TRIUMPH

TR7
TR8

DESCRIPTION

All models are equipped with front disc and rear drum brakes. A tandem master cylinder with 2 independent and complete hydraulic circuits is used on all models. A pressure differential valve is used on all models to detect low pressure in either front or rear brake circuit. When a pressure differential exists between the 2 circuits, the pressure differential valve will be positioned off-center and cause the brake failure warning lamp on instrument panel to glow. A vacuum servo unit is used for power braking. Parking brake is cable actuated on rear brakes.

ADJUSTMENT

DRUM BRAKES

NOTE – *Rear brakes on TR7 and TR8 models are equipped with self-adjusting mechanism incorporated in parking brake linkage.*

PARKING BRAKE

NOTE – ***Adjustment of rear brakes will normally provide satisfactory parking brake adjustment. If cables are stretched, further adjustment is performed as follows:***

1) Raise and support rear of vehicle. Release parking brake lever. Disconnect parking brake cable clevis pins from operating levers on brake backing plates. With light finger pressure, push operating levers inward to ensure operating levers are in contact with brake shoes.

2) Align parking brake cable equalizer (located on right side of differential housing) ½" (12.5 mm) to left of vertical position. Adjust each clevis equal amounts until clevis pins can be easily inserted into operating levers. Secure clevis pins and check operation. Brakes should not drag. Parking brake lever travel should be 5-7 notches with 25 lbs. (11.4 kg) force applied to lever.

BRAKE WARNING LIGHT

NOTE – *Warning light will glow after any repair on service brake system and will not go out until manually reset by bleeding hydraulic circuit.*

A dual warning light is mounted on instrument panel. Parking brake light should glow when lever is pulled 1 notch (ignition on) and go off when lever is fully released. To check circuit warning sensor, fully release parking brake and ensure light is off (ignition on). Open 1 bleed screw and depress brake pedal; light should glow. To reset warning light, bleed hydraulic system and check operation of brakes. After bleeding brakes, turn ignition on; warning lamp should not glow. If warning lamp glows, center differential valve.

NOTE – *During bleeding process, use only short strokes to prevent differential valve from being forced off-center.*

REMOVAL & INSTALLATION

DISC BRAKE PADS

Removal – Raise and support vehicle; remove tire and wheel. Remove retaining pins and springs. Lift out brake pads, complete with damper shims.

Installation – Clean surfaces of piston and caliper cavity. Ease caliper pistons into bores (with bleeder screw slightly open) to provide clearance. Insert new pads and shims. Smaller cut out faces up. Install retaining springs and pins.

DISC BRAKE CALIPER

Removal – Raise and support vehicle. Remove tire and wheel. Disconnect and plug hydraulic line at caliper. Remove 2 bolts and washers retaining steering arm and lower caliper mounting lug to stub axle. Push steering arm clear. Remove upper caliper mounting bolt and remove caliper.

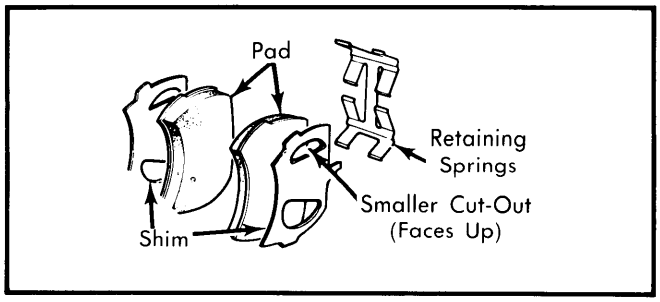

Fig. 1 Disc Brake Pad and Component Parts

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

DISC BRAKE ROTOR

Removal – Raise and support vehicle; remove tire and wheel. Remove caliper without disconnecting hydraulic line and hang out of way. Remove grease cap, cotter pin, castellated nut and washer. Remove hub, complete with bearings and disc. Remove 4 hub-to-rotor bolts and separate hub from rotor.

Installation – To install, reverse removal procedures. Eliminate hub end play. Do NOT tighten hub more than 60 INCH lbs. (7 N·m). Adjust wheel bearings. *See Wheel Bearing Adjustment in SUSPENSION Section.*

REAR BRAKE DRUM

Removal – Raise and support vehicle. Remove tire and wheel. Remove 2 brake drum retaining screws. Release parking brake and remove brake drum. If drum is difficult to remove, release self-adjuster. To release, remove dust cover on backing plate and insert small screwdriver and engage slotted hole in small adjusting lever. Press lever down to release adjuster.

Installation – To install, reverse removal procedure. If brake adjustment was released, neutralize brakes, install brake drum and depress brake pedal to set shoe-to-drum clearance. Tighten retaining screws evenly.

