Aston Workshop

ENHANCEMENTS

CATALOGUE

www.aston.co.uk

Intro

The brochure provides an an illustrated guide to the many upgrades and modifications that can be offered to the owner of any Aston Martin. Many of these upgrades are readily and retrospectively possible to fit, though a few are more conveniently undertaken in conjunction with another in order to preserve the car's safety and ease of use. For example, a planned engine modification will lead to a significant increase in power and torque; it is therefore only responsible to consider other upgrades to the car's cooling, braking and suspension systems. The recommended package of enhancements is indicated where it appropriate.

Contents

Right Hand Drive to Left Hand Drive

As one of the biggest specialists dealing in Classic Aston Martins, we are finding an increasing demand for LHD cars and the availability of such cars is extremely small. This is not surprising bearing in mind that only some 10% of those Aston Martins manufactured up until the introduction of the DB7, were sold as original LHD cars. As a result, we have endevoured to meet our clients wishes and developed LHD conversions to the highest standard.

Many prospective customers may well think that changing the specification of a rare car, such as an Aston Martin, would detract from both its originality and value. This may be the case if major changes were envisaged to the appearance or if there was considerable deviation from the original in some important mechanical item, such as fitting a Jaguar engine into a DB4. Indeed, as was originally found when many Austin Healeys and E-Types were re-imported back to the UK and converted to RHD, that values did to some extent suffer, largely as a result of the lack of quality and original appearance. Fortunately this is no longer the case though.

On the contrary, we are now routinely finding that valuable Aston Martins that have been sold to overseas customers are being bought and converted to LHD and that a premium is often achieved. As a result the value added to an Aston converted from RHD to LHD is as much, and often more, than the cost of the conversion.

There are however, a number of clear provisos in making this claim. First and foremost, the conversion has to be precisely as it would have been had the Aston been manufactured from new as a LHD car. The quality of the conversion has to be flawless giving the precise appearance of an original LHD Aston.

Over recent years, the demand for these LHD conversions has risen very substantially, particularly for the DB4, 5 and 6 and increasingly now, the V8 models. We re-manufacture and acquire all items necessary to carry out all of the conversion- be it for DB4, 5 and 6's-chief amongst which are the dashboards. As can be seen, the quality and original appearance is excellent and anyone contemplating a RHD to LHD conversion can rest assured that the conversion process is straightforward, taking no more than a few weeks to accomplish and that we are very experienced in carrying them out.

If a LHD conversion is of interest to you, please get in touch. We can certainly advise and can readily provide a very competitive quotation for all the work involved.

Contact Us for more information

Electric Power Steering

The cheapest and smallest of cars these days has power steering as a standard feature, but in the Post War years, most Aston Martin's came with unassisted steering as standard. Indeed, power steering was only an option with the DB6 and not available with any earlier models. Even then any prospective purchaser would have had to pay extra.

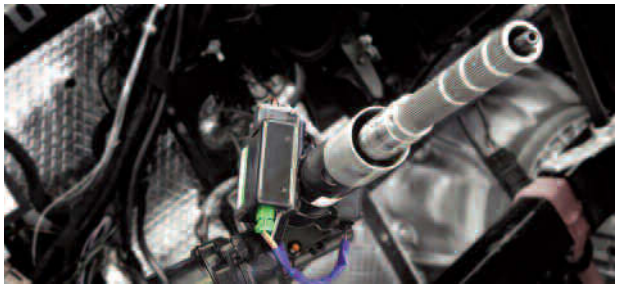
Today, with radial and wider section tyres now fitted in most cases, the steering of these cars becomes heavy and intolerable for many at parking speeds. The answer is to fit some form of power assisted steering. Such systems are now readily available for retro fit and at sensible prices. Until a few years ago, most forms of power assisted steering were hydraulic actuated. A hydraulic PAS required the fitment of an engine driven pump, reservoir, a hydraulic actuator and a torque sensor of some form in the steering column. All of this had to be connected with pipes, this all becoming quite a major modification to install. It was also intrusive, and detracted from the standard under bonnet look.

Further developement then led to idea of doing the same thing with an electric actuator instead, this being installed and incorporated into the steering column. This simplifies the installation, does away with the need for a pump, all of the pipes and big and intrusive actuator. Being much easier to install also means being much cheaper. It didn't stop there. It also becomes much easier to adjust levels of assistance, to vary the rate of assistance with regard to the steering angle of the front wheels, and with speed inputs, to make the steering speed sensitive. None of that was achievable with a simple hydraulic installation. Also, with many fewer moving parts, it is intrinsically much more reliable.

At Aston Workshop, we now offer electric power assisted steering for any post war Aston Martin. One of the problems besetting existing hydraulic assisted steering is the increasing cost and difficulty in their overhaul and repair and that they are prone to leak. Replacing an existing hydraulic system with an up to date electric one therefore makes sense.

Installing an electric power steering system simply involves the removal of the steering column and its modification with an electric actuator and torque sensor. Today, these systems are being regularly asked for and a replacement modified column can now often be supplied on an exchange basis. Some minor changes to wiring will be required and an adjustment knob put into the dash to give a degree of driver selected assistance. Alternatively, a fixed degree of assistance can be used. Either way, the installation does not affect the look of the car in anyway.

We will be pleased to advise and quote for such an upgrade. Those for the DB4's, 5's or 6's can be provided almost immediately. Those for the earlier Astons will require a little notice, as the existing steering column in DB2's, DB2/4's and DB Mk3 will need to be sent away for modification. As for the later models, we deal with them on a case by case basis. **Contact Us for more information**



Gearbox Conversions

We are all aware of the somewhat vintage feel of the David Brown gearbox fitted to the DB2 and DB Mk3 models and these gearboxes are for many owners part of their car's enduring character. The same applies to the gearbox fitted to the DB4, and the ZF gearboxes fitted to the DB5 and 6. Automatic gearboxes based on the Borg Warner DS35 are 3 speed, sluggish in response, power sapping and somewhat unresponsive, yet that is what was fitted at the time, and to someone who remembers and drove these cars while they were comparatively recent and typical of the period, there may be no wish to change.

Many new and aspiring owners, however, have no or at best hazy recollection of that period. So inevitably they compare a DB 4 for example, with other more recent cars that they do have experience in driving, wanting above all, a car that they can drive, feel comfortable and be safe with. We are also constantly being encouraged to be responsible citizens and to avoid polluting the atmosphere. The cost of fuel inexorably rises, so there is a real incentive to find ways of cutting fuel consumption, and with that, pollute less. The single most effective way to do that is to raise the gearing so that the car can cruise at lower engine speed for a given road speed. Fitting an Aston with a fifth gear when all it originally had was a simple 4 speed gearbox, is a good start.

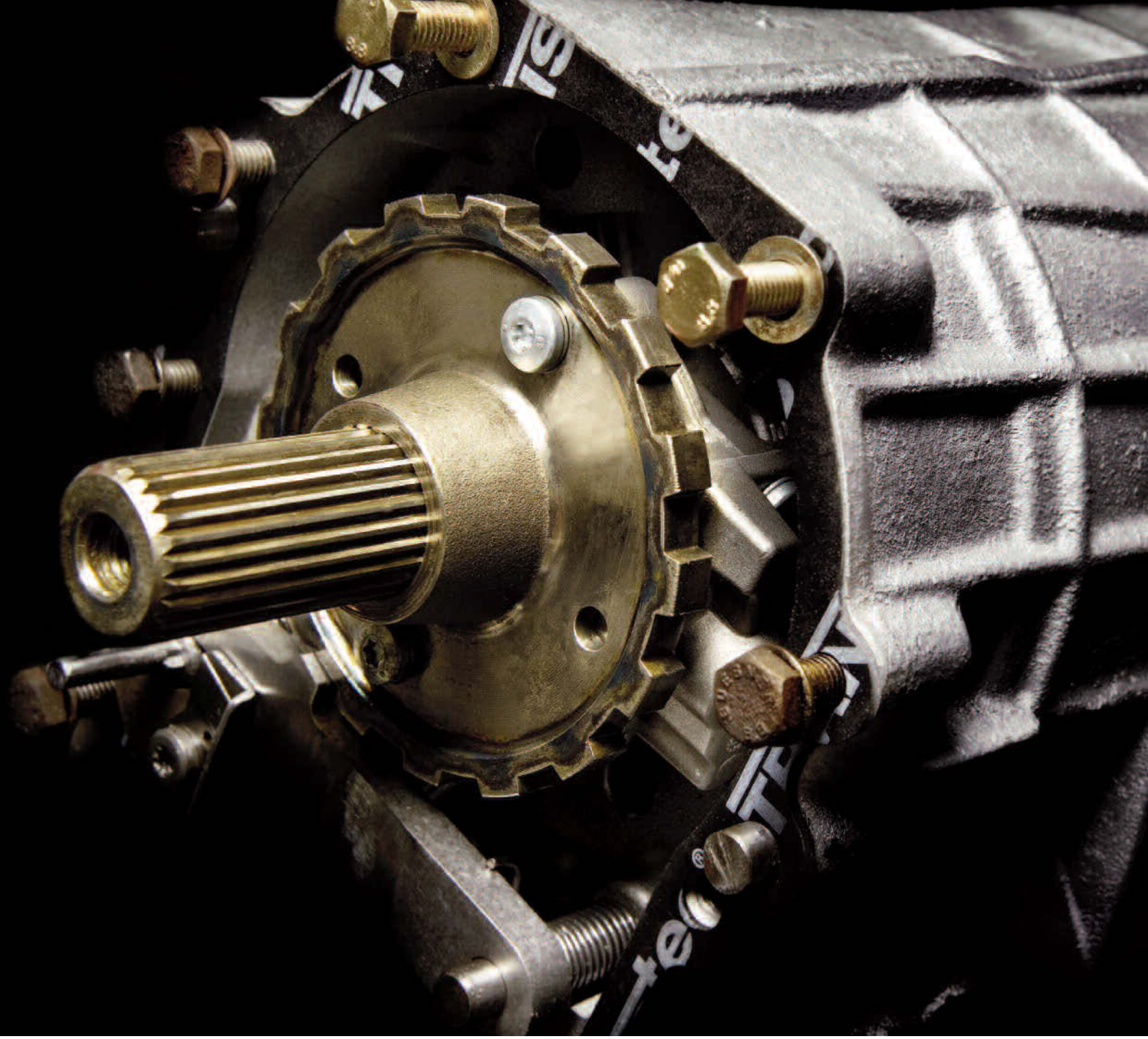
The same applies to the automatic gearbox as well, but even more so. An 80's 4 speed gearbox, now a regular option for many Astons, such as the DB6, DBS and Lagonda, helps but experience indicates that this is only a partial solution to what would transform such a car into one that suits today's traffic. So what can be practically done to improve matters?

The first concern is to decide whether to fit a manual or an auto gearbox, having regard to the reality that many would love to own such as a DB5, but, having had no experience of a manual, require a suitable auto gearbox.

The second concern is to decide the type of use, the traffic conditions and what feels right and comfortable. We all know that a typical modern Toyota, Getrag or Borg Warner 5 speed manual gearbox is just so effortless when compared to an original David Brown or ZF gearbox, being quiet, easy and simple to use, efficient and cheap to buy and widely available. At the same time, the cost of overhauling the original gearbox is high, and the end result is not always completely satisfactory. 6 speed gearboxes are now also available at sensible prices.

At Aston Workshop, we can help and we now have an expanding range of transmission options. What's right for one owner is not necessarily a choice for another. So we offer a wide range of options.

If the choice is to go for an auto, then we can oblige with a 4 speed and from autumn this year a 5 speed option. The 4 speed gearboxes are hydraulically actuated, so while very much more responsive than the original 3 speed gearboxes, they do have a direct top gear and with a modified governor, provide a big improvement over the 3 speed. Auto DB6 and V8 owners will notice this at once. However, we are on the cusp of an even bigger change, to fit a 5 speed ZF auto, but being electronically controlled, it can be given massively improved response characteristics over earlier gearboxes. With taller gearing this gives a marked improvement in fuel consumption, increases available performance and we expect to be able to start offering this option from autumn this year at a small premium to the cost of a 4 speed auto.



Overhauling the original David Brown and ZF gearboxes can be undertaken, but this takes time. They remain inherently noisy and no matter how much care is taken, the result will not transform them as may have been hoped for in many cases. It is also not a cheap exercise, largely a result of the parts required being rare, difficult and expensive to source. So we can offer a modern 5 speed and 6 speed alternative. As there are so many different options to choose from, the best course of action is to discuss your preferences and wishes and thence we provide you with a fully engineered solution that takes account of your budget, timescale and preference.

Please note that with the 5 speed auto and 6 speed manual boxes, the optimum configuration may well suggest a change to the final drive ratio, depending on usage and owner preference.

In conclusion we offer a fully engineered solution, which comes as close as possible to maintaining the visual impression of an unmodified car, yet has the easy to use and efficient characteristics of a more modern car at affordable and cost effective prices. And lastly, remember that these upgrades are always reversible, if at some point the owner wishes to revert their car back to its original specification.

Contact us for more information

Aston Martin Engine Enhancements

The models that are covered in this section are as follows:

The DB2, DB2/4, the DB2/4 Mk2 and the DB Mk 3 family

The DB4, the DB5 and the DB6 family up to and including the DBS and the Vantage (1972 to 1973)

The Aston Martin V8 family covering:
The DBS V8 (fuel injected and carburettered)
The V8 Series 1 through to 5 (incl. Volante)
The V8 Lagonda Series 1 to 4 manufactured from 1977 to 1984
The V8 Vantage and all its variants

For each family of models the section has been further subdivided to easily identify the applicable upgrades, depending on whether the upgrade is intended to:

- Generally enhance performance (Fast Road)
- Improve flexibility, tractability and economy
- Provide the ultimate in performance

As will be readily appreciated, if a car has been provided with a significant increase in engine power and torque, other matters should be addressed. For example, if a car has significantly improved acceleration, it is only responsible to consider addressing its braking and road holding capabilities. In addition, where the aim is an increase of over 30% in power or a major improvement in economy is desired, it is essential also to address the strength of the transmission line (including gearbox and final drive) and to review carefully the desired gearing, this latter point probably having the single greatest influence on economy. To that end, where an engine configuration is suggested, there will be added links to Suspension, Braking and Transmission upgrades that should also be considered and which would provide the safest and best overall balance in the Aston's performance, roadholding and braking capabilities.

