Contents

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W: Accessory Functions

> **Note:**
> After changing these settings the machine must be switched off and on.

The following M commands are used for the accessories:

M10 Lock dividing head
M11 Unlock dividing head
M25 Close vice
M26 Open vice
M27 Swivel dividing head
M71 Puff blowing on
M72 Puff blowing off

The accessories and machine functions can be actuated with the following keys:

Activate Accessory Functions

The milling machines can be equipped with following accessories:
• Automatic door
• Automatic vice
• Puff blowing device
• Robotic interface
• Dividing head
• DNC interface

The accessory will be activated with EmConfig.

PC keyboard   Control keyboard, Digitizer

| Strg | ° ^ | ⟳ |
Swivel tool turret .... *

| Strg | " 2 |
Puff blowing on / off

| Strg | " 2 |
Coolant on / off .... *

| Strg | § 3 | ⚙ |
Swivel dividing head ....•

| Strg | $ 4 |
Feed stop ....•x

| Strg | % 5 |
Feed Start ....*x

| Strg | & 6 |
Spindle stop

| Strg | / 7 |
Spindle start .... *

Spindle start manual:

Clockwise: press short

CCW: press min. 1 sec.

| Strg | (8 [| AUX |
AUX ON

| Strg |) 9] |
Close vice ....+•

| Strg | = 0 } |
Open vice ....+•

| Strg | ? ß \ | AUX |
AUX OFF

| Strg | ` ´ | and |
Open / close door

+ works with open door only
* works with closed door only
• not depending on door status
x only in special operation mode

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Robotic interface PC MILL 55

The robotic interface for the PC Mill 55 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

> **Caution:**
> Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 5.7 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
E 5.1 robotic / Open door
E 5.0 robotic / Close door
E 5.2 robotic / Open vice
E 5.3 robotic / Close vice
E 5.7 robotic / Feed stop
E 5.6 robotic / Program START

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 5.0 robotic / Program STOP
       (M30, M00, M01, M02)
A 5.1 robotik / Axes standing at reference-point
A 5.3 robotic / Door open
A 5.4 robotic / Door closed
A 5.5 robotic / Vice back position
A 5.6 robotic / Vice clamped
A 5.7 robotic / Alarm output

Robotic interface PC MILL 105

The robotic interface for the PC Mill 105 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

⚠️

Caution:
Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 6.6 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
*E 6.0 robotik / close door 2nd channel input
E 6.2 robotic / AUX ON
E 6.3 robotic / Switch NC-mode reference - automatic
E 6.4 robotic / Approach reference point
E 6.5 robotic / NC start
E 6.6 robotic / Feed stop

E 7.0 robotic / Close vice
E 7.1 robotic / Open vice
E 7.5 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 0.3 robotic / alarm active
*A 6.0 robotic / close door 2nd channel output
A 6.3 robotic / EMERGENCY OFF
A 6.4 robotic / Machine ready
A 6.5 robotic / NC-mode reference
A 6.6 robotic / M0, M1, M2 or M30 is activ
A 6.7 robotik / Axes standing at reference-point
A 7.0 robotic / Vice clamped
A 7.1 robotic / Vice open
A 7.6 robotic / Door closed
A 7.7 robotic / Door open

* With the help of two potential-free safety-contacts, the door will be closed.
One contact bridges the consent-key, the second connects the SPS-output 6.0 with the SPS-input 6.0.
The safety-relais has to be switched until the door is closed, then it has to be switched off.

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Robotic interface PC MILL 125

The robotic interface for the PC Mill 125 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

> **Caution:**
> Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V	LOW
15 V .. 24 V	HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 6.6 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
E 6.2 robotic / AUX ON
E 6.3 robotic / Switch NC-mode reference - automatic
E 6.4 robotic / Approach reference point
E 6.5 robotic / NC start
E 6.6 robotic / Feed stop
E 7.0 robotic / Close vice
E 7.1 robotic / Open vice
E 7.4 robotic / Close door
E 7.5 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V	HIGH

Output assignement
A 6.3 robotic / EMERGENCY OFF
A 6.4 robotic / Machine ready
A 6.5 robotic / NC-mode reference
A 6.6 robotic / M00, M01, M02 or M30 aktiv
A 4.7 robotic / Alarm status
A 7.0 robotic / Vice clamped
A 7.1 robotic / Vice open
A 7.6 robotic / Door closed
A 7.7 robotic / Door open

Robotic interface PC MILL 155

The robotic interface for the PC Mill 155 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

Caution:
Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 6.6 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
*E 6.0 robotik / close door 2nd channel input
E 6.2 robotic / AUX ON
E 6.3 robotic / Switch NC-mode reference - ......
        automatic
E 6.4 robotic / Approach reference point
E 6.5 robotic / NC start
E 6.6 robotic / Feed stop
E 7.0 robotic / Close vice
E 7.1 robotic / Open vice
E 7.5 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 0.3 robotic / alarm active
*A 6.0 robotic / close door 2nd channel output
A 6.3 robotic / EMERGENCY OFF
A 6.4 robotic / Machine ready
A 6.5 robotic / NC-mode reference
A 6.6 robotic / M00, M01, M02 or M30 aktiv
A 6.7 robotik / Axes standing at reference-point
A 7.0 robotic / Vice clamped
A 7.1 robotic / Vice open
A 7.6 robotic / Door closed
A 7.7 robotic / Door open

* With the help of two potential-free safety-contacts, the door will be closed.
One contact bridges the consent-key, the second connects the SPS-output 6.0 with the SPS-input 6.0.
The safety-relais has to be switched until the door is closed, then it has to be switched off.

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Robotic interface PC MILL 300

The robotic interface for the PC Mill 300 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

> **Caution:**
> Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
E 8.2 robotic / AUX ON
E 8.3 robotic / Switch NC-mode reference - automatic
E 8.4 robotic / Approach reference point
E 8.5 robotic / NC start
E 9.1 robotic / Close vice
E 9.0 robotic / Open vice
E 9.1 robotic / Close door
E 9.0 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 9.6 robotic / Machine ready
A 8.6 robotic / NC-mode reference
A 8.7 robotik / Axes standing at reference-point
A 9.7 robotic / M00, M01, M02 or M30 aktiv
A 9.1 robotic / Vice clamped
A 9.0 robotic / Vice open
A 9.4 robotic / Door closed
A 9.5 robotic / Door open

Robotic interface Concept MILL 55

The robotic interface for the Mill 55 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

> **Caution:**
> Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
E 5.6 robotic / NC start
E 5.7 robotic / Feed stop
E 5.3 robotic / Close vice
E 5.2 robotic / Open vice
E 5.0 robotic / Close door
E 5.1 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 5.7 robotic / alarm active
A 5.0 robotic / Machine ready
A 5.1 robotik / Axes standing at reference-point
A 5.6 robotic / Vice clamped
A 5.5 robotic / Vice open
A 5.4 robotic / Door closed
A 5.3 robotic / Door open

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Robotic interface Concept MILL 105

The robotic interface for the Concept Mill 105 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

> **Caution:**
> Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 7.4 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
*E 6.6 robotik / close door 2nd channel input
E 7.0 robotic / AUX ON
E 7.1 robotic / Switch NC-mode reference - ...... automatic
E 7.2 robotic / Approach reference point
E 7.3 robotic / NC start
E 7.4 robotic / Feed stop

E 7.6 robotic / Close vice
E 7.7 robotic / Open vice
E 8.3 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 3.3 robotic / alarm active
*A 4.0 robotic / close door 2nd channel output
A 4.3 robotic / EMERGENCY OFF
A 4.4 robotic / Machine ready
A 4.5 robotic / NC-mode reference
A 4.6 robotic / M0, M1, M2 or M30 is activ
A 4.7 robotik / Axes standing at reference-point
A 5.0 robotic / Vice clamped
A 5.1 robotic / Vice open
A 5.6 robotic / Door closed
A 5.7 robotic / Door open

* With the help of two potential-free safety-contacts, the door will be closed.
One contact bridges the consent-key, the second connects the SPS-output 4.0 with the SPS-input 6.6.
The safety-relais has to be switched until the door is closed, then it has to be switched off.

Robotic interface Concept MILL 155

The robotic interface for the Concept Mill 155 is an accessory. To activate it, a special PLC software has to be installed. The robotic interface controls the inputs and outputs of the PLC directly.

