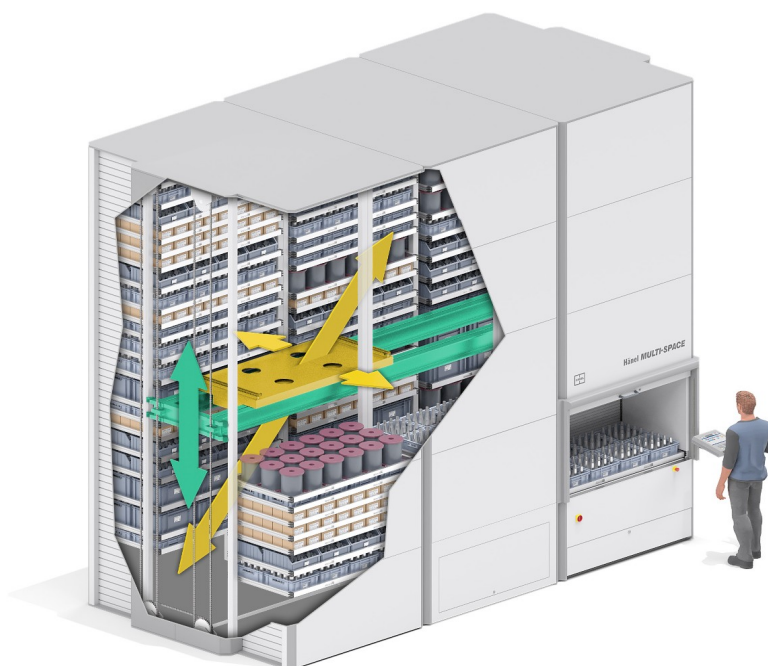
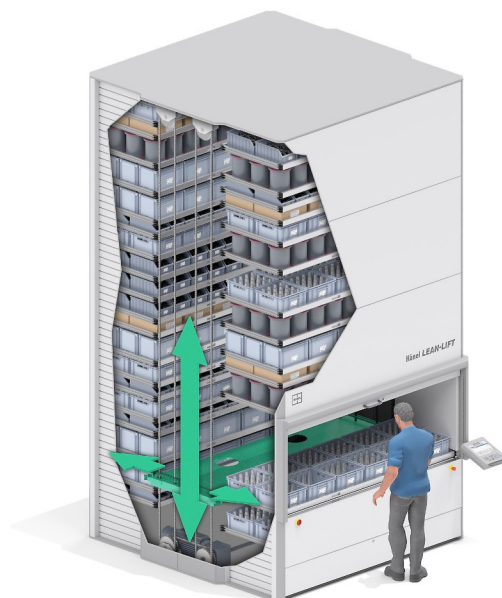


Technical Description of the MP 14 microprocessor control system

Lean-Lift® Multi-Space®



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1 Introduction

1.1 Basic information

Contents

This document contains information for configuring the MP 14 microprocessor control system and integrating it into the IT system.

Target group

This document has been written for:

- ◆ IT specialists
- ◆ Installation personnel
- ◆ Supervisors, service and maintenance personnel

Manufacturer

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Validity

This document is valid for lifts/carousels of the following series:

Type: Lean-Lift®, Multi-Space®

Access points: See operating manual

Serial number: See type plate on the lift/carousel

Model year: See type plate on the lift/carousel

If the lift/carousel has multiple access points, the type plate is located at the first access point.

This document is valid for MP control systems with the following or later software versions:

	Printed circuit board S0861
MP 14/12N SYSTEM	V 5.0
MP 14 CPU II	V 5.7 STANDARD PACKAGE 13

Keep in an accessible place as a complete document

- ◆ This documentation is a part of the lift and must be stored in a location that is accessible to authorised personnel at all times.
- ◆ Chapters may never be removed from this document. If the documentation or any of its pages are lost or missing, they must be replaced immediately.

Change service

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

Copyright

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All other rights reserved.

1 Introduction

1.2 Guide through the document

Symbols



Notes with this symbol warn you of a hazard caused by:

- possible severe injuries of a general nature, possibly including fatal injuries.



Here you will find important information and instructions that make using the lift/carousel easier.

- Action: You are prompted to carry out an operating step.
- ➔ Result: You are told the outcome of your operating step.
- x Tip: You are given helpful hints and comments.
- See: You are given references to other documents.

Terms

The microprocessor control system uses the term **shelf**.
The term **shelf** corresponds to the following:

- For the Lean-Lift® and Multi-Space®: **Containers**

Operator prompts

- ◆ The operator prompts include selection menus. There are two ways to select menu items:
 - 1) Select them using the **【↑】** / **【↓】** keys and then press the **【←】** key.
 - 2) Select them by pressing the key at the beginning of each menu item line.
Press the **【CE】** key to exit selection menus.
- ◆ Depending on the initialisation, some menu items for selection menus may not be offered.
- ◆ Placeholders are sometimes used in messages that appear on the display. These placeholders are enclosed in angle brackets and appear in italics. For space reasons, abbreviations are used for the following placeholders.

<i><tt></i>	For Shelf
<i><ff></i>	For Compartment
<i><tf></i>	For Compartment depth
<i><tt ff tf></i>	For Shelf, Compartment, Compartment depth
<i><gg></i>	For Total inventory
<i><bb></i>	For Inventory at storage location
<i><qq></i>	For Quantity
<i><ll></i>	For lift

1 Introduction

1.3 Safety instructions



DANGER

All maintenance and repair work on Hänel lifts/carousels must be carried out by specially trained and authorised personnel only. Specially trained and authorised personnel are:

- Personnel who, because of their specialised education and special training in a Hänel factory, can provide proof of adequate skills and experience for these tasks and
- Who have received approval from the manufacturer or an agent authorised within the technical field to carry out these tasks and can carry out such tasks in a traceable manner.

SAFETY INSTRUCTION

Only specially trained and qualified personnel may operate the lift.

IT specialists have to follow the lift user guide and the lift operating manual.

Installation personnel have to follow the lift/carousel user guide and the lift/carousel operating manual as well as the installation instructions.

Supervisors, service and maintenance personnel have to follow the lift/carousel user guide and the lift/carousel operating manual.



SAFETY INSTRUCTION

Compliance with the following is mandatory:

- Safety Memorandum for Technical Field Staff
- Accident prevention regulation

For all work, the legal accident prevention regulations applicable to the respective country of use always have overriding authority. Furthermore, the owner/operator may have additional special regulations that also have to be taken into consideration.

1 Introduction

1.4 Supplementary documents

Program version S / H[MP14-S] / H[MP100D-5]

"Article storage management" packet:

- User Guide for the Article Storage Management for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.
- Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.
- For optional supplementary descriptions, refer to the overview in the appendix of the "User Guide for the Article Storage Management Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

H[HOST-DATA] program version

- User Guide for the HOST-DATA Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.
- For optional supplementary descriptions, refer to the overview in the appendix of the "User Guide for the HOST-DATA Program Version Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

H[HOST-WEB] program version

- User Guide for the HOST-WEB Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.
- For optional supplementary descriptions, refer to the overview in the appendix of the "User Guide for the HOST-WEB Program Version Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

H[HOST-COM] program version

- User Guide for the HOST-COM Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.
- For optional supplementary descriptions, refer to the overview in the appendix of the "User Guide for the HOST-COM Program Version Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

2 Initialisation

Various important system-specific data are defined in this menu.
Before a lift is put into service, the MP 14 microprocessor control system must be initialised.



- x The initialisation must be started at access point 1.
- x The first initialisation of the MP control system must be followed by positioning of the lift.
- x Only when the lift has been correctly positioned can other access points be initialised.
- x After each change of the initialisation data, the other access points must be reinitialised.

2.1 Initialisation mode

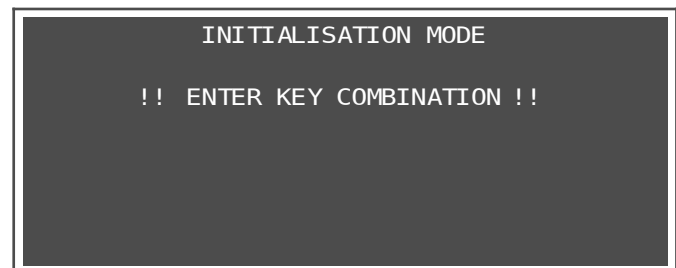
Description of the operator prompts

Activate initialisation mode

- Switch on the lift.
- Press the **[CE]** key at access point 1 until "Initialisation mode" is displayed.
- Press the following keys:



Example screenshot



2 Initialisation

2.2 Language



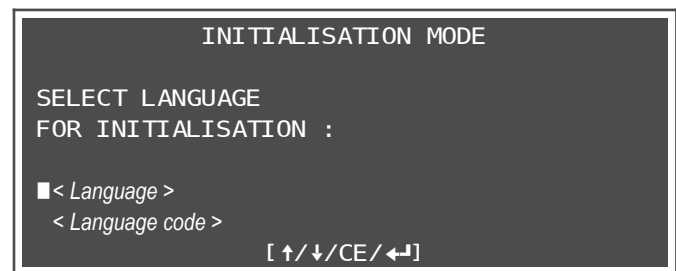
- x Since the technician and operator may be of different nationalities, the languages for initialisation mode and normal operating mode can be set separately.

Description of the operator prompts

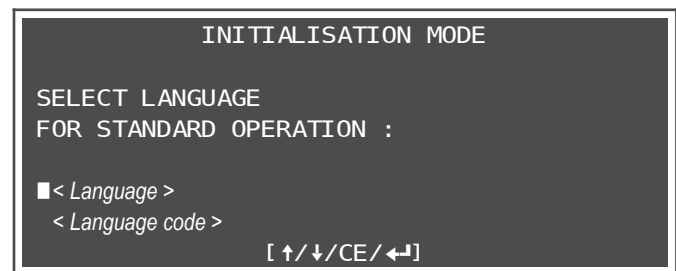
Set language

- Press the [↑] / [↓] key to select the language for initialisation.
- Press the [↵] key.

Example screenshot



- Press the [↑] / [↓] key to select the language for standard operation.
- Press the [↵] key.



2.3 Start initialisation of other access points (only with multiple access points)



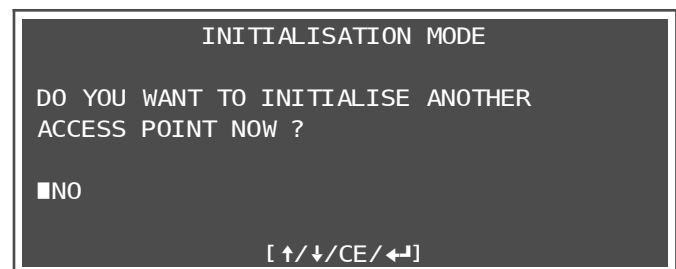
- x This prompt is displayed only for lifts with multiple access points. When all the initialisation parameters have been stored at access point 1, the other access points must be initialised.

Description of the operator prompts

Start initialisation of other access points

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.

Example screenshot



- x For other operator prompts, refer to the chapter on 2.21 on page 28.

2

Initialisation

2.4

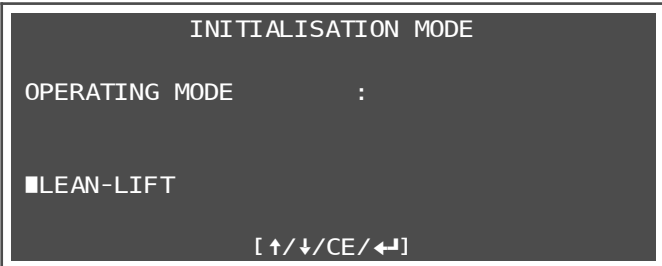
Operating mode

Description of the operator prompts

Set operating mode

- Press the **[↑] / [↓]** key to select the operating mode.
- Press the **[↵]** key.

Example screenshot



Options
◆ ROTOMAT
◆ LEAN-LIFT
◆ RACK OPERATION
◆ ROTOMAT LIFT RUN SIMULATION (password-protected)
◆ LEAN-LIFT LIFT RUN SIMULATION (password-protected)
◆ MULTI-SPACE
◆ MULTI-SPACE LIFT RUN SIMULATION (password-protected)

2

Initialisation

2.5

Number of lift units (only for Multi-Space®)



x This prompt appears in "Multi-Space®" operating mode only.

Description of the operator prompts

Example screenshot

Set number of lift units

- Press the [↑] / [↓] key to select the number of lift units.
- Press the [↵] key.

INITIALISATION MODE

NUMBER OF LIFT UNITS :

■2

[↑/↓/CE/↵]

Options	
◆ 2	◆ 5
◆ 3	◆ 6
◆ 4	

2 Initialisation

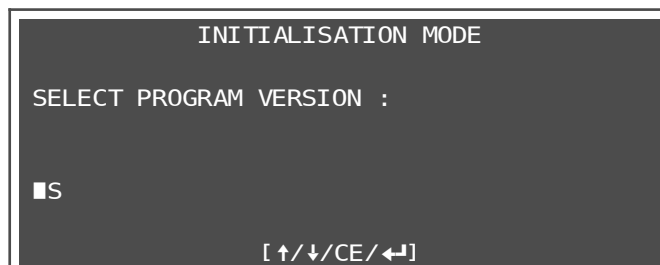
2.6 Program version

Description of the operator prompts

Set program version

- Press the [↑] / [↓] key to select the program version.
- Press the [↵] key.

Example screenshot



Options / description

◆ S	Program version for lift with integrated storage management for a max. of two lifts in the MP multi-unit network. Then configure the second lift with program version H [MP 14-S]. Host communication by data record transfer via FTP / SFTP or CIFS protocol Host communication by web service via SOAP protocol. (Standalone, i.e. data flash card required at Access point 1)
◆ H [MP 14-S]	Program version for lift (second lift), which is connected to the lift with program version S in the MP multi-unit network. Host communication by data record transfer via FTP / SFTP or CIFS protocol Host communication by web service via SOAP protocol.
◆ H [MP 100D-5]	Program version for lift which is connected to the MP 100D-5 in the MP multi-unit network. Host communication by data record transfer via FTP / SFTP or CIFS protocol Host communication by web service via SOAP protocol.
◆ H[HOST-WEB]	Host communication by HTML pages via HTTP protocol. Host communication by web service via SOAP protocol or REST web service.
◆ H[HOST-DATA]	Host communication by data record transfer via FTP / SFTP or CIFS protocol Host communication by web service via SOAP protocol.
◆ H[HOST-COM]	Host communication by data telegrams via TCP/IP protocol.



- x Data flash card can be used with each program version. It is required, however, only with program version S at Access point 1.

2

Initialisation

2.7

Total no. of access points

Description of the operator prompts

Set number of access points

- Press the [↑] / [↓] key to select the number of access points.
- Press the [↵] key.

Example screenshot

INITIALISATION MODE

TOTAL NO. OF ACCESS POINTS :

■ -1-

[↑/↓/CE/↵]

Options / description
◆ -1-
◆ -2-
◆ -3-
◆ -4-
◆ -5-
◆ -6-
◆ -7-
◆ -8-

2 Initialisation

2.8 MP multi-unit network (not for MP 14-H[HOST-WEB]/H[HOST-COM])



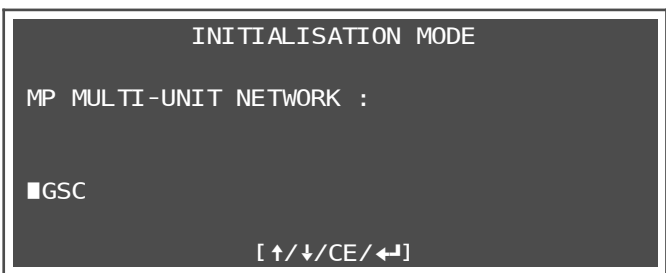
- x This prompt does not appear for the following :
 - ◆ MP 14-H[HOST-WEB]
(each access point is triggered via Ethernet)
 - ◆ MP 14-H[HOST-COM]
(each access point is triggered via Ethernet)

Description of the operator prompts

Configure networking for MP multi-unit network

- Press the [↑] / [↓] key to configure the networking of the MP multi-unit network.
- Press the [↵] key.

Example screenshot



Options / description
◆ GSC -> CANNOT BE USED FOR ARTICLE IMAGE SUPPLEMENTARY MODULE OR CAMERA FEATURE Internal Hänel interface for the MP multi-unit network.
◆ ETHERNET (TCP/IP)

2.9 Master lift (only for MP 14-H[MP 14-S]/H[HOST-DATA])



- x This prompt appears only for the following :
 - ◆ MP 14-H[MP 14-S] with networking of MP multi-unit network via Ethernet.
(The master lift is the MP 14-S).
 - ◆ MP 14-H[HOST-DATA]
(host communication to the customer via Ethernet is carried out using the master lift)

Description of the operator prompts

Enter master lift for host communication

- Enter the lift number.
- Press the [↵] key.

Example screenshot



2 Initialisation

2.10 Lift number

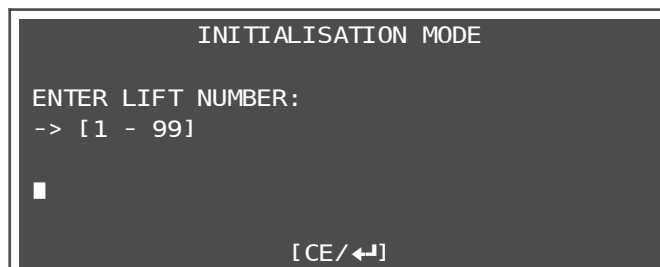
Description of the operator prompts

Set lift number

The lift can be assigned a number between 1 and 99.
Each lift number may occur only once in the MP multi-unit network.

- Enter the lift number.
- Press the [↵] key.

Example screenshot



2 Initialisation

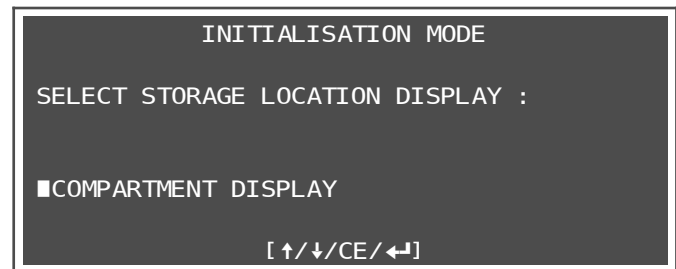
2.11 Storage location display

Description of the operator prompts

Configure storage location display

- Press the [↑] / [↓] key to select storage location display.
- Press the [←] key.

Example screenshot



Options	Compartments	Compartment depths
◆ COMPARTMENT DISPLAY		
– Without compartment display distributor	1 - 79	1 - 99
– With compartment display distributor	1 - 239	1 - 99
◆ COMPARTMENT DEPTH DISPLAY	1 - 99	1 - 9
◆ COMPARTMENT DEPTH DISPLAY TYPE 2 (Display for container width, a maximum of 20 compartment displays are illuminated at the same time)	1 - 99	1 - 9
◆ COMPARTMENT DEPTH DISPLAY TYPE 3 (Display for container width, a maximum of 20 compartment displays are illuminated at the same time)	1 - 99	1 - 99
◆ PICK-O-LIGHT SYSTEM (FIXED GRID)	Compartments x compartment depths ≤ 79 Compartments x compartment depths ≤ 239	
– Without compartment display distributor		
– With compartment display distributor		
◆ PICK-O-LIGHT SYSTEM (VARIABLE)	1 - 255	1 - 99
◆ PICK-O-LIGHT SYSTEM WITH CONTAINER DISPLAY (FIXED GRID)	Compartments x compartment depths ≤ 191	
◆ ---	1 - 255	1 - 99

- Refer to the "Supplementary Description of the Pick-O-Light system (variable) Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®".

2

Initialisation

2.12 Optional signal elements (only for MP 14-H[HOST-DATA]/H[HOST-WEB]/H[HOST-COM])



- x This prompt appears only for the following :
- ◆ MP 14-H[HOST-DATA]
 - ◆ MP 14-H [HOST-WEB]
 - ◆ MP 14-H[HOST-COM]

Description of the operator prompts

Optional signal elements present

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.

Example screenshot

INITIALISATION MODE

ARE OPTIONAL SIGNAL ELEMENTS
(E.G. INDICATOR LAMP) PRESENT:

■NO

[↑/↓/CE/↵]

Description

MP 14-H[HOST-DATA]:

Signal column consisting of:

- Indicator lamp for "Data record present" (standard colour is yellow).
- Indicator lamp for "Job present" (standard colour is blue).

MP 14-H[HOST-WEB]:

Signal column consisting of signal elements (indicator lamp or audible signal device) for operating commands (programmable, for indicator lamp signal element, the standard colour is yellow).

MP 14-H[HOST-COM]:

Signal column consisting of signal elements (indicator lamp or audible signal device) for operating commands (programmable, for indicator lamp signal element, the standard colour is yellow).

2 Initialisation

2.13 Lift data

Description of the operator prompts

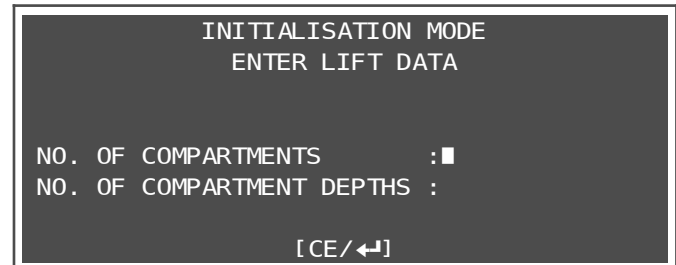
Enter lift data

You must not exceed the maximum values when entering these lift-specific data.

- Enter the number of compartments.
- Press the [↵] key.
- Enter the number of compartment depths.
- Press the [↵] key.

➔ If invalid figures are entered, an operator advisory is displayed and the input must be repeated.

Example screenshot



2

Initialisation

2.14

Additional safety equipment

Description of the operator prompts	Example screenshot				
Initialise additional safety device - Press the 【↑】 / 【↓】 key to select the additional safety device. - Press the 【↵】 key.	INITIALISATION MODE OPTIONAL ELECTRICAL EQUIPMENT ADDITIONAL SAFETY DEVICE : ■ < Additional safety device > [↑ / ↓ / CE / ↵] <table><tr><th>Options</th></tr><tr><td>◆ ---</td></tr><tr><td>◆ LIFT RUN WITH SLIDING DOOR CLOSED ONLY (only for Lean-Lift®)</td></tr><tr><td>◆ SAFETY LIGHT CURTAIN AT A DISTANCE IN FRONT OF THE ACCESS POINT</td></tr></table>	Options	◆ ---	◆ LIFT RUN WITH SLIDING DOOR CLOSED ONLY (only for Lean-Lift®)	◆ SAFETY LIGHT CURTAIN AT A DISTANCE IN FRONT OF THE ACCESS POINT
Options					
◆ ---					
◆ LIFT RUN WITH SLIDING DOOR CLOSED ONLY (only for Lean-Lift®)					
◆ SAFETY LIGHT CURTAIN AT A DISTANCE IN FRONT OF THE ACCESS POINT					

2 Initialisation

2.15 Second safety circuit (not for Multi-Space with multiple access points)



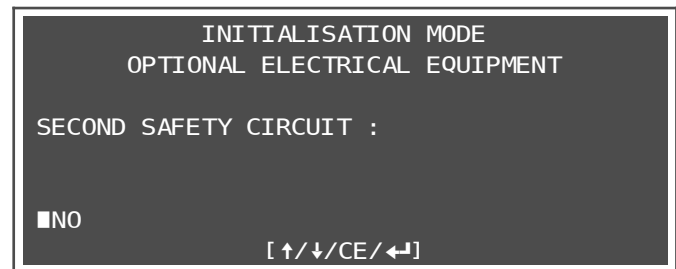
- x This prompt does not appear for multiple access points in "Multi-Space®" operating mode.

Description of the operator prompts

Initialise the optional electrical equipment "Second safety circuit"

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Example screenshot



Description

The second safety circuit is used to bypass a defective safety light curtain when the sliding door is closed.

2.16 Multiple immediately adjacent lifts with a shared service door (only for Lean-Lift®)



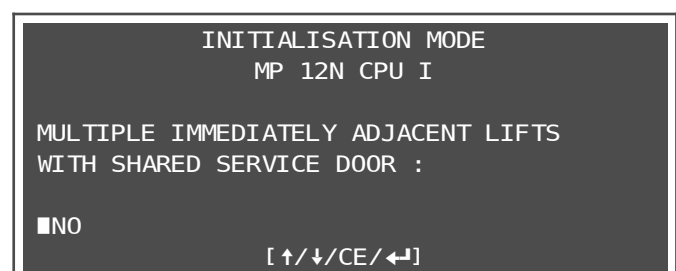
- x This prompt appears only in "Lean-Lift®" operating mode.

Description of the operator prompts

Multiple immediately adjacent lifts with a shared service door

- Press the [↑] / [↓] key to select "YES" if the lift is immediately adjacent to another lift, resulting in the use of a shared service door.
- Press the [←] key.

Example screenshot



Description

In the case of two or more immediately adjacent lifts with a shared service door, opening the service door switches off the main switch of all lifts.

If the lift is not automatically switched off by opening the service door, the lift run error message "CRITICAL ERROR: UNDERVOLTAGE TRIP -> CE" appears

2 Initialisation

2.17 MP 12 EXT board

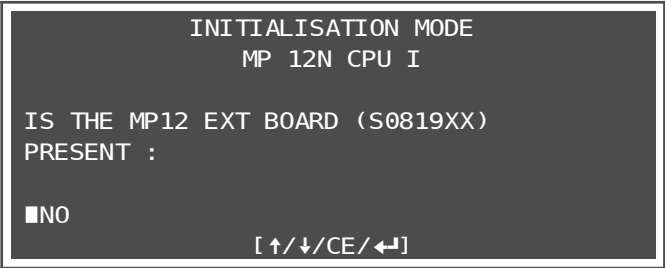
Description of the operator prompts

Initialising MP 12 EXT (S8-19 board)

The MP 12 EXT boards can be used to control other access points or supplementary features.

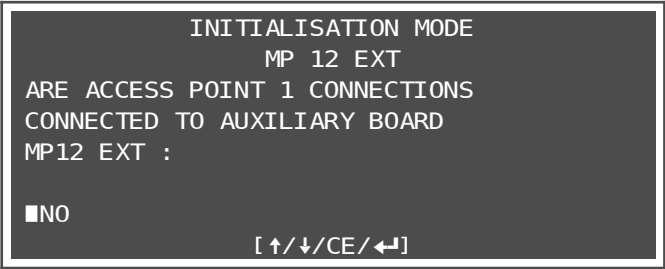
- Press the [↑] / [↓] key to select "YES" if the MP 12 EXT board is present.
- Press the [←] key.

Example screenshot



x This prompt appears only in "Lean-Lift®" operating mode and only if the MP 12 EXT board is present.

- Press the [↑] / [↓] key to select "YES" if the connections of access point 1 are located at an additional MP 12 EXT board.
- Press the [←] key.



Description

Select "YES" if the connections of access point 1 (compartment displays, access point proximity switches, article height detection, MP 14 CPU II) are not connected to the MP 12N CPU I, but to an auxiliary MP 12 EXT board.

This is the case in the following instances:

- Lift version with position of access point 1 in special height.
- Narrow lifts in which, for space reasons, parts of the electrical equipment are in an additional access point tray.

2 Initialisation

2.18 Signal / error message inputs

Safety-related operating states are monitored in a HÄNEL lift by a safety circuit and are shown on the display.

If one of these safety switches is triggered, the lift is stopped. The MP control system establishes which safety switch has been triggered by means of signal inputs at terminal 7 <nn> and displays the error message assigned to it.

Consequently, the signal inputs must have the correct signal / error message texts assigned to them. The assignment of signal inputs of terminal 7 <nn> to the designation of the respective safety switches is shown in the drawing "Control component circuit diagram" in the lift documentation.

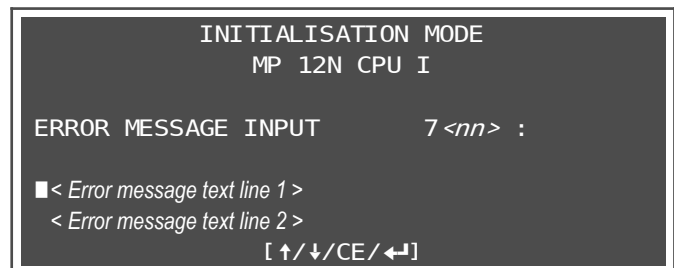
Description of the operator prompts

Select signal / error message inputs

For each prompt:

- Press the [↑] / [↓] key to select a signal / error message text (see drawing "Control component circuit diagram" in the lift documentation).
- Press the [↵] key.

Example screenshot



<nn> = 01 -18 for terminal 701- 718

For the Lean-Lift® and Multi-Space®, the MP 12N CPU I has terminals 701 to 718 as signal inputs.

2 Initialisation



- x The following prompt appears only if there is more than one access point and if the MP 12 EXT board is present.

The MP 12 EXT (S8-19 board) has terminals 701 to 706 as signal inputs.

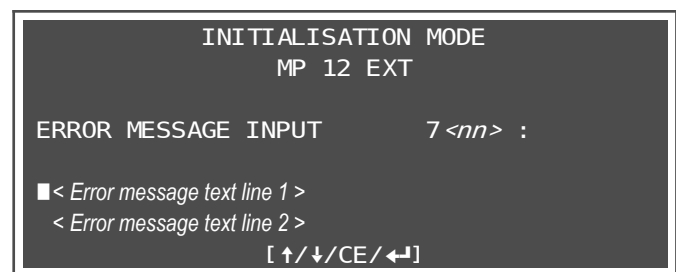
Consequently, the signal inputs must have the correct signal / error message texts assigned to them. The assignment of signal inputs terminal 7<nn> to the designation of the respective safety switches is shown in the drawing "Control component circuit diagram" in the lift documentation.

Description of the operator prompts

For each prompt:

- Press the [↑] / [↓] key to select a signal / error message text (see drawing "Control component circuit diagram" in the lift documentation).
- Press the [↵] key.

Example screenshot



<nn>= 01 - 06 for terminals 701 - 706

2

Initialisation

2.19

Format shelf memory



- x Formatting of the shelf memory is mandatory when a Lean-Lift® or Multi-Space® is first put into service.
- x In the positioning, after the shelf memory has been formatted, all the shelves still in the lift can be read in using the "READ IN SHELF POSITIONS" function. Shelf numbers are assigned to the shelves in the order in which they are read in.
- x The shelf numbers can be assigned by the user using the service function "CHECK SHELF POSITIONS".



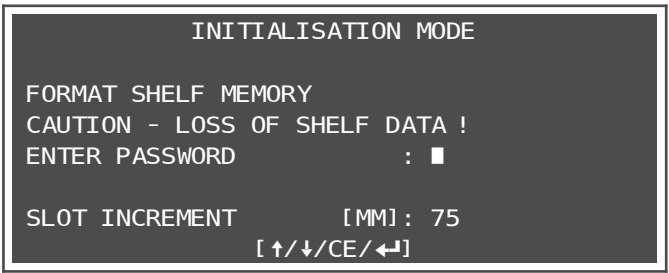
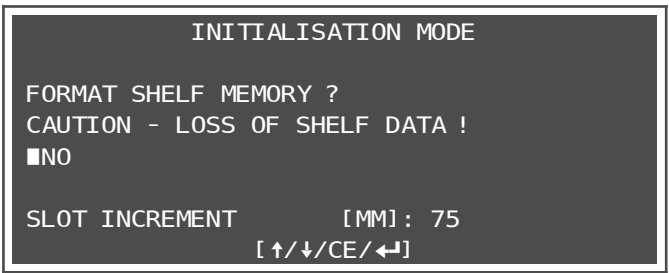
CAUTION! Danger of loss of data!
It is absolutely necessary to read out the shelf data to an external computer and back them up before the shelf memory is formatted.

Description of the operator prompts

Format shelf memory

- Press the [↑] / [↓] key to select "YES".
 - Press the [↵] key.
-
- Enter password.
 - Press the [↵] key.
 - Press the [↑] / [↓] key to select millimetres as the slot increment unit.
 - Press the [↵] key.

Example screenshot



Options
◆ 75 (starting from software MP 12N CPU I V 4.0 STANDARD)
◆ 75/90/125 (up to software MP 12N CPU I V 4.0 STANDARD)
◆ 37.5
◆ 25

2 Initialisation

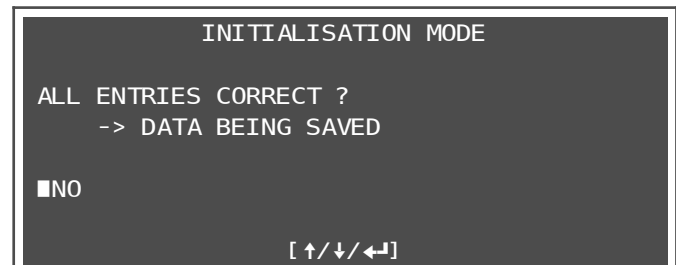
2.20 Ending initialisation

Description of the operator prompts

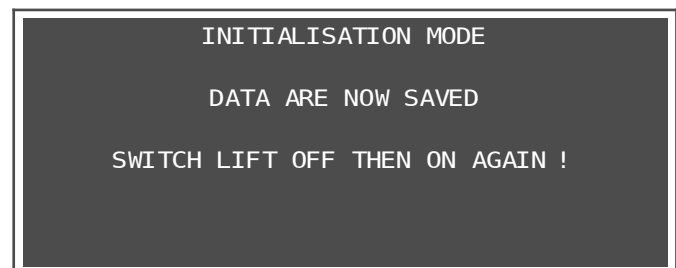
Ending initialisation

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.
- Initialisation data are saved.

Example screenshot



- Switch off the lift.



2.21 Initialisation of other access points

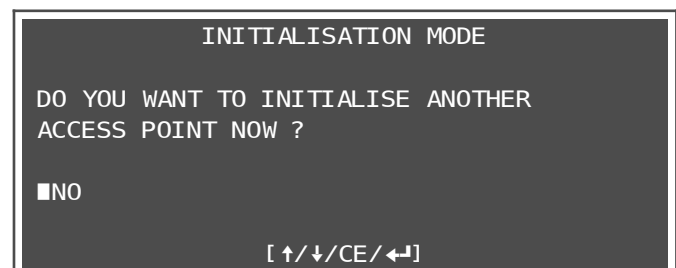
Description of the operator prompts

- Enable initialisation mode at access point 1 and answer prompts until the following display appears. Refer also to Chapter 2.3 on page 12.

Start initialisation of other access points

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

Example screenshot



2 Initialisation

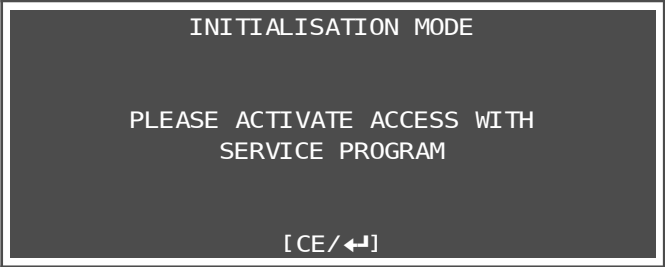
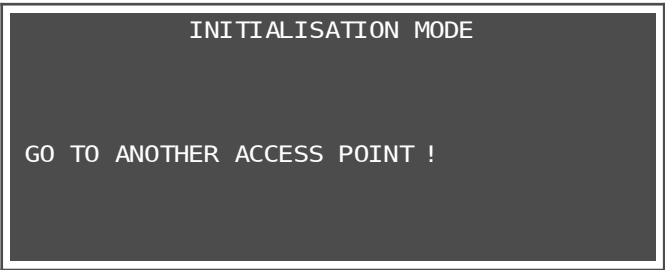
2.21.1 Initialise other access points for the Lean-Lift®

Description of the operator prompts

Initialise another access point for the Lean-Lift®

- Go to the other access point.
- Press the [↩] key.
- x The display text may vary depending on the configuration.
- Activate access with "JUMP" service software. The activation is valid for 12 hours at this access point.
- Press the [↩] key.

Example screenshot



2 Initialisation

Description of the operator prompts

Example screenshot

Password prompt before initialising the next access point

- Enter password.
- Press the [↵] key.



2 Initialisation

Description of the operator prompts

Example screenshot

Safety instruction before initialising the next access point

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

The initialisation mode is not started then.



2 Initialisation

Description of the operator prompts

Example screenshot

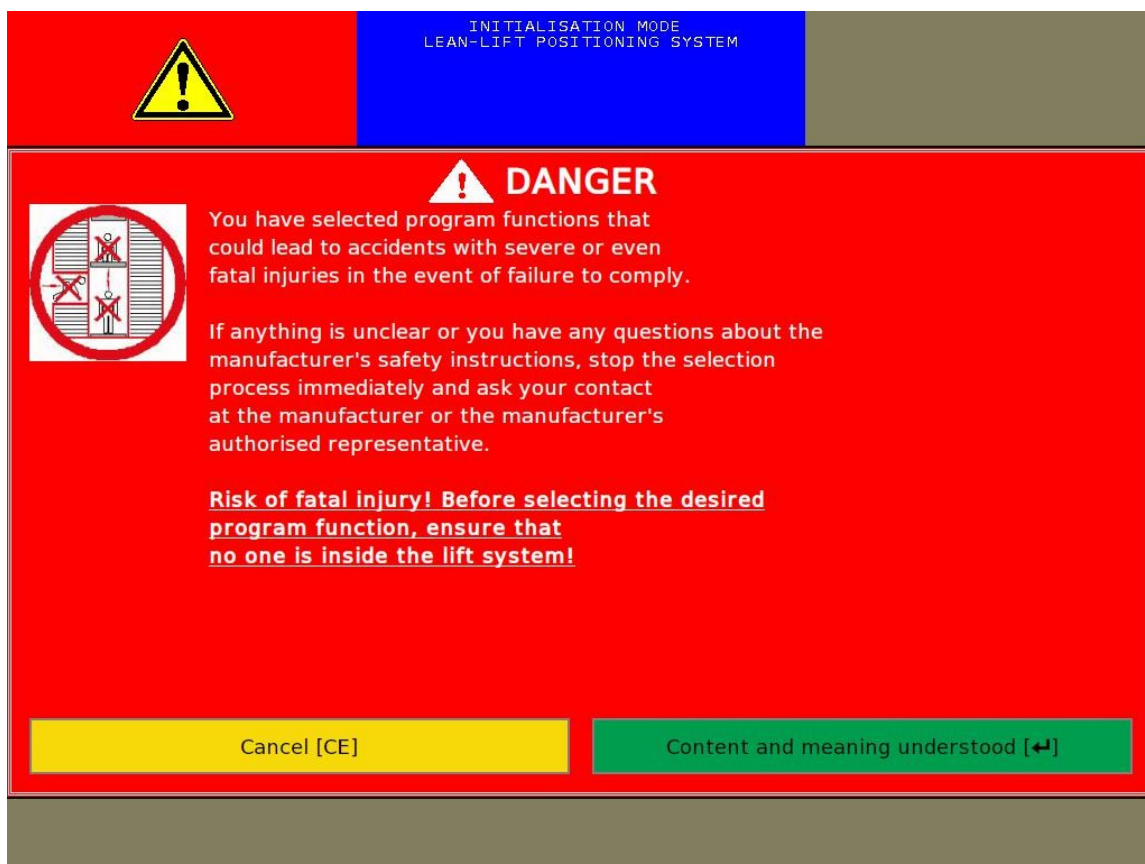
If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↔] key or press the [↔] key.

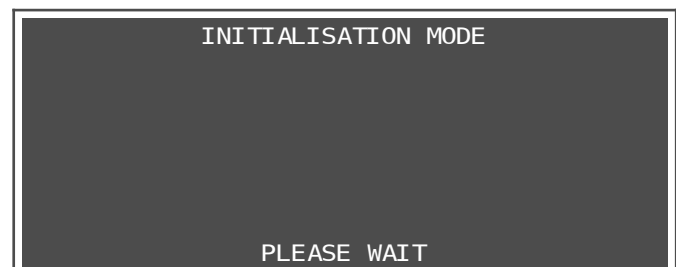
If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

The initialisation mode is not started then.



- The complete settings are transferred from access point 1 to the other access point.

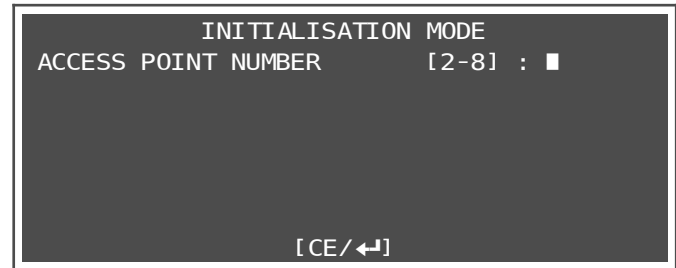


2 Initialisation

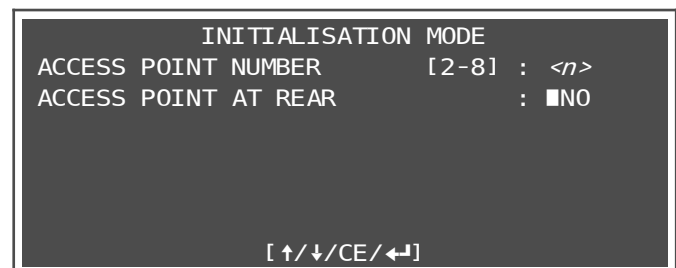
Description of the operator prompts

- Enter the access point number.
- Press the [↵] key.

Example screenshot

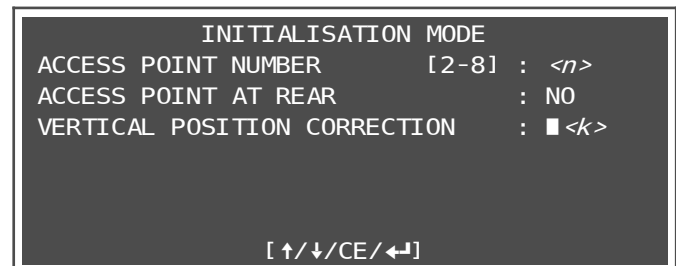


- Press the [↑] / [↓] key to select "YES" if the access point is at the rear.
The front side is the side where access point 1 is located. The rear side is the opposite side.
- Press the [↵] key.



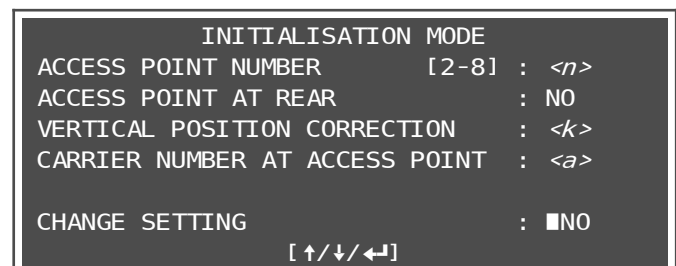
Set vertical position correction

- Press the [↑] / [↓] key to select vertical position correction <k>.
- Press the [↵] key.



Options	Description
◆ -1	The extractor stops 1.25 mm (0.049") lower at the access point.
◆ 0	The extractor stops at the access point without vertical position correction.
◆ +1	The extractor stops 1.25 mm (0.049") higher at the access point.

- ➔ The carrier number of the access point <a> is displayed.
- Press the [↑] / [↓] key to select "YES" if you want to change the carrier number of the access point.
- Press the [↵] key.

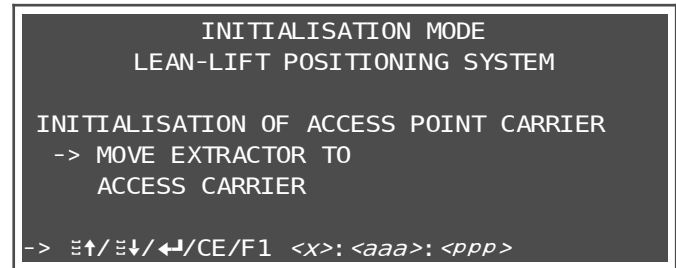


2 Initialisation

Description of the operator prompts

- Press the [↑] / [↓] key to move the extractor onto the access carrier.
Caution: [↕↑] / [↕↓] key starts a carousel run!
- Press the [↔] key.
- The carrier number to which the extractor is driven is assigned to the access point and saved.

Example screenshot



The front side is the side where access point 1 is located. The rear side is the opposite side.

If the access point is on the front side:

<x> = "F"

<aaa> = Carrier number of the front vertical position sensor

<ppp> = Position value of the front vertical position sensor

If the access point is on the rear side:

<x> = "R"

<aaa> = Carrier number of the rear vertical position sensor

<ppp> = Position value of the rear vertical position sensor



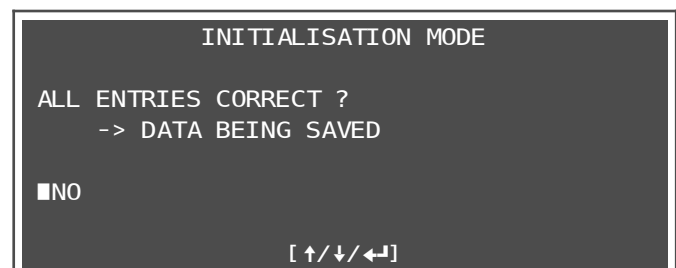
Note on optional electrical equipment "Lift run only with door closed"

- x Since a lift run is possible only when the sliding door is closed, the sliding door must be closed during the initialisation.
- x The [F1] key can be used to open the door in order to check the positioning.

Note on optional electrical equipment "High-speed door":

- x Since a vertical lift run is possible only when the high-speed door is closed, the high-speed door must be closed during initialisation.
- x The [F1] key can be used to open and close the high-speed door in order to check the positioning.

- Press the [↑] / [↓] key to select "YES".
- Press the [↔] key.
- The data are saved. The other access point has been initialised.



2 Initialisation

Description of the operator prompts

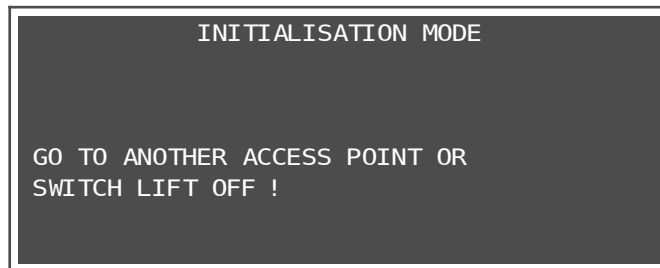
If you want to initialise the other access point:

- Go to the other access point.
- Repeat the above steps, beginning with entering the key combination.

If you do not want to initialise another access point:

- Switch off the lift.

Example screenshot



2 Initialisation

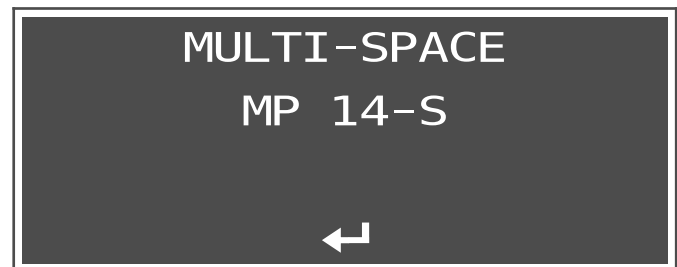
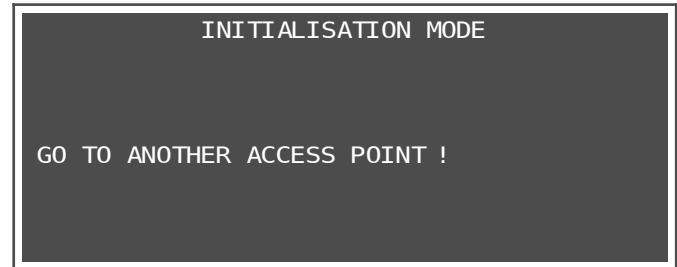
2.21.2 Initialise other access points for the Multi-Space

Description of the operator prompts

Initialise another access point for the Multi-Space®

- Go to the other access point.
- Press the [↵] key.
- x The display text may vary depending on the configuration.
- Activate access with "JUMP" service software. The activation is valid for 12 hours at this access point.
- Press the [↵] key.

Example screenshot



2 Initialisation

Description of the operator prompts

Example screenshot

Password prompt before initialising the next access point

- Enter password.
- Press the [↵] key.



2 Initialisation

Description of the operator prompts

Example screenshot

Safety instruction before initialising the next access point

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

The initialisation mode is not started then.



2 Initialisation

Description of the operator prompts

Example screenshot

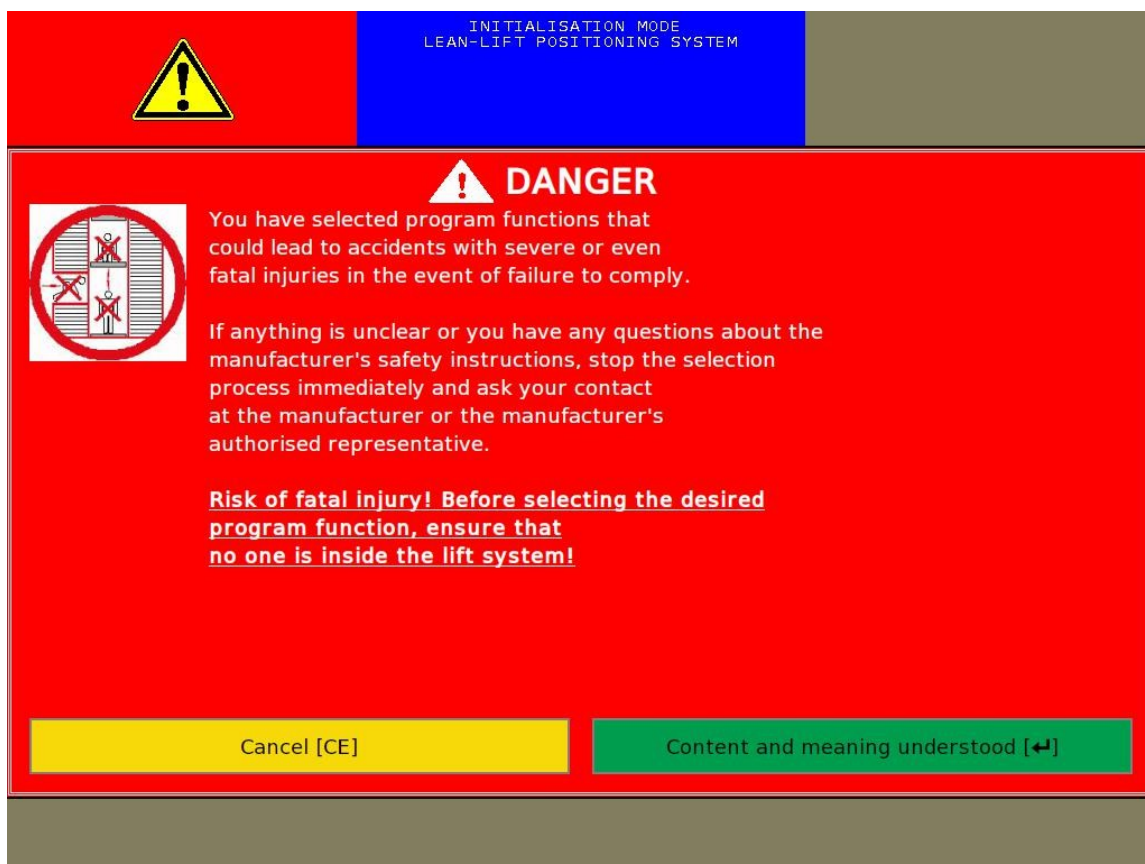
If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

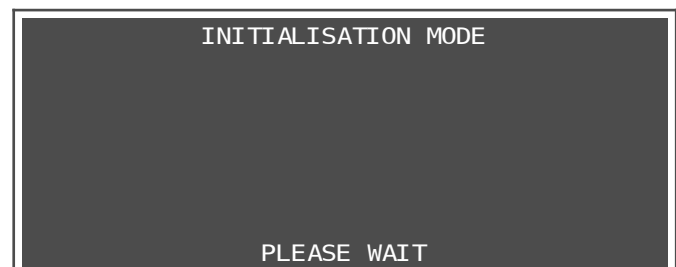
If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

The initialisation mode is not started then.



- The complete settings are transferred from access point 1 to the other access point.

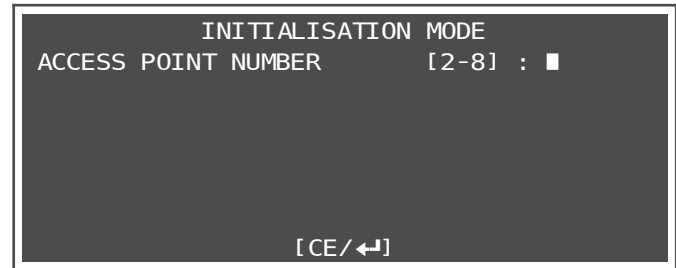


2 Initialisation

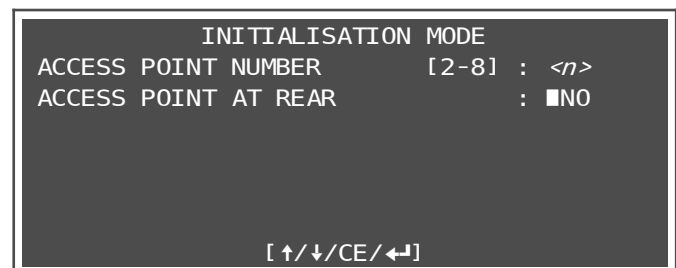
Description of the operator prompts

- Enter the access point number.
- Press the [↵] key.

Example screenshot

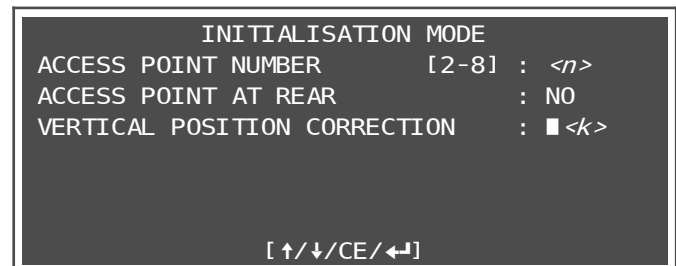


- Press the [↑] / [↓] key to select "YES" if the access point is at the rear.
The front side is the side where access point 1 is located. The rear side is the opposite side.
- Press the [↵] key.



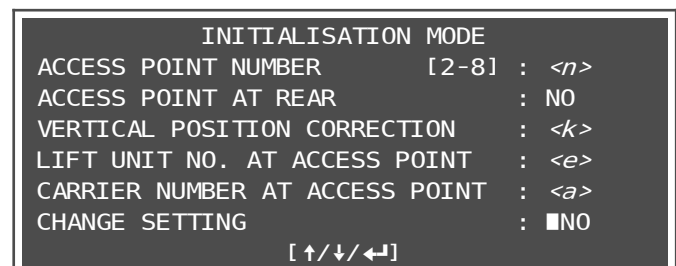
Set vertical position correction

- Press the [↑] / [↓] key to select vertical position correction <k>.
- Press the [↵] key.



Options	Description
◆ -1	The extractor stops 1.25 mm (0.049") lower at the access point.
◆ 0	The extractor stops at the access point without vertical position correction.
◆ +1	The extractor stops 1.25 mm (0.049") higher at the access point.

- ➔ The number of the lift unit <e> and carrier number of the access point <a> are displayed.
- Press the [↑] / [↓] key to select "YES" if you want to change the lift unit and carrier number of the access point.
- Press the [↵] key.



2 Initialisation

Description of the operator prompts

- Press the [↑] / [↓] key to move the extractor onto the access carrier.
Caution: [⇅] / [⇅] key starts a carousel run!
 - Press the [+] / [-] key to move the extractor horizontally onto the access carrier.
Caution: [+] / [-] key starts a lift run!
 - Press the [F1] key to open or close the high-speed door.
 - Press the [↵] key.
- ➔ The lift unit and vertical carrier to which the extractor is driven is assigned to the access point and saved.

- Press the [↑] / [↓] key to select "YES".
 - Press the [↵] key.
- ➔ The data are saved. The other access point has been initialised.

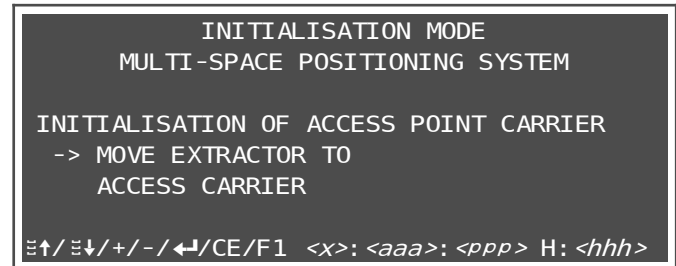
If you want to initialise the other access point:

- Go to the other access point.
- Repeat the above steps, beginning with entering the key combination.

If you do not want to initialise another access point:

- Switch off the lift.

Example screenshot



The front side is the side where access point 1 is located. The rear side is the opposite side.

