

International 1000 Km
UK Fastest 100 mile
Record Holders

Austin Healey 100S

new cars • new parts

The story of the NEW record breaking 100S



RECORD BREAKING HEALEYS

the original works story



In 1953 Donald Healey had an ambition to take the 24-hour endurance record. He used 'standard production cars' to take the production car records covering 3100 miles in 30 hours at an average speed of 104.3 mph

In 1954 a new car was commissioned and dubbed 'the Endurance car'. It was based on a standard chassis that was prepared with a modified Weslake designed cylinder head, 16 inch Dunlop peg drive wheels and Dunlop disc brakes (a first in production sports cars). There were a number of aerodynamic modifications with a small aero screen and head fairing, plus an air-cooled battery compartment in the right hand passenger seat and underbody streamlining.

On Aug 23rd 1954, supervised by the American Automobile club the car set 83 National and International Class D records driven by Donald Healey, George Eyston, Carroll Shelby, Mort Goodall and Roy Jackson-Moore. A 24-hour average speed of 132.29 mph was set giving the equivalence of driving from New York to San Francisco in a day!

Unfortunately the original car was scrapped shortly after the records in the fifties as salt had taken its toll and made it unsafe.

Healey expert Jeremy Welch recreated the 1954 car based on a works lightweight chassis, this car was built from scratch with a view to attempting an endurance record in 2009.

The car needed to be able to sustain the long distance record attempt and as such had to be fully functional. Parts had to be up to the task which ruled out the use of any original components that were not up to the job.

During the development of this car many parts had to be sourced and in some cases remade to match the original. These are now available to owners of the original 100S cars.

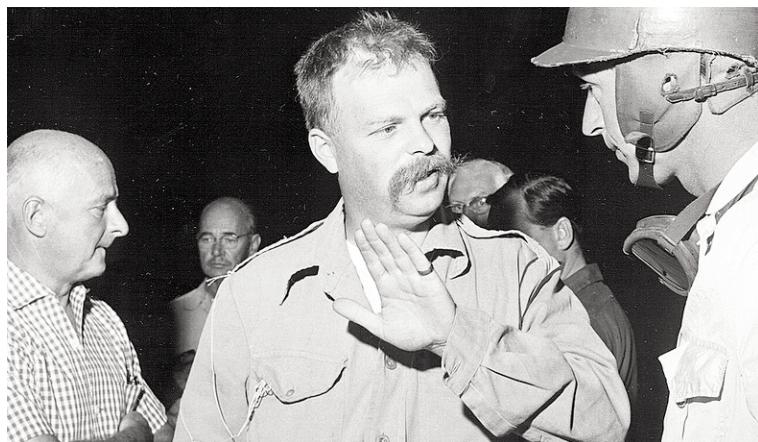
The ambition for this recreated car was to "exceed all Healey non-supercharged records" which means lapping around 150mph for at least 500 miles.

The car when tested was timed at 147.2 mph, a promising start to the adventure of recreating a legend. This brochure shows how it was done.

For detailed information go to: www.healeyendurance.com For parts go to: www.bighealey.co.uk



The Healey Endurance car comes into the pits Bonneville 1954



Geoff Healey debriefs Roy Jackson Moore (helmet) whilst Donald Healey looks on

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A.A.A. CERTIFICATE					
Contest AAA Board RECORDS					
broken by the Austin-Healey "100 S"					
INTERNATIONAL CLASS "D" (2,000—3,000 c.c.)					
Standing	1000 Kilo	...	...	...	132.81 m.p.h.
"	1000 Mile	...	...	...	132.59 m.p.h.
"	2000 Kilo	...	...	...	132.72 m.p.h.
"	2000 Mile	...	...	...	132.38 m.p.h.
"	3000 Kilo	...	...	...	132.45 m.p.h.
"	5000 Kilo	...	...	...	132.16 m.p.h.
"	4000 Kilo	...	...	...	132.02 m.p.h.
"	5000 Kilo	...	...	...	132.27 m.p.h.
"	6 Hour	...	...	...	133.06 m.p.h.
"	12 Hour	...	...	...	132.47 m.p.h.
"	24 Hour	...	...	...	132.29 m.p.h.

RECORD BREAKERS

the Welch story



Early Welch/Brooke history - At the start of the 100 miles trial. Beckshill Speed Trials with Brooke cars. World marine records with Brooke marine.



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The motoring history of Denis Welch Motorsport stretches back many years. Jeremy Welch's great, great grandfather John 'Walter' Brooke (known as the Old Governor) started business in 1874, at the tender age of 25. He had trained at Hogg's foundry, in Southwark, London, owned by his wife's family and after a brief trip to the USA set up a foundry and manufacturing business in Lowestoft, England.

The firm commenced in quite a modest way, the business being of a general nature, and included castings and ironwork for the Fishing and Trawling Fleet which were of course at that time all sailing vessels. Building ironwork, manufacturing machinery including steam retorts, bloater paste machinery, and soldering machines for the handling of both round and oval tins were also made, as well as lifts, hoists and amateur greenhouse hot water systems. On July 28th 1897 he incorporated the company J.W.Brooke and in 1899 they started to make internal combustion engines.

His son John 'Mawdesley' Brooke (known as the Governor) was on the board at the age of 22 and it was he who first took interest in this new phenomena in the year 1892, whilst sailing upon Oulton Broad.



He saw a boat of about 16 feet in length, with a box in the centre of it, coming towards him at

quite a respectable speed. There was no smoke, and practically no noise and his engineering instincts were at once awakened to investigate this boat.

The boat, known as 'The Old Tub' belonged to a Mr Estcourt and was fitted with a benzoline engine-the first engine sent over to the UK by Herr Gottlieb Daimler.

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He was able to see the possibilities of this type of propulsion and from that day the study of the petrol engine was one of his keenest interests.

His first personal experiment with an internal combustion engine was in 1899, and the resulting machine he believed represented the birth of the three-cylinder internal combustion engine.

Mawdesley was some inventor himself registering patents for an automatic Two Jet Carburetter, the forerunner, of the present day carburetter and a chain 'change speed' gear box, an ingenious arrangement then used on most motor 'buses.

Their first car was tested in 1901 and put on the market in 1902. The company had 100 employees at this time. This first car was of somewhat unusual design with a 10hp 3-cylinder vertical engine mounted transversely under a very small bonnet it was driven by chains mated to an all chain gearbox.

In 1904 a six cylinder car was designed and put on the market. The original engine was 3^{5/8}" bore, the car being described as 25-h.p. and was the World's Pioneer six-cylinder car, although it was disputed as to whether the six-cylinder Napier or the six-cylinder BROOKE took the road first, but undoubtedly the Firm built the first six-cylinder Marine Motor.



A 40hp six cylinder engine was offered in 1907. This was the hey day for Brooke motor cars, after

1913 as they started to concentrate more on their marine business.

The Welch/Brooke family are no strangers to achievement on the competition

stage either. They competed at the very earliest Beckhill Speed Trials and the family firm had notable success with water speed records, taking the 1925 world record and supplying tender boats to the RAF for the Schneider trophy races and latterly built the Virgin Atlantic challenger for Richard Branson.

Denis Welch followed in his Grandfather's footsteps in 1977. After a career in foundry work he switched to cars and built the most successful Healey racing business in the World. They have won just about everything there is in Europe and the UK.

If it's someone with a pedigree you want to build your car, then Jeremy Welch has one of the best, something you just can't get in one lifetime - over 110 years of motoring history and winning throughout.

It is, as they say 'in the blood'.

Family achievements have included:

- The World Water Speed Record with a boat called 'Bulldog' in 1925
- Over 340 trophies for motor boat wins
- The European FIA championship with their own Healey in 1990
- The rebuilding of the 1965 Le Mans Austin Healey Sprite and its sister car returning to Le Mans 25 years later
- Rebuilding the legendary RWD132 original works 100S in 2008/9
- Construction of many Healey championship winning cars



RECREATING HISTORY

the story of a new car



To faithfully recreate the world beating Healey Endurance car, careful research was undertaken.

The start point was an original works lightweight chassis which was examined and brought up to specification using our specialised modern jig.

This was then cloaked in an all aluminium body encompassing aerodynamic modifications as per the original works car. The mesmeric metallic green

paintwork was applied after verifying the colour with the late Geoff Healey shortly before his death.

