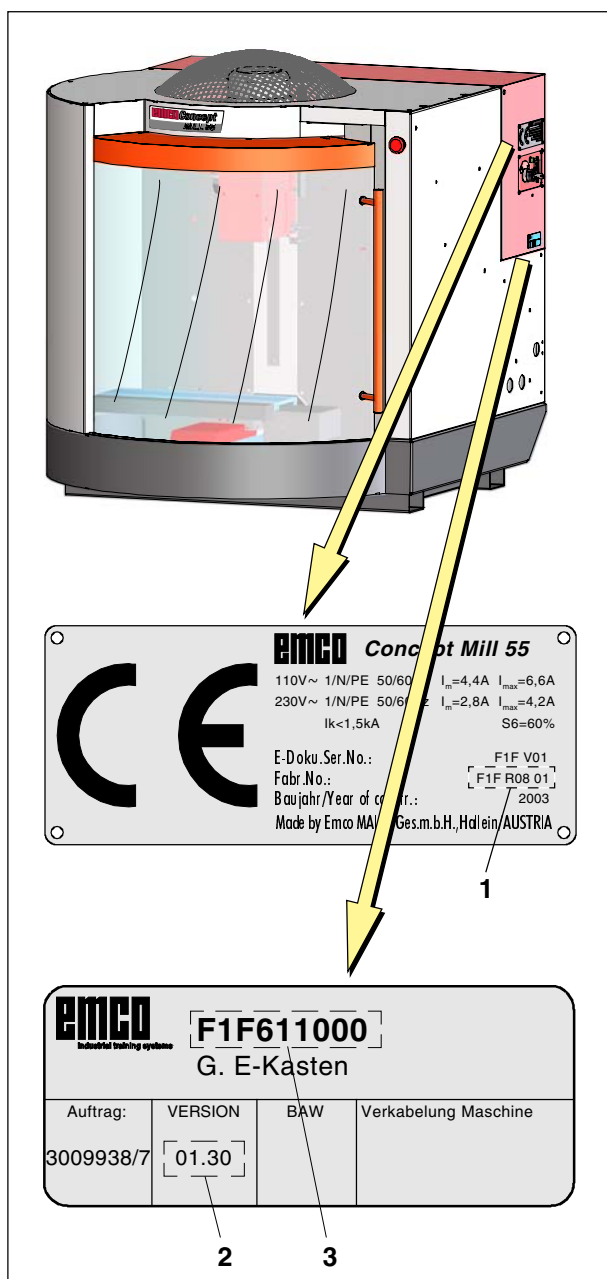


# A Installation of the Machine



Machine number and electrics number

## Machine acceptance

Check the machine for any transport damage and completeness of the delivery.

If you find any defects, please contact the dealer or the insurance company.

In case of complaints always specify the exact designation of the machine and the machine number and the electric number.

## Machine number

The adhesive plate with the machine number (1) is to be found laterally on the machine above the lockable main switch.

The machine number is also stamped into the machine bed.

## Electrics number

The adhesive plate with the electrics number is mounted on the right side of the machine below the main switch.

The electrics number consists of a 9-digit number (3) followed by the version number (2).

Example of a complete electrics number:

