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Kunststoffschweißtechnik

Working Instructions Translation

Heating Element Butt Welding Machine
with CNC Control Unit

WIDOS 5500 CNC 3.0

CE

Keep for further use!

Model:	Heating element butt welding machine with CNC control unit
Type:	WIDOS **5500 CNC 3.0**
Serial number, year of construction:	see type lable

Customer entries

Inventory-No.:	
Place of working:	

Order of spare parts and after sales service:

Address of manufacturer

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Purpose of the document

These working instructions give you information about all important questions which refer to the construction and the safe working of your machine.

Just as we are, you are obliged to engage in these working instructions, as well.

Not only to run your machine economically but also to avoid damages and injuries.

Should questions arise, contact our service team in the factory or in our subsidiary companies.

We will help you with pleasure.

According to our interest to continuously improve our products and working instructions, we kindly ask you to inform us about problems and defects which occur in exercise.

Thank you.

Structure of the working instructions

This manual is arranged in chapters which belong to the different using phases of the machine.

Due to this structure, the searched information can be easily found.

W. Dommer Söhne GmbH
Einsteinstraße 5
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1. Description of the product

1.1. Usage and purpose-oriented use

The **WIDOS 5500 CNC 3.0** has been designed only for heating element butt welding of pipes and fittings made out of PE, PP, PVDF with their diameter range going from OD_{min} = 200 mm up to OD_{max} = 500 mm

(standard diameters: 200 / 225 / 250 / 280 / 315 / 355 / 400 / 450 / 500 mm.)

All use of this control going beyond is not purpose oriented.

The machine is only to be used in a technically perfect condition, as well as purpose oriented, safety- and danger-conscious in compliance with the working instructions and the relevant safety regulations (especially the regulations for the prevention of accidents).

The described plastic welding machine may only be operated, maintained and repaired by persons who are trained and informed about the dangers.

The manufacturer is not responsible for any damages caused by inexpert handling or operation.

For personal injuries, material and immaterial damages resulting herefrom, only the user is responsible!

The control unit is reliable in the use when it is used according to the prescriptions in connection with a welding machine designed by WIDOS.

Also part of the purpose oriented use is

- respecting all the indications of the working instructions and
- performing the inspection and maintenance works.

1.2. Safety measures

In case of wrong use, wrong operation or wrong maintenance, the machine itself or products standing nearby can be damaged or destroyed.

Persons being in the endangered area may be injured.

Therefore these working instructions have to be thoroughly read and the corresponding safety regulations must be necessarily adhered to.

1.3. Conformity

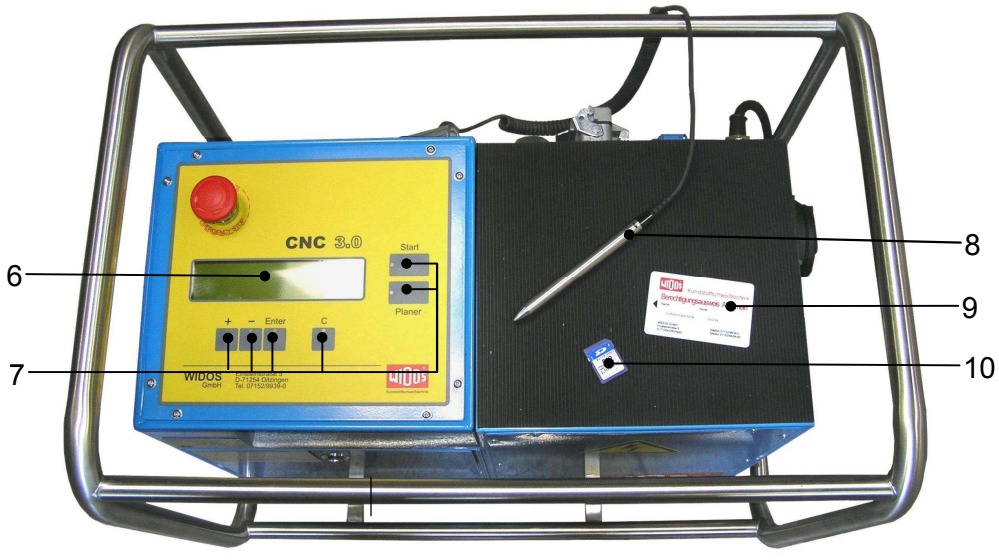
The machine corresponds in its construction to the valid recommendations of the European Community as well as to the according European standard specifications.

The development, manufacturing and mounting of the machine were made very carefully.

1.4. Machine overview

No.	*Denomination*
1	Basic machine
2	Control unit
3	Heating element
4	Planer
5	Reception box

1.5. Structure of the CNC 3.0 control unit



No.	*Denomination*
6	Display
7	Operating fields
8	Barcode reader
9	Pipe data card or general legitimacy card
10	SD-card

1.6. Designation of the product

The product is designated by type labels.
The type labels are attached at the control unit, at the heating element, at the planer and at the basic machine.
They contain the type, the serial number and the year of construction of the machine.

1.6.1. Technical data

All important technical data of each single component are listed.
This allows a quick information about working capacity and structure.

1.6.1.1. WIDOS CNC 3.0 General data

Weight (without transport box): Dimensions (l x w x h):	40.5 kg appr. 630x430x510 (mm)
Power:	560 Watt
Voltage:	400 V (± 10%)
Current:	4,7 A
Frequency:	50 Hz
Phase shift:	appr. 18°
Control voltage:	5 V
Insulation system:	IP 44
Hydraulic oil tank:	appr. 1 l
Attached elements:	Connection cable with motor protective plug 16 A
Power of emergency set:	6.5 kVA / 400 V/3~
Electro motor and pump:	
Driving speed (t/min):	2720
Max. working pressure of the pump:	110 bar
Working pressure:	100 bar
Volume flow:	3,5 l/min.
Emissions	- The sound intensity level while using the planer can be higer than 85 dB (A). - When using the named pipe materials and when welding below 260 °C / 500 °F no toxicant damp arises.
Environmental conditions at the welding area:	- Keep the workshop clean (no dust at the welding area) - If secured by an appropriate measurement that allowed conditions for welding are indicated, it is possible to work in any outside temperature condition as far as the welder is not constrained in its manual skill. - Avoid humidity, if necessary use a welding tent - Avoid strong sun rays influence - Protect from wind, shut the pipe ends.

1.6.1.2. Basic frame

Material frame:	Construction steel
Material clamping inserts:	Aluminium
Weight:	appr. 165.5 kg
Cylinder-Ø:	50 mm
Piston rod-Ø:	40 mm
Stroke length of cylinder:	300 mm
Max. force: (F=P*A)	14,14 kN (at 100 bar)
Velocity of piston rod:	4,1 cm/s

1.6.1.3. Heating element

Power:	5.9 kW
Voltage:	400 V (± 10 %)
Current:	14.9 A
Frequency:	50 Hz
Outside-Ø:	564 mm
Surface:	nonstick-coated
Attached elements:	- electronic temperature control - control lamps - cable with 16 pole plug
Weight:	appr. 24.5 kg

1.6.1.4. Automatic heating element (optional)

Power:	5.9 kW
Voltage:	400 V (± 10%)
Current:	14.9 A (± 10%)
Frequency:	50 Hz
Outside-∅:	564 mm
Surface:	nonstick-coated
Attached elements:	cable with 16 pole plug
Weight:	appr. 57.5 kg

1.6.1.5. Planer

Motor:	Alternating current motor
Power:	1.1 kW
Voltage:	400 V (± 10 %)
Current:	2.8 A
Frequency:	50 Hz (± 10 %)
Driving speed	appr. 140
Weight:	appr. 54 kg

1.6.1.6. Reception box

Dimensions:	714 x 450 x 595 mm
Weight:	appr. 28 kg

See spare parts list for order numbers and single parts

1.7. Equipment and accessories:

Following accessories are part of the delivery:

5	- General legitimacy card
1	- Key for front plate / hydraulic system
1	- SD-card (64 MB)
1 each	- Allan key angled, size 3; 6; 10
1 each	- Allan key with T-grip, size 4; 5; 7
1	- Tubular hexagon box wrench SW 27
1	- Torx srew driver T10

Following optional accessories are available on request:

- Pipe data card
- Program WICON for reading out the data (possibility of displaying included in SD-card)
- Gas legitimacy card
- Automatic heating element

2. Safety rules

The base for the safe handling and the fault-free operation of this machine is the knowledge of the basic safety indications and rules.

- These working instructions contain the most important indications to run the machine safely.
- The safety indications are to be followed by all persons working on the machine.

2.1. Explanation of the symbols and indications

In the working instructions, following denominations and signs are used for dangers:

This symbol means a possibly danger for the life and the health of persons.

- The disrespect of these indications may have heavy consequences for the health.

This symbol means a possible dangerous situation.

- The disrespect of these indications may cause slight injuries or damages on goods.

This symbol means a possible dangerous situation by moving parts of the machine.

- The disrespect of these indications may cause heavy crushings of parts of the body resp. damages of parts of the machine.

This symbol means a possible dangerous situation due to hot surfaces.

- The disrespect of these indications may conduct to heavy burns, respectively to self-ignition or even fire.

This symbol means a possible risk of injury by noises exceeding 80 dB(A).

- Ear protection is obligatory

This symbol gives important indications for the proper use of the machine.

- The disrespect of these indications may conduct to malfunctions and damages on the machine or on goods in the surrounding.

Under this symbol you get user tips and particularly useful information.

- It is a help for using all the functions on your machine in an optimal way and helps you to make the job easier.

The regulations for the prevention of accidents are valid (UVV).

2.2. Obligations of the owner

The owner is obliged only to let persons work at the machine, who

- know about basic safety and accident prevention rules and are instructed in the handling of the machine, as well as who
- have read and understood the safety chapter of this manual and certify this by their signature.

The safety-conscious working of the staff has to be checked in regular intervals.

2.3. Obligations of the worker

All persons who are to work at the machine are obliged before working:

- to follow the basic safety and accident protection rules.
- to have read and understood the safety chapter and the warnings in this manual and to confirm by their signature that they have well understood them.
- to inform themselves about the functions of the machine before using it.

2.4. Measures of organisation

- All equipment required for personal safety is to be provided by the owner.
- All available safety equipment is to be inspected regularly.

2.5. Information about safety precautions

- The working instructions have to be permanently kept at the place of use of the machine. They are to be at the operator's disposal at any time and without effort.
- In addition to the manual, the common valid and the local accident protection rules and regulations for the environmental protection must be available and followed.
- All safety and danger indications on the machine have to be in a clear readable condition.
- Every time the machine changes hands or is being rent to third persons, the working instructions are to be sent along with and their importance is to be emphasized.

2.6. Instructions for the staff

- It must be clearly defined who is responsible for transport, mounting and dismounting, starting the operation, setting and tooling, operation, maintenance and inspection, repair and dismounting.
- Only skilled and trained persons are allowed to work at the machine.
- A person who is being trained may only work at the machine under supervision of an experienced person.

2.7. Dangers while handling the machine

The heating element butt welding machine WIDOS **5500 CNC 3.0** is constructed according to the latest technical standard and the acknowledged technical safety rules.

However, dangers for the operator or other persons standing nearby may occur. Also material damages are possible.

The machine should only be used

- According to the purpose oriented usage
- In safety technical impeccable status

Disturbances, which may affect the safety of the machine must be cleared immediately.

Only skilled persons are allowed to work at electrical appliances.

- The electrical equipment of the machine has to be checked regularly. Loose connections and damaged cables have to be replaced immediately.
- All electric tools (heating element, planer, basic machine with clamps and control unit) have to be protected from rain and dropping water (if need be use a welding tent).
- According to VDE 0100, the use on construction sites is only allowed with a power distributor with a FI-safety switch.
- Replace damaged front foil at the control unit in order to avoid water coming in.

System parts and pressure hoses should be made pressureless before beginning of any repair works.
There is a danger of injuring the eyes by hydraulic oil squirting out. The hydraulic oil can be hot !

- Damaged hydraulic hoses have to be immediately replaced.
- Make a visual inspection of the hydraulic hoses before each work beginning.
- The hydraulic oil is inedible !
- The hydraulic oil has to be handled and disposed of **properly**.

2.8. Specific dangers

2.8.1. Danger of stumbling over hydraulic and electric wires

Make sure that nobody has to step over the cables.

Make sure that the cables lay in such a way that the danger is maintained in a minimum. Do not squeeze, buckle, etc. the cables. Avoid the hydraulic cables from being heated up (increase of pressure!).

2.8.2. Danger of catching clothes by the planer

You can cut yourself or even get bones broken !

For some machines the planer may shortly turn when switching the machine on!

- Only wear clothes tight to the body.
- Do not wear rings or jewellery during the work.

- If necessary wear a hair-net.
- Always put the planer back into the reception box after and before each use.
- Only transport the planer at the handle. Do not touch the surfaces.

2.8.3. Danger of being burnt by heating element and welding area

You can burn parts of your body and inflammable materials can also be ignited!

The heating element is heated up to more than **200°C** !

- Do not touch the surfaces of the heating element.
- Do not leave the heating element unsupervised.
- Take enough safety distance to inflammable materials.
- Do wear safety gloves.
- Always put the heating element back into the reception box after and before each use.
- Only transport the heating element at the handle.

2.8.4. Danger of Squeezing by clamping devices and guideways

There is a danger of serious injuries: on the one hand between the inner clamping devices and on the other hand between the outer clamping device and the end of the guideway

- Do not stand or put hands between clamped pipe ends.
- Do not stand or put hands between the inner clamping tools with not yet clamped pipes.
- Do not block opening and closing of the machine sledge.

2.8.5. Risk of injury by noises

Noises exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection!

2.9. Structural modifications on the machine

- No modifications, extensions or reconstructions may be made on the machine without permission of the manufacturer. In cases of non-compliance, any guarantee and liability demands shall expire.
- Machine parts which are not in a perfect condition are to be replaced immediately.
- Only use original **WIDOS** spare and wear parts.
- In case of purchase orders please always state the machine and version number!

2.10. Warranty and liability

Fundamentally our "General Sales and Delivery Conditions" are valid.

They are at the owner's disposal latest when signing the contract.

Guarantee and liability demands referring to personal injuries or damages on objects are excluded if they are caused by one or several of the following reasons:

- not using the machine according to the prescriptions
- inexpert building-up, starting, operating, maintenance and transport of the machine
- running the machine with defective or not orderly mounted safety appliances
- ignoring the information given in this manual
- structural modifications on the machine without permission
- unsatisfactory checking of parts of the machine, which are worn out
- repairs performed in an inexpert way
- In case of catastrophes and force majeure

3. Functional Description

The WIDOS **CNC 3.0** control unit performs a butt welding process with the plastic welding machine WIDOS **5500** after entering the type of material, the pipe diameter and the pipe wall thickness.

