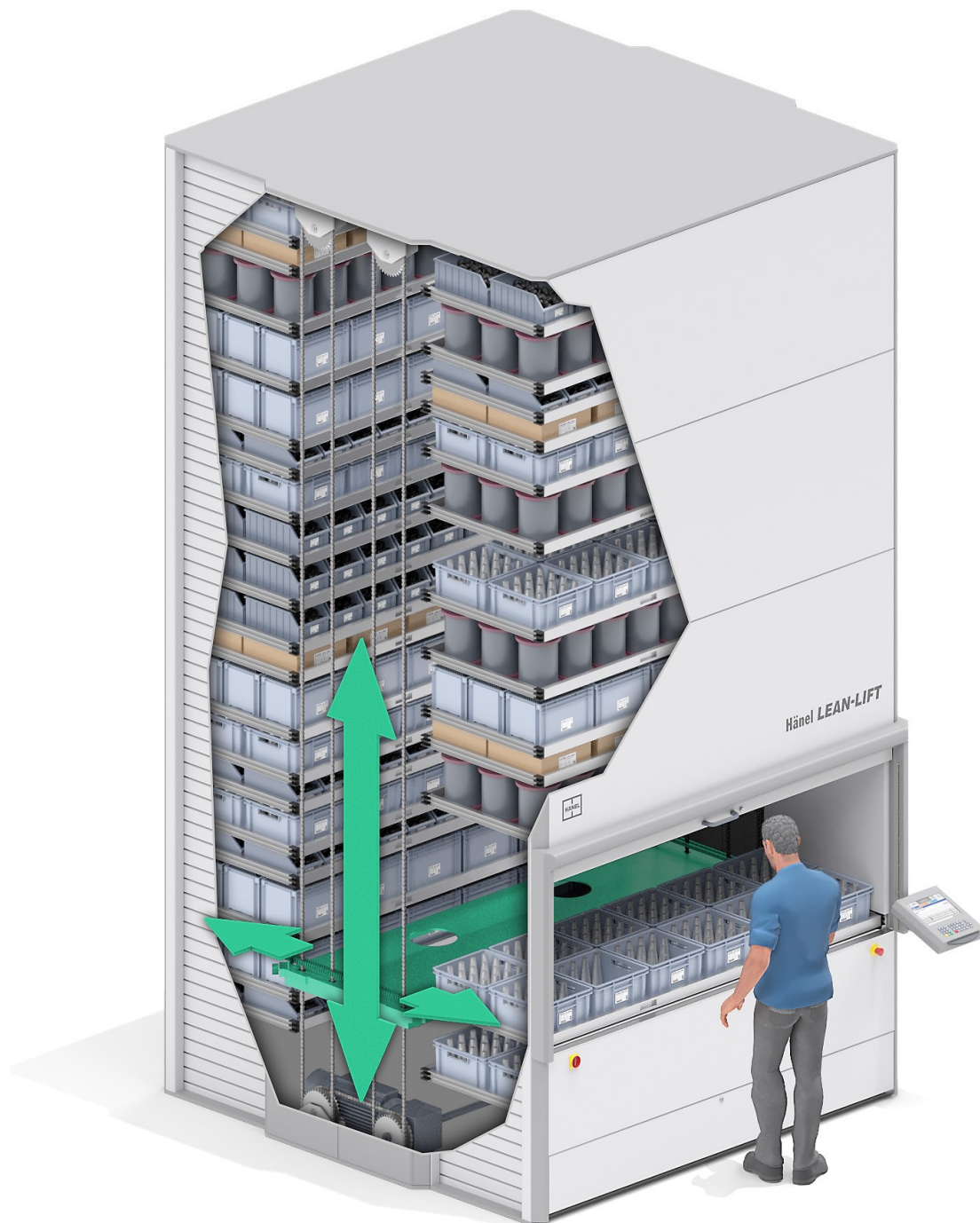


Installation Requirements for the Owner/Operator Hänel Lean-Lift®



Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

Contents

Note:

A separate table of contents is provided at the beginning of each chapter containing multiple subchapters.

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Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

0. Meaning of the signal words and symbols used

Contents

This section contains important information about this document. Follow the instructions in order to prevent errors when preparing to install the Hänel Lean-Lift®. It is particularly important that you note the meaning of the symbols for the safety instructions and follow the corresponding instructions exactly.

By doing so, you prevent possible accidents and the associated risk of injuries and property damage.

Table of contents

In addition to the main table of contents, any chapter containing multiple subchapters has a separate table of contents located at its beginning.

Classifying the signal words and colours used

The signal words and colours used have the following meanings:

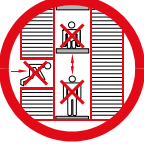
Signal word and colour	Meaning
(Warning sign)  DANGER • Safety instruction • Preventive measure	High risk of danger A safety alert symbol with the keyword "DANGER" means: High risk, warning of fatal injuries in the event that instructions/requirements are not observed. Appearance: White text on red background. To explain the danger, a specific symbol appears at the left of the safety instruction text.
(Warning sign)  WARNING • Safety instruction • Preventive measure	Moderate risk of danger A safety alert symbol with the keyword "WARNING" means: Moderate risk, warning of possible severe to fatal injuries in the event that instructions/requirements are not observed. Appearance: Black text on orange background. To explain the danger, a specific symbol appears at the left of the safety instruction text.
(Warning sign)  CAUTION • Safety instruction • Preventive measure	Low risk of danger A safety alert symbol with the keyword "CAUTION" means: Low risk, warning of possible minor to moderate injuries in the event that instructions/requirements are not observed. Appearance: Black text on yellow background. To explain the danger, a specific symbol appears at the left of the safety instruction text.
(Mandatory instruction sign) SAFETY INSTRUCTIONS • Safety-related instructions and safety-compliant workflows	Safety instructions Keyword "SAFETY INSTRUCTIONS": Instruction for safe work. Appearance: White text on green background. A specific mandatory instruction symbol may appear which explains the specific safety measure.

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0. Meaning of the signal words and symbols used (continued)

Symbols and signal words used

Symbols	Meaning
	This symbol informs you that the following are prohibited: • Entering the lift via the access point. • Sitting or standing inside the access point or underneath the unsecured extractor. • Riding on the extractor.
	Notes with this symbol and the keyword "Danger!" warn you of possible severe injuries of a general nature, possibly including fatal injuries.
	Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by falling.
	Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by suspended loads, particularly falling of the extractor.
	Notes with this symbol warn you of a crushing hazard caused by moving machine parts.
	Notes with this symbol warn you of a hazard caused by parts that tip over.
	Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by electrical current.
	Notes with this symbol warn you of a hazard caused by: • Storing explosive materials in the lift • Storing these materials in the area surrounding the lift • Development of explosive atmospheres.

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Hänel Lean-Lift®

0. Meaning of the signal words and symbols used (continued)

Symbols and signal words used (continued)

Symbols	Meaning
	Notes with this symbol warn you of a hazard caused by storing hazardous materials, particularly aggressive or corrosive media.
	Secure the main switch! This symbol informs you that, before beginning a task, you must switch off the main switch and secure it from being switched on again using a padlock.
	Secure the actuator latch! This symbol informs you that, before beginning a task, you must lock a padlock onto the actuator latch of the open service door to keep it from closing.
	Wear fall protection equipment! This symbol informs you that, before beginning a task at great heights, you must put on fall protection equipment as personal safety equipment (PSE) against falling.
	Wear safety gear! This symbol informs you that when hazards from falling parts exist, you must wear personal safety equipment.
	Disposal This symbol indicates that applicable national laws and regulations for the disposal of recyclable materials must be followed.
	Note The word "Note" marks important information that absolutely must be followed.

Note:

The word "Observe:" marks additional information for preventing errors.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

1. Basic information

These "Installation Requirements for the Owner/Operator" are part of our terms of delivery and their scope includes the requirements of the currently valid Machinery Directive of the European Community.

Contents

This chapter provides basic information about the Hänel Lean-Lift®.

Manufacturer

Hänel GmbH & Co. KG
Hänel Büro- und Lagersysteme
Postfach 11 61
D-74173 Bad Friedrichshall,
Germany
Phone: +49 7136 27725
Fax: +49 7136 27741
Internet: www.haenel.de

Scope of validity of the Installation Requirements

These Installation Requirements are valid for lifts of the following series:

Type: Hänel Lean-Lift®

Access points: according to order confirmation

Date of issue of the Installation Requirements

October 2024

Keep in an accessible place as a complete document

- This document, "Installation Requirements for the Owner/Operator", is a part of the lift and must be stored in an accessible location at all times, even after the installation work is completed.
- Pages may never be removed from this document, "Installation Requirements for the Owner/Operator". If the document or any of its pages are lost or missing, particularly the section entitled "Safety instructions", they must be replaced immediately.

Copyright

This documentation contains information that is protected by copyright. It may not, in whole or in part, be photocopied, duplicated, translated or stored to any electronic medium without prior consent from the manufacturer.

All other rights reserved.

Change service

This documentation is not subject to the change service of the manufacturer. Changes to this documentation may be made without further notification.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

1. Basic information (continued)

Purpose of this document

This document contains:

1. The mandatory prerequisites which have to be met for a lift to be installed
2. The mandatory prerequisites (particularly regarding the service access doors) which have to be met for later service work to be conducted safely and
3. Important information regarding how the situation at a particular location and the other basic conditions impact lift installation and service work as well as how the owner/operator may need to improve them for safety reasons.



DANGER

Improperly carried out installation work on the lift results in a risk of fatal injury!

- The applicable safety instructions must be followed throughout the entire installation. For further information, refer to the Chapter 4 General safety".
- The installation area must be sufficiently cordoned off to prevent risk of accident and access by third parties.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

2. Mandatory prerequisites for the lift's installation location

Contents

For a release of the lift for installation, all following points must have been answered with "Yes".

Chapter	Subject	Page
2.1	Static and structural requirements	9
2.2	Additional static and structural requirements for lifts with installation locations in earthquake-prone areas	10

2.1 Static and structural requirements

For the detailed requirements and relevant data, refer to the Power Supply and Foundation Plan, and—with regard to weight information and dimensions of the lift—the specific Hänel quotation/order confirmation.

For lifts erected in an earthquake zone, in addition—depending on the country/installation location, a corresponding Supplement to Power Supply and Foundation Plan Lift version for earthquake zones.

Requirements for the carrying capacity of the lift's installation location

Before lift installation, the owner/operator is responsible for having the load capacity in the respective lift installation location tested and released for sufficient load capacity by a structural engineer employed by the owner/operator with regard to the total weight of the lift including the maximum permitted total load.

Therefore, before erecting and commissioning the lift, have the floor/ceiling load capacity at the installation location checked by a structural engineer to ensure sufficient load capacity.

For more detailed information about this, refer to Chapter 6.1 C.

Requirements for the substrate of the lift's installation location

The substrate at the lift installation location must consist of a material that can safely hold the loads of the lift. Floating screed (inadequate load carrying capacity) or magnesium oxychloride cement (strong corrosion) is not permitted.

For more detailed information about this, refer to Chapter 6.1 C.

Requirements for the evenness of the lift's installation location

The floor at the erection location of the lift must be flat, solid (i.e. rigid) and level as determined by a spirit level.

Specific requirements apply for unevenness of the floor.

For more detailed information about this, refer to Chapter 6.1 C.



WARNING



Hazard in the event of inadequate static and structural requirements

The load capacity of the lift's installation location of the lift must withstand the total weight (empty weight of the lift plus maximum load).

Compliance with the permitted load capacity of the floor or ceiling at the respective lift's installation location is the responsibility of the owner/operator.

Lift installation on floating or magnesium oxychloride floor is not permitted.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

2.2 Additional static and structural requirements for lifts with installation locations in earthquake-prone areas

Standard lifts are not intended for installation and operation in seismic zones / earthquake-prone areas!

Lifts for seismic zones / earthquake-prone areas must be equipped with substantial structural reinforcement in accordance with the input parameters in order to retain their inner structure when subjected to earthquake loads. In addition, for this purpose, such lifts require permanent anchoring to the ground. The respective lift version can be taken from the order confirmation and the type plate. Before the order is placed, the corresponding relevant input parameters at the owner/operator's location on seismic zones / earthquake-prone areas at the owner/operator's location have to be shared.

To fulfil the special requirements for lift installation in an earthquake-prone area, such a lift's installation location - in addition to the points listed in Chapter 2.1 it is also mandatory to fulfil all the prerequisites listed below.



WARNING

Hazard posed by setting up the lift in seismic zones / earthquake-prone areas

Lifts without an additional special agreement are not structurally designed for use in earthquake-prone areas (refer also to the order confirmation and type plate). In the case of an earthquake, persons in the vicinity of the lift may be in danger. For earthquake-prone areas, there are lifts that are specifically constructed and designed based on various seismic zones (refer also to the order confirmation and type plate).



Note

For lift width greater than 3260:
At least 400 mm [15.75 in.] of space is required on the left and right side of the lift to install and screw on the floor anchors.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

2.2 Additional static and structural requirements for lifts with installation locations in earthquake-prone areas (continued)

a) Lift dimensions / sufficient clearance

- The lift must be freestanding, may not have any contact points/must have sufficient clearance to buildings/building parts, other lifts and other structures during ongoing operation and in the event of an earthquake.
For mandatory minimum clearances, refer to the specific Hänel quotation/order confirmation.

b) Load carrying capacity

- The load capacity (floor/ceiling load capacity) of the lift's installation location must withstand the total weight (empty weight of the lift plus maximum load) and the additional forces in the event of an earthquake.
For mandatory minimum requirements for the load carrying capacity, refer to the specific Hänel quotation/order confirmation.

Lift installation outside Germany

The installation of lifts is not possible in seismic zones.

Only for lifts installed in Germany:

Lift installation in storeys in seismic zones can be quoted only after presentation of an individual structural/building dynamic model (see corresponding notation in quotation/order confirmation).

c) Concrete quality of the foundation/footprint of the lift

- The concrete quality must be at least C 25/30,
 $f_{ck,cube} = 30 \text{ N/mm}^2$ [4352 lbf/sq in].

d) Floor anchorage systems

Operation of a lift with installation location in an earthquake zone/earthquake-prone area is possible only with attachment of a suitable floor anchorage system or one stipulated by Hänel. For proper installation of such a floor anchorage system in the floor plate/concrete foundation, the following prerequisites must be in place:

- Drilled hole depth/anchorage depth possible (no floor heating or the like in the floor)
- Thickness of the concrete component sufficient
- Minimum edge clearance around the anchor centre to the edge of the concrete component adequate
- Suitable anchor type stipulated by Hänel.

For detailed information about this, refer to "Supplement to Power Supply and Foundation Plan Lift Version for Earthquake Zones",

For the floor anchorage system to be used, refer to the specific Hänel quotation/order confirmation.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

2.2 Additional static and structural requirements for lifts with installation locations in earthquake-prone areas (continued)

e) Written Confirmation of Lift's Installation Location

Before installation of the lift, Hänel must be given the following written confirmation with a positive result by the owner/operator of the lift:

- We hereby confirm that in accordance with the "Power Supply and Foundation Plan" and the "Supplement to Power Supply and Foundation Plan Lift Version for Earthquake Zones" the required verification of the static and structural requirements of the planned lift installation location [address, building, floor, department, etc.] has been carried out properly (e.g. by a structural engineer or other specialist) with a positive result.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

3. Personnel requirements

Contents

Overview of the qualifications required of the necessary personnel.

Installation personnel

The installation personnel from Hänel/their representative on-site must meet the following mandatory requirements:

- The installation personnel must have completed a qualifying examination, or comparable examination in the country of use, in the field of mechanical or electrical engineering.
- The installation personnel must be able to provide evidence of having received adequate installation training in all matters related to technical support of the lift and its safe handling, as well as regular annual follow-up training, from the manufacturer.
- They must have sufficient knowledge of the language of the country of use.

If these requirements are not in place, the work must not be carried out or must be cancelled if it has begun already.

Auxiliary personnel

The owner/operator is solely responsible for selecting any auxiliary personnel to be used. It is mandatory that the auxiliary personnel used fulfil the following requirements:

- The auxiliary personnel have to be suitable for the task they are used in, adequately instructed, and demonstrably capable of using the respective equipment (e.g. powered auxiliary equipment).
- The auxiliary personnel have to be equipped with the required personal safety equipment and familiar with its proper use.
- The auxiliary personnel must be sufficiently proficient in the language of the country of use.
- The auxiliary personnel must be able to follow the instructions of the installation personnel.
- The auxiliary personnel have to be available to the installation personnel without any interruption.

If the installation supervisors of Hänel or its on-site representatives believe that these requirements have not been met, the work must not be carried out or must be terminated.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

4. General safety

Contents

This chapter provides important instructions intended to protect the installation personnel, auxiliary personnel and (where applicable) third parties from injury or damage and to prevent property damage.

Important notes before beginning work

These "Installation Requirements for the Owner/Operator" are fundamental to safe installation of the Hänel Lean-Lift® and require careful and thorough compliance. The installation personnel are obligated to verify this before installation begins.

Safety during installation

The owner/operator is responsible for clarifying the internal company regulations for installation, operation and maintenance.

Before work begins, the installers and auxiliary personnel have to be informed about all internal company regulations relevant to installation. For the necessary qualification of the installation personnel and the auxiliary personnel, see Chapter 3. If the owner/operator will conduct safety training with regard to factory safety, workplace safety and environmental protection, this must be agreed on with the installation supervisor before the installation begins. The same applies to any plant ID cards the owner/operator may issue.

Safety of the installation area

For safe installation, the owner/operator must provide a sufficiently large installation area that is permanently protected against the weather; see Chapter 6.1. Only installation personnel and authorised auxiliary personnel may access this installation area.

Before work begins, the owner/operator must coordinate with the installation personnel to ensure that the installation area is visibly cordoned off to prevent risk of accident—particularly due to falling or overturning parts of the lift—and prevent access for unauthorised persons.

For new buildings / shell construction

The installation work may proceed only after removing any construction dirt present. During installation, the owner/operator must protect the installation area and lift parts in temporary storage from dirt.

If, despite this, the installation area or lift parts are contaminated with construction dirt, the dirt must be removed completely before installation continues.