**F1F 611 000 V1.30** (see illustration)

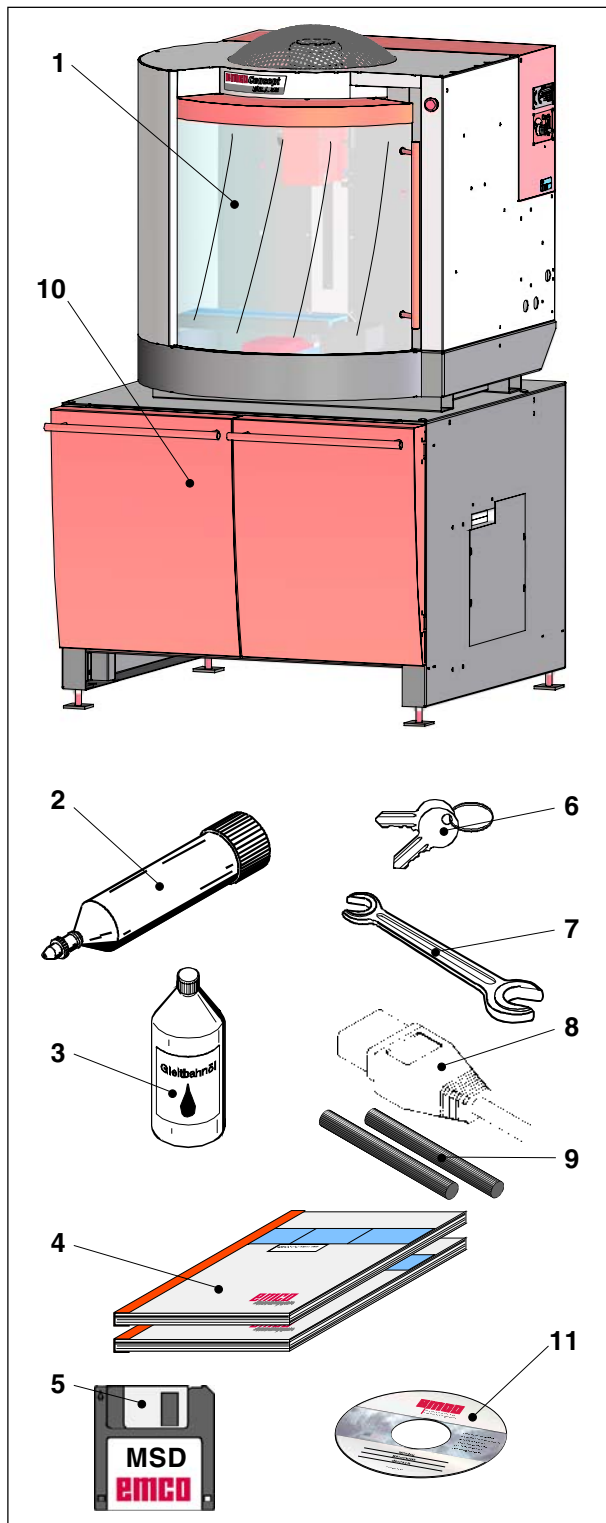
### Note:

The wiring diagrams valid for your machine are to be found in the **electrical documentation** which is in the switch cabinet of the machine.

An electrical documentation can also be obtained under order number **ZVP 677 915** and indicating the version number (e.g. **V1.30**) from EMCO.



## Scope of supply



Scope of supply

### Basic machine

- (1) PC-controlled CNC-machining center Concept Mill 55 with:
  - full shell with chip tray
  - complete electric equipment
  - safety devices according to CE-standard
- (2) oil gun
- (3) 1 bottle (0.25l) of slideway oil
- (4) machine description and electrical documentation
- (5) disk with machine data (MSD)
- (6) 2 keys for main switch
- (7) 1 hexagonal key SW10x13
- (8) 1 power cable
- (9) 2 clamping pins

### Further Options

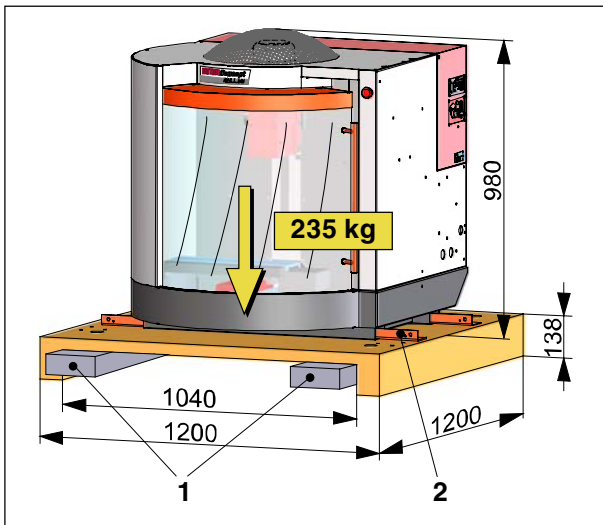
- ☐ Machine base (10)
- ☐ 8 position tool changer
- ☐ Minimal coolant device
- ☐ Dividing head
- ☐ Automatic door
- ☐ Machine lamp
- ☐ Automatic machine vice
- ☐ Robotic-Interface
- ☐ DNC-Interface

