V8 Roadster Conversion project - from dream to reality!

V8 Roadster Conversions are very popular with V8 enthusiasts and come in a variety of specifications. Here **Geoff King** (Tartan Red 4029) from Kincardinshire provides a fascinating tale of how his project was conceived and carried out over a three year period to produce an award winning V8 Roadster with a wonderful specification and performance. Geoff converted his rusty 1972 MGBGT 1800 to a V8 Roadster over a three year period and completed the project in August 2002. It has a 3.5 litre injected engine with a five speed gearbox, independent rear suspension, unequal length double wishbones, and coilover dampers front and rear. The brakes have been upgraded with disc brakes front and rear, with four pot calipers on the front. It looks standard but it isn't! (May 04)

How did the project come about?

While in the local library one day, I noticed Roger Williams' book 'How to give your MGB V8 power'. The sound of a V8 in a Rover SD1 that I had some years ago and its smooth effortless power came back into my mind and I thought how I had missed my MGB during the time our family were growing up, but now the seed was sown and I knew what I was going to do. I would build a Tartan Red V8 Roadster with alloy wheels, like the one that I had in my carefree youth but with enough power to keep up with the traffic of today. I knew that new MGB shells were being manufactured and my plan was to buy a cheap roadster as a donor and build a car using a new body. The car would look original but it would be modern under the skin with electronic ignition and fuel injection, up to date suspension and brakes and the "toys" that we expect in many cars today.

First a complete Rover SD1 was purchased for its V8 engine and 5 speed LT77 manual gearbox. I overhauled the 3.5 engine and fitted new rings, bearings, rocker shafts, 3.9 cam and duplex roller timing chain. To help the engine breathe, I smoothed and matched the ports in the heads and fitted the latest 'Vitesse' type valves. The gearbox was rebuilt with new baulk rings and bearings.

A suitable donor roadster proved to be elusive in Scotland (by suitable I mean cheap and tax exempt) and I eventually bought a 1972 GT in Dumfries. The 1800 MGBGT had been off the road for a couple of years when I purchased it at the end of May 1999 and it definitely was not roadworthy, so I towed it back home to Banchory on a trailer. It had severe corrosion in all the usual places but that didn't matter, the car was stripped bare in a weekend and the rusty remains discarded. On the garage floor I was left with a front crossmember, rear axle, the steering rack and column and a four-cylinder engine with an overdrive gearbox. I also had the heater, pedal box, dashboard, windscreen wiper motor, front and rear lights, some scratched glass and a tatty interior. The engine and gearbox were sold and the chrome bumper front crossmember swapped for a rubber bumper one. I purchased a twin circuit brake and clutch master cylinder pedal box assembly, a rubber bumper steering rack and a collapsible column, the original items were sold. The '72 dashboard was also sold and a late model MGB version bought to suit the collapsible column. The seat runners were retained but the remainder of the interior was thrown away. The glass was no use either - there was not much left of the original GT.

Difficulties with the new V8 Roadster shell

I placed my order for a special V8 Roadster shell with the fittings and brackets etc (or so I thought) for the V8 engine, 5 speed gearbox and ancillaries. The shell would have apertures in the inner wings for a RV8 style exhaust manifolds and I also specified a RV8 bonnet to give clearance for the fuel injection plenum chamber. The shell was delivered in November 2000 finished in two pack Tartan Red and as it was lifted off the trailer and pushed into my garage on that cold, dark evening it looked wonderful with gleaming paintwork. Unfortunately, the next day a more careful inspection revealed that the doors, boot and bonnet which were supposed to be 'fitted' were, in fact, simply 'attached' and many hours were spent getting the panel gaps as even as possible. I was to find more and more defects with the shell and I can only assume that I had an early version that still needed some development work. To be fair the supplier (or rather the shell manufacturer) paid for the errors to be corrected but in my opinion they should not have been there in the first place. There were too many defects with the shell to ignore but following some correspondence with the supplier I was advised that I "should leave a V8 conversion to the professionals"; however, having seen some of the workmanship from so called craftsmen, I knew I could do at least as well if not better. I would also have the satisfaction of doing it myself and for better or worse I would do it my way.

Building the V8 Roadster

The build commenced; the uprated heater and fan being the first items installed then the twin circuit brake master cylinder and pedal box. The clutch master cylinder is a MGBGTV8 type with a metal reservoir a new plastic reservoir type didn't fit as the cap fouled the bulkhead. To update the front suspension and brakes I modified the rubber bumper type crossmember with a John Hoyle coilover damper conversion with unequal length double wishbones replacing the standard lever arm dampers.

