



User Guide for the Article Storage Management Microprocessor Control System MP 12N

Lean-Lift Multi-Space



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1 Introduction

1.1 Basic information

Contents	This document contains information for operating the MP 12N microprocessor control system.										
Target group	<p>This document has been written for:</p> <ul style="list-style-type: none">◆ Instructed and trained operators who use the lift for their day-to-day work in standard operating mode.◆ Trained and instructed installation and maintenance personnel who are responsible for all matters related to technical support of the lift.◆ IT specialists assigned the task of connecting the MP control system to the customer's IT system.										
Manufacturer	<p>Hänel Büro- und Lagersysteme Postfach 11 61 D-74173 Bad Friedrichshall Phone: +49 7136/27725 Fax: +49 7136/27741 http://www.hanel.de</p>										
Validity	<p>This document is valid for lifts of the following series:</p> <table><tr><td>Type:</td><td>Lean-Lift, Multi-Space</td></tr><tr><td>Access points:</td><td>Unlimited</td></tr><tr><td>Serial number:</td><td>see type plate on the lift</td></tr><tr><td>Year of construction:</td><td>see type plate on the lift</td></tr></table> <p>If the lift has multiple access points, the type plate is located at the first access point.</p> <p>This document is valid for MP control systems with the following or later program versions:</p> <table><tr><td>MP 12N CPU II:</td><td>V 2.4</td></tr></table>	Type:	Lean-Lift, Multi-Space	Access points:	Unlimited	Serial number:	see type plate on the lift	Year of construction:	see type plate on the lift	MP 12N CPU II:	V 2.4
Type:	Lean-Lift, Multi-Space										
Access points:	Unlimited										
Serial number:	see type plate on the lift										
Year of construction:	see type plate on the lift										
MP 12N CPU II:	V 2.4										
Keep in an accessible place as a complete document	<ul style="list-style-type: none">◆ 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	<p>This documentation contains information that is protected by copyright. It may not, in whole or in part, be photocopied, duplicated, translated or stored to any electronic medium without prior consent.</p> <p>All other rights reserved.</p>										

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 easier.

- Action: You are prompted to carry out an operating step.
- ➔ Result: You are told the outcome of your operating step.
- × 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. Shelf corresponds to the term container.
- ◆ FIFO (First In - First Out)
If multiple storage locations exist for an article, during retrieval, the storage location created first is accessed first, and the storage location created last is accessed last.

Operator prompts

- ◆ The operator prompts in all display variants differ only in minor details.
- ◆ 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
- ◆ 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 button 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.

1 Introduction

1.3 Safety instructions



DANGER

All maintenance and repair work on Hänel lifts may be carried out by trained and authorised personnel only. Authorised personnel are defined as follows:

- Personnel who, because of their specialised education and qualified training (for example, from the manufacturer), 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 trained and qualified personnel may operate the lift.

Operators have to follow the lift user guide.

Installation and maintenance personnel have to follow the lift user guide and the lift operating manual.

1.4 Supplementary documents

- Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat
- Technical Description of the Microprocessor Control System MP 12N-S / MP 100D Server for Lean-Lift, Multi-Space and Rotomat.
- For optional Supplementary Descriptions, refer to the "Annex" chapter.
- When using MP 12N-H[HOST-WEB]:
The description of operation to be created by the programmer of the control computer (Host).

1 Introduction

1.5 Configurable program versions

Various program versions can be initialised on the control system according to the application.

1.5.1 MP 12N-S/H[MP 100D]

The control system functions as the storage management packet "Article storage management". This is the standard application of the control system.

1.5.2 MP 12N-H[HOST-DATA]

The control system (multi-unit network) is connected to a control computer (Host) via Ethernet on the master lift. The host sends data records to the control system. These data records can be retrieved at the control system. Article storage management takes place in the host system.

- For additional information, see Chapter 12 "Program version MP 12N-H[HOST-DATA]"

1.5.3 MP 12N-H[HOST-WEB]

The control system is connected to a control computer (Host) via Ethernet. The host sends HTML pages via HTTP protocol and control commands to the control system. Article storage management takes place in the host system.

- For additional information, see Chapter 13 "Program version MP 12N-H[HOST-WEB]"

1.5.4 MP 12N-S/H[MP 12N-S]

The control system functions as the storage management packet "Article storage management". The MP 12N-S functions as the central control system for two lifts. In the description, H[MP 100D] also stands for H[MP 12N-S].

2 Overview of features

The microprocessor control system MP 12N-S handles the storage management of individual lifts.

In the case of a multi-unit network, the central control system MP 100D performs the storage management functions. For the central control system MP 100D, data can be easily backed up by plugging in an additional Compact Flash card.

Compact Flash cards provide high data security and shock resistance, and they are insensitive to dust and dirt.

The article and requisition data are automatically backed up to the Compact Flash card. After a power outage, the memory contents always remain intact.

The index management system is created at program start. All articles stored in memory are sorted so as to keep access times to a minimum. If an error occurs in index management, the index table is regenerated.

-> Automatic error correction.

2.1 Article storage management

The article storage management system manages the article and storage location-related data. The article master data are stored on a Compact Flash card.

Article-related data are:

- ◆ Article number (1 - 40 characters)
- ◆ Article name (0 - 40 characters)
- ◆ Special data fields article master data (H01 - H25) (0 - 40 characters)
- ◆ Minimum inventory (8 characters)

Storage location-related data are:

- ◆ Storage location (lift, shelf, compartment, compartment depth)
- ◆ Container size in direction of compartments and direction of compartment depths
- ◆ Inventory at storage location (8 characters)
- ◆ FIFO status

Functions:

- ◆ Article master data can be created, updated and deleted.
- ◆ Working with or without inventory control is possible.
- ◆ Quantity journal logging is supported.
- ◆ The order recommendation list based on the minimum inventory control is supported.
- ◆ An article can be stored in multiple lifts simultaneously.
- ◆ An article can be stored in different containers of different sizes.
- ◆ The storage location can be entered manually or by way of the automatic storage location assignment function.

2 Overview of features

2.2 Requisition management

The list management manages the requisition-related data, consisting of the requisition header and the requisition items. The requisition data are stored on a Compact Flash card.

Requisition header data are:

- ◆ Requisition number (1 - 40 characters)
- ◆ Requisition status
- ◆ Special data fields requisition header (C01 - C25) (0 - 40 characters)

Requisition item data are:

- ◆ Article number (1 - 40 characters)
- ◆ Goods in/out
- ◆ Special data fields requisition item (U01 - U25) (0 - 40 characters)
- ◆ Container
- ◆ Quantity (8 characters)
- ◆ Status

Functions:

- ◆ Requisitions can be created, processed, edited and deleted using the keyboard.
- ◆ Requisitions can also transferred using host communication by file transfer.
- ◆ Working with quantity factor is possible.
- ◆ Unprocessed requisition items are registered.
- ◆ The following requisition strategies are possible:
 - Sequential
 - Path-optimised
 - Time-optimised

2.3 Job management

Job management corresponds to requisition management with the following differences:

- ◆ There is no quantity factor.
- ◆ A priority can be assigned.
- ◆ Processed jobs are acknowledged.
- ◆ If the control system is in the basic state, the yellow LED in the [↔] key lights up as soon as there is a job.
- ◆ Jobs can be transferred using host communication by file transfer only. It is not possible to create, edit or delete using the keyboard.

2 Overview of features

2.4 Information services

- ◆ Printing of lists
(article lists, journal lists, requisition lists, etc.)
- ◆ Information shown on the display
(article memory, requisition memory, storage location memory)
- ◆ Manual deletion of requisitions and journal data
- ◆ Display of the lift data
- ◆ Display of the software versions
- ◆ Entry of an AP (access priority) factor

2.5 System services

- ◆ Setting print reports, system clock, language, interface parameters, etc.
- ◆ Printing out system information
- ◆ Activating and deactivating functions
- ◆ Initialising and formatting the storage management functions
- ◆ Service functions
- ◆ Safety inspection log
- ◆ Adjusting the run sequence

2.6 Communication

- ◆ Network connection for the multi-unit network via GSC interface. Transmission speed 153.6 kBaud, CSMA/CD protocol (collision detection)
- ◆ Network connection for the multi-unit network via Ethernet
- ◆ Connection of an external computer via Ethernet
- ◆ Read-out of initialisation data
- ◆ Read-in/out of article master data
- ◆ Read-in/out of requisitions
- ◆ Read-out of a quantity/operations journal
Data are read in and out simultaneously to lift communication.
Exception: read-in of article master data
- ◆ Connecting a printer for printing lists simultaneously to the lift and PC communication via the Ethernet interface

2 Overview of features

2.7 Search functions

- ◆ Match code search for
 - Article number
 - Article name
 - Special data fields
- ◆ Article search (index search system for quick access to stored article numbers)
- ◆ Match code search for
 - Requisition number
 - Special data fields

2.8 Limit values

Limit values in standard	MP 12N-S	MP 100D
Lifts	2	99
Article	10,000	100,000
Different articles per storage location	255	255
Storage locations	100,000	400,000
Different storage locations per article	255	255
Requisitions/jobs	1,000	4,000
Requisition items	25,000	100,000

2 Overview of features

2.9 Lift control

- Storage location displayed using:
- ◆ Compartment LEDs without compartment depth display
 - ◆ Compartment LEDs with compartment depth display
 - ◆ Compartment LEDs for container width with compartment depth display
- 4 RS232 interfaces for:
- ◆ Barcode reader
 - ◆ Quantity scale
 - ◆ Badge reader/transponder
 - ◆ Label printer
- Display texts:
- ◆ All language versions with Roman characters are possible
 - ◆ Other language versions are possible only with the TFT display
 - ◆ Display of error messages in plain text
- Optimisations:
- ◆ Automatic article height measurement, resulting in optimum utilisation of space
 - ◆ Maximum utilisation of space and minimal access times made possible by optimisation run
 - ◆ Minimisation of access time to shelves frequently accessed
- Functions:
- ◆ Access to shelves by direct selection or by input of an article number
 - ◆ Locking of individual functions or the entire keyboard to prevent unauthorised operation is possible
 - ◆ External rack store management by rack operating control system

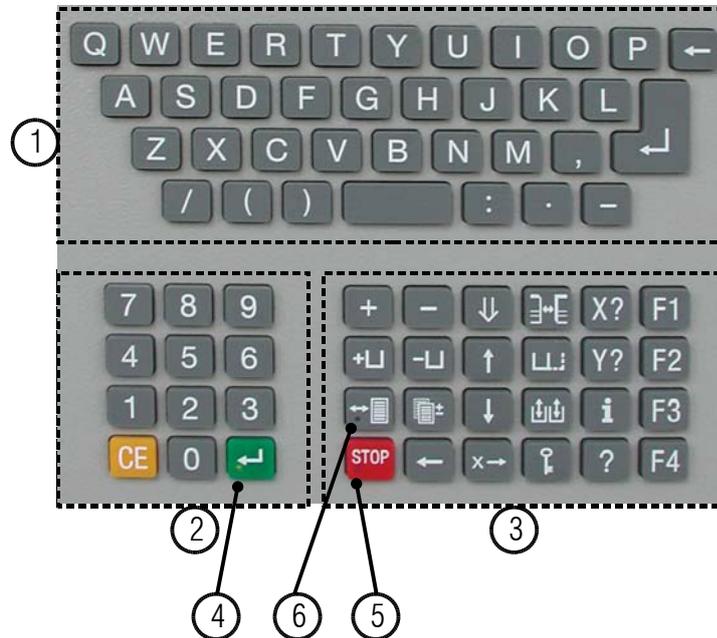
3 Description of the hardware components

3.1 Possible displays

Display	Brief description	Example of main menu	Example of article selection												
VFD	<p>Graphical VFD module (Vacuum Fluorescent Display)</p> <p>Resolution: 256 x 64 pixels</p> <p>Text: 4 x 20 or 8 x 40 characters for operator prompts (depending on current menu item)</p>														
TFT	<p>Graphical TFT (Thin Film Transistor technology) module with touchscreen</p> <p>Resolution: 800 x 600 pixels</p> <p>Text: 4 x 20 or 8 x 40 characters for operator prompts (depending on current menu item) and 11 x 60 characters for additional information</p>		 <table border="1" data-bbox="1062 987 1437 1081"> <thead> <tr> <th colspan="2">Info</th> </tr> </thead> <tbody> <tr> <td>Article number</td> <td>1006</td> </tr> <tr> <td>Article name</td> <td>CPU 80486</td> </tr> <tr> <td>Total/Minimum inventory</td> <td>412/ 140</td> </tr> <tr> <td>SPEC.DATA1</td> <td>--</td> </tr> <tr> <td>SPEC.DATA2</td> <td>--</td> </tr> </tbody> </table>	Info		Article number	1006	Article name	CPU 80486	Total/Minimum inventory	412/ 140	SPEC.DATA1	--	SPEC.DATA2	--
Info															
Article number	1006														
Article name	CPU 80486														
Total/Minimum inventory	412/ 140														
SPEC.DATA1	--														
SPEC.DATA2	--														

3 Description of the hardware components

3.2 Overview of keyboard



- ① Main key block for entering characters and letters
- ② Number block for entering article numbers, shelf numbers, quantity, article names etc.
- ③ Function keys for calling up individual functions and navigating in input fields
- ④ Green LED illuminated
-> Safety system set
- ⑤ Red LED illuminated
Safety system interrupted
Red LED flashes
-> Safety system defective
- ⑥ Yellow LED illuminated
-> Job is present

3 Description of the hardware components

3.3 Key functions

Confirm entry,
set safety system and start lift run



Delete an entry, cancel a function,
acknowledge an error message



Stopping a lift run
To stop a lift run in hazardous situations, use the
emergency stop switch.



Delete the character last entered



Optimisation run,
automatic storage location assignment



Bring shelf to access position,
select menu items, make selection



Store shelf from access position,
select menu items, make selection



Store an article



Remove an article



Add a new shelf,
remove an article with creation of a storage location



Remove a shelf,
retrieve an article with specific deletion of the storage location



Processing a job



Create, process, edit, add to a requisition, delete an item



Activate information and service programs



3 Description of the hardware components

Call up lift references	
Enter container size	
Switch language,	
Activate system services	
Match code search, article search (freely assignable with default setting search mode)	 
Random access storage (if initialised)	
Keyboard buffer	
Enter article name or editable special data fields Hxx, Open and close door (only with automatic sliding door), unlock door (only with manual doors and lift run only with door closed)	
Enter minimum inventory, fast keylock function (if activated)	
Release shelf locking (if activated), request weight (only with shelf weighing device)	
Re-store function (if initialised), shelf transport (only with multiple access points with high-speed door or lift run only with door closed)	

4 Extended functions with supplementary modules

To increase the standard scope of the software, supplementary modules can be purchased and activated.

The range of functions offered by each supplementary module is covered in a separate description.

Restrictions exist with regard to the possible combinations of supplementary modules (refer to the descriptions of the supplementary modules themselves).

MP 12N - S / H[MP 100D]:

- ◆ External shelf management
- ◆ Access code management
- ◆ Article pool management
- ◆ Storage location height management
- ◆ Storage time management
- ◆ Operations journal logging
- ◆ Barcode cross-check
- ◆ Free location management
- ◆ Shelf pre-positioning
- ◆ Inventory function
- ◆ Adjustable shelf speed
- ◆ Lending management
- ◆ Label printing at access point

MP 12N-H[HOST-WEB]

- ◆ Storage location height management
- ◆ Adjustable shelf speed
- ◆ Shelf pre-positioning
- ◆ Automatic sliding door
- ◆ Automatic shelf ejection

MP 12N-H[HOST-DATA]

- ◆ Storage location height management
- ◆ Adjustable shelf speed
- ◆ Shelf pre-positioning

5 General

5.1 Switching on the lift



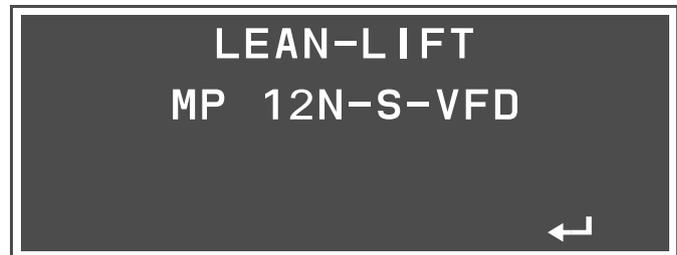
- x If the lift is operated with external inventory control programs, the software on the host computer must also be started up.

Description of the operator prompts

Display

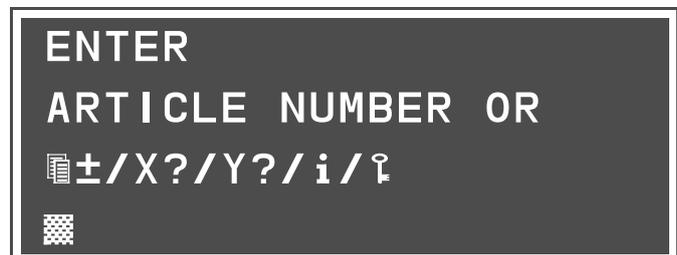
Lift control system start-up message

- Switch on lift with the main switch.
- Wait for the control system to start up.
- The red LED in the [STOP] key lights up.
- The lift type and control system type appear on the display. The display text may vary depending on the configuration.
- Press the [←] key.
- The green LED is illuminated.



Main menu of the control system (basic state)

- The control system is ready for operation and the main menu is displayed.
- x The main menu of the control system is the basic state. It is reached after operational processes are complete and can differ according to the configuration.



5 General

5.2 Basic shelf functions

The basic shelf functions are called up from the main menu of the control system.

5.2.1 Adding a new shelf



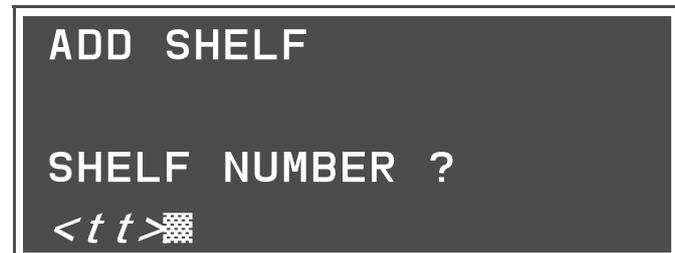
- x It is advisable to label the shelves with the shelf number at the front and rear.
- x The [+U] key can be locked using the keylock function.

Description of the operator prompts

Display

Add shelf

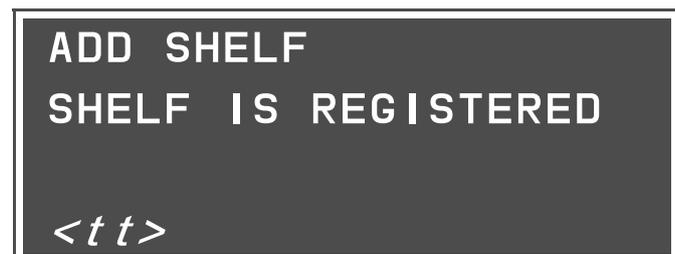
- Press the [+U] key.
- If a shelf is in the access point that has already been registered, it is first stored in the lift.
- The control system automatically suggests the smallest free shelf number as the default.
- Enter the shelf number or keep the suggested number.
- Press the [←] key.



- Push the new shelf into the access point.



- As soon as the control system detects the new shelf by means of the proximity switches, the shelf is registered as present. The control system goes into the main menu. Articles can now be stored and registered in it.



5 General

Description of possible operator advisories

Display texts

A shelf number is entered that has already been assigned.

ADD SHELF
SHELF ALREADY
EXISTS
-> CE

Enter the shelf number "0".

ADD SHELF
INPUT ERROR

-> CE

All available shelf numbers are assigned.
(1 - 254 for Lean-Lift, 1 - 999 for Multi-Space)

ADD SHELF
MAXIMUM NUMBER
OF SHELVES REACHED !
-> CE

A shelf number is entered that is too high.
(> 254 for Lean-Lift)

ADD SHELF
SHELF NUMBER
TOO HIGH
-> CE

The key is locked using the keylock function.

+U FUNCTION
DISABLED
-> CE

5 General

5.2.2 Removing a shelf



- x We recommend printing out the article list sorted by storage locations for the shelf to be removed.
- x The [-U] key can be locked using the keylock function.

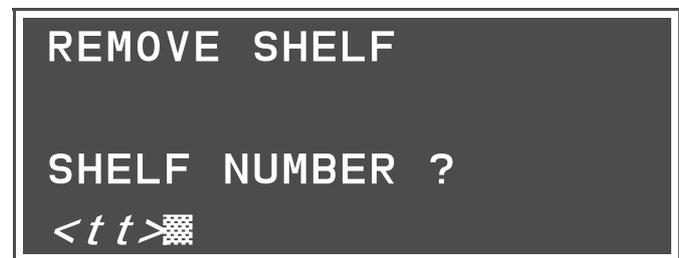
Description of the operator prompts

Display

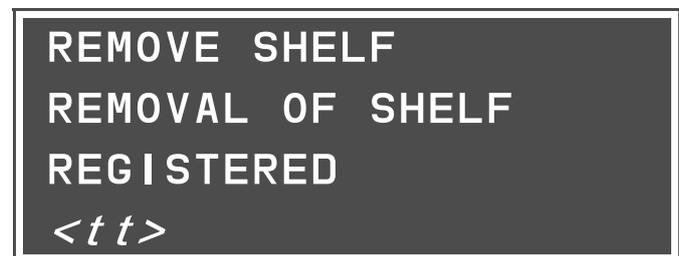
Remove shelf

- Press the [-U] key.
- ➔ The control system automatically suggests the shelf currently in the access point as the default.
- Enter the shelf number or keep the suggested number.
- Press the [↵] key.
- ➔ The entered shelf is brought to the access point if it is not there already. If the access point is occupied by another shelf, this is returned to storage in the lift first.

- Pull shelf from the access point.



- ➔ As soon as the control system detects the removal of the shelf by means of the proximity switches, the shelf is unregistered. The control system goes into the main menu.



5 General

Description of possible operator advisories

Display texts

A shelf number is entered that has not been assigned.

```
REMOVE SHELF  
SHELF NOT  
FOUND  
-> CE
```

A shelf number is entered for which article data are still stored. In this case, the articles must be unregistered first.

```
REMOVE SHELF  
FIRST UNREGISTER  
ARTICLE ?  
-> CE/←
```

After you confirm the prompt with the [←] key, the articles on this shelf are automatically unregistered. You can cancel the operation using the [CE] key.

```
REMOVE SHELF  
UNREGISTER  
ARTICLE ?  
-> CE/←
```

When the articles for a shelf are unregistered, all the article numbers and storage location quantities are displayed in sequence.

```
<Article number>  
  
REGISTERED WITH  
<tt ff tf> -<bb>
```

The key is locked using the keylock function.

```
-U FUNCTION  
DISABLED  
-> CE
```

5 General

5.2.3 Bringing a shelf to the access point manually



If no shelf number or shelf number "0" is entered, the shelf that is currently on the extractor is brought to the access point.



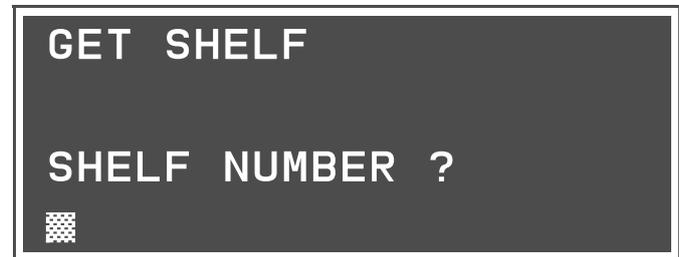
x The [↓] key can be locked using the keylock function.

Description of the operator prompts

Display

Get shelf

- Press the [↓] key.
 - Enter the shelf number.
 - Press the [←] key.
- The entered shelf is brought to the access point. If the access point is occupied by another shelf, this is returned to storage in the lift first.



Description of possible operator advisories

Display texts

A shelf number is entered that has not been assigned.

GET SHELF
SHELF NOT
FOUND
-> CE

The key is locked using the keylock function.

↓ FUNCTION
DISABLED
-> CE

5 General

5.2.4 Storing a shelf from the access point manually



The position of the shelf when it is stored in the lift depends on the free storage locations, the article height, the access frequency and the AP factor.

Description of the operator prompts

Display

Store shelf

- Press the [↑] key.
- ➔ The shelf in the access point is stored in the lift.



Description of possible operator advisories

Display texts

There is no shelf in the access point.

```
STORE SHELF
NO SHELF IN
ACCESS POINT
-> CE
```

5 General

5.2.5 Starting an optimisation run



During standard operation, the control system registers the frequency with which individual shelves are accessed. Shelves with a frequent access rate or a high AP (Access Priority) factor are stored close to the access point if space in the lift permits.

In an optimisation run according to access time, the control system calculates the most favourable position for shelves with a frequent access rate or high AP factor. If it is possible to optimise the shelf positions, the shelves are relocated automatically. Moreover, gaps that have arisen between shelves as a result of constantly changing article heights are closed by re-sorting the shelves.

An optimisation run according to packing density closes all the gaps between shelves by re-sorting from the bottom up.



x The [↓] key can be locked using the keylock function.

Description of the operator prompts

Display

Starting an optimisation run

- Press the [↓] key.
 - Press the [↓] / [↑] keys to select between optimisation according to "Access time" and "Packing density".
 - Press the [←] key.
- The optimisation run starts.

```
OPTIMISATION RUN
OPTIMISE ACC. TO
ACCESS TIME
[↓/↑/CE/←]
```

```
OPTIMISATION RUN
OPTIMISE ACC. TO
PACKING DENSITY
[↓/↑/CE/←]
```

Cancelling the optimisation run

- Press the [STOP] key.
- The lift run error message "STOP BUTTON PRESSED" is displayed.
- Press the [CE] key.
- The optimisation run is cancelled.

```
OPTIMISATION RUN
LIFT RUNNING !
[STOP]
```

5 General

Description of possible operator advisories

The key is locked using the keylock function.

Display texts

↓ FUNCTION
DISABLED
-> CE

5 General

5.2.6 Release shelf locking

F3

The shelf locking can be released in the main menu and during quantity input in article management, requisition management and job management.

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.



- x Shelf locking is possible only on lifts that are fitted with an incremental encoder for horizontal movement and that do *not* have the following supplementary features:
 - High-speed door
 - Automatic shelf ejection
 - Shelf weighing device
 - Automatic shelf pre-positioning
 - Double access
 - Multiple access points with guide rails or transporter/trolley

Description of the operator prompts

Release shelf locking

- Press the [F3] key.
- ➔ The shelf is pushed all the way into the access point. The extractor drive catches leave the guides in the shelf. The shelf is unlocked.

Display

LIFT RUNNING !

5 General

5.3 Operating multiple access points

5.3.1 Lean-Lift with guide rails

When pushing the shelf into the access opening, please remember that:

- ◆ The shelf must not be pushed in as long as the <-STOP-> message is displayed.
- ◆ The shelf must be correctly positioned. It must cover the front and rear proximity switches of the access point simultaneously.

