

## Hydraulic cylinder in a class of its own



Photo: Hunger

Exactly one year after the supply contract was signed with the customer, a huge hydraulic cylinder leaves the Hunger factory in Lohr am Main and is on its way to the end customer in Shanghai. Although Hunger has manufactured hydraulic cylinders of similar size in the past, the engineering, material procurement and production of this 200 t hydraulic cylinder presented a special challenge. All materials for the hydraulic cylinder were specially produced according to the specifications of our engineers, whereby the largest components, such as the cylinder tube and piston rod, each had to be welded together from several parts. The raw parts simply could not be manufactured in one piece. From a technical point of view, the hydraulic cylinder meets the most modern standard in cylinder construction. The piston rod is protected against corrosion and wear by a combined laser-ceramic coating, low-friction seals ensure smooth running, and the spherical plain bearings for mounting the hydraulic cylinder are designed to be maintenance-free. A hydraulic safety block ensures that the hydraulic cylinder can safely support the load under all circumstances, even if a hose line bursts or other malfunctions occur in the system. All these components and technologies were manufactured within the Hunger Group.

With its technical data of 1,400 mm piston diameter, 15,800 mm stroke, a total length of 23.5 m and a maximum pressure force of 3,000 t, the hydraulic cylinder is one of the largest in the world. The hydraulic cylinder is used on an offshore platform, where it moves an approximately 140 m long crane-like boom.

With a small farewell party the Hunger team celebrates the successful completion of this 200 ton heavy hydraulic cylinder. With beer and bratwurst, the employees once again shared their experiences they had made in the development and production of this cylinder.



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First the heavy duty transporter transported the 200 ton hydraulic cylinder the 2 km distance from the Hunger factory site to the landing pier in Lohr am Main. The enormous weight of cylinder is distributed over 22 individually controllable and height-adjustable axles. After the heavy duty transporter had manoeuvred itself into the work shop, the hydraulic cylinder was lifted by means of a hydraulic lifting frame and the trailer could drive under the cylinder.





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Before the transport to the 2 km away landing stage in Lohr am Main could start, a traffic sign and some lanterns first had to be dismantled and the road had to be closed off completely. Then the transport started on time at 11.00 PM.

The heavy transport sets in motion and has to master a 90 degree curve at the factory entrance. There is only a few centimetres of room for manoeuvre on each side, but the experienced specialists mastered this task with success.

Then we went on to the next bottle neck, the old river Main bridge with a clearance height of only 4.06 m. The cylinder on the heavy-duty transporter was exactly 4.00 m high. But this task was also mastered thanks to hydraulic height adjustment of the heavy-duty trailer. On the landing stage, a 180 degree U-turn was then driven again and the hydraulic cylinder has reached its stage goal for this night.



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For loading into a barge, two 500 ton mobile cranes were available. After the heavy-duty transporter had positioned itself directly in front of the cranes, they began lifting the hydraulic cylinder on time at 11.00 AM. Seemingly effortlessly, it floated between the cranes and was finally lowered into the ship's hull. When the hydraulic cylinder was set down, the 750 t barge sank by 40 cm.

Afterwards, a box with assembly and spare parts was lifted onto the cylinder and attached there. Already at 12.00 o'clock the ship could leave in direction Antwerp in Belgium. At the end of this project, the management would like to express special thanks to the employees who have made this success possible with their professional skills, ideas and commitment.



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