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TRIUMPH (Cont.)

REAR BRAKE SHOES

CAUTION — *Upper and lower return springs and not interchangeable. Note position of each spring prior to removal.*

Removal — Remove brake drum. Remove cotter pin from parking brake lever on rear of backing plate. Separate lever from parking brake lever. Remove rear shoe anchor pins, spings and cups. Disconnect and remove lower return spring.

Installation — To install, reverse removal procedure. If brake adjustment was released, neutralize brakes, install brake drum and depress brake pedal to set shoe-to-drum clearance. Tighten retaining screws evenly.

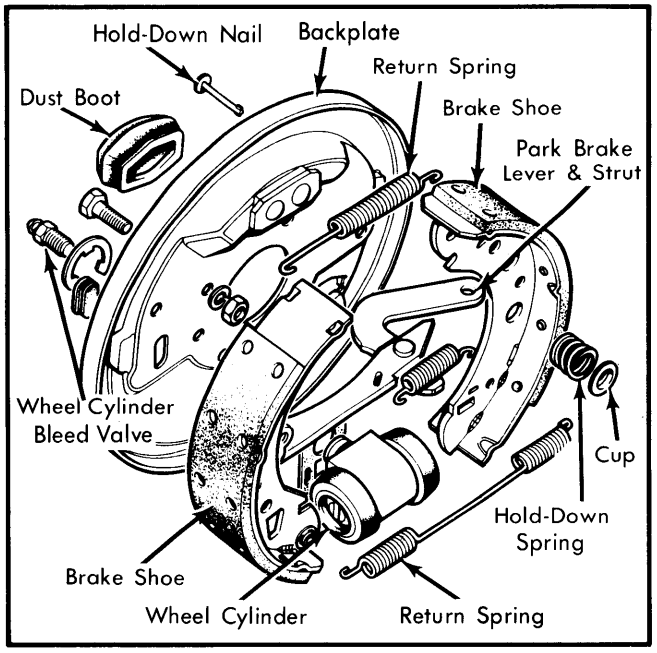

Fig. 2 Exploded View of Rear Assembly

MASTER CYLINDER

Removal — Disconnect all hydraulic lines and electrical connections (if equipped) from master cylinder. On models equipped with vacuum servo unit, remove mounting nuts and washers, then remove master cylinder. On models without vacuum servo unit, disconnect master cylinder push rod from brake pedal. Remove 4 mounting bolts securing master cylinder to firewall, then remove 2 bolts securing cylinder to front bracket. Remove master cylinder.

Installation — To install, reverse removal procedure and note the following: Bleed hydraulic system and check that pressure differential valve is centered.

VACUUM SERVO UNIT

Removal & Installation — Remove master cylinder as previously outlined. Disconnect vacuum hose from check valve. Remove clevis pin from servo operating rod and brake pedal lever. Remove 4 mounting nuts and washers, then remove servo. To install, reverse removal procedure.

PRESSURE DIFFERENTIAL VALVE

Removal & Installation — Disconnect electrical leads. Disconnect inlet and outlet lines and plug all ports to prevent loss of fluid and entry of dirt. Remove bolt securing valve and remove unit. To install, reverse removal procedure, bleed brakes and if necessary, center valve shuttle.

REAR BRAKE WHEEL CYLINDER

Removal & Installation — Remove brake shoes as previously outlined. Drain fluid and disconnect flexible hydraulic line at wheel cylinder. Remove wheel cylinder dust cover, retaining clip and spring plate. Remove wheel cylinder complete with parking brake operating lever. To install, reverse removal procedure and bleed hydraulic system.

NOTE — *Bleeder screw is installed on right wheel cylinder only. Left cylinder has fluid line installed in place of bleed screw to transfer fluid to right wheel cylinder. DO NOT interchange wheel cylinders.*

OVERHAUL

DISC BRAKE CALIPER

Disassembly — Using low air pressure, force pistons from caliper bores. If pistons are seized, the whole caliper assembly must be replaced. Carefully pry dust seal retainer from groove, using a blunt instrument. Take out dust seal and fluid seal.

Inspection — Clean caliper bores and inspect for deep scratches or pitting. Look at pistons and ensure they are not corroded or damaged. Replace components as necessary.

Reassembly — Fit new fluid seals into caliper bores, making sure they are properly located. Lightly coat bores with clean brake fluid. Insert pistons into caliper bores with approximately 5/16" (7.9 mm) of each piston protruding from mouth of each bore. Fit new dust seal into retainer, then slide assembly, seal first, into mouth of bore. Fully seat pistons, ensuring retainers are not distorted.

