FIESTA

Fiesta

DESCRIPTION

Fiesta brake system is hydraulically operated using a tandem master cylinder and optional vacuum brake booster. Front brakes are single piston, sliding caliper disc; rear brakes are drum. Parking brake is cable actuated and operates on rear wheels.

Primary chamber of master cylinder provides fluid for right front/left rear brake system. Secondary chamber provides fluid for left front/right rear brake system. A warning light is installed on master cylinder reservoir to warn of low fluid level.

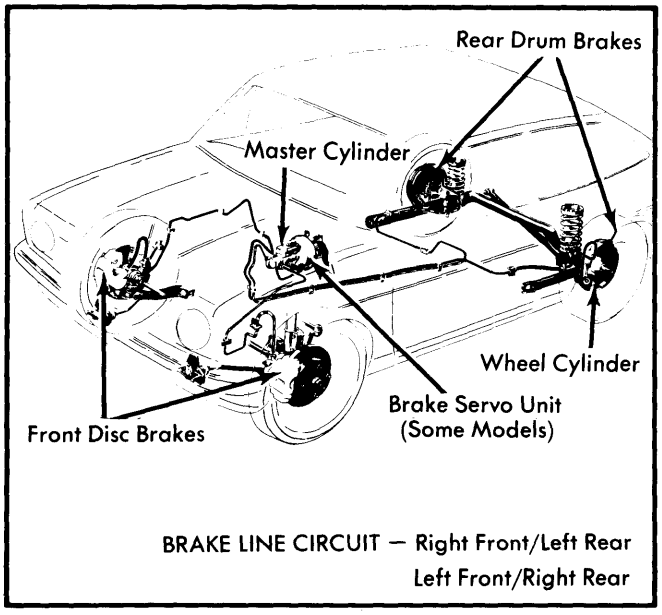

Fig. 1 Fiesta Brake System — Overall View

ADJUSTMENTS

FRONT DISC BRAKE PADS

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

REAR BRAKE SHOES

Rear brakes are self-adjusting during operation of brake pedal.

PARKING BRAKE

CAUTION — *Raise and support rear of vehicle first when lifting vehicle.*

Raise and support vehicle on safety stands; release parking brake. Loosen adjuster nut "A" and rotate cable adjuster "B" until cable is slack. See *Fig.* 2. Ensure parking brake is OFF, then turn adjuster until slack is out of cable. After brake levers have just begun to move, turn adjuster 3 complete turns and tighten lock nut.

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

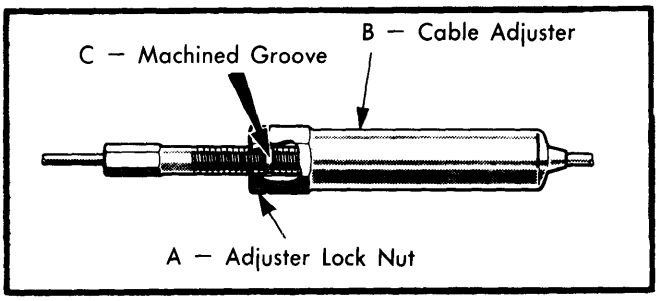

Fig. 2 Fiesta Parking Brake Adjuster

HYDRAULIC SYSTEM BLEEDING

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

1) Raise and support vehicle in level position. Check master cylinder reservoir and fill as required; check fluid level often during bleeding process. Remove dust cap from right front bleeder screw and attach bleed tube. Immerse opposite end of tube in a glass container partially filled with brake fluid.

NOTE — *Container must be held 12" (300 mm) higher than bleeder screw during bleeding process.*

2) Unscrew bleeder valve ½ turn. Depress brake pedal completely and allow it to return to original position. Brake fluid or air should have been discharged; if not, open bleeder screw further and repeat operation. Allow 3 seconds between strokes and repeat operation until no air bubbles are seen in discharged fluid. Tighten bleeder screw with brake pedal in released position. Remove bleed tube and install dust cap.

CAUTION — *Hand brake must be applied prior to bleeding and released after bleeding each rear wheel cylinder.*

3) Bleeding sequence is right front, left rear, left front, and right rear. Repeat procedure on remaining brake lines. Check reservoir level often; replacing fluid as required. After bleeding operation is complete; fill reservoir to "MAX" mark, lower vehicle and check brake operation during road test.

REMOVAL & INSTALLATION

FRONT DISC BRAKE PADS

NOTE — *Disc brake pads must be installed in sets and must match vehicle.*

Removal — Raise and support front of vehicle on safety stands; remove tire and wheel. Remove and discard caliper retaining pins. Lightly press piston housing against caliper tension springs; slide out and discard keys.