If the access point is on the front side:

<x> = "F"

<aaa> = Carrier number of the front vertical position sensor at the extractor position

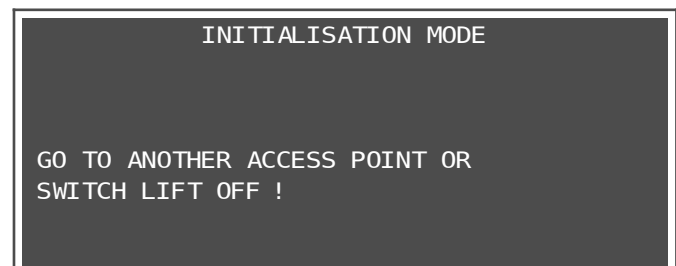
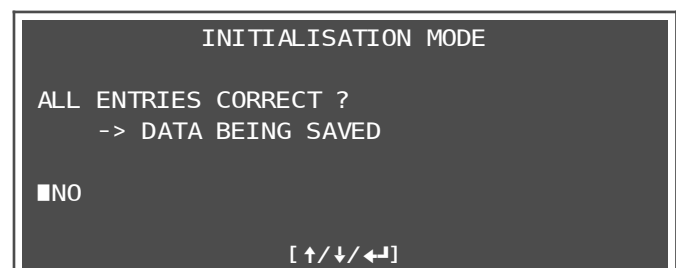
<ppp> = Position value of the front vertical position sensor at the extractor position

If the access point is on the rear side:

<x> = "R"

<aaa> = Carrier number of the rear vertical position sensor at the extractor position

<ppp> = Position value of the rear vertical position sensor at the extractor position



3 Positioning

The positioning defines all the values and settings required for the lift run functions.



- x The positioning must be started at access point 1.
- x The first initialisation of the MP control system must be followed by positioning of the lift.
- x Only when the lift has been correctly positioned can other access points be initialised.
- x The lift can be registered with the storage management system only after the positioning is completed.
- x The positioning must also be carried out after replacing the MP 12N CPU I if the EEPROM is not taken over.

3.1 Activate initialisation mode of the positioning system

Description of the operator prompts

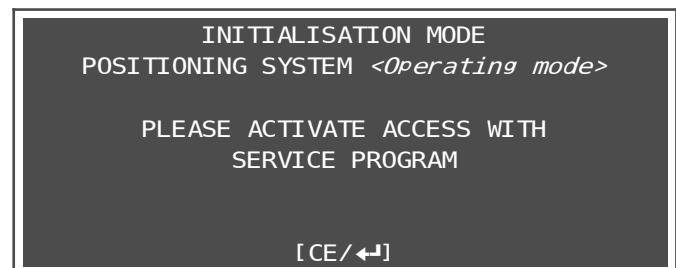
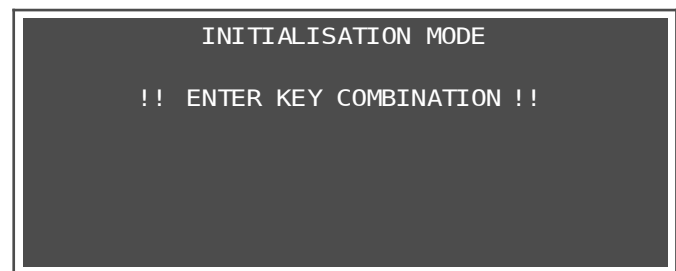
Activate initialisation mode of the positioning system

- Switch on the lift.
- Press the **[CE]** key until "Initialisation mode" is displayed.
- Press the following keys:



- Activate access with "JUMP" service software. The activation is valid for 12 hours at this access point.
- Press the **[↩]** key.

Example screenshot



3 Positioning

Description of the operator prompts

Example screenshot

Password prompt before the positioning

- Enter password.
- Press the [↵] key.



3 Positioning

Description of the operator prompts

Example screenshot

Safety instructions before the positioning

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.
The positioning is not started then.



3 Positioning

Description of the operator prompts

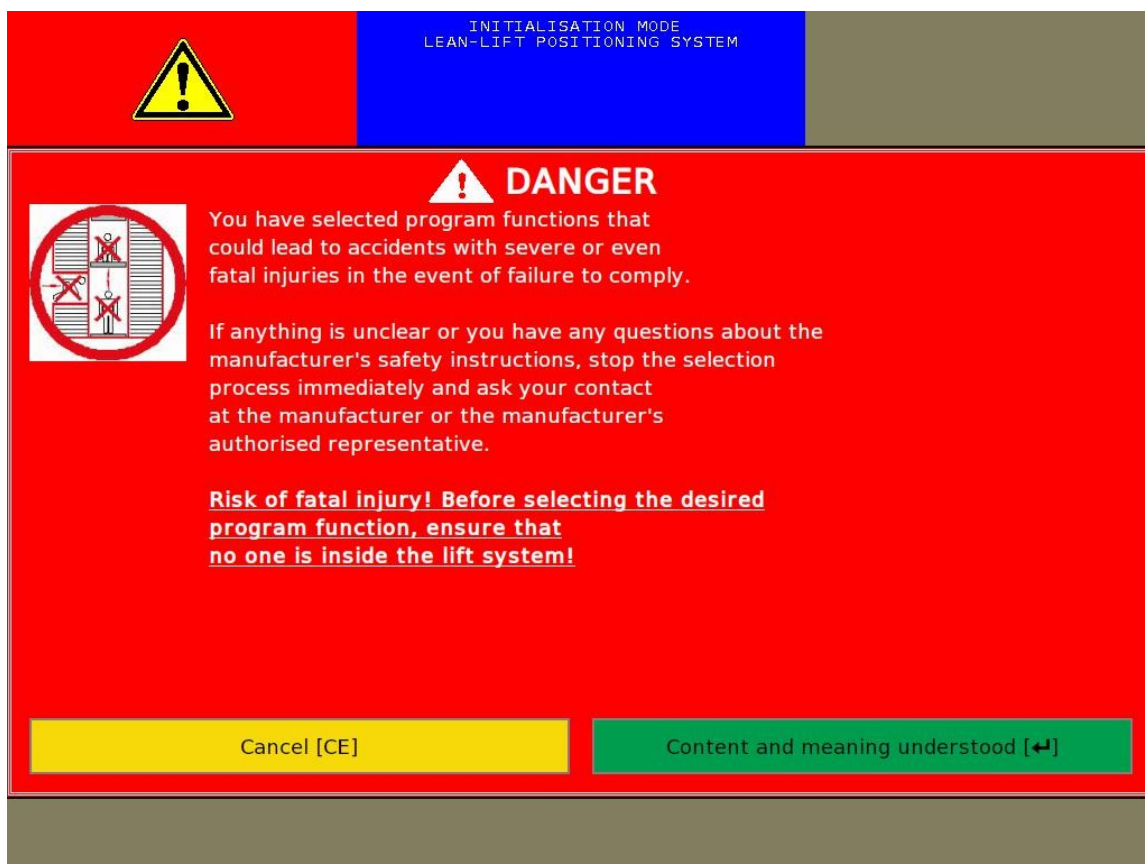
Example screenshot

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↔] key or press the [↔] key.

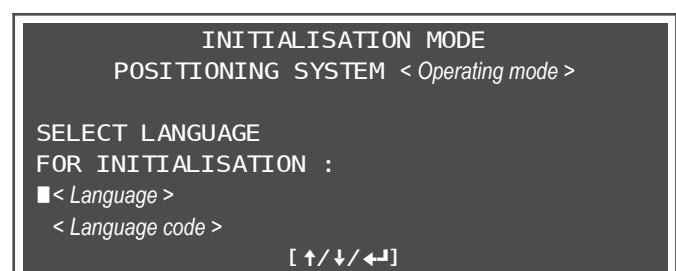
If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.
The positioning is not started then.



Select language

- Press the [↑] / [↓] key to select the language for positioning system initialisation.
- Press the [↔] key.



3

Positioning

Description of the operator prompts



Example screenshot

The rest of the menu prompts depend on the operating mode selected in initialisation mode (see Chapter 2).

Operating mode	See Chapter	Page
LEAN-LIFT®	3.2	48
MULTI-SPACE®	3.3	78

3 Positioning

3.2 Positioning in Lean-Lift® operating mode

Description of the operator prompts

Select the drive type

- Press the [↑] / [↓] key to select the drive type.
- Press the [←] key.

x For the drive type, see "Type" on the lift type plate.

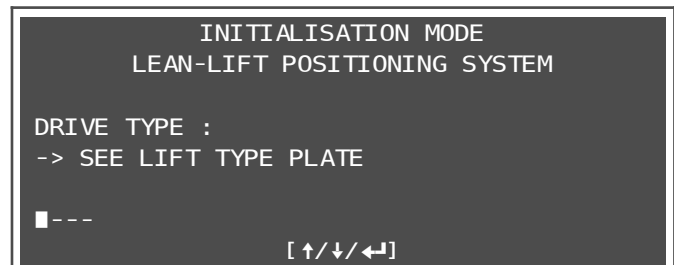
→ Example for option "----":

Type LEAN-LIFT® 2300-825

→ Example for option "HS21":

Type LEAN-LIFT® 2300-825 HS21

Example screenshot



Options	
◆ ---- (old lift type plate)	◆ HS51
◆ HS21	◆ HS52
◆ HS22	◆ ES11
◆ HS26	◆ ES12
◆ HS27	◆ ES21
◆ HS31	◆ ES22
◆ HS32	◆ ES31
◆ HS33	◆ ES32
◆ HS34	◆ ES41
◆ HS36	◆ ES42
◆ HS37	◆ ES51
◆ HS43	◆ ES52
◆ HS44	

3 Positioning

Description of the operator prompts



Initialise incremental encoder

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

If "Incremental encoder present" has been initialised to "NO".

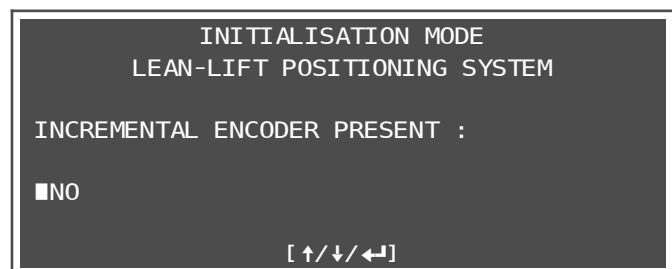
Select horizontal drive

- Press the [↑] / [↓] key to select horizontal drive.
 - Press the [←] key.
- x For the horizontal drive, see "Vertical/Horizontal Motor Type" on lift type plate.



Example screenshot

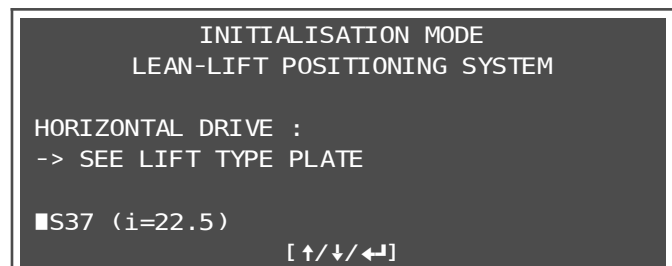
- x The following prompt does not appear starting from software MP 12N CPU I V 4.0 STANDARD.
- x The following prompt does not appear for lifts with the drive type "HS33", "HS34", "HS43" or "HS44", e.g. lifts with shelf widths >= 3660 millimetres.
- x When the incremental encoder is activated, the horizontal drive of the extractor must be in basic position, i.e. proximity switches B10 and B11 must switch, or the "Drive extractor to home position" function must subsequently be called up.



Description

There are lifts that are fitted with an incremental encoder for horizontal movement.

The incremental encoder is present in lifts of the "HS" (HIGH SPEED) version or in lifts with the option "Partially redundant control" (corresponds to "Equipment for emergency operation").



Options

- ◆ S37 (i=22.5)
- ◆ MB2201 (i=20) / S37 (i=19,..)
"/" = or

- x If the horizontal movement is too fast, the horizontal drive "MB2201 (i=20) / S37 (i=19,..)" must be selected.
- x If the horizontal movement is too slow, the horizontal drive "S37 (i=22.5)" must be selected.

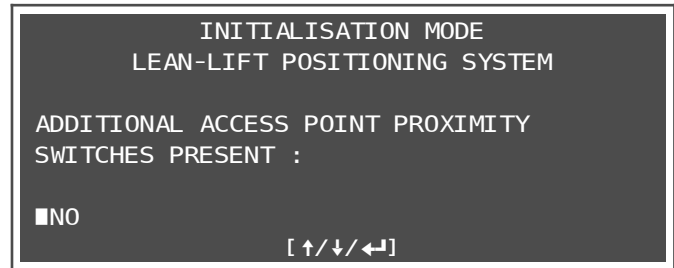
3 Positioning

Description of the operator prompts

Initialise access proximity switches B26, B27

- Press the [↑] / [↓] key to select Access point proximity switch.
- Press the [←] key.

Example screenshot



Options / description

◆ NO

◆ YES [B26, B27]

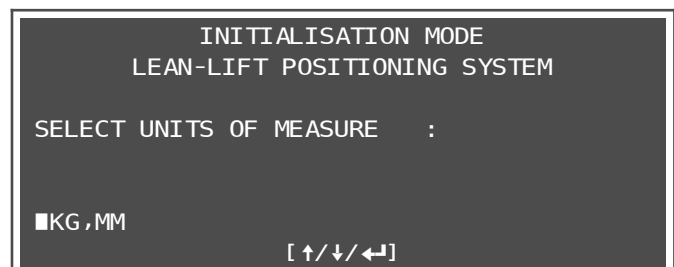
There are lifts that are fitted with additional proximity switches B26 and B27 (redundancy for B20 and B21) in the access point. This equipment provides increased availability without waiting for the service personnel.

The deactivation of a pair of proximity switches in the redundancy system means that in the event of a failure, the lift can continue to be operated.

The additional proximity switches B26 and B27 are present for lifts with the option "Partially redundant control" (corresponds to "Equipment for emergency operation").

Select units of measure

- Press the [↑] / [↓] key to select the unit of measure.
- Press the [←] key.



Options	Description
◆ KG, MM	All weights and measures are then displayed and entered in the units selected.
◆ LBS, INCH	

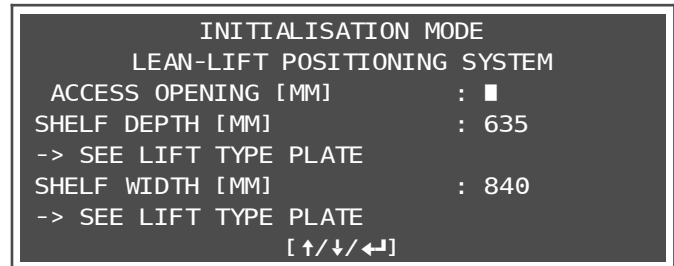
3 Positioning

Description of the operator prompts

Set the access opening, shelf depth and width

- Enter the access opening.
- Press the [←] key.
- Press the [↑] / [↓] key to select the shelf depth (see specification on the lift type plate).
- Press the [←] key.
- Press the [↑] / [↓] key to select the shelf width (see specification on the lift type plate).
- Press the [←] key.

Example screenshot



Parameters / description

ACCESS OPENING

The access opening is the distance between the lower and upper edge of the access opening. The default value is 900 mm (35.433").

- x If a lift with multiple access points has multiple access heights, the additional height is provided by manual carrier blocking. If such a lift version is present, check whether this additional carrier block has been carried out.

SHELF DEPTH

The following shelf depths can be set:

- ◆ 635 MM or 200 INCH/8
- ◆ 825 MM or 260 INCH/8
- ◆ 1270 MM or 400 INCH/8
- ◆ 1047 MM or 330 INCH/8

Caution: If you select a shelf depth that is too large, this could cause faulty positioning of the horizontal drive and shelf collisions. If you select a shelf depth that is too small, the horizontal shelf positioning is slowed down.

SHELF WIDTH

The following shelf widths can be set:

- ◆ 840 MM or 265 INCH/8
- ◆ 1300 MM or 410 INCH/8
- ◆ 1640 MM or 515 INCH/8
- ◆ 2060 MM or 650 INCH/8
- ◆ 2300 MM or 725 INCH/8
- ◆ 2460 MM or 775 INCH/8
- ◆ 2860 MM or 900 INCH/8
- ◆ 3260 MM or 1025 INCH/8
- ◆ 1860 MM or 585 INCH/8
- ◆ 3060 MM or 965 INCH/8
- ◆ 3660 MM or 1155 INCH/8
- ◆ 4060 MM or 1280 INCH/8
- ◆ 4460 MM or 1405 INCH/8

Note: If a shelf width is not available, the next largest shelf width must be selected.

3 Positioning

Description of the operator prompts

- Check entries and unit of measure and correct if necessary.
- Press the [↩] key.

Example screenshot

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
ACCESS OPENING [MM]      : <Height>
SHELF DEPTH [MM]         : <Depth>
-> SEE LIFT TYPE PLATE
SHELF WIDTH [MM]         : <Width>
ALL ENTRIES CORRECT ?
-> CE/↩
```



- x The following prompt only appears for lifts with the drive type "HS33", "HS34", "HS43" or "HS44", e.g. lifts with shelf widths >= 3660 millimetres and a slot increment of 37.5.

Shelf version with reduced useful height loss for a slot increment of 37.5 millimetres

The height of empty tables in the standard model is 4 carriers.

The height of the shelf version with a reduced useful height loss is 3 carriers.

- Press the [↑] / [↓] key to select "YES" or "NO". See order confirmation.
- Press the [↩] key.

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
SHELF VERSION WITH REDUCED
USEFUL HEIGHT LOSS      : ■NO

[↑/↓/CE/↩]
```

If "Shelf version with reduced useful height loss" has been initialised to "YES":

Code prompt for switch from "NO" to "YES"

➔ Commission number of the lift is displayed as shown on the type plate.

- Enter the code specific to the lift.

The code is kept in the documentation folder "Hänel Rotomat® / Lean-Lift® / Multi-Space® Technical Documentation".

- Press the [↩] key.

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
SHELF VERSION WITH REDUCED
USEFUL HEIGHT LOSS      : YES
COM. NO. : <Commission number of lift>
CODE : ■
-> DOCUMENTATION FOLDER
[CE/↩]
```

Initialise service door at a special height

- Press the [↑] / [↓] key to select "YES" or "NO". See order confirmation.
- Press the [↩] key.

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
SERVICE DOOR AT A SPECIAL HEIGHT : ■NO

[↑/↓/↩]
```

3 Positioning

Description of the operator prompts

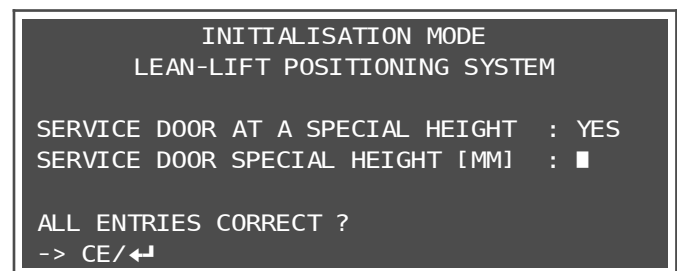
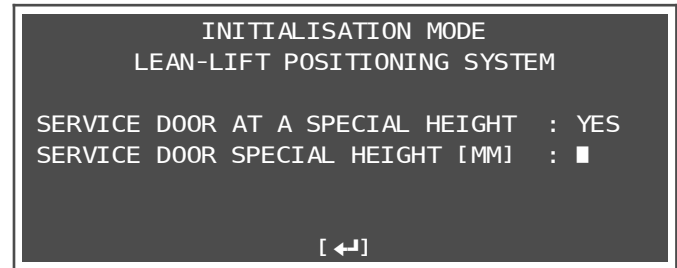
If "Service door at a special height" has been initialised to "YES":

- Enter service door special height.
Enter the position of the service doors in accordance with the order confirmation.
- Press the [↵] key.

If "Service door at a special height [mm]" has been initialised greater than 600 mm:

- Press the [↵] key.
- Service door special height [mm] is saved.

Example screenshot



3 Positioning

Description of the operator prompts



Frequency converter with RS485 connection

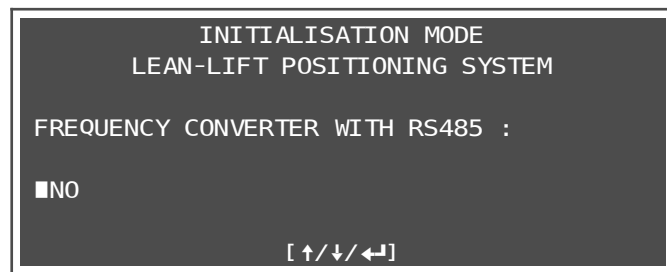
- Press the [↑] / [↓] key to select the frequency converter connection.
 - Press the [←] key.
- If "YES" is selected, the RS485 connection is tested.
In case of an error, the error message "SYSTEM ERROR RS485" is displayed.

Example screenshot

x The following prompt appears only with the Mitsubishi drive.

There are lifts with a frequency converter that has an RS485 interface to the MP control system. Thus the following functions are possible:

- ◆ Frequency converter parameters can be displayed and changed.
- ◆ Error messages of the frequency transformer can be retrieved.
- ◆ Shelves are brought to the access point in case of motor overload.



Options / description
◆ NO
◆ YES

3 Positioning

Description of the operator prompts



Drive extractor to basic position

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

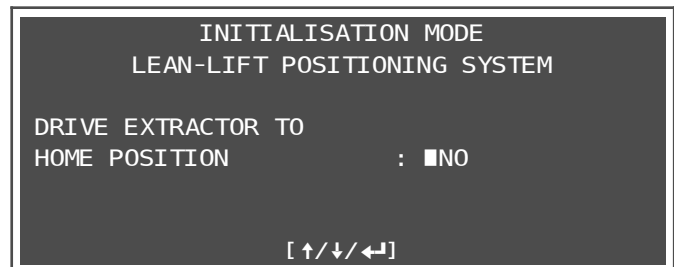
If "YES" has been selected:

Move shelf out forward

- Press the [↑] / [↓] key to select "YES" or "NO".
The front is the side where access point 1 is located. The right-hand drive side moves counter-clockwise as seen from above if "YES" is selected, and clockwise if "NO" is selected.
- Press the [←] key.

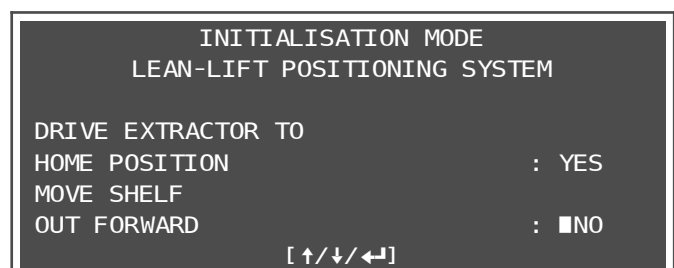
Example screenshot

- x The following prompt appears only if the shelf memory is empty. This is the case when the unit is first put into service, after the shelf memory is formatted or if all shelves have been removed.
- x The extractor must also be driven to home position when first put into service and after replacing the MP 12N CPU I without data transfer (EEPROM). Even if the extractor is already in basic position, this must be done in order to reset the internal run status.
- x **Caution:** A shelf can be pushed out only if the extractor is standing at a free carrier position.



Description

The extractor is the transport unit in the lift shaft. It consists of a drive unit, drive chains and drive catches, among other components. When the extractor is in the basic position, the drive catches on the left and right horizontal chain on the extractor must be pointing to the respective side walls of the lift and be positioned exactly above the proximity switches B10/B11 on one side.

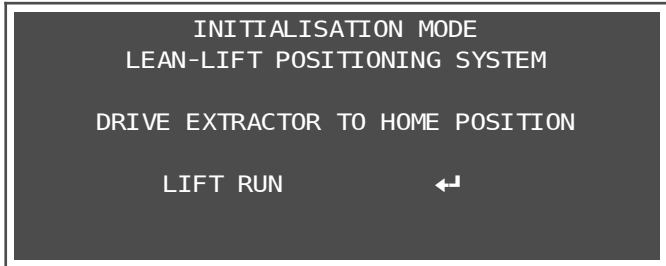
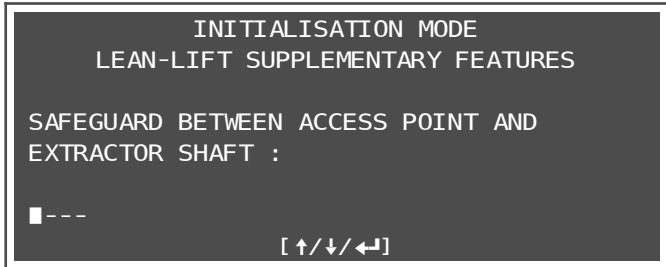


Description

This prompt determines the direction in which the extractor drive catches run to the basic position. This allows a shelf that happens to be on the extractor to be pushed into a carrier. The direction must be selected so that a shelf is pushed into a free carrier, or so that if the extractor is empty the drive catches cannot bump into a shelf at the same height or an access point.

3

Positioning

Description of the operator prompts	Example screenshot			
Press the [↵] key. Caution: The [↵] key starts a lift run! ➔ Extractor is driven to home position.				
Select safeguard between access point and extractor shaft - Press the [↑] / [↓] key to select the safeguard. - Press the [↵] key.				
<table><tr><th>Options / description</th></tr><tr><td> ◆ --- No safeguard between access point and extractor shaft present. </td></tr><tr><td> ◆ HIGH-SPEED DOOR The high-speed door is used to close off the rear opening of the access point to the shaft, in which the extractor moves vertically. </td></tr></table> ➤ For further details on the high-speed door, refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®".		Options / description	◆ --- No safeguard between access point and extractor shaft present.	◆ HIGH-SPEED DOOR The high-speed door is used to close off the rear opening of the access point to the shaft, in which the extractor moves vertically.
Options / description				
◆ --- No safeguard between access point and extractor shaft present.				
◆ HIGH-SPEED DOOR The high-speed door is used to close off the rear opening of the access point to the shaft, in which the extractor moves vertically.				

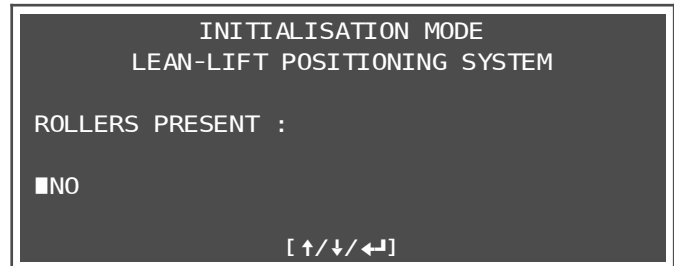
3 Positioning

Description of the operator prompts

Initialise access point rollers

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Example screenshot



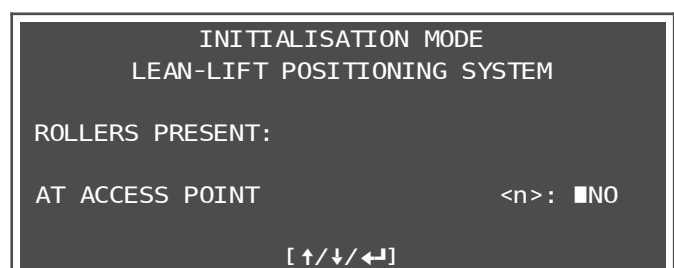
Options / description

- ◆ NO
There is no access point available with access point rollers.
- ◆ YES
(For model year 2020 and later)
There is at least one access point available with access point rollers.
The extractor is then positioned 1.25 mm (0.049") higher in the access point with rollers than for the other carriers. In addition, the shelves are moved into the end position more slowly when brought to the access point.
- ◆ YES [MAX. SHELF LOAD ≤ 700 KG / 1544 LBS]
-> SEE LIFT TYPE PLATE
(Up to model year 2020)
If rollers are present in the access points, "YES" must be selected.
The extractor is then positioned 1.25 mm (0.049") higher in the access point with rollers than for the other carriers. In addition, the shelves are moved into the end position more slowly when brought to the access point.
- ◆ YES [MAX. SHELF LOAD > 700 KG / 1544 LBS]
-> SEE LIFT TYPE PLATE
(Up to model year 2020)
If rollers are present in the access points, "YES" must be selected.
The extractor is then positioned 2.5 mm (0.098") higher in the access point with rollers than for the other carriers. In addition, the shelves are moved into the end position more slowly when brought to the access point.

If "YES" has been selected and multiple access points are present:

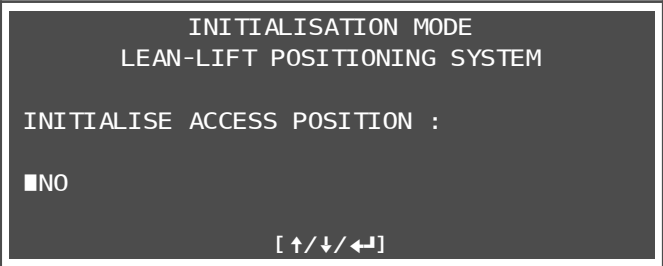
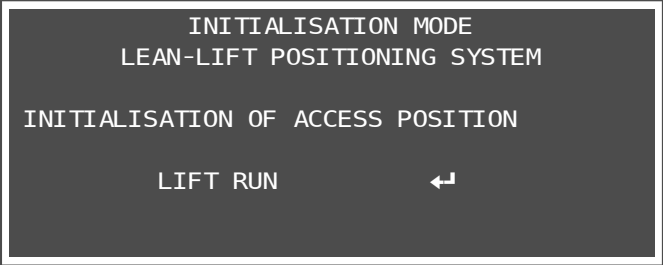
At each access point <n>:

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



3

Positioning

Description of the operator prompts	Example screenshot
Initialise access position  - Press the [↑] / [↓] key to select "YES" or "NO". - Press the [↵] key.	- The horizontal drive of the access point must be in the basic position at the time, i.e. proximity switches B10 and B11 must switch and there must be no shelf on the extractor. - Before the access position is initialised, a synchronisation run is carried out.  Description By driving to the access position, the position of the access point (number of the vertical carrier and position value) is determined. This enables exact positioning of the extractor for the front carrier positions.
If "YES" has been selected: Perform synchronisation run - Press the [↵] key. Caution: The [↵] key starts a lift run! - A synchronisation run is carried out.	 Description The extractor first drives down to a reference position. Then, it moves upwards until the second-to-next carrier position on the front and rear sides of the lift is detected. The positioning system synchronises itself by these carrier positions.

3 Positioning

Description of the operator prompts



- Press the key **[↕↑]** / **[↕↓]** to move the extractor vertically onto the access carrier.
Caution: [↕↑] / [↕↓] key starts a lift run!
The extractor must be positioned such that a shelf can be transported level between the extractor and access point. In doing so, ensure that the shelf rollers are arranged next to the plastic sliders of the bottom of the shelf. For more information, refer to the table below.
 - Press the **[←]** key.
- The vertical position to which the extractor is driven is assigned to the access point and saved.

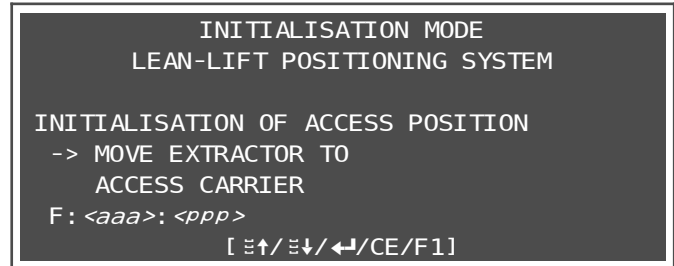
Extractor equipment	Access point equipment	Extractor positioning
Shelf slide rail	Shelf slide rail	The shelf slide rails of the extractor must be set to the same height as the shelf slide rails of the access point.
Shelf slide rail	Shelf rollers	The shelf slide rails of the extractor must be set to 1 position value (=1.25 mm/0.049") lower than the shelf rollers of the access point.
Shelf rollers	Shelf slide rail	The shelf slide rollers of the extractor must be set to 1 position value (=1.25 mm/0.049") higher than the shelf slide rails of the access point.
Shelf rollers	Shelf rollers	The shelf slide rollers of the extractor must be set to the same height as the shelf slide rollers of the access point.



Example screenshot

Note on positioning using the **[↑]** / **[↓]** keys:

- The extractor must not actuate the limit switches on the top and bottom ends of the lift. If it does, the extractor can only resume travel when the actuated switch has been bypassed.



The front side is the side where access point 1 is located. The rear side is the opposite side.

<aaa> = Carrier number of the front vertical position sensor

<ppp> = Position value of the front vertical position sensor

Note on optional electrical equipment "High-speed door":

- The high-speed door must be closed for a vertical run to be possible.
- The **[F1]** key can be used to open the high-speed door in order to check the positioning of the extractor.

Note on optional electrical equipment "Lift run only with door closed"

- The sliding door must be closed for a lift run to be possible.
- The **[F1]** key can be used to open the sliding door in order to check the positioning of the extractor.

Description of the operator prompts



Example screenshot

- The horizontal drive of the access point must be in the basic position at the time, i.e. proximity switches B10 and B11 must switch and there must be no shelf on the extractor.

3 Positioning

Description of the operator prompts

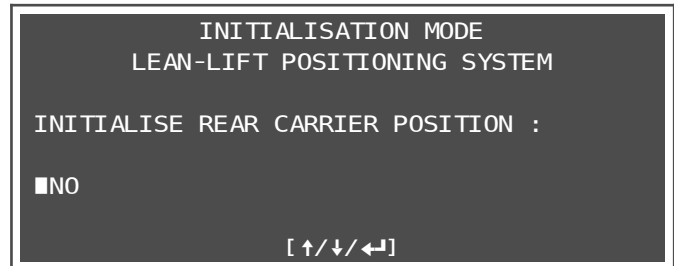
Initialise rear carrier position

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



- Press the [↕] / [↕] key to move the extractor vertically onto a rear carrier.
Caution: [↕] / [↕] key starts a lift run!
The extractor must be positioned such that a shelf can be transported level between the extractor and slot increment shelf 75 / 90 / 125 millimetres (2.952"/3.543"/4.921"). In doing so, ensure that the shelf rollers are arranged next to the plastic sliders of the bottom of the shelf. For more information, refer to the table below.
 - Press the [←] key.
- The rear vertical position to which the extractor has been driven is accepted.

Example screenshot

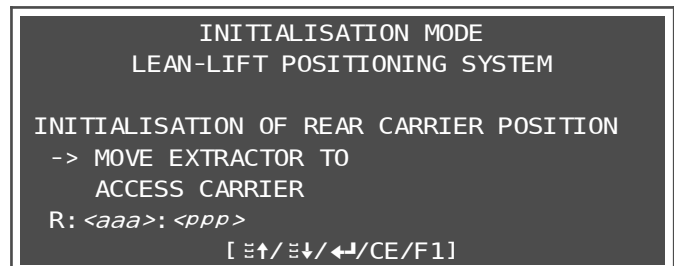


Description

Driving to the rear carrier position enables exact positioning of the extractor for the rear carrier positions.

Note on positioning using the [↑] / [↓] keys:

- x The extractor must not actuate the limit switches on the top and bottom ends of the lift. If it does, the extractor can only resume travel when the actuated switch has been bypassed.



The front side is the side where access point 1 is located. The rear side is the opposite side.

<aaa> = Carrier number of the rear vertical position sensor

<ppp> = Position value of the rear vertical position sensor

Extractor equipment	Extractor positioning
Shelf slide rail	The shelf slide rails of the extractor must be set to the same height as the shelf slide rails of the carrier.
Shelf rollers	The shelf rollers of the extractor must be set to 1 position value (=1.25 mm/0.049") higher than the carrier.

3 Positioning

Description of the operator prompts



Lifts designed for earthquake-prone areas or Eurocode 8

- Press the **[↑]** / **[↓]** key to select "YES [...]" or "NO".
- Press the **[←]** key.

If "YES, ..." has been selected:

- x The lifts are filled from the bottom, even if access points are in the upper area of the lift.

Example screenshot

Note on optional electrical equipment "High-speed door":

- x The high-speed door must be closed for a vertical run to be possible.
- x The **[F1]** key can be used to open the high-speed door in order to check the positioning of the extractor.

Note on optional electrical equipment "Lift run only with door closed"

- x The sliding door must be closed for a lift run to be possible.
- x The **[F1]** key can be used to open the sliding door in order to check the positioning of the extractor.



Options / description
◆ NO
◆ YES, TYPE 1-2 PERMITTED IN ACCORDANCE WITH UBC
◆ YES, TYPE 1-3 PERMITTED IN ACCORDANCE WITH UBC
◆ YES, TYPE 1-4 PERMITTED IN ACCORDANCE WITH UBC
◆ YES, TYPE 1-4S PERMITTED IN ACCORDANCE WITH UBC
◆ YES, EUROCODE 8__, TYPE 2
◆ YES, EUROCODE 8__, TYPE 4
◆ YES, EUROCODE 8 DE, ZONE 1, TYPE 40
◆ YES, EUROCODE 8 DE, ZONE 2, TYPE 40
◆ YES, EUROCODE 8 DE, ZONE 1-2, TYPE 60 ZONE 3 WITH SPECIAL RELEASE
◆ YES, EUROCODE 8 DE, ZONE 1-3, TYPE 40S

3 Positioning

Description of the operator prompts

If "YES, EUROCODE 8" has been selected:

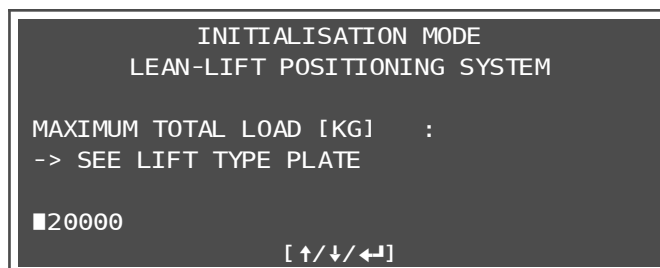
Enter loading code

- Enter loading code.
(27-digit, contains maximum total load, maximum no. of shelves, maximum shelf load and shelf empty weight)
- Press the [↵] key.

Select maximum total load

- Press the [↑] / [↓] key to select the maximum total load (see specification on the lift type plate).
- Press the [↵] key.

Example screenshot



Options	Description
◆ 10000 KG or 22050 LBS	Lean-Lifts have a cross bracket on the upper end for reinforcement for all total loads. This means the uppermost carrier cannot be occupied by a shelf or storage articles. This carrier is blocked automatically.
◆ 15,000 KG or 33,075 LBS	
◆ 20,000 KG or 44,100 LBS (NOT FOR LIFTS WITH THE DRIVE TYPE "HS33", "HS34", "HS43" or "HS44", e.g. lifts with shelf widths >= 3660 millimetres)	
◆ 30,000 KG or 66,150 LBS (Not for lifts with the drive type "HS33", "HS34", "HS43" or "HS44", e.g. lifts with shelf widths >= 3660 millimetres)	
◆ 40000 KG or 88200 LBS	
◆ 60,000 KG or 132,300 LBS	



Note for Lean-Lifts® up to about model year 2015:

The cross bracket on the upper end is not available for Lean-Lifts® with a total load of 20,000 kg (44,092 lbs.) and a height less than 6 m (19' 8.22").

Note on software:

For Lean-Lifts with a model year 2015 or later with a total load of 20,000 kg (44,092 lbs.) and a height of less than 6 m (19' 8.22"), the carrier for the cross bracket is locked automatically on the upper end starting with version MP 12N CPU I V3.1/2 STANDARD.

Technical Description of the MP 14 microprocessor control system

Lean-Lift®
Multi-Space®

3 Positioning

Lifts designed for earthquake-prone areas or Eurocode 8	Possible maximum total load
◆ NO	◆ 20,000 KG or 44,100 LBS. ◆ 30,000 KG or 66,150 LBS ◆ 40,000 KG or 88,200 LBS ◆ 60,000 KG or 132,300 LBS
◆ YES, TYPE 1-2 PERMITTED IN ACCORDANCE WITH UBC ◆ YES, EUROCODE 8 DE, ZONE 1, TYPE 40 ◆ YES, EUROCODE 8 DE, ZONE 2, TYPE 40	◆ 40,000 KG or 88,200 LBS
◆ YES, TYPE 1-3 PERMITTED IN ACCORDANCE WITH UBC	◆ 30,000 KG or 66,150 LBS ◆ 40,000 KG or 88,200 LBS
◆ YES, TYPE 1-4 PERMITTED IN ACCORDANCE WITH UBC ◆ YES, EUROCODE 8 __, TYPE 2 ◆ YES, EUROCODE 8 __, TYPE 4 ◆ YES, EUROCODE 8 DE, ZONE 1-3, TYPE 40S	◆ 20,000 KG or 44,100 LBS. ◆ 30,000 KG or 66,150 LBS ◆ 40,000 KG or 88,200 LBS
◆ YES, TYPE 1-4S PERMITTED IN ACCORDANCE WITH UBC	◆ 10000 KG or 22,050 LBS ◆ 15,000 KG or 33,075 LBS ◆ 20,000 KG or 44,100 LBS. ◆ 30,000 KG or 66,150 LBS
◆ YES, EUROCODE 8 DE, ZONE 1-2, TYPE 60 ◆ ZONE 3 WITH SPECIAL RELEASE	◆ 60,000 KG or 132,300 LBS

3

Positioning

Description of the operator prompts	Example screenshot
	It is possible to block individual carriers in the Lean-Lift® or areas consisting of several adjoining carriers so that shelves cannot be stored there. For "Lifts designed for earthquake-prone areas or Eurocode 8", there are a maximum of 12 repositories or no more than 8 shelf areas that can be locked. It may be necessary, for example, to block carriers for the following reasons: ◆ The wiring cabinet is located inside the usable carrier area, in contrast to the standard arrangement. Five adjoining carriers on one side need to be blocked for this purpose. The standard location for the wiring cabinet is below the usable area on the front side of the lift. ◆ Greater lift heights require cross-bracing for structural strength. Two adjoining carriers on each side need to be blocked for this purpose. ◆ A notice attached to the inside of the wiring cabinet draws attention to blocked carriers in the Lean-Lift®. The carriers actually blocked must correspond to the details on the notice.

Description of the operator prompts	Example screenshot
Initialise blocked carriers • Press the [↑] / [↓] key to select "YES" or "NO". • Press the [↵] key.	x The entry of blocked carriers always relates to the 75 / 90 / 125 millimetre slot increments and not the 37.5 millimetre or 25 millimetre slot increment.

For each carrier area <x> = 1 - 8/12:

- Press the [↑] / [↓] key to select "YES" for the "CHANGE SETTING" PROMPT.
- Press the [↵] key.

3 Positioning

Description of the operator prompts

- Enter the password (default setting "22488").
- Press the **[↵]** key.

- Press the **[↑] / [↓]** key to select the type of carrier blocking.
- Press the **[↵]** key.
- Enter the number of the bottom carrier of the blocked area.
- Press the **[↵]** key.
- Enter the number of blocked carriers.
- Press the **[↵]** key.

Example screenshot

```

      BLOCKED CARRIER AREA <x>
CARRIER BLOCK           : <yyy>
LOWEST CARRIER          : <n1>
NO. OF CARRIERS          : <n2>

CHANGE SETTING          : YES
PASSWORD                 : ■
    
```

```

      BLOCKED CARRIER AREA <x>
CARRIER BLOCK           : ■ <yyy>
LOWEST CARRIER          : <n1>
NO. OF CARRIERS          : <n2>

[ ↑/↓/↵ ]
    
```

Parameters / description

CARRIER BLOCK

The following settings <yyy> are possible:

- ◆ FRONT (the side at which access point 1 is located.)
- ◆ REAR
- ◆ BOTH SIDES
- ◆ NONE (if you want to cancel an area that was previously blocked, select "NONE".)

BOTTOM CARRIER

At this point, enter the lowest carrier <n1> at which the blocked carrier area is to begin. The carriers are numbered from "1" upwards at the front and rear. Carrier 1 is always the lowest usable carrier.

NO. OF CARRIERS

At this point, enter the number of adjoining carriers <n2> of the blocked area.

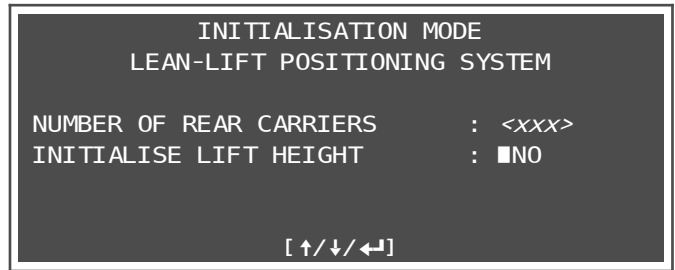
3 Positioning

Description of the operator prompts

Initialise lift height

- The number of rear carriers <xxx> is displayed.
- The initialisation of the lift height cannot be carried out until the position sensors have been correctly adjusted.
- Press the [↑] / [↓] key to select "YES" or "NO".

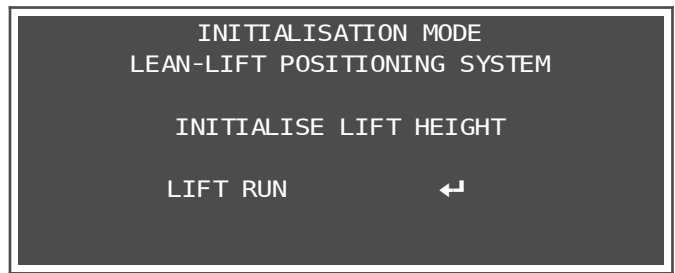
Example screenshot



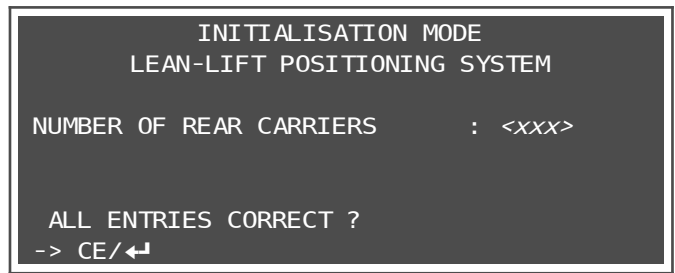
Parameters / description
INITIALISE LIFT HEIGHT The MP control system measures the height of the lift by sending the extractor down and up the lift automatically. If "YES" is selected, the extractor first travels downwards to carrier "1" and then upwards to the uppermost carrier. At the same time, the positioning sensor system is tested over the entire height of the lift. If the positioning sensors are not mounted correctly on the extractor, a synchronisation run is started.

If "YES" has been selected:

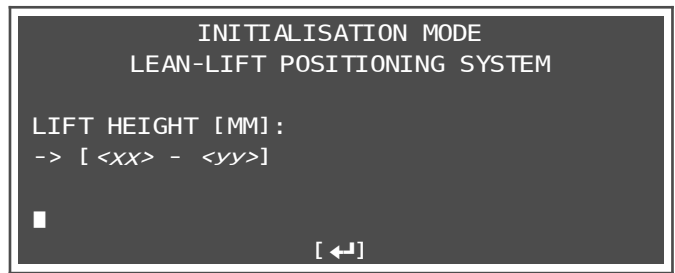
- Press the [↵] key.
Caution: The [↵] key starts a lift run!
- The lift height is measured and saved.



- The lift height has been determined.
- The number of rear carriers <xxx> is displayed.
- Press the [↵] key.



- Enter lift height in millimetres.
See order confirmation.
- Press the [↵] key.



<xx> = Minimum value
<yy> = Maximum value

3

Positioning

Description of the operator prompts

Example screenshot



- x The following prompt appears only for lifts:
- with lifts designed for earthquake-prone areas or Eurocode 8 to "NO"
 - with lift height > 10 metres
 - or
 - with lift height > 8 metres and shelf width 840 millimetres / shelf width 635 millimetres
 - or
 - with lift width > 8 metres and shelf width 840 millimetres / shelf width 825 millimetres

Customer-provided connection between lift and building

- Press the [↑] / [↓] key to select the connection.
- Press the [↵] key.

INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

CUSTOMER-PROVIDED CONNECTION BETWEEN LIFT
AND BUILDING:

FLOOR ANCHORING PROVIDED BY OWNER/OPERATOR
[↑/↓/↵]

Options / description
◆ FLOOR ANCHORING PROVIDED BY OWNER/OPERATOR (code-protected)
◆ ANCHORING PROVIDED BY OWNER/OPERATOR

If "FLOOR ANCHORING PROVIDED BY OWNER/OPERATOR" has been selected:
Enter code prompt for conversion to "FLOOR ANCHORING PROVIDED BY OWNER/OPERATOR"

- ➔ Commission number of the lift is displayed as shown on the type plate.
- Enter the code specific to the lift.
The code is kept in the documentation folder "Hänel Rotomat® / Lean-Lift® / Multi-Space® Technical Documentation".
 - Press the [↵] key.

INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
FLOOR ANCHORING PROVIDED BY OWNER/OPERATOR

COM. NO. : < Commission number of lift >
CODE : ■
-> DOCUMENTATION FOLDER
[CE/↵]

3 Positioning

Description of the operator prompts

Adjusting the number of article height measurement light barriers

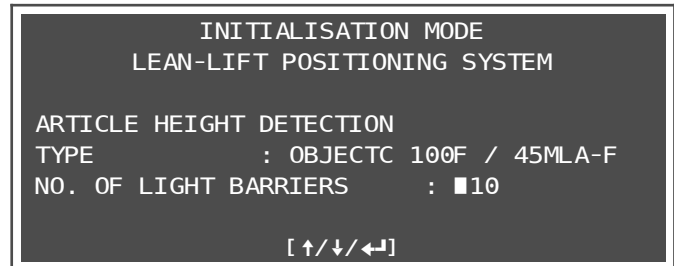
- Enter the number of light barriers.
- Press the [↵] key.

Plausibility check of number of light barriers for article height measurement in relation to access opening

Based on the access opening and the slot increment, the number of light barriers entered for article height measurement is checked for plausibility.

- If the entered number of light barriers is too large, the message displayed on the right appears.
- Check the entries.

Example screenshot



Parameters / description

TYPE

- ◆ LVH800 (Version is discontinued)
- ◆ OBJECTC 100F / 45MLA-F

NO. OF LIGHT BARRIERS

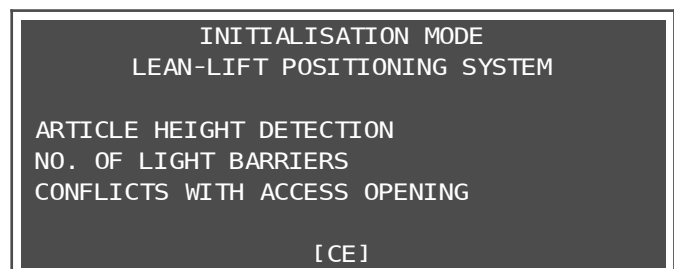
A vertical, multi-beam light barrier system at the crossover point from the access opening to the extractor shaft measures the article height.

The number of light barrier pairs is on a sticker on the height detection power supply unit or can be found in the order confirmation.

Caution: The DIP switches of height detection system B1 must be set according to the slot increment and number of light barriers.

The number of light barrier pairs actually present or a lower number must be entered. The maximum stored article height can be further limited if you enter a lower number.

Caution: The number entered must never be greater than the number of light barrier pairs actually present.



3

Positioning

Description of the operator prompts	Example screenshot
Initialising the supplementary feature "Shelf ejection" - Press the [↑] / [↓] key to select "YES" or "NO". - Press the [←] key.	INITIALISATION MODE LEAN-LIFT SUPPLEMENTARY FEATURES AUTOMATIC SHELF EJECTION : ■NO [↑/↓/←] ➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®".
Initialising the supplementary feature "Carriers with power socket" - Press the [↑] / [↓] key to select "YES" or "NO". - Press the [←] key.	INITIALISATION MODE LEAN-LIFT SUPPLEMENTARY FEATURES CARRIERS WITH POWER SOCKET : ■NO [↑/↓/←] ➤ See the "Supplementary Description of the Shelves With Power Socket Microprocessor Control System MP 14 Lean-Lift®".
Initialising the supplementary feature "Guide rails" At each access point <n>: - Press the [↑] / [↓] key to select "YES" or "NO". - Press the [←] key.	INITIALISATION MODE LEAN-LIFT SUPPLEMENTARY FEATURES GUIDE RAILS AVAILABLE : AT ACCESS POINT <n>: ■NO [↑/↓/←] Description GUIDE RAILS AVAILABLE Guide rails allow the shelves to be pulled out of the access point. In a Lean-Lift® with multiple access points, they enable articles to be stored in or retrieved from a shelf that has been pulled out while a lift run is executed at the same time for another access point. For safety reasons, it is not possible to execute a lift run if a shelf is located in another access point.

3 Positioning

Description of the operator prompts

Initialising the supplementary feature "Shelf weighing device"

- Press the [↑] / [↓] key to select "YES [...]" or "NO".
- Press the [←] key.

Example screenshot



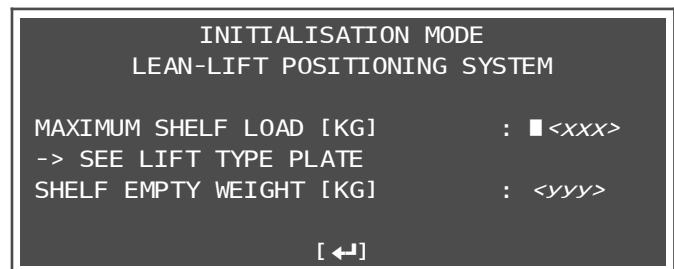
Options / description

- ◆ NO
- ◆ YES [IN THE ACCESS POINT]
- ◆ YES [ON THE EXTRACTOR]
(Version is discontinued)

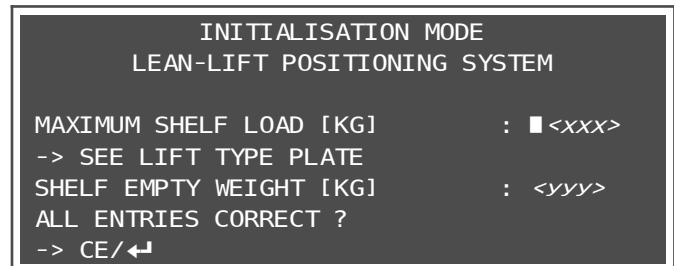
- Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®".

Enter maximum shelf load and shelf empty weight

- Enter maximum shelf load (see specification on the lift type plate).
<xxx>: 1 - 1000 KG or 2205 LBS
- Press the [←] key.
- Enter the shelf empty weight (see annex Power Supply and Foundation Plan).
<yyy>: 1 - 255 KG or 562 LBS
Round decimal values up to the next higher integer value.
- Press the [←] key.



- Check entries and unit of measure and correct if necessary.
- Press the [←] key.



3 Positioning

Description of the operator prompts



Plausibility check

The blocked carrier input undergoes a plausibility check based on the maximum total load, the lift height and the maximum shelf load.

→ In case of a conflict, one of the adjacent messages appears.

- Re-enter the data.

Possible message for lifts in the version for earthquake-prone areas permitted in accordance with UBC.

Possible message for lifts in the version for earthquake-prone areas according to EUROCODE 8.

Possible message for lifts in the version for earthquake-prone areas according to EUROCODE 8.

Example screenshot

- x On lifts without the supplementary feature "Shelf weighing device," these entries are used to monitor the shelf number limit. See Chapter 4.3.6 on page 176.
- x If a figure that is too large is entered, the message "ENTRY IS INVALID -> CE" is displayed.
- x The message "ENTRY IS INVALID -> CE" is also displayed if the max. shelf load conflicts with drive type and the shelf size.

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

MAXIMUM TOTAL LOAD
CONFLICTS WITH
BLOCKED CARRIERS

[CE]
```

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

MAXIMUM TOTAL LOAD IN CASE OF A CONFLICT
FOR LIFTS DESIGNED FOR EARTHQUAKE-
PRONE AREAS, LIFT HEIGHTS,
SHELF SIZES OR BLOCKED CARRIERS

[CE]
```

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

MAXIMUM TOTAL LOAD IN CASE OF A CONFLICT
LIFT DESIGN ACCORDING TO EUROCODE 8,
LOADING CODE OR BLOCKED CARRIERS

[CE]
```

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

MAXIMUM SHELF LOAD
CONFLICTS WITH
LOADING CODE

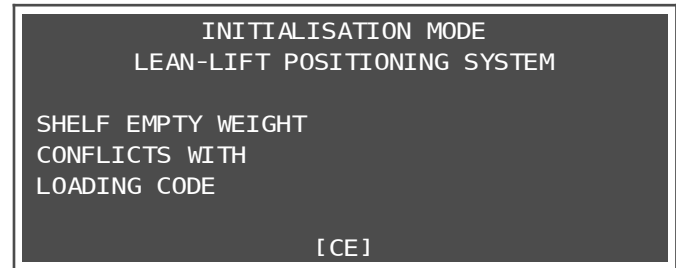
[CE]
```

3 Positioning

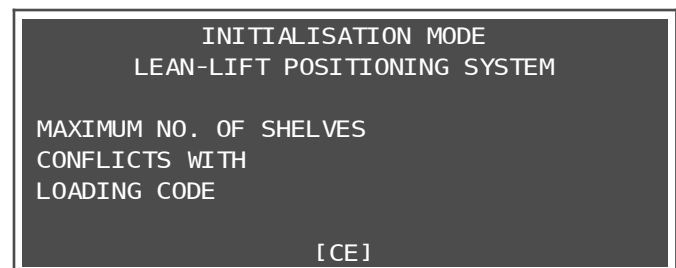
Description of the operator prompts

Possible message for lifts in the version for earthquake-prone areas according to EUROCODE 8.

