RESTORING
SPRITES & MIDGETS
an enthusiast's guide

BY GRAHAME BRISTOW

Now you can restore your Austin-Healey Sprite or MG Midget to concours condition. Packed with detailed practical information, photographs and illustrations this book will help with reshelling and restoring these popular cars. Comprehensive histories and full technical specifications included.

Written by an enthusiast, "Restoring Sprites and Midgets" looks at how these fun little sports cars can be restored or reshelled by 'real people' - that is, people like you or me!

Packed with photographs, sketches, anecdotes, hints, histories and essential parts data, this is the restoration book for anybody without a large workshop, a blackhawk jig or a certificate in welding.

Brooklands Books

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Restoring Sprites & Midgets: An Enthusiasts Guide

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Foreword

Whenever I see a rebuild guide I am impressed by how easy everything looks - every job seems to be so straightforward. Not surprisingly, since they have been written by seasoned professionals who have all the tools, own large workshops and have worked on the same cars for years.

What they all have in common is that seasoned professionals are not the same as many of us. It's time that these guys started to think about real people. No, we don't own workshops, probably not even a double door garage - rarely even a single door garage. Many of us work on our cars outside on the road or a driveway, where a level surface is a dream. We are often tackling restoration problems for the first time.

For example, a few years back, over the course of seven or eight months, I watched the slow building of a Peugeot 205 rally car. It was certainly an interesting and time consuming project; which included painting the bare shell inside and out. In fact I noticed that almost every day a bit more work had been done - as did many others amongst thousands of motorists who use the A316 Chertsey Road (one of the great London arteries) every single working day. The owner stripped and built the car on the rough grass verge outside his flat much to the admiration and enlightenment of many a humble commuter.

Just like the rest of us, here was an enthusiast getting on with the job, without a workshop or garage, he just worked on the roadside. No power tools, no Blackhawk jig, nothing more than simple tools, four axle stands and his wits.

Not only is working space at a premium, but so are specialist tools - even a trolley jack is a luxury for many. Also, surprisingly, many of us cannot weld or wish to learn that black art. Even if we could, where would we do it - on the grass verge outside our house, in a cramped garage, or in the yard? I didn't buy my MG with the intention of rebuilding it, I just wanted to drive it. The painful truth dawned later, and boy did I learn the hard way.

I couldn't lay claim to being a great mechanic or being very knowledgeable about Midgets or Sprites. As you'll see, I made some fundamental errors building my own Midget, but I got there in the end, without much help and without being too adept in the spanner department. I simply intended to get it right, and if I got things wrong, well I just started again.

Hopefully this guide, in conjunction with a little of your own research, will lead to a successful rebuild of your own. I've tried to cover as much as I can within these pages, but my knowledge is pretty shaky in some areas, especially with regard to the 1500 engine. If your car proves to be at variance with what has been written here, its not necessarily wrong, just that you will need to do some detective work of your own.

Have fun. And when you've finished building the car, drive it - that's what they made it for...

HISTORY AND GENERAL DATA

Thucydides boat

There is a question that has been asked countless times. One could ask the same question again and again, using the same arguments, yet always come up with a different answer. It is the eternal question, the question of originality. One might imagine the very question being at least as old as the first ever concours d'elegance. The question, and the philosophy (oh yes, there is a philosophy), is at least as old as the Greek empire - perhaps as far back as the time of Thucydides.

Of course, the Greeks weren't too interested in cars, but they were a great maritime nation, and as such pub talk consisted largely of girls, boys and boats; what could be finer than a good day's cruising and boat polishing followed by the bar.

Even in those days the question of originality was not ignored. Rumour has it that Thucydides' boat was in for repair. Some timbers required replacement and it was an old boat, a classic. Thucydides wanted the boat restored to "original" condition.

When the boat was completed Thucydides went to view the work, but was faced by a dilemma. Was it, technically speaking, the same boat. It looked the same. It felt the same, but it wasn't really the boat that it once was. It wasn't the boat that had been built by his father. It had many new timbers and a new sail. So in essence, though it looked like the old boat, it wasn't quite the old boat. In fact so many timbers had been replaced it might almost be called a new boat but using some old scrap timbers from a wrecker.

The boat builder listened to Thucydides conundrum with great interest and, being a keen philosopher himself, helped Thucydides extricate himself from the dilemma by convincing him that it was indeed the same boat in essence. It looked the same, it felt the same, it sailed as well as ever and therefore it was the same boat.

Greatly relieved, Thucydides thanked the boat builder profusely and declared his undying gratitude for the man's good sense. There was however one final sticking point. Technically speaking, old boat or new, it wasn't Thucydides boat until he paid the bill...

Sometimes, philosophy is no help at all...

Notes on the MG Car Company, Important Characters and Great Cars

1910 William R Morris opened the Morris Garage (vehicle sales).

1913 Morris Garage became Morris Garages.

Morris Garages developed into half dozen showrooms selling both cars and motorcycles. New cars included a wide range of Ford, Morris, Humber, Singer and Wolseley cars among others.

In the same year Morris set up WRM Motors Ltd. (vehicle manufacture).

1919 WRM Motors Ltd. became Morris Motors Ltd.

1921 Cecil Kimber was appointed Sales Manager of Morris Garages.

1922 Aged only 34, Kimber was appointed General Manager.

Kimber began to design special bodies for Morris Cars, which were then fitted to existing Morris chassis at the Morris Garages workshops. One particular design, with an all-over Chummy hood and revised rear springs, became known as the "Morris Garages Chummy". Displaying its own Morris Garages badge, it sold well.

1923 Production moved to Alfred Lane

A full time production team of two were employed. Bodies for the cars were supplied by Carbodies of Coventry. Chassis arrived from Morris Motors.

The introduction of bodies from Charles Raworth of Oxford allowed the "Raworth Two-Seater" to be developed, also with a Morris Garages badge.

1923 Morris purchased the Hotchkiss factory.

Hotchkiss moved to Britain during the first world war. Following the purchase, the factory became Morris' Engine Branch. Here's the interesting bit. The MG T Series engines used metric and imperial threads because the tooling dated back to when Hotchkiss imported metric machinery into the UK. Morris never converted tooling for imperial applications but carried on using metric threads.

1924 The famous MG badge appeared for the first time in an advertisement.

Old Number One

Old number One wasn't (despite popular belief), the first MG. It began production as late as 1924 with Longwall staff modifying an existing Morris Cowley chassis. Fitted with a Hotchkiss engine, it was dumped at the back of the workshop for months before completion.

The body was actually the 48th supplied to Morris Garages for conversion, registered on 27th March 1925 - just in time for Cecil Kimber and Wilfred Mathews to compete in the Lands End Trial - qualifying for a gold.

1925 Morris Garages outgrew the Alfred Lane site so Morris allowed Kimber's crew to move into the old radiator plant at Bainton Road. Morris Garages now had 50 staff producing cars.

1927 Funded by Morris Motors, Kimber built a £10,000 factory at Edmund Road, Cowley in Oxford.

Wolseley Motors and SU Carburetter Company were purchased by Morris.

The MG Badge

It seems likely that no MGs produced before late 1927 had an MG badge. It was at that time that a Morris Garages 14/40 incorporated a German Silver MG logo on its honeycomb grill. At the same time a few cars had a small MG octagon badge placed over the centre of the Morris Garages badge.

1927 July: Morris Garages was registered as a limited company.

November: Morris Garages legally accepted responsibility for all MG guarantees - formally with Morris Motors.

From that date each new car carried a brass plate with an MG car number instead of a Morris chassis number.

The first car was a 14/40 - number 2251
The first 18/80 Six was number 6251
The first Midget - M0251
The first 18/80 Mk II - A0251.

The new 18/80 MG Six was the first to be fully designed by MG. It incorporated a Morris (not Wolseley) 6 cylinder ohc engine. Known as the "Quick Six", many part numbers specific to the car were prefixed QS.

The 251 number became quite a feature of MG sportscars - as mentioned later.

1928 MG Car Company was registered as a subsidiary of Morris Garages

Two famous motoring names first appeared. The Morris Minor and the MG Midget. The Minor incorporated the Wolseley 8hp 4-cylinder ohc engine, which in March the following year, was used to power Kimber's new Midget.

MG Assembly
The MG Car Company didn't really manufacture cars. Components may have been modified on site but generally they arrived as parts and assemblies, to be put together on site. Even the chassis and bodies were produced elsewhere and supplied to the factory complete.