The installation area must be heatable.

Personal safety equipment

The respective national regulations apply.

In particular, for installation personnel and auxiliary personnel, the following are required in accordance with rules:

- Safety shoes and a safety helmet with chin guard to protect against falling parts,
- safety glasses if necessary,
- protective gloves as protection against injuries from corners and as protection from burns on hot drive parts,
- Personal safety equipment against falling (restraint/fall arrest system) for all work at great heights.

The owner/operator must provide the required personal safety equipment for auxiliary personnel.

SAFETY INSTRUCTIONS



Use necessary safety equipment!

Work may be carried out with the required personal safety equipment (e.g. safety shoes, safety helmet with chin strap, protective gloves etc.).



The owner/operator must provide the required personal safety equipment for auxiliary personnel!

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

4. General safety (continued)

Safety for service calls

The service and auxiliary access points (see Chapter 6.9) must be continuously accessible so that they can be used in compliance with the relevant legal and company workplace safety and safety instructions.

These service and auxiliary access points must be permanently protected from the elements.

Safety in conditions with cold / heat / vapours / gases

For lifts intended for cool or warm areas or in which vapours and gases can form, the work area for lift assembly and maintenance work must have the proper conditions for carrying out all work on the lift in compliance with the relevant legal and company occupational safety and standard safety regulations.

Personal safety equipment

The respective national regulations apply.

In particular, for installation personnel and auxiliary personnel, the following are required in accordance with rules:

- Safety shoes and a safety helmet with chin guard to protect against falling parts
- safety glasses if necessary,
- protective gloves as protection against injuries from corners and as protection from burns on hot drive parts,
- Personal safety equipment against falling (restraint/fall arrest system) for all work at great heights.

The owner/operator must provide the required personal safety equipment for auxiliary personnel.

SAFETY INSTRUCTIONS



Use necessary safety equipment!

Work may be carried out with the required personal safety equipment (e.g. safety shoes, safety helmet with chin strap, protective gloves etc.).



The owner/operator must provide the required personal safety equipment for auxiliary personnel!

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

4. General safety (continued)

Work at heights

Work at great heights must be carried out only by personnel specially trained and authorised for this purpose.

A. Personal protection when using a raised working platform or scaffolding

Only a raised working platform or scaffolding is permitted as auxiliary equipment for work at great heights. The workers must not leave the platform or scaffolding when carrying out installation work at a great height.

Before using a raised working platform, it is mandatory to use the personal safety equipment against falling (restraint system) and the attachment points according to the manufacturer's operating manual for the raised working platform.

When using scaffolding, the personal protection against falling is provided by the existing railing or according to the manufacturer's operating manual.

B. Personal protection at insufficiently secured fall-risk zones

For work on insufficiently secured fall-risk zones (when transporting lift parts and for lift installation in a recessed pit or over multiple storeys), the owner/operator or its safety officer must provide or create inspected and permitted attachment points for personal protection (for European Union: see EN 795). For these attachment points the owner/operator must provide a test log from a person qualified for this or the approval of a structural engineer.

When carrying out such work, suitable personal safety equipment against falling must be used (depending on the height, e.g. a suitable restraint system or fall arrest system with deceleration device).

For proper use of the personal safety equipment, please observe the specifications and instructions from the respective manufacturer.

The owner/operator must block off the area around an insufficiently secured fall-risk zone to prevent access by unsecured personnel.

SAFETY INSTRUCTIONS



Second person required for work at heights!

Individual personnel must not carry out work at heights alone. It is mandatory to find a second trained person to watch during the entire duration of the work at heights and help immediately in the event of an emergency.

Note:

Outside Europe, the corresponding laws, standards and accident prevention regulations for work at heights and for fall protection equipment apply.

SAFETY INSTRUCTIONS



Wear fall protection equipment!

Therefore the safety rope of the fall protection equipment must be attached to a point outside of the lift that is permitted and suitable for the respective work.

Note:

Outside Europe, the corresponding laws, standards and accident prevention regulations for work at heights and for fall protection equipment apply.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

4. General safety (continued)

Modifying the Lean-Lift®

Modifications are permitted only after drafting and release of a trained safety concept by the Hänel production plant and may be carried out only by personnel who are specially trained and authorised by the manufacturer, and who have a sufficient Hänel certification level.

The consequences of an unauthorised modification and/or modification by personnel who are not (or not sufficiently) trained and certified by the manufacturer, Hänel:

All safety warranties and certifications shall be rendered null and void. These are:

- a. For the USA/Canada, the ETL label.
- b. For the European Economic Area, the EC Declaration of Conformity.

All warranty claims towards the manufacturer Hänel arising from faulty modification shall be null and void. Hänel shall no longer be responsible for the new safety concept.

The party carrying out the modification must draft a new safety assessment process and safety concept in accordance with EN-ISO 12100. All country-specific legal regulations or product standards, as well as country-specific obligations for retrofit must be taken into account by the party carrying out the modification. For the European Economic Area, these are the EC Machinery Directive, documented by the EC Declaration of Conformity and product standard EN 15095. This modification would then be carried out at the sole responsibility and risk of the company carrying out the modification and the owner/operator without the technical knowledge of the manufacturer.



DANGER

Risk of fatal injury incurred by unauthorised modifications!

- Any modification without the proper approval of the manufacturer is prohibited.
- There is a risk of fatal injury in case of insufficient technical knowledge or following improper procedure!

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

5. Requirements of the area surrounding the lift for installation and lift operation

Contents

Here you will find the requirements of the area surrounding the lift and for subsequent lift operation.

Chapter	Subject	Page
5.1	Lift ambient conditions, risk of explosion and hazardous materials	19
5.2	Safety regulations for fire protection	20

5.1 Lift ambient conditions, risk of explosion and hazardous materials

Lift ambient conditions

The lift must be protected from humidity, moisture, and weather forces such as wind and snow. It is not intended for outdoor operation.

Installation of the lift and use in very dusty or dirty conditions, for example in a building shell, is not permitted.

The lift is not intended for use in explosive, aggressive or corrosive environments.

Explosion hazard

Hot surfaces or sparks may develop in the lift, for example from self-heating of drive parts or damage to interior parts from improperly stored articles. Therefore, no potentially explosive materials may be stored or handled in the area surrounding the lift's installation location/in the lift.

Hazardous materials

The storage of hazardous materials in the lift or the surrounding area is not permitted at any time. Examples of hazardous materials include:

- Irritants and other materials hazardous to the health
- Flammable materials
- Explosive materials

WARNING

Hazard from unsuitable area surrounding the lift

The lift must not be installed and operated unless all conditions are properly met.



DANGER

Risk of fatal injury from explosive materials and atmospheres

The lift is not suited for storing explosive or combustible hazardous materials, or for being operated in an explosive atmosphere; these are all prohibited. Solid materials and aerosols can accumulate in gaps inside the lift.

- Before installing/switching on the lift, remove all explosive and combustible materials from the danger zone of the lift.
- Do not store any explosive or combustible materials or materials that can create an explosive atmosphere.



WARNING

Danger from hazardous materials

- Before installing or switching on the lift, remove all aggressive, corrosive or other hazardous materials from the lift and the surrounding area.
- Do not store any aggressive, corrosive or otherwise hazardous materials in the lift or the area surrounding the lift.



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5.2 Safety regulations for fire protection

Notification duties of the owner/operator for fire protection

Insofar as special operating and safety instructions for fire safety valid at the lift's installation location are in effect for the lift installation, it is mandatory for the owner/operator to provide advance notice of this to Hänel/the authorised Hänel representative and the installation personnel on site, before the beginning of installation work.

The special country-specific regulations for fire protection must be followed by all parties.

In the event that the lift installation and lift operation may have an effect on existing technical fire protection requirements/equipment at the installation location, the owner/operator must provide written notice of this to Hänel before the order is placed.

In addition, suitable measures/lift versions must be agreed with Hänel (e.g. fabricating perforated openings on the lift housing, etc.)

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Hänel Lean-Lift®

6. Planning and preparation for the installation on the part of the owner/operator

Contents

This provides important information for the planning and preparation of a safe lift installation in accordance with regulations. Careful and thorough preparation can prevent extra costs caused by delays.

Chapter	Subject	Page
6.1	Spatial and structural requirements	22
6.2	Anchoring provided by owner/operator for the lift	34
6.3	Mains power supply	37
6.4	Determining weights	42
6.5	Auxiliary personnel	44
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6.1 Spatial and structural requirements

A Required surfaces

The owner/operator must provide a sufficiently large interim storage site and installation location that is clear and free of obstacles and which must also be marked in an easily identifiable manner and cordoned off.

The respective spaces must be dry and heated.

A parking space must be provided at no charge for the installation service vehicle in the immediate vicinity of the installation location.

A 1 Interim storage site for individual lift parts

The owner/operator must be able to temporarily store lift parts near the installation location for the time between delivery and installation. A rule of thumb for the required storage area is 4x the desired lift height as an area in square metres [sqft].

One length of the storage area has to be equal to at least the lift height, but no more than 8 m [314.96 in].

If interim storage near the installation location is not possible, increased installation costs must be anticipated.

A 2 Required size of the installation area

The installation area needs to be at least large enough for a **side part of the lift**—its largest single part—to be laid flat on the ground. In addition to the dimensions of the side part, sufficient space must remain for handling the side parts and other parts, particularly for installation using a raised working platform or forklift (take into account space needed for manoeuvring, Figure 1).

The dimensions of the **side part of the lift** are as follows:

Height: desired lift height; refer also to the quotation or order confirmation
Depth: 95 mm [3.74 in]
Width: See table to the right

A 3 Required size of holes in the ceiling

The dimensions for **holes in the ceiling** each have to be 100 mm [3.9 in] larger than the lift depth or width.

For lifts with installation locations in earthquake zones/ earthquake-prone areas, larger holes in the ceiling may be required. Compliance is mandatory with the relevant dimensions/clearances to buildings/building parts and other structures in accordance with the specific Hänel quotation/order confirmation.

SAFETY INSTRUCTIONS

Secure the installation area!

The installation area must be sufficiently marked and cordoned off by the owner/operator in an easily visible manner (using coloured tape, for example) to prevent risk of injury—particularly due to falling or overturning parts of the lift—and prevent access for unauthorised persons.



Fig. 1: Examples of installation auxiliary materials used

Lift type	Width
Lean-Lift® 635	615 mm [24.21 in]
Lean-Lift® 825	805 mm [31.69 in]
Lean-Lift® 1047	1027 mm [40.43 in]
Lean-Lift® 1270	1250 mm [49.21 in]



Note

After the lift has been installed, the owner/operator has to seal the gap between the lift and cover.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

B Accessibility (installation and service)

The lifts must be **accessible** for the **installation auxiliary materials** at least on the front side of the lift and the side with a service access door, if possible, also on the opposite side of the lift. The space requirement in front of the lift access point (in the direction of lift depth) is at least the width of the container.

Depending on the size of the owner/operator's installation auxiliary materials, there is also need for sufficient manoeuvring space at least on the lift's front side and the side with the lower service door.

The Lean-Lift® must be **accessible** for **maintenance tasks** following the commissioning. Standard service access points are the lower service doors or, for lift width > 3260 bottom left and right service doors and additionally, a lift side panelling across the entire lift height. For further information about this, refer to Chapter 6.9.

SAFETY INSTRUCTIONS

Keep service access doors clear!

For service and maintenance tasks, the owner/operator must ensure the accessibility required for this and provide suitable auxiliary equipment, for example, a raised working platform or scaffolding. Ensure that safe and unobstructed access is possible using the respective auxiliary equipment. Adequate space at the lift is required for a raised working platform, scaffolding or forklift.



Note

If the lift side panelling can be reached, for example, via a pedestal or through floors, it may be necessary to install additional side brackets behind the side panel as a railing for fall protection equipment. To do so, the respective storey heights (top edge of the floor) have to be communicated to the Hänel factory before the quotation is submitted.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

C Checking the floor characteristics

C 1 Load carrying capacity

A structural engineering check of the load carrying capacity of the substrate, at both the installation and the erection location of the lift, must be carried out by the owner/operator.

The force distribution extends in the area of the side parts, as these are the load-carrying elements of the lift.

In addition, the load carrying capacity of the floor of the in-house transport cart to the interim storage site and assembly / installation site must be sufficiently dimensioned in order to absorb the existing loads using the tools for installation (such as the forklift, raised working platform) and the loads through the individual parts of the lift. For the tools that are used, see Chapter 6.6 or 6.7. For the weights of the individual lift parts, see Chapter 6.4.



WARNING

Hazard from erection of the lift on a prohibited substrate.

The load capacity of the installation location must withstand the total weight (empty weight of the lift plus maximum load).

Compliance with the permitted load capacity of the floor or ceiling at the respective lift's installation location is the responsibility of the owner/operator.

- Before lift installation, the owner/operator is responsible for having the load capacity of the floor or ceiling in the respective lift installation location tested and released for sufficient load capacity with regard to the total weight of the lift including the maximum permitted total load.
- Earthquake-prone areas: Lifts without an additional special agreement are not structurally designed for use in earthquake-prone areas (refer also to the order confirmation and type plate). In the case of an earthquake, persons in the vicinity of the lift may be in danger. For earthquake-prone areas, there are lifts that are specifically constructed and designed based on various seismic zones (refer also to the order confirmation and type plate).

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

C Checking the floor characteristics (continued)

C 2 Prohibited substrate

The floor at the installation location must consist of a material that can safely hold the loads of the lift. Floating screed (inadequate load carrying capacity) or magnesium oxychloride cement (strong corrosion) is not permitted.

WARNING



Hazard from erection of the lift on a prohibited substrate!

The load capacity of the lift's installation location must withstand the total weight (empty weight of the lift plus maximum load). Compliance with the permitted load capacity of the floor or ceiling at the respective lift's installation location is the responsibility of the owner/operator. Lift installation on floating or magnesium oxychloride floor is not permitted.

C 3 Level tolerances

The floor at the erection location of the lift must be flat, solid (i.e. rigid), level as determined by a spirit level and completely below the lift.

For unevenness of the floor, the maximum flatness deviations apply in accordance with the following table (refer also to DIN 18202, Table 3: "Level tolerances", row 2):

Measuring point distance	Maximum flatness deviation
1 m [39.37 in]	8 mm [0.31 in]
4 m [157.48 in]	12 mm [0.47 in]
10 m [393.7 in]	15 mm [0.59 in]
15 m [590.55 in]	20 mm [0.79 in]

Excerpt from DIN 18202: Table 3: "Level tolerances", Row 2

SAFETY INSTRUCTIONS

Lacking static and structural requirements!

If static and structural engineering requirements are not in place at the lift's installation location, the installation work may not be carried out or the installation work must be terminated.

Note:

If multiple lifts are erected immediately adjacent to each other, the flatness deviation causes a height shift of the adjacent lifts. If this height shift is not desired by the owner/operator, the maximum flatness deviation must not be more than 10 mm [0.39 in] over the width of all lifts.

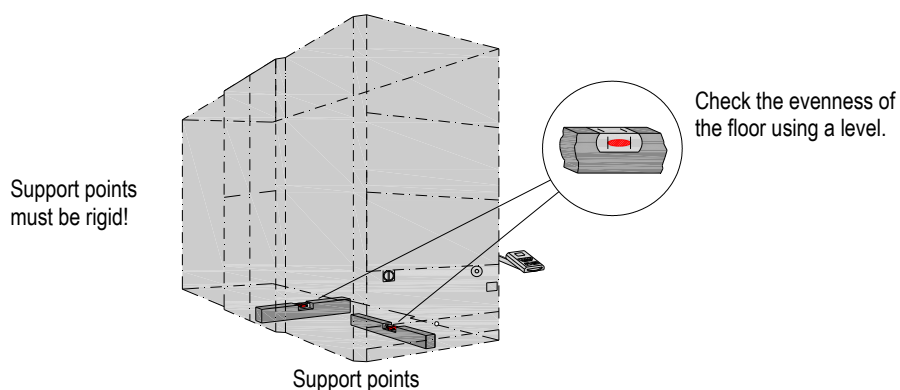


Fig. 2: Checking the floor characteristics

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

D Room height, width, depth

The installation area has to be free of obstacles. Tubes, busbars, ceiling joists, ventilation ducts etc. have to be taken into account.

The following room heights, widths and depths are required for setting up and installing the individual lift parts:

D 1 Installation with forklift and raised working platform by default.

The height of the room must be at least $D = 8 \text{ cm}$ [3.15 in] above the lift height (see. Fig. 3).

For all front panels and rear panels to be able to be installed, there has to be at least $D_{vr} = 5 \text{ cm}$ [1.97 in] of space to the front and rear.

For all side panels to be able to be installed, there has to be at least $D_s = 5 \text{ cm}$ [1.97 in] of space on the left and right sides of the lift.

Furthermore, to open a lower service door on this side of the lift, at least the following space D_w is required:

Lift type	Dw if lift width ≤ 3260	Dw if lift width > 3260
635	53 cm [20.87 in]	61.5 cm [24.2 in]
825	62.5 cm [24.61 in]	70.5 cm [27.8 in]
1047	74 cm [29.13 in]	-
1270	85 cm [33.46 in]	-

Lower service door, minimum space requirements in mm [in]

D 2 Lean-Lift® with divided side parts

If it is not possible to assemble the side parts before the lift is erected, the room height (see Fig. 3) must be approx. $D = 22 \text{ cm}$ [8.66 in] above the lift height.

For a lift height less than or equal to 10 m [393.7 in]: if the side parts can be assembled together before the lift is erected, the room height (see Fig. 3) must be at least 8 cm [3.15 in] above the lift height.

D 3 Anchoring provided by owner/operator

Depending on the version of the owner/operator's anchor, the space over the lift may need to be enlarged; to do this, observe Chapter 6.2.

Lean-Lifts® with a lift width > 3260 require a floor anchor from the owner/operator - refer to Chapter 6.2.

Note:

If there are "difficult installation conditions" (regarding these, see Section E next in this chapter), a larger room height and width may be required.

