

Testing

The use of these tests will assist in diagnosis and will provide assurance after servicing, but the tests are not exhaustive and obviously cannot equal the quality of testing which is done in the factory by the specially designed equipment. If a Servo Unit gives cause for doubt it is always best to replace it by a factory-tested unit whenever possible.

It is assumed that any faults connected with the brake system, such as contamination, lack of adjustment, air in the system, fluid leaks etc., have been recognised and eliminated.

TEST 1

Connect up the hydraulic and vacuum pipes and bleed the system refer to Section 1, Page 1D1).

Start the engine and as the brake is applied, it should be possible to hear the 'hiss' of the air inlet and, with a hand on the centre of the front shell, feel the movement of the unit working. With the brakes held on there should be no 'hiss' from the air inlet

Unsatisfactory result on TEST 1

It means the unit is not working at all which could be caused by a lack of vacuum, possibly a faulty non-return valve, or a fault within the unit.

TEST 2

Run the engine for half a minute, switch off and leave for two minutes. Apply the brake and the Servo Unit should operate and the operation should be detected as described in Test 1.

Unsatisfactory result on TEST 2

It indicates leaking gaskets, air valve or rubber grommet. Run the engine, clamp the vacuum hose and repeat test. If satisfactory the non-return valve is faulty. To test for a leaking air valve run the engine and place the finger over the air inlet. If the suction is only slight the air valve is satisfactory and the leak is elsewhere.

TEST 3

Run the engine and apply the brake hard, and hold it for fifteen to twenty seconds. There should be no perceptible creep of the pedal. If there is, it indicates leaks or scored bores in the components. If the pedal pushes back the hydraulic connections may be reversed or there is a fault in the unit.

Unsatisfactory result on TEST 3

The source of the trouble can only be found by elimination. Check for leaks. If no leak of hydraulic fluid is evident clamp each hose successively and repeat test each time. Finally plug the master cylinder outlet and test. If creeping of the pedal is evident when the hoses are clamped and the pedal is solid when the master cylinder outlet is plugged, the Servo Unit is faulty.

These tests can be used to test a suspect Servo Unit before it is removed from the car.

Fault Finding

FAULT	CAUSE	ACTION
Hard pedal — apparent lack of assistance with engine running.	Lack of vacuum. Restricted hose. Blocked air inlet. Faulty output piston. Major fault in unit.	Check vacuum connections. Check hose and replace if necessary — fit parts from Service Kit — examine filter and air inlet — fit new unit.
Slow action of servo unit.	Blocked filter or restricted air inlet. Faulty vacuum hose or connections.	Change filter. Tighten vacuum connections. Replace hose.
Lack of assistance on heavy braking. Servo operating only when engine is running. Poor slow running of engine.	Air leak in servo low vacuum. Air leaks in gaskets, non-return valve grommet, rubber sleeve, diaphragm or air valve. Vacuum hoses or faulty non-return valve.	Check for vacuum leaks, if unsuccessful, dismantle and replace all parts in Service Kit. Tighten vacuum connections. Replace vacuum hose or replace non-return valve.
Loss of fluid.	Failure of a seal or seals in unit or scored bores.	Replace unit or fit a Service Kit of seals and gaskets.
Pedal pushes back.	Hydraulic inlet and outlet pipe wrongly connected, or fault in unit.	Re-connect pipes or dismantle unit.