Kleemann │ An all-electric plant train impresses in every respect in Sweden

Cost-efficient and future-oriented

In the coastal region of Stockholm, a construction contractor is taking another step into the future: the entire crushing and screening process is being handled by a purely electrically powered, line coupled plant train from Kleemann consisting of a MOBICAT MC 120 PRO jaw crusher, a MOBICONE MCO 110 PRO cone crusher, and a MOBISCREEN MSC 953 EVO screening plant.

The spectrum of applications it can handle is impressive. As the contractor predominantly processes granite and recycling materials, it is often necessary to adapt the machine settings to cope with the wide range of different feed materials. This is one of the reasons why a complete plant train consisting of three Kleemann machines is now in use. From the jaw crusher, the crushed material with a grain size of 0 – 150 mm is passed to the cone crusher, where, after further crushing to a size of 0 – 60 mm, it finally reaches the mobile classifying screen, which separates it into three fractions with the following grain sizes: 0 – 16 mm, 16 – 32 mm, and >32 mm.

Purely electric – out of conviction

There’s quite a difference to the way the company handled materials processing in the past. Today, the entire plant train is exclusively electrically powered. ‘Our decision to go fully electric was motivated by energy-saving considerations and the desire to reduce emissions’, explains co-owner Freddie Erickson, co-owner of Kentas Last & Schakt AB.

The investment also pays off in financial terms: The company estimates that the operating costs otherwise incurred by diesel fuel consumption are more or less cut by half when using an electric power supply. The procedures are also simpler and save valuable time: no daily refuelling, no warm-up times and, as the electrical systems are more reliable, maintenance tasks are also easier and less complex.

The conditions at the location also confirmed the viability of the Swedish company’s project from a financial and logistical point of view. A substantial six-figure Euro sum was invested in infrastructure measures, including a transformer station and the laying of underground power supply lines. There was no state funding.

Rugged technology for challenging materials

The individual components of the plant train are interlinked by smart line coupling, which, thanks to automated regulation, guarantees a stable process chain from end-to-end. The machines communicate via fill level sensors and autonomously regulate their output: The upstream machine, for example, reduces the feed when the downstream machine reports a high fill level. If an emergency stop is activated anywhere on the train, all machines are stopped simultaneously.

SPECTIVE CONNECT is used for operating on site. It allows machine data and settings to be conveniently viewed and adjusted on a smartphone – safely and efficiently, without having to be present in person directly at the plant.

Pushing the envelope of change

The experience gathered with all-electric operation has been positive across the board. In view of the results, the company in Sweden is already planning the electrification of further machines: ‘We are actively working on the conversion of as many of our machines as possible to electric power. This is clearly the way forward, and we are determined to implement this change across our entire fleet.’

Facts and figures

Plant train (exclusively electrically powered)

* Jaw crusher: MC 120 PRO
* Cone crusher: MCO 110 PRO
* Classifying screen: MSC 953 EVO

Feed material

* Granite
* Recycling material, piece sizes: 0 – 600 mm

Final products (from the classifying screen)

* Fine grain: 0 – 16 mm
* Medium grain: 16 – 32 mm
* Oversize grain: >32 mm

**Photos:**

  
K\_pic\_jr\_MC120PRO\_MCO110PRO\_stockholm\_elektrification\_0042  
The material flow: The Kleemann jaw crusher pre-crushes the material, the cone crusher shapes it, and the screening plant classifies it into two final products and separates out the oversize grain.

  
K\_pic\_jr\_MC120PRO\_MCO110PRO\_stockholm\_elektrification\_Freddie\_Erickson\_0003  
Freddie Erickson, co-owner of Kentas Last & Schakt AB, is convinced: The switch to fully electric operation of the Kleemann plant train was an economically sound decision.

  
K\_pic\_jr\_MC120PRO\_MCO110PRO\_stockholm\_elektrification\_0027  
The Kleemann plant train at work: Thanks to smart line coupling, production runs smoothly and without disruptions.

  
K\_pic\_jr\_MC120PRO\_MCO110PRO\_stockholm\_elektrification\_0002  
First of all, the plant operator had to invest in the installation of a transformer station and the necessary power supply lines. As soon as the infrastructure was in-place, the all-electric Kleemann plant train began to pay its way in many respects.

Please note: The photographs shown here are only previews. If you wish to publish them in other media, please download the higher resolution (300 dpi) versions from the link provided here.

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