

SINUMERIK 840D/840Di/810D

Short Guide

Operation

02.01 Edition



User Documentation

www.nicsanat.com

021-87700210

www.nicsanat.com

021-87700210



SINUMERIK 840D/840Di/810D

Short Guide Operation

Valid for

<i>Control</i>	<i>Software version</i>
SINUMERIK 840D	6
SINUMERIK 840DE (Export version)	6
SINUMERIK 840Di	1
SINUMERIK 810D	4
SINUMERIK 810DE (Export version)	4

02.01 Edition

SINUMERIK® Documentation

Printing history

Brief details of this edition and previous editions are listed below.

The status of each edition is shown by the code in the "Remarks" column.

Status code in the "Remarks" column:

A New documentation

B Unrevised reprint with new Order No.

C Revised edition with new status.

If factual changes have been made on the page since the last edition, this is indicated by a new edition coding in the header on that page.

Edition	Order No.	Remarks
11.94	6FC5298-0AA10-0BP0	A
04.95	6FC5298-2AA10-0BP0	C
03.96	6FC5298-3AA10-0BP0	C
08.97	6FC5298-4AA10-0BP0	C
12.98	6FC5298-5AA10-0BP0	C
02.01	6FC5298-6AA10-0BP0	C

This manual is included in the documentation on CD-ROM (**DOCONCD**)

Edition	Order No.	Remarks
08.01	6FC5298-6CA00-0BG1	C

Further information is available on the Internet under:
<http://www.ad.siemens.de/sinumerik>

This publication was produced with WinWord V8.0 and Designer V7.0.

The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Other functions not described in this documentation might be executable in the control. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

Subject to change without prior notice.

© Siemens AG 1994–2001. All rights reserved

Introduction



HMI
Embedded



HMI
Advanced

Validity

Unless stated otherwise, this operator's guide applies to the SINUMERIK 840D/840Di/810D controls

How to use this booklet

This booklet is an operator's guide describing all the main programming steps.

The aim is to provide the operator with some quick help and a memory aid especially for commands that are used infrequently or to offer a quick reference on various parameters.

This guide therefore has little text!

First familiarize yourself with the symbols below so that you understand them better whenever they occur on the following pages.

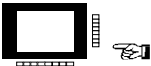
The symbols



Gives you a tip or background information



Screen displays



Operation via softkeys



Input through the operator keyboard



Input through the machine control panel

List of Sections

Operator Control	1
Set-up	2
Manually Controlled Operation	3
Parts Programming	4
Manage Data	5
Automatic Mode	6
Alarms and Messages	7

1. Operator Control

1.1 Key assignments slimline operator panel OP 010	1-10
1.2 Key assignments slimline operator panel OP 010C	1-11
1.3 Key assignments slimline operator panel OP 010S	1-12
1.4 Key assignments slimline operator panel OP 012	1-13
1.5 Key assignments slimline operator panel OP 015	1-14
1.6 Key assignments operator panel	1-15
1.7 Key assignments external machine control panel	1-17
1.8 Graphical user interface	1-20
1.9 Operating areas	1-22
1.10 Operating principle	1-23

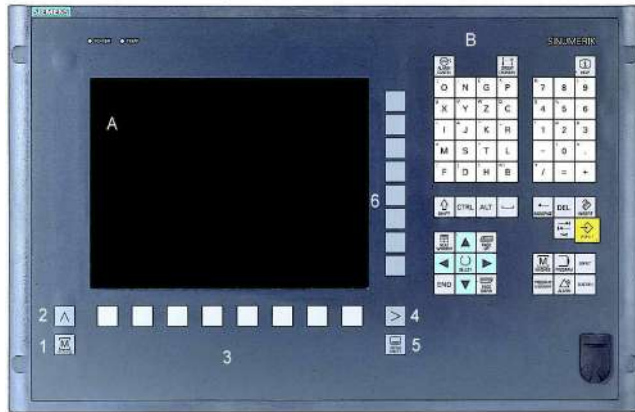
1.1 Key assignments slimline operator panel OP 010



HMI Embedded



HMI Advanced



- A Display
- B Alphanumeric keypads
Correction/cursor keys
- 1 Machine area key
- 2 Recall
- 3 Soft bar (horizontal)
- 4 ETC key (menu extension)
- 5 Area changeover key
- 6 Soft bar (vertical)

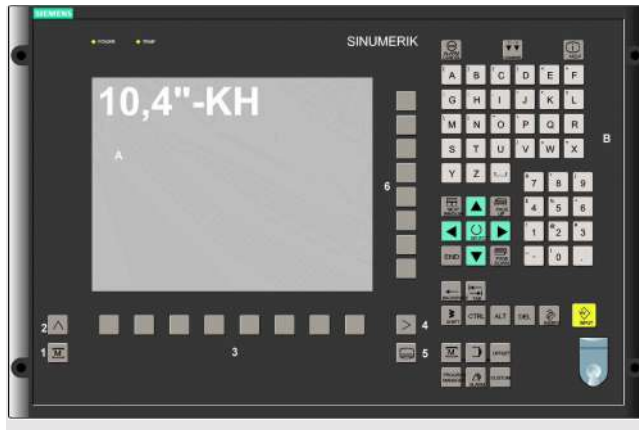
1.2 Key assignments slimline operator panel OP 010C



HMI
Embedded



HMI
Advanced



- A Display
- B Alphanumeric keypads
Correction/cursor keys
- 2 Machine area key
- 2 Recall
- 3 Soft bar (horizontal)
- 4 ETC key (menu extension)
- 5 Area changeover key
- 6 Soft bar (vertical)

