

CUSTOMER VOICE



Marotechniek

Allies in the search for gold

HÄGGLUNDS 

BOSCH REXROTH SUPPLIES HÄGGLUNDS DRIVES FOR CUTTER-SUCTION DREDGER

A top choice for deep dredging



The cutter-suction dredge under construction by ROHR-IDRECO features seven Hägglunds-powered winches.

Bosch Rexroth Netherlands looks set to play a role in gold mining in the near future. The company has supplied seven Hägglunds drive systems to Marotechniek, a winch manufacturer. The drives will power seven winches in an electric cutter-suction dredge on a vessel owned by a Colombian gold mining company. The vessel is under construction by ROHR-IDRECO, a specialist builder of deep-digging dredgers.

Fulco Vrooland was delighted to receive the order for an electric cutter-suction dredge from Colombian company Mineros Aluvial. “A ship like this appeals to the imagination,” explained ROHR-IDRECO’s CEO. “Mineros is a world-class player in gold mining, so we are honoured that this multinational company has entrusted us with the task of building such a crucial component.”

That crucial component is a large electric cutter-suction dredge, designed for dredging bottom sediments as part of the gold mining process.

EXCAVATION DEPTH OF 28 METRES

The dredge has a maximum excavation depth of 28 metres and an output capacity of 270 cubic metres per hour. The dredging vessel has an overall length of 53 metres and a beam of 8.6 metres, and weighs approximately 255 tonnes. A sizeable build, in other words.

“The seven hydraulic winches in the cutter-suction dredge ensure the vessel and the ladder are correctly positioned,” explained Vrooland. “This releases enormous forces, so the winches have to be extraordinarily strong. The drive system obviously plays a major role.

As our clients at Mineros were big fans of Hägglunds drives, we asked Marotechniek, our winch manufacturer, to supply Hägglunds-powered winches. Marotechniek in turn contracted Bosch Rexroth.”

HÄGGLUNDS DRIVES FOR PERFECT CONTROL

Michel Maat, an engineer at Marotechniek, is business manager for this project. From the

outset, he found Mineros’ preference for Hägglunds drives a logical choice. “They build fully hydraulic winches. Considering the power required, you soon settle on Hägglunds drives, which connect directly to the winches with no gearbox involved.

“The biggest advantage of Hägglunds drives is lower inertia”

The biggest advantage of this is lower inertia. As a result, the winches immediately come to a stop when necessary. Unlike other motors, Hägglunds drives don’t turn a few additional revs. One revolution of the motor really equals

About ROHR-IDRECO

ROHR-IDRECO Dredge Systems designs and produces premium-quality deep-digging electric dredging vessels and equipment, primarily for the mining and dredging industries. ●

About Marotechniek

Marotechniek builds and supplies high-quality winches, dredge pump drives, mechanical and electric drive systems, controls and custom solutions for the dredging, maritime, offshore and manufacturing sectors. ●

one revolution of the winch. This means the winches can be adjusted very precisely – perfect for controlling the cutter-suction dredger, to stop it hitting the bottom, for instance.”

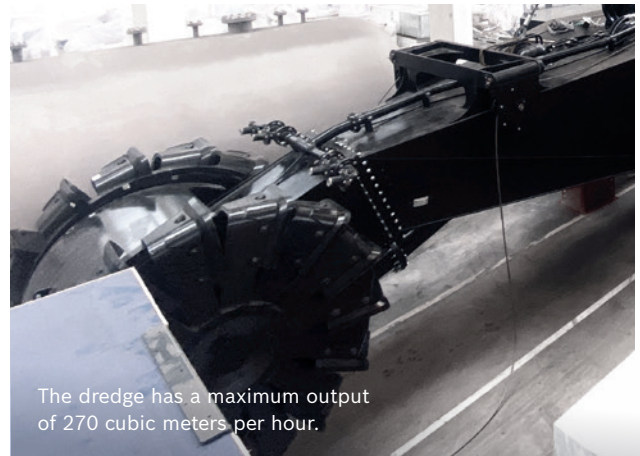
MANY ADVANTAGES

Account manager Jeroen Oude Smeijers is overseeing Bosch Rexroth’s involvement in the project. According to him, Hägglunds drives have many advantages besides lower inertia. “Because they are direct-drive motors, they have very high volumetric efficiency: 98 per cent. What’s more, a Hägglunds drive has a much higher starting torque than an electric motor with a gearbox. Any load peaks on the cables are also absorbed relatively easily because the oil is fairly compressible and has a damping effect.”

But that is not all, said Oude Smeijers, pointing to the power density and reliability of Hägglunds drives, which are developed and built in-house by Bosch Rexroth in Sweden. “Electric motors often take up much more space because of the gearbox,” he explained. “We install Hägglunds drives right next to the winch drum, saving lots of space – which is perfect given the limited deck area available on a ship. Not to mention reliability: these drives can go fifteen to twenty years without problems and without servicing. An electric motor with a gearbox may be cheaper up front, but is also much more service-intensive. The uptime of Hägglunds drives is a decisive factor.”

SUCCESSFUL WORKING RELATIONSHIP

The electric cutter-suction dredger was delivered to Colombia in late 2020, and commissioned early in 2021. At Marotechniek, they are already reflecting on a successful working relationship with Bosch Rexroth. “This is not the first time we have called on Bosch for their services and expertise,” said Maat. “Where



The dredge has a maximum output of 270 cubic meters per hour.

drive systems are concerned, they know their stuff better than anyone. What’s more, they have the ability to contribute ideas at all levels, which means some nice interaction for us as engineers. Another thing I really appreciate about working with Bosch is the company’s tremendous dedication. You get the sense that their employees also think this is a great project – it’s not just a question of ‘fire and forget’. That’s not something you find everywhere in our industry.”

“Mineros are impressed by the quality of what we’re building”

Although ROHR-IDRECO has been dealing mainly with Marotechniek in the course of the project, Vrooland also praised the role played by Bosch. “During the project an inspector from Mineros was at the production location to check up on progress. He was very impressed by the quality of what we’re building. Thanks to Bosch, we were able to meet their express requirement for Hägglunds drives. This dredger is the product of great working relationships with all our suppliers and their subcontractors.” ●