TRIUMPH

Spitfire
TR6
TR7

DESCRIPTION

Clutch is dry, single plate, diaphragm spring type. Clutch actuation is hydraulic, using a firewall mounted master cylinder and a clutch housing-mounted slave cylinder. Due to self-adjusting feature of clutch assembly, no adjustment, with the exception of bleeding hydraulic system, is necessary.

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

Removal, Spitfire and TR6 – 1) Raise vehicle and place on safety stands. Disconnect battery. On TR6 models, remove front seats. On all models, remove gear shift lever knob and disconnect overdrive electrical wires (if equipped). Remove tunnel cover.

2) Remove drive shaft cover plate on Spitfire models. On all models, disconnect drive shaft from transmission, then disconnect speedometer.

3) On Spitfire models, disconnect slave cylinder at pinch bolt and place out of way. Drain transmission. Support engine under oil pan.

4) On TR6 models, remove bolts from mounting flange on extension housing, then remove support bracket. On all models, remove and/or place exhaust components out of way. On TR6 models, remove 9 upper bell housing bolts, then disconnect clutch slave cylinder push rod. Support TR6 engine under oil pan.

5) On Spitfire models, remove transmission mounting nuts. Remove all bell housing bolts from below. On TR6 models, remove 7 remaining bell housing bolts and slide out transmission.

6) On Spitfire models, work inside engine compartment and remove starter bolts. From inside vehicle, disconnect electrical leads from transmission. Remove remaining bell housing bolts and pull transmission from vehicle.

7) Index mark pressure plate and flywheel. Alternately and evenly remove 6 mounting bolts. Remove clutch assembly.

Installation – Center clutch disc on flywheel using a suitable alignment tool, then install pressure plate and tighten attaching bolts evenly. To complete installation, reverse removal procedure.

Removal, TR7 – 1) Raise and support vehicle, then disconnect battery. Remove gear shift lever assembly. Remove transmission tunnel cover, if equipped. Index mark and separate drive shaft from transmission. Disconnect entire exhaust system and remove those brackets that may interfer with removal process.

2) Disconnect speedometer cable and all electrical wires that are attached to transmission. Remove support tie-bar that attaches to rear mounting member and in front to support. Disconnect and remove restraint cable from bracket on transmission. Place a jack under oil pan to support engine.

3) Remove, in order, the following: engine rear stabilizer, transmission rear mount, starter, and upper clutch housing bolts. Remove wiring harness and slave cylinder, only disconnect slave cylinder if necessary. Take out remaining clutch housing mounting bolts and remove clutch housing and transmission as an assembly.

4) Separate clutch housing and index mark pressure plate and flywheel. Remove pressure plate bolts evenly and alternately until all pressure is off clutch disc.

Installation – To install, reverse removal procedure and note the following: Ensure index marks on clutch assembly match with those on flywheel. Make sure engine rear stabilizer is properly adjusted. Adjust restraint cable as follows: Loosen front nut at rear of cable, then tighten rear nut to 5-8 ft. lbs. (.69-1.1 mkg) to settle cable into position. Loosen rear nut and holding cable with fingers, position rear nut so a clearance of .031-.063" (.79-1.6 mm) clearance exists between cable and bracket, tighten front nut.

CLUTCH MASTER CYLINDER

Removal – Drain hydraulic system. Pull back rubber boot and remove clevis pin securing master cylinder push rod to clutch pedal.

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

CLUTCH SLAVE CYLINDER

Removal – Rasie vehicle and place on safety stands. Clear dirt from area around slave cylinder. Disconnect hydraulic line and drain fluid. Plug hydraulic line openings. On TR6 models only, disconnect push rod clevis pin. Remove mounting bolts (nuts) and remove cylinder.

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

CLUTCH RELEASE BEARING

Spitfire – With transmission assembly removed, remove clutch fork pivot pin and remove fork and bearing assembly. Drive pins from fork and remove bearing and sleeve. Using a suitable press, remove bearing from sleeve. To install, reverse removal procedure. Lubricate all bearing contact points with multi-purpose grease.

Removal, TR6 – With transmission removed, clip safety wire from pinch bolt and remove bolt. Remove shaft, anti-rattle spring and fork.

Installation – To install, reverse removal procedure and note. Narrow end of anti-rattle spring faces away from fork. Release bearing anti-rattle pin must be in 12 o'clock position above input shaft. Make sure flat, machined surfaces of clutch fork are on engine side of shaft.

TRIUMPH (Cont.)

TR7 – With transmission removed, use suitable tool (ST 1136) and unscrew clutch release lever pivot bolt from clutch housing. Pull release lever, complete with pivot bolt and release bearing. To install, reverse removal procedure making sure fork and collar engage evenly.

PILOT BUSHING

Bushing to support transmission input shaft is located in flywheel end of crankshaft. If bushing is worn or damaged, remove using a suitable puller. Lubricate new bushing with multi-purpose grease and install using a suitable driver.

OVERHAUL

CLUTCH MASTER CYLINDER

Disassembly, TR6 & Spitfire – 1) Slide rubber boot up push rod sufficiently and remove snap ring, push rod, and washer. Remove piston, spring and seal assembly. NOTE – *Removal is made easier if compressed air is applied to fluid outlet port of cylinder.*

2) Straighten prong of spring retainer and remove retainer and spring from piston. Remove valve stem from keyhole slot in retainer. Remove valve seal and spacer from valve stem. Remove seal from piston.