As long as a shelf is in the access point, no lift run is possible for another access point. Only after the shelf has been pulled completely onto the guide rails can a lift run be executed from another access point.



- x When an access operation is completed, the accessed shelf should be pushed fully into the access opening and put into storage from the access point. This allows the shelf to be accessed from another access point.
- x Moreover, an access point should never be left by the operator while an error message is displayed. In this case, the run at this access point is not concluded and access by the other access points is blocked.

Description of the operator prompts

Pull shelf onto the guide rails

- Pull the shelf onto the guide rails.
- ➔ The message disappears as soon as the shelf has been pulled fully onto the guide rails.

Display



Store shelf from the guide rails

- Push shelf into the access point.
- ➔ The message disappears automatically as soon as the shelf is pushed in fully.



5 General

Description of possible operator advisories

The <STOP> message/symbol is shown on the display.
The <STOP> message/symbol has the following meaning:

Lift run not possible, do not push the shelf in.

(Lift run for another access point is carried out or a shelf is located in another access opening)

- ◆ The VFD display shows the message vertically on the left and right.
- ◆ The CSTN display shows the message at the bottom left and right in the information window.
- ◆ The TFT display shows a STOP symbol at the top right.

Access to a shelf that is in another access point (x).

The shelf must be pushed in at access point (x), then stored in the lift.

No lift run is carried out for this access point because access point (x) is occupied with a shelf.

The control system must wait until the other access point has ended its lift run.

Display



```
LIFT RUN FAULT :  
REQUESTED SHELF IN  
OTHER ACCESS POINT  
(x)          -> CE/←
```

```
LIFT RUN FAULT :  
OTHER ACCESS POINT  
OCCUPIED WITH SHELF  
(x)          -> CE/←
```

```
LIFT RUN FOR  
OTHER ACCESS POINT  
  
PLEASE WAIT
```

5 General

5.3.2 Lean-Lift with lift run with sliding door closed only

Before each lift run, the sliding door must be closed. The door must be opened after accessing a storage location.

Description of the operator prompts

After lift run to storage location

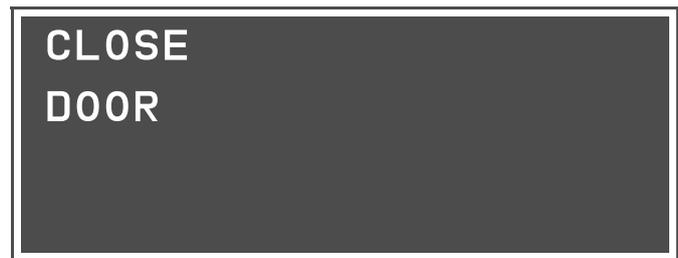
- Open door.
- ➔ The message is cleared automatically as soon as the door is opened.

Display



Request lift run

- Close the door.
- ➔ The message is cleared automatically as soon as the door is closed all the way.



5.3.3 Lift with high-speed door

- Refer to the "Supplementary Description of the High-speed Door Microprocessor Control System MP 12D/N Lean-Lift and Multi-Space".

5.3.4 Lean-Lift with mutual door locking

- See the "Supplementary Description of the Mutual Door Locking Microprocessor Control System MP 12D/N Lean-Lift with Optional Feature".

5 General

5.4 Changing the language



The function is called up from the main menu of the control system.



- x After the lift is switched off and on again, the operator prompts are again displayed in the language configured in the initialisation.

Description of the operator prompts

Display

Changing the language

- Press the [?] key.
 - Press the [↑] / [↓] key to select the desired language.
 - Press the [↵] key.
- Once you have done so, the operator prompts will be displayed in the new language you have chosen.



5.5 Fast keylock function



The function is called up from the main menu of the control system.



- x The fast keylock function can be activated via the keylock function.
- x When the fast keylock function is activated, the keyboard is always locked after the lift is switched on.

Description of the operator prompts

Display

Starting the fast keylock function

- Press the [F2] key.
- Keyboard is locked.
- Enter password.
 - Press the [↵] key.
- Keyboard is no longer locked.



5 General

5.6 Lift references in a multi-unit network

If lifts are operating in a multi-unit network and the user wishes to access articles that are stored in another lift, a lift reference is issued. The control system differentiates between the following kinds of lift reference:

- Lift reference for direct storage and retrieval
- Lift reference for requisition processing
- Lift reference for job processing

Up to 6 references can be stored in the other lift. The reference selected is deleted immediately after it has been called. If a lift is switched off, all the references are deleted.

If the lift reference memory is full, each additional lift reference causes the oldest lift reference to be deleted.

5.6.1 Call up lift reference

Description of the operator prompts

Call up lift reference

- The message to the right appears if an article storage location is accessed that is in another lift. The *<Lift number>* is displayed.
- Press the [CE] key.
- The control system goes into the main menu.
- Go to lift *<Lift number>* and call up the lift reference.

Display



```
GO TO LIFT  
NUMBER  
<Lift number>  
-> CE
```

Description of possible operator advisories

No lift reference is possible to a lift that is switched off.

Display texts

```
REFERENCE IS NOT  
POSSIBLE  
-> CE
```

5 General

5.6.2 Call up lift reference



The function is called up from the main menu of the control system.

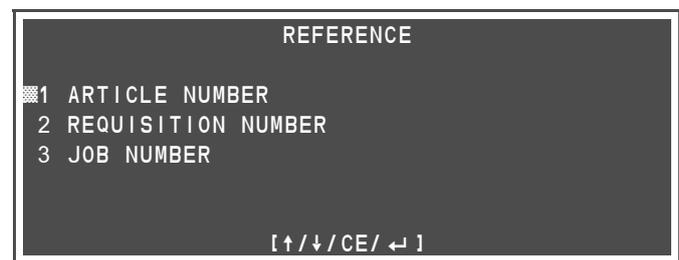
Description of the operator prompts

Call up lift reference

- Press the [↵] key.
- The lift reference selection menu is displayed.



Display



Menu item	See Chapter	Page
1	5.6.2.1	41
2	5.6.2.2	41
3	5.6.2.3	42

Description of possible operator advisories

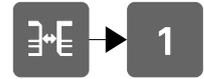
No lift reference has been stored.

Display texts

NO REFERENCE
FOUND
-> CE

5 General

5.6.2.1 Article number lift reference



Description of the operator prompts

Display

Article number lift reference

- Press the [] key and the [1] key.
- Up to 6 references to this lift are now displayed with the number of the referring lift and the relevant article numbers.
Press the [] key to toggle the display between the article number and article name.
- Press the [] / [] key to select the desired reference.
- Press the [] key.
- Processing of the selected article number lift reference continues.

```

LIFT          ARTICLE NUMBER
█<Lift number>  <Article number>
<Lift number>  <Article number>
<Lift number>  <Article number>
<Lift number>  <Article number>

[↑/↓/↵/CE/←]
    
```

5.6.2.2 Requisition number lift reference



Description of the operator prompts

Display

Requisition number lift reference

- Press the [] key and the [2] key.
- Up to 6 references to this lift are now displayed with the number of the referring lift and the relevant requisition numbers.
- Press the [] / [] key to select the desired reference.
- Press the [] key.
- Processing of the selected requisition number lift reference continues.

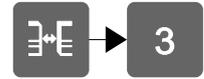
```

LIFT          REQUISITION NUMBER
█<Lift number>  <Requisition number>
<Lift number>  <Requisition number>
<Lift number>  <Requisition number>
<Lift number>  <Requisition number>

[↑/↓/↵/CE/←]
    
```

5 General

5.6.2.3 Job number lift reference



Description of the operator prompts

Display

Job number lift reference

- Press the [↵] key and the [3] key.
- ➔ Up to 6 references to this lift are now displayed with the number of the referring lift and the relevant job numbers.
- Press the [↑] / [↓] key to select the desired reference.
- Press the [←] key.
- ➔ Processing of the selected job number lift reference continues.

```
LIFT          JOB NUMBER
█<Lift number>  <Requisition number>
<Lift number>  <Requisition number>
<Lift number>  <Requisition number>
<Lift number>  <Requisition number>

[↑/↓/CE/←]
```

5 General

5.7 Search functions (match code search and article search)



The search functions are called up from the main menu of the control system.

The control system offers the operator search functions with which data can be retrieved from memory. There are article data records and requisition data records.

The search function is activated with the [X?] or [Y?] key. Press the [X?] or [Y?] key again to set the search mode (DEFAULT SETTING).

For example, you can assign the [X?] key to the match code search for article number and the [Y?] key to the match code search for article name.

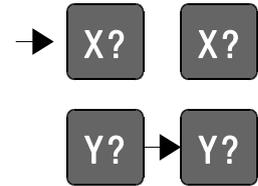
For requisition management, only the [X?] key is available.



x Only the search functions that are activated under "Select function" are displayed.

5 General

5.7.1 Default setting for article search mode



Description of the operator prompts

Display

Default setting for article data record search mode

- Press the [X?] key twice
or
press the [Y?] key twice.
- Press the [↑] / [↓] key to select "Match code search" or "Article search" as the default.
- Press the [↵] key.

```

DEFAULT SETTING
█MATCH CODE SEARCH
ARTICLE SEARCH

[↑/↓/CE/↵]
    
```

If you select "ARTICLE SEARCH":

- ➔ The [X?] or [Y?] key is occupied by the "Article search" search mode.

If you select "MATCH CODE SEARCH":

- Press the [↑] / [↓] key to select the default setting of the match code search.
- Press the [↵] key.

```

DEFAULT SETTING OF MATCH CODE SEARCH
█ARTICLE NUMBER
ARTICLE NAME
SPEC. DATA FIELDS FOR ART. MASTER DATA

[↑/↓/CE/↵]
    
```

If you select "ARTICLE NUMBER":

- ➔ The [X?] or [Y?] key is occupied by the "Match code search for article number" search mode.

If you select "ARTICLE NAME":

- ➔ The [X?] or [Y?] key is occupied by the "Match code search for article name" search mode.

If you select "SPEC. DATA FIELDS FOR ART. MASTER DATA":

- Press the [↑] / [↓] key to select "Special data field for article master data".
- Press the [↵] key.
- ➔ The [X?] or [Y?] key is occupied by the "Match code search for spec. data fields for art. master data" search mode.

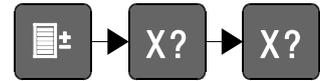
```

DEFAULT SETTING OF MATCH CODE SEARCH
█<Special data field name>
<Special data field name>
<Special data field name>

[↑/↓/CE/↵]
    
```

5 General

5.7.2 Default setting for requisition search mode



Description of the operator prompts

Display

Default setting for requisition data record search mode

- Press the [F5] key, then press the [X?] key twice.
- Press the [↑] / [↓] key to select the default setting of the match code search.
- Press the [←] key.

```

DEFAULT SETTING OF MATCH CODE SEARCH
█REQUISITION NUMBER
SPECIAL DATA FIELDS FOR REQ. HEADER

[↑/↓/CE/←]
    
```

If you select "REQUISITION NUMBER":

→ The [X?] key is occupied by the "Match code search for requisition number" search mode.

If you select "SPECIAL DATA FIELDS FOR REQ. HEADER":

- Press the [↑] / [↓] key to select "Special data field for requisition header".
 - Press the [←] key.
- The [X?] key is occupied by the "Match code search for req. header" search mode.

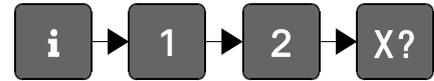
```

DEFAULT SETTING OF MATCH CODE SEARCH
█<Special data field name>
<Special data field name>
<Special data field name>

[↑/↓/CE/←]
    
```

5 General

5.7.3 Default setting for info on article data search mode



Description of the operator prompts

Display

Default setting for search mode for the "Info on article data" menu item

- Press the [i] key, the [1] key, the [2] key and then the [X?] key.
 - Press the [↑] / [↓] key to select the default setting of the match code search.
 - Press the [←] key.
- The search mode of the menu item "Info on article data" (see Chapter 9.1.2 on page 93) is set by default. If you select the option "SPEC. DATA FIELDS FOR ART. MASTER DATA" or "SPECIAL DATA FIELDS FOR REQ. HEADER", the menu item "Info on article data" displays the field names of all formatted special data fields.

```

DEFAULT SETTING OF MATCH CODE SEARCH

ARTICLE NUMBER
ARTICLE NAME
SPEC. DATA FIELDS FOR ART. MASTER DATA
REQUISITION NUMBER
SPECIAL DATA FIELDS FOR REQ. HEADER
[↑/↓/CE/←]
    
```

5 General

5.7.4 Match code search

The match code search function allows the user to look for article and requisition data records in the memory according to various search criteria that can be applied to different data fields.

The search data field can be preset by setting a default match code search and remains active until the next time it is changed.

The search criterion is a character string (termed a match code) entered by the user. All the search data fields in the memory are searched for this string. All the data records that match the search criterion are shown on the display. The more characters contained in the match code, the narrower the search range will be and the fewer matching data records will be offered for selection.

Possible match codes	Description
?	Use of the question mark. All the data records with the search data field are selected.
<Character string>?	A character string followed by a question mark. The system searches for data which start with this character string.
?<Character string>	Use of the question mark at the beginning, followed by a character string. The system searches for data which end with this character string.
?<Character string>?<Character string>?	Multiple character strings separated by question marks and with question marks at the beginning and end. The system searches for data which contain the various character strings in the search data field in the order specified.

5 General

5.7.4.1 Match code search for article data records

X?

Y?

Description of the operator prompts

Display

Match code search for article data records

- Press the [X?] key or the [Y?] key.
- A prompt appears corresponding to the default setting (match code search for article number, article name or special data field Hxx).
- Enter the search criterion.
- Press the [↵] key.

```
MATCH CODE SRCH FOR ARTICLE NUMBER

ENTER
ARTICLE NUMBER

? █
```

Selection menu if matching data records are found:

- The display shows the search data field and the currently displayed data field, and states whether the display is sorted or unsorted.
- Press the [↓] key to toggle the display between other data fields of the data records. Doing so does not change the sequence of the data records in the display.
- Press the [↑] / [↓] key to select an article number.
- Press the [↵] key.
- The article number is selected.

```
MATCH CODE SRCH FOR ARTICLE NUMBER
ARTICLE NUMBER          SORTED
█ <Article number>
<Article number>
<Article number>

[↑/↓/↓/CE/↵]
```

Description of possible operator advisories

Display texts

Message if no matching article data records were found.

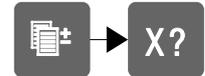
```
MATCH CODE SRCH FOR ARTICLE NUMBER

ENTER
ARTICLE NUMBER

NO SUCH ARTICLE
FOUND
-> CE
```

5 General

5.7.4.2 Match code search for requisition data records



Description of the operator prompts

Display

Match code search for requisition data records

- Press the [F10] key, then press the [X?] key.
- A prompt appears corresponding to the default setting (match code search for requisition number or special data field Cxx).
- Enter the search criterion.
- Press the [↵] key.

```
MATCH CODE SRCH FOR REQUISITION NUMBER

ENTER
REQUISITION NUMBER

? █
```

Selection menu if matching data records are found:

- The display shows the search data field and the currently displayed data field, and states whether the display is sorted or unsorted (status).
Press the [F11] key to toggle the display between other data fields of the data records. Doing so does not change the sequence of the data records in the display.
- Press the [↑] / [↓] key to select a requisition number.
- Press the [↵] key.
- The requisition number is selected.

```
MATCH CODE SRCH FOR REQUISITION NUMBER
REQUISITION NUMBER      SORTED
█ <Requisition number>
  <Requisition number>
  <Requisition number>

[↑/↓/↵/CE/↵]
```

Description of possible operator advisories

Display texts

Message if no matching requisition data records were found.

```
MATCH CODE SRCH FOR REQUISITION NUMBER

ENTER
REQUISITION NUMBER

NO SUCH
REQUISITION FOUND
-> CE
```

5 General

5.7.4.3 Match code search for article and requisition data records



For this match code search, additional storage location-related data (e.g. storage location, container size, inventory at storage location, FIFO status) is displayed.

Articles can be displayed or printed out; selecting an article is not possible.

Match code search for article and requisition data records

➤ See Chapter 9.1.2 on page 93.

5 General

5.7.5 Article search

X?

Y?

After you enter the first characters of an article number, the control system starts to search for matching articles. Each additional character you enter narrows the search. When the control system has found 6 or fewer matching articles, these articles are shown in the display.

Description of the operator prompts

Display

Article search

- Press the [X?] key or the [Y?] key.
- Enter the first characters of an article number.
- The search for matching articles is started.
- A maximum of 6 matching articles are shown on the display.
If no articles are displayed, you have to enter more characters to narrow down the search.
- Press the [↑] / [↓] key to select articles.
- Press the [←] key.
- The article number is selected.

```
ARTICLE SEARCH
ENTER
ARTICLE NUMBER
```

```
ARTICLE SEARCH
█<Article number>
<Article number>
<Article number>

[↑/↓/CE/←]
```

Description of possible operator advisories

Display texts

Message if no matching article data records were found.

```
ARTICLE SEARCH
ENTER
ARTICLE NUMBER
NO SUCH ARTICLE
FOUND
-> CE
```


6 Article storage management

6.1 Brief description of article storage management

The article management system manages the article and storage location-related data. These data are called article master data.

The sequence and display depend on the following settings:

- ◆ Management with inventory control:
 - YES
 - NO
- ◆ Storage location management:
 - FIFO STORAGE MANAGEMENT
 - FIFO WITH RESTORE FUNCTION
 - RANDOM ACCESS STORAGE



x Depending on the initialisation, some function keys may not be offered.

6.2 General information for entering data

The article master data consists of alphanumeric and numeric data.

The following alphanumeric article master data can be entered on the keyboard or using the barcode reader:

- ◆ Article number
- ◆ Article name
- ◆ Special data fields Hxx

When storage management is formatted, the maximum number of characters for these alphanumeric article master data is specified.

The following numerical article master data can be entered on the keyboard:

- ◆ Storage location (lift, shelf, compartment, compartment depth)
- ◆ Minimum inventory
- ◆ Container size in direction of compartments and in direction of compartment depths

The following numerical data can be entered on the keyboard, via barcode reader or via counting scale:

- ◆ Quantity

Numeric characters

0123456789

Character set

Alphanumeric characters

Standard

0123456789ABCDEFGHIJKLMN OPQRSTUVWXYZ , / () : . +-Space

6 Article storage management

6.3 Enter or select the article number.



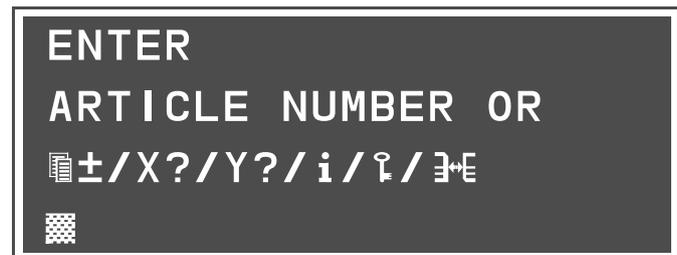
- x Various options exist for defining the article number. You can enter or select the list number using the:
 - Keyboard (letters and number pad)
 - Keyboard buffer ([X→] key)
 - Match code search
 - Article search
 - Article number lift reference
 - Barcode reader
- x If "Processing, creating and deleting requisitions" is disabled under "Select function", the [±] key is disabled.
- x If the match code search is disabled under "Select function", the [X?] and [Y?] keys are omitted.
- x If no multi-unit network is possible, the [↻] key is omitted.

Description of the operator prompts

Enter or select the article number.

- Enter the article number.
An article number can consist of a combination of numbers, letters and special characters. Max. number: 40 characters
- Press the [←] key.

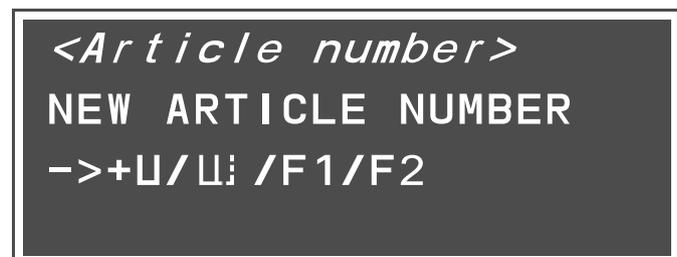
Display



When entering a "new" article number:

The following functions are now possible:

Function		See Chapter	Page
[+U]	Store article with creation of a storage location	6.5.1	59
[U:]	Store article with creation of a storage location and container entry	6.5.2	62
[F1]	Enter article name, special data fields Hxx	6.4.1	56
[F2]	Enter minimum inventory	6.4.2	58



6 Article storage management

Description of the operator prompts

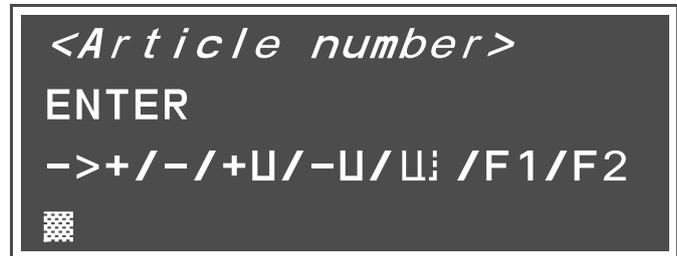
Display

When entering an "existing" article number:

The following functions are now possible:

Function	See Chapter	Page
[+] Store article at existing storage location	6.5.4	65
<i>With random access storage ¹⁾</i>	6.7	70
[-] Remove article without specific deletion of the storage location	6.6.1	66
<i>With random access storage ¹⁾</i>	6.7	70
[+ U] Store article with creation of a storage location	6.5.1	59
[- U] Remove article with deletion of the storage location	6.6.2	68
<i>With random access storage ¹⁾</i>	6.7	70
[U:] Store article with creation of a storage location and container entry	6.5.2	62
[F 1] Enter article name, special data fields Hxx	6.4.1	56
[F 2] Enter minimum inventory	6.4.2	58
[F 4] Store article with creation of a storage location and re-store function ¹⁾	6.5.3	64

¹⁾ if function is initialised



6 Article storage management

6.4 Enter or modify the article data

6.4.1 Enter article name, special data fields Hxx



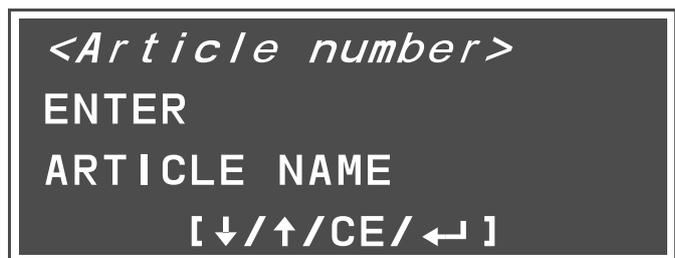
- x If the number of digits for the article name is set to "0" in the formatting, the entry of the article name is omitted.
- x If no editable special data fields Hxx are formatted, the entry of the special data fields is omitted.

Description of the operator prompts

Display

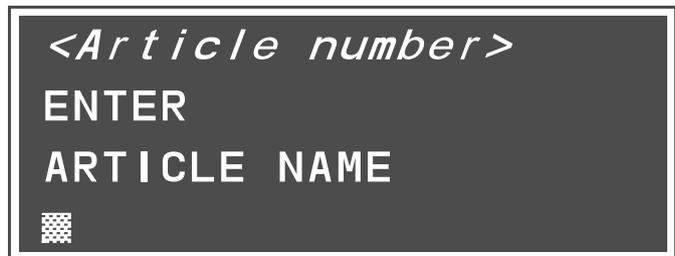
Enter article name, special data fields Hxx

- Enter or select the article number.
- Press the [F1] key.
- Press the [↑] / [↓] keys to select between "Enter article name" or "Enter special data field Hxx".
- Press the [↵] key.



If you select "Enter article name":

- Enter the article name.
You can enter the article name using the:
 - Keyboard (letters and number pad)
 - Barcode reader
 The article name can consist of a combination of numbers, letters and special characters. Max. number: 40 characters
- Press the [↵] key.
- For a "new" article number:
The article name was accepted. This is not registered until the storage operation has ended.
- For an "existing" article number:
The article name was registered immediately.



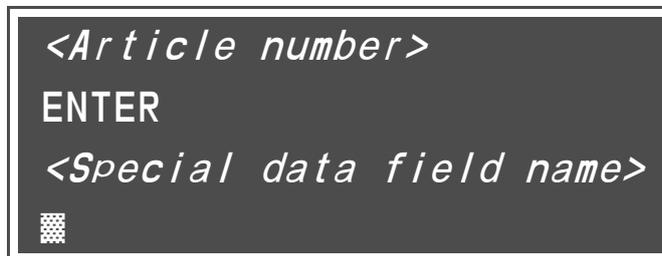
6 Article storage management

Description of the operator prompts

Display

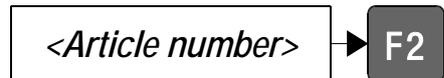
For "Enter special data field Hxx":

- Enter the special data field.
You can enter the editable special data fields Hxx via the:
 - Keyboard (letters and number pad)
 - Barcode readerA special data field Hxx can consist of a combination of numbers, letters and special characters.
Max. number: 40 characters
 - Press the [←] key.
- For a "new" article number:
The special data field was accepted. It is not registered until the storage operation has ended.
- For an "existing" article number:
The special data field was registered immediately.



6 Article storage management

6.4.2 Enter minimum inventory



- x If the article storage management is initialised to "Without inventory control", entering the minimum inventory is omitted.

Description of the operator prompts

Display

Enter minimum inventory

- Enter or select the article number.
- Press the [F2] key.
- Enter the minimum inventory.
Max. number: 8 characters
- Press the [↵] key.
- For a "new" article number:
The minimum inventory was accepted. It is not registered until the storage operation has ended.
- For an "existing" article number:
The minimum inventory was registered immediately.

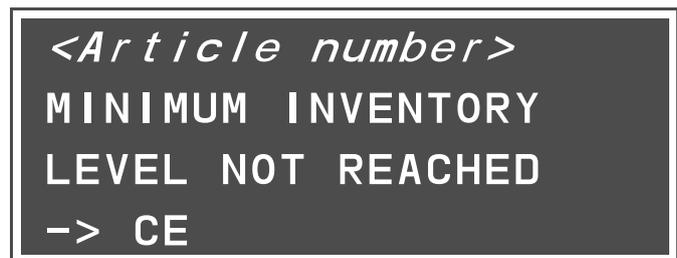


Description of possible operator advisories

Display

Message when inventory falls below the minimum inventory

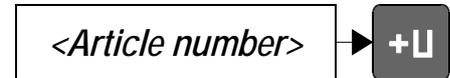
- If quantities of an article have dropped below the minimum inventory level due to a retrieval operation, once the operation has been registered, a warning is displayed when the next attempt is made to retrieve this article.
- Press the [CE] key.



