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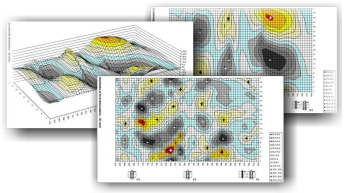
ROTARY DRUMS

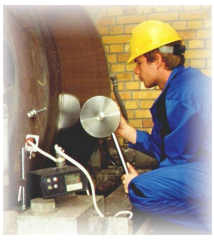
ALIGNMENT ANALYSIS, INSPECTIONS OF THE CARRYING SYSTEMS AND SHELL'S GEOMETRY

The base term being the base to considerations of rotary drums operating correctness, is the problem of its mechanical balance. This is an extremely extensive problem including many issues connected with statics and dynamics. Generally, one says about correct mechanical balance as an optimum state of the forces and stresses distribution acting on the drum carrying system and shell. The essential factors, which determine this distribution, are elements' geometry and mutual relations between their rotation axes.

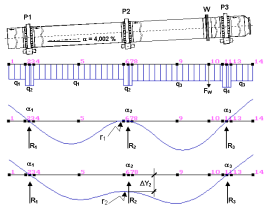


The object geometry term includes such parameters as the **carrying system configuration**, **the shell's state** and **the drive section parameters**. Knowledge of these factors, together with knowledge of the object operating-technological parameters, gives the possibility of deducing about its state.

Our firm disposes of wide fan of measurement and analysis methods with specialized, the highest quality equipment's application.



Regarding this, the carrying system geometry measurements and the measurements of the shell geometry and drum drive section parameters **can be realized in both conditions: of its full operating and in the period of its shutdown.**



In the first case, so-called hot method, the real parameters are taken to the system analysis. In the case of so-called cold method, by the analytical activities, there is a possibility of simulating the operating conditions, taking into considerations among others potential temperature distribution and potential value of the technological process' settings, taking place inside the object.

The relation of the carrying system measurements with the measurements of the shell's state, lets infer about the mutual influence of these parameters and take into consideration this fact during determining the correcting settings of the rollers positions.

The combination of the geometrical measurements with the professional inspection including defining of the temperature distribution, the direct measurements of the axial reaction forces of the rollers and the elements deformations analysis, for given kinematic, operating parameters and surrounding conditions, gives the possibility of complex attitude to the problem of defining the object mechanical balance.

APPLICATION

The alignment analysis has the application in defining the rotary drums state with the considerable overall dimensions such as: kilns, incinerating plants, dryers, coolers, calciners, crystallizers, mixers etc.

It can be also successfully applied with the objects without typical rolling carrying system meaning e.g. any kind of mills with slide bearings and other plants with the similar construction.

ROTARY DRUMS

REPAIRS, MODERNIZATIONS, NEW OBJECTS BUILDING

The object's life can be divided into four basic stages: **designing**, **production**, **operating** and **disposal**. The activities performed in the particular stages, impinge in a direct or indirect way on the realization course of the following life phases. The first stage - designing, has its reflection on both production and operating stage. It has also influence on the disposal stage. The production stage has its direct reflection in the object work quality, which means in its operating phase. The object's operating is periodically interrupted by the **modernization** and **repair activities** having, depending on the scope, the features of designing and production stages.

The modernization and repair activities are to improve or restore the object's initial qualities.

Our firm provides you with the service during all the life phases of the technical objects of rotary machine type.
The firm's domain is the complex repairs and modernization service including such activities as:

- defining the object's current state;
- defining the remedial possibilities;
- formulating the full executive documentation, elements' quality control;
- formulating the repair /modernization technology;
- contractor firms' selection;
- rodman - engineering supervision over the repair / modernization works;
- defining the left state and service guidelines;
- performing post-guarantee service.

ROTARY DRUMS

REGENERATION OF THE ROLLERS RACEWAYS

One of the main requirements of rotary drums proper operating is an assurance of adequate forces' distribution in their support system. Unfortunately, this aim is not always possible to achieve. One of the obstacles is shape errors of rollers' raceway. In the past, and at the present, the replacement of the deformed rollers with the new one with cylindrical shape is the antidote to this situation.

But this is the economically groundless activity (dis- and assembly expenses, transport and machining expenses), and besides, it forces the plant to stop.
We offer to our clients to take advantage of portable, fully numerically controlled machine tool, created by our engineers.

ADVANTAGES

- No necessity of expensive and laborious dismantling and assembly.
- Elimination of expensive transportation to and from regeneration site.
- Possibility of production process continuity.
- Basing on the real rotary axis during regeneration.

APPLICATION

- Rotary drums rollers' regeneration during their normal operation.
- Regeneration of other large dimensions rotating parts.

ROTARY DRUMS

THERMAL METHOD OF SHELL'S STRAIGHTENING

The geometrical axis flexure of the rotary drum shell is one of the most serious operating problems for this kind of objects.

The flexure phenomenon is extremely dangerous. Invisible to the unaided eye, leads to the carrying system overloads, causing e.g. excessive, cyclic load on the contact points between rings and rollers. These excessive loads are the direct reason for rings and rollers raceways' cracks, and brake down damages of their shafts. Only in extreme cases, the shell's flexure is visible in the form of the ring 'lifting' effect.

The rotary drum shell's flexure can have thermal (**temporal**) or mechanical (**permanent**) character, dependent on the cause of its formation. The only antidote to the permanent flexure of the rotary drum shell's geometrical axis, as so far, has been its expensive mechanical repair.

Laborious cutting stages, adjustment and again joint assembly from the classical method can be eliminated by application of the alternative thermal straightening solution.

More information about our firm's activity can be found on our Internet site **www.eurokiln.com**.