Hänel Büro- und Lagersysteme

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

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Microprocessor Control System
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Contents

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1   Introduction

1.1   Basic information

Contents	This document contains information about operating and configuring the microprocessor control system with the supplementary module "Inventory function" and integrating it into the IT system.
Target group	This document has been written for:

- Instructed and trained operators who use the lift/carousel 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/carousel.
- IT specialists assigned the task of connecting the MP control system to the customer's IT system.

Manufacturer

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Validity

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

Type:	Lean-Lift, Multi-Space, Rotomat
Access points:	Unlimited
Serial number:	see type plate on the lift/carousel
Model year:	see type plate on the lift/carousel

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

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

MP 12D CPU II:	V 2.4 (W,X,Y are language versions of V)
MP 12N CPU II:	V 2.4

Keep in an accessible place as a complete document

- This documentation is a part of the lift/carousel 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.

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1   Introduction

1.2   Guide through the document

Symbols

Notes with this symbol warn you of a hazard caused by:
–   possible severe injuries of a general nature, possibly including fatal injuries.

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

•   Action: You are prompted to carry out an operating step.

➔   Result: You are told the outcome of your operating step.

✗   Tip: You are given helpful hints and comments.

➢   See: You are given references to other documents.

Terms

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

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

–   For the Rotomat: **Carrier level**

–   For rack operation: **Shelf level**

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.

<tt>	For shelf
<ff>	For compartment
<tf>	For compartment depth
<hh>	For height
<tt ff tf>	For shelf compartment compartment depth
<gg>	For total inventory
<bb>	For inventory at storage location
<qq>	For quantity
<ll>	For lift/carousel

◆   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.

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1   Introduction

1.3   Safety instructions

	DANGER

All maintenance and repair work on Hänel lifts/carousels must 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/carousel.

Operators have to follow the lift/carousel user guide.

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

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1 Introduction

1.4 Supplementary documents

MP 12D

> User Guide for the Article Storage Management Microprocessor Control System MP 12D Lean-Lift and Multi-Space

> or

> User Guide for the Article Storage Management Microprocessor Control System MP 12D Rotomat

> Technical Description of the Microprocessor Control System MP 12D 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

> Optional supplementary descriptions

MP 12N

> User Guide for the Article Storage Management Microprocessor Control System MP 12N Lean-Lift and Multi-Space

> or

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

> 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

> Optional supplementary descriptions

1.5 Prerequisites for the "Inventory function" supplementary module

◆ The storage management packet for "File management" is not available.

◆ The storage management packet for "Tool storage management" is not available.

1   Introduction 9 (33)

1.6   Memory requirements for the inventory function

The inventory data are stored as belonging to the article data record.

Calculation $\mathbf{ANZ = (10000 \times 75 \times FCT) / (7 + ART + GBH + MEN + BEZ + INV + AUSL + ZEIT)}$

ANZ	Number of possible data records (but not more than 10000*FCT)
FCT	MP 12D-S = 1 MP 12N-S = 1 MP 100D = 10
ART	Formatted number of characters for article number
GBH	Storage location height management (YES = 4, NO = 0)
MEN	Quantity journal logging (YES = 8, NO = 0)
BEZ	Formatted number of characters for article name
INV	Inventory journal logging (YES = 19, NO = 0)
AUSL	Lending management (YES = formatted number of characters for lender +28, NO = 0)
ZEIT	Storage location height management (Yes = 10, No = 0)

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2   Overview of features

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

◆ Perpetual inventory:
With perpetual inventory, the physical inventory does not take place on an annual inventory date, but on a user-selectable day. This is planned by the control system at the most logical times possible, for example, when the inventory at the storage location has reached a minimum. The in and out movements are added by the control system up to the annual inventory date.

◆ The inventory data can be read out and further processed.

◆ The storage management system manages the inventory procedure. An individual configuration of the inventory procedure is possible through the following settings:
  – Inventory period
  – Threshold inventory
  – Storage/retrieval operation
  – Time ranges
  – Article groups
  Only if these criteria apply, an inventory prompt and an inventory registration is carried out for the article at the storage location.

MP 12D-H[HOST]

◆ The host manages inventory jobs containing the article numbers for an inventory job.
After the inventory function is called up at the lift/carousel and an inventory number is entered, the host transfers a sequence of article numbers for which an inventory is planned. The lift/carousel brings the storage locations of the articles into position, and the operator must enter the current stock at the storage location. The current stock data are transferred to the host, where they are updated.

◆ Maintaining, printing and deleting an inventory journal depend on the range of functions of the host.

◆ The data field **K** is used for the inventory number and has the same maximum number of characters as the requisition number.
The data field **B** is used for the nominal inventory and the data field **Z** is used for the actual inventory.

◆ If an article storage location of an inventory item is in another lift/carousel, a lift/carousel reference is issued.
The inventory number lift/carousel reference is called up via:
[⊞] - key ->
3 INVENTORY NUMBER

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3   Operation

3.1   Carry out inventory for MP 12D/N-S/H [MP 100D]

✗ Depending on the configuration of the supplementary module, inventory prompts automatically appear during operation. See Chapter 3.1.1 on page 11.

