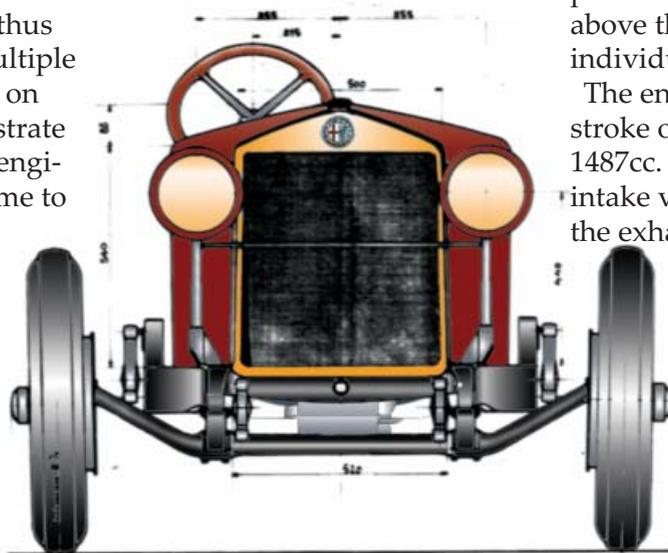


## 6C 1500 Normale

The 6C 1500 Normale was Jano's first Alfa to go into series production. As such it was also the first complete car designed by Jano employing his philosophy of series manufacture of customer cars directly derived from a competition car; in this case a Grand Prix car.

His adaptation of the P2's straight-eight for this new series of six cylinder engines was quite ingenious. Industrially, it cost effectively consolidated Alfa's material purchasing and manufacturing operations; thus allowing Alfa to create a multiple series of automobiles based on shared components. To illustrate this point let's examine the engineering of the first 6C to come to market; the 6C Normale.

The target was to develop an engine design that would allow Jano and his team to place either a single cam or a twin cam block/head on the same bottom ends coming off the engine assembly line. This was done by designing an external vertical-shaft overhead cam drive that rose out of the rear of the crank case; echoing the similarly placed gear tower of the P2. For the single overhead cam Normale, a cast iron mono-block was placed on the alloy bottom end. This one-piece casting contained the in-line cylinders, water passages, ports, valve gear and single cam. It bolted to the bottom end, and there was an extension about the rear of the cam that bolted to the top of the vertical cam drive shaft; an alloy cam cover was placed on top. Another



interesting aspect of this design was that the intake manifold was internal, and in unit with the ports; thus the updraft Zenith carb was mounted directly to the block. The six spark plugs angled into the flat topped combustion chambers directly above the carb. Speaking of sequential firing of the cylinders, the distributor was angled off of the vertical shaft cam drive, from which it was driven. The twelve valves, which had Jano's 'mushroom' tappets for adjustment, were

placed in-line and vertically directly above the cylinders. Each cylinder had individual side by side ports.

