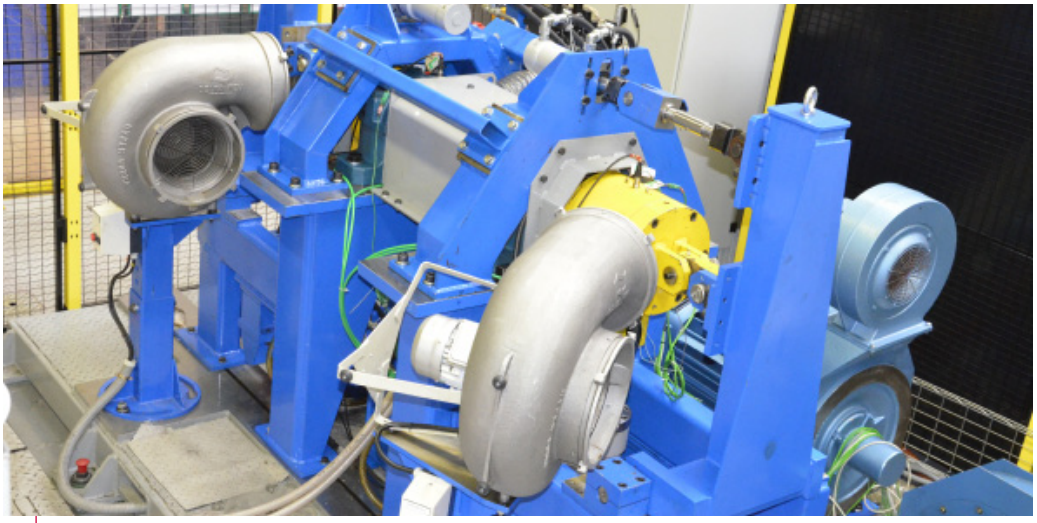
NTN-SNR

Bearing test bench: the railway sector stands the test of time

NTN-SNR wagers on Cetim's railway test bench to test innovative solutions and comprehend the phenomena which reside in mechanical components under heavy loading. This mutualised test equipment allows significant cost savings.



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OUR CLIENT

Corporate name
NTN-SNR

Activity
NTN-SNR is a bearing manufacturer for the motor sector and for industry in general, inclusive of railway: axle bearings and power transmission components

Sales turnover (2011 figure)
€ 802.2 million

Workforce
4,113

Improving railway bearing service life, studying their thermal behaviour and the occurrence of fretting and sealing issues...
So many research subjects are at stake! The complexity of the phenomena involved requires functional testing. Says Ludovic Saunier, engineer at NTN-SNR: *"...railway bearing approval/certification tests are performed. But they require the use of complex test benches, and for several months: therefore, this type of tests does not allow us to carry out in parallel the indispensable functional tests to improve our knowledge of railway equipment".*

A mutualised test bench

Cetim has developed a mutualised test bench, offering impressive performance data, to address the needs of the bearing and mechanical transmission professionals. Ludovic Saunier adds that *"... This innovation avoids having to block the internal test facilities which are used for approvals or certifications. It provides a new responsiveness and capacity while ensuring time savings to meet the deadlines, as well as the advantage of experts available to perform the tests".*
Besides, the mutualisation process enables us to propose a shared facility and to make its operation profitable.
This test bench allows tests on large size bearings (bore: 160 mm, outer diameter: 240 mm) and under heavy loading (up to 15,000 daN constant radially, up to ± 5,000 daN cycled axially). For a constant radial load corresponding to the train's weight, the axial loads applied are cycled and correspond to bends or rail track misalignments.
Ludovic Saunier concludes: *"... With this type of equipment the difficulty stems from the need to withstand the loads applied, and to obtain reproductible results, and from the cycling of the axial loads. The test bench control system allows us to program the load and speed cycles up to 1,600 RPM while recording the loads, the speeds, the temperatures, the vibration data, etc.".*

Cetim's asset

The mutualised test bench allows us to propose bearing characterisation and validation tests services to the bearing and mechanical transmission professionals, at a lower cost and in strict confidence.

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

1307-009

INSTITUT CARNOT Cetim

cetim