

Mobile crushing plants "Made in Altamura", Apulia (IT)



Mobile Crusher FM 9000.20, capacity 200 t/h

Since the early eighties, the **agriworld S.r.l.** company has been producing many kinds of agricultural machines for the local market. In 2005, the management decided to also manufacture equipment for the treatment/recycling of construction waste.

The first contacts for a cooperation with ROSTA were made at the "Samoter" construction machine trade fair in Verona in 2008. On this occasion, **agriworld** exhibited a circular motion screen that was mounted on ROSTA Type **AB-D 45** oscillating mountings. This was the first screen of a complete range of sorting units that were immediately fitted on ROSTA oscillating mountings.



Circular motion screen on AB-D 38

The cooperation between the Italian subsidiary of ROSTA and the screen manufacturer was intensified when the managing director of **agriworld**, Mr. Vitantonio Squicciarini, decided to convert all his screen suspensions from coil springs to ROSTA oscillating mountings. Newly designed machines would also be added to the programme.

In a first phase, the corresponding suspensions of the Blue Ones from ROSTA programme were determined and standardised for all existing screen models.

The second, practical phase entailed the screens with the corresponding ROSTA



Circular motion screen on AB-D 38

suspensions being subjected to an overload test on the factory site, with endurance testing and spontaneous loading.

In the course of this development phase, a mobile crushing plant was also designed for the first time, the **agriworld FM 9000.20**, a unit driven by a 530 hp diesel engine with a proud hourly output of 200 tons of assorted construction waste.

The heavy coarse sieve, or the feed trough for the centrifugal crusher, is driven by two 6-pole unbalanced motors. **agriworld** selected four ROSTA Type **AB-D 45** oscillating mountings for the suspension of the trough, which provided ideal guidance for the loading unit and offered a high degree of isolation efficiency to the sub-frame.



Feeding trough on AB-D 45

The high performance and the great customer satisfaction have intensified the cooperation between **agriworld** and ROSTA S.r.l., and 14 units of the FM 9000.20 mobile crusher have been delivered to customers in the meantime.

“Euroclass” elliptical motion screen “Made in Switzerland”



Ammann elliptical motion screen mounted on AB-HD suspensions

For once, the statement made by the evangelist Lukas that “no prophet finds acceptance in his own country” does not apply!

The **Ammann Schweiz AG** company, a company belonging to the globally active construction machine manufacturer **Ammann Group** (manufacturer of asphalt mixing plants, concrete mixing plants, road compaction machines and material processing plants), has recently decided to use ROSTA oscillating mountings for the suspension of its new “Euroclass” elliptical motion screening machines.

The elliptical motion screens for the grading technology (water separation and grain sorting in the treatment of gravel and sand), which are driven by means of two unbalanced shafts, are mounted on ROSTA **Type AB-HD (Heavy Duty) 50-2** oscillating mountings. The 2-deck linear motion screen with dimensions 5x2.4 metres weighs approximately 9 tonnes with material coupling, and is mounted on a total of 8 ROSTA **AB-HD 50-2**, which offer adequate load-reserve capacity in this configuration (maximum

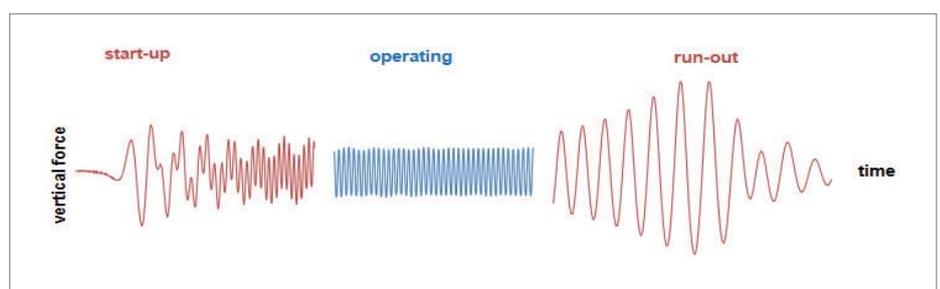
permissible loading per element 1,400 kg = approx. 20% of reserve capacity).

Why Ammann Schweiz AG chose the ROSTA Type AB oscillating mountings for the suspension of its new screen generation:

- The dewatering screens normally work in relatively high plant buildings made out of steel construction, which for cost reasons, should not have too much mass. In order to reduce the transfer of the residual forces to the structure when the screen is running out, Ammann AG equipped the previous ge-

neration of the “Euroclass” screens with motor brakes, which represented an additional cost factor. The ROSTA supports provide optimal **self-damping** when running through the resonance frequency of the suspension, with the result that the remaining energy is completely dissipated after a few oscillations and the screen-box thereby comes to a complete standstill within seconds; the expensive brakes are therefore not anymore required.

- In addition, as the ROSTA Type AB oscillating mountings have a great **lateral stability** compared to helical springs, it was not necessary to fit any side snubbers and/or side-mounted friction absorbers to the new screen models; a further cost reduction.
- Unlike helical springs, ROSTA oscillating mountings can be **directly bolted** to the four bearing supports and the base frame. Neither spring guides nor vibration limiters (e.g. cables) need to be fitted by the manufacturer.
- The isolation efficiency towards the screen base is described as “**very good**” by the manufacturer. Under the afore-mentioned rated load of 1,125 kg, the ROSTA suspensions display a natural frequency of 2.6 Hz, which corresponds to a isolation efficiency of approx. 97% by an interference frequency of 16 Hz.



