

Greyhounds



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The Story of the Light Sports Coupe 1930 to 1960

Introduction

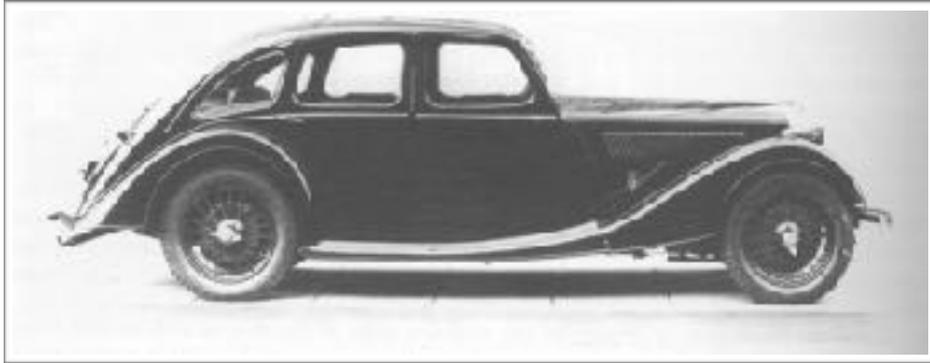
The lightweight sports coupe, as a class of car has been relatively expensive compared to other classes of car of similar engine capacity. To achieve success required refined quality engineering design and manufacturing, therefore a relatively high cost. In the nineteen sixties this was offset by taxation laws and the limited purchasing power of the buying public, as taxation laws eased and more wealth came to the purchasers of sports coupes, engine capacity weight and cost increased moving most sports coupes out of the ranks of the lightweight. Another factor has been the rise of the “hot hatch” as the quality of general car design has advanced, with improvements in engines, road holding, brakes and aerodynamics reaching high levels, all packaged in the latest steel monocoque chassis/body units. The “hot hatch and the medium to heavy sports coupe may appeal to a lot of people, but to me they lack that special sparkle of a good light weight coupe, with nimbleness, beauty of form and charm.

Fortunately in Britain many kit car manufacturers identified a sector in the market that needed filling. Almost from the beginning of the industry, lightweight sports coupes have been available, although in many forms from many different makers. These cars are part of the story and will take their place alongside cars from more prestigious manufacturers.

Most of these kit car makers have long disappeared, but some have gone on to be prestigious car makers themselves. As far as I can determine, the first true lightweight sports coupes were conceived and constructed in the nineteen thirties, they were the result of various threads of advances in technology. With the advances of automobile and aeronautical design and construction, the technology of lightweight construction, high output small capacity engines, advances in suspension and streamlining, reached a point where, with the construction of the autobahn and AutoRoute's, a breakthrough in design was possible and desirable. This led to the design and construction of various sports coupes, mainly intended for long distance sports car racing by German and Italian manufacturers, in the years before the second world war.

Only one model went into limited production and it was not until the late nineteen forties that development continued, again in Italy and Germany and true production cars became available. The nineteen fifties saw growth in the class, with cars in production in Germany, Italy, France and Great Britain. Some makers falling by the wayside and others starting long histories. They ranged from Italian exotica to British kit based cars, many variations in between.

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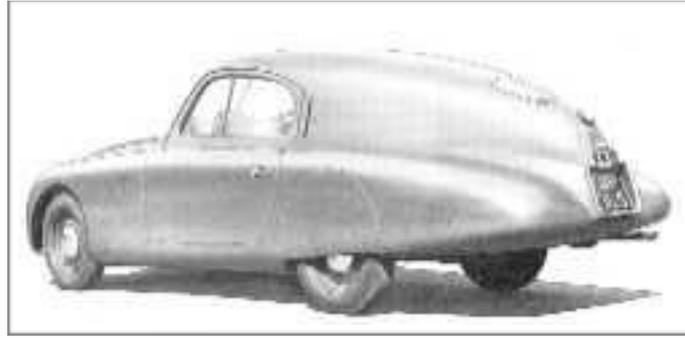
1937 Riley Kestrel, a Typical 1930s light sports saloon