Example screenshot



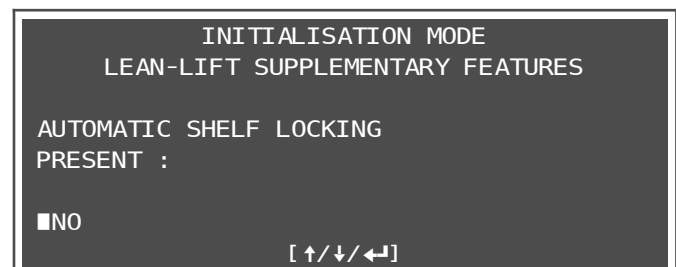
Possible message for lifts in the version for earthquake-prone areas according to EUROCODE 8.



x This prompt does not appear if guide rails are present.

Initialising the "Automatic Shelf Locking" supplementary feature

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



- See the "Supplementary Description of the Automatic Shelf Locking for Operation with High Lift Truck or Forklift Truck Microprocessor Control System MP 14 Lean-Lift®"

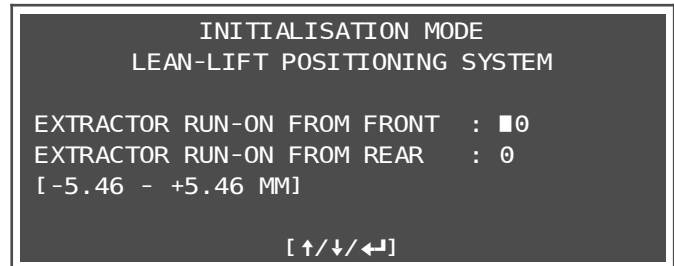
3 Positioning

Description of the operator prompts

Set extractor run-on

- Press the [↑] / [↓] key to select extractor run-on from the front.
- Press the [←] key.
- Press the [↑] / [↓] key to select extractor run-on from the rear.
- Press the [←] key.

Example screenshot



Description

It is possible to set the run-on when a shelf is pulled onto the extractor so that the shelf is accurately centred on the extractor when the extractor has stopped.

The run-on can be set separately for the front and the rear. The front is the side where access point 1 is located.

The following values can be set for lifts with a shelf width less than 3660 millimetres:

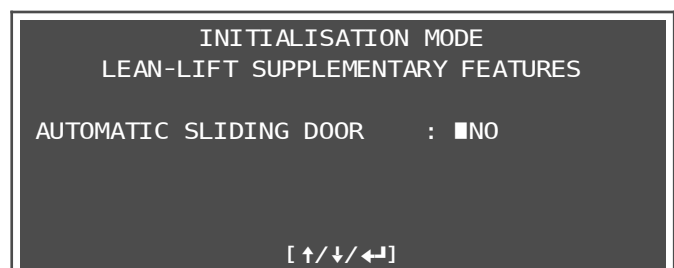
- ◆ -5,46
- ◆ -3,64 -: When pulling onto the extractor, it stops earlier
- ◆ -1,82
- ◆ 0
- ◆ +1,82 +: When pulling onto the extractor, it stops later
- ◆ +3,64
- ◆ +5,46

The following values can be set for lifts with a shelf width of 3660, 4060 or 4460 millimetres:

- ◆ -7,44
- ◆ -4,96 -: When pulling onto the extractor, it stops earlier
- ◆ -2,48
- ◆ 0
- ◆ +2,48 +: When pulling onto the extractor, it stops later
- ◆ +4,96
- ◆ +7,44

Activate automatic sliding door

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"

3 Positioning

Description of the operator prompts

Activating the requisition processing strip

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Activate LED matrix

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



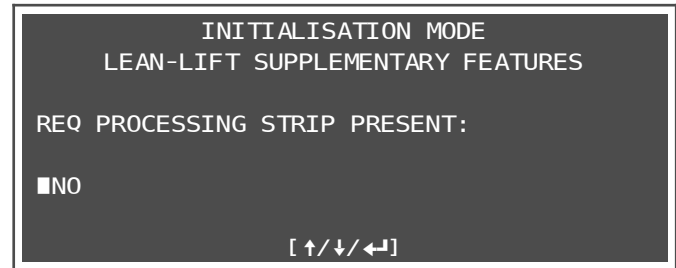
Initialising the supplementary feature "Lift safety equipment is not triggered during standstill"

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

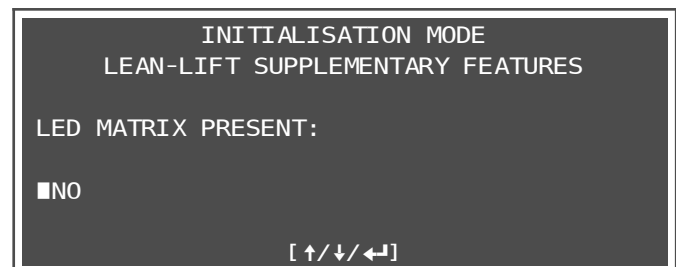
Initialise the electrical equipment ECO-MODE

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Example screenshot

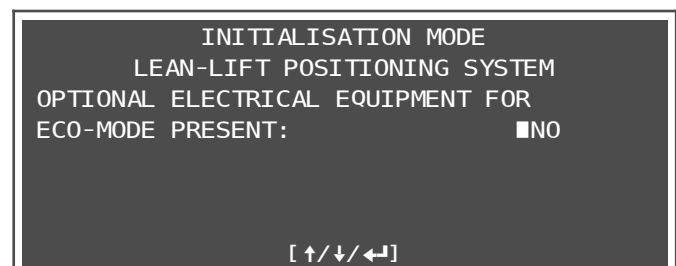
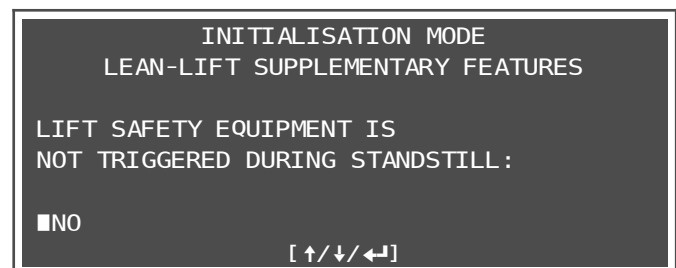


- Refer to the "Supplementary Description of the Requisition Processing Strip Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"



- See the "Supplementary Description of the LED Matrix Microprocessor Control System MP 14 Lean-Lift®"

- x The following prompt appears only for lifts that do *not* have the following supplementary features:
 - Multiple access points
 - Automatic shutters
 - High-speed door
 - Automatic shelf ejection



3 Positioning

Description of the operator prompts

Code prompt for switch from "NO" to "YES"

- ➔ Commission number of the lift is displayed as shown on the lift type plate.
- Enter the code specific to the lift.
The code for activating the supplementary feature is in the documentation folder "Hänel Rotomat® / Lean-Lift® / Multi-Space® Technical Documentation".
- Press the [↵] key.



Enter the number of cameras

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.

Example screenshot

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM
OPTIONAL ELECTRICAL EQUIPMENT FOR
ECO-MODE PRESENT: YES
COM. NO. : < Commission number of lift >
CODE : ■
-> DOCUMENTATION FOLDER
[CE/↵]
```

- x The following prompt appears only if the MP multi-unit network is linked via Ethernet.
- x The following prompt appears only with program version MP 14-S/H[MP 14-S]/H[MP 100D-5].

```
INITIALISATION MODE
LEAN-LIFT POSITIONING SYSTEM

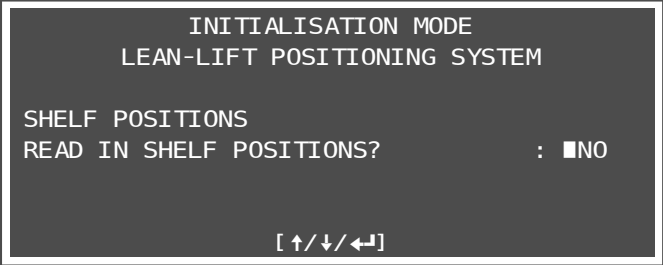
NUMBER OF CAMERAS PER ACCESS : ■0
-> [0 - 2]

[CE/↵]
```

- Refer to the "Supplementary Description of the Camera Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

3

Positioning

Description of the operator prompts	Example screenshot
 x The following prompt appears only if the shelf memory is empty. This is the case when the unit is first put into service, after the shelf memory is formatted or if all shelves have been removed. When the automatic shelf read-in function has been executed, the shelf numbers in the shelf data memory no longer agree with the shelf numbers of any article data records that already exist.  Recommended: Read out the shelf data and edit the shelf numbers so that they agree with the article master data.	 Description For carrier slot increment 75 / 90 / 125 millimetres: The extractor drives all the way up the lift from the bottom and tries to pull a shelf out of each carrier. The shelves in the access points are detected by proximity switches B20, B21. The MP control system notes the shelf position and assigns a shelf number from "1" upwards. For carrier slot increment 37.5 millimetres and 25 millimetres: The extractor drives all the way up the lift from the bottom and stops at each slot. The proximity switches B14 and B15 detect if there is a shelf present. The top shelves at the front and rear are detected by pulling them out. When they are pulled out, it is possible for the drive catch to be blocked if the shelf is stored one slot lower. This is monitored by a timer. The shelves in the access points are detected by proximity switches B20, B21. The MP control system notes the shelf position and assigns a shelf number from "1" upwards.

3 Positioning

If "YES" has been selected:

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

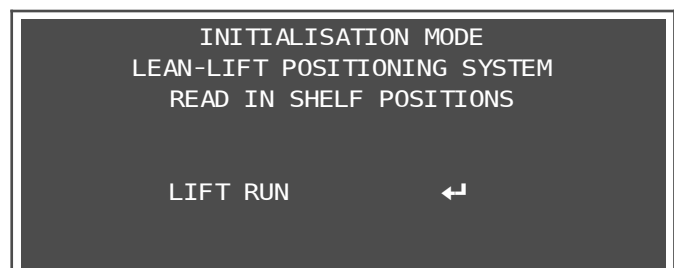
The test run is not started then.



- Press the [↵] key.

Caution: The [↵] key starts a lift run!

→ The shelf positions are read in and saved.



3 Positioning

3.3 Positioning in Multi-Space® operating mode

Description of the operator prompts

Select the drive type

- Press the [↑] / [↓] key to select the drive type.
- Press the [←] key.

x For the drive type, see "Type" on the lift type plate.

→ Example for option "MS21":

Type MULTI-SPACE® 1300-825 MS21

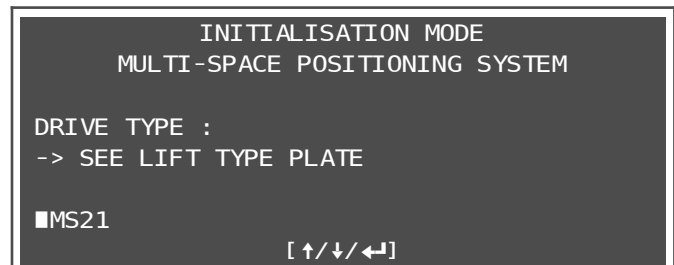


Select the drive type

- Press the [↑] / [↓] key to select horizontal drive.
- Press the [←] key.

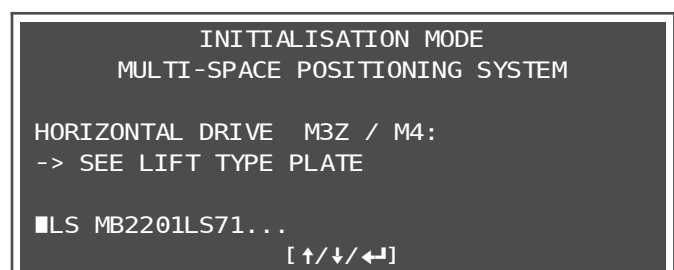
x For the drive type, see "Type" on the lift type plate.

Example screenshot



Options	
◆ MS21	◆ MS31
◆ MS22	◆ MS32
◆ MS23	◆ MS33
◆ MS24	◆ MS34
◆ MS25	◆ MS36
◆ MS26	◆ MS37
◆ MS27	◆ MS38
◆ MS28	

x The following prompt appears starting from software MP 12N CPU I V 4.3/8 STANDARD for lifts older than manufacturing week 25, year of manufacture 2025 in order to be able to use the current drive in an old lift in the event of a repair.



Options
◆ LS MB2201LS71... (up to manufacturing week 25, model year 2025)
◆ SEW K19DRN...

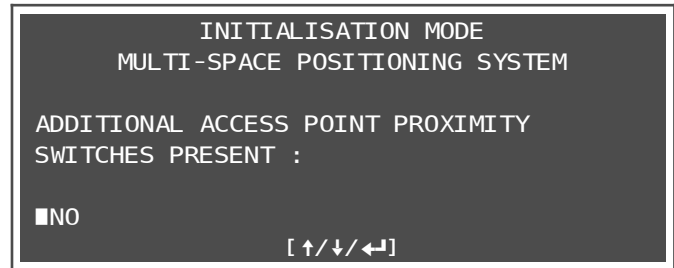
3 Positioning

Description of the operator prompts

Initialise access proximity switches B26, B27

- Press the [↑] / [↓] key to select Access point proximity switch.
- Press the [←] key.

Example screenshot



Options / description

◆ NO

◆ YES [B26, B27]

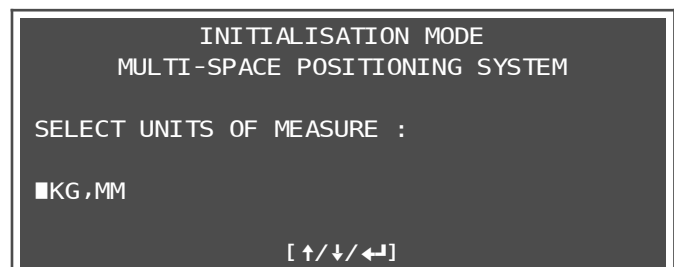
There are lifts that are fitted with additional proximity switches B26 and B27 (redundancy for B20 and B21) in the access point. This equipment provides increased availability without waiting for the service personnel.

The deactivation of a pair of proximity switches in the redundancy system means that in the event of a failure, the lift can continue to be operated.

The additional proximity switches B26 and B27 are present for lifts with the option "Partially redundant control" (corresponds to "Equipment for emergency operation").

Select units of measure

- Press the [↑] / [↓] key to select the unit of measure.
- Press the [←] key.



Options

Description

◆ KG, MM

All weights and measures are then displayed and entered in the units selected.

◆ LBS, INCH

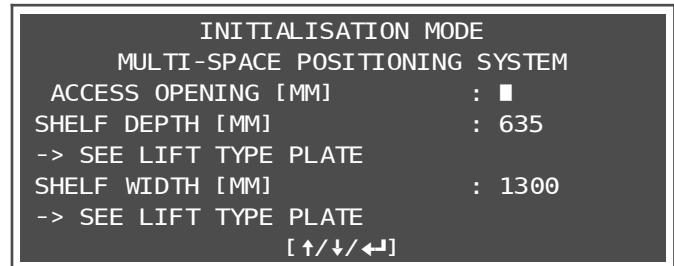
3 Positioning

Description of the operator prompts

Set the access opening, shelf depth and width

- Enter the access opening.
- Press the [←] key.
- Press the [↑] / [↓] key to select the shelf depth (see specification on the lift type plate).
- Press the [←] key.
- Press the [↑] / [↓] key to select the shelf width (see specification on the lift type plate).
- Press the [←] key.

Example screenshot



Parameters / description

ACCESS OPENING

The access opening is the distance between the lower and upper edge of the access opening. The default value is 900 mm (35.433").

- x If a lift with multiple access points has multiple access heights, the additional height is provided by manual carrier blocking. If such a lift version is present, check whether this additional carrier block has been carried out.

SHELF DEPTH

The following shelf depths can be set:

- ◆ 635 MM or 200 INCH/8
- ◆ 825 MM or 260 INCH/8
- ◆ 1270 MM or 400 INCH/8
- ◆ 1047 MM or 330 INCH/8

Caution: If you select a shelf depth that is too large, this could cause faulty positioning of the horizontal drive and shelf collisions. If you select a shelf depth that is too small, the horizontal shelf positioning is slowed down.

SHELF WIDTH

The shelf width determines the horizontal stop position of the extractor.

The following shelf widths can be set:

- ◆ 1300 MM or 410 INCH/8
- ◆ 1640 MM or 515 INCH/8
- ◆ 2060 MM or 650 INCH/8
- ◆ 2460 MM or 775 INCH/8
- ◆ 1860 MM or 585 INCH/8

3 Positioning

Description of the operator prompts

- Check entries and unit of measure and correct if necessary.
- Press the [↩] key.

Example screenshot

```
INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM
ACCESS OPENING [MM]      : < Height >
SHELF DEPTH [MM]         : < Depth >
-> SEE LIFT TYPE PLATE
SHELF WIDTH [MM]         : < Width >
ALL ENTRIES CORRECT ?
-> CE/↩
```

Initialise service door at a special height

- Press the [↑] / [↓] key to select "YES" or "NO".
See order confirmation.
- Press the [↩] key.

```
INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM

SERVICE DOOR AT A SPECIAL HEIGHT : ■NO

[↑/↓/↩]
```

If "Service door at a special height" has been initialised to "YES":

- Enter service door special height.
Enter the position of the service doors in accordance with the order confirmation.
- Press the [↩] key.

```
INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM

SERVICE DOOR AT A SPECIAL HEIGHT : YES
SERVICE DOOR SPECIAL HEIGHT [MM] : ■
-> EXPECTED RANGE [0 - 600 MM (23.622" )]

[↩]
```

If "Service door at a special height [mm]" has been initialised greater than 600 mm:

- Press the [↩] key.
- Service door special height [mm] is saved.

```
INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM

SERVICE DOOR AT A SPECIAL HEIGHT : YES
SERVICE DOOR SPECIAL HEIGHT [MM] : ■
-> EXPECTED RANGE [0 - 600 MM (23.622" )]
ALL ENTRIES CORRECT ?
-> CE/↩
```

3

Positioning

Description of the operator prompts

Frequency converter with RS485 connection

- Press the [↑] / [↓] key to select the frequency converter connection.
- Press the [←] key.

→ If "YES" is selected, the RS485 connection is tested.
In case of an error, the error message "SYSTEM ERROR RS485" is displayed.

Example screenshot

INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM

FREQUENCY CONVERTER WITH RS485 :

■ NO

[↑ / ↓ / ←]

Options / description
◆ NO
◆ YES

3 Positioning

Description of the operator prompts



Drive extractor to home position

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

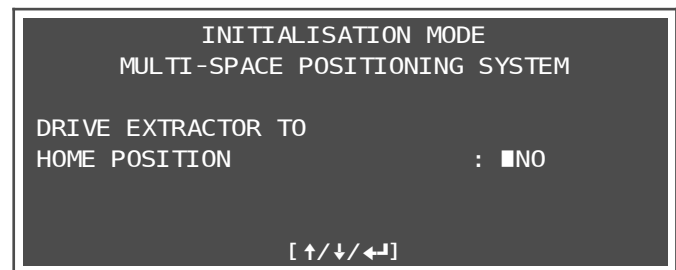
If "YES" has been selected:

Move shelf out forward

- Press the [↑] / [↓] key to select "YES" or "NO".
The front is the side where access point 1 is located.
The right-hand drive side moves counter-clockwise as seen from above if "YES" is selected, and clockwise if "NO" is selected.
- Press the [←] key.

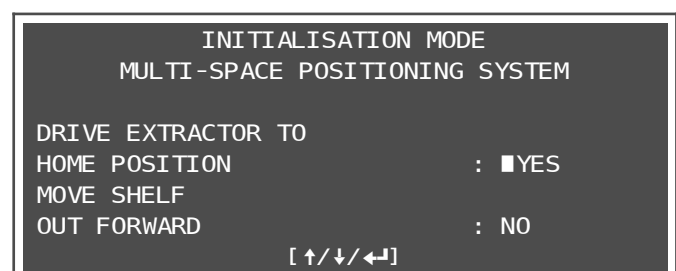
Example screenshot

- x The following prompt appears only if the shelf memory is empty. This is the case when the unit is first put into service, after the shelf memory is formatted or if all shelves have been removed.
- x The extractor must also be driven to home position when first put into service and after replacing the MP 12N CPU I without data transfer (EEPROM). Even if the extractor is already in basic position, this must be done in order to reset the internal run status.
- x **Caution:** A shelf can be pushed out only if the extractor is standing at a free carrier position.



Description

The extractor is the transport unit in the lift shaft. It consists of a drive unit, drive chains and drive catches, among other components. When the extractor is in the basic position, the drive catches on the left and right horizontal chain on the extractor must be pointing to the respective side walls of the lift and be positioned exactly above the proximity switches B10/B11 on one side.



Description

This prompt determines the direction in which the extractor drive catches run to the basic position. This allows a shelf that happens to be on the extractor to be pushed into a carrier. The direction must be selected so that a shelf is pushed into a free carrier, or so that if the extractor is empty the drive catches cannot bump into a shelf at the same height or an access point.

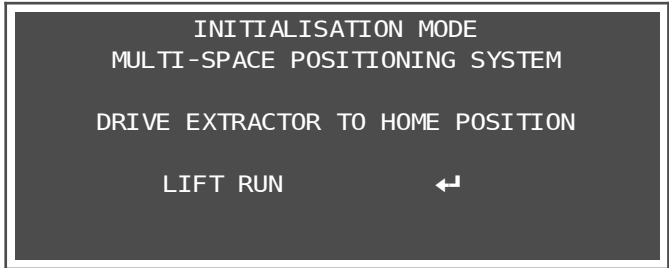
3

Positioning

Description of the operator prompts

Example screenshot

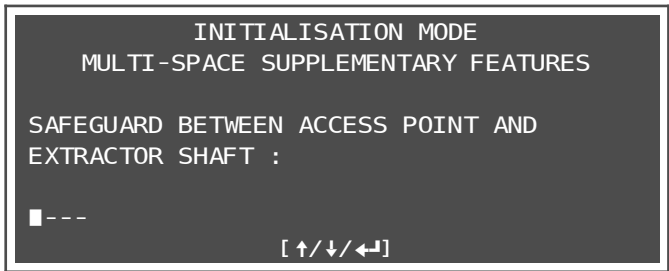
- Press the [↵] key.
Caution: The [↵] key starts a lift run!
 → Extractor is driven to home position.



x The following prompt appears only with one access point. For multiple access points, a high-speed door is always present.

Select safeguard between access point and extractor shaft

- Press the [↑] / [↓] key to select the safeguard.
- Press the [↵] key.



Options / description	
◆ ---	No safeguard between access point and extractor shaft present.
◆ HIGH-SPEED DOOR	The high-speed door is used to close off the rear opening of the access point to the shaft, in which the extractor moves vertically.

➤ For further details on the high-speed door, refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®".

3

Positioning

Initialise access position

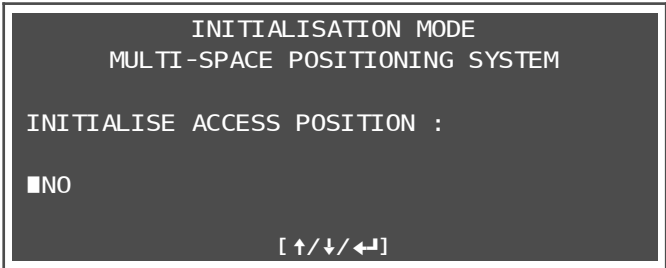


- x The horizontal drive of the access point must be in the basic position at the time, i.e. proximity switches B10 and B11 must switch and there must be no shelf on the extractor.
- x Before the access position is initialised, a synchronisation run is carried out.

Description of the operator prompts

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Example screenshot



Description
By driving to the access position, the position of the access point (number of the lift unit and number of the vertical carrier) is determined. The exact stop positions for the access points and carriers, however, are determined by the adjustment of the interruption angles, which are read in for the service functions when carrying out a synchronisation run.

3 Positioning

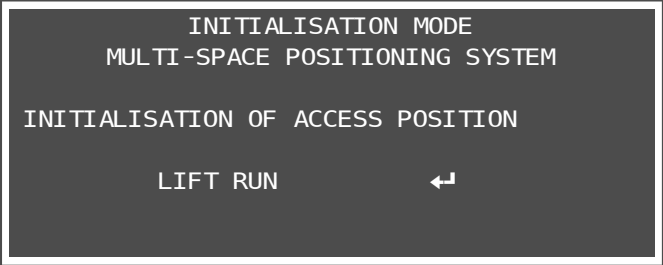
Description of the operator prompts

If "YES" has been selected:

Perform synchronisation run

- Press the [↵] key.
 Caution: The [↵] key starts a lift run!
- A synchronisation run is carried out.

Example screenshot



Description

First, the movement unit is synchronised forwards and back. This process of moving the movement unit forwards and back determines the centre position based on switches S22 and S23. Thus the adjustment of switches S22 and S23 defines the middle position of the movement unit.

Next, vertical synchronisation takes place. To do so, the base carrier drives down to the lower protection zone. Then, it moves upward until the second-to-next carrier position is detected for all vertical sensors. These positions define the absolute positions of the individual vertical sensors.

Then, the horizontal left/right sensor system is synchronised. To do so, the extractor first moves to the left limit switch S24, then right until the fork light barrier B31 on the rear left extractor switches. This position defines the absolute position of the left/right sensor system.

Finally, the carrier positions of the individual front and rear lift units are defined. To do so, horizontal and vertical runs are carried out to read out the positions of the interruption angles on the individual lift units via the fork light barriers B28 to B31.

The carrier positions can be modified subsequently by correcting the interruption angle on the corresponding lift unit, then carrying out a synchronisation run in the service functions.

3 Positioning

Description of the operator prompts



- Press the key **[↑]** / **[↓]** to move the extractor vertically onto the access carrier.
Caution: [↑] / [↓] key starts a lift run!
 - Press the **[+]** / **[-]** key to move the extractor horizontally onto the access carrier.
Caution: [+] / [-] key starts a lift run!
 - Press the **[F1]** key to open or close the high-speed door.
 - Press the **[←]** key.
- ➔ The lift unit and vertical carrier to which the extractor is driven is assigned to the access point and saved.

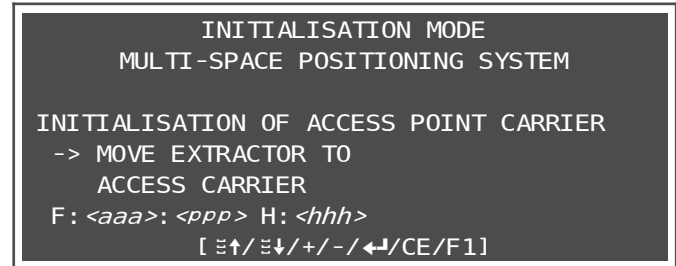
Set vertical position correction

- Press the **[↑]** / **[↓]** key to select vertical position correction **<k>**.
- Press the **[←]** key.

Example screenshot

Note on positioning using the **[↑]** / **[↓]** / **[+]** / **[-]** keys:

- x The extractor must not actuate the limit switches at the top, bottom, left or right ends of the lift. If it does, the extractor can only resume travel when the actuated switch has been bypassed.

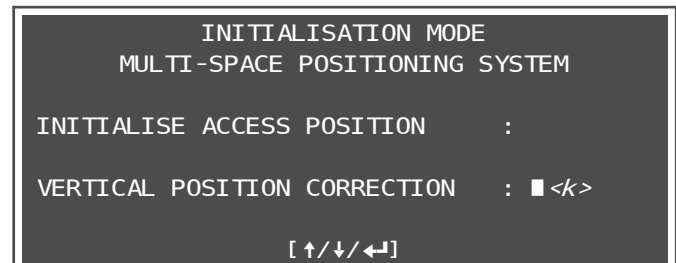


The front side is the side where access point 1 is located. The rear side is the opposite side.

<aaa> = Carrier number of the front vertical position sensor at the extractor position

<ppp> = Position value of the front vertical position sensor at the extractor position

<hhh> = Left/right horizontal position value



Options	Description
◆ -1	The extractor stops 1.25 mm (0.049") lower at the access point.
◆ 0	The extractor stops at the access point without vertical position correction.
◆ +1	The extractor stops 1.25 mm (0.049") higher at the access point.

3

Positioning

Description of the operator prompts

Select maximum total load

- Press the [↑] / [↓] key to select the maximum total load (see specification on the lift type plate).
- Press the [←] key.

Example screenshot

INITIALISATION MODE
MULTI-SPACE POSITIONING SYSTEM

MAXIMUM TOTAL LOAD [KG] :
-> SEE LIFT TYPE PLATE

■40000
[↑/↓/←]

Description

The maximum total load pertains to the entire lift and not the individual lift units.

3 Positioning

It is possible to block individual carriers in the Multi-Space® or areas consisting of several adjoining carriers so that shelves cannot be stored there. Up to 8 carrier areas can be blocked.

It may be necessary to block carriers for the following reasons:

- ◆ The wiring cabinet is located inside the usable carrier area, in contrast to the standard arrangement.
- ◆ Certain lift heights require cross-bracing for structural strength. Two adjoining carriers on each side have to be blocked for this purpose over the entire width of the lift.
- ◆ A notice attached to the inside of the wiring cabinet draws attention to blocked carriers in the Multi-Space®. The carriers actually blocked must correspond to the details on the notice.

Description of the operator prompts

Initialise blocked carriers

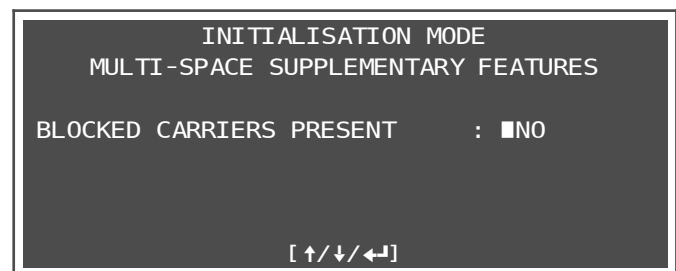
- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



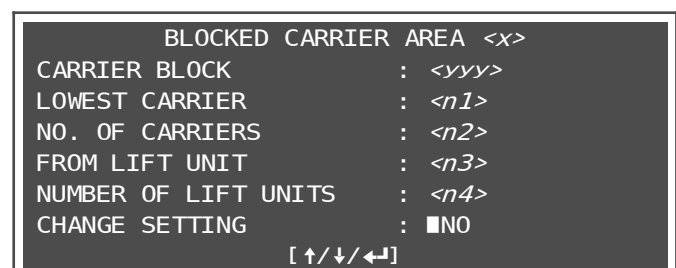
For each carrier area <x> = 1 - 8:

- Press the [↑] / [↓] key to select "YES" for the "CHANGE SETTING" prompt.
- Press the [←] key.

Example screenshot



- x The entry of blocked carriers always relates to the 75 / 90 / 125 millimetre slot increments and **not** the 37.5 millimetre or 25 millimetre slot increment.



3 Positioning

Description of the operator prompts

- Enter the password (default setting "22488").
- Press the [↵] key.

- Press the [↑] / [↓] key to select the type of carrier blocking.
- Press the [↵] key.
- Enter the number of the bottom carrier.
- Press the [↵] key.
- Enter the number of blocked carriers.
- Press the [↵] key.
- Enter the lift unit.
- Press the [↵] key.
- Enter the number of lift units.
- Press the [↵] key.

Example screenshot

```

BLOCKED CARRIER AREA <x>
CARRIER BLOCK           : <yyy>
LOWEST CARRIER          : <n1>
NO. OF CARRIERS          : <n2>
FROM LIFT UNIT           : <n3>
NUMBER OF LIFT UNITS     : <n4>
CHANGE SETTING          : NO
PASSWORD                 : ■
    
```

```

BLOCKED CARRIER AREA <x>
CARRIER BLOCK           : ■ <yyy>
LOWEST CARRIER          : <n1>
NO. OF CARRIERS          : <n2>
FROM LIFT UNIT           : <n3>
NUMBER OF LIFT UNITS     : <n4>

[ ↑/↓/↵ ]
    
```

Parameters / description

CARRIER BLOCK

The following settings <yyy> are possible:

- ◆ FRONT (the side at which access point 1 is located.)
- ◆ REAR
- ◆ BOTH SIDES
- ◆ NONE (if you want to cancel an area that was previously blocked, select "NONE".)

BOTTOM CARRIER

At this point, enter the lowest carrier <n1> at which the blocked carrier area is to begin. The carriers are numbered from "1" upwards at the front and rear. Carrier 1 is always the lowest usable carrier.

NO. OF CARRIERS

At this point, enter the number of adjoining carriers <n2> of the blocked area.

FROM LIFT UNIT (left lift unit as seen from access point 1)

At this point, enter the number of the lift unit <n3> at which the blocked carrier area is to begin.

NUMBER OF LIFT UNITS

At this point, enter the number of adjoining lift units <n4> of the blocked area.

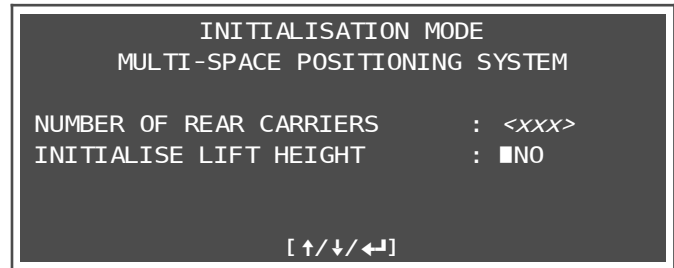
3 Positioning

Description of the operator prompts

Initialise lift height

- The number of rear carriers <xxx> is displayed.
- The initialisation of the lift height cannot be carried out until the position sensors have been correctly adjusted.
- Press the [↑] / [↓] key to select "YES" or "NO".

Example screenshot



Parameters / description

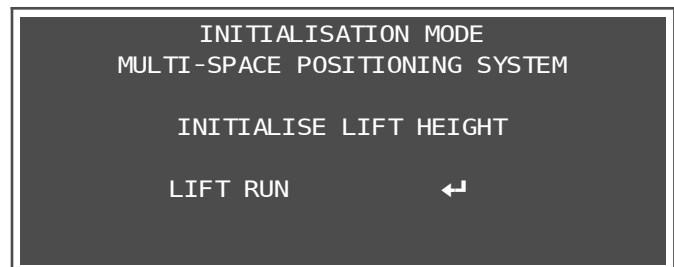
INITIALISE LIFT HEIGHT

The MP control system measures the height of the lift by sending the extractor down and up the lift automatically.

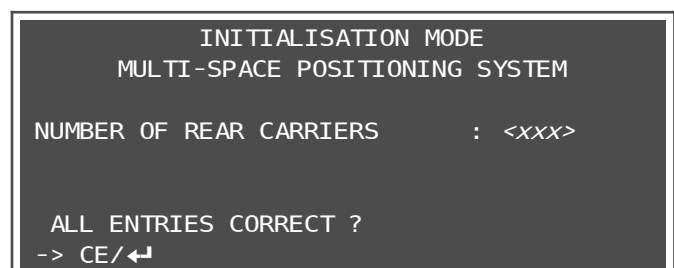
If "YES" is selected, the extractor first travels downwards to carrier "1" and then upwards to the uppermost carrier. At the same time, the positioning sensor system is tested over the entire height of the lift. If the positioning sensors are not mounted correctly on the extractor, a synchronisation run is started.

If "YES" has been selected:

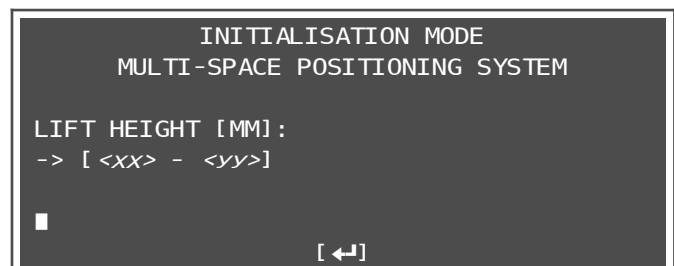
- Press the [←] key.
- Caution: The [←] key starts a lift run!**
- The lift height is measured and saved.



- The lift height has been determined.
- The number of rear carriers <xxx> is displayed.
- Press the [←] key.



- Enter lift height in millimetres.
See order confirmation.
- Press the [←] key.



<xx> = Minimum value

<yy> = Maximum value

3

Positioning

Description of the operator prompts	Example screenshot
Set the number of light barriers of the article height measurement system - Enter the number of light barriers. - Press the [↵] key.	INITIALISATION MODE MULTI-SPACE POSITIONING SYSTEM ARTICLE HEIGHT DETECTION NO. OF LIGHT BARRIERS : ■ [↑/↓/↵] Description A vertical, multi-beam light barrier system at the crossover point from the access opening to the extractor shaft measures the article height. The number of light barrier pairs is on a sticker on the height detection power supply unit or can be found in the order confirmation. Caution: The DIP switches of height detection system B1 must be set according to the slot increment and number of light barriers. The number of light barrier pairs actually present or a lower number must be entered. The maximum stored article height can be further limited if you enter a lower number. Caution: The number entered must never be greater than the number of light barrier pairs actually present.
Plausibility check of number of light barriers for article height measurement in relation to access opening Based on the access opening and the slot increment, the number of light barriers entered for article height measurement is checked for plausibility. ➔ If the entered number of light barriers is too large, the message displayed on the right appears. Check the entries.	INITIALISATION MODE MULTI-SPACE POSITIONING SYSTEM ARTICLE HEIGHT DETECTION NO. OF LIGHT BARRIERS CONFLICTS WITH ACCESS OPENING [CE]

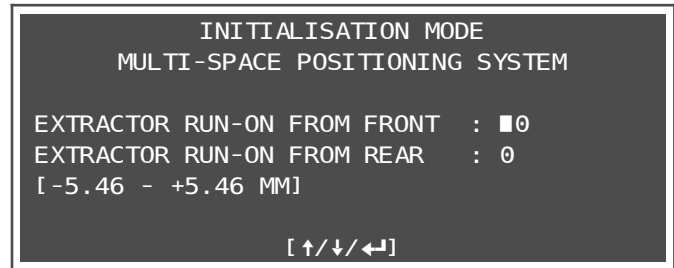
3 Positioning

Description of the operator prompts

Set extractor run-on

- Press the [↑] / [↓] key to select extractor run-on from the front.
- Press the [←] key.
- Press the [↑] / [↓] key to select extractor run-on from the rear.
- Press the [←] key.

Example screenshot



Description

It is possible to set the run-on when a shelf is pulled onto the extractor so that the shelf is accurately centred on the extractor when the extractor has stopped.

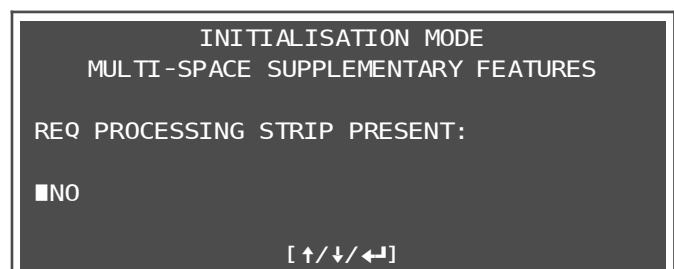
The run-on can be set separately for the front and the rear. The front is the side where access point 1 is located.

The following values can be set:

- ◆ -5,46
- ◆ -3,64 -: When pulling onto the extractor, it stops earlier
- ◆ -1,82
- ◆ 0
- ◆ +1,82 +: When pulling onto the extractor, it stops later
- ◆ +3,64
- ◆ +5,46

Activating the requisition processing strip

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



- Refer to the "Supplementary Description of the Requisition Processing Strip Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"

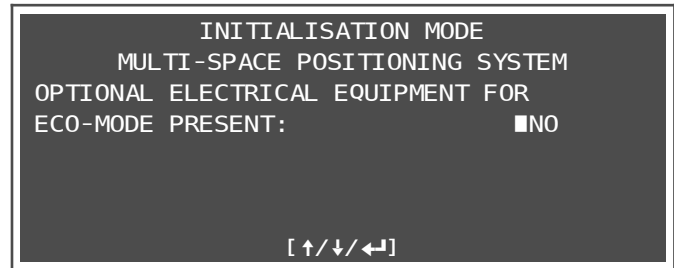
3 Positioning

Description of the operator prompts

Initialise the electrical equipment ECO-MODE

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.

Example screenshot



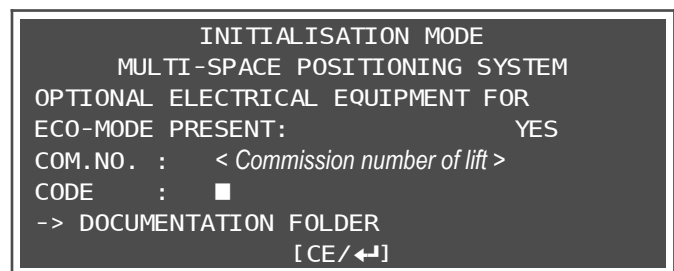
Code prompt for switch from "NO" to "YES"

➔ Commission number of the lift is displayed as shown on the lift type plate.

- Enter the code specific to the lift.

The code for activating the supplementary feature is in the documentation folder "Hänel Rotomat® / Lean-Lift® / Multi-Space® Technical Documentation".

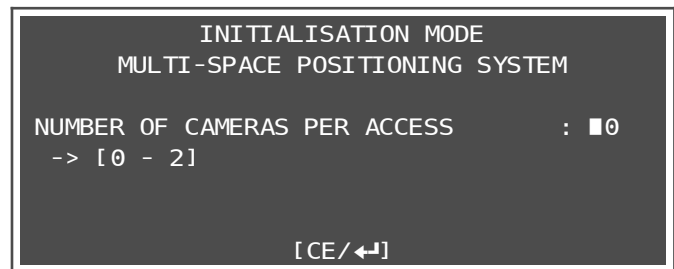
- Press the [↵] key.



- x The following prompt appears only if the MP multi-unit network is linked via Ethernet.
- x The following prompt appears only with program version MP 14-S/H[MP 14-S]/H[MP 100D-5].

Enter the number of cameras

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.



- Refer to the "Supplementary Description of the Camera Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

3 Positioning

Description of the operator prompts

Example screenshot



- x The following prompt appears only if the shelf memory is empty. This is the case when the unit is first put into service, after the shelf memory is formatted or if all shelves have been removed.

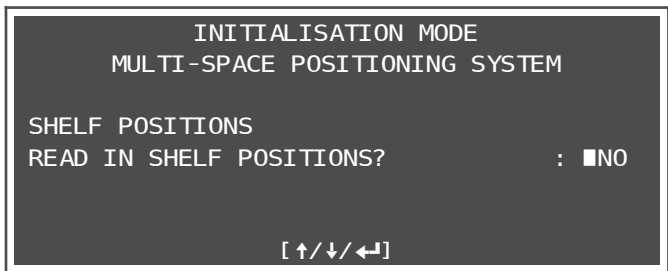
When the automatic shelf read-in function has been executed, the shelf numbers in the shelf data memory no longer agree with the shelf numbers of any article data records that already exist.



Recommended:
Read out the shelf data and edit the shelf numbers so that they agree with the article master data.

Read in shelf positions

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



Description
For carrier slot increment 75 / 90 / 125 millimetres: The extractor drives all the way up the lift from the bottom in the individual lift units and tries to pull a shelf out of each carrier. The shelves in the access points are detected by proximity switches B20, B21. The MP control system notes the shelf position and assigns a shelf number from "1" upwards.
For carrier slot increment 37.5 millimetres and 25 millimetres: The extractor drives all the way up the lift from the bottom in the individual lift units and stops at each slot. The proximity switches B14 and B15 detect if there is a shelf present. The top shelves at the front and rear are detected by pulling them out. It is possible for the drive catches to lock if a shelf is stored one slot lower. This is monitored by a timer. The shelves in the access points are detected by proximity switches B20, B21. The MP control system notes the shelf position and assigns a shelf number from "1" upwards.

3 Positioning

Description of the operator prompts

Example screenshot

If "YES" has been selected:

If you have understood the content and meaning of the instructions:

- Touch the **Content and meaning understood** [↵] key or press the [↵] key.

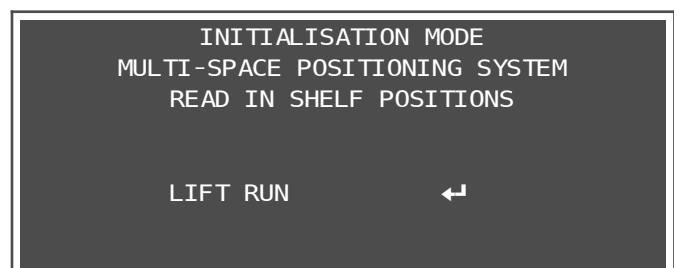
If you have not understood the content and meaning of the instructions:

- Touch the **Cancel** [CE] button or press the [CE] key.

The test run is not started then.



- Press the [↵] key.
Caution: The [↵] key starts a lift run!
→ The shelf positions are read in and saved.



4 System services



Various system parameters can be configured in this menu.



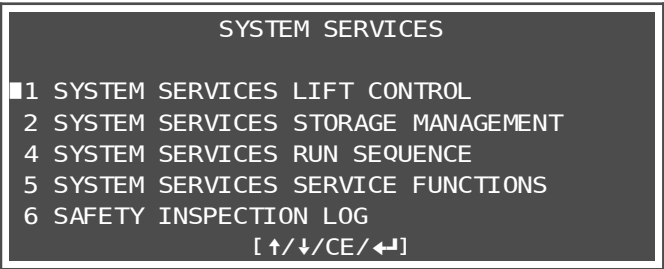
- x Depending on the initialisation, some menu items may not be offered.
- x The password "22488" is factory-assigned for all password prompts (except for the service functions).

Description of the operator prompts

Call up System services

- Press the **[F1]** key.
- The "System services" menu is displayed.

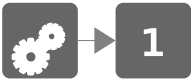
Example screenshot



Menu item	See Chapter	Page
1	4.1	100
2	4.2	117
4	4.3	158
5	4.4	182
6	4.5	183

4 System services

4.1 System services lift control



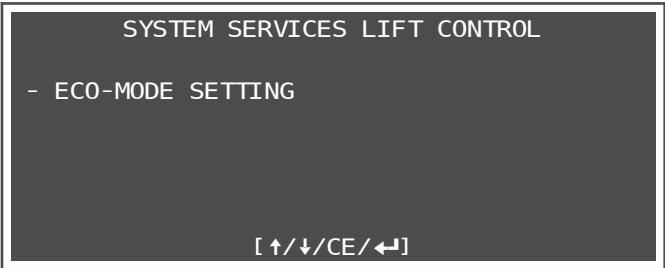
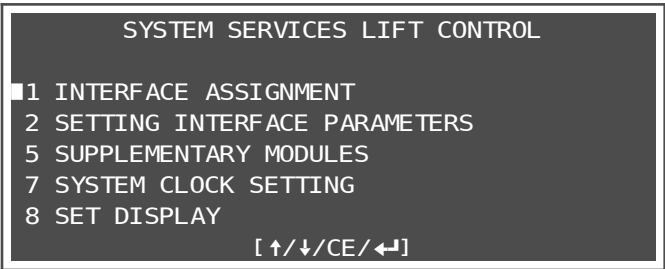
Various system parameters of the lift control system can be configured and retrieved in this menu.

Description of the operator prompts

Call up system services lift control

- Press the **[F1]** key and the **[1]** key.
- The "System services lift control" menu is displayed.

Example screenshot



Menu item	See Chapter	Page
1	4.1.1	101
2	4.1.2	103
5	4.1.3	107
7	4.1.4	110
8	4.1.5	112
-	4.1.6	114

4 System services

4.1.1 Interface assignment



Data can also be read in by connected peripheral devices as an alternative to keyboard input. To allow the MP control system to record and process these inputs correctly, a connected peripheral device must have the correct interface assigned to it.



- x Under the key panel at each access point there are 2x 9-pin RS232 connectors (plugs) and 1x USB connector led to the outside.
Refer also the Installation Instructions "PERIPMP12N".

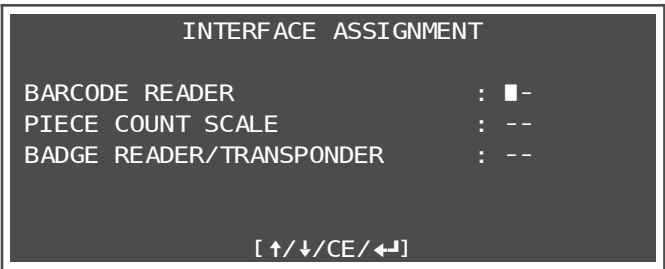
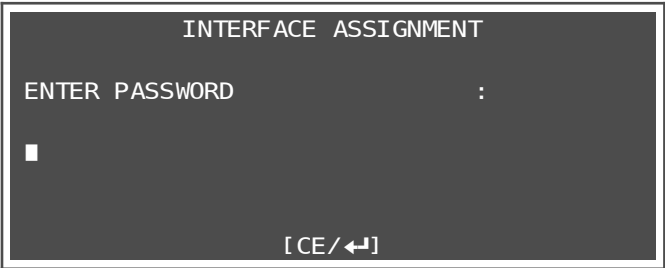
Description of the operator prompts

Interface assignment

- Press the [F1] key, the [1] key and then the [1] key.
- Enter the password (default setting "22488").
- Press the [F2] key.

- For each prompt:
- Press the [↑] / [↓] key to select the interface.
 - Press the [F2] key.
- Each interface can be used only once.

Example screenshot



Options	Description
◆ --	Peripheral device does not exist
◆ S1	Interface S1
◆ S2	Interface S2
◆ USB	USB interface (only for barcode reader)



- x The following prompt is displayed only for a barcode reader with a USB connector.

4

System services

Description of the operator prompts

USB Keyboard Country Mode

- Press the [↑] / [↓] key to select Country Mode.
 - Press the [↵] key.
- ➔ This setting takes effect only for barcode readers which are operated with the "USB Keyboard" USB interface. For this interface, the "USB Polling Interval" or "USB Keyboard Speed" should be set to at least 6 ms. Regarding this, see the manual for the barcode reader. Otherwise, parts of the barcode can be lost during scanning.

Locking quantity input via barcode reader

- Press the [↑] / [↓] key to select "YES" or "NO".
 - Press the [↵] key.
- ➔ If quantity input via barcode reader is not used, then "YES" should be selected. This can prevent malfunctions, such as scanning an article number as a quantity.
-
- Press the [↑] / [↓] key to select "YES".
 - Press the [↵] key.
- ➔ The interface assignment is saved.

Example screenshot

INTERFACE ASSIGNMENT

BARCODE READER : USB

USB KEYBOARD INTERFACE COUNTRY MODE :

US ENGLISH

[EN_US]

[↑/↓/CE/↵]

Options	Description
DEUTSCH [DE]	German keyboard layout (affects umlauts and special characters)
US ENGLISH [EN_US]	US English keyboard layout (affects special characters)

INTERFACE ASSIGNMENT

BARCODE READER : <Interface>

LOCK QUANTITY INPUT VIA BARCODE READER :

■NO

[↑/↓/CE/↵]

INTERFACE ASSIGNMENT

ALL ENTRIES CORRECT ?

-> DATA BEING SAVED

■NO

[↑/↓/↵]

4 System services

4.1.2 Setting interface parameters



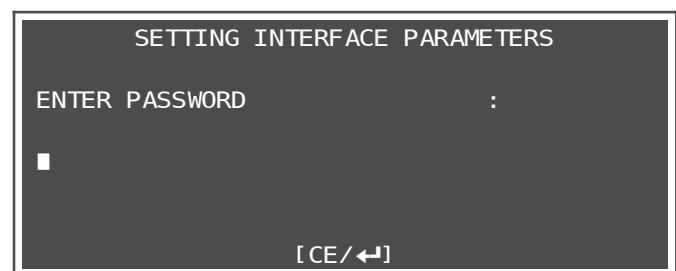
The transmission parameters of serial interfaces "S1" - "S2" and the Ethernet parameters can be set in this menu.

Description of the operator prompts

Set interface parameters S1 and S2

- Press the **[F1]** key, the **[1]** key and then the **[F2]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.

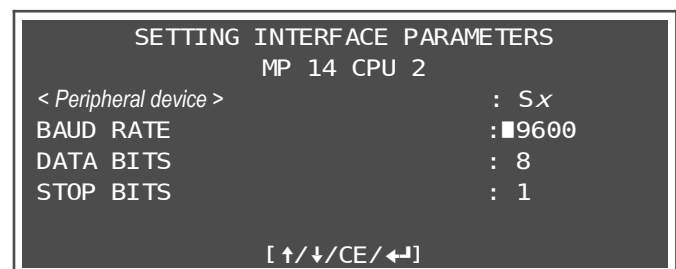
Example screenshot



For interface assignment Sx to *<Peripheral device>*, see Chapter 4.1.1.

The user is prompted to enter the interface parameters in sequence for each interface.

- Press the **[↑] / [↓]** key to select the baud rate.
- Press the **[F4]** key.
- Press the **[↑] / [↓]** key to select data bits.
- Press the **[F4]** key.
- Press the **[↑] / [↓]** key to select stop bits.
- Press the **[F4]** key.



Parameters	Options	
BAUD RATE	◆ 1200 ◆ 2400 ◆ 4800 ◆ 9600 ◆ 19200	◆ 38400 ◆ 57600 ◆ 76800 ◆ 115200
DATA BITS	◆ 7	◆ 8
STOP BITS	◆ 1	◆ 2

4 System services



- x For integration into the Ethernet corporate network, see Chapter 5 on page 185.
- x The network administrator for the corporate network must define the parameters to be set.

Description of the operator prompts

Configuring an Ethernet adapter

- Press the [↑] / [↓] key to select "YES".
- Press the [←] key.

If "YES" has been selected:

- Press the [↑] / [↓] key to select the Ethernet speed and duplex mode.

Ethernet MP multi-unit network

- ➔ The IP address of the MP 14N in the MP multi-unit network is displayed.
- Press the [↑] / [↓] key to select the IP address range.
The default setting is "172.16". This value must **only** be changed if:
 - There is overlap with the IP address range of the corporate network.
 - More than one MP 14-S is incorporated in the corporate network if more than one MP 14-S has the same lift number.
 - If, for the MP 14-H[MP 100D-5], the MP 100D-5 is in another address range.
- Press the [←] key.

Example screenshot

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II

CONFIGURE ETHERNET ADAPTER : ■NO

[↑/↓/CE/←]
```

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II

ETHERNET SPEED AND
DUPLEX MODE :

AUTONEGOTIATION
(FACTORY SETTING)

[↑/↓/CE/←]
```

Parameters / description
AUTONEGOTIATION (FACTORY SETTING)
10 MBIT/S HALF-DUPLEX
10 MBIT/S FULL-DUPLEX
100 MBIT/S HALF-DUPLEX
100 MBIT/S FULL-DUPLEX

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II

ETHERNET MP MULTI-UNIT NETWORK
IP ADDRESS      : 172.<xx>.<ee>.<ll>
IP ADDRESS RANGE : 172.■<xx>
-> [16 - 31]

[↑/↓/CE/←]
```

- <xx> = IP address range
- <ee> = Access point number
- <ll> = Lift number

4 System services

Description of the operator prompts

Ethernet corporate network with DHCP

→ The corporate network must have a DHCP server and the MP 14 is authorised to have an IP address assigned by the DHCP. If no DHCP server is found when the unit is put into service, however, no IP address is assigned for the corporate network.

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

→ The IP address, MAC address and current DNS name of the MP 14 are displayed.

- If necessary, change the DNS name.
- Press the [↵] key.

→ Address of the DNS server is displayed.

- If necessary, change the DNS server address.
Caution: The DNS server address can be overwritten by the DHCP server.
- Press the [↵] key.

Ethernet corporate network without DHCP

→ The corporate network does not have a DHCP server or it is to work with static IP addresses.

- Press the [↑] / [↓] key to select "NO".
- Press the [↵] key.
- Enter the IP address of the MP 14 for the connection to the corporate network.
(Entering the IP address "0.0.0.0" deactivates this.)
- Press the [↵] key.
- Enter the subnet mask.
- Press the [↵] key.
- Enter the standard gateway, if necessary.
- Press the [↵] key.

→ The MAC address and current DNS name of the MP 14 are displayed here.

- If necessary, change the DNS name.
- Press the [↵] key.

→ Address of the DNS server is displayed.

- If necessary, change the DNS server address.
- Press the [↵] key.

