



University of Patras

Department of Mechanical Engineering & Aeronautics



Laboratory for
Manufacturing
Systems & Automation

Newsletter No.3

04/05/06'07



During the last three months the heat of our work was higher than ever. We have been working the whole time, some times until the early morning hours. However we believe that the final outcome had overcome our expectations: The UoP 2 is READY!!

Frame:

Some final mounts (e.g. for the intake system and the oil tank) were installed and the chassis was completed.

Purchased parts
Completion percentile: 100%
Manufactured parts
Completion percentile: 100%

Powertrain:

Our engine was fired up in the beginning of April for the first time. Gladly it ignited with little effort, a result of the good preparation of all the peripheral devices and the fine tuning of it.

An oil tank was constructed in house and mounted in it's position. Moreover an oil radiator was installed in order to provide adequate oil cooling.

Finally, the electronics of the car were completed: cut-off switches, dashboard lights, brake light, various sensors.



Purchased parts
Completion percentile: 100%
Manufactured parts
Completion percentile: 100%

Drivetrain:

The half-shafts' construction was completed in the lathe from hardened steel alloy. After that, all the drivetrain parts were available for assembly.

In addition the gear changing system was installed and the buttons for the actuation of the system found their position on the steering wheel.



Purchased parts
Completion percentile: 100%
Manufactured parts
Completion percentile: 100%

Brakes:

The brake system has been assembled (high pressure lines) and the brake calipers have been mounted on their positions. The front calipers have been mounted on the uprights, just after its con-

struction and the rear caliper has been mounted centrally on the differential, on a mount on of the tensioners. In addition a brake light and a brake light system were installed.

Purchased parts



Completion percentile: 100%
Manufactured parts
Completion percentile: 100%

Suspension:

The last three months were three very busy months for the suspension team. After the finalizing of the upright and hub design, the construction began. The uprights, comprised of aluminum sheets, joined together with TIG welding were cut in our University's laser cutting machine, ensuring maximum accuracy.

The hubs were constructed in the lathe, from hardened steel alloy.

Last but not least the steering system was assembled. The cog-railway has been mounted in its position and

afterwards the mount of the steering wheel was determined and installed.



Purchased parts
Completion percentile: 100%
Manufactured parts
Completion percentile: 100%

Composite materials:

The composite team had been extremely busy. From the construction and finishing of the moulds to the construction and finishing of the body panels, everything was made in house.



The side panels have been formed from GFRP and the front panel from two layers of GFRP and one layer of Kevlar. After that the panels had been sent for painting.



UoP 2 Photos:



UoP 2 Photos:



Athens International Motor show 2007:

Our team was given the opportunity to show it's accomplishments to the public during Athens International Motor show 2007 which took place in the old East Airport, Hellinikon, during the period 12-20 May 2007.

It was an excellent opportunity to give to public an idea for the level of the students and their skill in the Greek University.

In our stand we exhibited UoP1 along with the chassis and some peripheral devices of the UoP2.



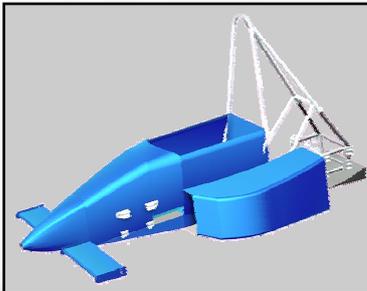
Class 3 team:

Our Class 3 team has also been very busy in order to finish with the design of most parts of the third car of University of Patras.

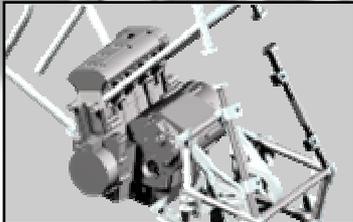
Chassis:

A hybrid frame will be used, combining the low weight of CFRP and the great torsional stiffness of CrMo 4130 steel tubes.

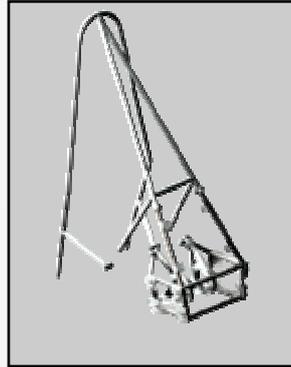
In addition, aerodynamic characteristic of the front tub were taken into consideration and therefore a thorough fluid study took place.



The rear subframe has been designed so that it can be manufactured separately



from the rest chassis and afterwards to be connected with the front part of the car.



Engine:

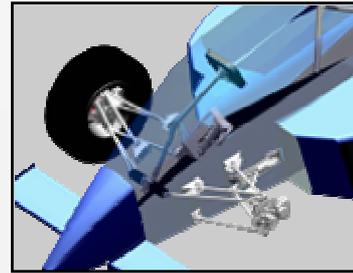
The UoP 3 team has chosen to use a Yamaha R6 engine in their future car.

Likewise they will install a turbo charger that will increase the engine's power.

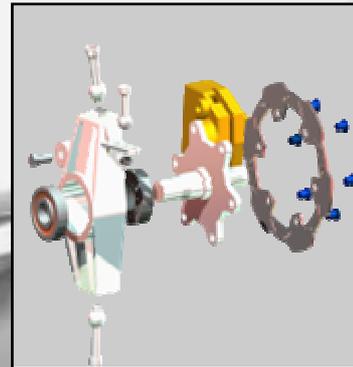


Suspension:

A fully adjustable suspension has been designed in order to ensure the best possible car behavior in a variety of circumstances and tracks.



Moreover, the utilization of CNC milling in the construction of the uprights ensures accuracy and quality for a very crucial part of the car.



Formula Student Competition News:

Formula Student 2007 is about to begin. On the 12th of July, Universities' teams from all over the world will meet in Silverstone circuit to compete in the place where the British Grand Prix will be taking place until the 10th of July. Just right where of Ferrari, Mc Laren Mercedes and others' will be competing for one position on the podium 4 days before the Formula 1 cars, every student team will try for the best result.

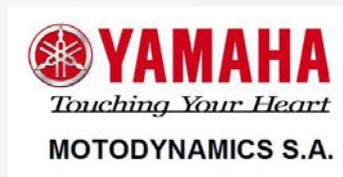
Just right there our team will try to make the best out of it's car, UoP 2. You are welcome to come and visit us on the 14th and 15th of July, see our car competing and discuss with us. Our team will be located in pit no. 9C-2.

In the following link you will find a very useful Formula Student 2007 Handbook with a lot of information on the 2007 event:

<http://www.formulastudent.com/NR/rdonlyres/59322F8E-8A59-4B93-976F-C861514991AF/0/FSHandbook.pdf>

UoP Racing is proudly sponsored by:

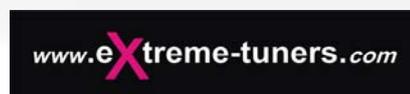
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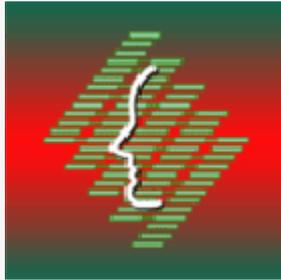
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