The Nineteen Thirties

As I have already stated in the introduction, the first true lightweight sports coupes were conceived in Germany and Italy during the nineteen thirties, for the purpose of research and motor racing, with only the Fiat 508c MM going into series production. The others were from Italy, the Lancia Aprilia based coupe by Pinin Farina, and Germany the Volkswagen type 64, developed from the Volkswagen by it's creator Professor Porsche. In time this would lead to the Porsche 356, one of the greatest cars of the class. As I have only limited data on the cars of this period, I have assumed that by their purpose and form that they conform to the spirit of the class. As data is available for most of the post war cars, I will be more definite with my selection. The two figures that stand out amongst the pioneers of automobile aerodynamics are Paul Jarey and Dr Wunibold Kamm. They both promoted the use of wind tunnels to refine the shape of car bodies at a time when most cars had the aerodynamics of a brick, they introduced principles of body design that have had a major bearing on the shape of cars in use today. History records one big difference in their approach to the application of aerodynamics to a cars body form, Kamm promoted the cut off "Kamm" tail form and Jarey the long tapered form of tail. Practical and aesthetic considerations have since led to both extremes to being compromised. It could be envisaged that the lightweight coupe would not have been possible without Kamm and Jarey;s pioneering work, but fortunately their idea's had been followed up by various engineers of vision and led to the creation of the first of the type.

Fiat 508c MM

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The Fiat 508c MM was conceived by Dante Giacosa, as an aerodynamic coupe development of his newly designed 508c introduced in 1937 as a means publicising the new model and was the result of wind tunnel tests carried out on scale models at Turin polytechnic. In basic form the 1089cc engine in the 508c produced 32 bhp, giving it a maximum speed of 68 mph. In the 508c MM it was tuned to produce 42 bhp and with the improved aerodynamic form, a maximum speed of 95 mph was attained. The body shape was based on the principles of Professor Kamm, but was of a high build due to the use of an existing chassis, it was constructed by the Savio Brothers of Turin. The "MM" designation short for Mille Miglia, was added as a result of a class win in that event in 1938. Another racing success was another class win in the Tobruk/Tripoli race of 1939. Production ran from 1938 to 1940, when approximately 400 were built. A front engine rear wheel drive car with a four cylinder inline water-cooled overhead valve 1089cc engine producing 42bhp, an X braced pressed steel chassis frame with Coil spring independent front suspension and a live rear axle, drum brakes and a Maximum speed of 95mph.

Fiat 508c MM	1938 to 1940	Italy
Layout. Front engine/rear wheel drive.		Suspension/rear. Live axle.
Engine. 4 I.L.W.C.O.H.V. 1089cc.		Brakes /front. Drum
Chassis. X braced pressed steel frame.		Brakes/rear. Drum.
Transmission. 4 speed & reverse.		Engine output. 42bhp.
Suspension/front. Coil spring ifs.		Maximum speed. 95mph
		
Fiat 508c MM	Fiat 508c chassis	

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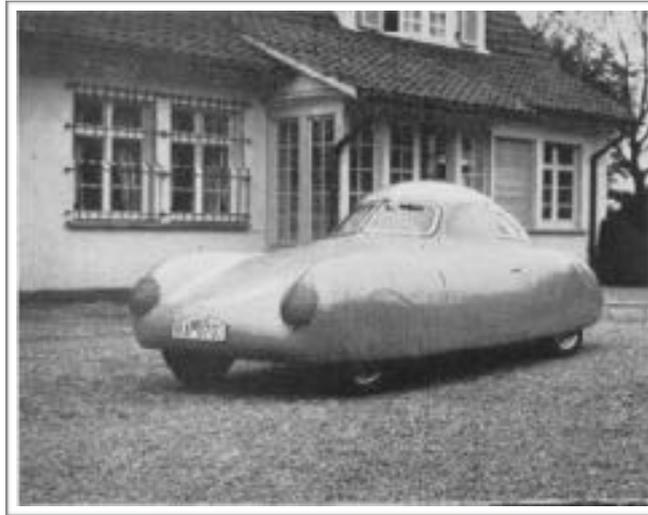


Lancia Aprilia Coupe

The Lancia Aprilia Coupe was derived from the Aprilia saloon the first to feature unitary construction in Europe, first introduced in 1937. It was light and had superb road holding due to having Independent suspension on all four wheels very rare at the time, by sliding pillar at the front as on the Morgan and a transverse leaf spring and torsion bars at the rear, this combined with it's compact o.h.c narrow V4 engine with an output of 46bhp produced a lively performance for a 1352cc car with a top speed of 80mph . Fortunately a platform chassis was also available for specialist coach builders to work on and this was the basis of the Coupes created by Pinin Farina. Farina was interested in exploring aerodynamic body forms, and as he was very familiar with Lancia cars he chose the Aprilia for this work. With the body following the principles of aerodynamics of Jaray, Farina produced a series of five experimental cars and then the "Aerodynamic Coupe" model before the beginning of the second world war caused all such activities to stop.

