



# Hänel Lean-Lift®: Standards in automated materials handling and warehousing



Innovative ideas. Sound technology. Flexible systems



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# Hänel Lean-Lift®

## Flexibility, efficiency and cost-effectiveness

**Economy, efficiency and ecology – these are the demands that modern-day intralogistics must meet**

With the Hänel Lean-Lift® we offer you a first-class, high-tech system for storage organization and materials handling that saves time, storage space and costs, and enables a much more efficient workflow.

### Over 60 % more space

The Hänel Lean-Lift® uses the available room height – in a similar way to a high-bay warehouse or miniload system. Unlike these, however, it stores parts in height-optimized positions so that no space is lost. This produces maximum storage capacity on a minimal footprint.

This in turn saves costs and helps to utilize the area dedicated to storage more economically.

### Efficiency

Countless companies throughout the world use the Hänel Lean-Lift® to increase the cost-effectiveness of their warehousing and materials handling.

Hänel also offers customized special features to get even more efficiency out of the Hänel Lean-Lift®.

One highlight is the Hänel EcoDrive – efficient energy recovery with the Hänel Lean-Lift®.

### Ergonomic and safe

The ergonomic design minimizes the physical strain for employees at work. And Hänel goes far beyond the requirements of today's safety standards.

### Work time slashed

The Hänel Lean-Lift® brings the requested item automatically to the access area in seconds, where it can be retrieved at the optimum ergonomic height.

Goods to man is the motto instead of man to goods. Access times are radically reduced and order-picking performance substantially improved.

### Optimal parts management

The state-of-the-art Hänel micro-processor controllers can be used as stand-alone inventory management systems or communicate with customers' own data processing systems.

An up-to-date overview of inventory is ensured at all times.

### We are committed to environmental protection

It goes without saying that production at our three plants meets the latest environmental guidelines and even exceeds them. Only environmentally friendly, recyclable materials are used. But it's not only the production that lives up to Hänel's ecological principles – even the Hänel Lean-Lift® itself does so. Moreover, the Hänel EcoDrive makes a contribution toward reducing CO<sub>2</sub> emissions.

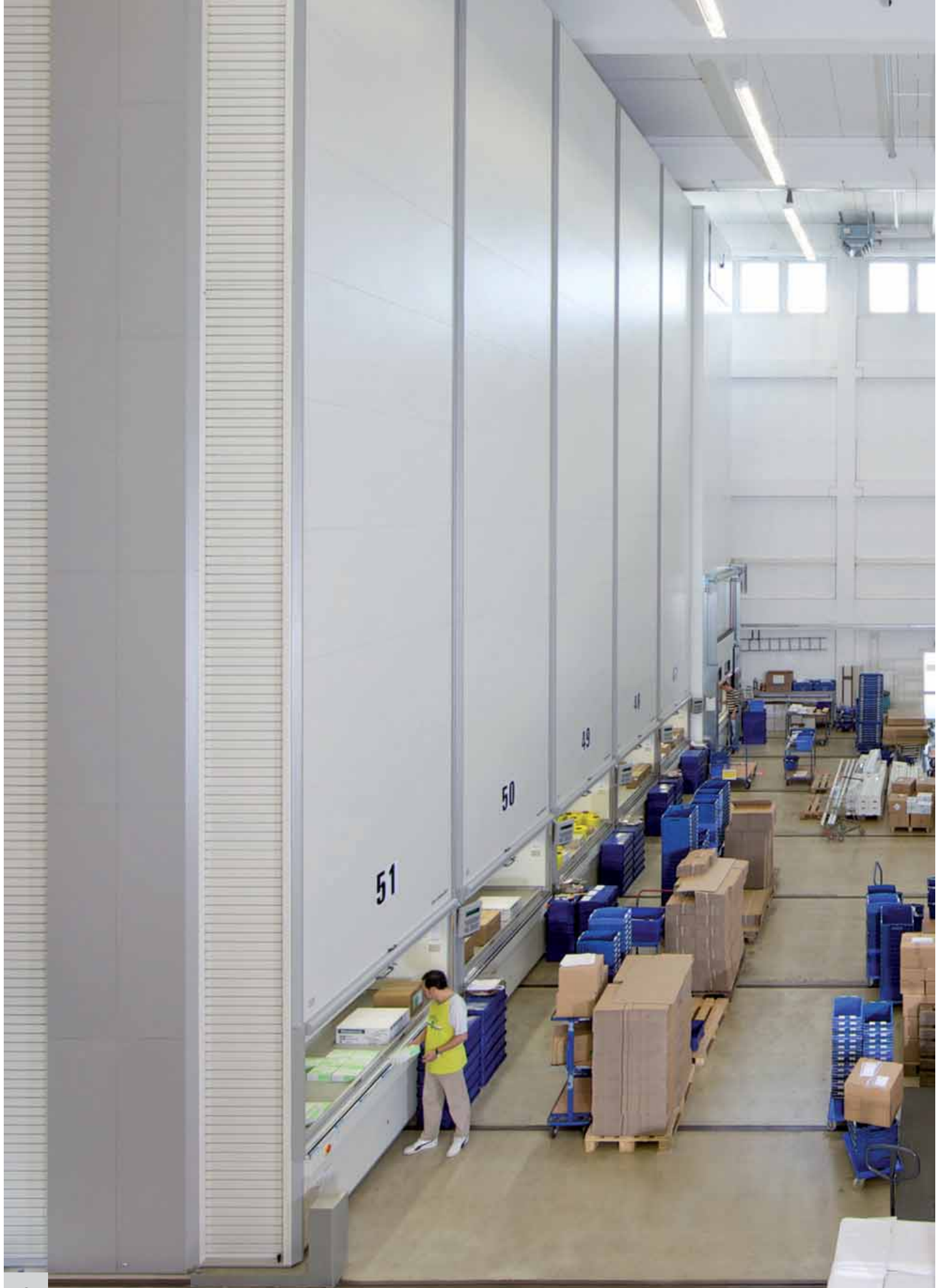
### The right decision

If you want to improve your intralogistics concept and reduce costs, you should talk to the specialists at Hänel first. They will work with you to develop your own 'tailor-made intralogistics concept'.

Live demonstration of CO<sub>2</sub> savings with the Hänel EcoDrive at the CeMAT trade fair

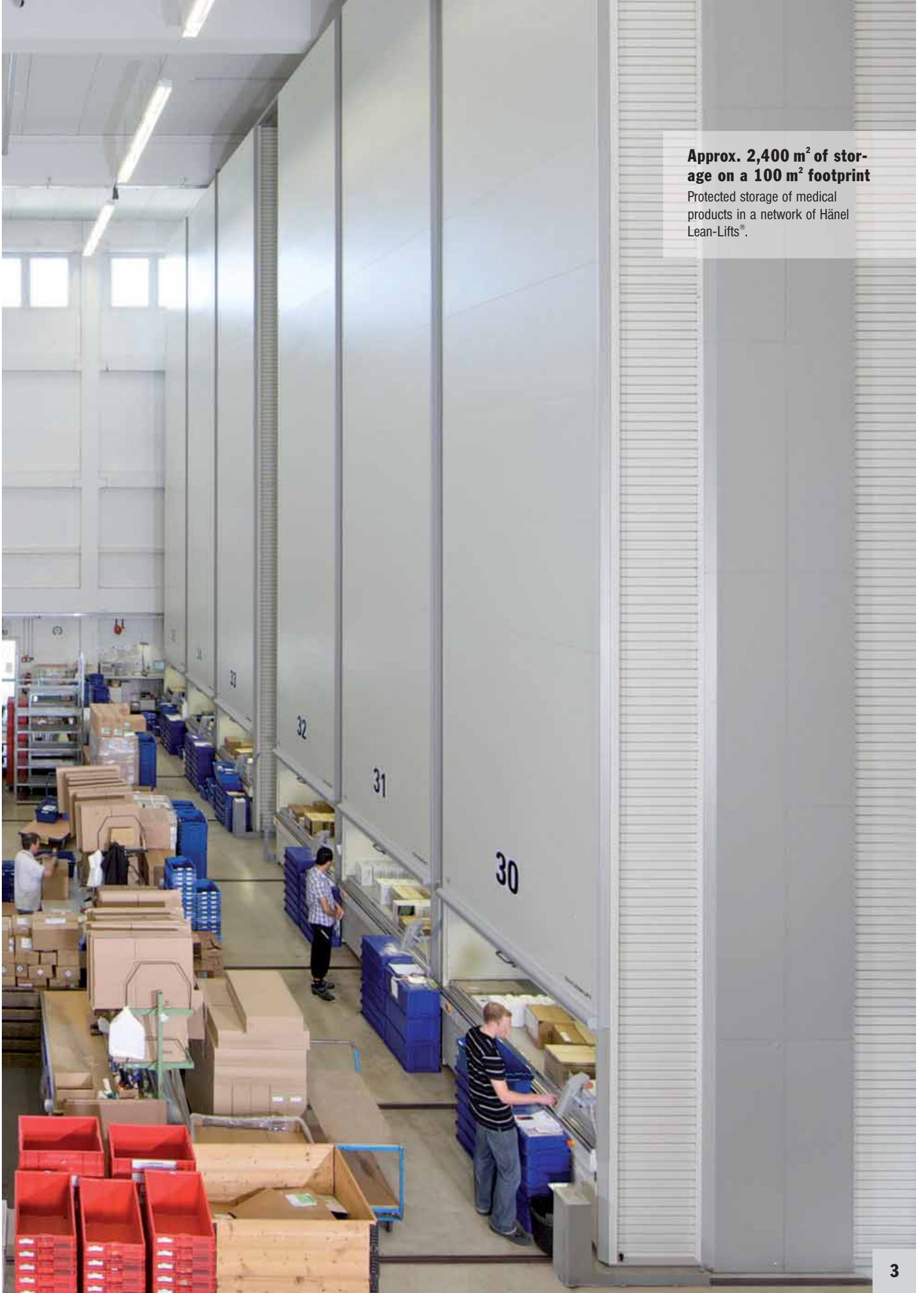






**Approx. 2,400 m<sup>2</sup> of storage on a 100 m<sup>2</sup> footprint**

Protected storage of medical products in a network of Hänel Lean-Lifts®.





