourth	Left Rear

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

Removal – 1) Raise and support front of vehicle.

2) Remove wheel and tire assembly.

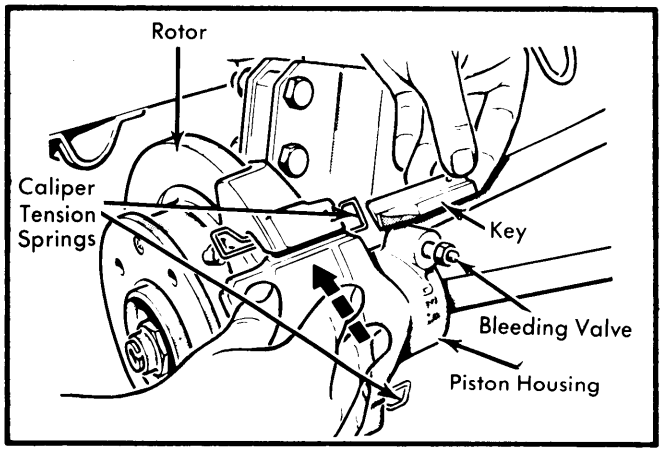

Fig. 3 Removing Disc Brake Caliper

3) Remove caliper retaining pins and discard.

4) Apply light pressure to piston housing against caliper tension springs. Slide out keys and discard.

5) Remove piston housing (caliper) from rotor. Suspend caliper assembly from vehicle body using suitable wire.

NOTE – *Do not let piston housing (caliper) assembly hang by brake line.*

6) Remove old brake pads and anti-rattle clips from pad housing.

Installation – 1) Ensure new pads are correct type. All parts (pads, clips, key and disc) must be clean.

2) Carefully apply pressure to face of piston, pushing it back into its bore. Do not damage piston face.

3) Install new disc brake pads and anti-rattle clips into pad housing.

NOTE – *Anti-rattle clips must be fitted to top of brake pad.*

4) Install piston housing (caliper), ensuring that it is mounted above caliper tension springs.

5) Apply pressure to piston housing against caliper tension springs and slide in NEW keys.

NOTE – *Be sure that retaining pin holes in key and in piston housing are aligned.*

6) Insert new retaining pins from disc side and secure.

7) Depress and release brake pedal several times to bring pads into proper adjustment.

8) Replace wheel and tire assembly.

9) Lower vehicle and tighten lug nuts.

FRONT DISC BRAKE CALIPER

Removal – 1) Raise vehicle and support with safety stands.

2) Remove wheel and tire assembly.

3) Disconnect brake fluid flexible hose from caliper. Plug open brake line.

4) Remove both caliper retaining bolts and remove caliper.

Installation – 1) Mount caliper assembly in position.

2) Install and tighten (2) retaining bolts.

3) Remove plug and connect flexible brake line hose.

4) Install wheel, lower vehicle and tighten lug nuts.

5) Bleed brake system. See *Brake Bleeding in this article.*

FIESTA (Cont.)

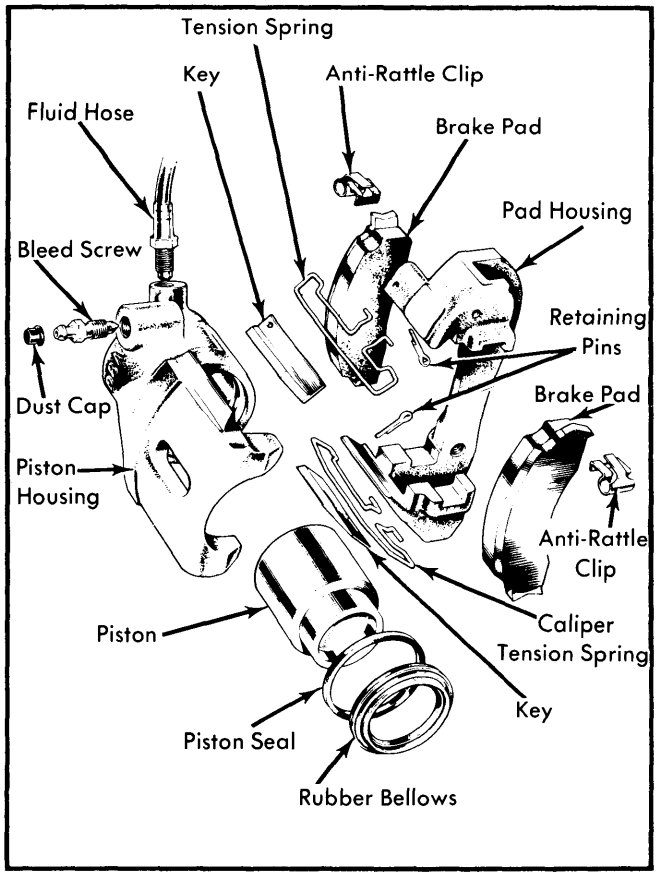

Fig. 4 Exploded View of Front Disc Brake Caliper

FRONT DISC BRAKE ROTOR

Removal – 1) With caliper assembly removed and suspended from body with suitable length of wire, remove disc retaining screw.