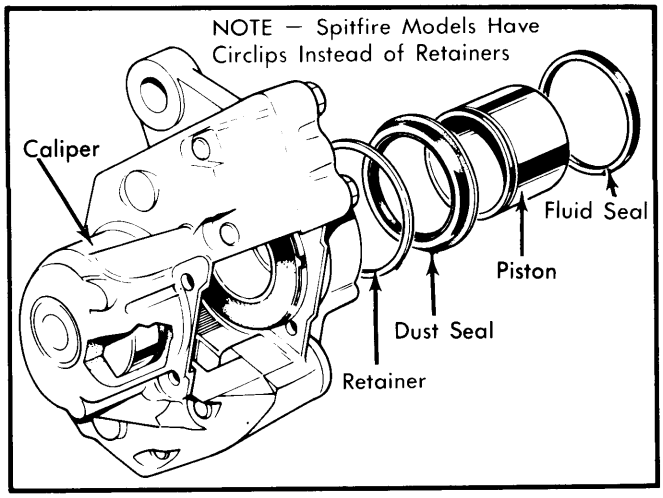

Fig. 3 Disassembled Front Disc Brake Caliper

REAR WHEEL CYLINDER

Disassembly — Remove wheel cylinder. Remove dust cover retaining ring and dust covers. Press on 1 piston to force pistons, seals and springs from cylinder.

Cleaning & Inspection — Clean all parts in alcohol or brake fluid and examine cylinder bore and piston for score marks, ridges or corrosion. If either bore or piston is damaged, replace entire cylinder assembly.

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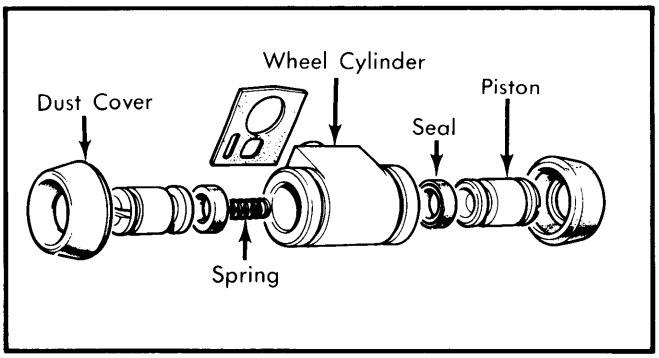

Fig. 4 Exploded View Wheel Cylinder

Reassembly – Install new seals on pistons. Lubricate seals, inside of cylinder and pistons with clean brake fluid. Reverse disassembly procedure to complete reassembly of wheel cylinder.

MASTER CYLINDER

Disassembly – **1)** Drain and discard hydraulic fluid from reservoir. Remove reservoir from master cylinder. Note size and location of reservoir seals, remove seal from master cylinder. Remove metal cap and rubber boot from end of master cylinder.

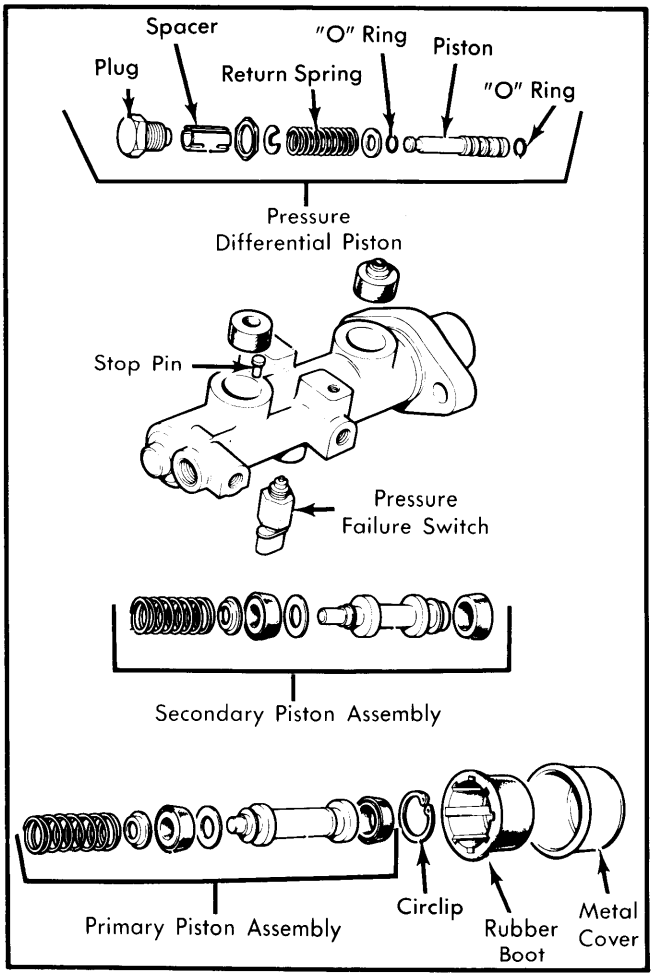

Fig. 5 Exploded View of Master Cylinder

2) Remove circlip and withdraw primary piston assembly. Unscrew pressure failure switch from cylinder body. Remove end plug and copper washer, withdraw spacer, return spring and pressure differential piston as an assembly.

