

# LASER-BASED CONTROL OF FORK POSITIONING IN HIGH-BAY WAREHOUSES

INTRALOGISTICS

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LAP LINE LASER XtrAlign HY  
AT THE STILL FM-X 20 HD REACH TRUCK

**STILL**

**LAP**  
LASER

“The laser-based position control provides drivers with additional visual support especially when picking up loads at great heights.”

**FRANK KRAHWINKEL,**  
Customer Options – CDWRS, Product  
Development Warehouse Reach Truck,  
STILL GmbH



## THE PROJECT

Whether in high-bay warehouses, logistics centers or cold stores – storing and retrieving loads of up to 2000 kilograms at heights of 13 meters in the smallest of spaces requires the highest level of precision. STILL, a leading provider of intralogistics solutions based in Hamburg, found an effective solution: On customer demand, STILL realized a laser-based position control for the FM-X 20 HD reach truck, which gives additional visual support for truck drivers. The laser positioning system was implemented with robust line laser technology from LAP. The laser allows precise alignment of the fork arms at the target position. It enables drivers to pick up pallets even more safely and quickly especially at great heights. Combined with a camera system, the laser technology contributes to increased safety in the logistics operation and helps avoid damage to goods.

## THE APPLICATION

The HY positioning laser from LAP is mounted on the fork carriage between the fork arms and projects a horizontal green laser line, which is visible on the forks and the load carrier. The laser line thus serves as a visual reference for the driver to precisely position the fork arms at the target height. A camera installed on the inner side of the fork transmits the situation to a terminal in the cab. Even without the fork arms being visible, drivers can see clearly on the monitor whether the exact position has been reached to pick up a pallet, also at great heights. This avoids unnecessary maneuvering and the risk of the driver bumping into the load carrier and possibly damaging goods. By means of a height sensor, the laser automatically activates from a height of five meters. Alternatively, the driver can turn the line laser on and off by hand at the preset lift height.

## THE TECHNOLOGY

For implementation on the FM-X 20 HD, STILL chose the XtrAlign HY positioning laser with a green laser source and a power output of 15 mW. The robust line laser technology offers many benefits for harsh warehouse environments. The stainless steel housing is sealed against water and dust in accordance with IP67. With IK10, the laser also fulfills the highest degree of protection for shock resistance to guard the laser source against external mechanical impacts. The green laser lines are clearly visible even against dark backgrounds. The laser diode also has a service life of over 30,000 hours and the laser is inherently maintenance-free. Furthermore, the optics are manually focusable so the laser can be set to specific customer requirements, e.g. fork length, during installation in high-bay warehouses.



Line laser from LAP on the STILL FM-X 20 HD reach truck. Lifts loads of up to 2000 kilograms to heights of 13 meters at speeds of up to 0.50 m/s.

### THE BENEFITS

The precise load pick-up in high-bay warehouses, logistics centers or cold stores reduces time and costs and increases safety:

- Enhanced safety in logistics operations
- Higher efficiency through faster pallet handling
- Minimization of risks, such as damage to goods



The XtrAlign HY positioning laser with a green laser diode is mounted between the fork arms on the fork carriage.



Full view of the situation: Drivers can see on a monitor when the exact target position has been reached.



The clearly visible laser line precisely shows drivers at which height the fork arms need to move into the pallet's forklift pockets.



## ABOUT STILL

STILL offers customized intralogistics solutions, and implements the intelligent teamwork of forklift trucks and warehouse technology, software and services. The achievement created by the Company's founder Hans Still in 1920 through a large amount of creativity, entrepreneurial spirit and quality quickly developed into a strong brand well-known throughout the world. Today around 8,000 qualified staff in research and development, production, marketing and service are involved for the sole purpose of fulfilling customers' needs throughout the whole world. The keys to the company's success are highly efficient products ranging from sector-specific complete offers for large and small enterprises to computer-assisted logistics programs for efficient warehouse and materials flow management.

[www.still.de](http://www.still.de)

## ABOUT LAP

LAP is a worldwide leader in the field of laser-based systems for projection and non contact measurement. For more than 30 years, LAP has developed, manufactured and distributed laser measuring systems, line lasers and laser projectors for industry and medicine. Numerous international industrial corporations rely on the precision technology Made in Germany for improvement of the quality of their products and the effectiveness of their production processes.

[www.lap-laser.com](http://www.lap-laser.com)



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