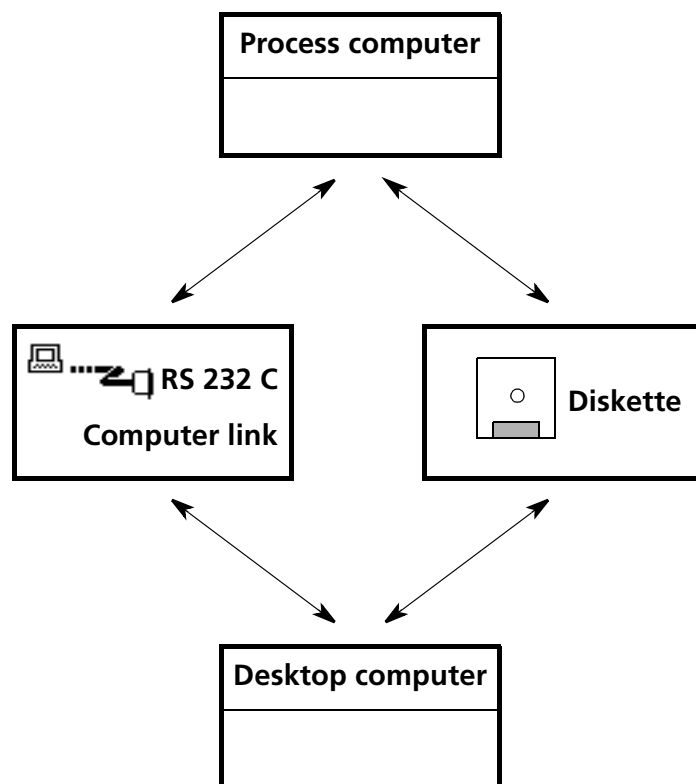


UMESS

Option 4 Control data converter for UNIX



Operating Instructions



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Preface

It is here assumed that the user is familiar with the coordinate measuring machine and its components. Please keep all printed materials delivered with the measuring machine ready to hand at all times.

Principles in this operating manual

Before starting to work with this manual, the user has to familiarize himself with the applied principles.

In the following, you will find information on the used font types, signs and symbols.

Typographic principles

The font types and font schemes used in this manual have the following meaning:

- **bold face**
 - Dialog element on the screen
Example: "... the button <TERMIN>"
 - Term
Example: "During calculation the location of a **measuring** element in relation to a **reference element** is determined."
 - File and directory names
Example: **/home/zeiss/UB**
- *italic*
 - Highlighted text of which the contents are very important
Example: "Click with the *right* mouse button ..."
 - Cross reference
Example: "..., see also ► *"Typographic principles" on page -3*"
- Courier
Program code, file contents
- **Courier bold face**
Text in dialog windows and records

Signs and symbols

Special signs and symbols are used in this manual.

Symbols for warnings and information



Danger!

In this case, special care is called for. The warning triangle indicates risk of injury. Non-observance of this warning may cause personal injury.



Note!

This symbol warns against situations which may lead to loss of data, measuring errors, errors in the measuring run, collisions or damage to the machine and workpiece.



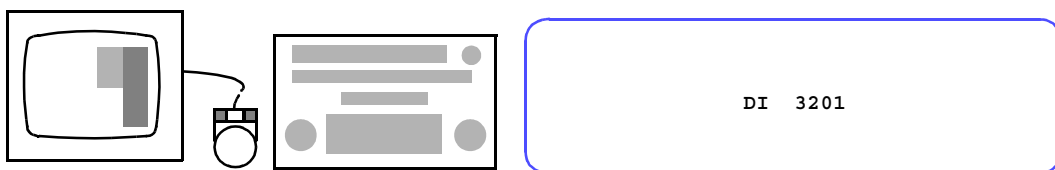
The **Note** symbol is shown next to important text and helpful additional information.

Symbol for function call

There are several possibilities:

- Direct input by means of the DI number
- Function selection by means of the pull-down menu
- Selection by means of icons

Example:



Symbol for softkey

Reference to softkeys in dialogs.

Overview of chapters

This manual describes the use of control data from desktop computers to process computers and vice versa; UMESS Opt.4 control data converter.

The following subjects are described:

- *"Introduction" on page 1-1*
- *"Online transfer from desktop computer to Process computer" on page 2-1*
- *"Offline transfer from desktop computer to process computer" on page 3-1*
- *"Online transfer from process computer to desktop computer" on page 4-1*
- *"Offline transfer from the process computer to the desktop computer" on page 5-1*
- *"Creating CMS control data (DI 1802)" on page 6-1*

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Chapter



Introduction

You can use control data from desktop computers on process computers and vice versa with the help of the control data converter.

Desktop computer

HP 9000, 300 series (Type 310, 320, 330, 332), CMS operating system, HP 9816, HP 9836

Process computer

HP 9000, 300 series (Type 340, 360), HP-UX operating system

This chapter contains:

Where do I find what?	1-2
Addressed Programs	1-3
Direct input functions	1-3

NOTE

The control data is converted in the process computer. In order for it to be transferred to the desktop computer, the DATACOM software must be installed there.

Where do I find what?

This manual describes:

- how you transfer control data on-line
 - from the desktop computer to the process computer (► *Page 2-1*)
 - from the process computer to the desktop computer (► *Page 4-1*)(the computers must then be linked by a RS 232 C cable)
- how you transfer data off-line
 - from the desktop computer to the process computer (► *Page 3-1*)
 - from the process computer to the desktop computer (► *Page 5-1*)(the computers must then be equipped with a disk drive)
- How you
 - create (► *Page 6-1*)
 - correct (► *Page 6-1*) desktop computer control data(if you are working on a process computer as ACE station)

Addressed Programs

<ADR PROG>	Program functions	Page
151	Programming the plotter scaling	➤ Page 6-15
153	Programming the graphics evaluation	➤ Page 6-16
183	Programming the probe change	➤ Page 6-22
185	Storing/reading the probe configuration	➤ Page 6-23
635	Offline control data transfer	➤ Page 3-4 and ➤ Page 5-3
639	Online control data transfer	➤ Page 2-3 and ➤ Page 4-6

Direct input functions

DI No.	Input abbrev.	Function	Page
1802		Creating CMS control data	➤ Page 6-1
3201		Converting 200/300 → UX	➤ Page 2-4
3301		Converting UX→ 200/300	➤ Page 4-3

Chapter

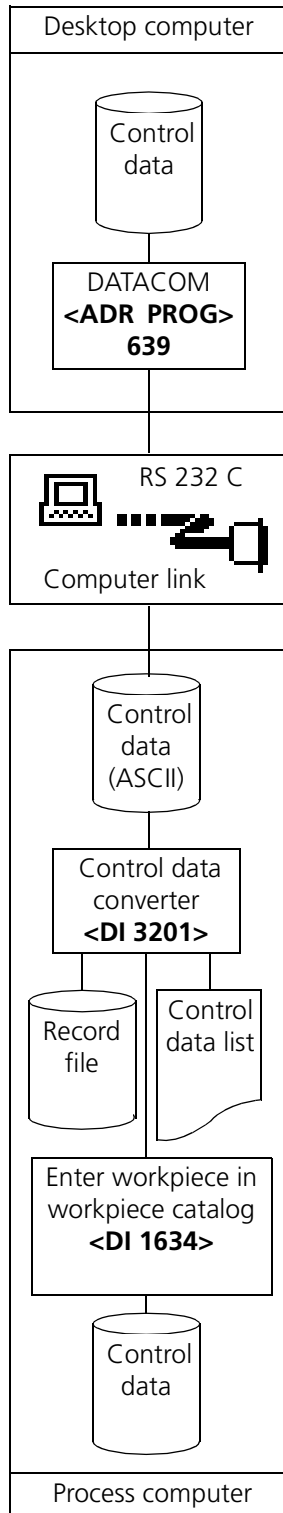
2

Online transfer from desktop computer to Process computer

This chapter contains:

Principle	2-2
Transferring the control data	2-3
Converting the control data	2-4

Principle



- The control data to be converted is on the current control data disk
- The DATACOM software has been installed on the desktop computer, **<ADR PROG> 639** is called.
- The control data is transferred to the process computer by cable and automatically converted to ASCII format.
- The ASCII control data is stored on the process computer in the directory **/var/opt/ASCII/Kn** under the name selected.
- The control data converter
 - reads the ASCII control data
 - converts it to runnable control data
 - outputs a control data list
 - retains the errors which have occurred in the record file
- The runnable control data is stored in the directory **/home/zeiss/UB** and subsequently entered manually into the workpiece catalog with **DI 1634**, see UMESS Operating Instructions.