⚠️

Caution:
Inputs and outputs are NOT potential free (NOT insulated)

Inputs

Signal level
0 V .. 5 V   LOW
15 V .. 24 V   HIGH

Input impedance
2 kΩ

Signal form
As long as an HIGH signal is at input 6.6 "FEED HOLD" is active.
All other inputs need a HIGH impulse with minimum 1 second duration, to switch the accessories (no steady signal).

Input assignement
*E 5.3 robotik / close door 2nd channel input
E 5.5 robotic / AUX ON
E 5.6 robotic / Switch NC-mode reference - automatic
E 5.7 robotic / Approach reference point
E 6.0 robotic / NC start
E 6.1 robotic / Feed stop
E 6.2 robotic / Close vice
E 6.3 robotic / Open vice
E 6.5 robotic / Open door

Outputs

All outputs are short circuit proof and bearable with 0.2 A.

Signal level
20 V .. 24 V   HIGH

Output assignement
A 3.3 robotic / alarm active
*A 5.3 robotic / close door 2nd channel output
A 4.0 robotic / EMERGENCY OFF
A 4.1 robotic / Machine ready
A 4.2 robotic / NC-mode reference
A 4.3 robotic / M00, M01, M02 or M30 aktiv
A 4.4 robotic / Vice clamped
A 4.5 robotic / Vice open
A 4.6 robotic / Door closed
A 4.7 robotic / Door open
A 5.0 robotik / Axes standing at reference-point

* With the help of two potential-free safety-contacts, the door will be closed.
One contact bridges the consent-key, the second connects the SPS-output 5.3 with the SPS-input 5.3.
The safety-relais has to be switched until the door is closed, then it has to be switched off.

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Automatic Vice

The automatic vice works only with open chip guard door. It can be traversed manually by pressing the key or via the robotic interface or the DNC interface.
At the PC Mill 100/105/125/155 also at the program with M25/M26

Notes for Working with the Automatic Tailstock
• The main spindle can not be switched on an when the vice is in an undefined status (neither in back nor in clamped position).
• Moving the tailstock manually is only possible with open door, standing spindle and inactive NC START. At the PC MILL 50/55 the doors must be open.
• The tailstock moves with pressed key until the end position is reached, it can not be positioned by key-tipping.

Door Automatic

Conditions for actuating the door:
• The auxiliary drives must be switched on.
• The main spindle must stand (M05 or M00) - this means also that the run-out time of the main spindle must be finished (program a dwell if necessary)
• The axis drives must stand still.
• The tool turret drives must stand still.

Characteristics with activated door automatic:

Open door
The door can be opened by manual key pressing, via robotic interface or DNC interface.
Additionally the door opens if the following commands are proceeded in the CNC program:
• M00
• M01
• M02
• M30

Close door
The door can be closed only by manual key pressing, via robotic interface or DNC interface.
PC MILL 50/ 55:The door closes on pressed key
PC MILL 125/155: Press the door key and the consent key simultanously to close the door. The door moves only as long as the keys are pressed.

Puff Blowing Device

M71 Puff blowing ON
By M71 in the CNC program the puff blowing device will be switched on.

M72 Puff blowing OFF
By M71 in the CNC program the puff blowing device will be switched off.

On the PC MILL 50/55 the puff blowing device is switched on and off with the key combination Ctrl + 2.

Dividing head

M10   Lock dividing head

M11   Unlock dividing head

The dividing head will be activated like a accessory with EmConfig.
See EmConfig.

Activate Tool Turret

The tool turret (PC MILL 100/125/155) will be activated like a accessory with EmConfig. See "EmConfig".

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DNC interface

The accessory DNC interface is activated with EmConfig by indicating TCP/IP (only for *WinNC SINUMERIK 810D/840D)* or a serial interface for the DNC.

With the DNC interface the machine can be operated via the PC control together with other machines (flexible machining system).

A master computer coordinates the machines and can load or read the following data and commands via the DNC interface:
• NC start
• NC stop
• NC programs
• zero offsets
• tool data
• RESET
• approach reference point
• peripheric control
• override data, ...

For further details read the online-documentation.

Only for *WinNC SINUMERIK 810D/840D:*
The setting of the serial interface parameters DNC is carried out as during the data transmission via the serial interface in the operating area "SERVICES" via the softkeys "V24 USER" and "SETTING", with the serial interface of DNC to be selected.
The DNC-Format "Reduced ASCII" requires 7 data bits for the data transmission.
The DNC-Format "Full Binary" requires 8 data bits for the data transmission.

If the interface DNC is operated with TCP/IP, incoming connections on port 5557 are waited for.

Installation of the DNC interface
• Start Windows 98/ME/2000/XP/Vista
• Only under Windows 98: download USB driver from the internet and install it
• Connect USB flash drive
• Start EMCO menu
• The installation program starts
• The installation is guided by menus. Follow the instructions step by step.

X: EmConfig

General

EmConfig is a configuration software for WinNC. EmConfig helps you to alter the settings of WinNC.

The most important settings are:
- Control language
- System of measurement mm - inch
- Activate accessories
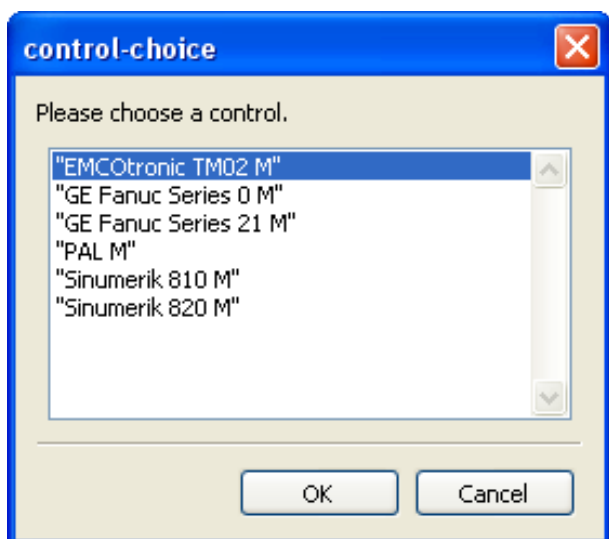- Selection of interface for control keyboard

Using EmConfig you can also activate diagnostic functions in case of troubles - that way you get help immediately.

Safety-related parameters are protected by a password. They can only be activated by set-up technicans or by technical support representatives.

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Icon for EmConfig
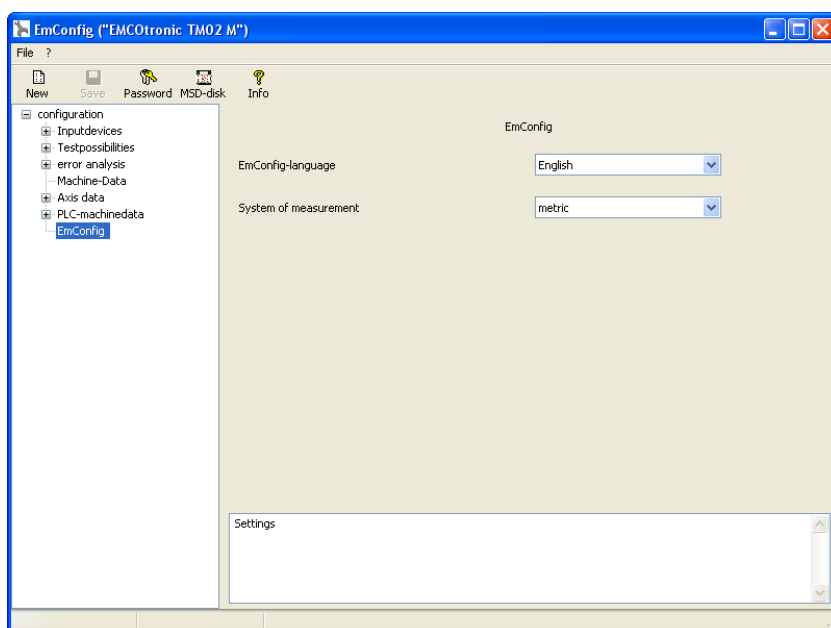
How to start EmConfig

Open EmConfig.

In case there are several control types installed, a selection box will appear on the screen.

Select the required control type and click OK.

The following settings are only valid for the selected control type.

The window for EmConfig appears on the screen.

