SAAB

99

DESCRIPTION

Clutch is dry, single plate, diaphragm spring type. Primary components are: Disc, pressure plate assembly, and release bearing. Release bearing is a special design ball bearing with elongated outer ring which presses directly against diaphragm when clutch pedal is let out. Clutch operation is hydraulic. Clutch pedal operates on a master cylinder which is connected to slave cylinder. Slave cylinder is located inside clutch cover around input shaft. Slave cylinder acts directly on release bearing. Clutch adjustment is automatic.

REMOVAL & INSTALLATION

CLUTCH ASSEMBLY

Removal – 1) Drain coolant.

2) Remove hood.

3) Disconnect battery ground cable.

4) Disconnect wiring harness from fan housing and disconnect following electrical leads:
- Ignition coil.
- Oil pressure switch.
- Temperature switch.
- Headlight wiper motor.
- Thermal fan switch (located on radiator).

5) Disconnect radiator hoses.

6) Remove grille.

7) Remove radiator.

8) Remove clutch cover assembly (bell housing).

9) Fit special spacer 8390023 (or equivalent) between cover and diaphragm spring.

NOTE – *Clutch pedal may need to be depressed during this operation.*

10) Dislodge lock ring. Remove seal cap from input shaft.

11) Remove plastic propeller "O" ring from input shaft.

12) Pull out input shaft using slide hammer (8390270) and universal adaptor (8390015).

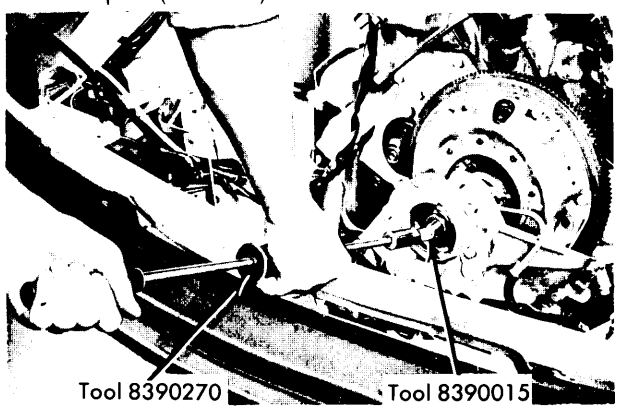

Fig. 1 Pulling Input Shaft Using Special Tools

13) Remove 3 bolts securing slave cylinder guide sleeve to primary gear case.

14) Remove bolts mounting clutch pressure plate and remove together:
- Pressure plate.
- Disc.
- Slave cylinder (guide sleeve).
- Release bearing.

NOTE – *Slave cylinder does not need to be disconnected.*

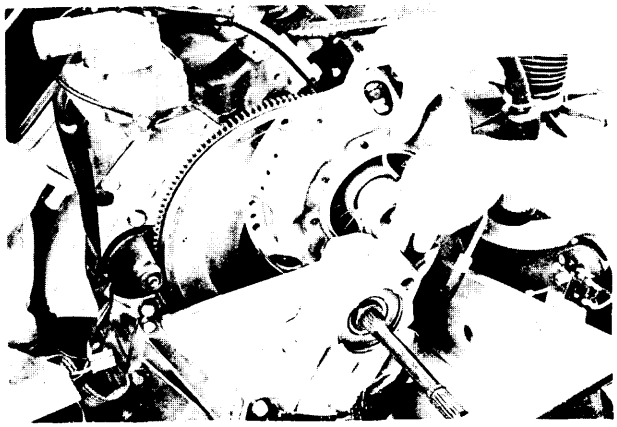

Fig. 2 Lifting Out Clutch Assembly – Illustration Shows Relationship of Clutch Assembly to Surrounding Engine Components

NOTE – *Before beginning clutch installation, make sure input shaft seal located in seal retainer inside slave cylinder is in good condition.*

Installation – 1) Install collective clutch parts and loosely install two clutch pressure plate bolts.

NOTE – *Make sure:*
- Diaphragm spring does not damage slave cylinder sleeve because piston may sieze.
- Hardened side of release bearing faces diaphragm spring.

2) Bolt slave cylinder to primary gear casing.

3) Install input shaft.

4) Fit plastic propeller and "O" ring to input shaft.

5) Fit sealing cap and "O" ring at input shaft.

6) Tighten clutch assembly (pressure plate) to flywheel.

7) Depress clutch pedal and remove spacer.

NOTE – *DO NOT depress clutch pedal any further than necessary. Seal lip may be pressed to far resulting in a hydraulic leak.*

8) Install remaining components in reverse of removal procedure.

CLUTCH MASTER CYLINDER

Removal – 1) Separate cylinder hydraulic line.

SAAB (Cont.)

2) On left side, remove screen under instrument panel. This provides access to master cylinder push rod and mounting nuts.

3) Remove clevis pin holding push rod to clutch pedal.

4) Remove mounting nuts under instrument panel. These nuts hold master cylinder to bulkhead.

5) Pull off master cylinder inlet hose (from reservoir) and position so fluid does not leak.

Installation – Reverse removal procedure and bleed hydraulic system.