3) Remove spring retainer. Separate spring and piston. Remove and discard "O" rings. Note size and position of all piston seals, washers and spring retainers. Remove seals using fingers only.

Reassembly – **1)** Install seals on primary and secondary pistons, using fingers only. Ensure all seals, springs and washers are properly installed. To assemble, reverse disassembly procedure and note the following:

2) Install new "O" rings and assemble pressure differential piston assembly. Install pressure differential assembly using new copper washer and tighten end plug. Install reservoir with 2 new screws.

3) Depress secondary piston assembly in cylinder bore and install stop pin. Install primary piston assembly and retain in position with new circlip.

VACUUM SERVO UNIT

NOTE – *Overhauling unit consists of changing check valve, filter dust cover, seal and plate assembly. Any other component failure requires complete unit replacement. Replacing filter is the only normal service required. A service repair kit is available for limited service.*

Disassembly – **1)** Remove servo unit as previously outlined. To remove check valve, note angle of valve in relation to servo housing. Use a suitable wrench to press down on valve and rotate counterclockwise ⅓ turn.

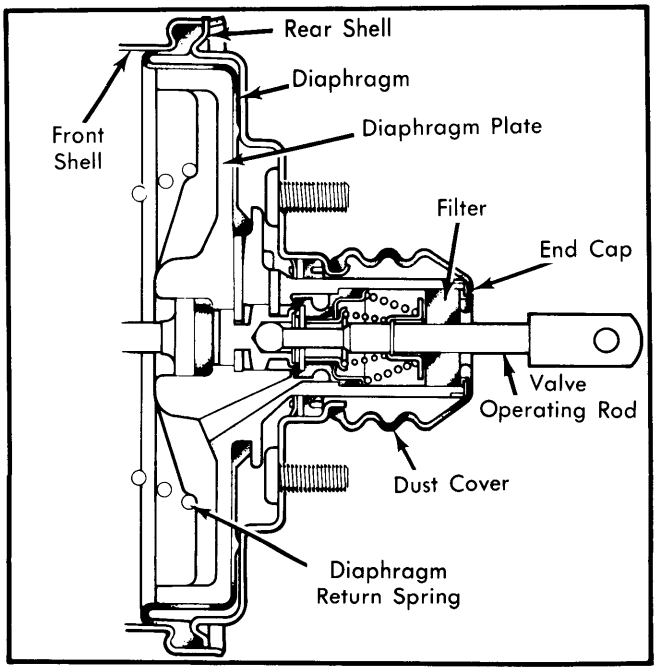

Fig. 6 Sectional View of Vacuum Servo Unit

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TRIUMPH (Cont.)

2) Remove filter by pulling back dust cover and pulling out filter. Do not remove valve operating rod. For ease of filter installation, cut new filter diagonally.

NOTE – *Servo push rod to master cylinder clearance is set by factory and secured with Loctite. No attempt should be made to alter setting.*

Reassembly – To reassemble components of servo unit, reverse disasssembly procedure.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (N·m)
Rotor-to-Hub	32 (44)
Caliper Mounting Bolts	74 (101)
Master Cylinder End Plug	33 (45)
Application	**INCH Lbs. (N·m)**
Reservoir-to-Master Cylinder	60 (7)
Master Cylinder-to-Pressure Reduction Valve	108 (12)

DRUM BRAKE SPECIFICATIONS

Application	Wheel Cyl. Bore Diameter In. (mm)	Drum Diameter In. (mm)	Original Diameter In. (mm)	Maximum Refinish Diameter In. (mm)	Discard Diameter In. (mm)
TR7 & TR8					
5-Speed	.....	9.00 (229)	9.00 (229)	.....	9.05 (229.9)
All Others	.....	8.00 (203)	8.00 (203)	.....	8.05 (204.5)

DISC BRAKE SPECIFICATIONS

Application	Caliper Bore Diameter In. (mm)	Lateral Runout In. (mm)	Parallelism In. (mm)	Original Thickness In. (mm)	Minimum Refinish Thickness In. (mm)	Discard Thickness In. (mm)
TR7 & TR8	.....	.....	.....	.375 (9.5)	.....	.....

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