BRUKS Siwertell
BULK HANDLING & WOOD PROCESSING



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MANOEUVRING OPTIMISATION SYSTEM (MOS)

MOS SYSTEM

Siwertell units have a fixed pendulum range for the vertical arm, and preset speeds for luffing, pendulum and travelling. The Manoeuvring Optimisation System (MOS) will improve the operation and lifte time of those machines. The system is designed to help the operator run the ship unloader with a high continuous capacity, without applying unnecessarily high digging forces.

DESCRIPTION

High digging forces increase wear andpower consumption and the risk of overload. The slewing motion and the travelling motion (as applicable) are continuously compared with the maximum allowed digging force, actual capacity and capacity requested/set by the operator. The optimal speed is then set automatically.

In this way, even if the operator demands full slewing speed, the actual speed will not exceed what is needed to keep the requested capacity. The system will also ensure that the maximum accepted digging force (tension in the arm) is not exceeded.

BENEFITS

This system is developed to:

- control critical forces applied to the Siwertell structure
- optimise the capacity and manoeuvering of the unloader
- improve the control & capacity of the inlet device
- extend the working range at certain conditions

By installing the MOS system, overall operation is optimised. The machine can partly work in a wider range than originally designed for (i.e. outside the plus/minus 30 degrees) as the exact loads are measured and the travelling/slewing speed is adjusted accordingly. Another benefit of the system is that it includes an updated version of the inlet speed control system with a new control logarithm and a new graphic display. The capacity can be set and kept more accurately than before.
As an option it is also possible to have different settings (capacity/digging force/motion speed parameters) for different material qualities. The relevant material is then easily selected on the screen. All information can, as an option, also be linked to an HMI/maintenance software.

SCOPE OF SUPPLY

- A new tension detector is installed on the vertical conveyor steel structure.
- The existing PLC programme system is updated.

- A new separate PLC* for the Manoeuvering Optimisation System is installed.

The complete system runs on this new PLC, which also comes with a new graphic display (MAC 700) where the values of capacity, inlet feeder speed, vertical motor load, slewing speed, structure tension, travel speed (on rail-mounted Siwertell units) and selected material to be unloaded are displayed.

The complete system is installed in a cabinet that will be fitted into the existing switchgear compartment

-New signal cables between the New PLC and the new sensor are installed
-Updated maintenance and operation manuals.

*) On some Siwertell units the existing PLC can be used.