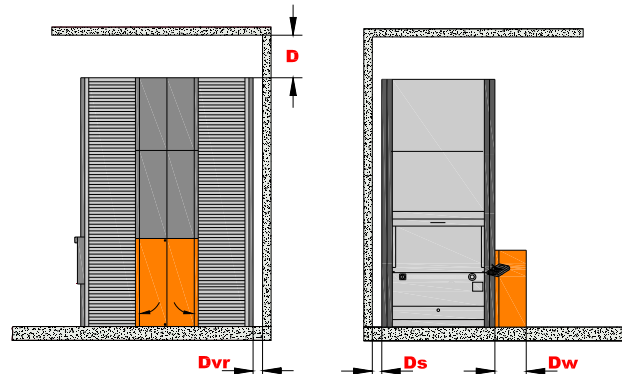


Fig. 3: Example: Space requirements for lift.
If lift width > 3260 , service doors on the left and right

Note:

Additional space is required for carrying out maintenance tasks - see Chapter 6.9.

Note!

For lifts with a height $> 8 \text{ m}$ [314.96 in], divided side parts are included in the standard scope of delivery.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions

Forklifts and raised working platforms are typically used as installation auxiliary materials for installing a Lean-Lift®.

Difficult installation conditions are regularly encountered for installing lifts under certain spacial conditions (see the following sections, E1 - E6) and for lift installations requiring the use of scaffolding, a crane, a chain block or an electric wire rope hoist (see E7).

Lift installations using scaffolding, a crane, a chain block or an electric wire rope hoist involve increased installation costs.

The standard version of the front panels can be installed from the outside, and the standard rear panels can be installed from inside.

If the front panels cannot be freely accessed from the front in a lift area due to the space for erecting the lift, the front panels in these areas must be in the "rear-panel model screwed on from the inside".

Note:

In the case of difficult installation conditions, verifiable solutions must exist before the quotation or order confirmation. In addition, note the following chapters 6.6 and 6.7



Fig. 4: Forklift and raised working platform

E 1 Lift in a shaft

Before selling a lift in a shaft, the installation team manager has to grant corresponding approval.

In order to be able to use a raised working platform during the installation, it must be able to be completely brought in through the shaft opening. In addition, note Section E7.

For **maintenance tasks** that are necessary after the lift is put into service, the **accessibility** of the Lean-Lift® must be ensured. Standard service access points are the lower service doors or, for lift width > 3260 bottom left and right service doors and, additionally, a lift side panel across the entire lift height. For further information about this, refer to Chapter 6.9.

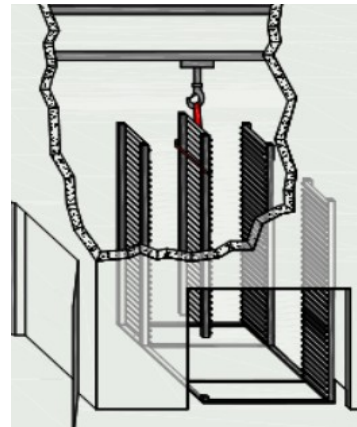


Fig. 5: Lift in a shaft

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

E 2 Installation in a niche

For lift installation in a niche, you must make sure there is enough side clearance between the lift and wall of the building (at least 5 cm [1.97 in] on each side of the lift, over the entire lift height) not just for carrying out installation work; sufficient space must also be available for carrying out maintenance tasks later - see Chapter 6.9.

Space requirements for carrying out lift installation work

When installing a lift in a niche, you must ensure that enough manoeuvring space is available, depending on the size of the installation auxiliary materials.

Space requirements for carrying out maintenance tasks later

For maintenance tasks that are necessary after the lift is put into service, the accessibility of the Lean-Lift® must be ensured. Standard service access points are the lower service doors or, if the Lean-Lift® > 3260, the lower left and right service doors and also a lift side panelling above the entire lift height. For further information about this, refer to Chapter 6.9. The lateral space requirements **in the niche** (= side clearance between lift and wall of the building) depend on whether the maintenance tasks have to be carried out in the niche right next to the lift or from the other side of the wall of the building using suitable wall openings.

A If no openings are provided in the wall of the building, accessibility of the service access points when using auxiliary equipment - depending on the specific local situation - requires space over the entire lift height in accordance with the tables in Chapter 6.9.

B If openings in the wall of the building are provided, they have to be sized so that the standard service access points can be reached; see the tables in Chapter 6.9. For the use of auxiliary equipment—depending on the specific local situation—space is required over the entire lift height in accordance with the tables in Chapter 6.9.

Note:

For Lean-Lifts® with a lower service door (a maximum lift width ≤ 3260), their position - either the left and right side of the lift - are defined in the offer or in the order confirmation.

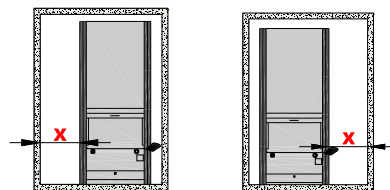


Fig. 6: **for A:** No openings in wall of the building.
If Lean-Lift® > 3260, the left and the right

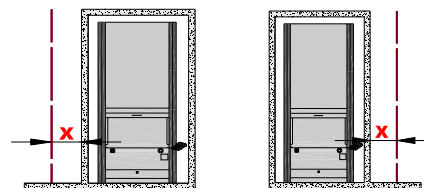


Fig. 7: **for B:** Openings in wall of the building.
If Lean-Lift® > 3260, the left and the right



Note

If the lift side panelling can be reached, for example, via a pedestal or through floors, it may be necessary to install additional side brackets behind the side panel as a railing for fall protection equipment. To do so, the respective storey heights (top edge of the floor) have to be communicated to the Hänel factory before the quotation is submitted.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

E 3 Lift in a recessed pit

Before selling a lift in a recessed pit, the installation team manager has to grant corresponding approval.

Mandatory structural requirements:

- The recessed pit must be dry and watertight.
- Access to lower service door: The service pit must have an access point (such as an adequately sized flight of stairs) which gives installation and service personnel a safe and unobstructed means of access, even when they are carrying tools or material. Regarding the space required, observe Chapter 6.9.

Observe:

For lift widths > 3260, an additional service door is required on the opposite side of the lift.

- For maintenance work that occurs after commissioning, the side panelling must be accessible above the entire lift height (on the side of the lower service door). For further information about this, refer to Chapter 6.9.
- For the accessibility of the standard service access points using auxiliary equipment—depending on the specific local situation—space is required over the entire lift height in accordance with the tables in Chapter 6.9.

Furthermore, the following points have to be observed:

- The owner/operator has to provide suitable scaffolding and corresponding lifting gear for the installation in order to lower and raise loads for the installation (see Chapter 6.9).
- The owner/operator is responsible for securing/covering the recessed pit during the installation.
- Front panels in the area of the recessed pit, in "rear-panel model, screwed on from the inside", have to be ordered.

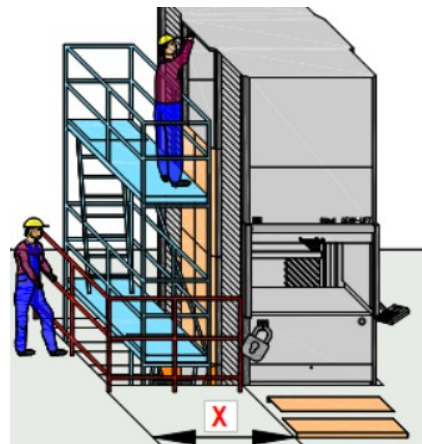


Fig. 8: Lift in a recessed pit, see Chapter 6.9

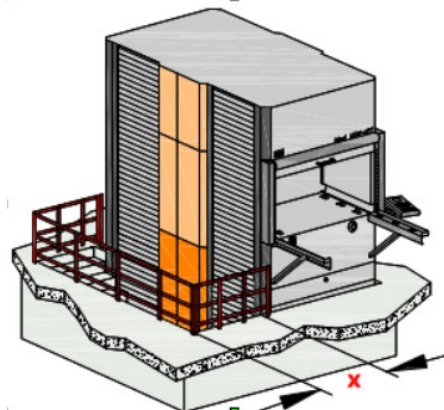


Fig. 9: Lift in a recessed pit, see Chapter 6.9

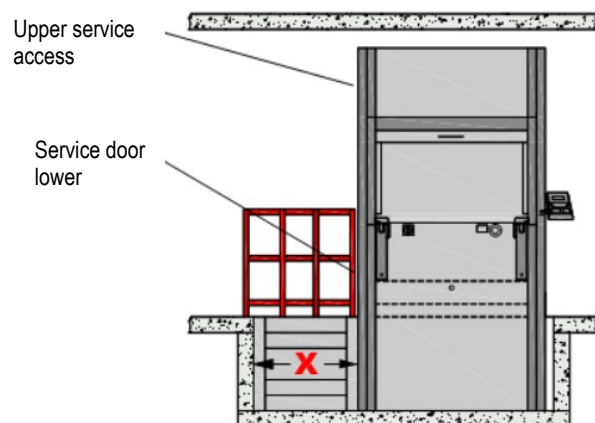


Fig. 10: Lift in a recessed pit, space requirements for lower service door (for lift widths > 3260 two service doors), see Chapter 6.9

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

E 4 Lift on a base

The same requirements regarding the floor characteristics apply for the base as those explained in detail under Section C. A base must be completely enclosed with a sufficient load capacity. Before installing a lift on a base, you have to check whether accessibility with a forklift and raised working platform exists. If necessary, the owner/operator has to provide suitable scaffolding and other alternative auxiliary equipment (see Chapter 6.6).

Observe:

Lift widths > 3260 need a floor anchoring provided by owner/operator - see Chapter 6.2.

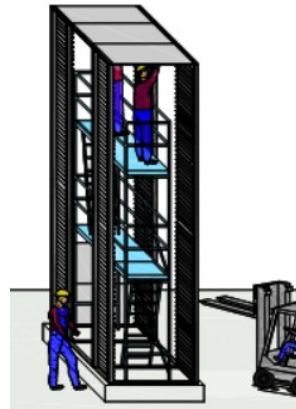


Fig. 11: Lift on a base

E 5 Lift through multiple storeys

When installing a lift through storeys, the following prerequisites have to be fulfilled:

- The dimensions for **holes in the ceiling** have to be 100 mm [3.94 in] larger than the lift depth or width.
- If unobstructed accessibility with a forklift or raised working platform does not exist, the owner/operator has to provide alternative auxiliary equipment such as suitable scaffolding and/or a chain block (see Chapter 6.6).
- The owner/operator is responsible for securing/covering ceiling holes during the installation.
- The Lean-Lift® must be accessible for **maintenance tasks** following the commissioning. Standard service access points are the lower service doors or, if the Lean-Lift® > 3260, the lower left and right service doors and also a lift side panelling above the entire lift height. For further information about this, refer to Chapter 6.9.
- After the lift has been installed, the owner/operator has to secure the gap between the lift and the ceiling if there are intermediate building ceilings. This covering has to be selected such that it can be removed for the duration of maintenance work (if parts of the lift panelling have to be removed).

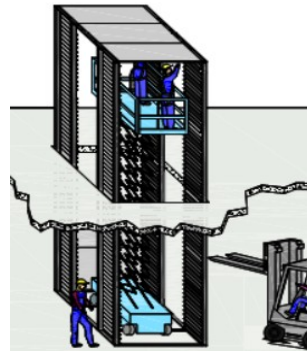


Fig. 12: Lift through a storey

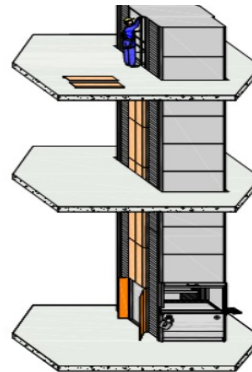


Fig. 13: Top access point



General notes

- If the lift side panelling can be reached, for example, via a pedestal or through storeys, it may be necessary to install additional side brackets behind the side panel as a railing for fall protection equipment. To do so, the respective floor heights (top edge of the floor) have to be communicated to the Hänel factory before the quotation is submitted.
- After the lift has been installed, the owner/operator has to seal the gap between the lift and cover.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

E 6 Lift with large lift heights

Before installing lifts with large lift heights, the following points absolutely must be checked:

- In the case of lifts with large lift heights, depending on the lift version, the owner/operator may have to provide an anchor at the top; to do so, observe Chapter 6.2.
- The lifting heights of a raised working platform and forklift have to be selected in accordance with the lift height (see Chapter 6.6).
- If the lifting height of the forklift is inadequate, the owner/operator must also provide, for example, a suitable electric wire rope hoist on two guide rails, one over the front and one over the rear lift unit over the entire lift width; see the next section (Section E7). The owner/operator must have the approval from a structural engineer that the owner/operator's guide rails for the lifting gear will withstand the load capacities!
- If the working platform has an inadequate lifting height, the owner/operator also has to provide suitable scaffolding (see Chapter 6.6).

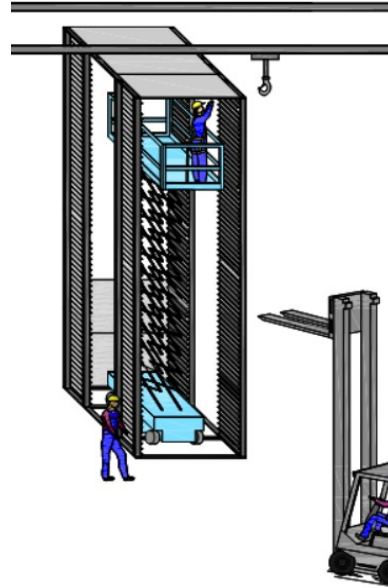


Fig. 14: Lift with high lift heights - standard installation auxiliary materials

! DANGER



Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist

Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist due to heavy parts toppling over or falling down!

When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

E 7 Installation with scaffolding, crane, chain block or electric wire rope hoist

Instead of a raised working platform, use of scaffolding may be necessary for the installation.

Instead of a forklift, use of a crane, chain block or electric wire rope hoist may be necessary for the installation.

In both cases, there will be increased installation costs.

Installation with scaffolding

The owner/operator has to provide as well as assemble and disassemble corresponding scaffolding.

Scaffolding must be constructed and removed by permitted scaffolders co-ordinated in time with lift installation according to specifications from the responsible construction engineers.

A written approval certificate is required for the completely erected scaffold.

Since the scaffolding has to be assembled gradually as the installation progresses, the scaffolders provided by owner/operator have to be present at the installation location for this time period.

The scaffolding used has to be adapted to the lift dimensions (see Chapter 6.6) and correspond to the applicable national safety regulations.

For the European Community: The scaffolding has to be designed for a useful weight of at least 2 kN/m² [41.8 lbs/sq. ft.] and have a minimum platform width of 0.6 m [23.62 in] (DIN EN 12811-1, width class W06, load class 3).

When using scaffolding, extended lift installation times should be anticipated. Take this into account also when providing suitable auxiliary personnel (see Chapter 6.5).

Installation with crane, chain block or electric wire rope hoist

If a crane, chain block or electric wire rope hoist is used, the owner/operator has to provide it and fulfil the following requirements:

- The minimum lifting capacity of the owner/operator's suspensions / guide rails has to be 1000 kg [2205 lbs]. For the minimum lifting capacity of the installation auxiliary materials, see Chapter 6.6. For the weights of the individual lift parts, see Chapter 6.4. If necessary, increase the load capacities accordingly.
- The owner/operator's suspensions / guide rails must also be able to handle oblique loads. Access from the lift installation surface must be unobstructed.
- **The owner/operator must have the approval from a structural engineer that the owner/operator's suspensions / guide rails for the lifting gear will withstand the load capacities!**

 **DANGER**

Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist

Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist due to heavy parts toppling over or falling down!

When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.

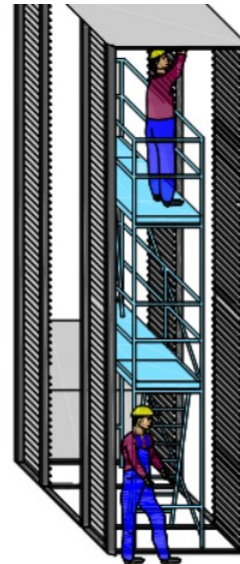


Fig. 15: Installation with scaffolding

Note:

- The regional regulations governing the use of auxiliary equipment for installation work apply.
- For workplace safety and liability reasons, Hänel employees are not authorised to install the owner/operator's suspension options or guide rails on the building.

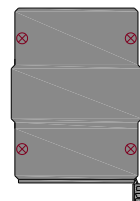


Fig. 16: Position of the owner/operator's suspensions for the lifting gear

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.1 Spatial and structural requirements (continued)

E Difficult installation conditions (continued)

Additionally for a chain block or electric wire rope hoist

Depending on the type used, in addition to the requirements mentioned under D1, make sure there is adequate distance between the top edge of the lift and the bottom edge of the load attachment point.

The equipment must be operated by authorised, qualified personnel.

Depending on the type of auxiliary equipment used, the owner/operator has to fulfil the following requirements:

- Two guide rails provided by owner/operator, one over the front and one over the rear lift unit over the entire lift width, alternatively:
- One suspension option provided by owner/operator centred over each of the four side parts of the lift; for example: hooks, steel girders.
- The owner/operator must have the approval from a structural engineer that the owner/operator's suspension/guide rail for the lifting gear will withstand the load capacities!

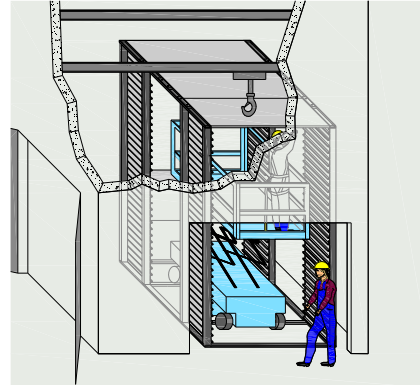


Fig. 17: Example: Two guide rails above the front and rear lift units

Additionally for a crane

Depending on the type of crane used, in addition to the requirements mentioned under D1, make sure there is adequate distance between the top edge of the lift and the bottom edge of the load attachment point.

The crane is to be operated by authorised, qualified personnel provided by owner/operator.