2) Remove caliper from rotor and support out of way. DO NOT let caliper hang from hydraulic line. Remove and discard brake pads and anti-rattle clips from pad housing.

FIESTA (Cont.)

Installation – 1) Carefully apply pressure to face of piston and seat piston in bore. Do not damage piston face. Install new anti-rattle clips to top of brake pads. Install new pads in housing.

2) Install piston housing above caliper tension springs. Lightly press piston housing against caliper tension springs and slide in new keys. Align retaining pin holes, insert new pins from disc side and secure. Pump brake pedal several times to adjust pad-to-rotor clearance. Install tire and wheel; lower vehicle.

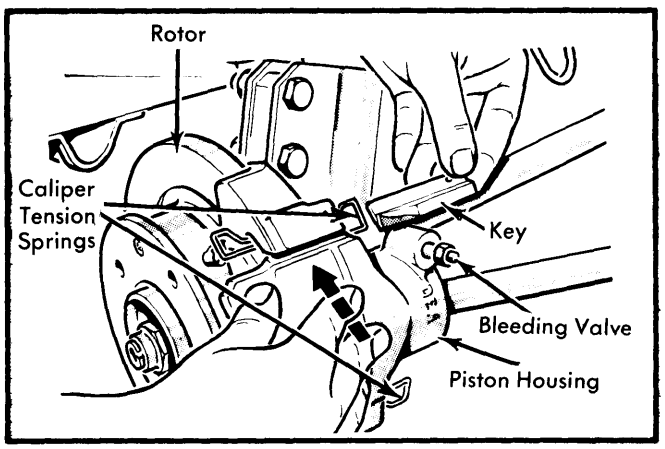

Fig. 3 Removing Disc Brake Caliper

FRONT DISC BRAKE CALIPER

Removal – With tire and wheel removed; disconnect flexible hydraulic line from caliper and plug openings. Remove caliper retaining bolts and remove caliper.

Installation – Reverse removal procedure and bleed hydraulic system.

NOTE – *Retaining bolts are identified by the number 10.9 stamped on bolt head and nylon locking patch on threads.*

FRONT DISC BRAKE ROTOR

Removal – With caliper removed, remove rotor retaining screw and remove rotor from hub.

Installation – Make sure all parts are clean and reverse removal procedure to install rotor.

REAR BRAKE SHOES

NOTE – *Replace brake shoes in sets of four.*

Removal – 1) Raise and support vehicle on safety stands; remove tire and wheel. Release parking brake. Disconnect parking brake cable from brake assembly by removing spring clip and clevis pin. Remove hand brake lever and rubber dust boot from carrier plate.

2) Remove dust cap, cotter pin, adjusting nut retainer, adjusting nut, washer, and outer bearing. Slide hub and drum assembly off spindle.

3) Remove hold down spring and pin assembly from primary shoe. Twist primary shoe out and up away from backing plate; do not damage wheel cylinder dust cover. Detach shoe, remove springs, and separate components.

4) Remove hold down spring and pin assembly from secondary shoe. Slide lower end of spacer strut out from carrier plate slot. Twist secondary shoe up and away from backing plate and remove parking brake lever and shoe assembly. Separate secondary shoe from strut by twisting. Remove spring.

Installation – 1) Assemble primary shoe by mounting small ratchet and spring on shoe pivot. Slide two .008" (.2 mm) feeler gauges (one on each side of pivot) between shoe and ratchet. Install new spring retaining washer. Remove feeler gauges and ensure ratchet rotates freely on pivot and returns freely with spring pressure.

NOTE – *Be sure parking brake lever rotates freely relative to spacer strut. Pin should be tightly riveted to lever and rotate in strut hole.*

2) Mount large ratchet on brake shoe with new spring clip. Seat clip fully (ratchet should rotate freely). Align ratchets with an overlap. Reverse removal procedure and install stronger return spring between pivot end of shoes (opposite wheel cylinder). Weak spring mounts between shoes at wheel cylinder.