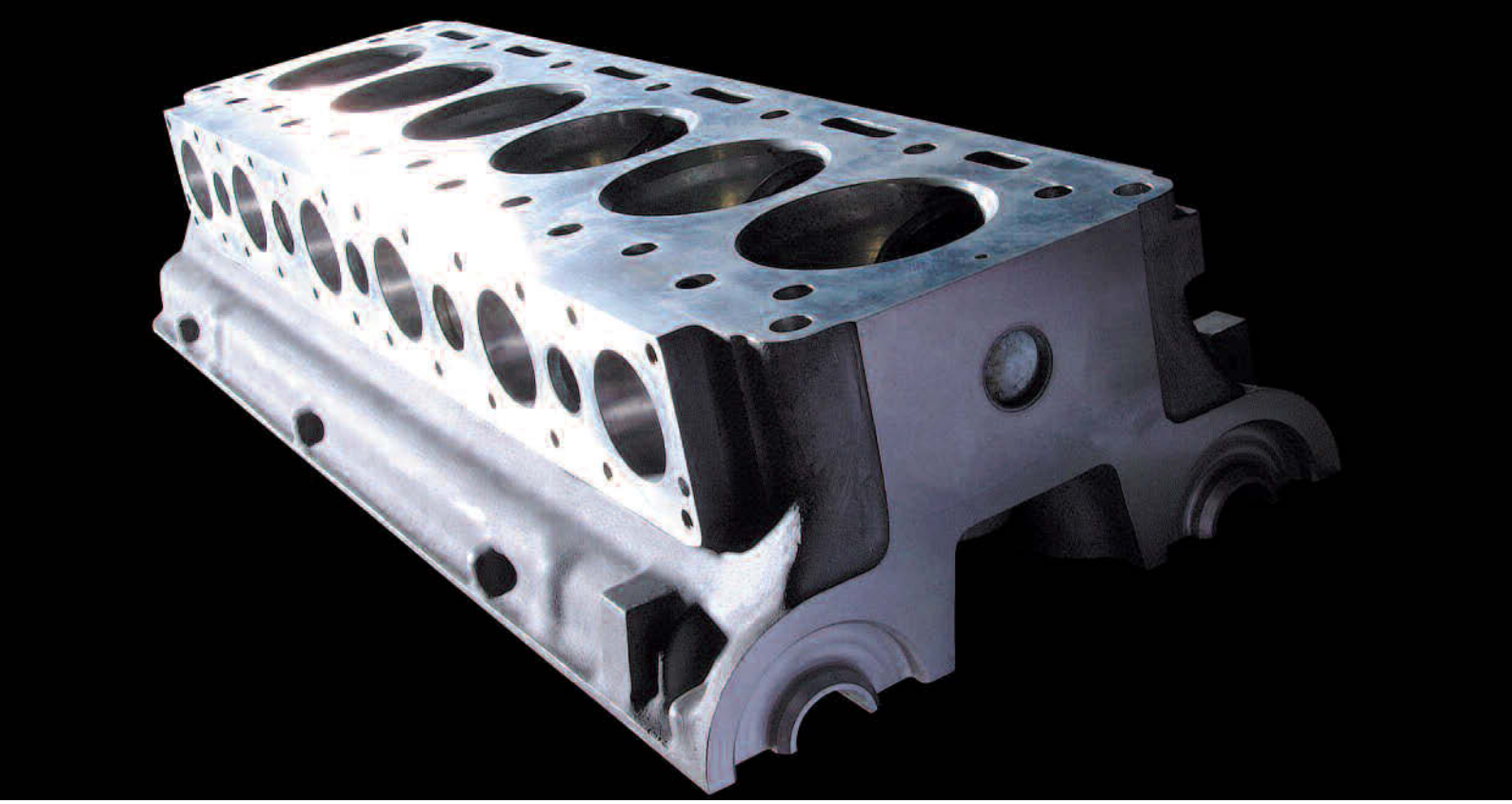
DB2, DB2/4, DB2/4 Mk2 and DB Mk3 engine upgrades

It should be remembered that the design concept of these engines dates back to the late 1930s and consequently there are some significant limitations to scope for engine modification and development that can be achieved. Not withstanding, racing engines in the 1950s were developing power outputs of 200 bhp and above, when the first production engines were producing only 85 bhp. Fast road engines today can reliably produce outputs in the region of 170 bhp. The suggested engine upgrades to enhance general reliability, flexibility and refinement apply universally as a set of recommendations for any engine and car.

Fast road engine enhancements
The principal areas of modification are:

Fast road camshafts

To go with fitting these, it is recommended that high compression pistons and free-flow exhaust manifolds are also fitted and the exhaust system is twinned.



Aluminium cylinder head replacement

DB2 and DB 2/4 cars are restricted with the inherent breathing of the engine by restrictions in the intake manifold and inlet ports. These may be overcome with this new aluminium cylinder head, that retains the basic design and physical features of the original. Fitted with improved porting and bigger valves, engines upgraded with this cylinder head have significantly greater scope for performance enhancement, but with full unleaded capabilities.– When mated with fast road camshafts, high compression pistons and free flow exhaust, the potential power can be further improved to around 180 to 185 bhp.

Crankshafts

To reliably cope with increased torque and power, consideration should be given to whether it would be prudent to fit a replacement forged steel crank. The advantage is the absence of crank induced torsional vibration and dynamic balance, as well as enhancing general longevity.

- New forged steel crank. To reduce the effects of torsional vibration and improve longevity
- Solid State ignition for reliability
- Increased capacity oil pump for reliability and longevity
- Improved engine cooling – aluminium radiator and electric fan

Complementary transmission recommendations

1. A higher rear axle ratio from 3.73. to 3.54
2. 5 speed gearbox or overdrive

Complementary suspension modifications recommended are:

1. Telescopic rear shock absorbers
2. Stiffer front roll bar
3. Fast road front and rear springs
4. Up rated front shock absorbers
5. Replacement front spring suspension towers - a safety precaution

Complementary brake and hub modifications

1. Front disc brakes
2. New front and rear hubs to overcome known design weaknesses
3. Brake servo
4. Consideration could also be given to modifying the braking system to accommodate separate front and rear brake hydraulic circuits.
5. 72 spoke wire wheels and radial tyres

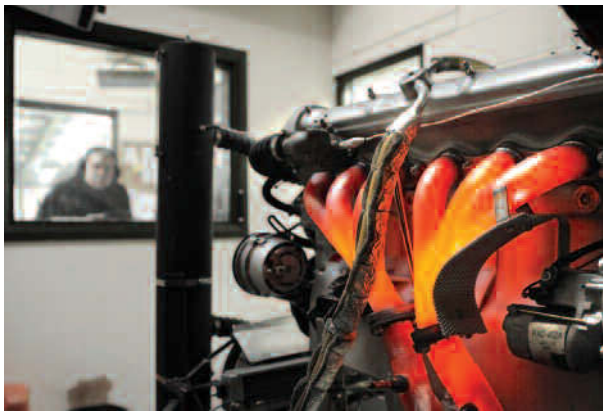
All parts used in our Engine Conversions ans rebuilds can be purchased at:

www.astonparts.com

DB4, 5 and 6 Engine Upgrades

General Points

The brief leading to the design of the DB4 engine was finally agreed in 1956, having initially started as a requirement for a 3 litre engine, then enlarged and finally coalescing around an all alloy engine of 3.7 litre capacity. The history of this engine is long and involved, but suffice to say that the engine configuration was a wet liner engine, with twin over head camshaft with hemispherical combustion chamber design.
The engine was given a 7 main bearing crankshaft with particularly generously dimensioned main



bearings, having regard to the possibility of the engine being used for endurance racing.
The DB4 engine has now been reworked and can be made to run reliably at up to 4.7 litre capacity, with a longer stroke crankshaft and increased bore size. The engine has shown that it can be readily tuned in various states of tune almost from the start of DB4 production.

Fast road engine enhancements

The main elements of a fast road engine involve:

An increase in engine capacity to a maximum of 4.5 litre, that is the limit on the safe cylinder bore size that can be reliably tolerated. It is more common to increase to 4.2 litre, and this has become the default specification for any overhauled DB4, DB5 and DB6 engine. While leading only to a very minor increase in power, there is some useful mid range improvement in torque, but to achieve any significant increase in performance, other changes to camshafts etc will be required.

Carburation – The original standard engine configuration involved a variety of different carburation arrangements, ranging from twin SU HD8s on the DB4, triple SU HD8s on the DB4 Vantage specification, and with the DB4 GT, triple twin choke Weber DCO-E9s. Later, with the introduction of the 4 litre DB5, the triple SU HD8s became the default with the Vantage tune, standardising with triple twin choke Weber DCO-E9s.

Fast Road Camshafts – There are several candidate camshafts to choose from, depending on the initial state of tune and the camshafts fitted have evolved over the production of DB4, DB5 and DB6 engines. One aspect of fitting “bigger” cams will be an increase in tappet noise, resulting from the steeper cam profiles that are used. Today, there are several choices of cams for the fast road engine but the two we would recommend are:

The Piper cams – these retain the flexibility and smoothness of the standard engine, but provide a general improvement in mid and top range torque. These suit best those who want a more lively car, but do not wish to compromise flexibility in traffic.

The Aston Workshop fast road cams – best suited to use with the DB5 and DB6 Vantage with triple Webers, in which they provide a very noticeable and consistent increase in engine torque of the region of 25% or so over the standard specification.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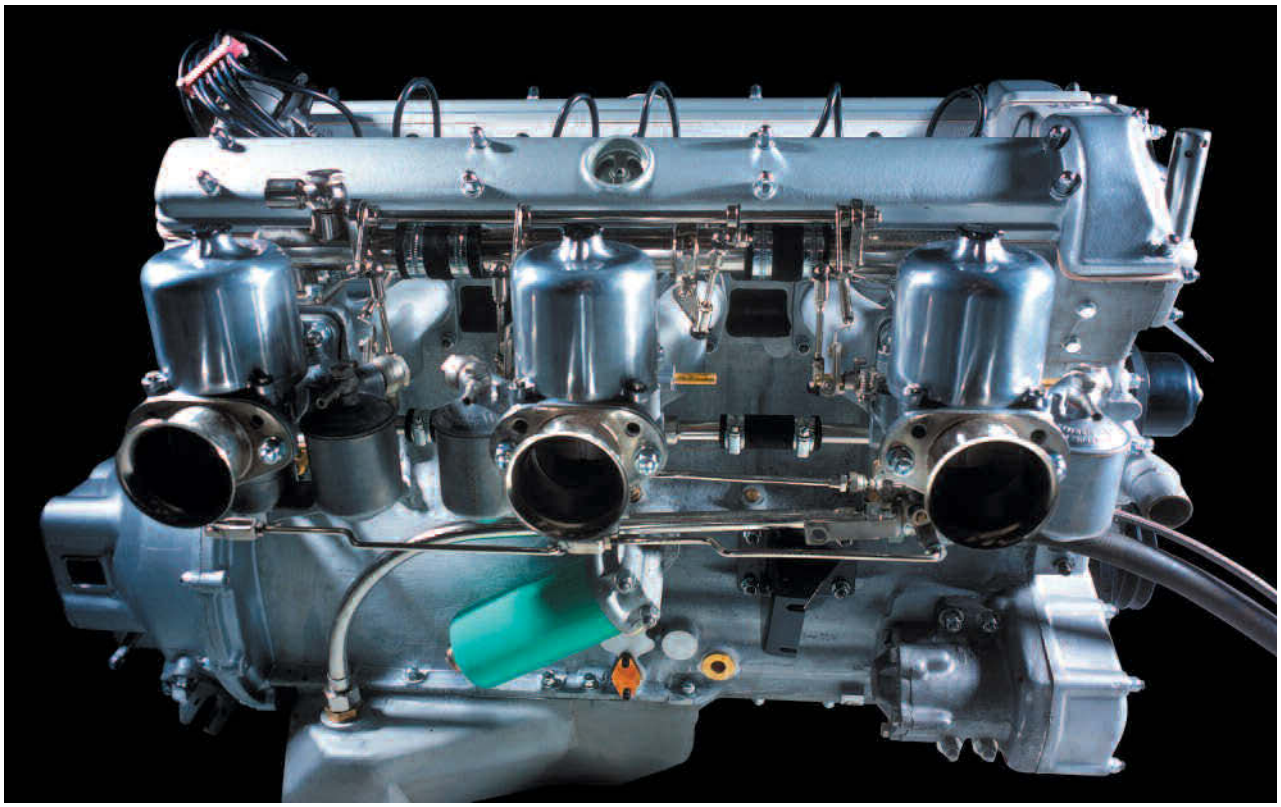


The car will feel noticeably livelier and from 2 to 2500 rpm, it will pull particularly strongly all the way to the red line. The downside is a slightly lumpy tickover and some loss of flexibility below 2000 rpm.

Lightweight Forged Steel Crankshaft – While this component is not an essential addition to the fast road engine specification, if the engine is being given a complete overhaul, the additional cost arising from the fitment of this new crank compared to the cost of regrinding and polishing the original is marginal and with the added assurance of standard sized journals as opposed to re-ground undersize journals.

Lightweight forged Cosworth Pistons and Liners – a rebuild of an engine involving conversion from the 3.7 or 4 litre to 4.2 or 4.5 litres will involve fitting new liners and pistons.

Compression ratio – the default compression ratio is 9.0 to 1 and the engine would so set up to achieve that.

Ignition – As part of the default specification will be the fitment of a full solid state electronic ignition using the 123 Distributor. This will not only control the advance curve for the ignition more accurately, but will also provide a higher intensity spark with commensurately cleaner exhaust emmisions.

Recommended transmission upgrades

A fast road engine will be quite capable of pulling a higher final drive ratio. The recommended change will be from 3.73 to 3.54 to 1 giving an extra 2 mph per 1000 rpm in fifth gear. For engines fitted with auto transmission, the standard final drive ratio is 3.54 to 1 and the recommended change will be to 3.31. This would also be the recommended change for manual DB4's fitted as standard with a 3.54 to 1 final drive.