# Vertical technology – simply brilliant

## The Hänel Lean-Lift® – the original with the profile wall

**The Hänel Lean-Lift® is the logical compliment to the time-proven Hänel Rotomat® principle**

### The automated 'high-bay warehouse in a cabinet'

The Hänel Lean-Lift® is both storage rationalization and goods protection in one: At the center of this closed system is a computer-controlled positioning lift – the 'extractor'. In front of it and behind it are the storage shelves. This is where the articles are stored in containers in height optimized positions.

The storage locations are accessed automatically under electronic control by means of the extractor, which stores or retrieves the requested container.

The goods are then delivered to the retrieval area at the correct ergonomic height.

This ingenious principle finds applications in a wide variety of industries. Used in the medical technology and electrical engineering sectors (for which ESD versions are possible) and also in the automotive, aircraft and pharmaceutical industries or in mechanical engineering, the mail-order and wholesale trades – the Lean-Lift® is the ideal buffer, dispatch, production or tool store, to name but a few sectors that demonstrate its versatility.

**Our specialists would be happy to show you references from your line of business – just send us an inquiry.**

### The pluses

- ▶ Fast storage and retrieval times.
- ▶ High storage density, even when articles have different heights.
- ▶ Goods to man is the motto instead of man to goods: this saves time.
- ▶ Improved order-picking performance.
- ▶ High economic efficiency and cost savings.
- ▶ Protection of inventory.
- ▶ Storage and handling of bulky and heavy parts.
- ▶ Load-bearing capacity of up to 1,000 kg per tray.
- ▶ Load-bearing capacity of up to 60,000 kg per Lean-Lift® (higher payloads on request).
- ▶ Integrated storage management.







**Lean-Lift® buffer store right in the production hall**

Complete sub-assemblies and delivered components are buffered in 5 Hänel Lean-Lifts® – here in the premium Silver/Anthracite finish.

# Appealing form, convincing functionality

## Hänel Lean-Lift® – storing with intelligence

It was 15 years ago that Hänel revolutionized vertical lift technology by inventing the profile wall. Precision hold for the containers and maximum compaction of the storage volume thanks to the integrated slot profile



The storage items are measured in the access point by the height sensors

The spacing of the height sensors corresponds to the slot profile. This enables height-optimized storage to be achieved

### The Hänel height sensors in steps of 25, 37.5, 75, 90 and 125 mm

Different height-measuring light barriers, designed to match each model's slot profile exactly, measure the inventory items and store the container according to the respective height without any loss of space!

With the Hänel space-saving pitch, the distortion-free Hänel multifunction containers and the optimization run (page 31) you will achieve maximum compaction of the storage volume.

**Let the air out of your store!**

### An ingenious development!

**The Hänel slot profile in 75 mm, 90 mm or 125 mm steps offers a multiplicity of options:**

The slot profile is a built-in fixed wall with integrated slots in 75 mm, 90 mm or 125 mm steps, and is the ultimate solution for achieving optimal space-saving storage

### Convincing simplicity: the high-stability Hänel profile wall!

Hänel is the inventor of the profile wall – with over 15 years of experience!

The profile wall with its high stability and precision is fixed to the tubular supports at the factory.

**On the outside the typical Hänel design, on the inside a stable slot system!**

### The pluses

- ▶ Optimal and compact storage even when articles are of different heights.
- ▶ The Lean-Lift® consistently offers compact and variable storage – without the need for any mechanical or electronic adjustment.

### Hänel multifunction containers

- ▶ Full-length, integrated supports offer optimum utilization of the storage height with maximum rigidity.
- ▶ Containers with the 75 mm single pitch or with space-saving 37.5 mm and 25 mm pitches in conjunction with the Hänel profile wall offer numerous possible combinations.



The profile wall in the Hänel Lean-Lift® offers compact and variable storage



The Hänel multifunction containers with space-saving 25 mm pitch and the latest slide technology enable optimal utilization of the storage area





**An ingenious invention**

On the outside the typical Hänel design, on the inside a stable slot system – the Hänel profile wall.

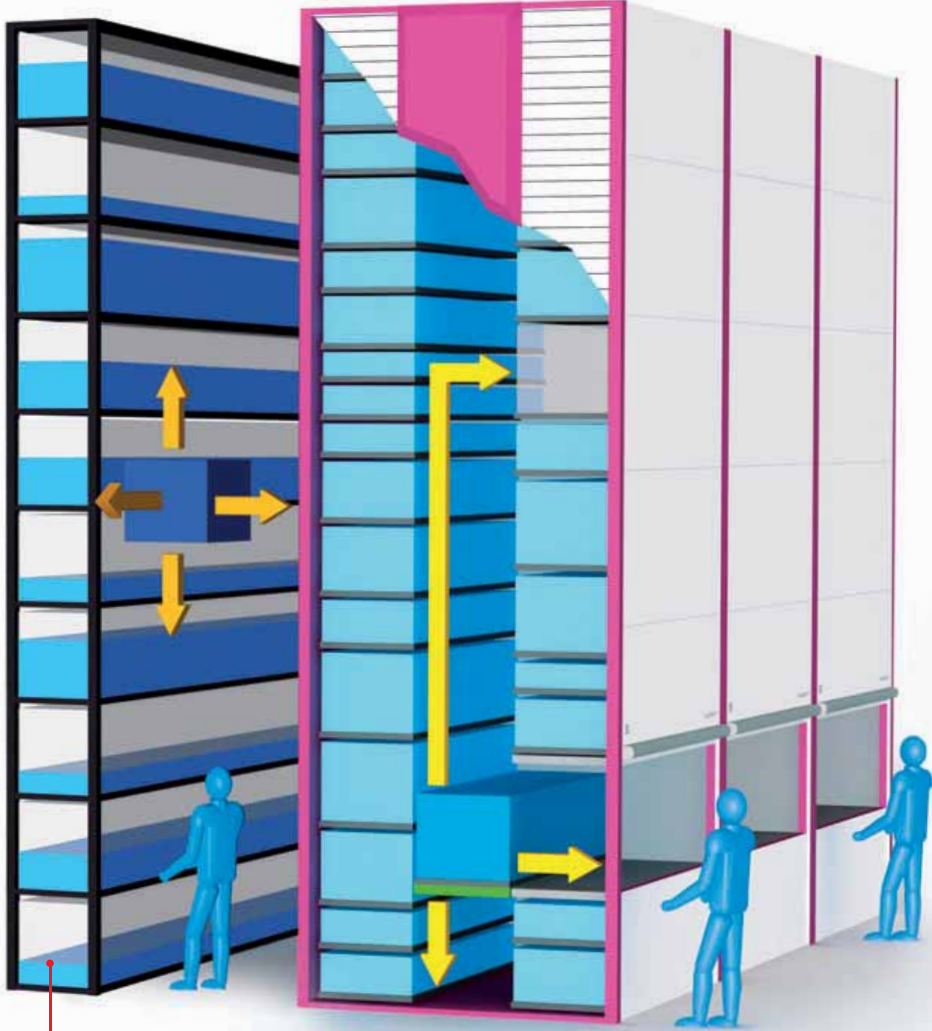




# Less warehouse is more

## Distinct advantages over conventional rack storage and MLS

The Hänel Lean-Lift® offers over 60% more storage capacity than a miniload system/rack store on the same footprint



Substantial loss of storage volume

**Miniload system/conventional rack storage**

**Hänel Lean-Lift®**

 **Free/unused storage capacity**  
 **Goods stored**

One glance in the Hänel Lean-Lift® shows the advantages clearly: Optimum storage of highly varied parts without any loss of space!

Key points speak in favor of the Hänel Lean-Lift®:

**The pluses**

- ▶ Storage capacity can be adapted step by step.
- ▶ More than one person at a time can operate the lift and process jobs.
- ▶ Retrieval times are considerably shorter.
- ▶ Units can be added, expanded or separated at a later time.
- ▶ Better utilization of storage volume thanks to height-optimized storage.
- ▶ Decentralized storage right in the production hall.

# Always well stocked with great ideas

## The Hänel Lean-Lift® access point

### The access point of the Hänel Lean-Lift® is truly multi-talented

It protects the user and it weighs, measures, photographs and identifies the storage items.