### Control software - Option (11)

- ☐ Siemens 810/820
- ☐ Siemens 810D/840D
- ☐ GE Fanuc Series 0
- ☐ GE Fanuc Series 21
- ☐ Emcotronic TM02
- ☐ Heidenhain TNC 426/430
- ☐ PAL
- ☐ Emco WinCam

## Transport of machine

### Transport with pallet



Transport with pallet



#### Attention:

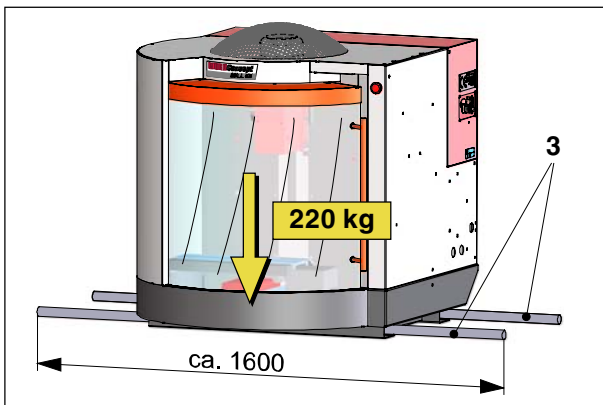
The machine may only be transported on the pallet if the machine is fixed on the pallet by means of angle sheets (2).

Note the positions of the stack forks (1).

Lifting capacity ..... min. 235 kg

Fork width ..... 800 - 1 000 mm

Fork length ..... min. 1 200 mm



Transport with lifting bars

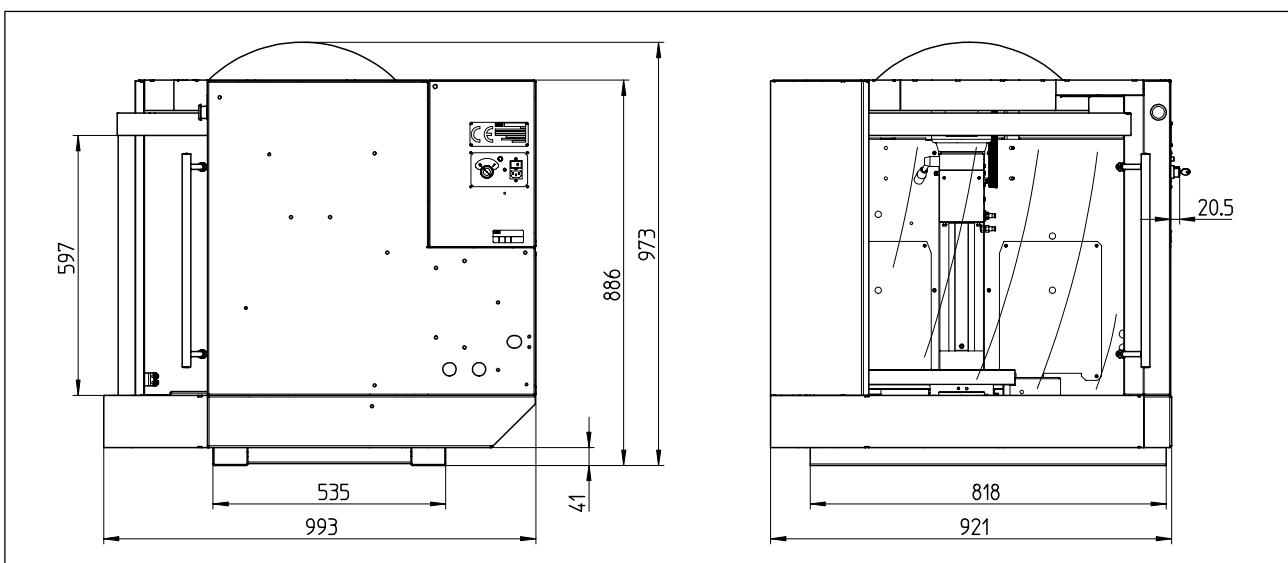
### Transport with lifting bars

The machine is transported with adequate lifting bars (3) which are passed through the machine base.

Lifting capacity ..... min. 220 kg

Lifting bars .....  $\varnothing 35 \times$  min. 1 300 mm

## Dimensions of machine



Dimensions

## Installation criteria

### General

The machine is to be installed on a stable base.