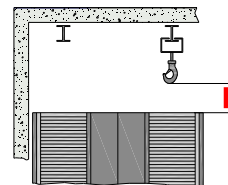


Fig. 18: Distance from the top edge of the lift to the load attachment point of the crane

! DANGER



Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist



Risk of fatal injury from prohibited suspension of a crane, chain block or electric wire rope hoist due to heavy parts toppling over or falling down!

When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.2 Anchoring provided by owner/operator for the lift

Anchor: General notes

Why and which lifts have to be anchored?

An anchor for the Lean-Lift® may be mandatory in order for the lift to function properly. For more information, refer to the order confirmation and note on the type plate.

A Lifts with lift width ≤ 3260

A.1 Lifts with great heights

Lifts with heights H greater than the following table must be given an anchoring provided by the owner/operator (in standard lifts, at the top of the headpiece of the Lean-Lift®; see Draws\LL-FIX).

Lift type	Anchor provided by owner/operator mandatory for lift height H and higher
840-635, 840-825	8 m [314.96 in]
All other lifts	10 m [393.7 in]

A.2 Access point in storeys

When planning access points in storeys, an anchoring should be provided by the owner/operator regardless of lift height (in standard lifts, at the top of the headpiece of the Lean-Lift®).

B Lift with a lift width > 3260

B.1 Floor anchoring provided by owner/operator

All lifts require a floor anchoring provided by owner/operator. Refer also to the Power Supply and Foundation Plan.

B.2 Access point in storeys

When planning access points in storeys, an anchoring should be provided by the owner/operator in addition to the floor anchoring provided by owner/operator (in standard lifts, at the top of the headpiece of the Lean-Lift®).

C Special case of earthquake-prone areas

Lift installation in seismic zones / earthquake-prone areas. In lifts for earthquake zones / earthquake-prone areas, there is no fastening between the lift and the building and no points of contact to the building. You can find further information about this in Chapter 2.2.

How should it be anchored?

Anchoring provided by the owner/operator may be attached only if it does not transfer any additional forces, such as loads from wind and snow, to the lift. The anchoring must provide horizontal support, and have the ability to be moved vertically.



Note

During regular lift operation - when pushing the container into/out of a carrier at a great height - a horizontal deflection of the lift, which may impede operation of the lift, may occur in the top lift section. Therefore, depending on the lift type, height and position of the access point and the installation site for proper functioning of the lift, an anchor may be required on the Lean-Lift. The owner/operator has to comply with the zoning ordinances when providing all anchors / connections / supports.

Note:

For workplace safety and liability reasons, Hänel employees are not authorised to install the lift anchors in the building.



WARNING

Hazard when a lift anchor that must be provided by the owner/operator is missing.

There is the risk that components can be overloaded in the lift, which, in the worst case scenario, could cause the lift to collapse.



WARNING

Hazard posed by setting up the lift in seismic zones / earthquake-prone areas

Lifts without an additional special agreement are not structurally designed for use in earthquake-prone areas (refer also to the order confirmation and type plate). In the case of an earthquake, persons in the vicinity of the lift may be in danger. For earthquake-prone areas, there are lifts that are specifically constructed and designed based on various seismic zones (refer also to the order confirmation and type plate).



Note

For freestanding lifts installed through several storeys in German earthquake zones, the specifications in DRAWS \ LL-DE seismic zones or LW-DE seismic zones.

For lifts in earthquake zones outside of Germany and the USA, the specifications in DRAWS \ LL-World-Seismic are valid.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.2 Anchoring provided by owner/operator of the lift (continued)

Standard anchor provided by owner/operator between lift headpiece and building

Dimensions and position of the fastening threads; refer also to the Power Supply and Foundation Plan.

Supports against side forces:

The top of the lift has to be supported against a stable building component in each direction for a horizontal side force of $F_h = 3.5 \text{ kN}$ [786.84 pound force].

Note about multi-unit network:

For simplification, the owner/operator can connect lifts to each other in groups of two. Then only one of these lifts must be given an anchoring provided by owner/operator.

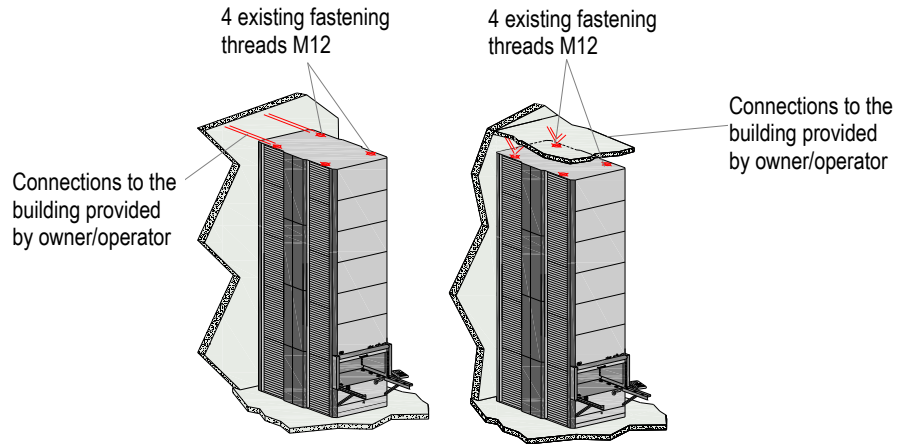


Fig. 19: Reinforcement examples: Anchoring provided by owner/operator at the building ceiling/wall

Optional reinforcement provided by owner/operator between the lift supporting tubes and the building

For lifts with a height $H \leq 15 \text{ m}$ [590.55 in], as an alternative to the anchoring provided by owner/operator on the headpiece, a bracket between the supporting pipes and a structurally stable part of the building (e.g. intermediate ceiling or similar). The top of the lift has to be supported against a stable building component in each direction for a horizontal side force of $F_h = 3.5 \text{ kN}$ [786.84 pound force].

In this case, fastening threads are provided at the appropriate position on the supporting tube at the factory in accordance with height specification X in the order confirmation (see Fig. 20).

Note about multi-unit network:

For simplification, the owner/operator can connect lifts to each other in groups of two. Then only one of these lifts must be given an anchoring provided by owner/operator.

Observe:

An anchoring provided by owner/operator on the supporting tube is permitted only for $H \leq 15 \text{ m}$ [590.55 in].

Reinforcement height X at least $H \times 0.66 \text{ m}$ (29.53")

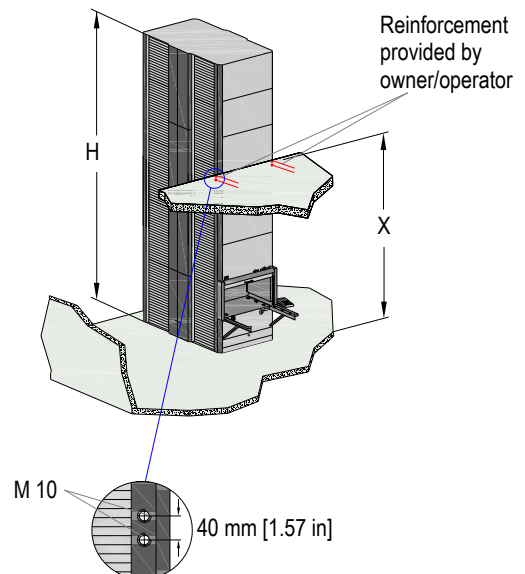


Fig. 20: Example: Reinforcement provided by owner/operator on an intermediate ceiling

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.2 Lift anchor provided by owner/operator (continued)

Optional reinforcement provided by owner/operator for Lean-Lifts® with lift width ≤ 3260

As an alternative to the anchoring provided by owner/operator on the headpiece, a floor anchoring provided by owner/operator can be used. For this alternative lift anchoring, a reduction of the horizontal acceleration and speed depending on the vertical extractor position is required (see Draws\LL-FIX-FLOOR).

The owner/operator must produce and install the required holes and floor anchors for the floor anchoring provided by the owner/operator during the lift installation.

For more information about this, refer to "Supplement to Power Supply and Foundation Plan Lift Version with Floor Anchoring Provided by Owner/Operator.

The owner/operator has to comply with the zoning ordinances in regard to all anchors / connections / supports.

A lift version for earthquake zones / earthquake-prone areas: see Chapter 2.2 "Lift installation in earthquake zones / earthquake-prone areas"

Standard floor anchoring provided by owner/operator for Lean-Lifts® with lift width > 3260

The lift always requires a floor anchoring provided by the owner/operator. The owner/operator must produce and install the required holes and floor anchors during the lift installation. Refer also to the Power Supply and Foundation Plan.

The owner/operator has to comply with the zoning ordinances in regard to all anchors / connections / supports.

A lift version for earthquake zones / earthquake-prone areas: see Chapter 2.2 "Lift installation in earthquake zones / earthquake-prone areas"



Note

At least 400 mm [15.75 in.] of space is required on the left and right side of the lift to install and screw on the floor anchors.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.3 Mains power supply

Electrical connection of the lift

For the Lean-Lift®, the owner/operator has to provide an electrical connection before beginning the installation in accordance with following remarks. To do so, please observe the Power Supply and Foundation Plan as well.

The owner/operator has to provide at least one suitable power socket for the tools necessary to install the lift, such as electric screwdrivers etc.

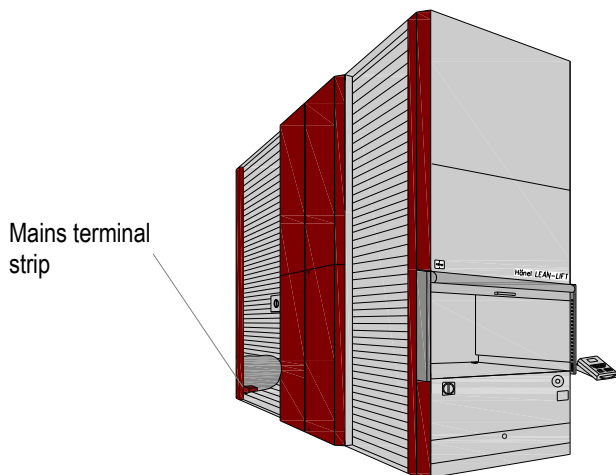


Fig. 21: Connecting the Lean-Lift®

DANGER



Risk of fatal injury from electric current!

If work on the electrical equipment is not carried out properly, there is a risk of fatal injury! Therefore, these tasks may be performed by qualified electrically skilled personnel only. Even an amperage as low as 44 mA can be fatal.

DANGER



There is a risk of fatal injury when working on the live electrical system!

The mains power supply cable may be connected to the mains terminal strip only by an electrically skilled person provided by the owner/operator and has to remain de-energised until the on-site installation supervisors approve it for being switched on.

The electrically skilled person is allowed to enter the lift only in the presence of the on-site installation supervisors.

Note:

The cable entry point for the owner/operator's mains power line with a separate earth wire is located on the rear side of the lift.

Any deviations must be specified when placing the order and described in the order confirmation.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.3 Mains power supply (continued)

Mains power supply connection and wire cross-sections

The lift's electrical equipment is designed as standard for connection to a three-phase AC current TN power system (L1/L2/L3/N/PE) in accordance with IEC 60364-1 (separate neutral and earth wire in the same power system):

3 outer conductors (for wire cross-section, see following tables),
1 neutral conductor (for wire cross-section, see following tables),
1 earth wire (for wire cross-section, see following tables),
1 additional separate earth wire (wire cross-section, at least 2.5 mm²) according to IEC 60204-1 (due to the leakage currents of the frequency converter > 3.5 mA).

A connection to three-phase AC (three-phase current) TN power system (L1/L2/L3/PE) without neutral conductor is also optionally available at a surcharge:

3 outer conductors (for the wire cross-section, see the following table),
1 earth wire (for the wire cross-section, see the following table),
1 additional separate earth wire (wire cross-section, at least 2.5 mm²) in accordance with IEC 60204-1 (due to the leakage current of the frequency converter > 3.5 mA).

All other mains power systems are to be co-ordinated with the supplied lift by owner/operator in co-ordination with the responsible energy company.

The owner/operator must observe the following:

The mains supply voltage and fuse protection of the mains power line at the owner/operator's location

- must conform to the specifications in the order confirmation and on the type plate.

If the customer employs a residual current circuit breaker at the installation site,

- a "universal, time-delayed residual current circuit breaker (Type B)" is required in accordance with EN 50178 or IEC 755.

Wiring installation

The wiring installation provided by the owner/operator must conform to the following standards:

- IEC 60364-4-43
- IEC 60364-5-52

Note:

The owner/operator has to find out the specific on-site connection conditions (mains power system, voltage and frequency) from the responsible energy company and supply this information when ordering.

Note:

The following technical connection conditions for the responsible energy company apply.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.3 Mains power supply (continued)

Mains power supply connection and wire cross-sections (continued)

Wire cross-section

Select the minimum wire cross-section for the power line provided by owner/operator depending on the lift power/type using the following table.

The following standards are used as a base:

- IEC 60364-5-52, Table B.52-1 and B.52-4 using the A2 method of installation, or
- NFPA 79 (National Fire Protection Association), Table 12.5.1.

Selecting the fuse protection

As a safety device for protection from overload and short-circuits in the power line provided by owner/operator, it is recommended that the owner/operator provide the following safety devices according to IEC 60364-4-43:

- Miniature circuit breaker with overcurrent and short-circuit trip, with standard "B" trip characteristic,
- Fuses with fuse links with standard "gG" trip characteristic (standard type: full-range protection, general application).

However, the customer-side or owner/operator specifications are authoritative in this context.



Note

The impedance of the energy supply, including the mains power supply line to the mains power supply terminal box of the lift provided by the owner/operator, may not exceed 500 milliohms.

Note:

For the minimum wire cross-section, the thermally relevant mains current (root mean square of the mains current) has been determined for a vertical lift at the max. possible lift height taking into account the different movement directions for the longest possible continuous operation. The root mean square of the mains current is approx. 70% of the nominal mains current. Furthermore, a potential voltage drop has been taken into account; the individual wire cross-sections are higher than the standard specification for this reason.

Observe:

Due to the soft starter with frequency converter, no current surges need to be taken into account for designing the fuse protection.

The main switch for the lift is equipped with an integrated protective motor switch for protection from overload and short-circuits. The setting value for the protective motor switch is set to the thermally relevant mains current (root mean square).

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.3 Mains power supply (continued)

Minimum wire cross-section and maximum fuse protection for the power line for which owner/operator is responsible

The following provides an overview of the minimum wire cross-section provided by the owner/operator according to IEC 60364-5-52 and NFPA 79 as well as the maximum fuse protection provided by the owner/operator due to the lift's internal wiring.

Note:

The fuse protection on the mains side for which owner/operator is responsible is selected according to IEC 60364-4-43.

The maximum fuse protection on the mains side listed in the following table refers to the lift's internal wiring and may not be exceeded.

The **lift power** is specified in the order confirmation (e.g.: Lift: 400 V AC, 50 Hz, **4.0 kW**, 100% duty cycle).
The **lift type** is specified in the order confirmation as part of the complete lift name (e.g. Lean-Lift 1300-825/281/164/75/300/20).

Lift power	Lift type	AntTyp		Minimum wire cross-section according to IEC 60364-5-52 Table B.52.4				Maximum safety device on the mains side	
				230 - 240V	380V	400V	415V	230 - 240V	380 - 415V
3,0KW	////150	ES12	ES11	5 x 2,5 mm ²	5 x 1,5 mm ²	5 x 1,5 mm ²	5 x 1,5 mm ²	20A	20A
4,0KW	////130-300	ES22	ES21	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 1,5 mm ²	20A	20A
5,0KW	////130-300HS	HS27, HS26	HS21, HS22	5 x 4,0 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	25A	20A
6,0KW	////200-500	ES32	ES31	5 x 4,0 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	25A	20A
7,5KW	////200-500HS	HS37, HS36	HS31, HS32	---	5 x 4,0 mm ²	5 x 4,0 mm ²	5 x 4,0 mm ²	---	20A
6,5KW	////400-700	ES42	ES41	---	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	---	20A
7,0KW	////600-1000	ES52	ES51	---	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	---	20A
7,0KW	////600-1000HS	HS52	HS51	---	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	---	20A
7,6KW	>=3660-635 .. 825////500HS	HS34	HS33	---	5 x 2,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²	---	20A
9,5KW	>=3660-635 .. 825////700HS	HS44	HS43	---	5 x 4,0 mm ²	5 x 4,0 mm ²	5 x 4,0 mm ²	---	25A

Table 1: Minimum wire cross-section and maximum fuse protection in accordance with IEC 60364-5-52

Lift power	Lift type	AntTyp		Minimum wire cross-section according to NFPA79 Table 12.5.1				Maximum safety device on the mains side	
				208V	230 - 240V	440 - 480V	575V	208 - 240V	440 - 575V
3,0KW	////150	ES12	ES11	5 x AWG 14	5 x AWG 14	5 x AWG 14	5 x AWG 14	20A	20A
4,0KW	////130-300	ES22	ES21	5 x AWG 14	5 x AWG 14	5 x AWG 14	5 x AWG 14	20A	20A
5,0KW	////130-300HS	HS27, HS26	HS21, HS22	5 x AWG 12	5 x AWG 12	5 x AWG 14	5 x AWG 14	25A	20A
6,0KW	////200-500	ES32	ES31	5 x AWG 12	5 x AWG 12	5 x AWG 14	5 x AWG 14	25A	20A
7,5KW	////200-500HS	HS37, HS36	HS31, HS32	---	---	5 x AWG 12	5 x AWG 12	---	20A
6,5KW	////400-700	ES42	ES41	---	---	5 x AWG 14	5 x AWG 14	---	20A
7,0KW	////600-1000	ES52	ES51	---	---	5 x AWG 14	5 x AWG 14	---	20A
7,0KW	////600-1000HS	HS52	HS51	---	---	5 x AWG 14	5 x AWG 14	---	20A
7,6KW	>=3660-635 .. 825////500HS	HS34	HS33	---	---	5 x AWG 14	5 x AWG 14	---	20A
9,5KW	>=3660-635 .. 825////700HS	HS44	HS43	---	---	5 x AWG 12	5 x AWG 12	---	25A

Table 2: Minimum wire cross-section and maximum fuse protection in accordance with NFPA 79 (only for use in the USA).

