



Optimized Efficiency and Performance - automated unit load warehousing

THE HI-RACKER AUTOMATED VNA



The multi-talented order picking stacker "Hi-Racker".



Storage and retrieval or order picking? The best thing is to have a truck that can do both including driverless ! That is the Hi-Racker. Always, individually modified to suit your warehouse and the tasks at hand.

A narrow vehicle - a broad application

DAMBACH's order picking stacker "Hi-Racker" combines a minimum space requirement with a maximum performance. Whether storing or retrieving unit loads or picking single orders, it enables a high throughput rate. Because of its man-up technique, the operator is always at the same height as the load. On the apron, the Hi-Racker can be freely driven manually; in the aisles the automatic steering control takes over, either by lateral rails or inductive wire loops set in the floor.

A faster throughput? No problem.

For warehousing and order-picking technology you have just the right partner, and, of course, if you need a system with higher productivity or automation we provide the driverless Hi-Racker. Additionally DAMBACH's stacker cranes store loads of up to 6600 lbs at heights of up to 132 feet.



Optimum accessibility when order-picking

Because mobility is the decisive factor here, we recommend the version with a split control panel when the Hi-Racker is mainly used as an order picker. This leaves the working area clear, no control interfering with the picking process on the collecting pallet. The folding seat creates even more room to maneuver, in an already extremely spacious cab with optimal visibility on all sides. In addition, the free lifting mast quite simply allows the load to be positioned

Versatile in Action

Storage and retrieval with the Hi-Racker

When used mainly as a high bay stacker, the Hi-Racker is equipped with a central control panel on which all the control and operating elements are clearly displayed. The easy-to operate electrical steering, the at-a-glance supervision and the comfortable fully adjustable seating, provides ample leg room while promoting a relaxed working condition free from fatigue.



Swivel traverse forks

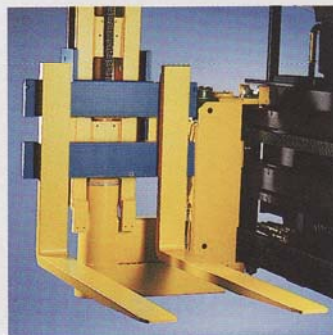
A versatile load handling device capable of a wide range of tasks:

- max. flexibility allows pallets to be lifted sideways left or right, or to the front
- exact positioning via continuous and sensitive
- controls are carefully handled thanks to the limit damping after swivel, traverse and lifting operations.
- a fast throughput via simultaneous rotation and sideshift optimized by space utilization through the free lifting of the load.
- utilization through the free lifting of the load.



Telescopic forks - in the smallest space

A telescopic fork can work in a very narrow aisle as this width needs only be determined by the load or truck width. Pallets do not have to be turned when storing or retrieving. Moreover, the work cycle is noticeably quicker than with a swivel traverse fork.



The Hi-Racker: The Highest Level of Productivity.



Modern and very efficient 3-phase AC drive system.

By means of its 48V 3-phase current drive system, the Hi-Racker achieves particularly high traveling and lifting speeds with outstanding acceleration. The resulting productivity shows that Hi-Rackers belong to the very best in their class.

3-phase current means:

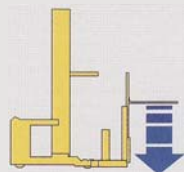
- increased efficiency
- reduced required maintenance
- smooth acceleration
- finely adjusted hydraulic controls
- low noise levels

Fast electronics CAN-BUS control

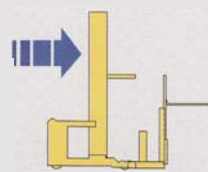
Four microprocessors, evenly distributed, on a fast data BUS make up the CAN-BUS control system of the Hi-Racker.

The advantages:

- easy servicing
- high level of safety control
- fast reactions to controls
- easy-to-follow wiring
- easy fault-finding with diagnostic system
- remote diagnosis via modem
- direct programming of functional changes



**Lowering energy
regeneration**



**Braking energy
regeneration**

Efficiency

A well-thought out range of models and the latest technology make Hi-Racker one of the most efficient order picking stackers ever. This is because one can find a model which caters to every purpose and which is best designed to serve one's own specific requirements. The Hi-Racker is highly reliable in action which is impressively demonstrated by the over 4000 trucks already produced by DAMBACH.

Energy regeneration: more performance, less downtime

Each of the Hi-Racker's lowering and braking operations replaces spent electrical energy by re-charging the battery. The energy saved by this system amounts to approx. 25% per work cycle. The result: a smaller battery can be used for the same operational time and it can be re-charged quicker. In many cases, two shifts can be worked without battery change!