The smooth-action rollers make storage and retrieval operations a breeze. Shelf retrieval and put-away can also be performed automatically.

The interior lighting ensures you can 'keep an eye' on things. A compartment sub-level indicator or the Pick-o-Light® system guarantee error-free retrieval.

Hänel offers individual equipment variants for every need.

**All these are ideas the Hänel specialists have developed over their many years of experience – and from which you benefit.**

### Optimum storage assignment based on precise height measurement of goods

Accurate height measurement for storing containers in the optimal packing density. Height-measuring light barriers spaced at 25 mm, 37.5 mm, 75 mm, 90 mm or 125 mm. When the container is drawn in, the highly accurate light barriers measure the articles, and the Hänel microprocessor control system finds the optimum storage location in the Hänel Lean-Lift®. At the same time a protruding goods check is carried out.

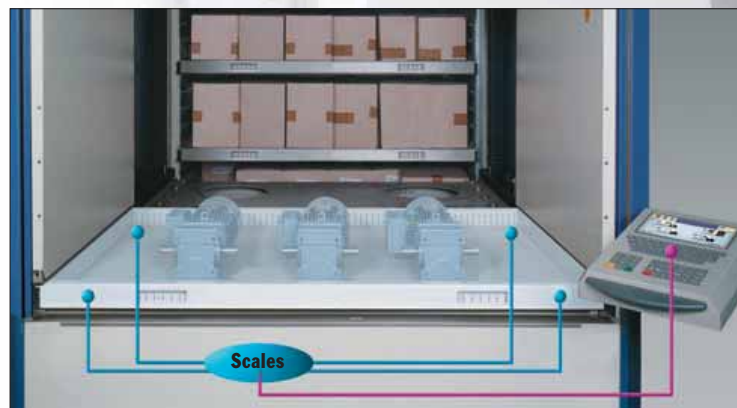
With its height sensors, profile wall and Hänel container technology, the Hänel Lean-Lift® provides vertical optimization and height optimization in one!



Height-measuring sensors

### Accurate weights recorded with the Hänel weighing device

The Hänel Lean-Lift® is equipped with a weight management system as standard. As an option, an electronic 4-point weighing system can be used to weigh each container in the access point without any loss of time. The current weight is then shown on the keyboard display. The weighing device allows the maximum load of the individual containers and that of the entire lift to be recorded. The additional payload is determined with the tare function.



Container weight accurately ascertained in the access point with no loss of time thanks to the electronic weighing device



### Safety light curtain

The Hänel light curtain guarantees maximum safety for the operators as they pick and put.

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1

# No more searching

## Hänel systems for error-free retrieval

### The compartment indicator ensures error-free access and quick storage and retrieval

The LED display can be positioned above or below the access point as required. The compartment and sub-level indicators ensure the right article is accessed.



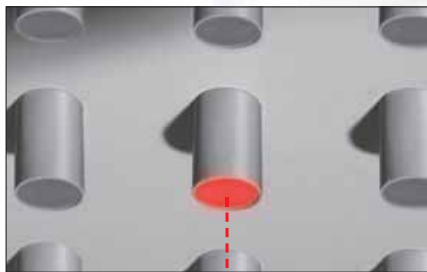
Error-free access with integrated compartment sub-level indicator

The compartment and sub-level are displayed on the LED strip as either one or two digits.

### The Hänel Pick-o-Light® system for quickly finding the required articles

An LED array is integrated into the panel above the access opening of the lift. A colored LED directs a beam of light onto the requested article so that it is identified unmistakably and unequivocally.

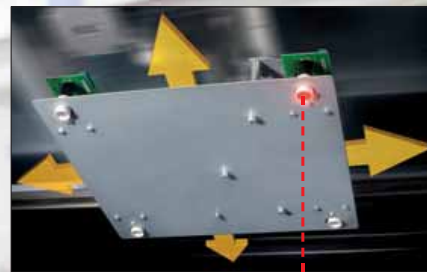
This ensures maximum efficiency and reliable selection during order picking.



LEDs in the access point...



... identify the requested article unmistakably



The Hänel Pick-o-Light-Vario® can move freely on 2 axes

### Hänel Pick-o-Light-Vario® for variable container divisions:

Alternatively, if container divisions are variable, items can be identified via a free-moving Vario unit with 4 integrated LEDs.

### Integrated camera

A camera integrated in the Lean-Lift® takes a photo of the container each time a transaction is carried out.

A fixed number of pictures is archived per container so that inventory changes on the container can be tracked.



The items are photographed and the picture displayed directly on the control unit

With the photographic information, an article on a container can be identified directly from the control unit and brought to the access point.



Hänel LEAN



# We've thought of everything

## Practical, variable, ergonomic

### The Hänel high-speed door

The Hänel high-speed door enables several operators to work simultaneously at a Lean-Lift® with more than one access point. The access areas are blocked off from each other.

Travel speeds of up to 1 m/s make for quick access. The aluminum profiles are highly robust and have a long lifecycle. A frequency converter ensures optimal flow of movement.



### The fold-down support rail from Hänel

The support rail at the access point can be raised and folded down as required. Storage containers can then be pulled out of the access point on smooth-running plastic rollers.

This makes work at the Hänel Lean-Lift® even more ergonomic. Heavy parts can also be removed with a crane.



### The Hänel transporter

With the Hänel transporter, complete containers can be taken out of the Lean-Lift®, as they can with the fold-down support rail. This means that even with particularly heavy parts (up to 1,000 kg per container) the container can be transported effortlessly to the required destination.



Picture top right:  
Perfect integration on the second floor of the company's modern building

Picture bottom:  
Replenishing the Hänel Lean-Lift® pallet store on the ground floor





**The Hänel Lean-Lift® as a materials handling system**

Ergonomic retrieval of heavy loads from the fold-down support rails by crane.





# A clever solution

## Hänel multifunction containers for maximum load-bearing capacity

### Highly diverse storage articles put highly diverse demands on the container

The carrying capacity of automated storage and materials handling systems is determined by the weight and dimensions of the inventory.

### This is where the Hänel multifunction container performs the extraordinary

The containers are configured according to the size and weight of the storage goods.

The containers can take loads of 250, 500, 700 or 1,000 kg depending on the version.

Even the most varied and bulky goods such as Euro pallets, engine blocks, tools, crates and cable drums are no problem for the Hänel Lean-Lift®.

### The payload per container can be up to 1,000 kg! An impressive performance by Hänel!



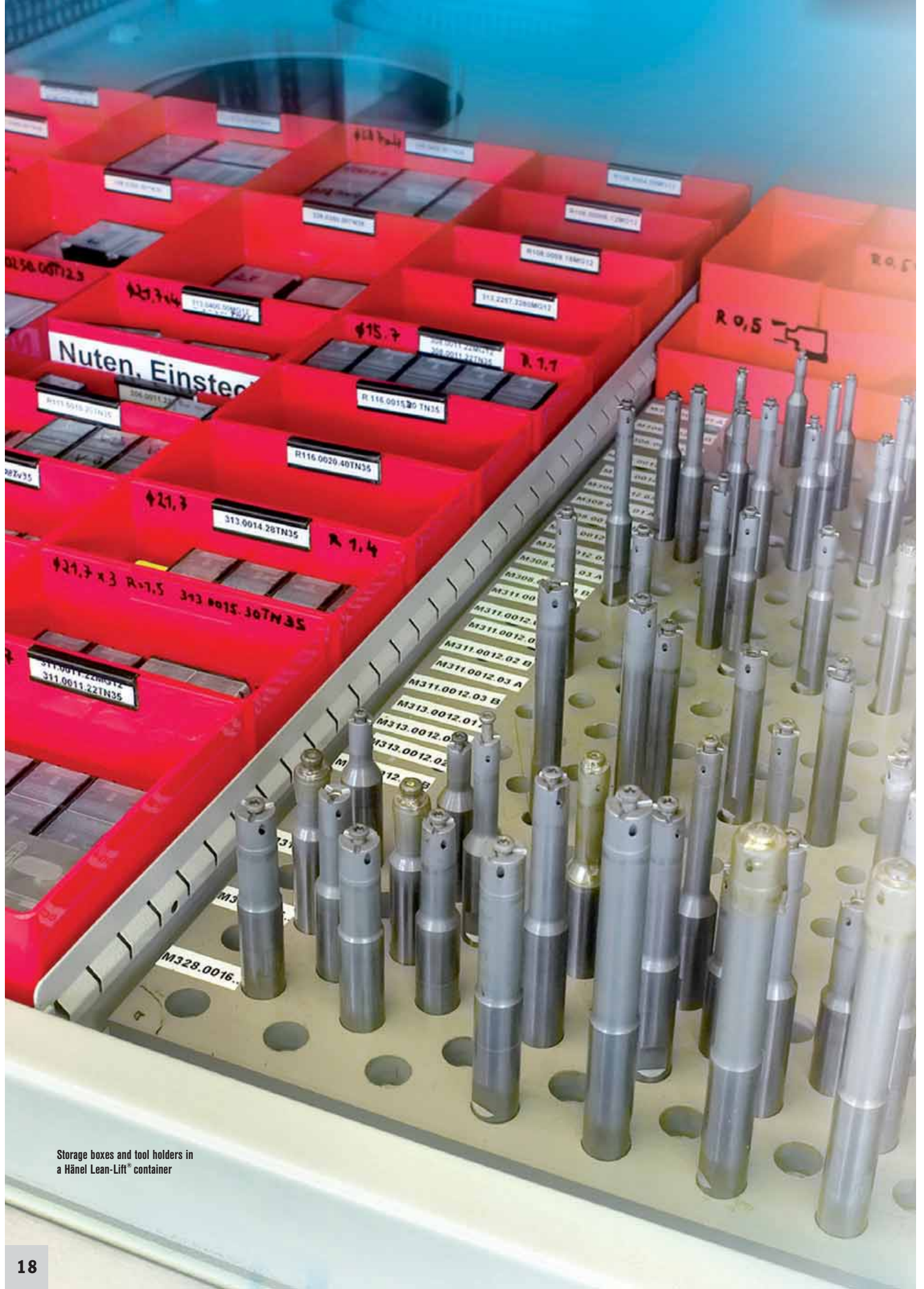
The total load capacity per Lean-Lift® can be 20,000, 30,000, 40,000 or 60,000 kg.