Gauge No.	Cross-section mm ²	Gauge No.	Cross-section mm ²
5 x AWG 16	5 x 1,31mm ²	5 x AWG 10	5 x 5,26mm ²
5 x AWG 14	5 x 2,08mm ²	5 x AWG 8	5 x 8,37mm ²
5 x AWG 12	5 x 3,31mm ²	5 x AWG 6	5 x 13,3mm ²

Table 3: AWG (American Wire Gauge) to wire cross-section (mm²) conversion table

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.3 Mains power supply (continued)

Power system nominal current values (A) for energy information

You can find an overview of the nominal mains power consumption of a Lean-Lift® based on the motor power.

Observe:

The lift power is specified in the order confirmation (e.g.: Lift: 400 V AC, 50 Hz, **4.0 kW**, 100% duty cycle).

The lift type is specified in the order confirmation as part of the complete lift name (e.g. Lean-Lift 1300-825/281/164/75/**300/20**)

Lift power	Lift type	AntTyp		Lean-Lift® nominal mains current [A]						
				208V	230 - 240V	380V	400V	415V	440 - 480V	575V
3.0KW	////150	ES12	ES11	11,7 - 14,6 A	10,6 - 13,2 A	6,4 - 8,0 A	6,1 - 7,6 A	5,9 - 7,3 A	5,5 - 6,9 A	4,2 - 5,3 A
4.0KW	////130-300	ES22	ES21	16,3 - 21,3 A	14,8 - 19,3 A	8,9 - 11,7 A	8,5 - 11,1 A	8,2 - 10,7 A	7,7 - 10,1 A	5,9 - 7,7 A
5.0KW	////130-300HS	HS27, HS26	HS21, HS22	21,0 - 30,8 A	19,0 - 27,8 A	11,5 - 16,8 A	10,9 - 16,0 A	10,5 - 15,4 A	9,9 - 14,5 A	7,6 - 11,1 A
6.0KW	////200-500	ES32	ES31	19,0 - 28,3 A	17,2 - 25,6 A	10,4 - 15,5 A	9,9 - 14,7 A	9,5 - 14,2 A	9,0 - 13,4 A	6,9 - 10,2 A
7.5KW	////200-500HS	HS37, HS36	HS31, HS32	---	---	13,6 - 22,7 A	12,9 - 21,6 A	12,4 - 20,8 A	11,7 - 19,6 A	9,0 - 15,0 A
6.5KW	////400-700	ES42	ES41	---	---	11,1 - 17,6 A	10,5 - 16,7 A	10,1 - 16,1 A	9,5 - 15,2 A	7,3 - 11,6 A
7.0KW	////600-1000	ES52	ES51	---	---	13,1 - 21,8 A	12,4 - 20,7 A	12,0 - 20,0 A	11,3 - 18,8 A	8,6 - 14,4 A
7.0KW	////600-1000HS	HS52	HS51	---	---	13,7 - 19,8 A	13,0 - 18,8 A	12,6 - 18,1 A	11,9 - 17,1 A	9,1 - 13,1 A
7.6KW	>=3660-635 .. 825////500HS	HS34	HS33	---	---	14,0 - 18,6 A	13,3 - 17,7 A	12,8 - 17,1 A	12,1 - 16,1 A	9,2 - 12,3 A
9.5KW	>=3660-635 .. 825////700HS	HS44	HS43	---	---	17,0 - 22,6 A	16,2 - 21,5 A	15,6 - 20,7 A	14,7 - 19,5 A	11,2 - 15,0 A

Table 4: Electrical connection values of nominal mains current for Lean-Lift® [A] (50 / 60 Hz)

Lift power	Lift type	AntTyp		Quadratic nominal mains current (Q2 setting value) Lean-Lift® [A]						
				208V	230 - 240V	380V	400V	415V	440 - 480V	575V
3.0KW	////150	ES12	ES11	10,6 - 10,9 A	9,6 - 9,9 A	5,8 - 6,0 A	6,0 - 6,3 A	5,8 - 6,0 A	5,5 - 5,7 A	4,2 - 4,4 A
4.0KW	////130-300	ES22	ES21	12,4 - 16,2 A	11,2 - 14,6 A	6,8 - 8,9 A	7,1 - 9,3 A	6,8 - 8,9 A	6,4 - 8,4 A	4,9 - 6,4 A
5.0KW	////130-300HS	HS27, HS26	HS21, HS22	15,9 - 23,3 A	14,4 - 21,1 A	8,7 - 12,8 A	9,1 - 13,3 A	8,8 - 12,9 A	8,3 - 12,1 A	6,3 - 9,3 A
6.0KW	////200-500	ES32	ES31	14,4 - 21,4 A	13,1 - 19,4 A	7,9 - 11,7 A	8,3 - 12,3 A	8,0 - 11,8 A	7,5 - 11,1 A	5,7 - 8,5 A
7.5KW	////200-500HS	HS37, HS36	HS31, HS32	---	---	10,3 - 17,2 A	10,7 - 18,0 A	10,4 - 17,4 A	9,8 - 16,4 A	7,5 - 12,5 A
6.5KW	////400-700	ES42	ES41	---	---	8,4 - 13,3 A	8,8 - 13,9 A	8,4 - 13,4 A	8,0 - 12,7 A	6,1 - 9,7 A
7.0KW	////600-1000	ES52	ES51	---	---	9,9 - 16,5 A	10,3 - 17,3 A	10,0 - 16,6 A	9,4 - 15,7 A	7,2 - 12,0 A
7.0KW	////600-1000HS	HS52	HS51	---	---	10,4 - 15,0 A	10,9 - 15,7 A	10,5 - 15,1 A	9,9 - 14,3 A	7,6 - 10,9 A
7.6KW	>=3660-635 .. 825////500HS	HS34	HS33	---	---	10,6 - 14,1 A	11,1 - 14,8 A	10,7 - 14,2 A	10,1 - 13,4 A	7,7 - 10,3 A
9.5KW	>=3660-635 .. 825////700HS	HS44	HS43	---	---	12,9 - 17,2 A	13,5 - 17,9 A	13,0 - 17,3 A	12,3 - 16,3 A	9,4 - 12,5 A

Table 5: Electrical connection values [A] (50 / 60 Hz) of quadratic nominal current taking into account the max. lift height

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.4 Determining weights

Selecting installation aids according to weights

Refer to the order confirmation for the total weight of the lift.

So that the correct installation aids are selected and/or provided, you must determine the weight of the **heaviest part** of the lift to be mounted. Refer to the following tables for the corresponding weight in kg/lbs according to the height and type of the lift:

*) Added weight for basic lift model for lifts designed for earthquake-prone areas:

The added weight of the side part per m [39.37 in] lift height is 67 kg [147.71 lbs],
the added weight of the lower frame is 25 kg [55.11 lbs].

Weight of side part (lifts in basic version (*) and without packaging):

Lift type	Weight in kg / lbs per m [39.37 in] of lift height	Weight in kg / lbs per m [39.37 in] of lift height for panelled (sealed) side parts
- 635	32 / 71	37 / 82
- 825	35 / 78	42 / 93
- 1047	39 / 86	47 / 104
- 1270	43 / 95	53 / 117

Weight of the bottom frame (basic lift models (*) and without packaging):

Lift type	Two-piece, heaviest piece, in kg/lbs	Lift type	Two-piece, heaviest piece, in kg/lbs
840 - 635	194 / 427	840 - 1047	211 / 464
1300 - 635	208 / 459	1300 - 1047	225 / 496
1640 - 635	219 / 483	1640 - 1047	236 / 520
1860 - 635	226 / 498	1860 - 1047	243 / 536
2060 - 635	237 / 522	2060 - 1047	254 / 559
2300 - 635	245 / 540	2300 - 1047	262 / 577
2460 - 635	250 / 552	2460 - 1047	267 / 590
2860 - 635	271 / 598	2860 - 1047	288 / 635
3060 - 635	279 / 614	3060 - 1047	296 / 652
3260 - 635	286 / 631	3260 - 1047	303 / 668
840 - 825	202 / 444	840 - 1270	220 / 484
1300 - 825	216 / 476	1300 - 1270	234 / 517
1640 - 825	227 / 500	1640 - 1270	245 / 541
1860 - 825	234 / 516	1860 - 1270	252 / 556
2060 - 825	244 / 539	2060 - 1270	263 / 579
2460 - 825	258 / 569	2460 - 1270	277 / 610
2860 - 825	279 / 615	2860 - 1270	297 / 655
3060 - 825	287 / 632	3060 - 1270	305 / 672
3260 - 825	294 / 648	3260 - 1270	312 / 688

Note:

The top frame is lighter, as it consists of 5 or 6 pieces

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.4 Determining weights (continued)

Weight of the extractor (basic lift models (*) and without packaging):

Lift type	Weight in kg / lbs
3660 - 635	273 / 602
4060 - 635	279 / 615
4460 - 635	286 / 631
3660 - 825	290 / 640
4060 - 825	297 / 655
4460 - 825	303 / 668

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.5 Auxiliary personnel

Selecting and providing auxiliary personnel

In addition to the two installation personnel from Hänel, lift installation requires additional auxiliary personnel.

As the owner/operator or customer, you must provide suitable auxiliary personnel for **unloading, transport and erection of lift housing parts and loading lift containers** for storage at no cost or requesting Hänel auxiliary personnel for a fee. This also includes a suitable driver for operating the installation auxiliary equipment provided by the owner/operator.

The owner/operator is solely responsible for selecting any customer auxiliary personnel.

The requirements for the auxiliary personnel to be provided are shown in detail in Chapter 3. If the installation supervisors of Hänel or its on-site representatives believe that these prerequisites have not been met, the installation work must not be carried out or must be suspended.

Minimum number of auxiliary personnel

The number of auxiliary personnel required for the respective work steps is shown in the following tables. The listed number of auxiliary personnel is intended as a minimum, without which installation cannot be carried out according to plan or must be suspended.

A Unloading and transport of lift parts to the installation location

Lift height in m [in]	Number of Hänel auxiliary personnel, including lift truck drivers		Number of customer auxiliary personnel, including lift truck drivers	
	Lift width of 840 to 2460	Lift width of 2860 to 4460	Lift width of 840 to 2460	Lift width of 2860 to 4460
≤ 5 [196.85]	2	3	3	3
> 5 [196.85]			Lift depth of 635, 825: 3	Lift depth of 635, 825: 3
≤ 8 [314.96]			Lift depth of 1047, 1270: 4	Lift depth of 1047, 1270: 4
> 8 [314.96]			Lift depth of 635, 825: 4	Lift depth of 635, 825: 4
≤ 12 [472.44]			Lift depth of 1047, 1270: 5	Lift depth of 1047, 1270: 5
> 12 [472.44]			5	5

SAFETY INSTRUCTIONS

Use necessary safety equipment!



Work may be carried out with the required personal safety equipment (e.g. safety shoes, safety helmet with chin strap, protective gloves etc.).



In this regard, observe Chapter 4 "General safety".

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.5 Auxiliary personnel (continued)

B Erecting the side parts and installing the housing and extractor

Note:

Scaffolding installation:

- The auxiliary personnel being used have to be suitable for work at heights on scaffolding.
- At a lift height > 6 m [236.22 in], 4 Hänel auxiliary personnel, incl. lift truck drivers or 6 customer auxiliary personnel, incl. lift truck drivers are required.
- At a lift height ≤ 6 m [236.22 in], the number of auxiliary personnel according to the table below applies.

Lift height in m [in]	Number of Hänel auxiliary personnel, including lift truck drivers		Number of customer auxiliary personnel, including lift truck drivers	
	Lift width of 840 to 2460	Lift width of 2860 to 4460	Lift width of 840 to 2460	Lift width of 2860 to 4460
≤ 5 [196.85]	2	3	3	3
> 5 [196.85]			Lift depth of 635, 825: 3	Lift depth of 635, 825: 3
≤ 8 [314.96]			Lift depth of 1047, 1270: 4	Lift depth of 1047, 1270: 4
> 8 [314.96]			Lift depth of 635, 825: 4	Lift depth of 635, 825: 4
≤ 12 [472.44]			Lift depth of 1047, 1270: 5	Lift depth of 1047, 1270: 5
> 12 [472.44]			5	5

C Bringing containers into the lift

Number of Hänel auxiliary personnel, including lift truck drivers		Number of customer auxiliary personnel, including lift truck drivers	
Lift width of 840 to 2460	Lift width of 2860 to 4460	Lift width of 840 to 2460	Lift width of 2860 to 4460
2	3	3	3

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.6 Auxiliary equipment for lift heights greater than 3 m [118.11 in]

Selecting and providing auxiliary equipment

As an operator, you must provide appropriate powered auxiliary equipment for unloading and transporting lift parts and lift installation work.

This auxiliary equipment must meet regional accident prevention and safety regulations.

The owner/operator is solely responsible for selecting suitable auxiliary equipment on site and ensuring its proper availability.

Forklifts and raised working platforms are typically used as primary installation auxiliary materials for installing a Lean-Lift®.



Note

When powered auxiliary equipment is used, the owner/operator must **also** provide an appropriate, properly trained driver with credentials to allow operation of the respective auxiliary equipment.

The regional regulations governing the use of auxiliary equipment for installation work apply. In addition, the operating manuals of the auxiliary equipment used must be observed; if the widths are large, especially with respect to the permissible maximum dimensions of the loads to be lifted.

For the "side panelling with Plexiglas" lift version:

Two raised working platforms and scaffolding are required to install the side panelling!



DANGER



Risk of fatal injury when using unsuitable auxiliary equipment!

Heavy parts can topple over or fall down!

- When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.
- For more information, refer to the safety instructions in this document and the operating manual for the auxiliary equipment in use.

Properties of the lifting gear

The owner/operator must select the auxiliary equipment according to the following parameters:

A Useful height / useful lifting height

- According to the following tables.

B Useful load capacity (at useful height / useful lifting height)

- According to the following tables or according to the maximum weight of the individual lift parts from Section 5.4 "Determining weights".

C Permissible dimensions of the loads to be lifted

- In accordance with the operating manual of the respective auxiliary equipment (particularly for large lift widths).

Note:

- The useful height / useful lifting height is the usable height the auxiliary equipment must reach for use during installation.
- The useful load capacity of the auxiliary materials has to be provided at the useful height / useful lifting height.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.6 Auxiliary equipment for lift heights greater than 3 m [118.11 in] (continued)

The installation auxiliary materials that are normally required have a grey background

	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
1	Auxiliary equipment for unloading, transport and lift installation work			
	Forklift / unloading from lorry, transport, lift installation work	Equal to or higher than the lift height. If the auxiliary equipment is used only for unloading the truck: 3 m [118.1 in.] + 1x container depth (of the lift to be installed) or higher.	2 tonnes [4411 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4 The load capacity has to be provided at the useful lifting height!	Fork length: at least 1500 mm [59 in]; Forklift with 4 wheels like the depiction in the figure below. Lift type > 3260: Fork length at least 2/3 of the container width 
	Supplemental auxiliary equipment for transport between storeys			
	Goods hoist / added if transport to other storeys in the owner/operator's building is required	The owner/operator must ensure the storeys involved are accessible for setting up the lift	Greater than the heaviest weight of the individual lift parts to be lifted as described in Chapter 6.4	Observe dimensions of the side parts of the lift! Side parts of the lift have a max. length of 8 m [314.96 in]. These can be split if necessary if specified by owner/operator. 
	Alternative auxiliary equipment with use restrictions (results in increased installation time in some cases)			
	Elevated forklift, with lateral movement / unloading, transport	Same as forklift	Same as forklift	
	Crane, lorry-mounted crane / depending on the local conditions: Unloading, transport, lift installation work (e.g. also transport through windows, doors, roof)	Same as forklift	1 to [2205 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4	If a lorry-mounted crane is used, this has to be co-ordinated with the responsible installation team manager at the Hänel factory in a timely manner before starting installation. 
				 Note: Suspensions / guide rails for a crane provided by the owner/operator must meet certain requirements; refer to Chapter 6.1, Section E7.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.6 Auxiliary equipment for lift heights greater than 3 m [118.11 in] (continued)

The installation auxiliary materials that are normally required have a grey background

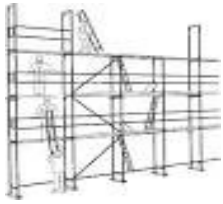
	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
1	Alternative auxiliary equipment with use restrictions (results in increased installation time in some cases) (Cont.)			
	Chain block, electric wire rope hoist / Lift installation work	Same as forklift	1 to [2205 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4	 Note: Suspensions / guide rails for a chain block or electric wire rope hoist provided by the owner/operator must meet certain requirements; refer to Chapter 6.1, Section E7.
	Telescoping loader for forklift / Lift installation work	See forklift	See forklift	 Fork extension for the forklift. Necessary if the installation room for the rear side parts of the lift cannot be reached with the forklift forks alone. Note: Depending on the size of the owner/operator's installation auxiliary materials, there is also need for sufficient manoeuvring space at least on the lift's front side and rear side.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.6 Auxiliary equipment for lift heights greater than 3 m [118.11 in] (continued)

The installation auxiliary materials that are normally required have a grey background

Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
2 Auxiliary equipment for lift installation work			
A raised working platform / Lifting of 2 installers, individual lift parts (panels, headpiece, etc.) and tool	Lift type ≤ 3260 1.5 m [59.06 in] under the lift height or higher Lift type > 3260 Useful height equal to or higher than the lift height	300 kg [661.65 lbs] or higher The load capacity has to be provided at the useful lifting height!	Raised working platform dimensions: Lift type ≤ 3060 Lift width minus approx. 0.5 - 1 m [19.68 - 39.37 in] x At least 2/3 of the lift width up to maximum Approx. 1.5 m [59.06 in] Lift type > 3060 2 raised work platforms with an identical design Approx. at least 1.2 m [47.24 in] x At least approx. 0.7 m [27.56 in] up to maximum  Approx. 1.5 m [59.06 in]
Alternative auxiliary equipment with use restrictions (results in increased installation time, difficult installation conditions)			
Scaffolding / Elevated access for 2 installers and transport route for individual lift parts (small parts) and tools	1.5 m [59.06 in] under the lift height or higher	2 installers and Individual lift parts (panels, headpiece), maximum weights, see Chapter 6.4	For set-up inside the lift, with levels at intervals of approx. 2 m [78.7 in] and which can be disassembled level-by-level from above; the floors of the levels have to have flaps. Dimensions Scaffolding width: Lift width minus approx. 0.5 - 1 m [19.68 - 39.37 in], Scaffolding depth: Lift depth minus approx. 0.5 - 1 m [19.68 - 39.37 in] Where applicable, other special versions of the scaffolding in agreement with the lift owner/operator. For the EC: The scaffolding has to be designed for a useful weight of at least 2 kN/m² [41.8 lbs/sqft] and have a minimum platform width of 0.6 m [23.62 in] (DIN EN 12811-1, width class W06, load class 3).  ! Note: Adhere to Chapter 6.1 "Spatial and structural requirements".