6 Article storage management

6.5 Store article

6.5.1 Store article with creation of a storage location



The storage location of an article consists of the lift number, shelf number, compartment number and compartment depth number. The lift number is predefined by the control system.

Two options exist for creating a storage location for an article.

1. Automatic storage location assignment:
In this option, a storage location is assigned by the article management system.
 2. Manual entry of the storage location:
In this option, a shelf number and—depending on the initialisation of the control system—a compartment and compartment depth number must be entered.
- x The automatic storage location assignment can be disabled under "Select function".
 - x The function **[+U]** does not appear if "Storage location creation only with mandatory container entry" is enabled in "Select function".
 - x The **[+U]** key can be locked using the keylock function.



Description of the operator prompts

Create storage location

- Enter or select the article number.
- Press the **[+U]** key.

If you want the storage location to be assigned automatically:

- Press the **[↓]** key.
- ➔ The automatically assigned shelf is brought to the access point. You can now store the article (see next page).

If you want to create the storage location manually:

If there is already a shelf in the access point, its shelf number *<tt>* is suggested as the default.

- Enter the shelf number or keep the suggested number.
- Press the **[←]** key.
- ➔ The selected shelf is brought to the access point.

Display



6 Article storage management

Description of the operator prompts



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

Display

- x There is no prompt for the compartment number if the lift is initialised for one compartment only.
- x There is no prompt for the compartment depth number if the lift is initialised for one compartment depth only.

```
<Article number>
ENTER STORAGE LOC .
COMPARTMENT ?
<tt>  +
```

- Enter the compartment depth number.
- Press the [↵] key.

```
<Article number>
ENTER STORAGE LOC .
COMPARTMENT DEPTH ?
<tt> <ff>  +
```

Store article "with inventory control":

If you want to store the article at the accessed storage location:

- Store the article.
- Enter the quantity.
- Press the [↵] key.

➔ The quantity has been registered at the accessed storage location. The storage operation is ended.

If there is too little room at the accessed storage location:

- Press the [↑] / [↓] key (manual storage location entry) or the [↵] key (automatic storage location assignment) to select another storage location.

```
<Article number>
ENTER QUANT . OR ST .
LOCAT . WITH ↓/↑/↵
<tt ff tf>  +
```

6 Article storage management

Description of the operator prompts

Store article "without inventory control":

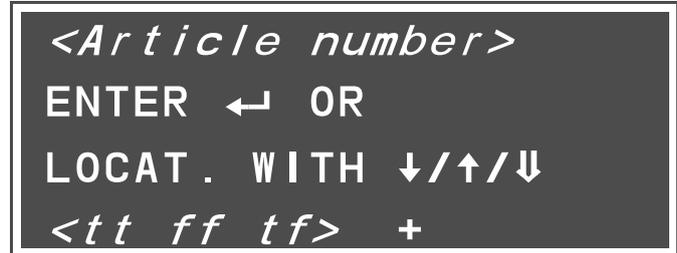
If you want to store the article at the accessed storage location:

- Store the article.
 - Press the [↵] key.
- ➔ The article has been registered at the accessed storage location. The storage operation is ended.

If there is too little room at the accessed storage location:

- Press the [↑] / [↓] key (manual storage location entry) or the [↕] key (automatic storage location assignment) to select another storage location.

Display



Description of possible operator advisories

All the storage locations in the lift have been assigned at least once and the storage management system was unable to find a free location.

Double assignment of a storage location is possible (also termed multiple assignment). To do this, enter the shelf, compartment, and compartment depth on the keyboard, or search for a storage location with the arrow keys.

The storage location you selected is part of a storage location chain or a container and cannot be assigned to another article.

You must select another location.

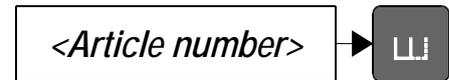
Display texts

```
<Article number>  
ALL STORAGE  
LOCATIONS ASSIGNED  
-> CE
```

```
<Article number>  
STORAGE LOC NOT  
ASSIGNABLE  
-> CE
```

6 Article storage management

6.5.2 Store article with creation of a storage location and container entry



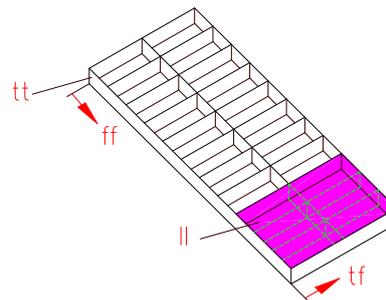
If an article you wish to enter or the bin provided for it occupies multiple adjacent storage locations, it must be created in a container.

- ◆ A container can only be created within one shelf level in contiguous compartments and compartment depths.
- ◆ A container can be redefined each time another storage location is created for an article. This means that an article can be stored in different containers.
- ◆ A container can be defined both in the direction of compartments $\langle ff \rangle$ (width) and in the direction of compartment depths $\langle tf \rangle$ (depth).

Example:

Shelf with 11 compartments and 2 compartment depths.

The container (marked area) in this example has 3 compartments in the direction of compartments and 2 compartments in the direction of compartment depths.



tt = Shelf
ff = Direction of compartments
tf = Direction of compartment depths
ll = Storage location



- x When specifying the storage location, ensure that the leftmost compartment and the front compartment depth of a container are entered. The control system then reserves the adjacent compartments and compartment depths depending on the container size entered.
- x When there are multiple access points and access point on the rear side, the rightmost compartment and the rear compartment depth of a container must be entered as the storage location.

6 Article storage management



- x The container function can be disabled under "Select function".
- x If the lift is initialised for only one compartment or compartment depth, the container prompt for entering the respective data is disabled.
- x If the lift is initialised for one compartment and one compartment depth, the container function is disabled entirely.

Description of the operator prompts

Display

Entering the container

- Enter or select the article number.
- Press the [U] key.
- Enter the number of compartments to be assigned in the direction of compartments.
- Press the [←] key.
- ➔ Container in direction of compartments has been accepted. It is not registered until the storage operation has ended.

```
<Article number>
CONTAINER SIZE IN
DIR. OF COMPARTMENTS
<ff>  <tf>
```

- Enter the number of compartment depths to be assigned in the direction of compartment depths.
- Press the [←] key.
- ➔ Container in direction of compartment depths has been accepted. It is not registered until the storage operation has ended.

```
<Article number>
CONTAINER SIZE IN
DIR. OF COMP. DEPTHS
<ff>  <tf>
```

For additional information, see Chapter 6.5.1 on page 59.

For "FIFO with re-store function":

If you want to create the storage location of the article according to the FIFO principle:

Press the [+U] key.

If you want to create the storage location of the article contrary to the FIFO principle:

- Press the [F4] key.

```
<Article number>
ENTER
-> +U/F4
```

6 Article storage management

6.5.3 Store article with creation of a storage location and re-store function

The storage location is created as the oldest storage location, contrary to the FIFO principle. This location can then be accessed first when articles are to be removed.

Example:

An open package of an article (e.g. open pack of screws) is stored using the re-store function. At the next retrieval operation for this article, the storage location with the opened box is accessed again.



- x The re-store function is omitted if storage location management is not initialised to "Fifo with re-store function".

Description of the operator prompts

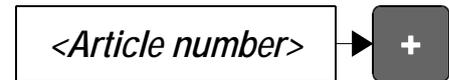
Creating a storage location with re-store function

- Enter or select the article number.
 - Press the [F4] key.
- The storage location has been accepted with the oldest FIFO. It is not registered until the storage operation has ended.

For additional information, see Chapter 6.5.1 on page 59.

6 Article storage management

6.5.4 Store article at existing storage location



- x The **[+]** key can be locked using the keyboard lock function. Then, during storage, a new storage location must always be created using the **[+□]** key. Thus each storage operation has a new FIFO status.

Description of the operator prompts

Display

Store article

- Enter or select the article number.
 - Press the **[+]** key.
- ➔ The shelf with the most recent storage location according to FIFO is brought to the access point.

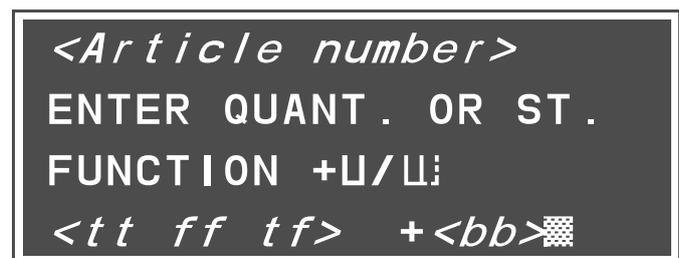
For "with inventory control":

If you want to store the article at the accessed storage location:

- Store the article.
 - Enter the quantity.
 - Press the **[←]** key.
- ➔ The quantity has been registered at the accessed storage location. The storage operation is ended.

If there is too little room at the accessed storage location:

- Press the **[+□]** key to create a new storage location or press the **[□]** key to create a new storage location with container entry.



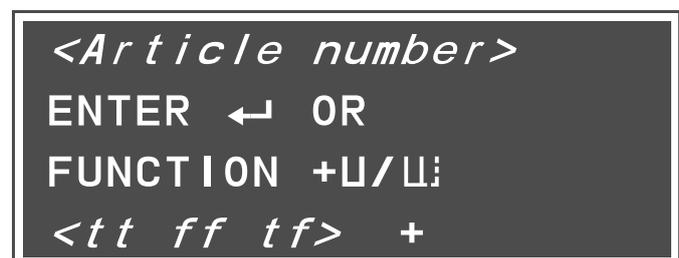
For "without inventory control":

If you want to store the article at the accessed storage location:

- Store the article.
 - Press the **[←]** key.
- ➔ The article has been registered at the accessed storage location. The storage operation is ended.

If there is too little room at the accessed storage location:

- Press the **[+□]** key to create a new storage location or press the **[□]** key to create a new storage location with container entry.



6 Article storage management

6.6 Retrieve article

6.6.1 Remove article without specific deletion of the storage location



The following applies for FIFO storage management:

- ◆ If an article has multiple storage locations, a storage location is always deleted when zero inventory is reached.
- ◆ If inventory control is initialised, it is possible that the last storage location will also be deleted automatically as soon as the inventory at this location is zero. However, the function "DELETE LAST STORAGE LOCATION AUTOMATICALLY AT ZERO INVENTORY" must be enabled in "Select function".

The following applies for random access storage:

- ◆ Storage locations can be deleted using the [-] key only.

Description of the operator prompts

Remove article without specific deletion of the storage location

- Enter or select the article number.
 - Press the [-] key.
- ➔ The shelf with the oldest storage location according to FIFO is brought to the access point.

For "with inventory control":

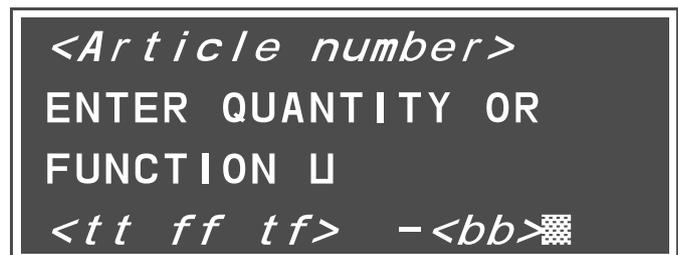
If you do not want to specifically delete the accessed storage location:

- Remove the article.
 - Enter the quantity.
 - Press the [←] key.
- ➔ The quantity has been unregistered at the accessed storage location. The retrieval operation is ended.

If you want to delete the accessed storage location (e.g. when removing the entire inventory in the storage location):

- Press the [-] key to remove articles with deletion of the storage location.

Display



6 Article storage management

Description of the operator prompts

If the quantity to be removed is greater than the inventory at the storage location:

- Remove all articles.
- Press the [←] key.
- ➔ The quantity has been unregistered at the accessed storage location.
- ➔ The shelf with the oldest storage location according to FIFO is brought to the access point.

- Remove the remaining quantity.
- Press the [←] key.
- ➔ The quantity has been unregistered at the accessed storage location. The retrieval operation is ended.

For "without inventory control":

If you do not want to specifically delete the accessed storage location:

- Remove the article.
- Press the [←] key.
- ➔ The article has been unregistered at the accessed storage location. The retrieval operation is ended.

If you want to delete the accessed storage location (e.g. when removing the entire inventory in the storage location):

- Press the [-U] key to remove articles with deletion of the storage location.

If an article has at least two storage locations and the quantity you wish to remove is greater than the inventory at the first storage location, proceed as follows.

- Remove the total quantity at the first storage location.
- Delete the storage location with the [-U] key.
- Enter the same article number.
- Press the [-] key.
- ➔ The next storage location is accessed.
- Remove the remaining quantity.
- ➔ The article has been unregistered at the accessed storage location. The retrieval operation is ended.

Display

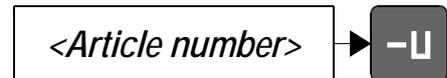
```
<Article number>
REMOVE TOTAL .
MORE STORED AT : ←
<tt ff tf> -<qq>
```

```
<Article number>
REMOVE REMAIN . QTY .
ENTER ←
<tt ff tf> -<qq>
```

```
<Article number>
ENTER ← OR
FUNCTION -U
<tt ff tf> -
```

6 Article storage management

6.6.2 Remove article with deletion of the storage location



- x The [-U] key can be locked using the keylock function.
- x The storage location is deleted only if the inventory at storage location becomes "0" due to the retrieval.

Description of the operator prompts

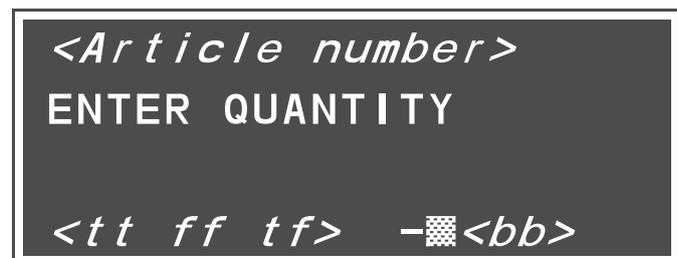
Display

Remove article and delete storage location

- Enter or select the article number.
- Press the [-U] key.
- ➔ The shelf with the oldest storage location according to FIFO is brought to the access point.

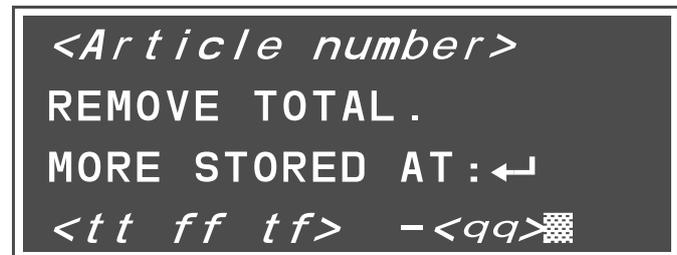
For "with inventory control":

- Remove the article.
- Enter the quantity.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location. If the inventory at the storage location is now "0", the storage location is deleted. The retrieval operation is ended.

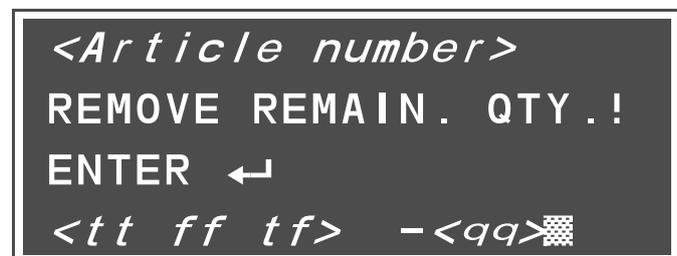


If the quantity to be removed is greater than the inventory at the storage location:

- Remove all articles.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location.
- ➔ The shelf with the oldest storage location according to FIFO is brought to the access point.



- Remove the remaining quantity.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location. The retrieval operation is ended.



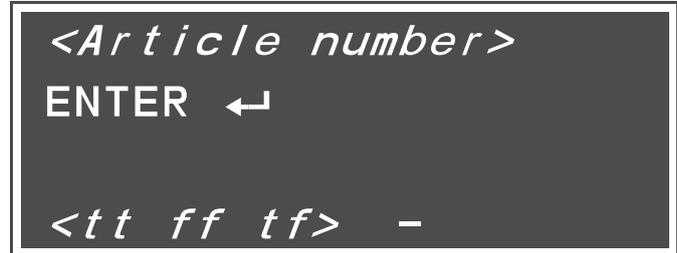
6 Article storage management

Description of the operator prompts

For "without inventory control":

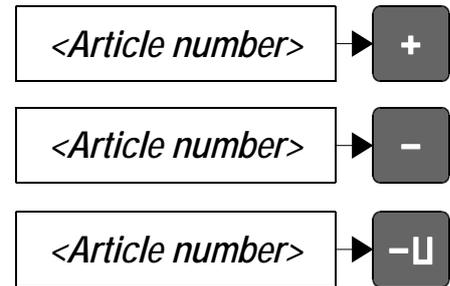
- Remove the article.
- Press the [←] key.
- ➔ The article has been unregistered at the accessed storage location. The storage location was deleted. The retrieval operation is ended.

Display



6 Article storage management

6.7 Random access storage



This function can be used to access any storage location, contrary to the FIFO principle, when articles are stored in multiple locations (storage location chain).

Even when the user is processing requisitions or retrieving a quantity larger than the inventory in the storage location (the remaining quantity function) the storage location can be selected freely.



- x Random access storage must be activated during initialisation.
- x The storage location is deleted only if the **[-□]** key is pressed and the inventory at storage location becomes "0" due to the retrieval.

Description of the operator prompts

For "Store article at existing storage location":

- Enter or select the article number.
- Press the **[+]** key.

If you want to store the article according to the FIFO principle:

- Press the **[←]** key.
- ➔ The shelf is brought to the access point.
- Store the article (see Chapter 6.5.4 on page 65).

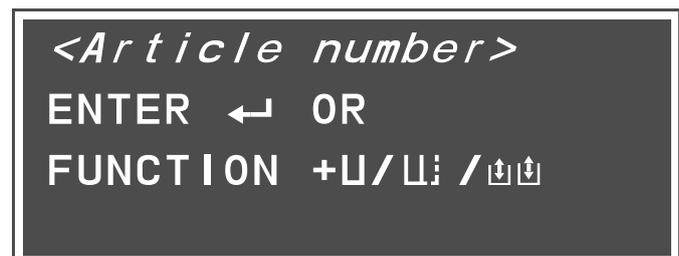
If you want to store the article contrary to the FIFO principle (random access storage):

- Press the **[□□]** key to show a list of all storage locations of this article. (For additional operating steps, refer to "Selecting the storage location from a list" on page 72.)

If you require another storage location:

- Press the **[+□]** key to create a new storage location or press the **[□:]** key to create a new storage location with container entry.

Display



6 Article storage management

Description of the operator prompts

Display

For "Remove article without specific deletion of the storage location":

- Enter or select the article number.
- Press the [-] key.

If you want to remove the article according to the FIFO principle:

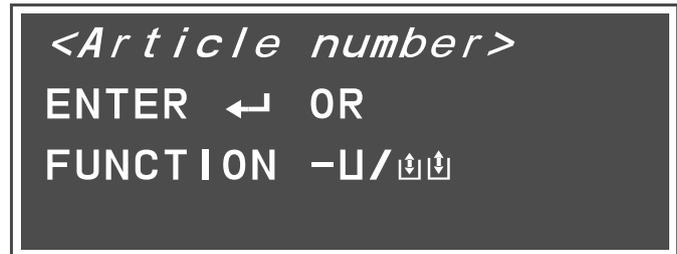
- Press the [←] key.
- ➔ The shelf is brought to the access point.
- Remove the article (see Chapter 6.6.1 on page 66).

If you want to remove the article contrary to the FIFO principle (random access storage):

- Press the [↕] key to show a list of all storage locations of this article. (For additional operating steps, refer to "Selecting the storage location from a list" on page 72.)

If you want to delete the accessed storage location (e.g. when removing the entire inventory in the storage location):

- Press the [-] key to remove articles with deletion of the storage location.



For "Remove article with deletion of storage location":

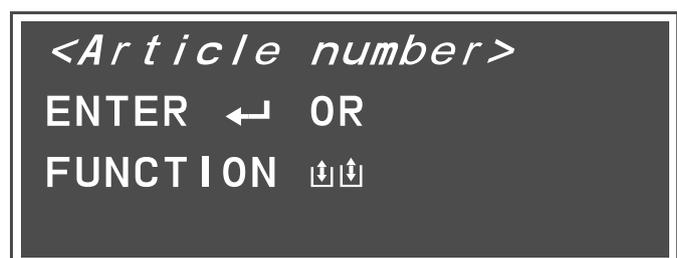
- Enter or select the article number.
- Press the [-] key.

If you want to remove the article according to the FIFO principle:

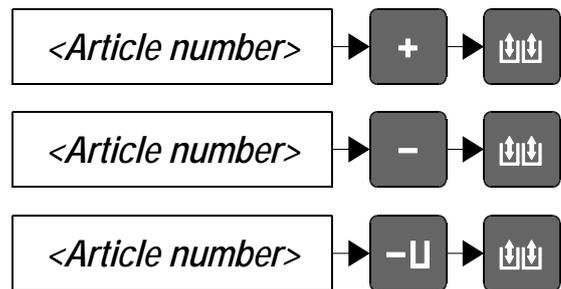
- Press the [←] key.
- ➔ The shelf is brought to the access point.
- Remove the article (see Chapter 6.6.2 on page 68).

If you want to remove the article contrary to the FIFO principle (random access storage):

- Press the [↕] key to show a list of all storage locations of this article. (For additional operating steps, refer to "Selecting the storage location from a list" on page 72.)
- ➔ The storage location is deleted only if the inventory at storage location becomes "0" due to the retrieval.



6 Article storage management



Description of the operator prompts

Select storage location from list

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

Continue with

- Store article at existing storage location (see Chapter 6.5.4 on page 65).
 - Store article without specific deletion of the storage location (see Chapter 6.6.1 on page 66) or
 - Store article with deletion of the storage location (see Chapter 6.6.2 on page 68).
- x If storage management without inventory control is not initialised, no inventory is displayed for the storage location.
- x A lift reference is displayed if the location selected is in another lift.
- x If the storage location in the other lift has been deleted in the meantime, the menu of all the storage locations for this article is displayed when the reference is called.

Display

```

<Article number>
LIFT SHELF COMP C-D C.-SIZE INVENTORY
</> <tt> <ff> <tf> <Container> <bb>
[↑/↓/CE/←]
    
```

7 Requisition management

7.1 Brief description of requisition management

The requisition management system manages the requisition-related data. Requisitions can be entered via the keyboard or transmitted by a host:

The host can be connected via Ethernet to the MP 12N-S or MP 100D microprocessor control system. The requisitions are then transmitted via file transfer between the host and MP 12N-S or MP 100D.

The sequence and display depend on the following settings:

- ◆ Management with inventory control:
 - YES
 - NO

- ◆ Storage location management:
 - FIFO STORAGE MANAGEMENT
 - FIFO WITH RESTORE FUNCTION
 - RANDOM ACCESS STORAGE



- x Depending on the initialisation, some function keys may not be offered.
- x Depending on the initialisation, some menu items may not be offered.
- x If "Processing, creating and deleting requisitions" is disabled under "Select function", the [F4] key is disabled in the main menu.

7.2 Requisition strategies

Various types of requisition processing can be set under "SETTING SUPPLEMENTARY FUNCTIONS."

Also refer to:

[F4] key ->

2 SYSTEM SERVICES STORAGE MANAGEMENT ->

6 SYSTEM CONFIGURATION ->

8 SETTING SUPPLEMENTARY FUNCTIONS

Sequential

- ◆ Processing in the order in which the individual list items were entered or transferred by the host.

Path-optimised

- ◆ Processing sorted according to the storage locations in the lift.
- ◆ Multi-unit processing on the basis of a path list in which the shortest distances between the lifts are entered.

Time-optimised

- ◆ Based on path optimisation.
- ◆ Requisition reference strategy for distributing the sequence of lift references in order to avoid congestion at the lifts.



Further optimisations for the "time-optimised" requisition strategy are possible with the supplementary module "Shelf pre-positioning". Observe restrictions with regard to lift features and number of lifts.

- See the "Supplementary Description of the Shelf Pre-positioning Microprocessor Control System MP 12D/N Lean-Lift and Rotomat".

7 Requisition management

7.3 Enter or select the requisition number.



- x Various options exist for entering the requisition number. You can enter or select the requisition number using the:
- Keyboard (letters and number pad)
 - Keyboard buffer ([X→] key)
 - Match code search
 - Requisition number lift reference
 - Barcode reader

Description of the operator prompts

Display

Enter or select the requisition number

- Press the [] key.
- Enter or select the requisition number.
A requisition number can consist of a combination of numbers, letters and special characters.
Max. number: 40 characters
- Press the [←] key.



When entering a "new" requisition number:

For additional information, see Chapter 7.6 on page 84.

When entering an "existing" requisition number:

- The requisition selection menu is displayed.
If "Create requisitions" is disabled under "Select function", the selection menu is disabled and "Process requisition" is started immediately.



Menu item	See Chapter	Page
1	7.4	75
2	7.5	83
3	7.6	84
4	7.7	87

7 Requisition management

7.4 Processing a requisition



- x "Process requisition" can be disabled under "Select function".
 - x If "Delete requisition automatically after it is processed" has been selected under "Select function", the requisition is automatically deleted after processing is completed. Otherwise, the requisition can be called up again or deleted manually.
- Also refer to:
- [i] key ->
 - 2 REQUISITION MANAGEMENT ->
 - 4 DELETE REQUISITION
- x If the article to be stored is not already present, a storage location is created automatically.

Description of the operator prompts

Display

Processing a requisition

- Press the [±] key.
 - Enter or select the requisition number.
 - Press the [1] key.
 - Enter the quantity factor (if activated).
- Processing of the requisition is started.
- The rest of the menu prompts depend on which operation (+, -, +U, -U) has been assigned to the requisition item.
- Store or remove the articles according to the information on the display. Refer also to Chapter 7.4.2 (+, +U) or Chapter 7.4.3 (-, -U).
- If the article is stored in another lift, this is indicated by a lift reference in the display. Requisition processing is then continued with the next article.
- You can interrupt requisition processing using the [CE] key. In this case the item last displayed is not registered. If you select the interrupted requisition again, processing continues with this item.
- When the last item in a requisition has been processed, the message to the right is displayed briefly. The control system then returns to the main menu.



7 Requisition management

7.4.1 Enter a quantity factor

By entering a quantity factor, the user can have all the quantity figures relating to the individual list items multiplied by the specified factor immediately before processing.

The control system automatically assigns the factor "1".

After you enter the quantity factor, the system checks whether all articles are present in this quantity. If an insufficient number of articles is present, the control system suggests the greatest possible quantity factor. However, if the greatest possible quantity factor is overwritten, an error message appears for the corresponding item. The quantity must be corrected. To do so, press the [+] key for a storage operation, [-] for a retrieval operation, and then enter the new quantity.