Typical function behaviour of the ROSTA screen mounts

mounted on ROSTA oscillating mountings type AB-HD 50-2

– The very durable and corrosion-resistant ROSTA suspensions were also able to achieve an additional plus factor for the new “Euroclass” machines in relation to the **downtimes** as a result of spring fractures. Spring fractures and the resulting downtimes of the plant are almost completely excluded with AB suspensions.



Motor for belt transmission installed on ROSTA Motorbase type MB 50x270-2

Ammann Schweiz AG is also relying on **the Blue Ones** from ROSTA for the drive of the two unbalanced shafts of the elliptical exciter. The Swiss manufacturer not only wants to promote the freedom from maintenance of the screen suspension of his classifier as a breakthrough, but also wants to ensure that the belt drive will never be the cause of downtimes for the plant. The 22 kW, 4-pole drive motor (frame size 180 L) has therefore be mounted on a **self-adjusting** ROSTA Motorbase **Type MB 50x270-2**.

The ROSTA Motorbase continually compensates the belt elongation and thereby prevents **energy-wasting** slippage on the belt drive. In addition, the regular re-tensioning of the belts by maintenance personnel becomes completely unnecessary. Once fitted, the Motorbase ensures the ideal tension of the transmission belts over the complete service life. When starting up the large inertial masses (unbalanced shafts), this elastic motor suspension protects the carcasses from over-stretching, in that they permit short-term slippage for a few initial rotations, until swivelling back to their working

positions, once the inertial mass has been overcome.

ROSTA Motorbases are:

- **energy-saving**, they prevent belt slippage
- **belt-friendly**, they offer a short-term start-up slippage
- **maintenance-free**, they continually compensate for belt elongation
- **cost-reducing**, maintenance-intensive re-tensioning becomes unnecessary
- **vibration-damping**, they effectively dissipate machine vibrations



ROSTA Motorbase MB 50x270-2



High-performance laundry centrifuge installed on ROSTA oscillating mountings



Centrifuge installed on ROSTA mounts AB-HD

From the viewpoint of economics, the spinning of laundry in large laundries is cheaper and faster than hot-air tumbling. The remaining water is spun out of the laundry items by the large centrifugal force of the hydro-extractor.

In addition to large industrial-sized washing machines, the Spanish company **Tupesa SL** in Cornellà del Terri also produces high-performance laundry centrifuges.

If wet laundry items are loaded into laundry centrifuges evenly and all around the circumference of the drum, the spinning process is relatively smooth. If an accumulation of wet material builds

up in one sector of the drum, however, an immense imbalance of the spinning drum will arise at 1,080 revolutions/minute, which will cause dangerous vibrations in the centrifuge. Improper loading can never be fully ruled out, and occurs on a daily basis in the hectic service operations in hotels and hospitals.

Tupesa has mounted the supporting frame of the laundry centrifuge on two ROSTA Type **AB-HD 50-2** oscillating mountings on the loading side and on two **AB-HD 50** on the drive side. These ROSTA oscillating mountings have a large "absorption capacity" and quieten the uneven running of the



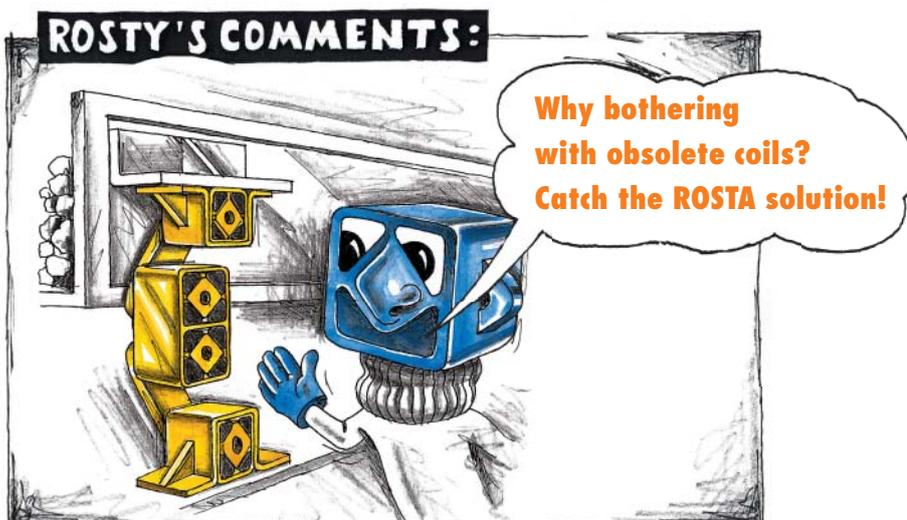
Drive motor for centrifuge installed on ROSTA Motorbase type MB 50x400

spinner centrifuge. Above all during the run-down, when passing through the natural frequency of the suspension, the four ROSTA elements effectively dissipate the resulting vibration amplitude peaks within seconds. Before the installation of the ROSTA vibratory suspensions, **Tupesa** had attempted to dampen down the vibrations of the hydro-extractor with helical spring suspensions, hydraulic shock absorbers and heavy mass compensation – none of which lead to a satisfactory conclusion.

The compact ROSTA solution has tamed the unruly laundry centrifuge!



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