



## CRP Motorsport Case study

### The Zytek LMP2 engine air intake system

#### Interview with Zytek staff.

The RP part supplied to Zytek by CRP RP Dept. is a section of the air intake system on the Zytek LMP1 & 2 engines. **"This part has a significant impact on the performance of the engine."**



#### Which are the stress/loads involved in the component?

*"The main stress/loads applied to the component are the aerodynamic, vibration and thermal loads in use on both the engine dyno and in the LeMans race car."*

#### Which were the critical problems of this component?

*"The critical problems of this component are the minimal mass & very tight time constraints plus the need to produce just a few components without the need for expensive tooling and patterns. The shape is such that it which would be extremely difficult to form by traditional methods. The technologies and the materials used in the past were the carbon fibre/epoxy laminated moulding formed on an aluminium mould. The limits of those past technologies was owing to the complex shape of the part. The section required is difficult to achieve with traditional technology. CRP were able to offer a fast & cost effective solution."*

#### Which are the advantages obtained with the new technology/material and method?

*"Mainly the ability to go from CAD to part on engine in 2 days. Then, cost is a significant factor to remain competitive in the current LMP market and again CRP were able to offer a fast & cost effective solution."*

#### Would you point out any other aspects about the project?

*"CRP's ability to help define a suitable material was of great benefit."*



## Would you add your own words about this project?

*"We have used both the Windform GF & XT parts in our engines, mainly on the air intake duct inside the engine airbox. The Windform XT parts from last year raced at Le Mans and are still in use on both Zytek LMP2 cars racing in the 2008 LeMans series and have covered **15,000 racing & testing km's**.*

*The ability to go straight from CAD model to working part delivered to our factory in less than 2 days is very useful to our development department."*

*"The design of the part is based on many months of CFD & development work and gives us a significant increase in engine performance".*

### **Ian Lovett**

#### **Engineering Manager**

Zytek Engine Technology

Zytek Engineering Ltd

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### **Zytek Engineering Ltd**

Zytek Systems was founded in 1982 to develop and manufacture innovative electronic technologies for the exacting world of motor racing, including the first digital engine management system for Formula One.

Their performance engines business, Zytek Engineering, has also achieved outstanding success. The contract for which Zytek Engineering is arguably best known was first awarded in 1995, when the FIA asked Zytek to supply and support all the engines used by Formula 3000 competitors worldwide. The success of our engine lies in its reliability, which greatly reduced the cost of competing in this series and led to the renewal of this contract in 1998 and in 2001.

**Zytek's** and **CRP's** success with many of the world's leading race teams have proven their ability to produce winning combinations of performance and delivery, providing turnkey solutions and two 'one stop shops' for any racing formula. They both have employed the full extent of their motorsport expertise in race vehicle and engine technology to develop and support teams' development of engine, chassis, suspension and aerodynamics.

### **Le Mans 24 Hours**

The legendary Le Mans 24 hour race is the world's most famous sportscar endurance race, the first ever race taking place in 1923. Usually around 50 cars race in a number of different categories and classes. Current classes are LMP1 and LMP2 (Le Mans prototypes), and GT1 and GT2 (Gran Turismo).

In 2006 Zytek competed at Le Mans with their 06S LMP1 sportscar, finishing 5th in their class with Danish driver trio John Neilsen, Casper Elgaard and Philip Andersen.

Racing in the LMP2 class were the Zytek-engined Binnie Motorsport team, finishing 2nd in class in 2006. The same team took victory in the LMP2 category at Le Mans 2007.

In 2007 the LMP2 LMS Championship winning team of Barazi-Epsilon competed with Zytek's new 07S sportscar chassis and engine at Le Mans, as well as a Barazi-Epsilon entered Lowe's sponsored second 07S.