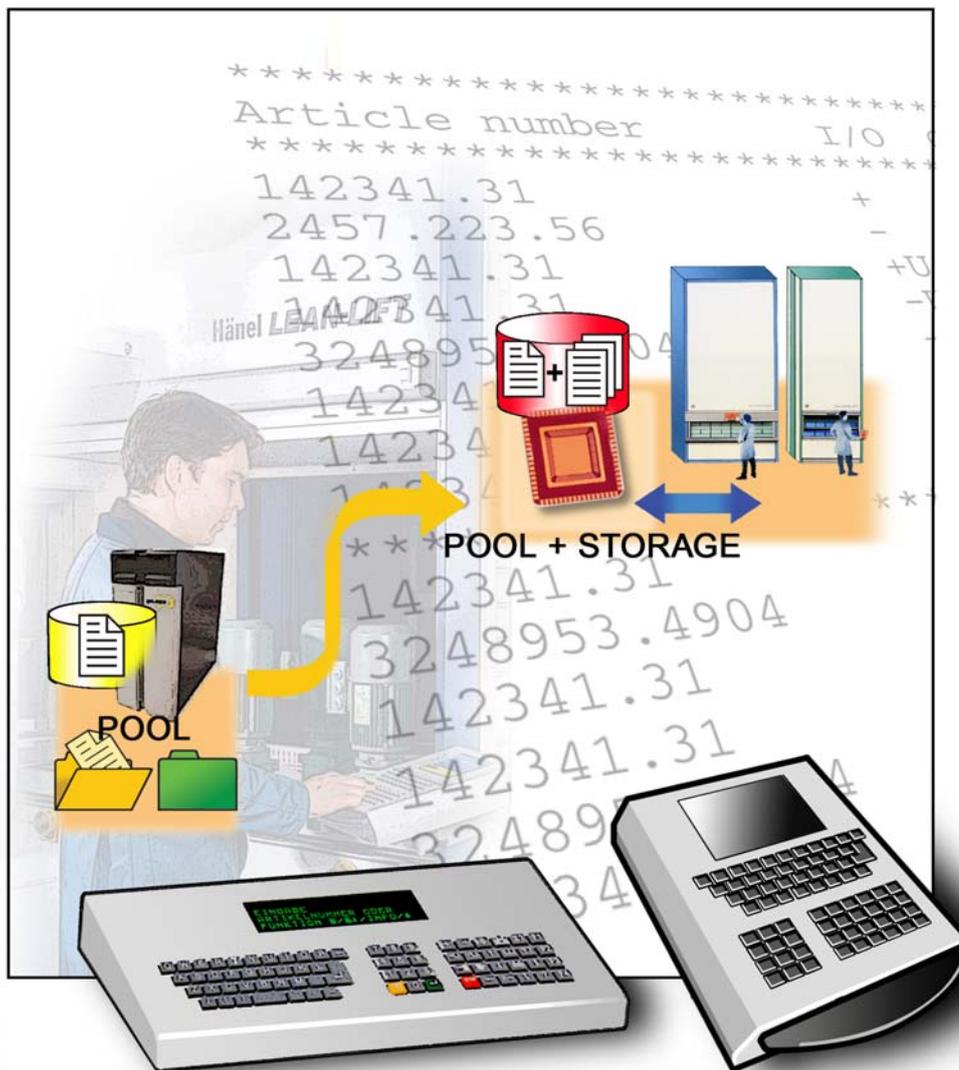




## Supplementary Description of the Article Pool Management Microprocessor Control System MP 12D/N-S/H[MP 100D]

Lean-Lift  
Multi-Space  
Rotomat





# Supplementary Description of the Article Pool Management Microprocessor Control System MP 12D/N-S/H[MP 100D]

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Multi-Space  
Rotomat

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## 1 Introduction

### 1.1 Basic information

<b>Contents</b>	This document contains information about configuring the microprocessor control system with the supplementary module "Article pool management" and integrating it into the IT system.												
<b>Target group</b>	This document has been written for: <ul style="list-style-type: none"><li>◆ Trained and instructed installation and maintenance personnel who are responsible for all matters related to technical support of the lift/carousel.</li><li>◆ IT specialists assigned the task of connecting the MP control system to the customer's IT system.</li></ul>												
<b>Manufacturer</b>	Hänel Büro- und Lagersysteme Postfach 11 61 74173 Bad Friedrichshall Phone: +49 7136/27725 Fax: +49 7136/27741 <a href="http://www.hanel.de">http://www.hanel.de</a>												
<b>Validity</b>	<p>This document is valid for lift/carousels of the following series:</p> <table><tr><td>Type:</td><td>Lean-Lift, Multi-Space, Rotomat</td></tr><tr><td>Access points:</td><td>unlimited</td></tr><tr><td>Serial number:</td><td>see type plate on the lift/carousel</td></tr><tr><td>Year of construction:</td><td>see type plate on the lift/carousel</td></tr></table> <p>If the lift/carousel 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 12D CPU II:</td><td>V 2.3 (W,X,Y are language versions of V)</td></tr><tr><td>MP 12N CPU II:</td><td>V2.3</td></tr></table>	Type:	Lean-Lift, Multi-Space, Rotomat	Access points:	unlimited	Serial number:	see type plate on the lift/carousel	Year of construction:	see type plate on the lift/carousel	MP 12D CPU II:	V 2.3 (W,X,Y are language versions of V)	MP 12N CPU II:	V2.3
Type:	Lean-Lift, Multi-Space, Rotomat												
Access points:	unlimited												
Serial number:	see type plate on the lift/carousel												
Year of construction:	see type plate on the lift/carousel												
MP 12D CPU II:	V 2.3 (W,X,Y are language versions of V)												
MP 12N CPU II:	V2.3												
<b>Keep in an accessible place as a complete document</b>	<ul style="list-style-type: none"><li>◆ 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.</li><li>◆ 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.</li></ul>												