#### **Danger:**

Observe the carrying capacity of the table according to the machine weight!

Weight of the machine ..... 220 kg

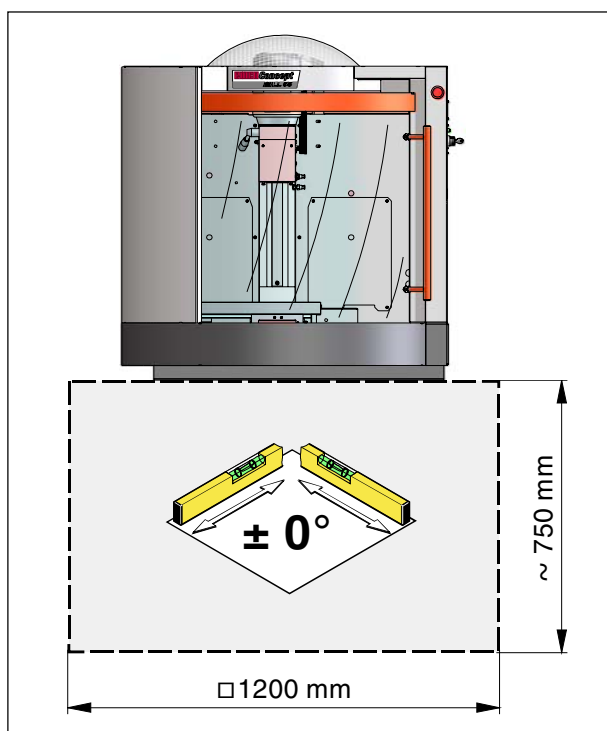
Ideal table height ..... ca. 750 mm

Installation width × inst. depth ... 1200 × 1200 mm

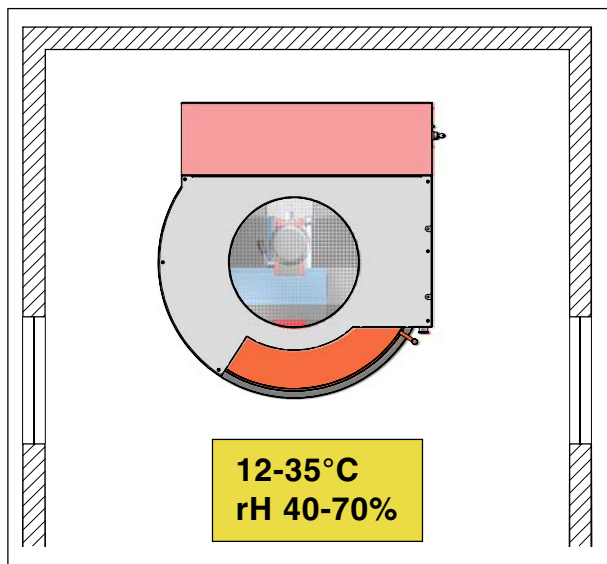
#### **Hinweis:**

Ein Maschinenuntersatz ist von EMCO als Zubehör erhältlich.

**Bestell-Nr. A7Z 210**



Installation possibility



Room climate at installation site

### Installation site

Mind that the selected installation site is adequately clean (free of excessive dust exposure etc.) to take care of the machine as well as the PC and the peripheral devices.

**Furthermore, the following requirements must be met:**

Room temperature ..... 12-35°C

Atmospheric moisture ..... 40-70%

### Ergonomy

Due to its ergonomic design the machine provides optimum operation.

However, when choosing the installation site pay attention to sufficient lighting.

## Electrical connection of the machine



### Danger:

A ground wire contact has to be available at the socket.

**Voltages:** 100 V 1/N/PE ~ 50/60 Hz  
110 V 1/N/PE ~ 50/60 Hz  
230 V 1/N/PE ~ 50/60 Hz

**Connected load:** 0,85 kVA

**Preliminary fuse:** max. 12 A/slow

**Max. voltage fluctuations:** +5/-10%

## Adjustment of the required supply voltage

- Push up the latch on the casing (3) and remove the casing with the fuse (1) and the selector pin (2).
- Turn the selector pin (2) in such a way that in the window of the casing (3) the following voltage setting appears:

Mains supply	Setting in control window
*100V ~	"100V" + transformer
110V ~	"120V"
230V ~	"220V"

- Put the whole unit with fuse (1), selector pin (2) and casing (3) again into the socket.