The maximum storage height is determined purely by the height of the access opening.

The standard height of 740 mm for the access opening can be adapted to suit the respective requirements.

Heavy parts can be retrieved and transported effortlessly with the Hänel transporter

Tools for injection molding machines, for example, can be removed from the transporter by crane



Storage boxes and tool holders in a Hänel Lean-Lift® container



# Everything the user wants

## The Hänel multifunction container

**100 % individuality for our customers – the right container for every requirement**



### Different sizes of Hänel multifunction containers

Hänel offers a variety of container widths and depths. This means the containers can be adapted individually to the stored goods!

Width

840/1,300/1,640/1,860/2,060/  
2,300/2,460/2,860/3,060 or  
3,260 mm

Depth 635/825/1,047 or 1,270 mm

And a wide range of accessories are available, such as tool inserts, molded trays for small parts, holders for milling cutters, and other separators, which complement the Hänel Lean-Lift®, turning it into a complete intralogistics system that saves costs, makes optimum use of space, makes work easier and minimizes distribution times!

**Our specialists would be happy to develop a tailored solution for your storage requirements**

Hänel offers special-purpose solutions to hold, for example, arbors, bars, rollers, sheet material, boards, SMD reels, hanging garments, rollable storage goods, sleeve rolls, and drawings of all formats right up to A0 size.

### Solutions for the electronics industry

The Hänel Lean-Lift® offers the electronics industry further advantages: The containers can be given an antistatic coating, if necessary, to protect sensitive electronic components.

And Hänel supplies containers that can be electrified with an electronic plug-in contact at the rear.

Containers and dividers with an antistatic coating are ideal for applications in the ESD sector

### The pluses

- ▶ Hänel multifunction containers always retain their shape and are absolutely distortion-free.
- ▶ No limitation to their usability.
- ▶ Smooth running thanks to modern plastic slide technology.
- ▶ Integrated grips.
- ▶ Optionally available with slots punched round the inside for customized dividers.
- ▶ Variable attachments of different heights.
- ▶ Different container sizes to suit requirements.
- ▶ Payload capacity per container of up to 1,000 kg.
- ▶ Galvanized – with environmentally friendly powder-based finish on request.



# Speed is our driving force

## Fast, efficient and quiet

**High traversing speeds, low noise levels and accurate positioning are characteristics of the Hänel Lean-Lift®**

### **Hänel Lean-Lift® new generation in a high-speed version**

The Hänel Lean-Lift® is available in a high-speed version. The vertical speed of travel, for example for containers with a load capacity of up to 500 kg, is 2.3 m/sec with an empty extractor, and 1 m/sec with a loaded extractor. Horizontally the extractor travels jolt-free at a speed of 0.5 m/sec.

Moreover each Hänel Lean-Lift® is equipped with a soft start control with frequency converter.

**The advantage:  
Gentle and rapid acceleration and braking.**

### **The vertical carriage (extractor) has 4-point suspension ...**

This has enormous advantages:

- ▶ No tilting of the extractor.
- ▶ No problem with uneven load distribution, even with heavy weights, and consequently a longer lifecycle.
- ▶ Easy maintenance access from the side.
- ▶ Easy attachment of the arresting device for the extractor.

### **... and time-proven, low-noise 4-chain technology!**

- ▶ Roller chains are durable, so no fatigue failures.
- ▶ Long lifecycle.
- ▶ No replacement necessary at fixed service intervals.
- ▶ Roller chains have a high rate of efficiency (98 %).
- ▶ Accurate positioning because of high rigidity.
- ▶ No slip on emergency stops.

### **The Hänel EcoDrive – CO<sub>2</sub> reductions thanks to efficient energy recovery**

In the Hänel Lean-Lift® EcoDrive, a frequency converter converts the kinetic energy of the descending extractor into electrical energy and feeds it back into the electrical supply system.

Depending on the traversing rate, up to 40% of the energy fed in for the upward run can be returned to the supply network.

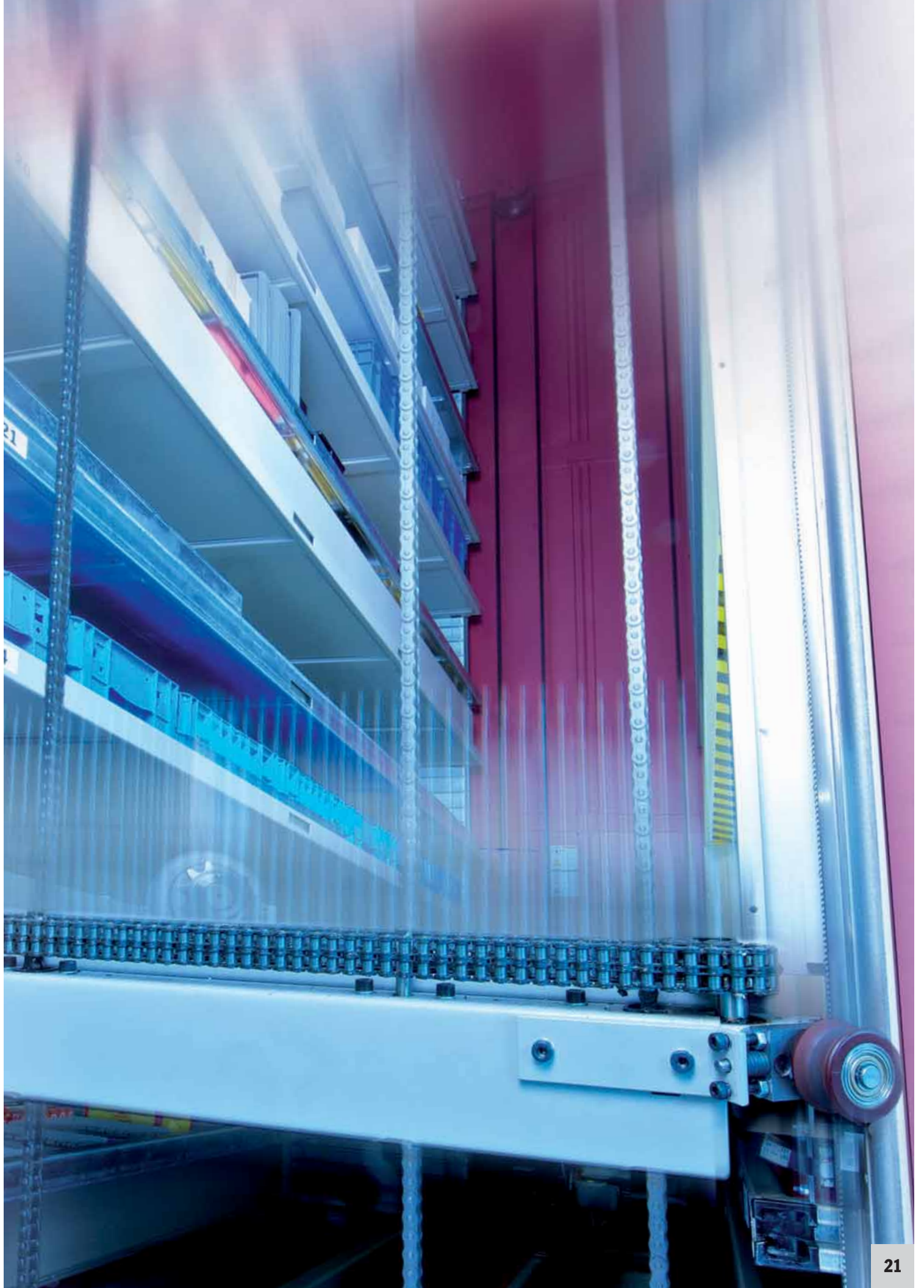


Highly efficient and powerful motors allow the extractor to achieve travel speeds of up to 2.3 m/sec



Frequency converter in the Hänel Lean-Lift® EcoDrive











### **Available to multiple users**

Depending on the height of the Hänel Lean-Lifts®, access points can be installed on different floors. Several people can use the Hänel Lean-Lift® simultaneously at different positions and levels.

