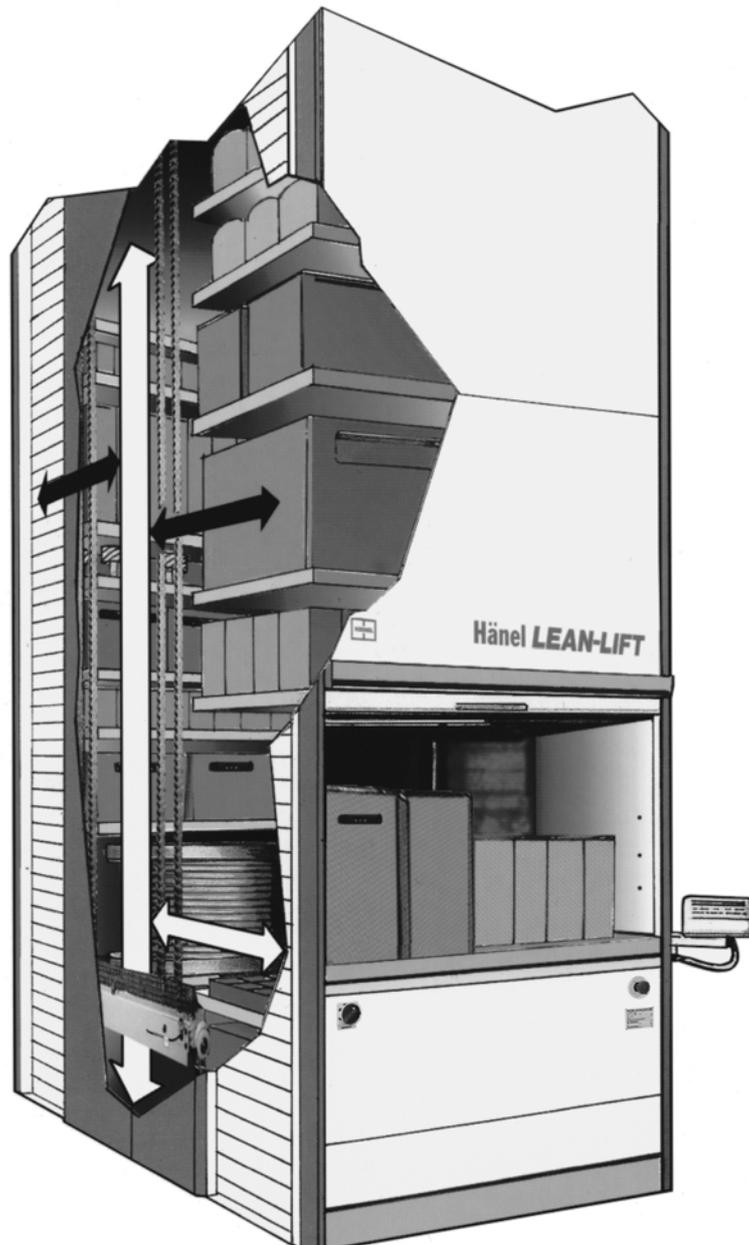




## Installation Requirements for the Owner/Operator

### Hänel Lean-Lift

#### Installation with raised working platform





# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 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

### Installation with raised working platform

#### 0. Guide

##### Contents

This section contains basic information about this manual. 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.

##### Target group of this document, "Installation Requirements"

This document, entitled "Installation Requirements", is intended for trained technicians employed by the customer or owner/operator. These must be specialists who are trained for and experienced in executing the respective tasks.

##### 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.

##### Classification of the signal words and colours used

The signal words and colours used have the following meanings:

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

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 0. Guide (continued)

##### Symbols and signal words used

Symbol	Meaning
	<b>Danger!</b> Notes with this symbol and the keyword "Danger!" warn you of possible severe injuries of a general nature, possibly including fatal injuries.
	<b>Danger!</b> Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by falling.
	<b>Danger!</b> Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by suspended loads, particularly falling of the extractor.
	<b>Danger!</b> Notes with this symbol and the keyword "Danger!" warn you of a hazard caused by electrical current.
	<b>Danger!</b> This symbol informs you of the following: <ul style="list-style-type: none"><li>• Entering the lift via the access point.</li><li>• Sitting or standing inside the access point or underneath the extractor.</li><li>• Riding on the extractor.</li></ul>
	<b>Secure the main switch(es)!</b> 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.
	<b>Secure the actuator latch!</b> 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.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 0. Guide (continued)

##### Symbols and signal words used (continued)

Symbol	Meaning
	<b>Wear fall protection equipment!</b> This symbol informs you that, before beginning a task at great heights, you must put on fall protection equipment as personal safety equipment (PSE).
	<b>Wear a safety helmet!</b> This symbol informs you that when hazards from falling parts exist, you must wear a helmet as personal safety equipment.
	<b>Disposal</b> This symbol indicates that applicable national laws and regulations for the disposal of recyclable materials must be followed.
	<b>Information symbol</b> This symbol indicates particularly important information for installation intended to help you avoid making errors or causing damage; this information may include tips to help make the installation easier.  Signal words are "Important!", "Instruction", "Information" or "Tip"; of these, instructions given under the signal word "Important!" must be followed especially carefully.



# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 1. Basic information

##### Contents

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

##### Manufacturer

Hänel Büro- und Lagersysteme  
Postfach 11 61  
74173 Bad Friedrichshall  
Phone: +49 (0) 7136 27725  
Fax: +49 (0) 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

Drives: 2

Number of access points: unlimited

##### Date of issue of the Installation Requirements:

June 2008

##### Keep in an accessible place as a complete document

- These Installation Requirements are 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 these Installation Requirements. If the Installation Requirements 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

### Installation with raised working platform

#### 1. Basic information (continued)

##### Purpose of this manual

This manual contains instructions for the specialists employed by the owner/operator. The instructions are provided to prepare them for installing the lift for the customer or owner/operator in order to guarantee a smooth installation process. In this way, extra costs caused by delays can be avoided.



**DANGER**

The applicable safety instructions must be followed throughout the entire installation. For further information, refer to Chapter 3, "Safety instructions".

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

### Installation with raised working platform

#### 2. Personnel requirements

##### Contents

Overview of the qualifications required of the installation personnel.

##### Installation personnel

The requirements of Hänel installation personnel and Hänel representatives apply:

- 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.
- They must follow the installation instructions.
- They must have sufficient knowledge of the language of the country of use.
- They must be adequately suited to the tasks described here, and trained in the use and handling of the respective devices.
- They must be able to provide evidence of having received adequate 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.

Furthermore, the owner/operator is responsible for the auxiliary personnel they employ. Thus the auxiliary personnel is likewise required to:

- Follow the installation instructions.
- Have sufficient knowledge of the language of the country of use.
- Be adequately suited to the tasks described here, and trained in the use and handling of the respective devices.



# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 3. Safety instructions

##### Contents

This chapter provides important instructions intended to protect the installation personnel employed by the owner/operator, the Lean-Lift itself, and (where applicable) third parties from injury or damage.

##### Important notes before beginning work

These "Installation Requirements for the Owner/Operator" are fundamental to safe and trouble-free installation of the Hänel Lean-Lift, and require careful and thorough compliance. Hänel factory installers are obligated to verify this before installation begins.

##### Safety during installation



**DANGER**

These safety instructions, and those in the "Safety" chapter of the Hänel Lean-Lift operating manual, must be observed and followed at all times to prevent hazards to your health.

##### Personal safety gear

The following personal safety equipment is required:

- Fall protection equipment whenever working at great heights. The respective laws and regulations of the country of use apply.
- Protective gloves as protection against burns on hot drives and injuries from corners and edges.
- Safety shoes and a safety helmet to protect against falling parts.

##### Selecting permitted fall protection equipment

For all work carried out at a fall height of 1 m (39.37 in) or more, the following fall protection equipment must be used:

- The safety harness must conform to EN 361. A safety belt in accordance with EN 358 is not suitable as fall arrest equipment!
- The safety harness must have a fastener with webbing fall arrester in accordance with EN 354 / EN 355 including carabiner in accordance with EN 362.
- In addition, an attachment belt in accordance with EN 795 B can be used to secure the fall arrest equipment.



##### Important!

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



##### Note!

The fall arrester is attached to the raised working platform.

If there are any questions regarding the attachment point, contact the safety officer designated by the owner/operator.

#### SAFETY INSTRUCTION



##### Wear fall protection equipment

All lifts with a height > 4 m (157.5 in) have devices for connecting fall protection equipment and drawing in a safety rope. The feed line is located to the right of the service door inside the lift.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 3. Safety instructions (continued)

##### Safety during installation (continued)

##### Safety of the installation area

The installation area must be sufficiently cordoned off to prevent risk of accident and access by third parties.

Parts lifted using lifting gear must always be secured against falling down or falling over.