An additional option is the fitment of a 6 speed manual. Currently not a standard transmission option, it could be offered if desired and would potentially enable a further reduction in the final drive ratio for manual cars from 3.54 to 3.31, with 6th gear giving a road speed in the region of 35 mph per 1000 rpm. Such an option could realise a very useful improvement in fuel economy.

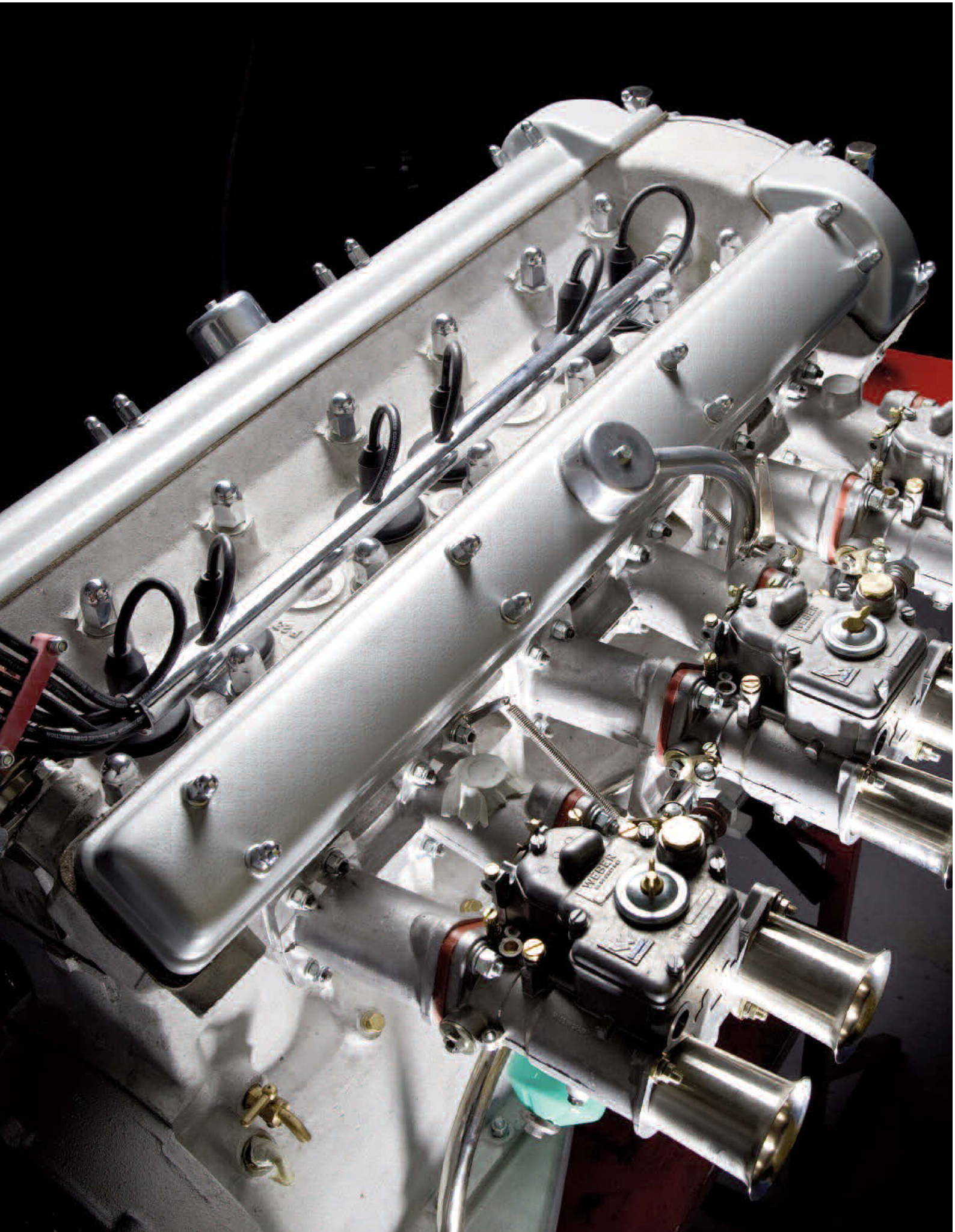
In summary the options are:

- Final drive ratio change – 3.73 to 3.54 to 1
- Final drive ratio change – 3.54 to 3.31 to 1

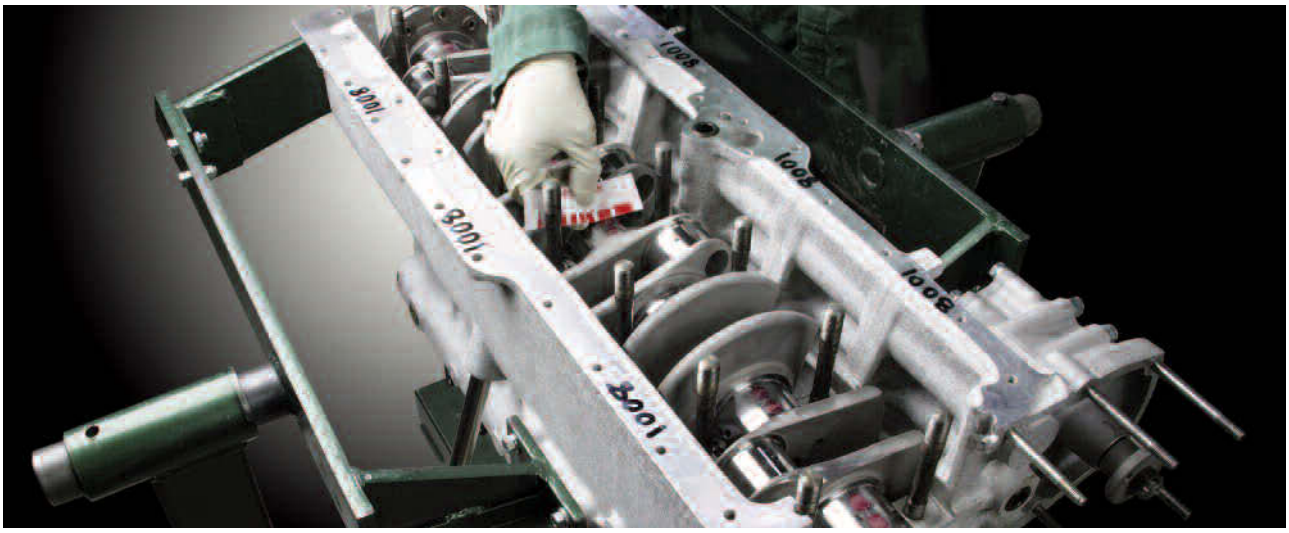
With other changes:

- 6 speed manual plus change of final drive from 3.73 to 3.31 to 1
- 5 speed auto with 3.54 to 1 final drive

Contact Us for more information


WEBER

The 4.7 Litre Engine



The Ultimate

It is possible to safely increase engine size by fitting the enlarged liners of a 4.5 litre engine and by fitting a crankshaft with a slightly larger stroke to give 4.7 litres. Fitted with the fast road camshafts and with the triple Weber DCOe9 carburettors, the resulting increase in engine torque is in the order of 35% to 40% and a reliable power output better than 340 to 350 bhp. Any engine fitted to this specification will be very noticeably livelier, particularly mid range torque and the ability to pull a very high ratio final drive will be significantly enhanced. Commensurate requirements for a 4.7 litre engine are:

A new cylinder block with stiffer main bearing webs and main bearing housings which are additionally cross bolted to add to the structural stiffness of the cylinder block

- A new increased stroke crankshaft
- 4.5 litre sized cylinder liners
- New forged Cosworth pistons
- Fast road cams
- Reworked cylinder head to cater for the increase in engine bore size
- A twin plate racing clutch to absorb the increase in engine torque

Aspects of engine development also include gas flowing and blue printing of the cylinder head and block assemblies. Each project really needs to be discussed in detail before a personal specification can be finalised.

In all other respects, the complimentary transmission, brake and suspension modifications that would be recommended are those for the fast road engine, as detailed above, but with the desirable addition of:

- 4 pot racing and ventilated front brakes and calipers
- Full flow engine oil cooler (as opposed to the bypass oil cooler system fitted as standard)

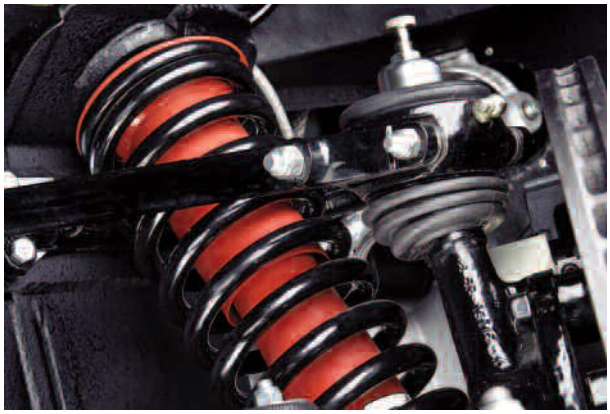
Recommended Complimentary Upgrades

Recommended suspension upgrades

A general re-fit and upgrade of the suspension is strongly recommended when moving to a fast engine specification. The key options that are available are:

- The Monte Carlo handling kit featuring:
  Stiffer front roll bar
  Fast road front and rear springs
- Plus Up-rated Koni front dampers (not included in all the Mote Carlo handling kits)

An additional change highly recommended would be the fitment of **The Monza Adjustable Telescopic rear Dampers Kit.**



Recomended brake & wheel upgrades

Fitted as standard on DB5 and 6 cars, is a 4 wheel all disc duplex Girling brake system that has proven to be effective and capable of adequate retardation from very high speeds consistently and safely. With DB4 cars, the early simplex all disc brake Dunlop system lacks the same capacity to absorb heavy heat loss arising from very high speeds. The recommended changes to the standard brake systems are:

DB4 – Fit the standard duplex Girling Brake system upgraded as below.
DB5 & DB6 – Improve brake system resilience as follows:
Fit harder Pads
Upgraded brake servo assistance
Wheels : Default to move to 6.5J rim size wheel and to fit 205/80 section radial tyres with an added option to fit 225/70 radial tyres on 15 wheels.

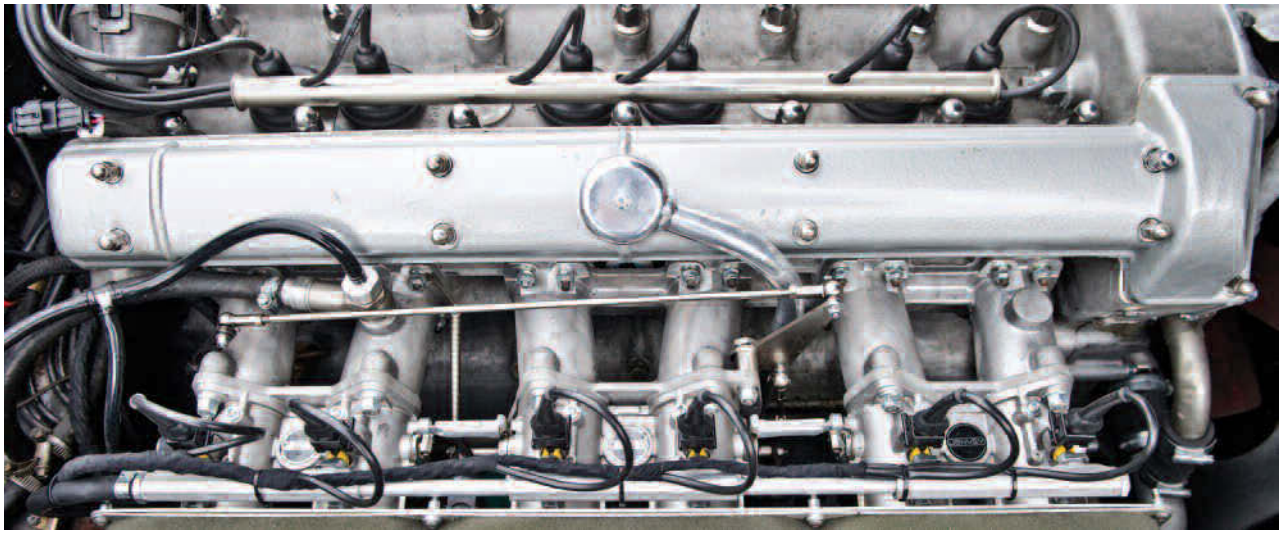
Reliability, flexibility & refinement

The design of the engine provides limited scope for major refinement improvements, but the following would be of benefit in any engine of this type. These are:

- New forged steel crank. To improve engine responsiveness and reliability
- Solid State ignition for reliability
  Increased capacity oil pump for reliability and longevity
- Improved engine cooling – aluminium oil and cooling system radiators and electric fan