Increased effectiveness by truck guidance system

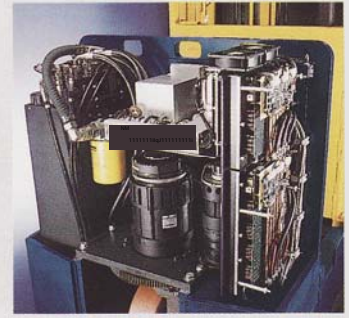
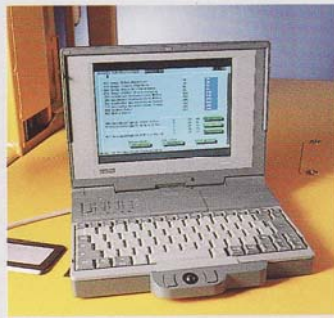
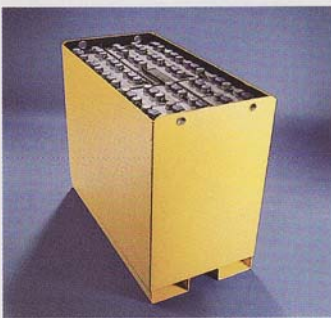
A warehouse using trucks equipped with a data communication system linked to a material flow computer can raise the throughput of goods tremendously. With a radio transmission data system, the Hi-Racker achieves even higher performances. The self-explanatory operating concept of the truck's guidance system is easy to learn and simplifies data input for the driver quite considerably.

Remote diagnosis for fast fault finding

Every Hi-Racker is equipped with the integrated diagnostic system for DAMBACH's CAN-Bus control system which makes fault detection easier than ever before: simply plug in the diagnostic lead to the PC and have the data analyzed. It can even be done by means of a modem over a telephone line - and that is state of the art remote diagnosis.

Maintenance: Bonnet up - and the job's half done!

The components are so clearly laid out and access to the driving mechanism, to the steering sensor system and the hydraulics is so convenient that fault finding, part replacement or repairs are considerably speeded up. The working parts of a Hi-Racker are to be found under the easy-to-open or removable covers. Each element can be quickly and simply replaced independently of other parts.



The Hi-Racker: flexible, versatile safe and easy to maintain.



Relaxed working environment: The operator's cabin

So that the operator can see what's what and have the Hi-Racker fully under his control all the time, we've thought of everything:

- comfortable low boarding height - on the Hi-Racker 100, only 30cm
- simple continuous control panel, central or split
- all relevant data displayed at-a-glance
- two safety barriers, opening upwards for easy access
- clear view of the forks, the wheels and behind
- sprung seat, fully adjustable, which also folds back
- optional enclosed cab (cold store version available)
- vibration and shock-absorbing flooring material

Control panel symbols

release 2nd stacking depth	auxiliary lift	sideshift	rotation	end of aisle safety device	horn	parallel fork displacement	swivel/traverse synchronization	drive cut-out override	lift override	induction guidance operation	straight ahead steering

Ergonomics

The Hi-Racker has been designed for everyday use right down to the last detail. For example, there is the newly-designed control panel, on which all important functions are directly at hand. Intelligent solutions for many small details have made the operation easier and the Hi-Racker's "high dynamics" simply makes it fun to drive, day after day.

Control panel displays

- battery level indicator in %
- operating hours
- lifting height
- position of attachment
- traveling speed
- operational status
- position of steering wheel
- date/time
- wire guidance status
- plain language display for operator guidance

In safe hands

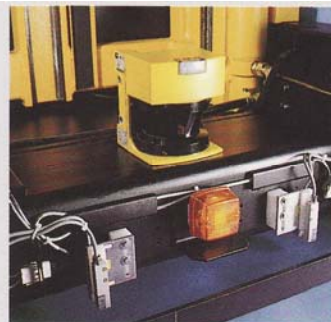
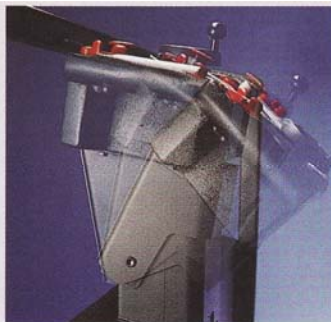
Hi-Racker takes safety seriously; a plain language indicator warns of operator error. Driving and lifting are only possible when the cab door is closed. Two-handed operation keeps the operator's hands out of the danger zone and a foot switch on the cabin floor causes the Hi-Racker to brake immediately if it detects the absence of the driver's weight. Moreover, the Hi-Racker also has an automatic control system to regulate traveling speed to lifting height, direction and load.