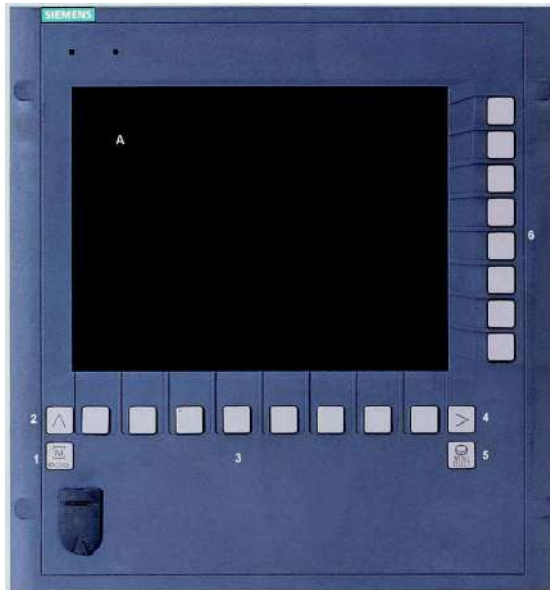
1.3 Key assignments slimline operator panel OP 010S



HMI
Embedded



HMI
Advanced



- A Display
- 1 Machine area key
- 2 Recall
- 3 Soft bar (horizontal)
- 4 ETC key (menu extension)
- 5 Area changeover key
- 6 Soft bar (vertical)

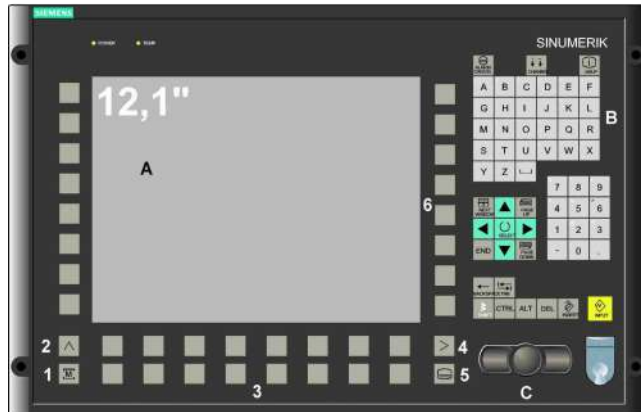
1.4 Key assignments slimline operator panel OP 012



HMI
Embedded



HMI
Advanced



- A Display
- B Alphabetic keypads
Correction/cursor keys
- C Mouse and mouse keys
- 1 Machine area key
- 2 Recall
- 3 Soft bar (horizontal)
- 4 ETC key (menu extension)
- 5 Area changeover key
- 6 Soft bar (vertical)

1.5 Key assignments slimline operator panel OP 015



HMI
Embedded



HMI
Advanced



- A Display
- 1 Machine area key
- 2 Recall
- 3 Soft bar (horizontal)
- 4 ETC key (menu extension)
- 5 Area changeover key
- 6 Soft bar (vertical)

1.6 Key assignments operator panel



HMI
Embedded



HMI
Advanced



Meaning of the key symbols:



Operating area "Machine"



Return jump



Softkey expansion



Area changeover



Acknowledgement alarm



Switch over channel



Information



Select window



Move cursor



Page up



Delete character



Blank



Selection key



Edit/Undo



Shift



End of line

1.6 Key assignments operator panel



HMI Embedded



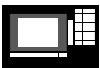
HMI Advanced

		Page up
		Input (accept)
		Overview alarms
		Customers
	available soon	Program
	available soon	Tool offset
	available soon	Program management



For keys with double assignment:

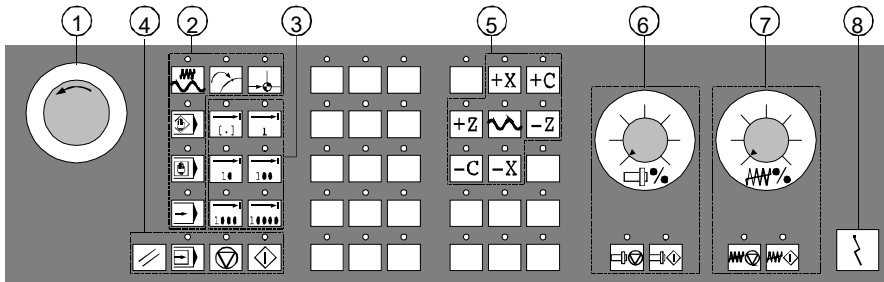
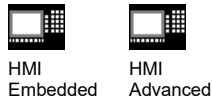
		Switchover with "Shift" key
		Ctrl key



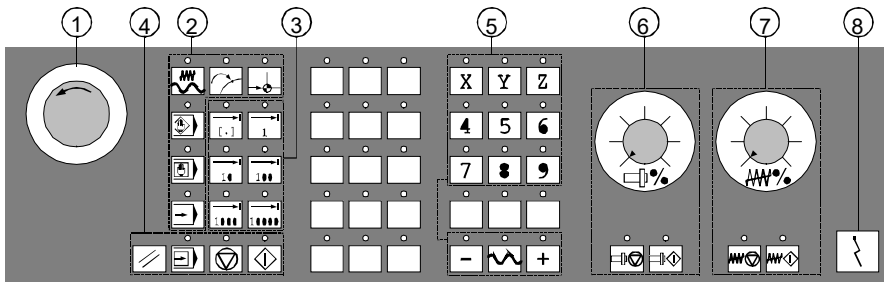
Key combinations:

	+			Jump to program start	
	+			Jump to program end	
	+		+		Start PCU reset

1.7 Key assignments external machine control panel



Machine control panel for turning machines



Machine control panel for milling machines



1	Emergency stop pushbutton								
2	Mode and machine functions								
	<table border="0"> <tr> <td></td> <td>Jog</td> </tr> <tr> <td></td> <td>MDA</td> </tr> <tr> <td></td> <td>Automatic</td> </tr> <tr> <td></td> <td>Teach In</td> </tr> </table>		Jog		MDA		Automatic		Teach In
	Jog								
	MDA								
	Automatic								
	Teach In								

1.7 Key assignments external machine control panel



HMI
Embedded



HMI
Advanced



		Repos
		Ref
3		Incremental travel
4		Program control
		Reset
		Single block
		NC Stop
		NC Start
5		Axis keys for turning machines
		Axis keys (with direction)
		Rapid traverse override
		MCS/WCS
		Axis keys for milling machines
		Axis keys
		Direction keys
		Rapid traverse override
		MCS/WCS

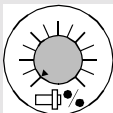


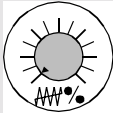



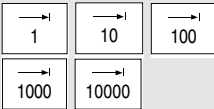
1.7 Key assignments external machine control panel



HMI
Embedded



HMI
Advanced

6	<p>Spindle control</p>   	<p>Spindle override</p> <p>Spindle stop</p> <p>Spindle start</p>
7	<p>Feed control</p>   	<p>Feed/rapid traverse override</p> <p>Feed stop</p> <p>Feed start</p>
8	<p>Keyswitch</p>	
9	<p>Incremental keys</p>  	<p>Variable incremental dimensions</p> <p>Preset incremental dimensions</p>

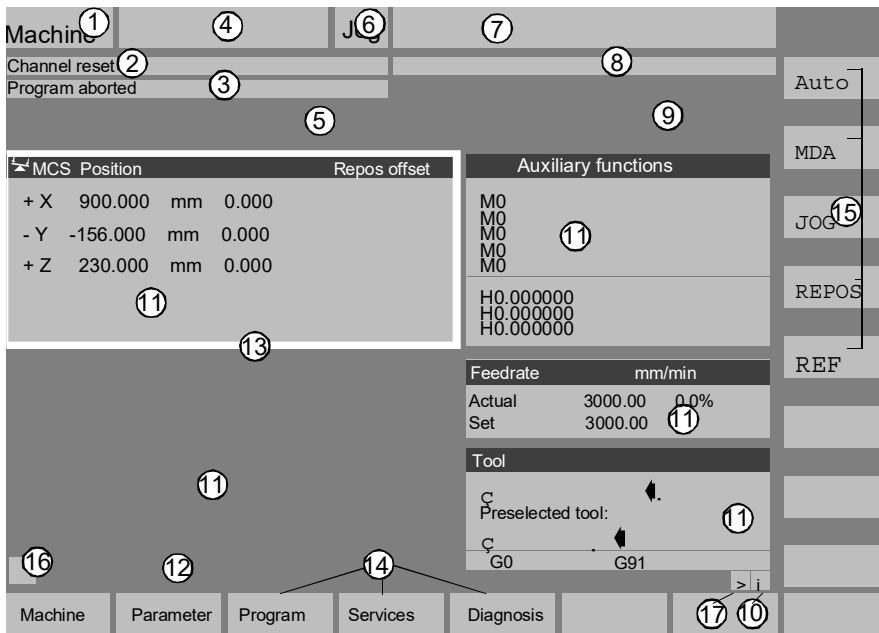
1.8 Graphical user interface



HMI
Embedded



HMI
Advanced



- 1 Operating area
- 2 Channel status
- 3 Program status
- 4 Channel and mode group
- 5 Alarm and message line

1.8 Graphical user interface



HMI
Embedded



HMI
Advanced



- 6 Mode
- 7 Program name
- 8 Channel operational messages
- 9 Channel status display
- 10 Information relating to the menu bar
- 11 Work windows and NC displays
- 12 Dialog line with notes for operator
- 13 Focus
- 14 Horizontal softkey bar
- 15 Vertical softkey bar
- 16 Recall
- 17 etc.

1.9 Operating areas

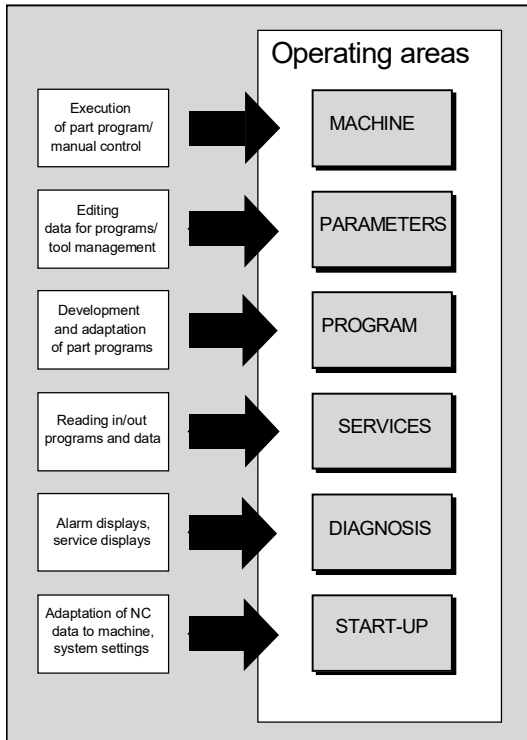


HMI Embedded



HMI Advanced

The standard functions in the control are organized into the following operating areas:



When you press the "Area changeover" key, the operating areas in the main menu appear in the horizontal softkey bar. You can use this key to switch from any menu to the main menu.