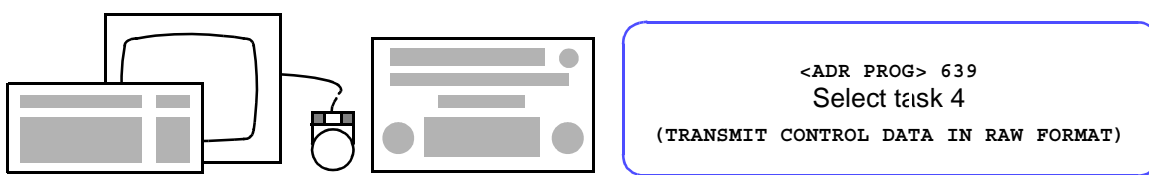
Transferring the control data

Procedure

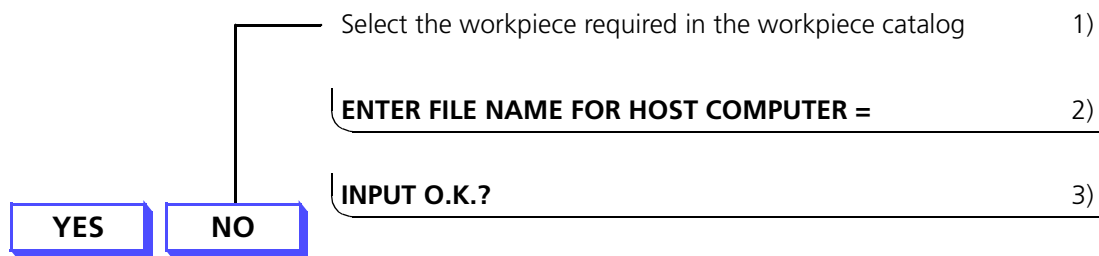
The control data transfer is executed from the desktop computer.

With the transfer the control data is converted to ASCII format and stored on the directory **/var/opt/ASCII/K_n** (n = 1...4).

Function call



Dialog



Transfer of the control data to the process computer

Explanation of the dialog

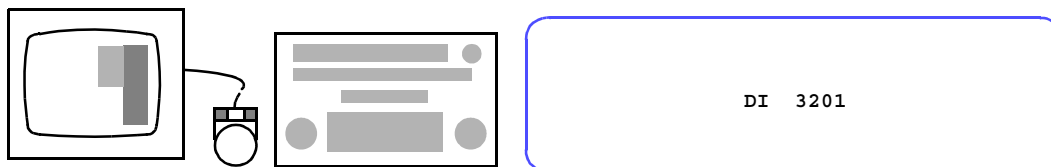
- 1 Select the workpiece required with the cursor keys.
- 2 Enter the name which the ASCII control data file is to receive on the process computer. The name must consist of 14 characters and must be written in capitals.
- 3 Verification inquiry.

Converting the control data

The control data converter <DI 3201> has three tasks:

- It reads desktop computer control data stored on ASCII file, produces from this control data in the process computer format and stores this on the directory **/home/zeiss/UB**.
- It outputs the corresponding control data list in the process computer format on file .
- It documents errors which occur during the conversion and stores them in the record file.

Function call on the process computer



Dialog			
Control data conversion UMESS-200/300 => UMESS-FTN			
<input checked="" type="checkbox"/> C	Source	ASCII Control data file	<input type="text"/>
	Directory Number		<input type="text"/>
	Workpiece name		<input type="text"/>
	Unit of length.....mm	<input checked="" type="checkbox"/> * or inch	<input type="checkbox"/>
Target	File name	CNC	<input type="text"/>
	overwrite		<input type="checkbox"/>
	Output control data list		<input type="checkbox"/>
	on printer		<input type="checkbox"/>
	or on file		<input type="checkbox"/>
* YES		NO	<input type="text"/>
BACK		<input type="text"/>	<input type="text"/>
*		CATALOG	TERMIN
		<input type="text"/>	INFO

File names

CNC__xxxB

The first two underlines in the file name are the catalog code.

Softkeys

YES / NO

Activates/deactivates the input fields.

CATALOG

Control data catalog for display.

TERMIN

Conclusion of screen pages and conversion of control data.

BACK

Return to UMESS main functions.

INFO

Additional information on the function.

Input fields

Source

Enter the name of the ASCII control data file which contains the desktop computer control data to be converted (14 characters).

Enter directory number (1, 2, 3 or 4). The workpiece name is added automatically.

Unit of length

Specify the unit of measurement to be used in the desktop control data. Choose between "mm" and "inch" with **<YES>/<NO>**.

Target

A name is suggested depending on the ASCII control data file. If a process computer control data file of this name already exists, (e.g. initial control data from which the desktop computer control data to be converted was produced originally by conversion) **<NO>** must be selected with overwrite and a new name entered.

Control data format

Select as target format UMESS-FTN with **<YES>**.

Output control data list

Determine by selecting **<YES>/<NO>** whether and where the output is to be made (printer not yet implemented).

Record file

Errors occurring during a control data conversion are documented in the directory

/home/zeiss/UF as record file **STD300ERGxxxxB**

The line number, address and note text are output.

Example

```
Control data file: CNC_____0003B
==> free of errors
```

```
Control data file: CNC_____0004B
Line: 1 no equiv. fct. in UMESS-FTN: 8 61157 1 2 1.5
Line: 325 no equiv. fct. in UMESS-FTN: 8 61157 1 1 0.0
Line: 350 no equiv. fct. in UMESS-FTN: 8 6121 1.6070 0.0000
Line: 357 no equiv. fct. in UMESS-FTN: 8 6121 -0.8930 0.0000
Line: 367 no equiv. fct. in UMESS-FTN: 8 6121 1.6070 0.0000
Line: 371 no equiv. fct. in UMESS-FTN: 8 6121 0.0000 0.0000
Line: 473 no equiv. fct. in UMESS-FTN: 8 61157 1 2
```

Process computer control data file

The computer stores the process computer control data file produced with the control data conversion in the directory

/home/zeiss/UB under the file name **CNC_____xxxxB**

The file name follows the name of the ASCII control data file. The control data must then be entered manually into the workpiece catalog (see UMESS Operating Instructions).

Control data list

During the conversion of the control data file, the computer stores a control data list in ASCII format as file

LIS_____xxxxB on the directory **/home/zeiss/UF**.

Chapter

3

Offline transfer from desktop computer to process computer

This chapter contains:

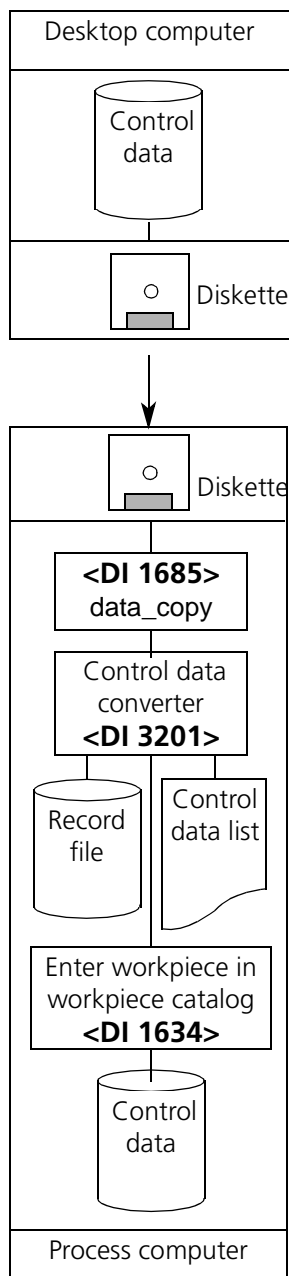
Transfer principles	3-2
Transferring the control data	3-4

Transfer principles

You can select between two transfer principles:

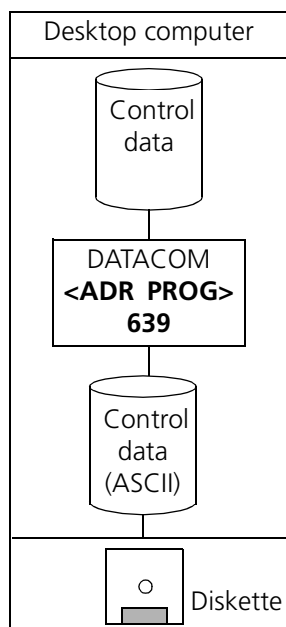
- Principle 1 with **<DI 1685> data_copy**
- Principle 2 with **<TERMIN> 635 DATACOM** .