Contact us for more information

Fuel Injection

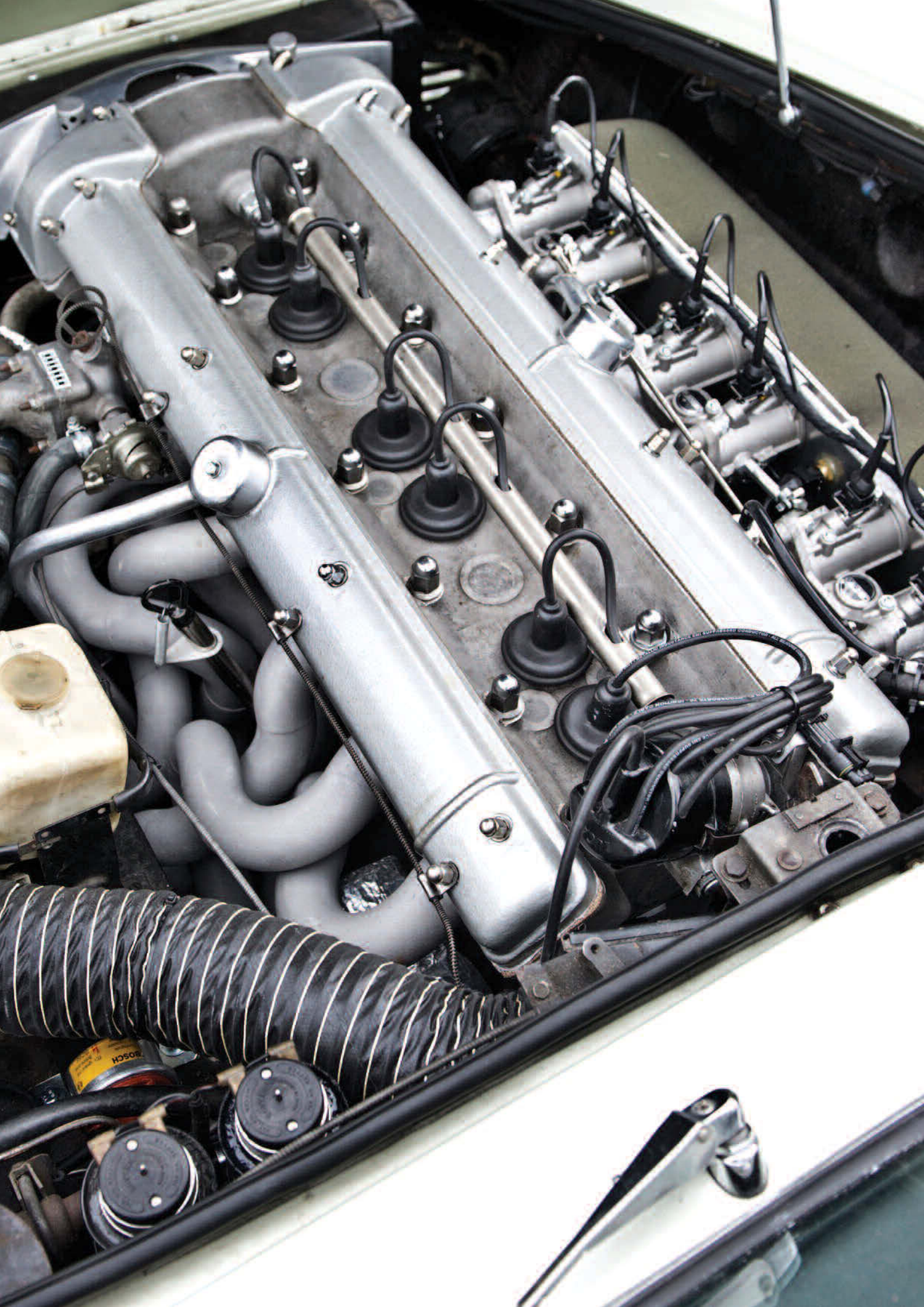


Having already completed many track days in his DB5, our client came to Aston Workshop looking for extra speed and refinement. The car was producing good power and torque with its triple 50 DCOE Webers and uprated 4.7 litre engine.
Preliminary testing suggested there was still room for improvement and that it could be made a lot more “usable” with a range of Aston Workshop enhancements.
Our brief was to produce a package which would enhance the DB5's performance and 'drive-ability', without affecting reliability.
With the car running on triple 50 Webers the power was only available higher up the rev range and would “bog down” below 2,500 RPM.

Under bonnet originality was not an issue for our client so we opted for a fully sequential, electronic fuel injection system with throttle bodies and stand alone ECU.

Using the EFI system, fuelling and ignition can be precisely controlled at all engine speeds and loads, increasing torque, smoothness, power and fuel economy. We also fitted an 'Aston Workshop' tuned, equal length header exhaust system to improve gas flow exiting the engine.

We used a combination of engine dyno, rolling road and road testing to optimize the engine. Peak torque was 366FT.LBS @ 4,000 RPM with 340BHP @ 5,000 RPM, even at 2,250 RPM the engine was producing a very healthy 270 FT, LBS of torque. On the road the car was smooth and tractable with blistering acceleration, for example 80 to 100 MPH in 6th gear was around the 3 second mark!
As well as these significant engine modifications (all carried out in house) we also converted the original 5 speed manual to a modern 6 speed manual gear box, fully rebuilt the front suspension with adjustable shock absorbers and uprated anti roll bar, AP racing brakes, electronic power steering, HD headlights and an instrument LED upgrade completed the package.
As a whole, the enhancements package produced a phenomenally quick and usable car which is not only an excellent track day “tool” but also a reliable everyday road vehicle.
Please feel free to contact us, we can tailor packages to suit any personal requirements you may have.
Please note, we also have a sequential EFI system which is completely hidden and retains the original S.U or Weber Carburettors. Please contact us for further information.


BOSCH

GT Engine

The GT Engine

A further development is to fit the GT Cylinder head. This differs from the standard by having twin spark plugs for each cylinder. Originally this cylinder head was developed for the DB4 GT. Around 120 DB4 GT's were manufactured during 1960 and 1961. The GT engine provides a further increase in power, particularly at 4,500 rpm and above. This GT cylinder head can be offered on any of the fast road or ultimate engine specifications.

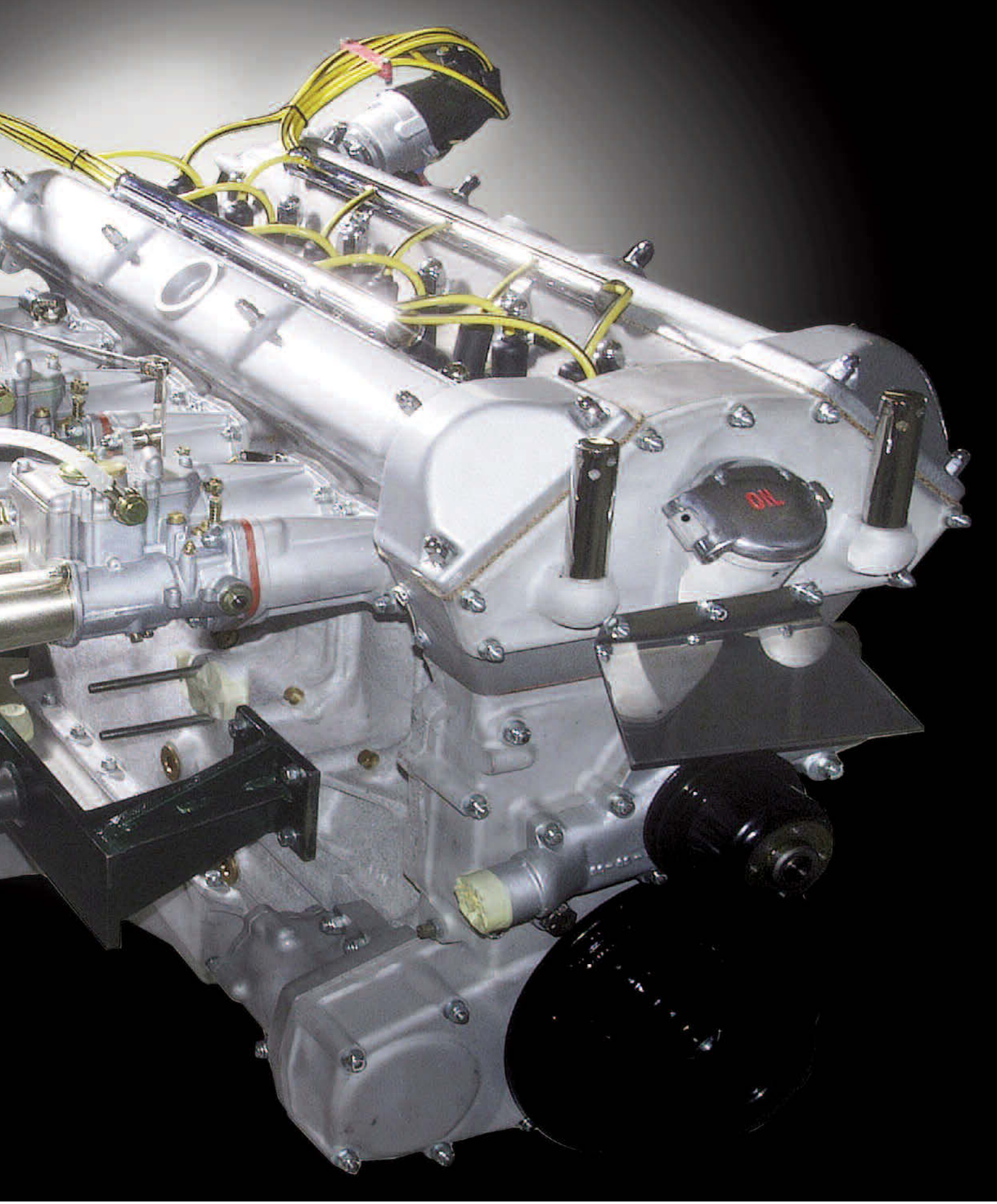
Some important modifications are required to the engine bulkhead and heater assembly, to provide adequate clearance for the second distributor. The cylinder head comes with significant improvement in inlet and exhaust porting over the standard head, which further aids the breathing.

Complimentary Transmission, Suspension, Brake Upgrades

In all other respects, the complimentary transmission, brake and suspension modifications that would be recommended are those for the fast road engine, as detailed above, but with the desirable addition of :

- 4 pot racing and ventilated front brakes and calipers
- Full flow engine oil cooler (as opposed to the bypass oil cooler system fitted as standard)

Contact Us for more information


OIL

The V8 Engines

General points

The Aston Martin V8 engine was originally defined and specified during 1963 as the DB5 was being readied for production. From the outset, conceived as a V8 of greater than 4 litre capacity, it incorporated many of the same technical and physical features of its predecessor, particularly, cylinder block design. This eventually resulted in an engine of 5.3 litre capacity.

A major aspect of the design brief was the use of wet liners and cylinder head design using two large valves per cylinder and twin overhead camshafts would continue. The policy of incorporating very generously dimensioned main bearings was also to be continued.

As a result of using the engine in a specially designed Lola chassis to go racing, some important weakness became evident in the cylinder block design and this led to a major re-work and strengthening, producing as a result a very tough engine with enormous scope for development.

Finally, as a means it was hoped, to homologate the V8 in the American market, it was decided to use a Bosch hydro mechanical fuel injection system, so that the emission requirements could be satisfied. Regrettably this early fuel injection system proved troublesome and unreliable, resulting from the 200th car, a reversion to 4 down draught twin choke Weber carburettors and this policy continued until the introduction of the series 5 V8, when a Weber electronic fuel injection system was incorporated.

Early engines were capable in carburettered tune of around 310 bhp and 300 ft lbs of torque. With the introduction of the Vantage tune, with more generously dimensioned ports, high lift cams and higher compression, power grew to 380 bhp and the X-pack still further to a highly reliable 430 bhp.

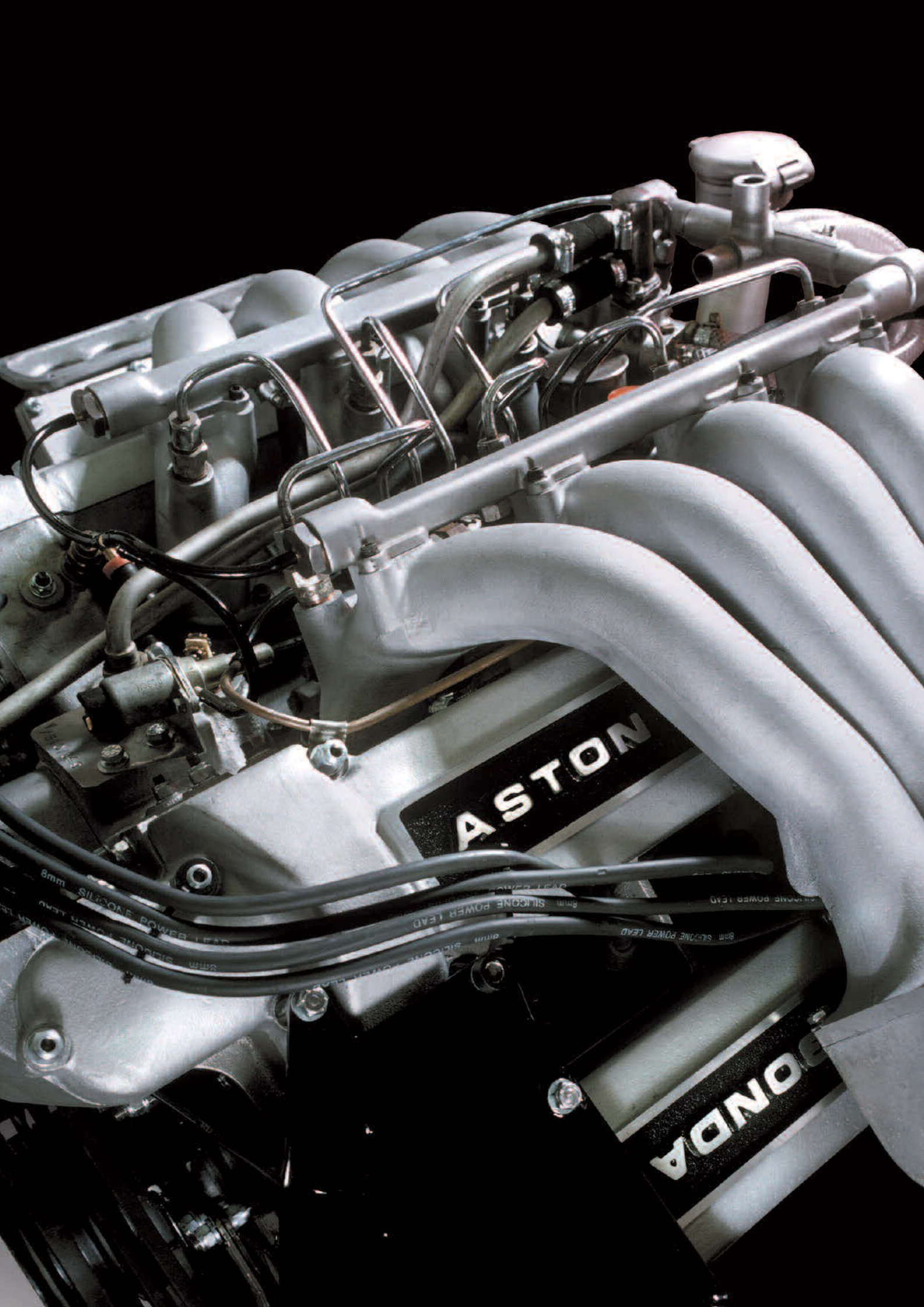
Aston Martin further developed the V8, introducing an enlarged 6 litre design, and with the Vantage 550, twin superchargers with fuel injection producing again with complete reliability, up to 550 bhp and in excess of 500 ft lbs of torque.