1.10 Operating principle



HMI Embedded



HMI Advanced

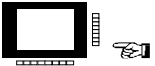
With HMI Embedded and HMI Advanced a range of key and softkey assignments is available with identical functions in all operating areas and menus (operating principle).



Area changeover:



Switch back from any menu to the main menu of your control.



Softkeys:



Horizontal softkeys:
These keys subdivide each operating area into further menu levels. Each horizontal menu item has a vertical menu bar/softkey assignment.



Vertical softkeys:
Assigned with functions for the currently selected horizontal softkeys.

1.10 Operating principle










HMI Embedded



HMI Advanced



Navigation in the menu window:

	Change menu windows: Change the focus to the selected menu window.
 	Scroll in the menu window: Scroll one screen page down or up.
 	Position cursor in the menu window: Position the cursor at the desired point in the menu window.
 	

1.10 Operating principle



HMI
Embedded



HMI
Advanced



Navigation in the directory tree:



Select directory/file:

Position the cursor on the desired directory/file.



Open/close directory:

Open or close the selected directory.



Close directory:

Close selected directory.



Open file:

Open the desired file, e.g. if you want to edit the file in the ASCII editor (in this case the editor is opened automatically).



Select file (HMI Advanced):

Select the desired file.

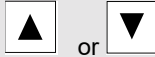


Select several files (HMI Advanced):

Hold down the "Shift" and "Cursor Down" keys.



Select start of block.



Neighboring files are selected when you hold down the "Cursor Up" or "Cursor Down" keys.

1.10 Operating principle



HMI
Embedded



HMI
Advanced



Deselect selected files.



Cancel all selections.



Edit inputs/values:

If you want to edit inputs/values, the corresponding key is always displayed automatically on the right of the input field. The following input fields are available:



1. **Option fields** (radio buttons or check boxes):
Activate or deactivate the option field.



2. **Input fields:**
Switch to input mode.

Enter the value or word (e.g. file name, type, etc.) on the numeric keypad.



You automatically switch to input mode if you first position the cursor on the input field.



Always confirm your input with the "Input" key. The value is accepted.

1.10 Operating principle



HMI
Embedded



HMI
Advanced



You can use the "Toggle" key to select one of several default values.

3. Selection list (HMI Advanced):

Display the preselection of possible values.

Open selection list



Position the cursor on the desired values.



Always confirm your input with the "Input" key. The value is accepted.



Switch to the next value in the selection list without displaying the entire list.

1.10 Operating principle



HMI
Embedded



HMI
Advanced

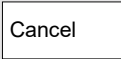


Confirm/cancel input:



Confirm input:

Save the inputs and exit the current menu (you automatically return to the calling menu).



Cancel input:

Reject the inputs and quit the current menu (you automatically return to the calling menu).



Reject the inputs and quit the current menu (you automatically move up one level).



Clear the current input but remain in the current menu.

1.10 Operating principle



HMI
Embedded



HMI
Advanced

Operation with the mouse:

If you have installed a mouse, operation is facilitated as follows:

1 "click"

1 click means:

- Activate the menu window.
- Position the cursor on the desired input field.
- Select directory.
- Activate softkey.
- Activate/deactivate radio button/check box.
- Activate input field.
- Open selection list.

2 "clicks"

2 clicks mean:

- Accept value/input.
- Open directory.

2. Set-up

2.1 Approach reference point	2-32
2.2 Enter tool offsets	2-33
2.3 Calculate tool offsets	2-34
2.4 Enter/alter zero offset	2-35
2.5 Scratching method/determine zero offset	2-37
2.6 Program the setting data	2-38

2.1 Approach reference point



HMI Embedded

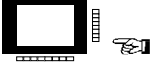


HMI Advanced



Caution:

Position the axes if they are not already located at a safe position.
Always follow the axis movements directly on the machine. Ignore the actual value display as long as the axes are not referenced (the software limit switches are not effective).



Machine

Select "Machine" operating area.

Jog

or

MDA

Choose "Jog" or "MDA".



Ref Point

Select "Ref" machine function.



Turning machine:
Traverse axes.

Milling machine:
Select axes and

traverse axes.

Stop axis before reference point is reached.

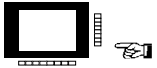
2.2 Enter tool offsets



HMI
Embedded



HMI
Advanced

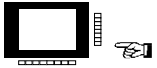


Parameter

Select "Parameter" operating area.

Tool offset

Select "Tool offset" menu.



T no.
+

Choose the desired function:

Select tool (T no.).

T no.
-

D no.
+

Select tool edge (D no.).

D no.
-

Delete

Delete tool/tool edge

Go to

Find tool

Overview...

List existing tools.

New...

Create new tool/tool edge.



Enter the new values.

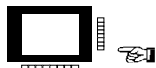
2.3 Calculate tool offsets



HMI
Embedded



HMI
Advanced



Parameter

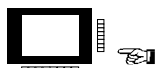
Select "Parameter"
operating area.

Tool
offset

Select "Tool offset" menu.



Position cursor on desired
tool parameter.



Determine
compensa.

Select axis and enter
reference value.

Calculate

The current position and the
reference value of the
selected tool parameter are
calculated automatically.

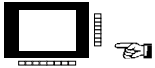
2.4 Enter/alter zero offset



HMI
Embedded



HMI
Advanced



Parameter

Select "Parameter" operating area.

Zero offset

Select "Overview of settable zero offsets" menu.



