

For small loads and great heights:
automatic MINI-LOAD stacker cranes

DAMBACH
LAGERSYSTEME

DAMBACH has brought more efficiency to small-parts storage with its new MINI-LOAD series. The throughput rates of current automatic small-parts warehouses can now be realised on high-level racking as well.

- High throughput rates
- High availability
- Best space utilisation, heights up to 27 m
- Stable and durable
- Various load-handling devices

- Modular drives, suitable for subsequent modifications
- Fast lifting and lowering
- Push/pull grab enables double-deep storage

Operating efficiency from A to Z: equipped for every type of load

From screws to electronic parts to files – with the right loading auxiliaries and the right load-handling device, full operating efficiency has now reached the small-parts warehouse.

An extensive range of load-handling devices is available for the DAMBACH MINI-LOAD series. From the storage of boxes right up to plastic containers. And depending on the application, single- or double-deep storage.

From one source: control and rail-guided stacker crane

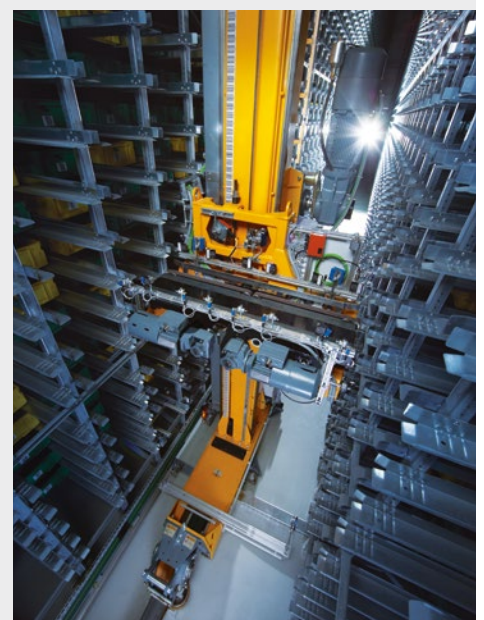
The DAMBACH machine controls are fully coordinated with the respective application in the DAMBACH rail-guided stacker cranes. In the case of the MINI-LOAD series, that includes absolute, contactless position decoding, path-dependent travel control and smooth acceleration – features that guarantee optimum performance.

DAMBACH control components are available in several different configurations and can therefore be adapted for each specific application – also for subsequent changes:

- stacker cranes factory pre-wired
- production and assembly of the control
- DAMBACH total control with hardware and software

Steel is the only choice: ideal for the toughest demands

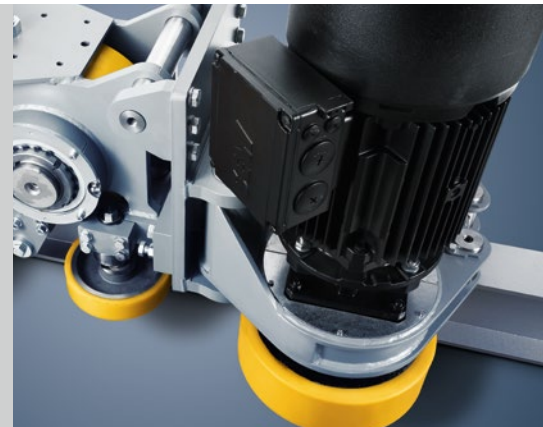
In cold stores the extreme temperatures as low as -30°C place extreme demands on materials and engineering. Both the components used and the manufacturing of the stacker cranes themselves must be designed to suit the conditions encountered in cold stores. The MINI-LOAD series is specifically designed for such situations, from design to assembly and commissioning.



Also big in the small-parts warehouse:
**make sure you benefit from DAMBACH's 40 years
of experience in rail-guided stacker cranes**



The MINI-LOAD series takes small-parts storage to previously unknown heights. Lifting heights of up to 27 m are possible. And without having to make any compromises in terms of stability, safety or access speeds. So make sure you benefit from DAMBACH's full range of skills and experience in the design and construction of rail-guided stacker cranes.



Small-parts warehouses: not afraid of heights

DAMBACH MINI-LOAD stacker cranes can be used for storing small parts on high-level racking as well. This opens up a whole new dimension in the storage of small parts without losses in performance. The stacker cranes can be used for both container and box storage. Appropriate load-handling devices are available to suit different requirements.

