

PRESS RELEASE

Freestanding at 100 meters: WOLFF cranes are constructing a high bridge over the Neckar Valley

Horb – July 2024. **When completed, this impressive 667-meter-long and up to 90-meter-high bridge will span the Neckar Valley near the small town of Horb in Baden-Württemberg. Thanks to this new bypass, traffic in the center of Horb will be alleviated and the region's transport infrastructure will be upgraded. But until then, there will be plenty to do for the Porr GmbH & Co. KGaA construction company and the five WOLFF cranes that are in use at the enormous construction site. Their figures are also impressive: Two freestanding WOLFF cranes are operating on 96.4- and 100.9-meter-high towers – a structural challenge for the Wolffkran team.**

At present, the two WOLFF 7534.16 Clear cranes are drawing a lot of attention in the Neckar Valley: Both are around 100 meters high and tower over the first 70-meter elements of the new viaduct. Since the fall of 2023, they have been moving heavy freestanding steel components, formwork, reinforcements, and concrete buckets. With their 75-meter jibs, they can lift a maximum of 16.5 tons and 3.4 tons at the top (4-strand operation). “This is normally not possible with a freestanding crane,” explains Wolfgang Kavelius, Sales Manager at Wolffkran GmbH. “But the special design of the bridge piers meant that no tie-ins could be used, or they would have been disproportionately complex and expensive.”

The technical WOLFF team makes it possible

For this reason, Porr turned to the technical support team at Wolffkran, which not only developed a suitable crane concept, but also a special structural solution for the two Porr-owned WOLFF cranes. “To ensure the necessary stability, the towers were assembled using three different tower elements,” explains Peter Hegenbart, Head of Sales Project Engineering at Wolffkran GmbH. The lower third of the towers is formed by the TV 33 tower element with a side length of 3.3 meters. Above this is a transition area composed of tower sections with a side length of 2.5 meters, which leads into the upper half of the tower made of 2x2-meter tower sections (TV 20). “This specialized structure makes it possible to limit the maximum tower deformation to well under two meters, thus allowing the cranes to be operated safely as freestanding units,” says Hegenbart.

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“Thanks to Wolffkran’s experience and technical expertise, we can use our own WOLFF 7534 Clear cranes as planned. This also allowed us to simply rent the additional 3.3-meter tower elements we needed for the project. We appreciate this flexibility, which goes above and beyond the normal standard, from our long-standing partner Wolffkran,” says Markus Jahn, Project Manager at Porr.

Two-stage assembly in the narrow Neckar Valley

In the inaccessible terrain of the Neckar Valley, which is also traversed by an ICE railway line and a cycle path, the available space is very limited, which makes the construction site logistics particularly challenging. Because it was not possible to use a sufficiently large mobile crane to erect the two WOLFF 7534.16 Clear cranes to their ultimate heights, the assembly was carried out in two stages. After the mobile crane had assembled the tower to a height of around 60 meters, the cranes climbed the remaining 40 meters to the top using an external climbing mechanism. For space reasons, both cranes were placed on foundation anchors. As construction progresses, the complex assembly process, which takes two days per crane, will have to be repeated, as one of the two cranes will be moved to follow the progress of the expanding bridge.

The WOLFF 7534.16 Clear are currently being supported by a WOLFF 6031.12 Clear with a 65-meter jib and a 47.3-meter hook height. As the construction process moves forward, a WOLFF 7534.16 Clear and a WOLFF 6031.12 Clear from the Porr crane fleet will support the pack.

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Specifications for crane configurations used on site:

WOLFF	Crane base	Jib radius, m	Hook height, m	max. lifting capacity/peak load capacity, t
7534.16 Clear	Foundation anchor	75.0	100.90	16.5 / 3.4
7534.16 Clear	Foundation anchor	75.0	96.40	16.5 / 3.4
7534.16 Clear	Foundation anchor	75.0	84.40	16.5 / 3.4
6031.12 Clear	Cross frame element	65.0	47.30	12.5 / 2.9
6031.12 Clear	Foundation anchor	65.0	42.00	12.5 / 2.9

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WOLFFKRAN is a leading manufacturer of premium quality tower cranes with a tradition spanning over 170 years. With its own rental fleet of some 750 tower cranes it is also one of the largest crane rental businesses in the world. WOLFFKRAN is headquartered in Zug, Switzerland and has manufacturing sites in Heilbronn and Luckau, Germany. It currently employs a global workforce of approx. 860 people in its two manufacturing sites and its sales and service subsidiaries located across Western and Central Europe, the Middle East and the United States.

PRESS RELEASE – Pictures and captions

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Can't do it? No way! Because tie-ins on the bridge piers would have been too expensive, Wolffkran calculated a special static for the two WOLFF 7534.16 Clear cranes, which are around 100 meters high, so that they can operate freestanding at this height and utilize their full potential.



Space is at a premium here, which is why the construction site logistics are complex and the cranes had to be assembled in two stages. As construction progresses, one of the two WOLFF 7534.16 Clear cranes will be relocated again.

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Porr and Wolffkran are long-standing partners. The construction company owns a large WOLFF pack. The rental of additional components, the production of special parts, and special static calculations are all part of Wolffkran's service portfolio.