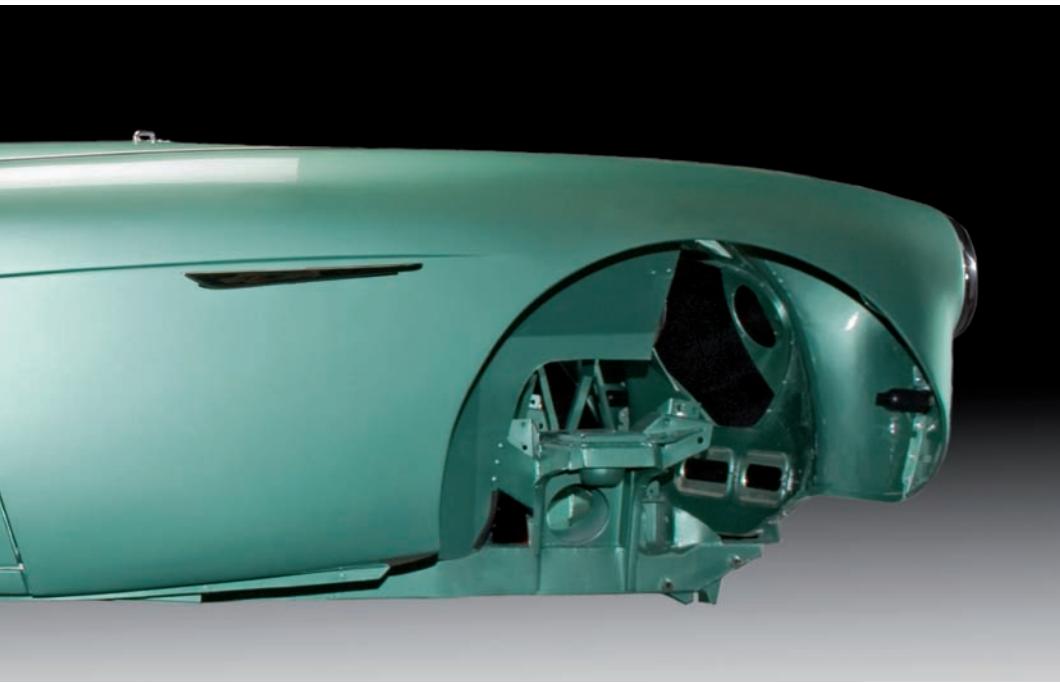
Finally the detail that was so specific to the original prototype car was carefully matched and verified by Roy Jackson Moore one of the original record breaking drivers.

Roy was the North American sales director for the Healey works and went on to be a major part of

the North American sales effort for British sports cars with names such as Aston Martin. Perhaps his most notable achievement was to introduce Carroll Shelby to AC which resulted in the creation of the legendary Cobra car.

As you can imagine after such a long time there are many things that get re-interpreted and there is nothing like an original competitor giving an on the spot, point of view to verify the real facts.

For detailed information go to: www.healeyendurance.com For parts go to: www.bighealey.co.uk



HEALEY Z

ENDURANCE CAR



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RECREATING HISTORY

a new car capable of taking on the world



Once the bodywork was complete, attention was directed towards the mechanical elements. The desire to make a car that was capable of breaking a record meant that every component had to be up to the task. Some parts were simply not available and as the original car was a prototype many had to be researched and remade from scratch. This involved CAD drawings and new castings and machining all undertaken in-house.

Peg drive hubs and the rear axle set up had not been made since the works days and were remade from CAD drawings.

The engine was constructed from scratch using a proven range of parts with adaptations made as per the original works performance enhancements and dyno tested in-house. Even the oil cooler had to be remodelled from original drawings incorporating modern filter and flow components.

Our experience has helped produce a car that has been extensively looked over by ex works personnel and drivers, all of whom have given it a significant thumbs up approval.

The parts developed during this recreation have been faithfully copied from the original and are a vital source of components for many original works cars, as they allow owners to keep them competitive.

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HEALEY Z ENDURANCE CAR



+44 (0) 1543 472244

Engine



Cylinders	In line 4 cylinder
Bore	Standard +30 (88mm)
Stroke	Standard (111.1mm)
Head	100S Weslake designed 8 port aluminium with right hand exhaust and induction
Carburation	2x SU 1.75" H6 normally aspirated
Max RPM	6000
BHP	Enough

Transmission

Gearbox	4 Speed BN2 type, side change non overdrive, straight cut H/Duty mainshaft
Final Drive	100S Crown wheel & pinion 2.69 ratio
Brakes	Dunlop type Disc brakes 11.25" front and rear hydraulically operated double piston

Suspension



As original - Front Bottom wishbone with coil spring and top location via hydraulic shock absorber

As original - Rear Semi elliptical leaf spring with hydraulic shock absorber, uprated springs and anti rollbar

Bodywork



2 door sports type - left hand drive
All aluminium body on steel chassis with lightweight aluminium bulkheads as 100S.

Special construction aluminium tonneau with air scoops, special head fairing

Special air cooling for both engine and oil

Aero screen replaces full windscreen

Plastic safety fuel cell with twin fuel pick ups 100 litre capacity

Top speed 145 mph plus

RECORD BREAKING

taking on the past



The Healey Endurance car was completed in July 2008 and final setup tests were concluded in Oct 2008 with great success. The car achieved its target speed of 147.2 mph, very close to the theoretical maximum of the original wind tunnel analysis calculated in the days when the car was designed.

The 1954 works Healey car achieved a 132.81 mph average for 1000 kilometres. The recreated car built with the ambition to 'exceed all non supercharged Healey records' has been developed continuously during the winter to try to better the works record car achievements.

Late 2008 tests had proved the cars straight line speed but further work was required on suspension and aerodynamics to suit the 2 mile circular Millbrook track designated for a record attempt.

The higher speeds achieved at the Millbrook test facility were bordering on the scary, as the original configuration made from the Bonneville settings were too harsh leading to some skittishness, which you do not need at nearly 150 mph.

In a test on 19th March 2009 at Millbrook proving ground during a one hour constant-run it exceeded the speed achieved by its predecessor by 10 mph.

This test was the first outing in 2009 with those improvements on board. The purpose of the test was to run the car for a one-hour constant-test to check long distance running and driver experience at the wheel and to see how well the engine could pull the tall diff ratio that had been calculated to be required to run at high speed whilst not overstressing the engine which might lead to failure over a long distance.

A wind tunnel test took place in mid April to see if improvements could be made to the aerodynamics, and significant lessons were learnt about the flow of air on the front of the car and through the bodywork, further minor corrections were then undertaken to make that vital difference to outright drag and speed.

The car made an attempt on the 1000 km endurance record in Nov 2009.

147.2 Mph
in testing



HEALEY
ENDURANCE CAR



RECORD BREAKING

the record attempt



November 2009 saw the 'Healey Endurance' car built by Denis Welch Motorsport attempt the International Speed record for 1000 Km (International Group 2 Class 8 non supercharged) at Millbrook proving ground in Bedfordshire.

The car successfully completed 308 laps at record breaking speed, with a speed adjudged on the day as 148.32 mph (finally adjusted to 148.13 by the time keepers). It was a trouble free run with the Healey not even consuming any oil in the entire run, that involved 3 scheduled pit stops. It was driven by owner Martyn Corfield and Constructor Jeremy Welch in 4 stints of one hour each.

The Saturday had seen final practice taking place amidst lashing gales, a full team practice had to be done at the last moment as Millbrook is a private testing ground and access is very limited. Pit stops and the final set up for fuel and tyres had to be concluded very swiftly due to the conditions.

Sunday saw a very early start with the car unloaded in the dark and installation laps taking place on a damp track just as dawn broke. Soon the sky shook off its sombre mood and the sunlight strengthened to show the car running smooth and true, as it did for the whole attempt. By 11:16 am the 500 km point was reached at an

impressive average of 148.10 mph, the pit stops were going like clockwork taking around 54 sec to change all four wheels, the driver and refuel.

It was always on schedule and looked fabulous in the weak autumn sunshine. A further pit stop was made after Martyn spun across the track at 150 mph due to the damp surface in the shadows from the previous days torrential rain and howling gales.

After such a mind numbing moment he was still able to gather the car, losing little time and after a safety check carry on unabated to the next scheduled stop.