Example screenshot

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II
ETHERNET CORPORATE NETWORK
GET IP ADDRESS FROM DHCP : ■YES

[↑/↓/CE/↵]
```

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II
ETHERNET CORPORATE NETWORK
IP ADDRESS      : ■xx.xxx.xxx.xxx
MAC ADDRESS     : xx:xx:xx:xx:xx:xx
MP NAME         : mp14-xxxxxxx
DNS SERVER      : xxx.xxx.xxx.xxx
[CE/↵]
```

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II
ETHERNET CORPORATE NETWORK
GET IP ADDRESS FROM DHCP : NO
IP ADDRESS      : ■xx.xxx.xxx.xxx
SUB-NETWORK MASK : xxx.xxx.xxx.xxx
STANDARD GATEWAY : xxx.xxx.xxx.xxx
[CE/↵]
```

```
SETTING INTERFACE PARAMETERS
MP 14 CPU II
ETHERNET CORPORATE NETWORK
MAC ADDRESS     : xx:xx:xx:xx:xx:xx
MP NAME         : ■mp14-xxxxxxx
DNS SERVER      : xxx.xxx.xxx.xxx
[↵]
```

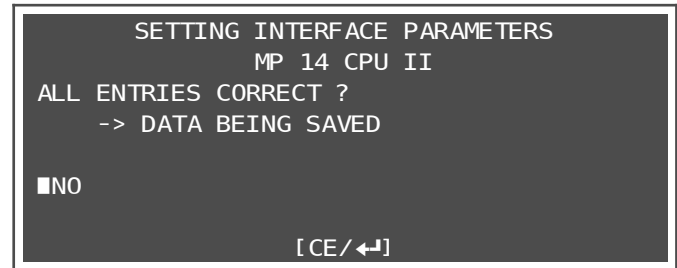
4 System services

Description of the operator prompts

End setting

- Press the [↑] / [↓] key to select "YES".
 - Press the [←] key.
- The interface parameter settings are saved.

Example screenshot



4 System services

4.1.3 Supplementary modules



Supplementary modules can be configured in this menu.



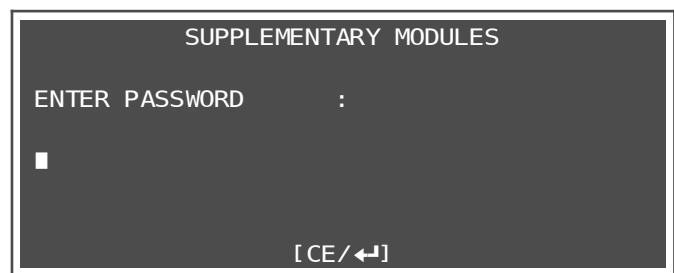
- x Separate descriptions are available for the individual supplementary modules.
- x The Annex of the operating manual contains a list of all the separate descriptions for the options for the lift.

Description of the operator prompts

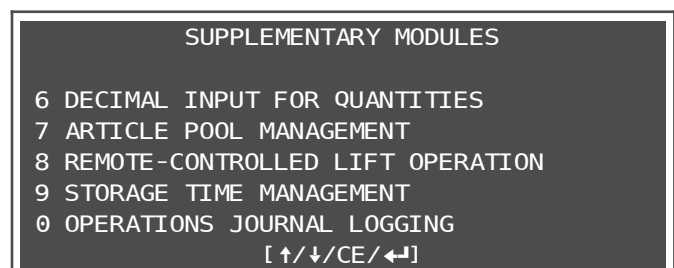
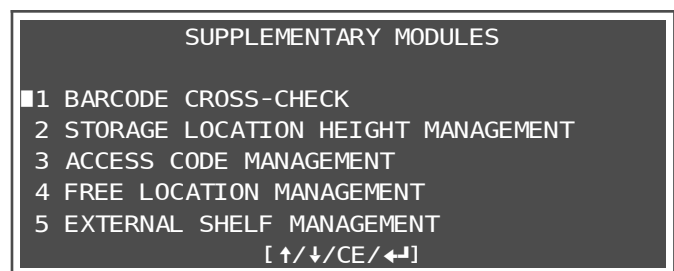
Set supplementary modules

- Press the **[↵]** key, the **[1]** key and then the **[5]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.

Example screenshot



MP 14-S / H[MP 14-S] / H[MP 100D-5] program version



4 System services

Description of the operator prompts

Example screenshot

```
SUPPLEMENTARY MODULES

+ INVENTORY FUNCTION
- ADJUSTABLE SHELF SPEED
↓ SHELF PRE-POSITIONING FOR JOB
+␣ LENDING MANAGEMENT
-␣ LABEL PRINTING AT ACCESS POINT
[ ↑/↓/CE/←→]
```

```
SUPPLEMENTARY MODULES

i INTERMEDIATE SHELF BUFFER
F2 BATCH MANAGEMENT
F3 DATA FIELD POPULATION BY MEANS OF
  A BARCODE
F4 SHELF TRANSFER
Fn EXTRACTOR PARK POSITION
[ ↑/↓/CE/←→]
```

```
SUPPLEMENTARY MODULES

⌘ ARTICLE IMAGE
↔␣ SHELF PRE-POS. FOR ARTICLE/JOB
␣ ALTERNATING-SIDE JOB PROCESSING

[ ↑/↓/CE/←→]
```

MP 14-H[HOST-DATA] program version

```
SUPPLEMENTARY MODULES

■1 BARCODE CROSS-CHECK
2 STORAGE LOCATION HEIGHT MANAGEMENT
3 ACCESS CODE MANAGEMENT
6 DECIMAL INPUT FOR QUANTITIES
8 REMOTE-CONTROLLED LIFT OPERATION
[ ↑/↓/CE/←→]
```

```
SUPPLEMENTARY MODULES

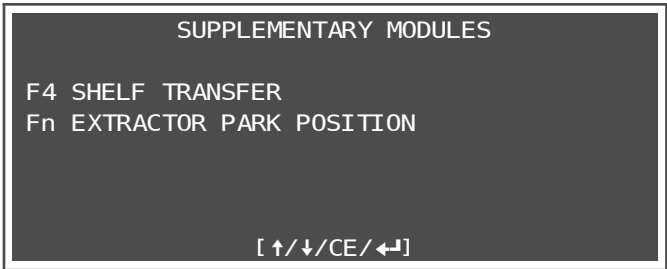
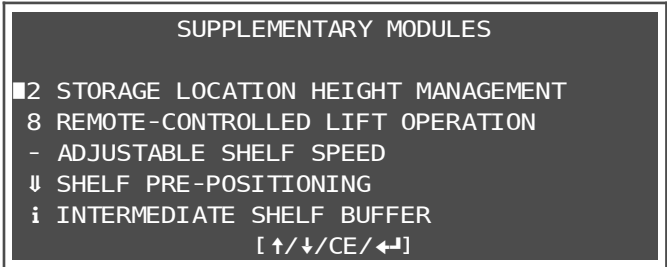
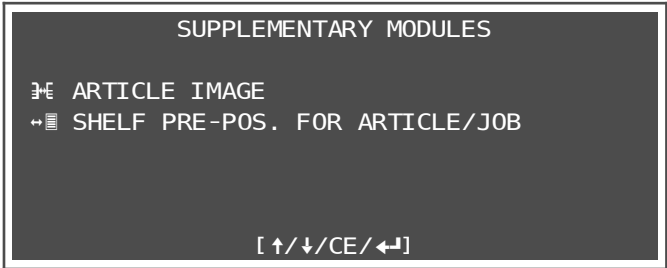
- ADJUSTABLE SHELF SPEED
↓ SHELF PRE-POSITIONING FOR JOB
i INTERMEDIATE SHELF BUFFER
F4 SHELF TRANSFER
Fn EXTRACTOR PARK POSITION
[ ↑/↓/CE/←→]
```

4 System services

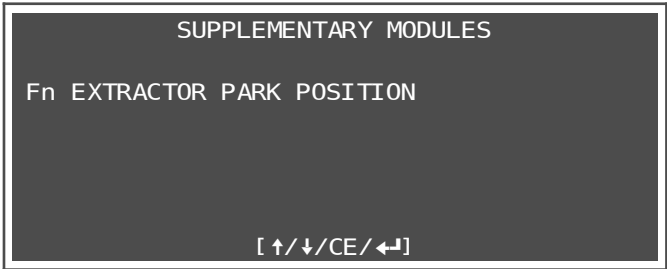
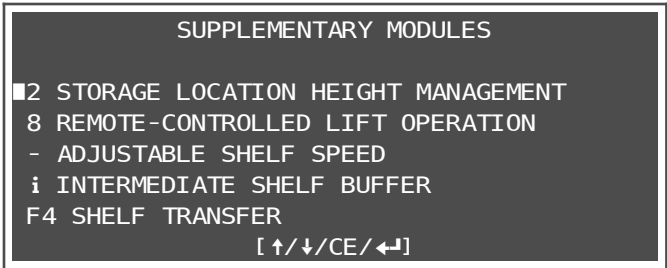
Description of the operator prompts

Example screenshot

MP 14-H[HOST-WEB] program version



MP 14-H[HOST-COM] program version



4 System services

4.1.4 System clock setting



The internal system clock can be displayed and set in this menu.



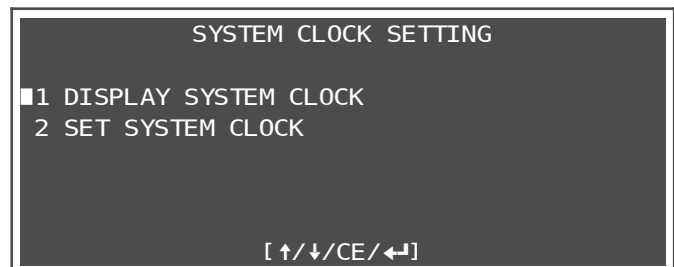
- x For multiple access points, the system clocks for all access points are changed and the MP control systems are restarted.

Description of the operator prompts

Call up system clock setting

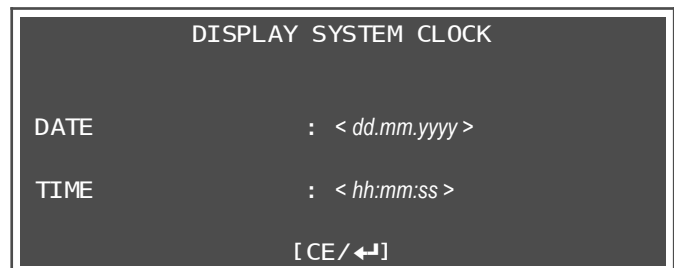
- Press the **[F1]** key, the **[1]** key and then the **[7]** key.
- The "System clock setting" menu is displayed.

Example screenshot



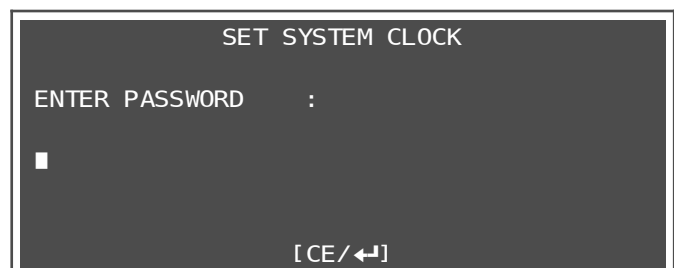
Display system clock

- The date and time are displayed.

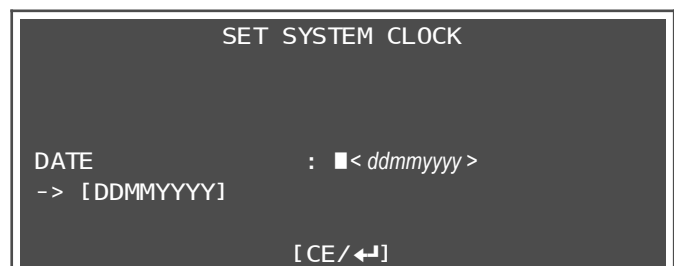


Set system clock

- Enter the password (default setting "22488").
- Press the **[←→]** key.



- Enter the date.
- Press the **[←→]** key.

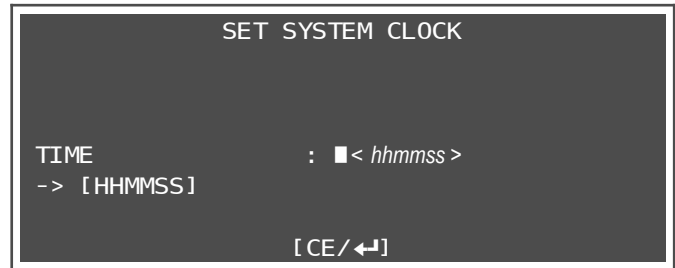


4 System services

Description of the operator prompts

- Enter the time.
- Press the [↵] key.

Example screenshot



4 System services

4.1.5 Set display



Display-specific settings can be configured in this menu.

Description of the operator prompts

Configure TFT display

- Press the [↑] / [↓] key to select the foreground colour for the operator prompts.
- Press the [←] key.
- Press the [↑] / [↓] key to select the background colour for the operator prompts.
- Press the [←] key.
- Press the [↑] / [↓] key to select "YES" or "NO" for the calibration of the touchscreen.

If you select "YES", the display-specific settings of the touchscreen are calibrated.

- Press the [←] key.

If lift run graphics are set to "NO":

- Press the [↑] / [↓] key to select "YES" or "NO" for the lift run graphics.
- Press the [←] key.

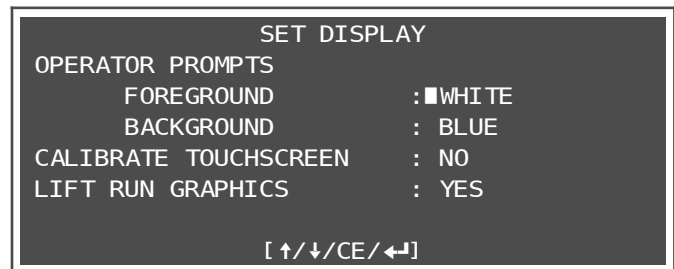
→ If the number of carriers of the rear carriers is > 200 and "Yes" has been selected, this note appears:
"LIFT RUN GRAPHICS IS NOT POSSIBLE AT THIS LIFT HEIGHT! -> CE".

The number of carriers always relates to the 75/90/125 mm (2.952"/3.543"/4.921") increments rather than the 37.5 or 25 mm (1.48" or 0.98") increments.

For Lean-Lift®:

- Press the [↑] / [↓] key to select the lift colour for the lift run graphics.
- Press the [←] key.

Example screenshot



Colour options:

◆ BLACK	◆ MAGENTA
◆ BLUE	◆ YELLOW
◆ GREEN	◆ WHITE
◆ CYAN	◆ GREY
◆ RED	



Options

◆ GREY
◆ MINT GREEN
◆ BLUE
◆ BORDEAUX
◆ SILVER / ANTHRACITE

4

System services

Description of the operator prompts

For Multi-Space®:

- Press the **[↑] / [↓]** key to select the lift colour for the lift run graphics.
- Press the **[←]** key.

→ A lift colour is assigned to each lift unit *<n>*.

Example screenshot

Options	
◆ GREY	◆ BORDEAUX
◆ MINT GREEN	◆ LIGHT BLUE
◆ BLUE	◆ RED

- Press the **[↑] / [↓]** key to select "YES".
- Press the **[←]** key.

→ The display-specific settings are saved.

4 System services

4.1.6 ECO-MODE setting



ECO-MODE settings can be configured in this menu. ECO-MODE controls the energy consumption of the electrical equipment when the lift is at a standstill (standby mode).

Description of the operator prompts

Call up Set ECO-MODE

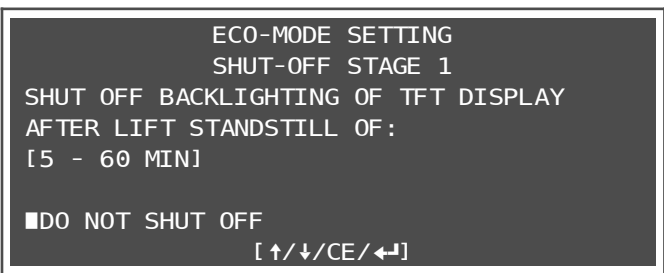
- Press the **[🔧]** key, the **[1]** key and then the **[-]** key.



- Press the **[↑] / [↓]** key to select the standstill time.
- Press the **[←]** key.

Example screenshot

- x Shutoff step 1 is not possible for the following supplementary modules:
 - Supplementary module "Remote-controlled Lift Operation"
 - Supplementary module "Shelf pre-positioning"



Description

MP 14-S/H[MP 14-S]/H[MP 100D-5]:
Shutoff step 1 takes place when the MP control system is in the main menu of the MP control system (basic state) and the standstill time has expired.
Cancel by actuating the keyboard, touchscreen or barcode reader.

MP 14-H[HOST-DATA]:
Shutoff step 1 takes place when the MP control system is in the main menu of the MP control system (basic state) and the standstill time has expired.
Cancel by actuating the keyboard or touchscreen.

MP 14-H[HOST-WEB]:
Shutoff step 1 takes place when the MP control system is connected to the host (as of the "HOST WEB SERVER ACTIVE" window) and the standstill time has expired.
Cancel by actuating the keyboard, touchscreen or a new macro from the host.

MP 14-H[HOST-COM]:
Shutoff step 1 takes place when the MP control system is connected to the host (as of the "OPERATION TAKES PLACE ON THE HOST APPLICATION" window) and the standstill time has expired.
Cancel by actuating the keyboard, touchscreen or a new macro from the host.

4 System services

Description of the operator prompts



- Press the [↑] / [↓] key to select the standstill time.
- Press the [←] key.

Example screenshot

- x The following prompt appears only if the ECO-MODE electrical equipment is present.

```
ECO-MODE SETTING
SHUT-OFF STAGE 2
SHUT OFF COMPONENTS OF THE ELECTRICAL
CONTROL SYS. AFTER LIFT STANDSTILL OF :
[5 - 60 MIN]

■DO NOT SHUT OFF
[↑/↓/CE/←]
```

Description

Shutoff step 2 takes place if no service symbol is displayed in the upper left (service functions, positioning, initialise other access points) and if a lift run was not carried out within the standstill time of any access point and no [←] key was pressed.
Cancel by lift run or [←] key.



- Press the [↑] / [↓] key to select the standstill time.
- Press the [←] key.

- x The following prompt appears only if the ECO-MODE electrical equipment is present.

```
ECO-MODE SETTING
SHUT-OFF STAGE 3
DIM ENERGY-EFFICIENT LED LIGHTING
AFTER LIFT STANDSTILL OF :
[5 - 60 MIN]

■DO NOT DIM
[↑/↓/CE/←]
```

Description

Shutoff step 3 takes place if the service symbol is not displayed in the upper left (service functions, positioning, initialise other access points) and the standstill time has expired.
MP 14-S/H[MP 14-S]/H[MP 100D-5]:
Cancel by actuating the keyboard or barcode reader.
MP 14-H[HOST-DATA]:
Cancel by actuating the keyboard.
MP 14-H[HOST-WEB]:
Cancel by actuating the keyboard or a new macro from the host.
MP 14-H[HOST-COM]:
Cancel by actuating the keyboard or a new macro from the host.



- x The following prompt appears only at access point 1 and only if the ECO-MODE electrical equipment is present.

4 System services

Description of the operator prompts

- Press the [↑] / [↓] key to select the standstill time.
- Press the [↵] key.

If standstill time for shutoff step 4 was selected:

➔ Enter the time frame for shut-off.

Every <Weekday>:

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

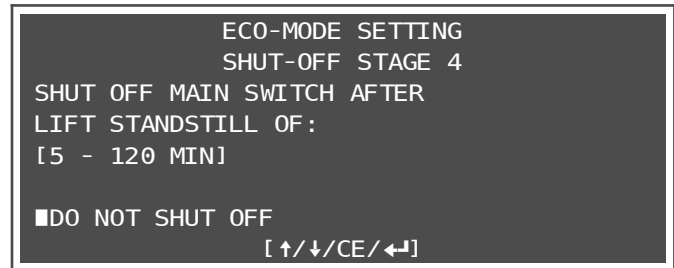
If "YES" has been selected:

- Enter the hours (from time).
- Press the [↵] key.
- Enter the minutes (from time).
- Press the [↵] key.
- Enter the hours (to time).
- Press the [↵] key.
- Enter the minutes (to time).
- Press the [↵] key.

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

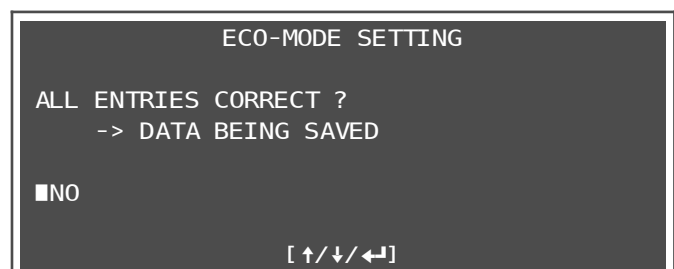
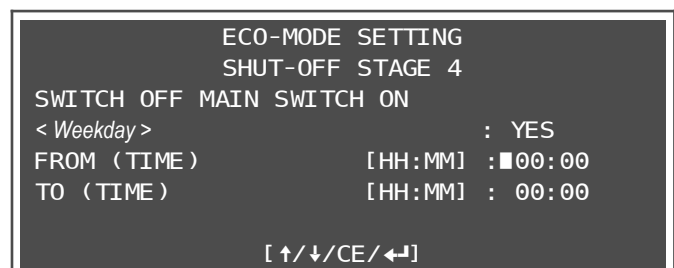
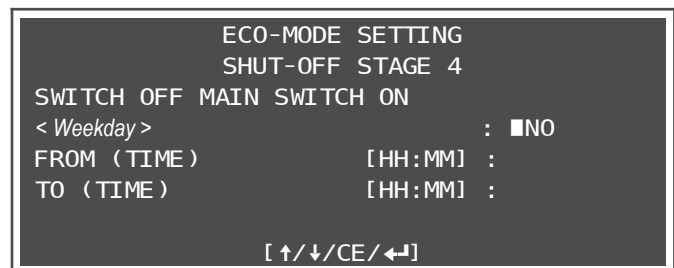
➔ The ECO-MODE setting is saved.

Example screenshot



Description

Shutoff step 4 takes place if no service symbol is displayed in the upper left (service functions, positioning, initialise other access points) and if a lift run was not requested within the standstill time of any access point.
Cancel by switching on the main switch.



4 System services

4.2 System services storage management (only for
MP 14-S/H[MP14-S]/H[MP 100D-5])



x This prompt appears only with program version
MP 14-S/H[MP 14-S]/H[MP 100D-5].

System parameters of the storage management system can be
configured in this menu.



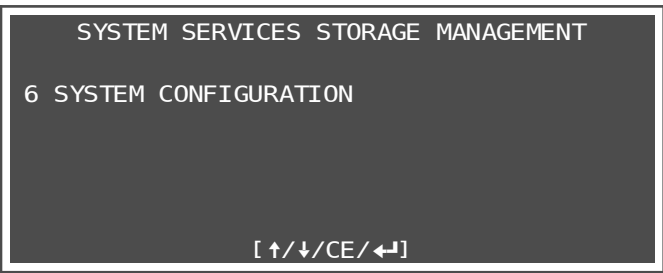
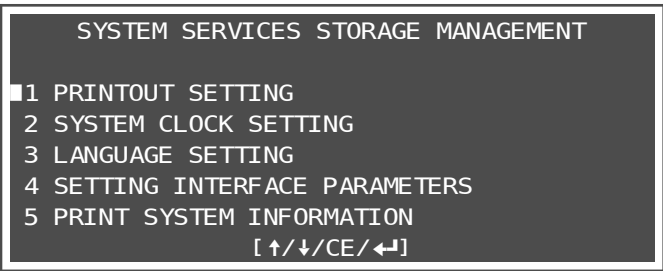
x For MP 14-S, menu items "2" and "4" are omitted.

Description of the operator prompts

Call up system services storage management

- Press the **[F1]** key and the **[2]** key.
- The "System services storage management" menu is
displayed.

Example screenshot



Menu item	See Chapter	Page
1	4.2.1	118
2	4.2.2	125
3	4.2.3	126
4	4.2.4	127
5	4.2.5	130
6	4.2.6	134

4 System services

4.2.1 Printout setting



Parameters for printing out lists can be configured in this menu.
You can customise the layout of a printout by enabling or disabling individual data fields.



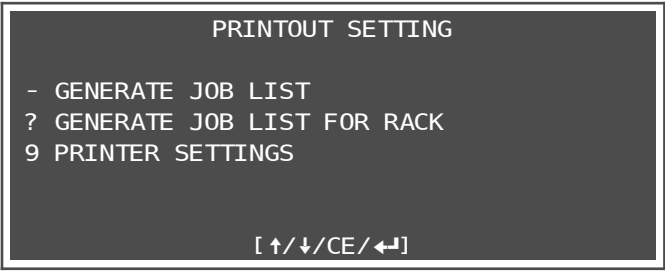
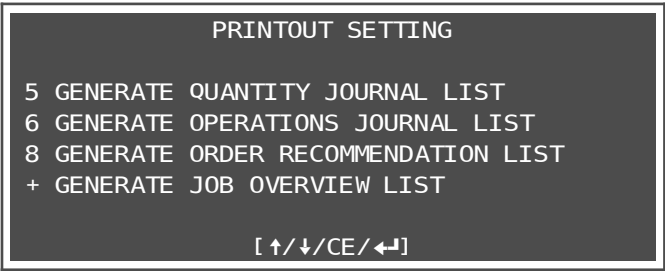
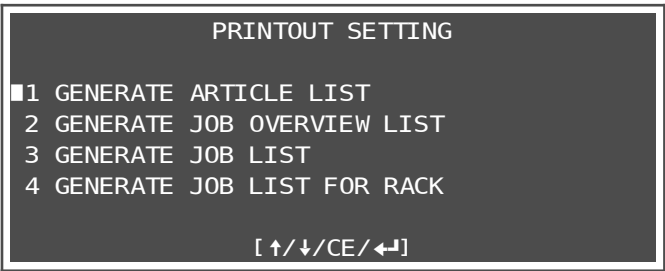
- x Frequently, there are more data fields available than can be accommodated by the width of the paper.
- x Printouts can be made easier to read by setting the printer to condensed printing mode or landscape format. See the operating instructions for the printer.
- x Depending on the initialisation, some menu items and parameters may not be offered.

Description of the operator prompts

Call up printout setting

- Press the **[F1]** key, the **[F2]** key and then the **[F1]** key.
- The "Printout setting" menu is displayed.

Example screenshot



4 System services

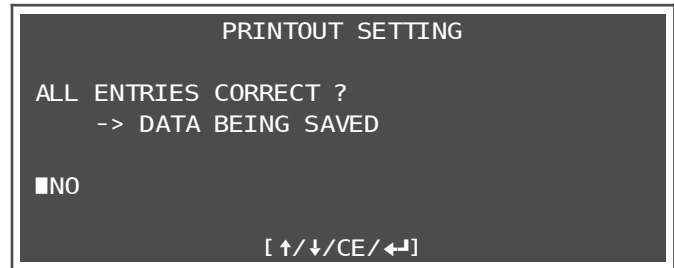
Description of the operator prompts

Saving printout settings

This prompt appears before saving the settings of each menu item.

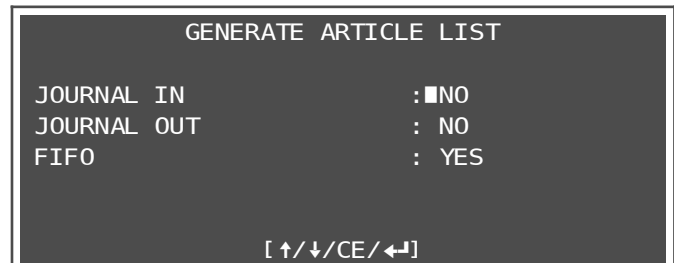
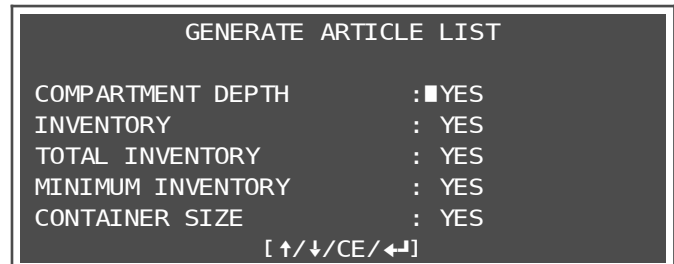
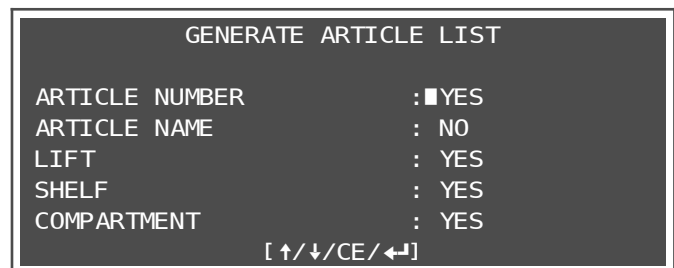
- Press the [↑] / [↓] key to select "YES".
- Press the [←] key.
- The printout settings are saved.

Example screenshot



Generate article list

- Press the [F] key, the [2] key, the [1] key and then the [1] key.
- All the printable data fields for an article list are shown on the display.
- For each prompt:
- Press the [↑] / [↓] key to select "YES" or "NO".
If you select "NO", the data field is not printed.
- Press the [←] key.



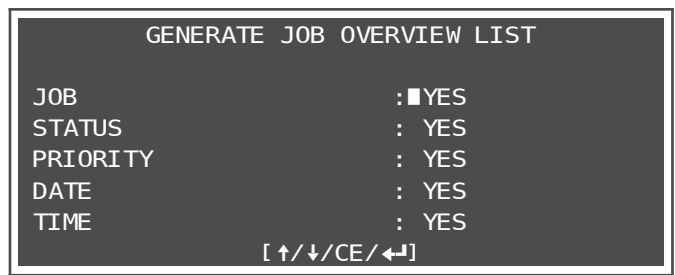
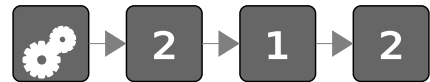
4 System services

Description of the operator prompts

Generate job overview list

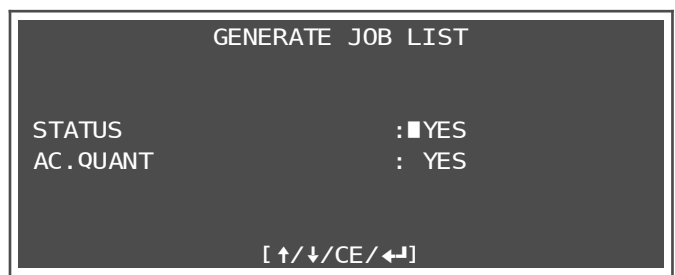
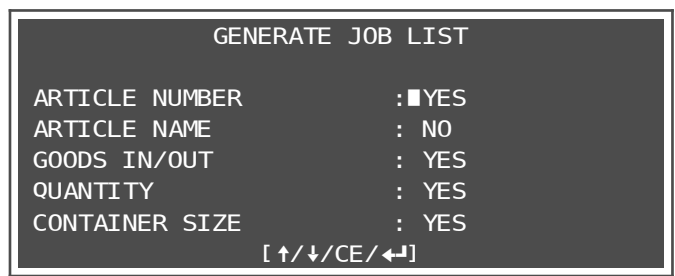
- Press the **[F1]** key, the **[F2]** key, the **[F1]** key and then the **[F2]** key.
- ➔ All the printable data fields for a job overview list are shown on the display.
- For each prompt:
- Press the **[↑] / [↓]** key to select "YES" or "NO".
If you select "NO", the data field is not printed.
- Press the **[←]** key.

Example screenshot



Generate job list

- Press the **[F1]** key, the **[F2]** key, the **[F1]** key and then the **[F3]** key.
- ➔ All the printable data fields for a job list are shown on the display.
- For each prompt:
- Press the **[↑] / [↓]** key to select "YES" or "NO".
If you select "NO", the data field is not printed.
- Press the **[←]** key.



4 System services

Description of the operator prompts

Generate job list for rack

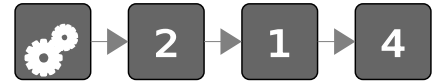
- Press the **[F1]** key, the **[2]** key, the **[1]** key and then the **[4]** key.

→ All the printable data fields for a job list or rack are shown on the display.

For each prompt:

- Press the **[↑]** / **[↓]** key to select "YES" or "NO".
If you select "NO", the data field is not printed.
- Press the **[←]** key.

Example screenshot



```

GENERATE JOB LIST FOR RACK

ARTICLE NUMBER      : ☒ YES
ARTICLE NAME        : NO
LIFT                 : YES
SHELF                : YES
COMPARTMENT          : YES

[ ↑/↓/CE/← ]
  
```

```

GENERATE JOB LIST FOR RACK

COMPARTMENT DEPTH    : ☒ YES
GOODS IN/OUT         : YES
QUANTITY             : YES
CONTAINER SIZE       : YES
AC . QUANT           : YES

[ ↑/↓/CE/← ]
  
```

Generate quantity journal list

- Press the **[F1]** key, the **[2]** key, the **[1]** key and then the **[5]** key.

→ All the printable data fields for a quantity journal list are shown on the display.

For each prompt:

- Press the **[↑]** / **[↓]** key to select "YES" or "NO".
If you select "NO", the data field is not printed.
- Press the **[←]** key.



```

GENERATE QUANTITY JOURNAL LIST

ARTICLE NUMBER      : ☒ YES
ARTICLE NAME        : NO
TOTAL INVENTORY     : YES
MINIMUM INVENTORY   : YES
JOURNAL IN          : YES

[ ↑/↓/CE/← ]
  
```

```

GENERATE QUANTITY JOURNAL LIST

JOURNAL OUT         : ☒ YES

[ ↑/↓/CE/← ]
  
```

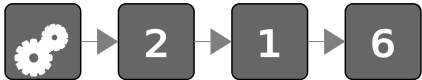
4 System services

Description of the operator prompts

Example screenshot

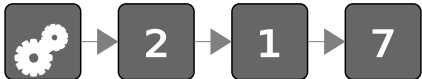
Generate operations journal list (supplementary module)

- Press the **[F1]** key, **[2]** key, the **[1]** key and then the **[6]** key.
- See the "Supplementary Description of the Operations Journal Logging for Microprocessor Control System MP 14-S/H[MP 14-S]/H[MP 100D-5] Lean-Lift®, Multi-Space® and Rotomat®".



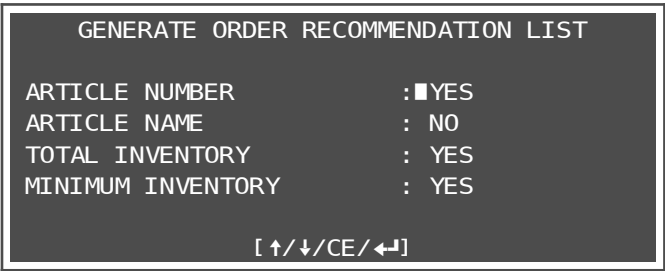
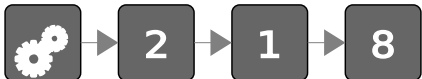
Generate lending overview list (supplementary module)

- Press the **[F1]** key, the **[2]** key, the **[1]** key and then the **[7]** key.
- See the "Supplementary Description of the Lending Management for Microprocessor Control System MP 14-S/H[MP 14-S]/H[MP 100D-5] Lean-Lift®, Multi-Space® and Rotomat®".



Generate order recommendation list

- Press the **[F1]** key, the **[2]** key, **[1]** key and then the **[8]** key.
 - ➔ All the printable data fields for an order recommendation list are shown on the display.
- For each prompt:
- Press the **[↑]** / **[↓]** key to select "YES" or "NO".
If you select "NO", the data field is not printed.
 - Press the **[←]** key.



4 System services



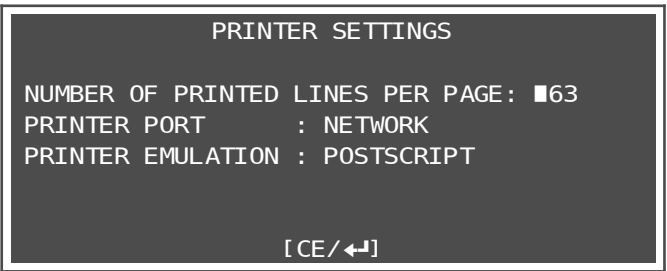
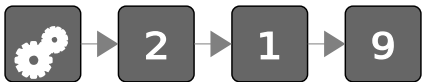
x The network administrator for the corporate network must define the parameters to be set.

Description of the operator prompts

Set printer

- Press the [F1] key, the [2] key, the [1] key and then the [9] key.
- Enter the printed lines per page.
- Press the [Enter] key.

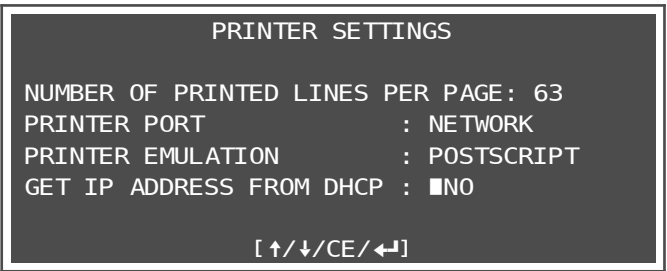
Example screenshot



Parameters / description
NUMBER OF PRINTED LINES PER PAGE The number of printed lines can be set to up to 90 lines. The default value for DIN A4-sized paper is "63".
NETWORK POSTSCRIPT Postscript printer emulation enables printouts in non-Roman alphabets such as Russian and Chinese.

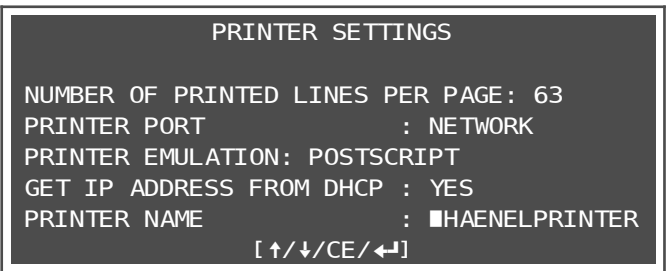
Configuring printer port for network with/without DHCP/DNS

- Press the [Up] / [Down] key to select "YES" or "NO".
Select "YES" if the network printer gets its IP address from the DHCP/DNS server.
Select "NO" if the network printer does not get its IP address from the DHCP/DNS server.
- Press the [Enter] key.



Printer port for network with DHCP/DNS

- Enter the printer name.
 - Press the [Enter] key.
- ➔ Changes to the printer name do not become effective until after the MP control system is switched off, then on again.



x The network administrator for the corporate network must define the parameters to be set.

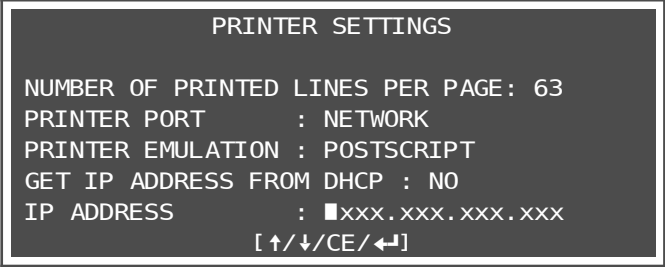
4 System services

Description of the operator prompts

Printer port for network without DHCP

- Enter the IP address.
- Press the [↵] key.

Example screenshot



4 System services

4.2.2 System clock setting (not for MP 14-S)



The internal system clock can be displayed and set in this menu.

x This menu does not appear for the MP 14-S program version.

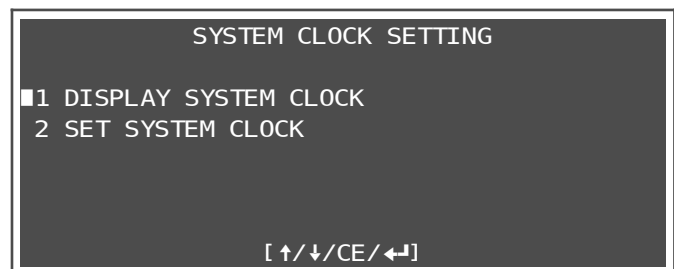


Description of the operator prompts

Call up system clock setting

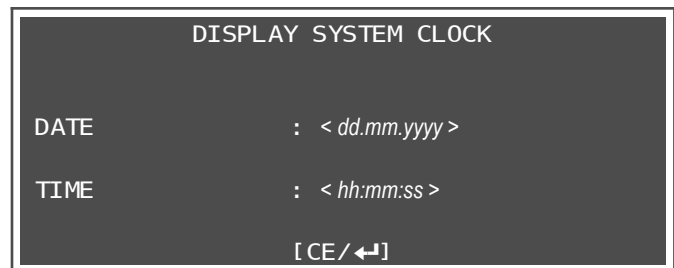
- Press the **[↶]** key, the **[2]** key and then the **[2]** key.
- The "System clock setting" menu is displayed.

Example screenshot



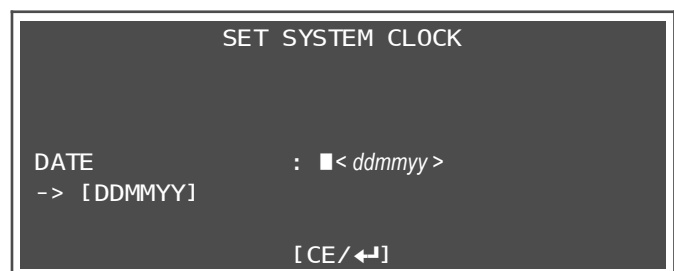
Display system clock

- The date and time are displayed.

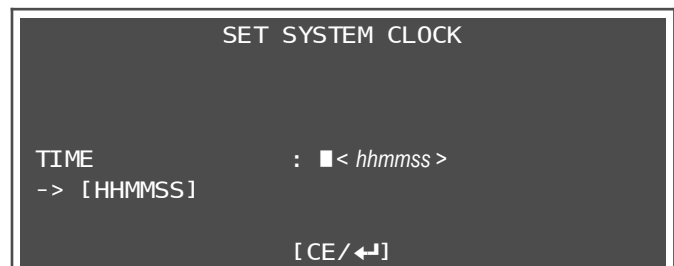


Set system clock

- Enter the date.
- Press the **[↶]** key.



- Enter the time.
- Press the **[↶]** key.



4 System services

4.2.3 Language setting



The language for the printer output and host communication can be set in this menu.

Description of the operator prompts

Set the language for printer/host communication

- Press the **[F1]** key, the **[2]** key and then the **[3]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.

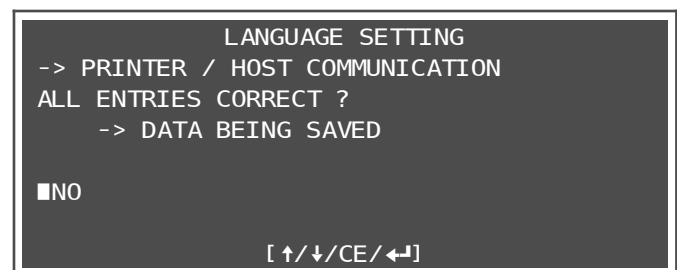
Example screenshot



- Press the **[↑] / [↓]** key to select the language.
- Press the **[F4]** key.



- Press the **[↑] / [↓]** key to select "YES".
 - Press the **[F4]** key.
- ➔ The language setting for printer/host communication is saved.
This settings also has an effect on the language of the special data field name of the special data fields, which are displayed in the info browser / PC browser based on supplementary modules.



4 System services

4.2.4 Setting the interface parameters (only for MP 14-H[MP 100D-5])



Interface parameters of the MP 100D-5 can be set in this menu.



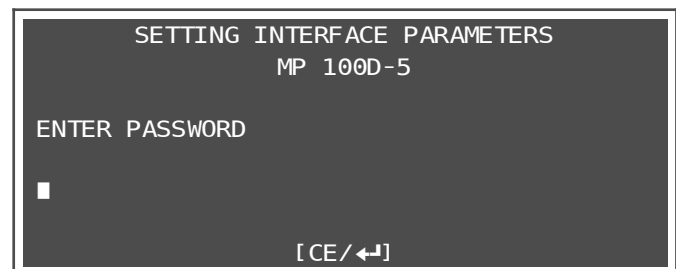
- x This menu does not appear for the MP 14-S program version.
- x For integration into the Ethernet corporate network, refer to the "Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®".
- x The network administrator for the corporate network must define the parameters to be set.

Description of the operator prompts

Set interface parameters

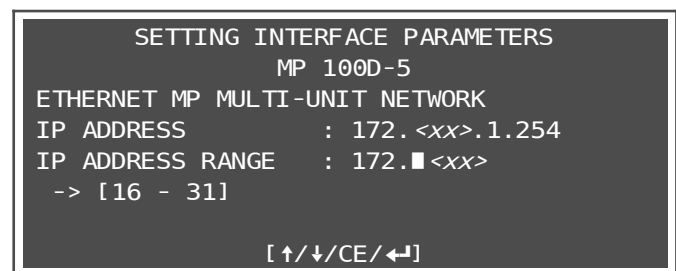
- Press the **[↵]** key, the **[2]** key and then the **[4]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.

Example screenshot



Ethernet MP multi-unit network

- ➔ The IP address is displayed.
- Press the **[↑]** / **[↓]** key to select the IP address range.
The default setting is "172.16". This value must **only** be changed if:
 - There is overlap with the IP address range of the corporate network.
 - More than one MP 100D-5 is incorporated in the corporate network. Each MP 100D-5 needs its own address range.
- Press the **[↵]** key.



<xx> = IP address range

4 System services

Description of the operator prompts

Ethernet corporate network with DHCP

- The corporate network must have a DHCP server and the MP 100D-5 is authorised to have an IP address assigned by the DHCP. If no DHCP server is found when the unit is put into service, however, no IP address is assigned for the corporate network.
- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

- The IP address, MAC address and current DNS name of the MP 100D-5 are displayed.
- If necessary, change the DNS name.
- Press the [↵] key.
- Address of the DNS server is displayed.
- If necessary, change the DNS server address.
Caution: The DNS server address can be overwritten by the DHCP server.
- Press the [↵] key.

Ethernet corporate network without DHCP

- The corporate network does not have a DHCP server or it is to work with static IP addresses.
- Press the [↑] / [↓] key to select "NO".
- Press the [↵] key.
- Enter the IP address of the MP100D-5 Web Server.
- Press the [↵] key.
- Enter the subnet mask.
- Press the [↵] key.
- Enter the standard gateway, if necessary.
- Press the [↵] key.

- The MAC address and current DNS name of the MP 100D-5 are displayed here.
- If necessary, change the DNS name.
- Press the [↵] key.
- Address of the DNS server is displayed.
- If necessary, change the DNS server address.
- Press the [↵] key.

Example screenshot

```

SETTING INTERFACE PARAMETERS
MP 100D-5
ETHERNET CORPORATE NETWORK
GET IP ADDRESS FROM DHCP : ■YES

[ ↑/↓/CE/↵ ]
    
```

```

SETTING INTERFACE PARAMETERS
MP 100D-5
ETHERNET CORPORATE NETWORK
IP ADDRESS      : xxx.xxx.xxx.xxx
MAC ADDRESS     : xx:xx:xx:xx:xx:xx
MP NAME         : ■mp100d-xxxxxx
DNS SERVER      : xxx.xxx.xxx.xxx
[ CE/↵ ]
    
```

```

SETTING INTERFACE PARAMETERS
MP 100D-5
ETHERNET CORPORATE NETWORK
GET IP ADDRESS FROM DHCP : NO
IP ADDRESS        : ■xx.xxx.xxx.xxx
SUB-NETWORK MASK  : xxx.xxx.xxx.xxx
STANDARD GATEWAY  : xxx.xxx.xxx.xxx
[ CE/↵ ]
    
```

```

SETTING INTERFACE PARAMETERS
MP 100D-5
ETHERNET CORPORATE NETWORK
MAC ADDRESS       : xx:xx:xx:xx:xx:xx
MP NAME           : ■mp100d-xxxxxx
DNS SERVER        : xxx.xxx.xxx.xxx
[ ↵ ]
    
```

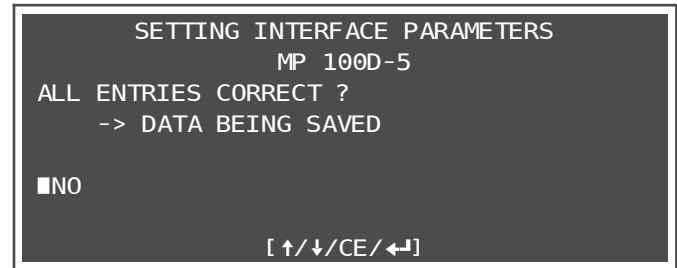
4 System services

Description of the operator prompts

End setting

- Press the [↑] / [↓] key to select "YES".
 - Press the [←] key.
- The interface parameter settings are saved.

Example screenshot



4 System services

4.2.5 Print system information



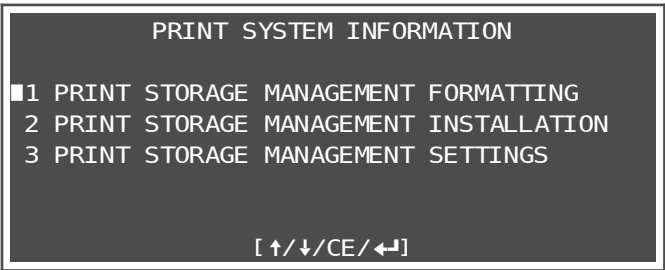
In this menu, you can print out lists that contain information about the formatting, installation and settings for storage management. This information is helpful for service purposes.

Description of the operator prompts

Print system information

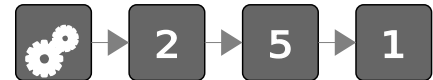
- Press the **[F1]** key, the **[2]** key and then the **[5]** key.
- ➔ The "Print system information" menu is displayed.

Example screenshot



4 System services

4.2.5.1 Print storage management formatting



All the format settings of storage management are printed out.

Example printout:

```

Storage management formatting                                     Page: 1
Date   : 2017-06-13      Time : 09:45 am
*****
Data field   Name                                           Number of characters
*****
S           Article number                                   20
N           Article name                                    20
L           Lift                                             2
T           Shelf                                            3
F           Compartment                                     3
O           Comp-D                                           2
B           Inventory                                       8
P           T-Inv.                                           8
R           M-Inv.                                           8
K           Job                                             20
V           Goods in/out                                    1
Q           Quantity                                        8
G           Cont                                            5
Z           Goods in                                        8
A           Goods out                                       8
I           Fifo                                            3
W           Stat                                            2
M           Actual quantity                                 8
p           Priority                                        3
d           Date                                            6
u           Time                                            4

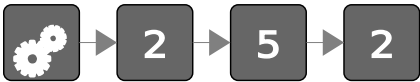
Program version                                           V 7.0 STANDARD
Article storage management
Date format                                           -> [ddmmyy]
Quantity journal logging                               NO
Operations journal logging                             NO
Access code management                                NO
Storage location height management                     NO
Storage time management                               NO
External shelf management                             NO
Article pool management                               NO
Inventory function                                    NO
Lending management                                    NO
Multi-unit storage                                    Yes
FIFO                                                  Yes
***** End of list *****
    
```

Abbreviations:

Comp-D	Compartment depth
T-Inv.	Total inventory
M-Inv.	Minimum inventory
Cont	Container size
Stat	Status

4 System services

4.2.5.2 Print storage management installation



All the lifts registered in storage management are printed out with their storage location configurations.
The printout also shows the total number of storage locations of all registered lifts.

Example printout:

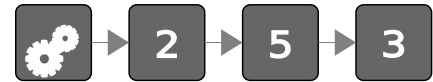
```
Storage management lift installation                                     Page: 1
Date   : 2017-06-13           Time : 09:45 am
*****
Lift number      Number of shelves  Number of      No. of comp-d  Storage
                               compartments          locations
*****
1                30                12            4            1440
2                26                40            1            1040
3                52                8             1            1416
                                           3896
***** End of list *****v*****
```

Abbreviations:

No. of comp-d Number of compartment depths

4 System services

4.2.5.3 Print storage management settings



All the system settings of storage management are printed out.

The printout contains the following:

- Current settings of the system clock and language
- Configuration of the interfaces
- Configuration of the printouts

Example printout:

```
Storage management settings                                     Page: 1
Date   : 2017-06-13      Time : 09:45 am
*****
*****
Language      : English

Job processing                      -> Path-optimised
Article list
Article number   : Yes
Article name     : NO
Lift             : Yes
Shelf            : Yes
Compartment      : Yes
Compartment depth : Yes
Inventory        : Yes
Total inventory  : Yes
Minimum inventory : Yes
Container size   : Yes
FIFO             : No

Order recommendation list          Job overview list
Article number   : Yes             Job number       : Yes
Article name     : No              Status          : Yes
Total inventory  : Yes             Priority        : Yes
Minimum inventory : Yes            Date            : Yes
Time            : Yes              Time            : Yes

Job list
Article number   : Yes
Article name     : No
Operation        : Yes
Quantity         : Yes
Container size   : Yes
Status          : Yes
Actual quantity  : Yes

Job list for rack
Article number   : Yes
Article name     : No
Lift             : Yes
Shelf            : Yes
Compartment      : Yes
Compartment depth : Yes
Operation        : Yes
Quantity         : Yes
Container size   : Yes
Actual quantity  : Yes