### Attention:

With the 100V mains supply there has to be done a modification on the transformer of the machine!

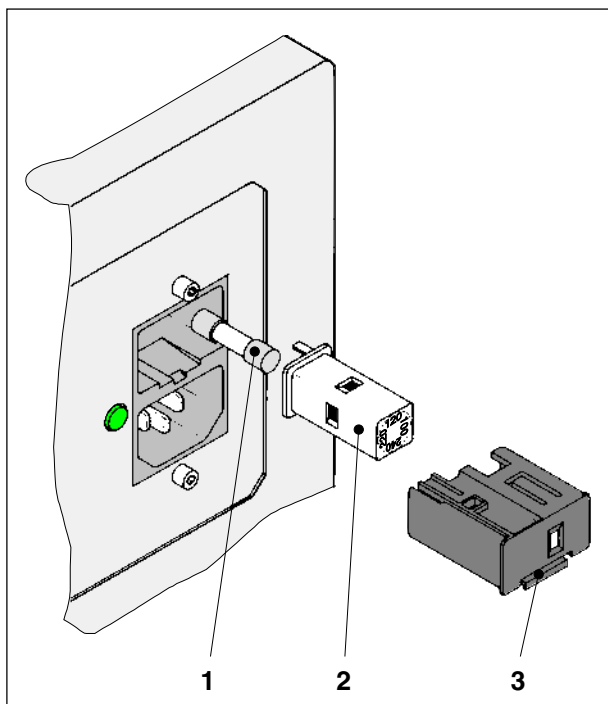
## Modification on transformer for 100V mains supply



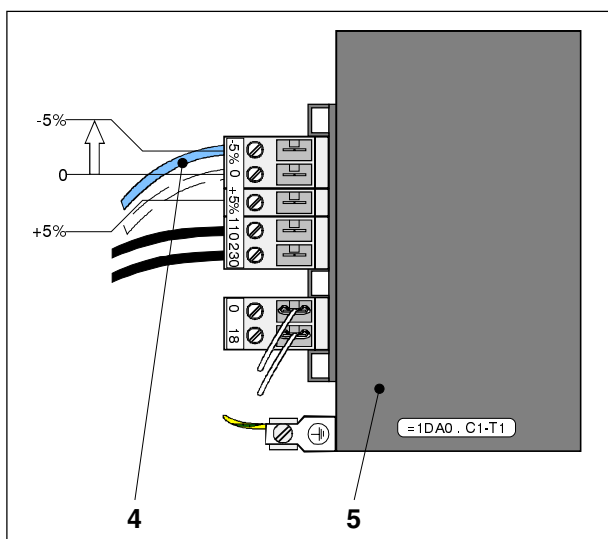
### Danger:

Modifications in the electric cabinet may only be carried out by an electrician expert.

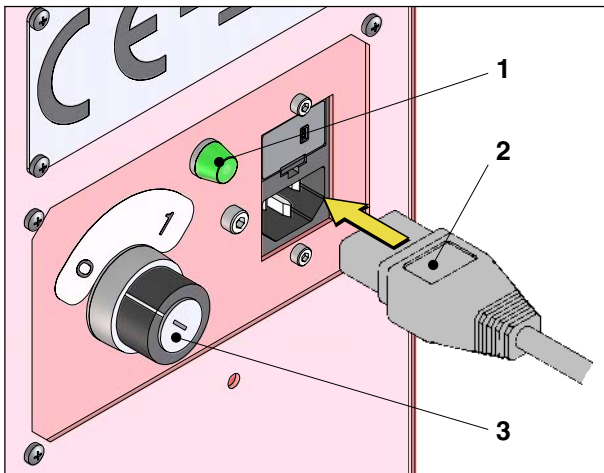
- Unscrew cover of the electric cabinet on the rear side of the machine.
- Connect blue core (4) on the transformer (5) from setting "0" to setting "-5%".
- Remount cover of electric cabinet.