The welding processes are recorded and can be printed out in a short or a long version over the parallel interface, or be saved on a PCMCIA card or be transmitted over the serial interface e.g. onto a laptop by means of the program WICON.

The corresponding pipe data are entered manually over the operation field or alternatively read with the barcode reader.

Welding with the WIDOS **5500 CNC 3.0** works as follows:

The plastic pipes are clamped by means of the clamping devices (basic machine) and the pipe ends are cut plane and parallel by means of the planer.

As soon as the pipes are plane and parallel and the misalignment is smaller than 0,1 X pipe wall thickness you can start welding.

The heating element has to be cleaned and checked before insertion and the desired temperature prescribed by the DVS must have been reached.

The clamped pipes drive under pressure in direction of the heating element and are heated up under the defined adjustment pressure (**adjusting**), the duration of the adjustment is called **adjusting time**.

During the adjustment the **bead** prescribed by the DVS is performed.

After reaching the prescribed bead height, the control unit automatically switches into the **heating time**.

During the heating time the basic machine is in a pressureless state and the pipe ends are heated.

After expiration of the heating time, the sledges move apart and the heating element should be removed as fast as possible.

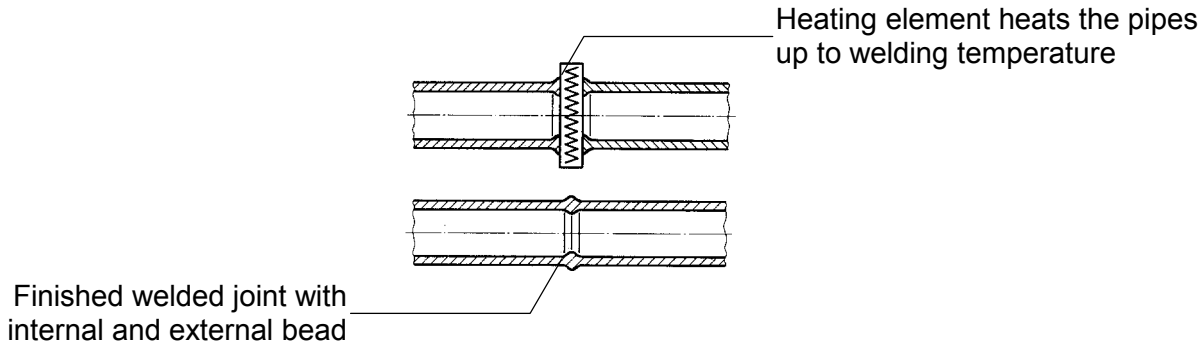
The time period between the removal of the heating element and the closing of the pipes is called **change over time**.

After the maximum time prescribed by the DVS, the pipe ends are driven together and a continuous welding pressure is built up.

The pipe then cools down under the prescribed welding pressure (**cooling time**).

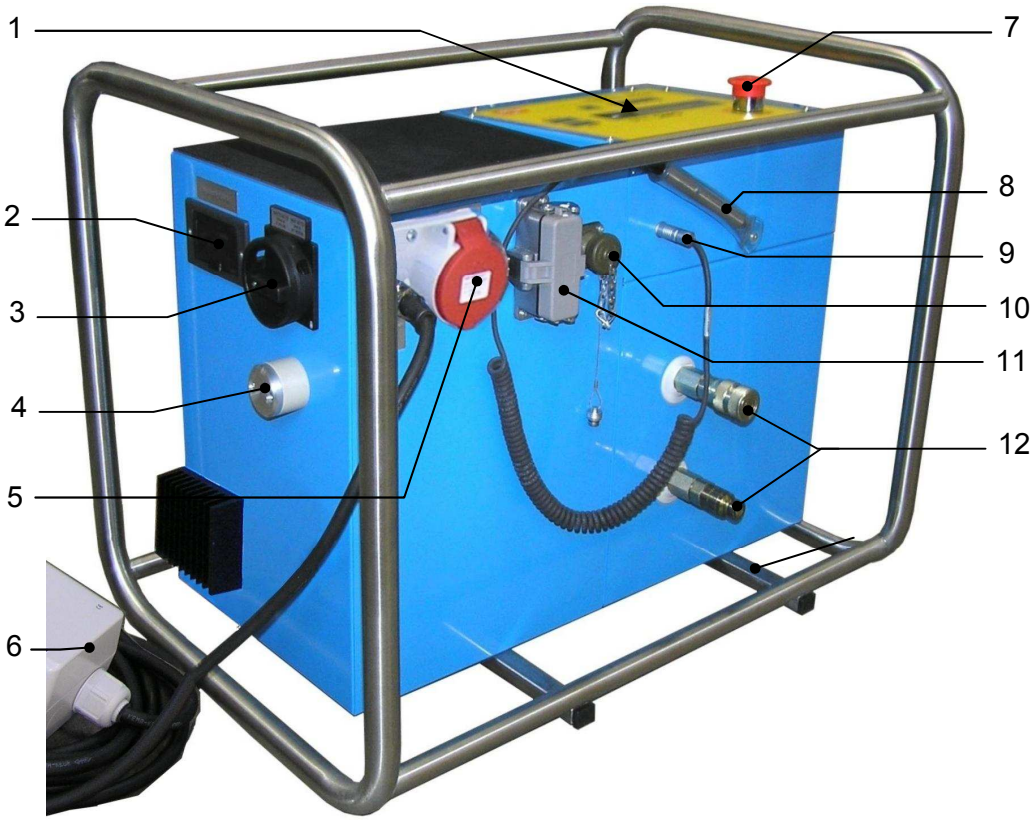
After completion of the cooling time, the pressure on the pipe is automatically released and the welded pipe can be unclamped.

The welding process is completed.



4. Operating and Indicating Elements

4.1. Elements on the CNC 3.0 Control Unit



No.	*Name*
1	Operation field with display
2	Reading unit for SD - card
3	Main switch
4	Outside temperature sensor
5	Plug box (400 V) for planer
6	Mains connection cable for the control unit
7	EMERGENCY-Stop push button
8	Bar code reader
9	Connection for bar code reader
10	Connection for the travel sensor
11	Plug box with safety stirrup for heating element
12	Connections for hydraulic hoses

4.2. EMERGENCY-Stop Push Button

There is an EMERGENCY-Stop push button (see 4.1 No. 9) on the CNC control unit, for interrupting the working process if the work piece, tools or persons are endangered by the working pressure.

- The EMERGENCY-Stop push button snaps when it is operated.

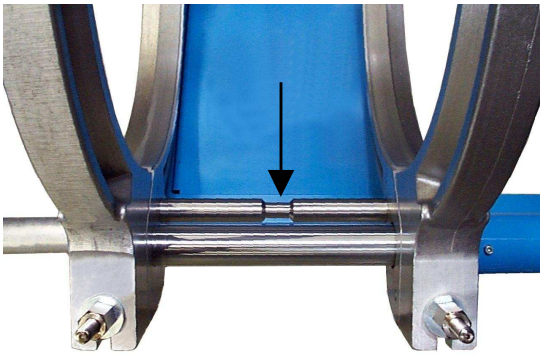
The display then shows:

```
## emergency stop ##
```

- In case the EMERGENCY-Stop push button was pushed, the system is pressure-less and the sledge can only be moved manually.
- After elimination of the danger the EMERGENCY-Stop push button must be unlocked again by turning it in clockwise direction and the functions of buttons <+> and <-> (open and close the sledge) are possible again.
- For a new welding process, the main switch must be switched on and off again.

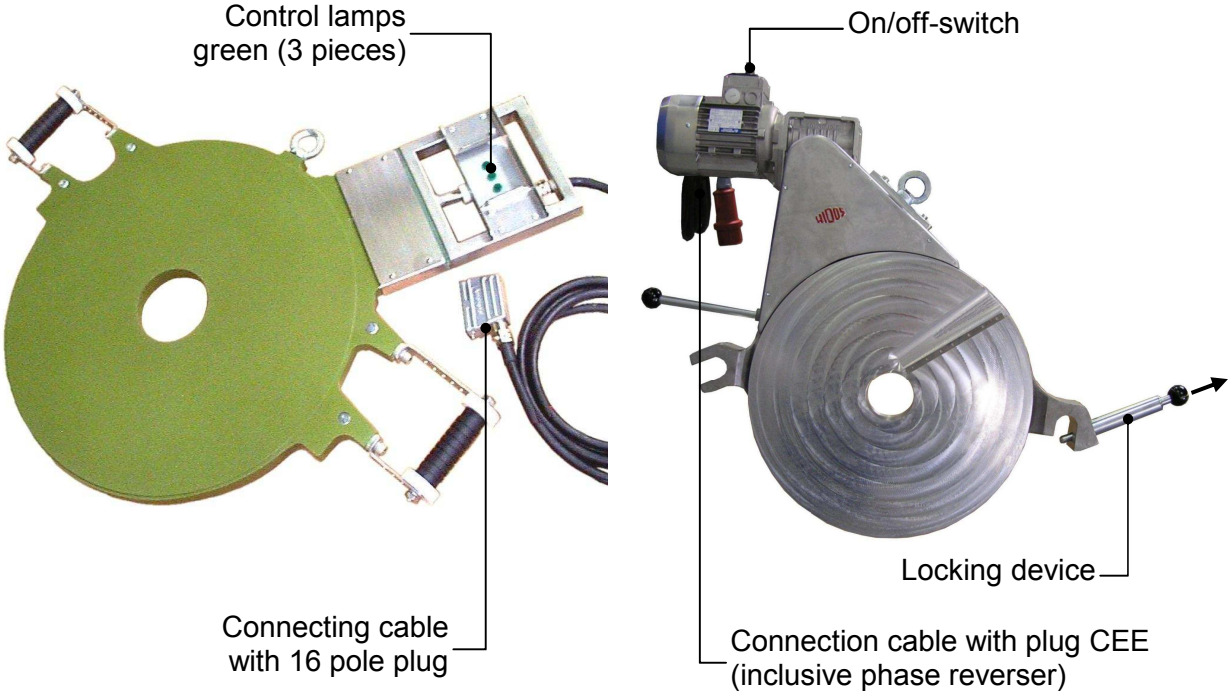
There is the danger of being burnt by the heating element cooling down very slowly.

4.3. Separating device for heating element



There is a tear-off bar mounted between the movable and the fixed clamping shells on the basic machine. It prevents the heating element from sticking to the heated-up pipe ends.
When inserting the heating element take care that it lies in the zone of the throat of the tear-off bar (see arrow).

4.4. Elements on the heating element and the planer



Name	***Function***
Control lamps, green (Heating element)	There are 3 different states: • **lightening,** only interrupted by short switch-off pulses: the heating element is being heated up, the desired temperature is not yet reached. The desired and the actual temperature are displayed alternating on the display of the control. • **blinking:** the temperature of the heating element is maintained by a pulse-position ratio. • **off:** the desired temperature has been exceeded, the heating element is cooled automatically onto desired temperature, or the heating element is switched off.
Cable (Heating element)	Connect the heating element at the corresponding plug box (chapter 4.1, No. 12) on the CNC control unit.
On/off-switch (Planer)	- During the planing process the planer has to be switched on at the switch. The planing process is operated by the CNC control.
Cable (Planer)	- Connect the planer at the corresponding plug box (chapter 4.1, No. 5) on the CNC control unit.
Locking device	- Locking the planer into basic machine by planning, unlock it by pulling the ball knob in direction of arrow

5. Starting and Operating

The instructions of this chapter are supposed to initiate in the operation of the machine and lead during the appropriate starting of the machine.

This includes:
- the safe operation of the machine
- using all the possible options of the machine
- economic operation of the machine

5.1. Safety Indications

- The machine should only be operated by initiated and authorized persons.
  For the qualification, a plastic welding exam can be taken according to DVS and DVGW.
- In situations of danger for persons and the machine, the EMERGENCY-Stop push button or the main switch have to be activated immediately.
- After completion of the welding work and during breaks the machine has to be switched off. Further take care that no unauthorized person has access.
- According to VDE 0100, the use on construction sites is only allowed with a power distributor with a FI-safety switch.

Check the oil level of the hydraulic system before each starting of the control unit in order to avoid damages on the pump.

If necessary, add hydraulic oil of the quality HLPD 32.

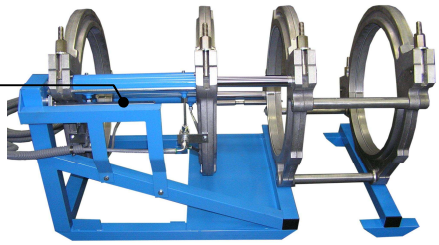
The heating element surfaces must be clean, especially non greasy, therefore they need to be cleaned shortly before each welding or in case of dirtiness by means of a **fibre-free paper** and a cleaning agent (e.g. technical pure alcool or pipe cleaning tissues which are available at the WIDOS company).

The anti-adhesive coating of the heating element must remain undamaged in the working area.

Take care that all hydraulic and electric connections are connected.

Never lift or transport the basic machine at path measuring system!

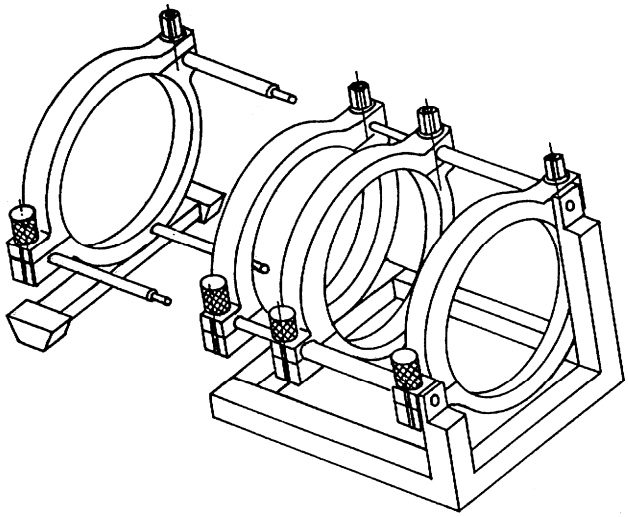
Path measuring system



- Take into account the surrounding conditions:
  The welding may not be performed under direct sun rays influence, use a welding umbrella if necessary.
- If the surrounding temperature is under 5° C, measures have to be taken:
  Use a welding tent or preheat the pipe ends if necessary.

5.2. Replacing the Reduction Inserts

- Unscrew the mounted reduction inserts.
- Screw the reduction inserts with the corresponding diameter into the clamping devices.
- If necessary (e.g. for T-pieces) the outer fixed clamping device can be dismantled by unscrewing the three hexagon socket screws.