Axes +

Select zero offset:

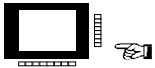
Changes to the defined zero offsets of the next or previous axis.

Axes -

Offsets

Rotation,
scal., mirr.

Change display mode of the currently displayed zero offset. The display shows either the absolute offsets or the proportional values of rotation, scaling or mirroring.



Basic ZOs

Enter/change zero offset:

Display all the defined basic zero offsets.

Sett. ZOs

Display all the defined settable zero offsets.

2.5 Enter/alter zero offset



HMI
Embedded



HMI
Advanced



Position the cursor on the desired field and enter/alter the value.



Please note:

Changes in the zero offset are updated at entry.

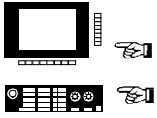
2.5 Scratching method/determine zero offset



HMI
Embedded



HMI
Advanced



Machine

Select "Machine" operating area.



Select "Jog" mode.

Scratching

Active level, active zero offset and active tool are selected.



Select axis which shall be traversed, with the cursor.



Traverse axis to the workpiece, enter desired set position and confirm with "Input". The offset is calculated.



OK

With "OK" all the values are entered into the selected zero offset.



Please note:

The calculation of the offset always refers to the current workpiece coordinate system (WCS).



In order to take account of the tool geometry, position the cursor in the column "Geometry + wear" on the axis which shall be traversed and select with "Toggle" key, how the tool offset shall be calculated.

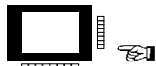
2.6 Program the setting data



HMI
Embedded



HMI
Advanced

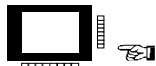


Parameter

Select "Parameter"
operating area.

Setting
data

Select the "Setting data"
menu.



Work area
limit.

**Define operating states
using setting data:**

- Change working area
limitation.

Jog
data

- Change jog data.

Spindle
data

- Change spindle data.

Feedrate
DRY

- Change dry run feedrate for
DRY test mode.

Starting
angle

- Change starting angle for
thread cutting.

Misc.

- Display miscellaneous
setting data.

Protection
zones

- Choose level for protection
zone.

2.6 Program the setting data



HMI
Embedded



HMI
Advanced



Position the cursor on the desired field and change the value, or



select a new value using the "Toggle" key.

3. Manually Controlled Operation

3.1 Jog/Jog Inc mode	3-42
3.2 MDA mode	3-44
3.3 Teach In mode	3-45

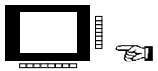
3.1 Jog/Jog Inc mode



HMI
Embedded



HMI
Advanced



Machine

Select "Machine" operating area.

Jog

Select "Jog" mode.



"Reference point approach" is deactivated.



+X ... -Z

Turning machine:
Traverse axes.

X ... 9
9th Axis

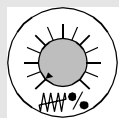
Milling machine:
Select axis and

+ ... -

traverse.



The traversing velocity is stored in the "setting data".



If necessary, use the override to set the velocity.



If necessary, move axes with rapid traverse.

3.1 Jog/Jog Inc mode



HMI
Embedded



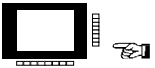
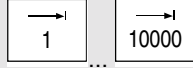
HMI
Advanced



Select/enter increment value for traversing position ("Inc"):

Traverse axes in defined increments, or

Traverse axis in selected increment value.



Inc

Enter desired increment.

+ .bzw.. -

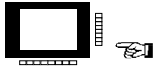
3.2 MDA mode



HMI
Embedded



HMI
Advanced



Machine

Select "Machine"
operating area.

MDA

Select "MDA" mode.



In "Teach In" mode, it is only possible to insert blocks at points in the program which have not yet been executed.



Enter NC block (one or
several consecutive program
blocks).



Confirm input.



Execute NC block.



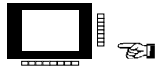
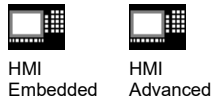
MDA-Prog.
sichern

Save program in MDA buffer.



If no program name is entered, the program is automatically stored in the MDA buffer with the name OSTORE.MPF (HMI Embedded) or MDAX.MPF (HMI Advanced).

3.3 Teach In mode



Machine	Select "Machine" operating area.
MDA	Select "MDA" mode.
Teach In	Select "Teach In" submode.



In "Teach In" mode, it is only possible to insert blocks at points in the program which have not yet been executed.



1. Manual positioning:

+X	...	-Z	Turning machine: Traverse axes.
X	...	9 9th Axis	
+	...	-	Milling machine: Select axis and traverse.
◇ Cycle Start			Save position values



The axis name and the traversed path are displayed in the "Teach In program" window.

3.3 Teach In mode



HMI
Embedded

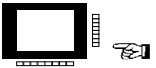


HMI
Advanced



2. Manual input of coordinates:

- Enter coordinates of traversing positions and
- enter additional functions (preparatory conditions, miscellaneous functions, etc.) in the "MDA program" window.



Delete
block

HMI Embedded

Delete the current block.

Insert
block

Insert an empty line before the current block.

Save
block

Save new axis positions and additional functions.



Cycle Start

Executed the entered program blocks and display them in the current block window.

HMI Advanced

Enter and delete blocks via keyboard.
Positions are automatically saved at entry.

4. Parts Programming

4.1 Select/enable workpiece/parts program	4-48
4.2 Open/edit parts program	4-49
4.3 Create new workpiece/parts program	4-51
4.4 Execute workpiece/parts program	4-52
4.5 Copy/paste, rename, delete, enable	4-53
4.6 Load/unload program (HMI Advanced)	4-55

4.1 Select/enable workpiece/parts program



HMI
Embedded

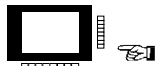


HMI
Advanced



Program

Select "Program"
operating area.



