Compression testers are sold as everyday DIY tools, so they are priced accordingly. A good one costs between £15 and £20

Leakdown testers, bizzarely, are sold as boutique specialist equipment. OK, you need to have an air compressor if you want to operate one, but that's not a reason to rip people off - just because it *sounds* professional!

If you're lucky enough to locate leakdown tester, the cost might be anywhere between £100 for a cheapo and £350 for the comprehensive SYKES PICKAVANT kit. Ouch.

Here's how I made one out of ordinary bits and bobs. It cost me less than £10 for the whole thing, but what I enjoy more is the satisfaction that I didn't pay the exorbitant prices demanded by all the rip-off merchants. Enjoy:

Airpump with gauge: this one was part of a 6-piece kit worth £20 from Aldi.

I wouldn't trust the calibration of this gauge for tyres, but for this tester it's perfectly fine. Here we're only interested in pressure changes over time, not absolute values.

The 'pistol' even has a pressure-release button (handy when you've finished with a cylinder and

want to move to the next one)

As part of the kit this didn't cost more than a fiver

Compression tester from Halfords: old, used and abused.

Why go to all the hassle of drilling spark plugs and attaching high-pressure hoses at their back (that, lets face it, are going to leak anyway)

This brass attachment already fits in the spark plug hole, screws and seals as well. The hose was made to fit, and it's got an O-ring as well (better than a flat plug washer that has been tighened 50 times!)

Any old compression tester will do (of this design) It doesn't matter if the gauge is knackered, because we'll cut it off anyway.

Compression testers try to keep the pressure ***within*** the cylinder, while our leakdown tester will try to shove pressure ***into*** the cylinder.

Therefore the valve at the end of the plug will have

to be gutted out. Easy.

Hose connectors, male and female.

You could find shorter versions, these are some I found laying about in my garage.

You could even do without the snap-on connectors if you like, but it's neater and will make it simpler to screw the adaptor to the spark plug holes.

Here is the whole leakdown tester assembled.

Not bad for tenner's worth of gear...

Facom and Snap-On, eat your heart out

Below is an extract from the Supra forum, describing what to look for:

A cylinder leak-down test consists of pressurizing a cylinder with shop air and listening for leaks. fashion an adapter from an old sparkplug so you can hook up an air hose from your air compressor. rotate the engine until the

cylinder to be tested is at tdc compression. be sure to get it exactly on tdc. next slowly turn up the air pressure regulator on your air compressor or slowly open the supply valve to pressurize the cylinder. go slow because the engine may try to spin - keep hands and tools clear of belts, etc. once the cylinder is fully pressurized listen for air leaks. do not confuse a "seashell" sound for a leak. air leaks will be very distinct sound and you may even feel a rush of air. open the throttle and put your ear next to the intake opening. a rush of air indicates a leaking intake valve (bent valve? misadjusted or sticking?). next put your ear to the tailpipe opening, air rushing out means a leaking exhaust valve (bent, misadjusted, sticking, or burnt?). listen at the oil filler cap. you will hear a slight hiss of air. this is normal 'blow-by' leakage. how much is normal? well, many clt tools have a flow meter to measure how much air is coming by the piston rings and out thru the oil filler cap. usually less than 15%. you probably don't have an air flow meter to hook in-line with your air hose, so instead try to remember what each cylinder sounded like and compare them to one another. engines with good compression and good rings will sound even, slightly louder than a 'seashell' and you will not feel any air rush. lastly, take the radiator cap off and look for bubbles. bubbles indicate a blown head gasket or maybe a cracked cylinder head. doing a clt along with a compression test will tell you a lot about an engine's condition.