Lancia Aprilia Coupes	1937 to 1939	Italy
Details of the Aprilia, basis of the Coupe.		Brakes /front. Hydraulic drum.
Layout. Front engine/rear wheel drive.		Brakes/rear. Hydraulic drum
Engine. 4 Narrow V. W.C.S.O.H.C 1352cc.		Wheelbase. 112 1/2 inches.
Chassis. Platform, used for all but saloon.		Engine output. 45bhp.
Suspension/front. Sliding pillar.		Maximum speed. 80mph
Suspension rear. Transverse leaf/torsion bar.		
Aprilia Saloon		
		
Aprilia Coupe		

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Volkswagen Type 64

The Volkswagen was designed by the Porsche design bureau and was developed and ready for production by 1938 and it was decided to develop a sports version of it to be run in a race from Berlin to Rome and back to take place in 1939. Three cars were built, named the Volkswagen type 64, based on the Volkswagen saloon platform chassis with an aerodynamic sports coupe body designed by Erwin Komenda of the Porsche design office. The tuned Volkswagen engine produced 40bhp and that was sufficient to give the car a maximum speed of 91mph, which would have been used a great deal in the race as it had been planned to be run the Autobahn recently built in Germany. The Volkswagen engine was ideal for this as it was designed to run for long periods on the autobahn a task it fulfilled with distinction in Volkswagens and the early Porsche coupes after the war. The race was cancelled due to the outbreak of the second world war, but Professor Porsche drove one of the cars throughout the war and that car survived to take part in post war motor sport in the hands of an Austrian driver. The next time the Porsche design office worked on a sport car it was an evolution of the type 64 but carried the Porsche name.

The Volkswagen type 64 1938

Details of the Volkswagen saloon basis of the type 64.

Layout.Rear engine/rear wheel drive.

Engine. Transverse flat 4. A.C 995cc.

Chassis. Platform.

Suspension/front. Twin trailing arms/torsion bars.

Suspension/rear. Swing axles/torsion bars.

Transmission. 4 speed & reverse.

Brakes /front.Cable operated drum.

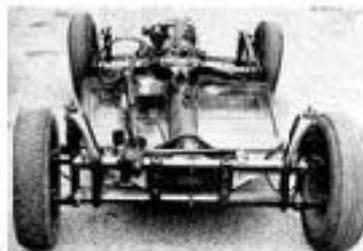
Brakes/rear.Cable operated drum.

Engine output.

Maximum speed.



VW Type 64



Volkswagen chassis

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The Nineteen Forties

For most of the Nineteen Forties very little development was possible due to the war and the disruption in the years after, but a few engineers, at first in Austria then in Germany and in Italy, were determined to introduce advanced light coupes.

The Italian link with the 1930's is the Fiat 1100s coupe. This was a development of the Fiat 508c MM. The Cisitalia was a serious attempt to introduce a small coupe to the market, but other matters brought about their downfall. The Maserati mentioned later only made a brief appearance before an increase in engine size, a recurring event, moved it outside the parameters of this study.

In Austria the Porsche family and their design team, against all odds produced a car that set the standard for the future, as Porsche cars continue to do. This was a successor to the pre-war Volkswagen type 64 sports coupe designed by the same team.

The Fiat 1100s was another Giacosa design, but this time for his full time employer and it was an updated version of his 508c MM. With a twin carburettor version of the 1100 engine producing 51 bhp and a new aerodynamic body by Savio, it now had a top speed of 93 mph. Produced in time for the 1947 Mille Miglia, it did well and was raced again in 1948. A total of 401 were made before production of this model stopped in 1950. Fiat 1100s

The next step was the 1100s Pinin Farina Coupe, using the same chassis but a new 2+2 body. Being slightly larger and heavier, performance was inferior with a maximum speed of 87 mph. Production was limited and only 50 were made by 1951 when it ceased.