<b>Change service</b>	This documentation is not subject to the change service of the manufacturer. Changes to this documentation may be made without further notification.												
<b>Copyright</b>	<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/carousel easier.

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

#### Terms

- ◆ The microprocessor control system uses the term **shelf**.  
The term "shelf" corresponds to the following:
  - For the Lean-Lift and Multi-Space: **containers**
  - 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
- ◆ 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/carousels 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

#### 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.

## 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 Tool Storage Management Microprocessor Control System MP 12N Lean-Lift and Multi-Space  
or
- User Guide for the File 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  
or
- User Guide for the Tool Storage Management Microprocessor Control System MP 12N Rotomat  
or
- User Guide for the File 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 "Article pool management" supplementary module

- ◆ All lifts/carousels must be equipped with the supplementary module "Article pool management".

### 1 Introduction

#### 1.6 Terms used for the "File management" and "Tool storage management" storage management packet (only for MP 12N-S/H [MP 100D])

This description uses the operator prompts for the "Article storage management" storage management packet.

For tool storage management, tool storage terms are used in place of article storage terms.

For file management, file terms are used in place of file terms.

Article storage terms	Tool storage terms	File terms
ARTICLE	TOOL	FILE
ARTICLE NUMBER	TOOL NUMBER	FILE NUMBER
ARTICLE MASTER DATA	TOOL MASTER DATA	FILE MASTER DATA
ARTICLE LIST	TOOL LIST	FILE LIST
ARTICLE NAME	TOOL NAME	FILE NAME
ARTICLE STORAGE MANAGEMENT	TOOL STORAGE MANAGEMENT	FILE MANAGEMENT
ARTICLE MEMORY	TOOL MEMORY	FILE MEMORY
ARTICLE DATA	TOOL DATA	FILE DATA
ARTICLE SEARCH	TOOL SEARCH	FILE SEARCH
ARTICLE POOL MANAGEMENT	TOOL POOL MANAGEMENT	FILE POOL MANAGEMENT
REQUISITION	EQUIPMENT LIST	LIST
REQUISITION LIST	EQUIPMENT LIST	LIST
REQUISITION NUMBER	EQUIPMENT LIST NO.	LIST NUMBER
REQUISITION MANAGEMENT	EQUIPMENT LIST MANAGEMENT	LIST MANAGEMENT
REQUISITION MEMORY	EQUIPMENT LIST MEMORY	LIST MEMORY
REQUISITION LIST OVERVIEW	EQUIPMENT LIST OVERVIEW	LIST OVERVIEW

