

HOW TO FIT A BRAKE SERVO

Fuzz Townshend takes you through the process of bringing your classic's braking system into the 21st Century and helping to improve your safety



Those of us who drive classic cars may be quite used to unassisted braking systems.

However I'm sure an awful lot of us have leaped out of our modern boxes and into elderly chariots without making the necessary mental adjustment to avoid hairy moments associated with such time travel. Like approaching the queue of traffic ahead of us at the speed we'd be travelling at in the new motor while in fact being in the old 'un.

To avoid such frights and possibly extend our stay on earth, we can take evasive action long before we see the whites of the eyes of the driver in front.

It's not always necessary to go to the lengths we have – see *Afraid to Ask* – but a pneumatic servo replacement is a bone fide method of dragging your classic into the 21st Century.

How the servo works

Now, the science bit: brake servos use a vacuum activated diaphragm or piston to help increase the pedal effort to the braking system.

A pipe or hose is connected to a suitable union on the engine's inlet manifold. When the engine is running, a depression is created in the inlet manifold by the intake of air. This causes the piston or diaphragm in the connected servo chamber to be drawn towards the lower atmospheric pressure.

It's this mechanical movement that can be harnessed to provide us with the desired extra pedal effort. We decided to go down the servo route as other braking

ESSENTIAL KIT

- ✓ Brake pipe flaring tool,
- ✓ Brake pipe
- ✓ Brake unions
- ✓ Drill
- ✓ Taps
- ✓ Tap set
- ✓ Inlet manifold gasket (see don't forget)

DIFFICULTY



The main difficulty is positioning your servo, but once you've cracked that you'll fly through the job.

AFRAID TO ASK

Do I have to bother with all this servo malarkey to improve my brakes?

A simple brake pads/shoes replacement can transform a braking system.

Modern friction materials designed for classic car applications as manufactured by companies like EBC offer a vast increase in efficiency.

Another option is to replace older-design, single-piston brake calipers with those of newer multi-pot configurations. In fact, a combination of these fore and aft can be more than enough of an upgrade in themselves.

Where on earth do I put the servo?

The Vitesse's engine bay is by no means as cramped as some of those new-fangled machines. But when it came to finding a place to fit something of around the same proportions as a medium sized saucepan under the bonnet, a bit of head scratching went on.

RatSport kindly supplied us with a remote-acting servo for our conversion. Most servo cylinders are sleeved in stainless steel and are tested on pressure decay and fluid pressure equipment which includes vacuum/boost ratio output. A remote, rather than

direct, servo has the advantage of being able to be mounted almost anywhere in the car, the boot for instance. But I was keen to tuck it away in the engine compartment.

So there was now't for it but to do a bit of repositioning. I reckoned on there being a little space to be had if I removed, replaced or reshaped the heater box.

For the record I had to dismantle the heater box and remove the matrix for access. I then cut out a section of the box in order to allow the servo to be mounted onto the bulkhead/firewall and temporarily resealed the box up using, er... fabric-based, adhesive strip.

Brake pipe flaring tools: do I have to buy one?

Well, no. While it's an invaluable asset to any workshop, specialist hire shops will rent you one for as long as you need it. But with modest tools coming in at under £30 from companies such as Draper, Frost Auto, Autotec and Teng, your saving will be obsolete should you need to hire one more than a few times.

Alternatively, pop to your friendly neighbourhood garage and ask them to make up the brake pipe for a small consideration. It should take between five and ten minutes to do.