

Case Study

Fan/Blower Vibration Analysis & Rotor Balancing

With Motionics iPad 2CH Vibration Analysis & Rotor Balancing Kit

Year: 2012

Location: Netherlands

Hardware: [Motionics Wired 2CH Vibration Analysis & Rotor Balancing Kit](#)

Software: [iVibraMeter](#) iPad app & [iRotorBalancer](#) iPad app

Application:

VTK is a fan and blower manufacturing and maintenance company in the Netherlands. Operators at VTK frequently check fan and blower vibration conditions and perform balancing work if an imbalance is detected. Motionics wired 2CH vibration analysis and rotor balancing kit integrates a DAQ system on an iPad case and allows operators to complete vibration checks and rotor balancing on an iPad.

The iVibraMeter app has a library of common industrial machines with marked test points, including fans/blowers. VTK operators can use the illustrations in the iVibraMeter app as a reference, place the accelerometer at pre-defined test locations, and quickly collect vibration readings by a few simple button taps. A PDF report can be generated and saved after the test.

The app iRotorBalancer collects accelerometer and tachometer signals connected to the DAQ system and computes vibration amplitude and phase parameters automatically. VTK operators can follow the step-by-step guide in iRotorBalancer and conduct single-plane and two-plane balancing easily, even without any knowledge of or previous experience in rotor balancing.



Figure 1 Motionics Wired 2CH Vibration Analysis & Rotor Balancing Kit

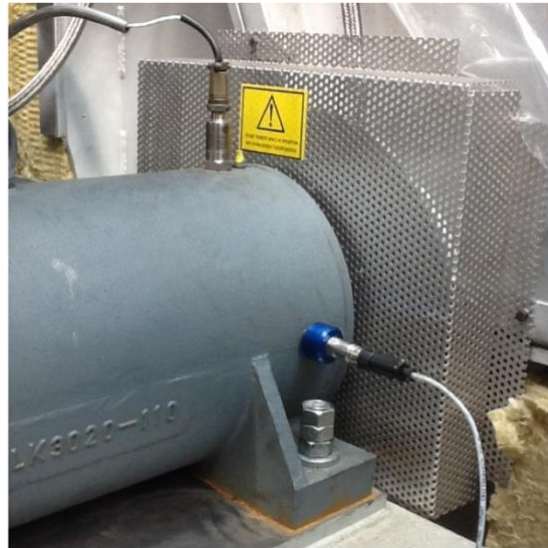


Figure 2 Vibration testing on a blower

Attached are two sample reports from VTK.

Report 1 is a vibration test report generated from iVibraMeter. An operator tested vibration at 5 points on the blower and a picture with acceleration and velocity readings at these 5 test points was shown in the report. Other test information, such as date/time, staff, location, machine, notes, signature, map, and machine images were also included in the report.

Report 2 is a rotor balancing report generated from iRotorBalancer. An operator conducted single-plane 2-channel balancing on the blower and reduced vibration magnitude from 0.0659 to 0.0097 ips. The test report includes general test information, balancing parameters, notes, signature, spectrum, machine images, and map.