## 2 Overview of features

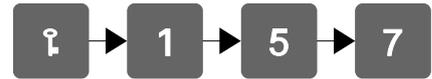
- ◆ Management of article data that are independent of storage location (article pool data) with the following objectives:
  - Defining a fixed range of articles that can be assigned for a storage location.
  - Updating of data that are independent of storage location by a higher-level host system during normal storage area operation.
  - Transfer of article data from a higher-level host system, whereby storage locations can be assigned to the data. Data that are independent of storage location, e.g. article name, do not have to be entered manually.
- ◆ Article pool data such as article name, minimum inventory and special data fields can be changed during operation.
- ◆ Article pool data and article master data share the same memory in storage management.
- ◆ After a storage location is created, an article pool data record becomes an article master data record.
- ◆ After the last storage location is deleted, an article master data record becomes an article pool data record.
- ◆ After the last storage location of an article is deleted, the article data that are independent of storage location remain saved.
- ◆ For the match code search, article master data and article pool data are displayed.
- ◆ Article pool data are read out in the same way as article master data.
- ◆ If storage locations are created for article pool data, these become article master data. The article pool and article master data are read out in mixed form, sorted by article number.
- ◆ When the article list is printed out sorted by article number, both article master data and article pool data are printed.
- ◆ When the article list is printed out sorted by storage location, only stored articles are included in the printout, since article pool data do not contain any storage location information.

### 3 Initialisation (for installation and maintenance personnel only)



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

#### 3.1 Activating the supplementary module "Article pool management"



##### Description of the operator prompts

##### Activating the supplementary module "Article pool management"

- Press the [ ? ] key, the [ 1 ] key and then the [ 5 ] key.
- Enter the password (default setting is "22488").
- Press the [ ← ] key.
- Press the [ 7 ] key.
- Press the [ ↑ ] / [ ↓ ] key to select "YES".
- Press the [ ← ] key.

##### Display

```

SUPPLEMENTARY MODULES
ARTICLE POOL MANAGEMENT :      NO
                                     [ ]
                                     [↑/↓/CE/←]
    
```

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

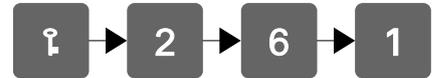
- ➔ Commission (order) number of the lift/carousel is displayed as shown on the type plate.
- Enter the code specific to the lift/carousel.  
The activation code for the supplementary module is kept in the documentation folder "Hänel Rotomat / Lean-Lift / Multi-Space Technical Documentation".
- Press the [ ← ] key.

```

SUPPLEMENTARY MODULES
ARTICLE POOL MANAGEMENT :      YES
COM. NO. : <Commission number of
            lift/carousel>
CODE      : [ ]
-> DOCUMENTATION FOLDER
                                     [CE/←]
    
```

### 3 Initialisation (for installation and maintenance personnel only)

#### 3.2 Format storage management



#### Description of the operator prompts

#### Display

Format the supplementary module "Article pool management" with storage management

- Press the **[F1]** key, the **[F2]** key and then the **[F6]** key.
- Enter the password (default setting is "22488").
- Press the **[←]** key.
- Press the **[F1]** 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 **[F6]** key to select "Article pool management".

```

SUPPLEMENTARY MODULES
1 OPERATIONS JOURNAL LOGGING
2 ACCESS CODE MANAGEMENT
3 STORAGE LOCATION HEIGHT MANAGEMENT
4 STORAGE TIME MANAGEMENT
[↑/↓/CE/←]
  
```

```

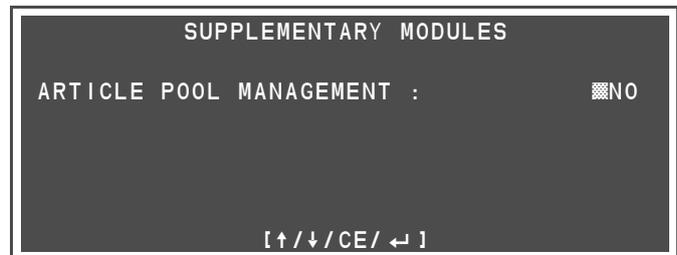
SUPPLEMENTARY MODULES
5 EXTERNAL SHELF MANAGEMENT
6 ARTICLE POOL MANAGEMENT
7 INVENTORY FUNCTION
[↑/↓/CE/←]
  
```

## 3 Initialisation (for installation and maintenance personnel only)

### Description of the operator prompts

- 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.

### Display



### 3.3 Configuring the supplementary module "Article pool management"



- Refer also to the "Technical Description for Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".
- or
- Refer also to the "Technical Description for Microprocessor Control System MP 12N Lean-Lift, Multi-Space and Rotomat".

### Description of the operator prompts

#### Configuring the supplementary module "Article pool 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 **[7]** key.
- Enter the password (default setting is "22488").
- Press the **[←]** key.

