DELCO-MORAINE SINGLE DIAPHRAGM

Chevrolet
GMC
Jeep

DESCRIPTION

A combined vacuum-hydraulic unit which uses a combination of intake manifold vacuum and atmospheric pressure to provide power assist. Reserve vacuum supply and vacuum check valve allow several brake applications, with vacuum assist, after engine has stopped. Unit is composed of two main sections: vacuum power cylinder and dual master cylinder. Vacuum power cylinder contains power piston assembly, which houses control valve, reaction mechanism, and power piston return spring.

REMOVAL & INSTALLATION

POWER BRAKE UNIT

Disconnect push rod from brake pedal. Disconnect vacuum hose from vacuum check valve. Remove nuts holding master cylinder to power unit and move master cylinder aside. DO NOT disconnect hydraulic lines. Remove nuts holding power unit to dash panel. On Jeep "CJ" and Scrambler models, remove nuts holding bellcrank to dash panel. On all models, remove power unit from vehicle, noting that On Jeep "CJ" and Scrambler models, power unit and bellcrank are removed as an assembly. To install, reverse removal procedure.

OVERHAUL

POWER BRAKE UNIT

NOTE – *Jeep Corp. does not recommend overhaul of this unit. It is serviced as an assembly.*

Disassembly – **1)** Scribe marks on housings for reassembly reference and remove boot, front housing seal, vacuum check valve and grommet.

2) Attach power unit front housing to holding fixture base (J-22805-1) and clamp base in vise with power section up.

3) Place a spanner wrench (J-9504) on studs of rear housing. Press down and turn counterclockwise to unlock housings.

NOTE – *Do not put pressure on plastic power piston extension.*

4) Remove power piston bearing, return spring and power piston group. Remove piston rod and reaction retainer.

CAUTION – *Use care not to damage power piston assembly when removing reaction disc. Reaction disc must be replaced.*

5) Use awl, ice pick or similar tool to remove reaction disc. Remove reaction piston.

6) Grasp assembly at outside edge of diaphragm support and diaphragm. Hold pushrod down against a hard surface. Use a slight force or impact to dislodge diaphragm retainer.

NOTE – *Do not disassemble power pushrod assembly.*

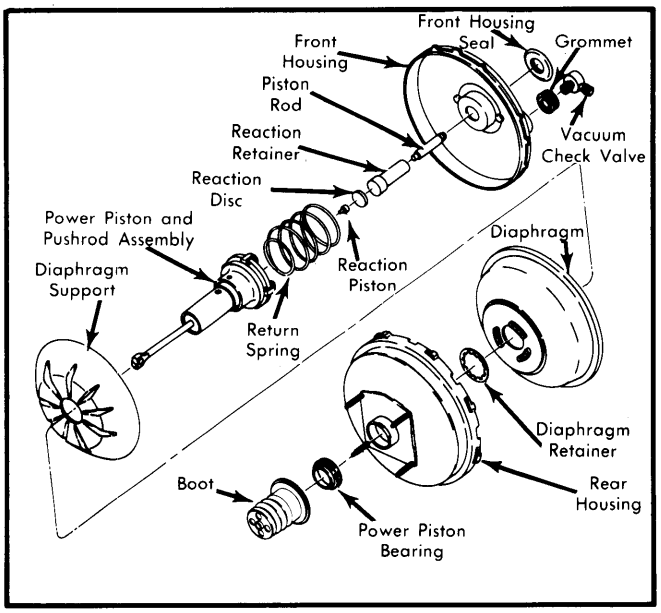

Fig. 1 Exploded View of Typical Delco-Moraine Single Diaphragm Power Brake Unit

Cleaning & Inspection – Clean all metal, plastic, and rubber parts in denatured alcohol. Blow out all passages, orifices, and valve holes with clean, dry air. Air dry all parts. Slight rust on inside of housings can be polished with crocus or emery cloth. There should be no nicks, cuts, or abnormalities of any rubber part. If in doubt about its condition, replace the part.

Reassembly – **1)** Lubricate inside diameter of diaphragm lip with silicon lubricant and fit in diaphragm support.

2) Install diaphragm and support over power piston and pushrod assembly, support side first. Install new diaphragm retainer and seat using seating tool (J-28458) and a plastic hammer.

3) Install reaction piston, new reaction disc, reaction retainer and piston rod.

4) Attach holding fixture to front housing and place in vise. Install power piston return spring with white end to front housing.