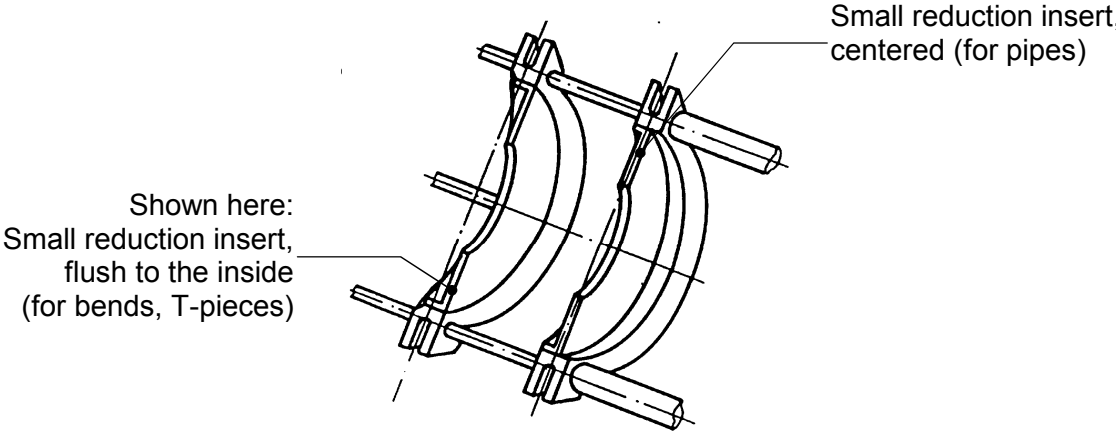


Dismantling of the outer fixed clamping device

5.2.1. Using Small and Large Reduction Inserts

Small Reduction Inserts:

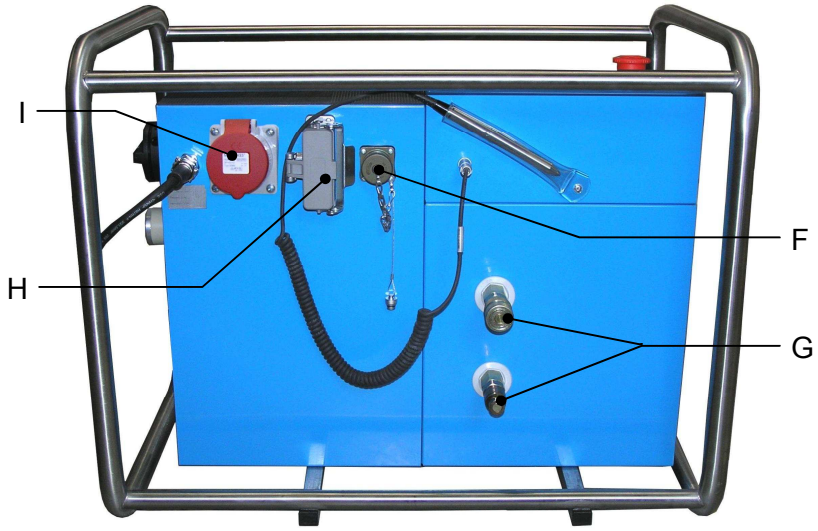
- Pipe fittings often have only a short straight surface area on which they can be clamped.
- Fittings mostly need to be clamped in the inner clamping devices with the small reduction inserts.
- When fittings are to be welded (bends, T-pieces etc.), the inner small reduction insert can also be used flush to the inside or to the outside.



Large Reduction Inserts:

- They are mainly used for a good tightening and are usually mounted on the inner clamping devices.

5.3. Connection with the Basic Machine



- Connect the hydraulic hoses and travel measuring systems of the basic machine at the CNC 3.0 (pos. G and F).
- Connect the heating element at the CNC 3.0 (pos. H) by means of the special plug and secure it by means of the safety stirrup.
- Connect the planer to the corresponding plug box of the CNC 3.0 (pos. I).
- Connect the power line plug of the CNC 3.0 to the mains, and be sure to have a correct mains voltage (400 V / 50 Hz).

5.4. Operation with Emergency Power Supply

Do not connect any other current consumers to the emergency power supply.

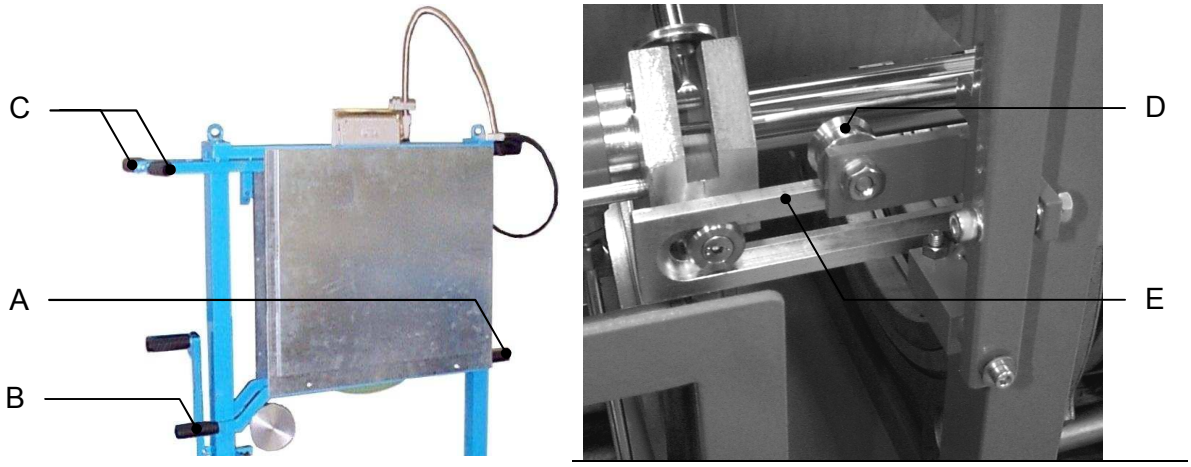
Current consumers, such as drilling machines, fluorescent lamps or motors, can generate spikes (more than 1000 V) which can **disturb the welding process** and might **destroy the welding aggregate**!

The emergency power supply should be maintained periodically.

For further details see the working instructions of the emergency power supply.

Important: first start the emergency power supply and then the other current consuming devices.

5.5. Automatic Heating Element (optional)



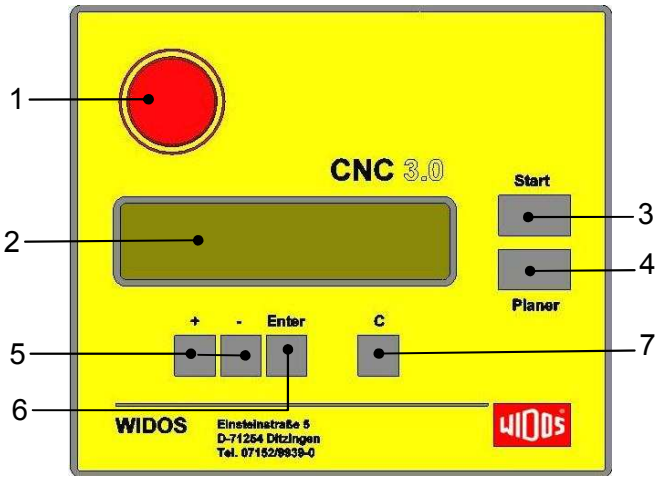
For inserting the heating element, please use in any case the handle provided for this purpose (A and B).

Pressing the handle (B) in the direction of the heating element plate will lock or release the heating element in the heat protected box or on the basic machine. The rollers (D) have to be supported on the guideway (E) before the heating element is locked by releasing the handle (B).

For welding, the heating element is pressed downwards by means of the handles (C) (sledges must not be opened completely).

After expiration of the adjusting or heating time, the heating element is unlocked by opening the sledge and is moved automatically out of the basic machine.

5.6. Description of the Display



No.	Buttons	Function
1	EMERGENCY-OFF push button	The EMERGENCY-OFF push button snaps when it is operated, the machine stops (see also chapter 4.2).
2	Display	Shows the actual parameters and status messages (for welding and programming). Several values can be displayed simultaneously.
3	Start	Start the welding functions. Confirm the new set parameters.
4	Planer	Start the planing process (on/off switch on the planer must be switched on).
5	+ / -	Change the parameters.
6	Enter	Enter / quit the menu "parameter setting". Confirm the parameters.
7	C	Abort the welding process Step back at "parameter setting".

5.7. Accessories for Reading the Data in and out

5.7.1. Legitimacy Cards

There are 4 different types of cards which are accepted by the barcode reader:

(1) With each supplied machine a **general legitimacy card** (5 pieces) is basically supplied with. It is of white colour and gives the legitimation to operate all functions (including special functions).

(2) **Pipe data card**: on this card all parameters of a pipe are memorized (parameters are stored in the control unit). For ordering the card, the pipe diameter, the pipe-wall thickness and the material should be specified.

(3) Optionally, a **gas legitimacy card** (yellow) can be supplied. With this card, no changes can be made in the system. The computer will ask automatically for a pipe data card for setting the pipe data.

(4) Optionally, a **ISO-legitimacy card** can be supplied. It is of white colour and gives the legitimation to operate all functions (including special functions).

- Protect the cards from wetness and dirtiness.

- Do not bend the cards or expose them to high magnetic fields.
- The card is not transmissible.

5.7.2. SD-card and drive

The unit CNC 3.0 has a drive for a SD-card.

The machine stores the welding data in the internal memory as well as on the SD-card if a card is in the drive.

On a card with 64 MB memory capacity, the welding data of about 32000 weldings can have place.

- The SD-card must be formatted with „FAT 16“ before usage.
- Insert Insert the card with its inscription to the top **carefully** and with low force into the reading unit.
- The card can be read out with a WICON program.
- The card may not be bent, opened, overheated and become wet !

Please only use SD cards purchased from WIDOS. We will not be liable for any cards from other manufactures!

5.7.3. Barcode

- For reading the barcode, glide smoothly over the barcode with the barcode reader (maintained vertically).
- The reader is ready as soon as the red light at its end is on.

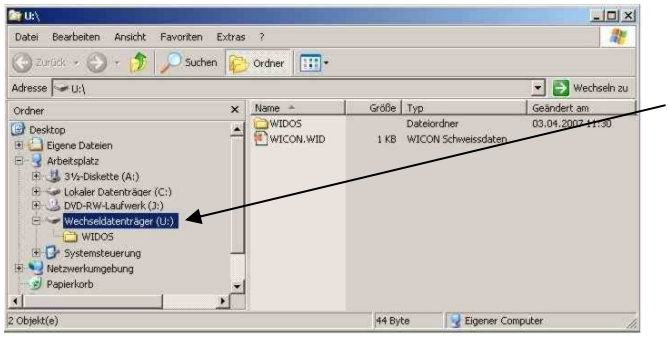
5.7.4. Read out WICON with USB card reader (option)

You may read out the welding data onto a PC by the USB card reader.

Remove the card from the SD card drive of the CNC - aggregate.

Remove the rear cap and plug card according to the image into the USB card reader.

Remove the front cap and plug USB card reader into the USB interface in your PC.



As soon as the USB card reader has been plugged, it appears as removable medium in the drive list.

Open the WIDOS folder, there you will find:

- WICON2000 viewer for considering and printing the welding data,
- working instructions for WICON2000 viewer as PDF file.

5.8. Switching the CNC 3.0 on

As soon as the control unit **CNC 3.0** is connected to the mains and switched on at the main switch, the display is lightened (the computer is being initialised).

Display:
2nd line:

```
WIDOS GmbH
Germany
```

after a few seconds, the display changes

Display:
2nd line:

```
version: 0.00.00
serial no: 0000000
```

Number of the software version
Serial number of the machine

after a few seconds, the display changes

Display:
2nd line:

```
000 free weldings
0000      SD-card
```

Number of free memory capacity (RAM)
Number of free memory capacity SD-card

after a few seconds, the display changes

Display:
2nd line:

```
WIDOS 5500 CNC
please identify
```

The type of the machine is displayed
Following ways of legitimation are possible:

- General legitimacy card and barcode reader
- Gas legitimacy card and barcode reader
- Reading in ISO legitimacy card with bar code reader

after a few seconds, the display changes

Display:
2nd line:

```
initial position
```

button <Start> → machine moves into initial position

Display:
2nd line:

```
WIDOS 5500 CNC
22.11.2002 10:10
```

The type of the machine is displayed
Current date and time

„Basic menu“

5.9. Programming and welding with gas legitimacy card

As soon as the control unit CNC 3.0 is switched on and legitimated with the gas legitimacy card, you can start welding.

Display:
2nd line:

WIDOS 5500 CNC **22.11.2002 10:10**

The type of the machine is displayed
Current date and time

button <Start>: confirm and jump to the next parameter

Display:
2nd line:

WIDOS 5500 CNC **please identify**

The type of the machine is displayed
Identify again with barcode reader and gas legitimacy card

after a few seconds, the display changes

Display:
2nd line:

please read in **pipe data card**

Read in pipe data card with the barcode reader for changing the parameters

5.10. Programming and welding with general legitimacy card or ISO legitimacy card

As soon as the control unit CNC 3.0 is switched on and legitimated with the general legitimacy card and the barcode reader, you can start welding.

Display:
2nd line:

WIDOS 5500 CNC **22.11.2002 10:10**

The type of the machine is displayed
Current date and time

In the basic menu, following functions are possible:

In the basic menu, following functions are possible:

button <+> and <–>: moving the sledge
button <Enter>: menu / setting
button <Start>: welding process

- Read in the pipe data card or the general legitimacy card or the ISO legitimacy card with the barcode reader for setting the parameters and changing pipe data

5.10.1. Setting the Pipe Data

By reading in the general legitimacy card, the pipe data can be changed over the keyboard. Alternatively, the pipe data can be read from a pipe data card.

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

The last welding parameters are displayed

button <+> or <–>: change the respective value
button <Start>: confirm and jump to the next parameter

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

button <+> or <–>: change the respective value
button <Start>: confirm and jump to the next parameter

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

button <+> or <–>: change the respective value
button <Start>: confirm and jump to the next parameter

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

Display of the heating element temperature calculated according to the prescriptions of the DVS

button <Start>: back to basic menu

Display:
2nd line:

```
WIDOS 5500 CNC
22.11.2002 10:10
```

Basic menu

5.11. Welding Process

The basic machine is connected with the control unit **CNC 3.0**, the planer and the heating element.
The control unit **CNC 3.0** is switched on, set and legitimated with the respective cards.
Now you can start the welding process. Please proceed as follows:

Display:
2nd line:

```
WIDOS 5500 CNC
22.11.2002 10:10
```

The type of the machine is displayed
Current date and time

button <Start>: menu welding parameters
Abort with button <C> if need be → basic menu

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

The welding parameters to be used for the following welding are displayed

❷ button <Start>: confirm welding parameters
Abort with button <C> if need be → basic menu

Only appears in case shortened cooling time is entered (Chapter: 5.14.4)

Display:
2. line:

```
Attn! shortened
cooling time
```

In case you have selected shortened cooling time, it is reduced by appr. 40% compared to the one of DVS.