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.6 Auxiliary equipment for lift heights greater than 3 m [118.11 in] (continued)

The installation auxiliary materials that are normally required have a grey background

	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
3	Auxiliary equipment for transportation on the floor			
	Transport cart / Transport on the floor	-	Minimum lifting capacity 1 t [2205 lbs]	 Refer to Chapter 6.8

	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
4	Auxiliary equipment for unloading via a loading ramp			
	High lift truck, electrically operated / unloading via a loading ramp	1.5 m [59.06 in] or higher	Minimum lifting capacity 1 t [2205 lbs]	Lift type > 3260: Fork length at least 2/3 of the container width  Note: Not suitable for housing assembly due to the drive under the forks.
	Alternative auxiliary equipment			
	Lift truck, mechanically operated / unloading via a loading ramp	0.1 m [3.94 in] or higher	Minimum lifting capacity 1 t [2205 lbs]	Lift type > 3260: Fork length at least 2/3 of the container width 

	Auxiliary equipment / Use	A Useful height	B Useful load capacity	Properties, Notes
5	Auxiliary equipment for installation at the access point			
	Safety step ladder / Lift installation work at the access point	Height 1 m [39.37 in] to 2 m [78.74 in.]	1 installer	Only step ladders—no simple ladders! Lift components are not allowed to be transported up with it. 

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.7 Auxiliary equipment for lift heights up to 3 m [118.11 in] and lift widths ≤ 2460

Transportation and lift installation work with the following auxiliary equipment are only permitted if all of the following requirements are met:

- The transport routes are at ground level (no steps, inclines, holes or edges, etc.),
- The minimum number of auxiliary personnel required at all times according to Chapter 6.5 for unloading, transportation, lift installation work and carrier installation are present. A suitable driver is also required to operate the auxiliary equipment for installation (forklift, crane) at the owner/operator's location.
- Applicable safety instructions are maintained,
- There are no difficult installation conditions such as assemblies in a shaft, recessed pit or on a base.

Selecting and providing auxiliary equipment

As owner/operator, you must provide, at no charge, appropriate auxiliary equipment for unloading and transporting lift parts as well as for the lift installation work.

This auxiliary equipment must meet regional accident prevention and safety regulations.

The owner/operator is solely responsible for selecting suitable auxiliary equipment on site and ensuring its proper availability.

Properties of the auxiliary equipment

The owner/operator must select the auxiliary equipment according to the following parameters:

A Useful height / useful lifting height

- According to the following tables,

B Useful load capacity (at useful height / useful lifting height)

- According to the following tables or according to the maximum weight of the individual lift parts from Section 5.4 "Determining weights".



Note

This auxiliary equipment is considered an exception for small lifts up to a maximum lift height of approx. 3.0 m [118 in]. The side parts of the lift can be erected manually if a sufficient number of suitable auxiliary personnel are used. Auxiliary equipment must be used according to Chapter 6.6 if there are difficult installation conditions for these lifts or if they have a height of over 3.0 m [118 in].



DANGER



Risk of fatal injury when transporting lift parts over steps!

Heavy parts can topple over or fall down!

- No stairs may be used when transporting individual lift parts.
- Lift parts must be brought to the upper storeys from the outside by the owner/operator, for example using a lorry-mounted crane with a transport platform and passed to the inside through a window or door.

Note:

The regional regulations governing the use of auxiliary equipment for installation work apply.



DANGER



Risk of fatal injury when using unsuitable auxiliary equipment!

Heavy parts can topple over or fall down!

- When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.
- For more information, refer to the safety instructions in this document and the operating manual for the auxiliary equipment in use.

Note:

The useful height / useful lifting height is the usable height the auxiliary equipment must reach for use during installation.

The useful load capacity of the auxiliary materials has to be provided at the useful height / useful lifting height.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.7 Auxiliary equipment for lift heights up to 3 m [118.11 in] and lift widths ≤ 2460 (continued)

The installation auxiliary materials that are normally required have a grey background

	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
1	Auxiliary equipment for unloading from a lorry			
	Forklift / unloading from a lorry	3 m [118.1 in.] + 1x container depth (of the lift to be installed) or higher.	2 to [4410 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4 The load capacity has to be provided at the useful lifting height!	Fork length: at least 1500 mm [59 in]; 

	Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
2	Auxiliary equipment for unloading via a loading ramp			
	High lift truck, electrically operated / unloading via a loading ramp	1.5 m [59.06 in] or higher	Minimum lifting capacity 1 t [2205 lbs]	  Note: Not suitable for housing assembly due to the drive under the forks.
	Alternative auxiliary equipment			
	Lift truck, mechanically operated / unloading via a loading ramp	0.1 m [3.94 in] or higher	Minimum lifting capacity 1 t [2205 lbs]	

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.7 Auxiliary equipment for lift heights up to 3 m [118.11 in] and lift widths ≤ 2460 (continued)

The installation auxiliary materials that are normally required have a grey background

Auxiliary equipment / Use	A Useful lifting height	B Useful load capacity	Properties, Notes
3 Auxiliary equipment for transportation on the floor			
Transport cart / Transport	-	Minimum lifting capacity 1 t [2205 lbs]	 Refer to Chapter 6.8
Supplemental auxiliary equipment for transport between storeys			
Goods hoist / added if transport to other storeys in the owner/operator's building is required	The owner/operator must ensure the storeys involved are accessible for setting up the lift	Greater than the heaviest weight of the individual lift parts to be lifted as described in Chapter 6.4	Observe dimensions of the side parts of the lift! 
Alternative auxiliary equipment			
Crane, lorry-mounted crane / If necessary: Transportation to other storeys in the owner/operator's building from outside (for example, through windows, doors, roof)	depending on the height of the storeys in the building of the owner/operator	1 to [2205 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4	If a crane or lorry-mounted crane is used, this has to be co-ordinated with the responsible installation team manager in the Hänel factory in a timely manner before starting installation.  ! Note: Suspensions / guide rails for a crane provided by the owner/operator must meet certain requirements; refer to Chapter 6.1, Section E7.
Forklift / If necessary: Transportation to other storeys in the owner/operator's building from outside (for example, through windows, doors) or through a ceiling hole	such as a crane, lorry-mounted crane	2 to [4410 lbs] or increased load capacity accordingly depending on the weight to be lifted; see Chapter 6.4 The load capacity has to be provided at the useful lifting height!	Fork length: at least 1500 mm [59 in] 

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.7 Auxiliary equipment for lift heights up to 3 m [118.11 in] and lift widths ≤ 2460 (continued)

The installation auxiliary materials that are normally required have a grey background

Auxiliary equipment / Use	A Useful height	B Useful load capacity	Properties, Notes
4 Auxiliary equipment for lift installation work			
Working platform / elevated access for 2 installers	Approx. 1.5 m [59.06 in] under the lift height (working height + 2 m [78.74 in]).	2 installers and Individual lift parts (panels, headpiece), maximum weights, see Chapter 5.4	For set-up inside the lift. Dimensions Platform width: Lift width minus approx. 0.5 - 1 m [19.68 - 39.37 in] Platform depth: Lift depth minus approx. 0.5 - 1 m [19.68 - 39.37 in] Where applicable, other special versions of the platform in agreement with the lift owner/operator.  ! Note: Adhere to Chapter 6.1 "Spatial and structural requirements".

Auxiliary equipment / Use	A Useful height	B Useful load capacity	Properties, Notes
5 Auxiliary equipment for lift installation work at the access point			
Safety step ladder / Lift installation work at the access point	Height 1 m [39.37 in] to 2 m [78.74 in.]	1 installer	Only step ladders—no simple ladders! Lift components are not allowed to be transported up with it. 

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation

The owner/operator has to enable smooth processes for unloading and transporting, which means that:

- The internal transport route is at ground level (no steps, inclines, holes or edges) and must be sufficiently capable of bearing loads (the weight of the auxiliary equipment and individual parts of the lift)
- Safety instructions are followed during transport.
- Third parties are not in the danger zone of the lifting gear
- The auxiliary personnel and auxiliary equipment correspond to the requirements
- The delivering lorry is unloaded out the back due to the danger of parts falling (unloading from the side is allowed only in the presence of the installation personnel)



DANGER

Risk of fatal injury due to heavy parts toppling over or falling down!

- The individual parts must be secured from toppling over or falling **during** transport, for example, using a safety catch or lifting belts.
- When using auxiliary equipment, prevent risks to your health by following the accident prevention and safety regulations.
- For more information, refer to the safety instructions in this document and the operating manual for the auxiliary equipment in use.



DANGER

Risk of fatal injury in the vicinity of the transport route!

There is a risk of fatal injury in the vicinity of the transport route!

- Ensure that there are no persons in the vicinity of the transport route.

SAFETY INSTRUCTIONS



Use necessary safety equipment!

Work may be carried out with the required personal safety equipment (e.g. safety shoes, safety helmet with chin strap, protective gloves etc.).



In this regard, observe Chapter 4 "General safety".

The owner/operator must provide the required personal safety equipment for auxiliary personnel!

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

A Unloading the individual lift parts

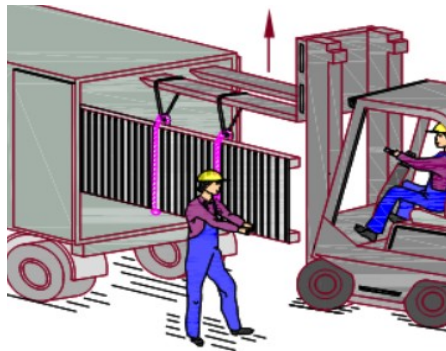


Fig. 22: Unloading from the rear with powered auxiliary equipment

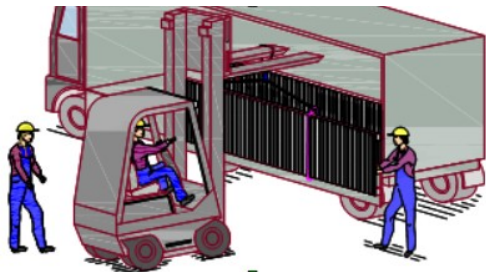


Fig. 23: Unloading from the side with powered auxiliary equipment
- in the presence of the responsible installation personnel

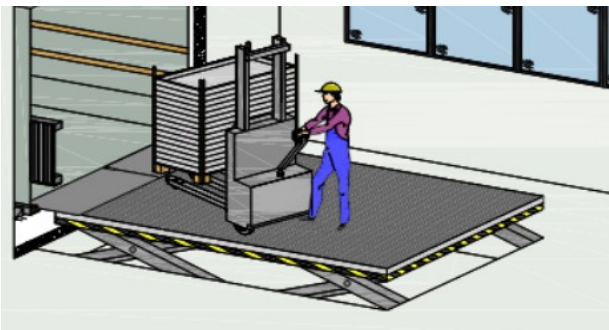


Fig. 24: Unloading with powered auxiliary equipment using a loading ramp
Container transport lift width ≤ 3260 with forklift in transverse
direction of the containers



Fig. 25: Unloading with powered auxiliary equipment using a loading ramp
Container transport for lift width > 3260 wit forklift in longitudinal
direction of containers

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

B Transport, interim storage of lift parts and installation area

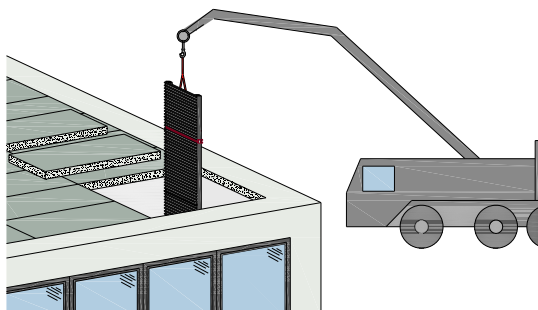


Fig. 26: Transport using a lorry-mounted crane



Fig. 27: Transport cart for internal transportation

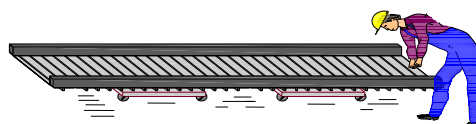


Fig. 28: Lift side part transport with transport cart

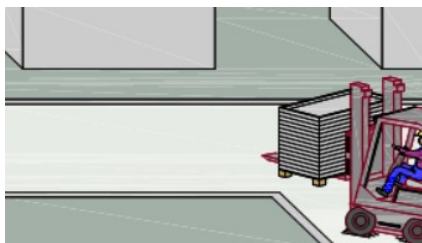


Fig. 29: Container transport for lift width ≤ 3260 with forklift in lateral direction of containers

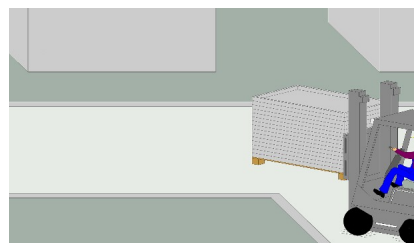


Fig. 30: Container transport for lift width > 3260 with forklift in longitudinal direction of containers



Fig. 31: Internal transport route: width at least 1 m [35.37 in] for lift depth 635 and 825, width at least 1.5 m [59.06 in] for lift depth 1047 and 1270. Container transport for lift width ≤ 3260 with forklift in transverse direction of containers

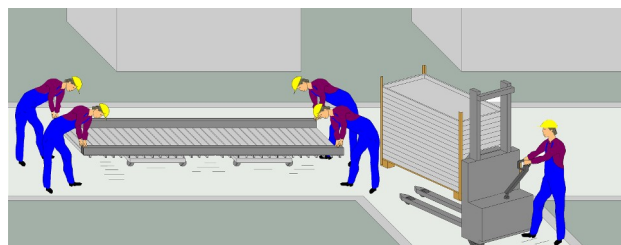


Fig. 32: Internal transport route: with at least 1 m [35.37 in] for lift depth 635 and 825. Container transport lift width > 3260 with forklift in longitudinal direction of containers

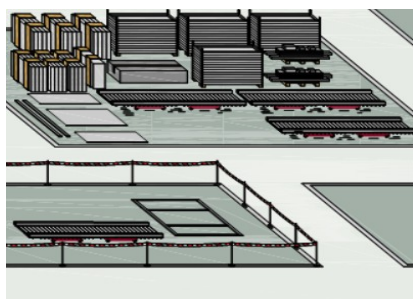


Fig. 33: Interim storage of lift parts, closed off installation area

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

C Erecting the side parts of the lift

Loop a suitable lifting rope around the side part, secure it and erect it using the installation auxiliary equipment.

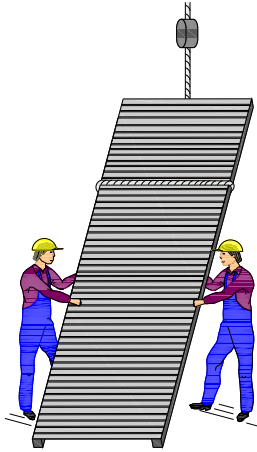


Fig. 34: Erecting the side part using a chain block as auxiliary equipment

Lifting rope (1) as installation auxiliary equipment cable securing device (2)

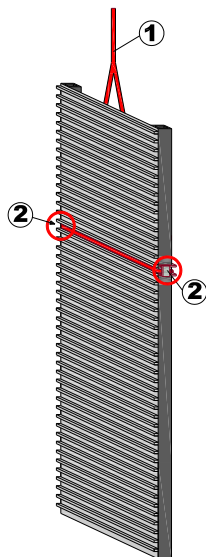


Fig. 35: Erecting the side part using auxiliary equipment, such as a forklift

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

D Handling the parts of the top lift frame

Drive into the lift housing from the front with the raised working platform, lift the parts of the top frame (5-piece or 6-piece) up and screw them into place.

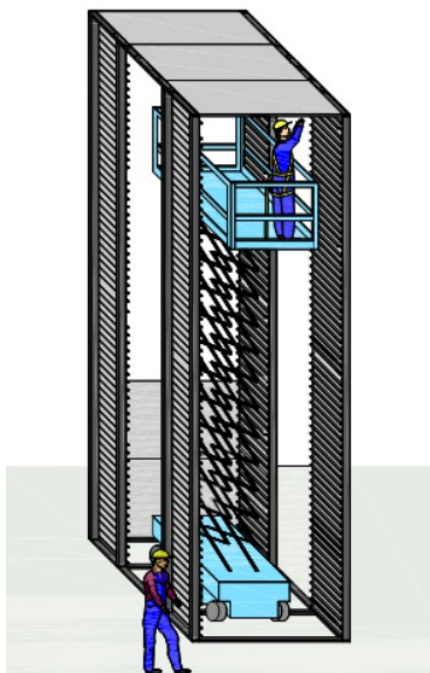


Fig. 36: Transporting and installing the top frame

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

E Handling the lift panels

Bring the panel to the installation position using the auxiliary equipment and screw it into place.