HEALEY Z

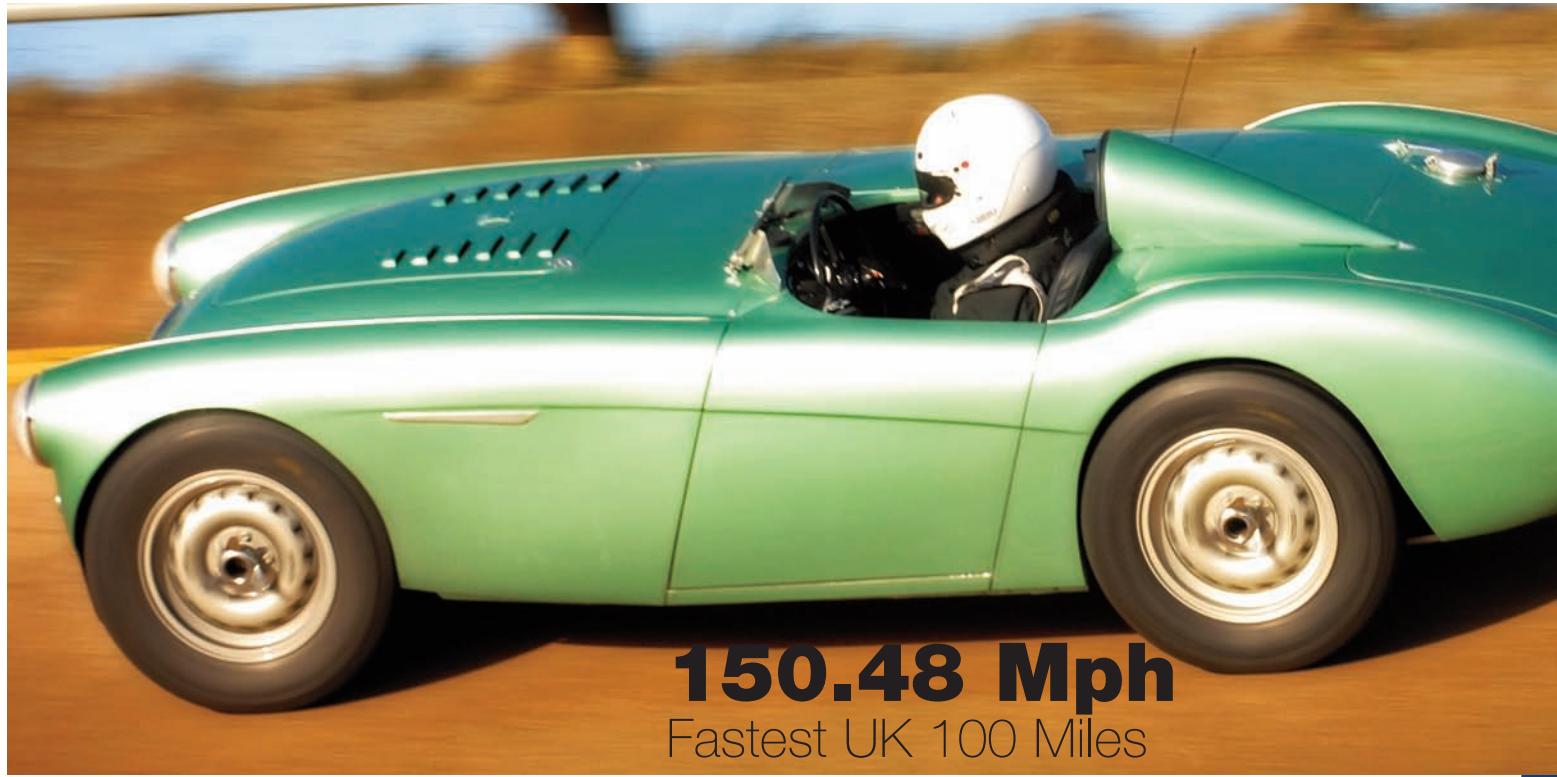
ENDURANCE CAR



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The Records

November 15th 2009



150.48 Mph
Fastest UK 100 Miles

The stupendous achievements of the Healey Endurance car still leave one astonished years later. The car took to the track on Nov 15th 2009 at Millbrook proving ground in Bedfordshire. Britain once again established world-beating performances in the field of speed records taking 17 records 11 National and 6 International, all officially confirmed by the FIA & MSA.

The official FIA awards ceremony took place at the Autosport show at the NEC where the Colin Hilton,

MSA Chief Executive (left) presented the certificates to Martyn Corfield (centre) and Jeremy Welch to mark their achievement.



'1000 KM INTERNATIONAL RECORD HOLDER'

The target was to run the 1000 km distance - equivalent to 621 miles in approximate 4 hours (London to Geneva).

The car covered 1000km at 148.13 mph. The time recorded was made all the more remarkable by the poor weather that dogged the preparations for the event.

Mission accomplished.

'FASTEST EVER 100 MILES' IN THE UK

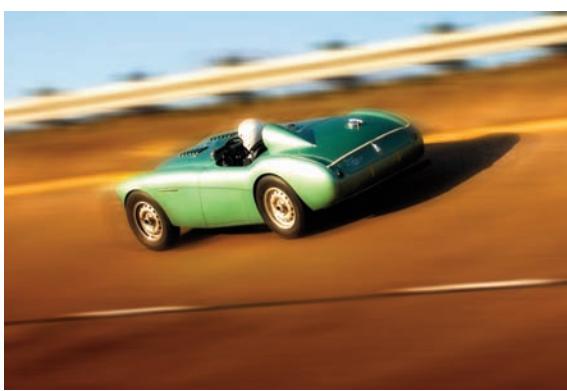
As well as the International 1000km record the car also clocked the 'fastest 100 miles ever recorded' in the UK irrespective of age of car, engine size or type of car. The record previously held by Prodrive who used a Volvo T5 in 2000, it was still holding this record in 2016.....

Constructor and Co-Driver Jeremy Welch, said

"The 1000 km endurance run is a major achievement both for myself and the company. It's definitely the fastest normally aspirated Healey 100 in the World today at 153.44 mph (fastest lap), and that's official. The entire team is delighted. We are looking at offering a customer version of this car for those people who want a classic performance car with a thoroughbred history, but don't have the mega budget you need for an original."

Thanks must go to Michelin tyres and their distributor Longstone tyres whose products never let the team down and Sunoco for supply of fuel and pumping equipment.

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International and UK records	1,000 kms	4h 11m 40.650s	148.13 mph
International and UK records	500 miles	3h 23m 33.434s	147.37 mph
International and UK records	500 kms	2h 05m 51.697s	148.10 mph
International and UK records	100 miles	39m 52.207s	150.48 mph
International record	100 kms	24m 53.159s	149.80 mph
International and UK records	1 hour	147 miles 668 yds	147.38 mph
Outright UK record	100 miles	39m 52.207s	150.48 mph
UK record	200 miles	1h 22m 21.817s	145.69 mph
UK record	10 miles	3m 55.143s	153.09 mph
UK record	10 kms	2m 26.030s	153.18 mph
UK record	5 miles	1m 57.495s	153.19 mph
UK record	3 hours	443 miles 1,724 yds	147.99 mph



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THE NEW 100S

a recreation of the original car



The development of the Healey 'Endurance' car has left Denis Welch Motorsport in a privileged position. Their 35 year history building and racing Healeys means that they had the pedigree to undertake such a recreation. Their in-house design and CAD manufacturing enabled them to recreate legendary cars such as this, at their base in Yoxall.

The Healey works produced 50 special edition cars called the 100S to celebrate the Endurance car record. They are in short supply these days costing upwards of £600,000.

Using skills long forgotten, such as chassis fabrication, bodywork & engine building - aided by in-house dyno facilities, Denis Welch Motorsport

can build a new 100S specifically for you.

For those with a desire and passion to own such a car they are the answer to a prayer, a turnkey solution to your dreams.

The new 100S created by Denis Welch Motorsport is a faithful recreation of those special edition cars, they are made from new with all the character and style that the original cars captured.

They are produced on a new jig-built chassis made in Britain - to British standards with a race pedigree that ensures stability and stiffness to match. This is a vital platform on which to base a competition or performance car. Lovingly crafted with an aluminium body, built and finished by hand

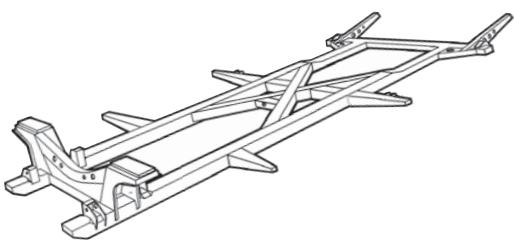
in the traditional fashion, they show what a classic these cars were. Those beautiful design curves drawn by Gerry Coker so many years ago are a joy to look at and are hand painted in traditional colours of your choosing.

Mechanical components such as suspension, gearbox and engine are built to your requirements with due regard to the original cars principles.

Being very faithful to an original 100S, these cars can apply for FIA Historic Technical Passports , this allows entries into many historic events by invitation.

So you no longer have to dream, simply call.

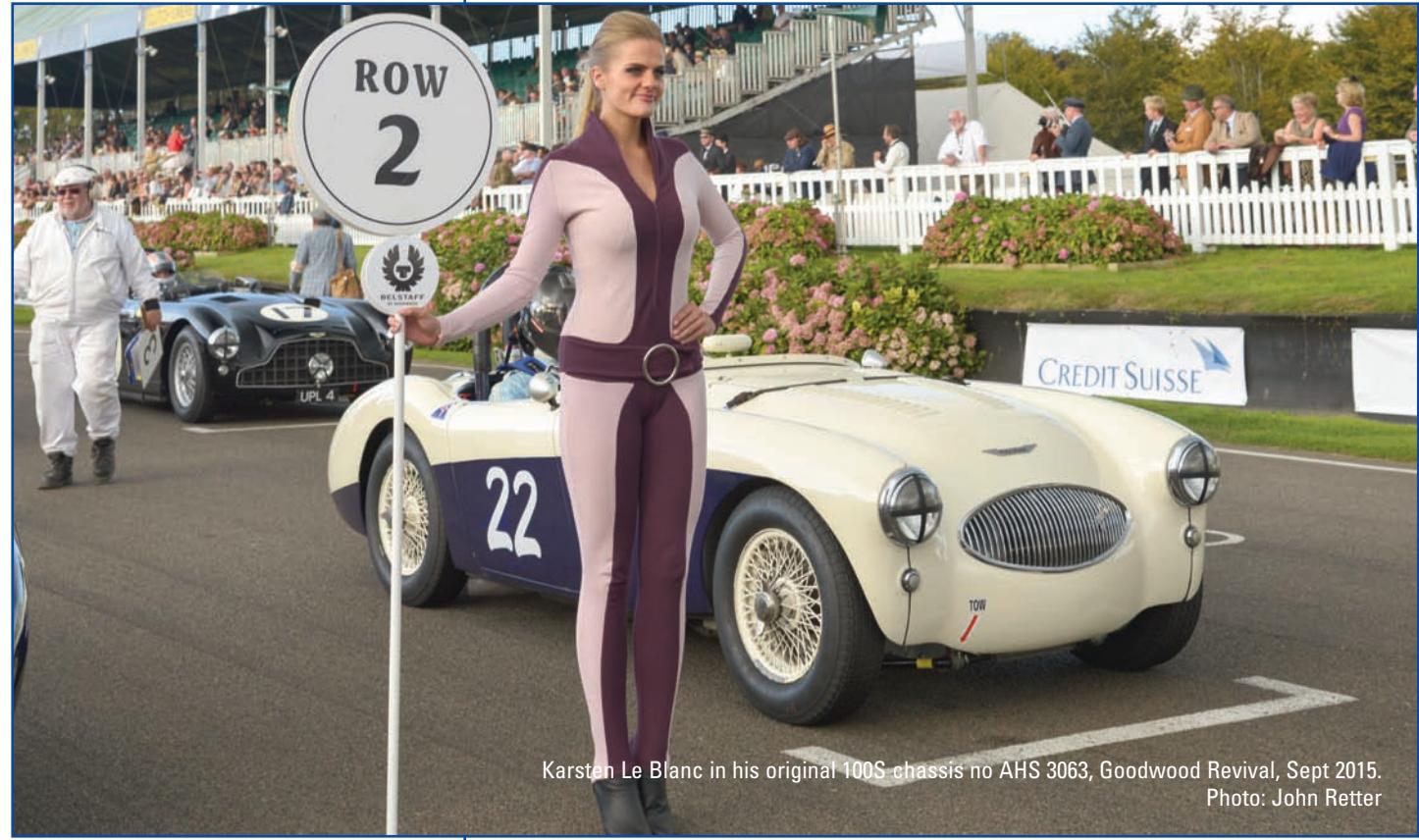
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WHERE TO USE YOUR 100S