Principle 1

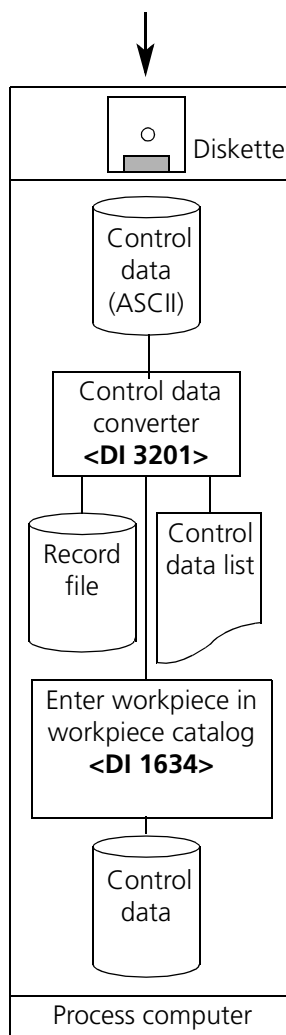


- The control data to be converted is on the current control data disk
- The control data is copied to disk.
- On the process computer, the control data is copied from the diskette renamed and
- stored on the directory **/var/opt/ASCII/K1**.
The control data is renamed so that the control data converter has access to it.
- The control data converter
 - reads the control data
 - converts it to runnable control data
 - outputs a control data list
 - retains the errors which have occurred in the record file
- The runnable control data is entered manually in the workpiece catalog with **<DI 1634>**.

Principle 2



- The control data to be converted is on the current control data disk
 - The DATACOM software has been installed on the desktop computer, **<ADR PROG> 635** is called.
 - The control data is converted to ASCII files
- and copied to disk.



- On the process computer, the ASCII control data is copied from the diskette, renamed and
- stored on the directory **/var/opt/ASCII/K_n**.
The control data is renamed so that the control data converter has access to it.
- The control data converter
 - reads the ASCII control data
 - converts it to runnable control data
 - outputs a control data list
 - retains the errors which have occurred in the record file
- The runnable control data is entered manually in the workpiece catalog with **<DI 1634>**.

Transferring the control data

Procedure for principle 1

- On the desktop computer copy the UMESS 300 workpiece in question to diskette.
- Take the diskette (control data diskette) with the UMESS 300 workpiece to the process computer (UMESS data station) and insert the diskette in the disk drive.

NOTE

If you are using HD diskettes, there should be a HD initialization on each diskette from the CMS system in LIF format. If your CMS system can only initialize DD diskettes, you can solve this by taping over the second window of the HD diskette; the UNIX system then recognizes this diskette as DD diskette.

- With the direct input **<TERMIN>** you call the HP-UX script **data_copy**. The control data stored on the diskette as workpieces from UMESS 300 is stored automatically as single files on the process computer. The individual files are stored on the directory **/var/opt/ASCII/K1** under the name **DATA1_1, DATA1_2, ... DATA1_n**, **n** stands for the number of the workpieces.
If the device file for the disk drive is not **dev/rdisk/floppy**, then the current name of the device file must be specified in the form **data_copy/[DEVICEFILE]**, for example: **data_copy /dev/floppy_c**
- With the direct input **<TERMIN,>** you then call the control data converter, explanation of the control data converter ➤ *“Converting the control data” on page 2-4*
- With the direct input **<DI 1634,>** you have to enter the corresponding workpiece (control data) in the workpiece catalog (control data catalog). Explanation of **<DI 1634>**, see UMESS operating instructions.

Procedure for principle 2

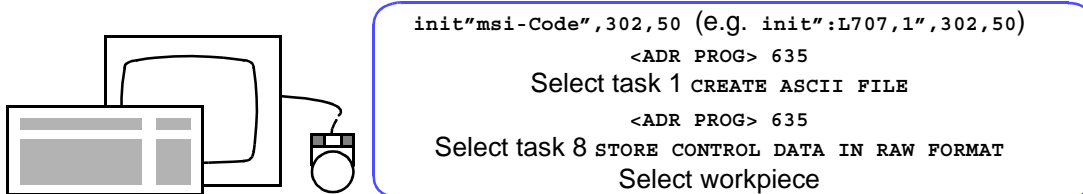
The control data is transferred in LIF format. You must format the diskette at the desktop computer to LIF

Note!

By entering the **init**-command, data on the diskette will be deleted.

Then convert the control data at the desktop computer to ASCII format and copy it to this disk. For the control data conversion, log on at the process computer as **kd1** user.

Function call



Dialog

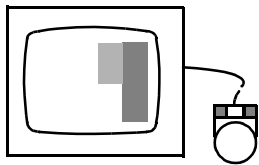
<div>YES</div> <div>NO</div>	ASCII FILE NAME (max. 10 char.) =	1)
	MSI-CODE =	2)
	ASCII FILE SIZE =	3)
	FILE :L707,1, ...RECORDS O.K.?	4)

Explanation of the dialog

- 1 Enter the name which the ASCII control data file is to receive (maximum 10 characters).
- 2 Enter the msi code of the disk drive (e.g. " :L707,1")
- 3 Specify the size of the ASCII file.
Guide value: A record corresponds to approximately three fully written screen lines.
- 4 Verification inquiry, answer with **<YES>** or **<NO>**.

The control data at the process computer is then copied to the directory **/var/opt/ASCII/K_n** and renamed (14 characters). If you switch first to the **/var/opt** directory, the command input is simplified.

Function call



```
lifcp /dev/rdsk/floppy:Filename /var/opt/ASCII/Kn/File name
      (Control data copied)
      cd /var/opt/ASCII/Kn
      (Change of directory)
mv /Directory/old file name /Directory/new file name
      (Renaming)
      cd
      (Return to home directory)
```

Note

If the control data to be transferred is stored on disk and a second disk drive is not available, you must first store the control data on the hard disk in ASCII format and copy from there to the LIF diskette. Proceed as described above, instead of the disk drive you specify a drive of the hard disk as msi-code. Subsequently copy the ASCII file to the LIF diskette.

Enter the following command at the desktop computer:

```
copy "Filename:msi-code Winchester Drive", "Filename:msi-code disk drive"
```

(e.g. copy "Luefter:L707,50", "Luefter:L707,1")

Explanation of the control data converter, **<DI 3201>**, ➤ *"Converting the control data" on page 2-4*

