

ADRE® Application in Measuring Hot – Cold - Hot Machinery Component Movement “Hot – Align”

By Ivo Dabelić

Ivo is graduate of the Dubrovnik Maritime Academy, Croatia. He spent six years at sea as Third, Second and First Assistant Engineer. Afterwards, he spent nine years as a Marine Service Engineer in the Rotterdam, Netherlands and San Francisco, California. He holds a Chief Engineer license for Steam and Diesel Engine Plants. Specializing in repair and later in vibration related problems, he served as a Manager of Maintenance in the marine industry. He has been active in industry for 32 years, specializing in Rotor-Dynamic and Torsional analysis on single shaft and branched systems.

ABSTRACT

The paper describes a practical approach to machinery component hot alignment, better known as “Hot-Align” method. Discussed within the paper are the idea, concept, first application, consequent development and final system application utilizing the ADRE® system. The paper will point and demonstrate the extreme flexibility and ease of this application. The paper also warns of pitfalls and common mistakes. The presentation will address methodology, application and measurement. Interpretation and explanation of “Cold” corrections for the machinery component movement during startup to full operating condition as well as heat soak are discussed. The paper discusses the graphic representation of the alignment plots and necessary steps for correct interpretation. The absolute and relative machinery component movements are discussed and explained. The cold re-positioning (preset) of the machinery centerlines, in order to achieve desired “Hot-Align” values, are presented as TIR (Total Indicator Reading) values that millwrights will require for proper alignment. The emphasis of this paper/presentation is placed on the set-up, procedures and simple calculations that enable the “repair and turnaround labor force” of skilled millwrights to very quickly analyze and interpret the machinery component and/or bearing centerline movements. This information in turn is plotted and via these plots personnel read proper alignment values needed to “Hot-Align” the machines in question.

Data gathering and interpretation is a product of the last 15 years of experience. During this period, the presented approach was successfully used to correctly align large steam and gas turbines, large compressor installations, hot process blowers and load units just to mention a few.