race, rally or road, compete all over the globe



Karsten Le Blanc in his original 100S chassis no AHS 3063, Goodwood Revival, Sept 2015.
Photo: John Retter

Our New 100S is eligible for events all over the globe whether it be race, rally or road.

The hospitality provided by the series' organisers is second to none at most of the classic events with a private dining area offering food and drink and often a barbecue or party on one of the nights.

This is a great way to get to know your fellow competitors and have an enjoyable time whilst competing. Circuits such as Silverstone, Monza, Porto and Spa Francorchamps are on the race calendar. For the adventurous there is the Spa 6 hour endurance with night racing.

There are also many rally events that this car is eligible for - taking you to far flung places.



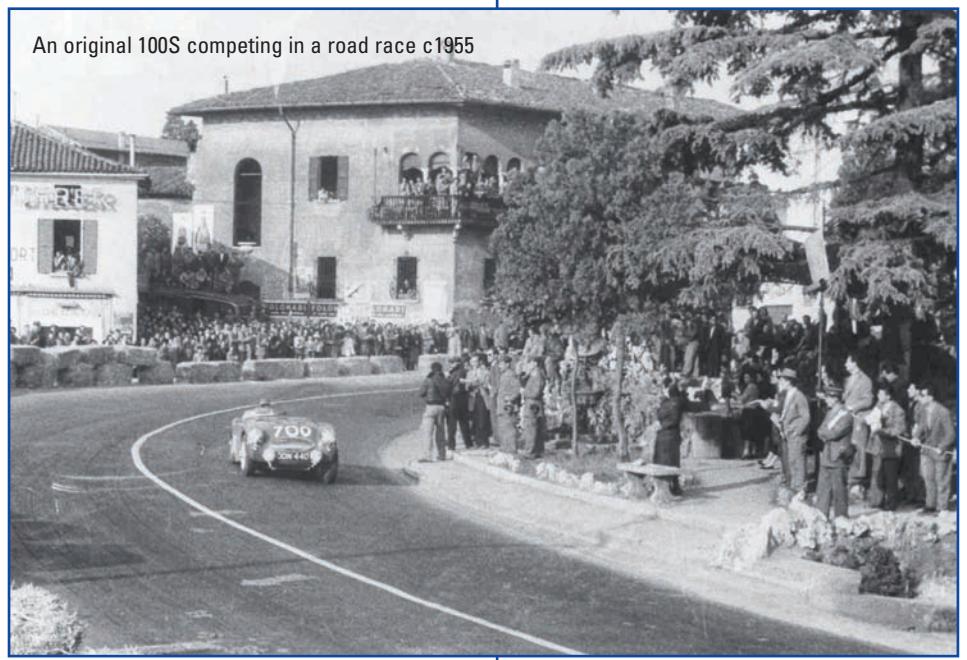


Masters

HISTORIC RACING



CIRCUIT DE SPA
FRANCORCHAMPS



GT & SPORTS CAR CUP



Liege-Rome-Liege c1955

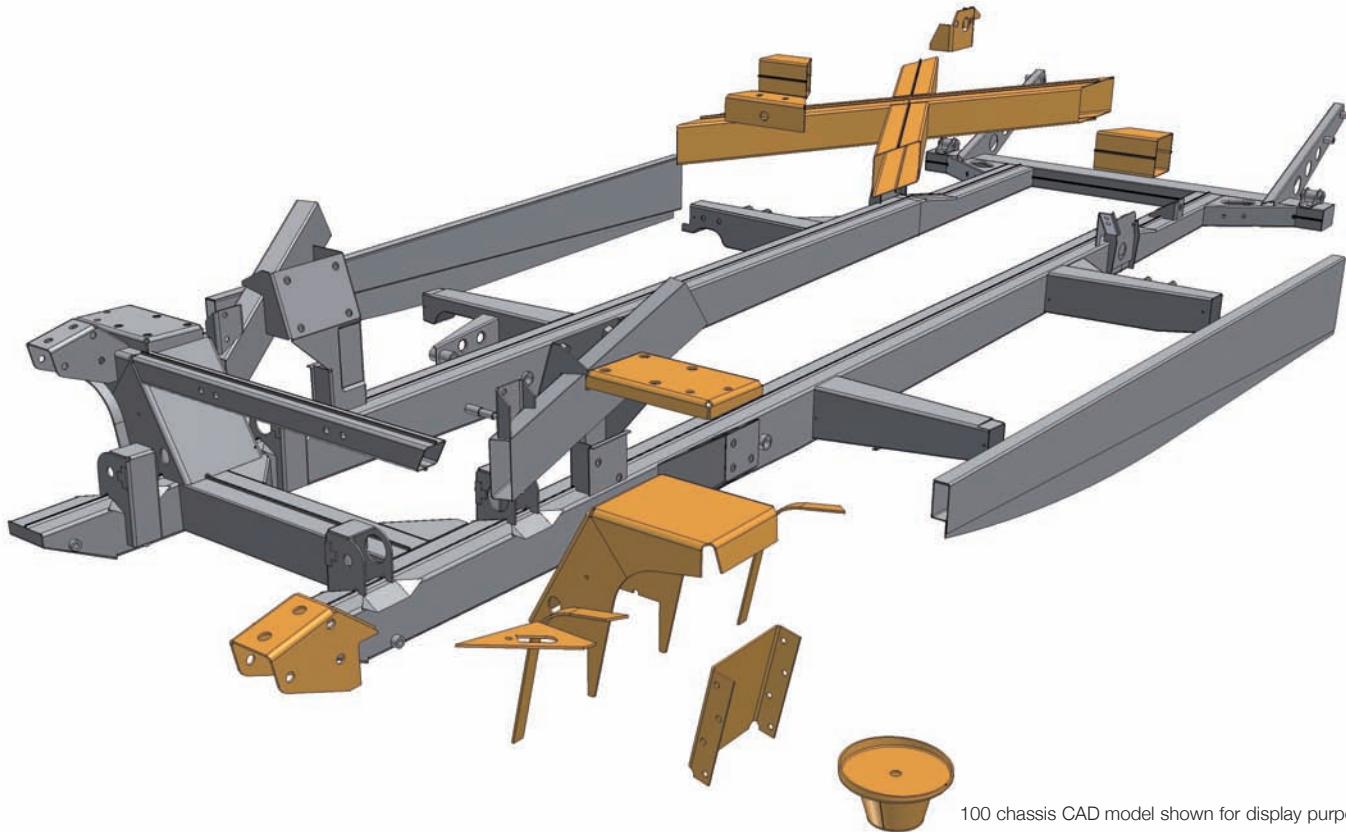
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Period photos are of original events. Entries cannot be guaranteed in todays' events

THE 100S CHASSIS & BODY

stiffer, stronger and corrosion free

100S CHASSIS



100 chassis CAD model shown for display purposes

For over thirty years we have been involved with Healeys and have constantly endeavoured to produce parts that provide peerless levels of performance in service.

Much of our earlier work involved attempting to make 60 year old components perform well beyond their design life. Frequently they simply failed to survive the rigours of age and the stress of racing.

Chassis were often found to be weak and sometimes the damage incurred was simply too great for them to be successfully straightened.

Our solution to these challenges was to reproduce them from scratch and improve them where weaknesses were found.

Modern design and materials meant we could enhance performance, increasing both strength and rigidity and correct corrosion problems, whilst retaining the compatibility and integrity of the original.

We invested heavily in new tooling to develop a British made chassis that was the equal to our engineered parts.

This required an alignment Jig backed up by new Press Tooling. Thus we were able to

ensure highly accurate chassis geometry and complete control of the process, guaranteeing the quality of the finished product.