✗ It is also possible to start an inventory manually. See Chapter 3.1.2 on page 12.

✗ The inventory function statistics provide an overview of the storage locations that have already been entered or still need to be entered. See Chapter 3.1.3 on page 13.

3.1.1 Inventory during operation

✗ Depending on the configuration of THRESHOLD INVENTORY, STORAGE/RETRIEVAL OPS. and TIME, inventory prompts automatically appear during operation. The current inventory must then be counted and entered.

Description of the operator prompts   **Display**

Enter current inventory

➜ The article number is displayed.

• Count the articles of the accessed storage location *<tt ff tf>*.

• Enter the counted quantity (current inventory).

• Press the [↵] key.

```
<Article number>


INPUT CURRENT INV.
<tt ff tf>   ▨
```

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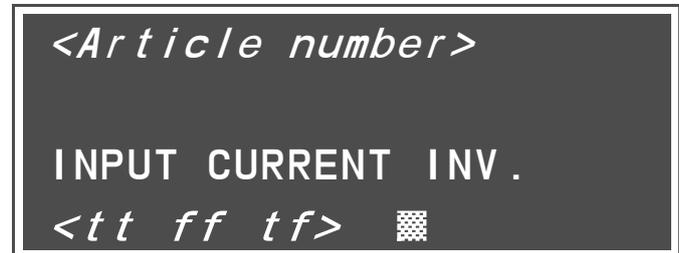
3   Operation

3.1.2 Start inventory manually

F4

✗ An inventory can be started independently of the configuration settings.
All storage locations of articles for which no inventory has yet been carried out are accessed in succession in path-optimised fashion.
The inventory function must be started separately at each lift/carousel using the [F4] key.
You can interrupt the inventory process using the [CE] key.

Description of the operator prompts	**Display**

Start inventory function

• Press the [F4] key.

➔ The storage location is accessed.

Enter current inventory

➔ The article number is displayed.

• Count the articles of the accessed storage location <*tt ff tf*>.

• Enter the counted quantity (current inventory).

• Press the [↵] key.

```
<Article number>


INPUT CURRENT INV.
<tt ff tf>    ▓
```

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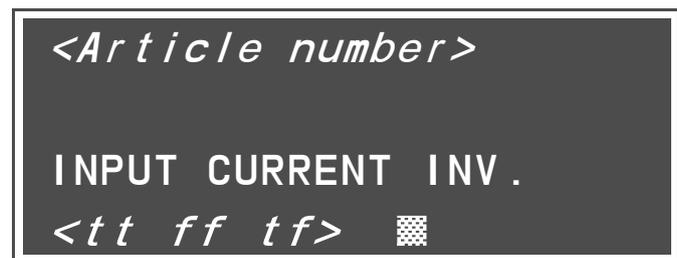
3   Operation

3.1.3 Inventory function statistics

[i] ➤ [8]
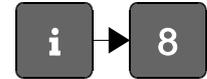
This function provides information about:

– Percentage of storage locations that have already been recorded during an inventory.

– Number of storage locations that still need to be recorded during an inventory.

Description of the operator prompts	Display

Call up inventory function statistics

• Press the 【▤】 key, then press the 【8】 key.

➜ The storage locations already recorded during an inventory are displayed as a percentage for the multi-unit network and for the lift/carousel.

• Press the 【↵】 key.

```
        INVENTORY FUNCTION
            STATISTICS

STORAGE LOCATIONS CHECKED
  IN MULTI-UNIT NET          : XX%
  IN LIFT                     : YY%

            [ CE/ ↵ ]
```

➜ The storage locations with discrepancies are displayed as a percentage for the multi-unit network and for the lift/carousel. Storage locations with discrepancies are those for which the inventory has been corrected.

• Press the 【↵】 key.

```
        INVENTORY FUNCTION
            STATISTICS

DISCREPANCY IN STORAGE LOCATIONS
  IN MULTI-UNIT NET          : XX%
  IN LIFT                     : YY%

            [ CE/ ↵ ]
```

➜ The number of storage locations still to be checked in an inventory for the multi-unit network and for the lift/carousel.

• Press the 【↵】 key.

```
        INVENTORY FUNCTION
            STATISTICS

STORAGE LOCATIONS STILL TO CHECK
  IN MULTI-UNIT NET          : XX%
  IN LIFT                     : YY

            [ CE/ ↵ ]
```

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3   Operation

3.2   Carry out inventory for MP 12D-H [HOST]

F4

| Description of the operator prompts	Display

Start inventory function

• Press the 【F4】 key.

Enter inventory number

• Enter inventory number.

• Press the 【↵】 key.

