

## MGB WORKSHOP TOOLS & INSTRUMENTS

Working on your MG can be either a pleasure or a pain. After many years (my early ones) as a marine engineer and my hobby of building race cars, I have found that having the appropriate tools and equipment can make the task easier and rewarding.

Likewise, having the right tools available saves so much time from having to either visit a friend to borrow tools or your local tool merchant which is invariably shut – because you're working on the weekend!

And please, have spare batteries available for all electrical instruments!

Accordingly I list below what I think are the essential instruments, tools and equipment. Note that many of the specialist instruments are available on ebay at ridiculously cheap prices,

### 1. My wish list

This "wish list" can be overlooked if you plan your work accordingly so that the work can be done when the specialised equipment can be borrowed or hired.

- Air compressor, air line and air tools. The Bunnings Ryobi Airwave 50L 2.0HP Air Compressor looks good at about \$150. Add a hose & fittings kit, air gun and other accessories for about another \$250.00.
- In lieu of the air compressor, an "air duster" can from Office Works will suffice to clean out carburettor bowls, jets etc. Pricy (~\$9.00) but essential.



- Small gasless **MIG** welder – the one below was \$150 on Ebay



Please don't try to use a "stick" welder on your MG you will just burn through body panels! Remember to disconnect both positive and negative terminals on the battery.

## 2. Safety Equipment

- A portable electric safety switch will protect you when using power tool on your car. At \$80.00 from Bunnings, it's a life saver.



- 240V **fluorescent** work light. Be careful here, the fluorescent light frequency may coincide with the engine fan blade rpm making it appear to be still, this concept is used for timing lights.

## 3. Personal protective Equipment

- First aid kit – also have one in your car!
- Fire extinguisher, minimum 4.5kg Dry Powder, anything smaller is a waste of time and money. You should also have one (1.0kg) in your car.
- Safety glasses.
- Mechanic's gloves.
- Box of Nitrile rubber gloves – the same as Ed China wears on the Foxtel TV programme "Wheeler Dealers"

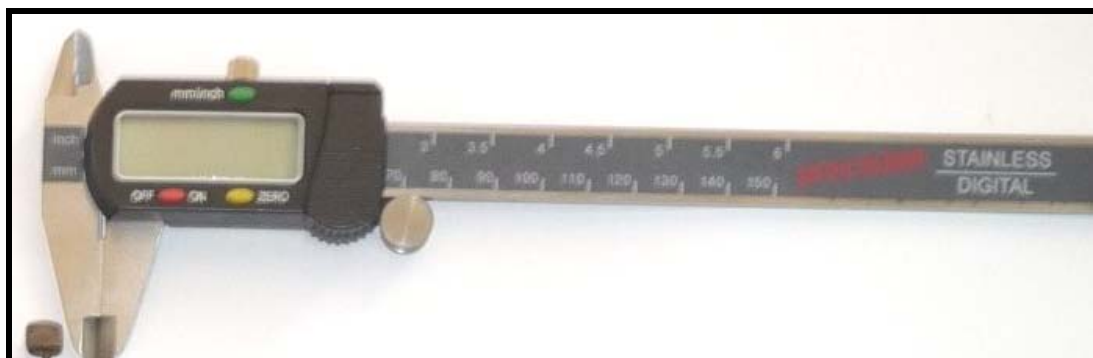


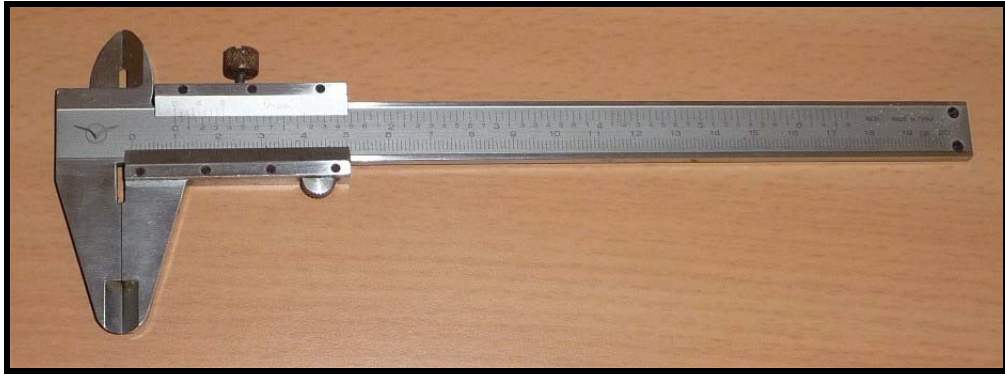
- Welding visor and gloves.

