



Alfa – The Masterpiece

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The engine was designed by the genius Vittorio Jano and it embodies the top level quality in its design and implementation. Versions with the Touring body are masterpieces of beauty and elegance. In short, it is a car with irresistible charm that keeps winning awards in the top beauty contests of the world, from Peeble Beach to Bagatelle.

In 1937, the 8C 290 was something very similar to the current Ferrari Enzo, McLaren F1 or Pagani Zonda. Its competitors could be counted on the fingers of one hand. There was Bugatti 57S Atlantic, but it didn't have the independent suspensions of Alfa. Mercedes 540K Spezial Roadster was very heavy and really strong only in versions with the supercharger. Finally, there was Duesenberg SJ that was really powerful but still far too big and heavy.

Purely from the collector's point of view, Alfa 8C 2900B have the advantage of being extraordinary and very rare. There were about 20 exemplars in short wheelbase version (2.90m) and just around 11 with long wheelbase (3.00m). There were only little more than 40 of them constructed in all, including the racing A models.

The sign of prestige

In the mid-30's, Italy was fully engaged in its politics of colonial expansion. Many factories were being adapted for weapon production and Alfa Romeo was one of them. But despite the wartime production, Alfa continued to dedicate a part of its efforts to the development of racing and passenger cars. Mussolini surely had an interest in nourishing the motor racing for the obvious reason of prestige but he also wanted to have a super-racing car from Alfa as an example of the Italian creativity in the world. In Germany, Mercedes and Auto Union were in a similar situation and they suddenly had a lot of finances for the development of their sports cars.

This is how the 2900 A was born in 1935 as a dedicated sports car with an engine directly originating from the famous P3. It became one of the most successful grand prix cars of the era. Then in 1937, a more "civilised" passenger car, type B, was derived from 2900A. The two versions differed mainly by the compression ratio (type B had less supercharged engine) and by the length of their chassis. Wheelbase. The wheelbase of type A was 2.75 m long while the chassis of the B varied between 2.80 and 3.00 m.

Right from the beginning the 2900 B seemed to be fated by its very nature to sell just in few numbers and it did indeed. It is estimated that there were 20 exemplars of the passenger version with short wheelbase and only about 10 with the long wheelbase. In all, there were little more than 40 of these cars ever constructed, including the racing A models. For some strange coincidence many of prestigious cars of this period never produced in more than 50 exemplars.

The engine

Equally to 8C 2300, the 2900 was provided with an 8-cylinder in-line engine with double overhead camshaft and a gear train valve timing. The engine had the structure of two blocks of 4 cylinders joined in line to the valve timing placed in the centre. It had a crank gear of the shaft typical for 8 cylinders in-line of that period: 2-4-2 with 90° between the crank plates and 180° between cranks located on the same plate.

This typology of engine, along with the 6-cylinder in-line and V 12 in 60° vee, is one of the few that are perfectly balanced when it comes to vibrations and torques of both first and second order. We remind you that vibrations of the first order are generated by the spinning masses, i.e. by connecting rod pin, big end of the connecting rod and about one third of the stem. Vibrations of the second order are generated by the reciprocating masses (with alternate motion), by piston, gudgeon, connecting rod and about two thirds of the stem.

The “straight eight ” configuration, which was used in many racing cars in the 30's, has been gradually abandoned by all the constructors mainly because of problems caused by its size and by the torsion of the drive shaft. It is interesting to note that an excessive torsion of the drive shaft can have negative effects on valve timing and lead to incorrect phasing. The designers of the 8C were well acquainted with these problems.

The decision to couple two “4 in line” arbours in Alfa 8C 2003 and 2900 was dictated by the need to reduce these negative effects of the torsion. Such an unusual and certainly very expensive choice gives us an idea of how much Alfa 8C was really “no compromise” car, dedicated to very few wealthy and expert clients.

Fixed heads and superchargers

The engine has a bore-stroke of 68x100 mm and displacement of 2905 cc. It is made of light alloy and has fixed heads. The heads of 2300 can be dismantled.

The engine layout differs from the model 2300; inlet ports are on the left side of the engine and exhaust pipes on the right.

If you are not an expert, this fact may help you to distinguish an engine of the 8C 2900 from that of the 2300. Moreover, the cooling finning is completely different from the one used in the 2300.

In a configuration typical for Alfa, the two Weber BS42 carburettors are placed above superchargers that intake the mixture and compress it towards cylinders.



The engine is provided with two lobe superchargers (type Roots) supported and moved by straight-cut gears located in the center of the drive shaft, right beside the gear that controls the valve gear train. Each of the two superchargers feeds a group of 4 cylinders and therefore there are two intake pipes for each group of 4 cylinders.

This configuration is used in all versions of Alfa 2900, with one exception. The car in question is the so called "Balena" (whale). This model with an aerodynamic body was constructed during the war years. It is mainly renowned for the shape of its body but it is also the only model equipped by a different inlet port. Its two superchargers are connected and they both "blow" to the same port that is later subdivided into 8 branches.