➔ The storage location is accessed.
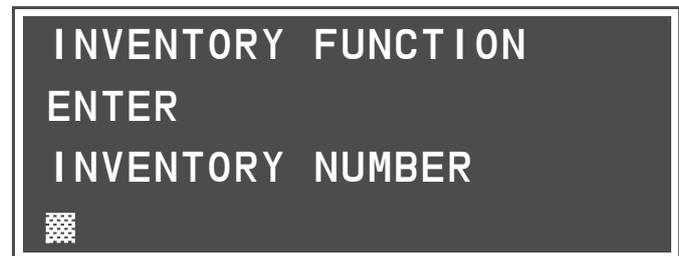
```
INVENTORY FUNCTION
ENTER
INVENTORY NUMBER
▓
```

Sequence: 60 Program step: 1

Enter current inventory

➔ The article number is displayed.

• Count the articles of the accessed storage location
  <tt ff tf>.

• Enter the counted quantity (current inventory).

• Press the 【↵】 key.

➔ If there is a discrepancy between the current inventory
  and the nominal inventory, the nominal inventory is
  corrected accordingly.

➔ If there is another storage location for this article, it is
  brought into position, or another inventory item is
  retrieved.

• Repeat the operating steps until the following display
  appears.

```
<Article number>

INPUT CURRENT INV.
<tt ff tf>  ▓
```
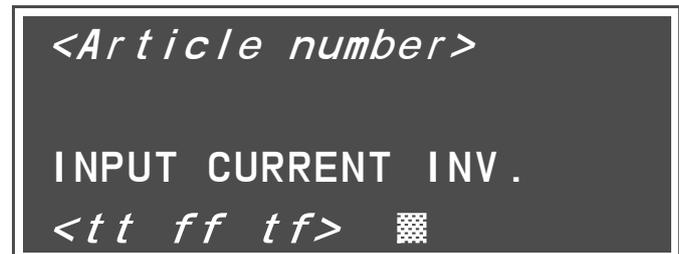
➔ Once all inventory items have been processed, the
  message to the right appears for approximately
  2 seconds:

```
<Inventory number>
INVENTORY FUNCTION
ENDED
```

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3	Operation	15 (33)

Description of possible operator prompts	**Display text**

If an article storage location of an inventory item is in another lift/carousel, a lift/carousel reference is issued.

- Press the [CE] key.
- ➔ The control system goes into the main menu.
- Go to lift/carousel *<lift/carousel number>.*
- Press the [⊞] key and the [3] key.
- Press the [↑] / [↓] key to select the desired reference.
- Press the [↵] key.
- ➔ Processing of the selected inventory number lift/carousel reference continues.

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

The inventory number entered is unknown.

```
<Inventory number>
INVENTORY NUMBER NOT
FOUND
-> CE
```

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4   Initialisation (for installation and maintenance personnel only)

This chapter is intended for instructed installation and maintenance personnel only.

4.1   Activate "Inventory function" supplementary module for MP 12D/N-S/H [MP 100D]
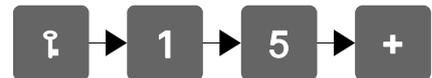
[⚷] ▶ [1] ▶ [5] ▶ [+]

✗ This chapter describes the initialisation of the "Inventory function" supplementary module for the MP 12D/N-S/H [MP 100D] control systems.

Description of the operator prompts	Display

Activate "Inventory function" supplementary module for MP 12D/N-S/H [MP 100D]

- Press the 【 ⚷ 】 key, the 【 1 】 key and then the 【 5 】 key.
- Enter the password (default setting is "22488").
- Press the 【 ↵ 】 key.
- Press the 【 + 】 key.
- Press the 【 ↑ 】 /【 ↓ 】 key to select "YES".
- Press the 【 ↵ 】 key.

```
        SUPPLEMENTARY  MODULES

INVENTORY  FUNCTION          : ▒NO




            [↑/↓/CE/↵]
```

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

➔ Commission (order) number of the lift/carousel is displayed as shown on the type plate.
- Enter the code specific to the lift/carousel.

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

- Press the 【 ↵ 】 key.

```
        SUPPLEMENTARY  MODULES

INVENTORY  FUNCTION          : YES

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

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4   Initialisation (for installation and maintenance personnel only)

4.2   Enable "Inventory function" supplementary module for MP 12D-H [HOST]
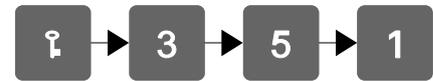
| 🗝 | ▶ | 3 | ▶ | 5 | ▶ | 1 |

This chapter is intended for instructed installation and maintenance personnel only.

✗ This chapter describes the initialisation of the "Inventory function" supplementary module for the MP 12D-H [HOST].

Description of the operator prompts	Display

Enable "Inventory function" supplementary module for MP 12D-/H [HOST]

- Press the 【🗝】 key, the 【3】 key and then the 【5】 key.

- Enter the password (default setting is "22488").

- Press the 【↵】 key.

- Press the 【1】 key.

- Press the 【↑】/【↓】 key to select "YES".

- Press the 【↵】 key.