Fiat 1100s 1947 to 1951 Italy

Layout. Front engine/rear wheel drive.

Suspension/rear. Live axle/1/2 elliptic.

Engine. IL4.WC.OHV.1089cc.

Brakes /front. Drum.

Chassis. "X" braced frame.

Brakes/rear. Drum.

Transmission. 4 speed.

Engine output. 51bhp.

Suspension/front. Independent/coils.

Maximum speed. 93mph.

Production. 401.

Fiat 1100S Pinin Farina



Fiat1100



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Cisitalia 202

Founded in 1943 by Piero Dusio, Consorzio Industriali Sportivo Italia, Cisitalia for short first production car was a single seat competition car designed by Danti Giacosa, in his own time, being a Fiat engineer and the designer of the 508c MM before the war. Based on Fiat components which included the "Milleceno" engine installed in a tubular chassis frame. It was first sold in 1946 and was very successful. Wanting to move on from this, Dusio had Giacosa design a 2-seater road going coupe version which was designated Project 202. After the first prototype the project was then taken over by Savoniezzi, an ex-Fiat engineer, who produced a second coupe, this had large rear fins to improve stability, these didn't make it to production, and a change to a 1100cc engine.

Completed in 1947 it had a top speed of 122 mph. The production cars with bodies by Pinin Farina were aerodynamic coupes but without fins based on Savonezzi's designs. Introduced in 1947 with production commencing in 1948, the coupe had an aluminium body on a tubular chassis, resulting in a weight of only 780Kg and a top speed of 105mph. Bodies were made by various Carrozzeria, including Pinin Farina, Vignali and Frua. Reports on production vary from only 170 to 485, before it ended in 1952.

Cisitalia 202

1947 to 1952

Italy

Layout. Front engine/rear wheel drive

Suspension/rear. Live axle/1/2 elliptic.

Engine. IL4.WC.OHV.1089cc.

Brakes /front. Drum.

Chassis. "X" braced frame.

Brakes/rear. Drum.

Transmission. 4 speed.

Engine output. 51bhp.

Suspension /front. Independent/coils.

Maximum speed. 99mph.

Weight. 780kg.

Production. 153.



Cisitalia 202

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Maserati A6

Introduced at the Geneva show of 1947, the A6-1500 the first Maserati Road car, had a 1488cc six cylinder single overhead camshaft engine, with the option of coupe or open bodies by Pinin Farina. It had a ladder frame chassis using coil springs all round wishbones i.f.s. at the front and a live rear axle. With a top speed of 95 mph from an engine producing 65 bhp. A modest production run of 61 cars was achieved before ending in 1950.

Maserati A6-1500 1947 to 1950 Italy

Layout. Front engine/rear wheel drive.

Engine. 6ILWC. SOHC. 1488cc.

Chassis. Ladder frame.

Suspension /front. Wishbones/coils.

Suspension /rear. Live axle/coils.

Transmission. 4 speed.

Brakes /front. Drum.

Brakes /rear. Drum.

Engine output. 65bhp.

Maximum speed. 95mph.

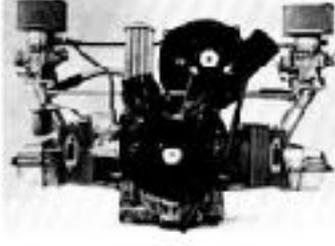


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Porsche 356

Ferry Porsche with the Porsche design team led by Karl Rabe, designed and built the first car to bare the Porsche name, while resident in the small Austrian town of Gmund where they had been evacuated at the end of the second world war. The first prototype was completed in March 1948, and was a mid engine roadster using Volkswagen components mounted in a space frame chassis. The second prototype used a purpose built platform chassis, the engine again a 1131cc Volkswagen unit tuned to produce 40 bhp was mounted in the usual Porsche position and again using all Volkswagen components. With a coupe body designed by Erwin Komenda, the 356 was born. Between 46 and 51 356s were made at Gmunde, all with aluminium bodies. All the Italian cars mentioned in this chapter were soon to go out of production but other makers would appear in the next decade filling the gap in the market.