Chapter

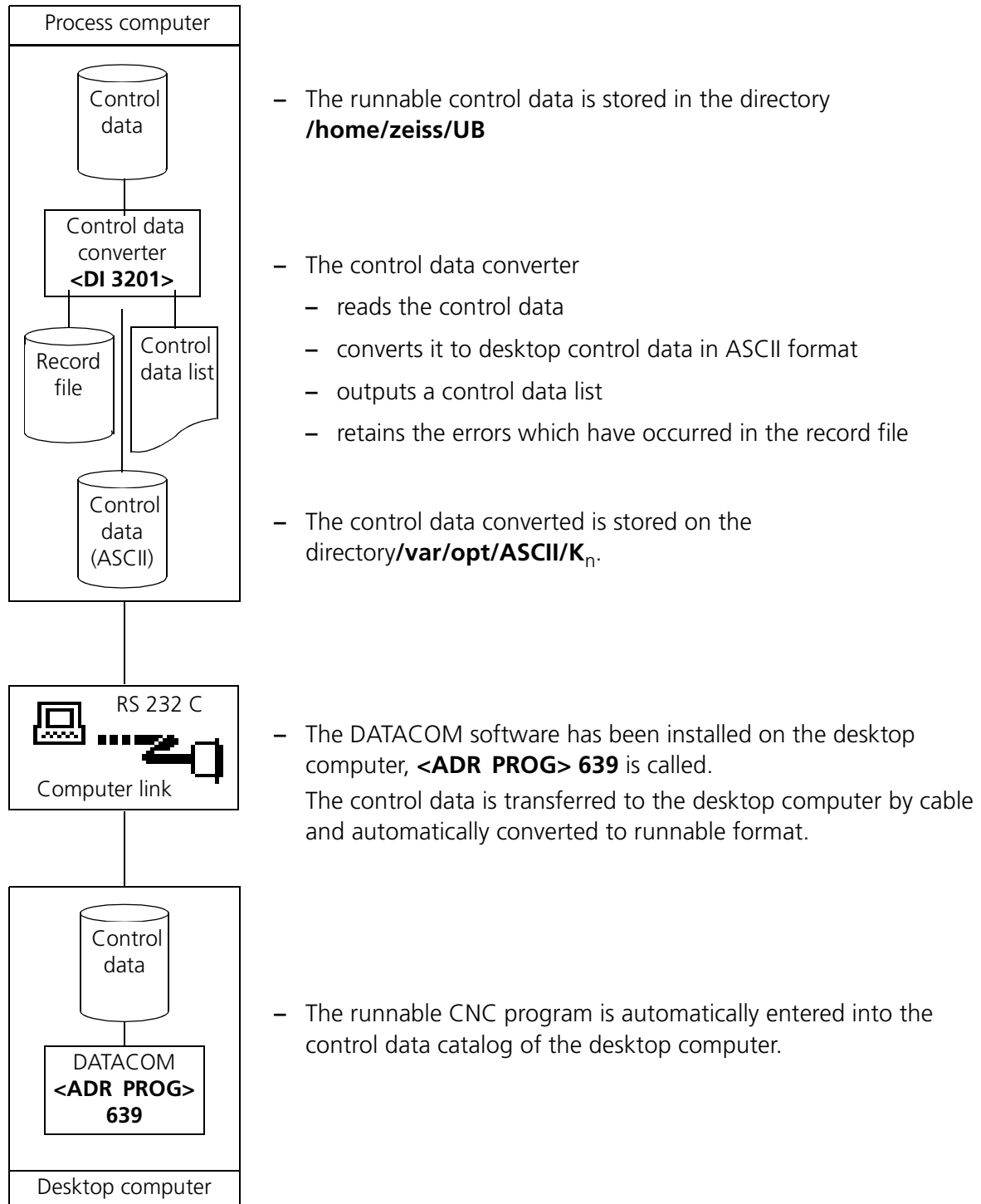
4

Online transfer from process computer to desktop computer

This chapter contains:

Principle.	4-2
Converting the control data.	4-3
Transferring the control data	4-6

Principle

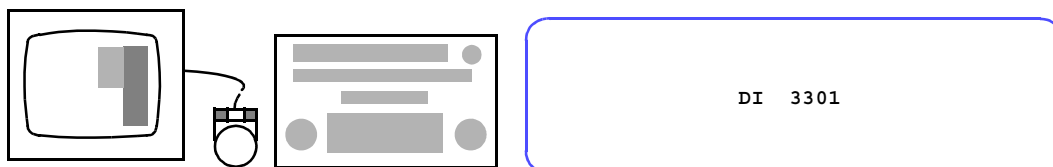


Converting the control data

The control data converter (DI 3301) has three tasks:

- It reads the control data of a CNC program, produces from this control data in desktop computer format and stores it as ASCII file.
- It outputs the corresponding control data list in the desktop computer format on file
- It documents errors which occur during the conversion and stores them in the record file.

Function call on the process computer



Input mask

Dialog			
Control data conversion UMESS-FTN=> UMESS-200/300			
Standard catalog			
<input checked="" type="checkbox"/> Source		Name	<input type="text"/>
WP code	<input type="text"/>	Comment	<input type="text"/>
Target	ASCII Control data file		<input type="text"/>
	Format UMESS-300		<input type="checkbox"/>
	Format UMESS-200		<input type="checkbox"/>
	Directory Number		<input type="text"/>
	overwrite		<input type="checkbox"/>
Output control data list			<input type="checkbox"/>
on printer			<input type="checkbox"/>
or on file			<input type="checkbox"/>
* YES NO		* CATALOG TERMIN	
BACK		INFO	

Softkeys

YES / NO
CATALOG
TERMIN
BACK
INFO

- Activates/deactivates the input fields.
- (Key not yet implemented)
- Conclusion of screen page and conversion of control data.
- Return to UMESS main functions.
- Additional information on the function.

Input fields

Source

- When the workpiece number is entered from the workpiece catalog, the workpiece name and file name are entered automatically.
- When the workpiece name is entered, the workpiece number and file name are entered automatically.
- When the file name is entered (name is in the directory **/home/zeiss/UB**), the workpiece number and workpiece name are entered automatically.

Target

- The name **CNC_CMS__xxxxB** is suggested for the ASCII control data file.
- xxxx** stands for a number between 0 and 200 with a zero prefix, e.g. **0012**. This number is the number from the process computer control data catalog.
- Determine with **<YES>** / **<NO>** the target format required (UMESS 200 or UMESS 300).
- The inquiry **Overwrite directory number ..** only appears if an ASCII control data file already exists on the conversion directory **/var/opt/ASCII/K_n** with the same name.

- <YES>** The existing directory is overwritten.
- <NO>** The field ASCII control data file is active so that a new name can be entered.

Output control data list

- Determine by selecting **<YES>** / **<NO>** whether and where the output is to be made (printer not yet implemented).

NOTE

Operation of the program as for standard catalog functions

Record file

All errors occurring during a control data conversion are documented in the directory

/home/zeiss/UF as record file **STDFTNERGxxxxB**

The line number, address and note text are output.

Example

```
Control data file: CNC_CMS__0003B
Masked MODE          Line
Masked RES NOMINAL   Line
Masked RES GAP        Line
Masked RES NOMINAL   Line
Masked RES GAP        Line
Masked RES NOMINAL   Line
Line 402: MIN-MAX FLAT/ROUND not yet implemented
Line 403: MIN-MAX FLAT/ROUND not yet implemented

Control data file: CNC_CMS__0009B
==> converted free of errors
```

Desktop computer control data file in ASCII format

The computer stores the desktop computer control data file produced with the control data conversion in the directory

/var/opt/ASCII/K_n ($n = 1 \dots 4$) under the file name **CNC_CMS__xxxxB**

or in another file name selected in ASCII format.

Control data list

During the conversion of the control data file, the computer stores a control data list in ASCII format as file

LLC_CMS__xxxxB on the directory **/home/zeiss/UF**

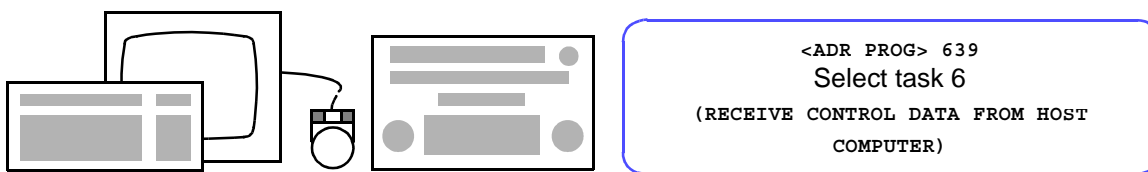
Transferring the control data

Procedure

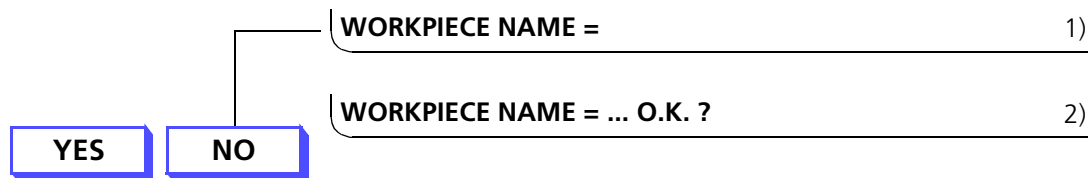
The control data transfer is executed from the desktop computer.

With the conversion the control data is converted to a runnable format and entered in the control data catalog.

Function call



Dialog



Transfer of the control data to the desktop computer

Explanation of the dialog

- 1 Enter the name of the ASCII control data file to be transferred.

Note: When installing DATACOM, the directory must be set to the one which DATACOM accesses at the computer. Normally the conversion directory is set here. If this is not the case, the conversion directory must be specified in addition to **WORKPIECE NAME**.

Example: It is assumed that DATACOM does not access the conversion directory. The ASCII control data file

CNC_CMS__0003B is on the directory **/var/opt/ASCII/K1**.

Input: **/var/opt/ASCII/K1/CNC_CMS__0003B**

- 2 Verification inquiry, answer with **<YES>** or **<NO>**.

DATACOM now accesses the ASCII control data file and fetches the control data to the desktop computer. The control data transferred is converted to runnable binary format at the same time; the CNC program is entered in the control data catalog.