#### DANGER

Risk of fatal injury from being crushed or from falling objects

- Never climb into the lift through the access point.
- It is forbidden to ride on the extractor at any time.



#### DANGER

Substantial risk of injury

- The feed line is not suitable for use as a safety rope, nor is it permitted to be used for that purpose.  
Its sole purpose is for pulling in the safety rope.
- The equipment may be used by trained technicians (such as those employed by the Hänel factory and the Hänel representatives).

#### SAFETY INSTRUCTION

##### Fire protection

In accordance with locally applicable building codes, necessary fire protection measures must be clarified with the respective regional fire protection authority.

##### Modification of the Lean-Lift

Modifications are permitted only after a specialised safety concept is created and approved by the Hänel factory. This applies both to modifications carried out by companies associated with Hänel and to those carried out by independent representatives or other companies.

Unauthorised modification shall have the following consequences:

- All safety warranties and certifications and the EC Declaration of Conformity shall be rendered null and void.
- Hänel shall no longer be deemed the manufacturer of the lift, and all warranty claims against Hänel shall be rendered null and void,
- A new safety assessment procedure and safety concept for conformity assessment may, in some circumstances, need to be created in its entirety in accordance with 98/37/EC. This would then have to take place under the sole responsibility and at the sole risk of the company carrying out the modification, and without the detailed knowledge of the manufacturer.



#### DANGER

Unauthorised modifications of the lift cause substantial risk of injury, including fatal injury.

- Any modification without the proper approval is prohibited.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 3. Safety instructions (continued)

##### Safety during installation (continued)

##### Modification of the Lean-Lift



#### CAUTION

Hazard from overload of the lift

The load of the containers and the lift is not monitored automatically. Overloaded containers can cause one-sided loads or overloads of the lift or falling of stored articles.

- After loading a container, check to make sure that the total weight of the stored articles does not exceed the permitted maximum.
- The owner/operator is responsible for monitoring the correct load.
- Refer to the type plate for the permitted load per container and for the entire lift.



# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 4. Preparing the installation location

##### Contents

This chapter describes how to select and prepare the installation location according to the following list of conditions to be verified.

Chapter	Subject	Page
4.1	Ambient conditions and hazardous materials	15
4.2	Safety	15

#### 4.1 Ambient conditions and hazardous materials

##### Ambient conditions

The lifts must be protected from humidity, moisture, and weather forces such as wind and snow. They are 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 lifts are 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 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



##### DANGER

There is a risk of fatal injury if the lift is operated in hazardous environments.

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



##### DANGER

There is a risk of fatal injury if you do not comply with these instructions.

- Do not store any explosive materials inside the Lean-Lift!



##### WARNING

There is a substantial health risk if you do not comply with these instructions.

- Do not store any hazardous materials inside the Lean-Lift!

#### 4.2 Safety

You must follow any applicable special regulations of your country while preparing for installation.

Before beginning work, the installer must obtain information from the customer or owner/operator about the special operating and safety instructions, as well as new or revised regulations.



# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5. Preparing for installation

##### Contents

This chapter describes the preparations to be made by the owner/operator for proper installation of the Lean-Lift. The following instructions must be followed exactly to ensure safe and correct installation. Careful and thorough preparation can prevent extra costs caused by delays and provides many other benefits.

Chapter	Subject	Page
5.1	Preparing the installation area	18
5.2	Structural anchoring for the lift	22
5.3	Mains power supply	24
5.4	Determining weights	26
5.5	Auxiliary personnel	27
5.6	Mechanical auxiliary equipment	28
5.7	Powered auxiliary equipment	29
5.8	Transport	31
5.9	Examples: How to use auxiliary equipment during installation	35
5.10	Ladders and scaffolding	38
5.11	Providing a service access door	39
5.12	Additional instructions	41

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.1 Preparing the installation area

An adequately sized installation area must be made available which is clear and free of obstacles. This section provides information about the general characteristics of the area and about openings and recessed pits.

#### Dimensions

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 (manoeuvring clearance).

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

Height: See lift height in order confirmation

Depth: 95 mm (3.74 in)

Width: See following table

Lift type	Width
Lean-Lift 635	615 mm (24.20 in)
Lean-Lift 825	805 mm (31.70 in)
Lean-Lift 1047	1027 mm (40.43 in)
Lean-Lift 1270	1250 mm (49.20 in)

The dimensions for the **holes in the ceiling** must be 100 mm (3.9 in) more than the unit depth and unit width.

#### Accessibility

The lift must be accessible using the installation auxiliary equipment at least on its front side, but also on one or two other sides wherever possible.

#### Specific requirements for installation

For lift depths 635 and 825, the top frame is supplied in 5 pieces; for lift depths 1047 and 1270, the top frame is delivered in 6 pieces.

This provides greater flexibility for installation with smaller and lighter individual parts.

#### Lifts with a height of > 15 m (591 in)

For lifts planned to be installed in a shaft and/or higher than 15 m (591 in), you must obtain the approval of the installation team managers when the initial enquiry is made.

#### Lifts on a base

For lifts planned to be installed elevated—such as on a base, pedestal or carrier—you must obtain the approval of the installation team managers at the time of technical clarification. During this process, the feasibility of installation is checked with a raised working platform.

#### Lifts in a shaft

**If the lift is not accessible from the front, the front panels in these areas must be in the "rear-panel model screwed on from the inside".**



#### WARNING

Risk of accident for third parties!

- For the entire duration of the installation work, block off the installation area so that is inaccessible to unauthorised persons (third parties).



#### Important!

These specifics must be specified when placing the order and described in the order confirmation.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.1 Preparing the installation area (continued)

##### Specific requirements for installation (continued)

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 lift is not accessible from the front, the front panels in these areas must be in the "rear-panel model screwed on from the inside".**

##### Installation in a recessed pit

The following points apply when installing a lift in a recessed pit:

- The recessed pit must be dry and watertight.
- For installation and later service purposes, the customer must provide appropriate lifting gear for lifting and/or lowering loads.
- Optionally, the service door can also be installed above the recessed pit. Because of the risk of accident and service problems, this is restricted to a maximum height of 1 m (39.37 in).
- When lifting gear is used for installation or service, no one is permitted to sit or stand under suspended loads in the recessed pit.
- When there is a danger from falling parts, a safety helmet must be worn in the pit.
- The service pit must have an access (such as an adequately sized flight of stairs) which gives installation and service personnel a safe and comfortable means of access, even when they are carrying tools or spare lift parts.
- The owner/operator is responsible for securing/covering the recessed pit.
- Front panels in the area of the recessed pit, in "rear-panel model, screwed on from the inside".



##### Important!

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

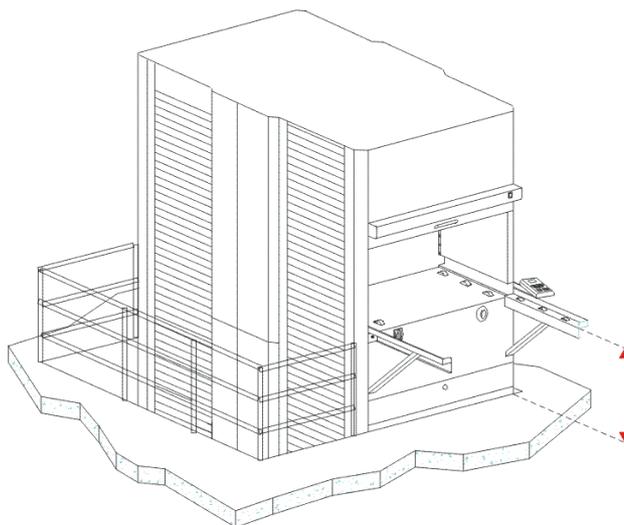


Fig. 1: Installation in a recessed pit



##### Important!

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

Lift type	Dimension "X"
Lean-Lift 635	600 mm (23.6 in)
Lean-Lift 825	625 mm (24.6 in)
Lean-Lift 1047	740 mm (29.1 in)
Lean-Lift 1270	850 mm (33.5 in)

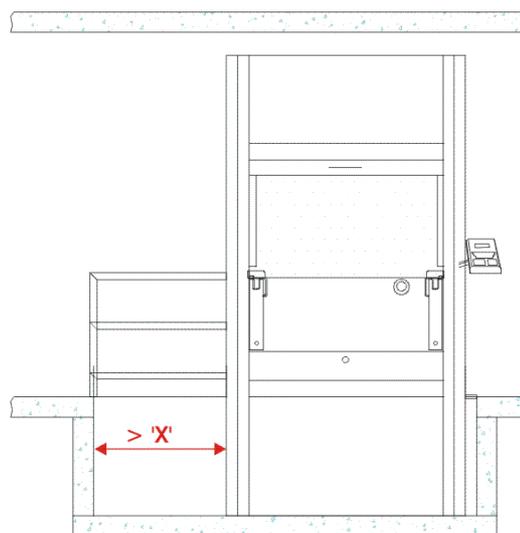


Fig. 2: Space required for service door ("X")

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.1 Preparing the installation area (continued)

##### Height and width of the area

The following heights and widths of the area are required for setup and installation of the individual lift parts:

##### A Standard installation

The height of the room must be at least  $D = 8 \text{ cm}$  (3.20 in) above the lift height (see Fig. 3).

