

PSA Peugeot Citroën

Close examination of a test bench

PSA has called on Cetim to determine the cause of the vibration problems with which it was confronted on a test bench, and to find adequate solutions.



OUR CUSTOMER

Corporate name:
PSA Peugeot-Citroën
-Vélizy Research Center

Activity:
Car manufacturer

Turnover:
54 billion euros

Countries:
15 production sites in France

PSA is testing all its braking systems on test benches that reproduce the real operating conditions for cars. The manufacturer has thus launched a test run on a bench for the purpose of finding the braking moment from which a parking brake becomes less efficient.

Avoiding a premature failure

At the end of the tests and after 800 operating hours only, the bench was emitting a strange noise and vibrations that disturbed its operation. The bench manufacturer has proposed a reconditioning of the equipment for fear of

a premature failure. But PSA preferred that the bench be reviewed by Cetim, *“taking stock of existing conditions and proposing solutions”* as said by Serge Cauvin, project manager with PSA.

A minute detection of the causes of vibrations

Firstly, Cetim carried out an analysis of vibrations on the bench as is. It complemented this analysis by taking photographs, inspecting the morphology of test bench bearings and defective parts, and taking grease samples. These investigations have shown that the bearings were

damaged not while the bench was operating but at standstill during the “lift-off” tests. The vibrations were mainly due to machining defects observed on the housing of the damaged bearing.

Then Cetim conducted “liftoff” tests. The results led Cetim to recommend that the bearing lubrication be improved, and the braking system mounting modified to reduce the vibrations. The bench manufacturer at PSA’s request has implemented the modifications recommended by Cetim.

Serge Cauvin, who deemed *“the services provided by Cetim very satisfactory”* concludes, *“it would be better to control the vibrations more accurately so as to detect the problems more quickly”*.

Cetim's asset

Cetim is establishing measurement and analysis with state-of-the-art techniques for vibration diagnostic such as, for example, the laser techniques for measuring the rotation oscillations of the alignments of bearings.