Chapter

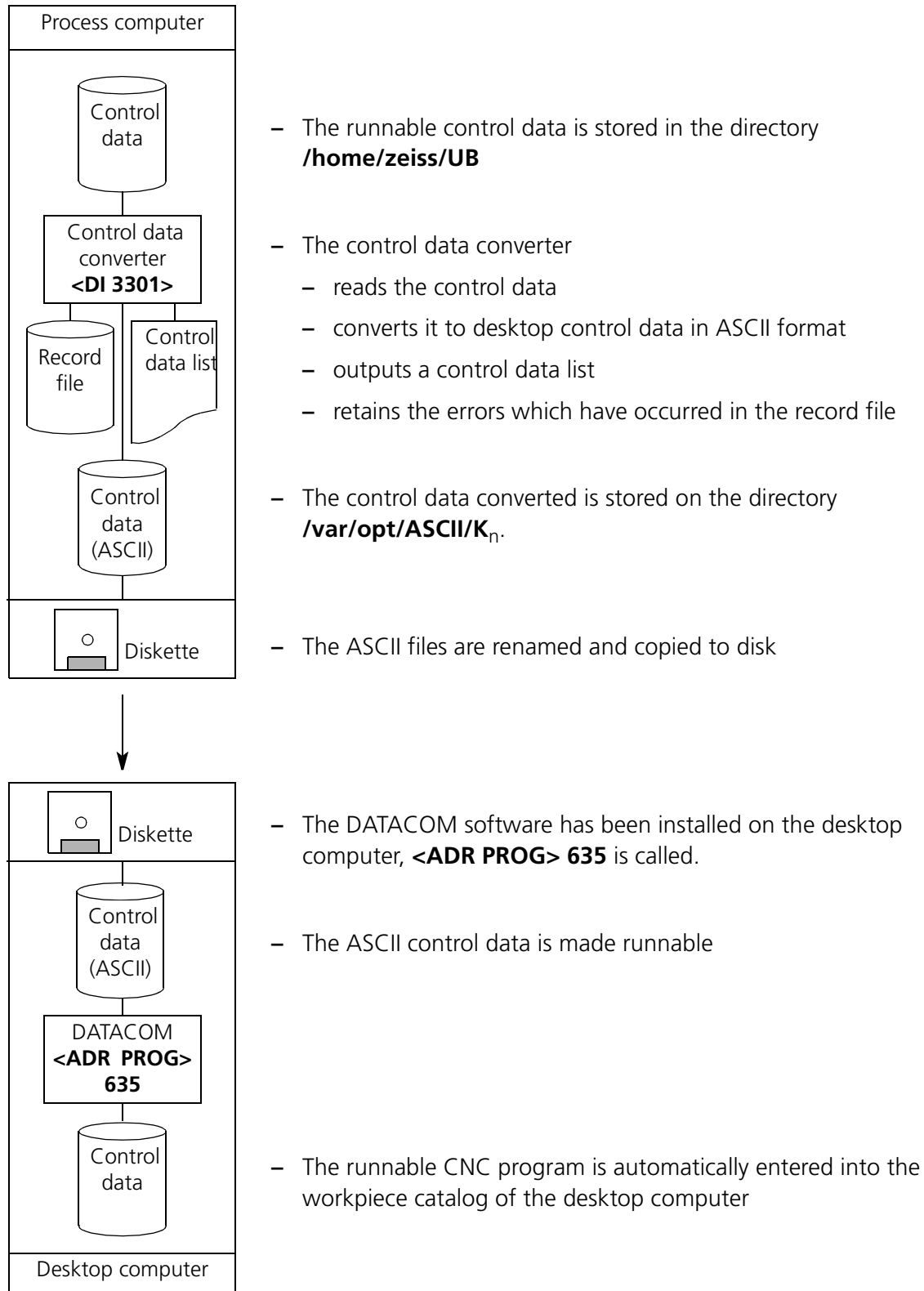
5

Offline transfer from the process computer to the desktop computer

This chapter contains:

Transfer principle	5-2
Transferring the control data	5-3

Transfer principle



Transferring the control data

Procedure

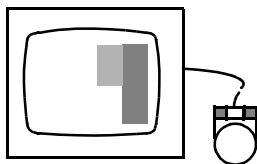
The control data conversion with the aid of **<DI 3301>** (► *"Converting the control data" on page 4-3*) in the process computer stores the desktop computer control data in ASCII format in the directory **/var/opt/ASCII/K_n** ($n = 1 \dots 4$). From there it is copied to disk.

In LIF format the file name is allowed to be written only in capitals, no numbers at the beginning, no dots or underlining, and max. 10 characters long. Therefore the control data files must be renamed before the transfer. The diskette must be initialized in LIF format (► *"Transferring the control data" on page 3-4*). For the transfer, log on at the process computer as **kd1** user.

NOTE

Devices are installed in HP-UX with device files. One device file is needed for each device connected. For connecting a disk drive there are two device files in the software, floppy0 and floppy1. If required, the system administrator can set up more device files.

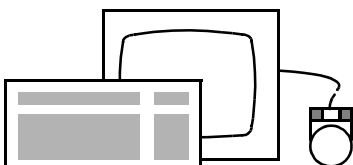
Function call on the process computer



```
cd /var/opt/ASCII/Kn
(Change to the conversion directory)
mv /Directory/old file name /Directory/new file name
(Renaming the ASCII control data file)
mediainit /dev/rdsk/floppy
(Initialising the diskette)
lifinit /dev/rdsk/floppy
(Formatting in LIF format)
lifcp FILENAME /dev/rdsk/floppy:FILENAME
(Storing ASCII control data file on disk)
```

Now you convert the ASCII control data file to runnable desktop computer control data and copy it to the workpiece catalog of the desktop computer.

Function call



```
<ADR PROG> 635
Select task 9
(Restore ASCII file to UMESS control data)
```

Dialog

YES **NO**

ASCII FILE NAME (max. 10 char.) = 1)

MSI-CODE = 2)

WORKPIECE NAME = 3)

WORKPIECE NAME = ... O.K. ? 4)

- 1 Enter the name of the ASCII control data file on the disk.
- 2 Enter the msi-code of the disk drive.
- 3 Enter the workpiece name under which the control data is to be stored on the control data disk (14 characters).
- 4 Verification inquiry.

Chapter 6

Creating CMS control data (DI 1802)

This chapter contains:

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Introduction

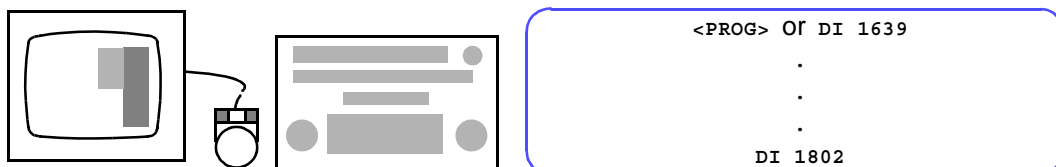
With **<DI 1802>** you can create on your ACE station (process computer) CMS300 control data (desktop computer control data), e.g. for UMESS 300. Input takes place using screen pages.

Basic procedure

- Create CMS control data line by line at the process computer
(➤ *“General control data line” on page 6-6*).
- Send the control data produced via the control data converter to the desktop computer at the coordinate measuring machine.
- If necessary, correct the control data created:
 - before the data transfer at the process computer **<DI 1642>**,
(➤ *“Computer link ASCII (A639)” on page 6-13*)
 - after the data transfer at the hp 300 (Edit command **<CORRECT CONTROL DATA>**)

To be able to create CMS control data, you must first call the screen page **Edit CMS300 control data** in the **programming mode**.

Function call



Dialog window

Dialog	
Edit CMS300 control data	
General control data line	
<input checked="" type="checkbox"/> Y	or probing speed
	or travel speed (A633)
	or temperature correction (A27)
	or measurement record on ASCII file (A623)
	or computer link ASCII (A637)
	or change plot format (A639)
	or plotter scaling (A537)
	or graphic evaluation (A151)
	Task code (A153)
	or probe change
	or probe configuration (A183)
<div> <div>* YES</div> <div>NO</div> <div></div> <div></div> </div> <div> <div>BACK</div> <div></div> <div></div> <div></div> </div>	
<div> <div>*</div> <div></div> <div></div> <div></div> <div>TERMIN</div> </div> <div> <div></div> <div></div> <div></div> <div>INFO</div> </div>	

Softkeys

*** YES / NO**

Acceptance/refusal of YES/NO field currently highlighted (<**YES**> = input of *).

TERMIN

Branching to the task selected.

BACK

Return to calling menu.

INFO

Further information.