1929 Cecil Kimber resigned from Morris Garages to work at the MG Car Company full time.

MG had outgrown Edmund Road in Cowley. The company moved again to Abingdon where by accident or design (nobody knows for sure) the telephone number was Abingdon 251.

The MG Car Company moved into what had been an extension of the Pavlova Leather Company premises.

Syd Enever joined MG at Abingdon, moving across from Morris Garages.

1930 "Safety Fast" adopted as the company slogan

The MG Car Club was formed and allocated office space in the Abingdon factory.

1931 John Thornley joins MG becoming honourary secretary of the MG Car Club.

1933 Rationalisation begins in earnest within the Morris organisation.

The MG Car Company was increasingly being pressured to buy stock from Morris Motors and help reduce Morris overheads by consolidating the business empire that was growing. Towards the end of the year body orders switched from Carbodies to Morris Bodies branch

1935 Rationalisation gets worse.

MG's terrific success in sporting events didn't stop its forced withdrawal from racing. At the same time, the design office, experimental office and racing departments were all closed by the newly appointed Leonard Lord.

Morris was intent on limiting the specialisation of MG and increasing its compatibility with stock components to reduce overheads. A feud with Kimber over racing also boiled over following accidents at recent race meetings and events.

The design office moved to Cowley, but even there Kimber worked hard to influence design so that the characteristics of MG still showed. Syd Enever remained at Abingdon.

1936 TA Midget appeared.

1939 WW II began.

Kimber put the factory on a war footing. He gained contracts to produce light pressings, tank parts and assembling army trucks - even winning a contract to repair armoured cars.

Repaired vehicles were 'road tested' on the nearby Berkshire Downs. The local RAF squadron based at Abingdon Aerodrome, always on the lookout for some light relief, took to the skies and bombed the vehicles with bags of flour whenever the hapless test drivers were spotted.

1941 Kimber resigned from the MG Car Company following a dispute over gaining the contract to build Albermarle aircraft parts.

Many companies had applied for the contract but could not deal with the complexity involved. MG engineers designed new tools and test rigs specifically for the job. The company built 600 units and completed another 300.

H.A Ryder and S.V. Smith followed as General Managers.

1945 4th February: Cecil Kimber died in a railway accident at Kings Cross.

Following the War the MG Car Company became a forgotten part of the Nuffield group, left without a vision for the future and lacking any investment capital.

With no budget money available, the old TB Midget was revamped hastily to produce the TC. It was this car that made the MG name popular in the US.

Over 2000 were exported to North America and also great numbers were purchased by US Air Force crews who, at their government's expense, took the cars home.

1947 The Y Type saloon was introduced.

The Y Type was an important step forward for MG, utilising rack and pinion steering and independent front suspension with coil springs. The design found its way onto later MGs including the MGA, MGB and Midget.

1949 May: Nuffield transferred production of Riley models into Abingdon.

Jack Tatlow of Riley took over as General Manager at Abingdon - moving in when Riley production began at the site.

Once again, MG was given no money to develop a replacement for the ageing TC. So, in the space of two weeks and with the use of a number of hammers, the workshop produced the prototype MG TD model.

1952 John Thornley become General Manager

The British Motor Corporation (1952)
Nuffield Group amalgamated with the Austin Motor Company, becoming the third largest motor manufacturer in the world. Lord Nuffield relinquished all control, leaving Sir Leonard Lord in sole charge.

A few things worth remembering at this point are:- Herbert Austin and William Morris had openly entered into a legal mud slinging match over the purchase of Wolseley - a battle won by Morris. Leonard Lord, who had acted as Morris's aide, had resigned after a furious row over profit sharing and bonuses, and had gone to work for Austin, Morris's major competitor in the U.K.

1952 MG wanted to develop its TD engined EX175 into a replacement for the existing TD, but BMC management refused to allow any investment, turning their attention instead to the new Healey 100 which was being shown at the Earls Court Motor Show.

Lord saw the car at the show, striking a deal with Healey there and then to produce the car at Longbridge. Overnight the car became known as the Austin Healey 100.

Lord, pleased with his decision, saw no reason for a second sportscar, and this was why BMC refused to allocate MG any funds to move forward with a replacement for the TD.

BMC's decision proved calamitous, TD export sales plunged against more modern opposition. In an effort to halt the decline BMC management offered sufficient funding for a face lift - leading to the rapid development of the TF, the latest in a line of cars stretching back to before the war.

The face lift took all of two months to develop, since BMC's funding was strictly limited, but MG designers and engineers did the best they could under such obviously hostile circumstances.

1953 The TF appeared at the 1953 Motor Show to the derision of the press.

Also at the show was the new TRX sportscar of Standard Triumph, soon to become the TR2. The Wolseley 4/44 designed by Gerald Palmer also appeared. This car had originally been intended as a new MG sports saloon. Shortly after the show the car was badge engineered, given an MG grille to become the ZA Magnette.

Attitudes towards MG worsened, being reduced now to petty nit-picking. The traditional 251 chassis number given to every new model of the production line was replaced by 501- a needless action thought out by an apparently anti-MG management, clearly determined to stamp out any individuality and self-determination MG may formerly have enjoyed.

1955 BMC established a competitions department at Abingdon under Marcus Chambers.

Throughout the late fifties and sixties the Competitions Department proved enormously successful, especially with the Big Healeys.

August: Production began on the MGA.

1957 The new Austin Healey 100/6 was produced at Abingdon

BMC transferred production of the Austin Healey 100-6 to the MG factory, replacing the Riley which had just ceased production. When the Sprite was being developed the phrase "The Big Healey" came into being, used purely as a workshop reference at Abingdon.

1958 May: Austin Healey Sprite went into production.

In the same year BMC discontinued the popular ZB Magnette and badge engineered the 1 1/2 litre saloon as the Magnette Mk III. In fact it was not built at Abingdon, and was the first MG not to be built on-site for 30 years.

1960 The factory began building Morris Minor vans and estate cars.

1961 May: Sprite Mk II announced
June: Midget announced

The Sprite front end had been redesigned by Healey, the rear was designed by Syd Enever.

1962 100,000 MGAs had been produced.

July: MGB production began at Abingdon.
October: Sprite II / Midget received 1098cc engine.

1964 March: Sprite III / Midget II announced

1965 October: MGB GT production began.

1966 October: Sprite IV / Midget III announced

1967 BMC merged with Jaguar to form British Motor Holdings.

The MG Car Company was renamed MG Division.

1968 May: British Motor Holdings merged with Leyland, who owned Triumph, to form British Leyland Motor Corporation.

Under Donald Stokes all BMC magazines, including Safety Fast, *were stopped. Support was withdrawn from all clubs, again including the MG Car Club. Soon after support was withdrawn from the MGCC.*

The BLMC empire was divided into three and, instead of being grouped with the Specialist Car Division, MG was lumped in with the Austin Morris Division.

1969 July: John Thornley retired as GM. Following in his footsteps many older staff also took early retirement

October: the "Leylandised" Sprite and Midget were introduced.

1970 August: the Competitions Department closed

1971 January: The rights to the Healey name were lost and the last Austin Healey Sprite was produced.

From now on the car became simply the Austin Sprite and, indeed, even that variant died out in June of that year.

1974 October: Midget 1500 introduced

1977 Michael Edwards took control of British Leyland at the request of the Government.

Edwards took control of a terrible mess. His first job was to pay the staff some wages, but the company had no funds to pay them - so he had to borrow more money from an incredulous Labour government. Jim Callaghan loaned the money but not without taking a snipe at the Triumph TR7, its awful reputation and its production difficulties. Since its inception, the cars built at Speke had proved themselves to be of very poor quality, while the site itself was riddled with industrial unrest. The Speke strike, in progress at the time of Callaghan's comments, led to its ultimate closure.

While the rest of BL was pulling itself to pieces and stamping on anything related to Lord Nuffield's side of the business, MG staff quietly developed the 'O' Series engine for the ageing MGB. The engine never made it into the MGB but got dropped into the Princess II and other cars, such as the early Rover 216.

1979 9th September: Abingdon staff celebrated 50 years of MG with a festival.

10th September: An impeccably timed press announcement by thoughtless BL press office staff broadcast to the world that the MG factory would be closed in July 1980.