- x The quantity factor can be disabled under "Select function".
- x The quantity factor control appears only if the control system is set accordingly and if inventory control is initialised.

Also refer to:

[↑] key ->

2 SYSTEM SERVICES STORAGE MANAGEMENT ->

6 SYSTEM CONFIGURATION ->

8 SETTING SUPPLEMENTARY FUNCTIONS

Description of the operator prompts

Enter a quantity factor

- Press the [±] key.
- Enter or select the requisition number.
- Enter the quantity factor.
- Press the [←] key.

Display

```
<Requisition number>
ENTER
QUANTITY FACTOR
1
```

Control of quantity factor

- The display indicates the maximum possible quantity factor <n>.
Thus the list can only be processed up to <n> times the quantity without shortages of parts.

```
INVENTORY TOO SMALL
LARGEST POSSIBLE
QTY . FACTOR : <n>
CORRECTION ← /CE
```

7 Requisition management

7.4.2 Store article

7.4.2.1 Store article with creation of a storage location

Description of the operator prompts

Store article with creation of a storage location (for requisition processing)

The following functions are possible:

Function

- | | |
|---------------|---|
| [+U] | Store article with creation of a storage location |
| [U:] | Store article with creation of a storage location and container entry |
| [F4] | Store article with creation of a storage location and re-store function |

If you want to enter a container:

- Press the **[U:]** key.
 - Enter the number of compartments to be assigned in the direction of compartments.
 - Press the **[←]** key.
- ➔ Container in direction of compartments has been accepted. It is not registered until the storage operation has ended.

- Enter the number of compartment depths to be assigned in the direction of compartment depths.
 - Press the **[←]** key.
- ➔ Container in direction of compartment depths has been accepted. It is not registered until the storage operation has ended.
- ➔ For "FIFO with re-store function", the top display for selecting the functions **+U/U: /F4** is again displayed. This enables container entry and re-store function.

If you want to activate the re-store function:

- Press the **[F4]** key.
- ➔ The storage location has been accepted with the oldest FIFO. It is not registered until the storage operation has ended.

Display

```
<Article number>
ENTER
FUNCTION +U/U: /F4
```

➤ Refer to Chapter 6.5.2

```
<Article number>
CONTAINER SIZE IN
DIR. OF COMPARTMENTS
<ff> <tf>
```

```
<Article number>
CONTAINER SIZE IN
DIR. OF COMP. DEPTHS
<ff> <tf>
```

➤ Refer to Chapter 6.5.3

7 Requisition management

Description of the operator prompts

Create storage location (for requisition processing)

- Press the [+] key.

If you want the storage location to be assigned automatically:

- Press the [↓] key.

→ The automatically assigned shelf is brought to the access point. You can now store the article (see next page).

If you want to create the storage location manually:

If there is already a shelf in the access point, its shelf number <tt> is suggested as the default.

- Enter the shelf number or keep the suggested number.

- Press the [←] key.

→ The selected shelf is brought to the access point.



Display

```

<Article number>
ENTER STORAGE LOC .
SHELF NUMBER ↓
<tt> [grid] + <qq>
    
```

- x There is no prompt for the compartment number if the lift is initialised for one compartment only.
- x There is no prompt for the compartment depth number if the lift is initialised for one compartment depth only.

- Enter the compartment number.
- Press the [←] key.

```

<Article number>
ENTER STORAGE LOC .
COMPARTMENT ?
<tt> [grid] + <qq>
    
```

- Enter the compartment depth number.
- Press the [←] key.

```

<Article number>
ENTER STORAGE LOC .
COMPARTMENT DEPTH ?
<tt> <ff> [grid] + <qq>
    
```

7 Requisition management

Description of the operator prompts

Store article (for requisition processing)

If you want to store the article at the accessed storage location:

- Store the article.
- Press the [←] key.
- ➔ The quantity has been registered at the accessed storage location. The storage operation for this requisition item is ended.

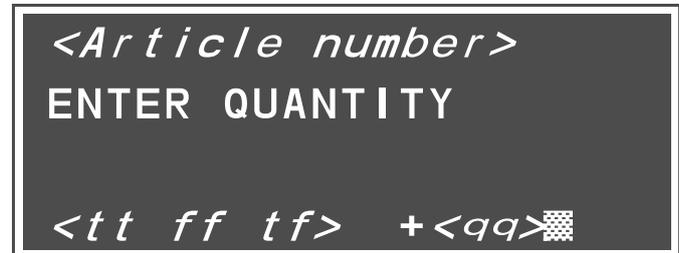
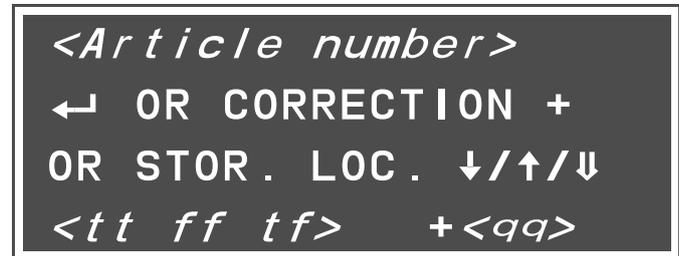
If there is too little room at the accessed storage location:

- Press the [↑] / [↓] key (manual storage location entry) or the [↕] key (automatic storage location assignment) to select another storage location.

If you want to correct the default quantity:

- Press the [+] key.
- Store the article.
- Enter the quantity.
- Press the [←] key.

Display



Description of possible operator advisories

If the correction reduces the quantity (e.g. too little space at the storage location), the prompt shown to the right appears, allowing you to create additional storage locations for the remaining quantity.

Display texts

```

<Article number>
STORE REMAINING QTY .
->+↕/↕: /CE
+ <qq>
    
```

7 Requisition management

7.4.2.2 Store article at existing storage location

Description of the operator prompts

Store article at existing storage location (for requisition processing)

If you want to store the article at the accessed storage location:

- Store the article.
- Press the [←] key.
- ➔ The quantity has been registered at the accessed storage location. The storage operation for this requisition item is ended.

If there is too little room at the accessed storage location:

- Press [+] key to create a new storage location or [] to create a new storage location with container entry or [] to select another existing storage location.

If you want to correct the default quantity:

- Press the [+] key.
- Store the article.
- Enter the quantity.
- Press the [←] key.

Display

```
<Article number>
ENTER ← / ↑ / ↓ / + ] / ] :
OR CORRECTION [ + ]
<tt ff tf> + <qq>
```

```
<Article number>
ENTER QUANTITY
<tt ff tf> + <qq>
```

Description of possible operator advisories

If the correction reduces the quantity (e.g. too little space at the storage location), the prompt shown to the right appears, allowing you to create additional storage locations for the remaining quantity.

Display texts

```
<Article number>
STORE REMAINING QTY .
->+ ] / ] : / CE
+ <qq>
```

7 Requisition management

7.4.3 Remove article

7.4.3.1 Remove article without specific deletion of the storage location

Description of the operator prompts

Store article without specific deletion of the storage location (for requisition processing)

If you do not want to specifically delete the accessed storage location:

- Remove the article.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location. The retrieval operation for this requisition item is ended.

If you want to access another storage location:

- Press the [↕↕] key to select another existing storage location.

If you want to correct the default quantity:

- Press the [-] key.
- Remove the article.
- Enter the quantity.
- Press the [↵] key.

If the quantity to be removed is greater than the inventory at the storage location:

- Remove all articles.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location.
- ➔ The shelf with the oldest storage location according to FIFO is brought to the access point.

- Remove the remaining quantity.
- Press the [↵] key.
- ➔ The quantity has been unregistered at the accessed storage location. The retrieval operation for this requisition item is ended.

Display

```
<Article number>
ENTER ←/↕↕
OR CORRECTION [-]
<tt ff tf> -<qq>
```

```
<Article number>
ENTER QUANTITY
<tt ff tf> -<qq>
```

```
<Article number>
REMOVE TOTAL.
MORE STORED AT: ←
<tt ff tf> -<qq>
```

```
<Article number>
REMOVE REMAIN. QTY.
ENTER ←
<tt ff tf> -<qq>
```

7 Requisition management

7.4.3.2 Remove article with deletion of the storage location

Description of the operator prompts

Remove article with deletion of the storage location
(for requisition processing)

- Remove the article.
- Press the [←] key.
- The quantity has been unregistered at the accessed storage location. The retrieval operation for this requisition item is ended.

If you want to access another storage location:

- Press the [↵↵] key to select another existing storage location.

If you want to correct the default quantity:

- Press the [-] key.
- Remove the article.
- Enter the quantity.
- Press the [←] key.

If the quantity to be removed is greater than the inventory at the storage location:

- Remove all articles.
- Press the [←] key.
- The quantity has been unregistered at the accessed storage location.
- The shelf with the oldest storage location according to FIFO is brought to the access point.

- Remove the remaining quantity.
- Press the [←] key.
- The quantity has been unregistered at the accessed storage location. The retrieval operation for this requisition item is ended.

Display

```
<Article number>
ENTER ←/↵↵
OR CORRECTION [-]
<tt ff tf> -<qq>
```

```
<Article number>
ENTER QUANTITY
<tt ff tf> -<qq>■
```

```
<Article number>
REMOVE TOTAL.
MORE STORED AT: ←
<tt ff tf> -<qq>
```

```
<Article number>
REMOVE REMAIN. QTY. !
ENTER ←
<tt ff tf> -<qq>
```

7 Requisition management

7.5 Editing a requisition



Description of the operator prompts

Display

Editing a requisition

- Press the [±] key.
- Enter or select the requisition number.
- Press the [2] key.
- Press the [↑] / [↓] keys to scroll forwards or backwards between the requisition items.
- The article number, the operation (+, -, +U, -U) and the quantity are displayed.
- Press the [←] key when the requisition item you want to edit (e.g. article number) appears in the display.

```

<Article number>
EDIT WITH ←
OR ↑/↓/CE
<Operation><Quantity>
    
```

- Keep or overwrite the existing article number.
- The rest of the process corresponds to creating a requisition item as outlined in Chapter 7.6.

```

<Article number>
ARTICLE NUMBER ?
<Operation><Quantity>
    
```

- Press the [CE] key if you want to change the article number in this requisition only.

or

- Press the [←] key if the article number is to be changed both within this requisition and automatically in all other lists.
- The automatic update affects even those requisitions that are currently being processed.

```

<Article number>
CHANGE ARTICLE NO.
IN ALL REQUISITIONS
-> CE/←
    
```

7 Requisition management

7.6 Create, add to a requisition



- x "Create requisition" can be disabled under "Select function".
- x When processing a requisition, if you wish to create a new article with [+U] or [U:] it is always created in the lift at which the requisition was called up for processing.
- x Articles you wish to create can be distributed over different lifts by interrupting requisition processing at any time and resuming it at another lift. The container size can be corrected at the lift when the requisition is being processed.

Description of the operator prompts

Display

Create, add to a requisition

- Press the [±] key.
- Enter or select the requisition number.
- Press the [3] key.
- Enter the article number.
You can enter the article number using the:
 - Keyboard (letters and number pad)
 - Barcode reader
- Press the [←] key.

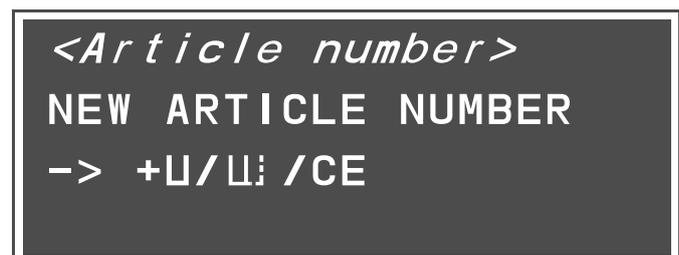


When entering a "new" article number:

The following functions can be assigned to the requisition item:

Function	
[+U]	Store article with creation of a storage location
[U:]	Store article with creation of a storage location and container entry

- Press the corresponding key.
- ➔ The selected function was assigned to the requisition item.



7 Requisition management

Description of the operator prompts

When entering an "existing" article number:

The following functions can be assigned to the requisition item:

Function	
[+]	Store article at existing storage location
[-]	Remove article without specific deletion of the storage location
[+] []	Store article with creation of a storage location
[-] []	Remove article with deletion of the storage location
[] []	Store article with creation of a storage location and container entry

- Press the corresponding key.
- ➔ The selected function was assigned to the requisition item.

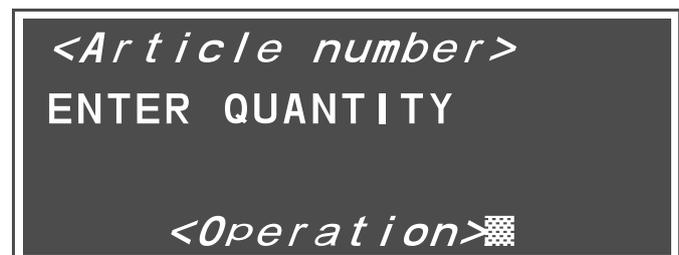
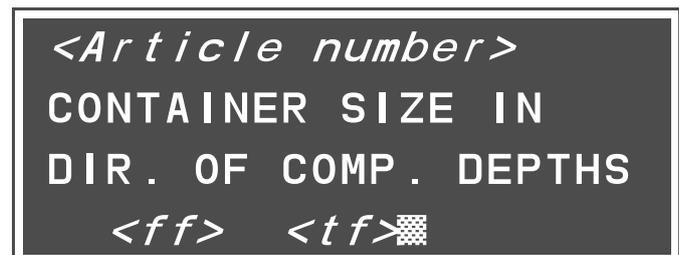
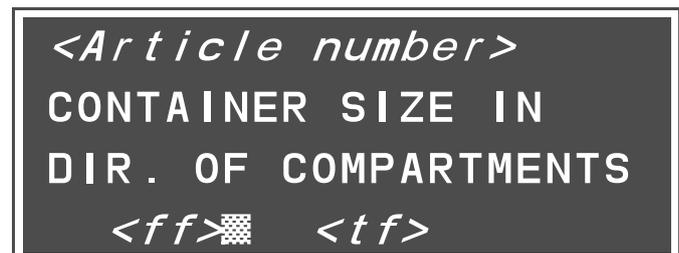
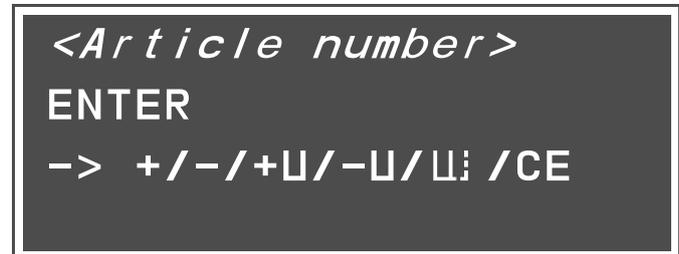
If the [] [] key has been pressed:

- Enter the number of compartments to be assigned in the direction of compartments.
- Press the [←] key.

- Enter the number of compartment depths to be assigned in the direction of compartment depths.
- Press the [←] key.

- Enter the quantity.
- Press the [←] key.
- ➔ The requisition item has been created.
- Enter next article numbers and repeat the process.

Display



7 Requisition management

Description of the operator prompts

Display

End requisition entry

- Enter article number "0".
 - Press the [←] key.
- The "Create requisition" operation is complete.

7 Requisition management

7.7 Deleting a requisition item



Description of the operator prompts

Deleting a requisition item

- Press the [\pm] key.
- Enter or select the requisition number.
- Press the [4] key.
- Press the [\uparrow] / [\downarrow] keys to scroll forwards or backwards between the requisition items.
- ➔ The article number, the operation (+, -, +U, -U) and the quantity are displayed.
- Press the [\leftarrow] key when the requisition item you wish to delete appears in the display.

Display

```

<Article number>
DELETE WITH  $\leftarrow$ 
OR  $\uparrow$ / $\downarrow$ /CE
<Operation><Quantity>
    
```

- Press the [\leftarrow] key.
- ➔ The requisition item was deleted.

```

<Article number>
ARE YOU SURE ?
-> CE/ $\leftarrow$ 
<Operation><Quantity>
    
```

7.8 Random access storage in a requisition

Description of the operator prompts

- For additional information, see Chapter 6.7.

Display

```

<Article number>
LIFT SHELF COMP C-D C.-SIZE INVENTORY
 $\leftarrow$  <ll> <tt> <ff> <tf> <Container> <bb>
[ $\uparrow$ / $\downarrow$ /CE/  $\leftarrow$  ]
    
```

7 Requisition management

7.9 Alternating-side requisition (only with Multi-Space)

Alternating-side requisition reduces wait times due to lift runs within one requisition. While one lift run is being carried out, the operator switches access points and continues working at the partner access point.



- x The alternating-side requisition is only possible with the Multi-Space.
- x The alternating-side requisition always involves two access points.
- x The access points at which alternating-side requisition processing is to take place must be immediately adjacent and at the same height.
- x Alternating-side requisition must be activated during initialisation.

- Start requisition processing.
- The first requisition item is accessed.
- A prompt appears asking whether you also want to start requisition processing at the access point <n>. However, this prompt appears only if the following conditions have been met:
 - The control system of the partner access point is in the main menu.
 - There are requisition items on another shelf.
- Press the [←] key to start requisition processing at the partner access point <n> also.
- If the safety system is set at the partner access point and no shelf is in the access point, the shelf for the started requisition item is brought to the access point. Otherwise, the lift run must be started by pressing the [←] key.
- Process the requisition items until a lift run is started or no other requisition items exist for this access point.
- Switch to the partner access point.

```
START
REQUISITION AT
ACCESS POINT      : <n>
-> CE / ←
```

- After the lift run, the following message appears at the partner access point.
- Press the [←] key.
- Process the requisition items until a lift run is started or no other requisition items exist for this access point.
- Switch to the partner access point.

```
REQUISITION
STARTED FROM
ACCESS POINT      : <n>
-> ←
```

8 Job management

Processing a job



The function is called up in the main menu of the control system. At least one job must be present (yellow LED lights up).

The host is connected via Ethernet to the MP12N-S or MP 100D microprocessor control system. The jobs are transmitted via file transfer between the host and MP12N-S or MP 100D.

- x If "Quick selection job processing by priority" is activated in "Select function", the [↔] key starts processing of the job with the highest priority immediately.
- x If "Quick selection job processing by priority" is *not* activated, the existing jobs are listed and the desired job must be selected.
- x Processing of a job is identical to processing of a requisition. A quantity factor is not used with job management.
- x See the Chapter on 7.4 "Process requisition" on page 75.
- x Processed jobs can be deleted automatically or read back from the host computer by file transfer.
- x The actual removed/added quantity can be acknowledged.

Description of the operator prompts

Processing a job

- Press the [↔] key.
- The job with the highest priority is displayed.
- Press the [←] key.
- Processing of the job is started.

If you want to process a job with another priority:

- Overwrite the job number.
- or
- Press the [X?] key to select another job number via the match code search.

Display



Description of possible operator advisories

The [↔] key has been pressed but no job is present for processing.

Display texts

NO NEW JOB
FOUND

-> CE

9 Information services



- x Depending on the initialisation, some menu items may not be offered.
- x If a list has more than 80 characters per line, the printer prints the excess characters in the next line, which makes the printout difficult to read. In this case, the printer must be set to condensed printing mode or landscape format. See the operating instructions for the printer.

It is also possible to deactivate individual data fields for the printout, which means there are fewer characters per line.

Also refer to:

[?] key ->
2 SYSTEM SERVICES STORAGE MANAGEMENT ->
1 PRINTOUT SETTING

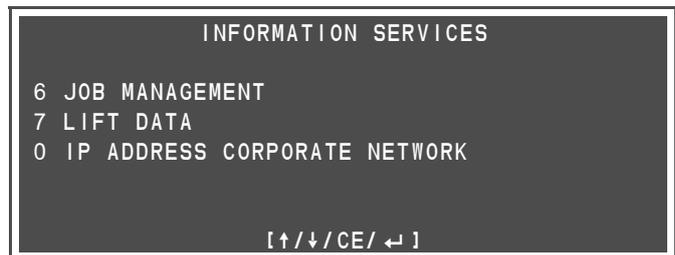
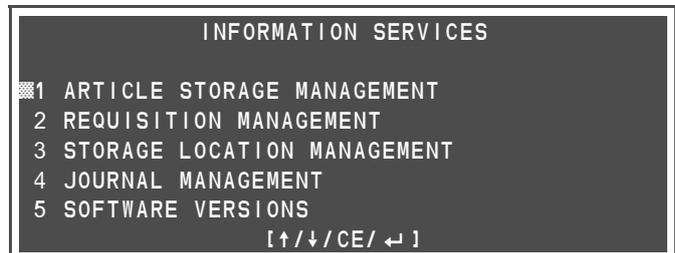
- x Printouts can be cancelled using the [CE] key.

Description of the operator prompts

Display

Call up information services

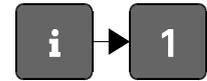
- Press the [i] key.
- ➔ The information services selection menu is displayed.



Menu item	See Chapter	Page
1	9.1	92
2	9.2	97
3	9.3	101
4	9.4	106
5	9.5	109
6	9.6	110
7	9.7	114
0	9.8	115

9 Information services

9.1 Article storage management



Description of the operator prompts

Call up information services for article storage management

- Press the [i] key, then press the [1] key.
- ➔ The information services for article storage management selection menu is displayed.

Display

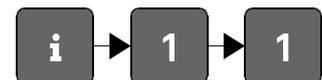
```

ARTICLE STORAGE MANAGEMENT
1 INFO ON ARTICLE MEMORY
2 INFO ON ARTICLE DATA
3 PRINT ARTICLE LIST SORTED BY NUMBER
4 PRINT ARTICLE LIST SORTED BY LOCATION
5 PRINT ORDER RECOMMENDATION LIST
[↑/↓/CE/←]
    
```



Menu item	See Chapter	Page
1	9.1.1	92
2	9.1.2	93
3	9.1.3	94
4	9.1.4	95
5	9.1.5	96

9.1.1 Info on article memory



Description of the operator prompts

Info on article memory

- Press the [i] key, the [1] key and then the [1] key.
- ➔ The assignment of the article storage memory of the control system is displayed:
 - <n1> = Maximum number of articles that can be contained in memory
 - <n2> = Number of articles for which memory space is still available
 - <n3> = Number of articles already in memory
 - <n4> = Number of articles in the lift in memory

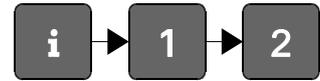
Display

```

Info on article memory
MAXIMUM NUMBER OF ARTICLES      : <n1>
FREE ARTICLE MEMORY LOCATIONS   : <n2>
TOTAL NO. OF STORED ARTICLES    : <n3>
NUMBER OF ARTICLES IN LIFT      : <n4>
-> CE/ ←
    
```

9 Information services

9.1.2 Info on article data

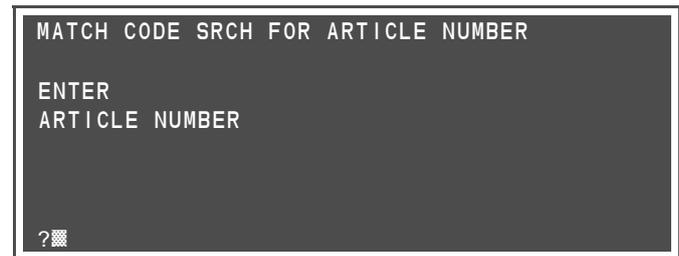


Description of the operator prompts

Display

Info on article data

- Press the [i] key, the [1] key and then the [2] key.
- A prompt appears corresponding to the default settings of search mode (see Chapter 5.7.3 on page 46).
- Enter the search criterion.
- Press the [←] key to show all matching data records.
- The stored article or requisition data records are shown on the display.
- If there is a storage location chain, each article data record in a storage location is displayed. Identical article numbers can be differentiated by their different FIFO status.



Description of possible operator advisories

Display texts

Message if no matching article data records were found.

```
MATCH CODE SRCH FOR ARTICLE NUMBER

ENTER
ARTICLE NUMBER

NO SUCH ARTICLE
FOUND
-> CE
```

Message if no matching requisition data records were found.

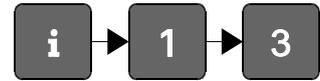
```
MATCH CODE SRCH FOR REQUISITION NUMBER

ENTER
REQUISITION NUMBER

NO SUCH
REQUISITION FOUND
-> CE
```

9 Information services

9.1.3 Print article list sorted by article number



Description of the operator prompts

Display

Print article list sorted by article number

- Press the [i] key, the [1] key and then the [3] key.
- Press the [←] key if you want to print out the complete article list.
- The list of all articles is printed.
- or
- Enter the first article number of the print range.

```

PRINT ARTICLE LIST SORTED BY NUMBER

PRINT COMPLETE ARTICLE LIST:[ ← ]
OR
PRINTOUT OF ARTICLE NUMBER :

```

- Enter the last article number of the print range.
- Press the [←] key.
- List with all articles within the specified range is printed.

```

PRINT ARTICLE LIST SORTED BY NUMBER

PRINTOUT OF ARTICLE NUMBER :
<Article number>
TO ARTICLE NUMBER :

```

Example printout:

```

Article list sorted by article number Page: 1
From: 10001 to: 10002
Date: 2006-03-24 Time: 09:32
*****
Article number Lift Shelf Compartment Comp-D Inventory T-Inv. M-Inv. Cont
*****
10001 1 1 3 1 465 465 50 00101
10002 5 38 7 4 119 166 50 00204
10002 5 29 2 2 47 166 50 00204
***** End of list *****

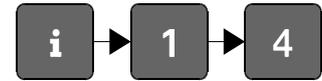
```

Abbreviations:

Comp-D	Compartment depth
Inventory	Inventory at storage location
T-Inv.	Total inventory
M-Inv.	Minimum inventory
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)

9 Information services

9.1.4 Print article list sorted by storage location



Description of the operator prompts

Display

Print article list sorted by location

- Press the [i] key, the [1] key and then the [4] key.
 - Press the [←] key if you want to print out the complete article list.
 - The list of all articles is printed.
- or
- Enter the lift number for the beginning of the print range.

```

PRINT ARTICLE LIST SORTED BY LOCATION

PRINT COMPLETE ARTICLE LIST:[ ← ]
OR
PRINT FROM LIFT NUMBER      : █
    
```

- Enter the shelf and compartment numbers for the beginning of the print range and press the [←] key for each.
- Enter the lift, shelf and compartment number for the end of the print range and press the [←] key for each.
- Press the [←] key.
- List with all articles within the specified range is printed.

```

PRINT ARTICLE LIST SORTED BY LOCATION

FROM LIFT NO      : < // >      TO LIFT NO      :
FROM SHELF NO     : █          TO SHELF NO     :
FROM COMP. NO    :             TO COMP. NO     :
    
```

Example printout:

```

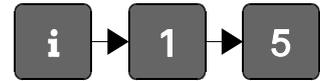
Article list sorted by storage location                                     Page: 1
from lift: 1      shelf: 1 comp: 1      to lift: 1 shelf: 1 lift:2
Date   : 2006-03-23   Time : 09:30
*****
Article number  Lift  Shelf  Compartment  Comp-D  Inventory  T-Inv.  M-Inv.  Cont
*****
945643         1    1    1           1       523       523     50      00101
81232          1    1    1           2        4        16      20      00204
2352556        1    1    2           1      2987     2987    700     00204
***** End of list *****
    
```

Abbreviations:

Comp-D	Compartment depth
Inventory	Inventory at storage location
T-Inv.	Total inventory
M-Inv.	Minimum inventory
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)

9 Information services

9.1.5 Print order recommendation list

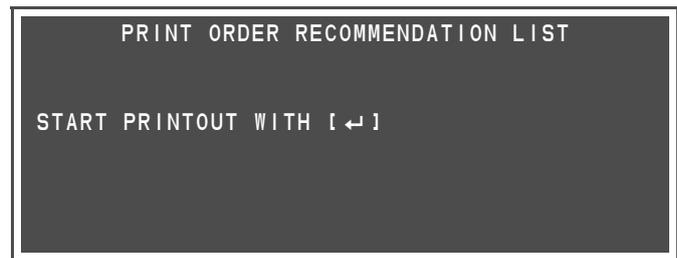


Description of the operator prompts

Display

Print order recommendation list

- Press the [i] key, the [1] key and then the [5] key.
- Press the [←] key.
- ➔ The list of all the articles of which the minimum inventory level has been reached is printed.