2) Carefully remove rotor assembly.

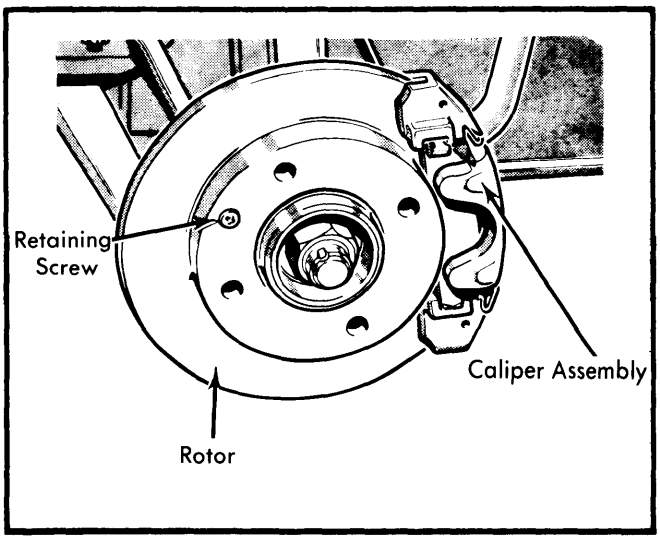

Fig. 5 Fiesta Disc Brake Rotor & Caliper Front Wheels Only

Installation – 1) Ensure all parts are clean.

2) Mount disc assembly in position and secure retaining screw.

3) Install caliper assembly. See *Front Disc Brake Caliper Installation in this article.*

REAR BRAKE SHOES

Removal – 1) Raise vehicle and support with safety stands.

2) Remove rear wheels.

3) Release parking brake fully.

4) Disconnect parking brake cable from brake assembly by removing spring clip and pulling out clevis pin.

5) Remove parking brake lever rubber dust cover from brake carrier plate.

6) Remove the following parts in order given:
- Spindle and bearing dust cap
- Cotter pin
- Adjusting nut retainer
- Adjusting nut
- Washer
- Outer bearing

7) Slide hub and drum assembly clear of spindle.

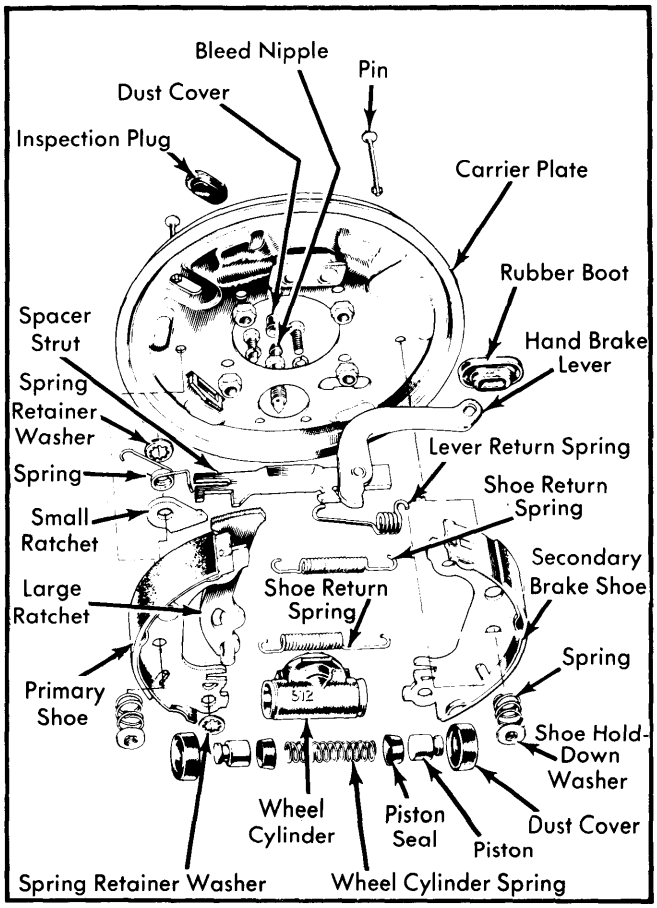

Fig. 6 Exploded View of Fiesta Rear Brake Assembly

FIESTA (Cont.)