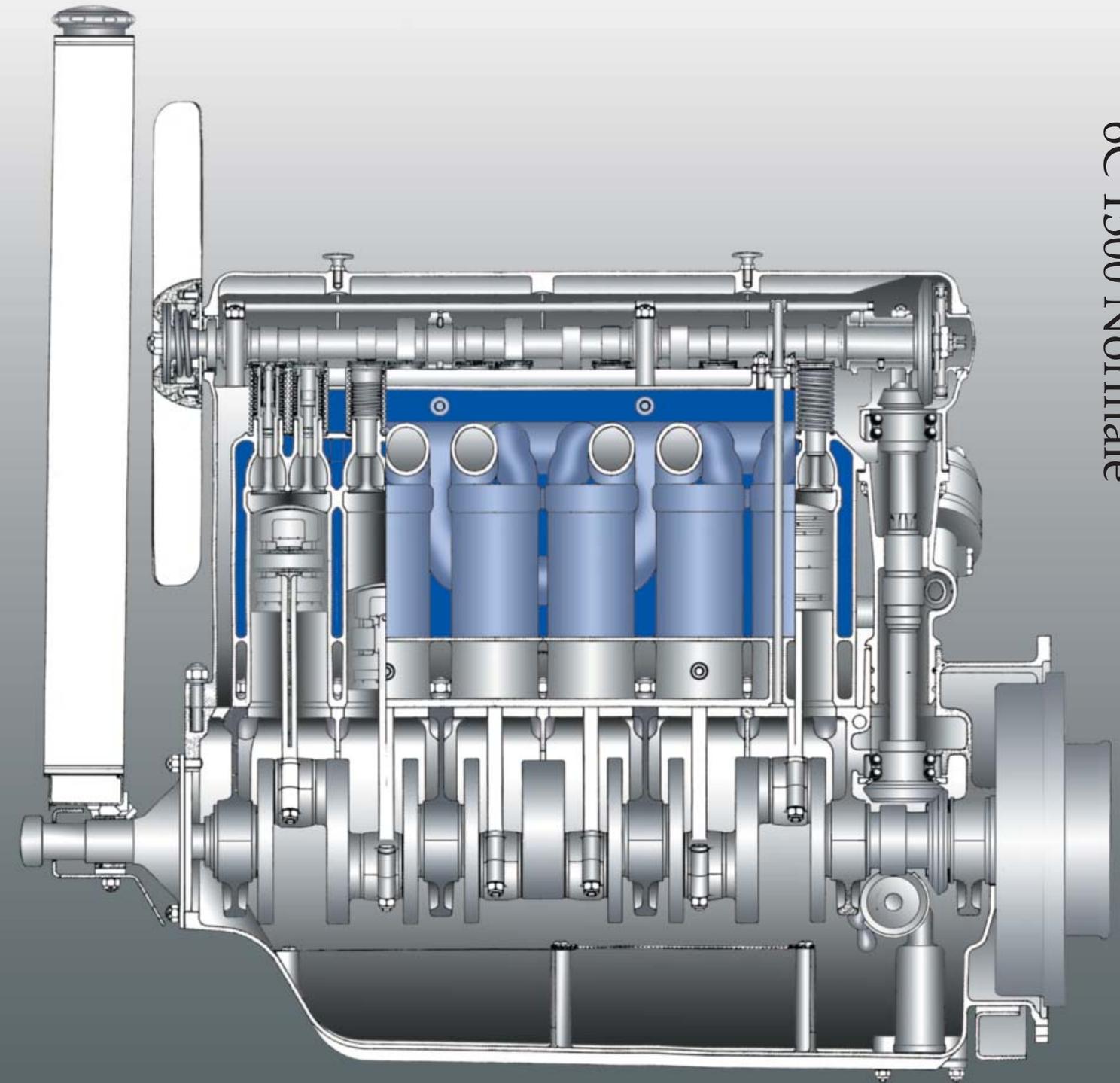
The engine had a bore of 62mm with a stroke of 82mm. Displacement was 1487cc. Compression was 5.75:1. The intake valves measured 26.5mm and the exhaust 25.5mm. Power output

was rated at 44hp at 4200rpm.

The Grand Prix lineage of chassis was quite apparent in its sophisticated lightweight construction. All of the elements of the P2's flexible competition chassis and suspension engineering were in great, if understated, evi-

dence in the Normale. The front leaf springs were integral with the forged front axle, with the lever shocks placed just inside the frame rails. The P2's running gear—brakes, transmission, driveshaft, solid axle—were all here. The frame rails at the back were arched over the live axle, with leaf springs in line below. The lever shocks were mounted outside the frame and leaf springs, and bolted to the frame rail above and solid axle below.