# Hänel Lean-Lift®

## The key to more flexibility

### The Hänel Lean-Lift® system offers unlimited variation possibilities

Each Hänel Lean-Lift® can be used as a stand-alone system. By adding other Lean-Lifts® you can expand or alter your storage capacity at any time without any problem.

### Making maximum use of the available space

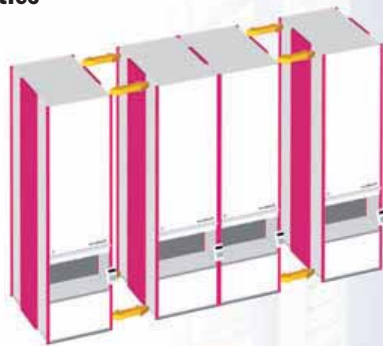
Hänel Lean-Lifts® can be installed next to each other and even span several building levels, with multiple access points one above the other. This creates the maximum possible storage space on a minimal footprint.

Height changes can be made post-installation using solid slot-in joints with plug welds.

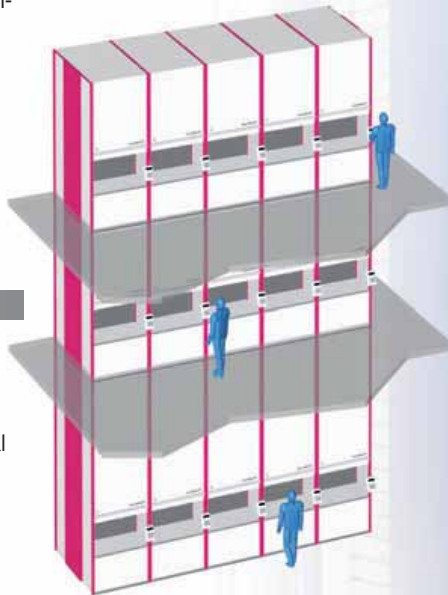
The Hänel service team also takes care of relocations quickly and reliably.

### The pluses

- ▶ Every square meter is optimally used – the essence of economic efficiency.
- ▶ Easy adjustment to operational requirements.
- ▶ More than one person at a time can operate the lift and process jobs.
- ▶ Improvement in storage management.
- ▶ Greater flexibility with step-by-step expansion.
- ▶ Clearly definable and manageable investment.



Each Hänel Lean-Lift® can be used as a stand-alone system. The store is gradually expanded by adding further Lean-Lifts® as needs grow



The Lean-Lifts® can even be combined to span several floors!



Two groups of Lean-Lifts® spanning multiple floors were docked onto the building from the outside so that production area wasn't sacrificed





Lean-Lifts® can also be positioned at a 90 degree angle to each other





HANDEL

Lift 1  
Service





**Maximized ergonomics**

Retrieval of bins using the fold-down support rails from Hänel.

# Everything under control

## The control concept with brains

**Our strength lies in our know-how – the practice-oriented microprocessor control units from Hänel can offer you a complete storage management system**



The variable control keyboard for the Hänel Lean-Lift® is placed at the side of the access point – the most ergonomic position for operators. So tiring overhead work is no longer necessary!

### MP 12 N-S

A complete storage management package is already integrated. The TFT touchscreen technology makes it easy to use. Quick and easy hook-up to the customer's corporate network is ensured by the integrated Ethernet interface.

With the web server, users can access the web page of the MP 12 N-S directly with Internet Browser. The optional shelf camera takes a current shelf picture after every transaction.

### MP 100 D – high-powered storage management intelligently designed!

Up to 99 Lean-Lifts® can be controlled simultaneously with the MP 100 D.

#### The pluses

- ▶ Hardware and software are integrated in the lift, no additional PC or monitor required.
- ▶ No complex software installation on PC.
- ▶ Direct integration into the corporate network via Ethernet link.
- ▶ Data can be retrieved from the MP 100 D and MP 12 N-S simply by using the browser – continuous transparency in the store-room guaranteed.
- ▶ No additional communication software needed.
- ▶ Customized expansion possible with versatile supplementary modules.

### Networking with IT systems

Of course it is possible to hook up the Lean-Lift® to the customer's IT environment. The control systems are easily connected via the integrated Ethernet interface.

Article data, pick lists and booking information are exchanged through the integrated storage management functions.

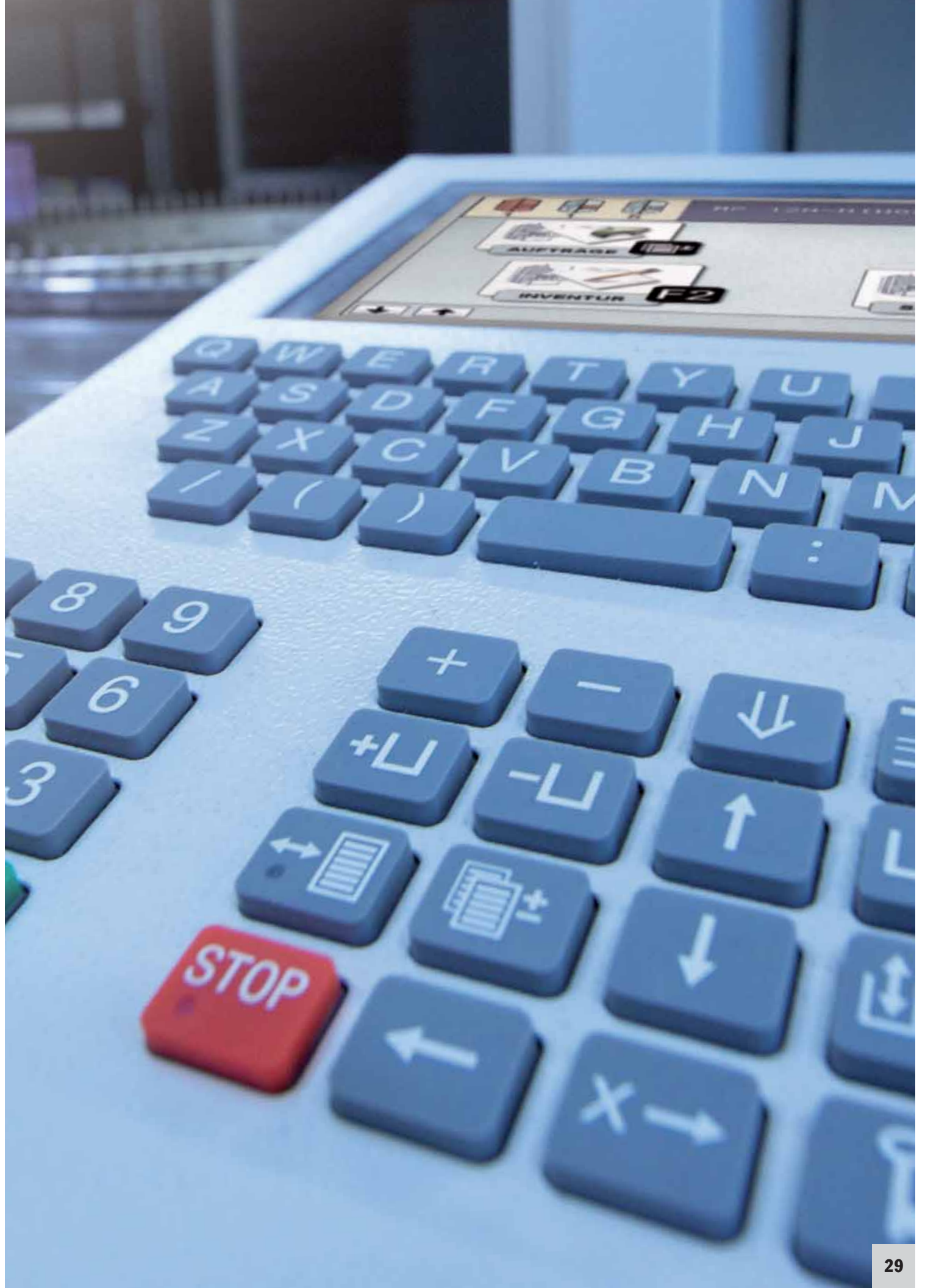
If required, the lift can be positioned directly via the interface.

### Hänel software made-to-measure

If you wish, the Hänel specialists will develop with you a tailor-made storage management concept that meets your requirements exactly!

You can find detailed information about Hänel microprocessor control systems in our brochure 'The intelligent Hänel control and software technology'.





# Everything you need – included in Integrated Hänel storage management

## Intelligent inventory control with the storage management packages from Hänel

Contained in the compact controller MP 12N-S and the central control system MP 100D is the Hänel inventory control package. This means all the storage management is already integrated.

**No additional PC is required!**

Three different storage management packages are available:

- ▶ Hänel article management
- ▶ Hänel tool management
- ▶ Hänel file management

All three packages boast easy-to-operate user interfaces and maximum storage management functionality.