##### B Structural reinforcement at top

Depending on the version provided by the customer, more space may be required above the lift.

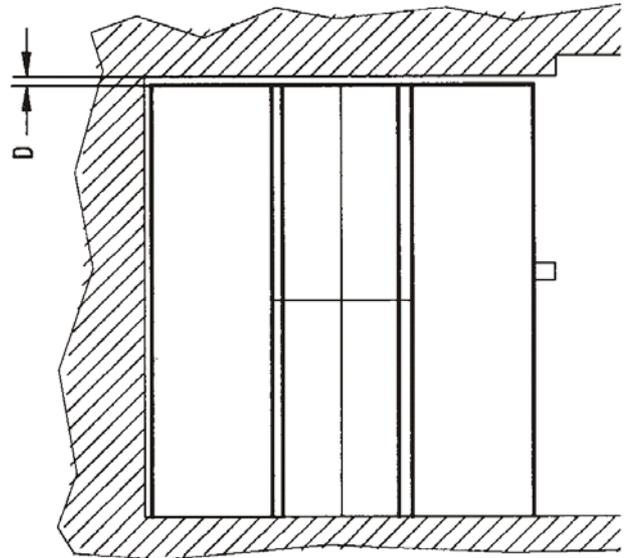


Fig. 3: Space required above the lift

##### C Lean-Lift with divided side parts

If the side parts can be installed before the lift is erected, the room height for standard installation (A) applies.

If it is not possible to assemble the side parts before the lift is erected, the room height (see Fig. 3) must be approx.  $D = 22 \text{ cm}$  (9.7 in) above the lift height.



##### Note

For lifts with heights of  $> 8 \text{ m}$  (315.0 in), divided side parts are included in the standard scope of delivery:

##### D Niche installation

If a lift is to be erected up against a wall at the side or in a room niche, there must be space at the side for the service doors:



##### Note

The position of the service door (left or right side of the lift) must be specified in the quotation or in the order confirmation.

##### Space required at the side (see Fig. 2)

Lift type	Space required on the service door side ("X")
Lean-Lift 635	600 mm (23.6 in)
Lean-Lift 825	625 mm (24.6 in)
Lean-Lift 1047	740 mm (29.1 in)
Lean-Lift 1047	850 mm (33.5 in)

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.1 Preparing the installation area (continued)

##### E Installation with block and tackle

If, for space reasons (such as installation in a shaft), parts have to be conveyed to the top using a block and tackle, the room height (see Fig. 3) must be at least  $D = 1 \text{ m}$  (39.4 in) above the lift height. The customer's building must have an appropriate mounting option (such as a steel girder) for the block and tackle above the erection location.

#### Checking the floor characteristics

##### A 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.

##### B Level tolerances

The floor at the erection location of the lift must be flat, solid (i.e. rigid) and level as determined by a spirit level. In accordance with EN 18202, Table 3: "Level tolerances", Row 1, distance between measuring points 4 m (157.5 in), the unevenness of the floor may not exceed 20 mm (0.79 in).



##### Note

For the loads and force distribution of the specific lift type, refer to the power supply and foundation plan.



##### **DANGER**

Poor quality substrates cause a substantial risk of injury, including fatal injury.

- Installation cannot be approved if there is an apparent structural flaw in the foundation.



##### **DANGER**

Poor quality substrates cause a substantial risk of injury, including fatal injury.

Erection of the lift is not permitted under the following conditions:

- On floating or cast plaster floor (due to its insufficient load carrying capacity)
- On magnesium oxychloride cement (due to corrosion of the housing)
- If the level tolerances of the floor are exceeded.

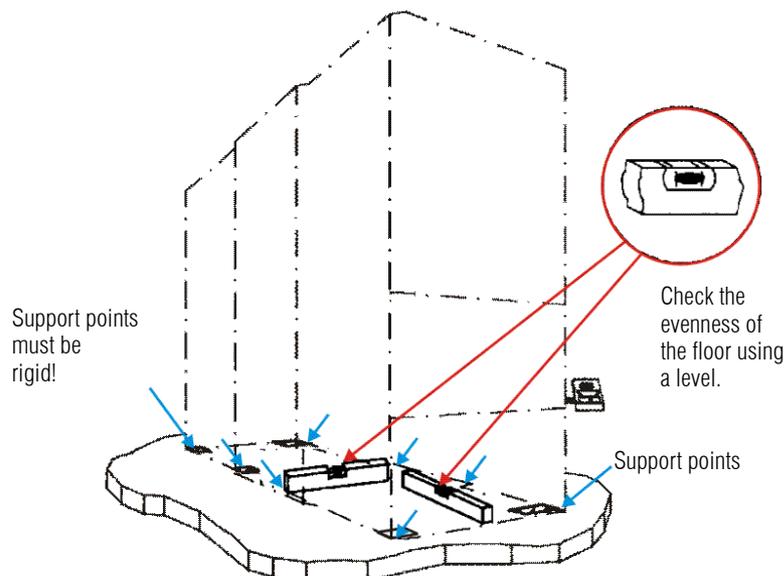


Fig. 4: Checking the floor characteristics

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.2 Structural anchoring for the lift

##### Anchorage: general notes



##### Important!

Lift anchors must be installed in the building by the owner/operator before the lift is first put into service. To do so, the fastening threads (M 12) on the roof of the lift, which are standard for lifts equal to or greater than a certain height, can be used (also refer to the power supply and foundation plan).



##### Note

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

##### Why anchor the lift?

Anchoring the Lean-Lift is required for static strength and the function of the lift.

##### When should the lift be anchored?

A structural reinforcement for the lift, connecting it to the building, must be provided if the lift height exceeds the "Permitted lift height without structural reinforcement" (see corresponding instruction on type plate).

The owner/operator is required to structurally anchor the lift beginning at the following heights:

Lift type	Structural anchoring for lift heights beginning at
Lean-Lift 840 - ...	8,000 mm (314.90 in)
All other lifts	10,000 mm (393.70 in)



##### DANGER

Risk of fatal injury from collapse of the lift or parts of it!

- No structural reinforcement of the lift which connects it to the ceiling of the building is permitted in **earthquake zones**.
- Therefore, only those lifts can be used in earthquake zones that do not need structural reinforcement and for which the special type of construction has been agreed with the manufacturer.

##### Supports against side forces

Each side of the unit must be supported at the top by a stable structural unit to withstand a side force  $F_h = 1 \text{ kN}$  [224.8 pound force] (for lift heights  $> 15 \text{ m}$  [591 in]:  $F_h = 3 \text{ kN}$  [674.4 pound force]).

##### Attaching structural reinforcements to protective coverings

Structural reinforcements may be attached to protective coverings only if these do not transfer any additional forces, such as loads from wind and snow, to the lift.

##### Attaching structural reinforcements to intermediate ceilings of the building

As an alternative to this, structural anchors can also be installed on intermediate building ceilings or similar structures (see Fig. 6).

At the factory, features such as threads can be provided on the lift for this purpose.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.2 Structural anchoring for the lift (continued)

Optional reinforcements can be prepared according to the specified height.

Fig. 6: The side force to be absorbed increases corresponding to the proportion of the lift height to the reinforcement height:

For lift heights  $\leq 15$  m (591 in):  $F_h = 1$  kN (224.8 pound force)  $\times (H/X)$ .

For lift heights  $> 15$  m (591 in):  $F_h = 3$  kN (674.4 pound force)  $\times (H/X)$ .