## 4. Instruments

- **Digital or Vernier Calipers**

From ebay





**Vernier Calipers**

**Button battery AG12**

- **150mm and 300mm steel rulers**
- **Air Velocity meter – see the paper on SU tuning.**

Both of these have temperature readings so you can calculate the mass air flow through the 40mm (1 ½”) SU choke body.



Button Battery CR2032 3v



Button Battery CR2032

- **Multimeter**

From ebay



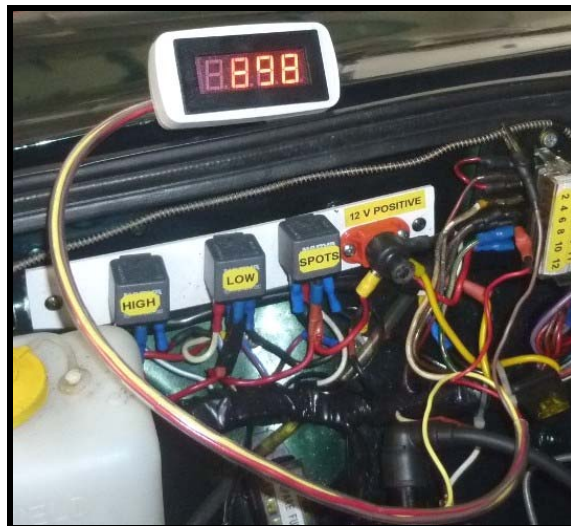
12v 23A battery

- **Timing light**

I have modified this one so that power can be picked up from a cigarette lighter / accessory socket in the engine bay.



- **Engine Bay Tachometer**



## 5. Lifting & Support equipment

- Sturdy workbench.
- 100mm (4") engineer's vice.
- Hydraulic trolley jack – 1.5 tonne capacity.
- Four 1.0 tonne capacity axle stands.
- Bottle jack 1.0 tonne capacity – useful for supporting / raising components such as the front suspension spring pan or rear spring bracket whilst removing a damper.
- Two wheel chocks – with abrasive surfaces. The rubber section can be purchased at Clark Rubber. Note the reflective tape being anti-slip stair nose tape.



## 6. Power Tools

- 3/8" 240v drill
- 3/8" cordless drill.
- Right angle drive attachment.
- 4" angle grinder with grinding wheels and a diamond tipped cutting wheel.

## 7. General Tools

- Full set of 1/4" to 7/8" Imperial (inch) sockets with ratchet lever and extension rods.
- Full set of 1/4" to 7/8" Imperial (inch) open ended / ring spanners.
- Full set of 6mm to 24mm metric sockets with ratchet lever and extension rods
- 34mm (steel) socket for rear wheel nuts.
- Full set of 6mm to 20mm metric open ended / ring spanners.
- Assortment of flat blade and Philips screwdrivers.
- Ball Pein hammer – NOT a carpenter's hammer which can shatter!



- 1/4" and 1/2" flat steel chisels.
- Allen keys.
- Two 3" "C" clamps – for holding rear leaf springs during disassembly.
- Large and small hacksaws.
- Large and small multi-grips.
- Pliers, including one pair of point nose for brake shoe springs.
- Side cutters
- 1/4" x 5/16" brake adjuster spanner. From ebay



## 8. Specialist tools

- Dremel micro tool with extension shaft and accessories, this is quite an expensive piece of equipment at about \$300.00 but if you're doing things like repairs, making small replacement parts or grinding and buffing your cylinder head, it will save money.



- Two coil spring compressors.



- SU Spanner box spanner and jet spanners

From ebay



- Nut Splitter



- **Set of drills, taps & dies preferably UNF threads up to 1/2"**

From ebay



- **Multi size drill / reamer**



- **Oil Filter tool – saves your knuckles!**



- **Fuel Line Clamps**







- **Compression tester**



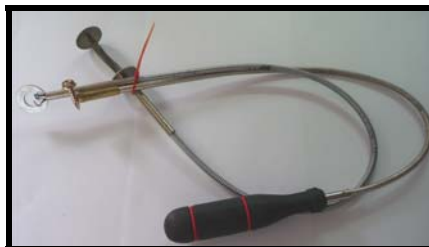
- **Sprocket puller**

Combined internal and external model.



- **Claw & Magnetic extension retrievers**

Forever dropping things in the engine bay?



- **Extendible Inspection mirror**

For looking for things dropped in the engine bay! From ebay



- **Grease gun & cartridges**

This handy cartridge trigger unit is just the job for the hard to reach grease nipples on the MGB.