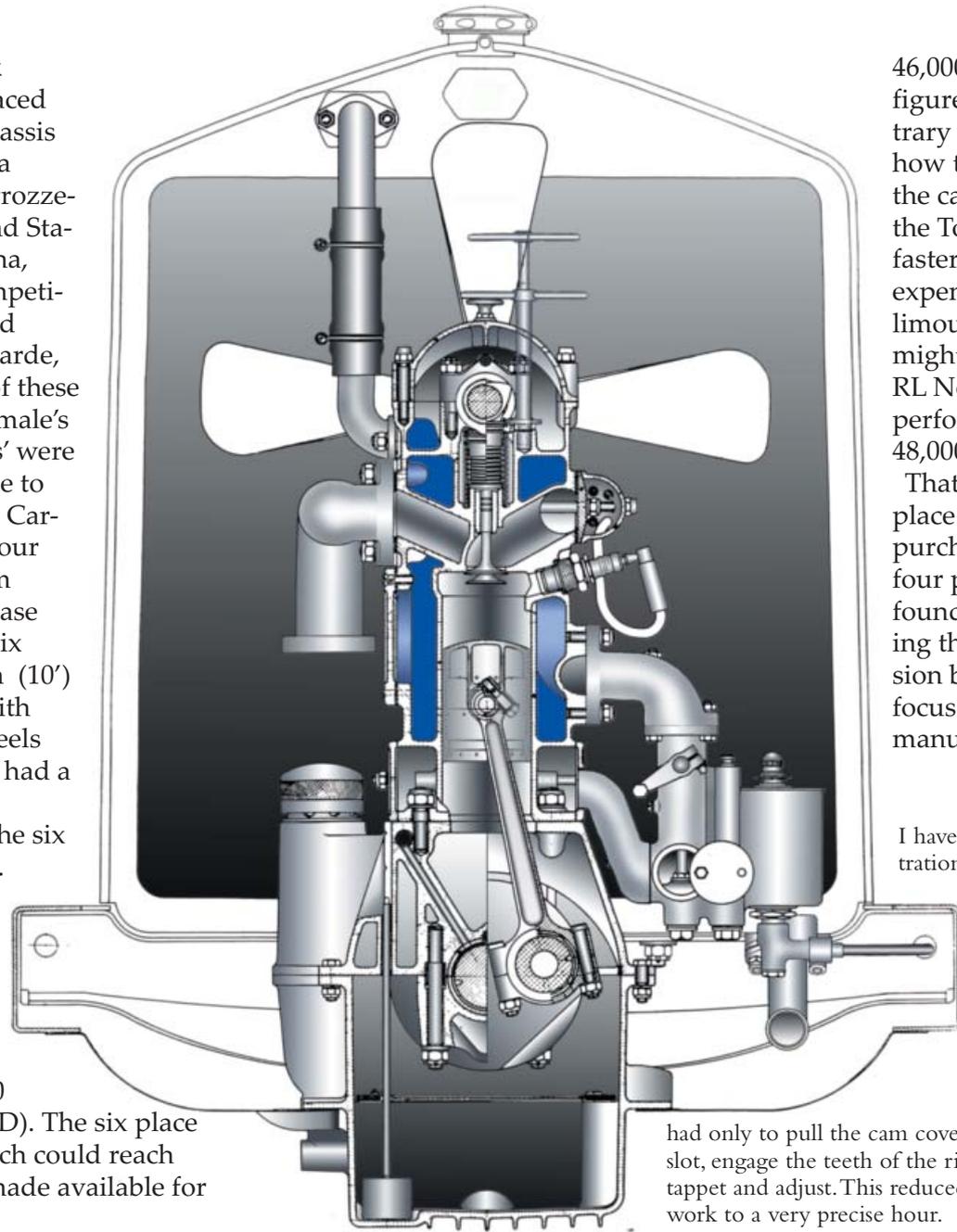
The often quite conservative, yet finely finished tour-



6C 1500 Normale

ing bodywork which was placed upon these chassis by Carrozzeria Castagna, Carrozzeria Touring and Stabilimento Farina, belied the competition based, and quite Avant Garde, mechanicals of these cars. The Normale's rolling chassis' were made available to these eminent Carrozzeria in a four place, 2900mm (9'4") wheel base model and a six place 3100mm (10') wheelbase. With two spare wheels the four place had a dry weight of 2200lbs, and the six place, 2445lbs.