8) Remove hold-down spring from primary shoe by depressing and turning washer 90°. Remove spring and washer. Pull pin from carrier plate.

9) Twist primary shoe (shoe nearest rear of vehicle) out and up away from carrier plate. Use care not to damage cylinder dust cover.

10) Detach shoe and remove springs.

11) Remove hold-down spring from secondary shoe.

12) Slide lower end of spacer strut out from carrier plate slot.

13) Twist secondary shoe up and away from carrier plate. Remove parking brake lever and shoe assembly from carrier plate.

14) Disassemble primary shoe assembly.

15) Separate secondary shoe from strut by twisting, and remove spring.

Installation – Reverse removal procedure while noting the following:

1) Be sure parking brake lever rotates freely to spacer strut. Pin should rotate in strut hole and be riveted tightly to lever.

2) When assembling primary brake shoe, proceed as follows:
- **a.** Mount smaller ratchet and spring on shoe pivot. Slide two .008" (.2 mm) feeler gauges (one on each side of pivot) between brake shoe and ratchet. Install new spring retaining washer. Retaining tabs must be secure. Remove feelers. Ratchet should rotate freely on pivot and return freely with spring pressure.
- **b.** Mount larger ratchet to brake shoe. Secure with new spring clip. Push clip in fully. Ratchet should rotate freely.
- **c.** Position two ratchets relative to each other with an overlap. See *Fig. 7*

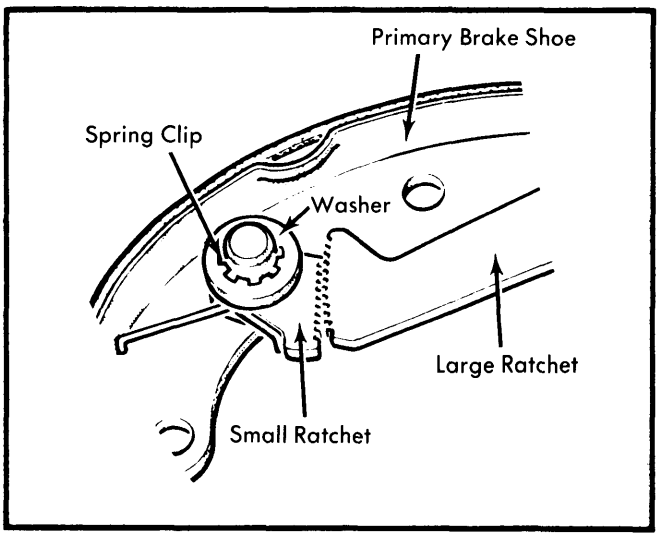

Fig. 7 Assembling Large & Small Ratchets on Primary Brake Shoe

3) Stronger of the two brake return springs mounts between shoes at pivot end, opposite from wheel cylinder.

4) Weaker of the two brake return springs mounts between shoes at wheel cylinder ends.

5) Install outer wheel bearing by tightening nut to 37 ft. lbs. (5.1 mkg) while turning drum. Back nut off 90° and install nut retainer. Install new cotter pin. Install dust cap.

6) Adjust rear brake by depressing brake pedal and releasing several times. Road test for brake operation.

REAR BRAKE WHEEL CYLINDER

Removal – 1) Remove rear brake shoe assembly. See *Rear Brake Shoes – Removal in this article.*

2) Disconnect brake fluid line and plug line.

3) Remove (2) retaining bolts from back of carrier plate and remove wheel cylinder.

Installation – 1) Ensure all parts are clean.

2) Replace wheel cylinder on carrier plate and install (2) retaining bolts.

3) Reconnect fluid line.

4) Install rear brake shoe assembly.

5) Bleed brake system. See *Brake Bleeding in this article.*

MASTER CYLINDER

Removal – 1) Disconnect battery and cover fenders.
NOTE – *If brake fluid contacts any painted surfaces, wash immediately with cold water.*

2) Remove filler cap from master cylinder.

3) Draw brake fluid from reservoir.

4) Tip reservoir assembly sideways and remove from cylinder.

5) Remove (2) rubber seals from cylinder assembly. Replace if necessary.