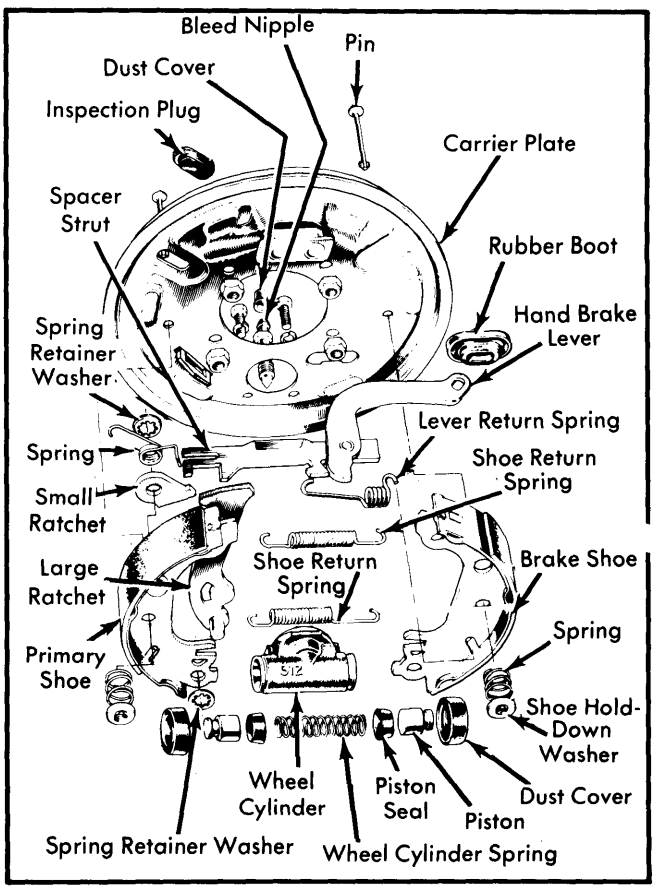

Fig. 4 Exploded View of Fiesta Rear Brake Assembly

3) Adjust outer wheel bearing by tightening nut to 15-18 ft. lbs. (2.0-2.4 mkg) while rotating drum counterclockwise.

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Loosen nut ½ turn; retorque nut to 0.3-0.6 ft. lbs. (.04-.08 mkg) and install nut retainer. Install new cotter pin and put on dust cap. Pump brake pedal several times to adjust shoe-to-drum clearance. Road test for proper brake operation.

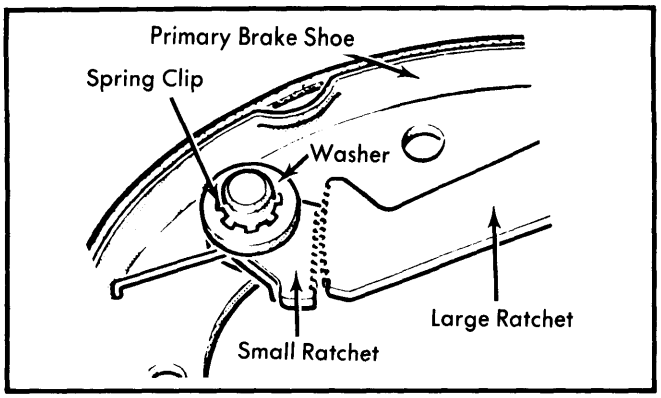

Fig. 5 Assembling Ratchets on Primary Brake Shoe

REAR BRAKE WHEEL CYLINDER

Removal – With brake shoes removed, remove hydraulic line and plug openings. Remove retaining bolts from backing plate and remove wheel cylinder.

Installation – To install, reverse removal procedure and bleed hydraulic system.

MASTER CYLINDER

NOTE – *If brake fluid contacts any painted surfaces, wash immediately with cold water.*

Removal – 1) Disconnect battery. Draw fluid from reservoir. Remove hydraulic lines and plug openings. Disconnect electrical connection from differential valve switch (if equipped).

2) From inside vehicle, disconnect push rod (booster linkage) from brake pedal. Remove master cylinder retaining nuts and remove master cylinder.

Installation – Reverse removal procedure, bleed hydraulic system and road test vehicle.

POWER BRAKE UNIT

Removal – With master cylinder removed; remove operating rod from brake pedal. Disconnect vacuum line from booster. Remove booster mounting nuts and remove booster.

Installation – Reverse removal procedure and bleed hydraulic system.

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.

Cleaning & Inpsection – Clean piston and caliper bore with alcohol or brake fluid. Check piston and bore for wear, scoring, scratches or other damage. Replace defective parts.

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.

