Job Report

Duty Cycle Crawler Crane
HS 8130 HD in Dredging Application

"The handling of the HS 8130 HD is extremely smooth and precise. This contributes immensely to the fact that, so far, the work has progressed according to plan."

Yann Blouet,
Crane Operator, S.E. Levage

LIEBHERR

Situation

The filter grids in Lago di Luzzone, a reservoir in the Swiss canton of Ticino, have to be freed of deposited sediments. At depths of up to 200 m, a total of 125,000 m³ of material has accumulated in close proximity to the power station in Olivone. A yearly average of 180 million m³ of water flow through the turbines of the Olivone power station and consequently warrant approximately 234,000 MWh of energy. The same water subsequently flows on to the Biasca power station which produces 304,000 MWh of electricity per year. A decelerated and impaired flow of water from the Lake Luzzone reservoir would not achieve this amount of electricity.

Task

A duty cycle crawler crane of the type HS 8130 HD had to be transported to the high altitude reservoir at about 1,600 m above sea level. This imposed an immense challenge for Liebherr, S.E. Levage the French owner of the crane, as well as the transport company JMS Risi AG. On the way to its jobsite the duty cycle crawler crane did not only have to negotiate numerous hairpin bends but also pass through two narrow tunnels and cross a 225 m high dam. Furthermore, shortly before transportation the road had to be cleared of fallen rock.

In order to pass through the two narrow tunnels the duty cycle crawler crane had to be transferred to a smaller carrier shortly before its destination. Due to the extremely limited amount of space the uppercarriage and the undercarriage of the duty cycle crawler crane were delivered separately. Thus, the basic machine's low transport weight of only 51 tonnes and the maximum transport width of a mere 3.5 m were an enormous advantage.

Solution

The assembly was carried out directly on the shore of the reservoir with the aid of a Liebherr mobile crane. Subsequently the duty cycle crawler crane was driven onto and mounted on a barge, which was also assembled on-site. Thanks to its robust design the Liebherr duty cycle crawler crane is ideally equipped for the dynamic forces which especially influence the uppercarriage in dredging operation. The HS 8130 HD has two hydraulic free-fall winches with 35 tonnes line pull each. Through its sophisticated hydraulic system the HS 8130 HD convinces with low fuel consumption of a mere 35 litres per hour.

In order to carry out the dredging work the HS 8130 HD is equipped with a mechanical clamshell bucket from Negrini, which was specially produced by the Italian manufacturer for this specific assignment. Thanks to its large filling capacity of 10 m³, an average hourly handling performance of about 130 m³ can be achieved.

It is anticipated that the duty cycle crawler crane will be operating on the high altitude reservoir in the Swiss Alps, between April/May and October, for three years.

Technical Data: HS 8130 HD – Dredging

Engine power:	505 kW/677 hp	Max. boom length in grab operation:	38 m
Max. lifting capacity:	130 t	Operating weight:	116 t
Max. winch line pull:	2 × 350 kN	Clamshell bucket:	10 m³

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