October: A consortium led by Aston Martin tried to purchase MG. Eventually the attempt failed, but not without considerable press coverage.

November: the last MG Midget was produced.

1980 August: It was formally announced that the MG factory was to be shut down.

Statistical fact: In 1980 Longbridge staff built seven cars per man. At Abingdon, 50 cars were built per man employed!

23rd October: the last MGB rolled off the production line.

Production of "real" MG cars ended.

RV8 The MGRV8, a model based on the MGB, was built using Heritage built bodyshells, themselves manufactured using original MGB jigs.

MGF Built at Longbridge (there's one in the eye for Herbert). The MG name, so persistently trod into the dirt by the anti-Morris faction, is virtually all that is left of BMC and BL.

Interestingly enough, the first MGF off the production line bore the numbers 251 as part of its VIN number!

Some Record Breaking MGs

If you don't know much about MG or Austin Healey, beyond the fact that you have enjoyed the fun of owning your own MG Midget or Austin Healey Sprite, you may not realise how impressive a history MG has on the track. Donald Healey, himself a great enthusiast for sporting events, regularly took part in trials such as the Lands End Trial and other rallies. Healey worked for Triumph before building his own business and worked with Nash in the US before designing the Healey 100.

Cecil Kimber was equally experienced behind the wheel, more than likely competing against Healey in the trials. MG however, unlike Healey, had a long time in which to build up an impressive array of "firsts" - in fact, they broke so many records, so consistently, and won so many events, that its difficult to see why people do not consider MGs to be thoroughbreds.

The record breaking history of MG is seriously impressive - the first 750cc car to reach 100mph, the first 750cc car to reach 140 miles per hour - how about the first 1250cc car to cover ten miles at 170mph and then cover 140 miles every hour for twelve hours. MG did all these things and more - in cars designed by MG staff and built in the workshops at Abingdon. These cars were the experimental cars and all of them shared one thing in common - the EX mark!

EX120

Designed along the lines of a French sports car called the Rally, EX120 incorporated the Rally's unusual chassis and axle arrangement. Fitted with a heavily modified M type engine it was famous as the first 750cc car to reach 100mph.

At Montlhery on 30th December 1930, the car, driven by George Eyston, covered 100km at 87.3mph before the engine failed. Several Austin records were broken during that run.

On the 16th February 1931, Eyston and EX120 again went to Montlhery. Determined to get ahead of Austin and Malcolm Campbell, Eyston made an attempt to take the 100mph record. At first the attempt it fell short, but by hammering out an old oil drum, the front of the car was streamlined and the record was broken. Speeds up to 103.13mph were achieved and the record was taken.

Later that same year Eyston returned to Montlhery where the car covered 101.1 miles in the hour before being engulfed by flames. Eyston, injured during the incident, was hospitalised.

EX127 "The Magic Midget"

Even as EX120 lay burning in a foreign field, EX127 was being developed. Again a 750cc engine was used to power what became known as the Magic Midget. Eyston was still in hospital when Ernest Eldridge drove the car at 110.28mph over a 5km stretch.

You would have thought that a spell in hospital would have put him off but, on the 22nd December 1931, Eyston reached 114.77mph in the Magic Midget.

In 1933 The Magic Midget went to Montlhery; achieving 110.87 miles in the hour and 128.63 mph over the flying mile.

In May 1935 Bobbie Kohlrausch, having acquired the Magic Midget, reached 130.41mph over the flying mile.

In 1936 he got the Magic Midget to reach 140.6mph - still using the 750cc engine.

EX135

EX135 was a converted K3.

1934: George Eyston's new EX135 managed 128.69mph in the flying mile and 120.88 miles in the hour.

In 1938 EX135 was fitted with a new Reid Railton designed body. Goldie Gardner (another keen speed freak working closely with MG), developed an 1100cc engine and fitted it into EX135 with a supercharger.

November 1938: EX135 covered the flying mile at 187.62mph.

In 1939 the car returned to Germany covering the flying mile at 203.5mph.

WWII then stopped play

After the war, Gardner once again turned his attention to record breaking - despite disappointing support from MG's new boss H.A. Ryder, later replaced by S.V. Smith. A string of record breaking assaults followed with EX135 taking records in five out of ten classes.

In 1949 EX135 was fitted with a supercharged 1250cc TD engine built by Syd Enever and his team. The engine gave 213bhp at 7000rpm.

In 1951, at the Bonneville Salt Flats, Utah, the car achieved a speed of 202.14mph. During the second attempt the car spun out of control injuring Gardner. The injury proved worse than expected and he never made another record attempt again.

EX175

In 1950 Syd Enever began working on a replacement for EX135. EX175 appeared in 1952 with a body of similar shape to the George Phillips Le Mans TD. A design bearing a striking resemblance to the later MGA. This was the design MG hoped to use as a replacement for the TD.

EX179

George Eyston persuaded Leonard Lord to back another record attempt at the Bonneville Salt Flats in Utah. EX175 proved unsuitable for the assault and so a new body was produced for the spare chassis and this car became EX179.

EX179 incorporated the new XPEG engine of 1416cc, unsupercharged. The XPEG engine was a development of the older 1250cc XPAG unit fitted to the TD and early TF. This was the the unit later used in the TF 1500 model.

Eyston and Miles achieved 153.69mph and also ran the car at over 120mph for a 12 hour period.

In 1956 EX179 broke 16 international 1500cc records including 10 miles at 170.15mph and 141mph for 12 hours.

In 1957 EX179, now fitted with a 948cc engine, went back to Utah to cover 118.13mph for 12 hours (at over 49mpg).

In supercharged form (that same year) EX179 reached 143.47mph over the flying mile.

EX181

Syd Enever went on to design EX181. In 1957, the car, fitted with a 290bhp 1500cc engine and driven by Stirling Moss took five international records. The average top speed was 245.64mph.

In 1959 EX181 returned to Utah. Driven by Phil Hill it reached 254.91mph.

EX182

EX182 was based on the chassis of EX179 with a body seen as early as 1951 in the Le Mans car.

EX182 was the experimental number given to the special parts produced for the prototype MGAs that ran at Le Mans. Three cars were entered and two finished

Following the launch of the MGA one car went to Montlhery as part of a five-car BMC team and covered 102.54mph in an hour. A race-prepared MGA, driven by John Gott, recorded 112.36mph.

Just A Few More Things

Racing Colours

Until the 1950s countries raced in particular colours. Germany used silver (in fact early BMW motorbikes were not even painted, just polished to save weight). Italy raced in red and Britain, of course, used green - which is why Racing Green was such a popular colour for British sportscars. So why did the Competitions Department break with tradition and paint cars red and white during the late 1950s and 1960s?

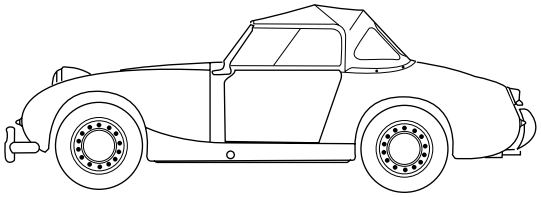
During one of the famous Italian Mille Miglia races one of the MGA drivers, Peter Scott Russell, noticed that railway crossings stayed open long enough to let red cars through. He reported back to the Competitions Department at Abingdon.

The following year, all the team cars sent out to Italy were painted red (with white hardtops to reflect the heat and keep the interiors cool).The subterfuge caught the crossing patrols off guard resulting in great success during the rally.

Water Proofed

At Sebring in 1965 Timo Makinen was driving one of two open topped Midgets when a tropical storm struck. The track was awash and Timo's car quickly filled with water, to the extent that when he accelerated, the water covered his shoulders. He cured the problem by opening the driver's door during rapid cornering to let the water out!

A Quick Guide To Recognising Model Type



Austin-Healey Sprite Mark I (HAN 5)
Announced May 20, 1958.

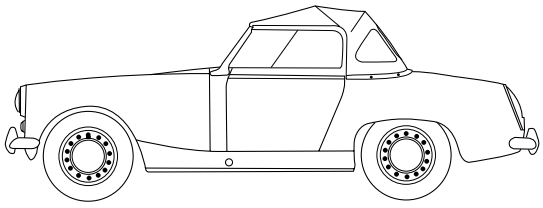
948-cc, 1/4-elliptic rear springs, all-in-one bonnet and wings. Known as the "frog-eye" Sprite. Price included hood, sidescreens, rear overriders and spare wheel.