CLUTCH SLAVE CYLINDER

NOTE – *Slave cylinder removal is accomplished during clutch assembly removal. See Clutch Assembly Removal in this article.*

OVERHAUL

CLUTCH MASTER CYLINDER

Disassembly – Pull back sealing bellows and remove retaining ring. Remove push rod and washer. Remove piston, convex washer, piston seal, and spring. Inspect cylinder bore for wear or damage. Replace complete assembly if cylinder is worn or damaged. Replace seal if worn or swollen.

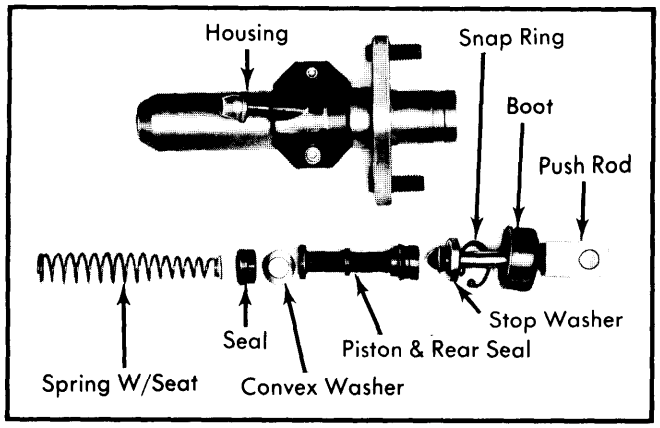

Fig. 3 Exploded View of Clutch Master Cylinder This is Same Cylinder That Has Been Used in Earlier Years

Reassembly – Install return spring and spring retainer. Lubricate piston and seals with Girling Rubber Grease No. 3 .

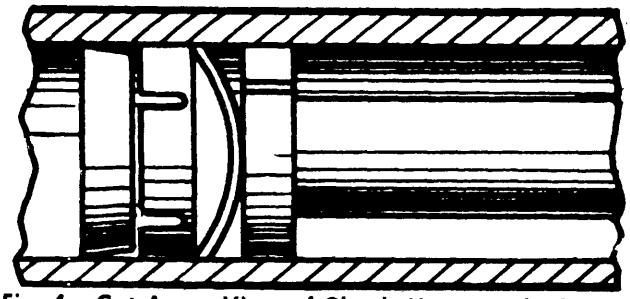

Fig. 4 Cut-Away View of Clutch Master Cylinder Bore Showing Convex Washer Correctly Installed. Convex Side MUST Face Master Cylinder Piston

Install seals, convex washer and piston. Install push rod followed by washer and retaining ring. Install sealing bellows.

CLUTCH SLAVE CYLINDER

Disassembly – 1) Remove clutch release bearing from slave cylinder.

2) Set slave cylinder with release bearing end facing up. Press cylinder sleeve out.

3) Remove "O" ring from sleeve.

4) Remove piston and lip seal.

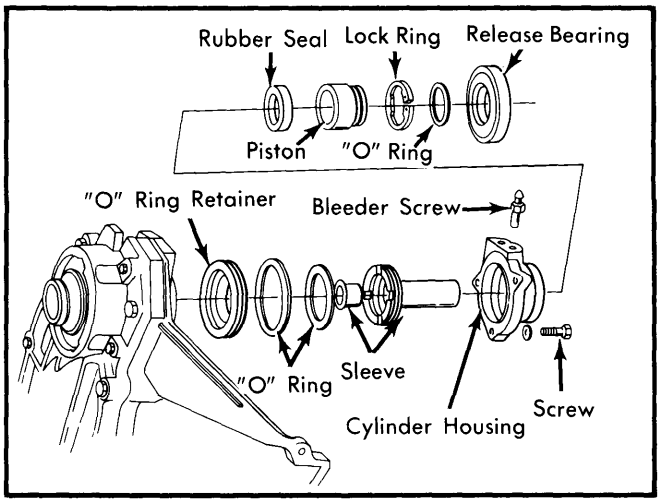

Fig. 5 Exploded View of Clutch Slave Cylinder New Design Slave Cylinder was Introduced in Early 1976 Models

NOTE – *Before beginning reassembly, lightly coat lip seal and piston (not "O" ring) with Caster Rubber Grease (or equivalent).*

Reassembly – 1) Fit "O" ring to sleeve flange.

2) Slide seal lip on sleeve.

3) Coat sleeve flange with brake fluid. Insert sleeve into cylinder. Push seal lip part way into cylinder.

4) Guide sleeve and cylinder together by pushing on piston until lock rings and "O" ring are fitted.

5) Place slave cylinder on support and seat sleeve into cylinder.

6) Fit release bearing to piston.

ADJUSTMENT

HYDRAULIC SYSTEM BLEEDING

1) Connect a ¼" hose to slave cylinder bleeder screw, and place opposite end in a container partially filled with hydraulic fluid. Fill master cylinder reservoir with hydraulic fluid. Open bleeder screw on slave cylinder ½ turn.

2) Place a coolant system tester over filler opening of master cylinder. Pump tester until all air has been removed from system. Close slave cylinder bleeder screw and check to see that all air has been expelled by depressing clutch pedal.