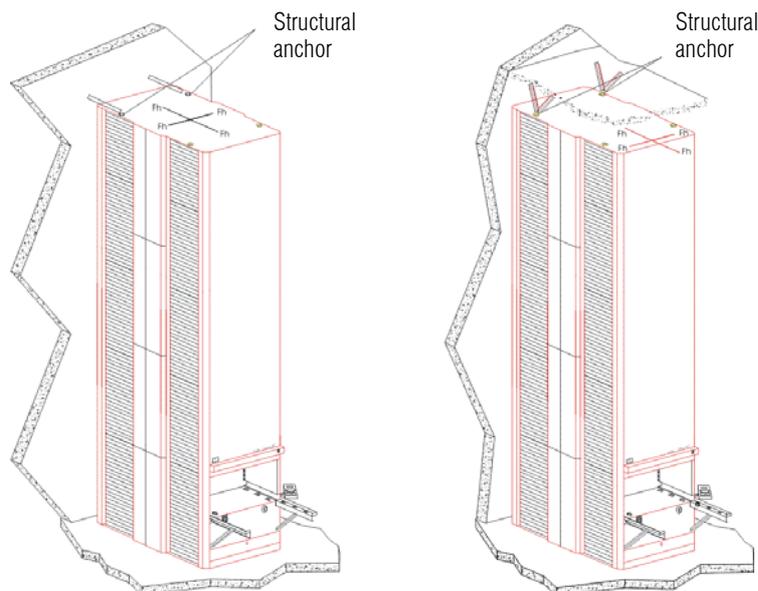


Fig. 5: Reinforcement examples: structural anchors on the building ceiling

Possible only for:

- a) Lift height  $H \leq 15$  m (591 in)
- b) Reinforcement height "x"  
At least 9 m (354 in)

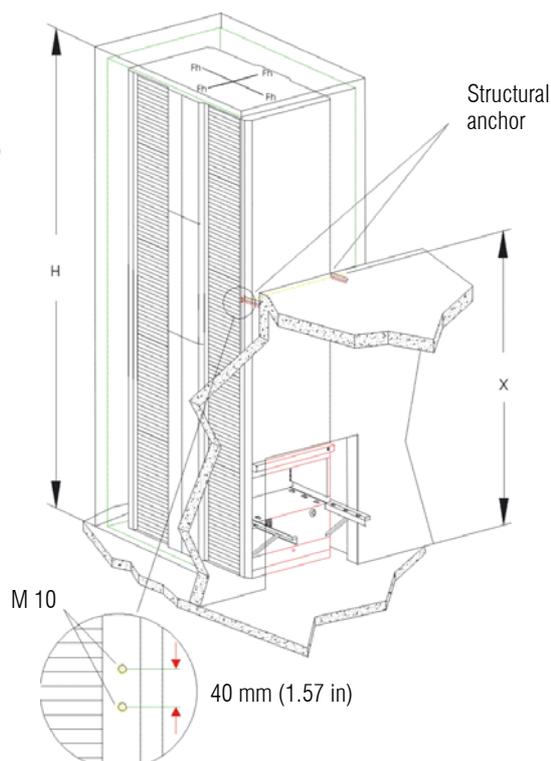


Fig. 6: Reinforcement example: Structural anchors on an intermediate ceiling

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.3 Mains power supply



**DANGER**

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 electricians only.

#### Electrical connection of the lift

You must provide an electrical connection for the Lean-Lift, and an additional connection for the tools required for installing the lift, such as electric screwdrivers etc. For more information, also refer to the power supply and foundation plan.



#### Note

The standard cable gland of the connecting cable with a cross-section of 5 x 2.5 mm<sup>2</sup> or 5 x 4 mm<sup>2</sup> with separate earth wires is on the rear side of the lift.

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



**DANGER**

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

- The mains power supply cable must be de-energised until the installer gives the clearance.

Power system terminal strip

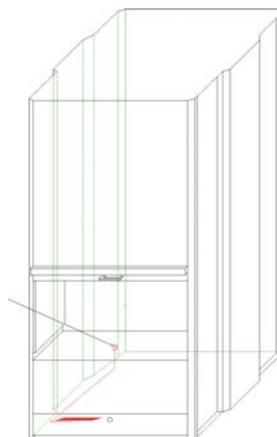


Fig. 7: Electrical connection of the Lean-Lift

#### Electrical connection values (50/60 Hz)

Total motor power	Lift type	Nominal mains current (A)			
		208 V	230 V	400 V	480 V
3.0 kW	////150	11.5 A	10.4 A	6.0 A	5.0 A
4.0 kW	////250-300	17.3 A	15.7 A	9.0 A	7.5 A
5.0 kW	////250-300 HS	23.1 A	20.9 A	12.0 A	10.0 A
6.0 kW	////400-500	25.0 A	22.6 A	13.0 A	10.8 A
6.5 kW	////600-700	26.9 A	24.3 A	14.0 A	11.7 A
7.0 kW	////800-1000	30.8 A	27.8 A	16.0 A	13.3 A
7.0 kW	////800-1000 HS	31.7 A	28.7 A	16.5 A	13.8 A
7.5 kW	////400-500 HS	32.7 A	29.6 A	17.0 A	14.2 A
7.5 kW	////600-700 HS	32.7 A	29.6 A	17.0 A	14.2 A

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.3 Mains power supply (continued)

##### Mains power supply connection and wire cross-sections

Unless another mains power supply at the location of use of the lift is specified when placing the order and in the order confirmation, the electrical components of lifts with three-phase drive are designed for operation with a TN-S power system in accordance with IEC 60364-1

(separate neutral and earth wires in the entire power system):

3 outer conductors

1 neutral conductor

2 earth wires

##### Note:

The mains supply voltage and the customer-side fuse protection of the mains power line → must conform to the specifications 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 → IEC 60364443:1977, IEC 603644-473:1977 and IEC 60364552:1993 must be followed by the owner/operator.

Selection of the wire cross-section → in accordance with DIN VDE 02984 (VDE 0298 Part 4):199811 Table A.1 in A2 method of installation and Table 13.5.1 of NFPA 79 (National Fire Protection Association).

Wiring installations may only be safeguarded as follows (all values are maximum values):

Connection value according to type plate	Wire cross-section in accordance with:		Safety device on the mains side
	VDE 0298-4 Table A1	NFPA 79 Table 13.5.1	
Three-phase current up to			
– 10 A	5 x 1.5 mm <sup>2</sup>	AWG 16 (1.30 mm <sup>2</sup> )	10 A
– 15 A		AWG 14 (2.08 mm <sup>2</sup> )	15 A
– 20 A	5 x 2.5 mm <sup>2</sup>	AWG 12 (3.30 mm <sup>2</sup> )	20 A
– 25 A	5 x 4.0 mm <sup>2</sup>	AWG 10 (5.26 mm <sup>2</sup> )	25 A
– 30 A	5 x 6.0 mm <sup>2</sup>	AWG 10 (5.26 mm <sup>2</sup> )	30 A



##### Note

Enquire with your local energy supplier as to the specific mains power supply connection requirements for your region.



##### Important!

The regulations of the respective national or local electricity providers apply.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.4 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.

Refer to the following tables for the corresponding weight in kg/lbs according to the height and type of the lift:

##### Side part weight

Lift type	Weight in kg/lbs pro m (39.50 in) of lift height
- 635	30 / 66
- 825	33 / 73
- 1047	37 / 82
- 1270	41 / 91

##### Bottom frame weight

Lift type	One-piece, in kg/lbs	Two-piece, heaviest piece, in kg/lbs	Lift type	One-piece, in kg/lbs	Two-piece, heaviest piece, in kg/lbs
840 - 635	158 / 349	-	840 - 1047	-	126 / 278
1300 - 635	182 / 402	-	1300 - 1047	-	138 / 304
1640 - 635	200 / 442	-	1640 - 1047	-	147 / 324
1860 - 635	-	138 / 304	1860 - 1047	-	151 / 333
2060 - 635	-	145 / 320	2060 - 1047	-	158 / 348
2300 - 635	-	151 / 333	2300 - 1047	-	164 / 362
2460 - 635	-	155 / 342	2460 - 1047	-	168 / 370
2860 - 635	-	165 / 364	2860 - 1047	-	178 / 392
3060 - 635	-	170 / 375	3060 - 1047	-	183 / 404
3260 - 635	-	175 / 386	3260 - 1047	-	188 / 414
840 - 825	172 / 380	121 / 267	840 - 1270	-	137 / 302
1300 - 825	196 / 433	133 / 294	1300 - 1270	-	149 / 329
1640 - 825	214 / 472	142 / 313	1640 - 1270	-	158 / 349
1860 - 825	-	146 / 322	1860 - 1270	-	162 / 357
2060 - 825	-	153 / 337	2060 - 1270	-	169 / 373
2460 - 825	-	163 / 360	2460 - 1270	-	179 / 395
2860 - 825	-	173 / 382	2860 - 1270	-	189 / 417
3060 - 825	-	178 / 392	3060 - 1270	-	194 / 428
3260 - 825	-	183 / 404	3260 - 1270	-	199 / 439

##### Note

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

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.5 Auxiliary personnel

##### Selecting and providing auxiliary personnel

The owner/operator or customer must, at no charge, provide suitable auxiliary personnel for **unloading, transport and erection of housing parts and storing the containers**. Hänel shall not be held liable for the auxiliary personnel or their level of qualification. If the number of auxiliary personnel and auxiliary equipment provided does not meet the requirements listed below, the installation may take longer or may not be able to be carried out at all for safety reasons. The information is valid for standard lifts without optional features with a ground-level transport route of approx. 50 m (164 ft) and facilities for unloading using a high-lift truck or loading ramp.