Porsche 356	1950 to 1965	Germany
Layout. Rear engine/rear wheel drive.		Suspension/rear. Swing axles/torsion bars.
Engine. 4HQ.AC.OHV.1100 to 1600cc.		Brakes /front. Drum.
Chassis. Steel platform.		Brakes/rear. Drum.
Transmission. 4 speed.		Engine output. 40to 115bhp.
Suspension/front. Trailing links/torsion bars.		Maximum speed. 80 to 120mph.
1955 Porsche engine		
		
	Porsche 356	

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The Nineteen Fifties

Most of the cars available in the nineteen forties survived into the next decade, the Maserati going the way many would follow, increased weight and engine capacity. The Fiat was dropped in 1951 and the Cisitalia only survived a short time after, failing due to financial problems caused by other projects, but the Porsche 356 was about to begin it's illustrious career right through the fifties and into the sixties.

In Italy Abarth began his involvement with tuning and making light performance cars that lasted until the nineteen seventies, Alfa Romeo introduced the Giulietta Sprint in 1954 and this led to other exotic developments.

In France DB was another marque very like Abarth, that produced cars from 1952 until 1962, with no definite models. Alpine was another France manufacturer that commenced producing the "A106" in 1955 and then various other models until the nineteen eighties. Four makers joined the field in Britain, MG making first the the MGA coupe and then the rare MGA Twin-cam coupe. Unfortunately their next coupe the MGB GT was no lightweight and although worthy was no Greyhound. The first Lotus Elite made it's debut in 1957 and was very much a Greyhound and a real beauty, The first in a line of Lotus lightweight Coupe models. Gilbern in Wales, made the "GT" from 1959 until 1967, then put on weight and used larger engines in later models. The last but not the least of British makers, was TRV of Blackpool, who produced the Grantura the first in a line of lightweight coupes. In 1950 production of the Porsche 356 was transferred to Stuttgart, Germany, their pre-war base. The cars were made in the Reutter factory where the pressed steel bodies used from now on, were also made. After the initial revolutionary design, The story of the Porsche 356 is one of evolution Between 1950 and 1955, over seven thousand of all types of this original 356 was made, the engine size steadily increasing from 1086cc, to 1488cc and the power output rising to 115bhp in the Carrera 1600GT Coupe of 1959. During this time the car evolved steadily with improvements in all it's components, the Volkswagen content being reduced as Porsche designed items became available. In 1955 the 356 evolved into the 356A and that in turn evolved into 356B in 1959 as the design was refined and improved, by then the car had long been pure Porsche.

The Nineteen Fifties Porsche 356

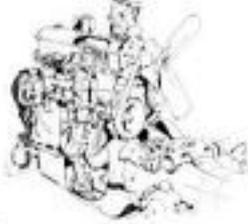
Model	Capacity	BHP	@ RPM	0 to 60	Max speed
356	1100	40	4200	-----	-----
356/356A	1300	44	4200	-----	-----
356/356A	1300S	60	5500	-----	-----
356	1500	55	4400	17	87
356/356A	1500S	70	5500	-----	-----
356A/B	1600	60	4500	14.1	102
356A/B	1600S	75	5000	11.4	109
356A Carrera	1500GS	100	6200	-----	125
356A Carrera	1600GT	115	6500	-----	120

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Alpine A106

The Alpine was the creation of Jean Redete, the son of a Dieppe Renault dealer. By grafting on a GRP 2+2 coupe body styled by Michelotti, on to a Renault 4CV floor pan he created a car that was capable of succeeding in the Alpine rally and the Mille Miglia, one winning it's class in 1956. His company Societe Automobile Alpine, was founded and the first model was the A106. The Renault 4CV has a rear mounted 747cc engine, all independent suspension, wishbones and coil springs at the front and swing axles with coil springs at the rear. Redete replaced the standard gearbox for a special five speed box and the engine was tuned so that a maximum speed of 120mph was achieved. With a production rate of two a week, by 1960 when the A106 was discontinued 650 had been made. The Renault 750, the basis for the first Alpine was designed in secret during the Second World War and had an inline four cylinder OHV engine located behind the swing axle rear suspension. This layout was retained in the Alpine and made a low profile design possible as the only equipment running through the passenger area was the gear change linkage. The disadvantage of this layout was the rear weight bias allied to swing axle suspension geometry led to unpredictable handling, but the layout was very popular during the fifties and sixties.