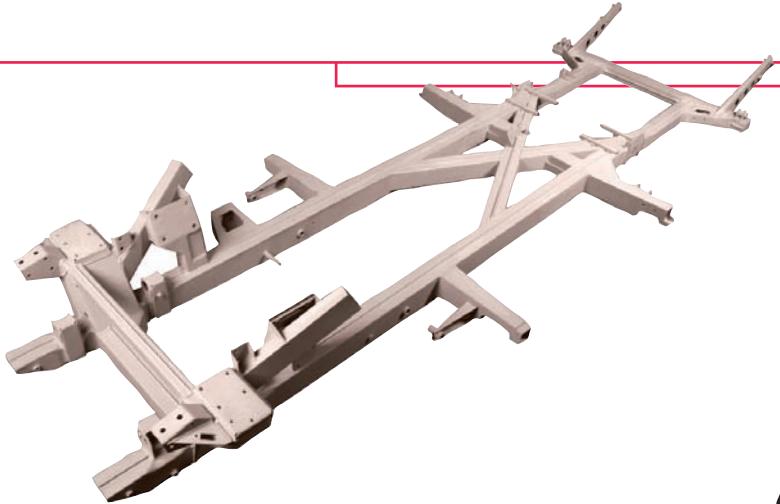
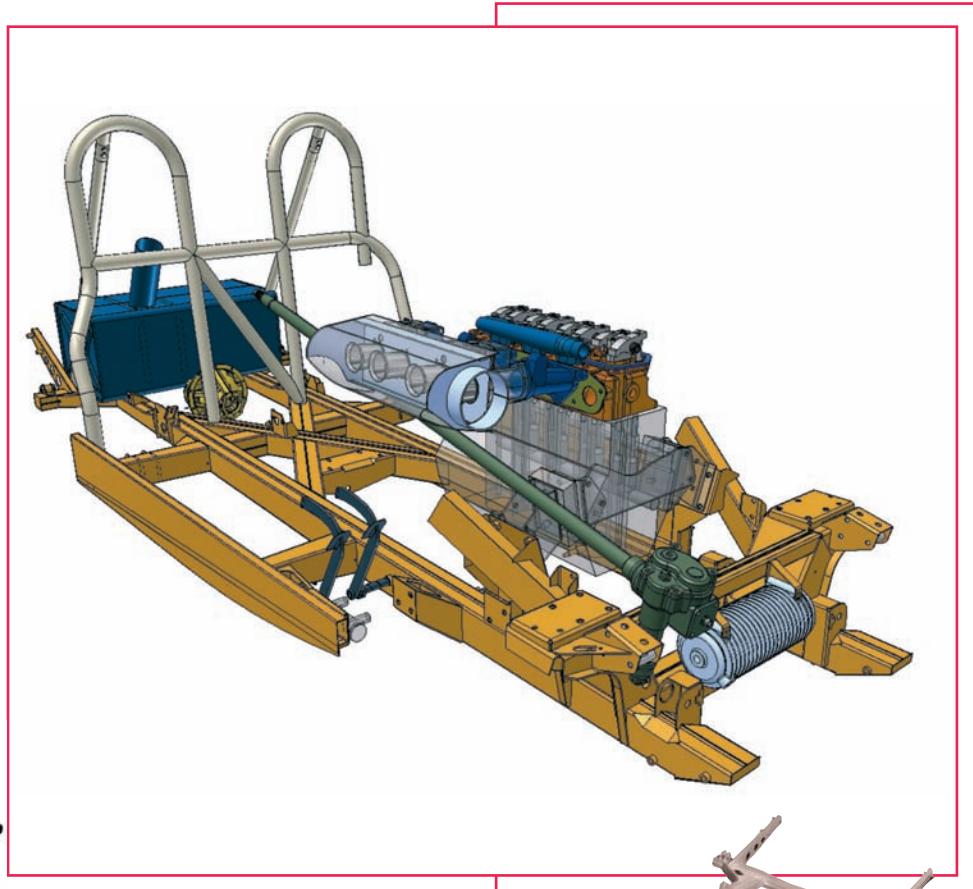
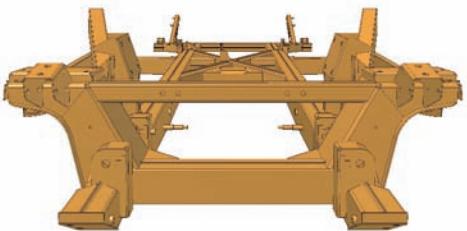
Our 100S chassis is made to these standards with the finest attention to detail and originality.

We have had the opportunity over the years to view an enormous amount of chassis and make detailed notes regarding their individual characteristics and the varying details that inevitably occur in a hand built car such as these.

This together with privileged access to historic records means that we are able to offer customers an exact copy of the original, made from new.

We can also manufacture and supply both 100/4 and 3000 complete chassis together with many replacement parts available for localised repair and strengthening.

These are made using original drawings and CAD design to ensure the correct fit and structural strength.

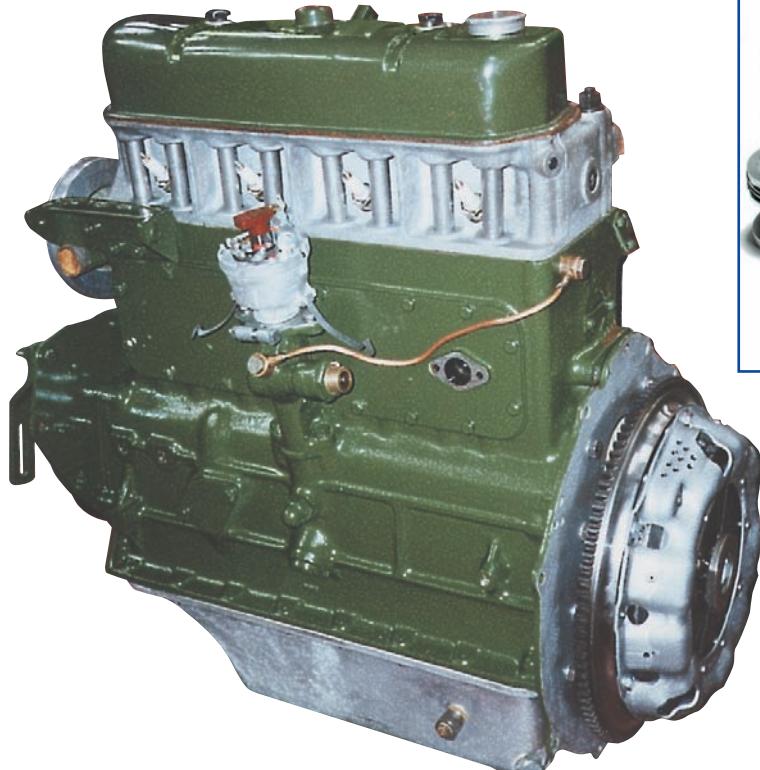


 **BRITISH BUILT**
RACE PROVEN

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THE ENGINE

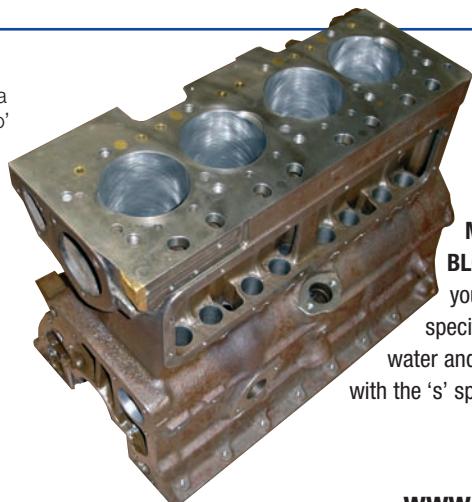
a highly developed version of the original



Although the 100S engine is based on a standard 100/4 block there are significant alterations that have been made to improve performance. Water and oil galleries are relocated to match the specialised cylinder head. Oil pump drives were different as were inlet and exhaust which were on the opposite side to the normal 100/4.

We offer a complete service for those considering building a 100S engine from reworking 100/4 blocks to supply of proven components and upgraded engines.

We will of course build you a complete engine 'ready to go' built to our exacting specifications.



MODIFIED STANDARD BLOCK We can modify your 100/4 block to 100S specification, relocating water and oil ways to comply with the 's' spec cylinder head

parts are interchangeable with original 100S

ALUMINIUM CYLINDER HEADS

Made with the use of the original works pattern equipment cast in LM25 heat treated and fully computer machined.

Available with precision ground, replaceable, lead-free valve seats of the latest material and complemented by our top quality valves, guides, springs and top caps fully interchangeable with the originals.

Available in two specifications.

STANDARD - unassembled with valves, guides, springs and top caps etc.

FULLY GAS FLOWED -fully assembled, ready to fit.

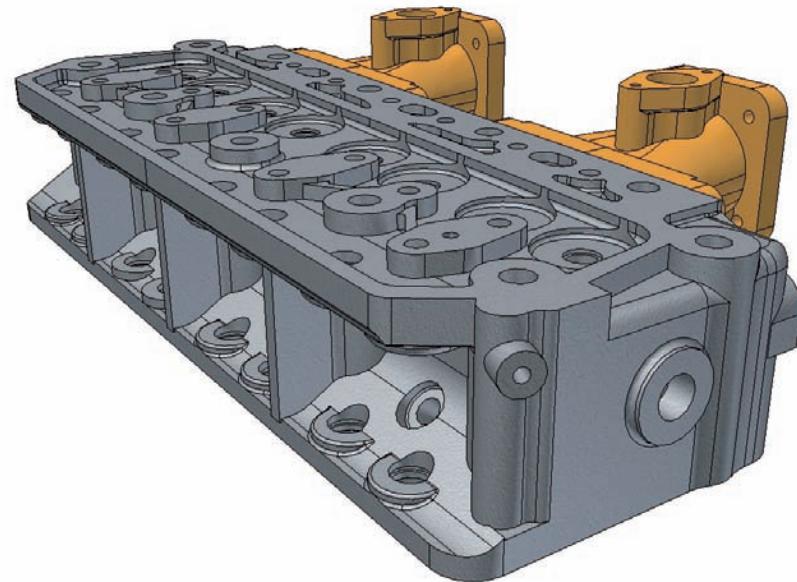


VALVES

Made from one-piece forgings in 214N stainless steel with stellite tips and tuftridized. Suitable for both leaded and unleaded fuel. These are made to the lightest design with original head diameters.