Select workpiece/parts program:

Work-
pieces

Select the level:

- Workpieces

Parts
programs

- Parts programs

Sub-
routines

- Subroutines

Standard
cycles

- Standard cycles
(HMI Advanced)

User
cycles

- User cycles

Clip-
board

- Clipboard



Position the cursor on the
desired file in the directory
tree.

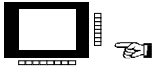
4.2 Open/edit parts program



HMI
Embedded



HMI
Advanced



Program

Select "Program" operating area.



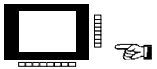
Open parts program:

Position the cursor on the desired file in the directory tree.



Open program in ASCII editor:

Press the "Input" key.



Support

New
contour

Call up free contour programming:

Press softkeys "Support" and "New contour".

4.2 Open/edit parts program



HMI
Embedded



HMI
Advanced



Edit parts program:	
Overwrite	Toggle between insert and overwrite mode.
Mark block	Mark the beginning of block.
Copy block	Save the block in the clipboard.
Delete block	Delete block.
Insert block	Paste the block from the clipboard.
Search/ go to ...	Position on block no., beginning of file, end of file or search string.
Search	Enter search string.
Substitute	Enter substitute.
Continue search	Next occurrence of search string.
Go to ...	Enter block no.
Save file	Save parts program.
Close editor	Close text editor.

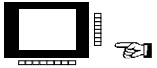
4.3 Create new workpiece/parts program



HMI Embedded

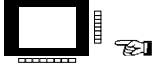


HMI Advanced



Program

Select "Program" operating area.



Workpieces

Parts programs

Sub-routines

Select "Workpieces", "Parts programs" or "Subroutines".

Open directory.

New ...

Enter name of workpiece, main program or subroutine and



select "File type".



HMI Advanced:

Select key

- text editor
- activate interactive programming.

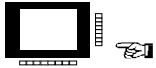
4.4 Execute workpiece/parts program



HMI
Embedded

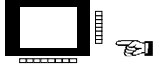


HMI
Advanced



Program

Select "Program" operating area.



Work-
pieces

Select workpiece:

Mark the desired workpiece with the cursor in the workpiece overview.

Selection

Select the workpiece.

Parts
programs

Select parts program:

Mark the desired workpiece with the cursor in the parts program overview.

Selection

Select the parts program.



Start the workpiece/parts program.



Clip-
board

You can also run parts programs directly from the clipboard.

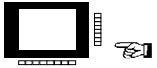
4.5 Copy/paste, rename, delete, enable



HMI Embedded



HMI Advanced



Program

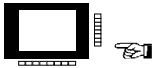
Select "Program" operating area.



Select the level and position the cursor on the desired file in the directory tree.

Manage programs

HMI Advanced: Select "Manage programs".



Copy

Copy/paste program:

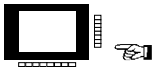
Select the source file.

Paste

Save the source file in the target directory.



If necessary, use the "Toggle" key to select the file type.



Rename

Rename the program:

Press the "Rename" softkey and enter new name.



Use the "Toggle" key to select the file type.

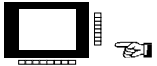
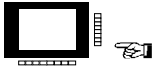
4.5 Copy/paste, rename, delete, enable



HMI
Embedded



HMI
Advanced



Delete program:

Delete

Delete the program from the directory.



Select several files via the "Select" key.

Change enable:

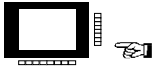
Change
enable

Set (x) or cancel () enable.

4.6 Load/unload program (HMI Advanced)



HMI
Advanced

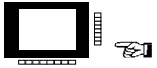


Program

Select "Program" operating area.



Position the cursor on the desired file in the directory tree.



Load

Load the program into the NC memory.

Unload

Save the program to hard disk.



Please note:

When you activate "Load", the program is automatically deleted from the hard disk. When you activate "Unload", the program is automatically cleared from the NC memory.

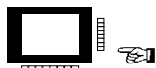
5. Manage Data

5.1 Transfer data (HMI Embedded)	5-58
5.2 Transfer data (HMI Advanced)	5-61
5.3 Create new file/directory (HMI Advanced)	5-63
5.4 Load/unload program (HMI Advanced)	5-64
5.5 Copy/paste, delete (HMI Advanced)	5-65
5.6 Directory/file/archive properties (HMI Advanced)	5-66

5.1 Transfer data (HMI Embedded)



HMI
Embedded



Services

Select "Services"
operating area.



Data out

Read out data:

Select "Data out" menu.

RS-232-
user

Select interface:

- RS-232 user

RS-232-
printer

- RS-232 printer

RS-232-
PG/PC

- RS-232-PG/PC

NC-Card

- NC- Card



Position the cursor on the
desired file in the directory
tree.



Start

Start "Data out".

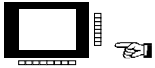
Stop

Interrupt "Data out".

5.1 Transfer data (HMI Embedded)



HMI
Embedded



Data in

Read in data:

Select " Data in" menu.

RS-232
user

Select interface:

- RS-232 user
- RS-232-PG/PC
- NC- Card

RS-232-
PG/PC

NC-Card



Position the cursor on the desired file in the directory tree.

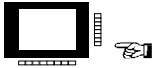
Reading in/out data in the case of the NC card:

After "Start", the window "Create archive" is displayed. Enter new name and confirm with "OK". A new directory is created.