Overall Vibration Report

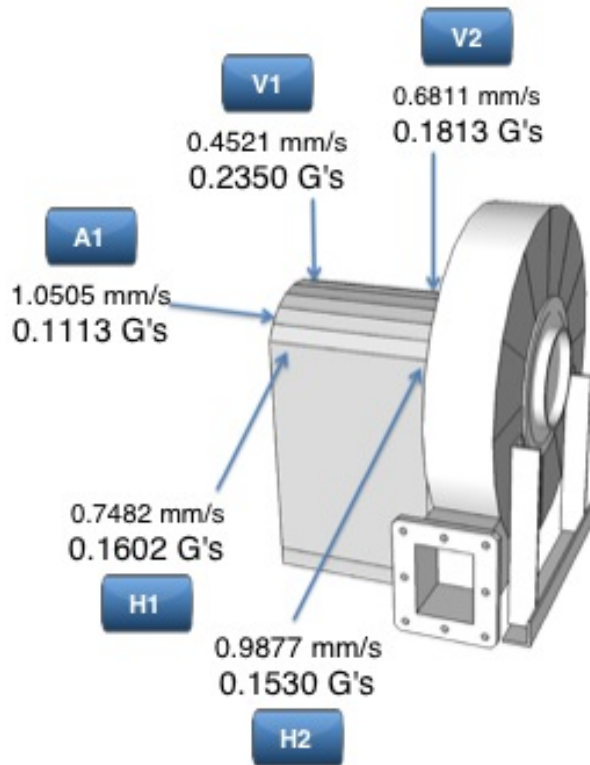
Date / Time: jun. 13, 2012 16:54:06 PM

Staff Name: W.Mudde

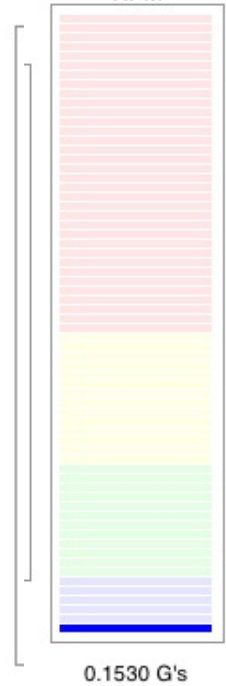
Location: Cabot

Machine ID: FN-7302

Vibration units in: G's

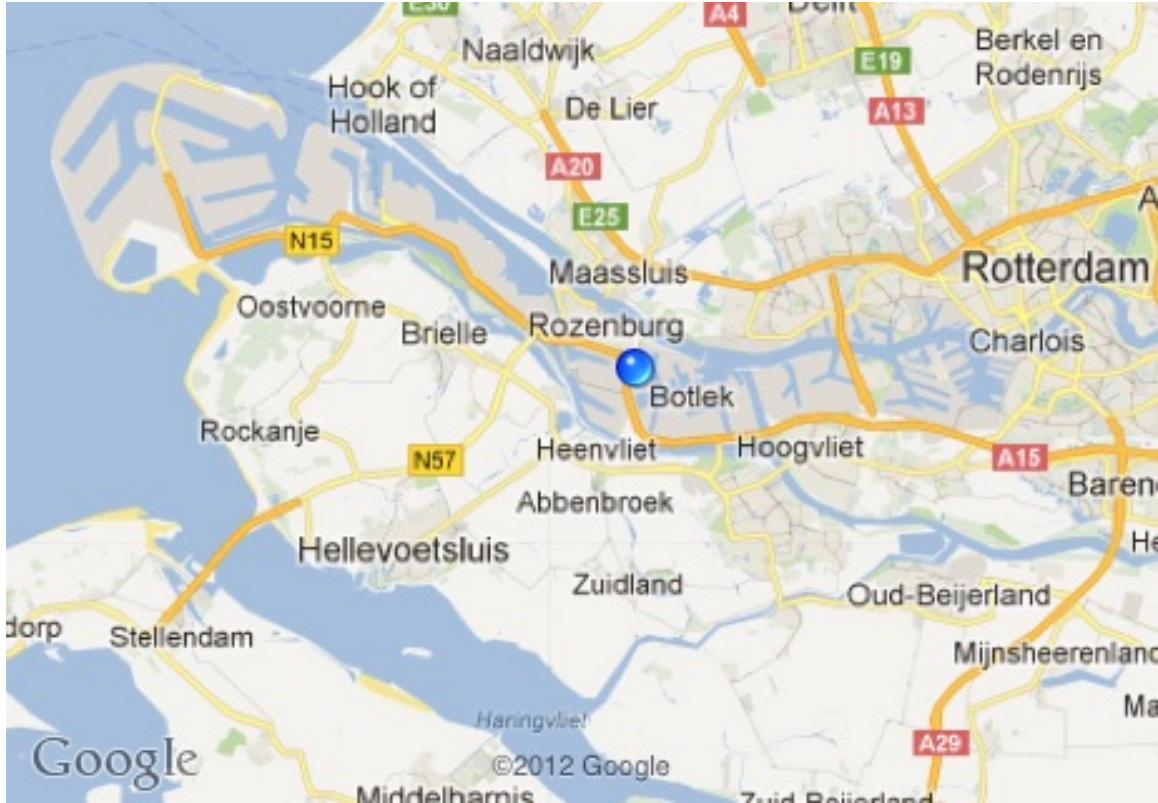


Motionics Bearing
Vibration Severity for
Shafts 600-1800
RPM



Notes

Overall Vibration Report - Attachments



Plant Location



Overall Vibration Report - Attachments



Rotor Balancing Report

Date / Time: mei 21, 2012 11:57:01 AM

Staff Name: W.Mudde

Location: Beverwijk

Machine ID: LD/355/480/T17B

