TRIUMPH

Spitfire
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) – 1) Disconnect battery. Remove gear shift lever. On models equipped with overdrive, pry off knob cap and disconnect wires. Remove knob.

2) Remove transmission tunnel cover and propeller shaft cover. Disconnect propeller shaft and speedometer cable. Remove clutch slave cylinder, raise vehicle, and drain transmission.

3) Support engine. Disconnect exhaust pipe bracket and remove rear mounting nuts from transmission. Remove cable from clutch housing, remove lower housing bolts, and lower vehicle.

4) Remove starter bolts. Disconnect wires from transmission. Remove upper clutch housing bolts and remove transmission. Separate transmission and clutch housing.

Installation – Reverse removal procedure and note the following: Use clutch alignment tool to center clutch assembly. Tighten clutch bolts evenly and gradually.

Removal (TR7) – 1) Raise and support vehicle. Disconnect battery ground cable. Remove gear shift lever assembly. Index mark and separate propeller shaft from transmission. Disconnect exhaust pipe at intake manifold (pipe may have to be comoletely removed).

2) Disconnect speedometer cable and all electrical wires attached to transmission. Remove starter heat shroud. Place a jack (with wood block) under oil pan. Remove slave cylinder without disconnecting fluid line. Hang cylinder out of way.

3) Remove 2 bolts holding oil pan plate to clutch housing. Remove 4 nuts keeping transmission rear crossmember to body. Slightly lower engine. Remove starter.

4) Remove nuts and bolts mounting clutch housing to engine. Support transmission with appropriate jack. Slide back transmission/clutch housing assembly and remove from vehicle.

5) Index mark pressure plate with flywheel. Loosen 6 pressure plate mounting bolts evenly (a few turns at a time). Slide out pressure plate with clutch disc.

Installation – To install, reverse removal procedure and note following: Ensure index marks on pressure plate align with those on flywheel. Use clutch aligning tool to center clutch disc.

CLUTCH MASTER CYLINDER

Removal – 1) Disconnect hydraulic line and drain fluid. Plug open port and line.

2) Disconnect clevis mounting push rod to clutch pedal.

3) Remove 2 bolts (Spitfire) or 2 nuts (TR7) mounting master cylinder to bracket (Spitfire) or bulkhead (TR7).

Installation – Reverse removal procedure and bleed hydraulic system.

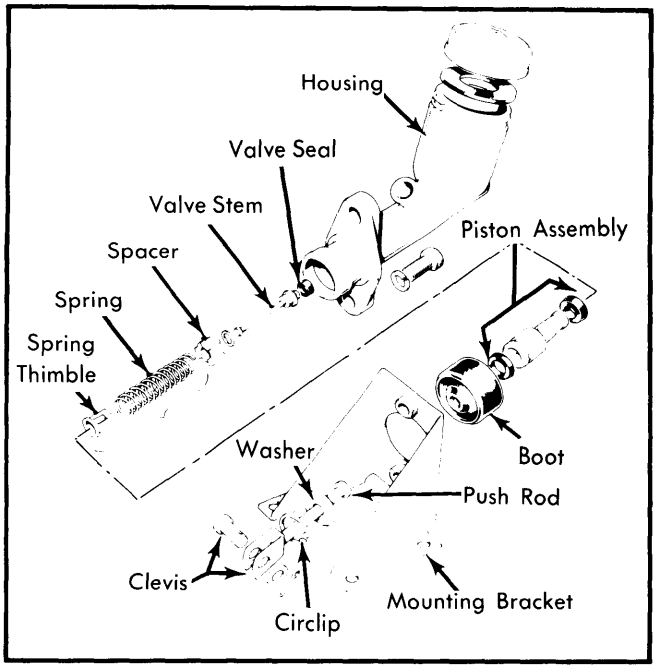

Fig. 1 Exploded View of Spitfire Clutch Master Cylinder – Note How Master Cylinder is Mounted

CLUTCH SLAVE CYLINDER

Removal – Raise and support vehicle. Disconnect and plug hydraulic line and remove slave cylinder.

NOTE – *On TR7 models, do not move operating rod in a forward direction. Forward movement may cause release lever to dislodge. Transmission removal would then become necessary for installation of release lever.*

Installation – Reverse removal procedure and note:

- On Spitfire models, centralize push rod in housing before sliding slave cylinder in position.
- On TR7 models, slave cylinder must be mounted with bleed screw ABOVE fluid pipe.
- Bleed hydraulic line.