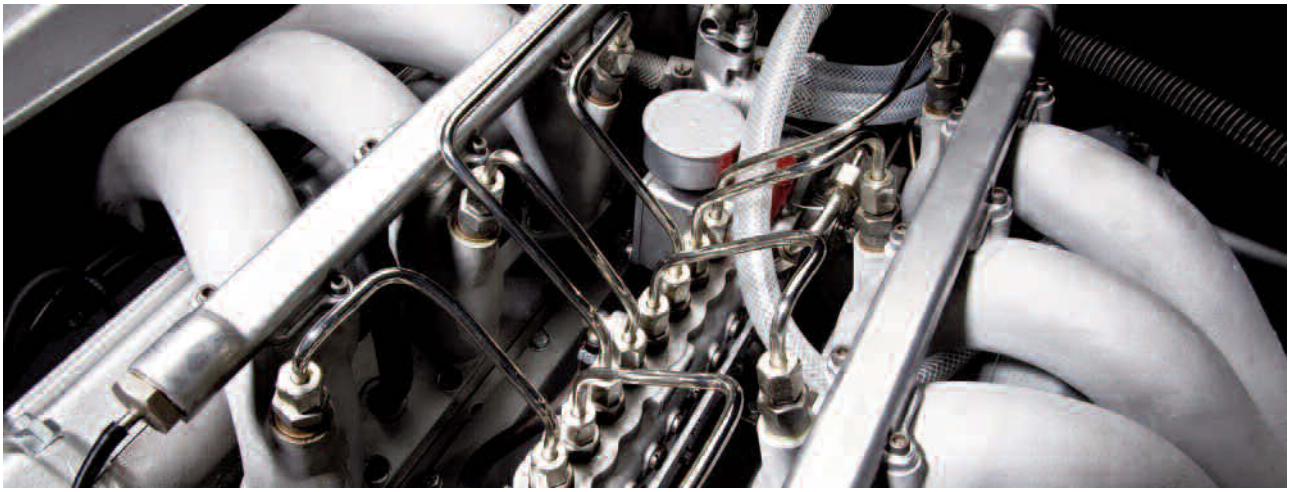
RS Williams went further by developing this engine with a longer stroke crank and yet further modification to cylinder block and head to 6.5 and 7 litre capacity, these producing 600 bhp with a further increase in available torque. It is a testament to its development potential that such massive increases in power and size have been possible and how unstressed the standard engine is.

Fast road engine enhancements

From the foregoing, it is quite possible to produce engines, which provide a substantial increase in power and torque simply by modifying engines to an established design specification. As a general rule, therefore our standard fast road engine is basically common with the V8 X-pack, the X-pack engine being a later development of the Vantage engine that went into production in 1977.

With lightweight low friction pistons, electronic ignition, revised camshaft timing and porting, these engines develop around 430 bhp and 350 to 370 ft lbs of torque totally reliably and with excellent flexibility and smoothness.


ASTON
8mm SILICONE POWER LEAD



An increase to 6 litres can be readily incorporated that provides a sizeable increment of additional torque over the entire engine speed range. This makes for exceedingly rapid and flexible performance. The main fast road engine options are therefore:

- 5.3 litres standard Vantage specification – nominally 380 bhp
- 5.3 litre standard Vantage X-Pack specification – nominally 430 bhp
- 6.0 litre standard spec – nominally 380 plus 20% increase in torque from 1500 to 5000 rpm
- 6.0 litre X Pack nominally 460 to 470 bhp plus additional 20% torque from 1500 to 5000 rpm

The fast road options above retain the original stroke of the engine, and because of that, it is possible to retain the original crankshaft and con rods and thereby, limit the costs of the upgrade. However, the decision to retain or replace these depends critically on condition. A new crank and rods may be desirable with the 6 litre option.

A simultaneous engine overhaul, which would be desirable anyway, will involve new liners and pistons. All of the fast road options require extensive changes to the cylinder heads, from enlarged valve seats, valves, springs and cam followers to gas flowing of the inlet and exhaust ports and new camshafts. New lightweight forged high compression pistons are also required.

The standard Vantage carburettor is the Weber 48 IDF with Vantage standard inlet manifolds. A set of enlarged bore exhausts manifolds are also required to compliment changes to the cylinder head.

Complimentary transmission upgrades

The standard transmission, whether auto or manual, will be capable of accepting the considerable increase in torque and power that comes from the Vantage engine. As always, the proviso should be that it must be fully serviceable and in good repair. However, the proviso, with the automatic gearbox is that the size and capacity of the standard transmission oil cooler must be increased. On manual cars, a heavy duty clutch must be fitted. The final drive differential carrier and its supporting cradle will need to be strengthened. In very hot climates, it may be advantageous to install a final drive oil cooler, for which we have an established scheme and installation kit. Finally, consideration should also be given to modifying the final drive ratio, where this may offer useful advantages.

In summary the upgrades are:

- Auto gearbox oil cooler
- Heavy duty clutch (Manual only)
- Strengthened final drive carrier and cradle
- Higher final drive ratio (dependent on customer choice)

Complimentary suspension and brake upgrades

When upgrading the standard V8 to full Vantage spec, it is essential that suspension is also upgraded to the Vantage spec or with upgraded fast road front brakes. This includes lowered and stiffened road springs, a thicker front anti-roll bar, complementary heavy-duty up rated dampers and a rear anti-roll bar. At the same time, it is essential to upgrade the braking system, with enlarged front discs and high performance, heavy-duty brake pads. Consideration should also be given to reviewing whether more powerful brake servos are desirable. In summary these are:

V8 Vantage suspension upgrade kit
(including rear anti roll bar kit)
V8 Vantage brake upgrade kit

Complimentary Wheel and Tyre upgrade

The standard V8 uses 225/70 15 tyres with a 6.5 J wheel width. This needs to be increased to cope with the additional torque and power available. The Vantage specification calls for 7J wheels with 255/55 16 tyres.

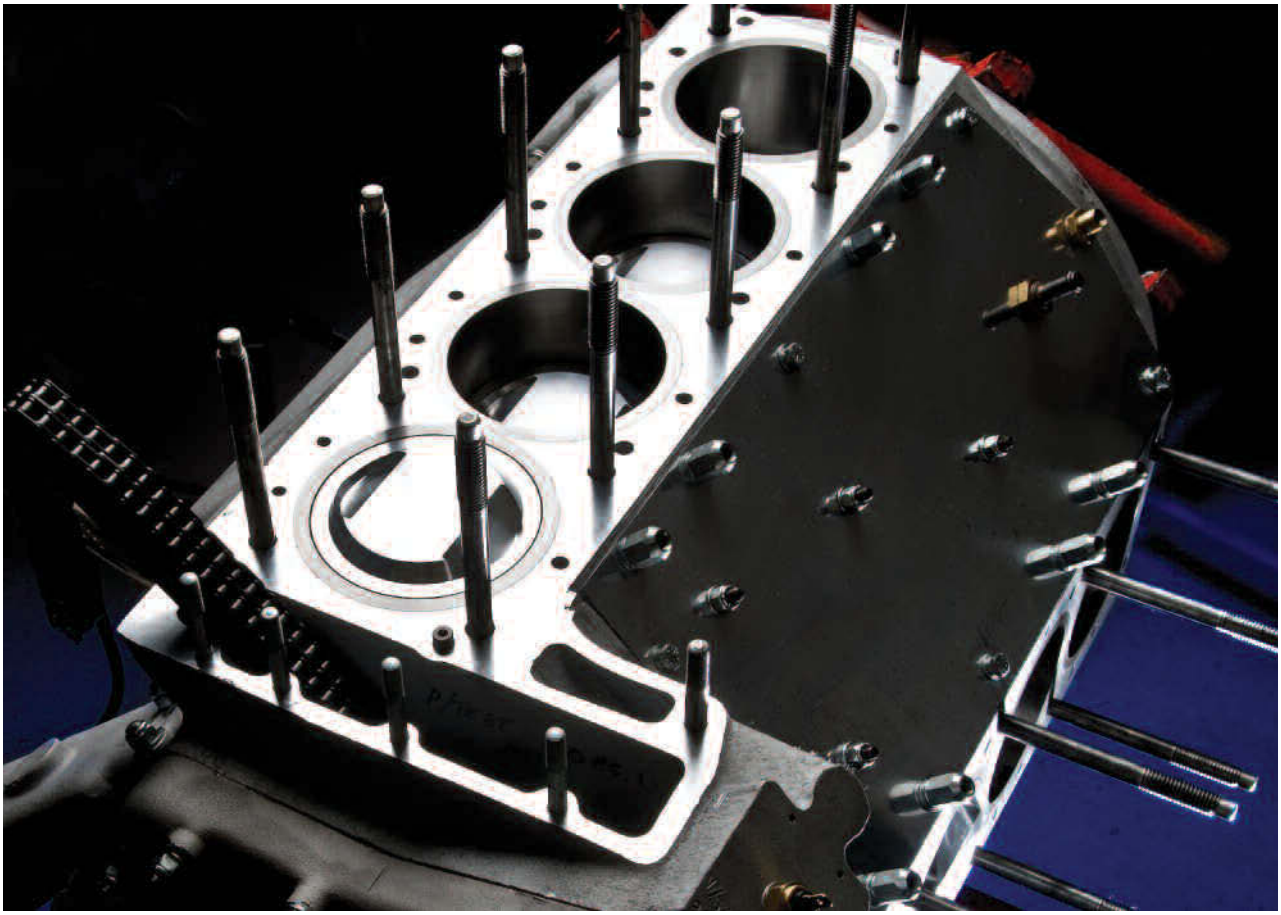
16in BBS wheels
255/55 ZR 16 Tyres

Reliability, flexibility and refinement

The standard 5.3 litres V8, whether in carburettor form or as with the Series 5 V8, fuel injection, starts as a highly flexible engine with abundant torque from as low as 1000 rpm. It is also a highly refined engine. Improvement to the inherent reliability of this engine needs, therefore to be in the areas of ignition and cooling predominantly. Improvement in general refinement is based on ensuring that the balance of the engine is optimal and this is best ensured during an engine rebuild.

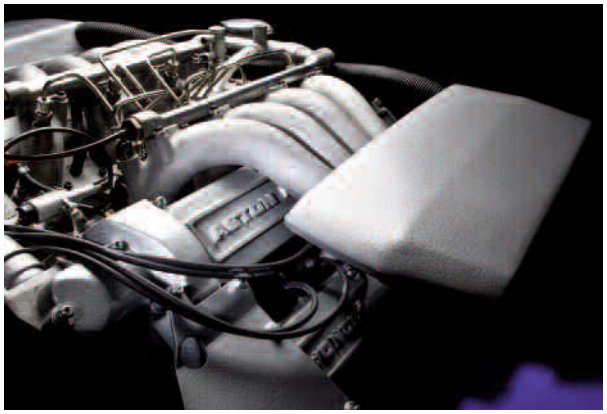
The following upgrades apply equally to Vantage and standard engines:

Ignition System upgrade
Cooling System upgrade (Coolant & oil)



The Ultimate V8

The Aston Martin V8 has shown itself to be adaptable to a bewildering range of options, with some versions having been developed from the standard 5.3 litre V8, through capacity increases to as high as 7 litre and with a variety of fuelling options ranging from up-rated carburettors to single and double superchargers and to power and torque figures of 600 bhp and 500 ftlbs of torque. These are massive increases from the standard engine,



which develops around 320 bhp and produces around 250 to 260 ft lbs of torque.
"The Tadek Marek designed Aston Martin V8 Engine lends itself to many configurations and capacities from the production 5.3 litre in 1969 to the final supercharged Vantage in 2000. During this time various upgrades have been developed to provide the Aston Martin V8 driver with a power upgrade to suit his needs.
Aston Workshop promote the 6 litre or 6.3 litre capacity engine to provide the extra torque to enhance the driving pleasure of the vehicle providing superb mid-range accelleration with prodigious pulling power as well as maintaining an acceptable fuel consumption to maintain its touring car range.

Complimentary Transmission, Suspension, Brake Upgrades for the Ultimate Engine

In all other respects, the complimentary transmission, brake and suspension modifications that would be recommended are those for the fast road engine, as detailed above, but with the desirable addition of :

6 pot racing and ventilated front brakes and callipers

Full flow engine oil cooler (as opposed to the bypass oil cooler system fitted as standard)

Contact Us for more information

Handling Kits

General

Modern gas filled dampers, adjustable in some cases, progressive rate springs and modern radial tyres have transformed the handling characteristics of modern cars and these advantages are available to classic car owners as well. **By adjusting damper settings, different suspension settings and spring rates and optimising these in conjunction with modern radial tyres, it becomes possible to tailor the handling characteristics to those desired by the owner**. Finally, replacing rear lever arm dampers, which have been fitted to every Aston Martin made up until around 1974, with telescopic dampers, gets rid of what has now become an obsolete component. We have developed **The Monza Adjustable Rear Telescopic Damper Kit** for DB2's through to the V8 models.

Furthermore, it is yet another significant step forward in achieving modern standards of ride comfort and road behaviour.

Finally there is the wider question of choice of tyres. At the end of the day, choice of tyre is a personal decision, and while we will recommend certain options that we know work well, the choice inevitably must be the customer's.

You will see in this section, therefore, a constant reference to the optimal combination of suspension improvements, settings and tyre choices in the upgrade recommendations made below.