5.1 Transfer data (HMI Embedded)



HMI
Embedded

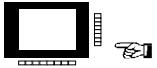


Start	Organize data according to the existing path:
<input checked="" type="checkbox"/>	Path/workpiece from archive file
	Store all files in the directory, irrespective of archived path:
<input type="checkbox"/>	Path/workpiece from archive file
	Store all files in the clipboard, irrespective of archived path:
<input checked="" type="checkbox"/>	Read into the clipboard
OK	Start "Data in".
Stop	Interrupt "Data in".

5.2 Transfer data (HMI Advanced)



HMI
Advanced



Services

Select "Services" operating area.

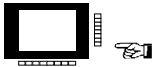
Read out data:

Data out

Select "Programs/data" menu.



Select data in the directory tree.



Select target area:

RS-232

• RS-232 interface

PG

• Programming device

Diskette...

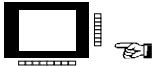
• Diskette drive

Archive...

• "Archive" on hard disk

NC Card

• NC Card



Start transfer:

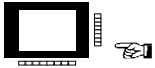
Start

Initiate data transfer on disk/archive (softkey label changes to "Stop").

5.2 Transfer data (HMI Advanced)



HMI
Advanced



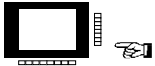
Data in

Read in data:

Select "Programs/data" menu.



Select data in the directory tree.



RS-232

PG

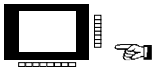
Diskette...

Archive...

NC Card

Select source area:

- RS-232 interface
- Programming device
- Diskette drive
- "Archive" on hard disk
- NC Card



Start

Start transfer:

Initiate data transfer on disk/archive (softkey label changes to "Stop").

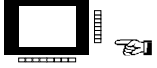


The data transfer is initiated automatically. You can interrupt data transfer at any time by pressing the softkey again.

5.3 Create new file/directory (HMI Advanced)



HMI
Advanced

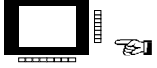


Services

Select "Services" operating area.

Manage
data

Select "Manage data" menu.



New...

Enter program name and select type of program.



End

By selecting the "End" softkey, you can switch between the areas "Name" and "Type of file".

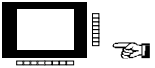
OK

New file/directory will be created.

5.4 Load/unload program (HMI Advanced)



HMI
Advanced



Services

Select "Services"
operating area.

Manage
data

Select "Manage data"
menu.



Position the cursor on the
desired file in the directory
tree.



Load

Load the file from the hard
disk into the NC memory.

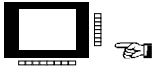
Unload

Unload the file from the NC
memory to the hard disk.

5.5 Copy/paste, delete (HMI Advanced)



HMI
Advanced



Services

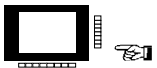
Select "Services" operating area.

Manage data

Select "Manage data" menu.



Position the cursor on the source file in the directory tree.



Copy

Copy/paste program:

Select target directory.

Programs data

Close target window.

Paste

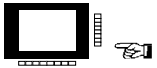
Copy source file to target directory.

Clipboard

Copy to or from clipboard.

Diskette

Copy to or from diskette.



Delete

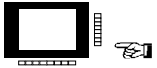
Delete program:

Delete selected file.

5.6 Directory/file/archive properties (HMI Advanced)



HMI
Advanced



Services

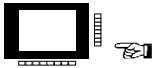
Select "Services" operating area.

Manage data

Select "Manage data" menu.



Position the cursor on the desired file in the directory tree.



Properties

Select "Properties" menu.



- Rename file
- Convert file type
- Change access rights for file/directory
- Display contents of all files



The access level can only be changed with the appropriate access rights.

6. Automatic Mode

6.1 Select workpiece/program	6-68
6.2 Start/stop/cancel program	6-69
6.3 Repos – Reposition after interruption	6-70
6.4 Overstore	6-72
6.5 Display program level	6-73
6.6 Program correction	6-74
6.7 Execution via RS-232 (HMI Embedded)	6-75
6.8 Load/unload program from hard disk (HMI Advanced)	6-76
6.9 Execution from hard disk (HMI Advanced)	6-77

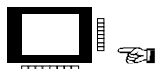
6.1 Select workpiece/program



HMI
Embedded



HMI
Advanced

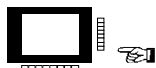


Machine

Select "Machine" operating area.

AUTO

Select "Automatic" mode.



Program
overview

Select "Program overview" menu.

Work-
pieces

Parts
programs

Sub-
routines

Standard
cycles

User cycles

Selection

Select desired workpiece/parts program/subroutine or desired cycles with the cursor in the workpiece/parts program/subroutine overview and the standard and user cycles.

Select workpiece/part program.

Change
enable

Set (x) or cancel () enable.

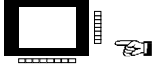
6.2 Start/stop/cancel program



HMI
Embedded



HMI
Advanced



Machine

Select "Machine"
operating area.

AUTO

Select "Automatic" mode.



Please check that:

No alarms are active.
The program is selected.
The feed enable is active.
The spindle enable is active.



Cycle Start

Start parts program.



Cycle Stop

Stop parts program.



Reset

Cancel parts program.



A parts program interrupted via "Cycle Stop" can be continued with "Cycle Start".

A parts program interrupted via "Reset" can be processed from the beginning if you press "Cycle Start".

6.3 Repos – Reposition after interruption



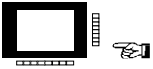
HMI
Embedded



HMI
Advanced



After a program interrupt ("Cycle-Stop") you can move the tool away from the contour in the manual mode. The control saves the coordinates of the interruption point. The traversed path differences of the axes are displayed.