#### SAFETY INSTRUCTION

Auxiliary personnel must be equipped with personal safety equipment (e.g. safety shoes, safety helmet, work gloves etc.) and wear them if necessary. For further information, refer to Chapter 3 on "Safety instructions" and the corresponding information in the supporting documents.



#### Note

The owner/operator or customer is also responsible for providing a suitable driver for the lifting gear.

The auxiliary personnel provided must be sufficiently qualified for the work.

The responsible installer assigns them their task and the tools and equipment they need.

Hänel shall not be held liable for the auxiliary personnel or their level of qualification.

##### Required auxiliary personnel and time

Depending on the height of the lift and the available auxiliary equipment, 2 to 5 auxiliary personnel are required. The hours listed here are based on standard conditions and may vary depending on the circumstances of each case.

If the route to the installation location is difficult, more helpers may need to be provided.

##### Properties of the lifting gear

See Chapter 5.7

Note the minimum lifting height!

#### A Unloading the lift and transport to erection location

Lift height in m (in)	Number of installers	Number of helpers*	Approx. time required (in hrs.)	Notes
Up to 3 (118.1)	2	2	2.0	The information for lift height 3 m (118.1 in) refers to installation without powered auxiliary equipment. If the transport route is difficult and no powered auxiliary equipment is used, 4 helpers are required. * Not including lift truck driver
Up to 5 (196.9)	2	2	2.0	
Above 5 (196.9)	2	4	2.5	
Above 10 (393.7)	2	4	3.5	
Above 15 (590.6)	2	4	4.5	

#### B Erecting the side parts and installing the housing

Lift height in m (in)	Number of installers	Number of helpers*	Approx. time required (in hrs.)	Notes
Up to 3 (118.1)	2	2	3.0	* Not including lift truck driver
Up to 5 (196.9)	2	2	3.0	
Above 5 (196.9)	2	4	5.0	
Above 10 (393.7)	2	4	7.0	
Above 15 (590.6)	2	5	9.0	

#### C Final installation

As in the table under B. For final installation up to a lift height of 3 m (118.1 in), no helpers may be needed.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.6 Mechanical auxiliary equipment

For lifts up to 3 m (118.1 in) high, installation without powered auxiliary equipment.

##### Selecting and providing auxiliary equipment

As the owner/operator, you must provide free of charge auxiliary equipment that conforms to accident prevention regulations and safety instructions for unloading, transport and erection of lift parts.

##### Mechanical auxiliary equipment

Erection without powered auxiliary equipment (such as raised working platforms, forklifts) is possible for Lean-Lift heights up to 3 m (118.10 in) only. The same regulations and safety conditions apply as for installation with powered auxiliary equipment. The following requirements apply, which deviate from the above rule.



#### **! DANGER**

Risk of fatal injury from overturning or falling of heavy parts!

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



##### Note

Hänel shall assume no liability for auxiliary equipment.

The auxiliary equipment must be in proper condition and have valid inspection stickers.

##### Properties of the lifting gear

Select the lifting gear according to the following parameters:

##### A Minimum lifting capacity or minimum load capacity

- According to the max. weight of the individual lift parts (see Section 5.4, "Determining weights")

##### B Minimum lifting height

- According to the following table



##### Important!

The lifting capacity (load capacity) of the lifting gear must apply even at the minimum lifting height!

Auxiliary equipment	Minimum lifting height	Properties / Notes
Lift truck		
Platform truck		Minimum lifting capacity 1 t (2205 lbs)
Ladders		e.g. step ladders
Block and tackle	Approx. 1 m (39.4 in) above the lift height	<b>The owner/operator must ensure that the lifting gear is fastened such that it withstands the load capacities.</b>
Goods hoist		Dimensions of the side part of the lift, the largest single part (see Section 5.1, "Preparing the installation area")
Installation scaffolding, portable		Design in co-ordination with the customer: - According to the space conditions at the installation location. - According to the lift dimensions.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.7 Powered auxiliary equipment

##### Installation using powered auxiliary equipment

##### Selecting and providing auxiliary equipment

As the owner/operator, for lifts equal to or greater than a height of 3 m (118.1 in), you must provide auxiliary equipment which conforms to accident prevention regulations and safety instructions for unloading, transport and erection of lift parts.

**Hänel shall assume no liability for auxiliary equipment.**



**DANGER**

Risk of fatal injury from overturning or falling of heavy parts!

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



##### Important!

When powered auxiliary equipment is used, the owner/operator must **also** provide a suitable driver who is skilled in operating the respective device.

Hänel shall assume no liability for auxiliary equipment.

##### Properties of the lifting gear

Select the lifting gear according to the following parameters:

##### A Minimum lifting capacity or minimum load capacity

- According to the max. weight of the individual lift parts (see Section 5.4, "Determining weights")

##### B Minimum lifting height

- According to the following table



##### Important!

The lifting capacity (load capacity) of the lifting gear must apply even at the minimum lifting height!

Pedestrian power pallet trucks are not suitable for lift installations!

Auxiliary equipment	Minimum lifting height	Properties / Notes
Lift truck		
Platform truck		Minimum lifting capacity 1 t (2205 lbs)
Ladders		e.g. step ladders
Goods hoist		Dimensions of the side part of the lift, the largest single part (see Section 5.1, "Preparing the installation area")
Installation scaffolding, portable		For set-up inside the lift, with levels at intervals of approx. 2.5 m (98.4 in), and which can be disassembled level-by-level from above. The floor of each level must have a door. Other aspects of design in co-ordination with the customer: - According to the space conditions at the installation location. - According to the lift dimensions. For lift type $\geq 2860$ and depth 1270, portable installation scaffolding must be provided by the customer.
Raised working platform for transporting 2 persons Tools and lift components (approx. 80 kg)	1.5 m (59.0 in) under the lift height	Width: approx. 2/3 of the lift width
Crane, block and tackle	1 m (39.4 in) above the lift height	<b>The owner/operator must ensure that the lifting gear is fastened such that it withstands the load capacities.</b>

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.7 Powered auxiliary equipment (continued)

Auxiliary equipment	Minimum lifting height	Properties / Notes
Forklift	Load capacity 2 t (4410 lbs) or, depending on the weight of the lift parts, corresponding load capacity that must be provided at lift height.	<b>TIP: A forklift that also features lateral movement speeds up installation.</b> Fork length: 1500 mm (59.0 in)
Elevated forklift with lateral movement	Approx. equal to the lift height For the load capacity, see forklift.	TIP: An elevated forklift that also features lateral movement speeds up installation.

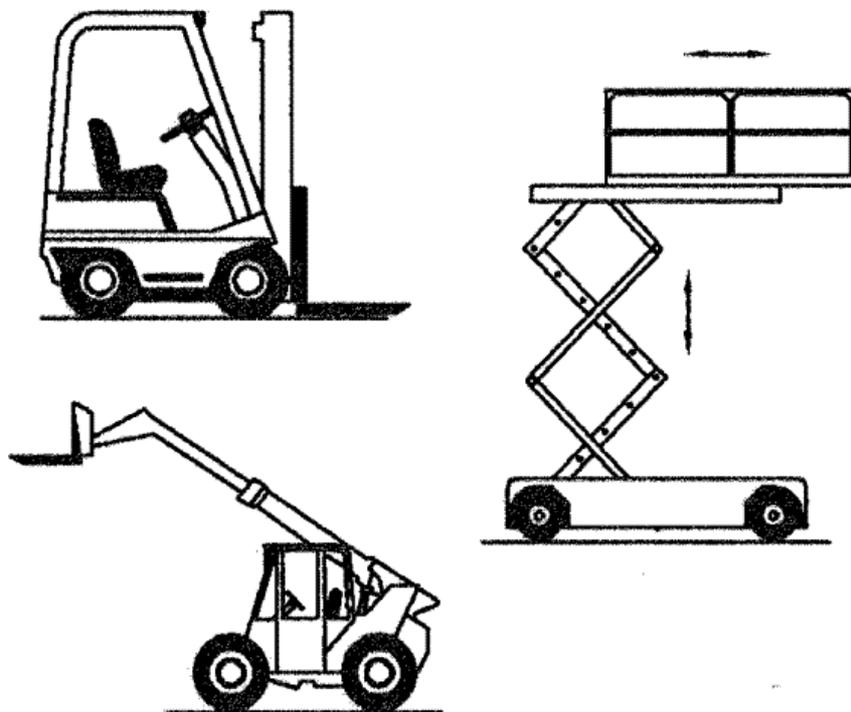


Fig. 8: Lifting gear for installing the Lean-Lift (examples)

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.8 Transport

##### Providing the auxiliary equipment

The Lean-Lift is delivered disassembled.