066/528-923  
ENTER QUANTITY  
1 1 1 -1 ■

INFO

REQUISITION NUMBER	125.547
ARTICLE NUMBER	066/528-923
ARTICLE NAME	Motor block
TOTAL/MIN. INVENTORY	10 / 5
CONTAINER SIZE	1 1
ARTICLE NAME 2	--
ADDITIONAL INFORMATION	--
ARTICLE INFORMATION	--
SPECIAL DATA FIELD	--

Select article storage/retrieval  
When an article is selected, a detailed list of information about the article is displayed

066/528-923  
ENTER STORAGE LOCATION  
SHELF NUMBER ↓  
1 1 3 1 ■ +

INFO

REQUISITION NUMBER	--
ARTICLE NUMBER	066/528-923
ARTICLE NAME	--
TOTAL/MIN. INVENTORY	0 / 0
CONTAINER SIZE	1 1

Storage location search  
When a unit size is entered (optionally with a height specification) the control system suggests the next free storage location

066/528-923  
ENTER ARTICLE NAME  
MOTOR BLOCK ■

INFO

REQUISITION NUMBER	--
ARTICLE NUMBER	066/528-923
ARTICLE NAME	Motor block
TOTAL/MIN. INVENTORY	10 / 5
CONTAINER SIZE	1 1
ARTICLE SIZE 2	--
ADDITIONAL INFORMATION	--
ARTICLE INFORMATION	--
SPECIAL DATA FIELD	--

Entry of supplementary data  
An article name can be entered as well as an article number. With the option 'Item pool management' it is possible to create and edit other data fields

MATCH CODE SEARCH FOR ARTICLE NUMBER  
[1/+/X→/CE]

1 1 3

MENU INFO ON LIFT ASSIGNMENT INFO ON ARTICLE DATA

ARTICLE NUMBER	ARTICLE NAME	SPECIAL DATA FIELD
1	ARTICLE 1	--
111	ARTICLE 111	--
122	ARTICLE 122	--
222	ARTICLE 222	--
1234	ARTICLE 1234	--
5368	ARTICLE 5368	--
5369	ARTICLE 5369	--
5370	ARTICLE 5370	--
5371	ARTICLE 5371	--

Info on article data  
When a search term is entered, the results are displayed in a table. Any data field can be selected as a search field, such as article number, article name, etc.





# Solutions that are truly convincing

## Control options for the practical world

### The Hänel optimization run

The Hänel Lean-Lift® uses its precision height sensors to store different items in the storage locations best suited to their height.

As a result of frequent storage movements, however, empty spaces can arise between the storage containers. When the integrated optimization run has been activ-

ated, it automatically eliminates the gaps, achieving the optimal packing density in the storage volume available.

In addition to this, the optimization run can optimize storage locations according to retrieval time.

### Hänel APF Access Priority Factor

Containers that are frequently needed can be stored closer to the retrieval point so that the time required to access them is shorter.

With the Access Priority Factor, this can be done manually and the

positions assigned directly on the Hänel microprocessor control system.

It can also be done automatically by the Hänel optimization run according to retrieval time.

### Hänel ESB – the intelligent safety package for enhanced availability of the Hänel lifts

Hänel storage systems work reliably and failure-free. Should a malfunction arise, however, the Hänel redundancy systems kick in.

Lean-Lifts® can be fitted with a second safety circuit, for example. This means that if the safety light barriers in the retrieval opening fail, it is still possible to continue operating the Lean-Lift® with the sliding door closed. The Hänel Lean-Lift® can also have the Hänel ESB (Expanded Safety Bypass package) integrated. By activating

the ESB system directly at the microprocessor controller, the user can continue to operate the Hänel Lean-Lift® in defined cases despite a malfunction. This redundancy system consists of eight integrated safety circuits.

It means that in certain cases the Hänel Lean-Lift® can continue to be operated safely and reliably until the Hänel service technician arrives.



Additional sensors in the access point and on the extractor, together with various positioning systems, continue in certain cases to guarantee safe and reliable operation until the Hänel service technician arrives



# Our strength lies in our know-how

## Hänel software solutions made-to-measure

### **Hänel's inventory management software enables efficient, rationalized workflow**

Hänel's inventory management programs are intelligent software systems for computerized handling of warehouse processes on Hänel storage systems.

These programs manage storage locations, articles, stocks, pick and put jobs and orders.

For every application there are powerful software packages that offer each customer individual adaptation based on useful configuration options and various standard modules:

#### **Storage management**

**Control software** for Hänel storage units networked with host-supported ERP (Enterprise Resource Planning) systems.

#### **Tool management**

**Warehouse management** with Hänel storage units – from goods receipt to dispatch.

**Talk to our specialists – we will be happy to advise you!**

#### **The pluses**

- ▶ Quick and reliable access during pick and put operations as the user works directly at the Hänel storage units.
- ▶ Modular functions for the best possible adaptation to customer requirements.
- ▶ Standardized interfaces for simple data exchange with materials management/ERP programs.
- ▶ Interface to the Hänel lift controllers for pick and put operations directly at the storage units.
- ▶ Optimized order picking for all connected storage units.
- ▶ Rack storage systems, pallet stores, container stores, etc., can be managed in addition to Hänel storage units.

**Hänel software systems rationalize storage operations and provide optimal transparency in the storeroom!**





# Efficient work process with storage management systems

## Maximum control over inventory with Hänel storage units

It doesn't matter whether you work with the software solutions from Hänel or other storage management software – Hänel storage units can be integrated effortlessly into the most varied of software environments through the micro-processor control units.

**All pick and put operations can be booked directly at the lift control units.**

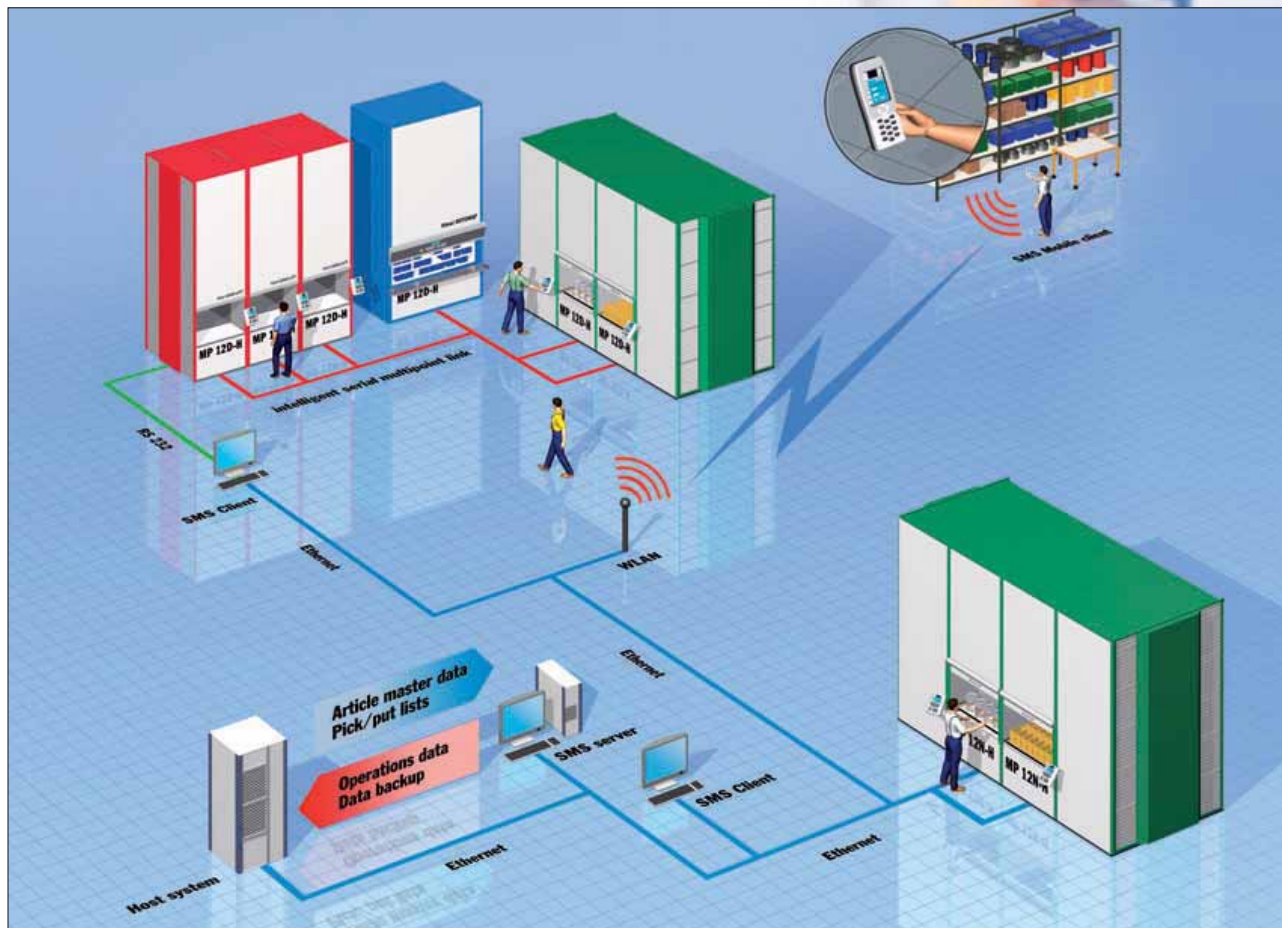
It allows not only Rotomat®, Lockomat®, Lean-Lift® and Multi-Space® units to be managed, but also other types of system such as rack and pallet stores.