6) Detach fluid lines by carefully unscrewing union nuts. Install plugs.

7) Disconnect electrical wires from switch in differential valve (if equipped).

8) Remove spring clip. Withdraw clevis pin and bushing from pedal shaft and master cylinder push rod.

9) Remove (2) nuts and spring washers holding master cylinder to firewall. Remove master cylinder.

FIESTA (Cont.)

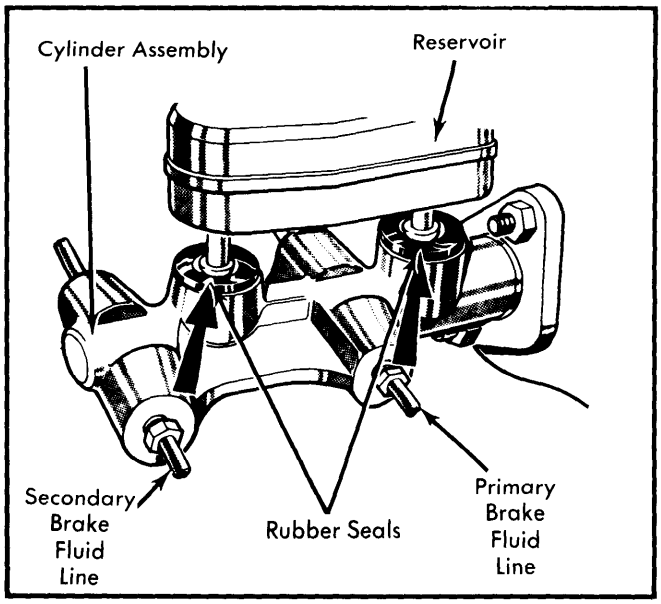

Fig. 9 Separating Reservoir from Master Cylinder

Installation – Reverse removal procedure and note the following:

1) All parts must be absolutely clean before installation.

2) Torque fluid line union nuts.

3) After filling master cylinder with suitable brake fluid, bleed brake system. *See Brake Bleeding in this article.*

4) Check brake system operation on road test.

POWER BRAKE SERVO UNIT

Removal – 1) Remove spring clip and clevis pin holding actuating rod to brake pedal.

2) Cover fenders for paint protection.

3) Disconnect vacuum hose from non-return valve on front of servo unit.

4) Disconnect brake lines and install plugs.

CAUTION – *Block vent hole in reservoir cap with tape to prevent excessive fluid loss. If fluid contacts painted surface, wash immediately with cold water.*

5) Remove (2) nuts and washers attaching master cylinder unit to servo.

6) Remove master cylinder from servo.

7) Remove (4) attaching nuts and washers from servo unit and remove servo.

Installation – Reverse removal procedure and note the following:

1) Torque fluid line union nuts.

2) Remove tape from reservoir vent hole.

3) After filling master cylinder with suitable brake fluid, bleed brake system. *See Brake Bleeding in this article.*

OVERHAUL

FRONT DISC BRAKE CALIPER

Disassembly – Remove piston rubber bellows. To remove piston force air pressure or low hydraulic pressure to piston via brake fluid inlet port. Using pointed tool, dig out piston seal from groove in piston housing. *See Fig. 4.*

Inspection – Wash piston and piston housing bore in suitable cleaner (alcohol). Make sure piston and bore do not have scratches or score marks.

Reassembly – Fit piston seal in piston housing groove. Lightly coat piston with brake fluid. Push piston into bore until fully seated. Make sure piston seal is not damaged as piston is seated. Fit piston rubber bellows between piston housing and piston seal.

MASTER CYLINDER

Disassembly – 1) With master cylinder removed, pry reservoir off and remove rubber seals. Support cylinder in a soft jaw vise. Depress push rod to relieve piston stop pin pressure, then remove stop pin.

2) Using a pair of pliers, remove retaining clip located under dust boot of push rod. Take off push rod, boot, and washer.