COLISBRO-BRONZE VALVE GUIDES

These are essential in all engines with gas flowed ports whether aluminium or iron and engines converted to lead-free fuel.

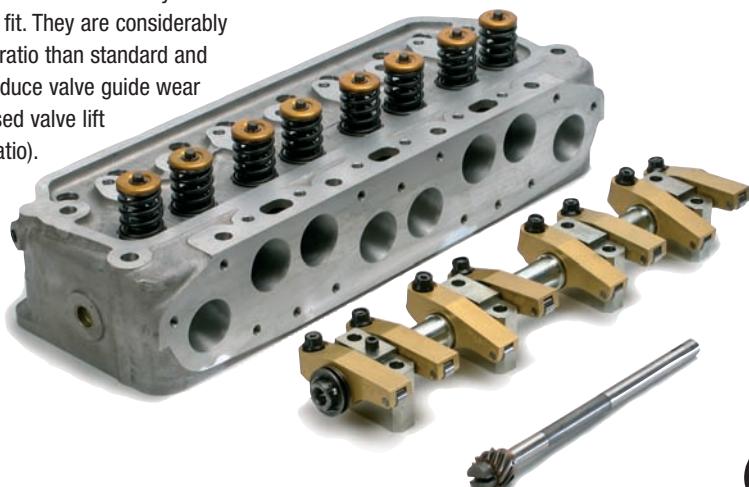


ROLLER ROCKER KIT

Comprising of roller rocker arms made from aircraft specification aluminium, offset steel posts, spacers and 100S shaft. These are fully assembled, ready to fit. They are considerably lighter and a higher ratio than standard and therefore not only reduce valve guide wear but also give increased valve lift (1.65:1 theoretical ratio).

OIL PUMP DRIVE SHAFT

Reproduction of the original which incorporates the slot drive for the original 100S distributor drive tower.



REAR AXLE

Specific to 100S multi ratio diff case and bearings

100S AXLE



One of the 100S components that requires particular consideration is the differential ratios. The original 100S was made in a limited batch of 50 cars specifically designed for 'drive to the track' competition, as such it had a specialised diff housing that could accept varying ratios.

The availability of original housings is decreasing as they get old, damaged and show signs of wear and as such existing replacements were unsuitable for such a high speed car as the Healey Endurance car so we decided to manufacture them from new.

We were determined to make this a particularly faithful reproduction. There are owners of original cars who are finding a replacement is simply not made to this standard, so we wanted to offer a product that would suit them.

It had to be able to take the original ratios of 2.9 and 3.2 which we have manufactured for some time, again with the benefit of original drawings

We have similarly had to recreate the pinion flange and Heavy Duty seal housing

This now allows us to supply complete brand new assembled diff units built to order.

parts are interchangeable with original 100S

OFFSET DIFFERENTIAL CASING



These differential nose cases are near perfect replicas of the original design. Made in a high grade Aluminium alloy from our pattern equipment and machined to very high tolerances, these are top quality items

CROWN WHEEL & PINIONS

Manufactured in England to original specifications, with the aid of original drawings. A choice of ratios available. 4.1, 3.66, 3.2, 2.9, 2.46.

UP-RATED HALF SHAFTS

Made from brand new forgings of higher grade steel, heat treated and surface treated. These are not only stronger than original they are lighter than any other design available.

A direct replacement for standard.

HIGH DEFLECTION PROP-SHAFT

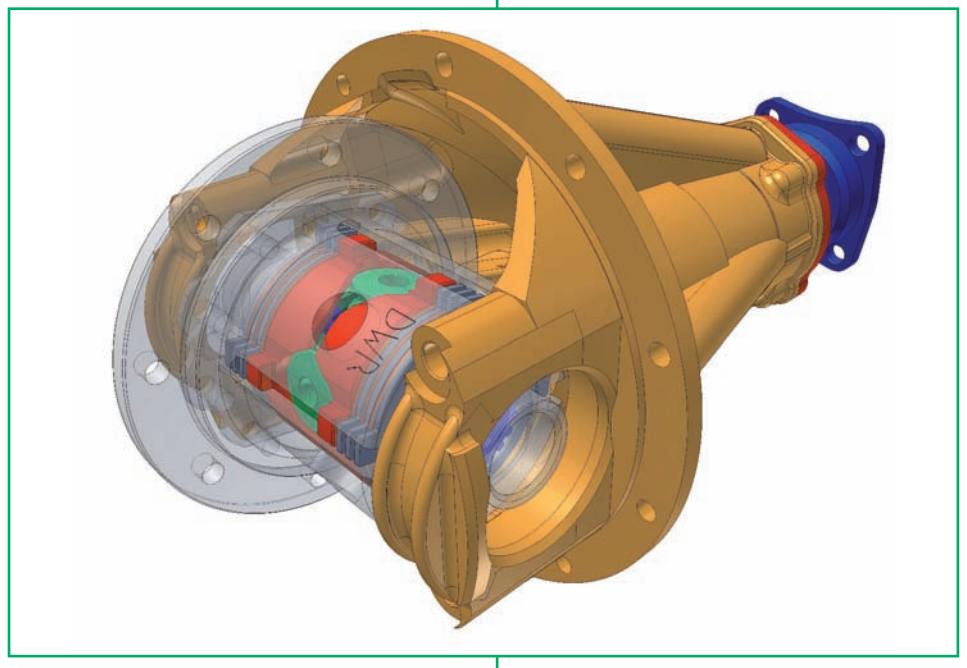
For race and rally cars, these are necessary to stop the universal joints binding up and breaking the nose off the differential when the axle winds up.

COMPETITION HUB SEALS

A considerably higher grade material allows these seals to stand increased heat levels encountered when rear discs are fitted and driving in long distance races, not recommended for road cars.

REAR BEARING CARRIERS

New manufacture of this item means no more loose fitting wheel bearings/studs and hence less load on the half shaft & less brake pad knock off.



REAR HUB STUDS

Top quality high tensile steel.



HEAVY DUTY PINION FLANGE

Top quality reproduction.

INLET AND EXHAUST

special induction and extraction

100S INLET AND EXHAUST



The original 100S was a marked change from its sister the 100 when it came to induction and exhaust. Harry Weslake redesigned the heads with increased power in mind, but with a view to fitting the standard block. The inlet and exhaust ports were moved from the left to the right, as the push rod location in the original head prevented a full 8 port system. This meant running the exhaust down the right side of the car. Our induction and exhaust system takes full advantage of this reconfiguration.

Our inlet manifold has been remade with the experience and knowledge gained over many years of racing.

The large bore diameter of this system gives increased power from the engine.

We pressure test them to give the utmost performance and quality, as small imperfections in the welds can create an air leak, which is the cause of annoying popping on over run.

Similarly the cold air box has been fabricated after extensive testing on the Endurance car project that involved comparisons with both SU and Weber configurations. Both can be accommodated according to your desired specification.

This is a vital component to get cool, dense air circulating around all the intakes for the carburettors to get a balanced airflow.

parts are interchangeable with original 100S

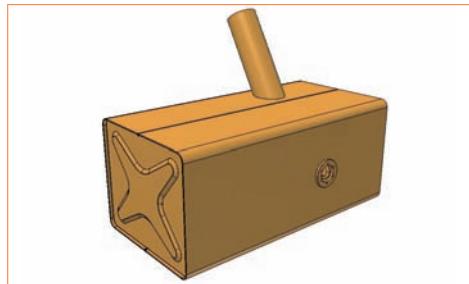
TUBULAR EXHAUST MANIFOLD

These high grade exhaust systems are manufactured on purpose made jigs to the highest tolerances and specification, they maintain a constant pipe diameter on the bends. Made from top quality stainless steel tube complete with stainless steel flanges. The secondary pipes are supplied loose to achieve the correct alignment when passing the brake master cylinder, a known tight fitting area of the cars design which varies individually on each car.

