



Optimized Efficiency and Performance in the Long Goods Warehouse

THE ML SERIES MULTI-DIRECTIONAL SIDELOADER



Proven multi-talent:

POWERFUL, MANOEUVRABLE, SPACE-SAVING



Manoeuvrable, powerful and compact - the ML SideLoader is based on decades practical application experience and the use of well proven standard components. These principals are the basis of the new ML Sideloader that guarantee flexible use, reliable continuous operation and a long service life.



**Robust:
Vehicle frame & mast extension**

The SideLoader is erected on a two-part vehicle frame consisting of a main and U-frame assembly. Both frames are joined together with a special abrasion-resistant central pins so that they can move independently of one another. This hinged joint permits unevenness in the floor to be reliably negotiated. In this manner constant floor contact is ensured. The ML Series SideLoader can also be equipped with cushion tires for operating on uneven surfaces or rough floors.

Parallel-movement extension cylinders are responsible for extending the mast. This ensures a smooth and jolt-free movement of the mast. A special plus factor of the vehicle is the automatic speed control end dampening at both end positions of the mast extension.

**Economic drive system:
Powerful and energy-saving**

The up-to-date, high performance ~AC technology controls used to power the two 7.5 kW drive motors, provide high acceleration and speed with maximum torque and power efficiency.

~AC technology also controls the internally geared hydraulic pump. The pump operates extremely quiet while operating efficiently. The control system recovers energy when decelerating or lowering the forks. Providing longer operational cycles without recharging or changing batteries.

Also safe for outdoor operation, the low maintenance enclosed design of the motors provides protection from moisture and dirt.

The double load wheels fitted close to the front edge of the vehicle provide exceptional stability. The steering system operates with two dynamic hydraulic motors.

**Reliable
Multi-directional control**

The optimized and matched multi-directional controls coordinate the steering movements of the four wheels. This innovative design permits particularly precise traveling and positioning control of the vehicle.

Various programmed steering movements can be selected in the length-wise or traverse travel directions.

- * All-wheel steering
- * Rear axle steering
- * Circular steering
- * Parking
- * Diagonal steering
- * Front axle steering

To reduce the amount of cabling and increase the functional safety the steering components are linked together via CAN-BUS.



**Practical
Information & service terminal**

The display of the onboard computer is integrated into the steering console.

The unique steering wheel support allows the operator to view all necessary and vital information at a glance: travel speed, wheel setting and steering program selection.

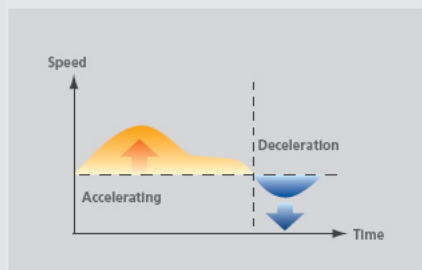
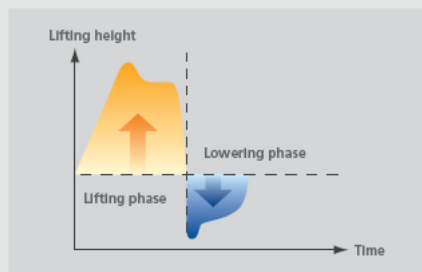
Service information can also be displayed such as: maintenance intervals, battery display, operating hours.

The improved ergonomics and the plus factors of comfort and safety ease the work and increase the productivity.

**Economical
More power - less downtime**

With the ML Series Sideloader every lowering and braking process is used to recover energy.

- * Longer operating times without recharging
- * Smaller batteries
- * Higher efficiency



**Relaxing
User-friendly, ergonomic cab**

Working with the ML Series Sideloader can be really enjoyable. Control elements and displays are clearly arranged and easy to reach. The workstation has been designed with lots of space and freedom to move. Macrolon panels provide good visibility on all sides as well as safety for the driver.

The spacious cab and the comfortable, multi-adjustable seat ensures a fatigue-free work environment. The console, steering wheel and arm supports are ergonomically matched to the operator position. Self explanatory symbols simplify the operation. The low access transverse cab provides rapid entry and exit.

Modern, efficient warehouse technology requires innovative solutions which are individually matched to the respective transport tasks and spatial conditions.

- * Powerful drives
- * Low base leg height
- * Ergonomic cab
- * Precision hydraulics
- * Flexible modular system
- * Energy recovery

Safety through stability **Distortion-free lifting**

Static and dynamic distortions are minimized with the torsion resistant mast in connection with the vehicle frame. The wide mast frame and deep insertion overlapping channels supported by over-sized rollers provide stability at greater heights by reducing mast sway and deflection.