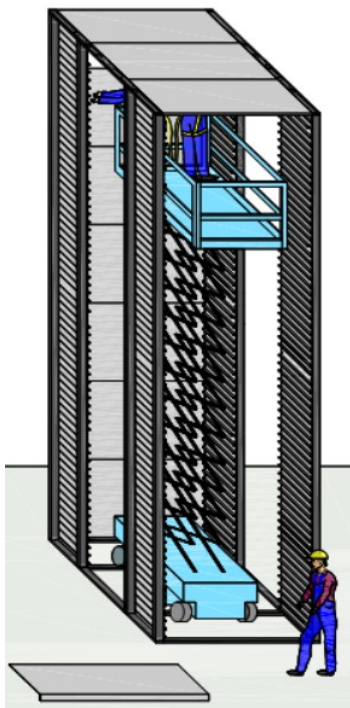


Fig. 37: Example: Installation of the rear panels

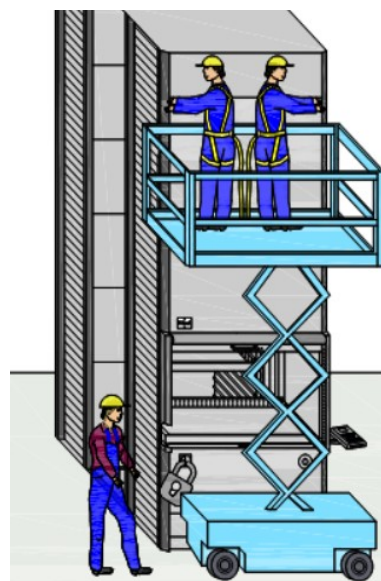


Fig. 38: Example: Installation of the front panels

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

F Installing the access point using safety step ladders

The regional regulations governing the use of ladders for installation work apply.

There is a danger of falling when using ladders that are not secure.

When working on the Lean-Lift®, only safety step ladders may be used!

- Check the condition of the safety step ladders before using them.
- Damaged or incomplete auxiliary equipment must be repaired before use, otherwise it may not be used for installation.
- Required height of the safety step ladder: 1 to 2 m [39.37 in] to [78.74 in]. All work at great heights has to be carried out using a raised working platform or scaffolding.

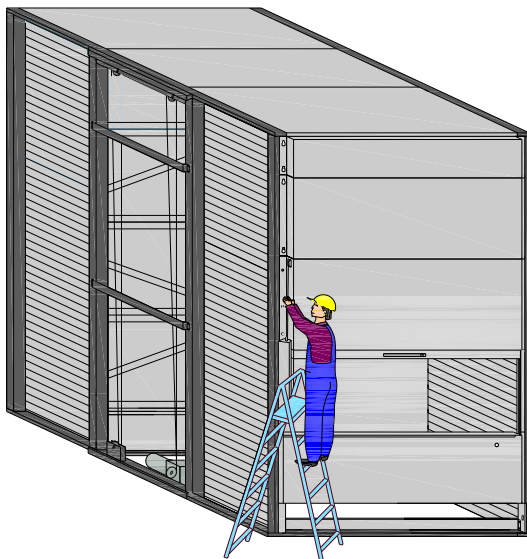


Fig. 39: Safety step ladder for installing the access point

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.8 Examples for using auxiliary equipment during the installation (continued)

G Bringing containers into the lift

To insert the containers, at least two auxiliary personnel and one piece of auxiliary equipment with driver are required for lifting the container stacks and inserting the containers.

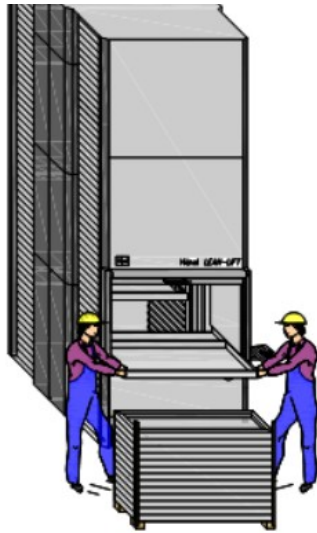


Fig. 40: Example of inserting lightweight containers into the lift

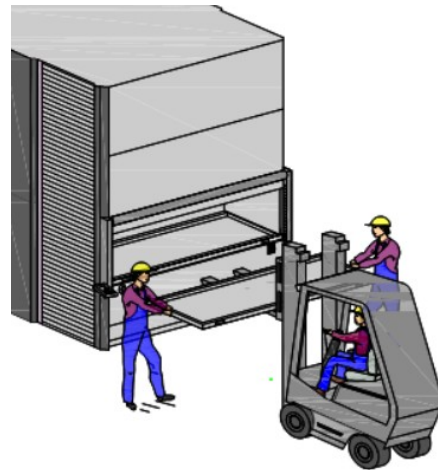


Fig. 41: Example of inserting containers into the lift

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator

Maintenance tasks after commissioning the lift

The owner/operator must ensure that the Lean-Lift® is accessible for maintenance tasks following the commissioning.

In order to carry out required maintenance tasks on the lift in a manner that is time-efficient and cost-efficient and to avoid longer lift downtimes, each lift should have standard service access points. See the following models under Item 1.

These service and auxiliary access points must be permanently protected from the elements. The work area for maintenance tasks must be set up so that all work on the lift can be carried out in compliance with the relevant legal and company occupational safety and standard safety regulations.

Lifts in multi-unit networks

The following models are valid for lifts in multi-unit networks. This means that the multi-unit network is treated as a single lift. Please note that the entire multi-unit network may not be operated while maintenance tasks are being carried out.



Note:

- The service and auxiliary access points must be continuously accessible so that they can be used unhindered in compliance with the relevant legal and company occupational safety and standard safety regulations.
- All access points to the inside of the lift (service and auxiliary access points) must be closed and locked again after completion of the maintenance tasks!

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Maintenance tasks after commissioning the lift

1. Lean-Lift® standard service access points

All required maintenance tasks on the lift can be carried out in a manner that is time-efficient and cost-efficient.

Lean-Lift® standard service access points for

Lift width ≤ 3260 : A lower service door and the lift side panelling above it that is above the entire lift height.

Lift width > 3260 : Two lower service doors on the left and right lift sides and removable lift side panelling over the entire lift height and, on the opposite side of the lift, the upper lift side panelling*.

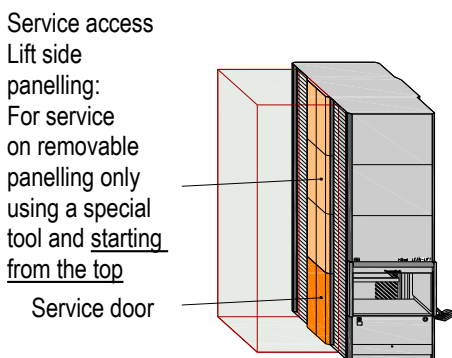


Fig. 42: Example (lift width ≤ 3260) standard service access points: Space requirements for the lower service door and service access point above the entire lift height

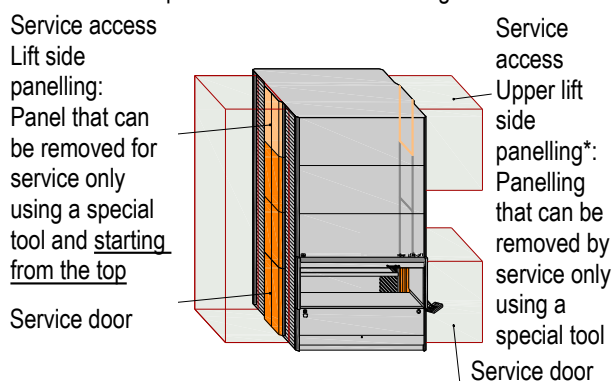


Fig. 43: Example (lift width > 3260) Standard service door: space requirements for the lower left and right service doors, a service access point above the entire lift height and a service access across the top lift side panelling on the opposite side

* This access point can be omitted if the lift has a Hänel safety carriage in accordance with the order confirmation.

2. Lean-Lift® service access points in exceptional cases

Maintenance tasks are associated with substantially longer lift downtimes and additional costs.

Use of an additional external industrial climber team is required.

The Lean-Lift® service access points in exceptional cases are as follows:

Lift width ≤ 3260 : A lower service door and the top lift side panelling are on the same lift side.

Lift width > 3260 : Two lower service doors on the left and right lift sides and the upper lift side panelling** on both lift sides.

In addition to unhindered access to each lower service door and the top side panel above, use of an additional external industrial climber team is mandatory for all repair work above the service door, which requires climbing into and rappelling down into the lift. This leads to substantially longer lift downtimes and additional costs for the owner/operator.

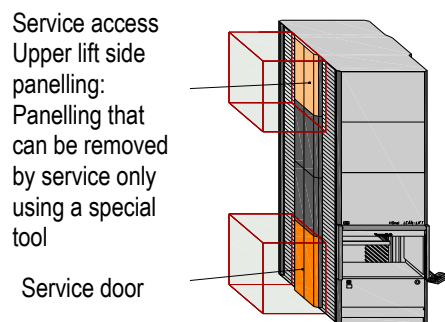


Fig. 44: Example (lift width ≤ 3260) service access points in exceptional cases: Space requirements for the lower service door and service access point above the top lift side panelling

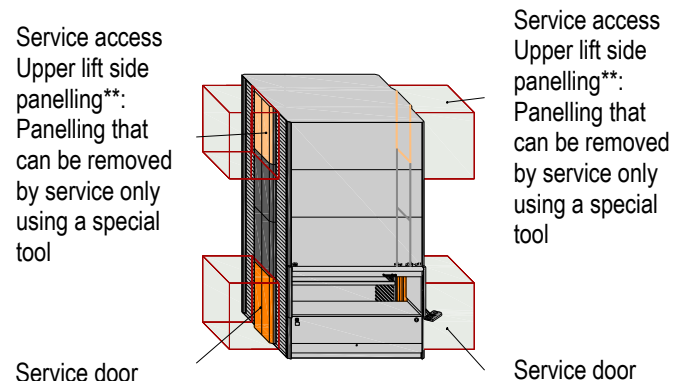


Fig. 45: Example (lift width > 3260) service access points in exceptional cases: Space requirements for the lower left and right service doors and service access points on both sides above the top lift side panelling

** One of the two access points can be omitted if the lift has a Hänel safety carriage in accordance with the order confirmation.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Maintenance tasks after commissioning the lift

3. Lean-Lift® auxiliary access points from the front / rear

Only possible if lift width ≤ 2060 and lift depth ≤ 825 .

Maintenance tasks can only be carried out if a great amount of time and money is expended and only if special prerequisites are carried out.

Use of an additional external industrial climber team is required.

Only possible if lift width ≤ 2060 and lift depth ≤ 825 : a lower service door and the front and rear sides of the lift above the entire lift height.

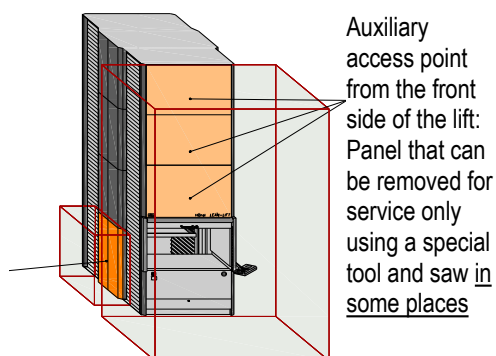
In addition, a auxiliary access point for maintenance tasks may only be used in a limited scope above the front or rear sides of the lift due to safety reasons if all of the following listed prerequisites have been met.

Mandatory requirements:

The owner/operator must ensure that suitable lifting gear ready for operation is available that can load / unload the maximum container weight and the respective container dimensions. The required maintenance tasks must be carried out in compliance with the relevant legal provisions for occupational safety.

Here, you must take the following into account:

- Simultaneous use of several tools (raised work platform, forklift, etc.), substantially larger space requirements may exist
- The container to be removed can only be removed as a whole (this means it can be removed with the bulk materials / maximum container load)
- The container to be removed must be evenly loaded
- The distance between the individual containers, including the bulk materials, must be sufficiently large for the forklift fork to fit through.



Service door

Fig. 46: Example (lift width ≤ 2060 and lift depth ≤ 825)

Space requirements for the lower service door and the front side of the lift above the entire lift height.



Notes:

Auxiliary access point not possible for optional equipment ("Lean-Lift® with automatic container extractor").

Lift panelling that can be removed from the outside is mandatory!

For a auxiliary access point above the front and rear sides of the lift, the lift panelling must be laid out on the respective side so that it can be removed from the outside!

This means that the rear lift panels may need to be laid out in the front lift panel version.

A auxiliary access point is not a fully-fledged replacement for a service access point!

- Auxiliary access points above the front and rear sides of the lift are not suitable for regular maintenance work on the lift. Their sole purpose is to provide direct access to the inside of the lift in which a malfunction has occurred in special cases at the respective height
- For a auxiliary access point to the lift, parts of the lift panelling must be removed and sawed off at the corresponding height. The affected parts may be damaged to the extent that they need to be replaced.
- Correcting faults using a auxiliary access point leads to substantially longer lift downtimes and substantially higher costs for the owner/operator.
- Use of an additional external industrial climber team must be made possible for all tasks that require climbing into and repelling down into the lift. This leads to substantially longer lift downtimes and additional costs for the owner/operator.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Work at heights

For maintenance tasks at great heights on or in the lift, Chapter 4 "Work at heights," must be observed.

Equipment for using a safety rope (part of the safety equipment) when working at heights in the lift

All lifts with a height > 4 m [157.48 in] are equipped with at least one piece of equipment for retracting a vertical safety rope in the lift as fall protection equipment:

- If lift width ≤ 3260 with a piece of equipment (depending on the lift version on the left or right side of the lift)
- If lift width > 3260 with two pieces of equipment (on the left and right sides of the lift) and, if necessary, a Hänel safety carriage (see order confirmation)

For more information on this equipment, refer to the lift operating manual and the supplementary operating manual for the Hänel safety carriage.

Space requirements for the service access points / auxiliary access points

The following sections present the space requirements for carrying out maintenance tasks for specific situations.

The owner/operator must ensure the accessibility required for this and provide suitable auxiliary equipment, for example, a raised working platform, scaffolding or stair tower. Ensure that safe and unobstructed access is possible using the respective auxiliary equipment. Adequate space at the lift is required for a raised working platform, scaffolding, stair tower or forklift; see the following sections.

Make sure that adequate space is available for the lift access points depending on the on-site conditions.

1. Space requirements for standard service access points:

- Lower service door, see the following **Section A**,
- Service access on the side over the lift height, see the following **Section B1**,
- Service access on the side using auxiliary equipment for work at heights, see the following **Section B2**.

2. Space requirements for service access points in exceptional cases:

- Lower service door, see the following **Section A**,
- Service access on the side at the top, see the following **Section C1**.

3. Space requirements for front / rear auxiliary access points:

- Lower service door, see the following **Section A**,
- Auxiliary access point using auxiliary equipment for work at heights, see the following **Section C2**.

For examples of required service access points / auxiliary access points in specific on-site situations (particularly when installing in a shaft, niche, recessed pit, on a base, through multiple storeys and at larger lift heights), refer to the following sections.



DANGER

Risk of fatal injury from falling

- There is a risk of fatal injury when carrying out work on or in the lift at great heights without suitable fall protection equipment.
- Work at heights requires special qualification.

SAFETY INSTRUCTIONS



Wearing personal safety equipment.

The required personal safety equipment against falling and the attachment points have to be selected in accordance with the manufacturer's operating manual for the auxiliary equipment used - see Chapter 4.

Note:

In most cases, use of auxiliary equipment for work at heights results in larger space requirements, see the following Sections B2, C2.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

A Lower service door, minimum space requirements in mm [in]

Lift type	Width		Height	Depth	
	Lift width ≤ 3260	Lift width >3260		Lift width ≤ 3260	Lift width >3260
635	1260 [49.6]	1410 [55.5]	2000[78.7]	530 [20.9]	615 [24.2]
825	1450 [57.1]	1585 [62.4]	2000[78.7]	625 [24.6]	705 [27.8]
1047	1675 [65.9]	-	2000[78.7]	740 [29.1]	-
1270	1900 [74.8]	-	2000[78.7]	850 [33.5]	-

Note:

In the case of wall openings, pay attention to the corresponding minimum dimensions. The dimensions in the table refer to the lift's outer edges.

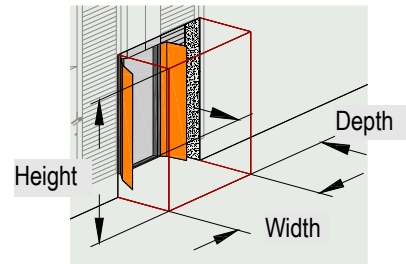


Fig. 47: Space requirements for lower service door

Note:

In most cases, use of auxiliary equipment particularly for work at heights results in larger space requirements, see the following Section B2.

B 1 Service access on the side over the lift height, minimum space requirements in mm [in]

Lift type	Width		Height	Depth
	Lift width ≤ 3260	Lift width >3260		
635	1260 [49.6]	1410 [55.5]	Lift height 2000 [78.7]	700 [27.6]
825	1450 [57.1]	1585 [62.4]	Lift height 2000 [78.7]	700 [27.6]
1047	1675 [65.9]	-	Lift height 2000 [78.7]	700 [27.6]
1270	1900 [74.8]	-	Lift height 2000 [78.7]	700 [27.6]

Note:

- In the case of wall openings, pay attention to the corresponding minimum dimension. The dimensions in the table refer to the lift's outer edges.
- The dimensions for holes in the ceiling each have to be 100 mm [3.9 in] larger than the lift depth or width.

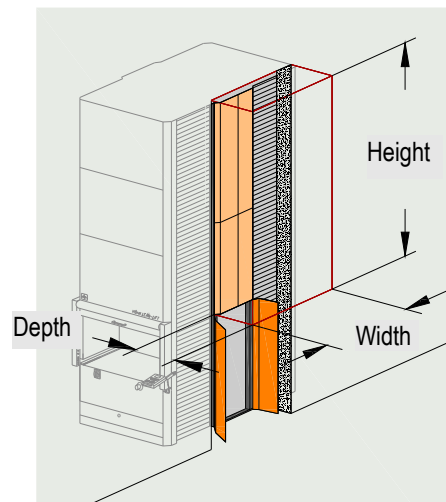


Fig. 48: Space requirements for service access on the side over the lift height

Note:

In most cases, use of auxiliary equipment particularly for work at heights results in larger space requirements, see the following Section B2.



Note

After the lift has been installed, the owner/operator has to seal the gap between the lift and the hole in the ceiling - see the Power Supply and Foundation Plan. Covers / safeguards have to be selected such that they can be removed for the duration of maintenance work (if parts of the lift panelling have to be removed).