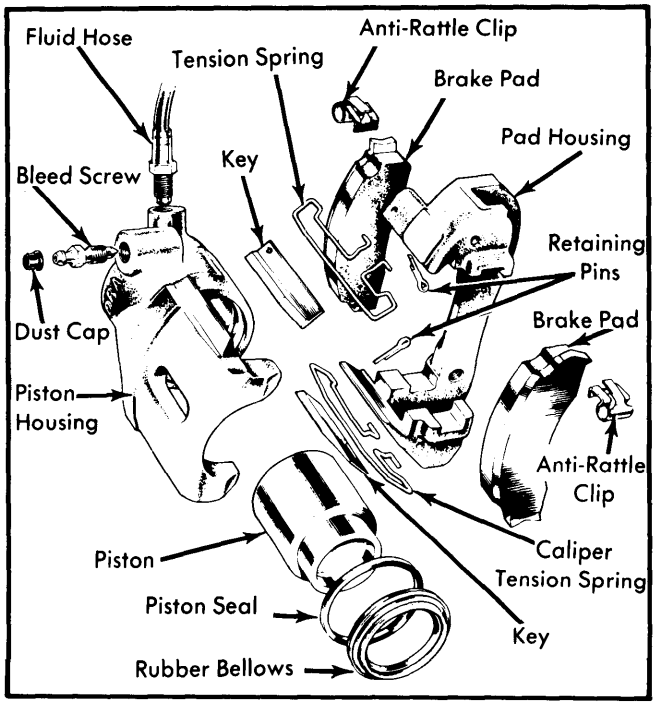

Fig. 6 Exploded View of Front Disc Brake Caliper

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.

Cleaning & Inspection – Clean cylinder bore and pistons in alcohol or brake fluid. Check pistons and cylinder bore for scratches or scoring. Replace defective parts.

Reassembly – Install dust covers on pistons. Install one piston and dust cover in position. From opposite end, slide in piston seal (flat side first), spring, piston seal (flat side out), piston and dust cover. Install bleeder screw.

MASTER CYLINDER

Disassembly – 1) Separate reservoir from master cylinder and remove rubber seals. Support cylinder in a soft-jaw vise. Depress push rod to relieve piston stop pin pressure and remove stop pin.

2) Peel back dust boot and remove retaining clip. Remove push rod, boot and washer. Separate components. Remove primary piston assembly. Tap master cylinder in palm of hand

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to jar out secondary piston. Remove screw in primary piston and disassemble piston assemblies.

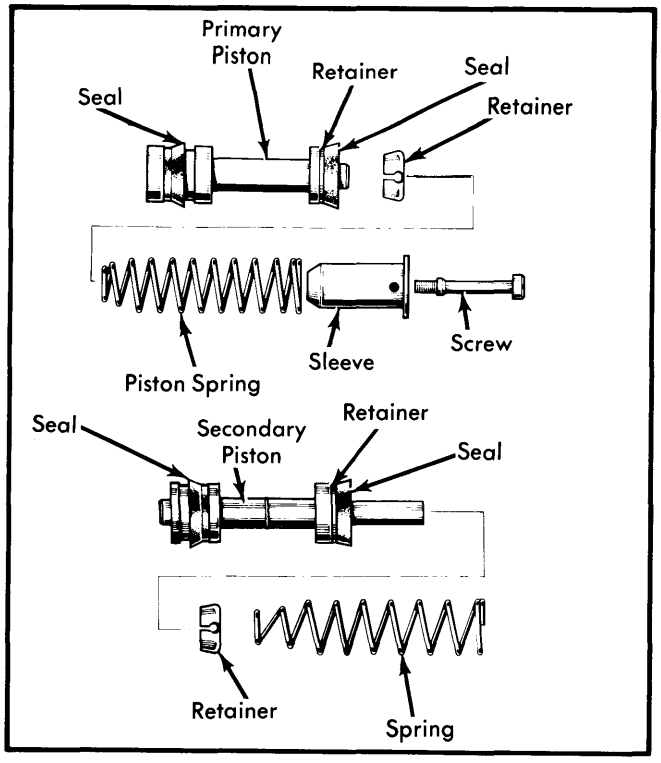

Fig. 7 Exploded View of Master Cylinder Piston Assemblies

Cleaning & Inspection – Clean all parts in alcohol or brake fluid. Check cylinder bore and pistons for wear, scratches and corrosion. Replace defective parts. Replace all rubber parts during overhaul.

Reassembly – 1) Correctly install new secondary piston seals and secure with retainer. Lightly coat secondary piston assembly with brake fluid, slide spring and piston assembly into cylinder bore. Install new primary piston seals and secure with retainer, spring, sleeve and screw.

2) Lightly coat primary piston assembly with brake fluid and insert in cylinder bore (spring first). Install new rubber boot on push rod and install washer. Install rod in master cylinder and secure with new retaining clip. Mount rubber boot on master cylinder. Depress push rod and insert piston stop pin in secondary inlet port. Install reservoir and rubber seals.

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)

BRAKE SYSTEM SPECIFICATIONS

Application	Drum Diam. In. (mm)	Wheel Cylinder Diameter		Master Cylinder Diameter In. (mm)
		Front In. (mm)	Rear In. (mm)	
Fiesta	7.00 (177.8)	1.89① (48.0)	.59 (15.0)	.....

① – Front disc caliper bore.

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.