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.

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.

OVERHAUL

CLUTCH MASTER CYLINDER

Disassembly (Spitfire) – 1) Drain fluid and remove master cylinder. Pull back rubber boot and release circlip, then pull out push rod and washer.

2) Apply compressed air to fluid inlet to remove piston and spring assembly. Remove thimble and spring from piston assembly, then disengage valve stem from slot in thimble. Remove seal spacer from valve stem and seals from valve and piston.

Reassembly – Reverse removal procedure, using new rubber seals and lubricating parts with brake fluid.

Disassembly (TR7) – 1) Remove master cylinder. Pull up rubber boot and remove snap ring. Slide out push rod and washer.

2) Pull out piston, spring, and seal as an assembly. It may be necessary to use air pressure to force out assembly.

3) Straighten spring thimble prong, then remove thimble and spring from piston. Disengage valve stem from slot in thimble. Slip spacer off valve stem. Remove valve seal.

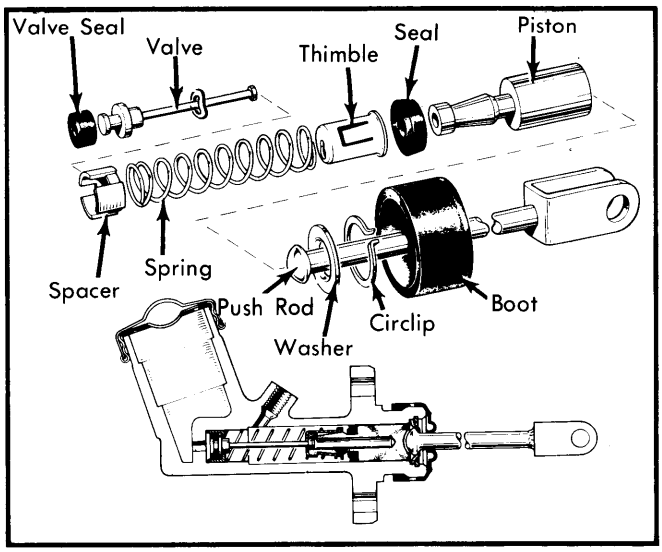

Fig. 2 Exploded View of TR7 Master Cylinder

Reassembly – 1) Fit spacer, spring and thimble to valve stem. Fit new seal to piston with lip facing spring. Put spring thimble on piston and depress thimble prong.

2) Lubricate master cylinder bore with brake fluid and slide seal assembly, spring and piston into place. Reverse disassembly procedure to assemble remaining components.

CLUTCH SLAVE CYLINDER

Disassembly – Remove slave cylinder and pull off dust cover. Remove circlip, then take out piston, seal and spring.

Inspection – Look at cylinder bore and piston for signs of damage. Replace either or both parts if wear is excessive.

Reassembly – Reverse removal procedure, lubricating parts with brake fluid and fitting small end of spring to piston.

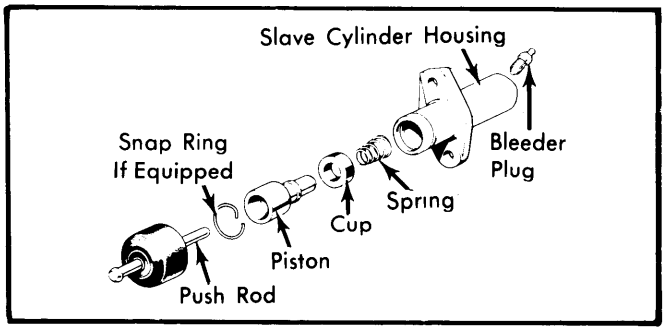

Fig. 3 Exploded View of Clutch Slave Cylinder (TR7 Shown, Spitfire Similar)

ADJUSTMENT

HYDRAULIC SYSTEM BLEEDING

1) Fill master cylinder. Attach bleed tube to bleed valve on slave cylinder. Submerge free end of tube in container of brake fluid.

2) Slowly depress pedal to force air out. Close bleed valve and let pedal rise unassisted. Check that fluid level does not drop too low, and repeat until no more air bubbles are visible.

TIGHTENING SPECIFICATIONS

Application	Ft. Lbs. (mkg)
Clutch Assembly-to-Flywheel	22 (3.0)
Clutch Housing-to-Transmission	32 (4.4)
Slave Cylinder-to-Clutch Housing	21 (2.9)