Ensure that all required auxiliary personnel and auxiliary equipment (see Sections 5.5 to 5.7) are available when the Lean-Lift is delivered.

##### Erection location

Survey the erection location and the conditions of the site, and make any necessary adjustments for the transport of lift parts (for the largest lift section, see Chapter 5.1) to the installation location. This will ensure that it is possible to carry on with the rest of the installation process quickly and efficiently.

##### Safety precautions

For further information, refer to the safety instructions in Chapter 3 and the relevant instructions in the supporting documents.



#### DANGER

There is a substantial risk of injury, including fatal injury, from falling heavy parts.

- The parts must be secured from falling during transport, for example using a safety catch or stop mechanisms for lifting belts.



#### SAFETY INSTRUCTION

##### Wear a safety helmet!

When there is a danger from falling parts,

- a helmet must be worn as personal safety equipment.



#### DANGER

There is a substantial risk of injury, including fatal injury, to third parties—especially unauthorised persons—in the danger zone of the transport path.

- Watch out for third parties during transport.
- Ensure that no third parties—especially unauthorised persons—are in the danger zone of the transport path.

##### Transport without powered auxiliary equipment

Ensure the following:

- A sufficient number of helpers is present.
- As many helpers as are necessary are employed for each transport step.
- Safety instructions are followed during transport.

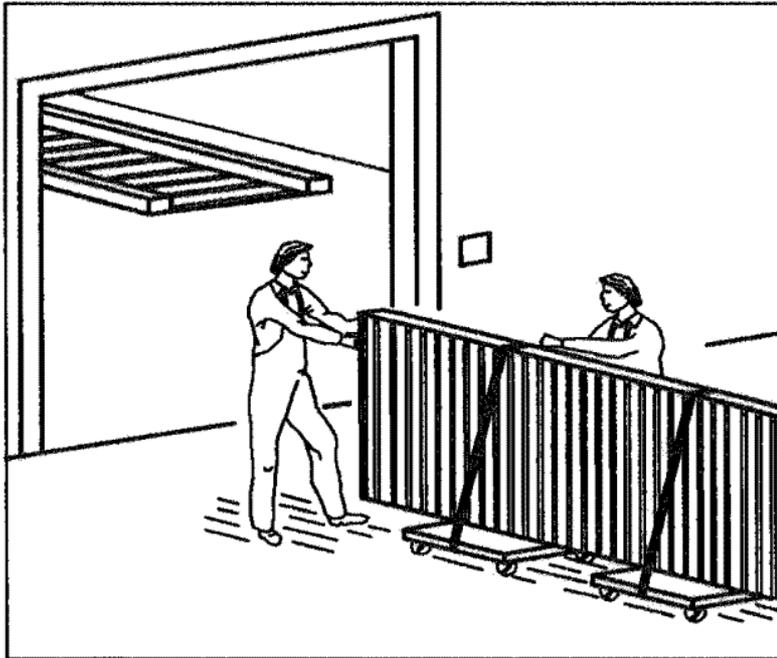
# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

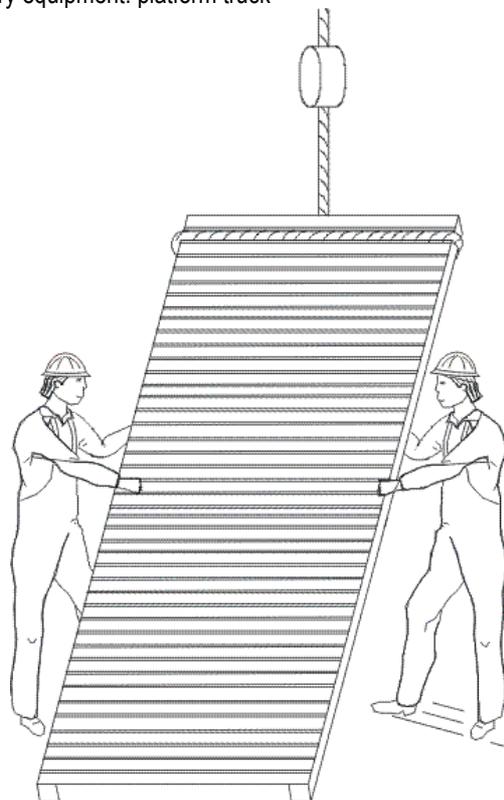
#### 5.8 Transport (continued)

##### Transport without powered auxiliary equipment (continued)



**Bulky parts**

Fig. 9: Transport without powered auxiliary equipment: platform truck



**Suspended loads:  
Wear a safety helmet!**

Fig. 10: Transport without powered auxiliary equipment: block and tackle

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

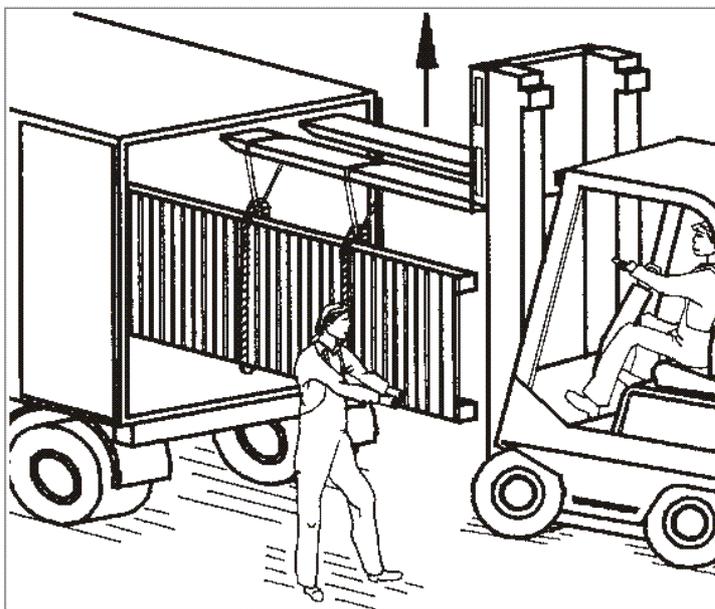
#### 5.8 Transport (continued)

##### Example:

##### Transport using powered auxiliary equipment

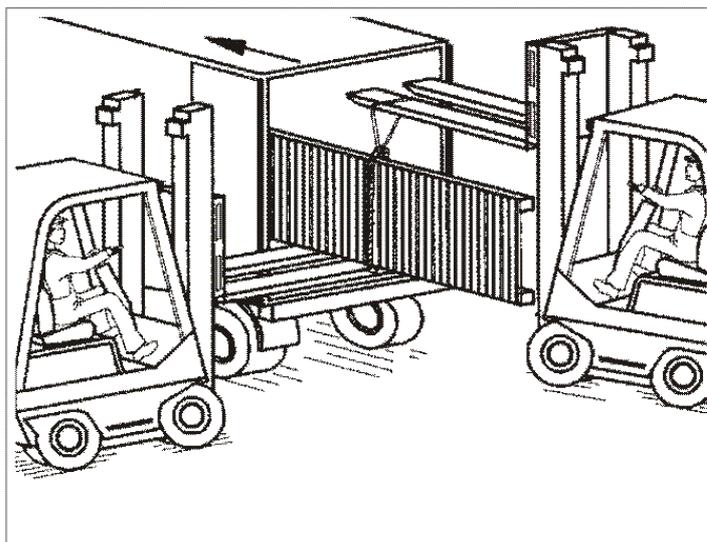
Ensure the following:

- Safety instructions are followed during transport.
- Third parties are not in the danger zone of the lifting gear.
- The lifting gear has the required load capacity.
- The lorry in which the parts are delivered is unloaded from the back.



Secure the lifting belts against shifting!

Fig. 11: Transport using powered auxiliary equipment: forklifts



Where necessary, secure the load using a second forklift!

Fig. 12: Transport using powered auxiliary equipment: securing the load using a second forklift

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.8 Transport (continued)

Example: Transport using powered auxiliary equipment (continued).