Adjustment of the supply voltage



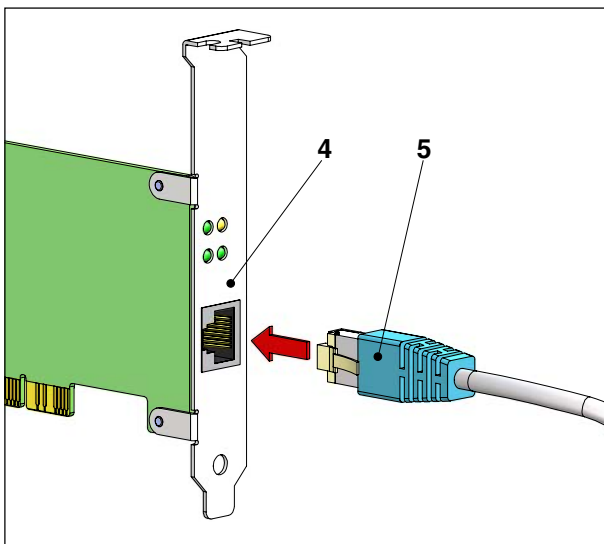
100V-voltage adjustment on the transformer



Power connection of the machine

## Connection of the power cable

- Plug in the power cable (2) at the machine and the other end at a socket with ground wire contact.
- The LED (1) shows you the main supply, when main switch (3) is switched on.



Connection machine - PC-network-card

## Connection machine - PC

The machine is controlled by a PC. You can use either the PC keyboard as input device or the control keyboard which can be obtained as accessory from EMCO.

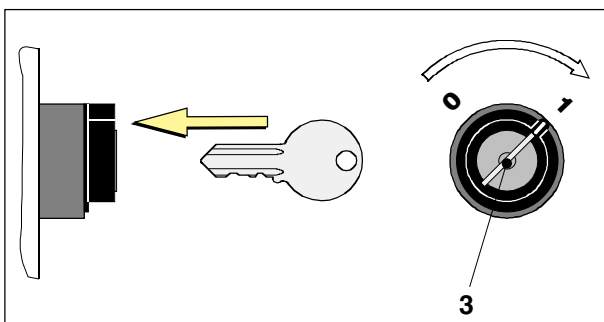
### Note:

To enable the connection of the machine with the PC, a network-card must be mounted and installed in the PC.

Mounting, installation and network adjustments see WinNC-Control descriptions, chapter "Installation".

**Network card:** .....Ethernet-network

- Plug in network-cable of the machine with the connector (5) at the connection of the network-card (4).



Key switch on the machine

## Initial start-up

- Machine is to be cleaned from rust preventive agent with a clean cloth.
- Establish power connection.
- Switch on machine at key switch (3).

### Note:

If the machine is not used for a longer period of time, slightly oil blank parts, protect machine against unauthorized start-up (take off key) and cover machine with dust protection.

## Technical Data of the Machine

<b>Working area</b>		
Slideway longitudinal (X axis)	[mm]	190
Slideway cross (Y axis)	[mm]	140
Slideway vertical (Z axis)	[mm]	260
effective Z-stroke standard / with tool changer	[mm]	190 / 120
Distance spindle nose - table surface	[mm]	77-337
<b>Milling table</b>		
Clamping surface (LxD)	[mm]	420x125
maximum table load	[kg]	10
2 T-slots according to DIN 650, width	[mm]	11
Distance of T-slots	[mm]	90
<b>Milling spindle</b>		
Spindle bearing	[mm]	ø35
Type of bearing		spindle bearing
Toolholding fixture similar to DIN7920 - SK30		works standard
Tensioning bolt		works standard
Tool clamping		manually
Max. tool diameter standard / with tool changer	[mm]	ø60 / ø40
<b>Milling spindle drive</b>		
Rotary current motor AC		
Max. power	[kW]	0,75
Speed range (infinitely variable)	[min <sup>-1</sup> ]	150-3500
nominal torque at the milling spindle	[Nm]	3,7
max. speed with high speed spindel unit (accessory)	[min <sup>-1</sup> ]	14 000
<b>Tool changer (option)</b>		
"pick-up"-System with swivel arm, complete with pneumatic-unit and blow-out device		
Number of tool stations	[1]	8
Max. tool weight	[kg]	1
Max. tool diameter	[mm]	ø40
Speed of tool swivel arm	[m/min]	10
Tool clamping		automatically
<b>Feed drives</b>		
AC step motors in X/Y/Z axis		
Step resolution	[µm]	0,5
Max. feed force X/Y/Z	[N]	800 / 800 / 1000
Working feed in X/Y/Z (infinitely variable )	[m/min]	0 - 2
Rapid traverse speed X/Y/Z	[m/min]	2
Medium positioning variation X/Y/Z according to DIN VDI 3441	[µm]	8 / 8 / 8
<b>Lubrication system</b>		
Guideways, feed spindle nuts		oil-lubrication
Main spindle		life time lubrication