```
        SUPPLEMENTARY MODULES

INVENTORY FUNCTION            : ▨NO




        [↑/↓/CE/↵]
```

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

➔ Commission (order) number of the lift/carousel is displayed as shown on the type plate.

- Enter the code specific to the lift/carousel.

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

- Press the 【↵】 key.

```
        SUPPLEMENTARY MODULES

INVENTORY FUNCTION            : YES

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

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4   Initialisation (for installation and maintenance personnel only)

4.3   Format storage management (only for MP 12D/N-S/H [MP 100D])
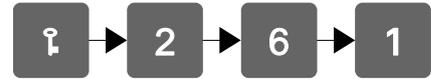
1 ▶ 2 ▶ 6 ▶ 1

This chapter is intended for instructed installation and maintenance personnel only.

✗ This chapter describes the formatting of the storage management system with the "Inventory function" supplementary module for the MP 12D/N-S/H [MP 100D] control systems.

Description of the operator prompts

Display

Format the supplementary module "Inventory function" with storage management

- Press the 〖 1 〗 key, the 〖 2 〗 key and then the 〖 6 〗 key.
- Enter the password (default setting is "22488").
- Press the 〖 ↵ 〗 key.
- Press the 〖 1 〗 key.
- Enter the password (default setting is "22488").
- Press the 〖 ↵ 〗 key.
➔ Prompts about the system formatting appear.
- Edit or keep the settings according to the technical description until the next prompt is displayed.
- Press the 〖 ↑ 〗 / 〖 ↓ 〗 key to select "YES".
- Press the 〖 ↵ 〗 key.

```
          SYSTEM FORMATTING

CALL UP SUPPLEMENTARY MODULES ?


▓NO


          [↑/↓/CE/↵]
```
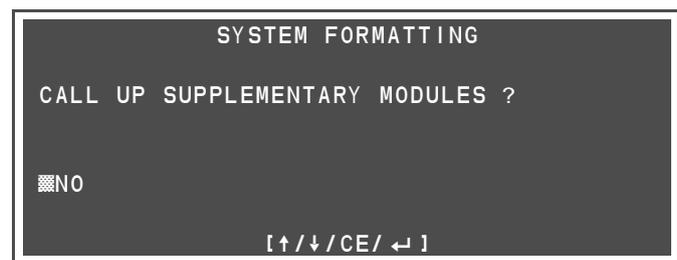
- Press the 〖 7 〗 key to select "Inventory function".
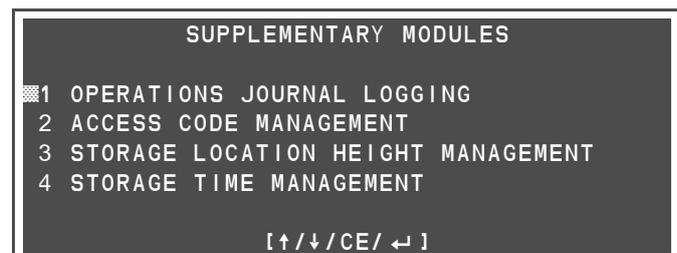
```
          SUPPLEMENTARY MODULES

▓1 OPERATIONS JOURNAL LOGGING
 2 ACCESS CODE MANAGEMENT
 3 STORAGE LOCATION HEIGHT MANAGEMENT
 4 STORAGE TIME MANAGEMENT

          [↑/↓/CE/↵]
```

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4 Initialisation (for installation and maintenance personnel only)

Description of the operator prompts

Display

```
         SUPPLEMENTARY  MODULES

5  EXTERNAL  SHELF  MANAGEMENT
6  ARTICLE  POOL  MANAGEMENT
7  INVENTORY  FUNCTION


              [↑/↓/CE/↵]
```
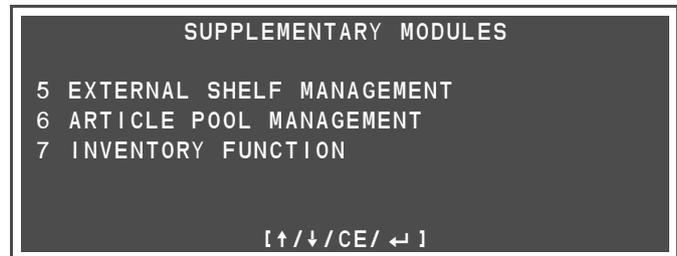
- Press the [↑]/[↓] key to select "YES".
- Press the [↵] key.
- ➔ Further prompts about the system formatting appear.
- Edit or keep the settings according to the technical description and activate formatting.

```
         SUPPLEMENTARY  MODULES

INVENTORY  FUNCTION          :  ▓NO



              [↑/↓/CE/↵]
```

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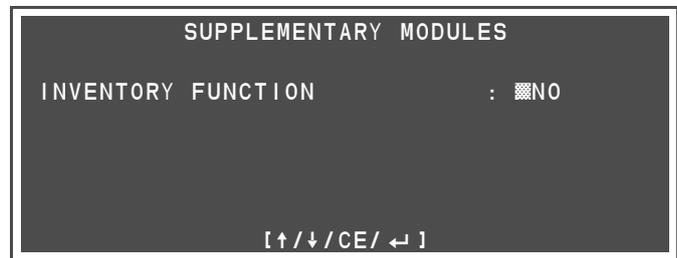
4   Initialisation (for installation and maintenance personnel only)