Activate the shortened cooling time with button <+>
Abort with button <C> if need be → basic menu

Display:
2nd line:

```
name of project
WIDOS .........
```

Enter name of project

button <+> and <->: select letters
button <Enter>: cursor jumps for 1 position to the right
button <Planer>: 5 storage locations for projects can be called
(when a new project is created, the oldest one is overwritten)
button <Start>: confirm
Abort with button <C> if need be → basic menu

Display:
2nd line:

```
number of joint
0000
```

Number of joint of the selected project
Enter and display the number of joint

button <+> and <->: select numbers
button <Enter>: cursor jumps for 1 position to the right
button <Start>: confirm

Abort with button <C> if need be → basic menu

Display: 2nd line:

```
weather   protect
24        31
```

Weather character and protecive measures to be taken (according to prescriptions of the DVS)

Weather character	Protective measures
1 = sunny	1 = none
2 = dry	2 = umbrella
3 = rain or snowfall	3 = tent
4 = wind	4 = preheat
In case of multiple statement respect the above mentioned order of the numbers (e.g.: 24 = dry and wind)	

Setting the weather data: numbers by pressing buttons <+> and <->
for 1 pos. to the right by pressing button <Enter>
confirm by pressing button <Start>

Abort with button <C> if need be → basic menu

Display: 2nd line:

```
opening machine
```

This message appears only if the machine is not opened completely

button <Start>: confirm (sledge opens)

Display: 2nd line:

```
insert pipes
clean pipes
```

Insert, clean and clamp the pipes

button <Start>: confirm

Display: 2nd line:

```
closing machine
measuring dragpress
```

The sledge opens and closes several times the dragpressure is measured herewith

after a few seconds, the display changes

Display: 2nd line:

```
closing machine
calibrating
```

Sledge closes
Pressure systems is calibrated

after a few seconds, the display changes

Display: 2nd line:

```
opening machine
```

Sledge opens

after a few seconds, the display changes

Display:
2nd line:

```
insert planer
start planer
```

Noises exceeding 80 dB (A) may occur; during planing it is obligatory to wear ear protection!

❶ Suspend the planer into the basic machine and lock it. Keep button <Planer> pressed until **a circular chip running 2-3 times around the pipe ends is formed** and the pipe ends are plane (The switch-from the planer has to be switched on)

Display:
2nd line:

```
planer working
Ps=000 Pi=000 P0=0.0
```

During the planing process, the desired, actual and drag pressures are displayed

after a few seconds, the display changes

Display:
2nd line:

```
alignment check
start planer
```

Unlock the planer (chapter: 4.4) and take planer out of the machine. Remove chips without contacting the working surfaces.

button <Start>: alignment check is started

Display:
2nd line:

```
closing machine
```

Sledge closes

after a few seconds, the display changes

Display:
2nd line:

```
confirm alignment
test pressure
```

Keep pressed button <+> to check the pressure build-up (e.g. whether pipes slip through)

If the alignment of the pipes is correct, confirm with button <Start>.
The misalignment may not be higher than 10 % of the wall thickness.
If the misalignment is too high, re-adjust the pipe ends in the basic clamping devices and repeat the planing process.

Display:
2nd line:

```
opening machine
```

after a few seconds, the display changes

Display:
2nd line:

insert heating elem
repeat planing

Button <Start>
by pressing the button <Planer>, the planing process is repeated ❶

Insert the heating element in the machine, take care that it lies in the zone of the throat of the tear-off bar (Chapter: 4.3). and press button <Start>

Display:
2nd line:

closing machine
measuring dragpress.

after a few seconds, the display changes

Display:
2nd line:

bead up
Ps=000 Pi=000 P_0=0.0

The bead up pressure is displayed

Display shows alternating bead up pressure and heating element temperature

Display:
2nd line:

bead up
heat.elem.t. 000°C

The heating element temperature is displayed

after the bead height being reached, the display changes

Display:
2nd line:

heat up Taw= 0000s
heat.elem.t. 000°C

Remaining heating time
Heating element temperature

5 seconds before end of the heating time you will hear several beeps

Display:
2nd line:

change over
remove heating elem.

Take heating element out of the machine

after a few seconds, the display changes

Display:
2nd line:

change over

after a few seconds, the display changes

Display:
2nd line:

ramp Tf= 000s
Ps=000 Pi=000 P_0=0.0

Remaining pressure build-up time (sec)

after a few seconds, the display changes

Display:
2nd line:

```
cooling Tk=00:00
Ps=000 Pi=000 P0=0.0
```

Remaining cooling time (min and sec)

After expiration of the cooling time you will hear 5 beeps

Display:
2nd line:

```
SD-card  0000
```

The welding is stored on the SD-card

after a few seconds, the display changes

Display:
2nd line:

```
remove pipes
parameter OK
```

Or: welding is finished with shortened cooling time:

Display:
2nd line:

```
shorten cooling time
parameter OK
```

Welding completed, unclamp the pipes
button <Start>: back to basic menu

Display:
2nd line:

```
   WIDOS 5500 CNC
22.11.2002 10:10
```

Basic menu
Current date and time

5.11.1. Welding process with traceability

Display:
2nd line:

```
WIDOS 5500 CNC
22.11.2002 10:10
```

The type of the machine is displayed
Identify with welder's identification code

next menu by pressing <Start> button

Display:
2. line:

```
please read pipe
code (1st pipe)
```

Read with bar code reader from 1st pipe

Display:
2. line:

```
Traceability 1:
RB PE80  160  9.1
```

The pipe data is displayed

After e few seconds, the display changes

Display:
2nd line:

```
please read addit.
pipe code (2nd pipe)
```

Read with barcode reader

Read with bar code reader from 2nd pipe

Display:
2. line:

```
Traceability 2:
RB PE80  160  9.1
```

The pipe data is displayed

in case of different pipe data, an error message appears:

Display:
2. line:

```
error: not possible
to weld those pipes
```

Confirm the error message by pressing button <Enter>

If the length of pipe is entered additional, disapears:

Display:
2. line:

```
length of 1. pipe
+000.00 mm
```

Enter the length of the last (read in) barcode pipe 1 up to the joint by buttons <+ / - / Enter>
Press button <Start>

Display:
2. line:

```
length of 2. pipe
+000.00 mm
```

Enter the length of the last (read in) barcode pipe 2 up to the joint by buttons <+ / - / Enter>
Press button <Start>

Display:
2nd line:

```
mat diam wall temp
PE80 225 20.5 206°
```

The welding parameters are displayed

next menu by pressing <Start> button
Continue as described in chapter 5.11, welding process ❷.

5.12. Error Messages

If during the work with the machine

- the prescriptions of the DVS are not followed
- the working steps necessary for the welding processs are not correctly or not at all performed
- certain measuring devices do not funtion,

the following error messages will appear on the display:

T	Heating element temperature
A	Adjusting
W	Heating
U	Change over
R	Pressure build-up ramp
t	Joining time
p	Joining pressure

In case of an error, these error codes will also appear in the first line of the display.
All error messages are logged.

5.13. Administration of the Welding Data

The battery-buffered CNC memory (RAM) can store about 400 weldings. Make sure not to go over this quantity (in the display the error message "memory full“ appears) because otherwise the first stored welding will be over-written.
If necessary, read the welding data out in time.

5.14. More adjustemends

5.14.1. Setting the time and the date

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu
Current date and time

next menu by pressing button <Enter>

Display:
2. line:

```
copy
_
```

next menu by pressing button <Start>

Display:
2. line:

```
Diag Clk WICON Param
_     10:10
```

next menu by pressing button <Start>

Display:
2. line:

```
Diag Clk WICON Param
      10:10
```

Setting the time

buttons <+> and <->: change the time
button <Enter>: confirm

Display:
2. line:

```
Diag Clk WICON Param
      22.11.2000
```

Setting the date

buttons <+> and <->: change the date
button <Enter>: confirm
press several times button <Start> or after a short while appears automatically:

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu

5.14.2. Setting the language

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu
Current date and time

next menu by pressing button <Enter>

Display:
2. line:

```
copy
_
```

next menu by pressing button <Start>

Display:
2. line:

```
Diag Clk WICON Param
_     10:10
```

press several times button <Start> until language appears

Display:
2. line:

```
Language    german?
_
```

several languages are entered

buttons <+> and <->: change the language
button <Enter>: confirm
press several times button <Start> or after a short while appears automatically:

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu

5.14.3. Setting information of traceability and lenght of pipe

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu
Current date and time

next menu by pressing button <Enter>

Display:
2. line:

```
copy
_
```

next menu by pressing button <Start>

Display:
2. line:

```
Diag Clk WICON Param
_     10:10
```

press several times button <Start> until language appears

Display:
2. line:

```
Traceability
Yes
```

traceability can be enterd: yes or no

buttons <+> and <->: set traceablity
Select “yes” with <+> if traceability is required.

Only appears if traceability has been selected with “yes”:

Display:
2. Zeile:

```
pipe length
Yes
```

Length of pipe, yes or no, can be entered

Wth button <+> - enter length of pipe (yes)

press several times button <Start> or after a short while appears automatically:

Display:
2. line:

```
    WIDOS 5500 CNC
  22.11.2000 10:10
```

Basic menu

5.14.4. Setting of shortened cooling time

Display:
2. line:

```
    WIDOS 5500 CNC
  22.11.2000 10:10
```

Basic menu
Current date and time

next menu by pressing button <Enter>

Display:
2. line:

```
          copy
          _
```

next menu by pressing button <Start>

Display:
2. line:

```
Diag Clk WICON Param
_     10:10
```

press several times button <Start> until shortened cooling time appears

Display:
2. line:

```
shorted cool. time?
yes
```

shortened cooling time can be entered

Select “yes” with <+> if shortened cooling time is required.

It is allowed to use the shortened cooling time under the following conditions:

- Welding material: **PE** and **PP**
- Prefabrikation under workshop conditions
- Low additional pressure at unclamp
- No additional pressure during further cooling down
- Load onto the workpieces only after being completely cooled down

press several times button <Start> or after a short while appears automatically:

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu

5.15. Administration of the welding data

The battery-buffered CNC memory (RAM) can store about 400 weldings. Make sure not to go over this quantity (in the display the error message "memory full“ appears) because otherwise the first stored welding will be over-written.
If necessary, copy the welding data on SD-card and read out in time.

5.15.1. Copying internal data onto SD-card and deleting them (RAM)

Abort and back to basic menu by pressing <C>.
One menu item back by pressing <Enter> (keep pressed) and <->.

Display:
2. line:

```
WIDOS 5500 CNC
09:43 03.05.2007
```

basic menu

next menu by pressing <Enter> button

Display:
2. line:

```
copy
_
```

By pressing <+> the data from the internal memory is transferred to the SD-card.

Only appears in case no SD-card is in the slot:

Display:
2. line:

```
error       SD-card
```

By pressing <Enter> confirm the error message.

Display:
2. line:

```
RAM memory
delete?
```

By pressing <+> the internal memory (RAM) is deleted.
By pressing <-> the internal memory (RAM) is **not** deleted.

Display:
2. line:

```
          copy
          _
```

Either: press <Enter> several times,
or: wait until the basic menu appears after a while

Display:
2. line:

```
    WIDOS 5500 CNC
  09:43 03.05.2007
```

Indication of the currently entered machine type
current time and date
alternating with: **21°C HE= - - - °C** current ambient and heating element temperature

„*Basic menu*“

5.15.2. Storing data on the SD - card

When pressing the button <Enter>, the stored welding parameters can stored on a SD-card.

Display:
2. line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Basic menu
Current date and time

next menu by pressing <Enter> button

Display:
2. line:

```
          copy
          _
```

button <+> for menu "storing"

Display: 2. line:	**SD-card 0000**	Data is stored on the SD-card

press button <Start> until the basic menu appears

Display: 2. line:	**WIDOS 5500 CNC** **22.11.2000 10:10**	Basic menu

6. Diagnosis program

The purpose of the diagnosis program is the modification of stored machine parameters.

In the following lines all important diagnosis numbers for the function tests are described.

Unappropriated operation of the diagnosis functions may lead to disturbances in the machine and may destroy components.
The diagnosis functions allow a direct access to the specific parameters of the machine and have to be operated only by skilled staff.

Display:
2nd line:

```
WIDOS 5500 CNC
22.11.2000 10:10
```

Press button <Enter>

Display:
2nd line:

```
copy
_
```

Press button <Start> for the next menu

Display:
2nd line:

```
Diag Clk WICON Param
_    10:10
```

The respective diagnosis number can be set with buttons <+>, <-> and <Enter>.

No.	*Signification*
0008	- The actual position of the sledge is displayed
0010	- The actual temperature (°C) of the heating element is displayed
0011	- The environmental temperature (°C) is displayed
0012	- The actual pressure (bar) is displayed
0013	- The required bead height (in 1/10 mm) which was calculated by the programmed welding parameters is displayed
0014	- The required heating time which was calculated by the programmed welding parameters is displayed
0015	- The required change over time which was calculated by the programmed welding parameters is displayed
0016	- The required pressure build-up time which was calculated by the programmed welding parameters is displayed
0017	- The required cooling time which was calculated by the programmed welding parameters is displayed

No.	*Signification*
0018	- The required joining pressure which was calculated by the programmed welding parameters is displayed
0021	- The operation and printout language can be choosen • 0000 German • 0001 English • 0003 French • 0004 Spanish
0023	- The automatic change to summer or winter time may be switched on or off • 0000 change summer / winter time switched off • 0001 change summer / winter time switched on
0030	- All stored weldings are deleted: • By entering of 0001 all weldings stored in the RAM memory up to that time are deleted • By reapeted entering of 0001 all weldings stored in the SD–card memory up to that time are deleted.
0034	- Bit values from 0-1023 appear which will change together with the change of the corresponding analog values • 0005 Travel • 0008 Heating element temperature PT 1000 • 0010 Environmental temperature • 0011 Pressure (4-20 mA)
0044	- A self-test of the machine and the control unit is performed.

Press button <-> for complete the dignosis program

7. Equipment care / Maintenance / Repair

Goal of the chapter is:

- Keeping the nominal state and the operation capacity of the machine.
- Increasing the efficiency by avoiding non-planned outage.
- Efficient planning of the maintenance works and the maintenance tools.

7.1. Storage

- The cylindrical waves of the basic machine are to be kept free from dirtiness and need to be covered with a thin oil film if they are not being used.
- Store dry.

7.2. Cleaning the Machine

The used materials and tissues are to be handled and disposed of properly, especially

- when cleaning with solvents.