Dimensions:	Height (hood up)	4' 1 3/4" (1.25m)
	Length	11' 5 1/4" (3.49m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	5" (12.7cm)
	Width	4' 5" (1.35m)

Options:	Front bumper & overriders	
	Heater	Radio
	Tachometer	Screenwash
	6-ply tyres	Laminated windscreen
	Fresh-air unit	Tonneau cover
	Hardtop**	Locking petrol cap**

** available 1959-60

UK Prices:	1958:	£678.17.0
	1959-60:	£631.10.10



Austin-Healey Sprite Mark II (HAN 6)
MG Midget (GAN 1)
Announced May 1961 (Sprite Mark II)
Announced June 1961 (MG Midget)

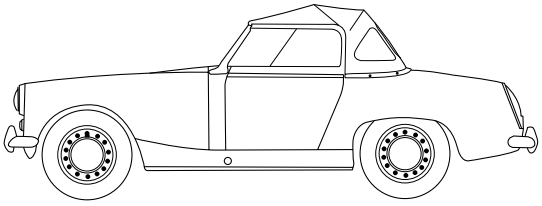
Restyled front with fixed wings and separate bonnet. Rear end now followed MGB styling with boot lid. Engine power was increased, while the close-ratio gearbox became standard fitment.

The MG version had a vertically slatted grille with centre plinth, chrome side and bonnet strips, superior seats and flecked rubber floor trim. The Austin Healey was given an Austin house-style crinkly chrome grille and retained a more spartan interior.
Price included windscreen washer, front & rear bumpers, overriders, tachometer, and adjustable passenger seat.

Dimensions:	Height (hood up)	4' 1 3/4" (1.25m)
	Length	11' 5 7/8" (3.5m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	5" (12.7cm)
	Width	4' 5" (1.35m)

Options:	Hardtop	
	Hardtop with sliding sidescreens	
	Heater	Radio
	Heavy-duty tyres	Whitewall tyres
	Fresh-air unit	Laminated windscreen
	Cigar lighter	Tonneau cover and rail
	Twin horns	Locking petrol cap
	Rear seat cushion	Ace wheel discs
	Luggage carrier and wing mirror	
	Wing mirror only	

UK Prices:	AH Sprite:	June 1961: £641.9.2
		July 1961: £660.9.6
	MG Midget:	June 1961: £669.15.10
		July 1961: £689.11.5



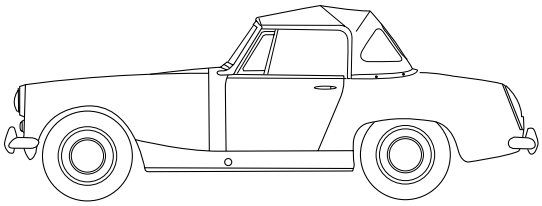
AH Sprite Mark II 1100 (HAN 7)
MG Midget 1100 (GAN 2)
Announced October 1962

Larger 1,098-cc engine fitted to make the car go faster and disc brakes were added to help it stop. The synchro-mesh gearbox was revised and carpets replaced the cheaper rubber mats. Generally, the trim was improved and a padded roll was added to the facia. The drilled wheels were replaced with plain ones part way through production.

Dimensions:	Height (hood up)	4' 1 3/4" (1.25m)
	Length	11' 5 5/8" (3.5m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	5" (12.7cm)
	Width	4' 5" (1.35m)

Options:	Radio	Heater
	Tonneau cover	Laminated windscreen
	Hardtop	Cigar lighter
	Heavy-duty tyres	Twin horns
	Luggage carrier	Rear seat cushion

UK Prices:	1962-63:	Sprite: £586.12.0
		Midget: £598.13.9



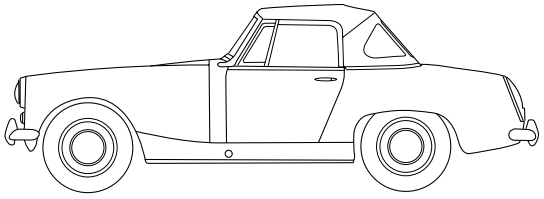
Austin-Healey Sprite Mark III (HAN 8)
MG Midget Mark II (GAN 3)
Announced March 1964.

A new windscreen and winding windows were fitted, necessitating the loss of the door pockets. Interior door locks were moved to an impossible location toward the rear of the now lockable doors. A wrinkle finished fascia was added to improved trim. An MG designed cylinder head was fitted, giving more power and semi-elliptic rear springs made the car a little less twitchy.

Dimensions:	Height (hood up)	4' 1 3/4" (1.25m)
	Length	11' 5 5/8" (3.5m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	5" (12.7cm)
	Width	4' 5" (1.35m)

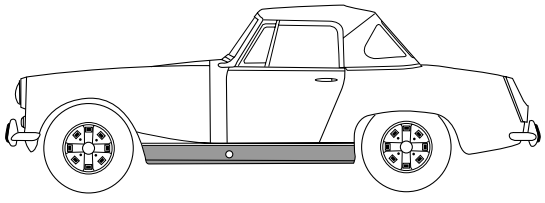
Options:	Radio	Heater
	Hardtop	Luggage carrier
	Twin horns	Heavy-duty tyres
	Wheel discs	Tonneau cover
	Wire wheels	

Prices: UK 1964-66: Sprite: £610.15.5
Midget: £622.17.1



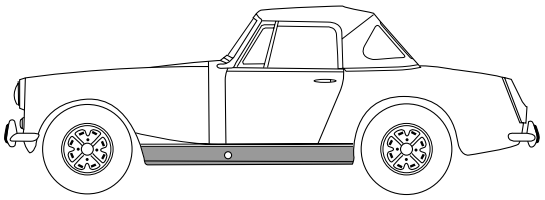
Austin-Healey Sprite Mark IV (HAN 9)
MG Midget Mark III (GAN 4)
Announced October 1966

1275 engine. A longer cockpit gave room to stow a new folding hood. A half tonneau was supplied to cover the hood. The cars otherwise looked the same as before.



Revised October 1969
Sprite HAN 10 and Midget GAN5
Austin Sprite AAN 10 (announced January 1971)

Black grille and sills marked the most obvious changes, fitting in with the new British Leyland house style. Quarter bumpers fitted to rear. Overriders finished with black rubber facings. Rostyle wheels were supplied.

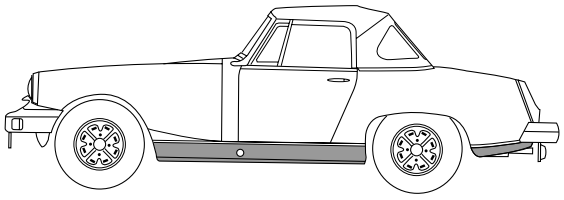


Revised October 1971
Round rear wheel arches were introduced. Rostyle wheels revised. Rocker switches fitted.

Dimensions:	Height (hood up)	4' 1 3/4" (1.25m)
	Length	11' 5 1/2" (3.5m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	5" (12.7cm)
	Width	4' 5" (1.35m)

Options:	Heater	Radio
	Seat belts	Tonneau cover
	Hardtop	Wire wheels

Prices: UK 1966-67: Sprite: £672.00.00
Midget: £684.00.00



MG Midget 1500
Announced October 1974.

Triumph Spitfire engine and gearbox fitted, along with all Spitfire engine ancillaries; black rubber bumpers fitted and ride height raised due to stringent US legislation. Safety crash testing led to the re-introduction of squared-off rear wheel arches.