Input fields

General control data line	This must always be selected apart from when you want to program one of the other UMESS functions specified on the screen page. After <TERMIN> the screen page CMS300: General control data line (➤ <i>"General control data line" on page 6-6</i>) appears.
Probing speed (A633)	This must be selected if you want to program <ADR PROG> 633 . After <TERMIN> the screen page CMS300: Probing speed (A633) (➤ <i>"Probing speed (A633)" on page 6-9</i>) appears.
Travel speed (A27)	This must be selected if you want to program <ADR PROG> 27 . After <TERMIN> the screen page CMS300: Travel speed (A27) (➤ <i>"Travel speed (A27)" on page 6-10</i>) appears.
Temperature correction (A623)	This must be selected if you want to program <ADR PROG> 623 . After <TERMIN> the screen page CMS300: Temperature correction (A623) (➤ <i>"Temperature correction (A623)" on page 6-11</i>) appears.
Measurement record on ASCII file (A637)	This must be selected if you want to program <ADR PROG> 637 . After <TERMIN> the screen page CMS300: Measurement record on ASCII file (A637) (➤ <i>"Measurement record on ASCII file (A637)" on page 6-12</i>) appears.
Computer link ASCII (A639)	This must be selected if you want to program <ADR PROG> 639 . After <TERMIN> the screen page CMS300: Data communications program (A639) (➤ <i>"Computer link ASCII (A639)" on page 6-13</i>) appears.
Change plot format (A537)	This must be selected if you want to program <ADR PROG> 537 . After <TERMIN> the screen page CMS300: Change plot format (A537) (➤ <i>"Changing plot format (A537)" on page 6-14</i>) appears.
Plotter scaling (A151)	This must be selected if you want to program <ADR PROG> 151 . After <TERMIN> the screen page CMS300: Plotter scaling (A151) (➤ <i>"Programming the plotter scale (A151)" on page 6-15</i>) appears.
Graphic evaluation (A153)	This must be selected if you want to program one of the tasks to be called with <ADR PROG> 153 . The task must be specified subsequently in the Task code field (➤ <i>"Programming graphic evaluation (A153)" on page 6-16</i>).
Task code	<p>If you want to program <ADR PROG> 153 you must specify the task required here. Possible input</p> <ol style="list-style-type: none"> 1 Text input; after <TERMIN> the screen page CMS300: Text input (A153, task 1) (➤ <i>"Text input (Task 1)" on page 6-16</i>) appears. 2 Record head; after <TERMIN> the screen page CMS300: Record head (A153, task 2) (➤ <i>"Record head (Task 2)" on page 6-17</i>) appears.

- 3 Nominal-actual table; after <TERMIN> the screen page **CMS300: Nominal-actual table (A153, task 3)** (▶ *"Nominal-actual table (Task 3)" on page 6-18*) appears.
- 4 Vector diagram; after <TERMIN> the screen page **CMS300: Vector diagram (A153, task 4)** (▶ *"Vector diagram (Task 4)" on page 6-19*) appears.
- 5 Bar diagram; after <TERMIN> the screen page **CMS300: Bar diagram (A153, task 5)** (▶ *"Bar diagram (Task 5)" on page 6-20*) appears.
- 6 Bar diagram with recall; after <TERMIN> the screen page **CMS300: Bar diagram with recall (A153, task 6)** (▶ *"Bar diagram with recall (Task 6)" on page 6-21*) appears.

Probe change (A183)

This must be selected if you want to program <ADR PROG> 183. After <TERMIN> the screen page **CMS300: Probe change (A183)** (▶ *"Programming the probe change (A183)" on page 6-22*) appears.

Probe configuration (A185)

This must be selected if you want to program <ADR PROG> 185. After <TERMIN> the screen page **CMS300: Probe configuration (A185)** (▶ *"Storing/reading the probe configuration (A185)" on page 6-23*) appears.

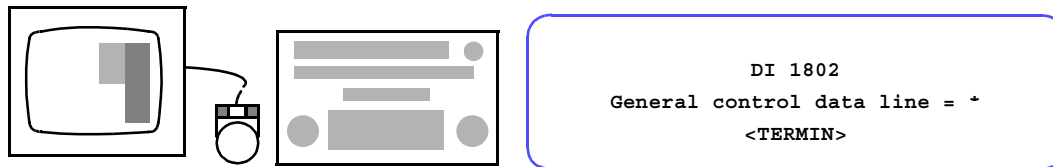
Operation

Select the required task with <* YES>/<NO> and call the appertaining screen page with <TERMIN>.

Return to ACE with <BACK>.

General control data line

Function call



Dialog window

CMS300: General control data line

1	3	5	8	11	20	29	37
I							

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

*** YES / NO**

To move between the input fields

TERMIN

The control data line entered is stored (4 FORTRAN control data lines), the **edit CMS300 control data** screen page appears again.

BACK

Return to calling menu.

INFO

Further information. As soon as the last input field has been selected, information on the format of the control data lines to be entered, cf. "Operation".

Input fields

See "Operation".

Operation

3 cases must be differentiated:

1. Enter the following to program the first line of an addressed program:

Field 1 8 <Return>.

Field 2 61 <Return>.

Field 3 the number of the addressed program

Field 4 the data belonging to the addressed program (with the corresponding space characters). You can request information here with the <INFO> softkey or refer to the corresponding operating instructions.

2. If you want to enter the first line of a measuring program, enter 8 in field 1 and the number of the measuring program in field 2. The input page changes as follows:

CMS300: General control data line

1	3	5	8	11	20	29	37
I	8	14					
	Field 1	Field 2	Field 3				

* YES	NO		
BACK			

*			TERMIN
			INFO

Now enter in field 3 the data belonging to the measuring program. You can request information here with the <INFO> softkey or refer to the corresponding operating instructions.

3. If you want to enter a continuation line, enter 14 in field 1. The following page appears:

CMS300: General control data line

1	3	5	8	11	20	29	37
I	14						

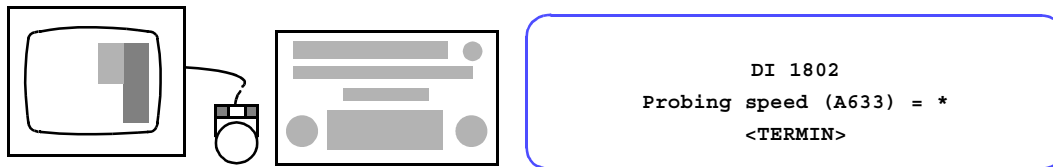
Field 1 Field 2

* YES	NO			*				TERMIN
BACK								INFO

Further operation analogous to 1. or 2.

Probing speed (A633)

Function call



Dialog window

CMS300: Probing speed (A633)

Probing speed

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

*** YES / NO**

Acceptance/refusal of YES/NO field currently highlighted (<YES> = input of *).

TERMIN

The control data line entered is stored, the **edit CMS300 control data** screen page appears again.

BACK

Return to calling menu.

INFO

Further information.

Input fields

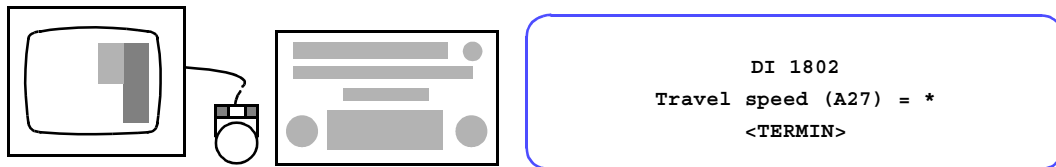
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with <TERMIN>.

Travel speed (A27)

Function call



Dialog window

CMS300: Travel speed (A27)

Travel speed

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

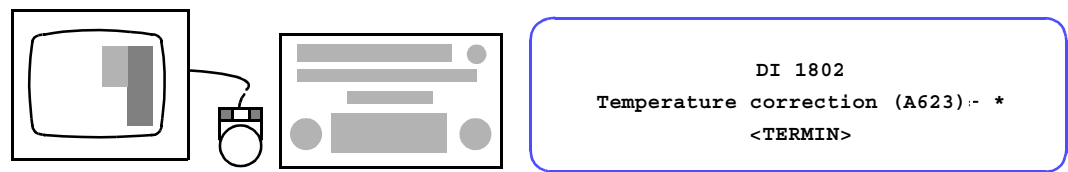
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with **<TERMIN>**.

Temperature correction (A623)

Function call



Dialog window

CMS300: Temperature correction (A623)

Execute temperature correction
Workpiece expansion coefficient
Record temperature correction
or delete temperature correction

0.0000

* YES

NO

*

TERMIN

BACK

INFO

Softkeys

As for ► “Probing speed (A633)” on page 6-9.