*Subject to technical modifications!*

<b>Pneumatic unit (option)</b>		
Pneumatic unit for options with pneumatic operation		
Supply pressure	[bar]	6
Hose connection	[mm]	ø10
<b>Automatic clamping device (option)</b>		
Pneumatic vice with blow-out device		
Opening capacity	[mm]	70
Jaw width	[mm]	72
<b>Automatic door mechanism (option)</b>		
pneumatically actuated, incl. final position control		
<b>Dividing head (option)</b>		
Dividing head completely with covers and material for mounting on milling table		
Spindle height	[mm]	50
Total height	[mm]	95
Positioning		infinitely variable
Nominal torque	[Nm]	45
Rapid traverse speed	[min <sup>-1</sup> ]	8
Accuracy of indexing	["]	±100
Repeating accuracy	["]	±15
<b>Tailstock for dividing head</b>		
Center height	[mm]	50
Cone of tailstock quill		MT1
Stroke of tailstock quill	[mm]	35
<b>Electrical connection</b>		
Power supply (changeable)	[V]	1/N/PE 110/230~
Max. voltage fluctuations	[%]	+5/-10
Frequency	[Hz]	50/60
Connected load of the machine	[kVA]	0,85
Max. preliminary fuse for the machine	[A-slow]	12
<b>Dimensions, weight</b>		
Total height	[mm]	980
Installation surface WxD	[mm]	960 × 1000
Total weight of the machine	[kg]	ca. 220
<b>Room climate, operating conditions</b>		
Room temperature	[°C]	12-35
Humidity rH	[%]	40-70
<b>Sound pressure level</b>		
Medium sound pressure level	[db(A)]	70
<b>With the following conditions:</b>		
Masuring method: enveloping surface according to DIN 45635		
Operating mode: maximum speed during idle running		

*Subject to technical modifications!*



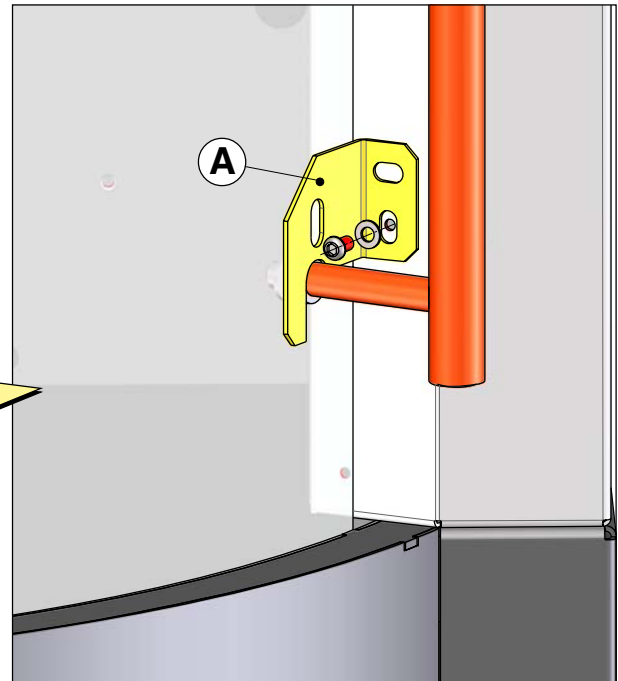
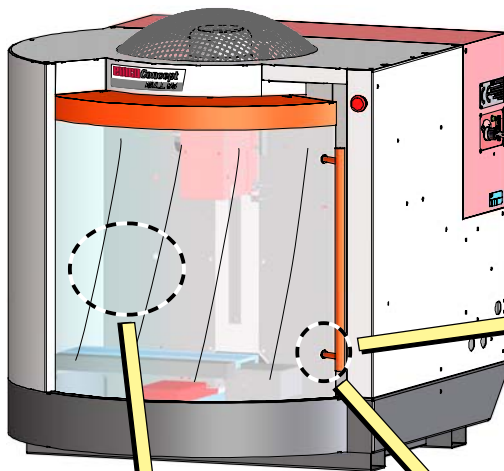
## PC-Configuration