Example printout:

```

Order recommendation list sorted by article number                               Page: 1
Date: 2006-03-23 Time: 09:30
*****
      Article number      T-Inv.   M-Inv.
*****
# 1042.127.16           18      25
# 2168.211.19           35     100
# 9345.428.92           35     40
4895.118.92            287    500
4922.222.45            85     150
6012.001.11            249    250
***** End of list *****
    
```

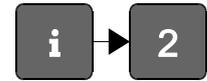
Abbreviations:

T-Inv. Total inventory
M-Inv. Minimum inventory

The "#" indicates articles that have already been printed out, but have not since exceeded the minimum inventory.

9 Information services

9.2 Requisition management

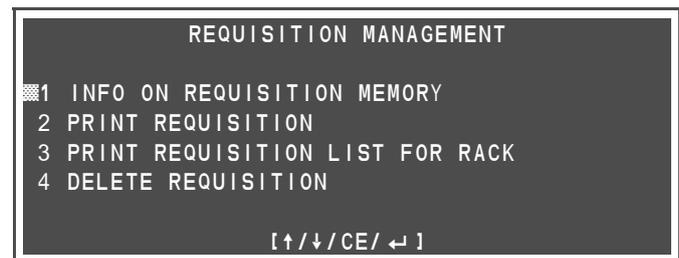


Description of the operator prompts

Display

Call up information services for requisition management

- Press the [i] key, then press the [2] key.
- ➔ The information services for requisition management selection menu is displayed.



Menu item	See Chapter	Page
1	9.2.1	97
2	9.2.2	98
3	9.2.3	99
4	9.2.4	100

9.2.1 Info on requisition memory

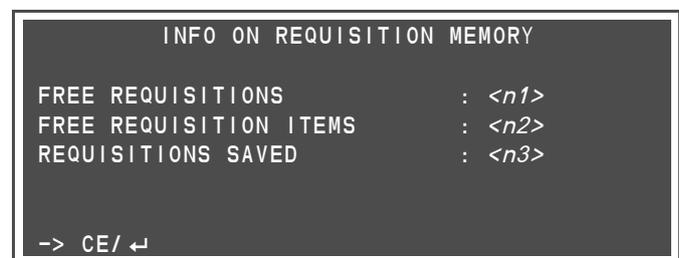


Description of the operator prompts

Display

Info on requisition memory

- Press the [i] key, the [2] key and then the [1] key.
- ➔ The assignment of the requisition storage memory of the control system is displayed:
 - <n1> = Maximum number of requisitions that can still be stored in memory
 - <n2> = Maximum number of individual items that can still be stored in memory
 - <n3> = Number of all requisitions already in memory



9 Information services

9.2.2 Print requisition



Description of the operator prompts

Display

Print requisition

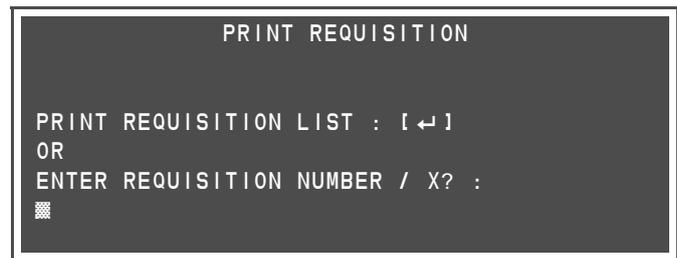
- Press the [i] key, the [2] key and then the [2] key.
- Press the [↵] if you want to print an overview list of all saved requisitions.

→ List with saved requisitions is printed.

or

- Enter or select the requisition number.

→ A list of all the requisition items contained under the entered requisition number is printed out.



Example printout:

```
Requisitions saved                                     Page: 1
Date   : 2006-03-23      Time : 09:30
*****
Requisition
*****
200.047
200.049
100.023
***** End of list *****
```

```
Requisition : 200.049                                     Page: 1
Date   : 2006-03-23      Time : 09:30
*****
Article number  I/O  Quantity Cont  Stat
*****
10086           -    25           00
19328           +     3           00
1323.31671.34  +U   267         00101 01
A1-123-567     -U    12           01
***** End of list *****
```

Abbreviations:

I/O	Goods in/out
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)
Stat	Status (00 = item unprocessed; 01 = item processed)

9 Information services

9.2.3 Print requisition list for rack storage



The individual items in a requisition can be printed out with the requisition list for rack, sorted according to storage locations. The list can be printed out in its entirety or include only a specified storage range, such as a rack store.

Using the list it is possible to first remove or store all the requisition items in the rack store at once. When the operator subsequently processes the requisition, these items are then registered in the rack control system without the user having to go back and forth repeatedly between the rack control system and the storage locations in the rack. This speeds up requisition processing in the rack area.

The list should be printed out immediately before beginning requisition processing. This ensures that the inventory listed is up-to-date and the storage locations can be accessed according to the list.



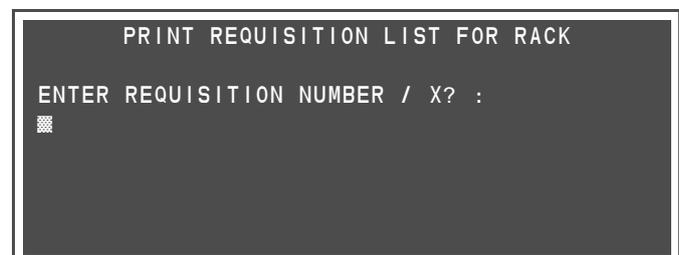
- x The lift number corresponds to the rack number.
- x If the "QUANTITY FACTOR FOR REQUISITION" function is active, the quantity factor for the requisition must be entered before initiating the printout.
- x If the "CONTROL OF QUANTITY FACTOR FOR REQUISITION PROCESSING" function is active, the requisition is checked for the retrieval quantity before the printout, and if there are not enough articles in storage, the error message "INVENTORY TOO SMALL" is displayed. Either enter a smaller quantity factor or replenish stocks before processing the list.

Description of the operator prompts

Print requisition list for rack storage

- Press the [i] key, the [2] key and then the [3] key.
- Enter or select the requisition number.
- Press the [←] key.

Display



9 Information services

Description of the operator prompts

- Press the [↵] key if you want to print a list with all of the requisition items under it.
- ➔ The complete list is printed.
- or
- Enter the lift numbers for the beginning and end of the print range and press the [↵] key for each.
- ➔ The list with all items within the specified storage location area is printed.

Display

```

PRINT REQUISITION LIST FOR RACK

PRINT COMPLETE LIST [↵]
OR
FROM LIFT NO : █ TO LIFT NO :
    
```

Example printout:

```

Requisition list for rack sorted by storage location                               Page: 1
Requisition : 6659.34
From lift: 1                               to lift: 2
Date      : 2006-03-23                       Time : 09:30
*****
Article number  Lift  Shelf  Compartment  Comp-D  I/O  Quantity  Cont
*****
1042.127.16    1    11    3            2      -    6         00203
1042.127.16    1     5    1            1      -    4         00203
4922.222.45    2     2    1            1      -    1         00401
6012.001.11    2     3    1            1      -    5         00401
***** End of list *****
    
```

Abbreviations:

Comp-D	Compartment depth
I/O	Goods in/out
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)

9.2.4 Delete requisition



Description of the operator prompts

Delete requisition

- Press the [i] key, the [2] key and then the [4] key.
- ➔ The entered requisition number, if present, is deleted from the requisition memory.

Display

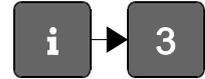
```

DELETE REQUISITION

ENTER REQUISITION NUMBER / X? :
█
    
```

9 Information services

9.3 Storage location management

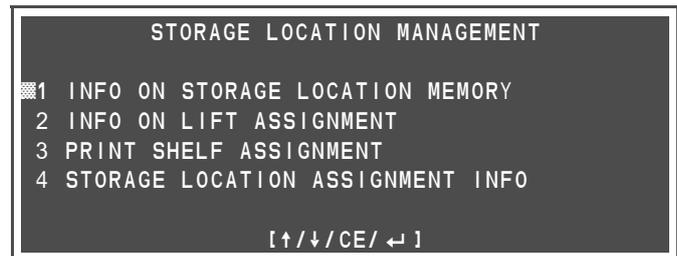


Description of the operator prompts

Display

Call up information services for storage location management

- Press the [i] key, then press the [3] key.
- ➔ The information services for storage location management selection menu is displayed.



Menu item	See Chapter	Page
1	9.3.1	102
2	9.3.2	103
3	9.3.3	104
4	9.3.4	105

9 Information services

9.3.1 Info on storage location memory



Description of the operator prompts

Display

Info on storage location memory

- Press the [i] key, the [3] key and then the [1] key.

→ The assignment of the storage location memory is displayed:

- <ll> = Lift number
- <tt> = No. of shelves
- <ff> = No. of comps.
- <tf> = Number of compartment depths
- <aa> = Number of unassigned carriers in the lift

- <n1> = Number of storage locations in the lift
- <n2> = Number of unassigned storage locations in the lift
- <n3> = Number of assigned storage locations in the lift
- <n4> = Percentage allocation of the carriers of the lift

```
INFO ON STORAGE LOCATION MEMORY
LIFT NUMBER                : <ll>
NUMBER OF SHELVES          : <tt>
NUMBER OF COMPARTMENTS     : <ff>
NUMBER OF COMP. DEPTHS    : <tf>
NUMBER OF FREE CARRIERS    : <aa>
-> CE/ ↵
```

```
INFO ON STORAGE LOCATION MEMORY
STORAGE LOCATIONS IN LIFT  : <n1>
FREE STORAGE LOCATIONS     : <n2>
ASSIGNED STORAGE LOCATIONS : <n3>
CARRIER ASSIGNMENT LEVEL  : <n4>%
-> CE/ ↵
```

9 Information services

9.3.2 Info on lift assignment



Description of the operator prompts

Display

Info on lift assignment

- Press the [i] key, the [3] key and then the [2] key.
- The assignment of the lift is displayed.
- Press the [↑] / [↓] key to scroll forwards or backwards page by page.

INFO ON LIFT ASSIGNMENT				
CARRIER			HEIGHT	
SHELF	LU	FRONT/REAR	ACT./NOMINAL	WEIGHT
1	1	1	1	
2	2	3	3	
3	1	15	1	
4	4	31	2	
[↑/↓/CE]				



- x SHELF = Shelf number
- x LU = Lift unit
LU is displayed only for the Multi-Space. Lift units are counted from left to right, beginning with "1".
- x CARRIER FRONT is the side at which the operator is standing.
- x HEIGHT NOMINAL is shown only if the supplementary module "Storage location height management" is installed.
- x WEIGHT is shown only if the supplementary module "Shelf weighing device" is installed.

9 Information services

9.3.4 Storage location assignment info



Description of the operator prompts

Display

Storage location assignment info

- Press the [**i**] key, the [**3**] key and then the [**4**] key.
- Enter the lift number.
- Press the [**←**] key.

```

STORAGE LOCATION ASSIGNMENT INFO

ENTER STORAGE LOC.
OUTPUT ARTICLE NUMBER

LIFT NUMBER      : █
    
```

- Enter the shelf number.
- Press the [**←**] key.
- Enter the compartment number.
- Press the [**←**] key.
- Enter the compartment depth number.
- Press the [**←**] key.

```

STORAGE LOCATION ASSIGNMENT INFO
LIFT NUMBER      : <Lift number>
SHELF NUMBER     : █
COMPARTMENT NUMBER :
COMP. DEPTH NO.  :
    
```

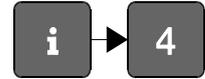
- ➔ The article at the entered storage location is displayed.
- Press the [**←**] key to show more existing articles.

```

STORAGE LOCATION ASSIGNMENT INFO
LIFT NUMBER      : <Lift number>
SHELF NUMBER     : <Shelf number>
COMPARTMENT NUMBER : <Compartment number>
COMP. DEPTH NO.  : <Compartment depth number>
ARTICLE NUMBER   : <Article number>
ARTICLE NAME     : <Article name>
DISPLAY ANOTHER ARTICLE ? [←/CE]
    
```

9 Information services

9.4 Journal management



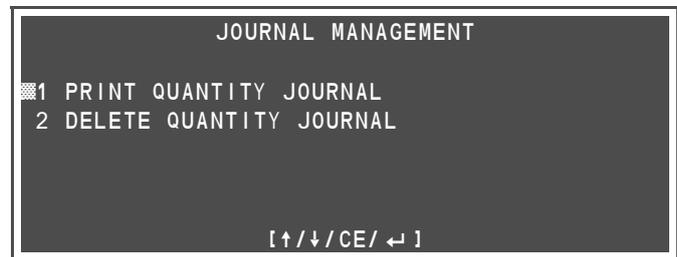
x This menu item appears only if the quantity journal has been activated in the formatting.

Description of the operator prompts

Display

Call up information services for journal management

- Press the [i] key, then press the [4] key.
- The information services for journal management selection menu is displayed.



Menu item	See Chapter	Page
1	9.4.1	107
2	9.4.2	108

9 Information services

9.4.1 Print quantity journal

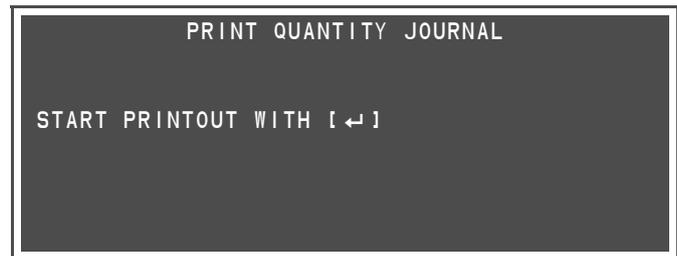


Description of the operator prompts

Display

Print quantity journal

- Press the [i] key, the [4] key and then the [1] key.
- Press the [←] key.
- The quantity journal is printed.
- All storage transactions and all retrieval transactions are added. The printout then shows the total quantity of stored (In) and retrieved (Out) items for each article that has been moved.



Example printout:

```

Quantity journal list sorted by article number                                     Page: 1
Date   : 2006-03-23      Time   : 09:30
*****
Article number  T-Inv.   M-Inv.   Additions  Retrievals
*****
10245          2956     150      345        128
2457.223.56    85        80        74         189
***** End of list *****
    
```

Abbreviations:

```

T-Inv.      Total inventory
M-Inv.      Minimum inventory
    
```

9 Information services

9.4.2 Delete quantity journal

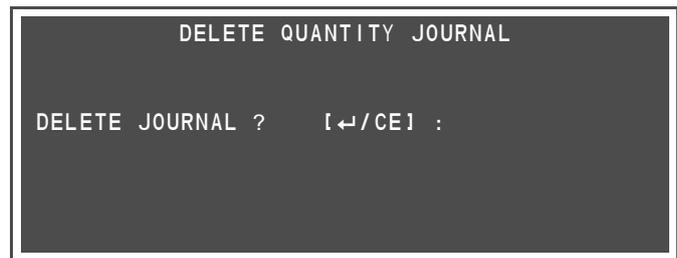


Description of the operator prompts

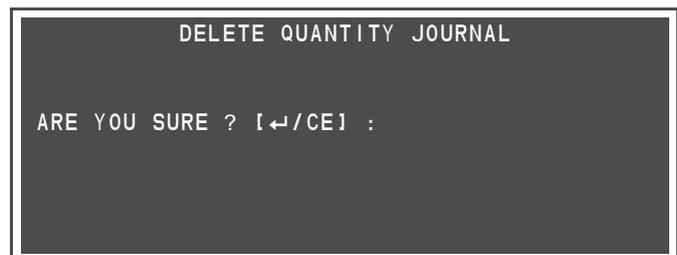
Display

Delete a quantity journal

- Press the [i] key, the [4] key and then the [2] key.
- Press the [←] key.



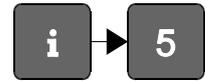
- Press the [←] key.
- The journal is deleted from memory.



- x To ensure that the article memory is not unnecessarily cluttered with journal data relating to articles that have already been deleted, it is advisable to delete the journal regularly or have it read out via host communication.
- x After being read out using host communication, the quantity journal is automatically deleted.

9 Information services

9.5 Software versions



Description of the operator prompts

Display

Call up information services for software versions

- Press the **[i]** key, then press the **[5]** key.
- The software versions used are displayed.

```
SOFTWARE VERSIONS

MP 12D/N CPU I      : <Version>
MP 12N CPU II      : <Version>
MP 100D             : <Version>
MP 100D JACOM      : <Version>
MP 12N WEBSERVER   : <Version>

[CE/↵]
```

```
SOFTWARE VERSIONS

MP 12N TFT          : <Version>
MP 12N SYSTEM      : <Version>
MP 12N KEYBOARD    : <Version>
MP 100D SYSTEM     : <Version>

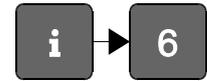
[CE/↵]
```



- x Some items may not be displayed, depending on the configuration.
- x Depending on the "CPU I" hardware, the name "MP 12D/N CPU I (EXT)" may be displayed instead of "MP 12D/N CPU I". "MP 12D/N CPU I (EXT)" means that an "MP 12D/N CPU I" has been built into the lift and that, during initialisation, the presence of the "MP 12 EXT" board(s) has been configured.
- x Depending on the configuration, the name "MP 12N JACOM" may be displayed instead of "MP 100D".
- x Depending on the configuration, the name "MP 100D WEBSERVER" may be displayed instead of "MP 12N WEBSERVER".

9 Information services

9.6 Job management



Description of the operator prompts

Display

Call up information services for job management

- Press the [i] key, then press the [6] key.
- ➔ The information services for job management selection menu is displayed.



Menu item	See Chapter	Page
1	9.6.1	110
2	9.6.2	111
3	9.6.3	112

9.6.1 Info on job memory

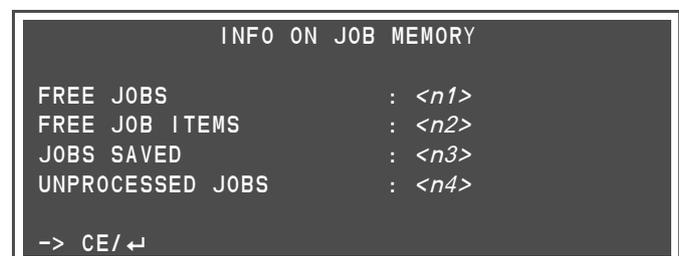


Description of the operator prompts

Display

Info on job memory

- Press the [i] key, the [6] key and then the [1] key.
- ➔ The assignment of the job memory is displayed:
 - <n1> = Maximum number of jobs that can still be stored in memory
 - <n2> = Maximum number of individual items that can still be stored in memory
 - <n3> = Number of all jobs already in memory
 - <n4> = Total number of unprocessed jobs



9 Information services

9.6.2 Print job

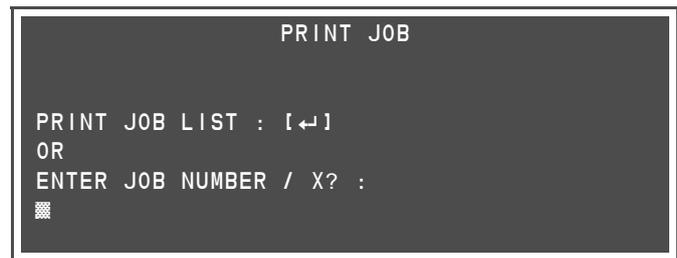


Description of the operator prompts

Display

Print job

- Press the **[i]** key, the **[6]** key and then the **[2]** key.
 - Press the **[↵]** if you want to print an overview list of all saved jobs.
 - ➔ List with all saved jobs is printed.
- or
- Enter or select the job number.
 - ➔ A list of all the job items contained under the entered job number is printed out.



Example printout:

```
Jobs saved                                     Page: 1
Date   : 2006-04-13       Time : 09:30
*****
Job
*****
200.047
200.049
100.023
***** End of list *****
```

```
Job: 200.049                                     Page: 1
Date   : 2006-04-13       Time : 09:30
*****
Article number  I/O  Quantity  Cont  Stat
*****
10086           -    25           00
19328           +     3           00
1323.31671.34  +U   267          00101 01
A1-123-567     -U    12           01
***** End of list *****
```

Abbreviations:

I/O	Goods in/out
Quantity	Specified quantity
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)
Stat	Status (00 = item unprocessed; 01 = item processed)

9 Information services

9.6.3 Print job list for rack



The individual items in a job can be printed out with the job list for rack, sorted according to storage locations. The list can be printed out in its entirety or include only a specified storage range, such as a rack store.

On the basis of this list, all the job items in the area of the rack store can be removed or put back into storage at once. When the operator subsequently processes the job, these items are then registered in the rack control system without the user having to go back and forth repeatedly between the rack control system and the storage locations in the rack. This speeds up job processing in the rack area.

The list should be printed out immediately before beginning job processing. This ensures that the inventory listed is up-to-date and the storage locations can be accessed according to the list.



x The lift number corresponds to the rack number.

Description of the operator prompts

Print job list for rack

- Press the [i] key, the [6] key and then the [3] key.
- Enter or select the job number.
- Press the [←] key.

Display



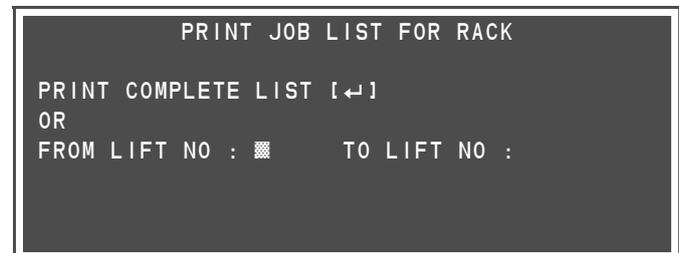
- Press the [←] key if you want to print a complete list with all of the job items under it.

→ The list of all job items is printed.

or

- Enter the lift numbers for the beginning and end of the print range and press the [←] key for each.
- Enter or select the job number.

→ The list with all job items within the specified storage location area is printed.



9 Information services

Example printout:

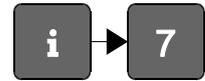
```
Job list for rack sorted by storage location                               Page: 1
Job: 6659.34
From lift: 1                      to lift: 2
Date   : 2006-04-13              Time : 09:30
*****
Article number  Lift  Shelf  Compartment  Comp-D I/O  Quantity Cont
*****
1042.127.16    1    11    3            2    -    6    00203
1042.127.16    1    5     1            1    -    4    00203
4922.222.45    2    2     1            1    -    1    00401
6012.001.11    2    3     1            1    -    5    00401
***** End of list *****
```

Abbreviations:

Comp-D	Compartment depth
I/O	Goods in/out
Quantity	Specified quantity
Cont	Container size in dir. of compartments (characters 1-3) and in dir. of comp. depths (characters 4-5)

9 Information services

9.7 Lift data



Description of the operator prompts

Display

Call up information services for lift data

- Press the [i] key, then press the [7] key.
- ➔ The lift data are displayed.

```
LIFT DATA
<Commission number of lift>

MOTOR OPERATING TIME : <hhh.mm.ss>
-> [HHMMSS]
NUMBER OF LIFT RUNS   : <XXXX>

[CE/↵]
```

Show safety inspection log

- Press the [↵] key.
- ➔ The safety inspections are displayed in succession. The oldest safety inspection is always the commissioning with safety inspection.

```
SAFETY INSPECTION
<Number>
DATE [DD.MM.YY]      : <dd.mm.yy>
INSPECTING
TECHNICIAN/COMP.    : <Technician/comp.>
RESPONSIBLE EMPLOYEE
OF OWNER/OPERATOR   : <Owner/operator>

[CE/↵]
```



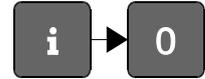
The information recorded in the control system is provided solely as an aid.

The test book and test logs are authoritative. Refer to the lift operating manual.

- For further information, refer to the "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

9 Information services

9.8 Corporate network IP address



Description of the operator prompts

Display

Call up the corporate network IP address

- Press the [i] key, then press the [0] key.
- ➔ The IP address of the corporate network of the *<MP control system>* (MP 12N CPU 2 or MP 100D) is displayed.

```
IP ADDRESS CORPORATE NETWORK
  <MP control system>
  <Requisition number of MP control system>

IP ADDRESS      : <IP address>
-> [0.0.0.0 = NOT AVAILABLE]

[CE/↵]
```


10 System services



Various system parameters can be configured in this menu.



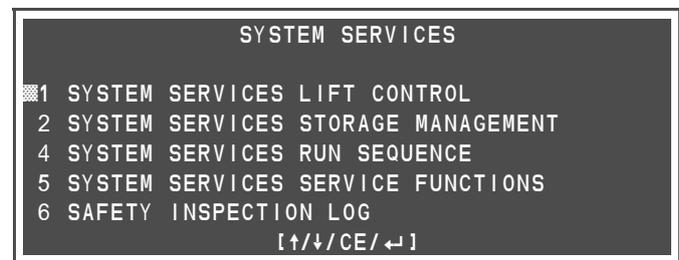
x Depending on the initialisation, some menu items may not be offered.

Description of the operator prompts

Display

Call up system services

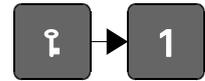
- Press the [F] key.
- The system services selection menu is displayed.



Menu item	See Chapter	Page
1	10.1	118
2	10.2	119
4	10.3	120
5	10.4	121
6	10.5	122

10 System services

10.1 System services lift control



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



- x A password prompt appears if you select menu items 1, 2, 3, 4 or 5.
- x For menu items 1, 2, 3, 4, 5, 8, 9, after you enter the data, a prompt at the end of the submenu asks whether you wish to save the data.

