Dickinson Group of Companies’ rotary kiln services include troubleshooting and root cause analysis, comprehensive hot kiln alignment, in-situ grinding of tyres, support rollers and thrust rollers, installation, maintenance, repair work, technical guidance and support on all rotary kiln equipment suppliers.
HOT KILN ALIGNMENT MAINTENANCE & INSPECTION PROGRAMMES

Our maintenance inspection programme has been designed to help clients adopt a proactive approach to rotary kiln maintenance. Direct benefits of our maintenance and inspection programmes include:

- Compilation of a comprehensive history of wear rates for mechanical components
- Reduced unplanned stoppages
- Achievement of maximum plant availability thereby increasing production and reducing operating costs
- Reduced wear rates achieved due to rotary kilns being correctly aligned on a regular basis
- Installation & Repair
- Efficient planning for programmed shutdowns
- Confident budget planning for replacement of high cost items such as girth gears, pinions, tyres and trunnion rollers

SURVEY PROCEDURE & HOT KILN ALIGNMENT

Comprehensive hot kiln alignment ensures that rotary kilns are able to achieve maximum efficiency throughout their service lives and help customers avoid unforeseen breakdowns.

Almost all problems associated with rotary kilns can be attributed to misalignment. Although the current trend is towards ‘soft’ non-contact measurements taken from areas outside the hot air envelope along the vessel, there are inherent problems associated with this technique, such as:

- Temperature front refraction
- Variable light conditions
- Oblique angles
- Unbalanced geometric networks
- Limitations of electronics in harsh environments

TECHNOLOGY

Dickinson Group of Companies represents global leading specialist GEOSERVEX from Poland in providing measurements and analyses of rotary machine deformations and measurements in Sub-Saharan Africa.

GEOSERVEX since its inception in 1983 is the world’s first developed and implemented technology of kiln alignment in dynamic conditions (during normal operation), termed “Hot Kiln Alignment” specialises in developing, implementing and realizing unusual and highly precise geodetic measurements. The method was patented and used in 42 countries around the world.

Our specialised high precision survey system is a coordinate system and a set of reference points, used to locate coordinates. The most specialized field of our activity are measurements and analyses of rotary machine deformations and measurements of ground displacements of industrial structures, constructions and equipment.

The objective is to maintain optimum kiln performance and maximum production.
Our company’s engineers have developed many new technologies, devices and software that have been rewarded with scientific, industrial and business awards. Our original achievements are methods of measuring and aligning machines during their operation, hot kiln alignments, which is an achievement often quoted in professional technical literature in many countries.

The most contemporary laser, code and computer devices have been utilized in a creative way - automating measurements and calculations. The analyses are not limited to presentation of results but they also provide data and guidelines for aligning and supervising machine repairs.

For making precise angle measurements (exactness in an order of 0,5cc) and setting coordinates we use electronic theodolites (total station) of the Japanese company TOPCON series GTS 601 and mirror-free GPT 2002, as well as precise theodolites of the Swiss company LEICA (WILD).

Levelling measurements are made with the help of precise code levels LEICA 2003 and ZEISS with computer recorders, of an accuracy of an order of 0,01 mm. This equipment is periodically attested and calibrated by the Institute of Geodesy of the Warsaw University of Technology in compliance with the industrial standards ISO 9001/2000.

**Hot-Kiln Alignment Services Package**

Our company’s hot-kiln alignment services offering results in the provision of the following:

- Current rotary kiln alignment status
- Condition of the tyres and trunnion rollers including tyre chairs and tyre stops
- Tyre and trunnion roller running face profiles

All of the above information is supplied, along with alignment adjustment recommendations, in a comprehensive report together with a series of drawings which can be supplied in either hard copy or electronically. Included in the package is a comprehensive mechanical condition report with recommendations for the repair or improvement of the relevant plant items.