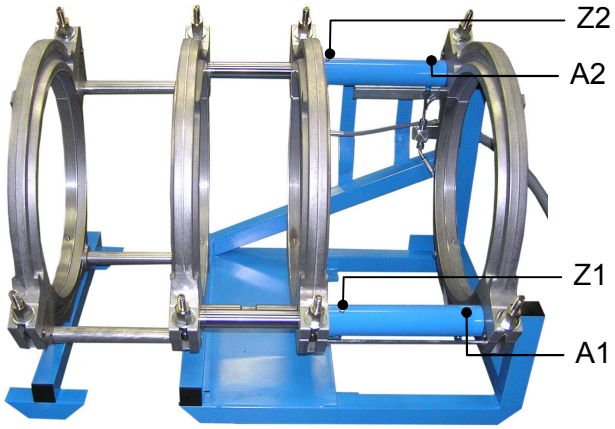
7.3. Clamping Elements

- For a long service life, clean and grease regularly the threaded spindles and the joint parts which are used for clamping the pipes.

7.4. Checking the Hydraulic Oil Level

- To avoid damages check the oil level of the hydraulic pump before each starting of the control unit.
- Open front plate on the lefthand side of the control unit.
- Unscrew the cover of the filler neck of the tank (with integrated oil dipstick).
- Clean the oil dipstick with a fiber-free tissue and insert it again in the tank groove.
- Remove the oil dipstick again and check the oil level by means of the two marks on it (the oil level should be between both marks).
- If the oil level is under the lower mark, then hydraulic oil of the quality HLPD 32 must be added.
- The oil level may not be over the upper mark because otherwise there is the risk of inondation.
- After completion of the works, close the tank cover again tightly and close the front plate.

7.5. Venting the Hydraulic Cylinders



- Venting the hydraulic cylinders is not required if
  - the hoses have been disconnected from the quick-action couplings at the control unit because the remaining oil in the hose is being kept by valves and for this reason no air can enter.
- The hydraulic cylinders have to be vented if
  - there has been too less oil in the tank and air has been attracted.
  - there were leaky spots at the hoses or in the connections.
  - the hoses were unscrewed from the basic machine.
- Eliminate the cause of the air entrance.
- Switch the machine on, legitimate with the card, then the main menu appears.
  With buttons <+> and <->, the machine can be opened or closed.
- Press button <-> and open the machine completely.
- First unscrew the lower vent screw (Z1) for closing (lefthand side).
- Connect the transparent venting hose and insert it in the collecting vessel.
- Close by pressing button <+> until there is no more air visible in the venting hose.
- Tighten again the vent screw (Z1).
- Press button <+> and close the machine completely.
- Then unscrew the lower vent screw (A1) for opening (righthand side).
- Connect the transparent venting hose and insert it in the collecting vessel.
- Open by pressing button <-> until there is no more air visible in the venting hose.
- Tighten again the vent screw (A1).
- When the venting producere at the lower rent screws is finished, repeat the same at the upper vent screw (Z2) for closing (lefthand side), and the upper vent screw (A2) for opening (righthand).

The lower vent screws always have to be vented at first because there is a direct connection between the upper and the lower cylinders.

- If air remains in the lower cylinder, it will ascend in the upper cylinder when pressure is applied.

There must always be enough oil in the tank (see chapter 7.4).

7.6. Maintenance, Inspection and Repair

All maintenance and repair works have to be basically performed with the machine in off position.

During this the machine has to be secured against unauthorized switching on.

Prescribed maintenance and inspection works should be performed in time. The DVS gives the advice of inspection works after 1 year.

For machines with a specially high usage percentage the testing cycle should be shortened.

The works should be performed at the WIDOS GmbH company or by an authorized partner.

- The operating staff has to be informed before the starting of the maintenance works.
- Check the tightness of all screwed connections and tighten again if need be.
- Check the function of the safety devices after completion of the maintenance works. Check especially insulation and tension resistance and protective cables resistance.

7.7. Saving the Welding Data

The battery buffer for the CNC memory (RAM) goes empty. Without current connection, the batteries necessary for the storage of the welding data work for about 1 month.
Remedy: connect the machine to power, switch it on and leave it switched on for 24 hours in order to completely load the batteries.

Please make sure that before a longer non operation period of the machine the welding data are read out so that they can not get lost.

7.8. Error signals

If during the work with the machine

- the DVS prescriptions are not followed
- the necessary steps for the welding process are not correctly or not at all performed
- certain measuring devices do not function

an error message will appear on the display.
By pressing the button <Enter>, the error message can be deleted on the display.

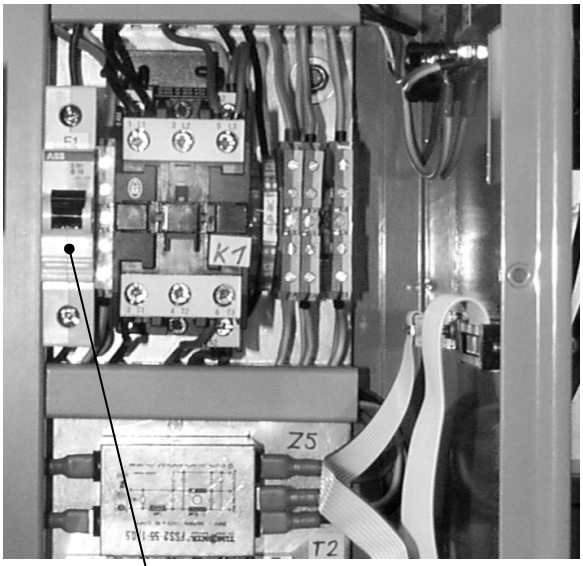
Error Message	***Cause***	***Remedial Action***
heating element temperature not o.k. !	Heating element did not yet reach the nominal temperature and is out of the tolerance of ± 10° C	Wait until the heating element is heated up and the setting process is finished
pipes clamped too long !!	Pipes are clamped too close one to the other and the planer does not fit between the pipe ends	Clamp the pipes with more distance one to the other
insert heating element !!	Message "insert heating element" has been confirmed with <Start> although the heating element has not yet been inserted	Insert heating element and confirm with <Start>
pipes slipped in clamps	Pipes were not properly clamped and are slipping through the clamping devices	Clamp the pipes tightly
heating element is still inserted !!	After completion of the change over time, the heating element was not removed	Abort the welding process and restart welding
error SD-card	Any other SD-card error	Check if SD-card is present or is inserted in a wrong way
error SD-card card full	Memory space of the SD-card is full	Read data out from the SD-card and perform new formatting
error SD-card write protect	SD-card has a write protection	Remove the write protection at the SD-card
error SD-card not formatted	SD-card is not formatted and no data can be stored	Format SD-card with PC **necessarily** using „**FAT16**“
power failure at last welding	Power supply of the control unit has been interrupted during the welding process	Eliminate the cause of the power failure and restart welding
no welding in memory	Internal memory is empty	
memory full !	Internal memory is full (more than 400 weldings stored)	Copy internal memory onto SD-card and then delete it

Error Message	*Cause*	*Remedial Action*
ambient temp. not o.k. !	Ambient temperature is higher than 50° C or lower than 0° C	Use a welding tent or umbrella or pre-heat pipe ends
error des. temp. choose material !	No pipe parameters were set	Set pipe parameters
error: check cable to way measuring !	Travel measuring cable is not connected or defective	Connect or replace travel measuring cable
error: time between plan./warm. too long !	The time between planing and heating up has overgone 10 min.	Repeat planing process
Error: pipes not well in place !	In the pressureless phase, the pipes open the clamping devices	Prevent the clamping devices from opening

7.9. Possible defects and their elimination

Defect	*Possible Cause*	*Identification and Elimination*
Machine does not move forward nor backward	- Emergency-stop is pressed - A valve is not getting its command - Travel cable is not plugged - Travel cable is interrupted	- Unlock the Emergency- Stop - Start "Test and diagnosis program" - Perform diagnosis No. 0008 travel test
Planer works the whole time or not at all	- Button at the planer is not pressed - Semi-conductive relais is defective	- Check the button - Perform diagnosis No. 0003 planer
After the planer program the planer is needed again and again	- No 2 mm material were planed - The travel measurement varies too much due to a defective travel recorder or a defective travel recorder cable	- Make sure that min. 2 mm material are being planed (circular chip!)
Machine does not switch from bead up programm to "heating"	- No travel change is recognized	- Perform diagnosis No. 0008 travel test
The pressure falls very fast, the pump keeps on working	- Pipes have slipped through - Hydraulic bloc is leaky - Cylinder is leaky	- Clamp pipes correctly - Check oil leakage - Inform service-team
Barcode does not work	- Barcode soiled - Reading pen defective	- Clean barcode, repeat read in - Manually enter digits of the barcode: simultaneously press all three buttons <+ / - / Enter>, afterwards manually entert the digits.

7.10. Fuse for Overload Safety Device / Printer Plug Box



The control unit does **not** function although the control unit is connected to the power supply, the main switch is on, and the Emergency-Stop has **not** been pressed and locked.

In this case the fuse (overload protection) must be checked.

For this purpose unscrew the right-hand cover plate, check the fuse (F1) and switch it on again, if necessary.

7.11. Disposal

At the end of their life time, the machine and the wear parts have to be disposed of properly and non-polluting, and in accordance with the national laws of waste disposal.

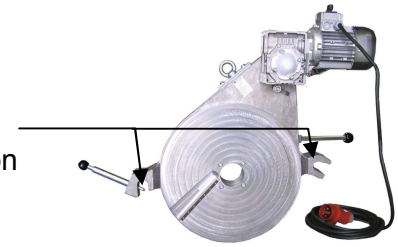
8. Transport

The machine can be transported in 3 transport boxes or 1 packing box.
Due to its compact design, the packing box is more suitable for longer transports.

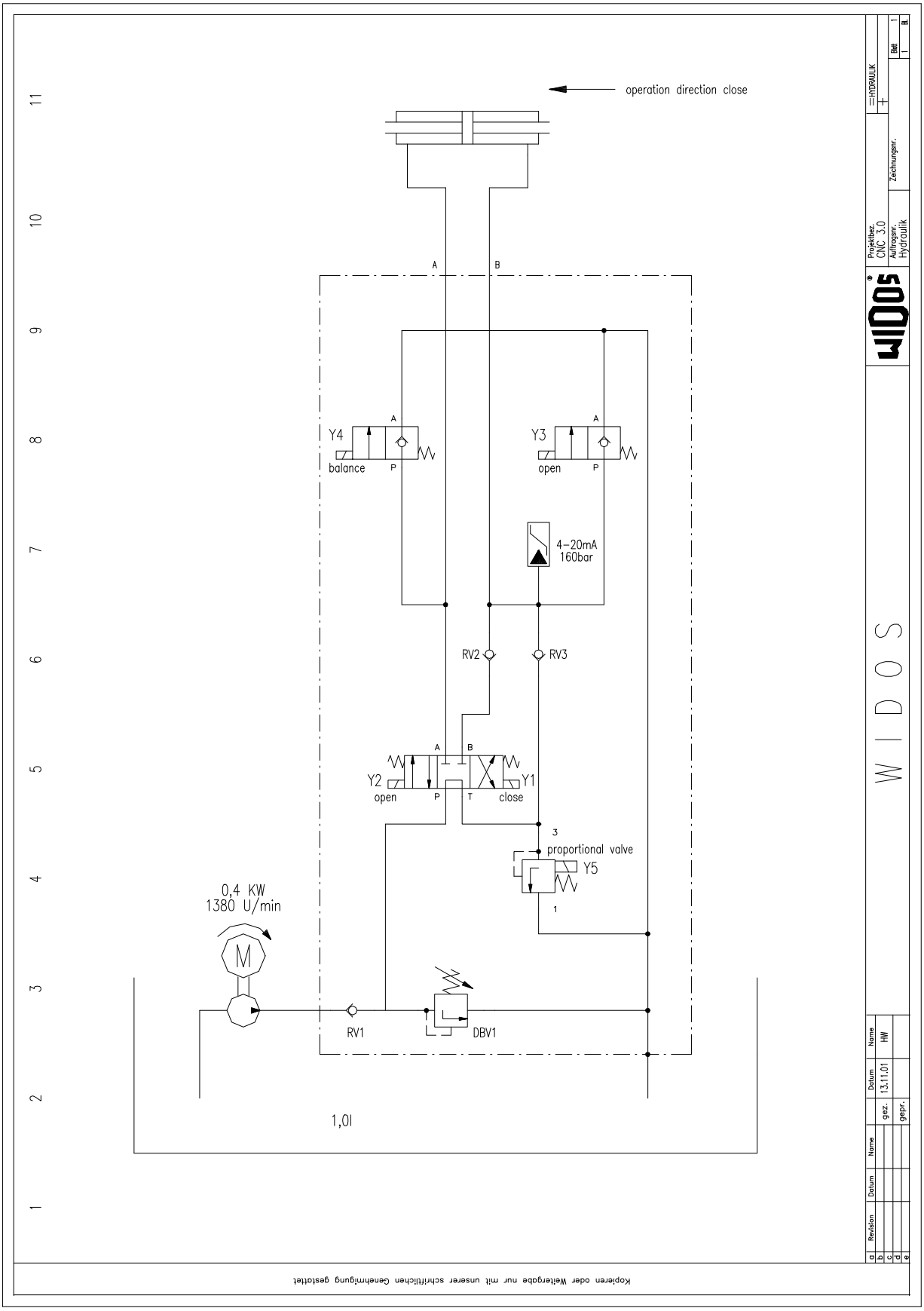
In each box holders are included which are suitable for each single element of the machine in order to avoid slipping.