***** End of list *****
```

Abbreviations:

No. of comp-d Number of compartment depths

4

System services

4.2.6

System configuration



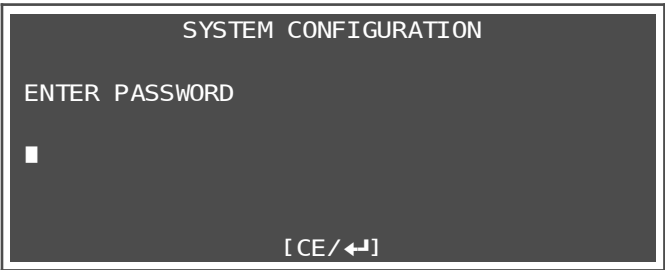
All the important system parameters for storage management and the multi-unit network can be configured in this menu.

Description of the operator prompts

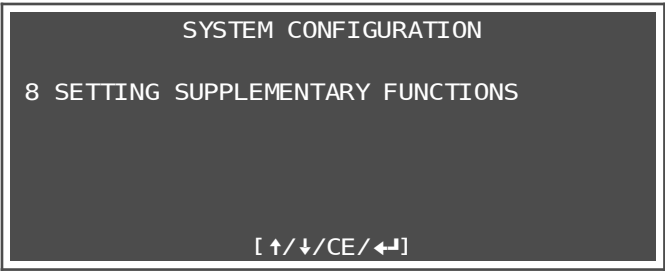
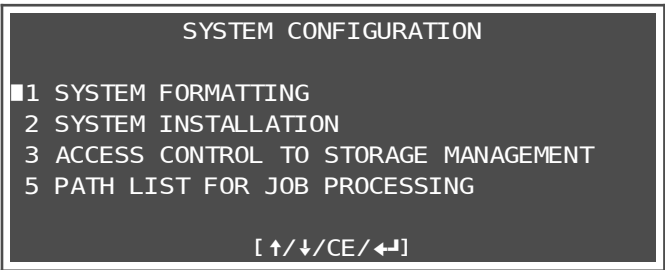
Call up system configuration

- Press the **[F1]** key, the **[2]** key and then the **[6]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.

Example screenshot



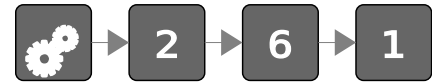
➔ The "System configuration" menu is displayed.



Menu item	See Chapter	Page
1	4.2.6.1	135
2	4.2.6.2	145
3	4.2.6.3	148
5	4.2.6.4	150
8	4.2.6.5	153

4 System services

4.2.6.1 System formatting



All the important system-specific data for storage management can be configured in this menu.



- x The storage management system must be formatted:
 - Before commissioning of an MP multi-unit network
 - When replacing the data flash cards.
- x Note about maximum number of characters:
 - A maximum of 40 characters are possible.
 - If there are more than 20 characters, output is in condensed script (40 column mode).



All article and job data are deleted.

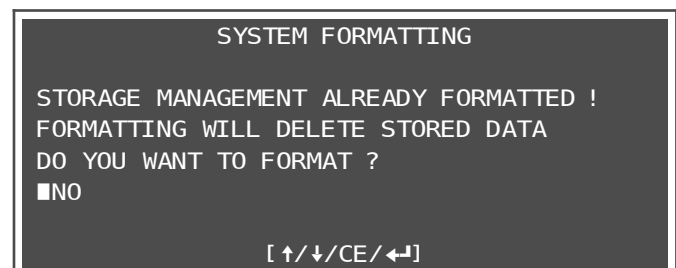
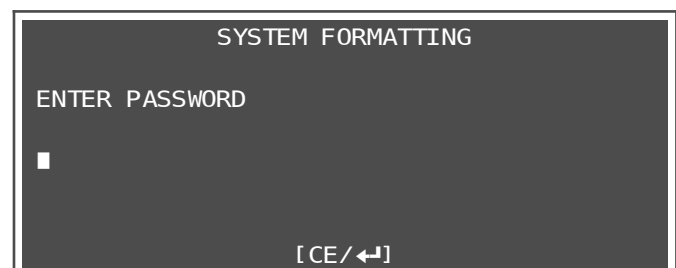
Description of the operator prompts

System formatting

- Press the **[F1]** key, the **[F2]** key and then the **[F6]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.
- Press the **[F1]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.

- Press the **[↑]** / **[↓]** key to select "YES".
- Press the **[F4]** key.

Example screenshot



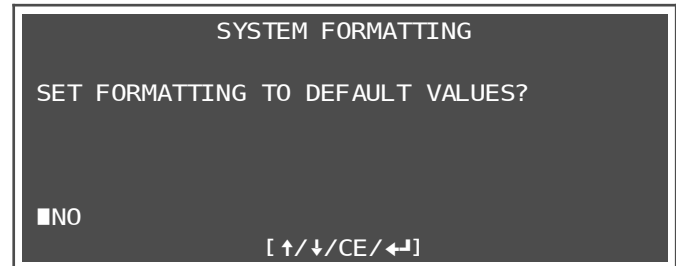
4 System services

Description of the operator prompts

Set formatting to default values

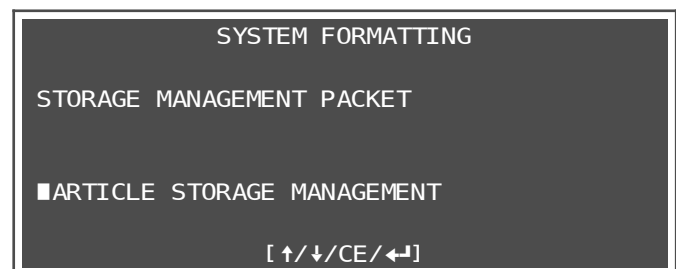
- Press the [↑] / [↓] key to select "YES" or "NO".
Selecting "YES" resets the MP control system to the basic configuration.
- Press the [↵] key.

Example screenshot



Storage management packet

- Press the [↵] key.

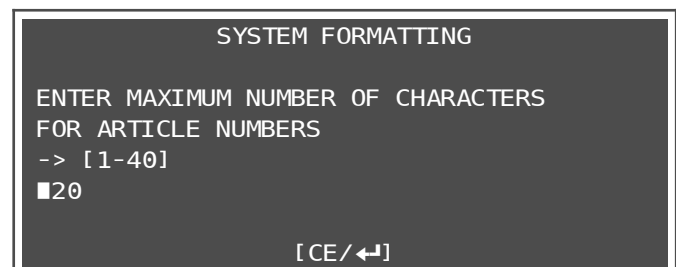


Options

- ◆ ARTICLE STORAGE MANAGEMENT

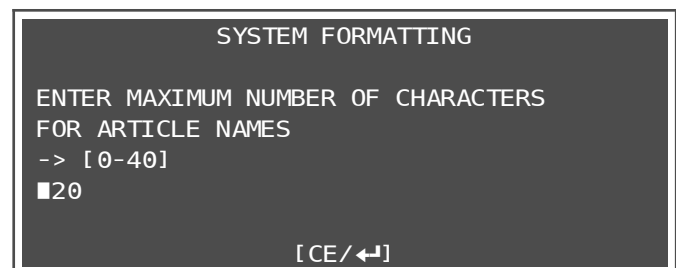
Maximum number of characters for article number

- Enter the number of characters.
- Press the [↵] key.



Maximum number of characters for article name

- Enter the number of characters.
if the setting is "0", no article name is recorded in the data record of the storage management system.
- Press the [↵] key.



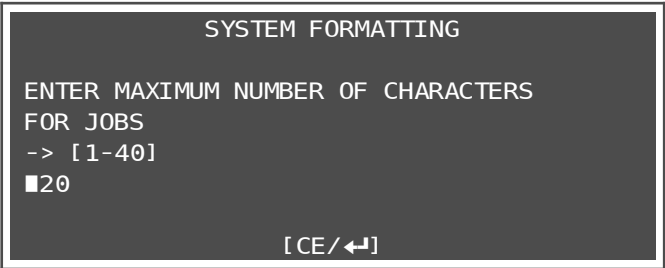
4 System services

Description of the operator prompts

Maximum number of characters for job numbers

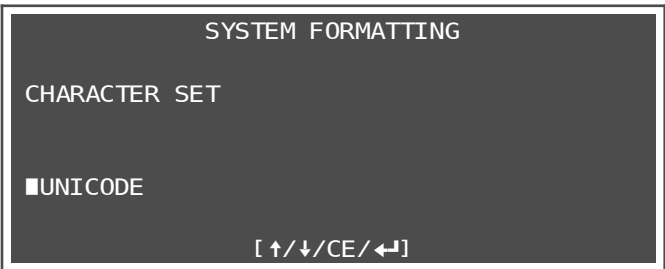
- Enter the number of characters.
- Press the [↵] key.

Example screenshot



Character set

- Press the [↵] key.



Parameters / description
UNICODE – Unicode character range "C0 Controls and Basic Latin" (0x20 - 0x7F) – Unicode character range "C1 Controls and Latin 1 Supplement" (0x80 - 0xFF) – All other Unicode ranges also cover the corresponding character range of the configured language. – The "\$" character is an exception that is reserved internally and is not available.

4 System services

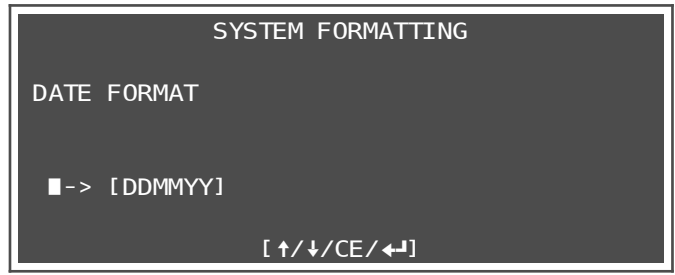
Description of the operator prompts

Set date format

When article lists are printed out or when the journal is read out with a PC (-> operations journal), the date appears in the configured format.

- Press the [↑] / [↓] key to select date format.
- Press the [←] key.

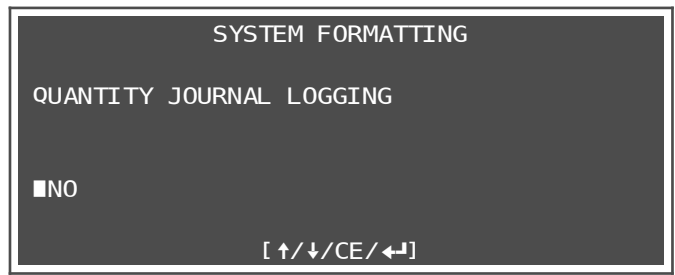
Example screenshot



Options	Description
◆ [DDMMYY]	DD = calendar day, 2-digit
	MM = month, 2-digit
◆ [MMDDYY]	YY = year, 2-digit

Quantity journal logging

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.



Description
QUANTITY JOURNAL LOGGING All incoming and outgoing quantities of articles in storage are listed separately. Article data relating to articles that have already been deleted remain in memory until the quantity journal has been deleted. It can be printed out and manually deleted. The quantity journal can also be read out to a PC as a file, after which it is automatically deleted.

4 System services

Description of the operator prompts

Call up supplementary modules

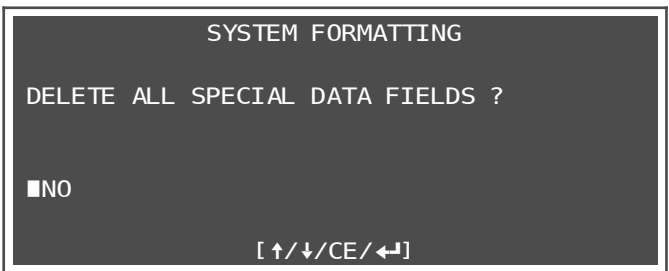
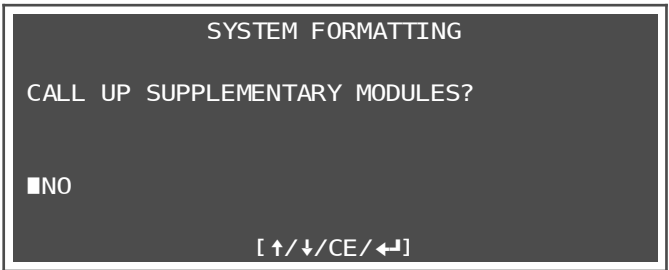
Special storage management functions can be activated in the form of supplementary modules.

- Refer to the supplementary description of the optional module in question.
- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

Delete special data fields

- Press the [↑] / [↓] key to select "YES".
If you select "YES", all the special data fields from earlier formatting are deleted.
If you select "NO", all the special data fields from earlier formatting are retained.
- Press the [↵] key.

Example screenshot



Description
SPECIAL DATA FIELDS Special data fields are necessary if additional prompts for the operator at the lift are to be incorporated over and above the standard program sequence. Depending on the program step in the operating sequence, special data are entered in a special data field for the article master data, job header or job item. A separate special data field must be defined for each additional prompt in the program sequence. It does not matter if no data are produced for them initially; they are simply carried along as empty data fields.

4 System services

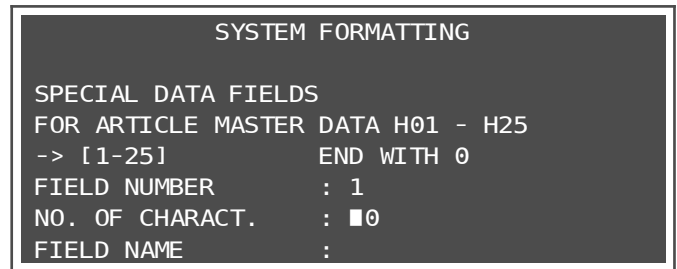
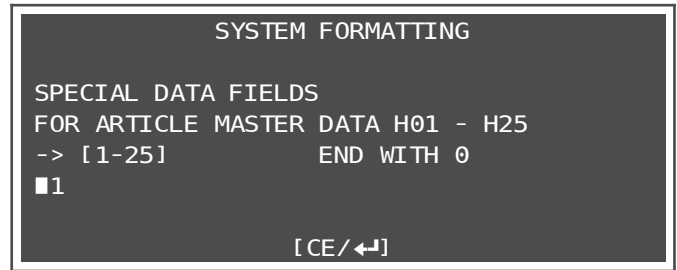
Description of the operator prompts

Create special data fields for article master data (H01-H25)

This data field type is available for special data that can arise with article movements.

- Enter the field number or keep the suggested number.
 - Press the [↵] key.
 - Press the [0] key and the [↵] key to end input.
-
- Enter the number of characters.
 - Press the [↵] key.
 - Enter the field name.
 - Press the [↵] key.

Example screenshot



Parameters / description
FIELD NUMBER The field number can be from 1 - 25.
NUMBER OF CHARACTERS A maximum of 40 characters are possible.
FIELD NAME The field name (max. 10 characters) is printed in the header for printer output.



The number of special data fields that can be configured depends on their number of characters. If exceeded, the error message "DATA FIELD LENGTHS EXCEEDED" or "DATA FIELD NAMES TOO LONG" appears.

➤ For formulas for calculation, refer to the Annex.

4 System services

Description of the operator prompts

Create special data fields for the job header
(C01 - C25)

This data field type is available for special data that may arise when a job is created or called.

- Enter the field number or keep the suggested number.
- Press the [↵] key.
- Press the [0] key and the [↵] key to end input.
- Enter the number of characters.
- Press the [↵] key.
- Enter the field name.
- Press the [↵] key.

Example screenshot

```
SYSTEM FORMATTING

SPECIAL DATA FIELDS
FOR JOB HEADER C01 - C25
-> [ 1-25]          END WITH 0
█1

[CE/↵]
```

```
SYSTEM FORMATTING

SPECIAL DATA FIELDS
FOR JOB HEADER C01 - C25
-> [ 1-25]          END WITH 0
FIELD NUMBER       : 1
NO. OF CHARACT.    : █0
FIELD NAME         :
```

Parameters / description
FIELD NUMBER The field number can be from 1 - 25.
NUMBER OF CHARACTERS A maximum of 40 characters are possible.
FIELD NAME The field name (max. 10 characters) is printed in the header for printer output.



The number of special data fields that can be configured depends on their number of characters. If exceeded, the error message "DATA FIELD LENGTHS EXCEEDED" or "DATA FIELD NAMES TOO LONG" appears.

➤ For formulas for calculation, refer to the Annex.

4 System services

Description of the operator prompts

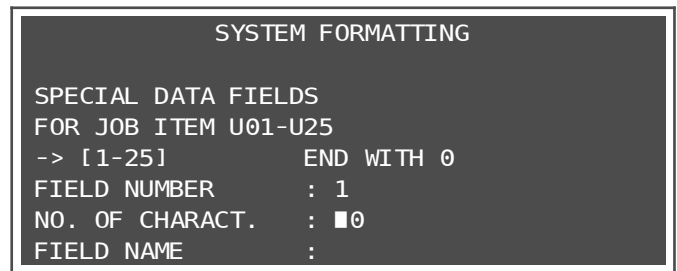
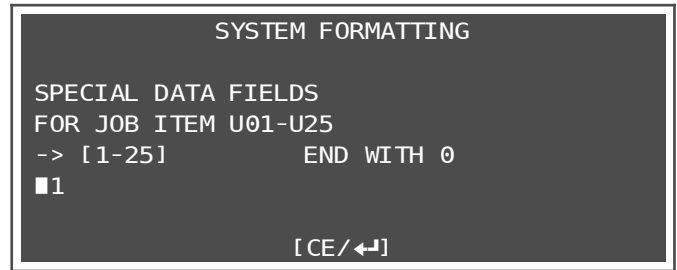
Create special data fields for job items (U01-U25)

This data field type is available for special data that may arise when a job item is entered or processed.

- Enter the field number or keep the suggested number.
- Press the [↵] key.
- Press the [0] key and the [↵] key to end input.

- Enter the number of characters.
- Press the [↵] key.
- Enter the field name.
- Press the [↵] key.

Example screenshot



Parameters / description
FIELD NUMBER The field number can be from 1 - 25.
NUMBER OF CHARACTERS A maximum of 40 characters are possible.
FIELD NAME The field name (max. 10 characters) is printed in the header for printer output.



The number of special data fields that can be configured depends on their number of characters. If exceeded, the error message "DATA FIELD LENGTHS EXCEEDED" or "DATA FIELD NAMES TOO LONG" appears.

- For formulas for calculation, refer to the Annex.

4

System services

Description of the operator prompts	Example screenshot
Multi-unit storage - Press the [↑] / [↓] key to select "YES". - Press the [↵] key.	SYSTEM FORMATTING MULTI-UNIT STORAGE ☐ NO [↑/↓/CE/↵]
	Description MULTI-UNIT STORAGE Multi-unit storage allows simultaneous storage of an article in different lifts. However, the following restrictions apply: All lifts connected to the storage management system must be initialised uniformly "with inventory control" or "without inventory control".
<i>If "YES" has been selected:</i> Multi-unit storage FIFO - Press the [↑] / [↓] key to select "YES". - Press the [↵] key.	SYSTEM FORMATTING MULTI-UNIT STORAGE -> FIFO ☐ NO [↑/↓/CE/↵]
	Description MULTI-UNIT STORAGE FIFO If you select "YES", storage and retrieval operations are carried out strictly according to the FIFO principle. This may mean longer routes for the operating personnel or more frequent alternating between the lifts. If you select "NO", storage and retrieval operations are first carried out at the lift where the procedure was started. References to the lift with the lowest FIFO identifier for this article are then issued.

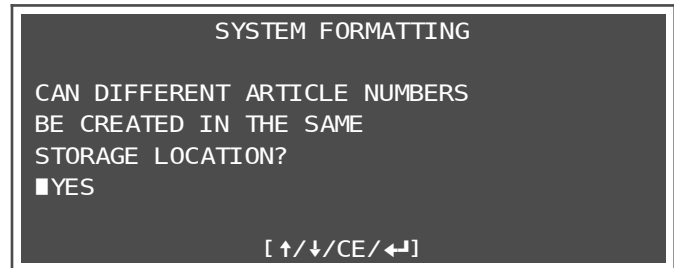
4 System services

Description of the operator prompts

Different article numbers can be created at the same storage location

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [↵] key.

Example screenshot



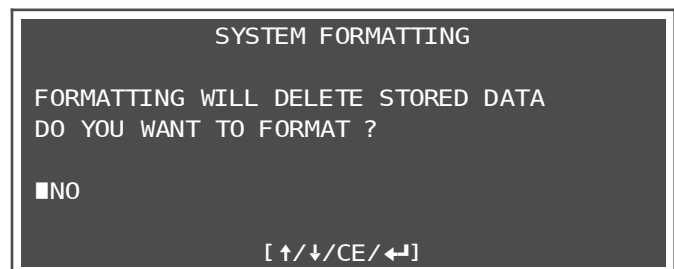
Description

If you select "YES", identical article numbers can be stored in same storage location.

If you select "NO", a note appears stating that the storage location cannot be assigned.

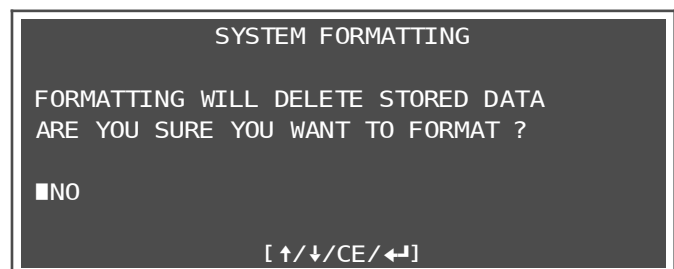
Initiate formatting

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.



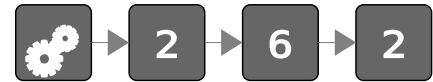
All article and job data are deleted in the process and the new settings defined previously are accepted.

- Press the [↑] / [↓] key to select "YES".
 - Press the [↵] key.
- ➔ The storage management system is reformatted.



4 System services

4.2.6.2 System installation



In this menu, lifts can be registered and unregistered and the shelf table can be updated.



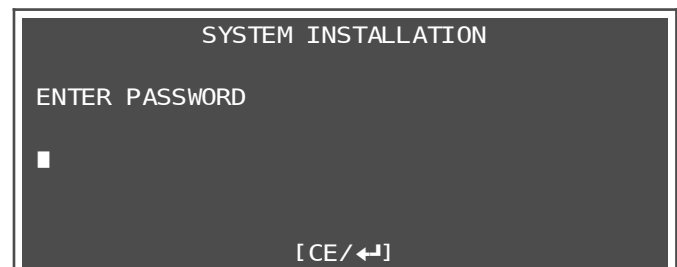
- x Lift initialisation and positioning must be completed before the lift is registered.
- x When a lift is registered, storage management takes over the lift-specific initialisation data.
- x Only when the lift has been registered can stored articles be registered and the full functionality of the storage management system be used on this lift.
- x A lift can only be unregistered when no more article data are contained in memory for this lift.

Description of the operator prompts

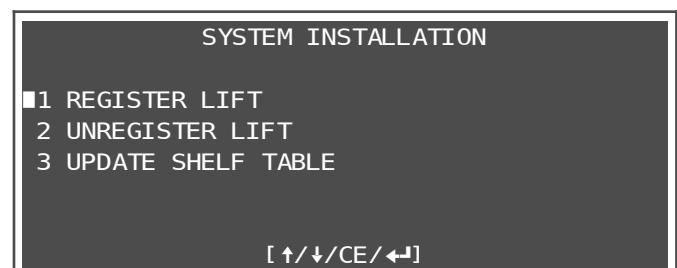
System installation

- Press the [**☛**] key, the [**2**] key and then the [**6**] key.
- Enter the password (default setting "22488").
- Press the [**↵**] key.
- Press the [**2**] key.
- Enter the password (default setting "22488").
- Press the [**↵**] key.

Example screenshot



→ The "System installation" menu is displayed.



Register lift

→ Lift initialisation and positioning must be completed before the lift is registered.

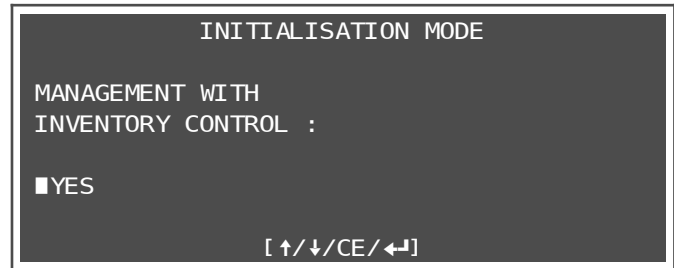
4 System services

Description of the operator prompts

Setting the management with inventory control

- Press the [↑] / [↓] key to select "YES" or "NO".
- Press the [←] key.

Example screenshot

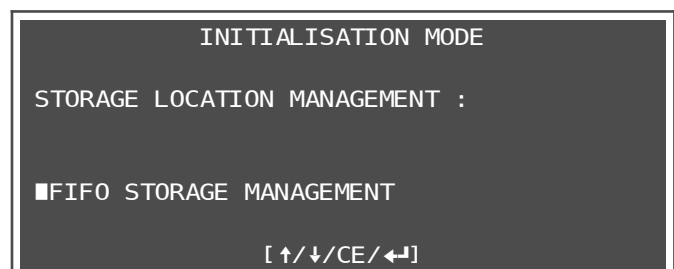


Description

If "Management with inventory control" is set, a quantity is requested when articles are stored or retrieved, and the current inventory is stored in memory.

Select storage location management

- Press the [↑] / [↓] key to select storage location management.
- Press the [←] key.



Options / description

◆ FIFO STORAGE MANAGEMENT

If an article is stored in multiple locations (termed a storage location chain) retrievals are always made from the oldest storage location and incoming goods always stored in the newest one. When inventory control is initialised, storage locations arranged in a chain can also be automatically deleted with the function key [–] when a retrieval operation leaves "0" inventory in this location and there is still another storage location containing articles.

◆ FIFO WITH RESTORE FUNCTION

Multiple storage locations are created for an article. At one location the entire package for this article was removed and the storage location automatically deleted. If the user does not require all the items in the removed package, the remaining items can be re-stored by creating a new storage location. The newly created storage location is marked as the oldest location by the re-store function. When the next retrieval operation is carried out, the system automatically accesses the opened package stored here.

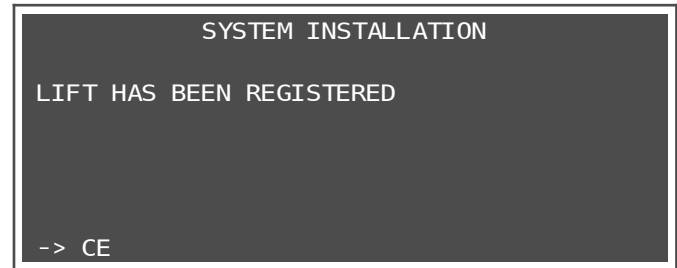
◆ RANDOM ACCESS STORAGE

When a storage location chain has been set up, locations for storage and retrieval operations can be freely selected.

4 System services

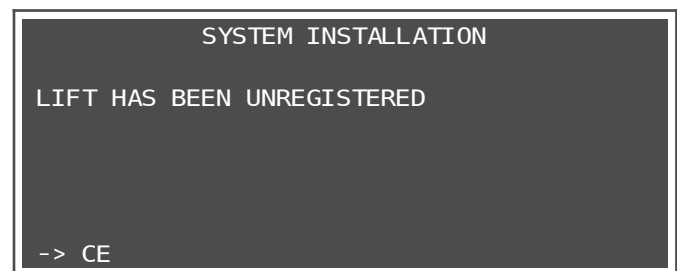
Description of the operator prompts

Example screenshot



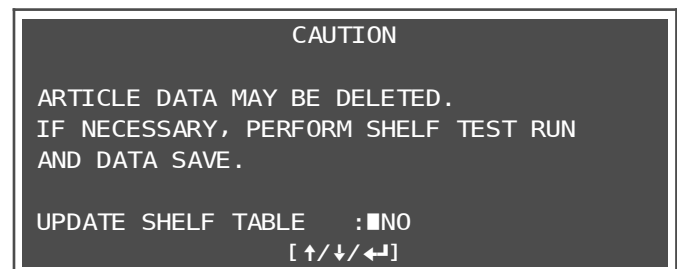
Unregister lift

→ A lift can only be unregistered when no more article data are contained in memory for this lift.



Update shelf table

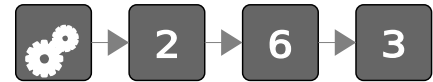
- Inconsistencies between the shelf tables contained in the lift control and storage management can be corrected here.
- Press the [↑] / [↓] key to select "YES".
 - Press the [←] key.



Article data can be deleted.

4 System services

4.2.6.3 Access control to storage management



This menu allows the passwords of all password-protected functions in storage management to be changed.



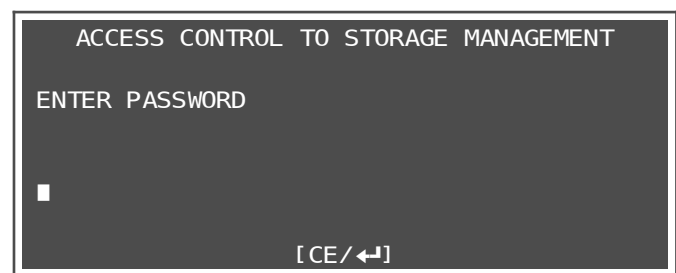
x The factory default password is "22488".

Description of the operator prompts

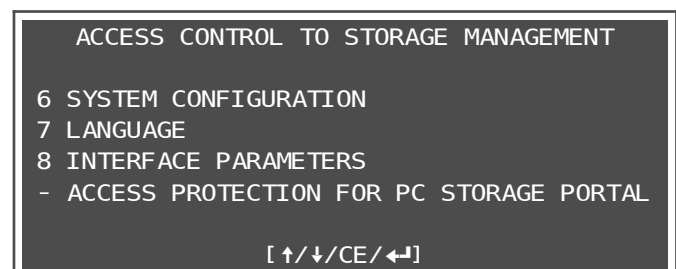
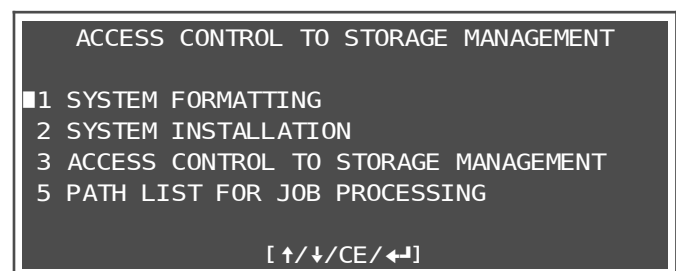
Change passwords of storage management system

- Press the **[☛]** key, the **[2]** key and then the **[6]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.
- Press the **[3]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.

Example screenshot



- The "Access control to storage management" menu is displayed.
- Select the desired function.



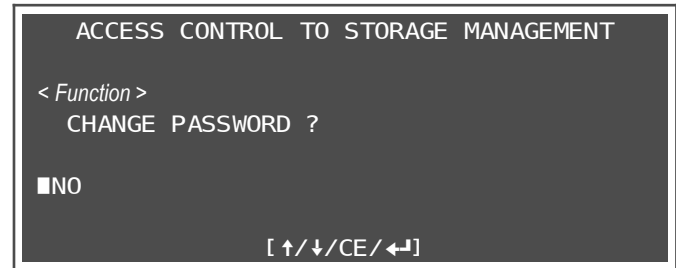
4 System services

Description of the operator prompts

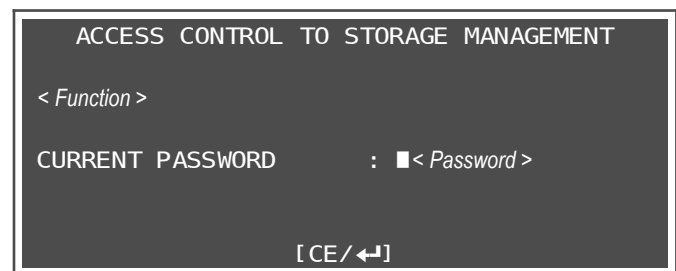
→ Depending on the previously selected *<Function>*,
e. g. "System installation", the following prompt
appears:

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

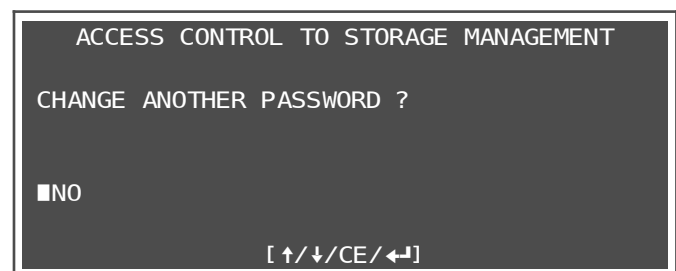
Example screenshot



- Enter the new password (max. 8 characters).
- Press the [↵] key.

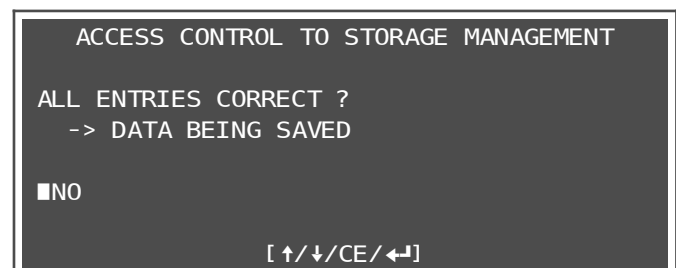


- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.



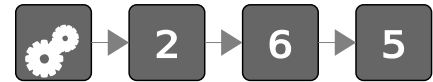
- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

→ The storage management passwords are saved.



4 System services

4.2.6.4 Path list for job processing



In this menu, the path list of multiple lifts for time-optimised and path-optimised job processing can be defined.

A path list can be defined for two or more registered lifts. Otherwise this note appears: "No path list possible -> CE".

The default path corresponds to the sequence in which the lifts were registered in the storage management system.

If this sequence does not agree with the route-optimised sequence (shortest distances between the lifts, taking the location of the lifts into consideration), the path list can be defined manually.

If there are multiple access points in a lift, a different path list can be entered for each access point.

Example:

--> Lift 4 --> Lift 1 --> Lift 3 --> Lift 2 --> ... --> Lift n

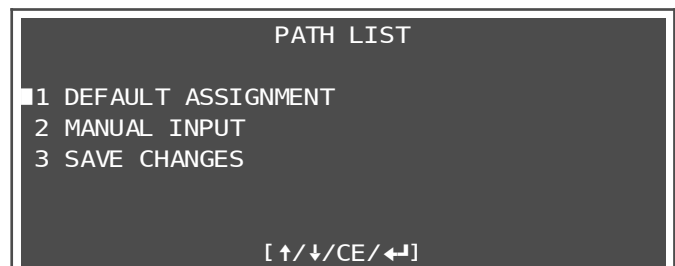
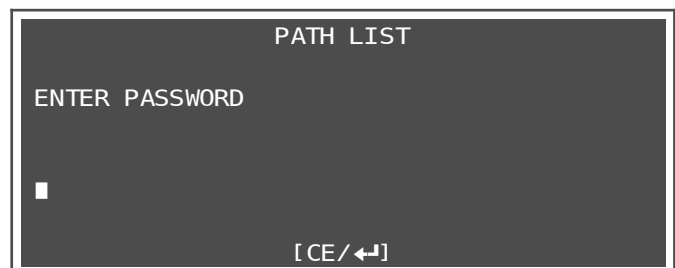
Description of the operator prompts

Defining the path list

- Press the [**☛**] key, the [**2**] key and then the [**6**] key.
- Enter the password (default setting "22488").
- Press the [**☛**] key.
- Press the [**5**] key.
- Enter the password (default setting "22488").
- Press the [**☛**] key.

→ The "Path list" menu is displayed.

Example screenshot



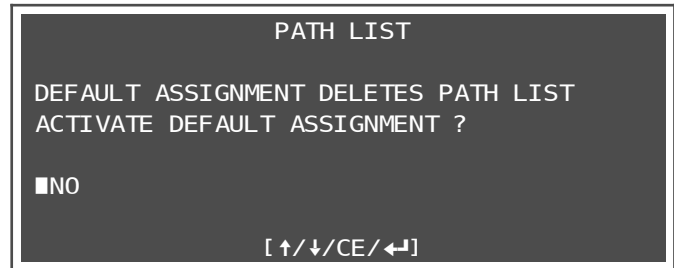
4 System services

Description of the operator prompts

Default assignment

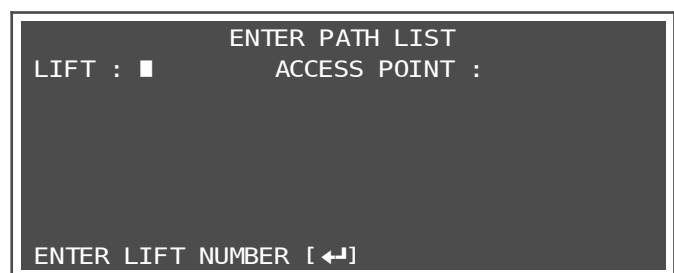
- Press the [**↑**] / [**↓**] key to select "YES".
- Press the [**↵**] key.
- ➔ Set path list to default values (lift numbers in ascending order).
Example:
-> Lift 1 -> Lift 2 -> Lift 3 -> Lift 4 -> ... -> Lift n

Example screenshot

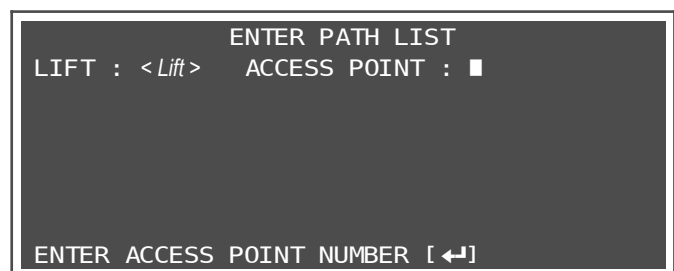


Manual input

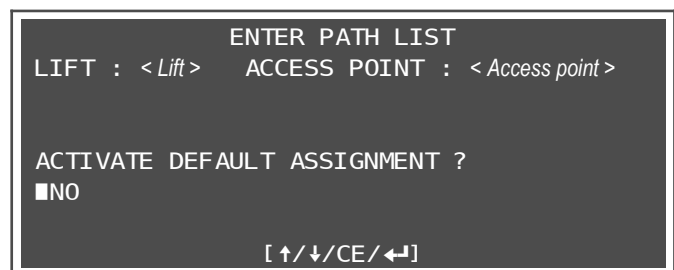
- Enter the lift number.
- Press the [**↵**] key.



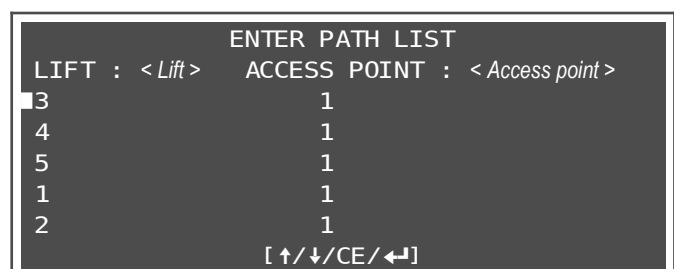
- Enter the access point number.
- Press the [**↵**] key.



- Press the [**↑**] / [**↓**] key to select "YES".
- Press the [**↵**] key.
- ➔ If you select "YES" the default settings for lift and access point are selected.
- ➔ If you select "NO", the following prompt appears:



- ➔ The sequence of entries corresponds to the sequence of processing the lifts. If more than 5 lifts are registered, the entries are shown page by page.
- Press the [**↑**] / [**↓**] key to select the lift to be changed.
- Press the [**↵**] key.



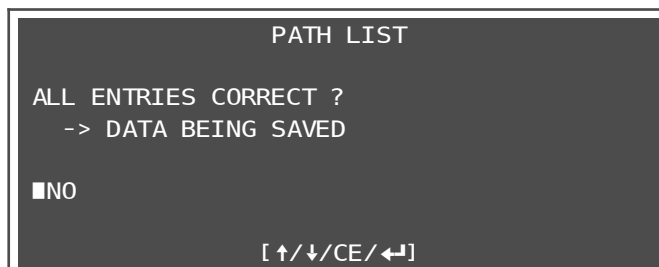
4 System services

Description of the operator prompts

Save change

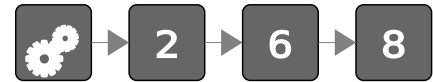
- Press the [↑] / [↓] key to select "YES".
 - Press the [←] key.
- The path list is saved.

Example screenshot



4 System services

4.2.6.5 Setting supplementary functions



Supplementary functions of the storage management system can be configured in this menu.

Description of the operator prompts

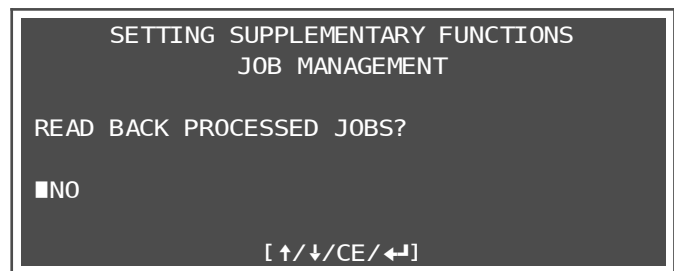
Call up setting supplementary functions

- Press the **[F1]** key, the **[2]** key and then the **[6]** key.
- Enter the password (default setting "22488").
- Press the **[F4]** key.
- Press the **[8]** key.

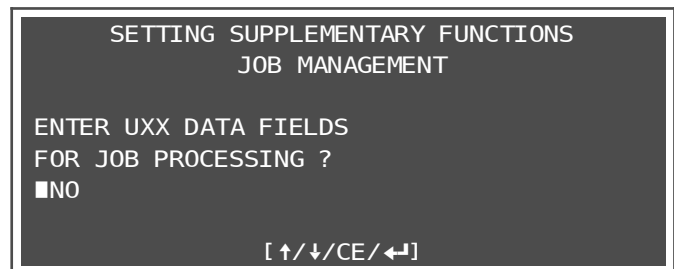
Job management

- Press the **[↑]** / **[↓]** key to select "YES".
If you select "YES", a processed job must be read back before it is deleted.
If you select "NO", the completed job is deleted immediately.
- Press the **[F4]** key.

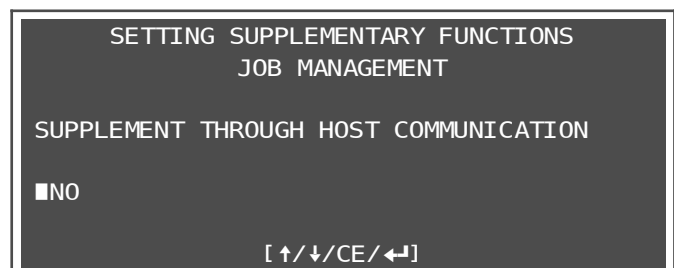
Example screenshot



- Press the **[↑]** / **[↓]** key to select "YES".
In the case of "YES", an additional data field "e" in the job item allows the option of initiating the MP control system to prompt for up to 5 UXX data fields during the processing of this item.
- Refer to the "Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®".



- Press the **[↑]** / **[↓]** key to select "YES".
If you select "YES", it is possible to add more items for new / partially processed jobs using host communication.
If you select "NO" (standard), the system prevents this.
- Press the **[F4]** key.



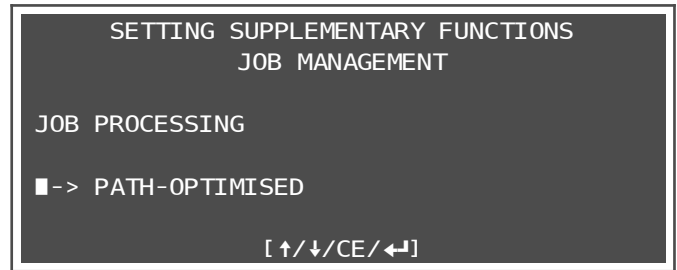
4 System services

Description of the operator prompts

Job processing

- Press the [↑] / [↓] key to select job processing.
- Press the [←] key.

Example screenshot



Options / description
◆ SEQUENTIAL Sequence in which the individual items are created in the job.
◆ PATH-OPTIMISED The sequence optimised according to path or route. The sequence of lifts can be defined by a path list.
◆ TIME-OPTIMISED Time optimisation is based on path optimisation. The system does not refer the user to a lift at which work is already being carried out. The jobs currently being processed are examined for frequency of access to the lifts, and the references are optimally distributed.



Note about job processing within the lift for "path-optimised" and "time-optimised":

- x If no shelf is in the access point:
All items on the shelf that is nearest to the access point are processed.
- x If a shelf is in the access point:
All items of the shelf in the access point are processed.
Afterwards, all items on the shelf that is nearest to the original storage location of the shelf from the access point are processed.
(If the stored article height does not change, the shelf is returned to storage at the original storage location.)
- ➔ For the Multi-Space, all items within the lift unit are processed first, then on the sides in the neighbouring lift units.



Note on "time-optimised":

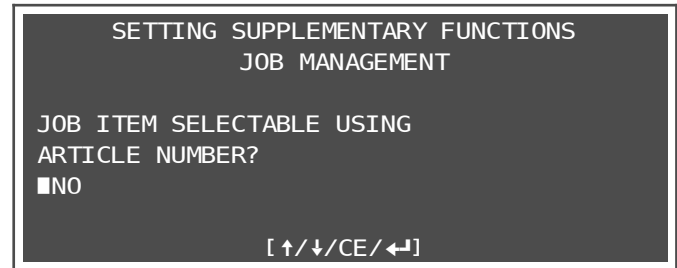
- x Further optimisations are possible with the supplementary module "Shelf pre-positioning". Observe restrictions with regard to lift features.
- Refer to the "Supplementary Description of the Shelf Pre-positioning Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"

4 System services

Description of the operator prompts

- Press the [↑] / [↓] key to select "YES".
If you select "YES", the function bar for menu item Job (red) is expanded by adding the "Item" function.
- Press the [←] key.

Example screenshot



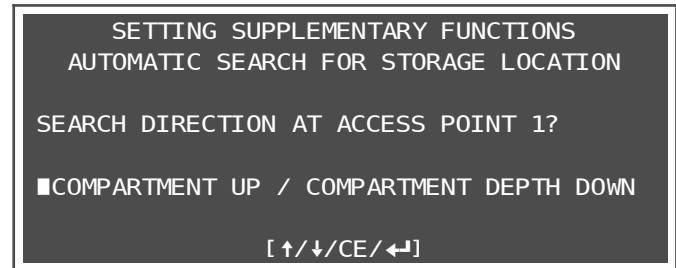
4 System services

Description of the operator prompts

Search direction for automatic search for storage location

- Press the [↑] / [↓] key to select search direction.
- Press the [←] key.

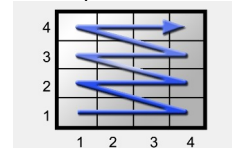
Example screenshot



Options / description

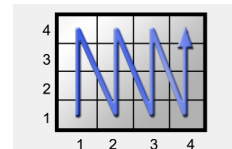
◆ COMPARTMENT UP / COMPARTMENT DEPTH UP

Searching for available storage locations on a shelf is carried out first in the direction of compartments, and then in the direction compartment depths.



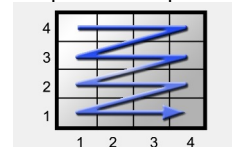
◆ COMPARTMENT DEPTH UP / COMPARTMENT UP

Searching for available storage locations on a shelf is carried out first in the direction of compartment depths, and then in the direction compartments.



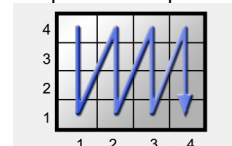
◆ COMPARTMENT UP / COMPARTMENT DEPTH DOWN

Starting with the largest compartment depth, searching for available storage locations on a shelf is carried out first upwards in the direction of compartments, and then downwards in the direction of compartment depths.



◆ COMPARTMENT DEPTH DOWN / COMPARTMENT UP

Starting with the largest compartment depth, searching for available storage locations on a shelf is carried out first upwards in the direction of compartments, and then downwards in the direction of compartment depths.



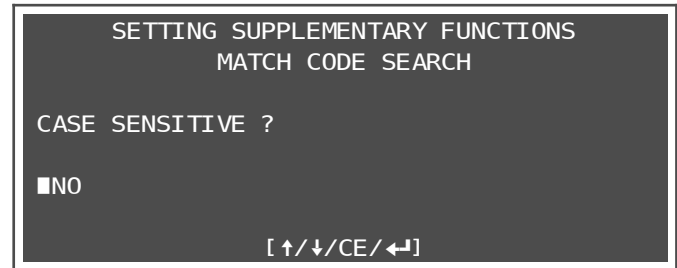
4 System services

Description of the operator prompts

Match code search

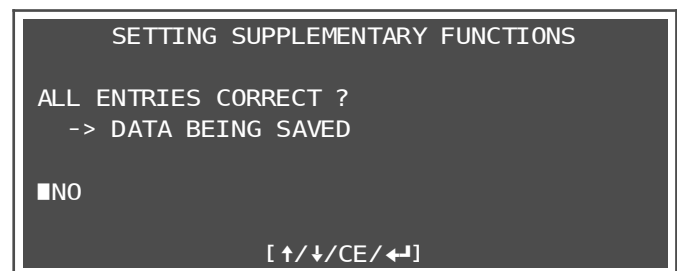
- Press the [↑] / [↓] key to select "YES".
If you select "YES", the upper case/lower case is taken into account in the match code search.
If you select "NO", the upper case/lower case is not taken into account in the match code search.
- Press the [↵] key.

Example screenshot



Save change

- Press the [↑] / [↓] key to select "YES".
 - Press the [↵] key.
- The data are saved.



4 System services

4.3 System services Run sequence



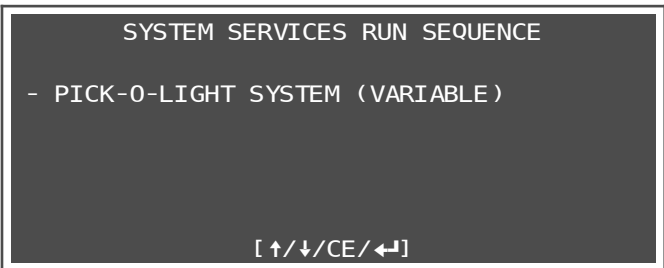
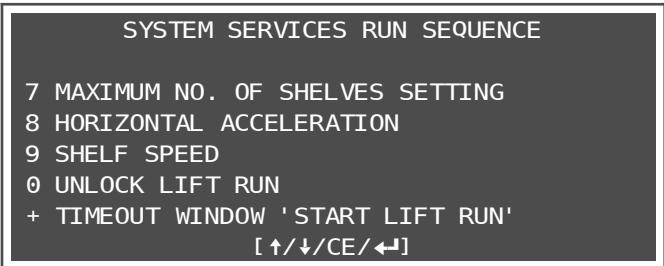
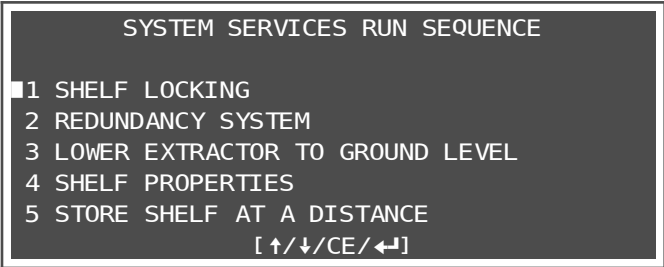
System parameters that influence the sequence of operations can be altered here.

Description of the operator prompts

Call up system services run sequence

- Press the **[↶]** and **[4]** key.
- ➔ The "System services run sequence" menu is displayed.

Example screenshot



4 System services



Menu item	See Chapter	Page
1	4.3.1	160
2	4.3.2.2	162
3	4.3.3	169
4	4.3.4	170
5	4.3.5	174
7	4.3.6	176
8	4.3.7	177
9	4.3.8	178
0	4.3.9	179
+	4.3.10	180
-	4.3.11	181

4 System services

4.3.1 Shelf locking (only with incremental encoder)



When shelf locking is activated, the shelf is not pushed completely into the access point. The horizontal movement stops before the extractor drive catches leave the guides in the shelf. This locks the shelf in place so that it cannot be moved. When shelf detent is activated, a locked shelf can be released by tapping the "Shelf detent" button in the taskbar.



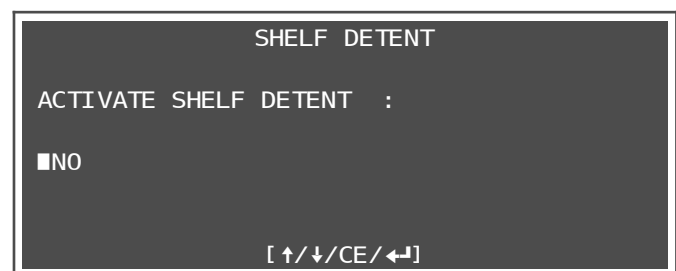
- x This menu appears only for lifts with incremental encoder and without the supplementary features listed below.
- x The incremental encoder is a sensor for measuring the horizontal movement.
- x Shelf locking is possible only on lifts that are fitted with an incremental encoder and that do *not* have the following supplementary features:
 - Automatic shutters
 - High-speed door without shelf change with high-speed door open,
 - Automatic shelf ejection
 - Shelf weighing device in the access point
 - Automatic shelf pre-positioning
 - Multiple access points with guide rails or transporter/trolley

Description of the operator prompts

Activate shelf locking

- Press the **[F1]** key, the **[4]** key and then the **[1]** key.
- Press the **[↑]** / **[↓]** key to select "YES".
- Press the **[←]** key.

Example screenshot



4 System services

4.3.2 Redundancy system

The redundancy system allows limited lift operation if certain system elements, such as position sensors or proximity switches, should fail. This is achieved by mutual support of the system elements and limited error monitoring.



x Even if the redundancy system allows limited operation of the lift despite an error, the Hänel service department should be called immediately to rectify the fault.

4.3.2.1 Application areas

System element	Redundancy function	Lean-Lift® 840 to 3260 mm shelf width	Lean-Lift® > 3260 mm shelf width	Multi-Space®
Vertical positioning system	1	✓	✓	✓
Horizontal positioning system	11, 12	✓	✓	✓
Protection zones	2, 3	✓	✓	✓
Vertical run direction and run speed monitoring	4, 5	✓	✓	✓
Horizontal run direction monitoring	13	✓	✓	✓
Article height detection	7	✓	✓	✓
Monitoring shelf management	8	✓	✓	✓
Shelf position detection on the extractor	9, 10	✓	✓	✓
Position detection for shelf in the access point	14, 15	○	✓	○
Safety light barriers	6	▶	✗	✗
Position detection for movement unit	16, 17, 18	✗	✗	✓



Redundancy function integrated into standard lift version



Redundancy function not possible / available



Optional redundancy function 'Redundant safety equipment at the access point' (second safety circuit)



Optional redundancy function 'Partially redundant control for Lean-Lift® / Multi-Space®' (4 access proximity switches)

Note:

The following redundancy functions can be enabled in automated form:
1, 2, 3, 9, 10, 11, 12, 16, 17

4 System services

4.3.2.2 Activate redundancy system



In this menu, restricted lift operation can be activated even if certain control elements fail.
This made possible by redundancy and restrictions to the error supervision system.



x All system elements are active after the lift is switched off and on again.

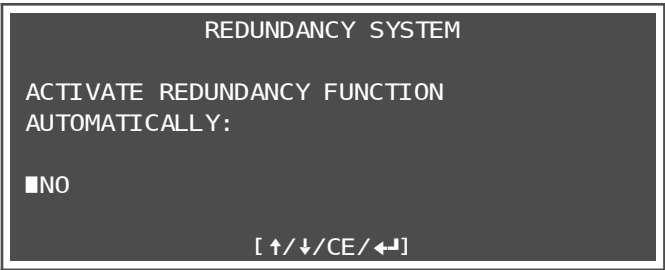
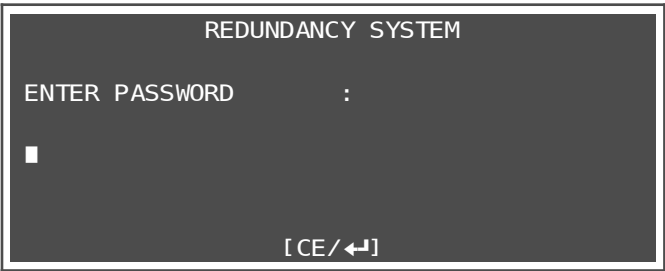
Description of the operator prompts

Activate redundancy system

- Press the **[↶]** key, the **[4]** key and then the **[2]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.

- Press the **[↑] / [↓]** key to select "YES".
- Press the **[↵]** key.

Example screenshot



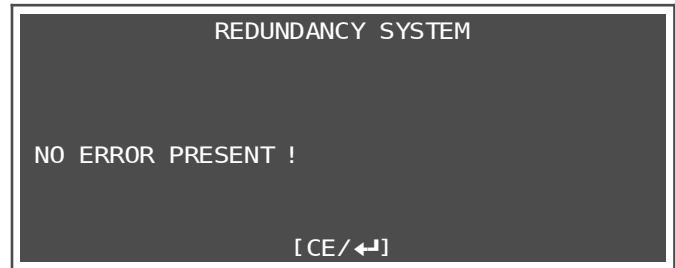
Description
For active automatic redundancy function, the following redundancy functions are started automatically: 1, 2, 3, 9, 10, 11, 12, 16, 17, 18 This applies to standard operation only, not to positioning and service functions.

4 System services

Description of the operator prompts

No error has occurred. No system element for deactivation is displayed.

Example screenshot



If a system element needs to be deactivated because of a fault, call the Hänel Service department to rectify the fault.



- x Please deactivate the system elements "Article height detection" and "Shelf management monitoring" only if necessary; after deactivating these system elements, the lift has to be inspected and the "Check article heights" test run has to be carried out by the Hänel service department.
- x For a description of the system elements, refer to the table on page 166.

4 System services

Description of the operator prompts

Possible system elements that can be deactivated if errors occur

→ Only system elements in which an error has occurred can be deactivated. Other system elements are not displayed.

For each system element:

- Press the [↑] / [↓] key to select "YES".
- Press the [↵] key.

Example screenshot

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
DOUBLE VERT. POSIT. SYSTEM      : NO
LOWER PROTECTION ZONE          : NO
UPPER PROTECTION ZONE          : NO
VERT. RUN DIRECTION MONITORING : NO

[ ↑/↓/CE/↵ ]
    
```

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
VERT. RUN SPEED MONITORING      : NO
SAFETY LIGHT BARRIERS          : NO
ARTICLE HEIGHT DETECTION       : NO

[ ↑/↓/CE/↵ ]
    
```

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
SHELF MANAGEMENT MONITORING    : NO
SHELF EXTRACTOR FRONT MONITORING : NO
SHELF EXTRACTOR REAR MONITORING : NO
DOUBLE HORIZ. ABSOLUTE POSIT.  : NO

[ ↑/↓/CE/↵ ]
    
```

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
DOUBLE HORIZ. POSIT. DETECTION  : NO
HORIZ. RUN DIRECTION MONITORING : NO
ACCESS PROXIM. SWITCHES B20, B21 : NO
ACCESS PROXIM. SWITCHES B26, B27 : NO

[ ↑/↓/CE/↵ ]
    
```

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
FRONT MOVEM. UNIT MONITORING    : NO
REAR MOVEM. UNIT MONITORING     : NO
DOUBLE POSIT. DETECTION MOVEM   : NO

[ ↑/↓/CE/↵ ]
    
```

4 System services

Description of the operator prompts



- Press the [↑] / [↓] key to select "YES".
- Press the [←] key.

Example screenshot

- x The following prompt appears only if the system element "Article height detection" has been deactivated.

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
CAUTION!
AFTER DISABLING,
LIFT MUST BE CHECKED
BY HAENEL SERVICE.
ARTICLE HEIGHT DETECTION           : ■NO
[ ↑/↓/CE/← ]
    
```



- Press the [↑] / [↓] key to select "YES".
- Press the [←] key.

- x The following prompt appears only if the system element "Shelf management monitoring" has been deactivated.

```

REDUNDANCY SYSTEM
DEACTIVATION OF SYSTEM ELEMENTS
CAUTION!
AFTER DISABLING,
LIFT MUST BE CHECKED
BY HAENEL SERVICE.
SHELF MANAGEMENT MONITORING       : ■NO
[ ↑/↓/CE/← ]
    
```



- Press the [←] key.
- ➔ Start a "Check article height" test run in the service functions.
- ➔ When the lift has been inspected and the "Check article height" test run has been completed by the Hänel service department, the display no longer appears and operation can continue as normal. Only then can the article heights of the shelves be increased again, shelves added and optimisation runs carried out.

- x When the system elements "Article height detection" or "Shelf management monitoring" have been deactivated, the following display appears when the lift is switched on:

```

REDUNDANCY SYSTEM

INCREASE IN ARTICLE HEIGHTS,
ADDITION OF SHELVES AND OPTIMISATION
RUNS NOT POSSIBLE UNTIL ARTICLE
HEIGHT HAS BEEN CHECKED.