Alpine A-106	1956-60	France
Layout. Rear engine/rear wheel drive.		Suspension/rear. Swing axles/coils.
Engine. 4ILWC.OHV.760cc.		Brakes /front. Drum.
Chassis. Steel platform.		Brakes/rear. Drum.
Transmission. 4 speed.		Engine output.
Suspension/front. Wishbones/coils .		Maximum speed.
Production. 650.		
Profile of a Renault 4CV		
		
Renault 4CV engine		

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DB Panhard

DB short for Deutch and Bonnet, who built numerous racing sports cars between 1939 and 1961. In the early nineteen fifties they began to race Panhard based sports cars in the 750cc class, from 1952 they began to market Panhard Dyna based coupes with engines ranging from 610cc up to 850cc, fitted with a wind cheating aluminium bodies. From 1955 a GRP body was specified and the Panhard engine could be supplied in many sizes up to 1300cc. Never a series production car the DB was famous for it's success in the index of performance category in the LeMans 24 hour races during this period. Panhard was one of the oldest car makers in France and so in the world and after the Second World War they changed direction from building luxury cars to lightweight cars. Using the design offered to them by J.A.Gregoire a pioneer of front wheel drive and the use of aluminium in car construction as a basis, they developed a car with many original features. The components used by Deutch and Bonnet were the transverse twin air cooled engine that was located in front of the leaf spring independent front suspension, the gearbox and the front wheel drive transmission. In standard 850cc form the engine produced 42bhp and proved capable of further tuning. DB mounted these in their own box section steel chassis.

DB Panhard 1950's France

Layout. Front engine/Front wheel drive.	Suspension/rear.
Engine.	Brakes /front. Disc.
Chassis.	Brakes/rear.Drum.
Transmission. 4speed.	Engine output. bhp.
Suspension/front. Wishbones/coils.	Maximum speed. mph.

DB coupe



Dyna Panhard



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Gilbern GT

Gilbern of Llantwit Fardre in Wales were makers of sports coupes, and were producing cars from 1959 until 1973, starting with the GT sports coupe, in production until 1966, first in kit form and later also a factory built car. The company founders Giles Smith and Bernard Friese designed a car with a GRP body mounted on a multi tubular chassis, using Austin A35 front suspension and a BMC live rear axle with coil springs and controlled by a Panhard rod. Various engine options were available, the smallest was the 948cc BMC unit as fitted in the Austin Healey Sprite at that time, other options were the Coventry Climax FWA engine as used in the contemporary Lotus Elite and the BMC engine fitted in the MGB was used from 1963. All the later Gilbern models had larger engines and so become heavier and do not interest us here. The cars styling was not exceptional and the specification not radical, but they were finished to a high standard and that led to their modest success.

Gilbern GT 1959–1967 UK

Layout. Front engine/rear wheel drive.

Suspension/rear. Live axle/coils.

Engine. 4L.WC.OHV.950to 1558cc.

Brakes /front. Drum.

Chassis. Multi tubular frame.

Brakes/rear. Drum.

Transmission. 4 speed.

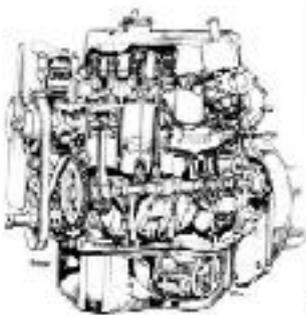
Engine output. 43to79bhp.

Suspension/front. Wishbones/coils.

Maximum speed. 94mph

Production. 580.

BMC A series engine



Gilwern GT

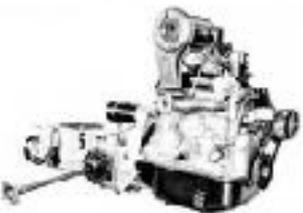


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Abarth 750

Abarth's output was so fragmented that it is impossible to define a definite production model, but more like snapshots of his work as time progressed. The Fiat-Abarth coupes with engine capacities ranging from 700cc to 1000cc with bodies by Zagato, were outstanding for their diminutive size and beautiful form. Based on the Fiat 600 components, the tuning of which was Abarth's main business and as the 600 it was rear engined. Some cars were fitted with an Abarth DOHC conversion for this pushrod unit. The Fiat 600 was developed by Abarth into a very popular sporting vehicle in Italy despite it's humble beginnings as an economy car. The extreme expression of that development was the 750 Zagato. With an aluminium body designed and made by Zagato on a fiat 600 floor pan. Like the Renault 750, the 600 was a rear engined car, the engine also being a water cooled inline four with overhead valves, but in the 750 Zagato, usually fitted with an Abarth double overhead camshaft conversion, as well as the more common Abarth modifications, an increase in capacity, multiple carburetors and free flow exhaust system. The combination of a well developed if small engine, a low profile lightweight slippery body added up to a potent little car.

