

TKF boost for Duisburg coke plant

In December 2009, ThyssenKrupp Fördertechnik TKF handed over the new Kohlelogistik to its client, HKM Hüttenwerke Krupp Mannesmann at Duisburg. The coke oven plant, built in 1984 for the production of about 1.1m tonnes of coke per year, has now been equipped with a new belt conveyor and storage system which will allow the supply of coking coal to the coke oven plant to reach over 2.3m tonnes of coke per year when it is in automatic operation.

Previously the coke oven plant had been supplied with coking coal directly from the producer or from the plant's own port via rail delivery to the pit bin at the old stockyard. There, stacking of the piles was carried out by means of a simple belt conveyor system and wheeled loaders. For reclaiming from the piles, once again use was made of the wheeled loaders, which fed the coal onto the discharge belt conveyor.



The new coal logistics arrangement consists of a TKF grab crane installed in the port for barge unloading, a stockyard with a fully automated slewing stacker and two fully automatic portal scraper reclaimers, as well as a pipe conveyor and connecting belt conveyors. In parallel, it will also be possible to supply the new coal stockyard via the existing coal delivery by rail, and combining different handling and transport routes in the plant.

In addition to the coal supply to the stockyard, there is the possibility of an emergency ore unloading from the port conveyor via the transfer tower ET001 onto the existing belt conveyor for ore TB18. The system also allows for the supply of coal to HKM's new pulverized-coal injection plant arranged at the rear by making use of the port conveyor running in the reverse direction.

Liebherr launches Pactronic drive

Liebherr has announced the industry's first hydraulic hybrid drive for mobile harbour cranes. The new Pactronic- hybrid drive system addresses two critical issues: increasing handling performance and reducing fuel consumption. The Liebherr Pactronic is a new hydraulic hybrid drive system, characterised by an energy storage device. A hydraulic accumulator supplements the fluid pump in delivering power to the system. It serves as a pressure storage reservoir incorporating a gas in conjunction with a hydraulic fluid. Energy is stored in this compressed gas to be released upon demand.

The Liebherr Pactronic is also a power booster. Hoisting as well as lowering speeds are increased substantially, without the need to go for a bigger diesel engine with more output. Thus the crane's efficiency reaches new levels with higher turnover figures. In addition, the crane's fuel consumption is significantly reduced. This is achieved by fully utilising the reverse energy and surplus power within the system.

"We believe Pactronic is one of the most important innovations we've come up with to date," said Dr Klaus Schneider, Director Drive Systems. "Pactronic delivers customers a level of handling performance and power efficiency never seen before."

The conventional, hydrostatic hoist system of a Liebherr mobile harbour crane is driven by a hydraulic motor, a pump and the prime mover (diesel or electric engine). With Pactronic a secondary energy source is added to the drive system. Charging of the accumulator is done by regenerating the reverse power while lowering the load. In addition, the surplus power of the primary energy source is also used for charging.

The stored energy of the accumulator is transferred back to the system when the crane requires peak power during hoisting. Consequently, the total hoisting power is the sum of the conventional hydrostatic power and the secondary energy, provided by the accumulator. The accumulator is based on proven energy storage technology and has a designed service life equal to the crane. For increased efficiency, Pactronic allows fast charging and discharging of the accumulator. The system is virtually maintenance free and is not affected by ambient temperature. The accumulator just needs visible inspections every 10 years and in addition, it is 100 percent recyclable.

Pactronic is most useful in situations where peak power is required, such as dedicated bulk handling. In comparison to Liebherr mobile harbour cranes with a conventional drive system and identical turnover (t/hr) the Pactronic hybrid version needs 25 – 35 percent less fuel depending on the crane's operation mode. In the current challenging economic times, it is important that large hybrid energy developments such as the Liebherr Pactronic continue for sustainable carbon emission reductions.

New OMC office to benefit bulkers

OMC International has opened a new office in South America in a bid to help make the region's ports and waterways more efficient and safer by introducing UKC management technology to the shipping industry, particularly for bulk carriers.

Executive Director Dr Terry O'Brien said Melbourne-based OMC's award-winning navigation technology could help boost South American trade because it allowed vessels to carry more cargo while ensuring safe navigation through shallow, draught restricted waterways.

"A challenge for many South American ports is the limited depths in the access channels as well as a coastline exposed to swell waves that can generate significant wave induced vessel motions," Dr O'Brien said.

OMC is presently working closely with Austrade to strengthen the likelihood that the regulators will install our DUKC technology for the clear benefits it offers the economies of South America.

"This new office demonstrates our confidence in, and long-term commitment, to developing this very appropriate market for Australia's DUKC technology. OMC has already shown that there are significant opportunities for major cost savings in operation and reduced grounding risk at one major South American port."

This expansion plan follows the opening of a United Kingdom office in 2008 which has helped OMC promote its DUKC systems and support its European installations, including Lisbon and four ports along the Weser River waterway in Germany. DUKC is in 19 ports worldwide, including most major Australian ports.