Dimensions:	Height (hood up)	4' 1 1/4" (1.25m);
	Length	11' 9" (3.58m)
	Wheelbase	6' 8" (2.03m)
	Ground clearance	6" (12.7cm)
	Width	4' 5 5/8" (1.36m)

Options:	Wire wheels	Hardtop

Prices: UK 1975: £1,559.61

Engine Numbers

Model	Engine No. Commences	Engine No. Finishes
AH Sprite	9C/U/H101	9C/U/H49201
AH Sprite Mk II (948)	9CG/Da/H (or Da/L)101	9CG/Da/H (or Da/L) 36711
AH Sprite Mk II (1098)	10CG/Da/H (or Da/L) 101	10CG/Da/H (or Da/L) 21048
AH Sprite Mk III	10CC/Da/H101	10CC/Da/H16300
AH Sprite Mk IV	12CC/Da/H101	12CC/Da/H16300
AH Sprite Mk IV	12CE/Da/H101	not known
AH Sprite Mk IV	12CD/Da/H101 (USA)	not known
AH Sprite Mk IV	12CG/Da/H101 (USA)	not known
Midget (948)	9CG/Da/H (or Da/L)101	9CG/Da/H (or Da/L) 36711
Midget (1098)	10CG/Da/H (or Da/L) 101	10CG/Da/H (or Da/L) 21048
Midget Mk II	10CC/Da/H101	10CC/Da/H16300
Midget Mk III	12CC/Da/H101	12CC/Da/H16300
Midget Mk III	12CE/Da/H101	not known
Midget Mk III	12V/586F/101	not known
Midget Mk III	12V/671Z/101	not known
Midget Mk III	12V/588F/101	not known
Midget Mk III	12V/778F/101	not known
Midget Mk III	12CD/Da/H101 (USA)	not known
Midget Mk III	12CF/Da/H101 (USA)	not known
Midget Mk III	12CG/Da/H101 (USA)	not known
Midget Mk III	12CH/Da/H101 (USA)	not known
Midget Mk III	12CJ/Da/H21201 (USA)	not known
Midget Mk III	12CK/Da/H101 (USA)	not known
Midget Mk III	12V/587Z/101 (USA)	not known
Midget 1500	FP001-E (UK)	not known
Midget 1500	FP300-UE (USA)	not known
Midget 1500	FP400-UCE (California)	not known

Chassis Numbers

Model	Chassis No. Commences	Chassis No. Finishes
AH Sprite	H-AN5-501	H-AN5-50116
AH Sprite Mk II (948)	H-AN6-101	H-AN6-24731
AH Sprite Mk II (1098)	H-AN7-24732	H-AN7-38828
AH Sprite Mk III	H-AN8-38829	H-AN8-64734
AH Sprite Mk IV	H-AN9-64735	H-AN9-85286
AH Sprite Mk IV (Leyland)	H-AN10-85287	H-AN10-86403
Austin Sprite Mk IV	A-AN10-86804	A-AN10-87824
Midget (948)	G-AN1-101	G-AN1-16183
Midget (1098)	G-AN2-16184	G-AN2-25787
Midget Mk II	G-AN3-25788	G-AN3-52389
Midget Mk III	G-AN4-52390	G-AN4-74885
Midget Mk III (Leyland)	G-AN5-74886	G-AN5-154100
Midget 1500	G-AN6-154101	To end of production

Torque Wrench Settings

Engine: 'A' Series	lbf/ft	kgf/m
Connecting rod bolts, 948	35	4.8
Connecting rod nuts		
1098 - 1275 (plain)	45	6.2
1098 - 1275 (nyloc)	32 to 34	4.4 to 4.7
Crankshaft (main) bearing bolts	60	8.7
Crankshaft pulley bolt	70	9.6
Cylinder head nuts		
948	40	5.5
1098 - 1275 (plain studs)	42	5.8
1098 - 1275 (studs marked 22 or with small drill point)	50	6.9
Cylinder side covers, 948 - 1098	2	0.3
Distributor clamp bolt (fixed bolt)	3	0.4
Distributor clamp bolt (fixed nut)	4	0.6
Flywheel bolts	40	5.5
Manifold nuts (brass)	15	2.1
Oil filter, 1275	10 to 15	1.4 to 2.0
Oil filter retaining nut		
(cartridge filter), 948 - 1098	16	2.2
Oil pipe union adaptor		
(oil filter head), 1275	19 to 21	2.6 to 2.9
Oil pump		
948 - 1098	9	1.2
1275	12	1.7
Rocker cover, 948 - 1098	4	0.6
Rocker pedestal nuts, 948 - 1098	25	3.4
Spark plug	20	2.8
Sump to crankcase, 948 - 1098	6	0.8
Timing cover bolt		
(1/4" UNF)	6	0.8
(5/16" UNF)	14	1.9

Engine: Triumph 1500		
Chainwheel to camshaft	24	3.3
Clutch to flywheel	22	3
Con rod bolt		
colour dyed (1975 - 1976)	50	6.9
phosphated (1975 - 1976)	46	6.4
phosphated (USA 1977 on)	46	6.4
Crankshaft pulley nut	150	20.7
Crankshaft rear seal housing	20	2.8
Cylinder head nuts		
UK, USA to 1976)	50	6.9
USA 1977 on	40 to 45	5.5 to 6.2
Distributor to pedestal	20	2.8
Flywheel to crankshaft		
cadmium plated	40	5.5
parkerised	45	6.2
Gearbox and rear engine plate to block	14	1.9
Main bearing cap bolts	65	9
Manifold to cylinder head	25	3.5
Manifold, inlet to exhaust	14	1.9
Oil pressure switch to cylinder head	14	1.9
Oil seal block attachment	14	1.9
Oil sump drain plug	25	3.5
Oil sump to block	20	2.8
Rear engine mounting platform on frame	20	2.8
Rocker cover to head	2	0.3
Rocker pedestal to cylinder head	32	4.4
Sealing block to engine plate	20	2.8
Spark plug	20	2.8
Starter motor attachment	34	4.7
Timing cover to front engine plate		
large bolt	20	2.8
small bolt	10	1.4

Cooling System: 'A' Series engine		
Fan securing bolts (plastic fan), 1275	10	1.2
Thermostat housing	8	1.1
Water pump	17	2.3

Cooling System: Triumph 1500 engine		
Alternator to adjusting link	20	2.8
Alternator to mounting bracket and engine plate	22	3
Cylinder block drain plug	35	4.8
Fan securing bolts	9	1.2
Water elbow to water pump	20	2.8
Water pump bearing housing to pump	14	1.9
Water pump to cylinder head	20	2.8

Gearbox: Triumph 1500 engine		
Drive flange nut	90 to 100	12.4 to 13.8
Flywheel housing retaining bolts	28 to 30	3.9 to 4.1
Rear extension to gearbox bolts	18 to 20	2.4 to 2.7

Rear Axle		
Bearing cap to gear carrier bolts	65	8.99
Crown wheel to gear carrier bolts	60	8.3
Drive flange nut	140	19.4
Pinion bearing pre-load	8 to10	0.09 to 0.12

Brakes		
Bleed screw	4 to 6	0.5 to 0.8
Brake disc to hub	40 to 45	5.5 to 6.2
Caliper to stub axle	45 to 50	6.2 to 7.0
Master cylinder port adaptors (USA), 1500	15 to 19	1.7 to 2.1
Plastic reservoir fixing bolts (USA), 1500	5	0.69
Pressure failure switch, nylon (USA), 1500	15	0.17
Pressure failure switch assembly end plug		
1975 to 1976 (USA), 1500	200	2.3
1977 on (USA), 1500	400	4.6

Steering & Suspension		
Column upper fixing bolts	12 to 17	1.7 to 2.4
Hub nut, front stub axle		
disc brakes	46	6.9
drum brake	55 to 65	7.6 to 9.0
Rack mounting bracket retaining bolts	17 to 18	2.3 to 2.4
Rack to clamp bolts	20 to 22	2.8 to 3.1
Road wheel nuts		
disc wheels	60 to 63.5	8.3 to 8.7
rostyle wheels	45	6.2
Shock absorber bolts	25 to 30	3.4 to 4.1
Steering column pinch bolt	9 to 11	1.2 to 1.5
Steering lever bolts		
disc brake models	39	5.4
drum brake models	30 to 35	4.1 to 4.8
Steering lock shear bolts, where fitted	70	0.8
Steering wheel nut		
non-collapsible column	42	5.8
collapsible column	37	5.2
Tie rod end ball joint nut		
948 - early 1275	32.3 to 34.3	4.4 to 4.7
late 1275 - 1500	28 to 32	3.9 to 4.5
Tie rod inner ball joint assembly locknut		
late 1275 - 1500	80	11.1
Trunnion retaining nut	40	5.5

Electrical		
Alternator pulley nut	25	3.5
Starter motor retaining nuts	34	4.7
Wiper motor yoke fixing bolts	20	0.23

Fuel System		
Fuel pump (mechanical type) mounting		
948 - 1098	14	1.9
1500	14	1.9
Fuel pump top cover bolt, 1500	10 to 14*	0.1 to 0.16*
Fuel tank drain plug, 1275	9	1.2

* lbf.in / kgf. cm

Useless Tip

If you don't have a torque wrench, there is a method you can use to determine whether you have correctly torqued down any item.