Description of the operator prompts

Call up system services lift control

- Press the [F1] key and the [1] key.
- ➔ The system services lift control selection menu is displayed.

Display

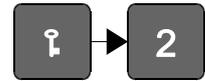
```
SYSTEM SERVICES LIFT CONTROL
1 INTERFACE ASSIGNMENT S1-4
2 SETTING INTERFACE PARAMETERS
3 SELECT FUNCTION
4 KEYLOCK FUNCTION
5 SUPPLEMENTARY MODULES
[↑/↓/CE/←]
```

```
SYSTEM SERVICES LIFT CONTROL
7 SYSTEM CLOCK SETTING
8 SET DISPLAY
9 SCREENSAVER
[↑/↓/CE/←]
```

- For further information, refer to the "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

10 System services

10.2 System services storage management



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

Description of the operator prompts

Call up system services storage management

- Press the [F1] key and the [F2] key.
- ➔ The system services storage management selection menu is displayed.

Display

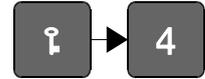
```
SYSTEM SERVICES STORAGE MANAGEMENT
1 PRINTOUT SETTING
2 SYSTEM CLOCK SETTING
3 LANGUAGE SETTING
4 SETTING INTERFACE PARAMETERS
5 PRINT SYSTEM INFORMATION
  [↑/↓/CE/←]
```

```
SYSTEM SERVICES STORAGE MANAGEMENT
6 SYSTEM CONFIGURATION
  [↑/↓/CE/←]
```

- For further information, refer to the "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

10 System services

10.3 System services run sequence



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



x If you select menu item 2, a password prompt appears.

Description of the operator prompts

Call up system services run sequence

- Press the [↑] key and the [4] key.
- ➔ The system services run sequence selection menu is displayed.

Display

```
SYSTEM SERVICES RUN SEQUENCE

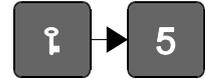
1 SHELF LOCKING
2 REDUNDANCY SYSTEM
4 SHELF PROPERTIES
5 STORAGE OF EMPTY SHELVES

[↑/↓/CE/←]
```

- For further information, refer to the "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

10 System services

10.4 System services service functions



The service functions are used to check the function of the lift during installation and service. Service functions are auxiliary equipment that can be used to locate faults in the lift quickly and easily.



SAFETY INSTRUCTION

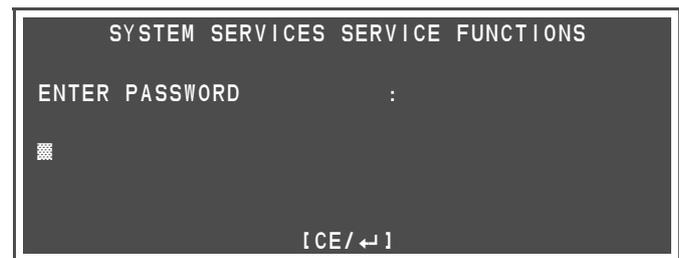
The service functions are protected by the service password. The service functions are intended for specially and verifiably *trained, authorised* personnel *only*.

Description of the operator prompts

Call up system services service functions

- Press the [?] key and the [5] key.
- Enter password.

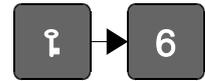
Display



- For further information, refer to the "Supplementary Description of the Service Functions for Microprocessor Control System MP 12D/N Lean-Lift, Multi-Space and Rotomat".

10 System services

10.5 Safety inspection log



In this menu item, you can update log data for the safety inspection. For control systems with clock module, the operator is reminded of the safety inspection annually.



The information recorded in the control system is provided solely as an aid.

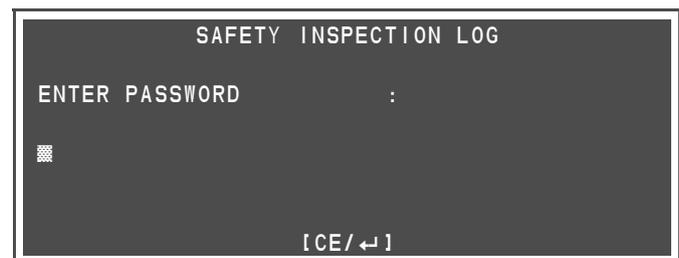
The test book and test logs are authoritative. Refer to the operating manual.

Description of the operator prompts

Enter the safety inspection log

- Press the [F1] key and the [6] key.
- Enter password.

Display



- For further information, refer to the "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

11 Operation on info browser / PC browser

11.1 General instructions:

There are two options for operation with browser:

1. Operation with an info browser in combination with a TFT display (touchscreen operation, only with MP 12-N-TFT).
2. Operation with a PC browser. The PC must be connected to the control system via Ethernet (e.g. Internet Explorer).

The following is a description of operator prompts when using the info browser.

Operator prompts when using the PC browser (e.g. Internet Explorer) differ only in minor details.

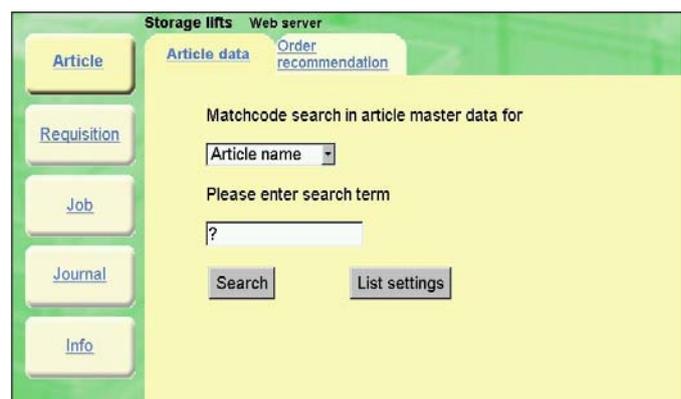
11.1.1 Basic information about the touchscreen

To prevent damage to the surface of the TFT display, touch it using your fingers or a blunt, non-smearing object only.

The buttons that appear in the corresponding menus must be touched just enough to visually indicate them as having been pressed on the screen.

11.1.2 Basic information about the menus

After you have activated the "Article storage management" storage management package and registered the lift, the "Storage lifts" layout appears in the info browser.



Refer to the corresponding main chapters for information about the Article, Requisition, Job, Journal and Info menu items.

11 Operation on info browser / PC browser

List settings

For the search functions (match code search), the data records found are displayed in lists.

The number of lines per page can be defined under "List settings". A maximum of 50 lines can be shown on a page.

Data fields can be enabled or disabled. Then, only the enabled data fields are displayed in the list.

The settings are saved and maintained even after the control system is switched off so that they can be modified individually at any time.

Example of list settings for article menu

The screenshot shows the 'List settings' configuration page in the 'Storage lifts' web server interface. The page has a green header with 'Storage lifts' and 'Web server' tabs. Below the header, there are navigation buttons for 'Article', 'Requisition', 'Job', 'Journal', 'User managem.', and 'Info'. The 'Article' button is highlighted. The main content area is titled 'List settings:' and contains two columns of settings. The first column lists data fields with checkboxes, and the second column lists inventory-related settings with checkboxes and a text input field. A 'Save' button is located at the bottom of the settings area.

List settings:	
Article number	<input checked="" type="checkbox"/>
Article name	<input checked="" type="checkbox"/>
Lift number	<input checked="" type="checkbox"/>
Shelf number	<input checked="" type="checkbox"/>
Compartment number	<input checked="" type="checkbox"/>
Compartment depth number	<input checked="" type="checkbox"/>
Container	<input checked="" type="checkbox"/>
Invent.	<input checked="" type="checkbox"/>
Minimum inventory	<input checked="" type="checkbox"/>
Total inventory	<input checked="" type="checkbox"/>
Fifo	<input checked="" type="checkbox"/>
Number of lines	6

11 Operation on info browser / PC browser

11.1.3 Instructions for entering the search term (match code)

The match code search function allows the user to look for data in the memory according to various search criteria that can be applied to different data fields.

The search criterion is a character string (termed a match code) entered by the user. All the search data fields in the memory are searched for this string. All the data records that match the search criterion can be shown on the display. The more characters contained in the match code, the narrower the search range will be and the fewer matching data records will be offered for selection.

There are various options for entering a match code:

Possible match codes	Description
?	<ul style="list-style-type: none">• Use of the question mark. <p>➔ All the data records with the search data field are selected.</p>
<Character string>?	<ul style="list-style-type: none">• A character string followed by a question mark. <p>➔ The system searches for data which start with this character string.</p>
?<Character string>	<ul style="list-style-type: none">• Use of the question mark at the beginning, followed by a character string. <p>➔ The system searches for data which end with this character string.</p>
?<Character string>?<Character string>?	<ul style="list-style-type: none">• Multiple character strings separated by question marks and with question marks at the beginning and end. <p>➔ The system searches for data which contain the various character strings in the search data field in the order specified.</p>

11 Operation on info browser / PC browser

11.2 Article menu

In the "Article" menu, you can carry out either of two types of match code search:

- For article master data
- Within an order recommendation list

An order recommendation list includes all articles with inventory levels below the minimum.

Description of the operator prompts

Match code search for article master data

- Touch the **Article data** tab.
- Touch the selection list and select a data field.
You can select the following data fields:
 - Article number
 - Article name
 - Special data fields (if activated in the formatting)
- Touch the input field and enter the search term via the keyboard.
- Touch the **Search** button.

Info browser

→ All the data records that match the search criterion are shown in a list.

- If necessary, touch the **Next** button to scroll through the list.
- Touch the desired data record in the list to select this article number for the storage/retrieval.

Article number	Article name	Lift	Shelf	Comp.	Compartment depth	Invent.	Container	Minimum inventory	Total inventory
1002	1N4148	5	6	3	4	916	00101	0	916
1001	74 HC 00	5	4	1	1	284	00101	50	350
1001	74 HC 00	5	2	3	1	66	00101	50	350
1004	BC 548A	5	2	2	2	689	00101	280	689
1005	BC 548B	5	2	1	1	684	00101	0	684
1006	CPU 80486	5	2	2	1	412	00101	140	412

11 Operation on info browser / PC browser

Description of the operator prompts

Info browser

Match code search in order recommendation list

- Touch the **Order recommendation** tab.
- Touch the selection list and select a data field.
You can select the following data fields:
 - Article number
 - Article name
 - Special data fields (if activated in the formatting)
- Touch the input field and enter the search term via the keyboard.
- Touch the **Search** button.

- All the data records that match the search criterion are shown in a list.
- If necessary, touch the **Next** button to scroll through the list.

Article number	Article name	Minimum inventory	Total inventory
1	--	50	23
2	--	25	12
3	--	500	456
4	--	20	12
5	--	88	23
6	--	155	45

11 Operation on info browser / PC browser

11.3 Requisition menu

You can carry out a match code search for requisition data in the "Requisition" menu.

Description of the operator prompts

Match code search for requisition data

- Touch the **Requisition** button in the navigation bar.
- Touch the selection list and select a data field.
You can select the following data fields:
 - Requisition number
 - Special data fields (if activated in the formatting)
- Touch the input field and enter the search term via the keyboard.
- Touch the **Search** button.

- All the data records that match the search criterion are shown in a list.
- If necessary, touch the **Next** button to scroll through the list.
- Touch the desired data record in the list to display the contents of the requisition.

Info browser

Storage lifts Web server

Article Requisition data

Match code search for

Requisition number -

Please enter search term

?

Search List settings

Storage lifts Web server

Job data Next Menu

Job list - all jobs:

Job number	Status	Priority	Date	Time
JOB-1	00	100	01.01.70	00:05
JOB-2	00	100	01.01.70	00:05
JOB-3	00	100	01.01.70	00:05
JOB-4	00	100	01.01.70	00:05

11 Operation on info browser / PC browser

11.4 Job menu

You can carry out a match code search for job data in the "Job" menu.

Description of the operator prompts

Match code search for job data

- Touch the selection list (1) and select a data field.
You can select the following data fields:
 - Job number
 - Special data fields (if activated in the formatting)
- Touch the selection list (2) and select a parameter.
You can select the following parameters:
 - Job list - all jobs
 - Job list - unprocessed jobs
- Touch the input field and enter the search term via the keyboard.
- Touch the **Search** button.

- ➔ All the data records that match the search criterion are shown in a list.
- If necessary, touch the **Next** button to scroll through the list.
- Touch the desired data record in the list to display the contents of the job.

Info browser

Job number	Status	Priority	Date	Time
JOB-1	00	100	01.01.70	00:05
JOB-2	00	100	01.01.70	00:05
JOB-3	00	100	01.01.70	00:05
JOB-4	00	100	01.01.70	00:05

11 Operation on info browser / PC browser

11.5 Journal menu

You can display either of two types of journal in the "Journal" menu:

- Quantity journal (if activated in the formatting) or
- Operations journal (if activated in the formatting).

A quantity journal shows all in and out movements of an article in list form.

An operations journal shows each individual change of the inventory of an article in list form.

➤ For additional information, refer to the "Supplementary Description of the Operations Journal Microprocessor Control System MP 12D/N - S / H[MP 100D] Lean-Lift, Multi-Space and Rotomat".



x The **Operations journal** tab appears for the supplementary module "Operations journal logging" only.

Description of the operator prompts

Display a quantity journal

- Enable the tick boxes for the desired data fields. These enabled data fields are then shown in the quantity journal.
 - Touch the input field and enter the number of lines via the keyboard. A maximum of 50 lines can be shown per page.
 - Touch the **Show list** button.
- ➔ The quantity journal is displayed.

Info browser

Set display of quantity journal:	
Article number	<input checked="" type="checkbox"/>
Article name	<input checked="" type="checkbox"/>
Minimum inventory	<input checked="" type="checkbox"/>
Total inventory	<input checked="" type="checkbox"/>
Journal in	<input checked="" type="checkbox"/>
Journal out	<input checked="" type="checkbox"/>

Number of lines:

Display List

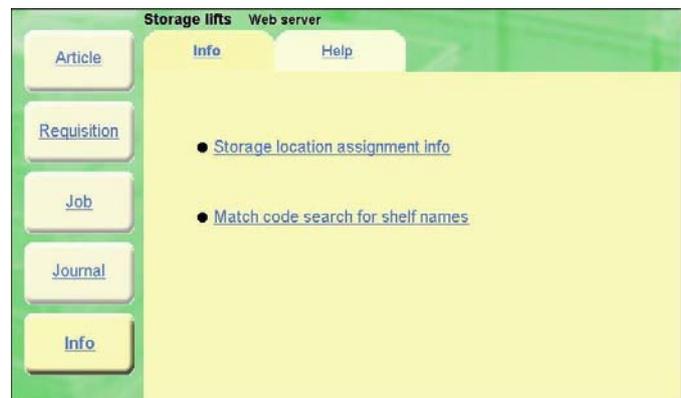
11 Operation on info browser / PC browser

11.6 Info menu

In the "Info" menu, you can display the storage location assignment of the lift and carry out a match code search by shelf names. You can also display explanations of various terms used and the functions of the keys of the MP 12N control system.

Description of the operator prompts

Info browser



The following functions are now possible:

Function	See Chapter	Page
Storage location assignment info	11.6.1	134
Match code search for shelf name	11.6.2	135
Help function	11.6.3	136

11 Operation on info browser / PC browser

11.6.1 Storage location assignment info

In this menu, you can display all articles of a storage location (maximum 255).

You can select the storage location with the following options:

- ◆ If the storage location is known, you can enter the lift, shelf, compartment and compartment depth number in input fields.
- ◆ The lift, shelf, compartment and compartment depth number can be selected using graphical displays.

Description of the operator prompts

Storage location assignment info

Requirements: "Info" menu is called up.

- Click the "Storage location assignment info" link.
- ➔ The lift numbers of all registered lifts are displayed. A lift group with a maximum of 16 lifts is displayed on one page. In the bottom area, you can switch to other lift groups, where applicable.

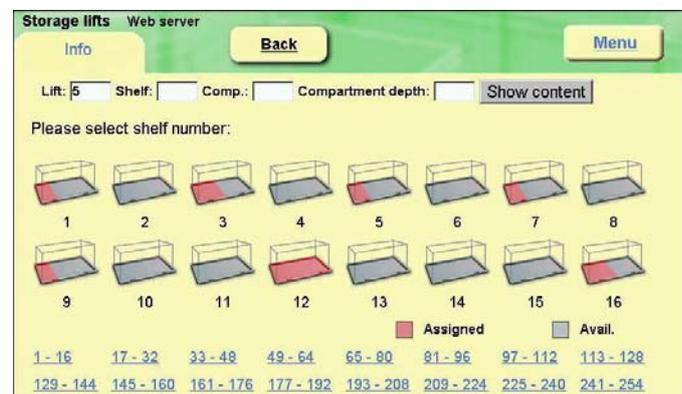
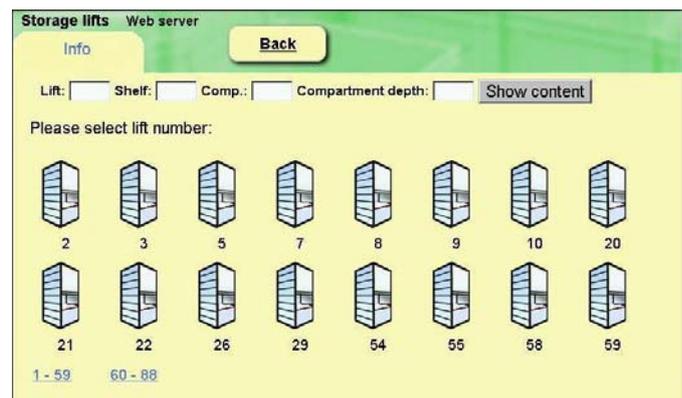
If you already know the storage location:

- Enter the lift, shelf, and compartment depth number in the corresponding input fields using the keyboard.
- Touch the **Show contents** button.
- ➔ The contents of the storage location are displayed in a table. (See "Display storage location assignment", page 134).

If you want to select the storage location graphically:

- Touch the link of the selected lift group if necessary.
- Touch the desired lift number.
- ➔ All shelves in the lift are displayed graphically. A shelf group with a maximum of 16 shelves is displayed on one page. In the lower area, additional shelf groups are shown as links.
- ➔ The shelves are colour-coded according to how fully occupied they are. Four classifications indicate empty shelves and fully occupied shelves.
- Touch the link of the selected shelf group if necessary.
- Touch the desired shelf number.

Info browser



11 Operation on info browser / PC browser

Description of the operator prompts

- The shelf is displayed graphically with its compartment/compartment depth divisions. The compartment numbers are displayed below the shelf. The compartment depth numbers are displayed to the left of the shelf.
- All occupied storage locations are indicated by their colour.

If you want to assign a shelf name to the shelf:

- Touch "Shelf name" in the input field and enter the shelf name (max. 20 characters) via the keyboard.
- Touch the **Apply name** button.

If a name has already been assigned, it is shown in the "Shelf name" input field.

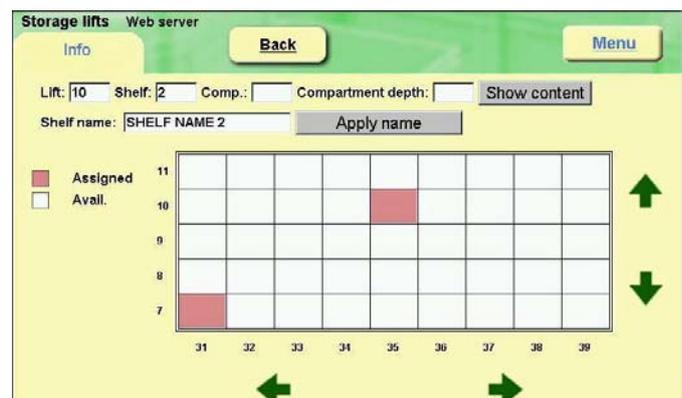
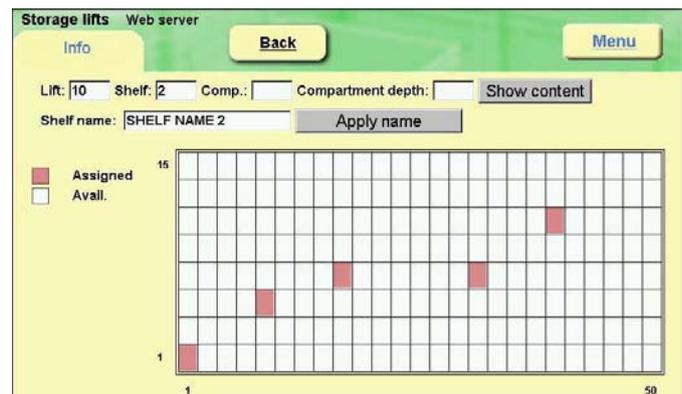
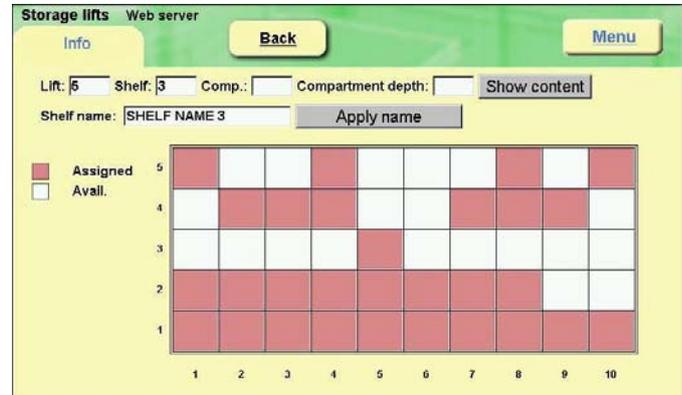
- Touch the desired storage location.

If the shelf is divided into a very large number of compartments and compartment depths:

- Multiple compartments and compartment depths are displayed combined into areas.
- The occupied storage locations are indicated by their colour. The colour-coding is possible up to a maximum value of 1024 storage locations per shelf only.
- Touch the desired storage area.

- The area is displayed in enlarged form.
- The occupied storage locations within the area are indicated by their colour.
- If necessary, touch the arrow to change the area display.
- Touch the desired storage location.

Info browser



11 Operation on info browser / PC browser

Description of the operator prompts

Info browser

Display storage location assignment

→ The contents of the storage location are displayed in a table.

Article number	Article name	Invent.
9	--	1

11 Operation on info browser / PC browser

11.6.2 Match code search for shelf name

You can carry out a match code search for shelf names in the "Info" menu.

The shelf names can be assigned under "Storage location assignment info".

Description of the operator prompts

Match code search for shelf name

Requirements: "Info" menu is called up.

- Touch the input field and enter the search term via the keyboard.
- Touch the **Search** button.

Info browser

Storage lifts Web server

Article Info Help

Match code search for

Shelf name -

Please enter search term

?

Search List settings

- All the shelves that match the search criterion are shown in a list.
- Touch the desired shelf name to show the shelf assignment.

Storage lifts Web server

Article Info Help

Shelf name	Shelf number	Lift number
SHELF NAME 1	1	5
SHELF NAME 2	2	5
SHELF NAME 3	3	5
SHELF NAME 4	4	5
SHELF NAME 5	5	5

11 Operation on info browser / PC browser

11.6.3 Help

In the "Help" menu, you can display explanations of various terms used and the functions of the keys of the MP 12N control system.

Description of the operator prompts

Info browser

Call up the "Help" menu

Requirements: "Info" menu is called up.

- Touch the **Help** tab.
 - Touch the desired link.
- Explanations of terms used and key functions are displayed.



11 Operation on info browser / PC browser

11.7 Lift run graphics



x You can enable or disable the lift run graphics under "SET DISPLAY".

Also refer to:

[F1] key ->

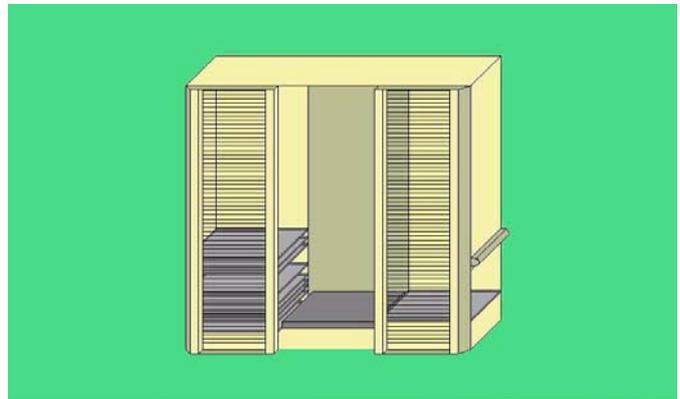
1 SYSTEM SERVICES LIFT CONTROL ->

8 SET DISPLAY

Description of the operator prompts

→ The lift run graphics are displayed during the lift run.

TFT display



12 Program version MP 12N-H[HOST-DATA]

12.1 Overview of features



x Host communication data record buffer is possible only with the microprocessor control system MP 12N-H[HOST-DATA]).

- ◆ In this mode, the data records can be written to a buffer. If data records exist for the lift/access point, the yellow LED in the **[↔]** key is lit. You can retrieve them sequentially by pressing the **[↔]** key.
- ◆ Storage management takes place in the host.
- ◆ A maximum of 500 data records can be saved in the buffer.
- ◆ The host is connected to access point 1 of the master lift via Ethernet. (By default, lift 1 is the master lift.)
- ◆ Processed data records can be read back if necessary.
- ◆ The display while processing the data records can be influenced by the transferred data fields of the data records.

12.2 Description of the hardware components

12.2.1 Possible displays

➤ See Chapter 3.1, page 19

12.2.2 Overview of keyboard

➤ See Chapter 3.2, page 20

12.2.3 Key functions

Confirm entry,
set safety system and start lift run



Delete an entry, cancel a function,
acknowledge an error message



Stopping a lift run
To stop a lift run in hazardous situations, use the
emergency stop switch.



Delete the character last entered



Processing a data record
Yellow LED is lit if data record is found and if the control system
is in the main menu.



12 Program version MP 12N-H[HOST-DATA]

Store shelf from access position



Bring shelf to access position



Optimisation run



Adding a new shelf



Removing a shelf



Activate information and service programs



Activate system services



Switch language



Data record search in the lift (only with TFT display)



Match code search for data fields in the lift (only with TFT display)



Open and close door (only with automatic sliding door),
unlock door (only with manual doors and lift run only with door closed)



Fast keylock function (if activated)



12.3 Extended functions with supplementary modules

➤ See Chapter 4, page 23

12 Program version MP 12N-H[HOST-DATA]

12.4 General

12.4.1 Switching on the lift



x If the lift is operated with external inventory control programs, the software on the host computer must also be started up.

Description of the operator prompts

Display

Lift control system start-up message

- Switch on lift with the main switch.
- Wait for the control system to start up.
- The red LED in the [STOP] key lights up.
- The lift type and control system type appear on the display. The display text may vary depending on the configuration.
- Press the [←] key.
- The green LED is illuminated.