### Display

### 3 Initialisation (for installation and maintenance personnel only)

#### Description of the operator prompts

For each prompt:

- Press the [↑] / [↓] key to select "YES" or "NO".
  - Press the [←] key.
- Supplementary module "Article pool management" has been configured.

#### Display

```

SUPPLEMENTARY MODULES

MANUAL VIA KEYBOARD :
CREATE POOL DATA      : NO
EDIT POOL DATA       : NO
CANCEL POOL DATA     : NO

[↑/↓/CE/←]
    
```

#### Parameters / description

##### CREATE POOL DATA

If you select "YES", you can create any articles you choose at the lift/carousel system, independent of the article pool data, and assign storage locations.

If you select "NO", you can only create articles that exist in memory as article pool data. If an attempt is made to create an article that is not present in the article pool, a message appears indicating "ITEM NOT AVAILABLE --> CE".

##### EDIT POOL DATA

If you select "YES", you can manually change the article name, minimum inventory, and special data fields for articles for which a storage location exists as well as for article pool data.

If you select "NO", you can manually change the article name, minimum inventory, and special data fields of the corresponding article pool data, if entries exist.

##### CANCEL POOL DATA

If you select "YES", when the last storage location of an article is deleted, the associated lending data records and reservation data records are also deleted.

Exception: When the quantity journal is enabled, after the last storage location is deleted, the article pool data are still required for the quantity journal and are not deleted until this journal is exported or deleted.

If you select "NO", only the storage location information is deleted. The article number, article name, minimum inventory, container size and special data field remain stored as the article pool data record.

Note: When storage management and the quantity journal are formatted at the same time, the article pool data are deleted only after the quantity journal is deleted.

#### 4 External data transfer via RS232 (only for MP 12D-S)

##### Read in / read out article pool data



- x External data transfer via RS232 is possible only with the MP 12D-S microprocessor control system.
- x The article pool data are independent of storage location and thus can be read into the storage management system even if no lift/carousel has yet been registered.
- x Article pool data can also be read into the storage management system if article master data and article pool data have been stored and the lift/carousel system is currently being operated.
- x Article pool data can also be transferred mixed with article master data under the following conditions:
  - No article master data may be stored in the storage management system. The storage management system must be reformatted if article master data are already saved.
  - All lifts/carousels must be registered.

Article pool data are read in and out in the same way as article master data.

- Refer to the "Technical Description of the Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat".

The structure of the article pool data for reading out is basically identical to that for article master data. The storage location data fields **L** (Lift), **T** (Shelf), **F** (Compartment) and **O** (Compartment depth) are set to **0** (null) for the article pool data record.

The structure of the article pool data for reading in can vary and must / can contain the following data fields:

Data field	Name / note	No. of characters	Area
S	Article number, depending in the formatting Article number must be transferred as the first data field.	1 - 40 digits	alphanumeric
N	Article name, depending on formatting Article name is accepted if transferred.	0 - 40 digits	alphanumeric
L	Lift/carousel number Lift/carousel number must be "0" (null) or not transferred.	2-digit	01 to 99
R	Minimum inventory Minimum inventory is accepted if transferred.	8-digit	numerical

4 External data transfer via RS232 (only for MP 12D-S)

G	Container size Container size is accepted if transferred and if no article master data record exists for this article. Digits 1-3: Size in compartments Digits 4-5: Size in compartment depths	5-digit	00101 to 25509
	Digits 1-3: Compartment Digits 4-5: Compartment depth Digits 6-7: Height	7-digit	0010101 to 2550931
Hxx (H01-H25)	Special data fields, article master data Special data fields are accepted if formatted and transferred.	1-40 digits	alphanumeric



x All other data fields are assigned default values.

5 Host communication by file transfer via Ethernet (only with MP 12N – S / MP 100D)

Read in / read out article pool data



- x Host communication by file transfer via Ethernet is possible only with the microprocessor control system MP 12N-S/MP 100D.
- x The article pool data are independent of storage location and thus can be read into the storage management system even if no lift/carousel has yet been registered.
- x Article pool data can also be read into the storage management system if article master data and article pool data have been stored and the lift/carousel system is currently being operated.
- x Article pool data can also be transferred mixed with article master data under the following conditions:
  - No article master data may be stored in the storage management system. The storage management system must be reformatted if article master data are already saved.
  - All lifts/carousels must be registered.

Article pool data are read in and out in the same way as article master data.

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

The structure of the article pool data for reading out is basically identical to that for article master data. The storage location data fields L (Lift), T (Shelf), F (Compartment) and O (Compartment depth) are set to 0 (null) for the article pool data record.