DB2, DB2/4 & Mk 3

DB2, DB2/4 and DB Mk 3 Suspension and Tyre Upgrades

General Characteristics
Designed in the late 1940's, the use of a double trailing arm front suspension with divided track rods for steering reflected a design concept that owes its origins to the racing Auto Unions of the 1930s. In combination with a cam and peg steering box, it provided a significant improvement in handling and ride comfort over the pre war use of a rigid beam front axle in combination with semi-elliptical front springs used on the 1 ½ and 2 litre cars of the Vintage era. The DB2 gained a fine reputation for handling and roadholding and was among the first production cars on the British market to introduce independent front suspension as the 1940's drew to a close.

Front Suspension

The front suspension uses twin-trailing arms. The upper trailing arm comprises the lever arm front shock absorber (damper). The lower arm is pivoted from a transverse cross member bolted to the chassis. Comprising of a hollow oil filled tube, there is a torsion bar that is splined to each of the lower trailing arms, and hence this acts as an anti-roll bar. In the bottom centre of this tube there is a pivot, which connects the divided trailing arms and drag link from the steering box.
The suspension uses coil springs which bear direct onto the king pin assembly and at the upper end is held within an aluminium spring tower bolted to the chassis.
The original suspension was designed for use with cross ply tyres, and with such tyres, the turn in and cornering is good, so long as the damping remains effective with minimal understeer. Some adjustment of camber and caster angle is possible within narrow limits.

Changing to radial tyres with a significantly reduced slip angle has the effect of inducing an element of oversteer, and to counteract that, a stiffer front anti-roll bar is desirable.

Rear Suspension

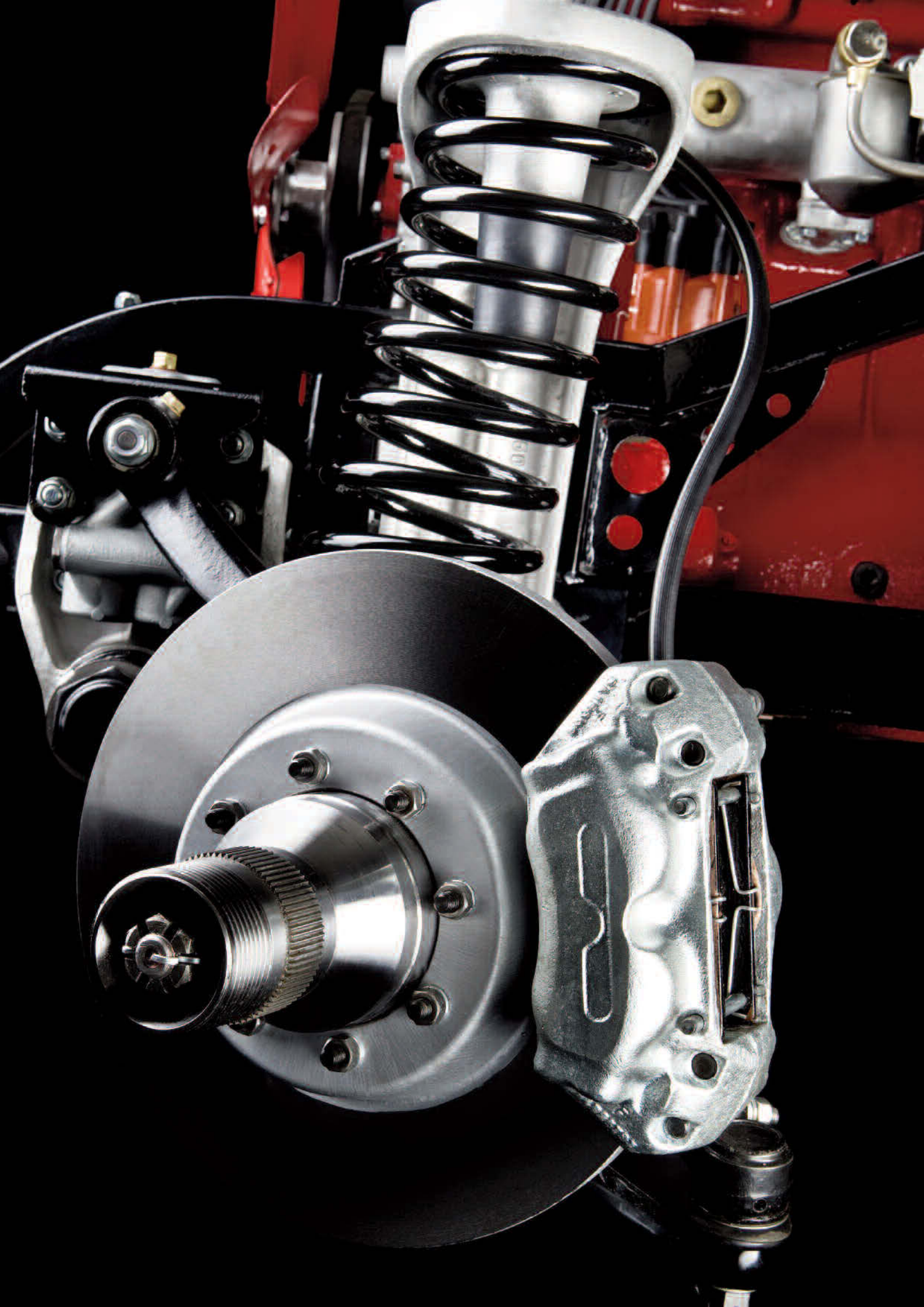
The rear suspension comprises twin equal length trailing arms with coil springs. Damping is achieved with lever arm shock absorbers acting on the lower trailing arms that also have the rear axle bolted to them. A Panhard rod is used to control any lateral movement.

Fast Road Suspension Upgrades

The aim of the fast road suspension kit is to improve general handling and to optimise the suspension for use with modern radial tyres. There are two options, the first of which replaces the rear lever arm shock absorber with a telescopic damper kit. The second option preserves the rear lever arms. A third option which can be offered is to improve the general efficiency of the front shock absorbers by adding an additional telescopic front damper, which is attached at the bottom with a bracket bolted to the king pin casting and at the top a bracket which is bolted to the top of the front suspension spring tower. The options are as follows:

Option 1

- The Monza Telescopic Rear Damper Kit
- The Monte Carlo Kit Stiffer front roll bar with fast road front and rear springs
- Up rated front shock absorbers
- Radial ply tyres



Options 2

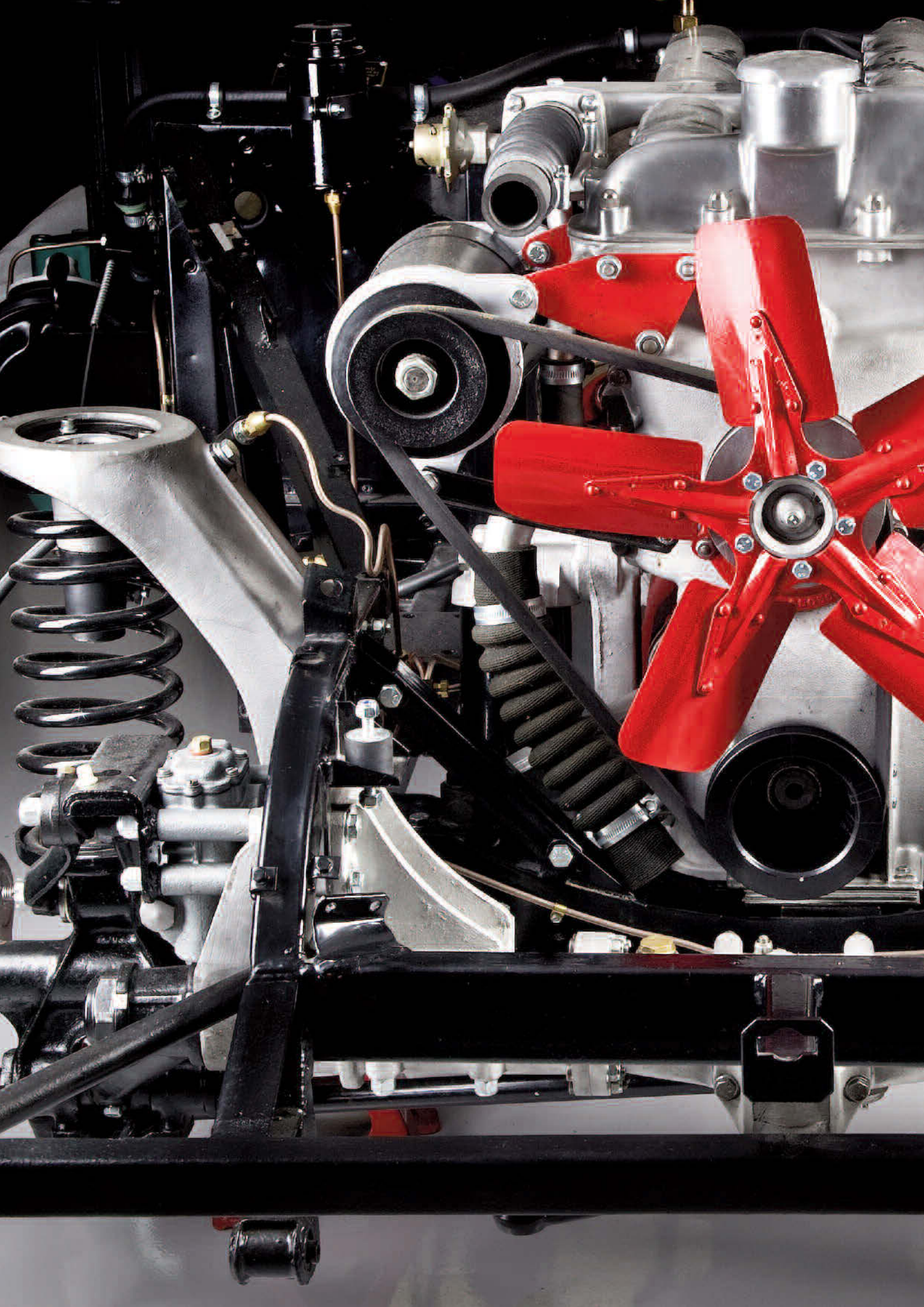
- Option 1 plus front telescopic dampers

While the standard wheels can continue to be used, careful consideration should be given to using 72 spoke wire wheels. Tyre size should ideally be retained using either 6.00-16 or 185-16 tyres. Wider section wheels and tyres are not recommended for general road use. If it is desired to continue the use of cross ply tyres, then it is recommended that the front anti-roll bar is retained as standard.

Safety Upgrades

Even the very last of the DB2 family of cars was built 50 years ago. Key stressed components such as the front suspension spring towers and front and rear hubs are known to have a tendency at this age to crack and if allowed to develop fail with potentially disastrous consequences. Other components, which should also be critically examined and replaced if at all suspect, include the rear suspension trailing arm front and rear pivot castings and rear axle U bolts. In addition the rear trailing arms should be critically examined for wastage as a result of general corrosion.
In summary the following components are safety critical:

Front Suspension Spring Towers
Front Hubs
Rear Hubs
Rear Suspension Trailing arm pivot castings
Rear axle U Bolts



DB4, 5 & 6

DB 4, 5 and 6 Suspension and Tyre Upgrades

General Characteristics
The design of the suspension for the DB4, which was launched in 1958, was a complete break from any previous road car designs. The front suspension design evolved and was honed from the DB3S and DBR1 sports racing cars developed under Aston Martin's racing programme during the 1950's and comprised unequal length double wishbones, telescopic dampers and springs. The rear suspension of both the DB3S and DBR1 included a De Dion independent rear suspension and it had been intended to use such a system in the DB4. However, the difficulties in developing a satisfactory installation and the lack of any constant velocity joints that would have accepted the pivot arcs, that were inevitable with the rear suspension design of that type created major concerns as to the maturity of its design and cost. It was therefore decided to use a conventional rigid rear axle located fore and aft with twin trailing arms and lateral location using a Watts linkage.
The DB4 and the DB5 and 6 that followed gained a fine reputation for road holding and ride comfort. The introduction of the E-Type, however, brought home the value of independent rear suspension. It would be only when the DBS was launched in 1968 that the De Dion rear suspension saw its introduction in an Aston Martin road going car.

Front Suspension

The front suspension comprises of twin unequal upper wishbones with top king pin spherical joint outboard, a lower forward wishbone, again outboard with a spherical joint. The rear lower wishbone arm comprises a drag link, pivoted inboard with a rubber bushed spherical pivot and outboard is secured to the bottom wishbone spherical joint.
The Suspension spring in unit with the telescopic front damper bears down on the lower wishbone assembly. Adjustment of camber angle and caster angle is by shim on the upper wishbone.
A front anti-roll bar completes the suspension design. Steering is by rack and pinion. The original suspension was designed for use with cross ply tyres, and with such tyres, the turn in and cornering is good, so long as the damping remains effective with some understeer designed in.
Changing to radial tyres with a significantly reduced slip angle has the effect of inducing an element of oversteer, and to counteract that, a stiffer front anti-roll bar is desirable. Turn-in is critically affected by camber angle, particularly when wider section radial tyres are being used.

Rear Suspension

The DB4 and 5 rear suspension is by twin equal length trailing arms for longitudinal location and Watts linkage for lateral location. With the DB6, the upper training arm is slightly shorter and this induces some natural roll stiffness and serves usefully to counteract the effects of some minor additional weight over the rear wheels and to maintain a gentle understeer.
The coil springs bear down direct onto the rigid rear axle. Damping is achieved using lever arm dampers, with some ride stiffness control using Selectaride shock absorbers on the DB5 and DB6.

Fast Road Suspension Upgrades

The aim of the fast road suspension kit is to improve general handling and to optimise the suspension for

use with modern radial tyres. There are two options the first of which replaces the rear lever arm shock absorber with a telescopic damper kit. The second option preserves the rear lever arms. The options are as follows:

Option 1

- The Monte Carlo Kit with stiffer front roll bar and fast road front and rear springs
- Up rated front shock absorbers - plus
- Radial ply tyres

Option 2

- Option 1plus The Monza Agjustable Rear Telescopic Kit

Inevitably there may well be owners who, for originality's sake, wish to continue to use cross ply tyres. The recommended way forward in this case would be to still fit the Monte Carlo Kit, but to counter the increased understeer inevitable with an increase in front roll stiffness, to adjust the camber angle to suit to retain the desired turn-in characteristics. Some additional compensation may be possible by judicious change in the balance of front and rear tyre pressures.