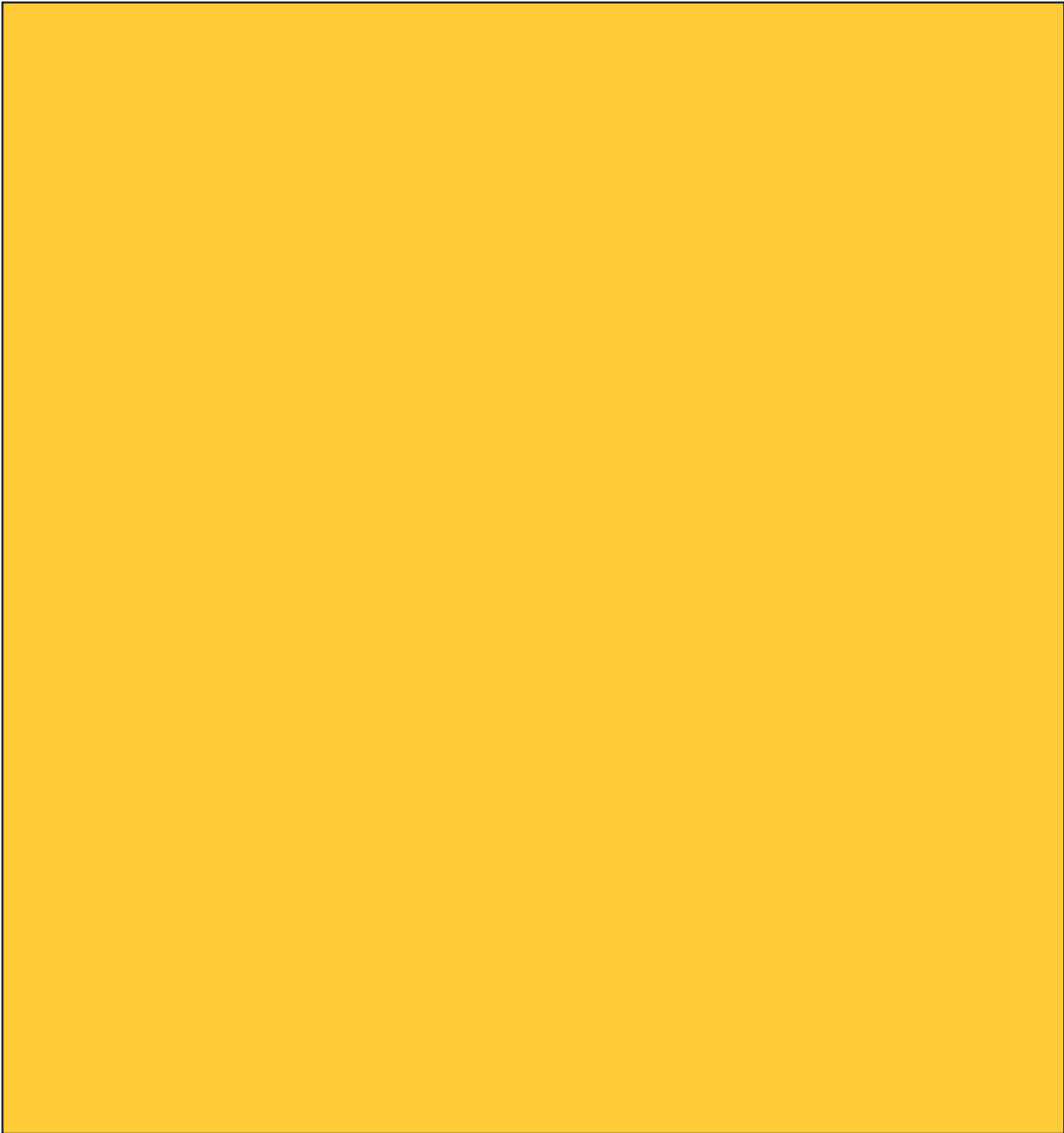
Optional safety feature: personnel safety scanner

A mounted mobile scanner can be built into the Hi-Racker ex works by using up-to-date laser technology. Coordinated to the controls of the truck, it guarantees maximum personnel safety. Extensive modifications and additional costs at a later date are therefore avoided.

All-purpose modifications: specials

We react with flexibility to the increasing demand for individual, customer-specific solutions. Our response ranges from special order-picking platforms to interchangeable working platforms. Diverse load auxiliaries, such as special furniture roll cages, can be used. For work in cold environments, the Hi-Racker can be supplied with an enclosed cab and heater and of course driverless operation.





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