1. If, after tightening, oil pours out or the part falls off, then insufficient tightening has taken place.
2. If the nut splits, the bolt breaks, thread shreds, component cracks or spanner snaps, too much torque has been applied.

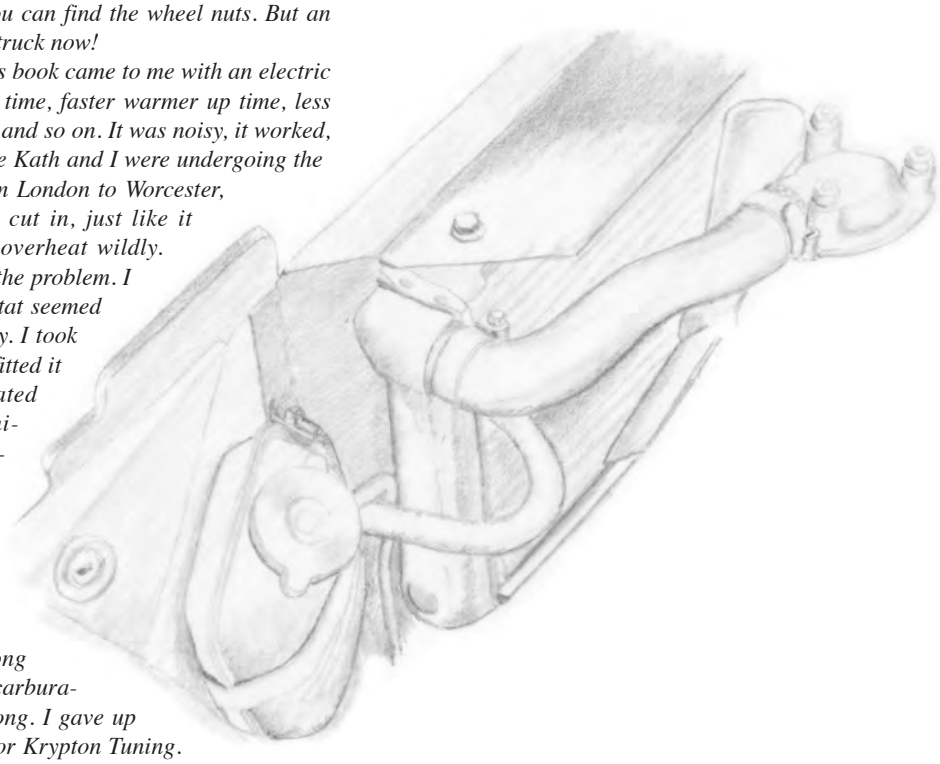
In many ways this is similar to the perennial carpentry question "how do I know when I should use a nail or a screw?" The answer is to always use a nail unless the wood splits, then you know that you should have used a screw...

The Cooling System and Heater

Keeping Cool Under Pressure...

An engineer friend and I spent a quiet few minutes ruminating the advantages of mechanical "things" over electrical "things". Electrical "things" we decided were all well and good. Press a button and they start, push another button and they stop, but there is nothing as reliable as a mechanical "thing". You turn a handle and a lever twists or a bar moves. If something gets stiff you can oil it. If something goes wrong you can take a spanner to it. But an electrical "thing" - now that's a horse of a different colour. When an electrical "thing" goes wrong, you've got a problem!

It's a question of visibility really. When you break down at the side of the road because something mechanical has happened you do at least have the chance of fixing it. You can see, for example, a wheel laying in a ditch - and you can fix it, assuming you can find the wheel nuts. But an electrical "thing"... better call the tow truck now!



The Midget mentioned throughout this book came to me with an electric fan. These were the "in-things" at the time, faster warmer up time, less stress on the engine, more fuel efficient and so on. It was noisy, it worked, I got used to it. Then one summer, while Kath and I were undergoing the long drawn out process of moving from London to Worcester, the car started running hot. The fan cut in, just like it always did, but the engine began to overheat wildly. There began a slow process of solving the problem. I fitted a new radiator cap. The thermostat seemed to work but I bought a new one anyway. I took the radiator out, back flushed it and refitted it with new hoses. Still the car overheated like mad, though the radiator was universally hot from top to bottom, leaving no suggestion that it was clogged. So what was it?

By now it was mid summer and I had to run the heater fan to help keep the car cool, and boy, was it a hot summer. I even took the head off for skimming, but there was nothing wrong with it. I'd checked the timing and the carburation as well but still found nothing wrong. I gave up in despair and sent it into the garage for Krypton Tuning. I explained what was happening and what I'd done. "Surely" I said "I must have missed something obvious".

It took them five minutes to suss the problem. "It's the fan" said the mechanic, "you'll get more wind from a gnat!"

And there was the problem, the fan was dying as the brushes wore down. Its decline was so gradual as to be unnoticeable - though it was as noisy as ever. The previous winter had been so bad that the fan was scarcely needed and its deterioration had gone unnoticed. Although I saw and heard it switching on, I had no way of measuring its effectiveness.

A mechanical fan, attached to a fan belt, can only fail if it comes undone, or the fan belt slips or snaps. These faults are clearly visible and can be rectified in minutes, probably without any damage to the engine so long as sensible attention is paid during servicing. Unless an electrical fan fails completely, how do you know it is faulty?

I gave up and went back to a traditional mechanical fan and have never had a problem since. Electrical things - pah!

Some History:
Cooling & the Heater System

The H frame of the early Sprites included two uprights onto which the radiator was bolted. Even following the re-design of the front end, this system of attachment remained. The original vertical flow radiator included an integral expansion tank which allowed easy topping -up directly into the top of the radiator. The radiator was modified lightly at HAN5-6888 and again at HAN5-50116, with both later styles able to be retro-fitted if required.

During its 1275cc incarnation (HAN9 72034 / GAN4 60441, USA and HAN9 77591/GAN4 66226 elsewhere) the cars were fitted with a cross-flow radiator mounted into a shroud which was, in turn, attached to the H frame uprights. The radiator system incorporated a separate expansion tank, made from black painted brass, mounted to the left-hand splash plate and wheel arch. Initial filling was via a brass plug mounted on top of the radiator. Topping-up was via the expansion tank.

The introduction of the 1500 Midget with its Triumph Spitfire engine, saw a new radiator - again cross-flow - being fitted. The expansion tank, now plastic, was mounted on the opposite side of the car. Filling was via a plug located on top of the thermostat housing as per the Triumph Dolomite.

The water pump, originally in cast iron, could be completely dismantled for restoration. Onto the pump was mounted a twin-bladed, yellow, steel fan. This style of pump was fitted up to engine 12CD/Da/H1745, at which point the pump was modified to enhance the pumping capacity.

With the introduction of the 12CC engines a six-bladed steel fan was fitted, only to be replaced on the 12CD engines with a yellow, six-bladed fan manufactured from plastic.

The 1500 engines utilised a new pump design with a seven-bladed, green or orange fan fitted - though in hot climates a natural coloured fan was utilised.

Only in a country like Britain could a heater be considered an option. However, the Sprite was a budget car. The heater unit consisted of a black box, behind which sat the battery, and a heater blower - looking for all the world like an oversized hair drier. Fresh air reached the blower by virtue of a long air hose which ran down the right hand side of the engine bay to an inlet hidden behind the grille. Flow was controlled by a push/pull lever which, by twisting, also turned the fan on and off. Hot water was allowed into the heater via a stop cock mounted to the rear of the A series engine.