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

B 2 Additional space requirements in mm [in] for using auxiliary equipment (raised working platform, scaffolding, stair tower, forklift)

In many cases (depending on the on-site structural situation) use of auxiliary equipment may be required in order to be able to reach the service access on the side.

Dimension X; also see the figures in the following section, "Examples".

	Dimension X, for lift height	
	≤ 8000 [315]	> 8000 [315]
A raised working platform (without manoeuvring space)	1050 [41.3]	1500 [59]
Scaffolding without structural reinforcement	1800 [70.9]	3200 [126]
Scaffolding with structural reinforcement	1500 [59]	1500 [59]
Stair tower	1700 [67]	1700 [67]

Note:

The values provided above are the minimum space requirements. The specific on-site space requirements have to be determined depending on the auxiliary equipment actually used and the owner/operator's spacial conditions.

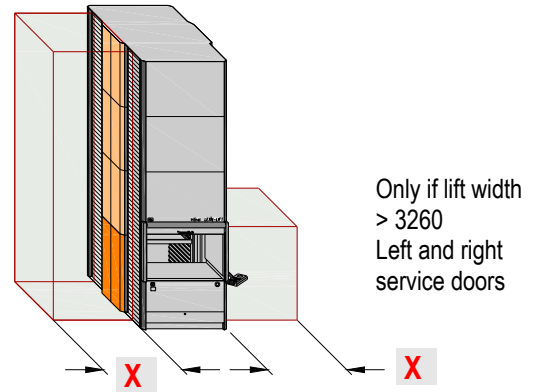


Fig. 49: Space requirements for service access on the side for using auxiliary equipment

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

C 1 Exceptional case: Service access on the side at the top, minimum space requirements in mm [in]

Lift type	Width		Height	Depth
	Lift width ≤ 3260	Lift width >3260		
635	1260 [49.6]	1410 [55.5]	2000 [78.7]	700 [27.6]
825	1450 [57.1]	1585 [62.4]	2000 [78.7]	700 [27.6]
1047	1675 [65.9]	-	2000 [78.7]	700 [27.6]
1270	1900 [74.8]	-	2000 [78.7]	700 [27.6]

Note:

- Service access in exceptional cases via a lower service door, top lift side panelling and front side of the lift. For requirements, see the introduction of this chapter.
- In the case of wall openings, pay attention to the corresponding minimum dimensions. The dimensions in the table refer to the lift's outer edges.

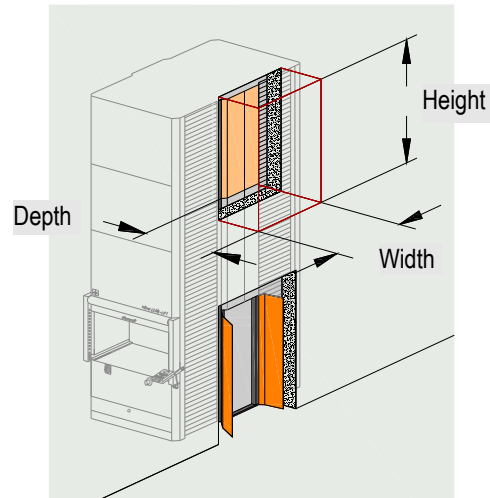


Fig. 50: Space requirements for service access on the side at the top

Note:

In most cases, use of auxiliary equipment particularly for work at heights results in larger space requirements, see the following Section C3.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

C 2 Auxiliary access points: Minimum space requirements in mm [in] for using auxiliary equipment (raised working platform, scaffolding, forklift)

Only possible if lift width ≤ 2060 and lift width ≤ 825 .

To access the auxiliary access point from the front / rear, use of auxiliary equipment is required.

For the required dimensions of the auxiliary equipment, see Chapter 6.6 and the dimensions of the auxiliary equipment that will actually be used on site.

Lift type	Width	Height	Depth
635 Up to 1270	Length of the raised working platform + width of the forklift + manoeuvring space	Lift height	Depth of container + Length of the raised working platform + length of the forklift(*) + manoeuvring space
	(*) Depending on which dimension is larger		

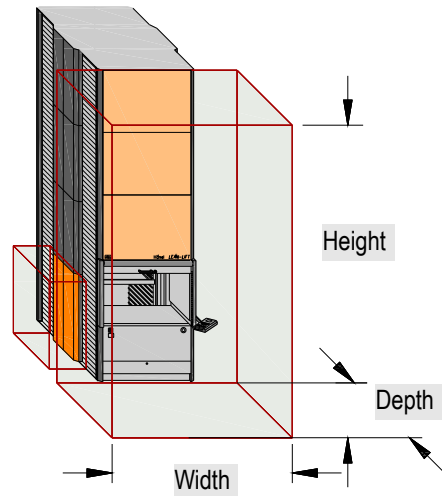


Fig. 51: Example: Space requirements for the auxiliary access point from the front for using auxiliary equipment

Note:

The values provided above are the minimum space requirements. The specific on-site space requirements have to be determined depending on the auxiliary equipment actually used and the owner/operator's spacial conditions.

The owner/operator must ensure that suitable lifting gear ready for operation is available that can load / unload the maximum container weight and the respective container dimensions. The required maintenance tasks must be carried out in compliance with the relevant legal provisions for occupational safety.

Here, you must take the following into account:

- Simultaneous use of several tools (raised work platform, forklift, etc.), substantially larger space requirements may be required
- The container to be removed can only be removed as a whole (this means it can be removed with the bulk materials / maximum container load)
- The container to be removed must be evenly loaded
- The distance between the individual containers, including the bulk materials, must be sufficiently large for the forklift fork to fit through.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Examples for lift accessibility for maintenance tasks

Shaft

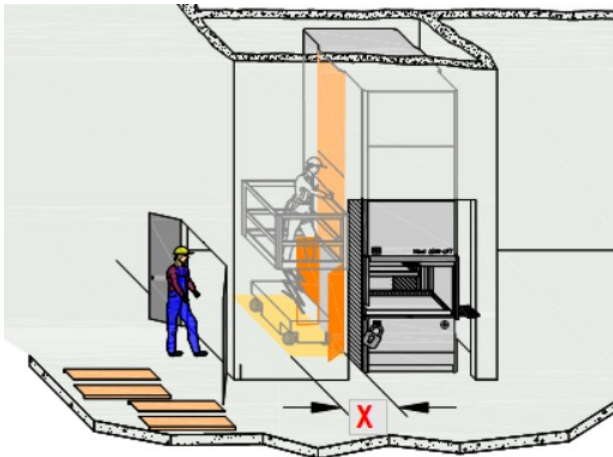


Fig. 52: Shaft and raised working platform

Note:

If the lift width > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

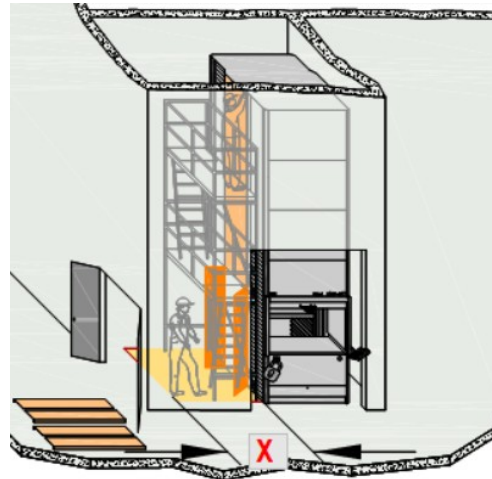


Fig. 53: Shaft and scaffolding

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Niche

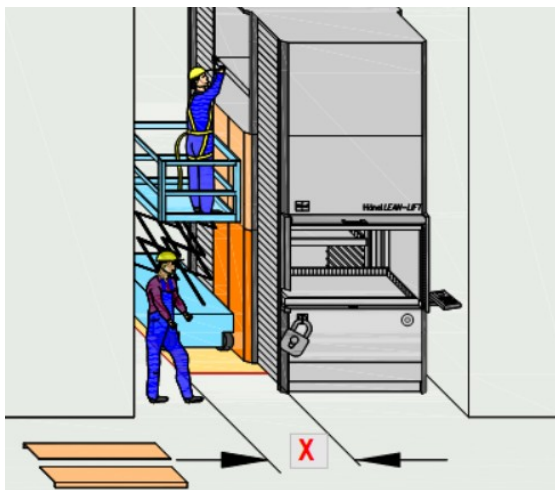


Fig. 54: Niche and raised working platform from the side

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

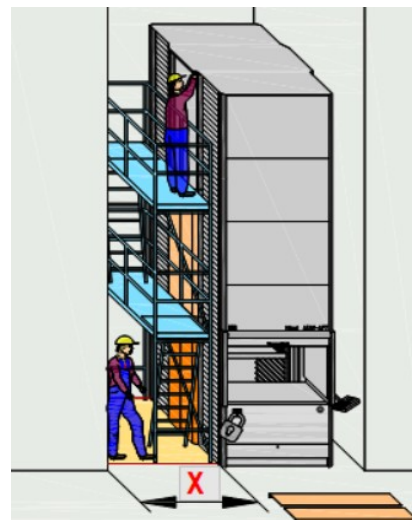


Fig. 55: Niche and scaffolding from the side

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Recessed pit

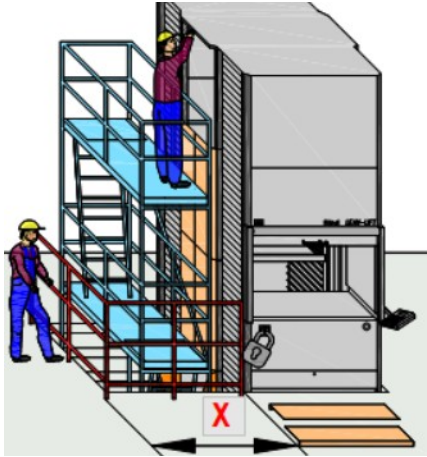


Fig. 56: Recessed pit and scaffolding from the side

Note:

If the lift width > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Base

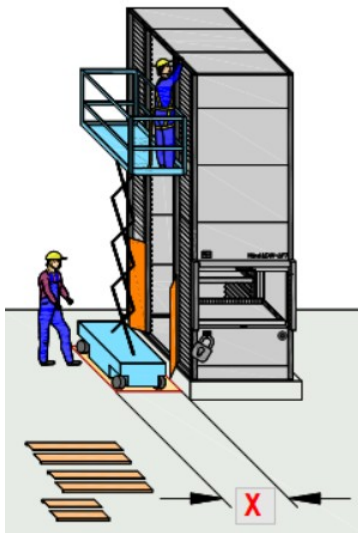


Fig. 57: Base and raised working platform

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

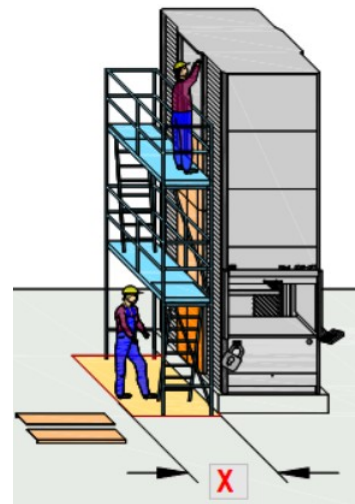


Fig. 58: Base and scaffolding

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Access in the case of lifts through storeys

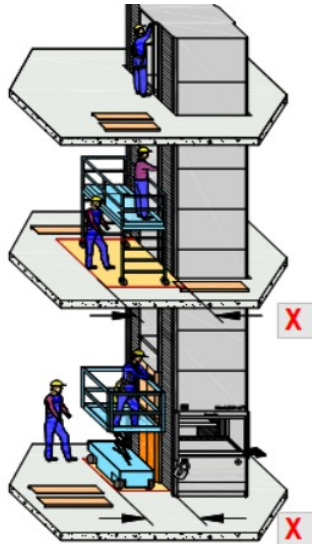


Fig. 59: Service access for lifts through several storeys with raised working platform and scaffolding

Note:

If the lift width is > 3260 , at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Access in the case of high lifts

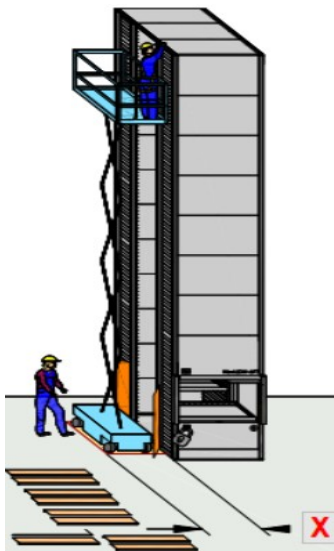


Fig. 60: High lifts and raised working platform

Note:

If the lift width is > 3260 , at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

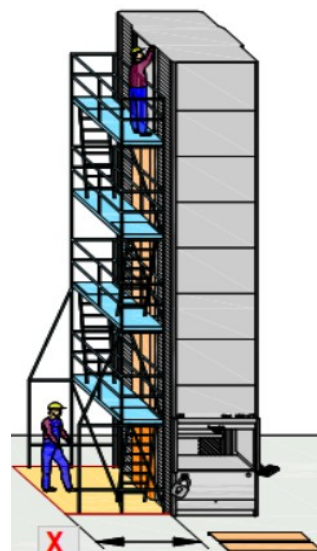


Fig. 61: High lifts and scaffolding

Note:

If the lift width is > 3260 , at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Multi-unit network with a stationary stair tower

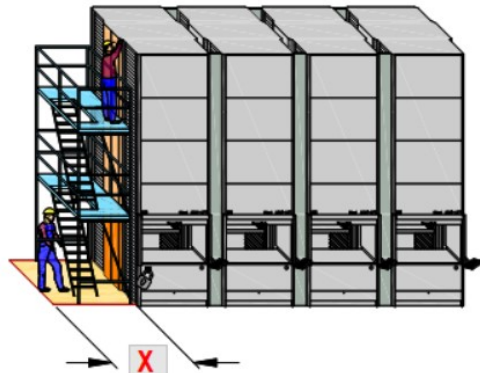


Fig. 62: Multi-unit network with stair tower

Note:

If the lift width > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Special case: stationary stair tower between the lifts

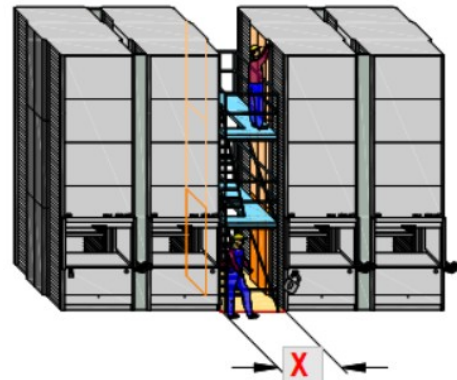


Fig. 63: Stair tower between lifts

When planning a stair tower between the lifts, you must take into account the ability to open the lower service doors and remove the side panels on both sides.

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Multi-unit network with raised working platform

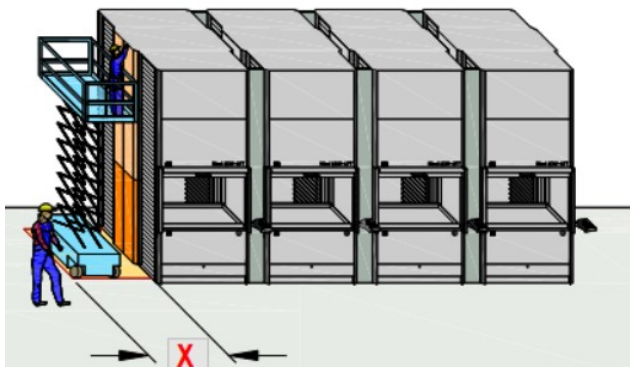


Fig. 64: Multi-unit network with raised working platform

Note:

If the lift width is > 3260, at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

6.9 Fulfilment of the service requirements by the owner/operator (continued)

Additional examples of lift accessibility for maintenance tasks via the front / rear auxiliary access point

Only possible if lift width ≤ 2060 and lift width ≤ 825 .

Service access in exceptional cases via a lower service door, top lift side panelling and auxiliary access point from the front or rear side of the lift.

For requirements, see the introduction of this chapter.

Note:

If the lift width is > 3260 , at least one additional service access point is required on the opposite side of the lift. For additional information, see the introduction of Chapter 6.9.

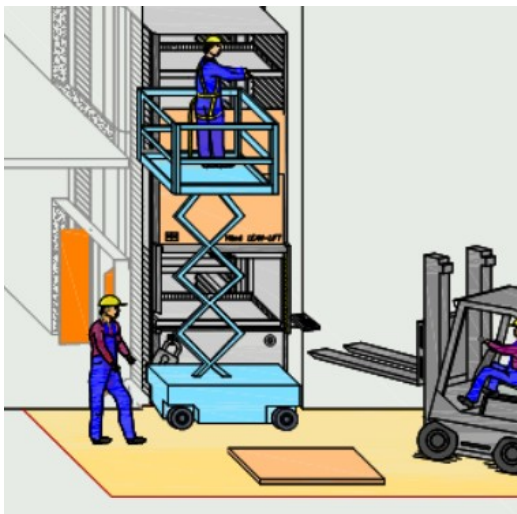


Fig. 65: Example: Niche and raised working platform and forklift from the front (lift width ≤ 2060 and lift depth ≤ 825)

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

7. Disposal instructions

Disposing of the packaging material



Our lifts require effective packaging to protect them during transport. However, we use only as much as absolutely necessary. After unpacking the lift parts, the packaging material has to be disposed of in an environmentally responsible manner.

The packaging material is composed of the following recyclable materials:

- Wood (untreated)
- Corrugated cardboard/cardboard/paper
- Polyethylene film (transparent)
- Tightening straps: Polypropylene (black)

When disposing of packaging material, follow the nationally and locally applicable laws and regulations of the country of use.

In Germany, the packaging can be given to the local recycling centre near the lift's installation location. Alternatively, you can also commission a regional disposal company to dispose of the packaging.

You can obtain addresses of these centres from your local government.

Installation Requirements for the Owner/Operator

Hänel Lean-Lift®

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