

Fig. Mb.1

A schematic diagram showing the principle of operation and the main components of the vacuum servo unit. The shaded area represents brake fluid

Section Mb.1

SERVO UNIT (Lockheed Type 6)

Operation

Refer to Fig. Mb.1. The vacuum-operated servo unit consists of three main components, namely the vacuum cylinder (1), the air valve assembly (2), and the slave cylinder (3) which is connected in the hydraulic circuit between the main master cylinder and the wheel cylinders. Under light braking, fluid is allowed to pass directly to the wheel cylinders via the hollow centre of the slave piston (4) and no braking assistance is obtained; fluid pressure acting on the air valve piston (5) closes the diaphragm (6), thus separating the chamber behind the main servo diaphragm (7) from the one in front. Under heavier braking, further movement of the air valve piston opens the air valve and allows air to enter the chamber behind the main diaphragm, destroying the vacuum. The central rod (9) is thus pushed to the left, sealing the hollow centre of the slave piston and pushing it down its bore, so increasing the fluid pressure at the wheel cylinders. When the brake pedal is released, the pressure beneath the air valve piston is destroyed, the diaphragm (6) re-opens and the air valve closes. Via the non-return valve (10), a suspended vacuum is re-created around the main diaphragm. Under the action of the spring (11), the diaphragm and push-rod, and thus the slave piston, are returned to their original positions, and the pressure in the wheel cylinders is lost.

Mb.2

Removing

- (1) From beneath the right-hand front wing, pull the heater hose off the intake unit, and then withdraw the intake unit from inside the engine compartment.
- (2) Disconnect the vacuum pipe from the servo unit.
- (3) Remove the securing bracket from the end of the servo unit, disconnect the brake pipes and plug the holes.
- (4) Remove the nuts securing the servo to the bracket and withdraw the unit.

Dismantling

Air valve assembly (Fig. Mb.2)

- (5) Grip the slave cylinder in a soft-jawed vice with the air valve uppermost and disconnect the rubber pipe from the connection on the end cover.
- (6) Remove the screws securing the plastic air valve cover to the valve housing, lift off the cover complete with the air valve sub-assembly. Suspect functioning of the air valve must be remedied by fitting a replacement air valve cover assembly comprising cover, filter, and air valve as an assembled part of the relevant repair kit.
- (7) Remove the rubber diaphragm and its plastic support to obtain access to valve housing securing screws. Remove the three screws and take off the housing and joint washer.
- (8) Seal one of the slave cylinder fluid ports with a finger, apply a low-pressure air-line to the remaining port and blow the air control valve piston from its bore. Remove the rubber cup from the valve piston.

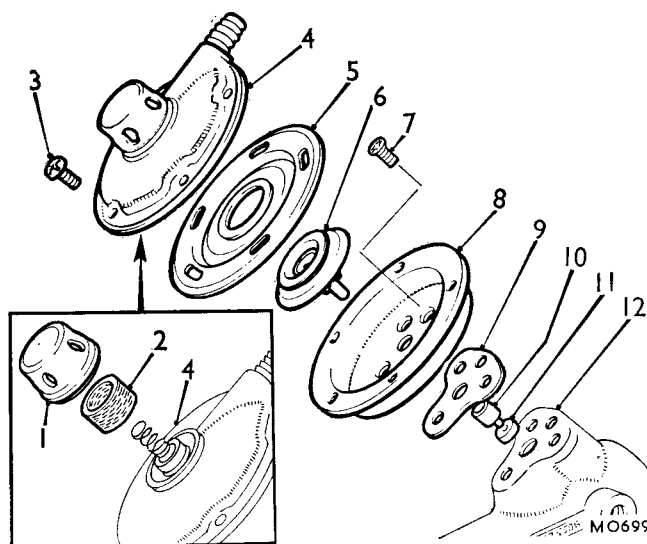


Fig. Mb.2

The air valve assembly components and piston

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|-------------------------------------|-----------------------------------|
| 1. Domed cover for filter. | 7. Valve housing securing screws. |
| 2. Air filter. | 8. Valve housing. |
| 3. Air valve cover securing screws. | 9. Joint washer. |
| 4. Air valve cover. | 10. Piston. |
| 5. Diaphragm. | 11. Piston cup. |
| 6. Diaphragm support. | 12. Slave cylinder. |