4.4   Configure the "Inventory function" supplementary module (only with MP 12D/N-S/H [MP 100D])

1 ▶ 2 ▶ 6 ▶ 9
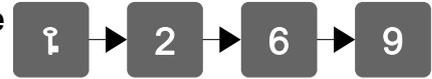
Description of the operator prompts	Display

Configure the "Inventory function" supplementary module

- Press the 【 1 】 key, the 【 2 】 key and then the 【 6 】 key.
- Enter the password (default setting is "22488").
- Press the 【 ↵ 】 key.
- Press the 【 9 】 key.
- Enter the password (default setting is "22488").
- Press the 【 ↵ 】 key.

If you want to create new inventory data:
- Press the 【 ↑ 】 / 【 ↓ 】 key to select "YES".
- Press the 【 ↵ 】 key.
- For other operating steps, see Section 1, "Create new inventory data", on page 20.

```
        INVENTORY FUNCTION

CREATE NEW INVENTORY ?     : ▓NO
 -> INVENTORY DATA WILL BE DELETED




        [↑/↓/CE/↵]
```

If you want to change inventory settings:
- Press the 【 ↑ 】 / 【 ↓ 】 key to select "NO".
- Press the 【 ↵ 】 key.
- For other operating steps, see Section 2, " Change inventory settings", on page 21.

1.   Create new inventory data

- Press the 【 ↑ 】 / 【 ↓ 】 key to select "YES".
- Press the 【 ↵ 】 key.
- ➔ The inventory data for all articles have been deleted.
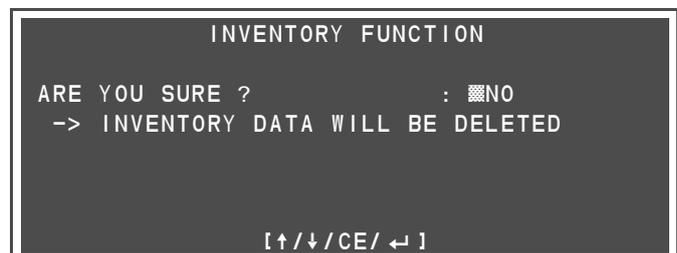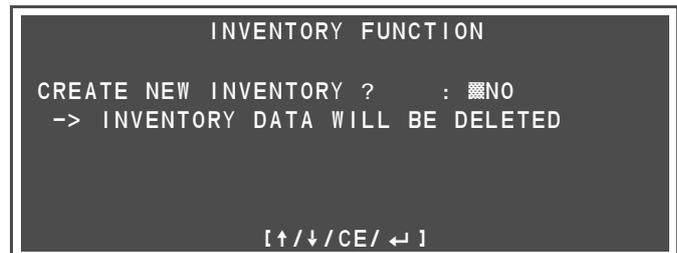
```
        INVENTORY FUNCTION

ARE YOU SURE ?             : ▓NO
 -> INVENTORY DATA WILL BE DELETED




        [↑/↓/CE/↵]
```

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4   Initialisation (for installation and maintenance personnel only)

Description of the operator prompts

Display

Enter inventory period and threshold inventory

- Enter the date for the first inventory day.
- Press the 【↵】 key.
- Enter the date for the last inventory day.
- Press the 【↵】 key.
- Enter the threshold inventory *<nn>*.
- Press the 【↵】 key.
➔ The inventory period and threshold inventory have been saved. For additional operating steps, refer to "storage/retrieval operations " on page 22.

```
            INVENTORY FUNCTION

FIRST INVENTORY DAY          ▓<ddmmyy>
LAST INVENTORY DAY            <ddmmyy>
-> [DDMMYY]
THRESHOLD INVENTORY              <nn>

            [↑/↓/CE/↵]
```

Parameters/description

FIRST INVENTORY DAY / LAST INVENTORY DAY

Inventory prompts in this period appear (perpetual inventory).

TT   = Calendar day, 2-digit;
MM = Month, 2-digit;
JJ   = Year, 2-digit

THRESHOLD INVENTORY

Inventory prompts are displayed only if the inventory of an article at the storage location is less than or equal to the threshold inventory before storage or after retrieval.

2.   Change inventory settings

Change threshold inventory

➔ The first and last inventory day are displayed.
- Enter the threshold inventory *<nn>*.
- Press the 【↵】 key.
➔ The threshold inventory has been saved. For additional operating steps, refer to "storage/retrieval operations " on page 22.

```
            INVENTORY FUNCTION

FIRST INVENTORY DAY           <ddmmyy>
LAST INVENTORY DAY            <ddmmyy>
-> [DDMMYY]
THRESHOLD INVENTORY          ▓<nn>

            [↑/↓/CE/↵]
```

Parameters/description

THRESHOLD INVENTORY

Inventory prompts are displayed only if the inventory of an article at the storage location is less than or equal to the threshold inventory before storage or after retrieval.