3) Slide out primary piston assembly. Tap master cylinder softly in palm of hand to jar out secondary piston assembly. Disassemble primary and secondary pistons. *See Fig. 10 and Fig. 11.*

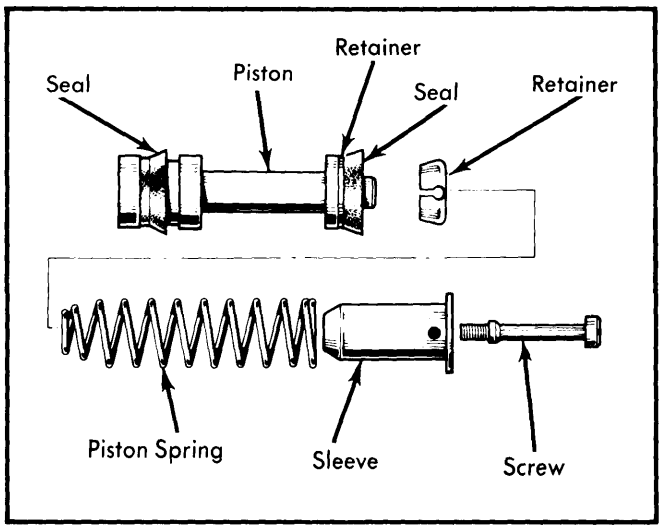

Fig. 10 Parts Relationship of Primary Piston Assembly

FIESTA (Cont.)

Inspection – Check cylinder bores and pistons for obvious signs of score marks, ridges, or corrosion. Replace components if necessary. Clean pistons assemblies in commercial alcohol. Replace rubber parts.

Reassembly – **1)** Install new secondary piston seals and secure in place with retainer and spring to piston. Refer to *Fig. 11* for correct seal installation. Lightly coat secondary piston assembly in brake fluid and slide into cylinder bore.

2) Fit new primary piston seals (See *Fig. 10*) and secure in place with retainer, spring, sleeve and screw. Lightly coat primary piston assembly in brake fluid and slide into cylinder bore.

3) Refit push rod and boot to master cylinder. Depress push rod enough to insert piston stop pin into secondary inlet port. Install new rubber seals to inlet ports and fit reservoir.

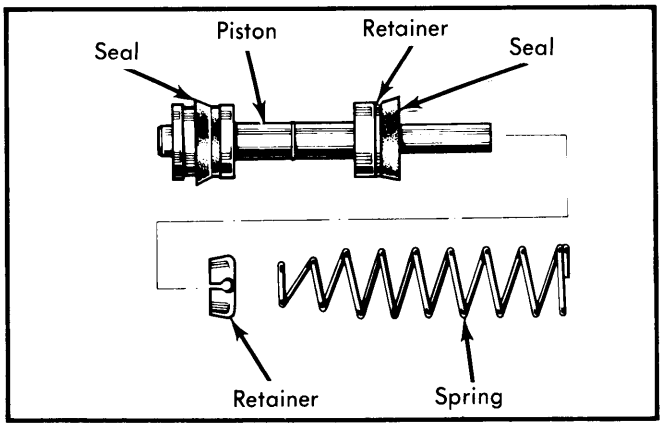

Fig. 11 Parts Relationship of Secondary Piston Assembly

WHEEL CYLINDER

Disassembly – Remove dust covers. Force out piston assemblies from cylinder bore. Separate piston seals from spring and flat side of piston. Remove bleed screw, if necessary.

Inspection – Clean cylinder bore and pistons. Check pistons and cylinder bore for score marks or grooves. Replace components as necessary.

Reassembly – Fit dust covers to pistons. Insert one piston and dust cover into position. Working from opposite end, slide in the following parts:

- Piston seal, flat side first.
- Spring.
- Piston seal, flat side first.
- Piston and dust cover.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Caliper-to-Front Suspension Unit	38-45 (5.3-6.2)
Carrier Plate-to--Axle Housing	15-18 (2.1-2.5)
Fluid Line-to-Master Cylinder Union Nuts	8-11 (1.2-1.5)
Bleed Valves	8 (1.0) Maximum①

① – Tighten sufficiently to seal.

BRAKE SYSTEM SPECIFICATIONS

Application	Drum Diam. In. (mm)	Wheel Cylinder Diameter		Master Cylinder Diameter In. (mm)
		Front In. (mm)	Rear In. (mm)	
Fiesta	7.00① (177.8)	1.89 (48.0)	.59 (15.0)	.....

① – Drum brakes on rear only.

DISC BRAKE ROTOR SPECIFICATIONS

Application	Disc Diameter In. (mm)	Lateral Runout In. (mm)	Parallelism In. (mm)	Original Thickness In. (mm)	Minimum Refinish Thickness In. (mm)	Discard Thickness In. (mm)
Fiesta	5.8① (148.0)	.006 (.15)	.....	.39 (10.0)	.34② (8.7)	③

① – Inner diameter shown. Outer diameter is 8.7" (221 mm).
② – Minimum allowable.
③ – Less than minimum thickness.