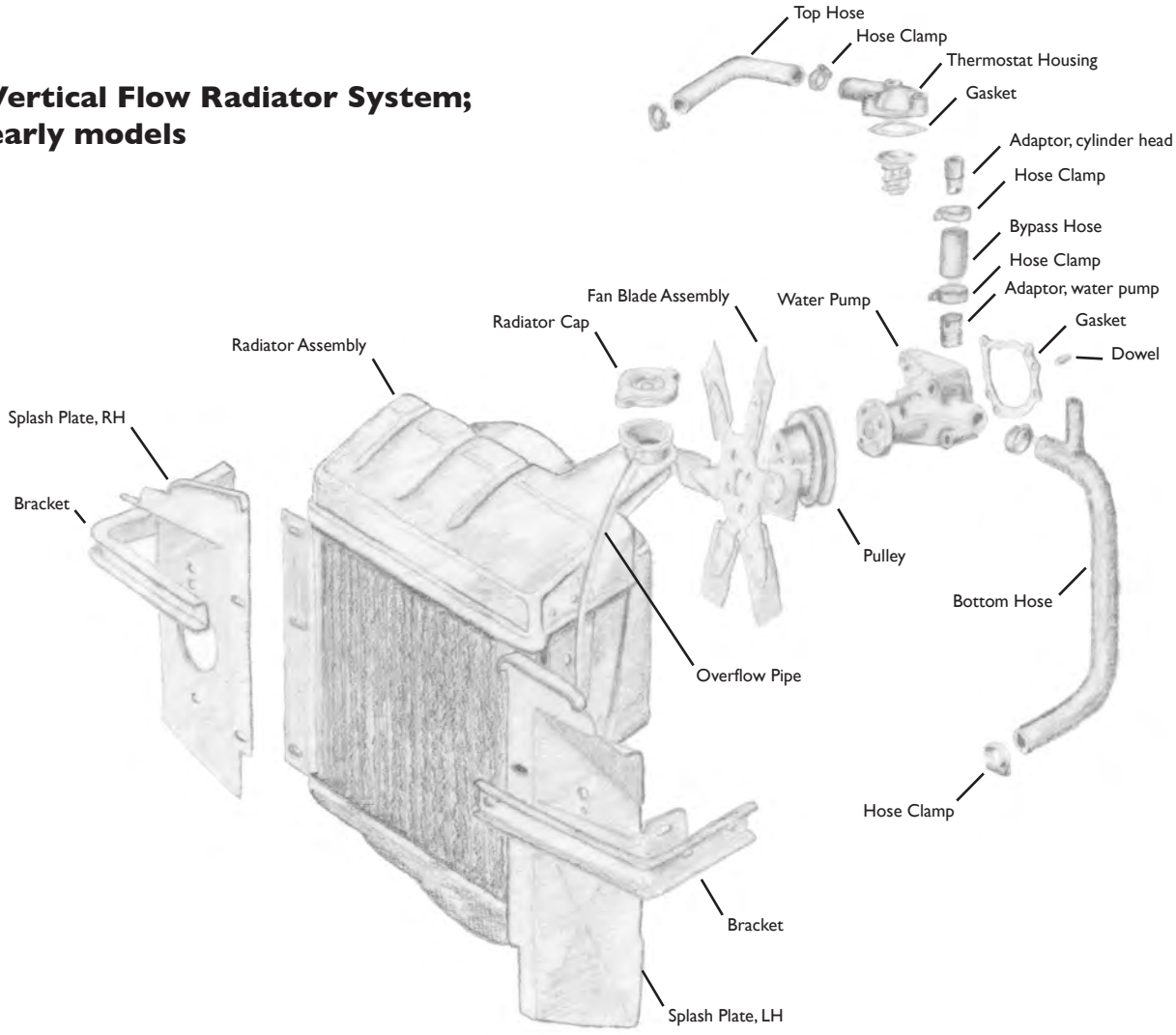
For countries where a heater was not required a fresh air unit was offered as an option. Basically this consisted of the heater box without the heater.

At HAN9 71121 and GAN4 58854 the trunking carrying freshly polluted air into the heater became more sophisticated. The central portion attached to the wheel arch was no longer concertina shaped, but smooth - and held in position with two clamps, not one, as shown in the parts books.

From HAN10 86378 / GAN5 91408 the heater unit was modified, and combined the heater element and blower in one single unit. Whereas formerly the fresh air was cut off via a door at the grille, this new assembly had the air shut off door mounted in the heater unit itself.

With the introduction of the 1500 model, the engine bay was so cramped that the whole heater system was fitted in reverse. The new heater box was a mirror image of the earlier style and the fresh air hose ran down the left hand side of the car. The fresh air tube had a concertina form running its entire length. Furthermore the hot water, in common with the Triumph Spitfire, ran through the inlet manifolds (an aid to rapid warm up) prior to going into the heater element. A new hot water valve allowed water to flow into the heater element, almost as inefficiently as on the earlier cars.

Vertical Flow Radiator System; early models



Green Hoses vs. Black

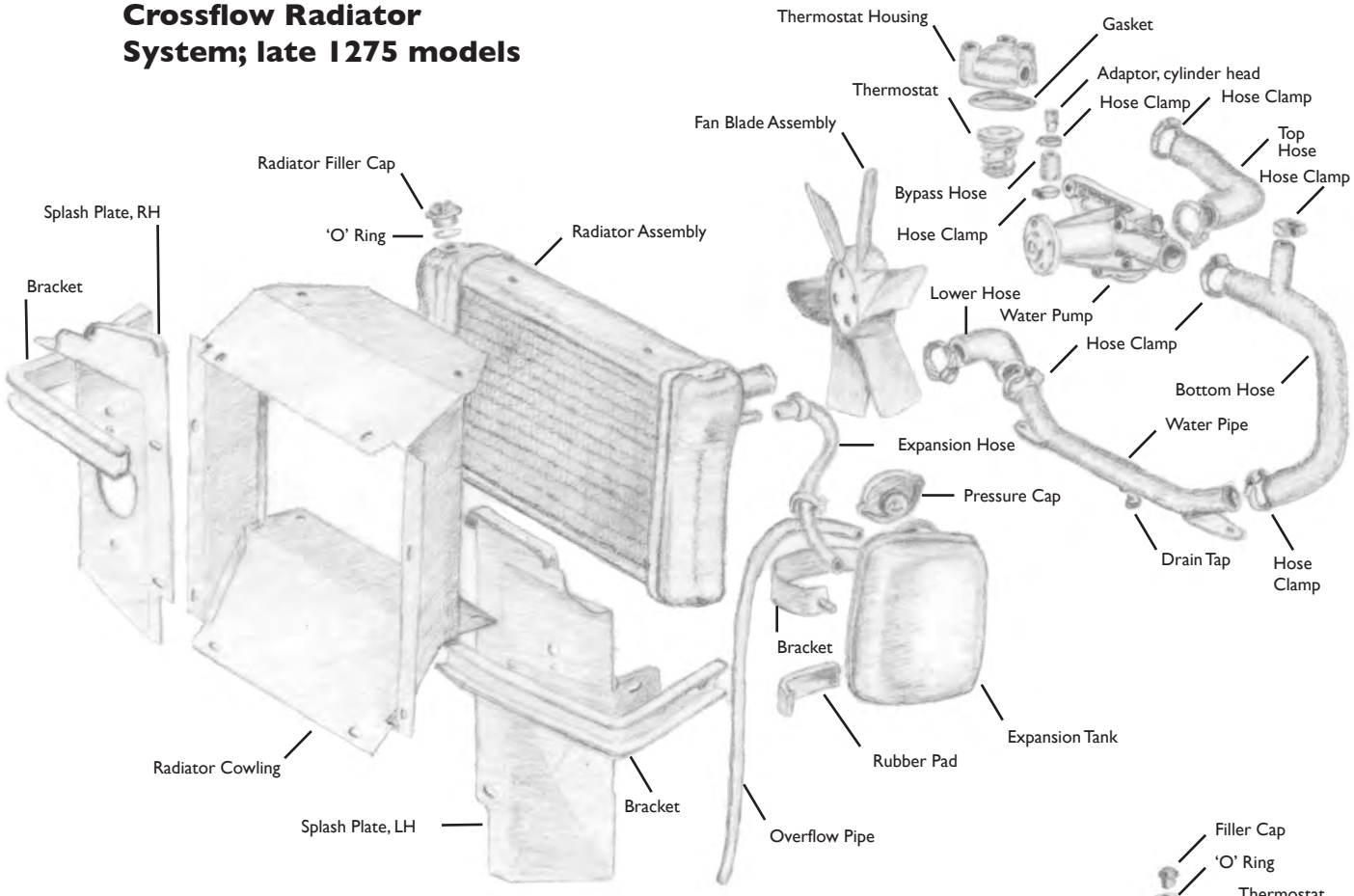
Sadly unavailable (well, sad for the garage trade that is) the classic green water hoses that were found under the bonnet of old cars have been replaced by black hoses. The older reader will remember the frequency with which these green hoses had to be replaced while younger readers may have never experienced the laborious job of replacing split hoses - "Ah, when I was young, blah, blah, blah...". Every garage stocked radiator hoses, because after two years of use the items in question would perish, blow up like balloons and explode sending steam everywhere. For many, hose replacement was a garage forecourt job while on holiday in Devon, with bored wives gazing out of grimy windows and kids whiningly asking "How much longer Dad?"

