Montupet

Telemetry on wheel rims

Before their launch production, the rims designed by Montupet are validated on test benches in ordor to proof their resistance. Only the telemetry used to find the stress endured during the rotation.

"We had already called upon Cetim for interventions on our unit of Nogent, in particular for instrumenting, with gauges and thermal probes, prototypes of engines cylinder heads tested on a special test bench in order to measure the internal stresses and the temperatures", explains Raphaëlle de Vito, engineer at the design and computing department of Montupet in Châteauroux.

Rims...

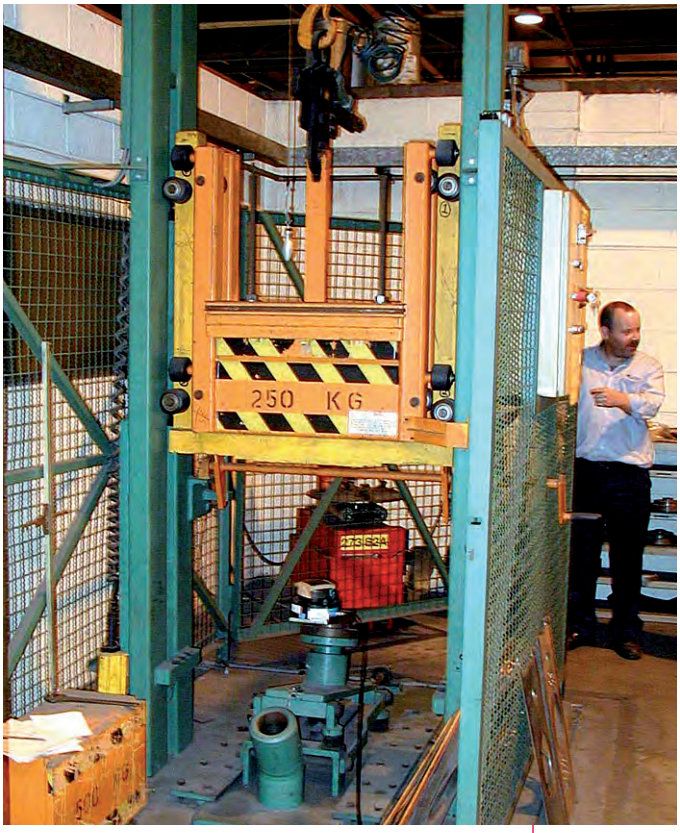
Montupet's unit in Châteauroux, which employs about thousand people, manufactures 70 types of wheel rims, as well as engines components like cylinder heads and car-to-ground connecting components for various car manufacturers. This represents daily a hundred tons of various parts...

... Which need to be tested...

"Before launching new mass productions, we validate each rim model on our fatigue and shock test benches", says Raphaëlle de Vito. For fatigue tests, the rims are subjected to two forces simulating the wheel's weight and the centrifugal force, for a certain number of cycles. For the impact tests, a shock against a pavement kerb is reproduced, having a mass fall on the rim provided with its tire.

... and evaluated

In order to check that the stresses computed by digital simulation agree well with the experimental results, Cetim instrumented a rim with deformation gauges. *"For taking account of the rotation speed, they also applied telemetry to rims bearing gauges connected to micro-transmitters"*, adds Raphaëlle de Vito. The main difficulty of such a telemetry is to position properly the antennas to avoid waves reflexion which interfere with measurements.



Cetim's asset

Its know-how relating to measurement on moving parts and its knowledge of the behavior of test benches allow Cetim to ensure the validation of equipment designs while associating to test benches the most sophisticated measurement techniques.

OUR CUSTOMER

Corporate name
Montupet

Activity
1.000 people at the unit of Châteauroux

Sales turnover
420 million euro, of which 200 in France and Belgium

Context
Montupet works in partnership with all european and american car manufacturers. For mass production, Montupet uses gravity, low pressure, sand and SHLP (Sand Hybrid Low Pressure) moulding techniques in metallic moulds or sand. Montupet complements its service by machining, heat treating and painting part of its production

Contact
Question/Answer Service
Tel.: +33 (0)3 44 67 36 82
sqr@cetim.fr
www.cetim.fr

1102-057