[ CE/← ]
    
```

4 System services

Redundancy function	Error	System element	Explanation	Comments
1	Synchronisation run 1, Synchronisation run 2, Synchronisation run 3, Synchronisation run 5, Synchronisation run 6	Double vertical positioning system	If one of the vertical position detection systems fails, the lift can continue to be operated with the position detection systems that are still functioning.	If multiple positioning systems fail, lift operation is no longer possible. If shelves are loaded unevenly, running may be blocked when shelves are pushed in. In this case, bring the shelf to the access point again and load it evenly. The horizontal driving speed is reduced.
2	System error 13	Lower protection zone	In the lower vertical running area (lower protection zone), the downward running speed is reduced. If the protection zone is detected at the wrong height or does not switch in the area of the protection zone, this error message is displayed.	If the lower protection zone monitoring is deactivated, the vertical driving speed is reduced.
3	System error 14	Upper protection zone	In the upper vertical running area (upper protection zone), the upward running speed is reduced. If the protection zone is detected at the wrong height or does not switch in the area of the protection zone, this error message is displayed.	If there is an error in the protection zone monitoring or the upper protection zone monitoring is deactivated, the vertical driving speed is reduced.
4	System error 2	Vertical run direction monitoring	This error message is displayed if the wrong vertical run direction is detected.	If direction monitoring is deactivated, the vertical driving speed is reduced.
5	System error 3	Vertical run speed monitoring	This error message is displayed if the vertical run speed is detected as being too high.	The vertical driving speed is reduced.
6	Light barriers Light barriers / Door	Safety light curtain	The safety light curtain secures the access area. If the lift is fitted with a second safety circuit, the safety light curtain is bypassed when the sliding door is closed.	The lift must be equipped and initialised with the optional electrical equipment "Second safety circuit". Before the lift starts to run, the sliding door must be closed.

4 System services

Redundancy function	Error	System element	Explanation	Comments
7	System error 15, Stored article protrudes over shelf at rear, Stored article protrudes over shelf at front, Stored article in the high-speed door area, Stored article is too high, Lift is full	Article height detection	When shelves are put into storage, the height of the storage article is detected by light barriers. If article height detection is deactivated, shelves are always put back into storage in the place from which they were retrieved. This presupposes that the article height has not been changed.	If article height detection is deactivated, the height of the storage articles must not be increased! Otherwise the articles will collide with shelves when put into storage. Shelves can be retrieved, stored and removed, but not added. Nor is it possible to execute an optimisation run. When the error in article height detection has been removed, the "Check shelf positions" test run must be executed, in which all the shelves are brought to the access point and the article heights read in again. For the Multi-Space® the test run "Check article height" must be carried out for all lift units. Only then may the article heights of the shelves be increased again, shelves added and optimisation runs carried out.
8	System error 1, System error 7, System error 8, Motor overloaded 7, Motor current too high 7	Monitoring of shelf management	These error messages occur when there is an error in shelf management. If this error monitoring function is deactivated, shelves are always put back into storage in the place from which they were retrieved. This presupposes that the article height has not been changed.	If this error monitoring function is deactivated, the height of the storage articles must not be increased! Shelves can be retrieved, stored and removed, but not added. Nor is it possible to execute an optimisation run. When the error in shelf management has been removed, the "Check shelf positions" test run must be executed, in which all the shelves are brought to the access point and the article heights read in again. For the Multi-Space® the test run "Check article height" must be carried out for all lift units. Only then may the article heights of the shelves be increased again, shelves added and optimisation runs carried out.
9	System error 5 System error 9 System error 12 Shelf is incorrectly positioned 2	Shelf detected on the front of the extractor	This error message appears when a shelf is erroneously detected on the front of the extractor (B12).	If the system element is deactivated, the vertical driving speed is reduced.
10	System error 5 System error 10 System error 11 Shelf is incorrectly positioned 2	Shelf detected on the back of the extractor.	This error message appears when a shelf is erroneously detected on the back of the extractor (B13).	If the system element is deactivated, the vertical driving speed is reduced.

4 System services

Redundancy function	Error	System element	Explanation	Comments
11	System error 18	Duplicated absolute position detection of the horizontal drive	This error message appears if there is a fault in the horizontal absolute position detection (B10 or B11).	If the duplicated absolute position detection system of the horizontal drive is deactivated, the vertical driving speed is reduced.
12	System error 19	Duplicated position detection of the horizontal drive	This error message appears if there is a fault in the horizontal position detection system.	If the duplicated position detection system is deactivated, the horizontal and vertical driving speeds are reduced.
13	System error 17	Direction monitoring for the horizontal drive	This error message is displayed if the wrong horizontal run direction is detected.	If run direction monitoring is deactivated, the horizontal driving speed is reduced.
14	Shelf removal pos too far inside Shelf removal pos too far outside Unknown shelf in the access point No shelf in access point Shelf was removed without being registered.	Monitoring of the position of the shelf in the access point (B20, B21)	The positions of the shelves in the access point are detected by proximity switches. This ensures, for example, that shelves are standing correctly in the access opening before being put into storage and that shelves are not jutting out into the lift shaft during vertical runs.	After deactivating the defective access proximity switches, lifts with certain shelf dimensions will drive vertically at a reduced speed.
15	Shelf removal pos too far inside Shelf removal pos too far outside Unknown shelf in the access point No shelf in access point Shelf was removed without being registered.	Monitoring of the position of the shelf in the access point (B26, B27)	The positions of the shelves in the access point are detected by proximity switches. This ensures, for example, that shelves are standing correctly in the access opening before being put into storage and that shelves are not jutting out into the lift shaft during vertical runs.	After deactivating the defective access proximity switches, lifts with certain shelf dimensions will drive vertically at a reduced speed.
Only for Multi-Space®: 16	System error 23 System error 24 System error 25 System error 26	Detection of the movement unit - position with switch S22	This error message appears if there is a fault in detecting the movement unit - position by switch S22.	After deactivating the system element, the position of the movement unit is checked during each trip to the centre position by checking the switch point of switch S23. Vertical movement and movement to the right/left is at a reduced speed.
Only for Multi-Space®: 17	System error 23 System error 24 System error 25 System error 26	Detection of the movement unit - position with switch S23	This error message appears if there is a fault in detecting the movement unit - position by switch S23.	After deactivating the system element, the position of the movement unit is checked during each trip to the centre position by checking the switch point of switch S22. Vertical movement and movement to the right/left is at a reduced speed.
Only for Multi-Space®: 18	System error 47	Duplicated position detection of the movement unit	This error message appears if there is a fault in the position detection system of the movement unit.	If the duplicated position detection system is deactivated, the vertical and right/left driving speeds are reduced.

4 System services

4.3.3 Lowering the extractor to ground level



In this menu, the extractor can be lowered to ground level.



x This menu item appears only at access point 1 for lifts with a model year 2015 or later.

Along with service technicians such as Hänel specialists or representatives authorised by Hänel, this function is only permitted for specially trained personnel that have been authorised by the owner/operator after creating a hazard assessment in writing specifically for this purpose.

See operating manual!

4

System services

4.3.4

Shelf properties



Shelf properties can be configured in this menu.



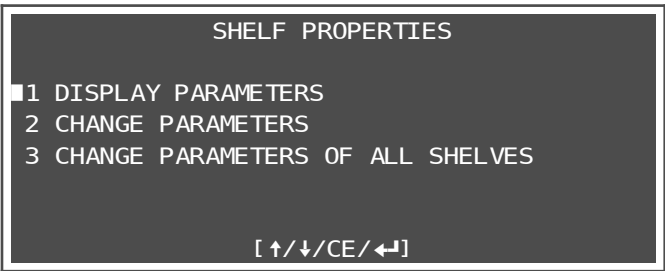
- x With the supplementary module "Adjustable shelf speed", each shelf can be assigned an individual speed as a percentage of the maximum speed.
- x With the supplementary module "Management of storage location height", each shelf can be assigned a desired (target) height.

Description of the operator prompts

Call up shelf properties

- Press the **[F1]** key, the **[4]** key and then the **[4]** key.
- The "Shelf properties" menu is displayed.

Example screenshot



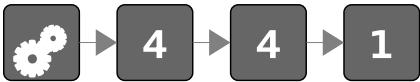
Menu item	See Chapter	Page
1	4.3.4.1	171
2	4.3.4.2	172
3	4.3.4.3	173

4

System services

4.3.4.1

Display parameters



- x The display of shelf speed ("SPEED") appears with the supplementary module "Adjustable shelf speed" only.
- x The display of shelf target height ("TARG.HEIGHT") appears with the supplementary module "Storage location height management" only.

Description of the operator prompts

Display shelf parameters

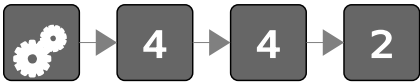
- Press the **[⚙]** key, the **[4]** key, the **[4]** key and then the **[1]** key.
- Press the **[↑]** / **[↓]** key to display additional shelves.
- Press the **[CE]** key to exit the display.

Example screenshot

SHELF PROPERTIES				
SHELF	AP	FACTOR	SPEED	TARG.HEIGHT
1		1		
2		3		
3		2		
4		1		
5		2		
[↓/CE]				

4 System services

4.3.4.2 Change parameters

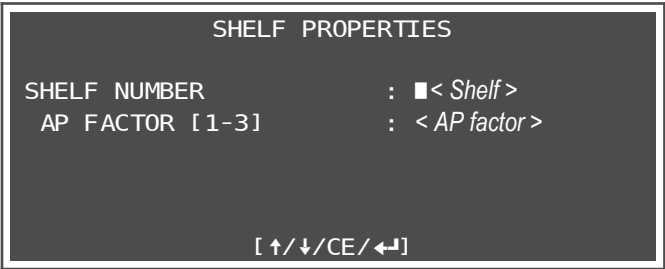


Description of the operator prompts

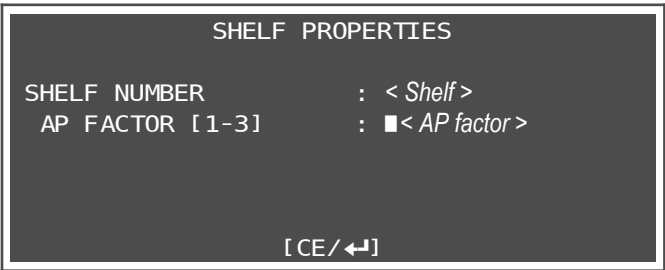
Change shelf parameters

- Press the **[F1]** key, the **[4]** key, the **[4]** key and then the **[2]** key.
- Enter the shelf number or select it using the **[↑]** / **[↓]** key.
- Press the **[←]** key.

Example screenshot



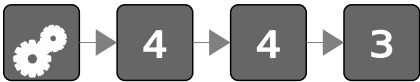
- Enter the AP factor.
- Press the **[←]** key.



Parameters / description	
AP FACTOR [1-3]	The time taken to access individual shelves can be influenced by an AP factor of 1 - 3 (AP = Access Priority). So long as the lift has adequate space, shelves with a high AP factor are stored close to the access opening to reduce the access time.

4 System services

4.3.4.3 Change parameters of all shelves



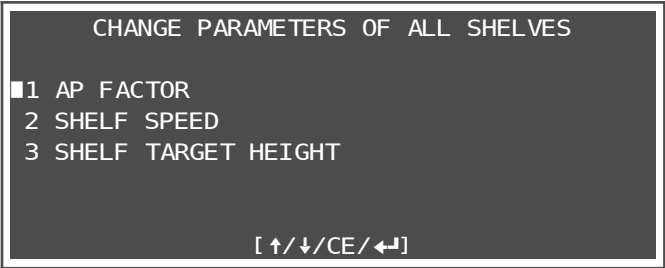
- x The display of shelf speed appears with the supplementary module "Adjustable shelf speed" only.
- x The display of the shelf target height appears with the supplementary module "Storage location height management" only.

Description of the operator prompts

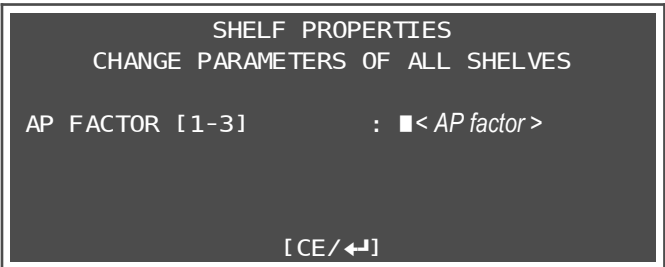
Change shelf parameters for all shelves

- Press the **[F1]** key, the **[4]** key, the **[4]** key and then the **[3]** key.
- ➔ The "Change parameters of all shelves" menu is displayed.

Example screenshot



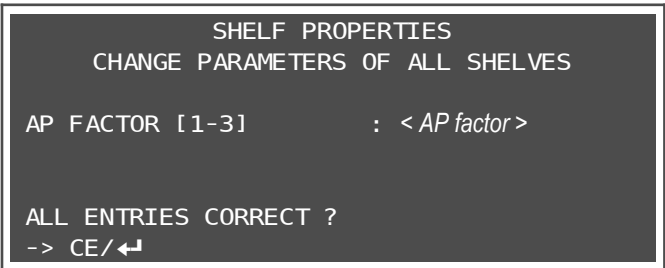
- Enter the AP factor.
- Press the **[←]** key.



Description

The time taken to access individual shelves can be influenced by an AP factor of 1 - 3 (AP = Access Priority).
So long as the lift has adequate space, shelves with a high AP factor are stored close to the access opening to reduce the access time.

- Press the **[←]** key.
- ➔ The AP factor entered is stored for all shelves.



4 System services

4.3.5 Store shelf at a distance



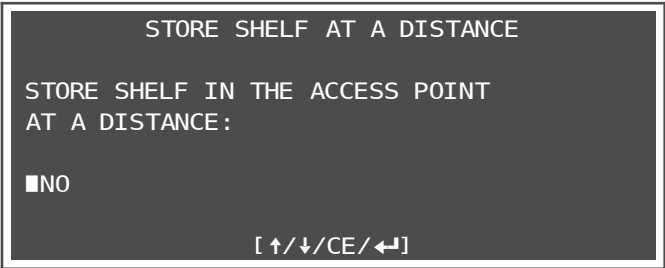
In this menu, the shelf in the access point can be stored away from the access point and the mode for further operation can be set. After switching the system off and on, the mode is reset by default.

Description of the operator prompts

Store shelf in access point farther away

- Press the [F1] key, the [4] key and then the [5] key.
 - Press the [↑] / [↓] key to select "YES".
 - Press the [←] key.
- The shelf in the access point is stored away from the access point.

Example screenshot



Description

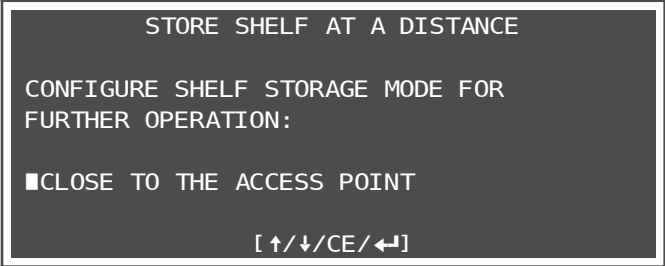
If you select "YES", the shelf in the access point is stored in a shelf that is away from the access point. This can, for example, prevent empty shelves from occupying areas with short access times (areas close to the access point).

For lifts designed for earthquake-prone areas or with floor anchorage provided by customer, the degree of occupancy of the lift is taken into account here so that the shelves are not stored far away from the other shelves in the upper area of the lift.



4 System services

- Press the [↑] / [↓] key to select the mode.
 - Press the [↵] key.
- ➔ The mode that is set is used in further operation. After switching the MP control system off and on, the mode is reset by default.



Options / description
◆ CLOSE TO THE ACCESS POINT (default setting) In further operation, shelves are stored near the access point.
◆ AT A DISTANCE FROM THE ACCESS POINT In further operation, shelves are stored away from the access point.

4 System services

4.3.6 Maximum no. of shelves setting



The maximum number of shelves can be increased using an enable code in this menu.

- x For lifts with model years 2016 and later, increasing the maximum number of shelves is only possible if a shelf weighing device is available.

Normally, the "maximum number of shelves" corresponds to the "maximum permitted number of shelves".

The "maximum number of shelves" is the lower value of the "maximum permitted number of shelves" and the "shelf number limit" only in the following two special cases:

- Lean-Lifts® starting from model year 2017 with lifts designed for earthquake-prone areas or Eurocode 8.
- Lean-Lifts® without shelf weighing device and shelf width ≤ 3260 mm (128.35") and total lift load < 60,000 kg (132,277.36 lbs) and 1000 kg (2204.62 lbs) drive, i.e. drive type "HS51" or "HS52" or "ES51" or "ES52".

◆ Maximum permitted number of shelves

The maximum permitted number of shelves indicates how many shelves can be stored depending on various factors (max. total load, lift height, model year, shelf dimensions, max. shelf load, shelf empty weight, restrictions, etc.).

◆ Shelf number limit

The shelf number limit indicates how many shelves with maximum total shelf weight can be stored depending on the maximum total lift load.

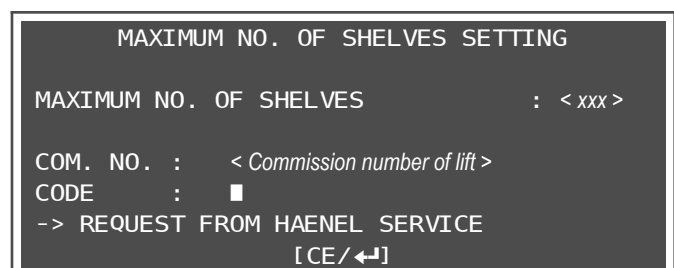
$$\text{Shelf number limit} = \frac{\text{Max. total load}}{(\text{Max. shelf load} + \text{Shelf empty weight})}$$

Description of the operator prompts

Maximum no. of shelves setting

- Press the [**1**] key, the [**4**] key and then the [**7**] key.
- ➔ Commission number of the lift is displayed as shown on the type plate.
- Enter the code specific to the lift.
Request the code for increasing the maximum number of shelves from the Hänel service department.
- Press the [**↵**] key.

Example screenshot



4 System services

4.3.7 Horizontal acceleration



The horizontal acceleration can be configured in this menu.



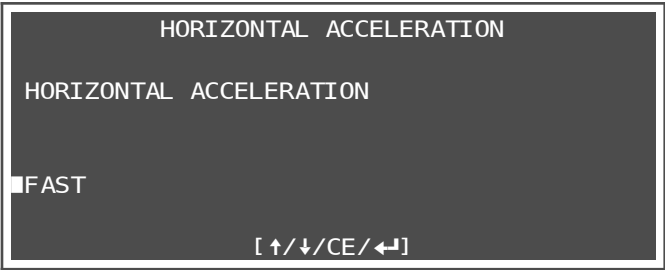
x This menu item appears only for lifts with incremental encoder with 2011 model year or later.

Description of the operator prompts

Horizontal acceleration setting

- Press the **[⚙]** key, the **[4]** key and then the **[8]** key.
- Press the **[↑] / [↓]** key to select the horizontal acceleration.
- Press the **[←] / [→]** key.
- The configured acceleration will be used during further operation.

Example screenshot



Options
◆ FAST
◆ MEDIUM (STANDARD)
◆ SLOW

Options for lift version
"EUROCODE 8 DE, ZONE 1, TYPE 40" or
"EUROCODE 8 DE, ZONE 2, TYPE 40" or
"EUROCODE 8 DE, ZONE 1-2, TYPE 60
ZONE 3 WITH SPECIAL RELEASE" or
"EUROCODE 8 DE, ZONE 1-3, TYPE 40S":

Options
◆ MEDIUM (EC8-DE)
◆ SLOW (EC8-DE)

4 System services

4.3.8 Shelf speed



- x This menu item only appears for lifts with an incremental encoder and only if the adjustable shelf speed supplementary module is not present.

The vertical and horizontal shelf speed (lift runs with shelf) can be reduced in this menu as a percentage of the standard speed. The vertical and horizontal shelf speed is the same for all shelves.

The following operations / speeds can be reduced:

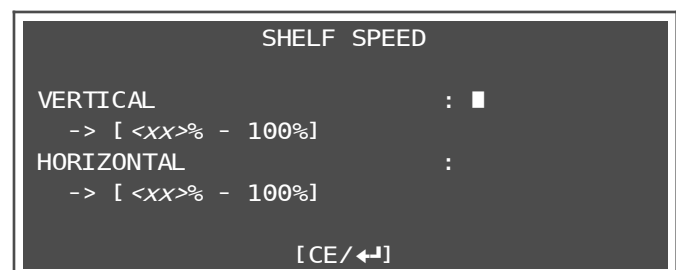
- **Extractor: Vertically move it up and down using shelf**
This maximum speed can be reduced using the vertical shelf speed setting.
- **Shelf: Horizontally pull it in / push it out**
The maximum speed can be reduced using the horizontal shelf speed setting.
- **Extractor horizontal right / left with shelf** (only for Multi-Space®)
This maximum speed can be reduced using the horizontal shelf speed setting.

Description of the operator prompts

Shelf speed

- Press the [**☛**] key, the [**4**] key and then the [**9**] key.
- Enter vertical shelf speed.
- Press the [**↔**] key.
- Enter horizontal shelf speed.
- Press the [**↔**] key.
- The set shelf speed is used for further operation.

Example screenshot



4 System services

4.3.9 Unlock lift run (only for Multi-Space®)



x This menu item is displayed only for the Multi-Space®.

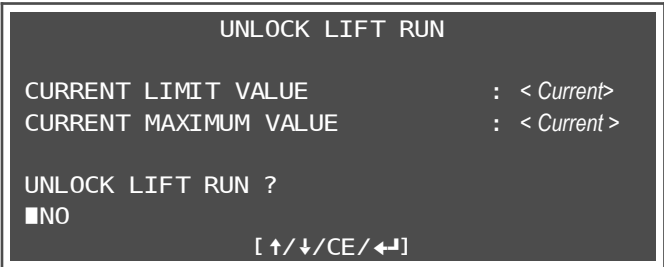
For the lift run, if too high of a M1.1/M1.2 motor current is identified, the lift run error message "LIFT RUN FAULT : WRONG MOT. CURRENT M1.1/M1.2 -> CE" appears. The lift run is disabled until it is unlocked here.

Description of the operator prompts

- Press the **[↶]** key, the **[4]** key and then the **[0]** key.
- ➔ Commission number of the lift is displayed as shown on the type plate.
- Enter the code specific to the lift.
The code to unlock the lift run must be requested by the Hänel service department.
- Press the **[↵]** key.

- Press the **[↑]** / **[↓]** key to select "YES" or "NO".
- Press the **[↵]** key.

Example screenshot



Parameters / description	
CURRENT LIMIT VALUE	Adjusted current limit value that is defined by the parameter file for the Frequency converter "FREQUEN2Vxx.FRA".
CURRENT MAXIMUM VALUE	The current maximum value measured with the CurrentSensorRS485 board.

4 System services

4.3.10 Timeout window 'Start lift run' (only for multiple access points)



- x This menu item only appears on lifts with multiple access points.
- x This menu item does not appear for supplementary module 36)
Alternating-side job processing

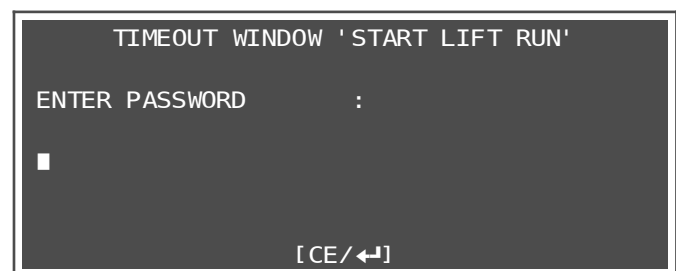
The other access points are blocked if a lift run must be started using the [↵] key on an access point. There is a timeout to ensure the other access points do not remain blocked permanently if the lift run at this access point is not started. A timeout of 10 seconds is set by default. This can be set individually.

Description of the operator prompts

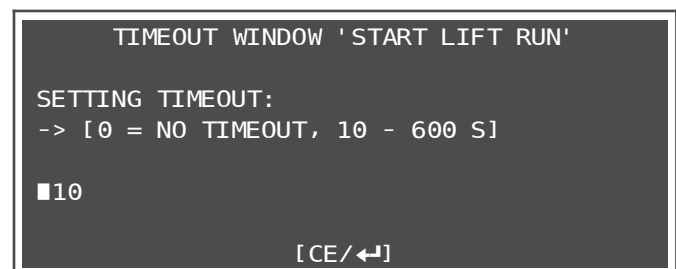
Timeout window 'start lift run'

- Press the [↵] key, the [4] key and then the [+] key.
- Enter the password (default setting "22488").
- Press the [↵] key.

Example screenshot



- Enter the timeout.
There is no timeout if a 0 is entered. Otherwise, values from 10 seconds to 600 seconds can be entered.
- Press the [↵] key.



4 System services

4.3.11 Pick-O-Light system (variable)



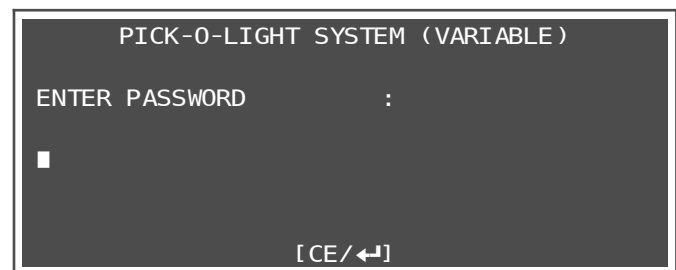
x This menu item appears only for lifts with the supplementary feature Pick-O-Light system (variable) in the HOST-WEB program version and in the HOST-COM program version.

Description of the operator prompts

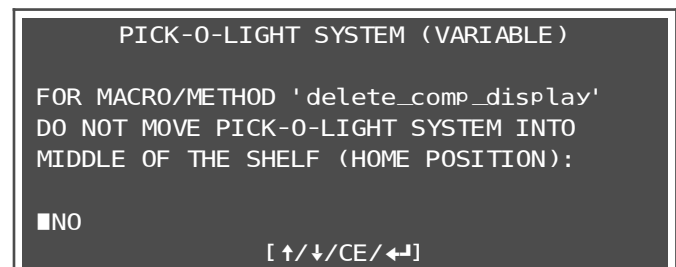
Pick-O-Light system (variable)

- Press the **[F1]** key, the **[4]** key and then the **[–]** key.
- Enter password.
- Press the **[↵]** key.

Example screenshot

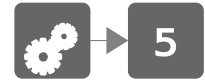


- Press the **[↑] / [↓]** key to select "YES".
- Press the **[↵]** key.



4 System services

4.4 System services service functions



The service functions are used to check the function of the lift during installation and service. Tools are provided to allow faults in the lift to be located quickly and easily.

SAFETY INSTRUCTION

The service functions are for authorised personnel only and are protected by the service password.

Authorised personnel are those who have proof of sufficient qualification and training for these tasks.

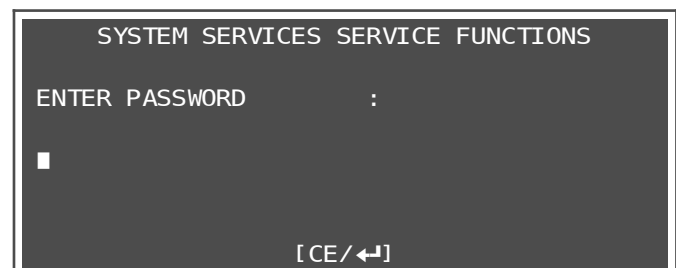
Description of the operator prompts

Call up system services service functions

- Press the **[F1]** key and the **[5]** key.
- Activate access for service functions with "JUMP" service software. The activation is valid for 12 hours at this access point.
- Press the **[↵]** key.

- Enter password. (Service password)
 - Press the **[↵]** key.
- ➔ The "System services service functions" menu is displayed.

Example screenshot



- For further information, refer to the "Supplementary Description of the Service Functions for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

4 System services

4.5 Safety inspection log



In this menu item, you can update log data for the safety inspection.

The information recorded in the MP control system is provided solely as an aid.

The test book and test logs are authoritative. Refer to the lift operating manual.



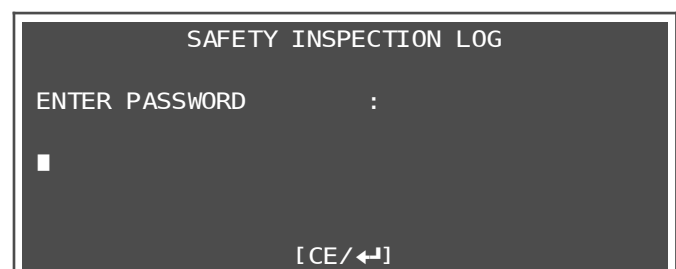
- x The data are deleted when the commission number of the lift is entered/modified. The data can also be deleted with the password "74173". The data are stored on the MP 12N CPU I board.
- x For multiple access points, the MP control systems are restarted after storage.

Description of the operator prompts

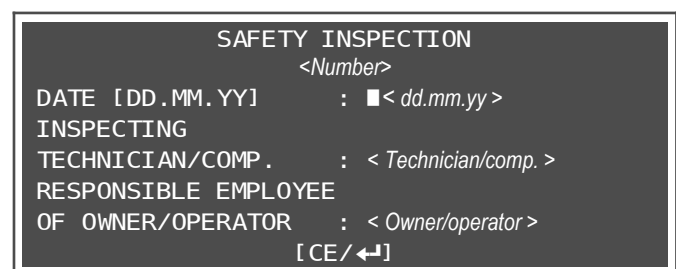
Call up system services safety inspections

- Press the **[F6]** and **[6]** key.
- Enter the password (default setting "22488").
- Press the **[↵]** key.
- ➔ The "System services safety inspections" menu is displayed.

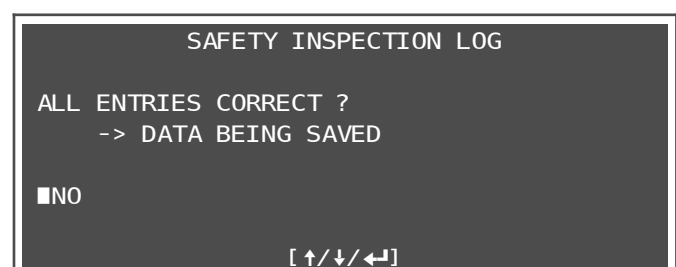
Example screenshot



- Enter the date.
- Press the **[↵]** key.
- Enter the technician and company carrying out the safety inspection.
- Press the **[↵]** key.
- Enter the responsible employee of the owner/operator.
- Press the **[↵]** key.



- Press the **[↑]** / **[↓]** key to select "YES".
- Press the **[↵]** key.
- ➔ The entries are saved.



5 Integration into the IT system

5.1 Control centre (HTTPS, firewall)



➤ The prerequisite is a "V 5.3" system version or later.

5.1.1 URL of starting screen

Direct connection of browser
(e.g. laptop, PC) to MP control system

`http://<IP address of MP multi-unit network>/controlcenter`
or
`http://<IP address of corporate network>/controlcenter`
or
`https://<IP address of MP multi-unit network>/controlcenter`
or
`https://<IP address of corporate network>/controlcenter`

Intranet connection of browser
(e.g. laptop, PC) to MP control system

`http://<IP address of MP multi-unit network>/controlcenter`
or
`http://<IP address of corporate network>/controlcenter`
or
`http://<MP name>/controlcenter`
or
`https://<IP address of MP multi-unit network>/controlcenter`
or
`https://<IP address of corporate network>/controlcenter`
or
`https://<MP name>/controlcenter`

5.1.2 Login

User (customer)

admin

Password (customer)

22488
The password can be changed.

User (service)

service

Password (service)

Service password
If the customer has forgotten their password, service can reset this password.

5 Integration into the IT system

5.1.3 Certificate maintenance (HTTPS)

- ◆ Display CA certificates of the system.
- ◆ Display manually imported CA certificates.
- ◆ Import CA certificates manually.
- ◆ Delete manually imported CA certificates.
- ◆ Generate/renew self-signed certificate.
- ◆ Export server certificate chain (format: PEM).
- ◆ Generate certificate signing request (format: CSR (certificate signing request)).
- ◆ Install server certificate chain (format: DER, PEM, PKCS#7 (P7B)).
- ◆ Back up and restore server certificate store.
The certificate store should be backed up after successful commissioning as well as before replacing the system flash cards.



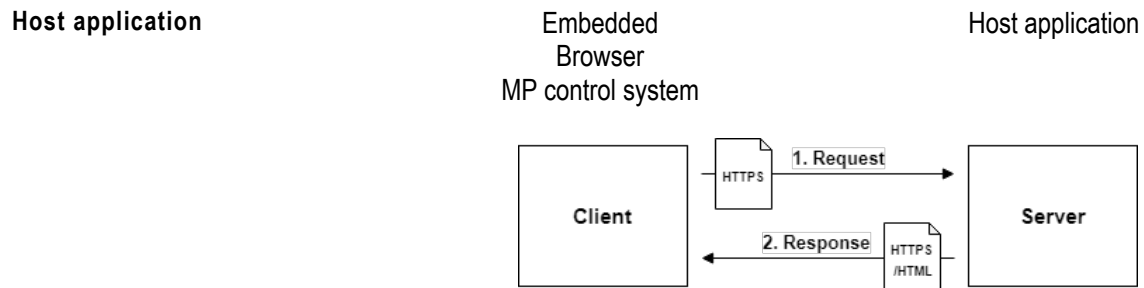
- x The date, time and MP name are used in the self-signed certificate and for the certificate signing request. These parameters should be set correctly in the MP control system before working with the control centre.
- x If the validity period of a certificate has expired, an update using the control centre is necessary.

5.1.3.1 Encrypted connection for program version MP 14-S/H[MP 14-S]/H[MP 100D-5]

- See Technical Description of the Microprocessor Control System
MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

5 Integration into the IT system

5.1.3.2 Encrypted connection for program version MP 14-H[HOST-WEB]



Scenario:

The embedded browser on the MP control system is to set up an encrypted connection to the host application. To do so, the MP control system must trust the issuer of the server certificate of the host. This is the case if the corresponding CA certificate of the certification authority is stored in the MP control system. If the suitable CA certificate is missing, no encrypted connection takes place and the MP control system shows the associated SSL error. As a result of the manual import of the suitable CA certificate using the control centre, the MP control system trusts the server certificate of the host and sets up an encrypted connection.

Functions in control centre:

- Display CA certificates of the system.
- Display manually imported CA certificates.
- Import CA certificates manually.
- Delete manually imported CA certificates.

Customer:

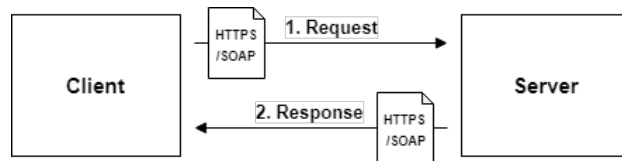
- Provide CA certificates.

5 Integration into the IT system

Activation of the lift by
means of web service using
SOAP protocol

Web service client
Host

Web server
MP control system



Scenarios:

- A) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system.
- B) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system after the certificate has been imported on the host.

Functions in control centre:

- Export server certificate chain (format: PEM).

Customer:

- Import certificate chain.

- C) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system that has been signed by an internal or external certification authority after this certificate has been installed on the MP control system.

Functions in control centre:

- Generate certificate signing request (format: CSR (certificate signing request)).
- Install server certificate chain.

Customer:

- Create server certificate chain as certificate signing request.
- If necessary, import CA certificate for web service client.

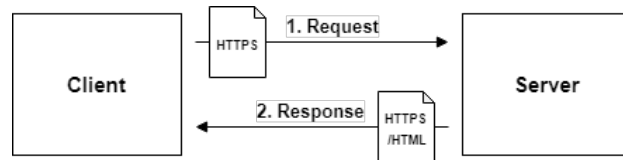
5 Integration into the IT system

5.1.3.3 Encrypted connection for access point 1 of the master lift for MP 14-H[HOST-DATA] program version

Storage portal

PC browser

Web server
MP control system



Scenarios:

- A) The PC browser sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system.
- B) The PC browser client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system after the certificate has been imported on the PC.

Functions in control centre:

- Export server certificate chain (format: PEM).

Customer:

- Import certificate chain.

- C) The PC browser sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system that has been signed by an internal or external certification authority after this certificate has been installed on the MP control system.

Functions in control centre:

- Generate certificate signing request (format: CSR (certificate signing request)).
- Install server certificate chain.

Customer:

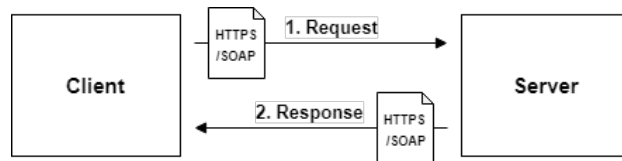
- Create server certificate chain as certificate signing request.
- If necessary, import CA certificate for web service client.

5 Integration into the IT system

Host communication by
means of web service via
SOAP protocol

Web service client
Host

Web server
MP control system



Scenarios:

- A) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system.
- B) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system after the certificate has been imported on the host.

Functions in control centre:

- Export server certificate chain (format: PEM).

Customer:

- Import certificate chain.

- C) The web service client sets up an encrypted connection to the web server and trusts the self-signed server certificate of the MP control system that has been signed by an internal or external certification authority after this certificate has been installed on the MP control system.

Functions in control centre:

- Generate certificate signing request (format: CSR (certificate signing request)).
- Install server certificate chain.

Customer:

- Create server certificate chain as certificate signing request.
- If necessary, import CA certificate for web service client.

5 Integration into the IT system

5.1.3.4 Terms used

Digital certificate

A digital certificate is a data record that confirms certain properties with regard to a person or object and the authenticity and integrity of which can be verified using cryptographic methods. The certificate is issued by an official certificate authority (CA). If the certificate was signed not by a certificate authority but by the owner of the certificate, it is a self-signed certificate.

The most widespread of these are public key certificates that comply with the X.509 standard. These certificates usually contain the following information:

- The name or other unique designation of the issuer
- Information about the validity period
- Information about the rules and methods under which the certificate was issued
- The name or other unique designation of the owner
- The public key of the owner
- Additional information about the owner
- The digital signature of the issuer for all information in the certificate

The syntax of X.509 certificates is based on ASN.1. DER is used for encoding.

Privacy Enhanced Mail (PEM)

Is a commonly used format for X.509 certificates, CSRs and cryptographic keys. A PEM file is a text file that contains one or more elements in Base64 ASCII encoding. Each element begins with a header and ends with a footer in plain text (e.g. "-----BEGIN CERTIFICATE-----" and "-----END CERTIFICATE-----"). A PEM file is usually labelled with one of the following file name extensions: ".crt", ".pem", ".cer" or ".key".

Key (cryptology)

A key in cryptology is a piece of information that is required for processing by a cryptographic algorithm in order to encrypt and decrypt data. Depending on the method used, the size and variety of the key can vary, but in all cases, the strength of the encryption depends on the security of the key. To set up encrypted connections, sign certificates or verify digital certificates, asymmetrical methods such as RSA are used. The asymmetrical method uses a key pair that consists of a public key and a private key. The private key is required in order to decrypt a secret text or sign a message. Unlike symmetrical methods, in which multiple users share a secret key, in asymmetrical methods, only one user has the private key. Thus a signature can be clearly allocated to a user.

Certificate Authority (CA)

In cryptography, a certificate authority is a body that stores, signs and issues digital certificates. A digital certificate certifies that the person or organisation specified in the certificate possesses a certain public key. The certificate authority attests to this possession by giving the certificate its own digital signature. A certificate authority acts as a third party trusted by both the owner of the certificate and the party that relies on the certificate.

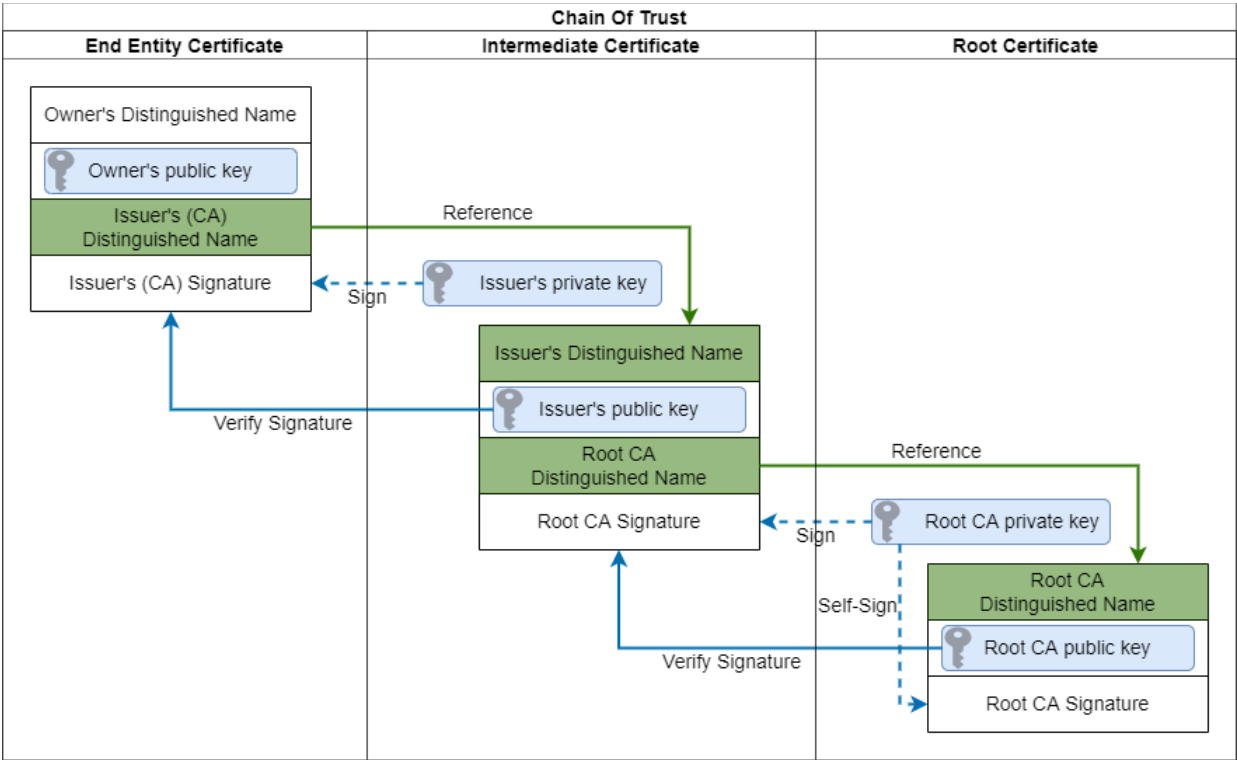
Certificate Signing Request (CSR)

A certificate signing request is a digital application that is generated on the same server on which the certificate is to be installed. In addition to the public key, this application contains additional information (e.g. Common Name, company, country) that the certificate authority (CA) uses to create the server certificate. The certificate signing request is usually created in a Base 64-based PEM format and can be opened using a text editor. The header of a certificate signing request reads "-----BEGIN NEW CERTIFICATE REQUEST-----".

5 Integration into the IT system

Chain of Trust

In computer security, digital certificates are verified based on a chain of trust. The anchor of trust for the digital certificate is the certificate authority (CA). The certificate hierarchy is a structure of certificates that enables individual persons to check the validity of the issuer of a certificate. Certificates are issued and signed by certificates that are higher in the certificate hierarchy. As a result, the validity and trustworthiness of a certain certificate is determined by the corresponding validity of the certificate that signed it. The chain of trust of a certificate chain is an ordered list of certificates that contains an end-user certificate and intermediate certificates and makes it possible for the recipient to check whether the sender and all intermediate certificates are trustworthy.



5 Integration into the IT system

File extensions

Extension	I/O	Format	Encoding	PEM header
*.cer	Certificate	X.509	DER or PEM	CERTIFICATE
*.crl	Certificate blocking list	X.509	DER or PEM	X509 CRL
*.crt	Certificate	X.509	DER or PEM	
*.csr	Certification request	PKCS#10	PEM	CERTIFICATE REQUEST
*.der	Certificate	X.509	DER	
*.ks	Keystore	Java KeyStore	binary	
*.pem	Certificate	X.509	PEM	CERTIFICATE

5 Integration into the IT system

5.1.4 Internal firewall

General

- ◆ The internal firewall is active during delivery. No port groups are additionally blocked.
- ◆ If an internal firewall is active without additional blocking of port groups, the following is true:
 - All unused ports are blocked.
 - No IP address ranges are blocked.
 - For an Ethernet MP multi-unit network, ports **2401-2408** and **3000-3008** are not blocked, because these are used for internal communication.
 - For a GSC multi-unit network, ports **2401-2408** and **3000-3008** are closed.
 - The ping command (ICMP echo request) is possible.
 - The port groups listed below can additionally be blocked, if necessary.
 - If the IP address range of the control system has been blocked at the factory, the internal firewall is active continuously and can no longer be disabled.

Port groups:

Service ports

(for system version lower than "V 7.0")

These ports are used only for service purposes.

When the service ports are selected, ports **20, 21, 22, 2100 and 3600** are additionally blocked.

(for system version lower than "V 7.3")

These ports are used only for service purposes.

When the service ports are selected, ports **20, 21, 2100, and 3600** are additionally blocked.

(for System "V 7.3" or higher)

These ports are used only for service purposes.

Ports **20** and **21** are blocked.

When the service ports are selected, ports **2100 and 3600** are additionally blocked.

Camera / SSH port

(for System "V 7.0" or higher)

This port is used for service purposes and for lifts with the supplementary feature "Hänel camera".

When "Camera / SSH port" is selected, port **22** is additionally blocked.

Host communication ports

(for system version lower than "V 7.3")

These ports are used when there is a connection to a host system.

When the "host communication ports" are selected, ports **2200** and **3500** are additionally blocked.

Host communication through macros

(for System "V 7.3" or higher)

This port is used for connecting an MP14-H [HOST-COM] to a higher-level host system.

By selecting "Host communication through macros", port **2200** is also blocked.

Configuration by Jacomman

(for System "V 7.3" or higher)

This port is used for configuring host communication using the Jacomman software.

By selecting "Configuration by Jacomman", port **3500** is also blocked.

Web server port (HTTP)

This port is used for connecting a PC browser to the MP control system. When the web server port (HTTP) is selected, port **80** is additionally blocked.

Web server port (HTTPS)

This port is used for an encrypted connection between a PC browser and the MP control system. When the web server port (HTTPS) is selected, port **443** is additionally blocked.

IP address range

For internal purposes, one of the 16 IP address ranges 172.16.x.x to 172.31.x.x is used, depending on the initialisation. When the IP address range is selected, the initialised IP address range (e.g. 16) is blocked and no longer visible from outside. That is, a ping command is no longer possible in this address range. The remaining IP address ranges can be used as corporate network address ranges.

The initialised IP address range can be blocked permanently upon customer request. This status is displayed via the indicator "Blocked at factory". It is not possible to change this setting.

5 Integration into the IT system



Caution: For an Ethernet MP multi-unit network, the IP address range must not be blocked if the camera supplementary feature is present or in the event of service work.

5 Integration into the IT system

5.1.5 Date & time (system "V 7.0" or higher)

General

- ◆ Display of the current system time.
- ◆ Enabling/disabling the time synchronisation using NTP time server
- ◆ Setting the system time manually

Synchronisation using NTP time server

The correct time zone must be selected so that the system time can be set according to the location. The default setting of the MP control system for the time zone is UTC. If the MP control system obtains the network settings from a DHCP server and this server provides the address of the time server, no further information is required. If this is not the case, the IP address/host name of a reachable time server must be entered. Multiple time servers can also be programmed.

Setting manually

If no time server is reachable in the network, you can set the date and time using the input window. Optionally, both entries can be made automatically by selecting "Synchronise with computer time". Then, the date and time of the computer with which you are carrying out the configuration are used.

5 Integration into the IT system

5.2 MP 14-S / H[MP 14-S] / H[MP 100D-5] program version

5.2.1 Integration into the Ethernet corporate network

- See Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

5.2.2 Data screening through integrated web server

- See Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

5.2.3 Host communication (file transfer / data conversion) via FTP / SFTP or CIFS protocol

- See Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

5.2.4 Host communication by web service via SOAP protocol

- See Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

5.3 MP 14-H[HOST-DATA] program version

5.3.1 Integration into the Ethernet corporate network

- Refer to the User Guide for the HOST-DATA Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.3.2 Data screening through integrated web server

- Refer to the User Guide for the HOST-DATA Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.3.3 Host communication by data record transfer via FTP / SFTP or CIFS protocol

- Refer to the User Guide for the HOST-DATA Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.3.4 Host communication by web service via SOAP protocol

- Refer to the User Guide for the HOST-DATA Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5 Integration into the IT system

5.4 MP 14-H[HOST-WEB] program version

5.4.1 Integration into the Ethernet corporate network

- Refer to the User Guide for the HOST-WEB Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.4.2 Host communication by HTML pages via HTTP protocol and lift activation by web service via SOAP protocol

- Refer to the User Guide for the HOST-WEB Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.5 MP 14-H[HOST-COM] program version

5.5.1 Integration into the Ethernet corporate network

- Refer to the User Guide for the HOST-COM Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

5.5.2 Host communication by data telegrams via FTP protocol

- Refer to the User Guide for the HOST-COM Program Version for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®.

6 Connection of peripheral devices

The following peripheral devices can be connected to a lift:

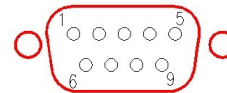
- Barcode scanner
- Piece count scale
- Network printer
- Label printer
- Badge reader
- Transponder

Hardware interface description

Under the key panel at each access point there are 2x 9-pin RS232 connectors and 1x USB connector led to the outside.

Refer also the Installation Instructions "PERIPMP12N".

Pin assignment for serial interface S1, S2 (DB 9 connector):



Pin 2: RXD

Pin 3: TXD

Pin 5: GND

Pin 7: RTS (only for S1, reserved)

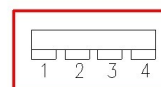
Pin 8: CTS (only for S1, only with label printer)

PIN 9: +5V (only for S2 if jumper J2 is bridged, only for Hänel transponder - reader. For customer-supplied peripheral devices, the pin must not be connected. An external, electrically isolated power supply unit must be used.)

Notes:

- Max. cable length is 5 m (16.4 ft.). The specifications of the manufacturer of the peripheral device must be taken into account.

Pin assignment for USB 2.0 interface (type A bushing)



Pin 1: +5V (max. 500mA)

Pin 2: D-

Pin 3: D+

Pin 4: GND

Notes:

- Max. cable length is 4 m (16.4 ft.). The specifications of the manufacturer of the peripheral device must be taken into account.
- If 500mA is inadequate, an external, electrically isolated mains power supply unit must be used. Pin 1 must not be connected then.

6 Connection of peripheral devices

6.1 Barcode scanner (not for MP 14-H[HOST-COM])

Alphanumeric queries (e.g. article numbers) or numerical queries (e.g. quantities) can be transferred to the MP control system by barcode reader as well as by keyboard input. Interfaces S1, S2 or the USB interface can be used for this.
For additional information, refer to Chapter 4.1.1, "Interface assignment" on page 101 and Chapter 4.1.2, "Setting interface parameters" on page 103.



The barcode reader may only be used if the operator has a clear view of the access point.

Barcode reader configuration

- The data record must be terminated with *CRLF* (Carriage Return ASCII 13 and Line Feed ASCII 10).
- All other settings are to be adapted to the customer-specific barcode.

General

The maximum number of characters that has been set cannot be exceeded. It is possible to enter fewer characters, however.
In the case of numerical queries (e.g. quantity), the following characters can be transferred:

Numeric characters

0123456789

In the case of alphanumeric queries (e.g. article number), the following characters can be transferred:

MP control system character set setting

Alphanumeric characters (transmission in ASCII- ISO 8859-1 character set)

Range of characters

0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ, / () : . + - Space
! " # \$ % & ' * ; < = > @ [\] ^ _ ` { | } ~ ° µ Å Ö å ö Æ Ø ø
a b c d e f g h i j k l m n o p q r s t u v w x y z

Example:

01003021CRLF



6 Connection of peripheral devices

6.2 Piece count scale (only for MP 14-S / H[MP 14-S] / H[MP 100D-5])

The quantity can be read in via a piece count scale as well as by keyboard input. Interfaces S1, S2 can be used for this.

The quantity is transmitted by pressing a foot switch or pushbutton on the piece count scale.

For additional information, refer to Chapter 4.1.1, "Interface assignment" on page 101 and Chapter 4.1.2, "Setting interface parameters" on page 103.

Data record structure

A data record has the following structure:

<Identification block><Data block><Blank><Units block>*CRLF*

<Identification block> = 3 space characters

<Data block> = 9 characters, ASCII numeric, unused positions are transmitted as blanks, right-justified

<Space> = 1 space character (ASCII 32)

<Units block> = PCS

Example:

 500_PC*CRLF*



The piece count scale interface can also be used to transfer the weight as a quantity to the MP control system. To do so, the numbers and, if present, decimal point or decimal comma are filtered out of the data record. Supplementary module 23) Decimal input for quantities is required for using decimal input.

6.3 Network printer (only for MP 14-S / H[MP 14-S] / H[MP 100D-5])

- See Technical Description of the Microprocessor Control System MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®.

6.4 Label printer (only for MP 14-S / H[MP 14-S] / H[MP 100D-5])

- Refer to the Supplementary Description of the Label Printing at Access Point MP 14-S / H[MP 14-S] / H[MP 100D-5] Lean-Lift®, Multi-Space® and Rotomat®.

6 Connection of peripheral devices

6.5 Badge reader (only for access code or lending management or MP 14-H[HOST-WEB])



MP 14-S / H[MP 14-S] / H[MP 100D-5] program version:

- x The badge reader can be used in conjunction with the supplementary modules "Access code management" or "Lending management".

Interfaces S1, S2 can be used for this.

For additional information, refer to Chapter 4.1.1, "Interface assignment" on page 101 and Chapter 4.1.2, "Setting interface parameters" on page 103.

The maximum number of characters that has been set cannot be exceeded. It is possible to enter fewer characters, however.

Alphanumeric characters may be transmitted. The data record must be terminated with *CRLF* (Carriage Return ASCII 13 and Line Feed ASCII 10).

Alphanumeric characters:

0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ,/():-blank

Example:

ID NUMBER*CRLF*

6

Connection of peripheral devices

6.6

Transponder (only for access code or lending management or MP 14-H[HOST-WEB])



MP 14-S / H[MP 14-S] / H[MP 100D-5] program version:

x

The transponder can be used only in conjunction with the supplementary modules "Access code management" or "Lending management".

Interfaces S1, S2 can be used for this.

For additional information, refer to Chapter 4.1.1, "Interface assignment" on page 101 and Chapter 4.1.2, "Setting interface parameters" on page 103.

The maximum number of characters that has been set cannot be exceeded. It is possible to enter fewer characters, however.

Alphanumeric characters may be transmitted.

Alphanumeric characters:

0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ,(/):-blank

Data record structure

A data record has the following structure:

<STX><Data block><ETX><CRC><CR>

<STX> = 1 byte (ASCII 2)

<Data block> = 10 bytes, ASCII, alphanumeric

<ETX> = 1 byte (ASCII 3)

<CRC> = 1 byte (XOR calculation of <STX> to <ETX>)

<CR> = 1 byte (ASCII 13)

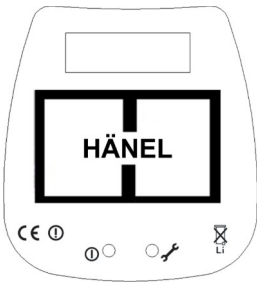
Example:

02 42 30 30 30 35 35 44 34 30 30 03 03 0D

STX B 0 0 0 5 5 D 4 0 0 ETX CRC CR

ID number: 00 4D 55 00 0B

Note



The transponder reader supplied by Hänel works at a baud rate of 9600 bits per second.

The transponder has one green and one red LED. The green LED flashes in short intervals when entering the field, and indicates the transmission of the transponder when everything is operating properly. The red LED flashes at short intervals when entering the field if a change of battery is necessary.

7 Error messages

7.1 Internal system errors

Internal system errors in the MP 14 microprocessor system.



x If these errors recur even after the system has been switched off and on again several times, contact the Hänel service department.

No.	Error	Cause	Action
600	<xxx> WRONG SOFTWARE VERSION -> CE <yyy>	<xxx>, <yyy>= Software name <yyy> reports that the software version of <xxx> is not compatible.	Carry out a software update according to the service news.
602	SYSTEM ERROR RS485 U< n > -> CE	For a frequency converter U<n> with RS485 connection, the system has detected a faulty RS485 connection or none at all. U<n> = U1 (Lean-Lift® and Multi-Space®); U2 (Multi-Space®) - Incorrect initialisation. - RS485 cable defective. - MP control system interface or frequency converter U<n> defective. - The station number of U2 is not set to address 17.	- Check initialisation of "Frequency converter with RS485". - Check interface parameters P331 to P342 of frequency converter U<n>. - Replace RS485 cable. - Replace MP control system or frequency converter U<n>. - Set parameter number 331 of frequency converter U2 to address 17 using the control module. Refer to "Frequency converter setting instructions" for Multi-Space® (document "FREQUEN2").
604	FREQUENCY CONVERTER PARAMETERS NOT SET U< n > -> CE	U<n>= U1 (Lean-Lift® and Multi-Space®) U2 (Multi-Space®) No parameter file or an incorrect parameter file has been read into the frequency converter via the MP control system using the "JUMP" service software.	Read in correct parameter file "FREQUEN1Vxx.FRA" for Lean-Lift® or "FREQUEN2Vxx.FRA" for Multi-Space® to frequency converter using "JUMP" service software via MP control system.

Technical Description of the MP 14 microprocessor control system

Lean-Lift®
Multi-Space®

7 Error messages

No.	Error	Cause	Action
605	AUTOMATIC SETTING FOR MOTOR NOT CARRIED OUT <Motor> -> CE	<Motor> = M1 (Lean-Lift®); M1.1/M1.2 (Multi-Space®) M4 (Multi-Space®) The system has determined that the automatic setting of motor data was not carried out when it was first put into service.	Carry out "Automatic setting of motor data" in the service functions for the motor.
607	INCORRECT PARAMETER SET FREQUENCY CONVERTER U<n> -> CE	U<n> = U1 (Lean-Lift® and Multi-Space®); U2 (Multi-Space®) The parameter set of the frequency converter does not match the currently initialised drive type.	- Check the initialisation of the "Drive type". - Reset frequency converter parameters.
623	Only for lifts without shelf weighing device: ERROR MAXIMUM TOTAL LOAD -> CE	The message appears when the unit is turned on and a shelf is added if the total load is greater than or equal to 60 tonnes and the lift height is greater than 15 metres.	Contact the Hänel service department.
608	Only for lifts without shelf weighing device: SHELF NUMBER LIMIT HAS BEEN REACHED -> CE	The message appears when adding a shelf if the shelf number limit has been reached and, in addition, the max. shelf load is greater than 500 kg (1102 lbs.) or the lift height is greater than 15 meters (590.55").	Contact the Hänel service department.
609	MAX. NO. OF SHELVES HAS BEEN REACHED -> CE	The message appears when adding a shelf if the maximum number of shelves has been reached.	Contact the Hänel service department.
624	Only for lifts without shelf weighing device: SYSTEM ERROR LIFT HEIGHT -> CE	The message appears when the unit is turned on and a shelf is added if the lift height is greater than 15 metres.	Contact the Hänel service department.
610	INCORRECT LIFT INITIALISATION MP 14 CPU II<-->MP 12N CPU I <xxx> CHECK SETTING ! -> CE	Various initialisation data recognised in the MP 14 CPU II and the MP 12N CPU I. <xxx> = internal code	Carry out initialisation and positioning.

7 Error messages

No.	Error	Cause	Action
625	For software MP 12N CPU I V 4.0 STANDARD or higher: MP 12N CPU I INCORRECT LIFT CONFIGURATION <x> -> CE	<x> = Equipment package/function that is no longer supported is enabled in the software. 1 = Lean-Lift® double extractor 2 = Lean-Lift® double access point 3 = Lean-Lift® stored article height measurement version "Single light barrier" 4 = Lean-Lift® stored article height measurement version "LVH800" 5 = Lean-Lift® manual electric sliding door 6 = Lean-Lift® high-speed drive 7 = Lean-Lift® shutters 8 = Shelf weighing device on the extractor / Lean-Lift® AED scale type 9 = Lean-Lift® 90 / 125 mm (3.543" / 4.921") slot increment 10 = Frequency converter type Lean-Lift® (SEW, FR-A540, FR-A541) 11 = Rotomat® binary code sensor 12 = Rotomat® load imbalance indicator UL1 / UL2 13 = Model year before 2008 Lean-Lift® and Multi-Space® Model year before 2009 Rotomat®	- Carry out initialisation and positioning. - Contact the Hänel service department.
611	SYSTEM ERROR >62< --> SWITCH OFF	Read/write error on access to the EEPROM by the MP 12N CPU I board. - EEPROM on the MP 12N CPU I board is missing. - MP 12N CPU I board is defective.	- Switch lift off, then on again. A synchronisation run then takes place. - Mount EEPROM on the MP 12N CPU I board and initialise MP control system. - Replace MP 12N CPU I board if defective.

7 Error messages

No.	Error	Cause	Action
612	SYSTEM ERROR >95< --> SWITCH OFF	Error when storing the current position data after disconnection of supply voltage. - Faulty line shielding. - Short-circuit of the MP 12N CPU I board due to faulty line. - MP 12N CPU I board is defective.	- Switch lift off, then on again. A synchronisation run then takes place. - Check line shielding as well as shielding of keyboard housing (if applicable). - Check circuitry. - Replace MP 12N CPU I board if defective.
613	SYSTEM ERROR >96< --> SWITCH OFF	Error during program execution of the MP 12N CPU I board due to external influences. - Faulty line shielding. - MP 12N CPU I board is defective.	- Switch lift off, then on again. - Check line shielding as well as shielding of keyboard housing (if applicable). - Replace MP 12N CPU I board if defective.
614	SYSTEM ERROR >97< --> SWITCH OFF	Software of MP 12N CPU I detects that switch-off was too short. - Switch-off too short. - Faulty voltage supply.	- Switch off lift for a longer time. - Increase transformer output voltage to the MP control systems.
615	SYSTEM ERROR HARDWARE (3) --> SWITCH OFF	MP 12N CPU I does not respond to request from the MP 14 CPU II. - Lift was switched off only briefly and then switched on again. - Jumper J3 MP 12N CPU I closed. - No software present on MP 12N CPU I. - Connecting cable X15 defective. - MP 12N CPU I board is defective. - MP 14 CPU II board is defective.	- Switch off lift for a longer time. - Jumper J3 MP 12N CPU I open. - Carry out software update with jumper J3 set. - Replace connecting cable X15 if defective. - Replace MP 12N CPU I board if defective. - Replace the MP 14 CPU II board if defective.
616	SYSTEM ERROR MP 14/12N KEYBOARD --> SWITCH OFF	Keyboard and GSC software is not responding. - Lift was switched off only briefly and then switched on again. - Component with keyboard and GSC software "TAS_Vxx_x.BIN" is missing. - MP 14 CPU II board is defective.	- Switch off lift for a longer time. - Insert component in PLCC base. - Replace the MP 14 CPU II board if defective.

7 Error messages

No.	Error	Cause	Action
617	SYSTEM ERROR MP 14/12N USB TOUCH -> CE	USB touch controller was not identified. • Cable to the USB touch controller is not plugged in. • Cable defective. • USB touch controller defective. • MP 14 CPU II board is defective.	• Insert cable. • Replace cable if defective. • Replace USB touch controller if defective. • Replace the MP 14 CPU II board if defective.
620	FREQUENCY CONVERTER CONVERTER PARAMETERS U1 -> CE	• Due to a change of the initialisation settings (shelf width, shelf depth, max. shelf load, maximum no. of shelves), the parameter file must be re-read into the frequency converter via the MP control system with the "JUMP" service software.	• Read in correct parameter file "FREQUEN1Vxx.FRA" for Lean-Lift® or "FREQUEN2Vxx.FRA" for Multi-Space® to frequency converter using "JUMP" service software via MP control system.
621	SYSTEM ERROR SD CARD IS NOT SUPPORTED --> SWITCH OFF	For MP 14-S: • The storage management system of MP 14-S has detected an SD card as a data flash card. For MP 100D-5 <u>without</u> background data backup using second data flash card: • The storage management system has detected only an SD card as a data flash card. For MP 100D-5 <u>with</u> background data backup using second data flash card: • The storage management system has detected only an SD card as a data flash card.	• Use a CF card as a data flash card. • Use a CF card as a data flash card. • Use a CF card without system as a data flash card.
622	SYSTEM ERROR SD CARD IS WRITE-PROTECTED --> SWITCH OFF	• The storage management system of the MP 100D-5 has detected an SD card as a data flash card that is write-protected.	• Remove write protection on the SD card.

7 Error messages

7.2 Data record errors or data record transmission errors

Errors in **data record structure** or **transfer error** during data exchange between central control system or computer and the microprocessor control system MP 14.

These errors are displayed by texts with E numbers and must be acknowledged with the **[CE]** key.

Check the connection between the central control system/computer and the lift (or MP multi-unit network) as well as the connection between the individual lifts.

No.	Error	Cause	Action
731	ERROR IN DATA RECORD STRUCTURE E110 / <xxx> -> CE	• Internal error <xxx> when processing the data fields. ✗ Note <xxx>: Lower-case letters are shown on the display in upper case.	• If this error recurs, contact the Hänel service department.

7 Error messages

7.3 Initialisation and formatting errors (only for MP 14-S / H[MP 14-S] / H[MP 100D-5])