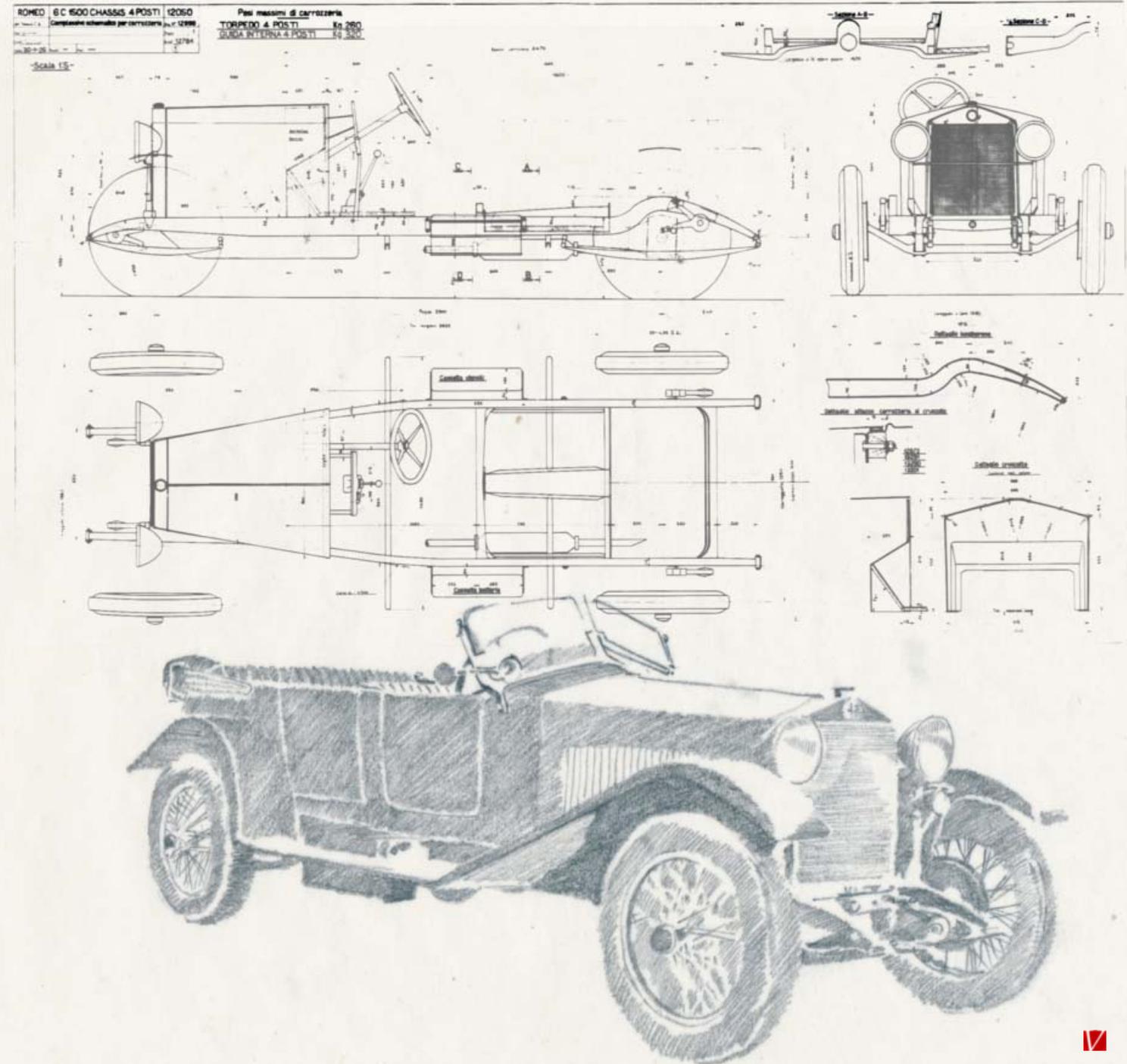
The four place Normale, which could reach 68mph, was made available for 45,000 lire (\$1452 USD). The six place Normale, which could reach 65mph, was made available for



46,000 lire. These last figures are quite arbitrary depending on how the customer had the cars fitted out, i.e. the Torpedo's were faster, lighter and less expensive than the limousines, as one might expect. The last RL Normale's price for performance was 48,000 lire and 70mph.

That first year 356 six place Normales were purchased, while 6 four place 6CN's found homes; reflecting the industrial decision by Alfa to initially focus on six place manufacture.

I have drawn into this illustration a tool that extends beyond the right side of the cam cover. It is an example of Jano's ingenuity to solve a service problem of the era: valve adjustment. With this tool a mechanic had only to pull the cam cover, slip the tool in the slot, engage the teeth of the ring of the mushroom tappet and adjust. This reduced a diligent day's work to a very precise hour.