Main menu of the control system (basic state)

- The control system is ready for operation and the main menu is displayed.
- x The main menu of the control system is the basic state. It is reached after operational processes are complete and can differ according to the configuration.



Description of possible operator advisories

Display

The software that manages the host data record buffer is not yet ready, as the data record buffer must be initialised.

No data transfer between lift control system and master lift. The master lift is the lift/access point on which the host data record buffer is managed.

HOST DATA RECORD
BUFFER NOT YET READY
↑/↓/↔/+/-/i/?

SWITCH ON
MASTER LIFT (x)
↑/↓/↔/+/-/i/?

12 Program version MP 12N-H[HOST-DATA]

12.4.2 Basic shelf functions

- See Chapter 5.2, page 26

12.4.3 Changing the language

- See Chapter 5.4, page 38

12.4.4 Fast keylock function

- See Chapter 5.5, page 38

12 Program version MP 12N-H[HOST-DATA]

12.5 Processing a data record



You can cancel processing of the data record by pressing the **[CE]** key. In this case, however, the data record is not lost and can be retrieved later by pressing the **[↔]** key.

The host can specify via the data fields whether a quantity correction is possible. For the quantity correction, the cursor flashes while the quantity is entered. You can accept or change the displayed quantity.

Description of the operator prompts

Display

Process data record with operation "+"

- Press the **[↔]** key.
- ➔ Data record, if available, is retrieved from the data record buffer and processed according to the FIFO principle.
- Press the **[↔]** key.
- ➔ The next data records are retrieved and processed. If no more data records are found, the control system switches to the main menu.

```
<Job>
<Article number>
<Name>
<tt ff tf> + <qq>
```

Process data record with operation "-"

- Press the **[↔]** key.
- ➔ Data record, if available, is retrieved from the data record buffer and processed according to the FIFO principle.
- Press the **[↔]** key.
- ➔ The next data records are retrieved and processed. If no more data records are found, the control system switches to the main menu.

```
<Job>
<Article number>
<Name>
<tt ff tf> - <qq>
```

12 Program version MP 12N-H[HOST-DATA]

Description of possible operator advisories

Display

No data record has been found.

NO NEW DATA RECORD
FOUND

-> CE

The shelf you want to access is not found in the lift.
The data record is acknowledged with the status "Error".

<Article number>
SHELF NOT
FOUND
<tt ff tf> -> CE

The compartment you want to access is not found in the
lift.
The data record is acknowledged with the status "Error".

<Article number>
COMPARTMENT NOT
FOUND
<tt ff tf> -> CE

The compartment depth you want to access is not found
in the lift.
The data record is acknowledged with the status "Error".

<Article number>
COMPARTMENT DEPTH
NOT FOUND
<tt ff tf> -> CE

12 Program version MP 12N-H[HOST-DATA]

12.6 Information services



Description of the operator prompts

Display

Call up information services

- Press the [i] key.
- The information services selection menu is displayed.

```

INFORMATION SERVICES

3 STORAGE LOCATION MANAGEMENT
5 SOFTWARE VERSIONS
7 LIFT DATA
9 HOST DATA RECORD BUFFER
0 IP ADDRESS CORPORATE NETWORK

[↑/↓/CE/↵]
    
```



Menu item	See Chapter	Page
3	9.3.1	102
5	9.5	109
7	9.7	114
9	12.6	145
0	9.8	115

Call up host data record buffer

- Press the [i] key, then press the [9] key.
- The host data record buffer selection menu is displayed.



```

9 HOST DATA RECORD BUFFER

1 INFO DATA RECORD BUFFER STORAGE MEM.

[↑/↓/CE/↵]
    
```

Info on data record buffer memory

- Press the [i] key, the [9] key and then the [1] key.
- The number of free and saved data records is displayed.



```

INFO ON DATA RECORD BUFFER MEMORY

FREE DATA RECORDS      :      500

SAVED DATA RECORDS
IN MULTI-UNIT NET      :      0
IN LIFT                 :      0

[CE/↵]
    
```

12 Program version MP 12N-H[HOST-DATA]

12.7 System services



Description of the operator prompts

Display

Call up system services

- Press the [F1] key.
- The system services selection menu is displayed.



Menu item	see
1	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"
3	➤ Chapter 12.7, page 147
4	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"
5	➤ "Supplementary Description of the Service Functions for Microprocessor Control System MP 12D/N Lean-Lift, Multi-Space and Rotomat"
6	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"

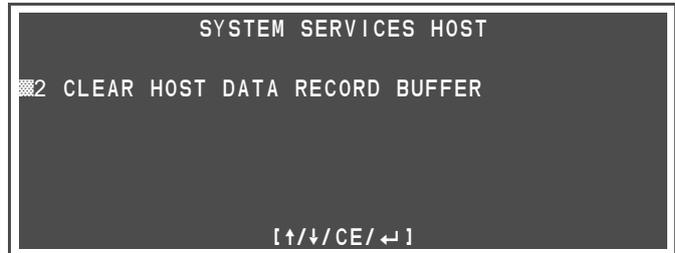
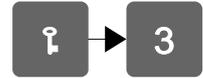
12 Program version MP 12N-H[HOST-DATA]

Description of the operator prompts

Display

Call up system services host

- Press the [F1] key and the [F3] key.
- The system services host selection menu is displayed.



Menu item	see
2	Page 147

Clear host data record buffer

- Press the [F1] key, the [F3] key and then the [F2] key.
- Enter the password (default setting is 22488).
- Press the [←] key.



- Press the [←] key.
- The data record buffer has been completely deleted.



12 Program version MP 12N-H[HOST-DATA]

12.8 Operation on info browser / PC browser



x Operation using the info browser is possible only in combination with a TFT display (touchscreen operation).

The following is a description of operator prompts when using the info browser.

Operator prompts when using the PC browser (e.g. Internet Explorer) differ only in minor details.
Refer also to the "Technical Description of the Microprocessor Control System MP 12N-S / MP 100D Server for Lean-Lift, Multi-Space and Rotomat."

12.8.1 Main menu

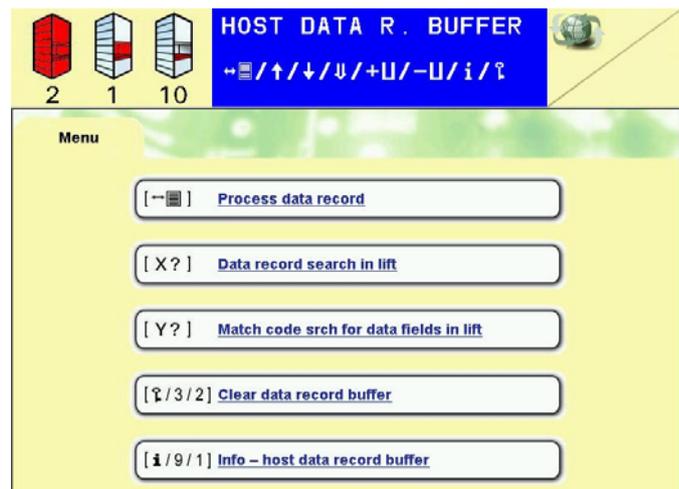
Description of the operator prompts

Main menu of the control system (basic state)

After the lift is switched on and the control system has booted up, the main menu appears.

→ At the upper left, the lift number, the access point number and the shelf number of the shelf in the access point are displayed.

Info browser



The following functions are now possible:

Function	See Chapter	Page
Processing a data record	12.8.2	149
Data record search in the lift	12.8.3	151
Match code search for data fields in the lift	12.8.4	152
Delete data record buffer	12.8.5	154
Info-host data record buffer	12.8.6	155

12 Program version MP 12N-H[HOST-DATA]

12.8.2 Processing a data record

Description of the operator prompts

Info browser

Processing a data record

- In the main menu, press the "Process data record" button.
Alternative: Press the [↔] key.
- Data record, if available, is retrieved from the data record buffer according to the FIFO principle.
- After the lift run is complete, operator can be prompted to enter data (e.g. batch number). This is defined in the data record.

Job	4567.123
Article number	066/528-923
Article name	Motor block
Container	101
Total inventory	20
Minimum inventory	10
Inventory	20
Priority	100
Cost	21
Status	New
Goods receipt	20.09.05
Note	The object is very heavy

- All assigned and initialised data fields of the data record transmitted by the host are displayed.
A quantity correction is possible depending on the structure of the data record.

Job	4567.123
Article number	066/528-923
Article name	Motor block
Container	101
Total inventory	20
Minimum inventory	10
Inventory	20
Priority	100
Cost	21
Status	New
Goods receipt	20.09.05
Note	The object is very heavy

- Press the [↔] key.

12 Program version MP 12N-H[HOST-DATA]

Description of the operator prompts

→ The data record has been "registered" and entered into the list of processed data records. The next data records are retrieved and processed. If no more data records are found, the control system switches to the main menu.

Info browser

Info	
Job	4567.123
Article number	066/528-923
Article name	Motor block
Container	101
Total inventory	20
Minimum inventory	10
Inventory	20
Priority	100
Cost	21
Status	New
Goods receipt	20.09.05
Note	The object is very heavy

12 Program version MP 12N-H[HOST-DATA]

12.8.3 Data record search in the lift

All data records in the lift that have not been processed can be displayed in this menu.

Description of the operator prompts

Data record search in the lift

- In the main menu, press the "Data record search in lift" button.

Alternative: Press the [X?] key.

The following functions are possible:

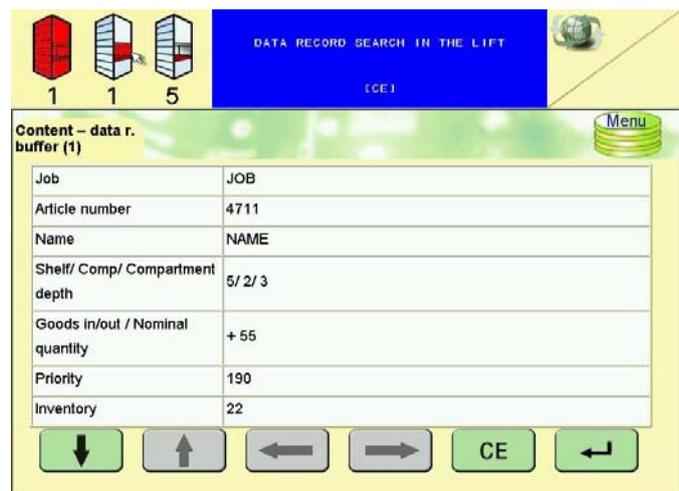
-  - Display next data fields
-  - Display previous data fields
-  - Display next data record
-  - Display previous data record
-  - Switch to main menu
-  Start processing of the data record

x Buttons that are disabled are greyed out.

If  has been pressed:

→ The Additional data fields are displayed.

Info browser



Content - data r. buffer (1) Menu

Job	JOB
Article number	4711
Name	NAME
Shelf/ Comp/ Compartment depth	5/ 2/ 3
Goods in/out / Nominal quantity	+ 55
Priority	190
Inventory	22

Navigation buttons:      



Content - data r. buffer (1) Menu

Container	202
Minimum inventory	66
Total inventory	44
Date	090206
Time of day	0634

Navigation buttons:      

12 Program version MP 12N-H[HOST-DATA]

12.8.4 Match code search for data fields in the lift

You can carry out a match code search for article master data in this menu.

Description of the operator prompts

Info browser

Match code search for data fields in the lift

- In the main menu, press the "Match code search for data fields in the lift" button.
Alternative: Press the [Y?] key.
- Touch the selection list and select data fields. You can select the following data fields:
 - Job number
 - Article number
 - Article name
 - Date
 - Special data fields
- Touch input field (1) and enter the lift number via the keyboard.
- Touch input field (2) and enter the search term via the keyboard.
For information on entering the search term (match code), see Chapter 5.7.4, page 47.
- If necessary, touch the **List settings** button to change the layout of the list. (For additional information, refer to the section on "List settings" on page 153).
- Touch the **Search** button.

→ All the data records that match the search criterion are shown.

The following functions are possible:

- Display next data fields
- Display previous data fields
- Display next data record
- Display previous data record
- Switch to main menu
- Start processing of the data record

x Buttons that are disabled are greyed out.

Job	JOB
Article number	4711
Name	NAME
Shelf/ Comp/ Compartment depth	5/ 2/ 3
Goods in/out / Nominal quantity	+ 55
Priority	190
Inventory	22

12 Program version MP 12N-H[HOST-DATA]

Description of the operator prompts

Info browser

List settings

Here, you can define which data records are displayed for the match code and data record search.

- Enable the tick boxes for the desired data fields.
 - Touch the **Save** button.
- The settings are accepted.

List settings:	
Job	<input checked="" type="checkbox"/>
Article number	<input checked="" type="checkbox"/>
Name	<input checked="" type="checkbox"/>
Lift	<input checked="" type="checkbox"/>
Access point	<input checked="" type="checkbox"/>
Shelf	<input checked="" type="checkbox"/>
Comp	<input checked="" type="checkbox"/>
Compartment depth	<input checked="" type="checkbox"/>
Container	<input checked="" type="checkbox"/>
Nominal quantity	<input checked="" type="checkbox"/>
Goods in/out	<input checked="" type="checkbox"/>
Priority	<input checked="" type="checkbox"/>
Inventory	<input checked="" type="checkbox"/>
Minimum inventory	<input checked="" type="checkbox"/>
Total inventory	<input checked="" type="checkbox"/>

12 Program version MP 12N-H[HOST-DATA]

12.8.5 Delete data record buffer

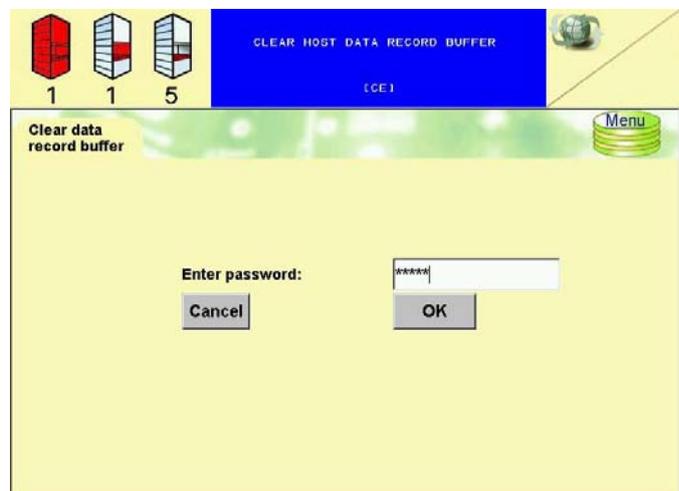
All data records in the buffer memory that have not been processed can be deleted in this menu.

Description of the operator prompts

Info browser

Delete data record buffer

- In the main menu, press the "Clear data record buffer" button.
Alternative: On the keyboard, press the [F1] key, [3] key and then the [F1] key.
 - Touch input field and enter the password via the keyboard (default setting is 22488).
 - Touch the **OK** button.
- The data record buffer has been completely deleted.



12 Program version MP 12N-H[HOST-DATA]

12.8.6 Info-host data record buffer

This menu includes graphic displays of the following:

- Number of free data records
- Number of stored data records in the lift
- Number of saved data records in the multi-unit network

The information always pertains to the unprocessed data records.

Description of the operator prompts

Info-host data record buffer

- In the main menu, press the "Info-host data record buffer" button.
Alternative: On the keyboard, press the [i] key, the [9] key and then the [1] key.

Info browser



13 Program version MP 12N-H[HOST-WEB]

13.1 Overview of features

The control computer (Host) is connected to the Ethernet interface. Data transmission takes place via a TCP/IP connection. The lift is the TCP server and the host is the TCP client. As such, the host initialises the connection.

With the TFT display, the operator prompts are displayed on the info browser (embedded browser), which connects to the Web server of the host.

13.2 Description of the hardware components

13.2.1 Possible displays

➤ See Chapter 3.1, page 19

13.2.2 Overview of keyboard

➤ See Chapter 3.2, page 20

13.2.3 Key functions

Confirm entry,
set safety system and start lift run



Delete an entry, cancel a function,
acknowledge an error message



Stopping a lift run
To stop a lift run in hazardous situations, use the
emergency stop switch.



Delete the character last entered



Store shelf from access position



Bring shelf to access position



Optimisation run



Adding a new shelf



13 Program version MP 12N-H[HOST-WEB]

Removing a shelf



Activate information and service programs



Activate system services



Switch language,



Open and close door (only with automatic sliding door),
unlock door (only with manual doors and lift run only with door
closed)



fast keylock function (if activated)



13.3 Extended functions with supplementary modules

➤ See Chapter 4, page 23

13 Program version MP 12N-H[HOST-WEB]

13.4 General

13.4.1 Switching on the lift



x If the lift is operated with external inventory control programs, the software on the host computer must also be started up.

Description of the operator prompts

Display

Lift control system start-up message

- Switch on lift with the main switch.
- Wait for the control system to start up.
- The red LED in the [STOP] key lights up.
- The lift type and control system type appear on the display. The display text may vary depending on the configuration.
- Press the [↩] key.
- The green LED is illuminated.

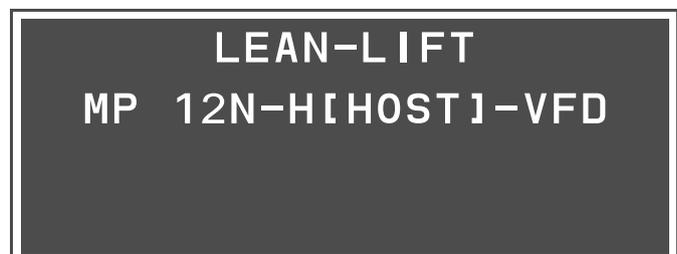


Display as long as no connection to the host existed yet

- The control system is ready to operate.



Display as soon as a connection to the host existed and no lift run is carried out



13 Program version MP 12N-H[HOST-WEB]

13.4.2 Basic shelf functions

- See Chapter 5.2, page 26

13.4.3 Operating multiple access points

- See Chapter 5.3, page 35

13.4.4 Changing the language

- See Chapter 5.4, page 38

13.4.5 Fast keylock function

- See Chapter 5.5, page 38

13.5 Operation for activation by the host

The operation depends on the programming of the control computer (host). Therefore, a corresponding description must be created by the programmer of the control computer.

13 Program version MP 12N-H[HOST-WEB]

13.6 Information services

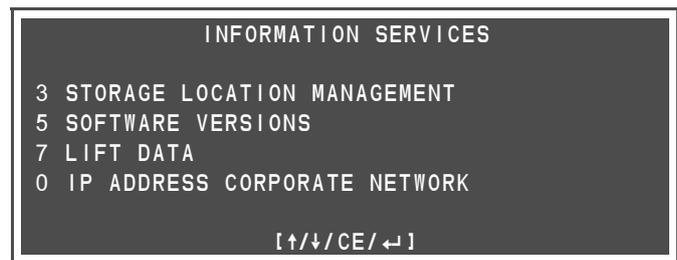


Description of the operator prompts

Display

Call up information services

- Press the [i] key.
- The information services selection menu is displayed.



Menu item	See Chapter	Page
3	9.3.1	102
5	9.5	109
7	9.7	114
0	9.8	115

13 Program version MP 12N-H[HOST-WEB]

13.7 System services



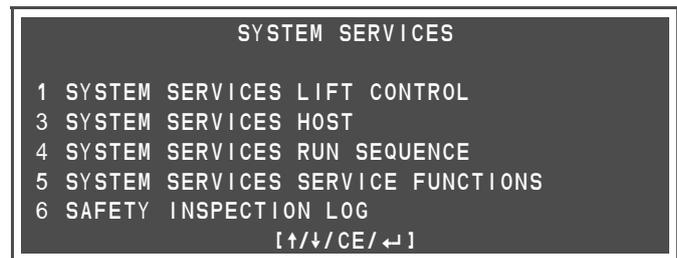
Description of the operator prompts

Display

Call up system services

- Press the [F1] key.

→ The system services selection menu is displayed.



Menu item	see
1	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"
3	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"
4	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"
5	➤ "Supplementary Description of the Service Functions for Microprocessor Control System MP 12D/N Lean-Lift, Multi-Space and Rotomat"
6	➤ "Technical Description of the Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat"

14 Advisories and error messages

The control system displays advisories or error messages if irregularities occur in lift operation or program execution. The control system differentiates between the following kinds of error:

- ◆ Operator advisories:
Instructions displayed due to incorrect operation or the entry of invalid values.
Message prompts for guiding the user. These messages are displayed in text. They must be acknowledged with the **[CE]** key. After that, a function or input can be repeated.
 - ◆ Status messages:
Messages which disappear automatically once a remedy is in place.
 - ◆ Error messages during lift run due to interruption of safety circuit
The lift run is stopped; the error is indicated by the red LED in the **[STOP]** key and is displayed as a text. The error must be corrected and acknowledged with **[↵]**.
 - ◆ Error messages during lift run due to software monitoring:
The lift run is stopped; the error is indicated by the red LED in the **[STOP]** key and is displayed as a text. The error must be corrected and acknowledged with **[↵]**.
- For more details on error messages intended for specially trained and authorised personnel, refer to the "Technical Description of the Microprocessor Control System MP 12N for Lean-Lift, Multi-Space and Rotomat".

14 Advisories and error messages

14.1 Operator advisories

14.1.1 Safety inspection

Note	Cause	Action
<p>SAFETY INSPECTION THE ANNUAL SAFETY INSPECTION MUST BE CARRIED OUT NO LATER THAN : DATE [DD.MM.YY] : <dd.mm.yy> [↵]</p> <p>then</p> <p>SAFETY INSPECTION OUR HÄNEL AFTER-SALES SERVICE WILL BE PLEASED TO CARRY OUT SERVICE AND MAINTENANCE WORK UPON REQUEST [↵]</p>	<p>This inspection appears only if the clock module (SRAM) is present.</p> <ul style="list-style-type: none"> The control system reminds the operator once of the annual safety inspection. The reminder appears no earlier than 5 days before the due date. 	<ul style="list-style-type: none"> Have a safety inspection carried out.
<p>SAFETY INSPECTION THE ANNUAL SAFETY INSPECTION MUST BE CARRIED OUT NO LATER THAN : DATE [DD.MM.YY] : <dd.mm.yy> -> THE DATE OF THE ANNUAL SAFETY INSPECTION HAS PASSED [↵]</p> <p>then</p> <p>SAFETY INSPECTION OUR HÄNEL AFTER-SALES SERVICE WILL BE PLEASED TO CARRY OUT SERVICE AND MAINTENANCE WORK UPON REQUEST [↵]</p>	<p>This inspection appears only if the clock module (SRAM) is present.</p> <ul style="list-style-type: none"> The control system reminds the operator once of the annual safety inspection. The reminder appears no later than 5 days after the due date. 	<ul style="list-style-type: none"> Have a safety inspection carried out.

14 Advisories and error messages

14.1.2 Input check

Note	Cause	Action
ARTICLE NUMBER IS INVALID	<ul style="list-style-type: none"> Article number "0" was entered. An article number entered by barcode reader contains invalid characters or too many characters, or the data record is incomplete. 	<ul style="list-style-type: none"> The figure "0" is accepted only in conjunction with further digits. Check the barcode and settings of the barcode reader. Refer also to the Technical Description.
REQUISITION NUMBER IS INVALID or JOB NUMBER IS INVALID	<ul style="list-style-type: none"> A requisition number or job number entered by barcode reader contains invalid characters or too many characters, or the data record is incomplete. 	<ul style="list-style-type: none"> Check the barcode and settings of the barcode reader. Refer also to the Technical Description.
QUANTITY IS INVALID	<ul style="list-style-type: none"> A quantity entered by barcode reader or scale contains invalid characters or too many characters, or the data record is incomplete. 	<ul style="list-style-type: none"> Check the barcode and settings of the barcode reader or settings of the scale. Refer also to the Technical Description.
CONTAINER SIZE IS INVALID	<ul style="list-style-type: none"> Container "0" or a container that is too large has been entered. Where multi-unit storage is being used, an attempt was made to create an article in a lift which cannot accept the container size because of its compartment/compartment depth divisions. 	<ul style="list-style-type: none"> Enter a valid container size.
SHELF NOT FOUND	<ul style="list-style-type: none"> A shelf number was entered that is not in the shelf memory. 	<ul style="list-style-type: none"> Enter a valid shelf number.
COMPARTMENT NOT FOUND	<ul style="list-style-type: none"> Compartment number "0" or a number that is too high was entered. 	<ul style="list-style-type: none"> Enter a valid compartment number.
COMPARTMENT DEPTH NOT FOUND	<ul style="list-style-type: none"> Compartment depth number "0" or a number that is too high was entered. 	<ul style="list-style-type: none"> Enter a valid compartment depth number.
ARTICLE NOT FOUND	<ul style="list-style-type: none"> During processing of a requisition/job, the user, using [-] or [-L], tried to retrieve an article that is not in memory. 	<ul style="list-style-type: none"> Acknowledge the message with [CE]. This requisition/job item is cancelled.

14 Advisories and error messages

Note	Cause	Action
REQUISITION NOT FOUND or JOB NOT FOUND	<ul style="list-style-type: none"> The specified requisition/job number cannot be found in the requisition/job memory. 	<ul style="list-style-type: none"> Enter a valid list/job number.
NO NEW JOB FOUND	<ul style="list-style-type: none"> The job key (↵) has been pressed but no job is present for processing. 	<ul style="list-style-type: none"> Wait until a new job is available.
THIS ARTICLE IS BEING PROCESSED	<ul style="list-style-type: none"> The same article was requested simultaneously at more than one access point of a lift. 	<ul style="list-style-type: none"> Wait until access to the article at the other access point is concluded.
THIS REQUISITION IS BEING PROCESSED or THIS JOB IS BEING PROCESSED	<ul style="list-style-type: none"> The entered requisition/job has already been called up for processing and has not yet been completely processed. 	<ul style="list-style-type: none"> Wait until access to the requisition/job is concluded.
QUANTITY TOO LARGE	<ul style="list-style-type: none"> The quantity entered is too large. The control system cannot process this amount. 	<ul style="list-style-type: none"> Enter a valid quantity.
QUANTITY IS LARGER THAN INVENTORY	<ul style="list-style-type: none"> The quantity specified for retrieval of an article is greater than the total inventory. 	<ul style="list-style-type: none"> Enter a smaller quantity.
TOTAL INVENTORY WOULD BE TOO LARGE	<ul style="list-style-type: none"> If put into storage, the total inventory for this article would exceed the maximum figure. The control system cannot process this amount. 	<ul style="list-style-type: none"> Maximum quantities cannot be exceeded. Assign a different article number.