x Initialisation and formatting errors are detected only if the microprocessor control system MP 14-S / H[MP 14-S] / H[MP 100D-5] is used.

No.	Error	Cause	Action
754	DATA FIELD LENGTHS EXCEEDED >>> CE	During formatting of storage management, the total of the data field lengths for <S> <N> <Hxx> <Cxx> <Uxx> is too large.	Check and reduce the length of the data fields.
755	DATA FIELD NAMES TOO LONG >>> CE	During formatting of storage management, the total length of the data field names <Hxx> <Cxx> <Uxx> is too long.	Check and reduce the length of the data field names.

7 Error messages

7.4 Critical errors

- Be certain to follow the safety instructions in Chapter 1.3 on page 9.
- If an error message is displayed for an error that can be resolved easily from outside of the machine, correct the problem. Otherwise, contact Hänel service.

The error message texts must agree with the actual switching of input terminals 701-712/718 and 810-816 through the safety switches.

Terminals 501-511, 701-712/718 and 810-816 are located on the MP 12N CPU I board.

- Refer also to the "Circuit diagram with safety and control components" and "Initialisation of the signal/error message inputs".

A lift run is possible only with the safety system set (green LED in the **【↔】** key is illuminated). In addition, the MP control system monitors the lift run. If the safety circuit is interrupted or the monitoring of the MP control system detects invalid statuses, the lift run stops. The red LED in the **【STOP】** key lights up and the error is listed in plain text on the display.

If an error cannot be eliminated, you have to inform Hänel after-sales service immediately.

7.4.1 Safety circuit monitor on the board

After a critical error, this error message appears until the lift is switched off.

Code	Lift run error message	Cause	Action
_ / 25	CRITICAL ERROR : RUN RELAY x -> CE	An error of one of the run relays, REL1 (x=1) to REL5 (x=5), has been detected. • MP 12N CPU I board is defective.	• Replace MP 12N CPU I board if defective.
_ / 28	Only for Lean-Lift®: CRITICAL ERROR : UNDERVOLTAGE TRIP -> CE	For immediately adjacent lifts with shared service door, the lift has not been switched off automatically although the service door is open. • Service door switch or main switch is defective. • Error in the undervoltage trip wiring.	• Check switches according to "Service access for multiple side-by-side lifts circuit diagram" and replace if defective. • Check wiring according to "Service access for multiple side-by-side lifts circuit diagram".

7 Error messages

7.4.2 Safety circuit monitor at terminal 810-816

After a critical error, this error message appears until the lift is switched off.

Code	Lift run error message	Cause	Action
_ / 21	CRITICAL ERROR : EMERGENCY STOP [F7] (n) -> CE	(n) = Access point number for multiple access points. Defective emergency stop switch at access point (n) or external voltage in safety circuit downline of emergency stop switch or incorrect signals at terminal 810 or 811. - Emergency stop switch is defective. - External voltage in safety circuit downline of emergency stop switch. - Line break or short circuit of the line at terminal 810 or 811. - Incorrect initialisation of the 7xx safety tap "Emergency stop/F7". - For lifts without safety circuit monitoring: incorrect initialisation.	- Check switch and replace if defective. - Check safety circuit for external voltage. - Check lines. - Check initialisation. - Only for lift with model year before 2016: For lift without monitoring of the safety circuit: check deactivation of the setting "Safety circuit monitoring terminal 810-816" after "Safety component I circuit diagram".
_ / 22	CRITICAL ERROR : SERVICE DOOR -> CE	Defective switch on the service door or external voltage in safety circuit downline of service door switch or incorrect signals at terminal 812 or 813. - Switch on the service door is defective. - External voltage in safety circuit downline of service door switch. - Line break or short circuit of the line at terminal 812 or 813. - Incorrect initialisation of the safety tap "Service door". - For lifts without safety circuit monitoring: incorrect initialisation.	- Check switch and replace if defective. - Check safety circuit for external voltage. - Check lines. - Check initialisation. - For lifts without safety circuit monitoring: Check to ensure that the setting "Safety monitors terminal 810-816" has been deactivated in accordance with the "Safety component I circuit diagram" and "Control component circuit diagram".

7 Error messages

Code	Lift run error message	Cause	Action
_ / 29	CRITICAL ERROR : SECOND SERVICE DOOR -> CE	Defective second service door switch or external voltage in safety circuit downline of second service door switch or incorrect signals at terminal 814 or 815. - Second service door switch is defective. - External voltage in safety circuit downline of second service door switch. - Line break or short circuit of the line at terminal 814 or 815. - Incorrect initialisation of the 7xx safety tap "Second service door". - For lifts without safety circuit monitoring: incorrect initialisation.	- Check switch and replace if defective. - Check safety circuit for external voltage. - Check lines. - Check initialisation. - For lifts without safety circuit monitoring: Check to ensure that the setting "Safety monitors terminal 810-816" has been deactivated in accordance with the "Safety component I circuit diagram" and "Control component circuit diagram".
_ / 27	CRITICAL ERROR : DRIVE CONTACTOR -> CE	Incorrect signal at terminal 816. The system detects welding together of the drive contactors via this terminal. - Contactor welded. - Switching error at terminal 816. - For lift without monitoring of the drive contactors: incorrect initialisation.	- Check contactor and replace if defective. - Check wiring. - Check to ensure that the setting "Safety monitors terminals 810-816" has been deactivated in accordance with the "Safety component I circuit diagram" and "Control component circuit diagram".

7 Error messages

7.4.3 Lift run monitoring

After critical errors 1 - 4, this error message appears until the lift is switched off.

Code	Lift run error message	Cause	Action
_ / 20	CRITICAL ERROR : EXTRACTOR DRIVE x -> CE	An impermissibly high shelf horizontal speed was detected in the access point. x = 1: When accelerating the shelf x = 2: In the maximum speed range x = 3: When decelerating the shelf x = 4: Before accelerating or after decelerating the shelf x = 5: Before starting the horizontal run, the output frequency of the frequency converter is too high x = 6: The lift has been blocked for standard operation because the test run "CHECK EXTRACTOR DRIVE" did not run without errors. X = 7: An impermissibly high shelf speed was detected in the test run "CHECK EXTRACTOR DRIVE".	• Use "JUMP" service software to read out the file package and forward it to Hänel service. • The lift can no longer be operated until the test run has been carried out correctly.

7 Error messages

7.5 Error messages during lift/carousel run

- Be certain to follow the safety instructions in Chapter 1.3 on page 9.
- If an error message is displayed for an error that can be resolved easily from outside of the machine, correct the problem. Otherwise, contact Hänel service.

7.5.1 Error messages during lift/carousel run due to interruption of safety circuit

The error message texts must agree with the actual switching of input terminals 701-718 through the safety switches.

Terminals 501-511, 701-718 are located on the MP 12N CPU I board.

- Refer also to the "Circuit diagram with safety and control components" and "Initialisation of the signal/error message inputs".

A lift run is possible only with the safety system set (green LED in the **【↔】** key is illuminated). In addition, the MP control system monitors the lift run. If the safety circuit is interrupted or the monitoring of the MP control system detects invalid statuses, the lift run stops. The red LED in the **【STOP】** key lights up and the error is listed in plain text on the display.

After the error is eliminated, the error message must be acknowledged with **【↔】**.

If the lift/carousel run was interrupted, it is now resumed.

If an error cannot be eliminated, you have to inform Hänel service.

Notes on documents

- For wiring, refer to the "Power component circuit diagram", "Safety components I+II circuit diagram" and "Control component circuit diagram", the electronics diagram general plan, and the distribution box drawing.
- For the Lean-Lift® frequency converter, refer to the document "FREQUEN1".
- For the Multi-Space® frequency converter, refer to the document "FREQUEN2".
- For details on installing/adjusting, see the installation instructions/setting instructions.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 103	LIFT RUN FAULT : SAFETY NOT CLEAR -> CE/↵	No voltage at input terminal 503. All error message inputs (terminals 701-718) that are initialised, however, have voltage.	Caution: The [↵] key starts a lift run! - Check initialisation of the signal/error message inputs. - Check to see if one of the safety switches (emergency stop, upper/lower limit switches, service door switches, thermal cut-out for motor, frequency converter, safety light curtain, etc.) has been triggered. - Trace signal against the "Safety components I+II circuit diagram" and "Control component circuit diagram". K6, K7, B0 may be defective.
_ / 8	LIFT RUN FAULT : STOP BUTTON PRESSED -> CE/↵	Interruption between terminals 511 and 510 during a lift run. [STOP] key has been pressed. - Defective relay (contact interrupted) on MP 12N CPU I board.	Caution: The [↵] key starts a lift run! - Press the [↵] key. - If the [STOP] key was not pressed, check against the "Safety component I circuit diagram" whether 24V AC is being switched through from terminal 511 to 510. If the [STOP] key is pressed, the voltage at terminal 510 must drop off. Replace MP 12/N CPU I board.
_ / 95	LIFT RUN FAULT : EMERGENCY STOP [F7] (n) -> CE/↵	(n) = Access point number for multiple access points. No voltage at safety input S4 at access point (n). - Emergency stop switch is pressed. - Safety cut-out F7 has been triggered or is defective. (Applies to access point 1 only) - Line interrupted. - Short-circuit in safety circuit.	Caution: The [↵] key starts a lift run! - Check emergency stop switch and unlock if necessary. - Cut-out F7 in the electrical drawer must be checked by qualified personnel. - Trace signal "S4" against the "Safety components I+II circuit diagram" and "Control component circuit diagram". - Check the safety circuit against the "Safety component I circuit diagram" and "Control component circuit diagram".
_ / 116	LIFT RUN FAULT : SERVICE DOOR -> CE/↵	No voltage present at safety input S3. - Service door not correctly closed. - Service door switch defective or power supply line interrupted.	Caution: The [↵] key starts a lift run! - Close service door correctly so that the service door switch is actuated. - Check the switch and trace signal "S3" against the "Safety component I circuit diagram" and "Control component circuit diagram".

7 Error messages

Code	Lift run error message	Cause	Action
_ / 30	LIFT RUN FAULT : SECOND SERVICE DOOR -> CE/↩	No voltage present at safety input S30. - Service door not correctly closed. - Service door switch defective or power supply line interrupted.	Caution: The [↩] key starts a lift run! - Close service door correctly so that the service door switch is actuated. - Check the switch and trace signal "S30" against the "Safety component I circuit diagram" and "Control component circuit diagram".
_ / 140	Only for Multi-Space®: LIFT RUN FAULT : SERVICE DOOR MOTORS -> CE/↩	No voltage present at safety input S31. - Service door for vertical motors M 1.1 and M 1.2 in the bottom front panel is not closed correctly. - Service door switch defective or power supply line interrupted.	Caution: The [↩] key starts a lift run! - Close service door correctly so that the service door switch is actuated. - Check the switch and trace signal "S31" against the "Safety component I circuit diagram" and "Control component circuit diagram".
_ / 108	LIFT RUN FAULT : LOWER DOOR -> CE/↩	No voltage present at safety input S2. - Limit switch defective or power supply line interrupted. - Lower limit switch S2 actuated. The positioning data for access position and rear carrier position may have been lost due to an external fault. - Limited positioning accuracy by deactivating the system element "Double vertical positioning system" for redundancy system.	Caution: The [↩] key starts a lift run! - Check the switch and trace signal "S2" against the "Safety component I circuit diagram" and "Control component circuit diagram". - Have qualified personnel bypass the output terminals for S1 or S2 in the electrical drawer according to the "Safety component I circuit diagram" and "Control component circuit diagram". Then, drive the extractor to the access point and carry out positioning of the access position and the rear carrier position. Caution: Check the direction in which the extractor runs. - Activate this system element in the redundancy system.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 113	Only for Lean-Lift®: LIFT RUN FAULT : MOTOR 1 TOO HOT -> CE/↩	No voltage present at safety input B6. • Motor 1 (vertical drive) overheated. • Thermal cut-out in motor defective or power supply lines interrupted. • Vertical lift run blocked.	Caution: The [↩] key starts a lift run! • Allow motor to cool down for about 10 min. • Check thermal cut-out B6 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. • Contact the Hänel service department.
_ / 127	Only for Lean-Lift®: LIFT RUN FAULT : MOTOR 2 TOO HOT/ UPPER LIMIT SWITCH -> CE/↩	No voltage present at safety input B7/S1. • Motor 2 (horizontal drive) overheated. • Thermal cut-out in motor defective or power supply lines interrupted. • Limit switch defective or power supply line interrupted. • Upper limit switch S1 actuated by extractor located at the very top, limit switch S1 defective, or power supply line interrupted. • Horizontal lift run blocked.	Caution: The [↩] key starts a lift run! • Allow motor to cool down for about 10 min. • Check thermal cut-out B7 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. • Check the switch and trace signal "S1" against the "Safety component I+II circuit diagram" and "Control component circuit diagram". • Have qualified personnel bypass the output terminals for "S1" in the electrical drawer according to the "Safety component I circuit diagram". Then, in positioning mode, drive the extractor to the access point and carry out positioning of the access position and the rear carrier position. Caution: Check the direction in which the extractor runs. • Contact the Hänel service department.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 122	Only for Lean-Lift®: LIFT RUN FAULT : FREQUENCY CONVERTER x -> CE/↩ For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER x / y -> CE/↩ y = 1: Vertical drive M1 y = 2: Horizontal drive M2 y = 3 : Shelf ejector drive M3, M4 y = 5 : High-speed door drive nM3	No voltage present at safety input U1. • Frequency converter with RS485 connection reports error x. • Frequency converter signals error. • Abruptly stopping a vertical lift run, for example by pressing [STOP] or EMERGENCY STOP, leads to brief overload of the frequency converter U1. • Phase failure at input or output of frequency converter U1. • Interruption/short-circuit of the braking resistor R1. • Contactor K8 defective. • Contactor K1 or K2 defective. • Frequency converter U1 incorrectly set or defective. • Extractor blocked in the vertical direction, possibly by protruding shelf.	Caution: The [↩] key starts a lift run! Refer to operating instructions of the frequency converter for meaning of LEDs or display on the operating device of U1. • Decode error >x< in "Frequency converter setting instructions for Lean-Lift®" (document "FREQUEN1"). • Decode error in "Frequency converter setting instructions for Lean-Lift®" (document "FREQUEN1"). • Switch off lift for about 5 sec. • Measure phases and check wiring against "Power component circuit diagram". • Check brake resistor R1 against "Power component circuit diagram". • Check that contactor K8 pulls up and switches as in "Power component circuit diagram" and "Control component circuit diagram". • Check that contactors K1 and K2 are functioning (main contacts, auxiliary contacts, actuation) using the "Power component circuit diagram", "Safety component II" and "Control component circuit diagram". • Check setting of frequency converter U1 against "Frequency converter setting instructions for Lean-Lift®" (document "FREQUEN1") and replace if defective. For a Mitsubishi frequency converter, remeasure motor. • Push shelf fully into carrier, then check that extractor is horizontal; if necessary, contact HÄNEL service department.

7 Error messages

Code	Lift run error message	Cause	Action
6 / 89	LIFT RUN FAULT : LIGHT BARRIERS (n) -> CE/↵ For supplementary feature "Automatic sliding door": ➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean- Lift® and Rotomat®" then Only for Lean-Lift® with multiple access points and guide rails:	(n) = Access point number for multiple access points. No voltage present at safety input nB0. • Interruption of the safety light curtain at access opening (n) due to protruding object. • Safety light curtain is not yet set. • After only a brief interruption of the safety circuit (e.g. EMERGENCY STOP, frequency converter), the safety light curtain remains triggered. • The transmitters and receivers of the safety light curtain not aligned correctly. • Safety light curtain control system is defective or transmitter/receiver is defective.	Caution: The [↵] key starts a lift run! • Clear the area monitored by the safety light curtain and press the [↵] key for approx. 0.5 sec. • Press the [↵] key for about 0.5 sec. to set the safety circuit. • Press the [↵] key for about 0.5 sec. to set the safety circuit. • Readjust safety light curtain in accordance with the "Installation Instructions for Safety Light Curtain". • Replace part.
_ / 31	LIFT RUN FAULT : ENABLE LIFT RUN AT ACCESS POINT (n) -> CE/↵ then LIFT RUN HAS BEEN ENABLED AT ACCESS POINT (n) -> CE/↵	• The [↵] key has been pressed without correcting the interruption of the safety light curtain at the access opening (n). • Interruption of safety light curtain at access opening (n) has been corrected.	• Clear the area monitored by the safety light curtain at the access opening (n) and press the [↵] key for approx. 0.5 sec. • Press the [↵] key for approx. 0.5 sec.
	Only for Lean-Lift® with multiple access points and guide rails: LIFT RUN ENABLE FOR ANOTHER ACCESS POINT WITH ↵	• Interruption of safety light curtain at this access opening while lift run was carried out for other access opening.	• Clear the area monitored by the safety light curtain at the access opening and press the [↵] key for approx. 0.5 sec.

7 Error messages

Code	Lift run error message	Cause	Action
	SYSTEM ERROR SAFETY CIRCUIT DEFECTIVE --> SWITCH OFF	Signal detected at input terminal 503 when MP control system switched on. - Defective component in safety circuit or wiring error. - Only the MP control system was switched off and on again via the integrated safety switch. - MP 12N CPU I board is defective.	- Check safety circuit (contactors K5, K6, K7) against "Safety component II circuit diagram", replace defective component. - Switch lift off, then on again. - Replace MP 12N CPU I board if defective.
_ / 14	Only for Multi-Space®: LIFT RUN FAULT : VERTICAL FREQUENCY CONVERTER x -> CE/↩ For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : VERTICAL FREQUENCY CONVERTER x / y -> CE/↩ y = 1: Vertical drive M1.1 y = 6 : Movement unit drive M3z	No voltage present at safety input U1. - Frequency converter with RS485 connection reports error >x< - Frequency converter signals error. - Abruptly stopping a vertical lift run, for example by pressing [STOP] or EMERGENCY STOP, leads to brief overload of the frequency converter U1. - Phase failure at input or output of frequency converter U1. - Interruption/short-circuit of the braking resistor R1. - Contactors K81 defective. - Contactors K1 defective. - Frequency converter U1 incorrectly set or defective.	Caution: The [↩] key starts a lift run! Refer to operating instructions of the frequency converter for meaning of LEDs or display on the operating device of U1. - Decode error >x< in "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Decode error in "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Switch off lift for about 5 sec. - Measure phases and check wiring against "Power component circuit diagram". - Check brake resistor R1 against "Power component circuit diagram". - Check that contactor K81 pulls up and switches as in "Power component circuit diagram" and "Control component circuit diagram". - Check that contactor K1 is functioning (main contacts, auxiliary contacts, actuation) using the "Power component circuit diagram", "Safety component II circuit diagram" and "Control component circuit diagram". - Check setting of frequency converter U1 against "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2") and replace if defective. Remeasure the motor.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 15	Only for Multi-Space®: LIFT RUN FAULT : FREQUENCY CONVERTER CONVERTER/HI-SP .DOOR x -> CE/↩ For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER CONVERTER/HI-SP .DOOR x / y -> CE/↩ y = 2: Horizontal drive M2 y = 4: Clockwise/ anticlockwisemovement drive M4 y = 5: High-speed door drive nM3	No voltage present at safety input U2. - Frequency converter with RS485 connection reports error >x< - Frequency converter signals error. - Phase failure at input or output of frequency converter U2. - Contactor K82 defective. - Contactor K2 or K3, K4 defective. - Frequency converter U2 incorrectly set or defective.	Caution: The [↩] key starts a lift run! Refer to operating instructions of the frequency converter for meaning of LEDs or display on the operating device of U2. - Decode error >x< in "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Decode error in "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Switch off lift for about 5 sec. - Measure phases and check wiring against "Power component circuit diagram". - Check that contactor K82 pulls up and switches as in "Power component circuit diagram" and "Control component circuit diagram". - Check that contactors K2 and K3, K4 are functioning (main contacts, auxiliary contacts, actuation) using the "Power component circuit diagram", "Safety component II circuit diagram" and "Control component circuit diagram". - Check setting of frequency converter U2 against "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2") and replace if defective. Remeasure the motor.
_ / 137	Only for Multi-Space®: LIFT RUN FAULT : MOTOR 1.1 TOO HOT -> CE/↩	No voltage present at safety input B6.1. - Motor M1.1 (left vertical drive) overheated. - Thermal cut-out in motor M1.1 defective or power supply lines interrupted. - Vertical lift run blocked.	Caution: The [↩] key starts a lift run! - Allow motor to cool down for about 10 min. - Check thermal cut-out B6.1 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. - Contact the Hänel service department.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 138	Only for Multi-Space®: LIFT RUN FAULT : MOTOR 1.2 TOO HOT -> CE/↩	No voltage present at safety input B6.2. • Motor M1.2 (right vertical drive) overheated. • Thermal cut-out in motor M1.2 defective or power supply lines interrupted. • Vertical lift run blocked.	Caution: The [↩] key starts a lift run! • Allow motor to cool down for about 10 min. • Check thermal cut-out B6.2 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. • Contact the Hänel service department.
_ / 141	Only for Multi-Space®: LIFT RUN FAULT : MOTOR 2 TOO HOT -> CE/↩	No voltage present at safety input B7. • Motor M2 (horizontal drive) overheated. • Thermal cut-out in motor M2 defective or power supply lines interrupted. • Horizontal lift run blocked.	Caution: The [↩] key starts a lift run! • Allow motor to cool down for about 10 min. • Check thermal cut-out B7 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. • Contact the Hänel service department.
_ / 17	Only for Multi-Space®: LIFT RUN FAULT : MOTOR 3 TOO HOT/ LEFT LIMIT SWITCH -> CE/↩	No voltage present at safety input B8. • Motor M3 (movement unit) overheated. • Thermal cut-out in motor M3 defective or power supply lines interrupted. • Left/right horizontal drive driven over left end position.	Caution: The [↩] key starts a lift run! • Allow motor to cool down for about 10 min. • Check thermal cut-out B8 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. • Have qualified personnel bypass the output terminals for S18 in the electrical drawer according to the "Safety component I circuit diagram" and "Control component circuit diagram". Then carry out a synchronisation run. Caution: Check run direction of the left-right horizontal drive. • Contact the Hänel service department.
_ / 107	Only for Multi-Space®: LIFT RUN FAULT : LOWER DOOR -> CE/↩	• Vertical drive driven over end position.	Caution: The [↩] key starts a lift run! • Have qualified personnel bypass the output terminals for "S1" in the electrical drawer according to the "Safety component I circuit diagram". Then carry out a synchronisation run. Caution: Check run direction of the vertical motors. • Contact the Hänel service department.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 6	Only for Multi-Space®: LIFT RUN FAULT : LOWER LIMIT SWITCH -> CE/↵	- Horizontal drive driven over right end position. - Horizontal lift run left-right blocked.	Caution: The [↵] key starts a lift run! - Have qualified personnel bypass the output terminals for S19 in the electrical drawer according to the "Safety component I circuit diagram" and "Control component circuit diagram". Then carry out a synchronisation run. Caution: Check run direction of the left-right horizontal drive. - Contact the Hänel service department.
_ / 48	Only for Multi-Space®: LIFT RUN FAULT : MOTOR 4 TOO HOT -> CE/↵	No voltage present at safety input B9. - Motor M4 (right/left horizontal drive) overheated. - Thermal cut-out in motor M4 defective or power supply lines interrupted.	Caution: The [↵] key starts a lift run! - Allow motor to cool down for about 10 min. - Check thermal cut-out B9 and its power supply lines against the "Safety component I circuit diagram" and "Control component circuit diagram". If the thermal cut-out is defective, replace the corresponding motor. - Contact the Hänel service department.
_ / 139	Only for Multi-Space®: LIFT RUN FAULT : TEMP. PROTECTION MOVEMENT UNIT -> CE/↵	Bimetal trip F30 has been triggered. - Bimetal trip for motor M3 (movement unit) detects that the motor current is too high. - Frequency converter U1 operates motor M3 with incorrect parameter set.	Caution: The [↵] key starts a lift run! - Allow motor to cool down for about 10 min. - Check setting value of bimetal trip F30 against "Movement unit power component circuit diagram". - Reset the bimetal trip using the "Reset" key. - Check motor current using tong-type ammeter and current display on frequency converter U1. - Check parameter switchover of frequency converter U1. - Check that frequency converter U1 is set according to "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Contact the Hänel service department.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 142	Software up to MP 12N CPU I V 4.0 STANDARD: Only for Multi-Space®: LIFT RUN FAULT : BRAKING RESISTOR R1 -> CE/↩	Bimetal trip F31 has been triggered. Bimetal trip for braking resistor R1 detects that the current is too high.	Caution: The [↩] key starts a lift run! - Check setting value of bimetal trip F31 against "Power component circuit diagram". - Check the duty cycle of braking resistor R1. Check that frequency converter U1 is set according to "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2"). - Check connection and resistance value of braking resistor R1 against "Power component circuit diagram". - Check current through braking resistor R1 using tong-type ammeter. Current must flow downwards during the vertical run only. - Contact the Hänel service department.
_ / 172	Only for safety PLC: LIFT RUN FAULT : MAINS SUPPLY T101 / T6 -> CE/↩	No voltage at the safety input T101/T6. - Safety cut-out F101 has been triggered or is defective. - Safety cut-out F106 has been triggered or is defective. - Safety cut-out F10 has been triggered or is defective. - DC power supply T6 is defective.	Caution: The [↩] key starts a lift run! - Cut-out F101 in the electrical drawer must be checked by qualified personnel. - Cut-out F106 in the electrical drawer must be checked by qualified personnel. - Cut-out F10 in the electrical drawer must be checked by qualified personnel. - DC power supply T6 in the electrical drawer must be checked by qualified personnel.
_ / 173	Only for Multi-Space®: LIFT RUN FAULT : SAFETY CIRCUIT MONITOR A0 -> CE/↩	No voltage at the safety input A0. - Due to multiple short interruptions in the safety circuit occurring in quick succession, the safety relay A0 is in a fault condition (for example, [STOP] key bounces). - Safety relay A0 is defective. - Safety relay A0 is wired incorrectly.	Caution: The [↩] key starts a lift run! - Press the [STOP] key for about 1 sec. to eliminate the fault condition from the safety relay A0. - Use the circuit diagram "Safety component I" to check whether safety relay A0 switches. - Use the circuit diagram "Safety component I" to check the wiring of safety relay A0.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 40	Only for safety PLC: LIFT RUN FAULT : SAFETY SYSTEM [F10] -> CE/↵	No voltage at the 7xx safety tap "Safety system [F10]". - Internal error of safety PLC A9-01. - Safety cut-out F10 has been triggered or is defective.	- Reset error of safety PLC. (Press the [↵] key for approx. 3 sec. and then the [STOP] key for approx. 1 sec.) - Switch lift off, then on again. - Erroneous input values at safety PLC A9-01, A9-03. (Note LEDs, see installation instructions BWU2700.) - Cut-out F10 in the electrical drawer must be checked by qualified personnel.

7 Error messages

7.5.2 Error messages during lift run due to software monitoring

The following error messages are displayed if an input condition is not fulfilled in the task scheduler or if data required for continued operation are not available.

If an error message is displayed for an error that can be resolved easily from outside of the machine, correct the problem. Otherwise, contact Hänel service.

Press the **【↩】** key to continue the interrupted lift run. Press the **【CE】** key to cancel the operation.

Notes on documents

- For wiring, refer to the "Power component circuit diagram", "Safety components I+II circuit diagram" and "Control component circuit diagram", the electronics diagram general plan, and the distribution box drawing.
- For details on installing/adjusting, see the installation instructions/setting instructions.
- For cable routing, see documents "CABLELL1", "CABLELL2", "CABLELL3", "CABLELL4", "CABLELL5".
- For shielding of control line X82, refer to the document "LL-SPIRA" or "TROMMEL1".
- For earthing of keyboard console, refer to document "TAST".
- For the current hardware version, refer to the document "V-SHWARE".
- For shielding of data transmission cable, refer to document "S90007".

Code	Lift run error message	Cause	Action
_ / 5	Only with HOST-WEB and HOST-COM program version: LIFT RUN FAULT : SHELF NOT FOUND -> CE	The shelf that needs to be retrieved is not available.	Activate valid shelf numbers.
1 / 118 / 1 1 / 165 / 1	LIFT RUN FAULT : SYSTEM ERROR 1 / x -> CE	- x = invalid carrier number - Move command to an invalid carrier position at the height of the access area or to a number higher than the maximum carrier number.	Switch lift off, then on again. If the error recurs, inform the Hänel service department.
4 / 118 / 2 4 / 165 / 2	LIFT RUN FAULT : SYSTEM ERROR 2 -> CE	Extractor detected as running in the wrong vertical direction.	Switch lift off, then on again. If the error recurs, inform the Hänel service department.
5 / 118 / 3 5 / 165 / 3	LIFT RUN FAULT : SYSTEM ERROR 3 -> CE	During a vertical lift run, the extractor was detected as moving too fast.	Switch lift off, then on again. If the error recurs, inform the Hänel service department.

7 Error messages

Code	Lift run error message	Cause	Action
9 / 118 / 5 10 / 118 / 5 9 / 165 / 5 10 / 165 / 5	LIFT RUN FAULT : SYSTEM ERROR 5 -> CE	No signal from proximity switches B12/B13 immediately before or after a horizontal run, although there is a shelf on the extractor. On lifts with incremental encoder T01, signal B10/B11 immediately before or after a horizontal lift run when there is a shelf on the extractor.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminals 773, 774 of B12, B13. - Check function, alignment and power supply lines at terminals 771, 772 of B10, B11.
_ / 118 / 6 _ / 165 / 6	LIFT RUN FAULT : SYSTEM ERROR 6 -> CE	Software up to MP 12N CPU I V 4.0 STANDARD: Only for lifts without incremental encoder T01: Incorrect signal or no signal from proximity switches B10/B11 during a lift run. While the lift height is being initialised in the positioning system, there is a shelf on the extractor.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminals 771, 772 of B10, B11. - Bring shelf to access point or store it first.
8 / 118 / 7 8 / 165 / 7	LIFT RUN FAULT : SYSTEM ERROR 7 / x -> CE	x = Incorrect carrier Error in shelf management. There is an inconsistency between the shelf data stored in memory and the carrier table.	Switch lift off, then on again. If the error recurs, inform the Hänel service department.
8 / 118 / 8 8 / 165 / 8	LIFT RUN FAULT : SYSTEM ERROR 8 -> CE	Carriers to which a shelf is to be stored are already occupied by a shelf. Re-storing a shelf to the carriers from which the shelf was retrieved is not possible because the height of the stored articles has been increased. Re-storing a shelf to the carriers from which the shelf was retrieved is not possible, because these carriers are assigned after carrying out an optimisation run.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Reduce article height. - Switch lift off, then on again. If the error recurs, inform the Hänel service department.
9 / 118 / 9 9 / 165 / 9	LIFT RUN FAULT : SYSTEM ERROR 9 -> CE	No signal from proximity switch B12 when a shelf is pulled in from a front carrier.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminal 773 of B12.
10 / 118 / 10 10 / 165 / 10	LIFT RUN FAULT : SYSTEM ERROR 10 -> CE	When a shelf is pulled in from a front carrier, only a signal from proximity switch B12 is detected. This disappears again before B13 switches. When a shelf is pulled in from a front carrier, only a signal from proximity switch B13 is detected.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminals 773, 774 of B12, B13.

7 Error messages

Code	Lift run error message	Cause	Action
10 / 118 / 11 10 / 165 / 11	LIFT RUN FAULT : SYSTEM ERROR 11 -> CE	No signal from proximity switch B13 when a shelf is pulled in from a rear carrier.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminal 774 of B13.
9 / 118 / 12 9 / 165 / 12	LIFT RUN FAULT : SYSTEM ERROR 12 -> CE	When a shelf is pulled in from a rear carrier, only a signal from proximity switch B13 is detected. This disappears again before B12 switches. When a shelf is pulled in from a rear carrier, if B13 gives no signal.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminals 773, 774 of B12, B13.
2 / 118 / 13 2 / 165 / 13	LIFT RUN FAULT : SYSTEM ERROR 13 -> CE	A lower protection zone or synchronisation run error cannot be detected if the "lower protection zone" system element is deactivated by the redundancy system.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminal 779 of B18.
3 / 118 / 14 3 / 165 / 14	LIFT RUN FAULT : SYSTEM ERROR 14 -> CE	Error signalled from upper protection zone.	- Switch lift off, then on again. If the error recurs, inform the Hänel service department. - Check function, alignment and power supply lines at terminal 780 of B19.
7 / 118 / 15 7 / 165 / 15	LIFT RUN FAULT : SYSTEM ERROR 15 -> CE For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SYSTEM ERROR 15 (n) -> CE	(n) = Access point number for multiple access points. No response from height detection system B1.	- It is still possible to get and unregister shelves. - Switch lift off, then on again. If the error recurs, inform the Hänel service department.
13 / 55 / 1 13 / 165 / 17	LIFT RUN FAULT : SYSTEM ERROR 17 -> CE	Only on lifts with horizontal position detection by incremental encoder T01: System has detected that the extractor drive is running in the wrong horizontal direction.	- Check connection of extractor motor. - Check whether connections of incremental encoder T01 (terminals 777 and 778) are inverted.
11 / 55 / 2 11 / 165 / 18	LIFT RUN FAULT : SYSTEM ERROR 18 -> CE	Only on lifts with horizontal position detection by incremental encoder T01: Faulty absolute position detection of horizontal extractor drive.	Check functioning of proximity switches B10 and B11 (terminals 771 and 772).

7 Error messages

Code	Lift run error message	Cause	Action
12 / 55 / 3 12 / 165 / 19	LIFT RUN FAULT : SYSTEM ERROR 19 -> CE For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SYSTEM ERROR 19 / y -> CE y = 1: Terminal 777 is interrupted y = 2: Terminal 778 is interrupted	Only on lifts with horizontal position detection by incremental encoder T01: Faulty position detection of horizontal drive.	- In the service functions, carry out the "Synchronisation run of extractor drive catch" function. - Check functioning of incremental encoder T01 (terminals 777 and 778).
_ / 55 / 4 _ / 165 / 20	LIFT RUN FAULT : SYSTEM ERROR 20 -> CE	Error in redundancy system. Shelf cannot be returned to its old storage location. • Shelf was newly added before activation of the redundancy system. or • The old storage location has since been occupied by a different shelf stored at another access point before the redundancy system was activated.	Unregister shelf or operate the lift from another access point until the redundancy system has been deactivated.
_ / 55 / 6 _ / 165 / 22	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 22 -> CE	Wrong direction of rotation of movement unit detected.	- Check connection of motor M3 (movement unit). - Check whether the connections (terminals 740 and 741) of the movement unit incremental encoder T02 are inverted.
16 / 55 / 7 17 / 55 / 7 16 / 165 / 23 17 / 165 / 23	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 23 -> CE	Neither of the two position switches of movement unit S22, S23 switch.	- Check function, alignment and power supply lines of S22, S23. - Check function of movement unit incremental encoder T02.
16 / 55 / 8 17 / 55 / 8 16 / 165 / 24 17 / 165 / 24	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 24 -> CE	After the movement unit moves forward, the front position switch S22 does not switch or the rear position switch S23 switches.	- Check function, alignment and power supply lines of S22, S23. - Check function of movement unit incremental encoder T02.
16 / 55 / 9 17 / 55 / 9 16 / 165 / 25 17 / 165 / 25	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 25 -> CE	After the movement unit moves towards the rear, the front position switch S22 switches or the rear position switch S23 does not switch.	- Check function, alignment and power supply lines of S22, S23. - Check function of movement unit incremental encoder T02.

7 Error messages

Code	Lift run error message	Cause	Action
16 / 55 / 10 17 / 55 / 10 16 / 165 / 26 17 / 165 / 26	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 26 -> CE	Either position switch S22 or position switch S23 of the movement unit does not switch after movement towards the centre.	• Check function, alignment and power supply lines of S22, S23. • Check function of movement unit incremental encoder T02.
_ / 55 / 11 _ / 165 / 27	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 27 -> CE	Lift run of the extractor to an invalid lift unit has been requested.	• Check the initialisation of "Number of lift units". • Check shelf table for incorrect carrier values.
_ / 55 / 12 _ / 165 / 28	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 28 -> CE	Extractor is moving in the wrong direction. (Movement direction right/left)	• Check connection of motor M4 (right/left horizontal drive). • Check whether connections (terminals 737 and 738) of incremental encoder T03 are inverted.
_ / 55 / 13 _ / 165 / 29	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 29 -> CE	Forward/backward extractor run is not possible, as extractor is not positioned at the lift unit.	• Check function/position value of the right/left drive.
_ / 55 / 14 _ / 165 / 30	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 30 -> CE	When a shelf is pushed out towards the front, the 45 mm (1.77") movement unit is not at the front end position.	• Check connection of motor M3 (movement unit). • Check function, alignment and power supply lines of S22, S23. • Check function of movement unit incremental encoder T02.
_ / 55 / 15 _ / 165 / 31	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 31 -> CE	When a shelf is pushed out towards the rear, the 45 mm (1.77") movement unit is not at the rear end position.	• Check connection of motor M3 (movement unit). • Check function, alignment and power supply lines of S22, S23. • Check function of movement unit incremental encoder T02.
_ / 133 / 1 _ / 165 / 33	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 33 -> CE	While the carrier positions are determined during a synchronisation run, fork light barrier B28 does not switch correctly.	• Check function, alignment and power supply lines at terminal 746 of B28. • Check adjustment of the corresponding interruption angle and alignment of the extractor.
_ / 133 / 2 _ / 165 / 34	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 34 -> CE	While the carrier positions are determined during a synchronisation run, fork light barrier B29 does not switch correctly.	• Check function, alignment and power supply lines at terminal 747 of B29. • Check adjustment of the corresponding interruption angle and alignment of the extractor.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 133 / 3 _ / 165 / 35	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 35 -> CE	While the carrier positions are determined during a synchronisation run, fork light barrier B30 does not switch correctly.	• Check function, alignment and power supply lines at terminal 748 of B30. • Check adjustment of the corresponding interruption angle and alignment of the extractor.
_ / 133 / 4 _ / 165 / 36	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 36 -> CE	While the horizontal right/left sensor system is synchronised or the carrier positions are synchronised during a synchronisation run, fork light barrier B31 does not switch correctly.	• Check function, alignment and power supply lines at terminal 749 of B31. • Check adjustment of the corresponding interruption angle and alignment of the extractor.
_ / 133 / 5 _ / 165 / 37	LIFT RUN FAULT : SYSTEM ERROR 37 -> CE	Currently it is not possible read in / check shelf positions. • Redundancy function 9 or 10 is active. • The "Intermediate shelf buffer" supplementary module is available.	• Deactivate redundancy function. • Deactivate the "Intermediate shelf buffer" supplementary module and reactivate it after reading in / checking shelf positions.
_ / 133 / 6 _ / 165 / 38	Only for Lean-Lift®: LIFT RUN FAULT : SYSTEM ERROR 38 -> CE	The last synchronisation run has detected that the vertical speed is too high for the initialised drive type.	• Check the initialisation of the "Drive type".
_ / 133 / 7 _ / 165 / 39	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 39 -> CE	While a shelf is ejected towards the front or rear, an incorrect left/right position value is detected.	• Check function/position value of the right/left drive.
_ / 133 / 11 _ / 165 / 43	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 43 -> CE	The movement unit is not fully extended when a shelf is pulled in from a carrier. Incorrect position value of the movement unit via incremental encoder T02. Incorrect initialisation of the horizontal drive M3Z / M4.	• Check that the movement unit can be moved in the service functions using the "Lift run movement unit" function. • Check functioning of incremental encoder T02 (terminals 740 and 741). • Check initialisation of the horizontal drive.
_ / 133 / 12 _ / 165 / 44	For automatic redundancy only in the log of lift run errors: LIFT RUN FAULT : SYSTEM ERROR 44 -> CE	Signal from proximity switch B12 too late when a shelf is pulled in from a front carrier.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Check function, alignment and power supply lines at terminal 773 of B12.
_ / 133 / 13 _ / 165 / 45	For automatic redundancy only in the log of lift run errors: LIFT RUN FAULT : SYSTEM ERROR 45 -> CE	Signal from proximity switch B13 too late when a shelf is pulled in from a rear carrier.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Check function, alignment and power supply lines at terminal 774 of B13.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 133 / 14 _ / 165 / 46	Only for Lean-Lift® without a shelf weighing device with a maximum total load of 40,000 kg and 1000 kg drive, i.e. drive type "HS51" or "HS52" or "ES51" or "ES52": LIFT RUN FAULT : SYSTEM ERROR 46 -> CE	After changing the shelf width, the frequency converter has to be reset.	• Check "Shelf width" initialisation. • Reset frequency converter parameters.
18 / 133 / 15 18 / 165 / 47	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 47 -> CE	Faulty position detection of movement unit.	• Check functioning of movement unit incremental encoder T02 (terminals 740 and 741).
_ / 164 / 1 _ / 165 / 49	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 49 -> CE	Incorrect signal S22 when "Movement unit rear monitoring" system element is deactivated by the redundancy system or incorrect signal S23 when "Movement unit front monitoring" system element is deactivated by the redundancy system.	• Check function, alignment and power supply lines of S22, S23. • Check function of movement unit incremental encoder T02.
_ / 164 / 3 _ / 165 / 51	LIFT RUN FAULT : SYSTEM ERROR 51 -> CE	Incorrect signal B13 when a shelf is pulled in from a front carrier.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Check function, alignment and power supply lines at terminal 774 of B13.
_ / 164 / 4 _ / 165 / 52	LIFT RUN FAULT : SYSTEM ERROR 52 -> CE	Incorrect signal B12 when a shelf is pulled in from a rear carrier.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Check function, alignment and power supply lines at terminal 773 of B12.
_ / 164 / 5 _ / 165 / 53	LIFT RUN FAULT : SYSTEM ERROR 53 -> CE	Internal error of the MP 12N CPU I hardware.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Replace MP 12N CPU I if defective.
_ / 164 / 6 _ / 165 / 54	Only for special program: LIFT RUN FAULT : SYSTEM ERROR 54 -> CE	Incorrect switching of the RES terminal on the frequency converter detected.	• Switch lift off, then on again. If the error recurs, inform the Hänel service department. • Check the wiring of the RES terminal on the frequency converter.
_ / 164 / 7 _ / 165 / 55	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 55 -> CE	Old hardware for the MP 12 PLUS board has been detected.	• Replace MP 12 PLUS board with newer hardware (>= S0848-02).

7 Error messages

Code	Lift run error message	Cause	Action
_/164/8 _/165/56	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 56 -> CE	Error for brake current monitoring of the board MP 12 PLUS during standstill. Brake current monitoring of the MP 12 PLUS board is defective.	Replace the MP 12 PLUS board if defective.
_/164/9 _/165/57	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 57 -> CE	The current sensor of the MP 12 PLUS board identifies missing current of brake Y1.1. Brake Y1.1 is not energised. Brake current monitoring of the MP 12 PLUS board is defective.	- Use the current tongs to measure the motor current of the brake Y1.1. The value would have to be larger than 2.5 amperes. - Check wiring for brake Y1.1 and Y1.2 - Replace the MP 12 PLUS board if defective.
_/164/10 _/165/58	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 58 -> CE	The current sensor of the MP 12 PLUS board identifies missing current of brake Y1.2. Brake Y1.2 is not energised. Brake current monitoring of the MP 12 PLUS board is defective.	- Use the current tongs to measure the motor current of the brake Y1.2. The value would have to be larger than 2.5 amperes. - Check wiring for brake Y1.1 and Y1.2 - Replace the MP 12 PLUS board if defective.
_/164/11 _/165/59	Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR 59 -> CE	No RS485 connection or a faulty connection to the CurrentSensorRS485 board has been detected. (The CurrentSensorRS485 is mandatory for model year 2015 or later.) - RS485 cable defective. - CurrentSensorRS485 board is defective. - X81 interface of the MP control system is defective.	- Replace RS485 cable. - Replace CurrentSensorRS485 board if defective. - Replace MP 12N CPU I if defective.
_/181	For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SYSTEM ERROR RS485 (U1) -> CE/↩	For frequency converter U1 with RS485 connection, the system has detected a faulty RS485 connection or none at all. - Incorrect initialisation. - RS485 cable defective. - MP control system interface or frequency converter U1 defective.	- Check initialisation of "Frequency converter with RS485". - Check interface parameters P331 to P342 of frequency converter U1. - Replace RS485 cable. - Replace MP control system or frequency converter U1.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 182	For software MP 12N CPU I V 4.0 STANDARD or higher: Only for Multi-Space®: LIFT RUN FAULT : SYSTEM ERROR RS485 (U2) -> CE/↩	For frequency converter U2 with RS485 connection, the system has detected a faulty RS485 connection or none at all. • Incorrect initialisation. • RS485 cable defective. • MP control system interface or frequency converter U2 defective. • The station number of U2 is not set to address 17.	• Check initialisation of "Frequency converter with RS485". • Check interface parameters P331 to P342 of frequency converter U2. • Replace RS485 cable. • Replace MP control system or frequency converter U2. • Set parameter number 331 of frequency converter U2 to address 17 using the control module. Refer to "Frequency converter setting instructions" for Multi-Space® (document "FREQUEN2").
_ / 183	For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SYSTEM ERROR LIFT LOAD CAPACITY <x> -> CE <x> = Lift load capacity cause 1 Maximum total load in case of a conflict with blocked carriers. 2 Maximum total load in case of a conflict with lifts designed for earthquake-prone areas, lift height, shelf size or blocked carriers. 3 Maximum total load in case of a conflict with lift version in accordance with Eurocode 8, load code or blocked carriers. 4 Maximum shelf load in case of a conflict with load code. 5 Shelf empty weight in case of a conflict with load code. 6 Maximum number of shelves in case of a conflict with load code.	The blocked carrier input undergoes a plausibility check based on the maximum total load, the lift height and the maximum shelf load. <x> = Lift load capacity cause • Incorrect initialisation.	• Carry out initialisation and positioning.
_ / 110 / 1	LIFT RUN FAULT : SHELF INCORRECTLY POSITIONED 1 -> CE/↩	Simultaneous signals from proximity switches B10+B11+B12 or B13. • Shelf was pushed onto the extractor manually. • Fault signalled by proximity switches B10/B11, B12/B13.	Caution: The [↩] key starts a lift run! • Pull shelf back into the access point or carrier manually. • Check function, alignment and power supply lines of terminal 771, 772, 773, 774 of B10, B11, B12, B13

7 Error messages

Code	Lift run error message	Cause	Action
_ / 110 / 2	LIFT RUN FAULT : SHELF INCORRECTLY POSITIONED 2 -> CE/↩	No signal from proximity switches B12/B13 before or during a vertical lift run, although there is a shelf on the extractor. - Proximity switches B12/B13 are incorrectly aligned or are defective. - Control cable X82 to extractor faulty.	Caution: The [↩] key starts a lift run! - Check installation dimension according to "Setting instructions for proximity switch" (document "NSEINS"). - Check function at terminal 773, 774, replace if defective. - Check control cable X82 between board and extractor.
_ / 110 / 4	LIFT RUN FAULT : SHELF INCORRECTLY POSITIONED 4 -> CE/↩	A horizontal run was not completed and consequently, no vertical motion is possible. - Error in the sequence control system. - Before the service functions were called, a lift run was interrupted; drive catches are not in the end position.	Caution: The [↩] key starts a lift run! - In the service functions, execute function "Bring shelf onto extractor". - Complete horizontal run, for example using function "Store shelf", "Get shelf". Wait until it is completed before calling up the service functions.

7 Error messages

Code	Lift run error message	Cause	Action
14 / 110 / 3 15 / 110 / 3	LIFT RUN FAULT : SHELF REMOVAL POS TOO FAR INSIDE (n) → CE/↩ For supplementary feature "Automatic shelf ejection": ➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®".	(n) = Access point number for multiple access points. No signal from proximity switch B20 or B26 when there is a shelf in access point (n). • The shelf is positioned too far towards the inside of access point (x). • Proximity switch B20 or B26 is incorrectly aligned or defective. Signal from proximity switch B21 when there is no shelf in the access point (n). • Proximity switch B21 is incorrectly aligned or defective. Additional signal from the proximity switch B21 or B27 after the shelf has been correctly pulled onto the extractor. • Proximity switch B21 or B27 is incorrectly aligned or defective.	Caution: The [↩] key starts a lift run! • Pull shelf back to end position. • Check installation dimension according to "Setting instructions for proximity switches" (document "NSEINS"); check function of B20 at terminal 877 of the MP 12N CPU I board, replace if defective. If additional access point proximity switch B26, B27 is present: • Check B26 at terminal 879. Check installation dimension according to "Setting instructions for proximity switches" (document "NSEINS"); check function of B21 at terminal 878 of the MP 12N CPU I board, replace if defective. If additional access point proximity switches B26, B27 are present: • Check B27 at terminal 880. Check installation dimension according to "Setting instructions for proximity switches" (document "NSEINS"); check function of B21 at terminal 878 of the MP 12N CPU I board, replace if defective. If additional access point proximity switches B26, B27 are present: • Check B27 at terminal 880.

7 Error messages

Code	Lift run error message	Cause	Action
14 / 110 / 5 15 / 110 / 5	LIFT RUN FAULT : SHELF REMOVAL POS TOO FAR OUTSIDE (n) -> CE/↩ For supplementary feature "Automatic shelf ejection": ➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®".	(n) = Access point number for multiple access points. No signal from proximity switch B21 when there is a shelf in access point (n). - The shelf is positioned too far towards the outside of access point (n). - Proximity switch B21 is incorrectly aligned or defective. Signal from proximity switch B20 when there is no shelf in the access point (n). - Proximity switch B20 is incorrectly aligned or defective.	Caution: The [↩] key starts a lift run! - Push shelf fully into access point (n). - Check installation dimension according to "Setting instructions for proximity switches" (document "NSEINS"); check function of B21 at terminal 878, replace if defective. If additional access point proximity switches B26, B27 are present: - Check B27 at terminal 880. Check installation dimension according to "Setting instructions for proximity switches" (document "NSEINS"); check function of B20 at terminal 877 of the MP 12N CPU I board, replace if defective. If additional access point proximity switches B26, B27 are present: - Check B26 at terminal 879.
_ / 115 / 2	Software up to MP 12N CPU I V 4.0 STANDARD: LIFT RUN FAULT : MOTOR IS OVERLOADED 2 -> CE	MP control system does not detect a change in position, though a move command has been issued. (Movement direction vertical) - Mitsubishi frequency converter U1 is in PU mode. - No drive signals at input of frequency converter U1.	- Set external mode at control unit. - Check 24V DC drive signals from terminal 782 of board MP 12/N CPU I via K6, K7, MP 12/N CPU I board terminal 504, 505/506 to terminal STR, STF against "Control component circuit diagram".
_ / 115 / 2 _ / 122 / 1000	For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : MOTOR IS OVERLOADED 2 -> CE For software MP 12N CPU I V 4.3/5 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER 1000 -> CE	MP control system does not detect a change in position, though a move command has been issued. - Mitsubishi frequency converter U1 / U2 is in PU mode. - No drive signals at input of frequency converter U1 / U2.	- Set external mode at control unit. - Check 24V DC drive signals from terminal 782 of board MP 12/N CPU I via K6, K7, MP 12/N CPU I board terminal 504, 505/506 to terminal STR, STF against "Control component circuit diagram".