## 6C SPORT



Here was the fulfillment of Romeo and Rimini's industrial strategy for Alfa Romeo. Romeo may have developed the car division for a bit of industrial promotion and personal aggrandizement in the beginning, but he very rapidly realized the value of investment in advanced automotive engineering during this second stage industrialization in Italy. One can only imagine the victor's lift upon the shoulders of the cheering populous that Romeo experienced in the fall of 1924. The presentation of Rimini, Merosi and Jano for

series manufacture of a single line of high performance cars, directly based on the P2's engineering, yet targeted at a purchase, tax and operations cost point of the broadest market seemed to have fallen on respective ears.

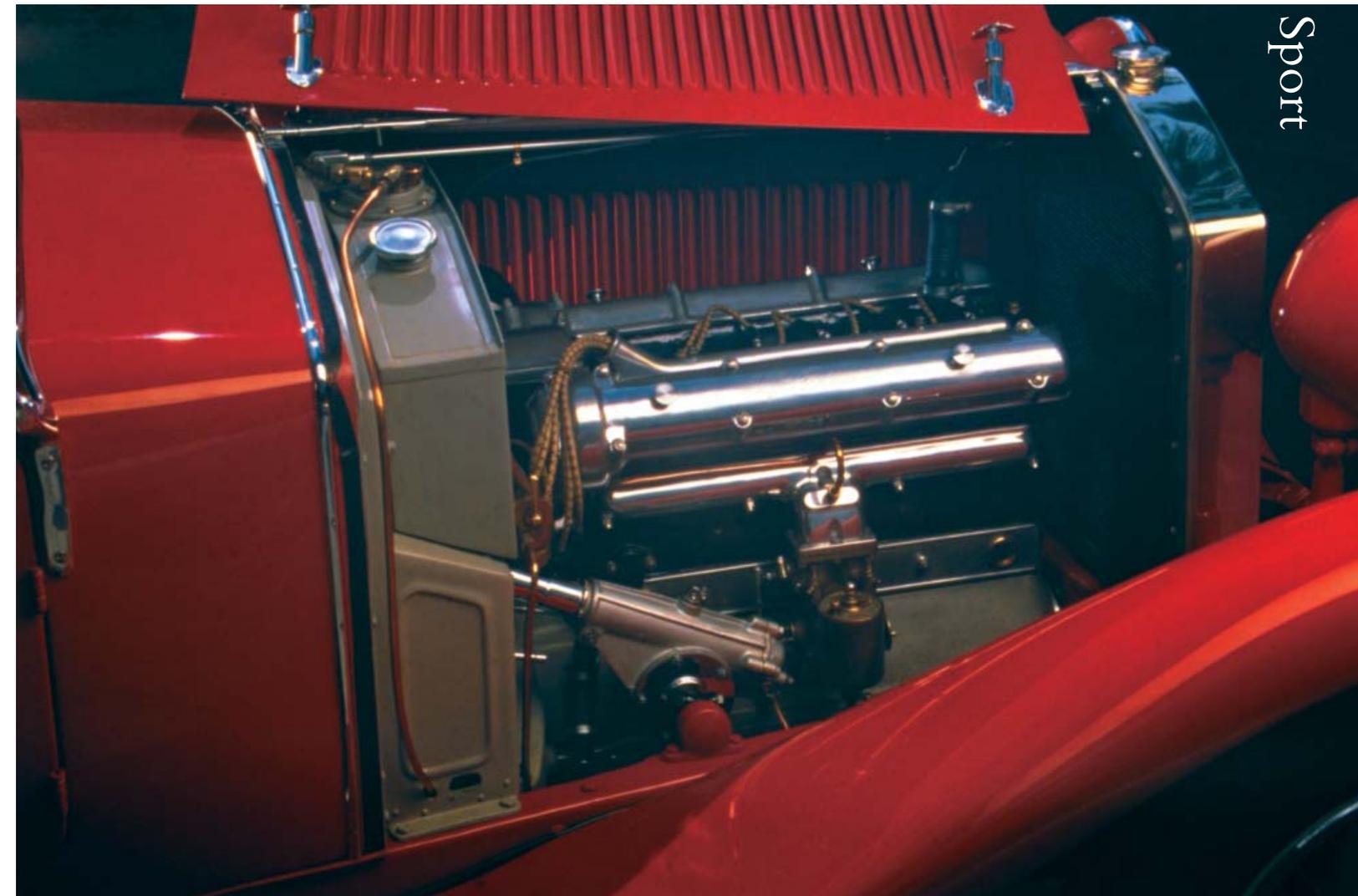
Because of the near mythic competition results of Alfa during this period we tend to put these cars into the same category of say Ettore's T35s with fenders and lights, a GP car that was making its name as a road racer. R, R, M & J's strategy was actually to develop a

line of cars that was indeed based on a GP, but more significantly, that was both the 24HP and the 12-20HP, the RL and the RM. By doing so reach a volume of production that would stabilize the price at a point to safeguard the auto division. This was never achieved. All of this industrial strategy was not assisted by the devaluation of the Lire's purchasing power in Italy just prior to the 6C's release.