- **Extendible magnet / light**



- **Brake bleeding kit**



- **Battery charger – for permanent connection.**



- **Stop Watch**



Battery – AG13

- **Mudguard / fender protector**

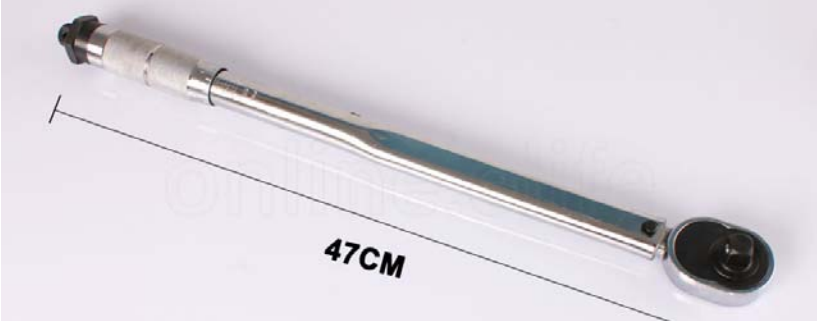


- **Soldering iron**
- **AJAX Fastener Catalogue**

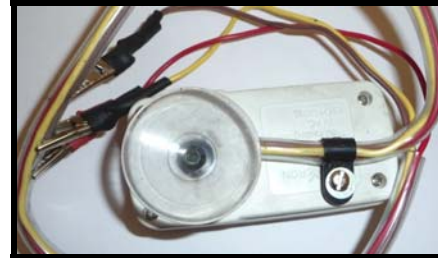
Gives all nut and bolt sizes including UNF and UNC used on the MGB. Essential for identifying high tensile nuts and bolts as well as nylock nuts by the markings on the bolt and nut tops.



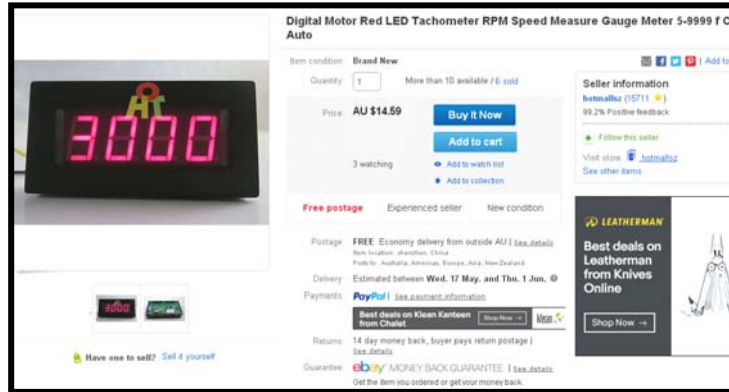
**9. Torque Wrench**



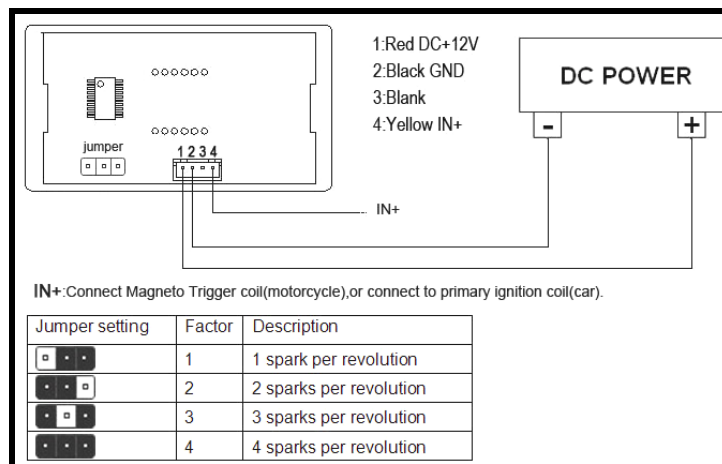
## SOURCING AND MANUFACTURE OF AN ENGINE BAY TACHOMETER



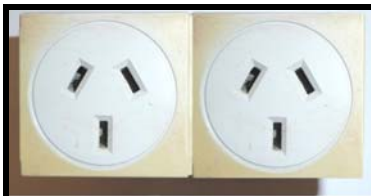
1. On ebay, source one of the many featured tachometers.



2. It will come with the following circuit diagram. +ve and -ve are common sense but the jumper needs to be set. Noting that a single cylinder four stroke engine has a power stroke every second revolution, a two cylinder has one power stroke every revolution and therefore a four cylinder engine produces two sparks for each revolution of the engine, set the jumper to "Factor 2"



3. Source a simple rectangular double adaptor



4. Disassemble the adaptor, remove the wires and tabs, mill out the front and interior so that the tachometer body fits neatly inside – this is where the Dremel is handy. Glue it in place.
5. Wire the tachometer with red, black and yellow wires terminating in alligator clips.
6. Assign the red to +ve12v, the black to -ve 12v and the white to the +ve post on the coil.
7. Fix a suction cap to the rear and tidy up the wiring.