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

4   Initialisation (for installation and maintenance personnel only)

Description of the operator prompts	Display

Set storage/retrieval operations

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

```
          INVENTORY FUNCTION

FOR ALL STORAGE/RETRIEVAL OPS.      YES




                [↑/↓/CE/↵]
```

Description

If you select "YES", an inventory prompt appears for all storage/retrieval operations.

If you select "NO", an inventory prompt appears only for certain storage/retrieval operations.

If set to "NO":

For each prompt:

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

```
          INVENTORY FUNCTION

FOR ALL STORAGE/RETRIEVAL OPS.       NO
   FOR DIRECT RETRIEVAL             YES
   FOR DIRECT STORAGE               YES
   WHEN REQUISITION ITEMS RETRIEVED YES
   WHEN REQUISITION ITEMS STORED    YES
                [↑/↓/CE/↵]
```

```
          INVENTORY FUNCTION

FOR ALL STORAGE/RETRIEVAL OPS.       NO
   WHEN JOB ITEMS RETRIEVED         YES
   WHEN JOB ITEMS STORED            YES



                [↑/↓/CE/↵]
```

Description

The inventory prompt appears for the storage/retrieval operations for which you selected "YES" only.

When creating a new storage location, you have to count and enter the quantity to be stored. An internal inventory registration is always carried out in the control system.

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

4   Initialisation (for installation and maintenance personnel only)

Description of the operator prompts	Display

Set time ranges

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

```
          INVENTORY  FUNCTION

INVENTORY  AT  ALL  TIMES              YES




              [↑/↓/CE/↵]
```
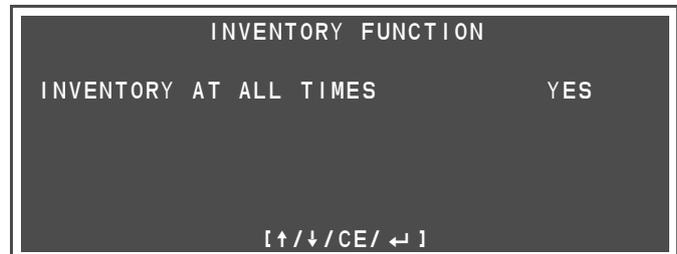
Description

If you select "YES", an inventory prompt appears at all times.

If you select "NO", an inventory prompt appears only at certain times.

If set to "NO":
- Enter the "from" time.
- Press the **[↵]** key.
- Enter the "to" time.
- Press the **[↵]** key.
- ➔ The time range has been saved.

If you want to create other time ranges (max. 3):
- Repeat the operating steps.

If you do not want to create another time range:
For each prompt:

- Press the **[↵]** key until all time ranges have been skipped.

```
          INVENTORY  FUNCTION

 INVENTORY  AT  ALL  TIMES              NO
 FROM (TIME) : ▓        TO (TIME) :
 FROM (TIME) :          TO (TIME) :
 FROM (TIME) :          TO (TIME) :
-> [HHMM]
              [↑/↓/CE/↵]
```
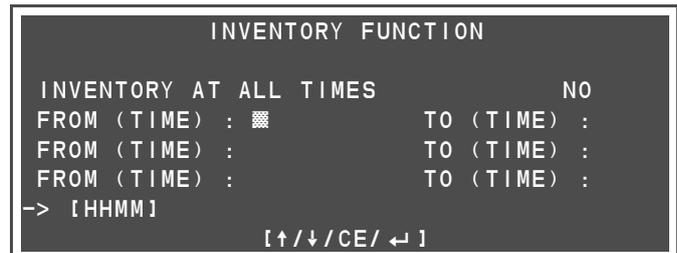
Description

The inventory prompt appears in the time ranges you specify only.

If no times are entered, the time range is unoccupied.

HH = Hour

MM = Minute

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

4   Initialisation (for installation and maintenance personnel only)

Description of the operator prompts	Display

Create article groups

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

```
         INVENTORY  FUNCTION

INVENTORY  FOR  ALL  ARTICLES        YES




              [↑/↓/CE/↵]
```
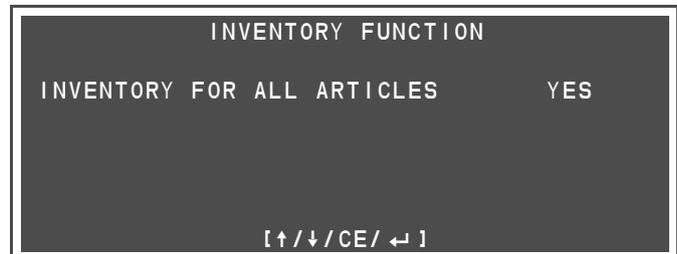
Options	Description
◆ YES	An inventory prompt appears for all articles.
◆ NO [EXCLUDE ARTICLE GROUPS]	An inventory prompt appears for articles that do not belong to certain article groups.
◆ NO [INCLUDE ARTICLE GROUPS]	An inventory prompt appears for articles that belong to certain article groups.