7 Error messages

Code	Lift run error message	Cause	Action
_ / 115 / 3	LIFT RUN FAULT : MOTOR IS OVERLOADED 3 -> CE	MP control system does not detect a change in position, though a move command has been issued. (Movement direction vertical) • Motor is overloaded. • No drive signals at input of frequency converter U1. • Drive contactor K1 defective. For the Lean-Lift®: • Motor brake of vertical motor M1 does not release. • Position sensor systems without supply voltage; line interrupted. For the Multi-Space®: • Motor brake of vertical motor M1.1 or M1.2 does not release. • Position sensor systems without supply voltage; line interrupted.	• Reduce shelf load. • Check 24V DC drive signals from terminal 782 of board MP 12/N CPU I via K6, K7, MP 12/N CPU I board terminal 504, 505/506 to terminal STR, STF against "Control component circuit diagram". • Check contactor K1 and replace if defective. • Check brake activation of motor M1. • Check activation of contactor K91 and voltage at rectifier V1. • Carry out current measurement in the DC circuit of the motor brake. • Measure voltage between terminal 767 (+5V) and terminal 768 (GND). • Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVLL. • Check brake activation of motor M1.1 or M1.2. • Check activation of contactor K91 and voltage at rectifier V1.1 and V1.2. • Carry out current measurement in the DC circuit of the motor brake. • Measure voltage between terminal 767 (+5V) and terminal 768 (GND). • Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVGT.

7 Error messages

Code	Lift run error message	Cause	Action
8 / 115 / 7	LIFT RUN FAULT : MOTOR IS OVERLOADED 7 -> CE	MP control system does not detect a change in position, though a move command has been issued. (Movement direction of extractor drive catch horizontal) • Motor is overloaded. • Too much friction on the shelf. • No parameter file or an incorrect parameter file has been read into the frequency converter via the MP control system using the "JUMP" service software. • Drive contactor K2 defective. • Motor brake of horizontal motor M2 does not release. For the Lean-Lift®: • Mitsubishi frequency converter U1 is in PU mode. • No drive signals at input of frequency converter U1. For the Multi-Space®: • Mitsubishi frequency converter U2 is in PU mode. • No drive signals at input of frequency converter U2.	• Reduce shelf load. • The plastic glides are missing from a heavily loaded shelf. • Read in correct parameter file "FREQUEN1Vxx.FRA" for Lean-Lift® or "FREQUEN2Vxx.FRA" for Multi-Space® to frequency converter using "JUMP" service software via MP control system. • Check contactor K2 and replace if defective. • Check brake activation of motor M2. • Check activation of contactor K92 and voltage at rectifier V2. • Carry out current measurement in the DC circuit of the motor brake. • Set external mode at control unit. • Check 24V DC drive signals from terminal 782 of board MP 12/N CPU I via K6, K7, MP 12/N CPU I board terminal 504, 505/506 to terminal STR, STF against "Control component circuit diagram". • Set external mode at control unit. • Check 24V DC drive signals from terminal 782 of MP 12 PLUS board via K6, K7, MP 12 PLUS board terminal 504, 505/506 to terminal STR, STF against "Control component circuit diagram".

7 Error messages

Code	Lift run error message	Cause	Action
_ / 115 / 8	Only for Multi-Space®: LIFT RUN FAULT : MOTOR IS OVERLOADED 8 -> CE	MP control system does not detect a change in position, though a move command has been issued. (Movement direction of movement unit forward/backward) • Mitsubishi frequency converter U1 is in PU mode. • Position sensor systems without supply voltage; line interrupted. • Drive contactor K3z defective. • Motor brake of movement unit M3 does not release.	• Set external mode at control unit. • Measure voltage between terminal 781 (0V) and terminal 782 (24V). • Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVEX. • Check contactor K3z and replace if defective. • Check brake activation of motor M3. • Check activation of contactor K94 and voltage at rectifier V3. • Carry out current measurement in the DC circuit of the motor brake.
_ / 115 / 9	Only for Multi-Space®: LIFT RUN FAULT : MOTOR IS OVERLOADED 9 -> CE	MP control system does not detect a change in position, though a move command has been issued. (Movement direction of extractor towards the right/left) • Motor is overloaded. • Mitsubishi frequency converter U2 is in PU mode. • Position sensor systems without supply voltage; line interrupted. • Drive contactor K4 defective. • Horizontal motor M4 defective. • Motor brake of horizontal drive right/left M4 does not release.	• Reduce shelf load. • Set external mode at control unit. • Measure voltage between terminal 781 (0V) and terminal 782 (24V). • Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVEX. • Check contactor K4 and replace if defective. • Check motor M4 and replace if defective. • Check brake activation of motor M4. • Check activation of contactor K92 and voltage at rectifier V4. • Carry out current measurement in the DC circuit of the motor brake.

7 Error messages

Code	Lift run error message	Cause	Action
7 / 109	LIFT RUN FAULT : THE ARTICLE IS TOO HIGH ! (n) -> CE/↩	(n) = Access point number for multiple access points. The value received from the height detection system during storage of a shelf (n) is too high. • The storage items are higher than the permitted max. storage article height. • Height detection disturbed by dirt or incorrect adjustment. • Control device B1 of height detection not correctly adjusted (jumpers). • Max. article height incorrectly initialised. • The article height was increased during the function "Check shelf positions - Check article heights". • Height detection system is defective. • Supply voltage for height detection system is not stable; it may drop briefly below 19V DC. • In the redundancy menu, the article height detection function or the monitoring of shelf management was deactivated.	Caution: The [↩] key starts a lift run! • Reduce the height of the stored articles. • Check to see if height detection system is dirty or incorrectly adjusted; for control purposes, switch on buzzer using switch on control device B1. • Check setting of jumper according to the specifications on the housing cover of control device B1. • Check the article height setting in positioning mode. • Reduce stored article height to previous value. • Check transmitters, receivers, and the control device of height detection system and replace if defective. • Check transformer voltage 24V AC and set higher if necessary. • Perform a "Check article height" test run.
7 / 120 / 1	LIFT RUN FAULT : STOR. ART. PROTRUDING OVER SHELF AT REAR (n) -> CE/↩	(n) = Access point number for multiple access points. When a shelf is being stored, before the shelf is pulled onto the extractor, a signal is received from the height detection system at access point (n). • Stored articles are protruding over the rear edge of the shelf into the lift shaft. • Erroneous signal from the height detection system caused by dirt, incorrect adjustment, or defect.	Caution: The [↩] key starts a lift run! • Store articles so that they do not protrude over the edge of the shelf. • Check error signal from height detection system for dirt, incorrect adjustment or defect. To check it, switch on the buzzer using the switch on control device nB1.

7 Error messages

Code	Lift run error message	Cause	Action
7 / 120 / 2	LIFT RUN FAULT : STOR. ART. PROTRUDING OVER SHELF AT REAR (n) -> CE/↩	(n) = Access point number for multiple access points. When a shelf is being stored, just before the end position of the shelf on the extractor, a signal is received from the height detection system at access point (n). - The stored articles protrude over the front edge of the shelf. - Erroneous signal from the height detection system caused by dirt, incorrect adjustment, or defect.	Caution: The [↩] key starts a lift run! - Store articles so that they do not protrude over the edge of the shelf. - Check error signal from height detection system for dirt, incorrect adjustment or defect. To check it, switch on the buzzer using the switch on control device nB1.
7 / 128	Only for lifts with disabled "Fixed shelf height" function (Supplementary module for Storage location height management): LIFT RUN FAULT : LIFT IS FULL ! -> CE/↩ For supplementary module 04) "Storage location height management": ➤ Refer to the "Supplementary Description of the Storage Location Height Management for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"	A shelf cannot be stored away because of its article height. No free, adjoining carriers available in the numbers required for this article height. The shelf is pushed back into the access point.	Caution: The [↩] key starts a lift run! ✗ Note: To save space, store articles in shelves so that packaging does not protrude at the top (e.g. lids of boxes, bags, etc.) - Reduce stored article height to this shelf. - Carry out an optimisation run. - It may be possible to create space by reducing the article height for other shelves.

7 Error messages

Code	Lift run error message	Cause	Action
1 / 104	LIFT RUN FAULT : SYNCHRONISATION RUN! x -> CE/↩	Error in vertical positioning system. <x> = Cause of synchronisation run (see Page 247) - Fault at positioning rail or sensor caused by dirt or damage - Position sensor not correctly aligned. - Line interrupted 761/762/763 front, 764/765/766 rear or 767(+5V)/768(GND). Voltage drop on supply voltage lines for the position sensor in control cable X82 is too great. For Lean-Lift® with shelf widths < 3660 millimetres: - Positioning sensor S09-05a or S09-05b defective. For Multi-Space® and for Lean-Lift® with shelf widths >= 3660 millimetres: - Positioning sensor X88A or X88B or X88C or X88D or X88E or X88F or X88G defective. For Lean-Lift®: - Access position or rear carrier position was initialised inaccurately or not at all. For "SYNCHRONISATION RUN 5": - Vertical speed too slow.	- Press the [↩] key. The extractor moves to the bottom reference position, after which the destination carrier is accessed. or - Press the [CE] key. The number of the carrier where the error took place is displayed. - Check positioning rails and sensors for dirt (lint, dust, grease, etc.) or for damage. - Check adjustment according to "Installation Instructions for Lean-Lift® Positioning Sensor" (document "POSIEINS"). - Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVLL. - Check positioning sensor and replace if defective. - Check positioning sensor and replace if defective. - Reinitialise the access position and the rear carrier position in positioning mode. - Check wiring of terminals 749, 754 and 755. - Check that frequency converter U1 is set according to "Frequency converter setting instructions for Lean-Lift®" (document "FREQUEN1"). - Check that frequency converter U1 is set according to "Frequency converter setting instructions for Multi-Space®" (document "FREQUEN2").

7 Error messages

Code	Lift run error message	Cause	Action
	<x> = Cause of synchronisation run		
1	The position value does not match the carrier positioning hole on the positioning rail.		
2	The carrier positioning hole on the positioning rails was not detected.		
3	The deviation of the position values between the front and rear position sensor is too great.		
4	The position value is too large in the vertical direction.		
5	During the synchronisation run, the carrier positioning hole on the positioning rails was not detected.		
6	During the synchronisation run, the deviation of the position values between the individual position sensors is too great.		
7	The synchronisation run has been requested using the "Synchronisation run" menu item in the service functions.		
8	"Initialise access position" has been activated.		
9	The synchronisation run has been triggered using the "Bring shelf onto extractor" menu item in the service functions.		
10	The position data were stored incorrectly when the lift was switched off.		
11	System error 95 has occurred.		
12	System error 96 has occurred.		
13	The double vertical position detection in the redundancy system has been activated.		
14	The lift has been switched off with the double vertical position detection in the redundancy system deactivated.		
15	Shelf width or number of lift units for Multi-Space® was changed.		
16	Error in right/left sensor for Multi-Space®.		
17	The drive type is not correctly initialised.		
18	The lift has been switched off during a lift run.		
19	Software up to MP 12N CPU I V 4.0 STANDARD: The lift was not synchronised when switched on. For cause of synchronisation run, see previous synchronisation run error in the log of lift run errors.		
20	Software up to MP 12N CPU I V 4.0 STANDARD: A software update of the MP 12N CPU I requires a synchronous run.		
21	The switching hysteresis of B18 is too large. B18 is defective.		

7 Error messages

Code	Lift run error message	Cause	Action
	For Lean-Lift® with shelf widths < 3660 millimetres: SYNCHRO. RUN : <x> SENSOR ERROR AT CARRIER FRONT <a> -> CE or SYNCHRO. RUN : <x> SENSOR ERROR AT CARRIER REAR <a> -> CE or SYNCHRO. RUN : <x> SENSOR ERROR AT CARRIER <a> -> CE Display in "JUMP" service software: SYNCHRO. RUN : <x> SENSOR ERROR AT CARRIER <a> (X88<n>) -> CE X88A = "AT CARRIER FRONT" X88B = "AT CARRIER REAR" X88 = "AT CARRIER"	If the lift run error message SYNCHRONISATION RUN! is cancelled using the [CE] key, the cause of the synchronisation run <x> and the carrier number <a> at which the synchronisation run was triggered are displayed. For lifts with intermediate shelf increment carriers, the carrier number is related to the intermediate increments 37.5 mm (1.48") or 25 mm (0.98"). <a> = Carrier number <x> = Cause of synchronisation run (see page 247) - If the same or neighbouring carrier numbers are always displayed at further synchronisation runs: fault at the positioning rail. - If different carrier numbers are always displayed at further synchronisation runs: fault in the front or rear positioning sensor, or line interrupted at 761/762/763 front, 764/765/766 rear or 767(+5V)/768(GND).	- Press the [↩] key. The destination carrier is accessed. - Check the positioning rails at the carrier indicated for dirt (lint, dust, grease etc.) or for damage. Carry out "positioning rail cleaning run" in the service functions. - Adjust positioning sensor according to "Installation instructions for positioning sensor" (document "POSIEINS"). Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVLL.
	For Multi-Space® and for Lean-Lift® with shelf widths >= 3660 millimetres: SYNCHRO. RUN : <x> SENSOR ERROR AT CARRIER <a> (X88<n>) -> CE	If the lift error message SYNCHRONISATION RUN! is cancelled using the [CE] key, the cause of the synchronisation run <x> and the carrier number <a> at which the synchronisation run was triggered are displayed. For lifts with intermediate shelf increment carriers, the carrier number is related to the intermediate increments 37.5 mm (1.48") or 25 mm (0.98"). <a> = Carrier number <x> = Cause of synchronisation run (see page 247) <n> = 'A' to 'G' - If the same or neighbouring carrier numbers are always displayed at further synchronisation runs: fault at the positioning rail. - If different carrier numbers are always displayed at further synchronisation runs: fault in the positioning sensor at X88<n> or X118/X119 or line interrupted at 761/762/763 front, 764/765/766 rear or 767(+5V)/768(GND).	- Press the [↩] key. The destination carrier is accessed. - Check the positioning rails at the carrier indicated for dirt (lint, dust, grease etc.) or for damage. - Adjust positioning sensor according to "Installation instructions for positioning sensor" (document "POSIEINS"). Check control cable between MP 12/N CPU I board in the electrical drawer and extractor board MP 12 KVLL.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 105	For Lean-Lift®: LIFT RUN FAULT : BRAKE IS NOT CORRECT ! x -> CE	The extractor overshoots the stop position vertically up/down (x=1) or horizontally forwards/back (x=3), even after repositioning. The vertical braking distance is too large after a safety circuit interruption (x=2). • (X=1) Brake rectifier V1 incorrectly poled or brake relay of terminal 752, 753 of MP 12/N CPU I board inverted. • (X=1) Brake relay of MP 12/N CPU I board defective. • (X=2) Brake Y1 worn or incorrectly set. • (X=2) Braking resistor R1 connected incorrectly. • (X=3) Contactor K92 defective.	• Check connection against "Power component circuit diagram". • Replace MP 12N CPU I board if defective. • Check condition of brake Y1. -> Refer to the Lean-Lift® operating manual. • Check brake resistor R1 against "Power component circuit diagram". • Check contactor K92 and replace if defective.
_ / 105	For Multi-Space®: LIFT RUN FAULT : BRAKE IS NOT CORRECT ! x -> CE	The extractor overshoots the stop position vertically up/down (x=1), horizontally forwards/back (x=3), or horizontally left/right (x=4), even after repositioning. The vertical braking distance is too large after a safety circuit interruption (x=2). • (X=1) Brake rectifier V1.1 / V1.2 incorrectly poled or brake relay of terminal 750, 751 / 752, 753 of MP 12 PLUS board inverted. • (X=1) Brake relay of MP 12 PLUS board defective. • (X=2) Brake Y1.1 / Y1.2 worn or incorrectly set. • (X=2) Braking resistor R1 connected incorrectly. • (X=3) Contactor K92 defective. • (X=4) Brake rectifier V4 incorrectly poled or brake relay of terminal 752, 753 of MP 12/N CPU I board inverted. • (X=4) Brake relay of MP 12/N CPU I board defective.	• Check connection against "Power component circuit diagram". • Replace the MP 12 PLUS board if defective. • Check the condition of brake Y1.1 / Y1.2. -> Refer to the Multi-Space® operating manual. • Check brake resistor R1 against "Power component circuit diagram". • Check contactor K92 and replace if defective. • Check connection against "Power component circuit diagram". • Replace MP 12N CPU I board if defective.
_ / 111	LIFT RUN FAULT : ADJUST POSITIONING SENSOR ! -> CE	No position data or invalid position data from the access or carrier position. • In positioning mode, the function "Initialise the access and rear carrier position" was not carried out.	• Initialise the access position and one rear carrier position in positioning mode and save them.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 117	LIFT RUN FAULT : ACCESS POINTS NOT INITIALISED -> CE	Initialisation and position data for access point(s) absent or invalid. - Positioning of the lift not yet carried out. - Initialisation of additional access points not carried out (may also occur after a modification of positioning at access 1)	- Carry out positioning. Then initialise any other access points that are present. - Initialise other access points.
	SYSTEM ERROR CHECK ACCESS POINT NUMBERS --> SWITCH OFF	Error in addressing the access points at a Lean-Lift® with multiple access points. - The same access point number was used for more than one access point. - Hardware fault due to external influences.	- Reinitialise MP control system and assign a different number to each access point. - Check line shielding.
14 / 121 15 / 121	LIFT RUN FAULT : NO SHELF IN ACCESS POINT ! -> CE or LIFT RUN FAULT : SHELF REMOVED BUT NOT REGISTERED <tt> (n) -> CE/↩	<tt> = Shelf number (n) = Access point number for multiple access points. Missing signal from proximity switches B20+B21. - There was no shelf in the access point when the function "Store shelf" was called. - A shelf was removed from the access point or pulled out onto the roller guide rails without being unregistered. - Proximity switches B20+B21 are incorrectly adjusted or defective, or power supply line interrupted.	Caution: The [↩] key starts a lift run! - Push shelf into the access point. - Push the shelf in question back into the access point or unregister the shelf. - Check installation dimensions, function and power supply line for terminals 877+878 of proximity switches B20+B21. If additional access point proximity switches B26, B27 are present: - Check B26 at terminal 879 and B27 at terminal 880.
14 / 114 15 / 114	For the supplementary feature "Automatic Shelf Locking for Operation with High-Lift Truck or Forklift Truck": ➤ See the "Supplementary Description of the Automatic Shelf Locking for Operation with High Lift Truck or Forklift Truck Microprocessor Control System MP 14 Lean-Lift®"		

7 Error messages

Code	Lift run error message	Cause	Action
14 / 112 15 / 112	LIFT RUN FAULT : UNKNOWN SHELF IN ACCESS POINT ! (n) -> CE/↩ For supplementary feature "Automatic shelf ejection": ➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®".	(n) = Access point number for multiple access points A shelf was detected in the access point, although there should not have been one there. - Shelf pushed into access point without being registered. - Incorrect signal from proximity switches B20+B21. - Access carrier incorrectly positioned. - Incorrect signal from proximity switch B22 (automatic shelf ejection).	Caution: The [↩] key starts a lift run! - Remove shelf from access point or register it. - Check installation dimensions, function and power supply line for terminals 877+878 of proximity switches B20+B21, (check for metal shavings, dirt). - Position the access point. - Check installation dimensions, function and power supply line for terminal 877 on the MP 12 EXT board of proximity switch B22. If additional access point proximity switches B26, B27 are present: - Check B26 at terminal 879 and B27 at terminal 880.
_ / 69	Only with multiple access points: LIFT RUN FAULT : REQUESTED SHELF IN OTHER ACCESS POINT (n) -> CE/↩	(n) = Access point number for multiple access points. The shelf has been brought to access point (n) and has not yet been put back into storage.	Caution: The [↩] key starts a lift run! Store shelf at access point (n).
	Only with multiple access points: LIFT RUN FOR OTHER ACCESS POINT ! (n) PLEASE WAIT	(n) = Access point number for multiple access points. An operation is currently in progress at access point (n).	Wait until the lift/carousel run for access point (n) is completed.
	Only with multiple access points: OPERATION IS BLOCKED BY OTHER ACCESS POINT ! (n)	(n) = Access point number for multiple access points. A lift run error message is pending at access point (n).	Resume lift run at access point (n).
	Only with multiple access points: CANCELLING BLOCKS OTHER ACCESS POINTS ! REALLY CANCEL ? NO -> ↑/↓/CE/↩	The horizontal movement within the access point is not completed and the [CE] key was pressed for the lift run error message.	Confirm "NO" and exit the horizontal movement.
_ / 201	LIFT RUN FAULT : WRONG OP MODE/ INITIALISATION -> CE	Lift with multiple access points was initialised without high-speed door, without guide rail, without automatic shelf ejection, without lift run only with door closed.	Check initialisation.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 124	LIFT RUN FAULT : REMOVE SHELF -> CE/↵	When a shelf is pushed out into an access point, the system detects that there is another shelf in the access point. - Shelf was pushed into the access point manually. - Incorrect signal from proximity switch B20.	Caution: The [↵] key starts a lift run! - Remove shelf from access point. - Check installation dimensions, function and power supply line for terminal 877 of proximity switch B20 (check for metal shavings, dirt). If additional access point proximity switches B26, B27 are present: - Check B26 at terminal 879.
_ / 54	Only for lifts without shelf weighing device: LIFT RUN FAULT : NUMBER OF SHELVES TOO HIGH -> CE	One of the following conditions is met: - The shelf number limit has been exceeded and, in addition, the max. shelf load is greater than 500 kg (1102 lbs.) or the lift height is greater than 15 meters (590.55"). - The maximum number of shelves has been exceeded. - Incorrect initialisation. - Lift version not permitted.	- Check initialisation. - Contact the Hänel service department.
_ / 132	Only for lifts without shelf weighing device: LIFT RUN FAULT : SYSTEM ERROR LIFT HEIGHT -> CE	The system has detected that a lift with a height greater than 15 meters (590.55") is to be operated without a shelf weighing device. - Incorrect initialisation. - Lift version not permitted.	- Check initialisation. - Contact the Hänel service department.
_ / 59 / 2	LIFT RUN FAULT : MOT.CURRENT TOO HIGH RETRIEVE SHELF 2 -> CE/↵ then	The system detects that an overload situation has caused the current limit of the frequency converter to be exceeded and that the acceleration time is too long. (Movement direction vertical for long run paths)	Caution: The [↵] key starts a lift run! Press the [↵] key to bring the shelf to the access point.
_ / 159 / 2	LIFT RUN FAULT : MOT.CURRENT TOO HIGH REMOVE ARTICLES! 2 -> CE/↵	Motor is overloaded.	Caution: The [↵] key starts a lift run! Reduce shelf load.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 59 / 3 LIFT RUN FAULT : MOT.CURRENT TOO HIGH RETRIEVE SHELF 3 -> CE/↩ then _ / 159 / 3 LIFT RUN FAULT : MOT.CURRENT TOO HIGH REMOVE ARTICLES! 3 -> CE/↩	The system detects that an overload situation has caused the current limit of the frequency converter to be exceeded. (Movement direction vertical) • Motor is overloaded. • Drive contactor K1 defective. For the Lean-Lift®: • Motor brake of vertical motor M1 does not release. For the Multi-Space®: • Motor brake of vertical motor M1.1 or M1.2 does not release.	Caution: The [↩] key starts a lift run! • Press the [↩] key to bring the shelf to the access point. Caution: The [↩] key starts a lift run! • Reduce shelf load. • Check contactor K1 and replace if defective. • Check brake activation of motor M1. • Check activation of contactor K91 and voltage at rectifier V1. • Carry out current measurement in the DC circuit of the motor brake. • Check brake activation of motor M1.1 or M1.2. • Check activation of contactor K91 and voltage at rectifier V1.1 and V1.2. • Carry out current measurement in the DC circuit of the motor brake.	
_ / 59 / 7 LIFT RUN FAULT : MOT.CURRENT TOO HIGH RETRIEVE SHELF 7 -> CE/↩ then _ / 159 / 7 LIFT RUN FAULT : MOT.CURRENT TOO HIGH REMOVE ARTICLES! 7 -> CE/↩	The system detects that an overload situation has caused the current limit of the frequency converter to be exceeded. (Movement direction of extractor drive catch horizontal) • Motor is overloaded. • Carrier friction too severe. • Drive contactor K2 defective. • Motor brake of horizontal motor M2 does not release.	Caution: The [↩] key starts a lift run! • Press the [↩] key to bring the shelf to the access point. Caution: The [↩] key starts a lift run! • Reduce shelf load. • Clean and lubricate carrier. • Check contactor K2 and replace if defective. • Check brake activation of motor M2. • Check activation of contactor K92 and voltage at rectifier V2. • Carry out current measurement in the DC circuit of the motor brake.	
_ / 59 / 9 Only for Multi-Space®: LIFT RUN FAULT : MOT.CURRENT TOO HIGH RETRIEVE SHELF 9 -> CE/↩	The system detects that an overload situation has caused the current limit of the frequency converter to be exceeded. (Movement direction of extractor towards the right/left)	Caution: The [↩] key starts a lift run! • Press the [↩] key to bring the shelf to the access point.	

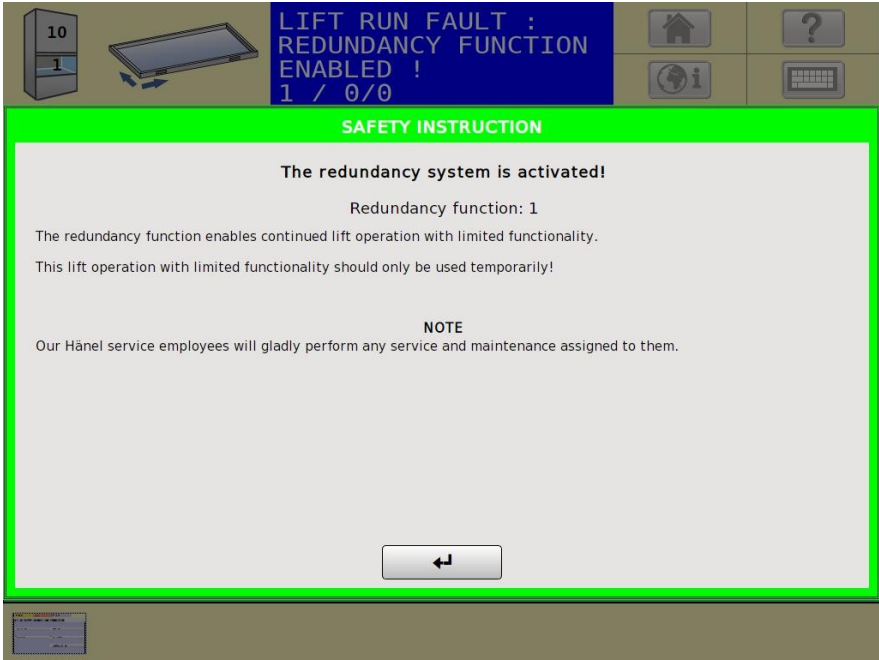
7 Error messages

Code	Lift run error message	Cause	Action
_ / 100	LIFT RUN FAULT : CLOSE DOOR -> CE/↩	If the system has a second safety circuit and the lift runs while the safety light curtain is deactivated (redundancy system): • Safety light curtain is interrupted and door not closed.	Caution: The [↩] key starts a lift run! • Close the door. • Check initialisation of the signal/error message inputs. • Check door position switches S13, S14 and contactor K18 according to "Safety component I+II circuit diagram" and "Control component circuit diagram".
_ / 66	LIFT RUN FAULT : OPEN DOOR -> CE/↩ For the supplementary feature "High-speed door": ➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"	If there is one access point and a second safety circuit: Lift run with active safety light curtain is possible with the door open. • The message is displayed if error message input "DOOR MONITORING" is voltage-free and the error message input in front of "DOOR MONITORING" is carrying voltage.	Caution: The [↩] key starts a lift run! • Open door. • Check initialisation of the signal/error message inputs. • Check door position switches S13, S14 and contactors K18, K19 according to "Safety components I+II circuit diagram" and "Control component circuit diagram".
_ / 67	LIFT RUN FAULT : SENSOR TEST: OPEN AND CLOSE DOOR -> CE/↩	If there is one access point and a second safety circuit: Lift run while the safety light curtain is deactivated (redundancy system) requires that the door be opened and closed after a safety interruption. • The message is displayed if error message input "DOOR MONITORING" is voltage-free and the error message input in front of "DOOR MONITORING" is carrying voltage.	Caution: The [↩] key starts a lift run! • Open and close door. • Check initialisation of the signal/error message inputs. • Check door position switches S13, S14 and contactors K18, K19 according to "Safety components I+II circuit diagram" and "Control component circuit diagram".
_ / 130	Only with multiple access points: LIFT RUN FAULT : END LIFT RUN AT OTHER ACCESS POINT (n) -> CE/↩	(n) = Access point number for multiple access points. The system has detected that a lift run at access point (n) has not ended. • No lift run is carried out for this access point because the lift run at access point (n) has not ended.	Caution: The [↩] key starts a lift run! • Carry out lift run at access point (n).

7 Error messages

Code	Lift run error message	Cause	Action
_ / 131	Only for lifts with multiple access points that do not have a safeguard between access point and extractor shaft (i. e. without high-speed door) and without lift run only with door closed: LIFT RUN FAULT : OTHER ACCESS POINT OCCUPIED WITH SHELF (n) -> CE/↩	(n) = Access point number for multiple access points. The system has detected that access point (n) is occupied with a shelf. No lift run is carried out for this access point because access point (n) is occupied with a shelf.	Caution: The [↩] key starts a lift run! Pull out the shelf at access point (n) onto the guide rails and continue at this access point using the [↩] key or interrupt the lift run at this access point and store the shelf at access point (n).

7 Error messages

Code	Lift run error message	Cause	Action
_ / 203	For active automatic redundancy function only: LIFT RUN FAULT : REDUNDANCY FUNCTION ENABLED ! < Code > -> CE/↩	< Code > = <x> / <y> / <z> The lift run error message with code <Code> has occurred. The redundancy function <x> has been activated. Limited lift operation is possible using redundancy and limited error monitoring.	Caution: The [↩] key starts a lift run! - Continue the lift run using the [↩] key. Limited continued operation of the lift is possible. - Contact the Hänel service department.
			
_ / 176	Only for Multi-Space®: LIFT RUN FAULT : WRONG MOT. CURRENT M1.1/M1.2 -> CE	An incorrect motor current M1.1/M1.2 has been detected via the CurrentSensorRS485 board. The residual current of both drives is too large. - The chain tension of the drive chain is too low. - The MP control system checks for incorrect motor current values. - This lift run error message occurs at each lift run until the lift run is unlocked. - CurrentSensorRS485 board is defective.	- Contact the Hänel service department. Check chain tension of both drives. - Read "FREQUEN2Vxx.FRA" parameter file into frequency converter via MP control system using "JUMP" service software. - Contact the Hänel service department. Unlock the lift run in the service functions or in system services run sequence after entering the lift-specific code. The code must be requested from the Hänel service department. - Replace CurrentSensorRS485 board if defective.

7 Error messages

Code	Lift run error message	Cause	Action
_ / 177	Only for Lean-Lift® with 4 positioning sensors: LIFT RUN FAULT : ENSURE UNIFORM SHELF LOAD -> CE/↵	An extractor inclined position has been detected before pushing the shelf out into the carrier.	Prevent uneven load distribution on the shelf. Continue the lift run using the [↵] key.
_ / 178	Only for Lean-Lift® with 4 positioning sensors: LIFT RUN FAULT : SYSTEM ERROR EXTRACTOR ALIGNMENT -> CE	An extractor inclined position has been detected before pushing the shelf out into the carrier. The shelf cannot be pushed out.	Contact the Hänel service department.
_ / 184 / 1	For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER ACTIVATION U1 1 -> CE/↵	No voltage present at the STF input of frequency inverter U1, although REL3 of the MP 12N CPU I board is activated.	- Check STF connection at U1. - Replace MP 12N CPU I board if defective.
_ / 184 / 2	For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER ACTIVATION U1 2 -> CE/↵	No voltage present at the STR input of frequency converter U1, although REL4 of the MP 12N CPU I board is actuated.	- Check STR connection at U1. - Replace MP 12N CPU I board if defective.
_ / 185 / 1	Only for Multi-Space®: For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER ACTIVATION U2 1 -> CE/↵	No voltage present at the STF input of frequency converter U2, although REL1 of the MP 12N PLUS board is actuated.	- Check STF connection at U2. - Replace the MP 12 PLUS board if defective.
_ / 185 / 2	Only for Multi-Space®: For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : FREQUENCY CONVERTER ACTIVATION U2 2 -> CE/↵	No voltage present at the STR input of frequency inverter U2, although REL2 of the MP 12N PLUS board is actuated.	- Check STR connection at U2. - Replace the board if defective. MP 12 PLUS

7 Error messages

7.6 Additional error messages during lift run due to supplementary features / supplementary modules

Code	Lift run error message	Cause / Remedy
_ / 80	For the supplementary feature "High-speed door": LIFT RUN FAULT : HIGH-SPEED DOOR (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 85	For the supplementary feature "High-speed door": Software up to MP 12N CPU I V 4.0 STANDARD: LIFT RUN FAULT : LOWER LIMIT SWITCH HIGH-SPEED DOOR (n) -> CE/↩ For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : LOWER END POSITION HIGH-SPEED DOOR (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 34	For the supplementary feature "High-speed door": Software up to MP 12N CPU I V 4.0 STANDARD: LIFT RUN FAULT : LOWER HIGH-SPEED DOOR (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 115 / 5	For the supplementary feature "High-speed door": LIFT RUN FAULT : MOTOR IS OVERLOADED 5 (n) -> CE	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 35	For the supplementary feature "High-speed door": LIFT RUN FAULT : MOTOR 5 TOO HOT (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

7 Error messages

Code	Lift run error message	Cause / Remedy
7 / 120 / 3	For the supplementary feature "High-speed door": LIFT RUN FAULT : STORAGE ARTICLES IN HIGH-SPEED DOOR AREA (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 55 / 5 _ / 165 / 21	For the supplementary feature "High-speed door": LIFT RUN FAULT : SYSTEM ERROR 21 (n) -> CE	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 164 / 12 _ / 165 / 60	For the supplementary feature "High-speed door": LIFT RUN FAULT : SYSTEM ERROR 60 (n) -> CE	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 180	For the supplementary feature "High-speed door": For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : UPPER LIMIT SWITCH HIGH-SPEED DOOR (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 188	For the supplementary feature "High-speed door": For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : LOWER LIMIT SWITCH HIGH-SPEED DOOR (n) -> CE/↩	➤ Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 174	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : ERROR FOUND DURING WEIGHT CHECK -> ↩	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 82	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : SHELF OVERLOADED <xx> (<yy>) [< Scale unit >] -> CE/↩	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

7 Error messages

Code	Lift run error message	Cause / Remedy
_ / 83	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : LIFT POSSIBLY OVERLOADED -> CE/↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 84	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : ERROR WEIGHT MEASUREMENT (n) -> ↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 160	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : SHELF EMPTY WEIGHT NOT REACHED (n) -> ↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 164 / 2 _ / 165 / 50	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : SYSTEM ERROR 50 / x -> CE	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 168	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : WEIGHT SUM ERROR RETRIEVE SHELF -> CE/↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 169	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : WEIGHT SUM ERROR REMOVE THE ARTICLE -> CE/↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 186	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : SYSTEM ERROR AMPLIFIER y (n) -> ↵	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

7 Error messages

Code	Lift run error message	Cause / Remedy
_ / 187	For the supplementary feature "Shelf weighing device": LIFT RUN FAULT : SYSTEM ERROR LOAD CELL x / y (n) -> ↩	➤ Refer to the "Supplementary Description of the Shelf Weighing Device Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"
_ / 106	For supplementary feature "Automatic sliding door": LIFT RUN FAULT : DOOR (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"
_ / 79	For supplementary feature "Automatic sliding door": LIFT RUN FAULT : LOWER LIMIT SWITCH DOOR (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"
_ / 50	For supplementary feature "Automatic sliding door": LIFT RUN FAULT : LIGHT BARRIERS / DOOR (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"
_ / 115 / 6	For supplementary feature "Automatic sliding door": LIFT RUN FAULT : MOTOR IS OVERLOADED 6 (n) -> CE	➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"
_ / 192	For supplementary feature "Automatic sliding door": LIFT RUN FAULT : BY OTHER IS OPEN x (n) -> CE	➤ See the "Supplementary Description of the Automatic Sliding Door Microprocessor Control System MP 14 Lean-Lift® and Rotomat®"
_ / 115 / 4	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : MOTOR IS OVERLOADED 4 (n) -> CE	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"

7 Error messages

Code	Lift run error message	Cause / Remedy
_ / 110 / 7	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : SHELF INCORRECTLY POSITIONED 7 (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 110 / 8	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : SHELF INCORRECTLY POSITIONED 8 (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 110 / 9	For supplementary feature "Automatic shelf ejection": For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SHELF EJECTION POS TOO FAR INSIDE (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 152	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : SAFEGUARDING OF EJECTION (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 146	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : LIGHT BARRIERS INSIDE (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 165 / 4	For supplementary feature "Automatic shelf ejection": For software MP 12N CPU I V 4.0 STANDARD or higher: LIFT RUN FAULT : SYSTEM ERROR 4 (n) -> CE	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 149	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : ACCESS POINT EJECT. ACTIVATION (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"

7 Error messages

Code	Lift run error message	Cause / Remedy
_ / 191	For supplementary feature "Automatic shelf ejection": LIFT RUN FAULT : SYNCHRONIZATION RUN SHELF EJECTION (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Ejection Microprocessor Control System MP 14 Lean-Lift®"
_ / 101	For the supplementary feature "Automatic Shelf Locking for Operation with High-Lift Truck or Forklift Truck": LIFT RUN FAULT : AUTOMATIC SHELF LOCKING (n) -> CE/↩	➤ See the "Supplementary Description of the Automatic Shelf Locking for Operation with High Lift Truck or Forklift Truck Microprocessor Control System MP 14 Lean-Lift®"
_ / 164 / 13 _ / 165 / 61	For the supplementary feature "Automatic Shelf Locking for Operation with High-Lift Truck or Forklift Truck": LIFT RUN FAULT : SYSTEM ERROR 61 (n) -> CE	➤ See the "Supplementary Description of the Automatic Shelf Locking for Operation with High Lift Truck or Forklift Truck Microprocessor Control System MP 14 Lean-Lift®"
_ / 128	For the supplementary feature "Shelves with power sockets": LIFT RUN FAULT : CARRIER AREA IS FULL ! -> CE/↩	➤ See the "Supplementary Description of the Shelves With Power Socket Microprocessor Control System MP 14 Lean-Lift®"
_ / 65 _ / 68	For supplementary module 04) "Storage location height management": LIFT RUN FAULT : SHELF TARGET HEIGHT EXCEEDED (n) -> ↩	➤ Refer to the "Supplementary Description of the Storage Location Height Management for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"
_ / 170	For supplementary module 04) "Storage location height management": LIFT RUN FAULT : SHELF TARGET HEIGHT EXCEEDED (n) -> CE	➤ Refer to the "Supplementary Description of the Storage Location Height Management for Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®"
_ / 71	For the supplementary module 29) "Shelf transfer": LIFT RUN FAULT : SHELF TRANSFER -> CE	➤ Refer to the "Supplementary Description of the Shelf Transfer Microprocessor Control System MP 14 Lean-Lift® and Multi-Space®"

8 Service notes

8.1 Software update MP 14

A software update of the MP 14 is carried out via the Ethernet interface X12 using the "JUMP" service software.

Required components / settings

- ◆ Laptop with installed PCMCIA Ethernet LAN card or 10/100 Mbps Ethernet interface.
- ◆ TCP/IP address = 172.xx.1.200
(xx = 16 to 31; set address range for the MP 14)
Subnet mask = 255.255.0.0
- ◆ "JUMP" service software with integrated Java Runtime Environment.
- ◆ Ethernet 10/100 Base T patch cable (crossover).

Procedure

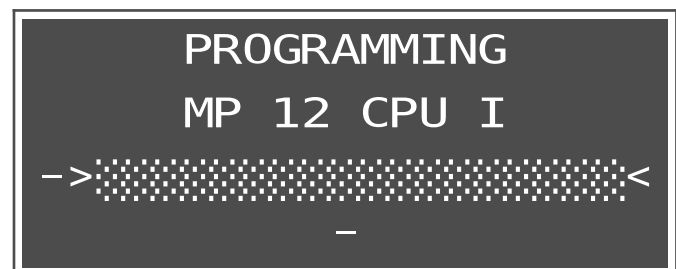
- Establish connection between laptop and MP 14 with patch cable.
- Switch on the MP 14 MP control system and let it boot up.
- Start the "JUMP" service software.
- Select the menu item:
 - ⇒ Upload
 - ⇒ Program update
 - ⇒ MP 14-S/H
 - ⇒ MP 14 package (at least MP 14/12N SYSTEM V5.0 must be present)
or
MP 12N CPU I (S0838/S0852)
- Select ZIP file.
- ➔ Connection is set up. File is transferred.
- Switch the MP 14 MP control system off, then on again.
- ➔ The transferred ZIP file is unpacked and started automatically.

Description of the operator prompts

Program update MP 12 CPU I

- ➔ The program is written from the MP 14 CPU II to the flash EPROM of the MP 12 CPU I. A progress display in the form of a bar shows the status of programming.

Example screenshot



- x The MP control system must not be switched off during programming. Otherwise, programming must take place with jumper J3 on the MP 12 CPU I board set.

8 Service notes

Description of the operator prompts

- MP 12 CPU I software update is complete.
- Switch off the lift.

Example screenshot



8 Service notes

8.2 Set frequency converter parameters

Frequency converter parameters are set via the Ethernet interface X12 using the "JUMP" service software.



- x Configuring the frequency converter using the "JUMP" service software is possible only for the Mitsubishi frequency converter FR-A 740 / FR-A 741 with RS485 connection.
- x Before configuring the frequency converter, the shelf depth and the shelf width must be entered in the positioning system.

Required components / settings

- ◆ Laptop with installed PCMCIA Ethernet LAN card or 10/100 Mbps Ethernet interface.
- ◆ TCP/IP address = 172.xx.1.200
(xx = 16 to 31; set address range for the MP 14)
Subnet mask = 255.255.0.0
- ◆ "JUMP" service software with integrated Java Runtime Environment.
- ◆ Ethernet 10/100 Base T patch cable (crossover).

Procedure

- Establish connection between laptop and MP 14 with patch cable.
- Switch on the MP 14 MP control system and let it boot up.
- Start the "JUMP" service software.
- Select the menu item:
 - ⇒ Upload
 - ⇒ Frequency converter parameters
- Select FRA file.
- ➔ Connection is set up. File is transferred.

Error	Cause	Action
E11	• Incorrect type of frequency converter present	• The Mitsubishi type FR-A740 / FR-A741 frequency converter must be installed and at least the following firmware versions have to be present. – FR-A740 >= 7992 / 3 - or – FR-A740 >= 7972 / 16 - or – FR-A741 >= 8102 / 6 Firmware version = <Parameter 168> / <Parameter 169>

8 Service notes

Error	Cause	Action
E12	Interface error U1	- Check connection of frequency converter interface X81. - For the Multi-Space®, the station number of U2, parameter number 331, must be set to the address 17 using the control module. Refer to "Frequency converter setting instructions" for Multi-Space® (document "FREQUEN2").
E13	Plausibility error: Initialised drive type does not match FC power class U1	Check frequency converter power class U1.
E14	Data record error	Error in parameter file "FREQUEN1Vxx.FRA" for Lean-Lift® or "FREQUEN2Vxx.FRA" for Multi-Space® or an incorrect parameter file has been used.
E15	Operating mode error	Check EXT mode on the frequency converter.
E16	Data range error	- Check connection of frequency converter interface X81. - Error in parameter file "FREQUEN1Vxx.FRA for Lean-Lift® or "FREQUEN2Vxx.FRA" for Multi-Space®.
Only for Multi-Space®: E17	Interface error U2	- For the Multi-Space®, the station number of U2, parameter number 331, must be set to the address 17 using the control module. Refer to "Frequency converter setting instructions" for Multi-Space® (document "FREQUEN2"). - The requisition number of the lift was changed after configuring the frequency converter. In this case, U2 has to be reset before re-configuring to the factory parameters (that is, delete all parameters).
E18	Plausibility error: Initialised drive type does not match FC power class U2	Check frequency converter power class U2.
E98	It is not possible to set frequency converter parameters at this program point.	During positioning, the frequency converter parameters cannot be set until the "Frequency converter with RS485" prompt is answered with "Yes".

8 Service notes

8.3 Software update MP 100D-5

- See "Technical Description of the Microprocessor Control System
MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®."

8

Service notes

8.4

IP addresses for Ethernet MP multi-unit network

➤ See "Technical Description of the Microprocessor Control System
MP 14-S / MP 100D-5 server for Lean-Lift®, Multi-Space® and Rotomat®."

Static IP addresses in
Ethernet MP multi-unit
network

MP 14	172.<IP address range>.<Access point number>.<Lift number> 172.<IP address range>.<Access point number>.<Reserved>
MP 100D	172.<IP address range>.1.254 172.<IP address range>.1.253 (reserved) 172.<IP address range>.<Access point number>.<Reserved>
Camera	172.<IP address range>.<Camera/access point number>.<Lift number>
Service	172.<IP address range>.1.200

<IP address range>	16 - 31 (default is 16)
<Access point number>	1 - 8
<Camera/access point number>	11 - 18 and 21 - 28
<Lift number>	1 - 99
<Reserved>	100 - 110

The chosen IP address range must be completely available on the customer's system.

IP addresses in the
Ethernet MP multi-unit
network without integration
into the corporate network:

Printer	172.<IP address range>.1.252
Host	172.<IP address range>.1.230
Host FTP server	172.<IP address range>.1.251
Host Browser	172.<IP address range>.1.<Reserved browser>

<IP address range>	: 16 - 31 (default is 16)
<Reserved browser>	: 242 - 249

This must be adhered to so as to avoid crossovers during updates and expansions.



An alternative is to integrate the network into the corporate network. In this case, the corporate network must be located in a separate IP address range.

8 Service notes

8.5 Test runs

- Refer to the "Supplementary Description of the Service Functions Microprocessor Control System MP 14 Lean-Lift®, Multi-Space® and Rotomat®".

9 Annex

Up to 25 special data fields can be created for article, job and item data records.
Each data field can be up to 40 characters in size.

Caution: the number of special data fields that can be configured decreases with the sum of their maximum numbers of characters.

Name of data fields

S _{NoC}	=	Number of characters for article number
N _{NoC}	=	Number of characters for article name
K _{NoC}	=	Number of characters for the job number
V _{NoC}	=	Number of characters for batch article (0 = without Batch Management supplementary module; 1 = with Batch Management supplementary module)
C _{NoC}	=	Number of characters for batch number (0 = without Batch Management supplementary module)
HXX _{No.}	=	Number of all H-special data fields
H01 _{NoC}	=	Number of characters for special data field H01
H02 _{NoC}	=	Number of characters for special data field H02
up to		
H25 _{NoC}	=	Number of characters for special data field H25
CXX _{No.}	=	Number of all C-special data fields
C01 _{NoC}	=	Number of characters for special data field C01
C02 _{NoC}	=	Number of characters for special data field C02
up to		
C25 _{NoC}	=	Number of characters for special data field C25
UXX _{No.}	=	Number of all U-special data fields
U01 _{NoC}	=	Number of characters for special data field U01
U02 _{NoC}	=	Number of characters for special data field U02
up to		
U25 _{NoC}	=	Number of characters for special data field U25
_{NoC} = number of characters		

Special data fields may already be populated with default values by supplementary modules.

Standard use of H-special data fields in supplementary modules:

◆ Storage time management:

Date	H03 _{NoC}	=	6
Time	H04 _{NoC}	=	4
Signal storage time per article (only if formatted)	H15 _{NoC}	=	8

◆ Inventory function:

Inventory date	H05 _{NoC}	=	6
Time of inventory	H06 _{NoC}	=	4
Difference (+/-)	H07 _{NoC}	=	1
Difference quantity	H08 _{NoC}	=	8

◆ Quantity journal:

If articles are deleted from the storage management system, they still remain in the quantity journal and occupy article memory locations until the quantity journal is deleted.

9 Annex

Standard use of U-special data fields in supplementary modules:

◆ Operations journal logging:

For jobs	U01 _{NoC}	=	Number of characters for the job number
Date	U02 _{NoC}	=	6
Time	U03 _{NoC}	=	4
Cost centre	U04 _{NoC}	=	Number of characters for cost centre
User data field	U05 _{NoC}	=	Number of characters for user field
Borrower/user	U06 _{NoC}	=	Number of characters for borrower/user ID
Storage location	U07 _{NoC}	=	10

◆ Batch management:

Batch articles	V _{NoC}	=	1
Batch number	C _{NoC}	=	Number of characters for batch number

9 Annex

9.1 Calculating the maximum number of data records that can be contained in memory

9.1.1 Calculating the maximum number of articles

Default size of data record for MP 100D-5 V7.0 and higher:

2,000 bytes for 100,000 articles = 200,000,000 bytes

$$\text{Data record}_{\text{NoC}} = 52 + v_{\text{NoC}} + 4 * (S_{\text{NoC}} + C_{\text{NoC}} + N_{\text{NoC}} + H01_{\text{NoC}} + H02_{\text{NoC}} + \dots + H25_{\text{NoC}})$$

- If the data record_{NoC} ≤ 2,000 → the number of articles =
100,000 articles
- If the data record_{NoC} > 2,000 → the number of articles =
200,000,000 bytes / data record_{NoC}

Default size of data record for MP 14-S V5.0 and higher:

2000 bytes for 10,000 articles = 20,000,000 bytes

$$\text{Data record}_{\text{NoC}} = 52 + v_{\text{NoC}} + 4 * (S_{\text{NoC}} + C_{\text{NoC}} + N_{\text{NoC}} + H01_{\text{NoC}} + H02_{\text{NoC}} + \dots + H25_{\text{NoC}})$$

- If the data record_{NoC} ≤ 2,000 → the number of articles =
10,000 articles
- If the data record_{NoC} > 2,000 → the number of articles =
20,000,000 bytes / data record_{NoC}

9.1.2 Calculating the maximum number of jobs

Default size of data record for MP 100D-5 V7.0 and higher:

544 bytes for 4,000 jobs = 2,176,000 bytes

$$\text{Data record}_{\text{NoC}} = 64 + 4 * (K_{\text{NoC}} + C01_{\text{NoC}} + C02_{\text{NoC}} + \dots + C25_{\text{NoC}})$$

- If the data record_{NoC} ≤ 544 → the number of jobs =
4,000 jobs
- If the data record_{NoC} > 544 → the number of jobs =
2,176,000 bytes / data record_{NoC}

Default size of data record for MP 14-S V5.0 and higher:

544 bytes for 1,000 jobs = 544,000 bytes

$$\text{Data record}_{\text{NoC}} = 64 + 4 * (K_{\text{NoC}} + C01_{\text{NoC}} + C02_{\text{NoC}} + \dots + C25_{\text{NoC}})$$

- If the data record_{NoC} ≤ 544 → the number of jobs =
1,000 jobs
- If the data record_{NoC} > 544 → the number of jobs =
544,000 bytes / data record_{NoC}

9 Annex

9.1.3 Calculating the maximum number of job items

Default size of data record for MP 100D-5 V7.0 and higher:

663 bytes for 100,000 jobs = 66,300,000 bytes

$$\text{Data record}_{\text{NoC}} = 23 + 4 \cdot (\text{S}_{\text{NoC}} + \text{U01}_{\text{NoC}} + \text{U02}_{\text{NoC}} + \dots + \text{U25}_{\text{NoC}})$$

- If the data record_{NoC} ≤ 663 -> the number of job items =
100,000 items
- If the data record_{NoC} > 663 -> the number of job items =
66,300,000 bytes / data record_{NoC}

Default size of data record for MP 14-S V5.0 and higher:

663 bytes for 25,000 jobs = 16,575,000 bytes

$$\text{Data record}_{\text{NoC}} = 23 + 4 \cdot (\text{S}_{\text{NoC}} + \text{U01}_{\text{NoC}} + \text{U02}_{\text{NoC}} + \dots + \text{U25}_{\text{NoC}})$$

- If the data record_{NoC} ≤ 663 -> the number of job items =
25,000 items
- If the data record_{NoC} > 663 -> the number of job items =
16,575,000 bytes / data record_{NoC}

9 Annex

9.2 Calculating the number and size of possible special data fields for MP 14-S and MP 14-H[MP 100D-5]

Checking the combination of the max. possible H-special data fields:

$$4 * H_{XX_{No.}} + 3 * V_{NoC} + 3 * (S_{NoC} + C_{NoC} + N_{NoC} + H01_{NoC} + H02_{NoC} + \dots + H25_{NoC}) + 74 \leq 1630$$

Checking the combination of the max. possible C-special data fields:

$$4 * C_{XX_{No.}} + 3 * (K_{NoC} + C01_{NoC} + C02_{NoC} + \dots + C25_{NoC}) + 19 \leq 1630$$

Checking the combination of the max. possible H and U-special data fields:

$$4 * (H_{XX_{No.}} + U_{XX_{No.}}) + 3 * V_{NoC} + 3 * (S_{NoC} + C_{NoC} + N_{NoC} + K_{NoC} + H01_{NoC} + H02_{NoC} + \dots + H25_{NoC} + U01_{NoC} + U02_{NoC} + \dots + U25_{NoC}) + 90 \leq 1630$$

A combination of special data fields with the corresponding length is possible only if the above equations are fulfilled.

A check takes place when formatting the storage management system.

9 Annex

9.3 License notes

The Hänel MP software and the operating system use open-source software.

The license texts and the sources of the libraries preinstalled on the system as well as further information and documentation can be found on the "Technical documentation" USB stick.

9.4 Revision notes

Last issue dated: **2023-06-16**

- Lean-Lift changed to Lean-Lift®
- Multi-Space changed to Multi-Space®
- Rotomat changed to Rotomat®
- HOST-COM added
- Chapter 1.1 Validity
- Chap. 2.19 added
- Chap. 2.21.1 and 2.21.2 Activate access with service program added.
- Chap. 2.10 Alternating-side requisition removed
- Chap. 3.1 Activate access with service program added.
- Chap. 3.2 "Shelf version with reduced useful height loss" added
- Chap. 3.2 Text "YES, EUROCODE 8 DE, ZONE 1-2, TYPE 60" expanded with "ZONE 3 WITH SPECIAL RELEASE".
- Chap. 3.2 Text "HS33 or HS34" replaced with text "HS33, HS34, HS43 or HS44".
- Chap. 3.2 "As of model year 2020" removed for customer-provided connection between lift and building.
- Chap. 3.2 Prompt "LED matrix present" added.
- Chap. 3.3 Prompt "HORIZONTAL DRIVE M3Z / M4" added.
- Chap. 4.2.6.1 Prompt "Can different article numbers be created at the same storage location?" added for system formatting.
- Chap. 4.4 Activate access with service program added.
- Chap. 4.3.2.2 Redundancy function 1, 2, 3, 6, 8 expanded.
- Chap. 4.4.10 Timeout window message "Not for supplementary module 36) ..."
- Chap. 7.1 Cause 10 and 13 improved for "MP 12N CPU I INCORRECT LIFT CONFIGURATION".
- Chap. 7.4.3 new
- Chap. 7.5.1 Text "Software up..." added to lift run error message "LIFT RUN FAULT: BRAKING RESISTOR R1".

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- Chap. 7.5.1 Text "Only for..." adapted for lift run error message "LIFT RUN FAULT: SAFETY SYSTEM|[F10]".
- Chap. 7.5.2 "NSEINS2" removed.
- Chap. 7.5.2 Remedy lift run error message "LIFT RUN FAULT: SYSTEM ERROR 19" expanded.
- Chap. 7.5.2 Text "Only for ..." added to lift run error message "LIFT RUN FAULT: SYSTEM ERROR 46".
- Chap. 7.5.2 Synchronisation run cause 22 removed.
- Chap. 7.5.2 Cause lift run error message "LIFT RUN FAULT: INCORRECT OPERATING MODE/INITIALISATION" improved.
- Chap. 7.5.2 Cause lift run error message "LIFT RUN FAULT: SYSTEM ERROR 26" improved.
- Chap. 7.5.2 Cause lift run error message "LIFT RUN FAULT: SYSTEM ERROR 43" expanded.
- Chap. 7.5.2 Cause lift run error message "LIFT RUN FAULT: SYSTEM ERROR 55" improved.
- Chap. 7.5.2 Cause lift run error message "LIFT RUN FAULT: SHELF REMOVAL POS TOO FAR INSIDE" improved.
- Chap. 7.5.2 Cause and remedy lift run error message "LIFT RUN FAULT: MOTOR IS|OVERLOADED 7" improved.
- Chap. 7.5.2 New lift run error message "LIFT RUN FAULT: FREQUENCY CONVERTER 1000".

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