Finally, the DB4, 5 and 6 respond well to use of wider section wheels and tyres, the key limiting factors being the ability of the wheel arches to accommodate wider section tyres and heaviness of the steering. In general the widest section that can be sensibly recommended for non power steering cars is most probably 185 section tyres on 6J wide rims, while still retaining an ability to manoeuvre the car at parking speeds without excessive effort. With power steering, the sensible maximum section is the 225 section tyres with 6J rims, although most choose 205 section tyres on 6J rims.

Safety Upgrades

The front and rear suspension on the DB4 and later cars has shown itself to be remarkably tough and apart from wishbone inner and outer pivots and bushes, free of age related problems. However, hubs wear and it is a wise precaution, if contemplating the fitting of a fast road suspension, to replace both front and rear hubs.

- Front Hubs
- Rear Hubs

DBS & V8

General Characteristics

The long awaited introduction of a De Dion type independent rear suspension finally happened when the DBS was launched in 1968. The front suspension remained identical to the system used in the DB6, save for minor detailing, spring rates and damper settings.
The independent rear suspension came with a De Dion tube located for and aft with twin trailing arms and laterally with a Watts linkage. Coil springs with lever arm dampers completed the specification. The final drive and differential housing was held in its own cradle, which was bolted to the chassis and insulated with rubber bushes. Rear disc brakes were inboard and accessed via a small hatch under the rear seat.
Finally a stiffer front anti-roll bar was specified. The system was to continue in production all the way until the 1989 when the new Virage was launched with a radically re-designed rear suspension, still of the De Dion type, but with quite different arrangements for fore and aft and lateral location.

Front Suspension

The front suspension comprises of twin unequal length upper wishbones with top king pin spherical joint outboard, a lower forward wishbone, again outboard with a spherical joint. The rear lower wishbone arm comprises a drag link, pivoted inboard with a rubber bushed spherical pivot and outboard is secured to the bottom wishbone spherical joint.
The Suspension spring in unit with the telescopic front damper bears down on the lower wishbone assembly. Adjustment of camber angle and caster angle is by shim on the upper wishbone.
A front anti-roll bar completes the suspension design. Steering is by rack and pinion. The original suspension was designed from the outset with radial play tyres. The system retains much of the feel and suppleness of the DB6 system, which it so closely resembles.
Finally the suspension settings, spring rates and stiffness of the front anti-roll bar were optimised for road use and for the significantly greater weight of the DBS and the V8.

Rear Suspension

Of the De Dion type, the rear suspension consists of a tube laterally located with a Watts Linkage with trailing hub carriers, left and right. The De Dion tube is located with twin trailing arms for fore and aft location.
The final drive unit is fitted in its own cradle and is located using rubber mounting bushes to the chassis. Inboard disc brakes are fitted either side of the differential. The drive to the wheels is via universally jointed drive shafts, located inboard to the differential and outboard to the hubs located within the hub carriers. The rear suspension comes with coil spring units. Rear suspension dampers use lever arm shock absorbers for DBS and V8 models up until the Series 3 V8 and V8 Vantage. Thereafter, all later V8 and V8 Vantage models use telescopic rear dampers.
The De Dion rear suspension radically improved general comfort and feel, giving an easy supple ride, but with outstanding traction and with a lightness of handling that masks the weight and bulk of the car. Near neutral handling ensued, which on the limits, gave way to an easily controlled gentle oversteer.

Fast Road Suspension Upgrades

All DBS and V8 models excluding the V8 Vantage

The main objectives of the fast road suspension are to provide much improved and controllable damping, tauter handling and much reduced roll and pitch. The consequence is generally improved road feel; higher levels of adhesion with little loss of ride comfort.
The main elements of the fast road kit are:

Option 1 – Fast Road Kit

- Monte Carlo Handling Kit The Monte Carlo Kit with stiffer front roll bar and fast road front and rear springs
- Monza Adjustable Rear Telescopic Damper Kit

Option 2 – The ultimate fast road Kit – applicable V8 cars only

- Option 1 plus Rear anti-roll bar

DBS further options

The DBS and associated Vantage models made between 1968 and 1972 are fitted with 6J wire wheels. To complement the fast road suspension, we recommend also fitting 225-70VR 15 tyres.

The V8 Vantage

The V8 Vantage suspension has been designed to complement the very high levels of performance available. There is in consequence no generally available fast road suspension upgrades available that can further improve the handling and stability, which is achieved using the Vantage production standard suspension specification.

Brake Upgrades

General Characteristics

As with many automotive systems, advances in design and materials have transformed brake performance and safety. Some systems, which are now finding almost universal application, include ABS, Emergency Brake Assist and Dynamic Systems Control, all of which integrate the brake system with engine management and steering. This level of integration is not a feasible proposition for the older car. However, other advances in materials and systems are now available. These include ventilated discs, new brake pad materials, up rated servo assistance and duplex brake systems, which are all feasible and provide a degree of brake performance and reserve capacity that was beyond the ability of the designer to specify right up until the early 1990s'.

We are all aware that the use of asbestos in any shape or form can lead to the release of asbestos particles, which if inhaled can lead to the onset of lung cancer. Consequently brake pad and liners material specifications have changed drastically from earlier times and they in turn have different properties that require to be taken account of in modifying brake systems and making them fit for use in modern traffic conditions.

What follows in this section are the recommended upgrades that we believe will lead to optimum brake system performance and balance and which will compliment the up rating of these cars with fast road engine performance modifications, and fast road suspension systems. In addition, there are also a range of Safety related upgrades that we recommend any owner should seriously consider embodying.

Brake Pad and Liner materials

There is a wide range of materials with different mixes of resin, friction material, binders etc and all of which have different heat ranges, coefficients of friction and tolerance to high temperatures. Some materials are best suited to low speed use with good "bite" that do not require any heat to realise their full braking performance. The heat tolerance of such materials is comparatively poor. Others are developed for high speeds and heavy use, which may well have lower coefficients of friction until the temperature has risen, but whose heat tolerance is very high.

The choice of brake pad and liner material is crucial in defining the braking performance, and often, the correct choice of pad will achieve the desired improvement in braking performance.

DB2, DB2/4 Brake System Upgrades

The DB2 and DB 2/4 up to the introduction of the DB Mk 3 were equipped with all 12 in Girling drum brakes with Alfin drums. The front brakes came with both leading and trailing fully floating brake shoes designed to have good all round performance. They come with a mechanical adjuster. The rear brakes also featured leading and trailing shoes with a fully floating double acting piston assembly. No brake servo was fitted. The handbrake acts on the rear drums and was equipped with a manual adjuster.

As fitted, they provide effective retardation all be it with fairly high pedal pressures. It is therefore a fairly common modification to fit a brake servo acting on the front cylinders only.

The brake system was itself simplex with one master cylinder acting on a single hydraulic brake circuit.

Contact us for more information


AP RACING

AP Racing Kits

Fast Road Upgrades

The general areas of improvement to balance the performance improvement of a fast road engine are to keep brake pedal pressures modest, fit harder more heat tolerant brake linings and to also offer the alternative of converting the front brakes to disc brakes. The combination ensures that brakes are more progressive in use and can be stressed more highly before there is evidence of brake fade. The upgrade options offered are therefore:

- Brake servo
- Harder brake linings
- Front Disc Brake conversion

If a brake servo is fitted which acts on both front and rear brakes, it will be important to introduce a rear brake pressure limiter valve to ensure that the rear brakes do not lock up prior to those acting on the front wheels.

Safety Upgrades

The key safety concern with the simplex brake system fitted to the DB 2 and DB2/4 is that a total brake loss could arise with a single point hydraulic system failure. To avoid that possibility, a duplex master cylinder with separate front and rear brake circuits can be offered. Separate hydraulic reservoirs are also fitted. Braided flexible brake hoses are offered to add assurance to the integrity of the brake system

DB4, DB5 and DB6 Brake system upgrades

All models come with disc brakes on both front and rear wheels. While the DB4 came with Dunlop disc brake units, the DB5 and later cars came with a Girling disc brake system. Girling braked cars came with a duplex braking system with twin servos for front and rear brake circuits.

Dunlop braked cars are fitted with a simplex brake system, single servo and single pot disc brake callipers for both front and rear brakes as standard. In contrast, the Girling brake system uses twin pot callipers with pads of significantly greater size. The handbrake acting on the rear discs with a separate cable operated brake calliper that is mounted to the rear disc brake calliper unit.

DB4 fast road Brake system upgrades

A limitation of the Dunlop system fitted to the DB4 is the reserve braking capacity that is available with a simplex single pad system. The Dunlop brakes use pads of comparatively small size and in order to

absorb the heat energy that follows from heavy high speed brake application; necessarily require a high heat tolerance. The consequence is a brake system that lacks the initial "bite" that the modern car user expects, especially when the brakes are 'cold'. Further the reserve thermal heat capacity is limited and this gives a feel that suggests that the car is under braked during heavy high speed application. An attractive option for the DB4 owner is therefore to upgrade the brake system to the duplex twin servo Girling brake system fitted to the DB5 and DB6. If even better brake system performance is required, then the system can be further modified with ventilated front discs and modern six pot brake callipers. Cars fitted with this upgrade will then cope with the extreme use that comes with track day use, while also reducing general road use brake system pedal pressures and enhancing yet further the already excellent progressive brake system performance of the standard system.

The DB4 fast road brake options are

Option 1

Girling brake system upgrade

- Girling discs Front
- Girling discs Rear
- Girling 3 pot disc brake callipers Front
- Girling 3 pot disc callipers Rear
- Twin servos
- Duplex Girling Brake master cylinder
- Separate front and rear hydraulic brake hydraulic circuits.

OPTION 2 –

Enhanced fast road brake system

- As option 1 but with **The AP Racing Kit** ventilated front discs and AP racing six pot front brake callipers – Front

Fitting this upgrade also demands the fitting of 6.5J wire wheels to proved the necessary clearance for the front disc and calliper assembly.

DB4 Safety Upgrades

The key safety concern with the Dunlop simplex brake system fitted to the Series 1 to Series 4 DB 4 is that a total brake loss could arise with a single point hydraulic system failure. To avoid that possibility, a duplex Girling master cylinder with separate front and rear brake circuits can be offered. Separate hydraulic reservoirs are also fitted. Braided flexible brake hoses are offered to add assurance to the integrity of the brake system. If adopting option 1 fast road Brake System upgrade, the system is given enhanced effectiveness with separate front brake and rear brake servos.

DB5 and DB6 fast road Brake System Upgrades

An all Girling disc duplex brake system is fitted with twin servos, that provides totally separate front and rear hydraulic systems. By common consent, the system fitted is very highly regarded, with excellent brake cooling and this provides more than adequate reserve braking system performance, except possibly on the race track. It is possible to upgrade the

system which will reduce pedal pressures, enhance the already highly progressive standard brake system and to provide an imroved high speed response.
The recomended DB5 and DB6 fast road options are:

OPTION 1

- Uprated servos

OPTION 2

- Option 1 plus
- **The AP Racing Kit**
  ventilated front discs and AP racing six pot front brake callipers – Front

DBS and V8 fast road Brake System upgrades

As with the DB6, the DBS and V8 come with an all disc brake configuration with inboard rear disc brakes. The standard brakes of the DBS are as for the DB6 with an all Girling twin pot calliper system with twin brake servos. The V8 follows an identical approach with the addition of ventilated front discs, enlarged three pot front callipers and ventilated rear discs with 3 pot Girling callipers.

DBS models fast road brake option

The upgrade option for the DBS and Vantage models is:

- **The AP Racing Kit**
  ventilated front discs and AP racing six pot front brake callipers – Front

V8 models excepting V8 Vantage – fast road Brake option

There are two principal options available to the V8 owner. The recommended option which enhances the progressive feel of the brakes, reduces pedal pressures and provides an enhanced capacity for high speed use is to:

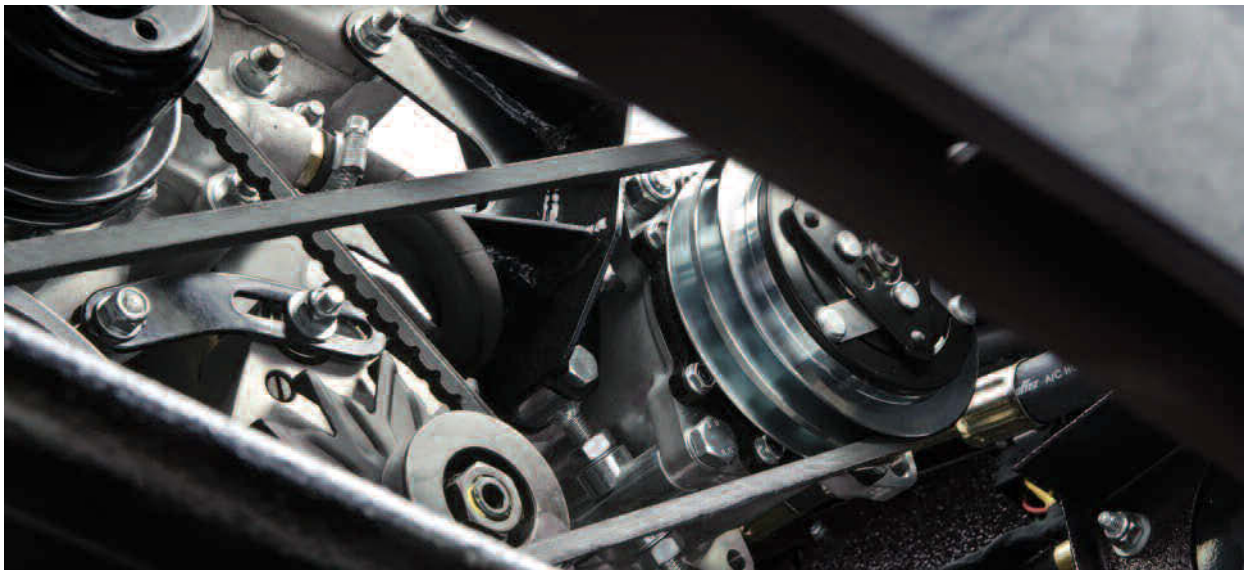
Option 1

- **The AP Racing Kit**
  ventilated front discs and AP racing six pot front brake callipers – Front

Option 2

- Full V8 Vantage brake system, Front and Rear

Air Conditioning



Air Conditioning Systems for Tropical Climates

Over the last 10 years, the Aston Workshop has gained a considerable amount of experience in providing Air Con systems fit for use in tropical and humid climates with ambient air temperatures that regularly exceed 40 deg Centigrade. Such tropicalised systems have been fitted to a wide range of cars including DB4s, DB5s and DB6s, V8 and less frequently even DB2 cars.