Machine	Select "Machine" operating area.
Jog	Select "Jog" mode.



	Reposition after program interruption.
	Turning machine: Traverse axes up to the point of interruption.
	Milling machine: Select axis and
	traverse axes up to the interruption point.



Caution:
Travel beyond the interruption point is inhibited. The feed override switches are active.

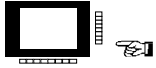
6.3 Repos – Reposition after interruption



HMI
Embedded



HMI
Advanced



Machine

Select "Machine"
operating area.

AUTO

Select "Automatic" mode.



Cycle Start

Continue machining.

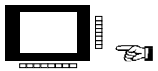
6.4 Overstore



HMI
Embedded



HMI
Advanced



Machine

Select "Machine"
operating area.

AUTO

Select "Automatic" mode.



Single Block

**Overstore with single
block:**

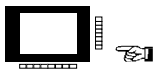
The program automatically
stops at the next block
boundary.



Cycle Stop

**Overstore without single
block:**

Stop parts program.



Overstore

Enter the values and
functions to be executed.



Cycle Start

Run the entered block.

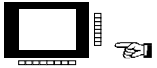
6.5 Display program level



HMI Embedded



HMI Advanced

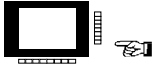


Machine

Select "Machine" operating area.

AUTO

Select "Automatic" mode.



Program level

Display block numbers for main programs and subroutines with the respective pass counts (P).

Current block

Display the blocks of the current program.



Pressing the "Program level" softkey automatically changes the level to and from "current block".

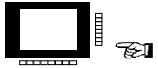
6.6 Program correction



HMI
Embedded



HMI
Advanced



Machine

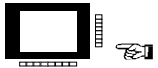
Select "Machine"
operating area.

AUTO

Select "Automatic" mode.



The control has detected a system error in the part program. Execution of the part program is automatically interrupted.



Correct
program

Correct the program block
with the error.

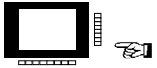


Continue machining.

6.7 Execution via RS-232 (HMI Embedded)



HMI
Embedded



Machine

Select "Machine" operating area.

Program overview

Select "Program overview" menu.

Execution from extern.

Select "Execution from external source" menu.



Position the cursor on the desired file in the directory tree.



Cycle Start

Start execution via RS-232.

Executed blocks appear in the current block window.



Alternatively, it is possible to start execution in the "Services" operating area.

You can change the transfer parameters in the "Services" operating area. The transfer is recorded in the error log.

6.8 Load/unload program from hard disk (HMI Advanced)



HMI
Advanced



Machine

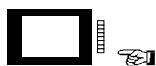
Select "Machine"
operating area.

Program
overview

Select "Program overview "
menu.



Position the cursor on the
desired file in the directory
tree.



Load

Load the program into the NC
memory.

Unload

Save the program on the
hard disk.



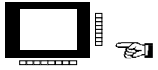
Please note:

When you activate "Load", the program is automatically deleted from the hard disk. When you activate "Unload", the program is automatically cleared from the NC memory.

6.9 Execution from hard disk (HMI Advanced)



HMI
Advanced



Machine

Select "Machine" operating area.

Program overview

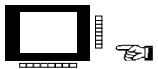
Select "Program overview" menu.



Position the cursor on the desired file in the directory tree.



Press the "Cycle Start" key.



Execution fr. hard disk

Start/cancel read-in and execution.



The program remains stored with "Execution from hard disk".

6-78

© Siemens AG 2001. All rights reserved
SINUMERIK 840D/840Di/810D Short Guide Operation (BAK) – 02.01 Edition

www.nicsanat.com

021-87700210



7. Alarms and Messages

7.1 Alarms/messages

7-80

© Siemens AG 2001. All rights reserved
SINUMERIK 840D/840Di/810D Short Guide Operation (BAK) – 02.01 Edition

7-79

www.nicsanat.com
021-87700210



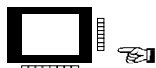
7.1 Alarms/messages



HMI
Embedded



HMI
Advanced



Diagnosis

Select "Diagnosis" operating area.



Alarms

Display alarms:

Display alarms with "alarm number", "date", "explanation" and "cancel criterion".



Switch the control off and on again.



Press "Reset".



Press "Acknowledge alarm".



Alarm is canceled with "Cycle-start".



Alarm is canceled with "Recall".

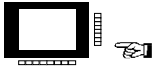
7.1 Alarms/messages



HMI Embedded



HMI Advanced



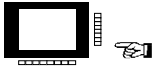
Display messages:

Messages

Display PLC error messages and PLC operational messages.



Caution:
PLC error messages must always be acknowledged.

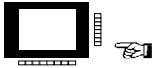


Display alarm log:

Alarm log

Display new

Display complete log of alarms and messages which have occurred.
Update alarm log.



HMI Advanced

Acknowledge HMI alarm

Select and delete HMI alarm.

An
SIEMENS AG
A&D MC BMS
P.O. Box 3180

D-91050 Erlangen
Germany

Tel.: 0180/525-8008/5009 [Hotline]
Fax: ++49(0)9131/98-2176
email: motioncontrol.docu@erf.siemens.de

Suggestions

Corrections

for Publication/Manual:
SINUMERIK 840D/840Di/810D

User Documentation

From

Name

Short Guide
Operation

Order No.: 6FC5298-6AA10-0BP0
Edition: 02.01

Company/Department

Address

Phone: /

Telefax: /

Should you come across any printing errors when reading this publication, please notify us on this sheet. Suggestions for improvement are also welcome.

Suggestions and/or corrections



www.nicsanat.com

021-87700210