Selection box for control type

Change the language of EmConfig

Here you can change the language of EMConfig. In order to activate the settings, restart the program.
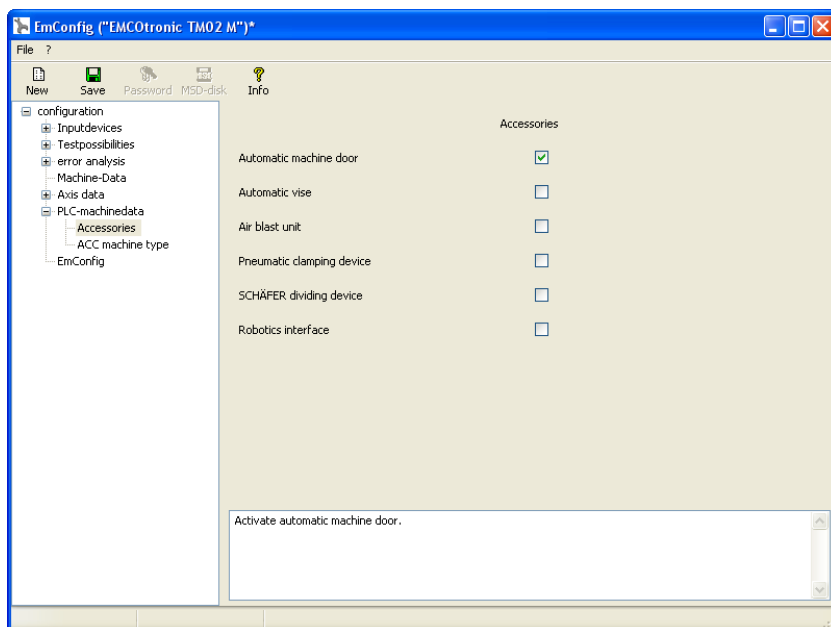
> **Note:**
> Select the desired menu item. The appropriate function is explained in the text box.

How to activate accessories

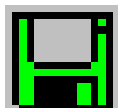When you install accessories on your machine, you need to activate them here.

Activate accessories

How to save changes

After the settings, the changes must be saved.

Select "Save" or click on the icon.

> **Note:**
> Input fields highlighted in red indicate inadmissible values. Inadmissible values are not saved in EmConfig.

After saving the changes, create a machine data floppy disk (MSD) or a machine data USB flash drive.

How to create machine data floppy disk or machine data USB flash drive

After having changed the machine data, the machine data floppy disk or the machine data USB flash drive must be in the appropriate drive. Otherwise your changes cannot be saved and get lost.

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X4

Y: External Input Devices

EMCO Control Keyboard USB

Note:
Since the control keyboard is already designed for an optimum operation with a a TFT display, the installation of such a display is recommended.
During the use at the machine itself the keys of the control keyboard are illuminated. The control keyboard can be fixed at a machine desk by means of the two front screws.
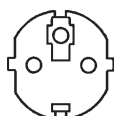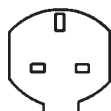
Scope of supply

The scope of supply for a complete control keyboard consists of two parts:
Basic case
Key module
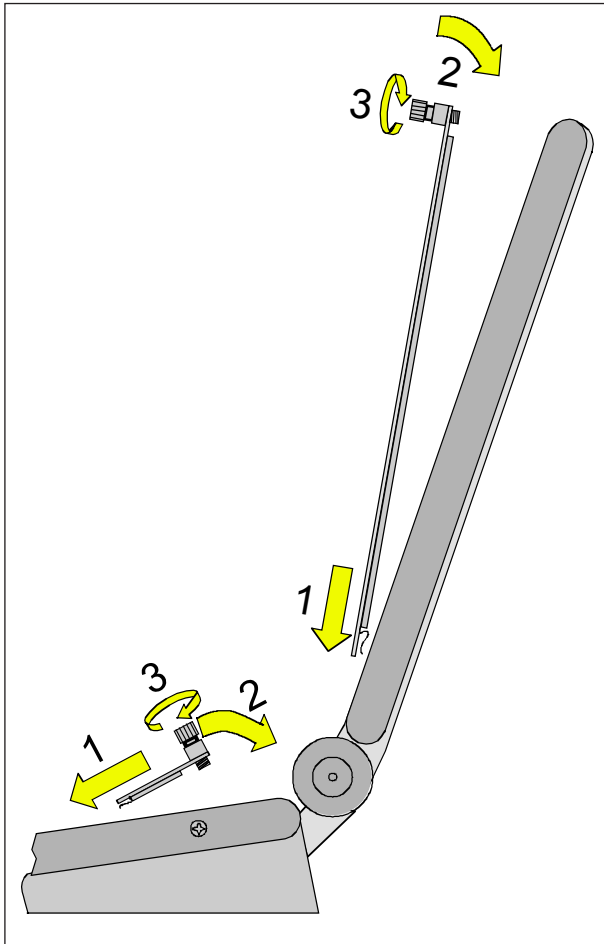
VDE   BSI   UL

Ref. No.	Description
X9B 000	Basic unit with USB cable
X9Z 600	TFT Display with screen cable and power supply unit
A4Z 010	Mains cable VDE
A4Z 030	Mains cable BSI
A4Z 050	Mains cable UL
X9Z 010N	Key module SINUMERIK 810 2 key sheets with keys 1 package exchange keys
X9Z 020N	Key module SINUMERIK 820 2 key sheets with keys 1 package exchange keys
X9Z 040N	Key module SINUMERIK 840 2 key sheets with keys 1 package exchange keys
X9Z 050N	Key module FAGOR 8055 TC 2 key sheets with keys
X9Z 055N	Key module FAGOR 8055 MC 2 key sheets with keys
X9Z 110N	Key module FANUC 0 2 key sheets with keys 1 package exchange keys
X9Z 130N	Key module FANUC 21 2 key sheets with keys 1 package exchange keys
X9Z 210N	Key module EMCOTRONIC TM02 2 key sheets with keys 1 package exchange keys
X9Z 510N	Key module PAL 2 key sheets with keys 1 package exchange keys
X9Z 520N	Key module HEIDENHAIN 355 2 key sheets with keys 1 package exchange keys
X9Z 426N	Key module HEIDENHAIN 426/430 2 key sheets with keys 1 package exchange keys

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Assembling

- Place the correseponding key sheet with the clips in the basic case (1).
- Pull the key sheet into the basic case, it must be insertet plainly (2).
- Fix the key sheet with the two knurled screws (3).
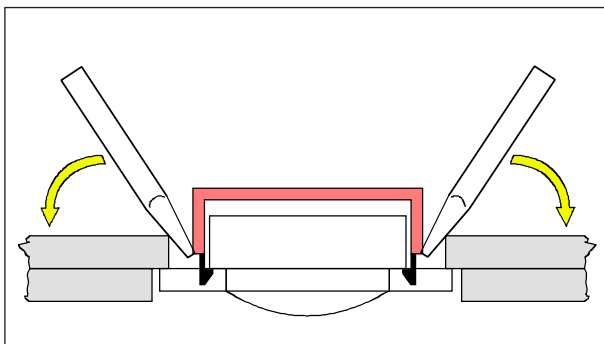
> **Note:**
> The key sheets must not be bended, otherwise the switching function can not be warranted.

Exchange of single key caps

Off works the keyboards are equipped with the keys for turning.

The scope of supply includes a package of exchange key caps to equip the keyboard for milling.

