

Installation of a ROSTA type MB 70 x 550 Motorbase on a METSO centrifugal slurry pump

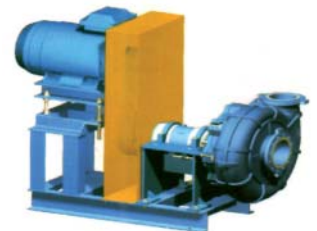
Situation

The South African agent of ROSTA AG, the **Orange Vibrator Motor Company (OVMC)** had the opportunity of installing the first ROSTA Motorbase onto the belt drive system for a METSO centrifugal pump for slurry transport in the Anglo-Amandelbult mine in Rustenburg. The pump was driven by a D 280 M 4-pole electric motor, generating 90 kW constant capacity. In order to be able to compensate for the belt elongation, the drive motor for the belt driven centrifugal pump was originally installed on an adjustable intermediate frame that could be raised or lowered using four threaded bolts. This maintenance work had to be carried out periodically, and represented one hour's work for two mechanics. After the compensation of the belt elongation, the belt pulley always had to be realigned with great precision using the four threaded rods – an expensive and difficult job. Furthermore, after a relatively short working period, the four SPC belts, with a length of 3150 mm, had to be re-tensioned in a 2-week cycle as the pump output was no longer constant as a result of belt slippage. The loss of torque due to belt slippage also generated a great deal of heat, which led to premature belt wear and failure. Anglo-Amandelbult showed interest in the automatic slack com-

ensation provided by the ROSTA Motorbase, as more than 70 centrifugal slurry pumps of this kind were operating in the mine in Rustenburg.

Installation of the automatic ROSTA Motorbase Type MB

For the suspension of the D 280 M drive motor, OVMC selected a ROSTA Motorbase MB 70 x 550 whose motor plate bores were designed for the D 280 M motor frame size.



The conversion was carried out with the help and support of a maintenance crew from the Anglo-Amandelbult mine. After lifting the 625 kg motor, the adjustable frame was removed.



Two U-shaped profiles were then welded onto the substructure in order to fit the side supports for the ROSTA Motorbase. The installation of the motorbase could then begin.



After the short installation period, the D 280 M motor was bolted onto the motor plate of the ROSTA Motorbase. Following this, the exact alignment of the belt pulleys had to be set up **once only** using a laser system. The four SPC Vbelts were then

positioned on the pulleys and the tensioning process could be started with the help of the two pre-tensioning devices integrated into the motorbase.



OVMC carried out the tensioning of the belt according to the guidelines of the belt manufacturer, paying particular attention to the compliance with the test force set up at the installation

using an infrared measuring instrument. The bolts of the friction plate were tightened one after the other and the belt cover was replaced.



Hendrik, the installation foreman, was amazed by the smooth start-up of the centrifugal pump drive and, after a few minutes of running, measured the heat generated at the belt cover – there was not the slightest increase in temperature as a result of heat generation due to belt slippage!



Manie du Preez, General Manager of OVMC is pleased about the smooth functionwise of the ROSTA-Motorbase.

Customer benefits using the self-adjusting ROSTA motor base

- No periodic and time consuming belt elongation compensation by the maintenance team is required = **automatic compensation of the belt elongation!**
- No appearance of energy-absorbing, excessive belt slippage = **Energy saving of up to 20%!**
- Constant transmission of the required drive torque for the pump = **no reduction in the pump capacity!**
- Longer lifetime of the belt sets due to slippage elimination = **the belts will not overheat and fail prematurely!**
- The belt sets can be changed within minutes = **the parallel running of the belt pulleys remains constant once adjusted**
- Fastest possible drive handling using the pre-tensioning units = simple raising and lowering of the 625 kg motor = **One-man maintenance!**



ASTECC circular motion screen, supported on ROSTA AB-HD 50-2 elements



ASTEC Type 2516 T screen, with belt loading, suspended on 8 pcs. ROSTA AB-HD 50-2 elements

The **Type 2516 T** mobile circular motion screens of **ASTEC Industries Inc.**, a manufacturing company based in Sterling (Illinois, USA), has now been supported on ROSTA Typ **AB-HD 50-2** oscillating mountings for almost one year. In ROSTA's oscillating mounting designation, **HD** stands for **Heavy Duty**. And that's exactly what the vibratory suspensions in this application have to be, as this self-driven ASTEC screen model is mainly used in rock or ore extraction, where the loading is mostly spontane-

ous using a front loader or mining excavator. The large 3-deck screen with a screen surface area of 1.5 x 4.8 m „swallows“ core sizes up to 600 mm, which corresponds to a weight of approximately 250 kg, and transfers high impact energies to the screen frame in the case of spontaneous loading.

ASTEC Industries Inc. required angle compensation of the individual box inclinations (18° to 25°) from the suspension without any modification to the spring base plates.

Depending on the flow capacity of the material being processed, the machine operator should be able to regulate the screen inclination individually between 18°–25° using hydraulic cylinders, without any modification to the deposition claws of the spring suspension – this is not possible with conventional steel helical springs, while even the interim installation of a rubber hollow spring suspension („marshmallows“) was subject to excessive friction wear by varying inclinations. The ROSTA AB-HD's compensate the angle adjustment range of 7° without any problem.

Customer benefits from ROSTA AB-HD 50 suspensions:

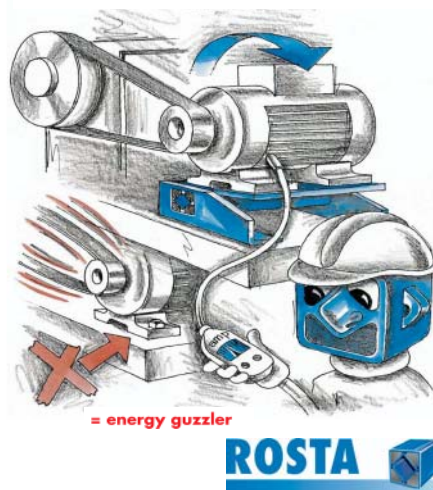
- individual adjustment of the screen inclination without support adaptation
- high „absorption capacity“ of the impact energy by spontaneous loading
- highest vibration insulation of the chassis sub-structure of mobile systems
- linear guidance of the screen box, no lateral wobble
- short, guided transition of the resonance range when stopping the system
- no screen box locking system necessary when moving the system
- corrosion-resistant, maintenance-free, with long service life

Represented by:



Screen suspension on the feed-end side using two AB-HD 50-2 by the maximum inclination angle of 25°

Up to 20 % of energy savings with the self-tensioning Motorbase from ROSTA !



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