The **suspension** has SuperFlex® bushes and is fully adjustable for ride height, damper rate, and caster and camber angles. To complete the front suspension I fitted a 7/8 inch anti roll bar and modified the steering with a 'quick rack' assembly to reduce the number of turns lock to lock.

For the **brakes**, Rover SD1 non-vented, single line, 4 pot callipers were a relatively cheap and easy brake upgrade. The big callipers were bolted on with thin wall sleeves (the holes are metric, the bolts imperial) and connected with metric to imperial stainless steel braided hoses. Solid ½ inch thick, 10.75 inch diameter MGBGTV8 discs were used, they are the same diameter as the standard MGB but thicker. The dust shield needed a very slight modification because the SD1 calliper is larger than the MGB one but apart from that the callipers just bolt on and the car looks as if it was originally

Front suspension *with the coilover damper conversion (Photo: Geoff King)*

Rear suspension *and disc brake conversion. (Photo: Geoff King)*

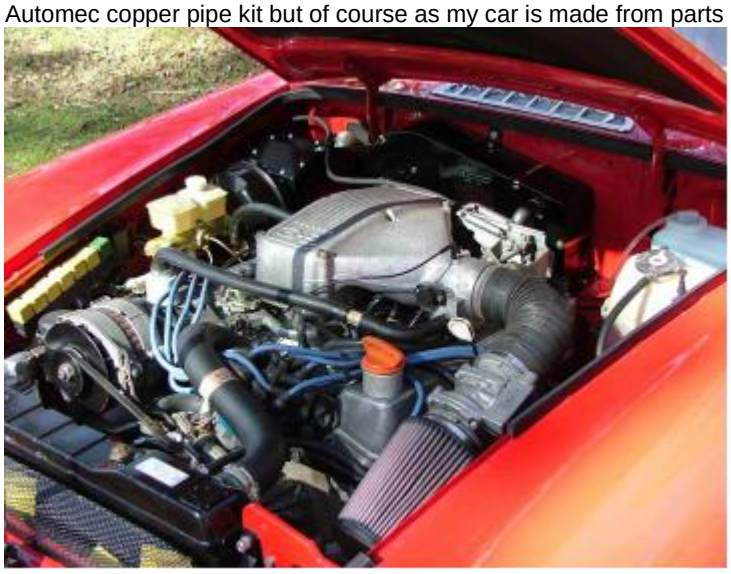
manufactured with them.

I fitted the refurbished **rear axle**, rebuilt with a 3.07:1 ratio crown wheel and pinion, but after less than 500 miles the antiquated live axle and cart springs were sold and replaced with John Hoyle's Independent Rear Suspension. Like the front suspension, the IRS kit from John is a high quality product, well designed and manufactured. The ride height, damper rate and camber are all fully adjustable and the bushes are again SuperFlex®. Incidentally, all the bushes used in the front and rear suspension are standard MGB size (front lower wishbone) so future replacements should not be a problem. The total weight of the suspension is slightly more than the live axle but the unsprung weight is much less. The tube axle assembly, springs and dampers weighs close to 100 Kgs, 85 Kgs unsprung. The IRS is approximately 105 Kgs with less than 46 Kgs unsprung. I purchased a refurbished **Sierra differential** with 3.14:1 CW&P (the highest standard ratio available), exchange-shortened drive shafts and new drive flanges, dust shields, discs, pads, wheel bearings & seals and calliper overhaul kits. A scrap Ford Scorpio donated its hubs, drive shafts and brake callipers; these were refurbished prior to being reused. Assembly of the rear suspension was straightforward with Sierra discs and rebuilt callipers; the completed sub-frame was then offered up and bolted to the chassis. No new holes are necessary; the existing front spring eye, the lever arm damper and check strap mounts are used - 8 bolts in total. A new, heavy duty propshaft to mate the Rover LT77 gearbox to the Sierra diff was purchased from GKN Driveline - suppliers of the original MGB propshafts.

The **engine and gearbox** went in easily but the RV8 style exhaust manifolds couldn't be bolted on after the engine was in position, so engine had to come out again. The manifolds couldn't be bolted to the engine first; they had to be placed in the inner wing holes then the engine fitted and then the manifolds bolted to the engine. **Electronic fuel injection** was obtained from a Range Rover, the ECU being from a 3.5 while the plenum, hot wire airflow meter, manifold and injectors were from a 3.9. It all fits under the RV8 bonnet, as you would expect, but only just. Considering the wiring is from a Range Rover it all fits very neatly in the MGB with the ECU mounted inside the cabin on the top of the passenger footwell.