If you want to use the control keyboard for milling, you have to exchange a part of the key caps. Exchange them as shown on the following pages.
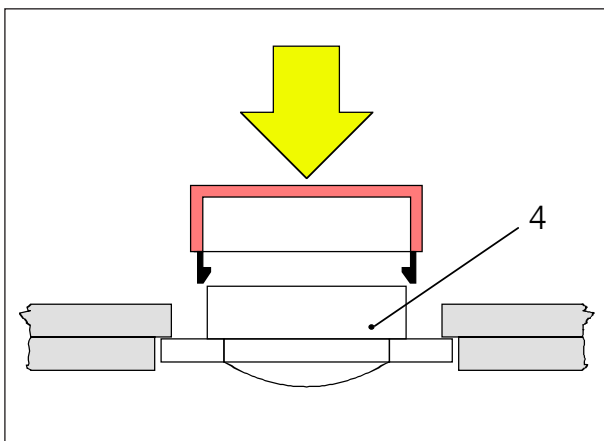
> **Note:**
> For the control type Heidenhain 355 only a milling version is available.
> You can select either a Dialog or DIN version an change the corresponding keys.
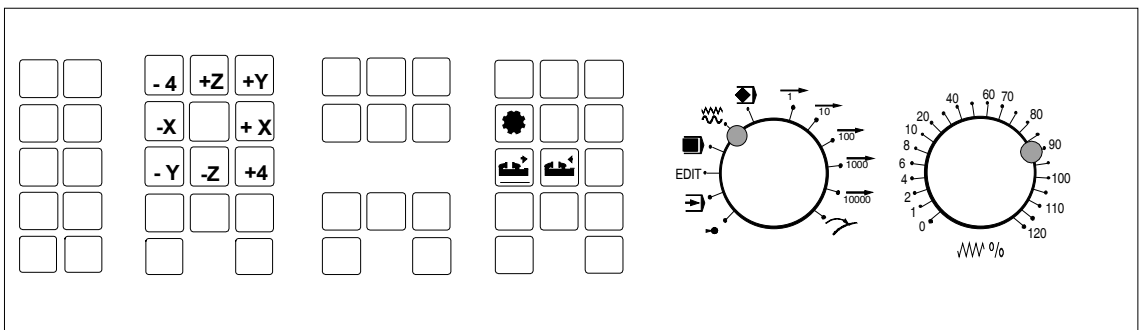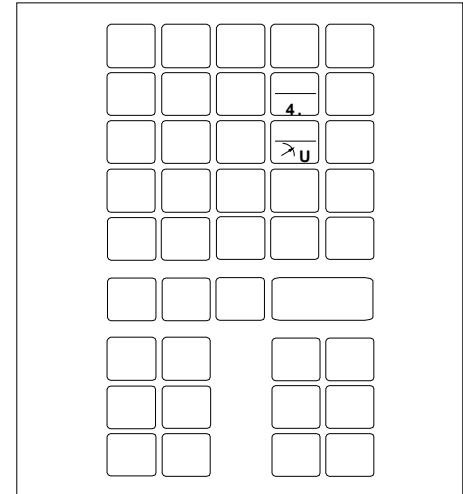> For the control type Heidenhain 426/430 only a milling version is available.

Take off
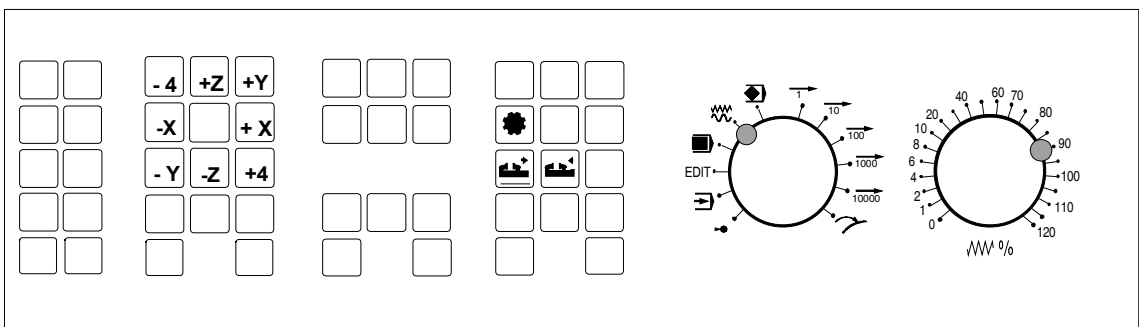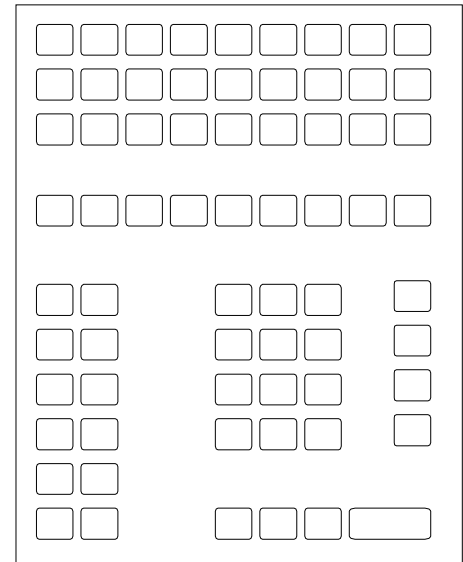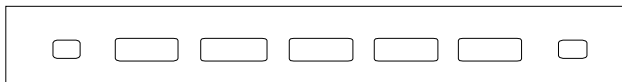Pull out carefully the key caps to be exchanged with a fine screw driver or a knife.

Clip on
Move the key body in the middle of the recess. Push the key cap vertically down onto the key body, until the key cap snaps in tactily.

SINUMERIK 810M
Exchange key caps
for milling

SINUMERIK 820M
Exchange key caps
for milling

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SINUMERIK 840D
Exchange key caps
for milling

- 4 +Z +Y
-X   + X
- Y -Z +4

EDIT

40 60 70
20   80
10
8   90
6
4   100
2
1   110
0   120
%

FANUC 0M
Exchange key caps
for milling

9
G

CURSOR

5   6
Y   Z

1   2
H   F

4th   K   'L
B   J   No. Q
       I   P

PAGE

- 4 +Z +Y
-X   + X
- Y -Z +4

EDIT

40 60 70
20   80
10
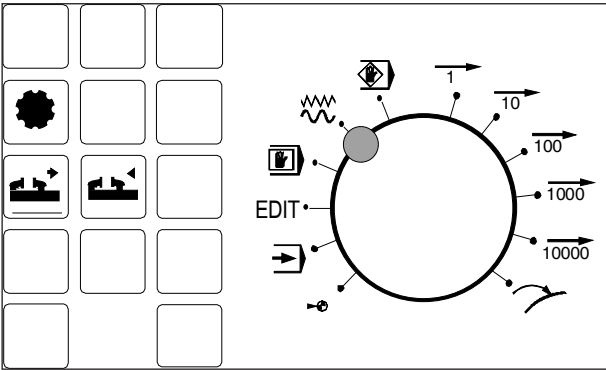8   90
6
4   100
2
1   110
0   120
%

FANUC 21M
Exchange key caps
for milling
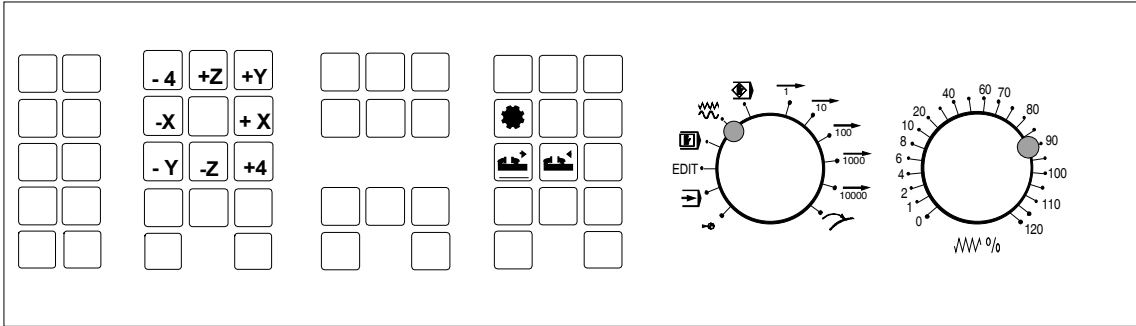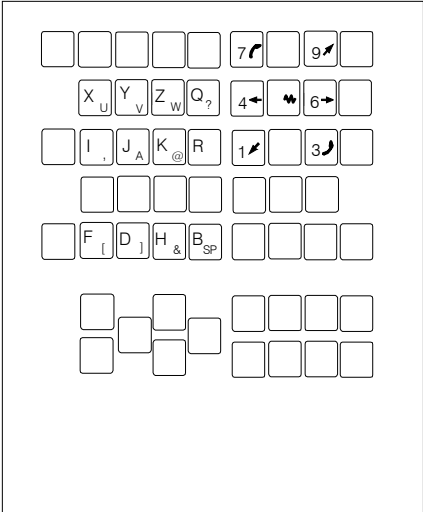
HEIDENHAIN 355
Exchange key caps
for DIN-Version
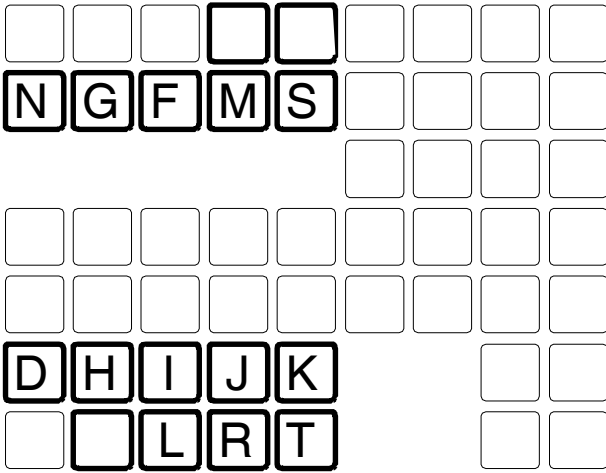
EMCOTRONIC M2
Exchange key caps
for milling

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Connection to the PC

The control keyboard is connected via USB interface to the PC.
The connection cable USB taking over at the same time the energy supply of the control keyboard is situated at the rear side of the control keyboard.