5) Insert power piston assembly pushrod end through rear housing and place on front housing and return spring.

6) Align scribe marks with spanner on studs of rear housing. Press down and turn clockwise to lock 2 housings.

DELCO-MORAINE SINGLE DIAPHRAGM (Cont.)

NOTE – *Assembly can be aided by connecting a vacuum source to booster.*

7) Stake 2 housing tabs into sockets with screwdriver. Stake at 2 tabs 180° apart.

8) Lubricate inside and outside diameters of grommet and front housing seal and install seal, grommet, vacuum check valve and boot.

ADJUSTMENT

PUSH ROD ADJUSTMENT

NOTE – *Chevrolet and GMC production push rod is not adjustable. If production rod is reused, gauging is to check proper assembly. If service push rod, which is adjustable, is used to replace production rod, gauging is to set correct rod length.*

Chevrolet & GMC – Place suitable gauge (J-22647) over piston rod in a position which will allow gauge to be slipped to left or right without contacting studs. Center section of gauge has two levels. Piston rod should always contact longer section (lower level), and never contact shorter section (higher level). Any variation beyond these two limits would require replacement of production piston rod or adjustment of service piston rod.

Jeep – Piston rod of replacement units is preset at factory and require no field adjustment.

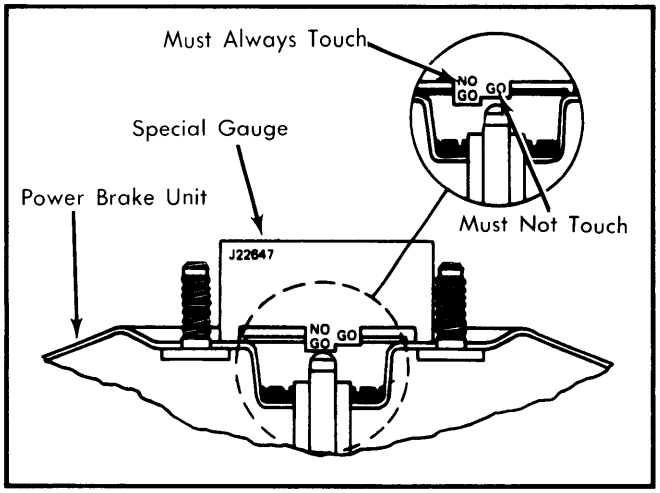

Fig. 2 Checking Piston Rod Height Nonadjustable Production Rod Shown

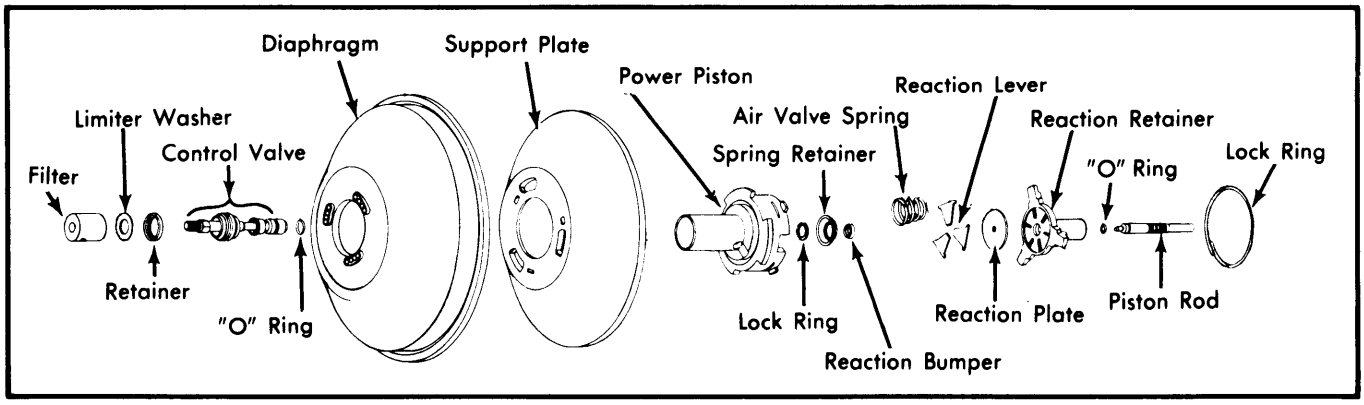

Fig. 3 Exploded View of Power Piston Assembly