BIG BORE SILENCER

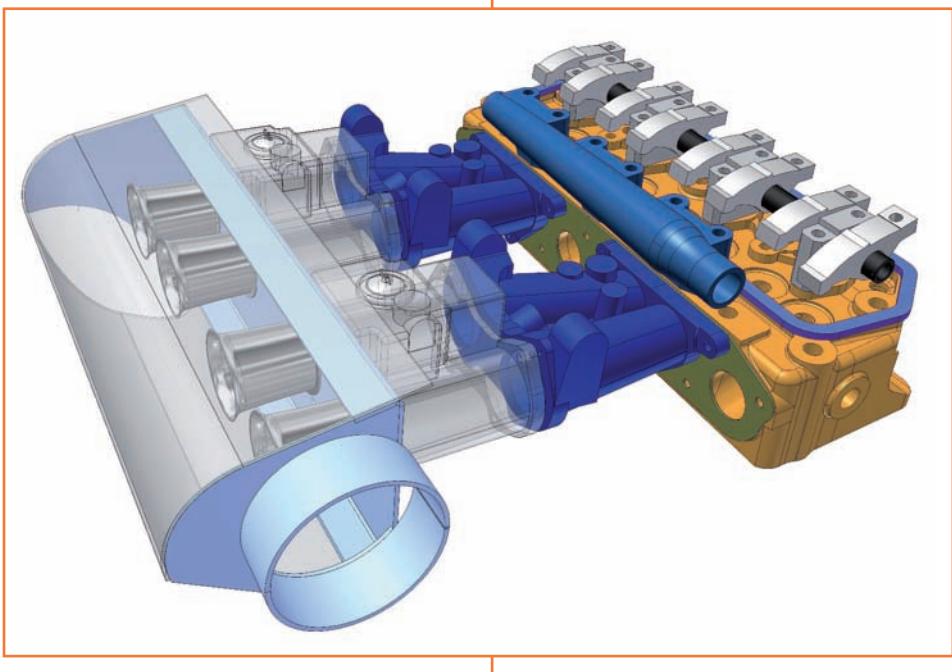


Developed from early 100/4 competition experience, this silencer ensures the large gas flow capacity of the manifold system is not compromised.



FUEL TANK

Faithful reproduction of the original, fabricated in-house in aluminium with foam filling to reduce surge and help prevent explosion if impacted.



S.U. INLET MANIFOLDS

Reproduction of the original by ourselves to suit 1^{3/4}" and 2".

MANIFOLD BALANCE PIPE

Reproduction of the original by ourselves.



WEBER INLET MANIFOLDS

Similar to the originals, cast from our own pattern equipment.

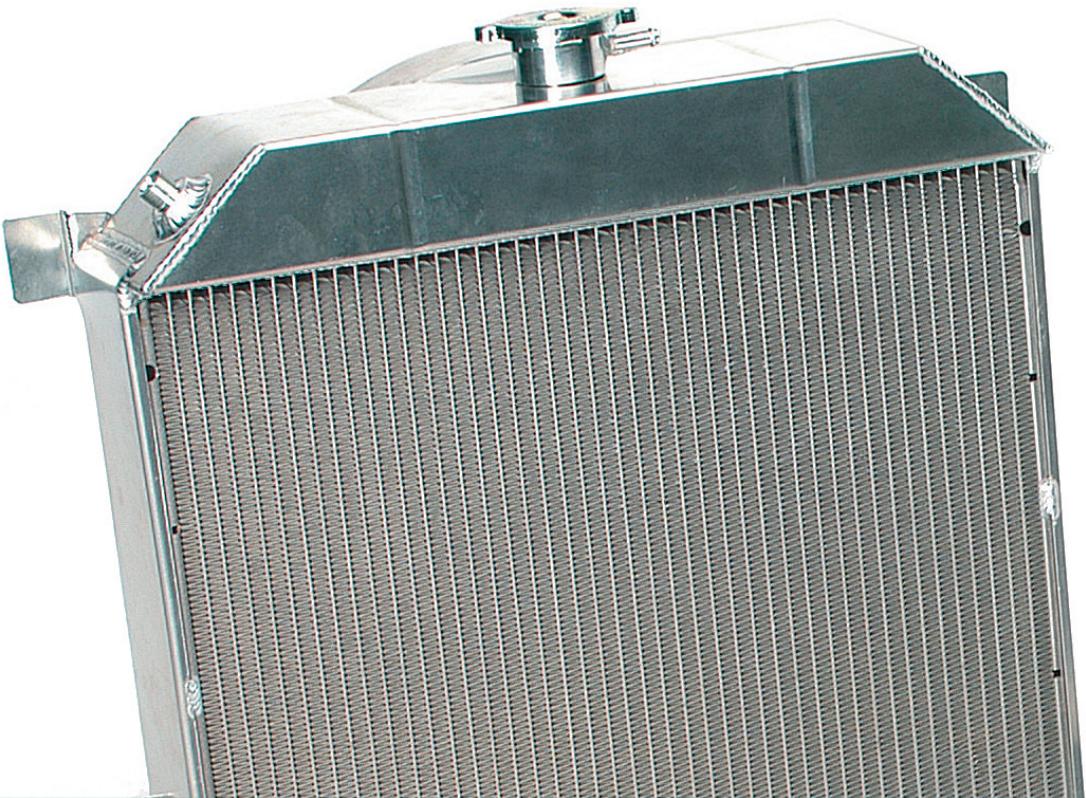
COLD AIR BOX

Fabricated in house to suit both SU and Weber carburetors.

COOLING

specialist fittings for the 100S

100S COOLING



The 100S had a variety of subtle cooling modifications that were different to its 100/4 sister.

The water rail and convoluted top hose being typical of modifications made.

To recreate the 1954 Healey Endurance car the cooling had to endure high speeds for a long distance and needed to be right, the oil cooler design was evaluated in terms of flow and filtration performance from the perspective of modern technology and design.

The original pressure relief spring rates and filtration were of concern to us and we sought improvements to maximise efficiency, but we were ever vigilant to ensure that to all extents and purposes it was a faithful replica of the original design.

We'd seen other copies and were not sure they would give us the safety margin at the edge of performance that we needed for the Endurance car, this product is the result.

This is typical of the type of product design and development that we undertake at Denis Welch Motorsport where our racing pedigree, in house design and manufacturing give us a distinct advantage in problem solving and product development.

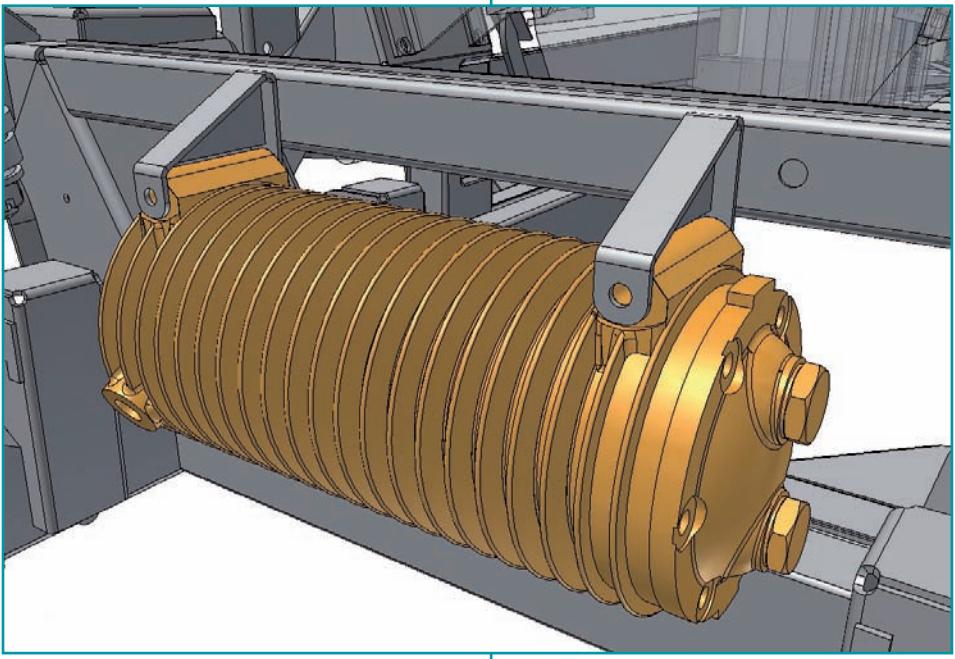
parts are interchangeable with original 100S

ALUMINIUM RADIATOR

New and light weight with correct hose fittings.

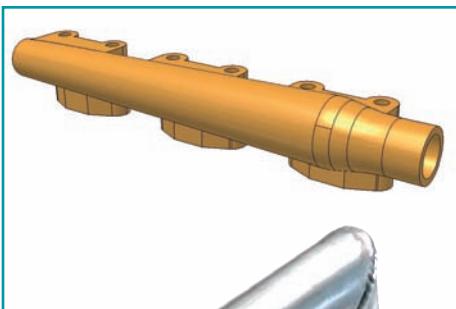
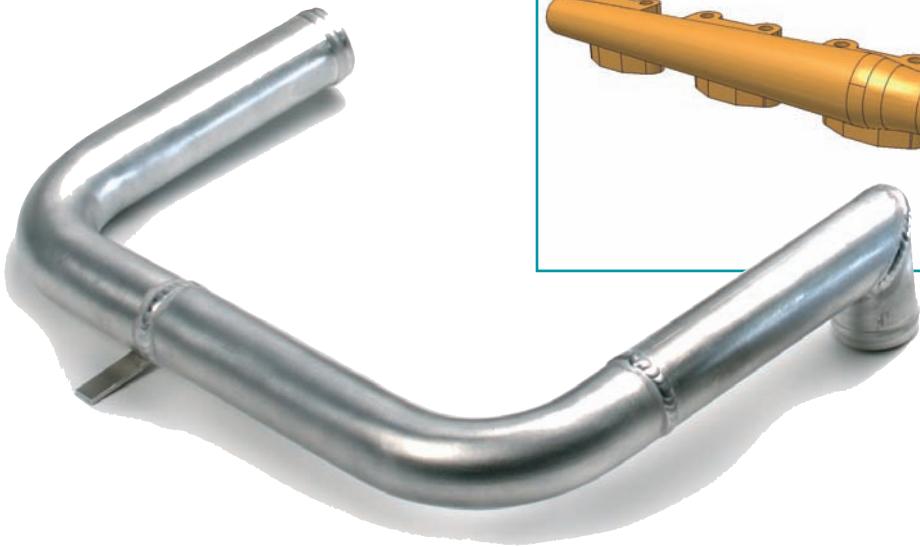
OIL COOLER

A faithful recreation of the original fluted cylinder design, made with modern materials and special internals to ensure optimum flow and cooling performance.