Input fields

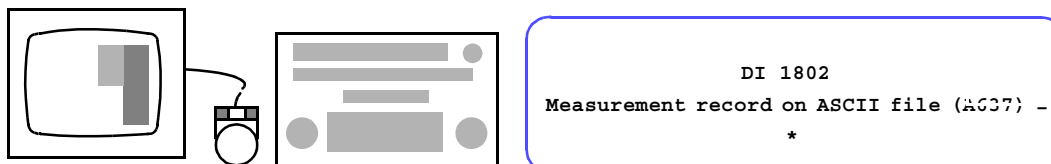
Cf. applicable “UMESS 300 Operating Instructions”.

Operation

Make inputs corresponding to the “UMESS 300 Operating Instructions” and conclude with <TERMIN>.

Measurement record on ASCII file (A637)

Function call



Dialog window

CMS300: Measurement record stored on ASCII file (A637)

☒ for DATACOM option
 switch on (overwrite data file)
 fixed input of file name
 or fixed input with autom. parts indexing.....
 or switch on (connect data to file)
 or switch on
 or switch off
 or switch off with flag workpiece and file end for DATACOM option
 or switch off with flag workpiece for DATACOM option
 or set flag file end for DATACOM option

File name
 Drive
 No. of record pages

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

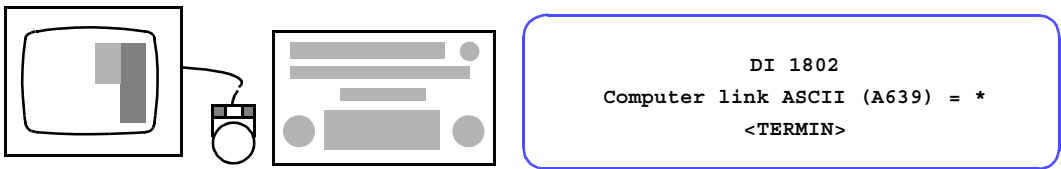
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with **<TERMIN>**.

Computer link ASCII (A639)

Function call



Dialog window

CMS300: Data communications program (A639)

Send ASCII file
fixed input of file name
or UMESS ASCII record file
or send UMESS measurement results in raw format
or send backup files
or receive ASCII file from host computer

File name

Drive

No. of record pages

0

File name on host computer

* YES

NO

*

TERMIN

BACK

INFO

Softkeys

As for ▶ “Probing speed (A633)” on page 6-9.

Input fields

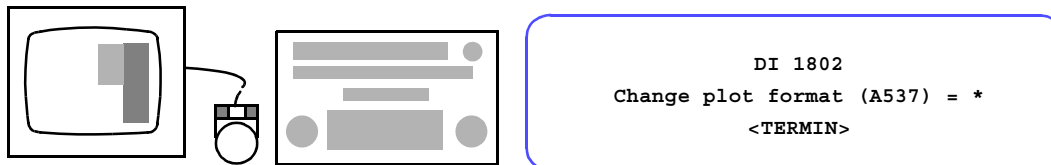
Cf. applicable “UMESS 300 Operating Instructions”.

Operation

Make inputs corresponding to the “UMESS 300 Operating Instructions” and conclude with <TERMIN>.

Changing plot format (A537)

Function call



Dialog window

CMS300: Change plot format (A537)

☐ Number of the plot format

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

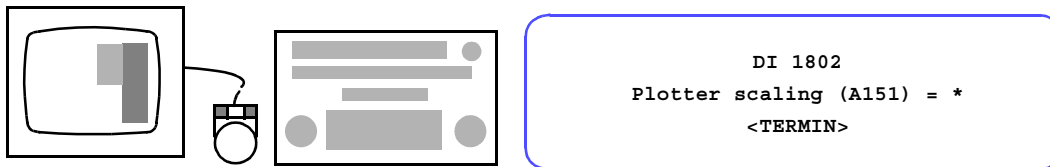
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with <TERMIN>.

Programming the plotter scale (A151)

Function call



Dialog window

CMS300: Plotter scaling (A151)

☒ Y Output device
 Screen ☐
 or plotter ☒

Xmin
 Xmax
 Ymin
 Ymax

* YES NO *

BACK

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

Cf. applicable "UMESS 300 Operating Instructions".

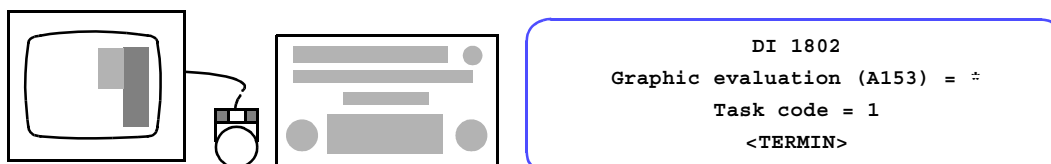
Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with **<TERMIN>**.

Programming graphic evaluation (A153)

Text input (Task 1)

Function call



Dialog window

CMS300: Text input (A153, task 1)

☐ D Character size

Type direction

Penno	Plotpos x	Plotpos y	Text
1	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	
	0.0000	0.0000	

* YES NO * TERMIN

BACK INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

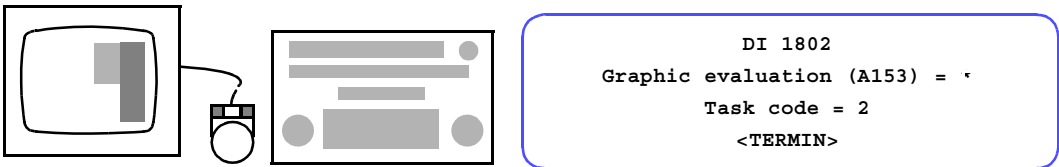
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with **<TERMIN>**.

Record head (Task 2)

Function call



Dialog window

CMS300: Record head (A153, task 2)

☒ Reserve control data
 No. of column identifications
 or enter control data
 Character size
 Type direction

0
0.0000
0.0000

Penno	Plotpos x	Plotpos y	ID No.	Column identification
1	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	
	0.0000	0.0000	0	

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

As for ► “Probing speed (A633)” on page 6-9.

Input fields

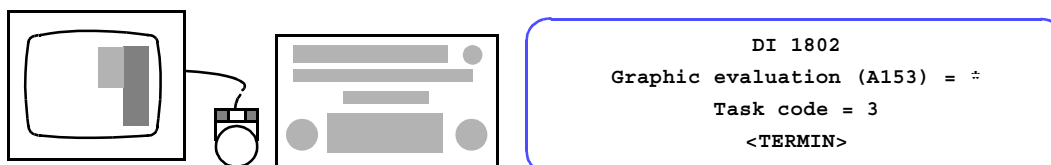
Cf. applicable “UMESS 300 Operating Instructions”.

Operation

Make inputs corresponding to the “UMESS 300 Operating Instructions” and conclude with <TERMIN>.

Nominal-actual table (Task 3)

Function call



Dialog window

CMS300: Nominal-actual table (A153, task 3)

☐ Y GDT program ☐ * or meas. program ☐

Symbol	Character size	Type direction	No. of decimal places	Pen No.	Plotpos x	Plotpos y	Distance x
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000
<input type="checkbox"/>	0.0000	0.0000	0	1	0.0000	0.0000	0.0000

* YES NO ☐ ☐ * ☐ ☐ ☐ ☐ TERMIN

BACK ☐ ☐ ☐ ☐ ☐ ☐ INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

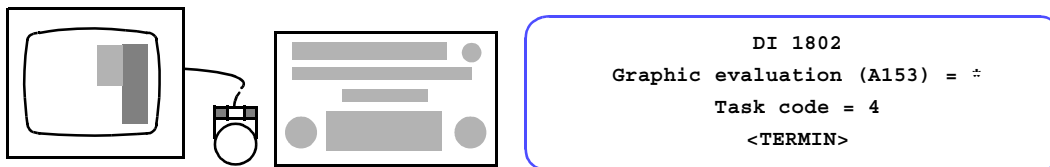
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with <TERMIN>.