14 Advisories and error messages

14.2 Status messages

14.2.1 System

Note	Cause	Action
PLEASE WAIT STORAGE MANAGEMENT NOT YET READY	<ul style="list-style-type: none"> Storage management cannot process the request at this time, as the internal start-up procedure is not yet completed. 	<ul style="list-style-type: none"> Operation is possible again after a short wait.
SWITCH ON MP 100D	<p>No data transfer between lift control system and central control system.</p> <ul style="list-style-type: none"> No supply voltage to MP 100D because main switch of "SERVER MP100" is off or because F13 cut-out is triggered. Lines connecting lift control system(s) and MP 100D interrupted. 	<ul style="list-style-type: none"> Switch on main switch of "SERVER MP100" or set F13 cut-out. Check connecting lines and replace if defective.
SWITCH ON HOST	<p>No data transfer between lift control system and host.</p> <ul style="list-style-type: none"> Host switched off or defective. Lines connecting lift control system(s) and host interrupted. 	<ul style="list-style-type: none"> Switch on host or replace if defective. Check connecting line and replace if defective.
LIFT RUN FOR OTHER ACCESS POINT	<ul style="list-style-type: none"> Another access point is being used at a lift with multiple access points. 	<ul style="list-style-type: none"> Wait until the lift run for the other access point is completed.
FUNCTION IS NOT POSSIBLE AT PRESENT	<ul style="list-style-type: none"> The function selected is already executing at another lift or another access point and must be concluded there first. Index tables are being regenerated in the main memory. 	<ul style="list-style-type: none"> Terminate the function at the other lift or the other access point. Wait until the index tables are generated.
KEYBOARD DISABLED	<ul style="list-style-type: none"> Keyboard is locked to prevent unauthorised access. 	<ul style="list-style-type: none"> Keylock function. See Technical Description.
x FUNCTION DISABLED	<ul style="list-style-type: none"> Function x is locked to prevent unauthorised access. 	<ul style="list-style-type: none"> Keylock function. See Technical Description.

14 Advisories and error messages

Note	Cause	Action
<p>DO NOT INCREASE ARTICLE HEIGHT</p> <p>ARTICLE HEIGHT NOT INCREASED ? NO</p>	<ul style="list-style-type: none"> In the redundancy menu, the article height detection function or the monitoring of shelf management was deactivated. This necessitates a subsequent "Check article height" test run. As long as this test run has not been carried out, these messages will be displayed when shelves are put into storage. 	<ul style="list-style-type: none"> Perform a "Check article height" test run. Refer also to the Technical Description.
<p>REDUNDANCY SYSTEM FUNCTION IS NOT POSSIBLE AT PRESENT</p>	<ul style="list-style-type: none"> In the redundancy menu, the article height detection function or the monitoring of shelf management was deactivated. This necessitates a subsequent "Check article height" test run. As long as this test run has not been carried out, this message will be displayed when the functions "Add shelf" and "Optimisation run" are called. 	<ul style="list-style-type: none"> Perform a "Check article height" test run. Refer also to the Technical Description.

14.2.2 Management

Note	Cause	Action
<p>STORAGE LOC NOT ASSIGNABLE</p>	<ul style="list-style-type: none"> The storage location belongs to a storage location chain and cannot have any more articles assigned to it. A container size entered overlaps with other storage locations that are already assigned. An article already created in this storage location has a different container size. An attempt was made to create an article in another lift although formatting includes the parameter "Multi-unit storage -> NO". 	<ul style="list-style-type: none"> Specify a different storage location. Enter a smaller container size or a different storage location. Specify a different storage location. This article can only have additional storage locations created in the lift where articles already exist.

14 Advisories and error messages

Note	Cause	Action
ALL STORAGE LOCATIONS ASSIGNED	<ul style="list-style-type: none"> All the storage locations in the lift have been assigned at least once and the control system was unable to find a free location. 	<ul style="list-style-type: none"> Assign an already occupied storage location to this article (multiple assignment). Enter shelf, compartment, compartment depth by keyboard or search for a storage location with the arrow keys.
GO TO LIFT NUMBER < / / >	<ul style="list-style-type: none"> The article entered or called up in a requisition/job is not stored in this unit. 	<ul style="list-style-type: none"> Go to the lift for which the number is displayed and call up the lift reference there.
REFERENCE IS NOT POSSIBLE	<ul style="list-style-type: none"> This unit is switched off. The unit to which you were referred cannot accept any more references. 	<ul style="list-style-type: none"> Enter the article or requisition/job manually at the unit to which you were referred.
MEMORY IS FULL	<ul style="list-style-type: none"> When storing an article: The article memory cannot hold any more article data. When creating a requisition: No more requisitions or list items can be saved. When a lift is registered: When the shelf table is updated: When shelves are added: The number of storage locations required is too high and cannot be administered. 	<ul style="list-style-type: none"> Delete the journal if necessary, because when journal logging is activated, articles that have been deleted remain in memory until the journal is deleted. More memory may need to be added. If possible, delete a different requisition that is no longer required. Minimise number of storage locations. Shelf x Compartment x Compartment depth For S version < 100,000 For H version < 400,000
SHELF NUMBER LIMIT EXCEEDED AVERAGE SHELF LOAD MAX. [KG]: xxx	<ul style="list-style-type: none"> The system has detected that the shelf number limit has been exceeded. Shelf number limit = max. total load / (max. shelf load + empty weight of shelf) 	<ul style="list-style-type: none"> When the shelf number limit is exceeded, the average shelf load capacity is reduced to the displayed value. This is checked when the unit is switched on and when shelves are added.

14 Advisories and error messages

14.3 Error messages during lift run due to interruption of safety circuit

After the error is corrected, the error message must be acknowledged with [↔]. If the lift run was interrupted, it is now resumed. Press the [CE] key to cancel the lift run.

- For more details on error messages intended for specially trained and authorised personnel, refer to the "Technical Description of the Microprocessor Control System MP 12N for Lean-Lift, Multi-Space and Rotomat".

Lift run error	Cause	Action
STOP BUTTON PRESSED	<ul style="list-style-type: none"> • The red [STOP] key on the keyboard has been pressed. 	<ul style="list-style-type: none"> • Press the green [↔] key to continue the lift run. Press the [CE] key to cancel the lift run.
EMERGENCY STOP [F7]	<ul style="list-style-type: none"> • The emergency stop button has been pressed. 	<ul style="list-style-type: none"> • Release the emergency stop switch.
SERVICE DOOR	<ul style="list-style-type: none"> • Service door is not properly closed. 	<ul style="list-style-type: none"> • Close service door correctly so that the door switch is actuated.
SECOND SERVICE DOOR	<ul style="list-style-type: none"> • Additional service door is not properly closed. 	<ul style="list-style-type: none"> • Close additional service door correctly so that the door switch is actuated.
SERVICE DOOR MOTORS -> only with Multi-Space	<ul style="list-style-type: none"> • Additional service door for the vertical motor in the bottom front panel is not closed correctly. 	<ul style="list-style-type: none"> • Close the additional service door for the vertical motor in the bottom front panel so that the door switch is actuated.
MOTOR 1 TOO HOT -> only with Lean-Lift	<ul style="list-style-type: none"> • Motor 1 (vertical drive) overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
MOTOR 2 TOO HOT/ UPPER LIMIT SWITCH -> only with Lean-Lift	<ul style="list-style-type: none"> • Motor 2 (horizontal drive) overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
LIGHT BARRIERS or LIGHT BARRIERS (1) or LIGHT BARRIERS (2)	<ul style="list-style-type: none"> • Interruption of safety light barriers at access point (x) due to protruding object. • Safety light barrier is not yet set. • After only a brief interruption of the safety circuit (e.g. EMERGENCY STOP, frequency converter), light barrier remains triggered. 	<ul style="list-style-type: none"> • Clear the area monitored by the light barriers and press the [↔] key for about 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.

14 Advisories and error messages

Lift run error	Cause	Action
<p>-> only with multiple access points with guide rails:</p> <p>LIGHT BARRIERS (X)</p> <p>then</p> <p>ENABLE LIFT RUN AT ACCESS POINT (X)</p> <p>then</p> <p>LIFT RUN HAS BEEN ENABLED AT ACCESS POINT (X)</p>	<ul style="list-style-type: none"> • Interruption of safety light barriers at access point (x). • The [←] key has been pressed without correcting the light barrier interruption at access point (x). • Interruption of safety light barriers at access point (x) has been corrected. 	<ul style="list-style-type: none"> • Clear the area monitored by the light barriers at access point (x) and press the [←] key for approx. 0.5 sec. • Clear the area monitored by the light barriers at access point (x) and press the [←] key for approx. 0.5 sec. • Press the [←] key for approx. 0.5 sec.
<p>-> only with multiple access points with guide rails:</p> <p>LIFT RUN ENABLE FOR ANOTHER ACCESS POINT WITH ←</p>	<ul style="list-style-type: none"> • Interruption of safety light barriers at this access point while lift run was carried out for other access point. 	<ul style="list-style-type: none"> • Clear the area monitored by the light barriers at access point and press the [←] key for approx. 0.5 sec.
<p>MOTOR 1.1 TOO HOT -> only with Multi-Space</p>	<ul style="list-style-type: none"> • Motor 1.1 (vertical drive) overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
<p>MOTOR 1.2 TOO HOT -> only with Multi-Space</p>	<ul style="list-style-type: none"> • Motor 1.2 (vertical drive) overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
<p>MOTOR 2 TOO HOT/ MOVEM. LIMIT SWITCH -> only with Multi-Space</p>	<ul style="list-style-type: none"> • Motor 2 (horizontal drive) overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
<p>MOTOR 3 TOO HOT/ LEFT LIMIT SWITCH -> only with Multi-Space</p>	<ul style="list-style-type: none"> • Motor 3 (movement unit) is overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
<p>MOTOR 4 TOO HOT -> only with Multi-Space</p>	<ul style="list-style-type: none"> • Motor 4 (movement unit) is overheated. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.
<p>TEMP. PROTECTION MOVEMENT UNIT -> only with Multi-Space</p>	<ul style="list-style-type: none"> • The movement unit motor monitor has tripped. 	<ul style="list-style-type: none"> • Allow motor to cool down for about 10 min.

14 Advisories and error messages

14.4 Error messages during lift run due to software monitoring

After the error is corrected, the error message must be acknowledged with [←]. If the lift run was interrupted, it is now resumed. Press the [CE] key to cancel the lift run.

- For more details on error messages intended for specially trained and authorised personnel, refer to the "Technical Description of the Microprocessor Control System MP 12N for Lean-Lift, Multi-Space and Rotomat".

Lift run error	Cause	Action
SHELF REMOVAL POS TOO FAR INSIDE	<ul style="list-style-type: none"> • The shelf is positioned too far towards the inside of the access point (x). 	<ul style="list-style-type: none"> • Pull shelf back to end position.
SHELF REMOVAL POS TOO FAR OUTSIDE	<ul style="list-style-type: none"> • The shelf is positioned too far towards the outside of access point (x). 	<ul style="list-style-type: none"> • Push shelf fully into the access point.
MOTOR IS OVERLOADED >3<	<ul style="list-style-type: none"> • Shelf is overloaded. 	<ul style="list-style-type: none"> • Remove articles from shelf.
MOTOR IS OVERLOADED >7<	<ul style="list-style-type: none"> • Shelf is overloaded. 	<ul style="list-style-type: none"> • Remove articles from shelf.
THE ARTICLE IS TOO HIGH (X)	<ul style="list-style-type: none"> • One or more storage articles is higher than the permitted max. storage article height at access point (x). 	<ul style="list-style-type: none"> • Reduce the height of the stored articles.
STORAGE ARTICLES PROTRUDING >1<	<ul style="list-style-type: none"> • Stored articles are protruding over the rear edge of the shelf into the lift shaft. 	<ul style="list-style-type: none"> • Store articles so that they do not protrude over the edge of the shelf.
STORAGE ARTICLES PROTRUDING >2<	<ul style="list-style-type: none"> • A storage article is protruding over the front edge of the shelf into the access point while the shelf is positioned fully on the extractor. 	<ul style="list-style-type: none"> • Store articles so that they do not protrude over the edge of the shelf.
LIFT IS FULL	<ul style="list-style-type: none"> • A shelf cannot be stored away because of its article height. 	<ul style="list-style-type: none"> x 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 article height on this shelf; carry out an optimisation run. • Check lift for free space. It may be possible to create space by reducing the article height in several shelves.

14 Advisories and error messages

Lift run error	Cause	Action
SYNCHRO . RUN x	<ul style="list-style-type: none"> The discrepancy between position values from front and rear position sensors is too great (mutual monitoring), or a position value at a carrier position slot is incorrect. x = cause of synchronisation run 	<ul style="list-style-type: none"> Pressing [←] moves the extractor to the bottom reference position, after which the destination carrier is accessed. You can display the number of the carrier where the error took place by pressing [CE].
NO SHELF IN ACCESS POINT or SHELF REMOVED BUT NOT REGISTERED	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Push shelf into the access point. Push the shelf in question back into the access point or unregister it.
REQUESTED SHELF IN OTHER ACCESS POINT (X)	<p>The shelf that is to be brought to the user is in access point (x).</p> <ul style="list-style-type: none"> The shelf has been brought to access point (x) and has not yet been put back into storage. 	<ul style="list-style-type: none"> Store shelf at access point (x).
UNKNOWN SHELF IN ACCESS POINT	<ul style="list-style-type: none"> A shelf was detected in the access point, although there should not have been one there. Shelf pushed into access point without being registered. 	<ul style="list-style-type: none"> Remove shelf from access point or register it.
REMOVE SHELF	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Remove shelf from access point.
CLOSE DOOR	<ul style="list-style-type: none"> With second safety circuit and lift run with safety light barrier disabled (redundancy system): light barriers are interrupted and door is not closed. 	<ul style="list-style-type: none"> Close the door.
OPEN DOOR	<ul style="list-style-type: none"> With one access point and second safety circuit: lift run with active safety light barriers is possible with door open only. 	<ul style="list-style-type: none"> Open door.

14 Advisories and error messages

Lift run error	Cause	Action
SENSOR TEST : OPEN AND CLOSE DOOR	<ul style="list-style-type: none"> If there is one access point and a second safety circuit: lift run while the safety light barriers are deactivated (redundancy system) requires that the door be opened and closed after a safety interruption. 	<ul style="list-style-type: none"> Open and close door.
EXTRACTOR OVERLOADED ? PLEASE CHECK	<p>The load measurement system has detected that the maximum permitted shelf load has been exceeded.</p> <ul style="list-style-type: none"> Shelf is overloaded 	<ul style="list-style-type: none"> Remove articles from shelf.
TOTAL LOAD EXCEEDED ? PLEASE CHECK	<p>The load measurement system has detected that the maximum permitted total load has been exceeded.</p> <ul style="list-style-type: none"> Lift is overloaded 	<ul style="list-style-type: none"> Remove articles from lift.
END LIFT RUN AT OTHER ACCESS POINT (X)	<p>The system has detected that a lift run at access point (x) has not ended.</p> <ul style="list-style-type: none"> No lift run is carried out for this access point because the lift run at access point (x) has not ended. 	<ul style="list-style-type: none"> Cancel the lift run at this access point and carry out the lift run at access point (x).
OTHER ACCESS POINT OCCUPIED WITH SHELF (X)	<p>The system has detected that access point (x) is occupied with a shelf. This check is carried out for lifts with multiple access points that do not have a safeguard between access point and extractor shaft (i.e. without high-speed door).</p> <ul style="list-style-type: none"> No lift run is carried out for this access point because access point (x) is occupied with a shelf. 	<ul style="list-style-type: none"> Cancel the lift run at this access point and store the shelf at access point (x).

15 Annex

15.1 Overview of optional supplementary descriptions

In the following list, the optional Supplementary Descriptions that have been included in the documentation folder are ticked. The list provides no information about possible applications and combinations of supplementary modules and supplementary features.

	<p>Version of Lift as per order confirmation</p> <p>Ausführung des Lifts gemäß Auftragsbestätigung</p> <p>Exécution du Lift selon confirmation de commande</p>	<p>Marked (x) Supplementary Descriptions are part of the machine documentation</p> <p>Markierte (x) Zusatzbeschreibungen sind Teil der Maschinendokumentation</p> <p>Les description additionnelles marquées (x) machine documentation</p>
	<p>Add-on module 01) for external shelf management</p> <p>Modul 01) Verwaltung externer Tablare</p>	<p>Supplementary Description – External Shelf Management</p> <p>Zusatzbeschreibung Verwaltung externer Tablare</p> <p>Description additionnelle - gestion des plateaux externes</p> <p>Aanvullende beschrijving beheer van externe plateaus</p> <p style="text-align: right;">INFOMZ-EXTTAB</p>
	<p>Add-on module 02) for access code management</p> <p>Modul 02) Zugangscodoverwaltung</p>	<p>Supplementary Description – Access Code Management</p> <p>Zusatzbeschreibung Zugangscodoverwaltung</p> <p>Description additionnelle - gestion des codes d'accès</p> <p>Aanvullende beschrijving toegangscodoverwaltung</p> <p style="text-align: right;">INFOMZ-PVW</p>
	<p>Add-on module 03) for article pool management</p> <p>Modul 03) Artikelpoolverwaltung</p>	<p>Supplementary Description – Article Pool Management</p> <p>Zusatzbeschreibung Artikelpoolverwaltung</p> <p>Description additionnelle - gestion des pools d'article</p> <p>Aanvullende beschrijving artikelpoolbeheer</p> <p style="text-align: right;">INFOMZ-APOOL</p>
	<p>Add-on module 04) for storage location height management</p> <p>Modul 04) Verwaltung der Lagerorthöhe</p>	<p>Supplementary Description – Storage Location Height Management</p> <p>Zusatzbeschreibung Verwaltung der Lagerorthöhe</p> <p>Description additionnelle - gestion des hauteurs d'emplacement</p> <p>Aanvullende beschrijving beheer opslagplaatshoogte</p> <p style="text-align: right;">INFOMZ-HOEHE</p>
	<p>Add-on module 05) for storage time management</p> <p>Modul 05) Verwaltung der Lagerzeit</p>	<p>Supplementary Description – Storage Time Management</p> <p>Zusatzbeschreibung Verwaltung der Lagerzeit</p> <p>Description additionnelle - gestion de la durée de stockage</p> <p>Aanvullende beschrijving beheer van de opslagtijd</p> <p style="text-align: right;">INFOMZ-LGZEIT</p>

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	<p>Version of Lift as per order confirmation</p> <p>Ausführung des Lifts gemäß Auftragsbestätigung</p> <p>Exécution du Lift selon confirmation de commande</p>	<p>Marked (x) Supplementary Descriptions are part of the machine documentation</p> <p>Markierte (x) Zusatzbeschreibungen sind Teil der Maschinendokumentation</p> <p>Les description additionnelles marquées (x) machine documentation</p>
	<p>Add-on module 06) for operations journal</p> <p>Modul 06) Bewegungsjournalführung</p>	<p>Supplementary Description – Operations Journal</p> <p>Supplementary Description of the Operations Journal Logging</p> <p>Description additionnelle - Tenue du journal des mouvements</p> <p>Aanvullende beschrijving bewegingsjournaal bijhouden</p> <p>INFOMZ-J100D</p>
	<p>Add-on module 07) for barcode cross-check</p> <p>Modul 07) Barcode-Gegencheck</p>	<p>Supplementary Description – Barcode Cross-check</p> <p>Zusatzbeschreibung Barcode-Gegencheck</p> <p>Description additionnelle - vérification du code-barres</p> <p>Aanvullende beschrijving barcode-tegencheck</p> <p>INFOMZ-BARCHK</p>
	<p>Add-on module 08) for free location management</p> <p>Modul 08) Freiplatzverwaltung</p>	<p>Supplementary Description – Command Free Location Management</p> <p>Zusatzbeschreibung Freiplatzverwaltung</p> <p>Description additionnelle - gestion des emplacements libres</p> <p>Aanvullende beschrijving vrije-plaatsenbeheer</p> <p>INFOMZ-FREIPL</p>
	<p>Add-on module 20) for shelf pre-positioning</p> <p>Modul 20) Tablarvorpositionierung</p>	<p>Supplementary Description – Shelf Pre-positioning</p> <p>Zusatzbeschreibung Tablarvorpositionierung</p> <p>Description additionnelle - prépositionnement de plateaux</p> <p>Aanvullende beschrijving plateauvoorpositionering</p> <p>INFOMZ-PREPOS</p>
	<p>Add-on module 21) for inventory function</p> <p>Modul 21) Inventurfunktion</p>	<p>Supplementary Description – Inventory Function</p> <p>Zusatzbeschreibung Inventurfunktion</p> <p>Description additionnelle - fonction d'inventaire</p> <p>Aanvullende beschrijving inventarisatiefunctie</p> <p>INFOMZ-INVENT</p>
	<p>Modul 24) Einstellbare Tablargeschwindigkeit</p>	<p>Supplementary Description – Adjustable Shelf Speed</p> <p>Zusatzbeschreibung Einstellbare Tablargeschwindigkeit</p> <p>Description additionnelle - vitesse de plateau réglable</p> <p>Aanvullende beschrijving instelbare plateausnelheid</p> <p>INFOMZ-GESCHW</p>

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	<p>Version of Lift as per order confirmation</p> <p>Ausführung des Lifts gemäß Auftragsbestätigung</p> <p>Exécution du Lift selon confirmation de commande</p>	<p>Marked (x) Supplementary Descriptions are part of the machine documentation</p> <p>Markierte (x) Zusatzbeschreibungen sind Teil der Maschinendokumentation</p> <p>Les description additionnelles marquées (x) machine documentation</p>
	<p>Modul 26) Ausleihverwaltung</p>	<p>Supplementary Description – Lending Management</p> <p>Zusatzbeschreibung Ausleihverwaltung</p> <p>Description complémentaire gestion des prêts</p> <p>Aanvullende beschrijving uitleenbeheer</p> <p style="text-align: right;">INFOMZ-AUSL</p>
	<p>With add-on module 27) Label printing at access point</p>	<p>Supplementary Description – Label Printing at Access Point</p> <p>Zusatzbeschreibung Etikettendruck an Entnahme</p> <p>Description complémentaire impression d'étiquettes au point de prélèvement</p> <p>Aanvullende beschrijving etikettenprint bij werkopening</p> <p style="text-align: right;">INFOMZ-EDRUCK</p>
	<p>Equipment for emergency operation (higher availability without waiting time for service personnel)</p> <p>Ausstattung für Notbetrieb (erhöhte Verfügbarkeit ohne Wartezeit auf Servicepersonal)</p>	<p>Supplementary Description – Redundancy System</p> <p>Supplementary Description of the Redundancy System</p> <p>Description additionnelle du système de redondance</p> <p>Aanvullende beschrijving redundantiesysteem</p> <p style="text-align: right;">INFOMZ-REDUNANZ</p>
	<p>High-speed-shutter between access opening and drive shaft</p> <p>Schnell-Lauftor zwischen Entnahmeöffnung und Fahrschacht</p>	<p>Supplementary Description – High-speed Door</p> <p>Zusatzbeschreibung Schnell-Lauftor</p> <p>Description complémentaire porte coulissante rapide</p> <p>Aanvullende beschrijving snellooppoort</p> <p style="text-align: right;">INFOMZ-STOR</p>
	<p>With automatic opening and closing of sliding door</p> <p>mit automatisch öffnende und schließende Schiebetüre</p>	<p>Supplementary Description – Automatic Sliding Door</p> <p>Zusatzbeschreibung Automatische Schiebetüre</p> <p>Description additionnelle - porte coulissante automatique</p> <p>Aanvullende beschrijving automatische schuifdeur</p> <p style="text-align: right;">INFOMZ-AUTOSD</p>
	<p>Automatic extraction of container</p> <p>automatischer Ein-/Ausschub eines Containers</p>	<p>Supplementary Description – Automatic Shelf Ejection</p> <p>Zusatzbeschreibung Automatischer Tablarausschub</p> <p>Description additionnelle - pousse-plateau automatique</p> <p>Aanvullende beschrijving automatische plateau-uitschuiving</p> <p style="text-align: right;">INFOMZ-ATA</p>

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	<p>Version of Lift as per order confirmation</p> <p>Ausführung des Lifts gemäß Auftragsbestätigung</p> <p>Exécution du Lift selon confirmation de commande</p>	<p>Marked (x) Supplementary Descriptions are part of the machine documentation</p> <p>Markierte (x) Zusatzbeschreibungen sind Teil der Maschinendokumentation</p> <p>Les description additionnelles marquées (x) machine documentation</p>
	<p>With container weighing scale in the access opening</p> <p>mit Container-Wiegeeinrichtung der Entnahmestelle</p>	<p>Supplementary Description – Shelf Weighing Device</p> <p>Zusatzbeschreibung Tablarwiegeeinrichtung</p> <p>Description additionnelle - équipement de pesage des plateaux</p> <p>Aanvullende beschrijving plateauweeginrichting</p> <p style="text-align: right;">INFOMZ-WEIGHT</p>
	<p>Special retrieval opening for operation with lifting trolley/pallet stacker and Container in the dimensions..., in special design for pallet storage</p> <p>Sonderentnahmestelle für Bedienung mit Standard- / Hochhubwagen und Container in den Abmessungen ..., in Spezialausführung für umlaufende Begrenzung</p>	<p>Supplementary Description – Automatic Shelf Locking</p> <p>Zusatzbeschreibung Automatische Tablarverriegelung</p> <p>Description additionnelle - verrouillage automatique de plateau</p> <p>Aanvullende beschrijving automatische plateauvergrendeling</p> <p style="text-align: right;">INFOMZ-TABVER</p>
	<p>Lean-Lift with mutual locking of sliding doors</p> <p>Lift mit gegenseitiger Verriegelung der Schiebetüren</p>	<p>Supplementary Description – Mutual Door Locking</p> <p>Zusatzbeschreibung Gegenseitige Türverriegelung</p> <p>Description addit. - Verrouillage réciproque des portes</p> <p>Aanvullende beschrijving wederzijdse deurvergrendeling</p> <p style="text-align: right;">INFOMZ-GETUEV</p>
	<p>Unit prepared as follows for electrical connection in the container</p> <p>Gerät vorbereitet für elektrifizierte Container</p>	<p>Supplementary Description – Shelves with Power Supply</p> <p>Zusatzbeschreibung Elektrifizierte Tablare</p> <p>Description additionnelle - plateaux électrifiés</p> <p>Aanvullende beschrijving geëlektrificeerde plateaus</p> <p style="text-align: right;">INFOMZ-ELTAB</p>
		<p>Supplementary Description – Double Access</p> <p>Zusatzbeschreibung Doppelentnahme</p> <p>Description additionnelle - ouverture double</p> <p>Aanvullende beschrijving dubbele werkopening</p> <p style="text-align: right;">INFOMZ-DOUBLE</p>
		<p>Supplementary Description – Demo Function</p> <p>Zusatzbeschreibung Messfunktion</p> <p>Description additionnelle - fonction exposition</p> <p>Aanvullende beschrijving beursfunctie</p> <p style="text-align: right;">INFOMZ-DEMO</p>

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15.2 Revision notes

Last issue dated: 2007-10-24

- ◆ Target group and validity improved.

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