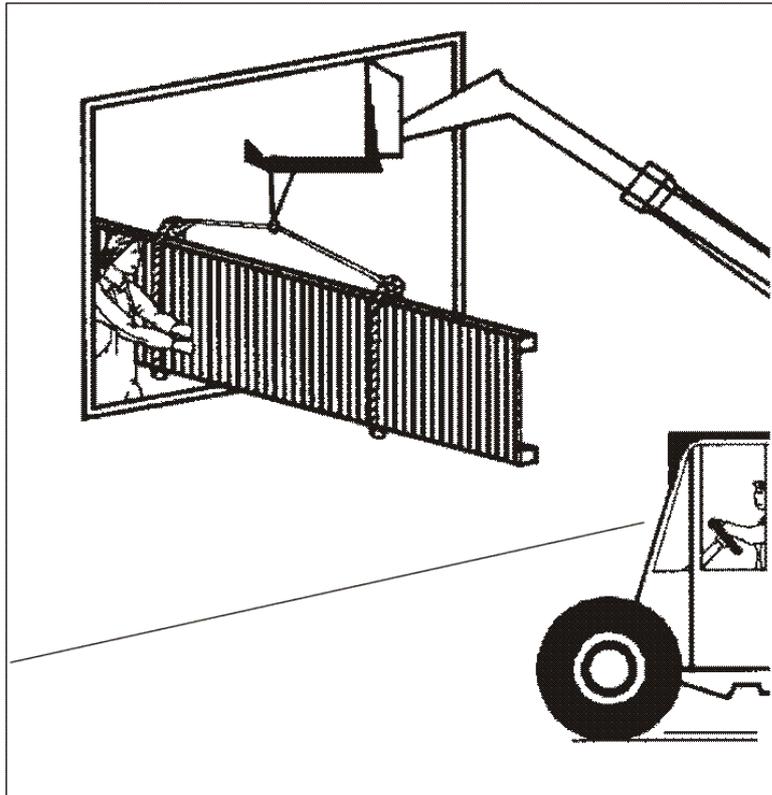


Fig. 13: Transport using powered auxiliary equipment: telescoping loader

# Installation Requirements for the Owner/Operator

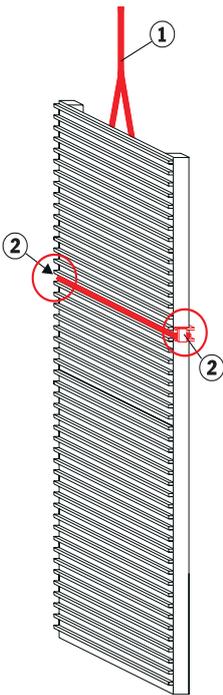
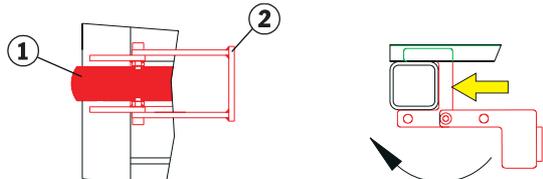
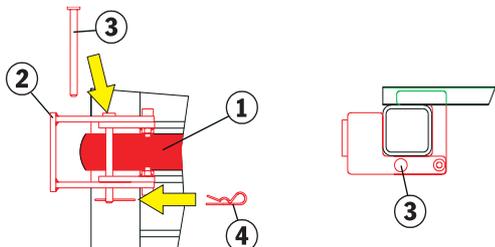
## Hänel Lean-Lift

### Installation with raised working platform

#### 5.9 Examples: How to use auxiliary equipment during installation

##### A Handling the side parts

When erecting the side parts using a load crane, use a cable with cable securing devices, such as a cable securing device made by Hänel. Other adequate cable securing devices are also permitted.

Step	Task	Important note/illustration
1	Loop the cable (1) around the side part as shown (Fig. 14) at a height equal to 2/3 the height of the side part and tighten the cable so that it cannot slide down.	 <p>Fig. 14: Wrapping the cable around the side panel</p>
2	Attaching the cable securing device (2): slide the U-profiles on the backward-facing part of the side panel into the steps above and below the cable (1) and onto the vertical rectangular tube (see Figs. 15 and 16).	 <p>Fig. 15: Attaching the cable securing device</p>
3	Securing the cable: insert the bolt (3) as shown and secure it using the spring cotter (4).	 <p>Fig. 16: Securing the cable</p>

For more information, refer to the instructions in Section 5.3.3, "Erecting the side parts", in the Hänel Lean-Lift Installation Instructions.

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.9 Examples: How to use auxiliary equipment during installation (continued)

##### B Handling the parts of the top frame

To install the parts of the 5-piece or 6-piece top frame, you can use the raised working platform.



##### Note

Other adequate installation types are permissible.



##### DANGER

There is a substantial risk of injury, including fatal injury, from falling frame parts.

- During transport, the parts of the top frame must be secured against falling down.



##### SAFETY INSTRUCTION

##### Wear a safety helmet!

When there is a danger from falling parts,

- a helmet must be worn as personal safety equipment.

##### Bringing the parts of the top frame to the installation position

Step	Task	Important note/illustration
------	------	-----------------------------

1 Example: Using the raised working platform, for example, approach the lift from the left or right and bring the parts of the top frame in sequence to the installation position.

2 Plug the side sections into the rectangular tubes of the side parts. The cover plates are screwed to the side sections and to each other.

For more information, refer to the instructions in Section 5.3.4, "Installing the top frame", in the Hänel Lean-Lift Installation Instructions.



**Suspended loads:  
Wear a safety helmet!  
Secure the load  
against  
falling!**

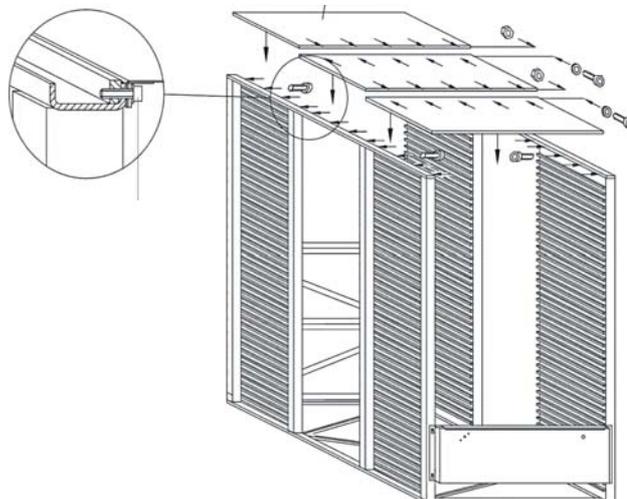


Fig. 17: Installing the top frame

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.9 Examples: How to use auxiliary equipment during installation (continued)

##### A Handling the panels

To transport the panels using a load crane, use a hook and safety catch.



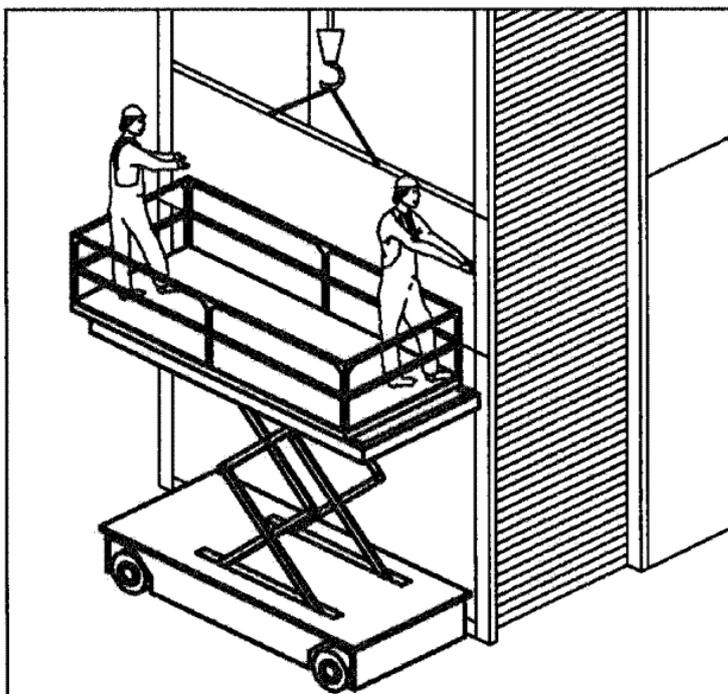
**DANGER**

There is a substantial risk of injury, including fatal injury, from falling of the panels.

- The panels must be secured from falling during transport (for example, using a safety catch or safety cables between the panels and lifting gear).

##### Bringing the panels to the installation position

Step	Task	Important note/illustration
1	Bring the panel to the installation position using the lifting gear.	
2	Using the raised working platform or a scissors lift platform, approach the lift from the front or rear and install the respective panel (see Fig. 18).	



**Suspended loads:  
Wear a safety helmet!  
Secure the load  
against  
falling!**

Fig. 18: Example: Bringing the panels to the installation position: load crane and scissors lift platform

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.10 Ladders and scaffolding

##### Using ladders and scaffolding

###### Safety precautions

For further information, refer to the safety instructions in Chapter 3 and the relevant instructions in the supporting documents.



**DANGER**

There is a danger of falling when using ladders and scaffolding.

- At great heights, ladders and scaffolding may not be used without fall protection equipment.



**DANGER**

There is a danger of falling when using unsafe ladders and scaffolding.

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

- Check the condition of the devices before using them.
- Damaged or incomplete auxiliary equipment must be repaired before use, or else it may not be used for installation.