Settings at the PC software

Installation of the USB driver

After booting the PC a message appears that a new USB device has been found.

> **Note:**
> For the installation of the USB driver administrator rights are necessary.
> Follow the instructions for the installation of the USB driver described in detail in the instructions of the EMCO USB control keyboard.

After the installation make sure that your system has recognized the EMCO Control Keyboard (USB).

Setting during new installation of the PC software

During the installation indicate the control keyboard and the respective USB interface.

Setting in case of PC software already installed

Select in EmConfig at the INI data settings the USB control keyboard as means of entry and the respective interface USB.
Furthermore, set the keyboard type to "New". Don't forget to memorize the settings.

Interruption of the PC software

The PC software can be interrupted by pressing the two keys represented in black for some seconds.
This corresponds to Alt+F4 on the PC keyboard.

Interrupt PC software

EMCO

Z: Software Installation

System requirements

The following minimum requirements must be met to run WinNC:

- Windows 98/2000/XP/Vista:
- PC Celeron or Pentium III
  733MHz IBM-compatible
  128 MB RAM, 256 MB RAM recommended
- VGA color graphic card (8MB or higher)
- 2 available USB connections
- network interface card (TCP/IP capable; only for ACC machines)
- 30 MB of free hard disk memory for each control type installed; CAMConcept 100 MB;
- latest service pack for operating system
- only required for HEIDENHAIN TNC 426 and FAGOR 8055:
  Netscape Navigator or Commuincator 4.5 to 4.78 (6.x is not supported), or Internet Explorer 4.0, or RealPlayer 8 or later

Note:
AC95: Machine installations are only possible under Windows 98/ME.

Software installation

- Start Windows 98/ME/2000/XP/Vista
- AC95: Machine installations are only possible under 98/ME.
- Only under Windows 98: download USB driver from the internet and install it
- Connect USB flash drive
- Start EMCO menu
- The installation program starts
- The installation is guided by menus. Follow the instructions step by step.

Variants of WinNC

You can install EMCO WinNC for the following CNC control types:

- SINUMERIK 810/820 T and M
- SINUMERIK 810D/840 D T and M
- EMCOTRONIC TM02 T and M
- PAL T and M
- HEIDENHAIN TNC 355
- HEIDENHAIN TNC 426
- FANUC Series 0-TC and 0-MC
- FANUC Series 21 TB and MB
- FAGOR 8055 TC and MC
- CAMConcept T and M

In case there are several control types installed, a menu appears when starting EM Launch from which you can select the desired type.
The following versions can be installed from the WinNC variants:

- Demo license:
  The demo license is valid for 30 days after the first use. Optionally, there is the possibility to extend the period to up to 90 days. 5 days before the demo license expires, you can enter another valid license key (see license manager)

- Programming station:
  Programming and operation of the appropriate CNC control type is simulated by WinNC on your PC.
  - Single user license:
    Authorizes to external programming of CNC-controlled machine tools on one PC workstation (machine-independent).
  - Multi-user license:
    Authorizes to external programming of CNC-controlled machine tools. The multi-user license can be installed on an unlimited number of PC workstations or in a network within the institute registered by the licensor (machine-independent).

- Machine license:
  This license allows to directly operate a PC-controlled machine (PC TURN, Concept TURN, PC MILL, Concept MILL) of WinNC as if it was operated by an ordinary CNC control.

EMCO

Settings of the Interface Board

RS 485 - Board (AC88)

(PC TURN 50, PC MILL 50,
PC TURN 120, PC MILL 100)

With installation of the software a certain memory area (**memory area CC000 - D0000**) is assigned to the interface card.

If this area is already occupied, e.g. by another card or an Expanded Memory Manager, an alarm appears.

After this alarm act as following:

Alter jumper positions
By altering the jumpers the interface card can be switched to another memory area.
The following memory areas are available:

RS 485					
	Jumper			**Hexadecimal**	
Nr.	**ST1**	**ST2**	**ST3**	**Memory Area**	
1*	L	L	L	CC000 to	CC7FF
2	H	L	L	CC800 to	CCFFF
3	L	H	L	CD000 to	CD7FF
4	H	H	L	CD800 to	CDFFF
5	L	L	H	CE000 to	CE7FF
6	H	L	H	CE800 to	CEFFF
7	L	H	H	CF000 to	CF7FF
8	H	H	H	CF800 to	CFFFF

*) Basic position
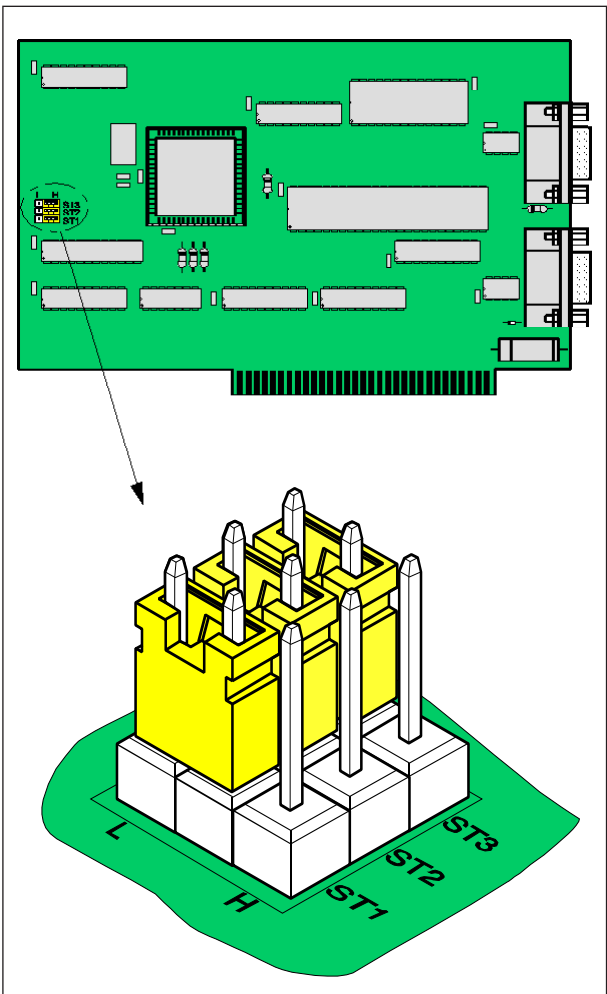
Jumper position on the interface board
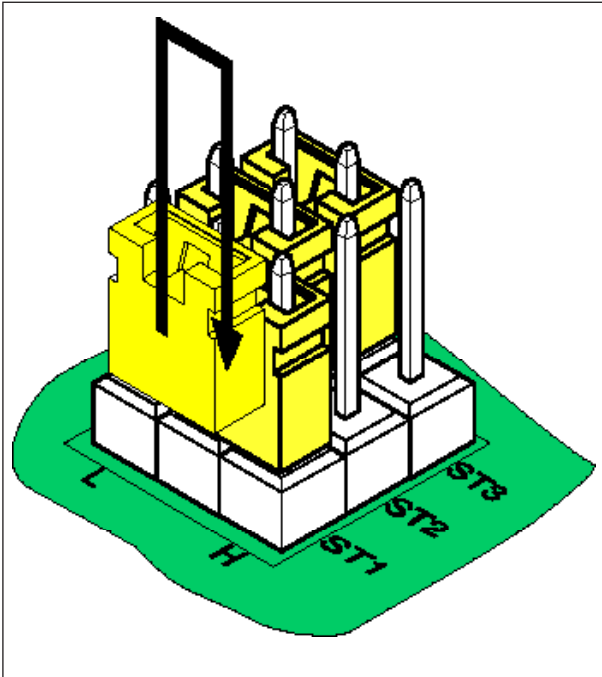
Alter jumper positions

Sequence:

> ⚠️
>
> **Danger:**
> Mount and dismount the interface card only while the PC is disconnected to the net.
> Pull power cable!