Abarth Zagato 750		1957 to 1961 Italy	
Layout. Rear engine/rear wheel drive.		Suspension/rear. Swing axles & coil springs.	
Engine. 4 I.L.W.C.O.H.V. 747 C.C.		Brakes /front. Drum.	
Chassis. Steel platform.		Brakes/rear. Drum.	
Transmission. 4 speed & reverse.		Engine output. 44 bhp.	
Suspension /front. Whishbone & transverse leaf.		Maximum speed. 95mph.	
Weight. 559 Kg.		0-60. 15.8 seconds.	
Fiat 600 engine and transmission			
			
		Fiat 600	

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Alfa Romeo Giulietta SZ

In 1954 Alfa Romeo entered the small car market, not with a saloon but with a sports coupe, the Giulietta 1300 Sprint. Unusually the Berlina version came second. The technical specification of the car was similar to the 1900 range of models, the first new Alfa introduced after the second world war. With a double overhead camshaft, 1290cc, inline four cylinder engine with an aluminium block and head that produced 80bhp at 6300rpm. Mounted in a platform chassis with coil spring and wishbone front suspension and a live rear axle located by radius rods and an "A" bracket and coil springs. The Sprint had a steel body designed and made by Bertone, welded to the chassis. The 1290cc engine was steadily developed and in 1956 a 90 bhp version was fitted to the "Sprint Veloce" a lightened version of the "Sprint". By 1959 an output of 100 bhp had been attained and this version of the engine was fitted into the "SS" (Sprint Special) another design by Bertone created for the racing enthusiast and the "SZ" an alloy bodied ultra lightweight designed and built by Zagato also for the racing circuit. The SS and the SZ were the first to use the five- speed gearbox when it became available, it later became available for fitting to the other Coupes. The "Giulietta" range was in production until 1962.

Alfa Romeo Giulietta	1955-62	Italy
Layout. Front engine/rear wheel drive.		Brakes /front. Drum.
Engine. 4B.WC.DOHC.1290cc.Chassis. Integral.		Brakes/rear. Drum.
Transmission. 4 speed.		Engine output. 80to 100bhp.
Suspension/front. Wishbones/coils.		Maximum speed. 101 to 112mph.
Suspension/rear. Live axle/coils.		
Giulietta SS		
Giulietta SZ		

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MGA Coupe

The MGA Coupe in production from 1956 to 1962 was derived from the MGA Roadster. Introduced in 1955, being a radical change from all previous MG roadsters with a full width body on a substantial box section chassis. With independent front suspension using coil springs and wishbone and half-elliptic springs and a live axle at the rear. When first produced the it had a 1500cc version of the BMC "B" series engine producing 68bhp, later model of the car had a 1622cc version of the same engine and that produced 80bhp. The Roadster and the Coupe models only differed in that the Roadster had a fabric top and flexible side-screens (normal ware for sports cars at that time,) and a top speed of 96mph, the Coupe being fitted with a permanent steel top and wind up windows and due to the improved aerodynamics, a top speed of 102mph. In 1958 a higher performance version of both models was created by installing MG's own version of the BMC "B" engine fitted with a chain driven double overhead camshaft which produced 108bhp at 6700rpm from 1622cc. These were named the "MGA Twin cam", and a top speed of 103mph and a 0-60 time of 9.1 seconds was the result. Dunlop disc brakes were fitted all round to these cars, making sure they could stop as well as they could go and Dunlop pressed aluminium disk wheels. The Twin Cam was intended for use in motor sport and in production until 1960. By 1962 all the MGA models had been superseded by the much heavier MGB.