BOTTOM WATER PIPE

Reproduction of original in aluminium.



WATER RAIL

Our reproduction of the original cast aluminium water rail which fits to the cylinder head.

TOP HOSE

The original convoluted type

BRAKES

better than the original

100S BRAKES



The original 100S was the first production sports car to be fitted with four wheel disc brakes, these being manufactured by Dunlop. They used round brake pads with some even having chrome plated discs.

These brake systems were not without their teething troubles, with issues concerning flexing of callipers and heat sink problems that caused reliability worries often known as "Dunlop Fear".

We are privileged to have had access to many of the original prototype brake design drawings, both for the production and Record Breaking cars. Many are branded "Dunlop Aviation Research and Development Department".

With this knowledge, we were able to take a closer look at the original design and by implementing modern metallurgy and safety improvements, the resulting product has proved to be a superior and more effective system than the original.

We offer a choice of original round or later square brake pads and calliper bodies. The later being easier to check pad life and simpler to change. Both types are made by ourselves for the front and rear of the car with a wide choice of modern brake pad materials.

parts are interchangeable with original 100S

CHOICE OF ROUND OR SQUARE PAD TYPE

COMPETITION PISTON ASSEMBLIES

Aluminium bodies with stainless steel pistons and modern seals. These help reduce the heat sink and reduce piston pull back.

Must be used with brake pads which have thick steel backing plates.

Alternative piston diameters available to order.

COMPETITION BRAKE PADS.

Available in a variety of compounds, bonded to a thick steel backing plate.

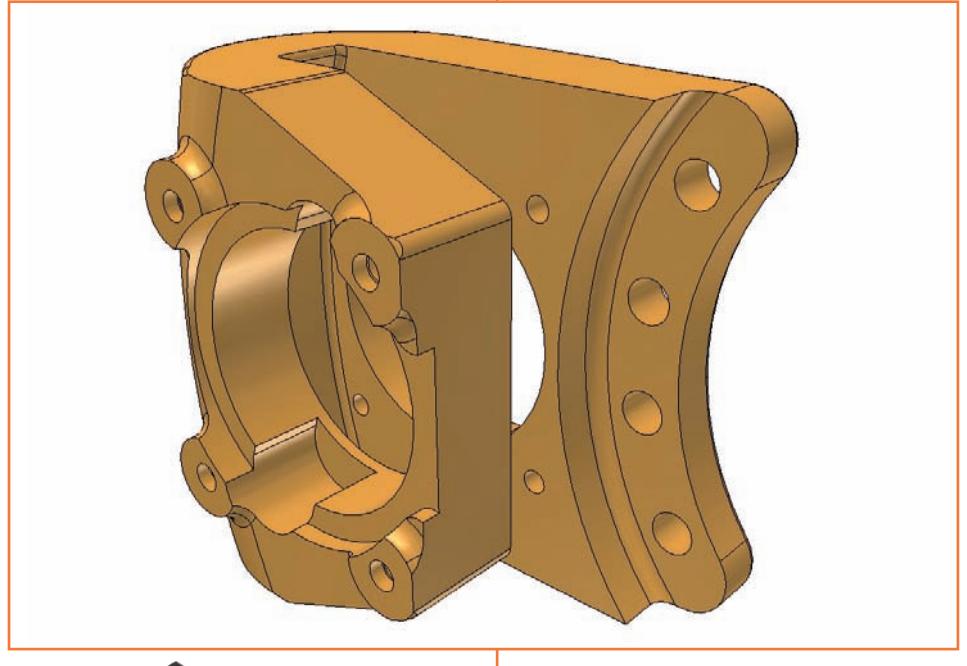
To suit the small Dunlop Calliper 48 mm sq. or 2 $\frac{1}{2}$ " round

PAD RETAINER

Reproduction of standard.

COMPETITION DISCS

These $\frac{1}{2}$ " thick competition discs are made from very high quality castings to withstand the temperatures and rigours of racing and performance road work. 11 $\frac{1}{2}$ " diameter as the originals.



**BRAKE PEDAL AND
PEDAL BUSH**
A faithful recreation of the
original



BRAKE CALLIPER SHIM



SUSPENSION

keeping it all facing the right way

100S SUSPENSION



Over the years we have been racing Healeys we have naturally developed suspension components to give improved performance.

We have also noticed just how much the original components were subject to failure so have often remanufactured new items with modern metallurgy and safety in mind, radiusing corners to avoid cracking and allowing changes in camber angles required for better grip.

The Endurance car provided new stimulus to remanufacture the earlier items such as steering lever arms, shims and spacers as well as wheel bearing carriers. We carry a wide range of components backed by a wealth of experience that can assist customers whatever their chosen sporting discipline.

parts are interchangeable with original 100S

COMPETITION SPRINGS

A variety of spring rates to suit the suspension characteristics required.

SPRING PLATFORM

Reproduction of standard.

TOP TRUNION

Machined from new forgings as per original.

STEERING LEVERS

Made from our own press tool and machined with the aid of original drawings.

HEAVY DUTY FRONT STUB AXLES

After having three original front stub axles snap off on our race Healey many years ago, we decided that something had to be done. Therefore we have taken brand new bare forgings and machined them with bigger radii where possible. These come ready to fit with reamed kingpin bushes.



FRONT LOWER WISHBONES

Machined from new forgings.



100S QUICK LIFT JACK

Fabricated in house, similar to the works original



RECENT HISTORY

the company today



Fully equipped facilities with body shop and servicing, parts design manufacturing and store. Engine building, Dynamometer and Race transportation.



The company that you see today is the culmination of many years hard work and experience.

A few years ago Jeremy Welch acquired the company from his Father - Denis and has continued to develop it with great success since. He has improved the facilities and reinvested in the business to ensure we stay ahead of the competition.

It comprises of one of the most complete organisations in the classic car field, specialising not just in Healeys & Jaguars but sports racing cars in general.

We service, rebuild and develop cars for race, rally and the road and the cars we cater for include legendary ex-works and Le Mans cars.

Our ambition is to 'be the best' and few other companies match our passion for excellence, skill levels and resources.

Our base near Burton on Trent is staffed by 28+ experienced personnel and can offer:

- **BODY SHOP** - using the latest paint technology
- **SERVICING AND MOT**
- **ENGINE & GEARBOX REBUILDS**
- **PARTS STORE** - to supply almost anything you might need - many items made in house
- **DYNAMOMETER** - state of the art facilities with a barrage of sensors to provides a huge amount of information on the engine's performance. Which enables us to cater for more exotic engines such as Cosworth BDA/BDG's and American V8's, up to 850 bhp & 14,000 rpm giving them our 'winning edge' too.
- **TIMELY ADVICE**

We can advise on a particular car or type of competition, using our vast competition knowledge to specify choice of engine, cam, crank, gearbox or wheels etc. This often helps to avoid expensive oversights such as ensuring that crankshafts are crack detected before being rebuilt.

- **DEVELOPMENT CONSULTANCY**

For those interested in pushing the envelope even further we offer a consultancy service for car

+44 (0) 1543 472244

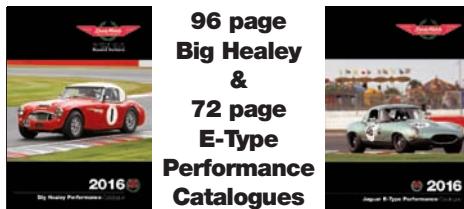
development. Using cutting edge of technologies from other racing formula, we can help to develop solutions for performance to give that all-important competitive advantage.

• RACE SUPPORT & TRANSPORTATION

Our customers are truly global - UK, USA, Germany, France, Italy, Australia and South Africa - even TVR's from Malaysia, they don't come all that way without good reason - they want the best! They want to win and we help many of them do just that. We can help make racing even easier by transporting your car to the circuit and looking after it over the weekend in our own transporter & awning.

EVOLUTION FOR THE FUTURE

The evolution of the business under Jeremy Welch's stewardship has taken the company to a new level. Using the very latest CAD/CAM techniques we are offering a wider and wider range of new products. Recent investment in a multi axis milling machine means that we are now able to offer reprofiling and head porting in-house.



We are currently preparing the Ex John Gott works car for racing after a long absence and yet another ex works Sebring car.

No matter what you require – we are here to help, to advise and to advance your dreams.



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Years of Motoring
History

Design, Photography and Artwork by Crucial Image www.cruicalimage.org.uk



“ It is not just coincidence that today we specialise in six and four cylinder racing engines.”

Our involvement in the competition side of motor racing extends back over 110 years to the days of the pioneers. Jeremy Welch's great grandfather built the first six cylinder engine ever made in the UK in 1906 and went on to build Brooke Marine racing engines with notable success.

Our own development programme is headed by our highly successful Big Healey (Reg KVS 484), that has seen success all over Europe and our E-type 3.8 semi lightweight (Reg 2747WK).

Our experience has extended from Ford Anglias, single seaters, sports racing cars, to 24hr Touring Cars, Record breaking cars and beyond.

Running these cars has resulted in a world conquering array of parts that quite simply guarantees success to almost anyone.



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