For "NO [EXCLUDE ARTICLE GROUPS]":

➔ The group number is displayed.
- Enter the "from" article number.
- Press the [↵] key.
- Enter the "to" article number.
- Press the [↵] key.
➔ Article group has been created.

If you want to create other article groups (max. 10):
- Repeat the operating steps.

If you do not want to create another article group:
For each prompt:
- Press the [↵] key.

```
        INVENTORY  FUNCTION
EXCLUDE  ARTICLE  GROUPS
GROUP : <Group number>
FROM  ARTICLE  NUMBER
▓
TO  ARTICLE  NUMBER

            [CE/↵]
```
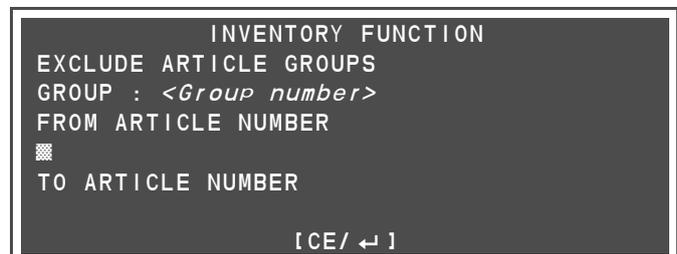
Description
An inventory prompt is not displayed for the article groups you have created. You can create a maximum of 10 article groups. If no article numbers are entered, the article group <n> (n=1 -10). ✗ We recommend printing a list sorted by article numbers. The article groups can be identified on this list. ✗ Article numbers are alphanumeric values. Depending on the length of the article number and the ASCII value of the individual characters (according to ASCII character code) articles are assigned to an article group by the control system.

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

4   Initialisation (for installation and maintenance personnel only)

25

Description of the operator prompts

Display

For "NO [INCLUDE ARTICLE GROUPS]":

➔ The group number is displayed.

• Enter the "from" article number.

• Press the 【 ↵ 】 key.

• Enter the "to" article number.

• Press the 【 ↵ 】 key.

➔ Article group has been created.

If you want to create other article groups (max. 10):

• Repeat the operating steps.

If you do not want to create another article group:

For each prompt:

Press the 【 ↵ 】 key.

```
            INVENTORY  FUNCTION
 INCLUDE  ARTICLE  GROUPS
 GROUP  :  <Group number>
 FROM  ARTICLE  NUMBER
 ▓
 TO  ARTICLE  NUMBER


              [ CE/ ↵ ]
```

Description

An inventory prompt is only displayed for the article groups you have created.

You can create a maximum of 10 article groups.

If no article numbers are entered, the article group <n> (n=1 -10) is not occupied.

✗ We recommend printing a list sorted by article numbers. The article groups can be identified on this list.

✗ Article numbers are alphanumeric values. Depending on the length of the article number and the ASCII value of the individual characters (according to ASCII character code) articles are assigned to an article group by the control system.

➔ "Inventory function" supplementary module has been configured.

Supplementary Description of Inventory Function   Lean-Lift
Microprocessor Control System   Multi-Space
MP 12D / MP 12N-S/H[MP 100D]   Rotomat

5   External data transfer via RS232 (only for MP 12D-S, only for installation and maintenance personnel and IT specialists)

This chapter is intended for instructed installation and maintenance personnel and IT specialists only.

✗ Reading inventory data in/out via RS232 is possible only with the microprocessor control system MP 12D-S.

➢ See also the "Technical Description for Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".

5.1   Read out inventory data

When the article master data are read out, the inventory data are automatically included in the transfer.

Data fields **H05**, **H06**, **H07**, **H08** are added to the article master data record.

After the new inventory is created, the data fields **H05** to **H08** are filled with blanks. **H05** to **H08** may not be otherwise occupied.

5.2   Read in the inventory data

When the article master data are read in, the inventory data are automatically included in the transfer.

Data fields **H05**, **H06**, **H07**, **H08** are added to the article master data record.

5.3   Additional data fields

Data field	Name		
H05	Day of inventory entry ddmmyy or mmddyy (depending on the system formatting settings) dd = calendar day, 2-digit mm = month, 2-digit yy = year, 2-digit	6-digit	numerical
H06	Time of inventory entry hhmm hh = hour, 2-digit mm = minute	4-digit	numerical
H07	Type of correction + = Correction by addition - = Correction by subtraction	1-digit	"+" or "-"
H08	Difference quantity	max. 8-digit	numerical

Supplementary Description of Inventory Function   **Lean-Lift**
Microprocessor Control System   **Multi-Space**
MP 12D / MP 12N-S/H[MP 100D]   **Rotomat**

6   Host communication by file transfer via Ethernet (only for MP 12N-S / MP 100D, only for installation and maintenance personnel and IT specialists)

This chapter is intended for instructed installation and maintenance personnel and IT specialists only.