The mast design enables a compact construction with especially favourable approach dimensions – both horizontally and vertically.

The DAMBACH MINI-LOAD in figures:

Height: up to 27 m

Rated load: 300 kg

Manoeuvring: speed: 5.0 m/s
acceleration: 3.8 m/s²

Lifting: speed: 2.5 m/s
acceleration: 2.5 m/s²

Very latest engineering ensures good economics

Our more than 40 years of experience with rail-guided stacker cranes goes into the design and construction of these stacker cranes. Besides performance and efficiency, we pay special attention to stability and robustness – and hence durability and the security of your investments.

An optimum weight steel construction is used throughout. Troublesome interfaces at junctions between different materials are therefore ruled out. Components particularly at risk, e.g. the mast-chassis connection, are specially strengthened in all DAMBACH MINI-LOAD stacker cranes.

The finite element method (FEM) is used for the analysis of the single-mast construction. The analysis takes into account not only the forces acting on the mast, but also the vibrations of the stacker cranes themselves. These – and the weight – have a major influence on efficiency. For the fact is that the greater the storage height, the greater is the significance of these vibrations.

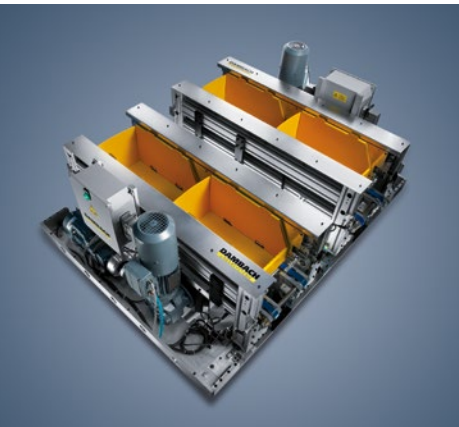
Modular drives: for every requirement

Various drive modules are available for travelling and manoeuvring: a choice of single-wheel, twin-wheel drive and twin-wheel with anti-oscillation drive depending on performance requirements. And exclusive to DAMBACH: the drive modules are connected to the chassis via standard interfaces and therefore are easily exchanged should the warehouse situation change in the future.

And where you need even more performance, a third drive unit can be installed. It reduces the overturning moment and damps the vibrations. Shorter positioning times with high acceleration are the outcome.

The modular concept also allows the performance of the devices to be subsequently increased or decreased as required. Simply replace the drive module or add a third drive unit.

Lifting operations are carried out by an integral lifting and lowering rope pulling the load-handling device up and down. The high average acceleration during lifting and lowering ensures shorter cycle times.



Perfectly coordinated control: no compromises

When great heights and limited approach tolerances are involved, positioning can be carried out – as an option – directly on the racking with a camera.

The drive wheels of the twin-wheel drive or twin-wheel with anti-oscillation drive are driven by a slip-based torque control. This compensates for the different rotational speeds of the wheels and hence reduces the wear on the wheels.

The lifting ropes are fitted with overload stress measurement to increase operational safety, and protect the load-handling devices against mechanical damage in the event of malfunctions.

You can cut operating costs even further by fitting the optional energy recovery system to the DAMBACH stacker crane control to improve the energy balance.

Load-handling devices: the right one for every job

Various load-handling devices are available for the MINI-LOAD, chosen according to the goods to be transported and performance requirements. Both containers and boxes can be stored. Telescopic forks are adequate for single-deep storage.

Combination telescopic forks are used for double-deep storage or to increase the performance at the transfer on the apron. The additional transport straps mean that the load-handling device does not have to be removed.

The push/pull grab enables double-deep storage and can store four load mountings. The push/pull system with fingers employed here requires very little space, meaning that the clearances between the load mountings in the racking are very small. This system was specially optimised for the storage and retrieval of boxes.

Pusher devices are available for storing trays or special containers.

DAMBACH MINI-LOAD: the advantages at a glance

- MINI-LOAD stacker cranes up to 27 m high
- Small approach dimensions
- Good throughput rates
- Single-wheel, twin-wheel drive or twin-wheel with anti-oscillation drive, third drive unit if required
- Drive modules can be exchanged to improve performance
- Adjustable drive unit heads
- Various load-handling devices, from telescopic forks to box grabs, single- or double-deep storage
- Durable construction
- Single- or twin-mast design

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Technical specification subject to change without notice

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