• Remove the interface board from the PC.

• Place the jumpers ST1 - ST3 in the required position (positions 1 - 8 see table on previous page).

• Mount the interface board in the PC.

• Connet the PC to line and switch on.

• Retry installation of the software.
  When the alarm occurs again, try the next jumper position for installation.

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PCCOM (RS 422) - Board (AC95)

(PC TURN 55, PC MILL 55
PC TURN 105, PC MILL 105
PC TURN 125, PC MILL 125
PC TURN 155, PC MILL 155)

With installation of the software a certain memory area (**memory area CC000 - CFFFF**) is assigned to the interface card.

If this area is already occupied, e.g. by another card or an Expanded Memory Manager, an alarm appears.

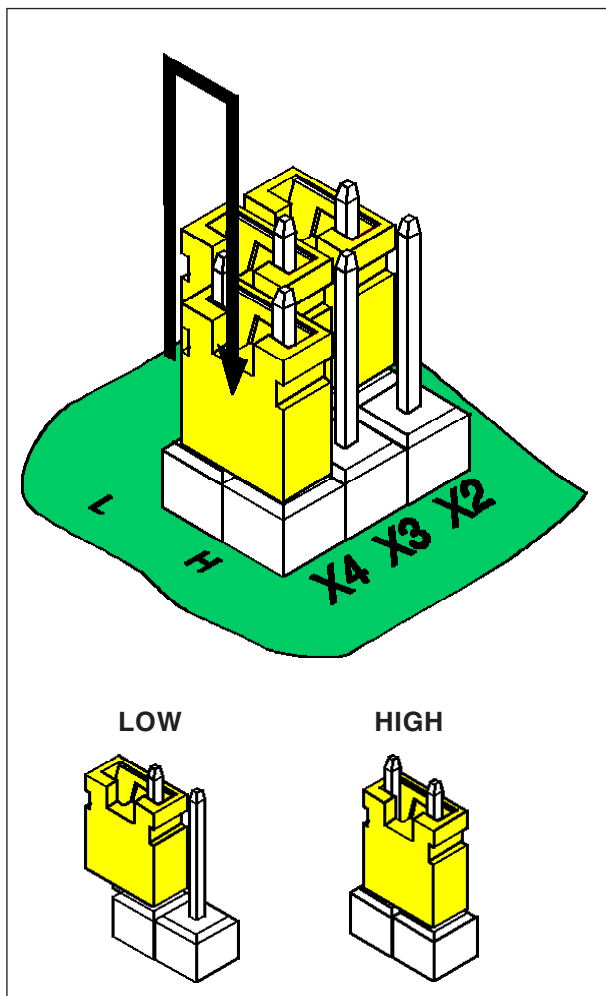After this alarm act as following:

Alter jumper positions
By altering the jumpers the interface card can be switched to another memory area.
The following memory areas are available:
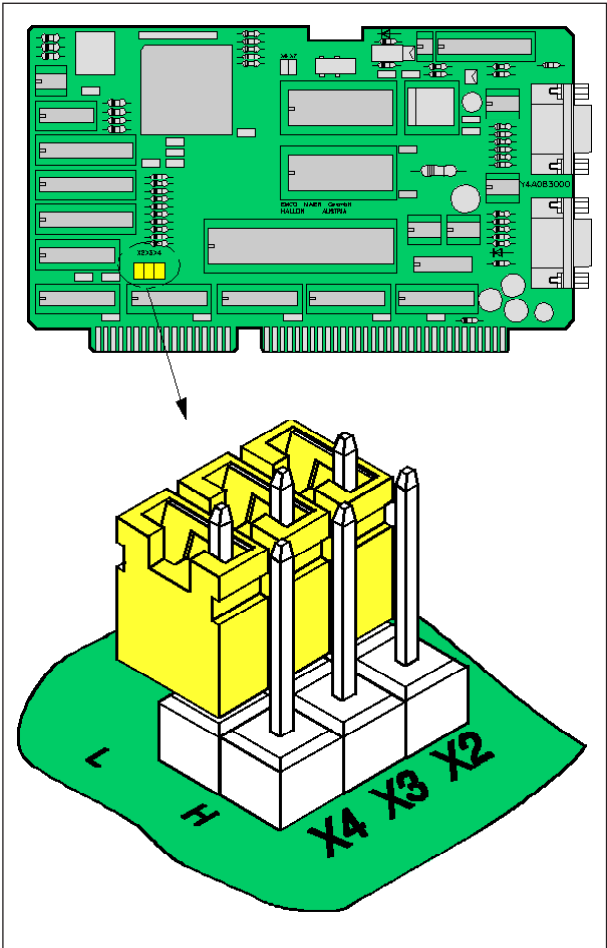
Jumper position on the interface board

RS 422						
Nr.	**Jumper**			**Hexadecimal**		
	X2	**X3**	**X4**	**Memory Area**		
1*	L	L	L	CC000	to	CC7FF
2¹⁾	L	L	H	D8000	to	D87FF
3	L	H	L	CF800	to	CFFFF
4¹⁾	L	H	H	E0000	to	E07FF
5	H	L	L	CE000	to	CE7FF
6¹⁾	H	L	H	DF800	to	DFFFF
7¹⁾	H	H	L	D0000	to	D07FF
8¹⁾	H	H	H	E8000	to	E87FF

*) Basic position
1) From PCCOM- Board- version 1

LOW   **HIGH**

Alter jumper positions

Sequence:

Danger:

Mount and dismount the interface card only while the PC is disconnected to the net.
Pull power cable!

• Remove the interface board from the PC.

• Put the jumpers X2 - X4 in the requierd position (positions 1 - 8 see table on previous page).
  Pins not connected: L
  Pins connected: H

• Mount the interface board in the PC.

• Connet the PC to line and switch on.

• Retry installation of the software.
When the alarm occurs again, try the next jumper position for installation.

PCCOM setting Master - Slave

PCCOM Master-Slave Setting
Several PCCOM boards can be installed in the PC, e.g. to control more than four axes on a machine.

In this case one of the boards must be set as Master, all other boards must be set as Slaves.

When only one board is installed it also must be set as master.

At delivery all cards are set as Master.

Setting occurs with the jumpers X6 and X7.

EMCO

Network card (ACC)

for:
Concept Turn 55
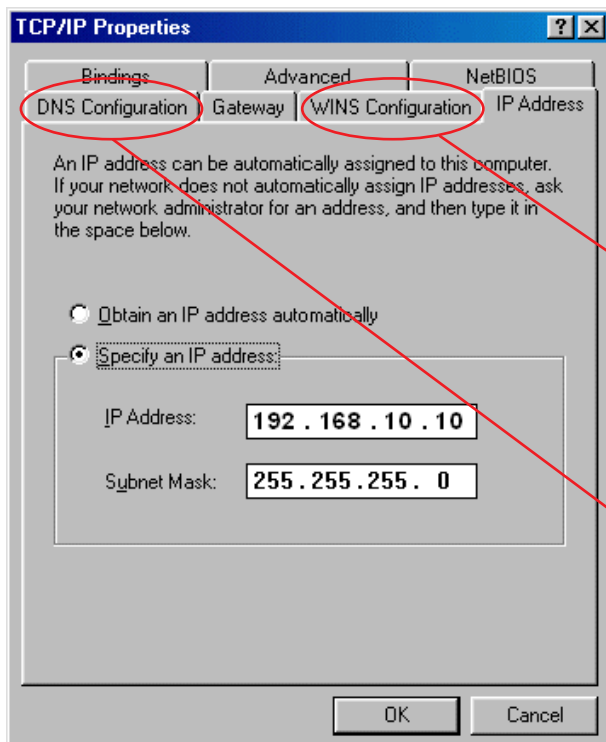Concept Mill 55
Concept Turn 105
Concept Mill 105

Danger:
Mounting and/or dismounting the network card may only be carried out when the computer is disconnected from the mains supply (unplug power plug).