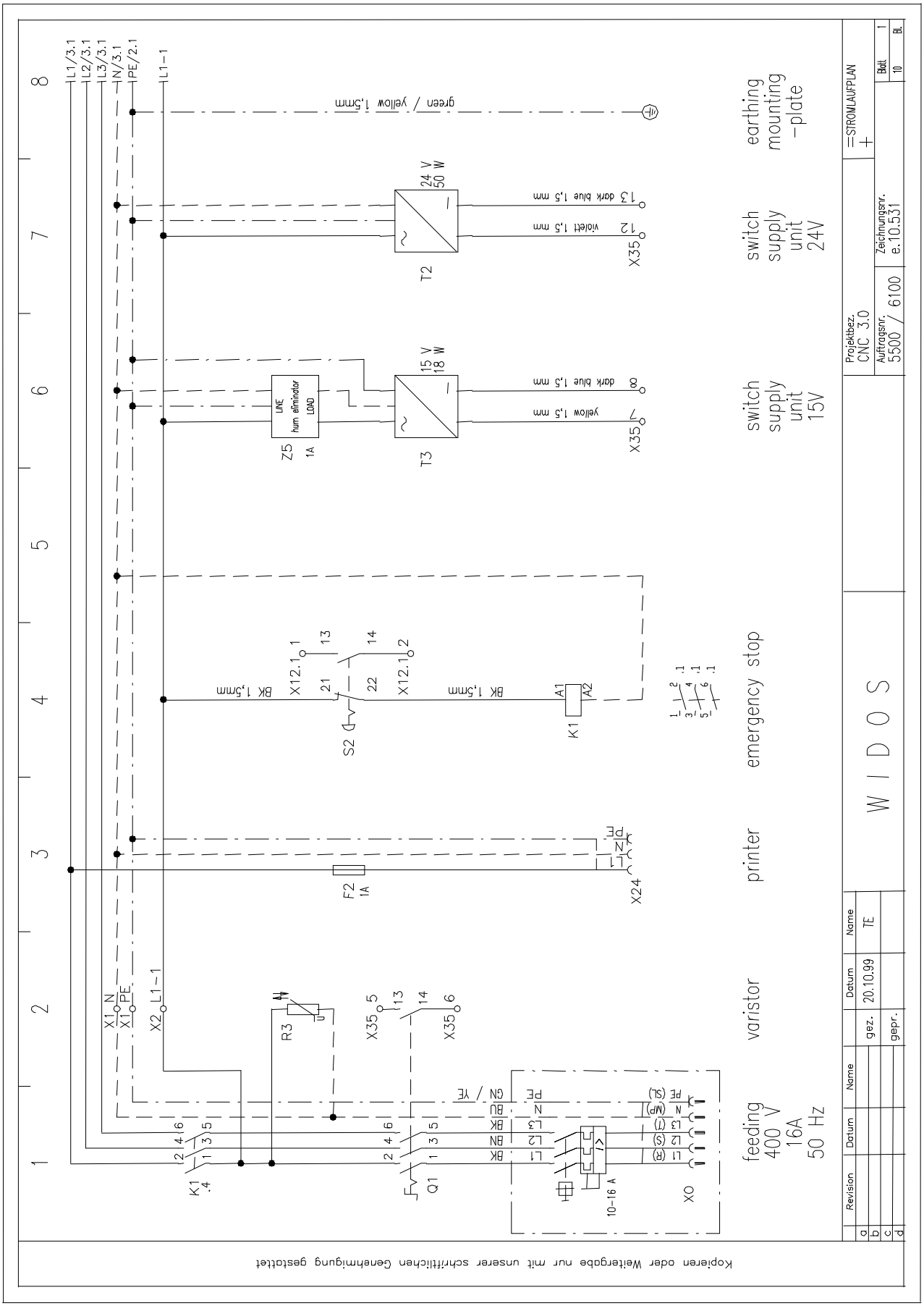
- Put the elements into the box in such a way that they are fitting in the holders.
- The hydraulic hoses at the basic machine should not be unscrewed (air penetration). Make sure that they are not squeezed.
- The sensors integrated in the machine are sensitive high precision devices which need to be handled carefully in order to reach a longer life.
  - Do not tilt the machine too much.
  - Protect the machine from heavy chocs.
  - Make sure that the box cover is closed correctly.
  - **Never** lift or transport the basic machine at path measuring system!
- During the construction of the transport box a stress was put on a light-weight construction.
  - Take much care when using automatic handling and carrying machines.

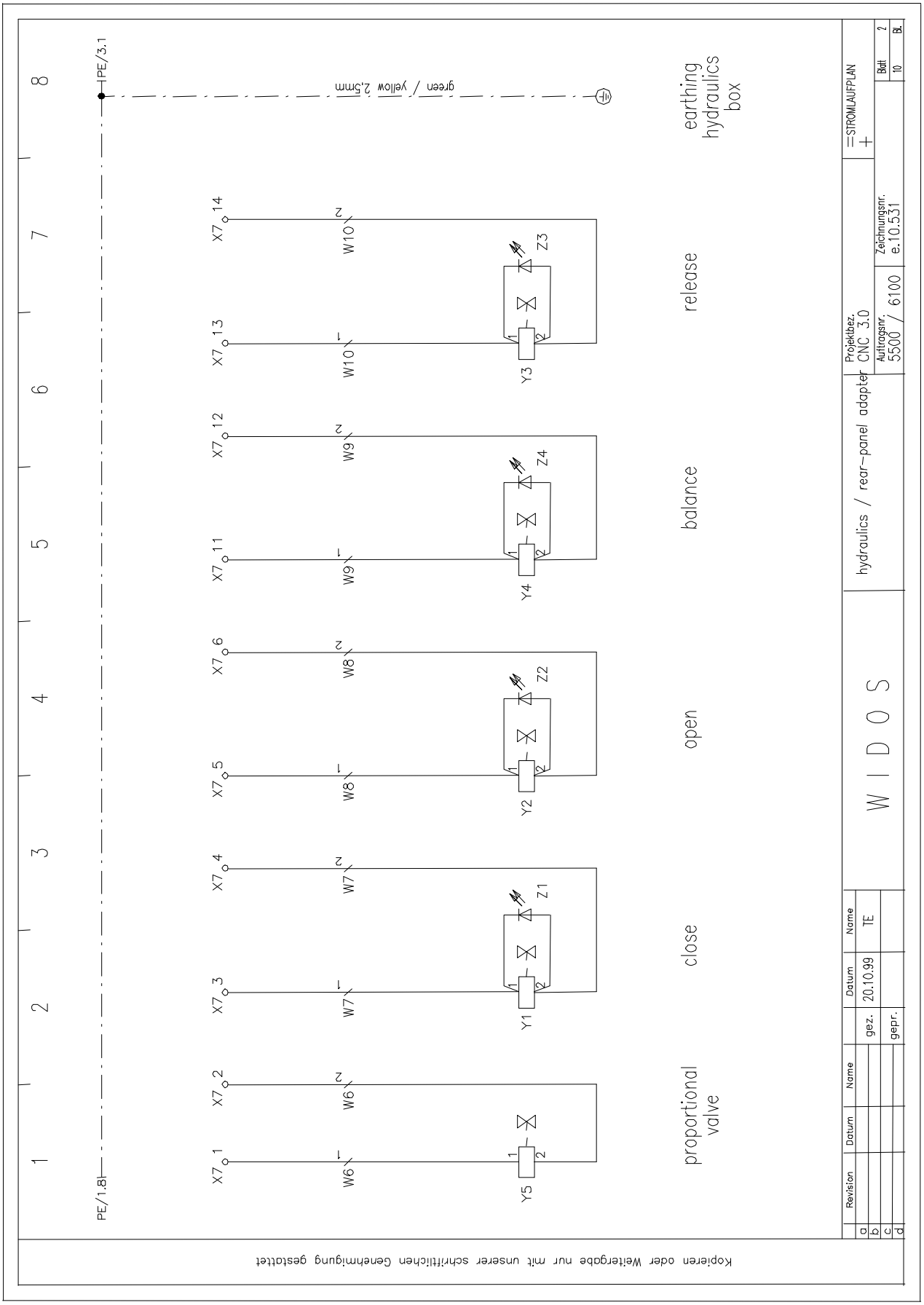
Transport the planer in the reception box.
If the planer is transported in the basic machine, grease the holders with PTFE-spray because otherwise damages at piston and sealings may occur.



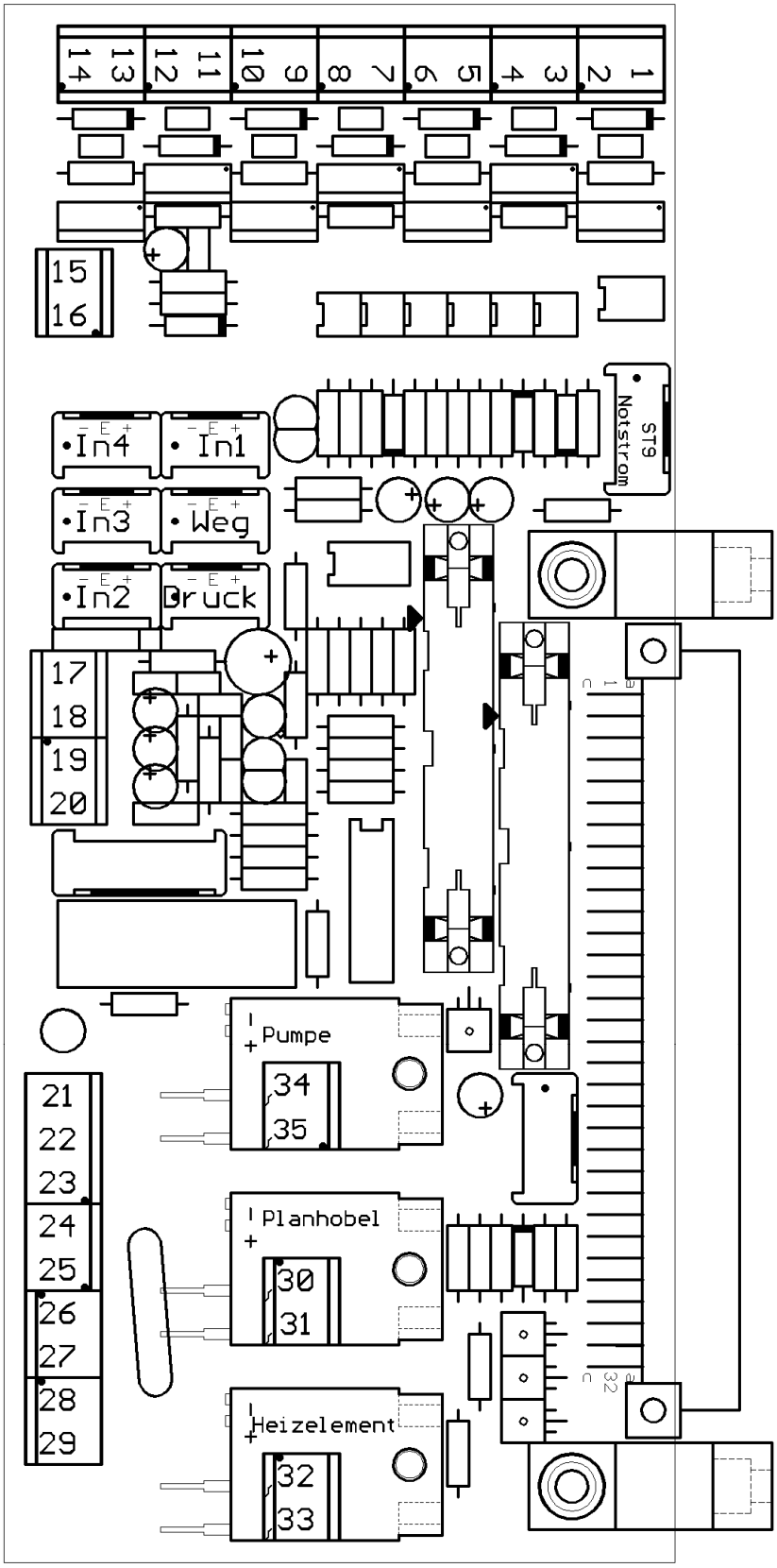
9. Wiring and Hydraulic Diagrams

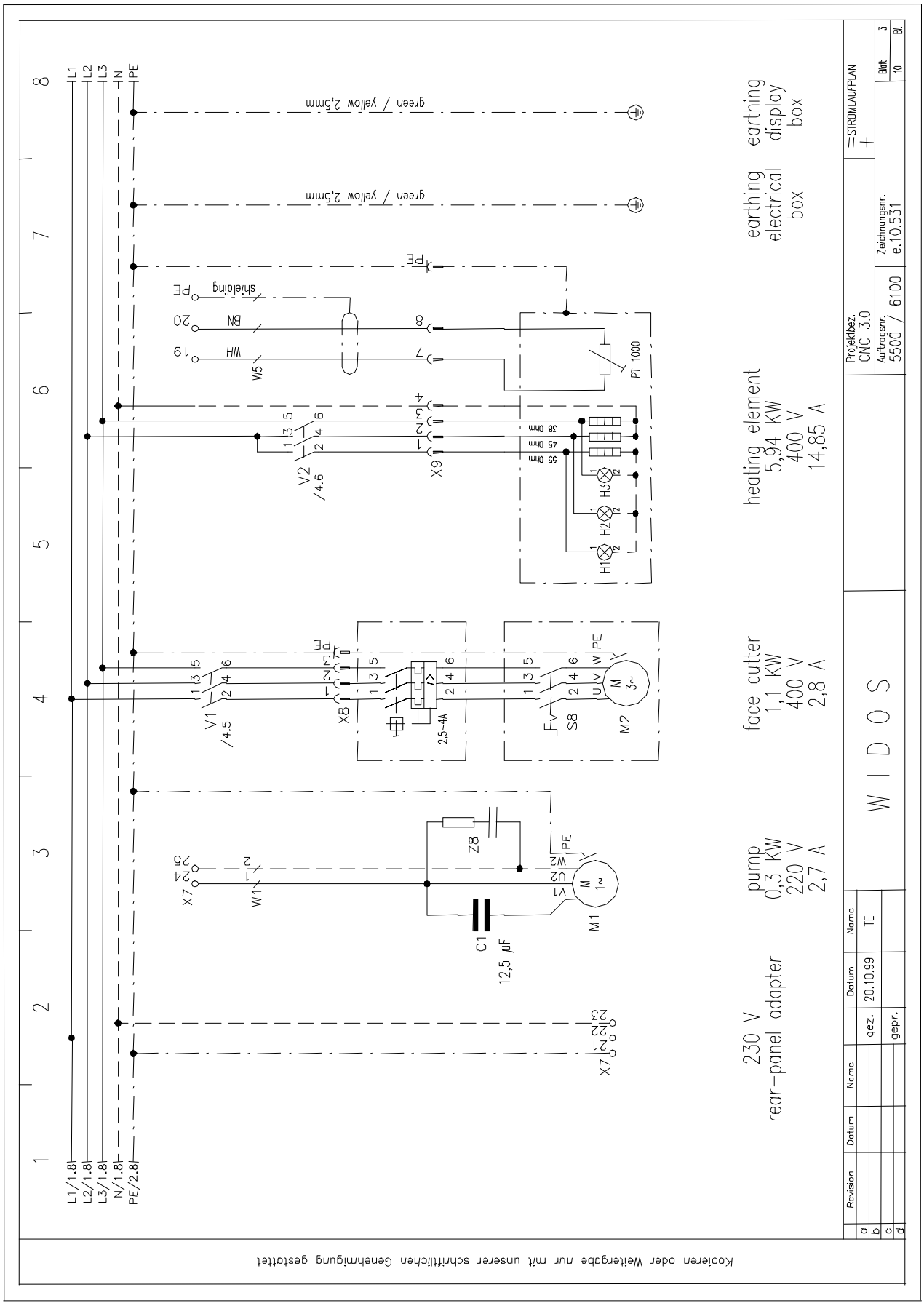



WIDOS
=STROMLAUFPLAN
Projektbez. CNC 3.0
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531
Bdtl 10
Bl. 1
Revision
Datum
Name
gez. 20.10.99 TE
gepr.
feeding 400 V 16A 50 Hz
varistor
printer
emergency stop
switch supply unit 15V
switch supply unit 24V
earthing mounting -plate
green / yellow 1,5mm
violett 1,5 mm
dark blue 1,5 mm
yellow 1,5 mm
BK 1,5mm
T2
T3
Z5
F2 1A
S2
K1
Q1
K1 .4
R3
X0
X1
X2
X24
X35
X12.1
10-16 A
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet


PE/3.1
green / yellow 2,5mm
earthing hydraulics box
release
balance
open
close
proportional valve
PE/1.8
X7 14
X7 13
X7 12
X7 11
X7 6
X7 5
X7 4
X7 3
X7 2
X7 1
W10
W9
W8
W7
W6
Y3
Y4
Y2
Y1
Y5
Z3
Z4
Z2
Z1
hydraulics / rear-panel adapter
Projektbez. CNC 3.0
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531
=STROMLAUFPLAN
Revision
Datum
Name
gez. 20.10.99 TE
gepr.
WIDOS
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet

Rear Panel Adapter X7
CNC 3.0




L1
L2
L3
N
PE
green / yellow 2,5mm
green / yellow 2,5mm
PE
shielding
BN
WH
W5
PT 1000
V2
/4.6
X9
38 Ohm
45 Ohm
56 Ohm
H3
H2
H1
earthing display box
earthing electrical box
heating element
5,94 KW
400 V
14,85 A
V1
/4.5
X8
2,5-4A
S8
M2
face cutter
1,1 KW
400 V
2,8 A
Z8
C1
12,5 µF
M1
pump
0,3 KW
220 V
2,7 A
X7
230 V
rear-panel adapter
=STROMLAUFPLAN
Projektbez.
CNC 3.0
Auftragsnr.
5500 / 6100
Zeichnungsnr.
e.10.531
Blatt 3
Bl. 10
WIDOS
Revision
Datum
Name
gez.
gepr.
20.10.99
TE
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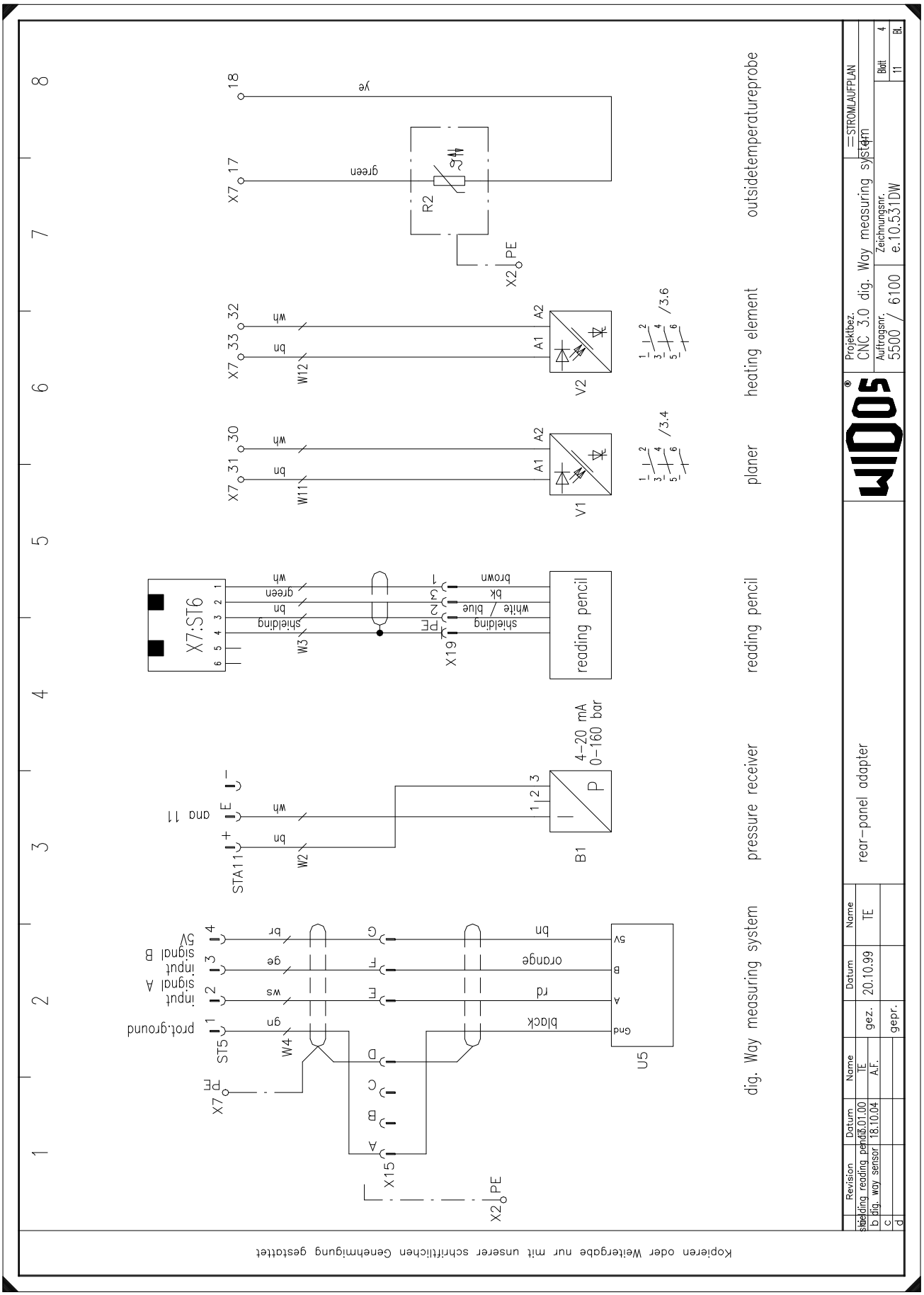
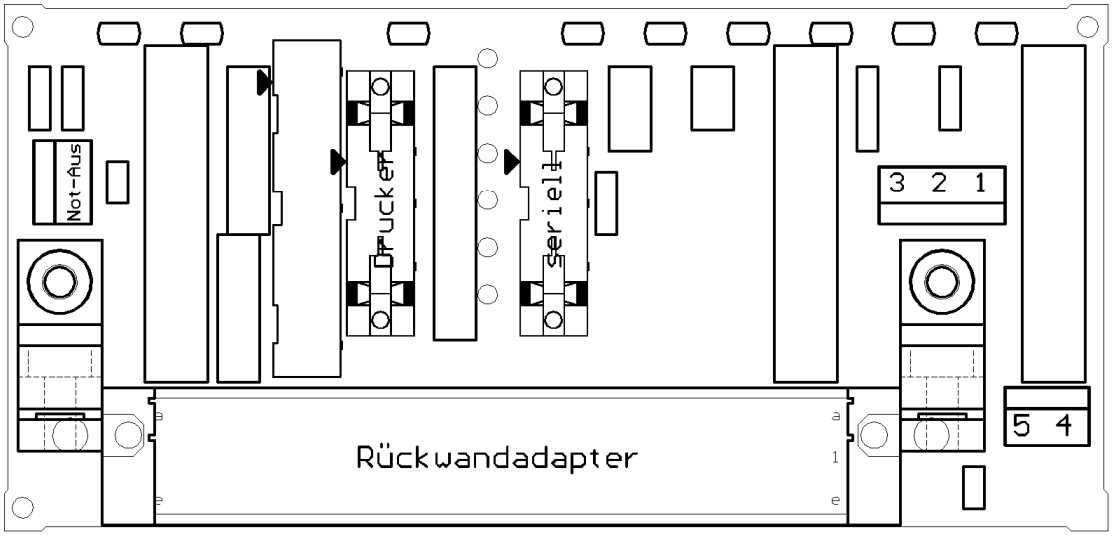

dig. Way measuring system
pressure receiver
reading pencil
planer
heating element
outsidetemperatureprobe
rear-panel adapter
STROMLAUFPLAN
Projektbez.
CNC 3.0 dig. Way measuring system
Auftragsnr.
5500 / 6100
Zeichnungsnr.
e.10.531DW
Revision
Datum
Name
gez.
gepr.
20.10.99
TE
A.F.
18.10.04
01.00
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet

Rear Panel X 12

Layout	W642B
Datum	9-16-1999 11:19:38a
Druck	9-16-1999 11:26:30a
Name	Li



Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet

	Revision	Datum	Name
a			
b			
c			
d			

	Datum	Name
gez.	20.10.99	TE
gepr.		

W I D O S

=Stromlaufplan-X2
control voltage 230 V

Projektbez.
CNC 3.0

Auftragsnr.
5500 / 6100

Zeichnungsnr.
e.10.531

=KLEMMENPLAN
+

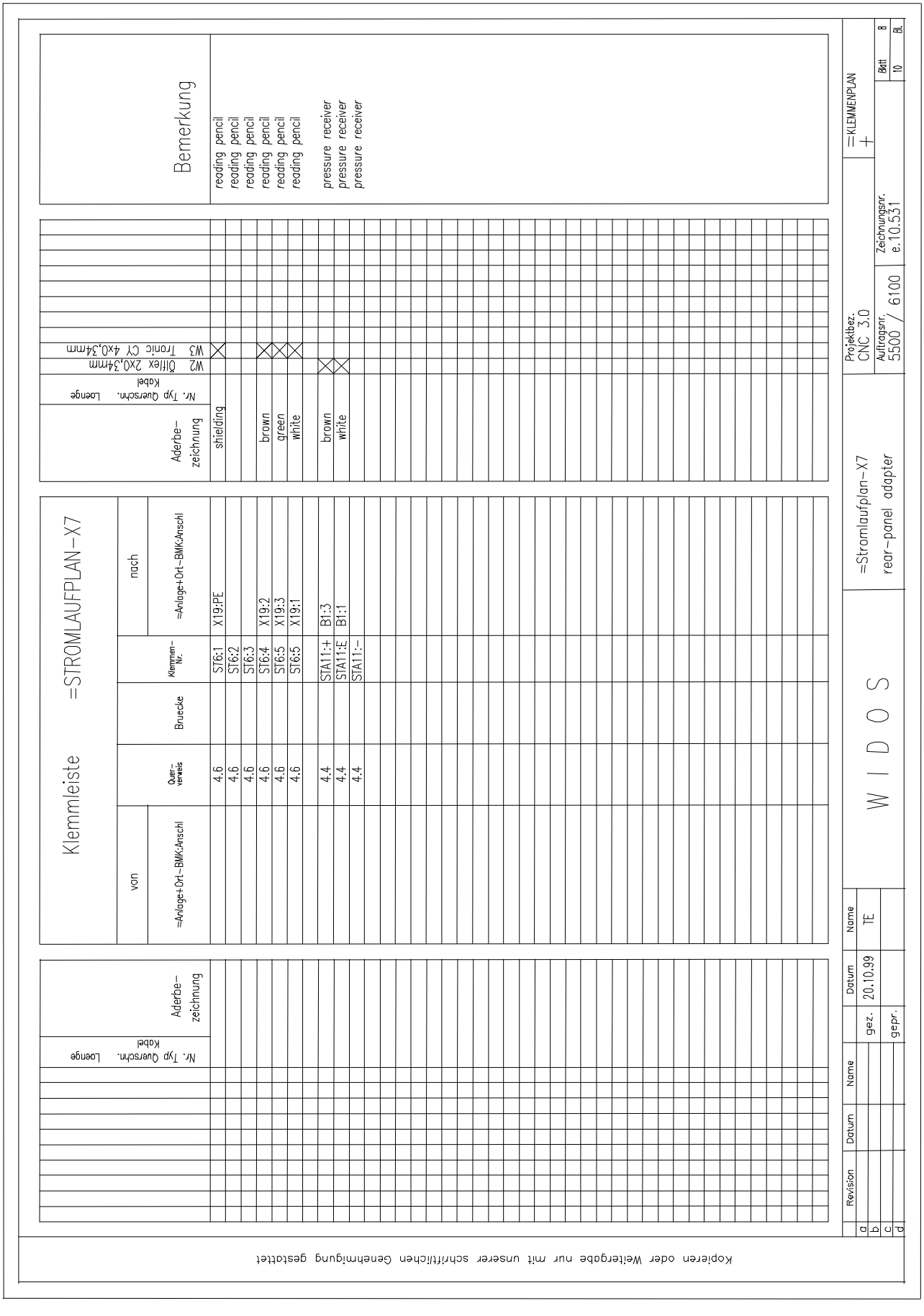
Blatt 6
Bl. 10

Klemmleiste =STROMLAUFPLAN-X2

von =Anlage+Ort-BMK:Anschl	Quer-verweis	Bruecke	Klemmen-Nr.	Quer-verweis	nach =Anlage+Ort-BMK:Anschl	Aderbe-zeichnung	Nr. Typ Querschn. Laenge Kabel	W1 Oflex 3x1,5mm	Bemerkung
M1:PE	3.3		PE	3.8	display box	green / yellow 2,50mm		X	display box
X2:N	1.2		R3	1.2	Q1:2	black 1,50mm			varistor
T2	1.7		L1-1	1.4	S2:1	black 1,50mm			emergency stop
Z5	1.6		L1-1	1.1	K1:1	black 1,50mm			emergency stop
T2	1.7		N	1.4	K1:A2	blue 1,50mm			feeding
Z5	1.6		N	1.1	X0:N	blue			printer
R3	1.2		N	1.3	X24	blue 1,50mm			heating element /way sensor
T3:PE / Z5:PE	1.6		PE	3.7 / 4.1	heating element /way sensor	green /yellow 1,50mm			face cutter /
T2:PE / X24:PE	1.7 / 1.3		PE	3.4 /	M2:PE /	green /yellow 1,50mm			hydraulics box / electrical box
X7:21 /	2.3 /		PE	2.8 / 3.7	hydraulics -/electrical box	green /yellow 2,50mm			feeding / outside-temperature probe
mounting plate /	1.8 /		PE	1.1 / 4.7	X0:PE / outside-temperature probe	green / yellow		X	

Aderbe-zeichnung	Nr. Typ Querschn. Laenge Kabel	W1 Oflex 3x1,5mm	Bemerkung
green / yellow		X	pump
blue 1,50mm			varistor
black 1,50mm			switch supply unit 24V
black 1,50mm			hum eliminator
blue 1,50mm			switch supply unit 24V
blue 1,50mm			hum eliminator
blue 1,50mm			varistor
green / yellow 1,50mm			switch supply unit 15V / hum eliminator
green / yellow 1,50mm			switch supply unit 24V / printer
green / yellow 1,50mm			rear-panel adapter /
green / yellow 1,50mm			mounting plate /