A standardized host interface enables data to be exchanged with any type of materials management system.

Please don't hesitate to request detailed information about Hänel software programs.

### The pluses

- ▶ Operators work directly at the storage units – which is ergonomic, practical and time-saving
- ▶ Asynchronous processes at the storage units – each lift works independently
- ▶ Prioritized storage location search in front of the corresponding storage unit
- ▶ Exchange of data with all the well-known ERP systems
- ▶ Can be expanded at any time by adding more storage units.





Hänel LEAN-LIFT

Lift 6

LR 5

Einstieg verboten Lebensgefahr Einstieg verboten



# Cool systems

## Automated storage in a controlled atmosphere

### Optimum solutions for storage in temperature-controlled and dry-air environments!

The quality requirements that consumer and industrial goods have to meet are becoming increasingly stringent and far-reaching. Many products today, ranging from fragile components in the electronics industry (such as the delicate surfaces of semiconductor products) to sensitive substances in the chemical and pharmaceutical industries, need to be stored under very specific, defined conditions.

With its automated **DryStore**<sup>®</sup> and **ClimateStore**<sup>®</sup> systems, Hänel offers future-oriented solutions that are suitable for all air-controlled environments.

The systems are flexible and can be free-standing or installed so that they dock into existing rooms.

Illustrated on the opposite page is a Hänel **ClimateStore**<sup>®</sup> Lean-Lift<sup>®</sup>, networked with other Lean-Lifts<sup>®</sup>. It is used to stock temperature-sensitive medicines at a constant 5 degrees Celsius.

The efficacy of the climate chamber is ensured by an automatically closing door and the Hänel high-speed door.



Storage of highly sensitive pacemakers at constant humidity with the Hänel Lean-Lift<sup>®</sup> DryStore





# Hänel Lean-Lift®

## Maximum efficiency in intralogistics

### Hänel EcoDrive

#### CO<sub>2</sub> reductions thanks to efficient energy recovery

**Depending on the traversing rate, up to 40 % of the energy fed in previously for the upward run can be returned to the supply network!**

The new Hänel EcoDrive helps to save energy and consequently to reduce costs. A new kind of frequency converter uses the energy of the descending extractor and converts it back into electrical energy. This is then fed back into

the supply system and can be used elsewhere, for example on other Lean-Lifts® in a network.



### Hänel DualDrive®

#### Double the performance

**Hänel, the inventor of the extractor with double container placement, has perfected this system and developed the Hänel Lean-Lift® in DualDrive® design.**

The new Hänel Lean-Lift® in DualDrive® design boosts order-picking performance substantially. Pick lists with articles stored on different containers can be processed at a considerably higher speed.

**This saves time and therefore costs!**

### Hänel Pre-Store-Buffering®

#### Time saved by automatic buffering

**Maximum security of the storage articles, no limitation to the height of the storage goods, and optimal ergonomics – another stroke of innovative genius from Hänel!**

Usually the articles in a pick list are located on different storage containers. With Hänel's Pre-Store-Buffering®, the time needed to access consecutive containers is considerably reduced.

While the operator takes the required articles from container ① in the access point, the extractor is already bringing container ② to a storage location directly behind the access point (this location can be pre-defined as required).





## Hänel Pick-o-Light® system

### A new way to identify storage locations

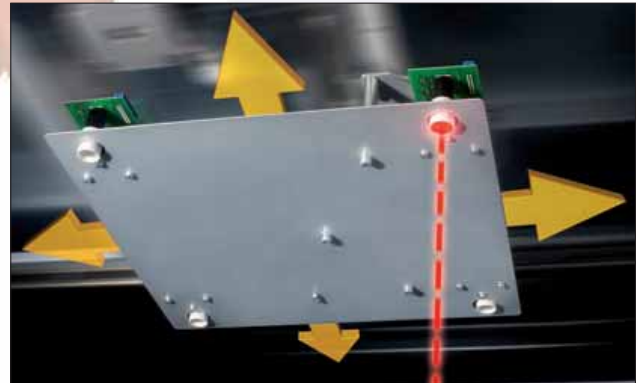
**A component of Hänel's high-speed-picking concept is the Hänel Pick-o-Light® system for quickly finding the required articles**

An LED array is integrated into the panel above the access opening of the lift. A colored LED directs a beam of light onto the requested article so that it is identified unmistakably and unequivocally.

This ensures maximum efficiency and reliable selection during order picking.

### Hänel Pick-o-Light-Vario® for variable container divisions:

Alternatively, if container divisions are variable, items can be identified via a free-moving Vario unit with 4 integrated LEDs.



## Hänel camera solution

### Visual representation of the container inventory

**With the photographic information, articles on a container can be identified directly at the control unit or in HänelSoft®**

One or more cameras are integrated in the Hänel Lean-Lift® per access point. Each time a pick or put operation is performed, an up-to-date container photo is taken.

The container photo is displayed at the control unit.

This guarantees an optimal visual overview of the storage situation at all times.

A defined number of pictures is archived per container so that inventory changes on the container can be tracked.

# Quality through competence

## The Hänel service team

**We see customer support and the legendary Hänel customer service as our obligation**



The electronics in the Hänel Lean-Lift® are easily accessible and clearly arranged in the pull-out wiring box below the access point

The employees in our support centers are factory trained and approach their jobs in a highly professional manner.

This applies whether they are developing a storage management concept, training operators or carrying out maintenance or repair work.

In recognition, the quality management system of Hänel Germany and Hänel Switzerland has been awarded the DIN EN ISO 9001:2008 certificate for production, design, development, installation, sales and service.

It's good to know there are people who understand their trade and who act responsibly.

### **Maintenance access from the side**

Maintenance or repair work can be carried out conveniently on the Hänel Lean-Lift® from the side – complex dismantling of device parts is unnecessary.

Reliable protection with the patented Hänel arresting device





### Play it safe

Only technicians trained and authorized by Hänel have the know-how and the technical resources to maintain Hänel industrial storage systems quickly and safely.







# Each Lean-Lift® is unique

## The right model for each store

### Technical data

Model	Device dimensions in mm		Container sizes in mm		Load capacity in kg
	Depth	Width	Width	Depth	
<b>840-635</b>	2,240	1,165	840	635	300/500/700
<b>1300-635</b>	2,240	1,625	1,300	635	300/500/700/1,000
<b>1640-635</b>	2,240	1,965	1,640	635	300/500/700/900
<b>1860-635</b>	2,240	2,185	1,860	635	250/500/650/900
<b>2060-635</b>	2,240	2,385	2,060	635	250/500/650/850
<b>2300-635</b>	2,240	2,625	2,300	635	250/400/470/650/800
<b>2460-635</b>	2,240	2,785	2,460	635	250/400/470/650/800
<b>2860-635</b>	2,240	3,185	2,860	635	190/250/400/500/550/650
<b>3060-635</b>	2,240	3,385	3,060	635	190/250/350/450/550/625
<b>3260-635</b>	2,240	3,585	3,260	635	180/250/400/550/600
<b>840-825</b>	2,810	1,165	840	825	300/500/700/1,000
<b>1300-825</b>	2,810	1,625	1,300	825	300/500/700/1,000
<b>1640-825</b>	2,810	1,965	1,640	825	300/500/700/900
<b>1860-825</b>	2,810	2,185	1,860	825	250/500/650/900
<b>2060-825</b>	2,810	2,385	2,060	825	250/500/650/850
<b>2300-825</b>	2,810	2,625	2,300	825	250/470/650/800
<b>2460-825</b>	2,810	2,785	2,460	825	250/470/650/800
<b>2860-825</b>	2,810	3,185	2,860	825	190/250/400/500/550/650
<b>3060-825</b>	2,810	3,385	3,060	825	180/325/425/450/550/625
<b>3260-825</b>	2,810	3,585	3,260	825	180/250/400/550/600
<b>840-1047</b>	3,475	1,165	840	1,047	300/500/700/1,000
<b>1300-1047</b>	3,475	1,625	1,300	1,047	300/500/700/950
<b>1640-1047</b>	3,475	1,965	1,640	1,047	250/500/650/850
<b>1860-1047</b>	3,475	2,185	1,860	1,047	250/450/650/850
<b>2060-1047</b>	3,475	2,385	2,060	1,047	250/450/600/800
<b>2460-1047</b>	3,475	2,785	2,460	1,047	250/400/600/750
<b>2860-1047</b>	3,475	3,185	2,860	1,047	250/350/500/700
<b>3060-1047</b>	3,475	3,385	3,060	1,047	220/300/450/650
<b>3260-1047</b>	3,475	3,585	3,260	1,047	220/300/450/600
<b>840-1270</b>	4,150	1,165	840	1,270	300/500/700/1,000
<b>1300-1270</b>	4,150	1,625	1,300	1,270	300/500/700/900
<b>1640-1270</b>	4,150	1,965	1,640	1,270	250/500/650/800
<b>1860-1270</b>	4,150	2,185	1,860	1,270	250/450/650/800
<b>2060-1270</b>	4,150	2,385	2,060	1,270	250/400/600/750
<b>2460-1270</b>	4,150	2,785	2,460	1,270	250/400/600/700
<b>2860-1270</b>	4,150	3,185	2,860	1,270	200/300/500/700
<b>3060-1270</b>	4,150	3,385	3,060	1,270	200/250/450/650
<b>3260-1270</b>	4,150	3,585	3,260	1,270	200/250/450/600

Maximum device payload up to 60,000 kg depending on the model.  
A few examples from a multitude of possibilities

### No two the same

No two Lean-Lifts® are the same. Simply because each task requires a unique approach. That's why, at Hänel, high quality of consultancy takes first place alongside product quality.