Network card type: TCP/IP compatible network card

Setting the network card for the local connection to the machine:

Note:
During a machine installation one network-card is reserved exclusively for the control of the machine.

IP- adress: 192.168.10.10
Subnetmask 255.255.255.0

In case of problems observe the instructions of your operating system (Windows help).
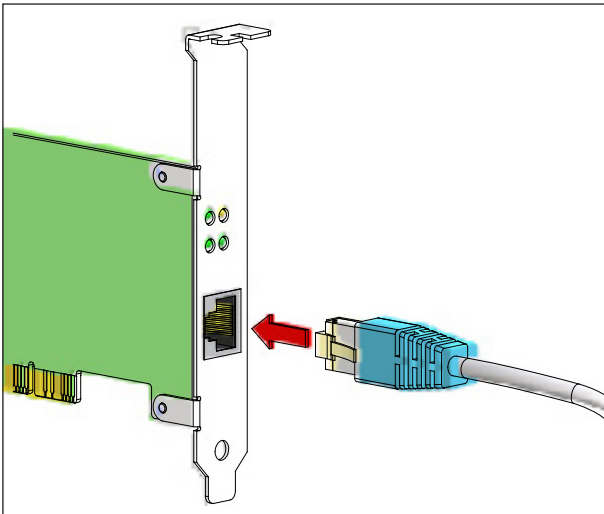
Connection of the machine to the PC

Example for Windows 98:
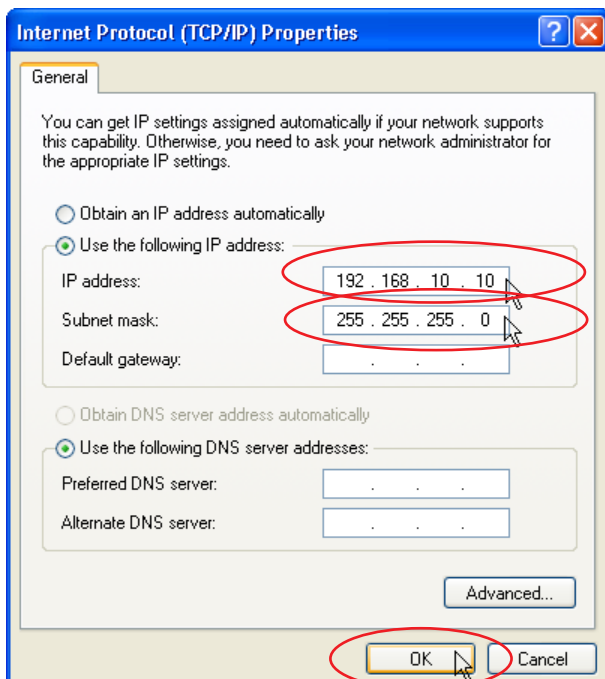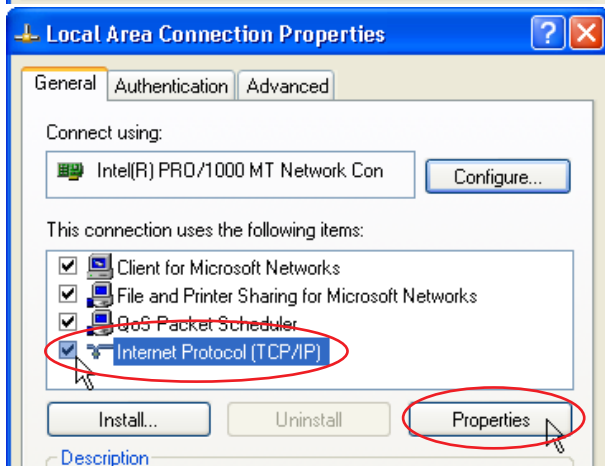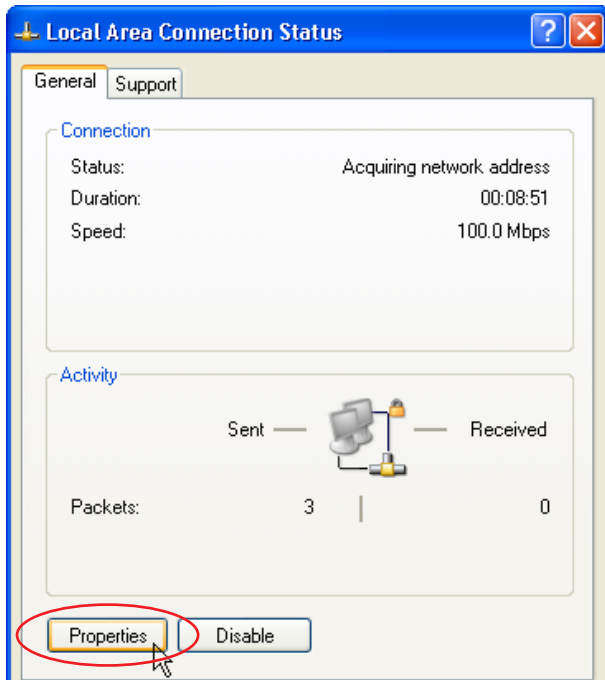Furthermore, in the registers "DNS configuration" and "WINS configuration" these should be activated.
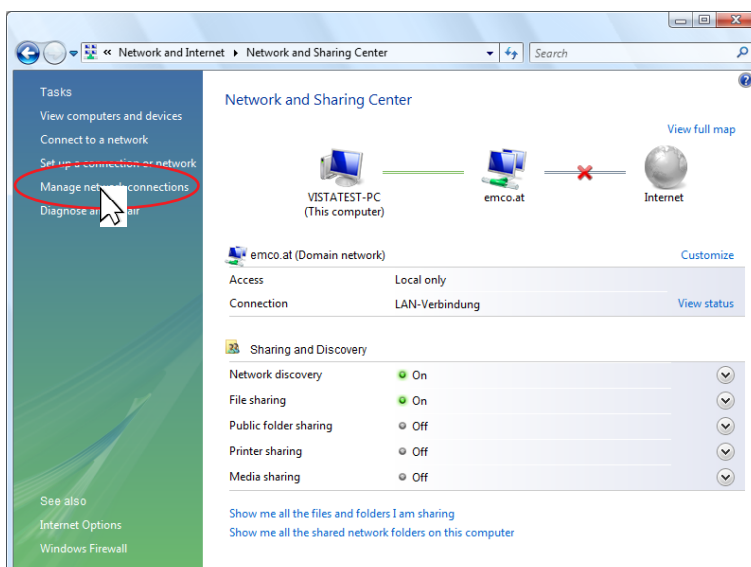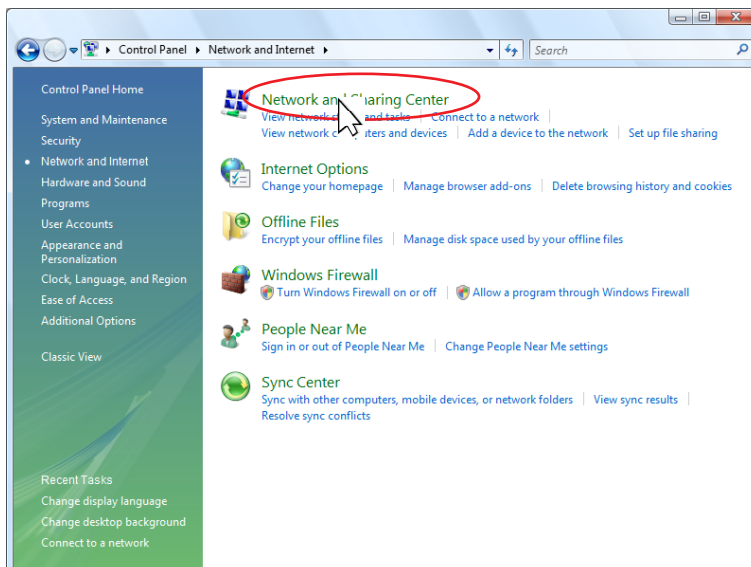