Computer components	Minimum configuration
IBM or IBM compatible	Celeron 700 MHz
Hard disk	10 GB
Drives	3½" floppy drive CD-ROM drive
Operating system	Win 9x, NT, 4.0, 2000, XP
Main memory	128 MB
Graphics card	8 MB VGA colour graphics card
Screen	Colour screen 14"
Keyboard	MF-2
Network-card to connect the machine with PC	10/100MB LAN with RJ45-plug connection
USB-interface to connect external control keyboard to PC (Accessory)	up from USB 1.0

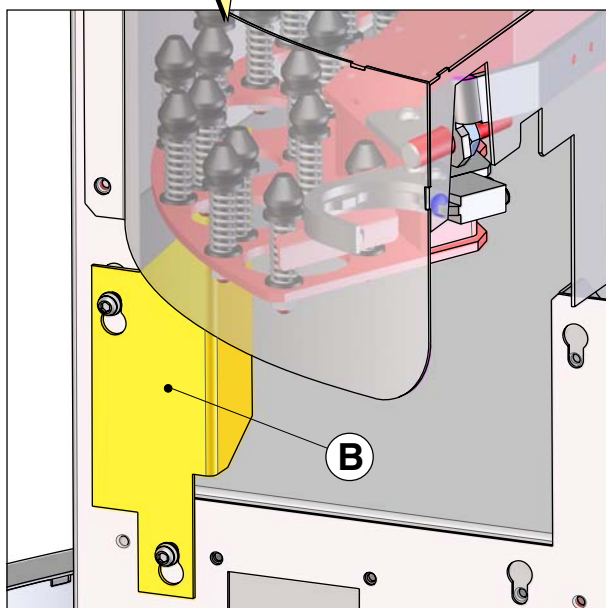
*Subject to technical modifications!*

## Transportsicherungen Concept Mill 55 Transport Safety Devices Concept Mill 55

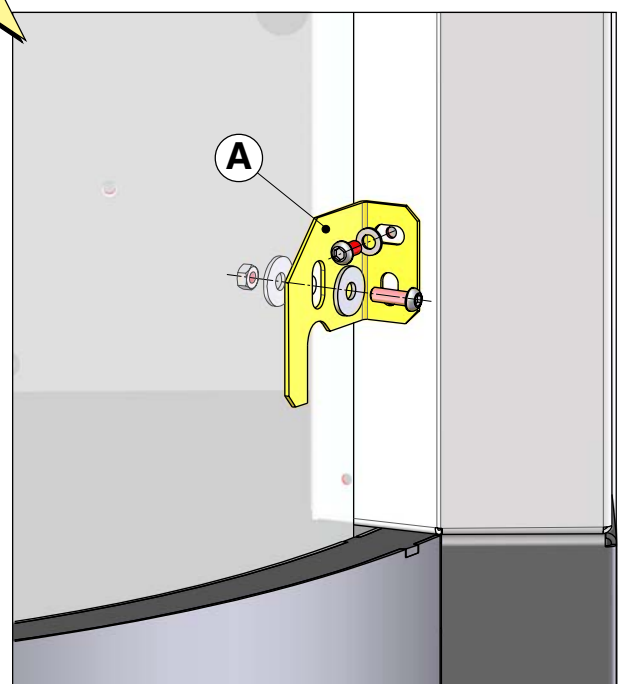
Transportsicherungen **A** und **B** vor Inbetriebnahme entfernen!  
Dismount safety devices **A** and **B** before working with the machine!



ohne Türautomatik / without automatic door



mit Werkzeugwechsler / with tool changer



mit Türautomatik / with automatic door