

SAAB

99
900

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) On 99 models, drain coolant, remove hood and disconnect negative battery cable. Disconnect wiring harness from fan housing and the following electrical leads: ignition coil, oil pressure switch, temperature switch, headlight wiper motor and thermal fan switch on radiator.

2) Disconnect radiator hoses. Remove grille and radiator. On all models, remove clutch housing cover, and install suitable spacer (8390023) between cover and diaphragm spring.

NOTE – Clutch pedal must be depressed to fit spacer.

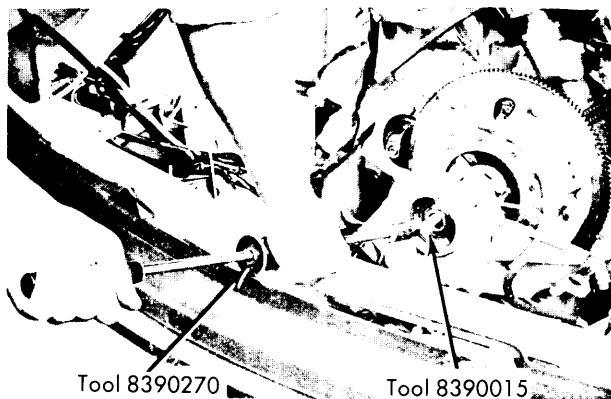


Fig. 1 Pulling Input Shaft Using Special Tools

3) Remove retaining ring and seal cap from input shaft. Remove plastic propeller from input shaft. On 99 models, pull out input shaft using slide hammer (8390270) and universal adapter (8390015). On 900 models, insert an M8 bolt into clutch shaft and install tool 8393175. Withdraw the shaft as far as possible.

4) Remove slave cylinder retaining bolts. Remove pressure plate mounting bolts and remove pressure plate, clutch disc, slave cylinder (hydraulic line attached) and release bearing as an assembly.

NOTE – Make sure diaphragm spring does not damage slave cylinder sleeve.



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 is in good condition. Seal is located inside slave cylinder in primary gear case. Seal forms a direct bond with sealing surface of input shaft.

CAUTION – Make sure diaphragm spring does not damage slave cylinder sleeve during installation.

Installation – 1) Reassemble clutch assembly and loosely install two pressure plate retaining bolts.

NOTE – Hardened side of release bearing faces diaphragm spring.

2) Bolt slave cylinder guide sleeve to primary gear casing. Install input shaft and make sure it engages clutch disc splines and bearing. Install plastic propeller, seal cap and retaining ring to input shaft.

3) Tighten clutch assembly (pressure plate) to flywheel. Depress clutch pedal and remove spacer. With pedal depressed, install sliding lock ring toward slave cylinder. Complete installation by reversing removal procedure.

NOTE – DO NOT depress clutch pedal farther than necessary. Seal lip may be pressed too far, causing a hydraulic leak and seal damage.

CLUTCH MASTER CYLINDER

Removal & Installation – Remove hydraulic line at rear of cylinder. From under instrument panel in vehicle, remove access cover on left side. Remove push rod pin at clutch pedal. Remove master cylinder retaining nuts from firewall. From engine compartment, remove fluid supply line from top of cylinder and position so fluid does not leak. Remove master cylinder. To install, reverse removal procedure and bleed system.

CLUTCH SLAVE CYLINDER

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

SAAB (Cont.)

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.

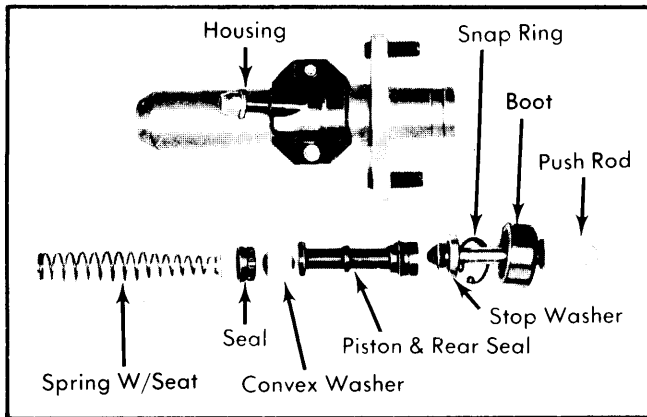


Fig. 3 Exploded View of Clutch Master Cylinder

Reassembly — Install return spring and spring retainer. Lubricate piston and seals with Girling Rubber Grease No. 3. Install seals, convex washer and piston. Install push rod followed by washer and retaining ring. Install sealing bellows.

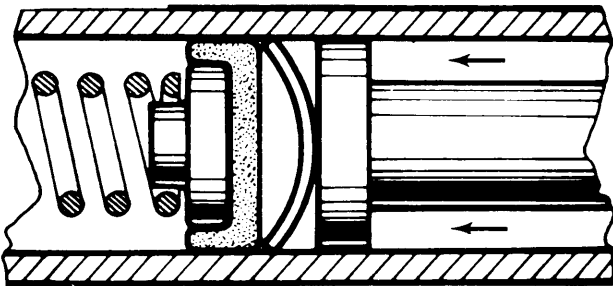


Fig. 4 Cut-Away View of Clutch Master Cylinder Bore Showing Convex Washer Correctly Installed. Convex Side MUST Face Master Cylinder Piston

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.

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.

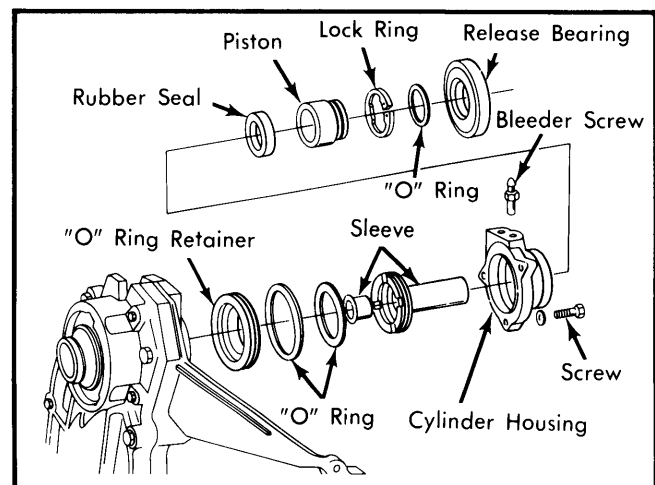


Fig. 5 Exploded View of Clutch Slave Cylinder

ADJUSTMENT

HYDRAULIC SYSTEM BLEEDING

1) Connect a 1/4" 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 1/2 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.