Properties of TCP/IP
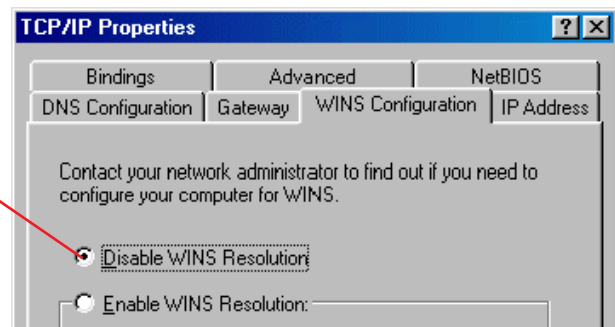
Disable WINS configuration
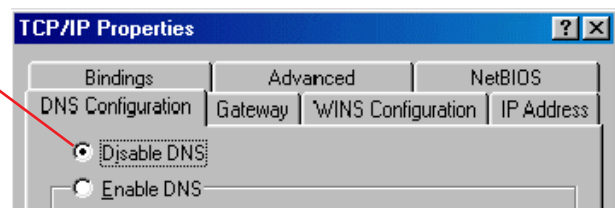
Disable DNS configuration

Example for Windows XP:

Local Area Connection Status

General | Support

Connection
Status: Acquiring network address
Duration: 00:08:51
Speed: 100.0 Mbps

Activity
Sent — Received
Packets: 3 | 0

Properties | Disable

Local Area Connection Properties

General | Authentication | Advanced

Connect using:
Intel(R) PRO/1000 MT Network Con | Configure...

This connection uses the following items:
☑ Client for Microsoft Networks
☑ File and Printer Sharing for Microsoft Networks
☑ QoS Packet Scheduler
☑ Internet Protocol (TCP/IP)

Install... | Uninstall | Properties

Description

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
● Use the following IP address:
IP address: 192 . 168 . 10 . 10
Subnet mask: 255 . 255 . 255 . 0
Default gateway: . . .

○ Obtain DNS server address automatically
● Use the following DNS server addresses:
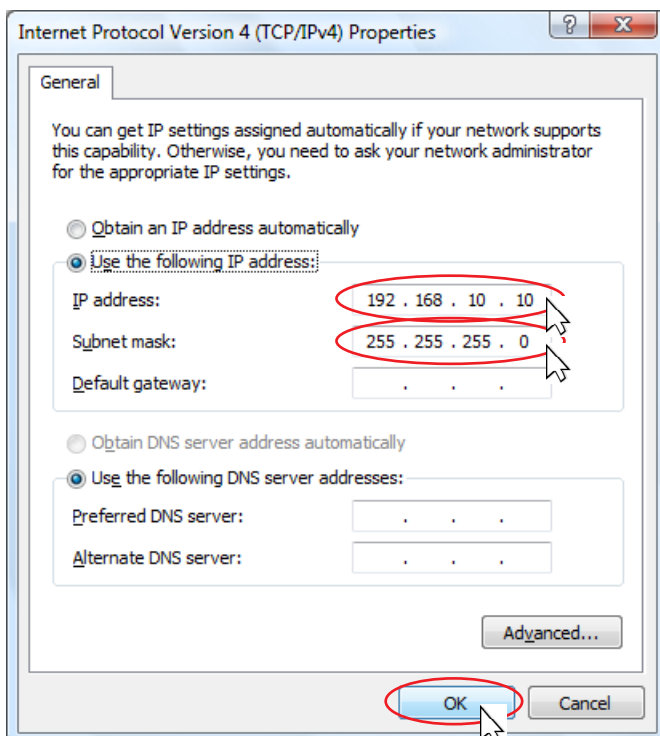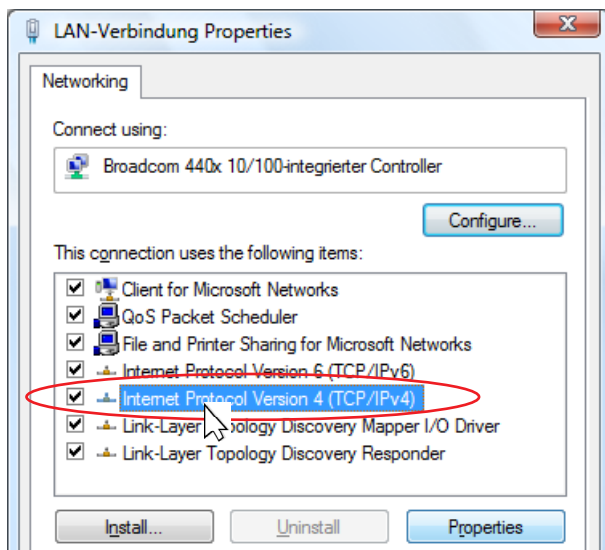Preferred DNS server: . . .
Alternate DNS server: . . .

Advanced...

OK | Cancel

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Example for Windows Vista:

Note:
Windows needs your permission to continue.
If you started this action, continue.

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Starting WinNC

If you have selected "YES" for the last query in the machine version installation (entry in the file AUTOEXEC), WinNC starts automatically after switching on the PC.

Otherwise act as following:
- Switch on the PC and start Windows 95 (resp. automatic start).
- Click on the start symbol in the bottom line.
- Select Programs, EMCO and click on WinNC.
- The screen shows the start picture. In the start picture the version number of WinNC and the licensee are displayed.
- If you have installed one control type only, it will start immediately.
- If you have installed several control types, the screen shows the selection menu.
- Select the desired control type (cursor keys or mouse) and press ENTER to start it.
- If you use the control keyboard, select the desired control type with the JOG keys and start it with NC-Start.

Note:
With ACC the machine must be switched on first.
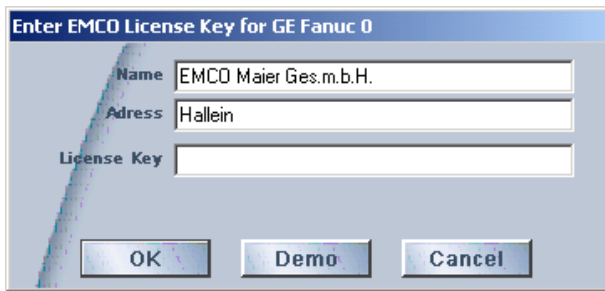
Closing WinNC

Switch off auxiliary drives.
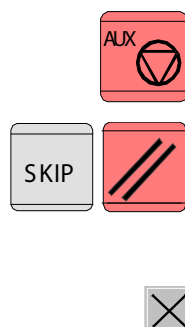
By similar pressing the keys "Alt" and "F4" (PC keyboard) or the keys „SKIP" and „RESET" (accessory control keyboard) the control system will be ceased and you are back in the selection menu for the control types.
Press Alt+F4 again to close WinNC.
With the mouse you can close WinNC by clicking on the symbol in the headline.

Input window license key enquiry

EMCO License Manager

Licence input

After having been successfully installed, an input window appears during initial operation of an EMCO software product and asks for name, address and licence key. This input window appears for every software product installed. In case a demo licence is desired (see page Z1), please select "DEMO".
The input window reappears only 5 days before the expiry of the demo licence. A subsequent input of a licence key is also possible via the licence manager (see licence manager below).
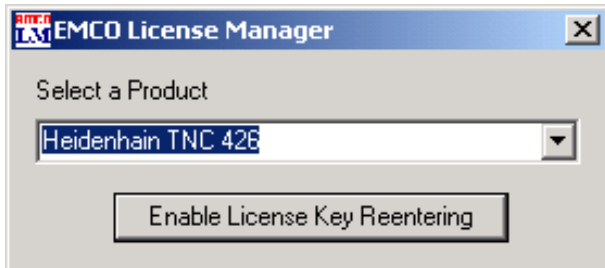
License manager

For the release of additional function groups of existing EMCO software products it is necessary to enter a new licence key (exception: demo licence).

The **EMCO License Manager** (see picture on the left) enables the input of further new license keys. For this purpose select the new product in the selection window and confirm the input.

The next time you start your control software an input window appears and asks you to enter name, address and licence key (see picture on the top left).

Please note that the licence key is asked for each software product individually. The picture on the left shows e.g. the input prompt for the licence key for the software product "Heidenhain TNC 426".

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