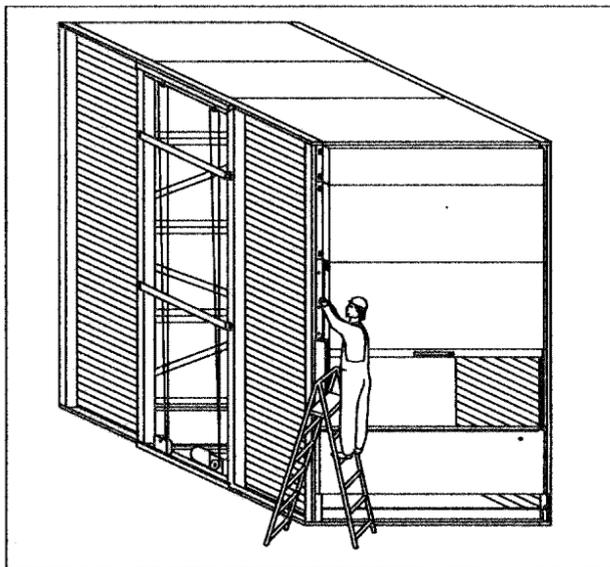


Fig. 19: Safety step ladder

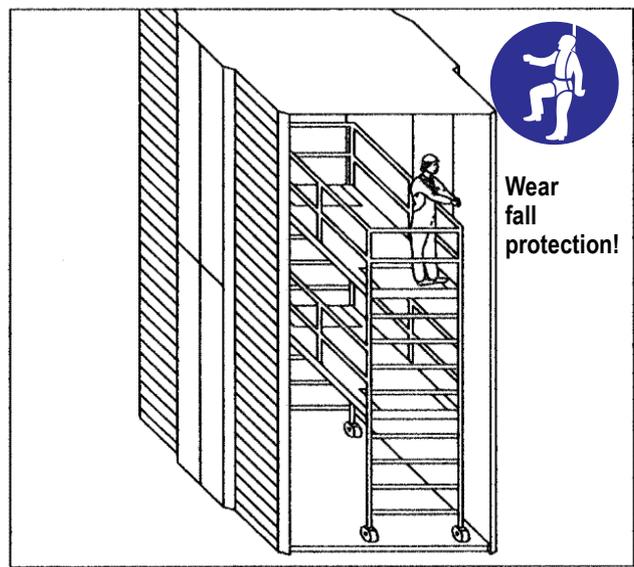


Fig. 20: Installation scaffolding

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.11 Providing a service access door

##### Fulfilling the service requirements at the customer's location

For any repair work that may be necessary after the lift is put into service, the machine must be accessible at the top of the sides of the shaft panelling or at the front.

Ensure that the necessary access is guaranteed, and that the customer has provided a scissors lift platform or other auxiliary equipment. Ensure that safe and unobstructed access is possible using the respective auxiliary equipment. Follow the instructions below for the anchors required for accesses.



**! DANGER**

There is a danger of falling when using ladders and lifting platforms.

- At great heights or for lifts that extend over several floors, scaffolding and lifting platforms may not be used without fall protection equipment.
- Fastening anchors with corresponding load capacity must be provided by the owner/operator (see Figs. 21 to 23).



Fig. 21: Example: Service access on the side



Fig. 22: Example: Service access from the front

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.11 Providing a service access door (continued)

Fulfilling the service requirements at the customer's facility (continued)

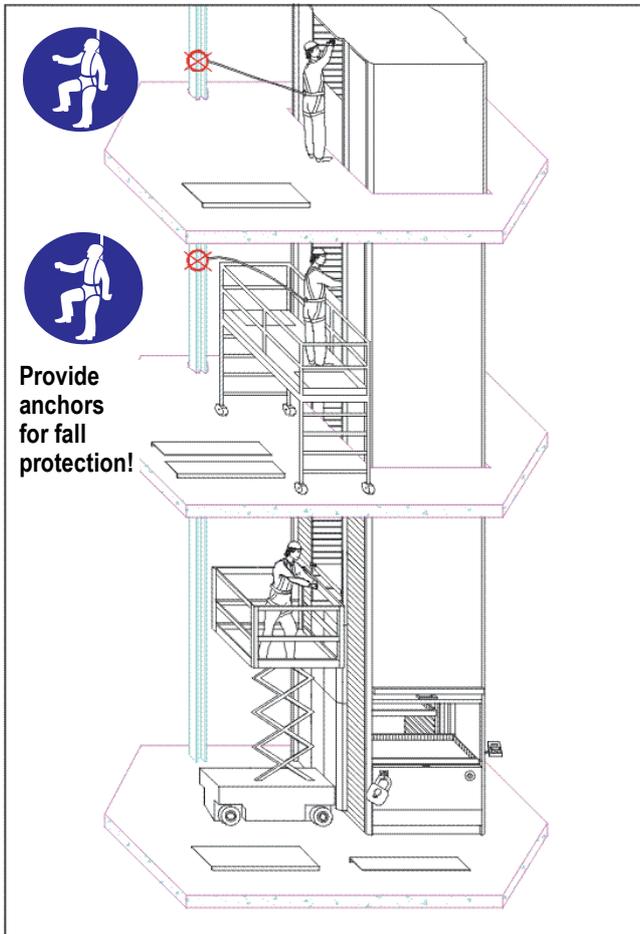


Fig. 23: Example: Service accesses for lifts over multiple storeys

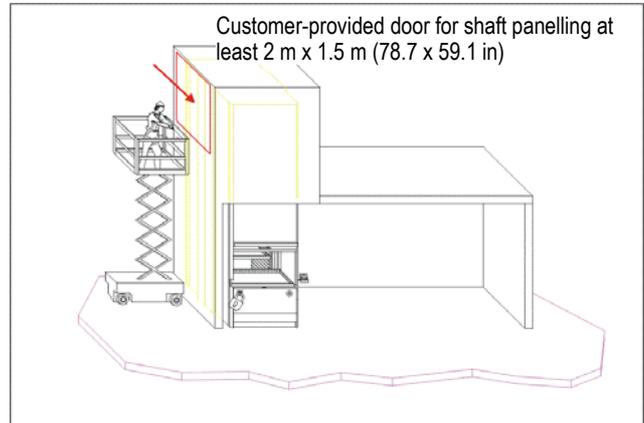


Fig. 24: Example: Service access for lifts in a shaft

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 5.12 Additional instructions

These Installation Requirements are based on our terms of delivery and the standard technical design of our lifts. Deviations from these, if technically feasible, require a surcharge.



# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 6. Disposal instructions

##### Disposing of the packaging material



Dispose of the packaging material in an environmentally responsible manner. Our units require effective packaging to protect them during transport. However, we use only as much as absolutely necessary.

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 the unit, follow the locally applicable laws and regulations of the country of use.

In Germany, the packaging can be given to your local recycling centre.

You can obtain their addresses from your local government.

##### Disposing of the decommissioned lift

Before being disassembled, the decommissioned lift must be completely unloaded and, after removing all containers, disconnected from the mains power supply by the owner/operator. The decommissioned lift must be disassembled in the reverse logical order to that described in the installation instructions.



**DANGER**

The safety instructions of the Installation Instructions and the Lean-Lift operating manual must be followed at all times.



When disposing of the unit, follow the locally applicable laws and regulations of the country of use. In Germany, you can give the used parts to a recycling centre or vehicle or scrap recycling facility. You can obtain their addresses from your local government. If you have specific questions about the proper disposal of the parts, please contact your local environmental officer or the Hänel factory.

Note the list of materials (see the following page).

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

#### 6. Disposal instructions (continued)

##### Materials

Material	Use	Note
Steel	<ul style="list-style-type: none"><li>• Base, cross brackets etc.</li><li>• Screws</li><li>• Various connecting elements</li><li>• Chains</li></ul>	
Sheet steel	<ul style="list-style-type: none"><li>• Housing</li><li>• Panelling</li></ul>	
Copper	<ul style="list-style-type: none"><li>• Cables</li></ul>	
Plastic, rubber, PVC	<ul style="list-style-type: none"><li>• Cables</li><li>• Seals</li><li>• Rollers</li></ul>	
Batteries, NiCd/Li batteries	<ul style="list-style-type: none"><li>• Control system</li></ul>	
LCD displays	<ul style="list-style-type: none"><li>• Control system</li><li>• Indicators</li></ul>	 <div data-bbox="1145 1021 1458 1099" style="background-color: #f4a460; padding: 5px;"> <b>WARNING</b></div> <p>Danger from toxic substances!</p> <ul style="list-style-type: none"><li>• LCD displays contain highly toxic fluids.</li></ul>
Electronic scrap	<ul style="list-style-type: none"><li>• Electrical supply</li><li>• Control units</li><li>• Boards with electronic components</li><li>• Safety light barriers/safety light curtain</li><li>• Article height detection</li></ul>	

# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

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# Installation Requirements for the Owner/Operator

## Hänel Lean-Lift

### Installation with raised working platform

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