Garages and parts shops stocked hoses by the thousand. Whatever car you owned could be catered for with new hoses at a moment's notice, wherever you happened to be. Stocks were replenished by the box load as recalled by a colleague of mine who vividly remembers his astonishment at seeing his first ever black hose. The black hose was a great innovation, though not billed as such during its introduction. He just carried on ordering them by the ton though - not having been told of the superior (or long lasting) quality of the new "space-age" material.

Within a short time most of the United Kingdom's motor cars green hoses had perished, blown up like balloons and exploded, sending steam everywhere in the appropriate manner. In next to no time all the green hoses had been sold, to be replaced by shelves of these new black hoses - and there they've stayed for years and years.

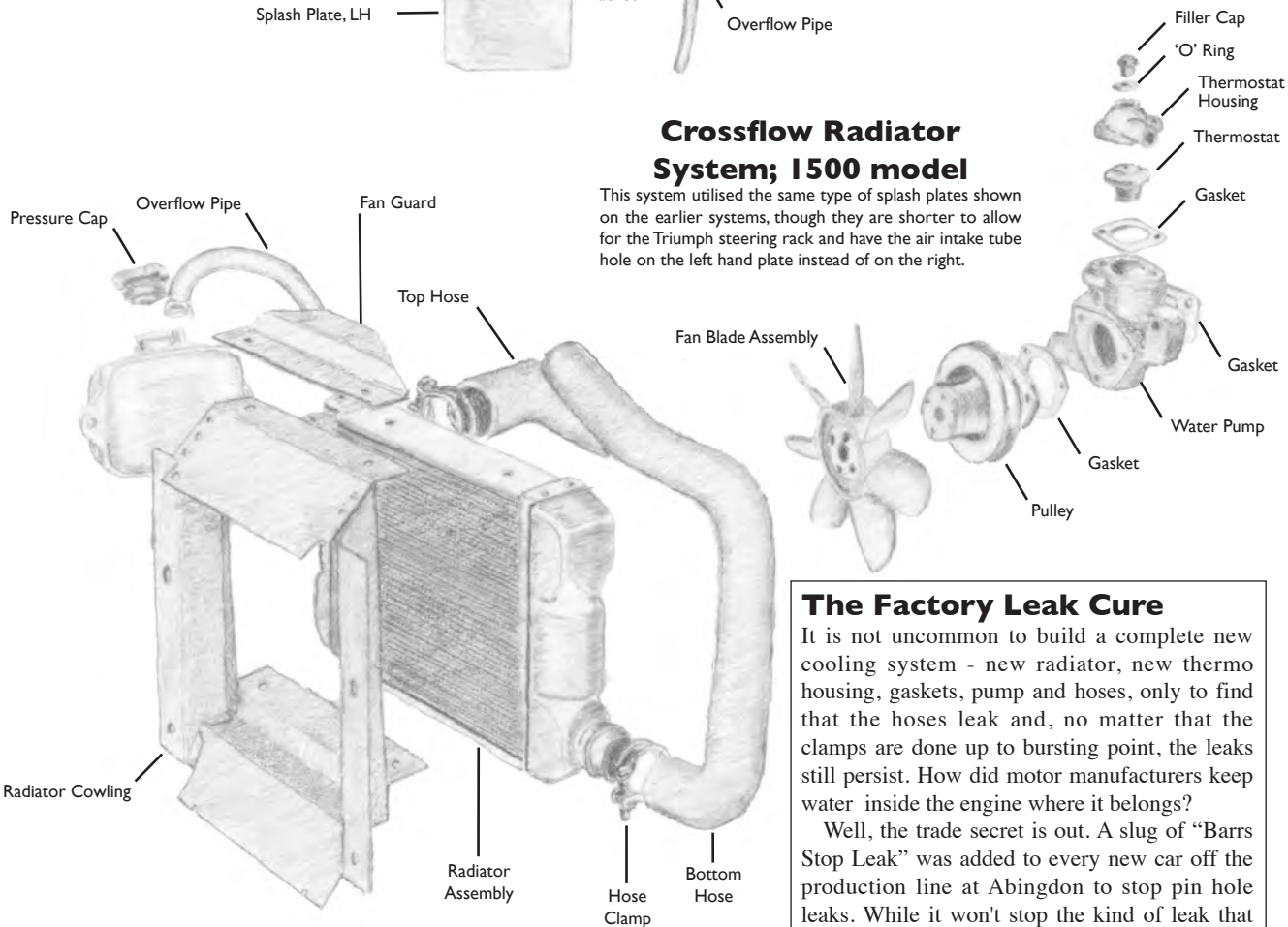
Even now, if you should chance upon an old country garage, look in through the window, where you will see walls full of dusty black hoses with grubby labels saying "Top Hose - A30", "Heater Hose - Morris Cowley", "Water Pump to radiator - Ford Anglia" etc, etc, etc.

Crossflow Radiator System; late 1275 models



Crossflow Radiator System; 1500 model

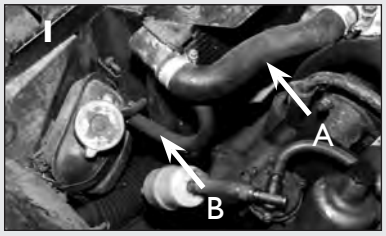
This system utilised the same type of splash plates shown on the earlier systems, though they are shorter to allow for the Triumph steering rack and have the air intake tube hole on the left hand plate instead of on the right.

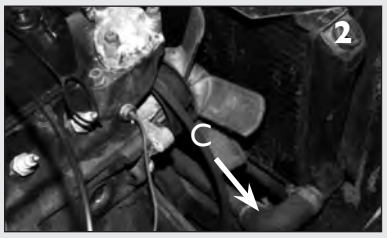


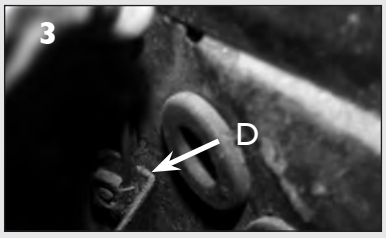
The Factory Leak Cure

It is not uncommon to build a complete new cooling system - new radiator, new thermo housing, gaskets, pump and hoses, only to find that the hoses leak and, no matter that the clamps are done up to bursting point, the leaks still persist. How did motor manufacturers keep water inside the engine where it belongs?

Well, the trade secret is out. A slug of "Barrs Stop Leak" was added to every new car off the production line at Abingdon to stop pin hole leaks. While it won't stop the kind of leak that needs a credit card, it will make a new system water tight without any adverse affects.







Case Study: Cross-Flow Cooling System

Early cross flow radiator systems offered no easy means to drain out the water. After the earlier type of system, with both a drain tap in the block and at the radiator, this was a step backwards. All you can do is undo a clamp, pull off a hose and get wet feet.

1 Drain the system either by removing one of the bottom hoses, or (in the case of later cross flow cars) by removing the drain plug located at the bottom of the steel cross pipe which sits beneath the radiator. (You can just reach it from beneath the car).

2 Disconnect and remove the thermostat to radiator hose (1A), radiator to expansion tank hose (1B) and the radiator lower hoses (2C).

3 The radiator is mounted in an archaic and stupidly designed cowling. Secured with captive nuts (3D) - which are usually no longer captive - and sundry ill fitting items of hardware, old cowlings are very difficult to remove.

If the captive nuts refuse to stay still, try wedging a small screwdriver blade in there to grip them while undoing the bolt from the front of the grille area.

4 The cowling and radiator will come out as an assembly (4). Four bolts fix the radiator into the cowling (5 & 6). Examine the radiator for damage to the fins and signs of corrosion.

5 The expansion tank is held in place by a steel strap, under which are two rubber anti-vibration strips. The strap incorporates studs which fit through the left hand wheel arch to be secured by nuts and lock washers.

Prior to removal, make a note of how the overflow hose is fed down through the engine bay. The overflow hose should be a flexible black rubber tube (7) - not clear plastic!

Take care undoing the nuts of the restraining strap which, if severely rusted could cause the strap to twist and warp out of shape.