### We are committed to environmental protection

It goes without saying that production at our three plants meets the latest environmental guidelines and even exceeds them. Only environmentally friendly, recyclable materials are used.



# Quality signed and sealed

## Innovative developments and state-of-the-art production technology

### Hänel – a company committed to top quality

#### Quality starts with consulting

No two Hänel lifts are the same. Simply because each task requires a unique approach.

That's why, at Hänel, high quality of consultancy takes first place alongside product quality. On the basis of your requirements and our experience we develop a complete solution tailored to your needs.

#### High-tech production for high-end demands

Highly qualified specialists implement the ideas of the planning engineers using cutting-edge manufacturing techniques. They act in concert to incorporate their know-how and experience.

Despite automation, the focus at Hänel is on people. They are the ones who coordinate the different production steps and monitor quality constantly.

On September 1, 1993, Hänel Germany was awarded the international certificate of quality according to ISO 9001 by the 'German Association for Certification of Quality Management Systems'. It was the first company in its field (vertical lift technology) worldwide to achieve this distinction.

And in 2009 once again the process-oriented quality management of Hänel was acknowledged by the technical control board TÜV Hessen with the current DIN EN ISO 9001:2008 Certificate.





**TÜV  
PROFI  
CERT**  
**CERTIFICATE**

Management system as per  
**DIN EN ISO 9001:2008**

Evidence of conformity with the above standard(s) has been furnished  
and is certified in accordance with TÜV PROFICERT procedures for



**Hänel GmbH & Co. KG**  
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Am Zollwasen 3 - D-97353 Wiesentheid  
**Hänel & Co. Büro- und Lagersysteme**  
Baffesstraße 21 - CH-9450 Altstätten/SG

scope

Design, Conception, Production, Distribution and Maintenance  
of Office and Storage Systems

Registration No. 73 100 2545  
4164 8914  
1st October 2011

*O. Malt*

Darmstadt, 15th October 2009  
Certification body of TÜV Hessen  
Certification manager



# Ideas that move the world . . .

## Cutting-edge technology 'Made by Hänel'

**As one of the world's market leaders for vertical carousels and vertical lift modules, Hänel is continuously expanding its network**

Hänel already has representatives in over 60 countries so that our customers can be given optimal support and the increasing demand for Hänel products can be met.

Hänel exhibits its innovations in intra-logistics at numerous international trade fairs. For an up-to-date overview of trade fair dates, visit us on the Internet at

**[www.hanelworldwide.com](http://www.hanelworldwide.com)**

It's all part of Hänel quality:  
being there whenever you need us.  
Worldwide . . .

**The Hänel team is at your service.**



- |                |               |                    |                      |
|----------------|---------------|--------------------|----------------------|
| Algeria        | Germany       | Mexico             | South Africa         |
| Australia      | Great Britain | Morocco            | South Korea          |
| Austria        | Greece        | Netherlands        | Spain                |
| Bahrain        | Hong Kong     | New Zealand        | Sweden               |
| Belgium        | Hungary       | Nigeria            | Switzerland          |
| Brazil         | India         | Norway             | Syria                |
| Bulgaria       | Iran          | Oman               | Taiwan               |
| Canada         | Ireland       | Poland             | Thailand             |
| China          | Italy         | Portugal           | Tunisia              |
| Costa Rica     | Jordan        | Qatar              | Turkey               |
| Croatia        | Kuwait        | Romania            | Ukraine              |
| Czech Republic | Latvia        | Russian Federation | United Arab Emirates |
| Denmark        | Lebanon       | Saudi Arabia       | USA                  |
| Egypt          | Libya         | Scotland           | Vietnam              |
| Estonia        | Lithuania     | Singapore          |                      |
| Finland        | Luxembourg    | Slovakia           |                      |
| France         | Malaysia      | Slovenia           |                      |





# We have more in store . . .

## Hänel Rotomat® office carousels

### The optimal filing systems for office and administration

Hänel started series-producing filing carousels (the first manufacturer in Europe to do so) over 50 years ago – and you reap the benefits of this long experience!

With the Hänel Rotomat® office carousel, we offer a flexible organization and filing system that adapts optimally to your needs.

#### The pluses

- ▶ Optimum use of floor space. There are no upper limits to the Rotomat®.
- ▶ High-performance controllers and hook-up to IT systems make the Rotomat® flexible and enable customized applications.
- ▶ The office worker no longer goes to the files, instead the files are brought automatically to the ergonomic retrieval height when requested.
- ▶ The Rotomat® protects all the files from dust, light and unauthorized access.



The right file is found among thousands of hanging folders in seconds

## Hänel Rotomat® industrial carousels

### Top order-picking performance due to short travel paths

Whether it's materials provisioning at the production line or computerized spare parts storage – the Rotomat® does the job. Its compact design enables up to 60 %

more storage capacity to be created on a minimal footprint by making use of the available room height.

#### The pluses

- ▶ Automated storage and materials handling technology for every application.
- ▶ The requested part is brought automatically to the ergonomic retrieval height.
- ▶ Perfect storage organization with MP control units and hook-up to IT systems.
- ▶ High economic efficiency and cost savings.



Antistatic storage in the Hänel Rotomat® industrial carousel right at the production line

## Hänel Multi-Space®

### The new definition of vertical lift technology

The innovative 3-axis storage system from Hänel with the many advantages of time-proven Hänel Lean-Lift® technology. Whether it operates as a stand-alone solution, in a network with other

Multi-Space® units or in combination with Lean-Lifts® and Rotomats® – the Hänel Multi-Space® offers another innovative solution for your intralogistics!

#### The pluses

- ▶ Unique extractor design in state-of-the-art lightweight construction (as used in bridge engineering) guarantees maximum stability.
- ▶ The Hänel Multi-Space® offers modular scalability in height and width – up to a total width of over 9 meters.
- ▶ Variable container widths, different payload capacities and the Hänel multiple pitch ensure the optimal solution for any challenge to compact storage.



Two Hänel Multi-Space® units each 9.57 m wide constitute the central store for the production hall



# The Hänel product portfolio – the right solution for every need!



## Hänel Rotomat® office carousel

The Hänel Rotomat® is the optimal filing system for office and administration.

Folders, index cards or files – the Hänel Rotomat® keeps them all in order. It finds the right file from among thousands of hanging folders and retrieves it in seconds. The powerful Hänel micro-processor control systems enable the Rotomat® to be networked directly with a PC.

All Rotomat® office carousels are also available in a version suitable for disabled operators.



## Hänel Rotomat® industrial carousel

Each Hänel Rotomat® is designed according to the tried-and-tested Ferris wheel model (vertical carousel principle) which means: goods to man and not man to goods.

The compact construction enables up to 60% more storage capacity to be created on a minimal footprint by making use of the available room height. No two Hänel Rotomats® are the same, because each task demands a precisely defined solution.



## Hänel Lockomat®

The Hänel Lockomat® is the ideal storage system for safe and secure provisioning of small parts, tools, electronic components, medicines, etc.

User authentication is provided by ID card, PIN code or optionally by transponder. The Hänel Lockomat® can be used in a wide range of sectors: the chemical industry, banking, pharmacies, etc.: wherever items that look the same on the outside but are entirely different on the inside need to be stored and retrieved quickly and without error.



## Hänel Lean-Lift®

The Hänel Lean-Lift® is both storage rationalization and goods protection in one: At the center of the 'cabinet' is a computer-controlled positioning lift – called the 'extractor'. In front of it and behind it are the storage shelves. This is where the articles are kept in containers.

The storage locations are accessed automatically under electronic control by means of the extractor, which stores or retrieves the requested container. The goods are then delivered to the retrieval area at the correct ergonomic height.



## Hänel Multi-Space®

Hänel has optimized the principle of 3-axis storage systems with the Hänel Multi-Space®. In addition to the many advantages of the Hänel Lean-Lift® technology, the Hänel Multi-Space® offers maximum flexibility, speed and use of space.

With its advanced technology, Hänel is able to offer a 3-axis storage system over 9 m in width. The Hänel Multi-Space® can even be varied in width and height once installed – an innovation from Hänel!

Even the number of retrieval points is variable and can be changed at any time.



## The intelligent Hänel control and software technology

Our strength lies in our know-how. Because only object-related, practice-oriented microprocessor control units can offer you a complete storage management system. Hänel storage systems can also be controlled via a computer interface, of course. Hook-up to enterprise resource planning systems is no problem. Hänel also offers software solutions for individual requirements.

## Hänel

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Fax 01 45 13 96 13  
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[www.hanel.fr](http://www.hanel.fr)

## Hänel

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[www.hanel.us](http://www.hanel.us)

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**Innovative ideas. Sound technology. Flexible systems**



Subject to revision

P-LEAN-11/2009