MGA Coupe 1956-59 UK	
Layout, Front engine/rear wheel drive.	Suspension/rear, Live axle/1/2 elliptic.
Engine, 4ILWCOHV, 1492cc.	Brakes /front, Drum
Chassis, Ladder frame.	Brakes/rear, Drum.
Transmission, 4 speed & reverse.	Engine output, 77bhp.
Suspension/Front, Wishbones/coils.	Maximum speed, 98mph.
Prototype chassis	
	
MGA Coupe	

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TVR Grantura

The first TVR car sold, a one off was made in 1949 in Blackpool as TVR's are today. It took until 1958 and a hand full of assorted cars before the first series production model the Grantura MK1 was introduced. It's design was evolved through those previous cars with it's multi-tubular backbone chassis, sprung by torsion bars and Volkswagen trailing link suspension at both front and rear. The principle engine fitted in the Mk1 was the Coventry Climax FWA 1,098cc or the in 1216cc FWE form mated to a ZF gearbox, this was topped by a distinctive coupe body in class reinforced plastic.

Although an interesting package the Grantura was never properly developed. Between 1958 and 1960 a hundred examples of the MK1 were produced, as with a weight of only 660kg and a slippery body form it had a lively performance, with a top speed of 101 mph and a 0-60 time of 10'8 seconds. This could explain how purchasers overlooked poor detail construction. The TVR Grantura was produced in different versions until 1967 when a new model the Vixen was introduced. basically the same as the Grantura , at first fitted with an MGB engine and gearbox which was soon superseded by Ford Cortina GT units of 1599cc. Over 500 of these were produced between 1967 and 1970 when larger engines were fitted making these the last TVR's in the lightweight class.

TVR Grantura 1 1957-60 UK

Layout. Front engine/Rear wheel drive.

Suspension/rear. Trailing links/torsion bars.

Engine. 41LWCOH.1622cc.

Brakes /front. Drum.

Chassis. Multi tubular frame.

Brakes/rear. Drum.

Transmission. 4speed.

Engine output. 86bhp.

Suspension /front. Trailing links/torsion bars.

Maximum speed. 100mph.

Coventry Climax engine



TVR IRS



Greyhounds

Lotus Elite

In 1956, Colin Chapman began the design of two new cars, one was a car to compete in the forthcoming Formula 2 and the other was to be a lightweight sports coupe. Both were to have Coventry Climax engines located at the front although of different type's, and to share the same suspension design. The formula two car had a multi-tubular space frame chassis that was conventional at the time, but the coupe, the Elite chassis was a revolutionary design, being similar to the by then common steel unitary construction chassis's of mass produced cars but made of glass reinforced plastic. The aim was for a lightweight unit that could be made in greater numbers than a tubular chassis. The FWE engine was engineered for the car by Coventry Climax from existing models as the capacity of 1216cc made the car eligible for the US 1250cc racing class. The transmission consisted of a BMC gearbox then a short propeller shaft to the chassis mounted final drive unit and finally fixed length drive shaft's that also acted as transverse arms for the strut type rear suspension. With rack and pinion steering, Girling disc brakes at the front and inboard at the rear to complete the advanced specification. The body style was conceived by Peter Kirwan-Taylor an accountant, it was then refined by Frank Costin, it is to me one of the most beautiful cars of all time. As with all Lotus designs, weight reduction was a great consideration and was kept down to 670kg, so performance was outstanding for a 1200cc coupe. The later 83bhp engine versions could attain a maximum speed of 118mph and a 0-60 time of 11 seconds. Despite manufacturing problems the Elite remained in production for five years and 988 were made. Lotus has never used a GRP chassis again although all subsequent Lotus car have had GRP bodies. Others have used GRP chassis since and many of them have been lightweight coupes.



Colin Chapman with a Lotus Elite

Lotus Elite 1957-63 UK

Layout. Front engine /rear wheel drive.
strut/coils.

Engine. 4IL WC.SOH.C.1216cc.

Chassis. GRP monocoque.

Transmission. 4speed.

Suspension/front. Wishbones/coils.

Production. 988.

Suspension/rear. Chapman

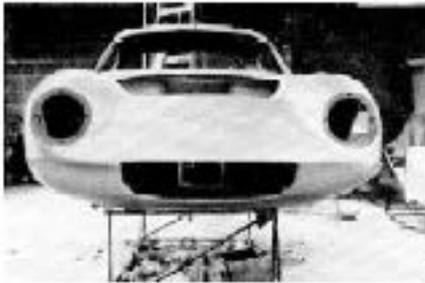
Brakes /front. Disc.

Brakes/rear.Drum.

Engine output. 83bhp.

Maximum speed. 118mph.

Elite GRP moulding



Elite rear suspension