In the event actually the 6C 1500 Normale could be

quite realistically compared, in configuration, market and numbers sold, to the Bugatti T40. Both were single cam 1500s that produced about 45hp and were made between 1927 and 1930. Bugatti sold 800 T40s and Alfa sold 862 Normales. Both were the market ideal of what the AIACR had in mind when the two-liter GP rules were put in place. The 6C Sport though, that was another kettle of fish entirely.

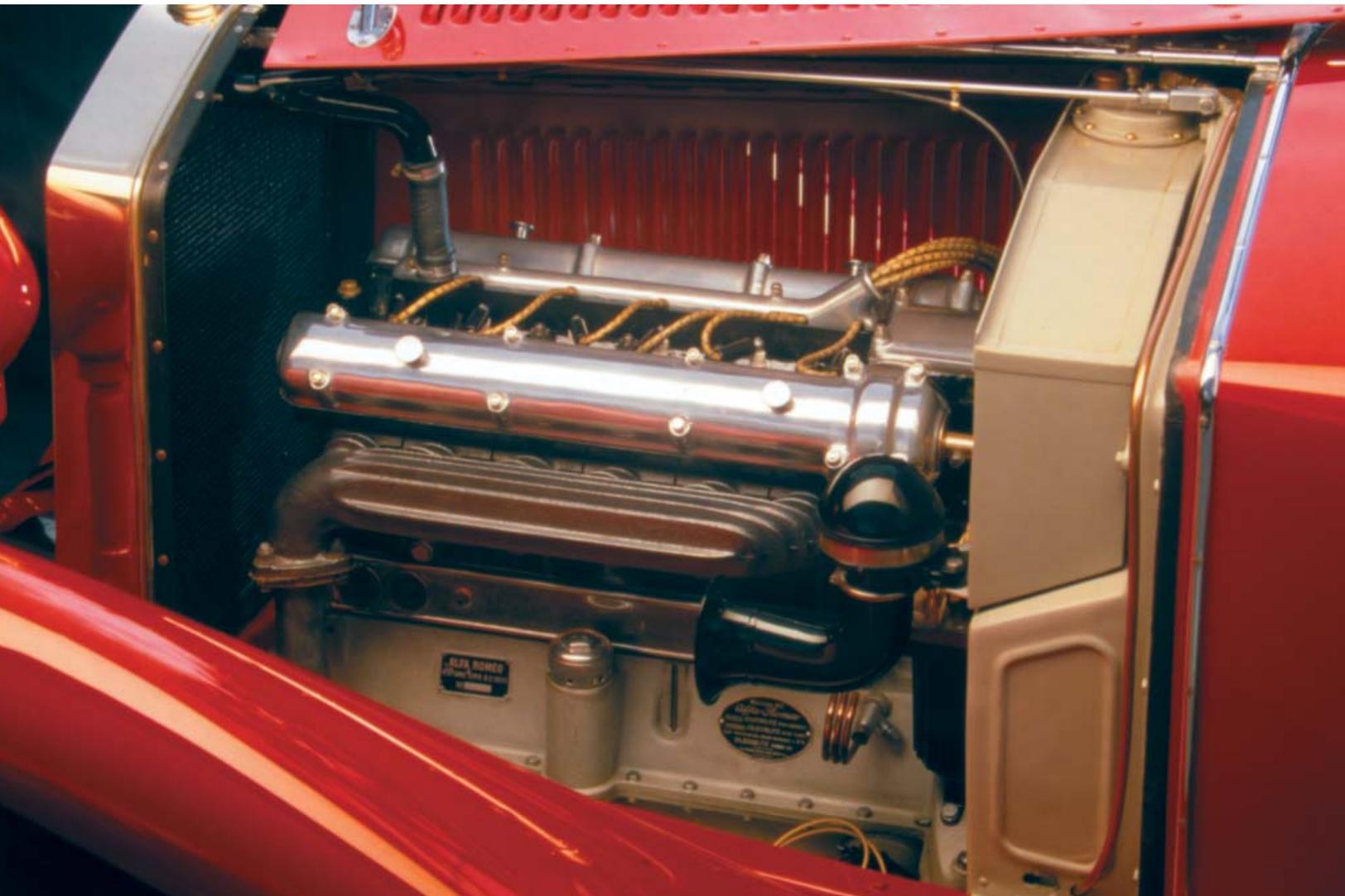
First we must recognize the sophistication of thought