Vector diagram (Task 4)

Function call



Dialog window

CMS300: Vector diagram (A153, task 4)

<input checked="" type="checkbox"/> Y GDT program	<input type="checkbox"/> *	or meas. program	<input type="checkbox"/>
Plane code No.	<input type="text" value="3"/>		
No. of nominals	<input type="text" value="2"/>		
Magnification factor	<input type="text" value="1"/>		
Draw tolerance zone	<input type="checkbox"/>		
Plot symbols	<input type="checkbox"/>		
Pen number	<input type="text" value="1"/>		
Input in cartesian coordinates	<input type="checkbox"/>		
Plotpos x.....	<input type="text" value="0.0000"/>	Plotpos y	<input type="text" value="0.0000"/>
or in polar coordinates	<input type="checkbox"/>		
Angle	<input type="text" value="0.0000"/>	Distance	<input type="text" value="0.0000"/>
Reference point in x	<input type="text" value="0.0000"/>	Reference point	<input type="text" value="0.0000"/>

* YES	NO			*			TERMIN
BACK							INFO

Softkeys

As for ► “Probing speed (A633)” on page 6-9.

Input fields

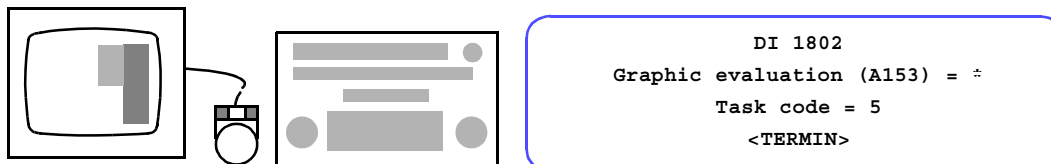
Cf. applicable “UMESS 300 Operating Instructions”.

Operation

Make inputs corresponding to the “UMESS 300 Operating Instructions” and conclude with <TERMIN>.

Bar diagram (Task 5)

Function call



Dialog window

CMS300: Bar diagram (A153, task 5)

<input checked="" type="checkbox"/> Y GDT program	<input type="checkbox"/> * or meas. program	<input type="checkbox"/>
No. of nominals	<input type="text" value="1"/>	
Diagram length	<input type="text" value="0"/>	
Magnification factor	<input type="text" value="1"/>	
Distance	<input type="text" value="0"/>	
Reference of space axis	<input type="text" value="3"/>	
Distance factor	<input type="text" value="1"/>	
Draw tolerance zone	<input type="checkbox"/>	
Plot identification	<input type="text" value="*"/>	
Symbol	<input type="text" value="WK"/>	
Penno	Plotpos x	Plotpos y
<input type="text" value="1"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

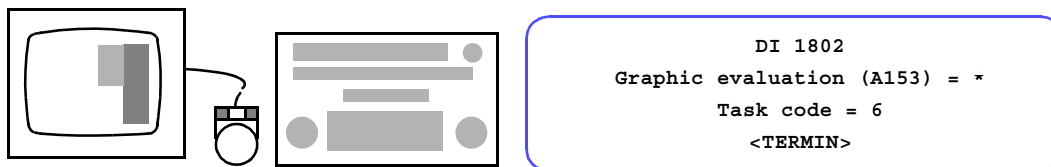
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with <TERMIN>.

Bar diagram with recall (Task 6)

Function call



Dialog window

CMS300: Bar diagram with recall (A153, task 6)

<input checked="" type="checkbox"/> Y GDT program	<input type="checkbox"/> * or meas. program	<input type="checkbox"/>
No. of nominals	<input type="text" value="0"/>	to address <input type="text" value="0"/>
Diagram length	<input type="text" value="1"/>	
Magnification factor	<input type="text" value="0"/>	
Distance.....	<input type="text" value="1"/>	
Reference of space axis	<input type="text" value="0"/>	
Distance factor.....	<input type="text" value="3"/>	
Draw tolerance zone	<input type="text" value="1"/>	
Plot identification	<input type="text" value=""/>	

Symbol	Nominal	Upper tolerance	Lower tolerance
<input type="text" value=""/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>

Pen number	Plotposition x	Plotposition y
<input type="text" value="1"/>	<input type="text" value="0.0000"/>	<input type="text" value="0.0000"/>

* YES	NO		*				TERMIN
BACK							INFO

Softkeys

As for ► “Probing speed (A633)” on page 6-9.

Input fields

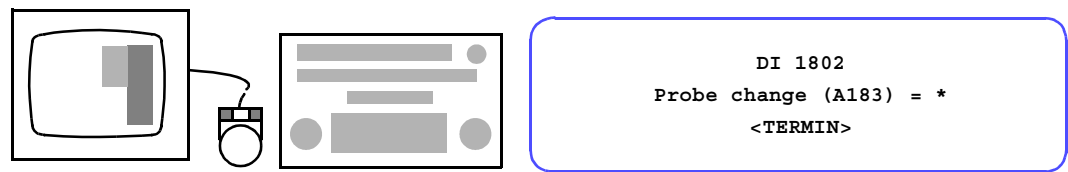
Cf. applicable “UMESS 300 Operating Instructions”.

Operation

Make inputs corresponding to the “UMESS 300 Operating Instructions” and conclude with **<TERMIN>**.

Programming the probe change (A183)

Function call



Dialog window

CMS300: Probe change (A183)

☐ C Fetch probe from magazine (A...X)

Number of probe configuration

Distance of first intermediate position from the magazine

Distance of last intermediate position from the magazine

Height of first intermediate position over the magazine

Height of last intermediate position over the magazine

* YES NO * TERMIN

BACK INFO

Softkeys

* YES / NO

Acceptance/refusal of YES/NO field currently highlighted (<YES> = input of *).

TERMIN

Control data line entered is stored, the **CMS300 edit control data** screen page appears again.

BACK

Return to calling menu.

INFO

Further information.

Input fields

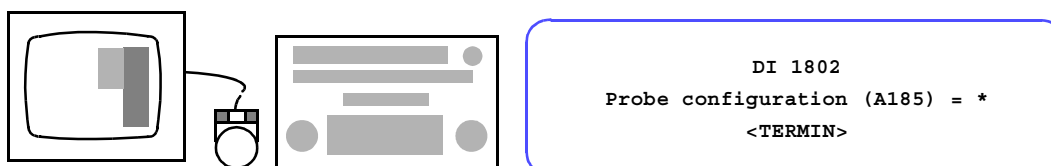
Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with <TERMIN>.

Storing/reading the probe configuration (A185)

Function call



Dialog window

CMS300: Probe configuration (A185)

☒ Y Number of probe configuration
Store data
or read in

1

* YES	NO			*				TERMIN
BACK								INFO

Softkeys

As for ► "Probing speed (A633)" on page 6-9.

Input fields

Cf. applicable "UMESS 300 Operating Instructions".

Operation

Make inputs corresponding to the "UMESS 300 Operating Instructions" and conclude with **<TERMIN>**.

Control data lines produced

The program produces 4 FORTRAN control data lines per CMS control data line (additional information for the control data converter). The header contains the code of the initial control data and the character length. The continuation lines code the pure ASCII text of the CMS control data line (max. 24 characters).

Examples

```
-----
Addressed program A151: Plotter scale
-----
CMS300 ,60          CNC DATCONV      22      0      4      1802      0
 8611511  0.0000 380.    DL CNCDCO      22      0      0      9911      0
0000              DL CNCDCO      22      0      0      9911      0
              LDL CNCDCO      22      0      0      9919      0
CMS300 ,60          CNC DATCONV      22      0      4      1802      0
 861151  0.0000 280.    DL CNCDCO      22      0      0      9911      0
0000              DL CNCDCO      22      0      0      9911      0
              LDL CNCDCO      22      0      0      9919      0
-----
Addressed program A183: Probe change
-----
CMS300 ,60          CNC DATCONV      22      0      4      1802      0
 861183 A1  1.000.    DL CNCDCO      22      0      0      9911      0
0000              DL CNCDCO      22      0      0      9911      0
              LDL CNCDCO      22      0      0      9919      0
-----
```

You can change the control data lines produced before the data transfer to the computer of the coordinate measuring machine as usual with the control data correction **<DI 1642>**. Difference: If you press the **<MODIFY>** softkey twice, you reach the input page belonging to the control data line (➤ *“General control data line”* on page 6-6 to ➤ *“Measurement record on ASCII file (A637)”* on page 6-12), filled in with the coded values. You can now make modifications in the input page. The process does not function for FORTRAN control data lines which document CMS continuation lines; the page for **General control data line** then appears.

After the transfer to the computer of the coordinate measuring machine, you can modify as usual with the UMESS 300 Edit-Funktion **CORRECT CONTROL DATA**.

NOTE

With **Graphic evaluation**, Task 1 to 3, the number of the texts, identifications and symbols must not be modified with the control data correction in the input page.

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