The fork tilt feature adds additional flexibility to this all around vehicle. A wide choice of fork carriage variations is available.

Flexibility through know how **The Optimum Solution**

Years of system experience and a broad spectrum of application know how is provided to the customer with individual advice and planning.

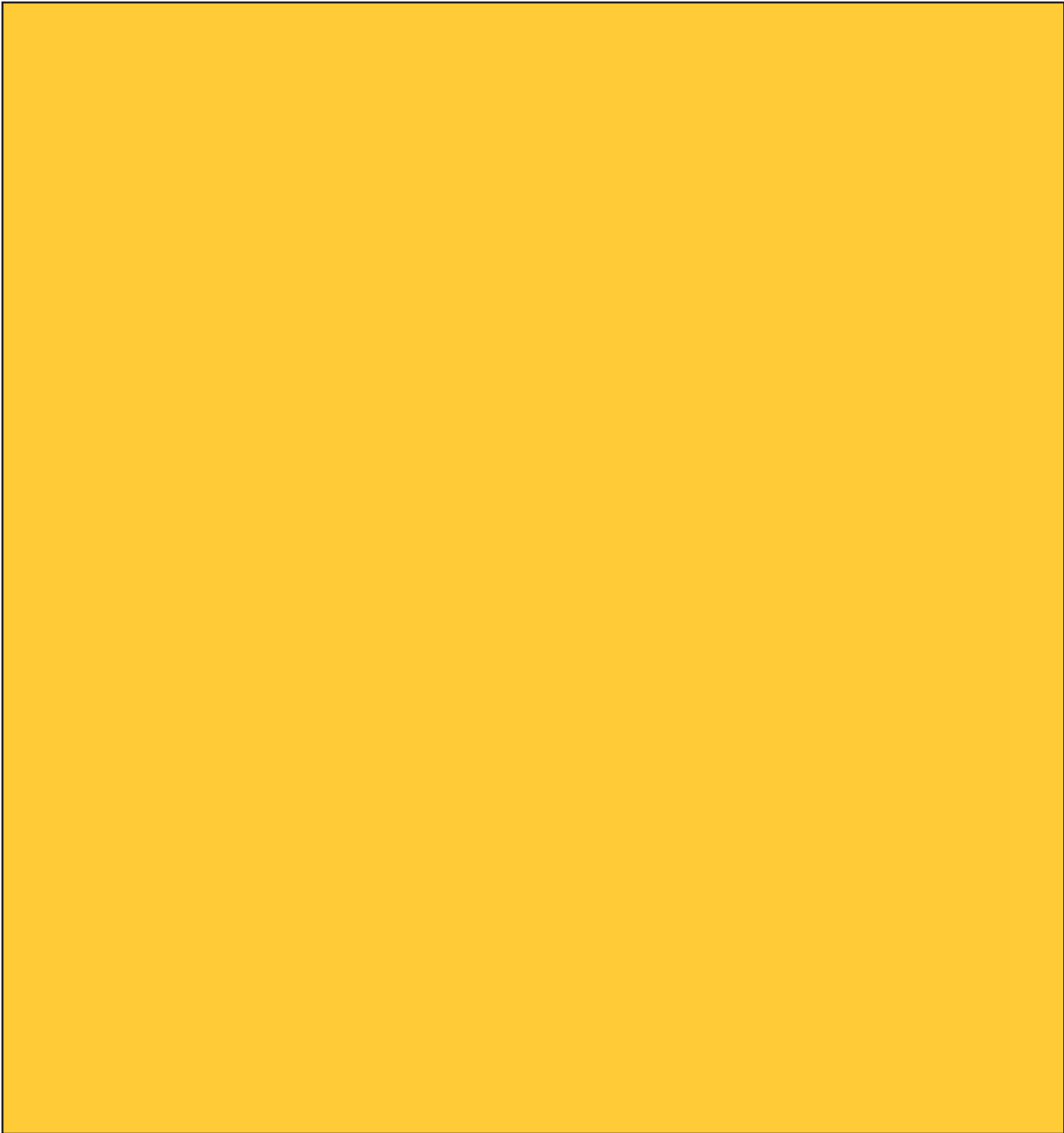
Let the Pro's Handle It !

Maintenance friendly concept **Clear & easy to Operate**

The design of and the easy access to the controls - drive unit, steering and hydraulics simplify any necessary maintenance or repair.

The drive units are located under easy to open covers. All modules can be replaced independently of one another.





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