There are 3 major elements to tropical specification air con systems which differ from the standard. The first of these is the use of an upgraded air con compressor and a larger condenser, which is mounted in front of the main radiator behind the radiator grill. The second main change is the addition of a second evaporator with its own ventilation system. The second evaporator plenum chamber is situated underneath the shelf under the rear window or in the case of a convertible, underneath the hood stowage. In the case of the saloon cars, this brings about a need for a number of consequential changes, including the removal of the standard tank and its replacement with twin tanks situated behind the rear wheel arches as happens as per standard with the drophead coupes (Volante). The third significant change is the fitment of a more capable ventilation system with provision for recirculation of the cabin air.

Experience has shown that they can and do provide a comfortable environment in the hottest conditions likely to be encountered and as has already been mentioned, they have been specified for a significant number of cars we have supplied for our customers in the Middle East, SE Asia and elsewhere.

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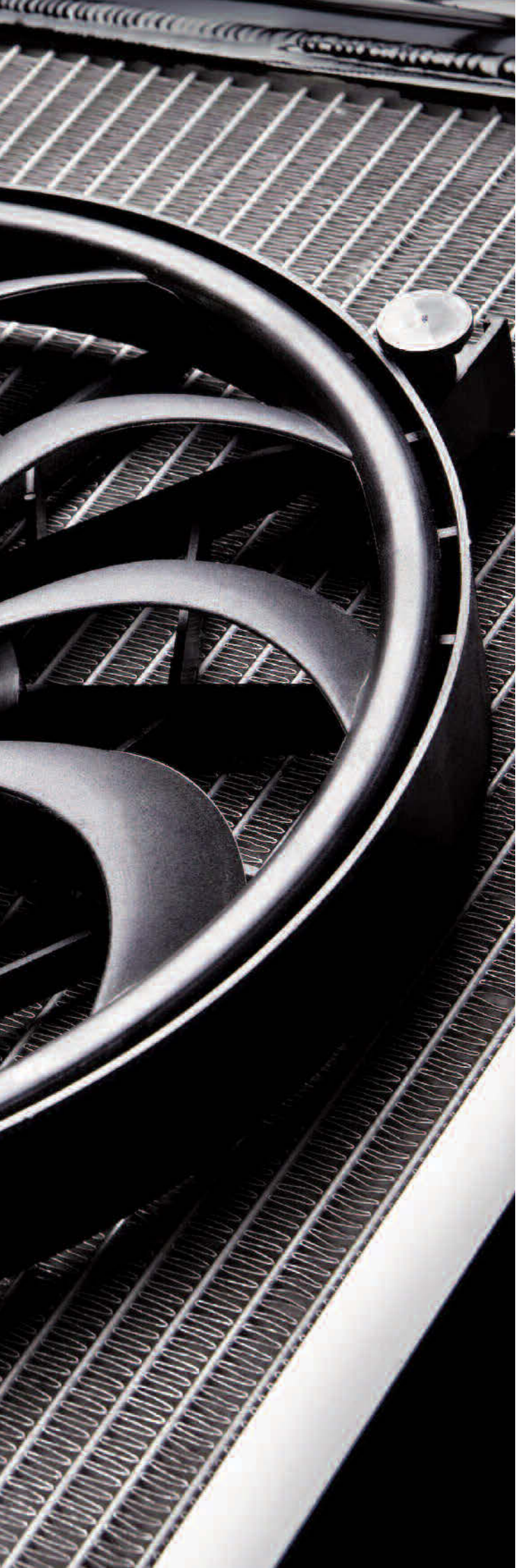


Cooling

Engine Cooling

Summer temperatures, heavy traffic, marginally cooled engines are a perennial problem for the classic car owner. Regrettably, Aston Martin was no different from many other car manufacturers of the day. To reduce the risk of overheating, the cooling capacity of the typical DB4 or early V8 needs significant upgrading. Not only does this need an improved and denser radiator matrix, but it is also essential to increase airflow through the radiator when the car is stationary or slow moving. On the latter point, the preferred answer is fit one or two electric thermostatically controlled fans.

The upgrade of cooling radiator and specification of electric fans depends on the climate where the car owner expects the car to be used and are thus best specified individually. The default choice is to fit the standard radiator with an upgraded radiator matrix. Another similar improvement can be achieved with a modern aluminium oil cooler.

Our **Imola Cooling Kit** consists of a new uprated aluminium radiator and an electronically controled Kenlow Fan is designed to give an effective solution to overheating and give you peace of mind in the most demanding conditions.

For those Astons operating in extremely high temperatures there is the option to add a second **Kenlow Fan** to the system.

Aluminium Fuel Tanks

A source of many car problems comes from the use of cars with contaminated fuel systems. Most of the contaminant is the result of fuel tank internal corrosion and the residual sludge that collects and finds itself in circulation through the fuel pipes, pump and carburettors. As many tanks are as old as the car, in many instances 50 or more years, this is hardly surprising.

Another irritating problem comes from the wildly fluctuating fuel gauge. The fuel contents are at best poorly and vaguely indicated.

The long-term solution is to fit a new aluminium tank with foam filling and a modern gauging unit. We can fit these with no outward indication, retaining the standard size, shape and position of fuel tank. The resultant rock steady and accurate indication of fuel contents can be a revelation!

This is a highly recommended upgrade for all cars not so fitted already and is a must for any restored car.

Daytona Window Lift Kits

Electric Windows became standard equipment only from the DB5 and later. Electric window lifts for the DB4 were an optional extra, rarely fitted except perhaps for cars being exported to the USA.
A source of many irritating problems, window lift mechanisms are often caused through faulty limit switches or electric motors and reduction gears in poor condition. Replacement original window lift motors are now unobtainable and are frankly not worth the cost of overhaul.
The Aston Workshop have developed **The Daytona Window Lift Kit** a simple but effective electric operated window lift system that can be readily adapted for use with Aston Martin DB4, DB5 and DB6's that replaces the existing window lift mechanism with a simple system that can be easily and cost effectively retro-fitted.
Our experience of these in service has been highly satisfactory.

Sat Nav and ICE

When it comes to classic cars, Satellite Navigation and In Car Entertainment systems are best specified and fitted on an individual basis.

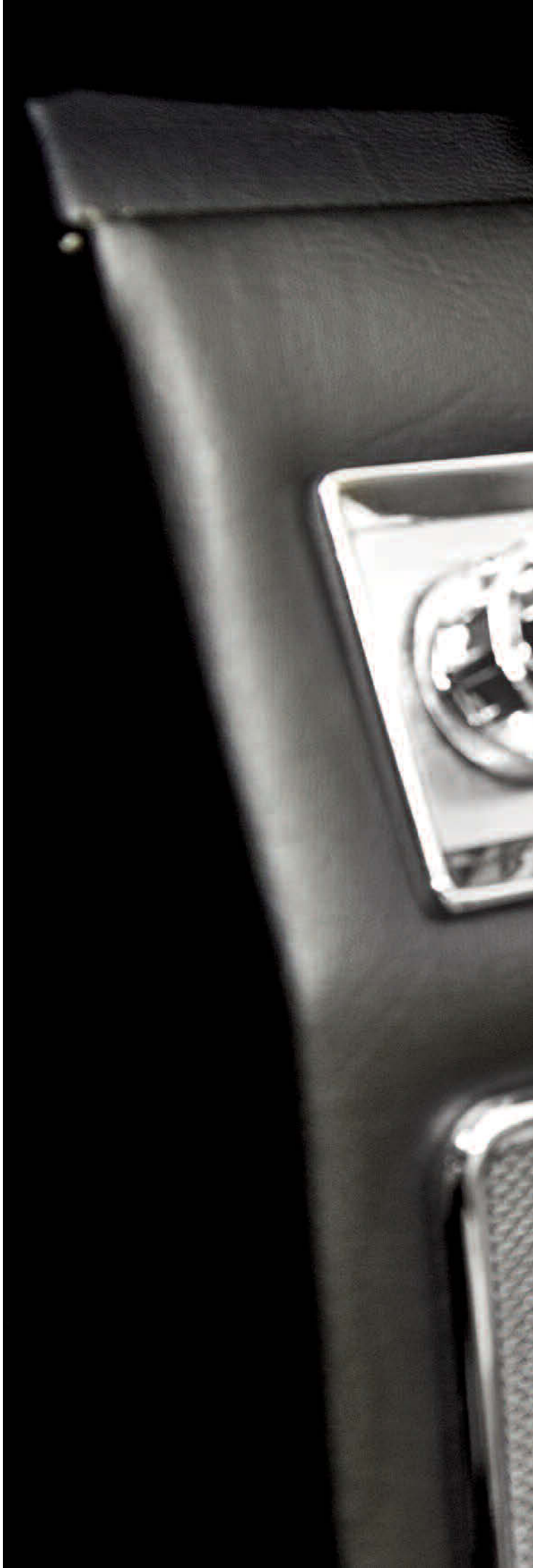
The choice of after market AV equipment is huge, but most systems are very modern in appearance and not suitable for installation in a classic Aston Martin. Finding the right combination of classic looks and modern functionality is key, and here at Aston Workshop we are constantly updating our recommended systems.

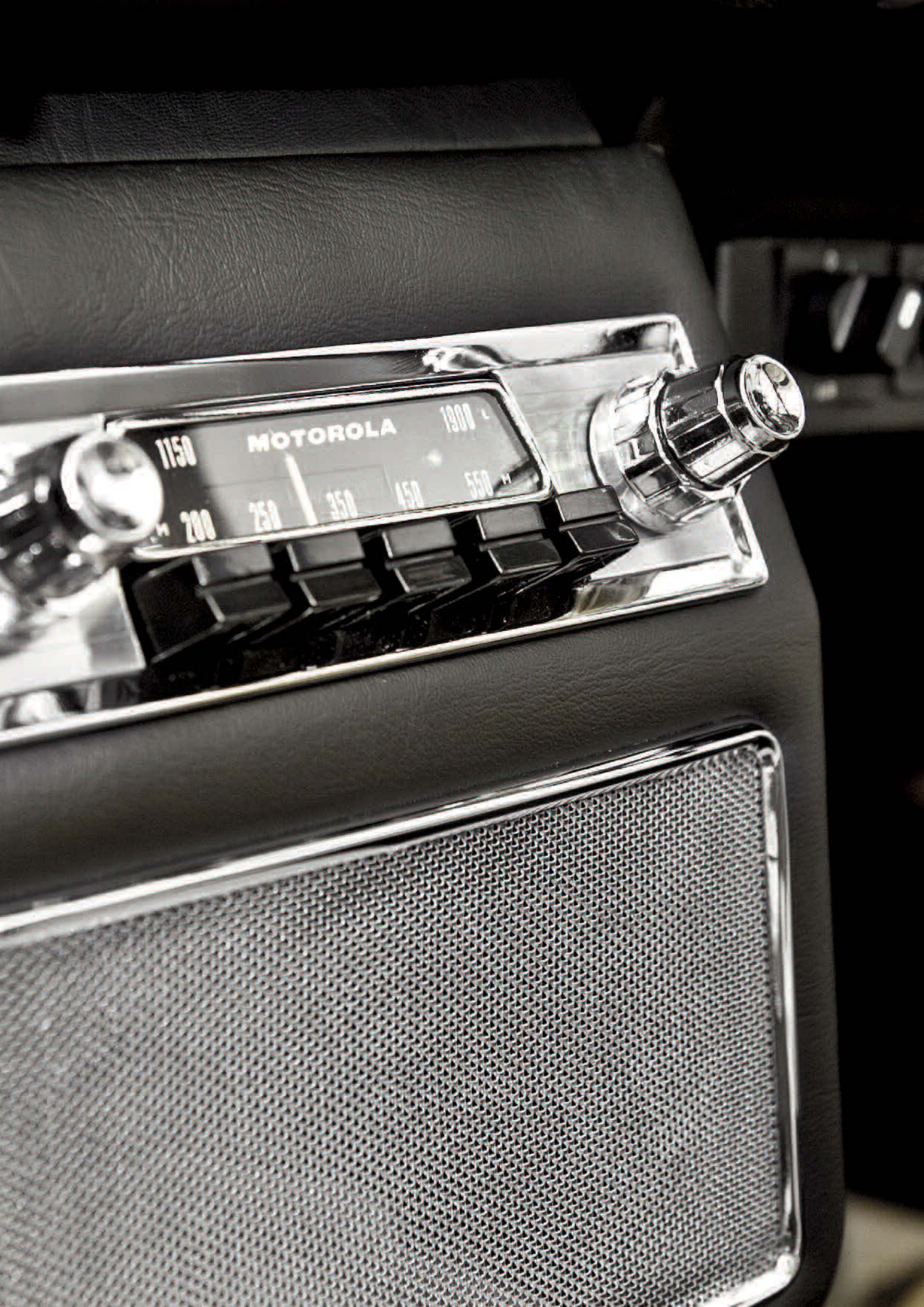
As with all electronic devices, these systems are constantly being developed and therefore, rather than publish a recommendation here that may obsolete in 6 months, we suggest getting in touch with our workshop to discuss the latest models on offer.

For cars dating back to the 1950's and earlier, it is still possible to source valve radios, that can be modified to receive FM. Again, these need to be individually sourced and specified.

There is little point in fitting a high quality Hi-Fi system without also addressing the issue of speakers. Again, there is an enormous choice, and at Aston Workshop have developed ways of fitting modern speaker systems discretely, so as not to distract from the aesthetics of your classic Aston.

In summary, we are always happy to discuss your requirements and find a solution that fits your individual needs.




MOTOROLA
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1900
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