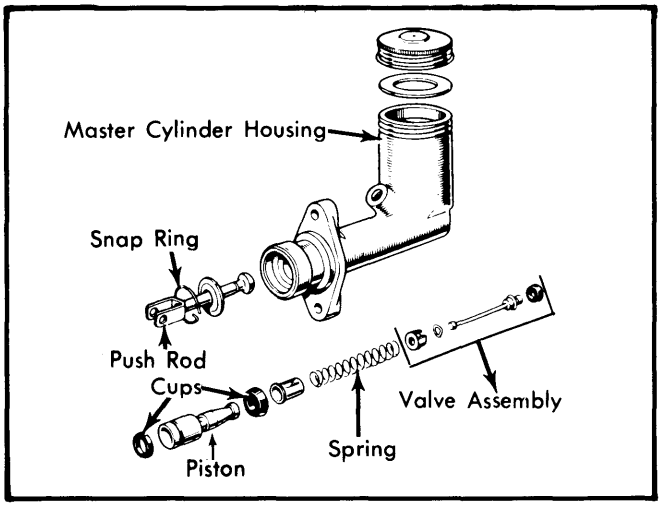

Fig. 1 Explode View of TR6 Master Cylinder

Reassembly – 1) Install a new seal on valve stem, and install spacer, spring, and spring retainer. Install a new seal on piston with seal lip facing spring. Install spring retainer on piston and carefully depress retainer prong.

2) Lubricate bore of cylinder with clean brake fluid and install seal assembly, spring and piston. Install a new rubber boot on push rod, and install push rod, washer, and snap ring into cylinder. Slide rubber boot into position on cylinder.

Disassembly, TR7 – Slide dust boot free of mounting flange and with push rod exposed, disengage snap ring. Remove boot and push rod. Withdraw piston and rear cup seal, front cup, seal and washer, spring and spring retainer.

Inspection – Discard dust boot, front and rear cups, then clean remaining components in clean beake fluid. Inspect cylinder bore and piston for scoring or damage, replace components as necessary.

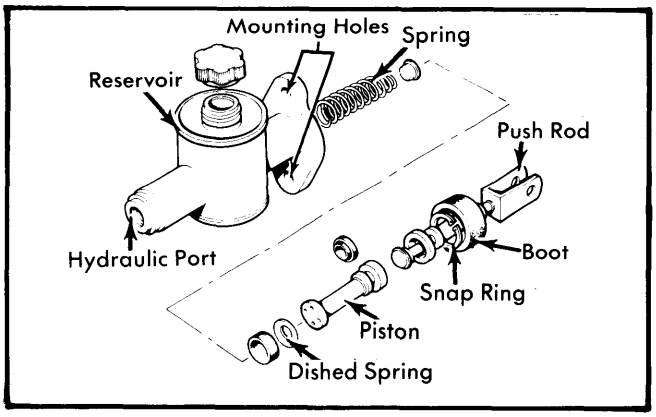

Fig. 2 Exploded View of TR7 Master Cylinder

Reassembly – Fit a new rear cup to piston. Lubricate cylinder bore with clean brake fluid. Insert large end of spring, with spring retainer, into cylinder bore. Fit dished spring and piston, complete with rear cup, into bore. Install new dust boot and push rod, then fit snap ring.

CLUTCH SLAVE CYLINDER

Disassembly – Remove rubber dust seal and push rod. Remove snap ring (if equipped), and withdraw piston, seal, cup filler (if equipped), and spring. Thoroughly clean all parts in brake fluid and inspect for wear or damage; replace parts as necessary.

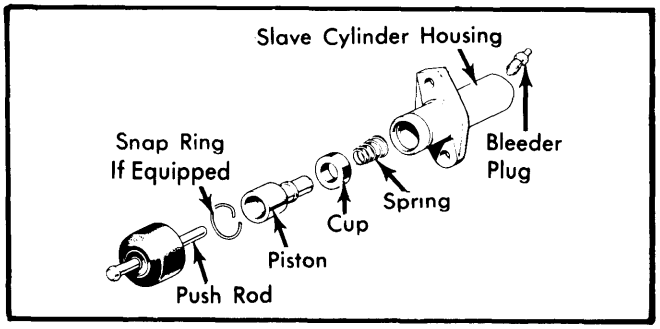

Fig. 3 Exploded View of Clutch Slave Cylinder (TR7 Shown, Others Similar)

Reassembly – Fit a new cup to piston. Lubricate cylinder bore with brake fluid. Insert smaller diameter of spring to piston and install spring (large end first), piston and cup into cylinder. Refit rubber dust boot.

ADJUSTMENT

HYDRAULIC SYSTEM BLEEDING

1) Remove filler cap from master cylinder reservoir and fill with hydraulic fluid. Attach a rubber hose to slave cylinder bleeder screw, and insert opposite end of hose into a container partially filled with hydraulic fluid.

2) Loosen bleeder screw approximately one-half turn. Push clutch pedal to bottom of stroke and allow to return unassisted. Continue operation until fluid being discharged into container is free of air bubbles.