For the **fuel supply** I used an early bolt-on tank, which has a the fuel pipe in the tank side, with a late fuel level sender which also has a fuel pipe, so as to have a flow and return to the tank. A section approximately eight inches square was cut out of the top of the new tank and a swirl pot from a Ford Granada welded inside. I mounted a Bosch, high-pressure fuel pump together with a fuel filter on the side of the battery box, the pump being level with the bottom of the fuel tank because high-pressure pumps have poor suction. Stainless steel pipes were used for the fuel supply and return and as the wiring harness was routed inside the car the return fuel pipe uses the old supports and brackets for the wiring.

One of the problems with the new shell was that the **radiator** support diaphragms were in the wrong place with the left side being some ¾ inch further forward compared to the right making it impossible to fit the radiator. The remote oil filter bracket was also incorrectly positioned so the supports were cut off and new ones welded in place and painted again. I originally fitted a standard MGBGTV8 radiator together with twin electric pusher fans but recently replaced this with a high efficiency radiator from Clive Wheatley. For the **brake lines** I used, or rather tried to use, an Automec copper pipe kit but of course as my car is made from parts



Engine bay *is very neat with the injected V8 power unit. (Photo: Geoff King)*

of various years and models very little fitted. I ended up removing the gland nuts from the copper tube and cutting Kunifer tube to the correct length. To avoid the exhaust I routed the front brake pipes through the inner wings above the dampers - I haven't seen that on a B before but it works perfectly and keeps the tube runs as short as possible and away from the heat. I also routed the rear brake line and main battery cable up the side of the tunnel beside the gearbox, well clear of the exhaust from the right bank of cylinders.

Interior and trim

The car was now more or less mechanically complete so on to the interior. I purchased a complete set of biscuit coloured panels and carpets including the boot and fitted heating elements to the leather seats which also have headrests. The combined door pulls and armrests are colour matched and are similar to RV8 ones but are actually from a scrapped Vauxhall. The Vinylkote custom colour aerosol was more expensive than the armrests themselves but the colour match is perfect.

I fitted **electric windows and remote central locking** with an immobiliser and alarm. I also have a CD radio cassette player with an electric aerial in the rear wing; the 6 disc autochanger is in the boot. The dashboard is late model MGB with 3 separate dials for fuel level, oil pressure and water temperature. All the gauges are new, everyone seems to fit magnolia faced gauges but mine are black with chrome bezels. I wanted the indicator switch on the left of the column so I fitted a late MGB switch upside down on the left for main and dip beam, indicators and horn. The switch on the right for wipers and washers is from a Mini, down is flick wipe and up is the two speeds, press in for the washers. There is also a variable wiper delay and wash wipe module. Both switch stalks are from a Mini so the graphics are the correct way up and the car looks as if it left the factory like it.

First firing and MOT test

I was pleasantly surprised when the engine fired up at the first attempt but some underseal melted and dripped onto the exhaust filling the garage with smoke during the first 20 minutes or so running in the cam at about 2,000 revs. My wife thought the garage was on fire!

On the 2nd of August 2002 the car passed the MOT (first time of course) it had already been inspected by the traffic police who checked the body and engine numbers, I had also been interviewed by the police and issued with a new VIN by the DVLA. My local MOT station checked that the new VIN was hard stamped into the shell and the car was registered as an "MGBGT Convertible".

Result is a wonderful V8 Roadster

The engine runs at around 90oC with occasional excursions to 95 or so and the modern suspension is excellent, driving the car around the Highland roads is a real joy; no more front wheel patter on rough surfaces, there is very little roll and the back end stays firmly planted to the road. Axle tramp has been eliminated and on hard acceleration the car just squats a little. The brake balance seems perfect with the four pot Rover SD1 callipers at the front and single pot Sierra callipers at the rear.

Externally my car looks almost standard, although the RV8 bonnet does have a bulge and the single exhaust pipe is a little larger than an 1800, there are also a couple of V8 badges and the wheels are a little larger, however, under the skin it is thoroughly modern and well able to keep up with everyday traffic. It is fast and safe and I'm still driving everywhere with a big grin on my face.

Externally the V8 Roadster looks standard *with only the RV8 bonnet bulge and V8 badges - but it is a thoroughly modern car and a delight to drive. (Photo: Geoff King)*