The 2900 had a "trans-axle" type transmission (its gearbox was bundled with the rear differential) that offers a better weight distribution and is still widely used in many racing cars today. In the racing version B, the engine had a compression ratio of about 6.5:1 delivering the beauty of 220 Hp at 5000 revolutions. The cars made for Le Mans were equipped by the same engine.

In the passenger version the ratio has been reduced to 5.75:1 to make the car more docile and reliable, and the horsepower went down to "only" 180 Hp.

The maximum speed was very high for the era. The 180 Km/h of the passenger version are comparable to 300 Km/h of a modern sports car. We should not forget that in the second half of the 30's formula one cars were already widely exceeding 300 Km/h on the circuits. But for a passenger car, the 180 Km/h was something quite extraordinary especially if you consider the fact that unlike in the present days the roads of this period were not made of asphalt.

The racing versions of the 8C performed naturally even better. It has been confirmed again by the recent tests on the racing circuits that their engine has a very progressive and vigorous thrust, impressive even for those familiar with more recent cars.

You can find out more details about the test in the latest issue of "Ruoteclassiche", which contains interesting impressions from driving the legendary Berlinetta Le Mans, with Touring body.

The chassis up to the task

The chassis of the 2900 follows the usual scheme of the period and is build of two main longitudinal boxed frame members connected with strengthening crossbars. The independent front suspensions have double swinging arms and a special cylindrical shock absorber that combines a helical spring with a hydraulic component.

The rear end is characterised by a swinging axle with longitudinal arms. The suspension system is composed of a crossing centrally hinged leaf spring (flexible element) and two shock absorbers (one hydraulic and one with adjustable clutch) for each wheel. In the first models, the adjustable clutch was controlled by a cable that was later replaced by a hydraulic system.

It is interesting to note that the rear suspension scheme is very similar to that of Auto Union grand prix type A, which also had the swinging axle with crossing leaf spring and clutch shock absorbers.





Dream coachworks

The bodies of almost all Alfa 2900 were made by Touring, an Italian company that has by that time developed the “ultra-light” technology. The technique was based on using thin metal pipes that were

bended and welded together. These served as a basis for other parts of the body that were then installed on top of them. The main innovation consisted of using metal and not wooden stiffening ribs to hold the plates. Although this invention is traditionally attributed to Touring, it was really developed by the Italian Zagato. He used it already in the 20's while working on the body of another racing Alfa, the 6C 1750, designed by Vittorio Jano.

Apart from the technology, bodies of the 2900 Touring stand out first of all by their irresistible beauty and incredibly slender and elegant shape that is perhaps the best among long wheelbase convertibles. These masterpieces introduce the concept of “ala spessa”, while not being the real “ala spessa” yet. This term refers to a body type that integrates the elements previously separated from the main bodywork (such as mudguards and headlights) into a single volume, without interruptions between its various parts.

We found similar signs of beauty and absolute modernity in the model designed by Pininfarina preserved by the Mulhouse museum in France. It even has retractable headlights!

The 2900 and its races
 Although the 8C 2900 cannot be proud of too many successes in its racing career, its story is still full of races and victories, which seems to be an almost inevitable destiny of all the great Alfa models. We have already said that the 2900A was made for races and we have also noticed that its engine was not very different from that of “granturismo” version B.



The production of the A began at the end of 1935 by the construction of 6 exemplars, three of which were part of "Scuderia Ferrari" in Mille Miglia of 1936. The three cars were piloted by Antonio Brivio, Giuseppe Farina e Carlo Maria Pintacuda. By the irony of fate, one of the strongest opponents of these 2900 was another Alfa, the P3 piloted by Clementine Biondetti. The 2900 were supposed to be worse compared to such extraordinary car as P3, but things went exactly the opposite way. Brivio won 1936's Mille Miglia, finishing ahead of its team mates and leaving Biondetti's P3 far behind on the eighth position. Apart from the pilots' merits (Brivio's headlights failed to function but he continued driving at night without it), a determining factor of the 2900's victory was one of its technical characteristics as the independent suspensions significantly reduced the wear out of its tires. Later on the 2900 won "24 di Spa" and was successful in other races as well.

In 1938, Alfa Romeo prepared an official 2900 for the 24 hours of Le Mans. Its exceptional body was designed by Touring using the "ultra-light" method. They replaced the steel of the support cage with aluminium plates varying according to the expected stress level. Its engine had compression ratio of 6.25:1 and power of 220 Hp at 5500 revolutions/min. The car piloted by Raymond Sommer and Biondetti dominated the race but was forced to withdraw due to the engine failure after more than 2000 km of the race. This model was reconstructed in the 80's and it still exists today. During the test in a wind tunnel in June 1983, it had a Cx of 0.42 in normal configuration and 0.37 in "maquette" version with closed front air intakes. It was estimated that many contemporary cars of the 2900 would have the average Cx over 0.50 (see "Ruoteclassiche" no. 1, Nov 1987).

The 2900's last major success was the victory in Mille Miglia soon after the war in 1947. It was a remarkable success for a car that may have been considered outdated but still had a lot to give even on the race circuits. In 1947, charm and value of the 2900 were not yet to wane and they still persist even today.