6C 1500 Sport

behind setting in place an engineering strategy that allows for the flexible manufacture of two distinct models on the same chassis, crankcase and cam drive, especially when you take into account the successful supercharging of same. As seen previously, Alfa addressed these various markets from family touring car to competitive road car by engineering the RL N, RLS, RLSS, RM N, RMS and RM U. Six cars at dramatic variance to

the other in displacement, performance and price point. Bringing all those characteristics together on one platform was industrially astute, and it was hoped that with sales the scale of the RL, it would substantially expand the car division. As we will see it was not substantial sales of the 6C that would define Alfa as a growing automotive concern in the next decade, but the quality, performance and innovative character of the cars that



would forever define the company.

The block and head for the Sport was developed inside the racing department while the 6C Normale, or NR as it was actually dubbed, was being prepared for its rather premature showing at the Milan Trade Show of 1925. Premature in the case that the first showing of the NR had presaged such a turning point in the philosophy of, and products to come from, Alfa Romeo that its appearance at the Milan show had a most damning impact on RL sales. Having reached a peak of 1110 RLs in 1925, sales of Merosi's Marque-creating car tumbled to 311 in 1926, then 142 in 1927, as dealers waited, then began, to receive the first shipments of the 6C's. The financially inopportune aspect of this will be explored further on.

The Sport's 1487cc block was a very clean and simple casting, as it didn't require the art-fully complex internal intake manifold. It was merely four cylinders in line cast of light iron with generous water passages. The head as well was a study in the straightforward. Its purpose was to replicate the deep breathing efficiency of the P2, and it did this with six and the shared vertical shaft cam drive of the Normale at the back.

With the external shaft drive the 62 x 82mm bore and stroke block bolted right onto the shared bottom end. The head, with its twin 28mm valves set in at 90°, shaved to 6:1 compression, bolted right to the block. There was a chain drive between vertical shaft and twin gears of the cams. The cams spun in five bearings. The valves were all topped with the geared mushroom tappet adjustment system. The intake manifold had a single carb mount, piping the mixture into the six ports. A unique dual-throated vertical draft Zenith carb was fit. When fired it produced 54hp at 4500rpm.

The Sport's chassis was 20mm longer than the four place Normale at 2920mm (9'5"). This was a result of

the radiator, engine and scuttle being moved back into more of a mid-ship position. Its track was the same as the Normale at 1380mm (4'5") front and rear. As on the Normale, Merosi and Jano had further developed the articulate front braking system contributing to its nimble handling.

Fitted with a Zagato superlight aluminum body with metal subframing, the 6C Sport weighed 2120lbs, carrying two spares. Its GP flexible frame is obviated whenever parked on a dirt road or street of irregular surface; the doors won't close.

As released to privateers in 1928 it was capable of 77mph on the unforgiving rustic roads of the period, which it proceeded to cover rapidly.

One of the two prototypes cobbled together in the racing department was finally given its baptism by fire in June of 1927 at the Curcuito di Modena. Enzo Ferrari was able to thoroughly test every characteristic of the new car on the way to victory in this rain soaked, mud caked, rural road racing competition.



This shot was composed to illustrate Jano's incorporation of Grand Prix suspension engineering in Alfa's car for the sportsman of the period. Here we have a close shot of the front suspension showing the leaf spring incorporated in the forged front axle.

The inherent strength of this design allowed Jano to design flex into the chassis, making the 6Cs incredibly sure footed on Italy's predominantly dirt and gravel surfaced roads of the late 'twenties.