✗ Host communication by file transfer via Ethernet is possible only with the microprocessor control system MP 12N-S/MP 100D.

➢ Refer to the "Technical Description of the Microprocessor Control System MP 12N-S / MP 100D Server for Lean-Lift and Rotomat".

Supplementary Description of Inventory Function   Lean-Lift
Microprocessor Control System   Multi-Space
MP 12D / MP 12N-S/H[MP 100D]   Rotomat

7   Host communication by commands (only for MP 12D-H[HOST], only for installation and maintenance personnel and IT specialists)

This chapter is intended for instructed installation and maintenance personnel and IT specialists only.

Additional commands

LOAD INVENTORY	**Get inventory data**		

Processing of an inventory was requested with the 〖F4〗 key.

MP:	***LS$K_$L_$**CRLF	**K**:	Inventory number
		L:	Lift/carousel number

Host:	***OK$**CRLF	Inventory number is found.
	or error code ***ER06**CRLF	Inventory number not found.

> For data fields and additional error codes, refer to the "Technical Description of the Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".

NEXT INVENTORY	**Get inventory item**		

MP:	***NS$K_$L_$E_$T_$**CRLF	**K**:	Inventory number
		L:	Lift/carousel number
		E:	Access point number
		T:	Display the shelf number of the shelf in the access point. If there is no shelf in the access point, "0" is sent.

Host:	***OK$K_$S_$L_$T_$F_$O.$B_$**CRLF	Inventory item	
		S:	Article number
		T:	Shelf number
		F:	Compartment number
		O:	Compartment depth number
		B:	Nominal quantity
	or error code ***ER08**CRLF	Inventory function is ended.	

> For data fields and additional error codes, refer to the "Technical Description of the Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".

✗ If a storage location of an inventory item is in another lift/carousel, a lift/carousel reference is displayed. The lift/carousel reference must be retrieved at the referenced lift/carousel by pressing the 〖⊐⊢⊏〗 key. There you can select the inventory number. The MP then again requests the inventory item from the host with "***NS....**" to obtain a current nominal quantity.

Supplementary Description of Inventory Function
Microprocessor Control System
MP 12D / MP 12N-S/H[MP 100D]

Lean-Lift
Multi-Space
Rotomat

7 Host communication by commands (only for MP 12D-H[HOST], only for installation and maintenance personnel and IT specialists)

UPDATE INVENTORY

Update inventory item

MP: ***US$K_$S_$L_$T_$F_$O.$B_$Z_$**_CRLF_

K:	Inventory number
L:	Lift/carousel number
S:	Article number
T:	Shelf number
F:	Compartment number
O:	Compartment depth number
B:	Nominal quantity
Z:	Current inventory

Host: ***OK$**_CRLF_   The data record has been saved.

➢ For data fields and error codes, refer to the "Technical Description of the Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".

8   Annex

8.1   Configuration settings

Configurations that deviate from the default setting can be documented here.
This is useful for production, installation and service personnel.
Default settings are underscored.

Supplementary module	Parameters	Setting
	INVENTORY FUNCTION :	[ ] YES [ ] <u>NO</u>
	FIRST INVENTORY DAY :	_____
	LAST INVENTORY DAY :	_____
	THRESHOLD INVENTORY :	_____
	FOR ALL STORAGE/RETRIEVAL OPS. :	[ ] <u>YES</u> [ ] NO
	FOR DIRECT RETRIEVAL :	[ ] <u>YES</u> [ ] NO
	FOR DIRECT STORAGE :	[ ] <u>YES</u> [ ] NO
	WHEN REQUISITION ITEMS RETRIEVED :	[ ] <u>YES</u> [ ] NO
	WHEN REQUISITION ITEMS STORED :	[ ] <u>YES</u> [ ] NO
	WHEN JOB ITEMS RETRIEVED :	[ ] <u>YES</u> [ ] NO
	WHEN JOB ITEMS STORED :	[ ] <u>YES</u> [ ] NO
	INVENTORY AT ALL TIMES :	[ ] <u>YES</u> [ ] NO
	FROM (TIME) TO (TIME) :	_____ _____
	FROM (TIME) TO (TIME) :	_____ _____
	FROM (TIME) TO (TIME) :	_____ _____

Supplementary Description of Inventory Function   Lean-Lift
Microprocessor Control System   Multi-Space
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Supplementary module	Parameters	Setting
	INVENTORY FOR ALL ARTICLES :	[ ] YES [ ] NO [EXCLUDE ARTICLE GROUPS] [ ] NO [INCLUDE ARTICLE GROUPS]
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____
	FROM ARTICLE NUMBER :	_____
	TO ARTICLE NUMBER :	_____

8   Annex

8.2   Revision notes

Last issue dated: **17.12.2007**

- Chapter 1.1 Validity.

- Chapter 3.1.1 Removed target inventory.

- Chapter 3.1.2 Removed target inventory.

- Chapter 3.2 Removed target inventory.

- Chapter 4.2 Replaced 5 key with 2 key.

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Microprocessor Control System   Multi-Space
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