The structure of the article pool data for reading in can vary and must / can contain the following data fields:

Data field	Name / note	No. of characters	Area
S	Article number, depending in the formatting Article number must be transferred as the first data field.	1 - 40 digits	alphanumeric
N	Article name, depending on formatting Article name is accepted if transferred.	0 - 40 digits	alphanumeric
L	Lift/carousel number Lift/carousel number must be "0" (null) or not transferred.	2-digit	01 to 99
R	Minimum inventory Minimum inventory is accepted if transferred.	8-digit	numerical

5 Host communication by file transfer via Ethernet (only with MP 12N – S / MP 100D)

G	Container size Container size is accepted if transferred and if no article master data record exists for this article. Digits 1-3: Size in compartments Digits 4-5: Size in compartment depths	5-digit	00101 to 25509
	Digits 1-3: Compartment Digits 4-5: Compartment depth Digits 6-7: Height	7-digit	0010101 to 2550931
Hxx (H01-H25)	Special data fields, article master data Special data fields are accepted if formatted and transferred.	1 - 40 digits	alphanumeric



x All other data fields are assigned default values.

6 Annex

6.1 Example: Conversion of customer article data for MP 12D-S

Article master data that exist in a database or spreadsheet software must be converted into the proper format before being transferred to article pool management.

StarOffice Calc (the StarOffice spreadsheet program) is used here as an example of data conversion.

Example table

Name	Article number	Supplier	Order number	Type
Nut M12	1001	TTS	815	11
Screw M12 x 20	1002	PPM	4711	12

- Step 1
- Reduce the table to the columns you want to transfer to article pool management.

Name	Article number	Supplier		
Nut M12	1001	TTS		
Screw M12 x 20	1002	PPM		

- Step 2
- Move the "Article number" column to the first column.

Article number	Name	Supplier		
1001	Nut M12	TTS		
1002	Screw M12 x 20	PPM		

- Step 3
- Check the entries (syntax check).
    - Each data record must have a unique article number.
    - Only valid characters may be used in the data fields.
    - The data field length must not be exceeded.
  - Refer to the "Technical Description of the Microprocessor Control System MP 12D Lean-Lift, Multi-Space and Rotomat, chapter "External data transfer".

- Step 4
- Insert another gap in front of each gap.
  - In the first column, enter \*\$S.
  - Add the delimiter \$ and the corresponding data field identifier, e.g. N to the corresponding columns.

	Article number		Name		Supplier	
*\$S	1001	\$N	Nut M12	\$H01	TTS	
*\$S	1002	\$N	Screw M12 x 20	\$H01	PPM	

6 Annex

- Step 5
- Delete the line with the table header.

*\$S	1001	\$N	Nut M12	\$H01	TTS	
*\$S	1002	\$N	Screw M12 x 20	\$H01	PPM	

- Step 6
- Save the table as a CSV file (comma-separated ASCII text file) with a semicolon (;) as the data field separator and (") as text separator.

Excerpt of CSV file:

```
**$S";"1001";"$N";"NUT M12    ";"$H01";"TTS"
**$S";"1002";"$N";"SCREW M12 X 20";"$H01";"PPM"
```

- Step 7
- Open the CSV file using an editor. Using search and replace, delete the data field separators (;) and the text separators (").
  - Save the file in the editor with "ANSI" encoding.

Excerpt of CSV file:

```
*$S1001$NNUT M12    $H01TTS
*$S1002$NSCREW M12 X 20$H01PPM
```

6 Annex

6.2 Configuration settings

A configuration that differs 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
ARTICLE POOL MANAGEMENT	: <input type="checkbox"/> YES <input type="checkbox"/> <u>NO</u>
MANUAL VIA KEYBOARD	
CREATE POOL DATA	: <input type="checkbox"/> YES <input type="checkbox"/> <u>NO</u>
EDIT POOL DATA	: <input type="checkbox"/> YES <input type="checkbox"/> <u>NO</u>
CANCEL POOL DATA	: <input type="checkbox"/> YES <input type="checkbox"/> <u>NO</u>

## 6 Annex

### 6.3 Revision notes

Last issue dated: 2007-11-23

- Chapter 1.1 Validity improved.
- Target group improved.

**Zusatzbeschreibung Artikelpoolverwaltung  
Microprocessor Control System  
MP 12D/N-S/H[MP 100D]**

**Lean-Lift  
Multi-Space  
Rotomat**

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