Vibration units in: ips

Balancing RPM: 2888.00

Rotor Weight (Kg): 18.50

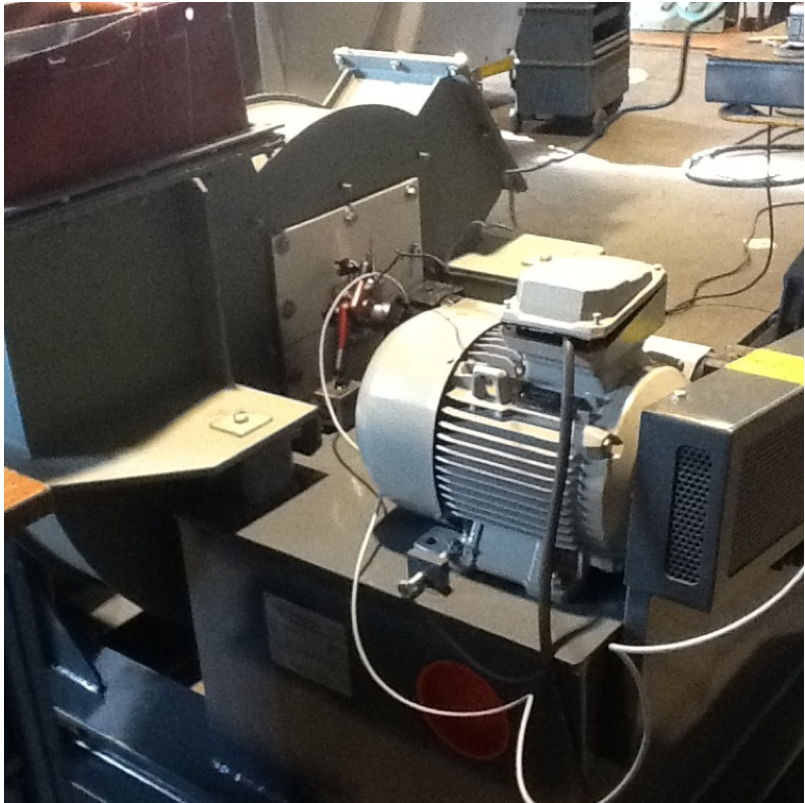
	Magnitude	Angle
Original Vibration:	0.0659	51°
Trial Weight (gr):	8.0000	231°
Trial Weight Radius (mm):	150.0000	
Vibration w/Trial Weight:	0.0482	56°
Correction Weight (gr):	29.0167	242°
Correction Weight Radius (mm):	150.0000	
Final Vibration:	0.0097	135°

Notes

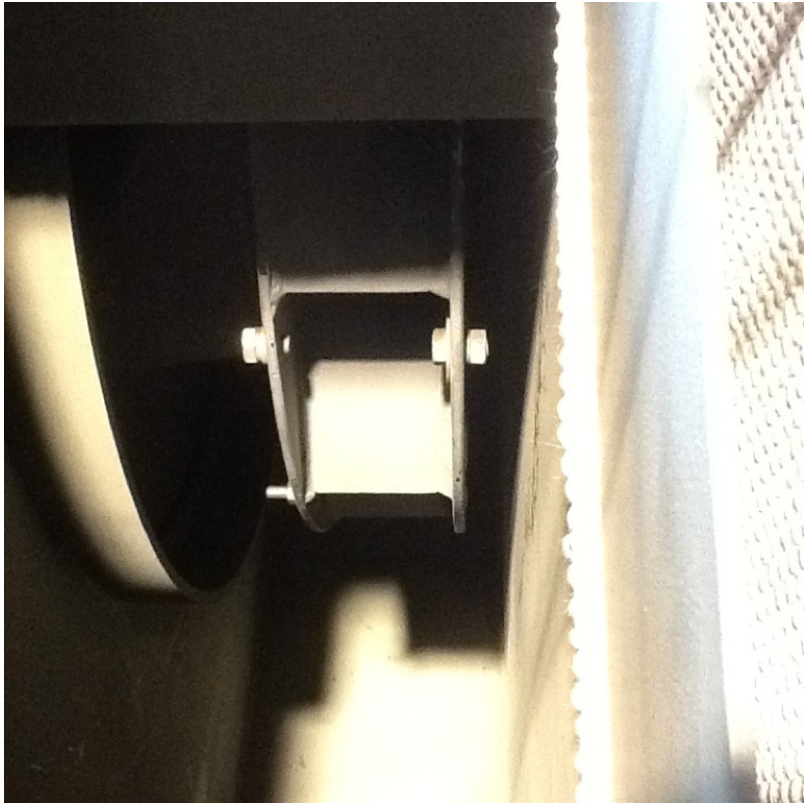
Shop balancing at Van Tongeren Kennemer B.V.



Rotor Balancing Report - Attachments



Rotor Balancing Report - Attachments



Rotor Balancing Report - Attachments



Plant Location