

**Note 98****Early V10 racing-engine projects****Porsche**

A "rally" from Berlin to Rome was scheduled for September 1939 to celebrate the "Axis" of collaboration between their countries and Porsche were contracted to build special cars for this event (which was really a road-race like the Mille Miglia). These cars were based on Volkswagen running gear but having a tubular chassis with streamlined 2/3 seater bodies. Prototypes were fitted with modified higher-power versions of the 1L engine provided for the VW.

Meanwhile a thoroughbred racing engine was designed for a mid-engine mounting, type 114, of 72V10 configuration with  $B/S = 58/56.5 = 1.027$ ,  $V = 1,493$  cc. It had 2 v/c at  $VIA = 86^{\circ}$ ,  $IVD/B = 0.61$ , hairpin valve springs, DOHC, a roller-bearing bottom-end (Hirth built-up crank) and NA by triple carburetors (320, 975). See Fig. N98A on P.2.

It is believed that this engine was not in fact built but, in any case, the invasion of Poland by Germany on 1 September 1939 prevented the race from being run.

This Porsche design was the 1<sup>st</sup> automobile full-racing V10 configuration.

It is interesting that, when Porsche were contracted by Cisitalia just after WW2 to build a Grand Prix 1.5 L PC engine, type 360, they did not pick up this 72V10 1.5L NA design but adopted an F12 layout.

**BMW**

Paul Rosche has reported that, at the end of 1975 when BMW considered entering the Grand Prix arena he received the order to design a suitable engine.

Considering the Cosworth DFV V8 and the Ferrari 312B F12 competing at that time he envisaged a 3L V10 as a suitable compromise. It was planned to use this engine also in a racing "supercar". However, the GP project did not proceed then and the V10 was too costly for the alternative installation, which became the M1 Powered by an IL6 3.5L unit (971).

When BMW did decide to enter Grand Prix racing it was with a TC version of their Formula 2 engine, as described in its place in this review. The works engines were withdrawn at the end of 1986. After another decade (September 1997) Rosche was once again given the go-ahead for a 3L NA GP engine. Ref. (1095) describes how 8, 10 and 12 cylinder configurations had already been evaluated and V12 engines built for research but the final choice was V10, built for the 2000 season. Perhaps BMW had divined that the FIA would rule that only V10 engines would be allowed in 2001 and onward (until 2006).

**Alfa Romeo**

The origin of this 3.5L V10 engine has been mentioned in the 3<sup>rd</sup> NA section. Fig.N98B on P.2 provides an illustration.

Fig.N98A  
1939 Porsche type 114  
72V10  $58/56.5 = 1.027$  1,493 cc  
Two-stage shaft drive to each camshaft pair.  
DASO 320

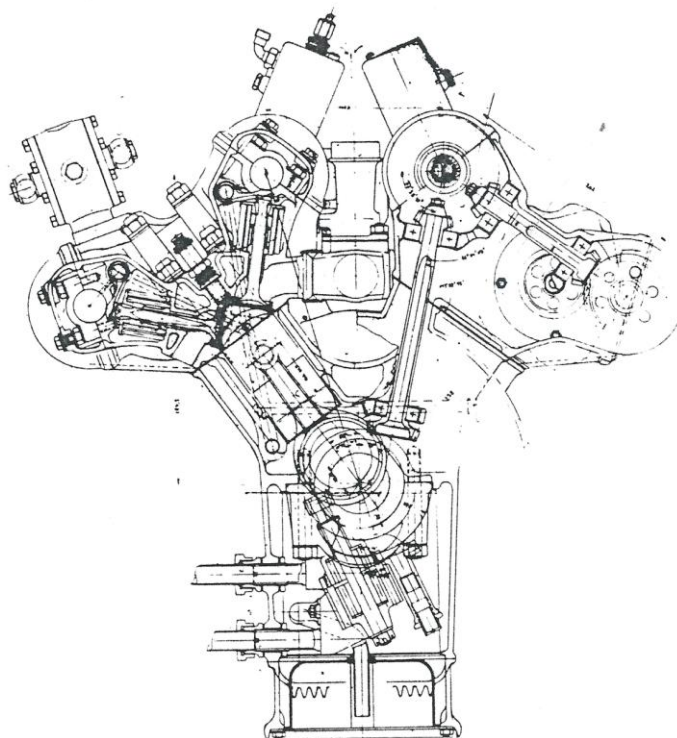


Fig. N98B  
1985 Alfa Romeo type 1035  
72V10  $88/57.52 = 1.53$  3,498 cc  
Belt drive to camshafts.  
Both 4 v/c and 5 v/c heads were examined.  
(DASO 1111: Alfa official data via courtesy of John Cundy 30 May 2012).  
DASO 1112: Wikipedia quotes power in 1986 as:- 620 BHP @ 13,300 RPM.  
DASO for figure: Not recorded.