Klemmleiste =STROMLAUFPLAN-X7
von =Anlage+Ort-BMK:Anschl
Quer-verweis
Bruecke
Klemmen-Nr.
nach =Anlage+Ort-BMK:Anschl
Aderbe-zeichnung
Nr. Typ Quersch. Laenge Kabel
Bemerkung
Prop.-Ventil
Prop.-Ventil
zufahren
zufahren
auffahren
auffahren
entlasten
entlasten
lösen
lösen
Notstromplatine 24 V
Notstromplatine 24 V
Außentemperaturfühler
Außentemperaturfühler
Heizelement
Heizelement
Heizelement
Spannungsversorgung
Spannungsversorgung
Spannungsversorgung
Pumpe
Pumpe
Planhobel
Planhobel
Heizelement
Heizelement
Weg
Weg
Weg
Weg
Weg
W1 Ölflex 3x1,5mm
W4 Tronic CY 4x0,34mm abg.
W5 Tronic CY 2x0,34mm abg.
W6 Ölflex 2x0,75mm
W7 Ölflex 2x0,75mm
W8 Ölflex 2x0,75mm
W9 Ölflex 2x0,75mm
W10 Ölflex 2x0,75mm
W11 Ölflex 2x0,34mm
W12 Ölflex 2x0,34mm
=Stromlaufplan-X7
Rückwandadapter
Revision
Datum
Name
gez. 20.10.99 TE
gepr.
Projektbez. CNC 3.0 dig. Wegmeßsystem
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531DW
=KLEMMENPLAN
Blatt 7
Bl. 11
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet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von =Anlage+Ort-BMK:Anschl
Quer-verweis
Bruecke
Klemmen-Nr.
nach =Anlage+Ort-BMK:Anschl
ST6:1 X19:PE
ST6:2
ST6:3
ST6:4 X19:2
ST6:5 X19:3
ST6:5 X19:1
STA11:+ B1:3
STA11:E B1:1
STA11:-
Aderbe-zeichnung
Nr. Typ Querschn. Laenge Kabel
shielding
brown
green
white
brown
white
W2 Ölflex 2x0,34mm
W3 Tronic CY 4x0,34mm
Bemerkung
reading pencil
reading pencil
reading pencil
reading pencil
reading pencil
reading pencil
pressure receiver
pressure receiver
pressure receiver
Revision Datum Name
gez. 20.10.99 TE
gepr.
WIDOS
=Stromlaufplan-X7
rear-panel adapter
Projektbez. CNC 3.0
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531
=KLEMMENPLAN
Bl. 10 Bl. 8
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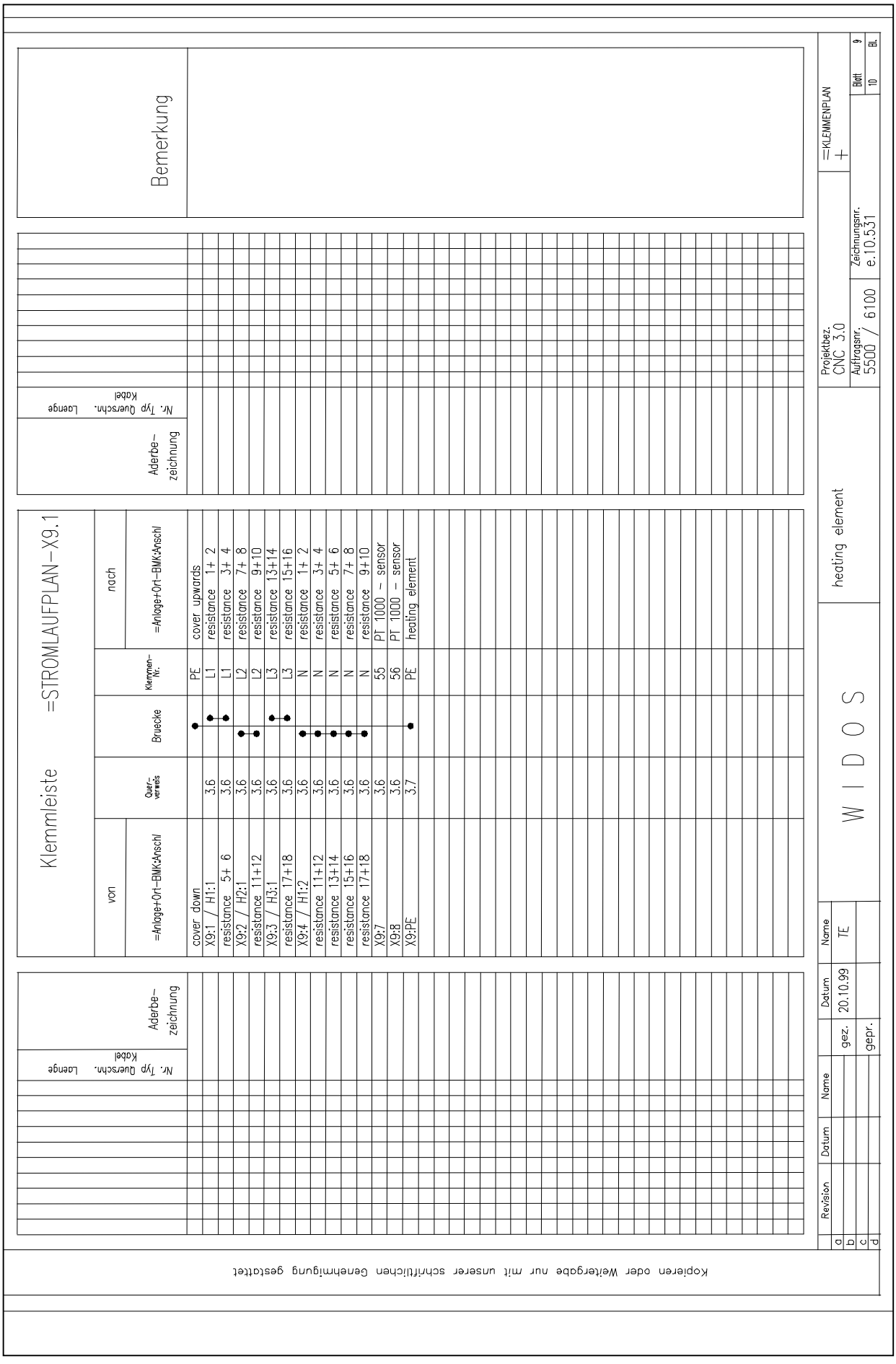
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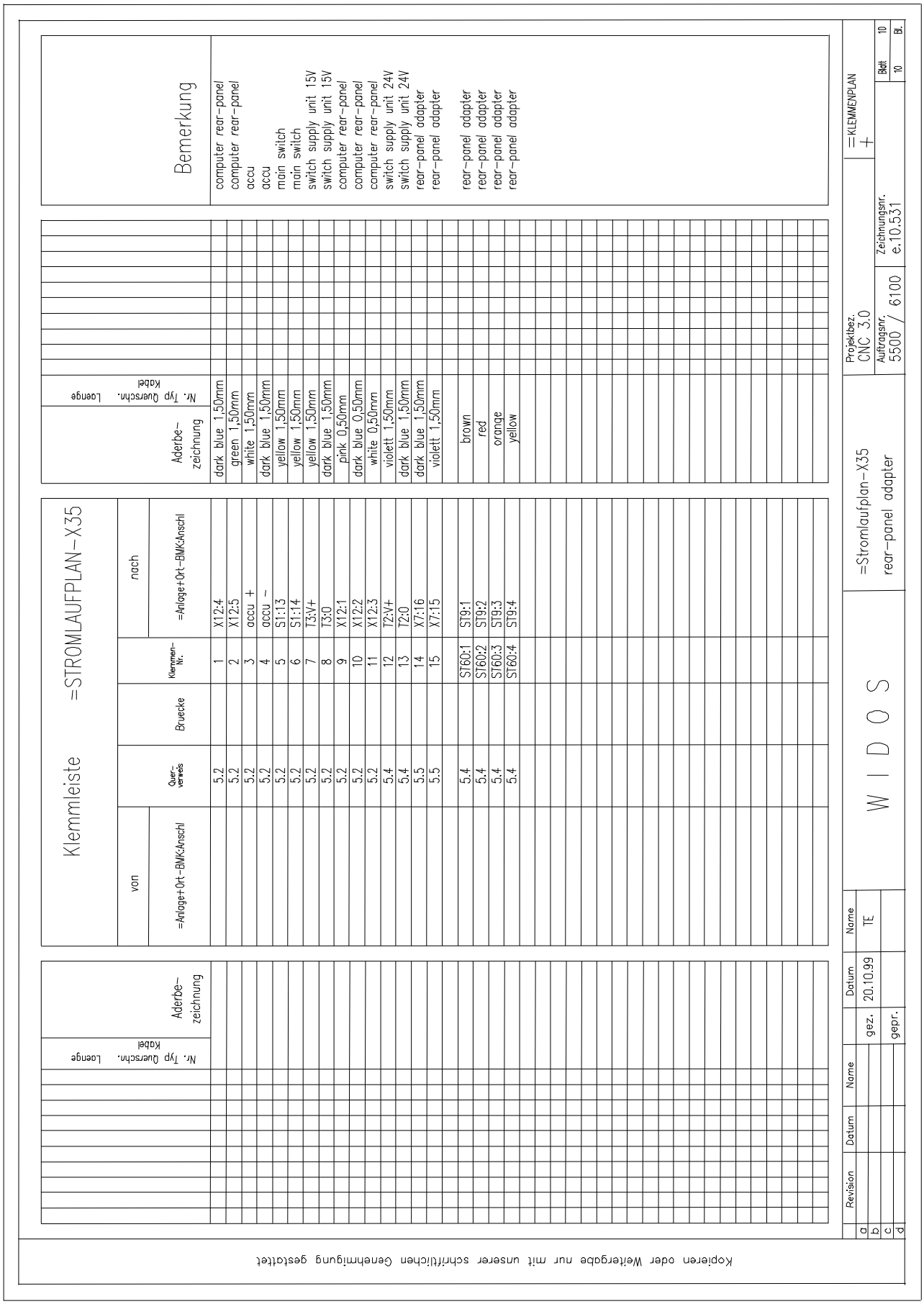
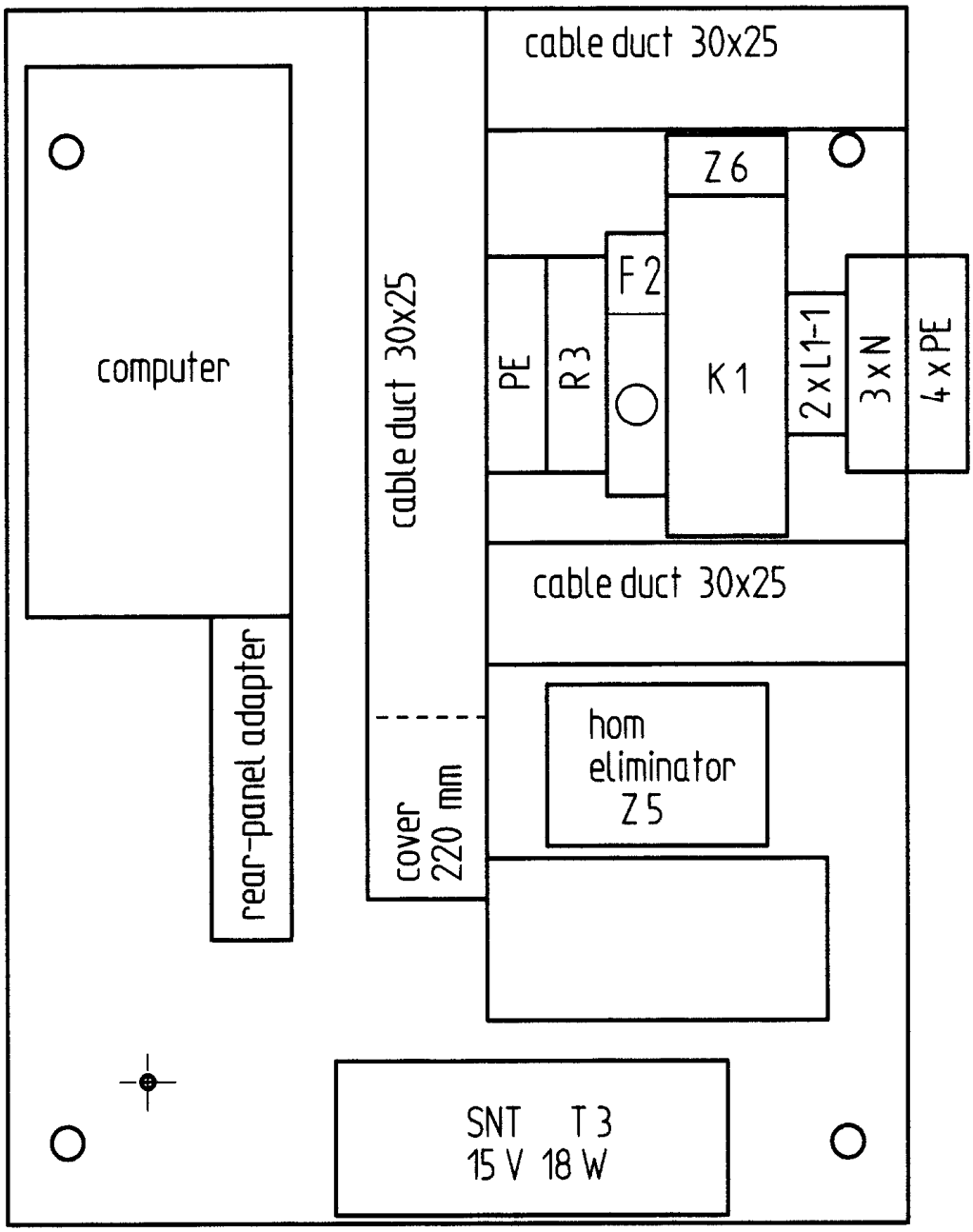
von
=Anlage+Ort-BMK:Anschl
Quer-verweis
Bruecke
Klemmen-Nr.
nach
=Anlage+Ort-BMK:Anschl
cover down
X9:1 / H1:1
resistance 5+ 6
X9:2 / H2:1
resistance 11+12
X9:3 / H3:1
resistance 17+18
X9:4 / H1:2
resistance 11+12
resistance 13+14
resistance 15+16
resistance 17+18
X9:7
X9:8
X9:PE
3.6
3.7
PE
L1
L2
L3
N
55
56
cover upwards
resistance 1+ 2
resistance 3+ 4
resistance 7+ 8
resistance 9+10
resistance 13+14
resistance 15+16
resistance 1+ 2
resistance 3+ 4
resistance 5+ 6
resistance 7+ 8
resistance 9+10
PT 1000 - sensor
PT 1000 - sensor
heating element
Aderbe-zeichnung
Nr. Typ Querschn. Laenge Kabel
Bemerkung
W I D O S
heating element
Projektbez. CNC 3.0
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531
=KLEMMENPLAN
Blatt 9
Bl. 10
Revision
Datum
Name
gez. 20.10.99 TE
gepr.
a
b
c
d
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet

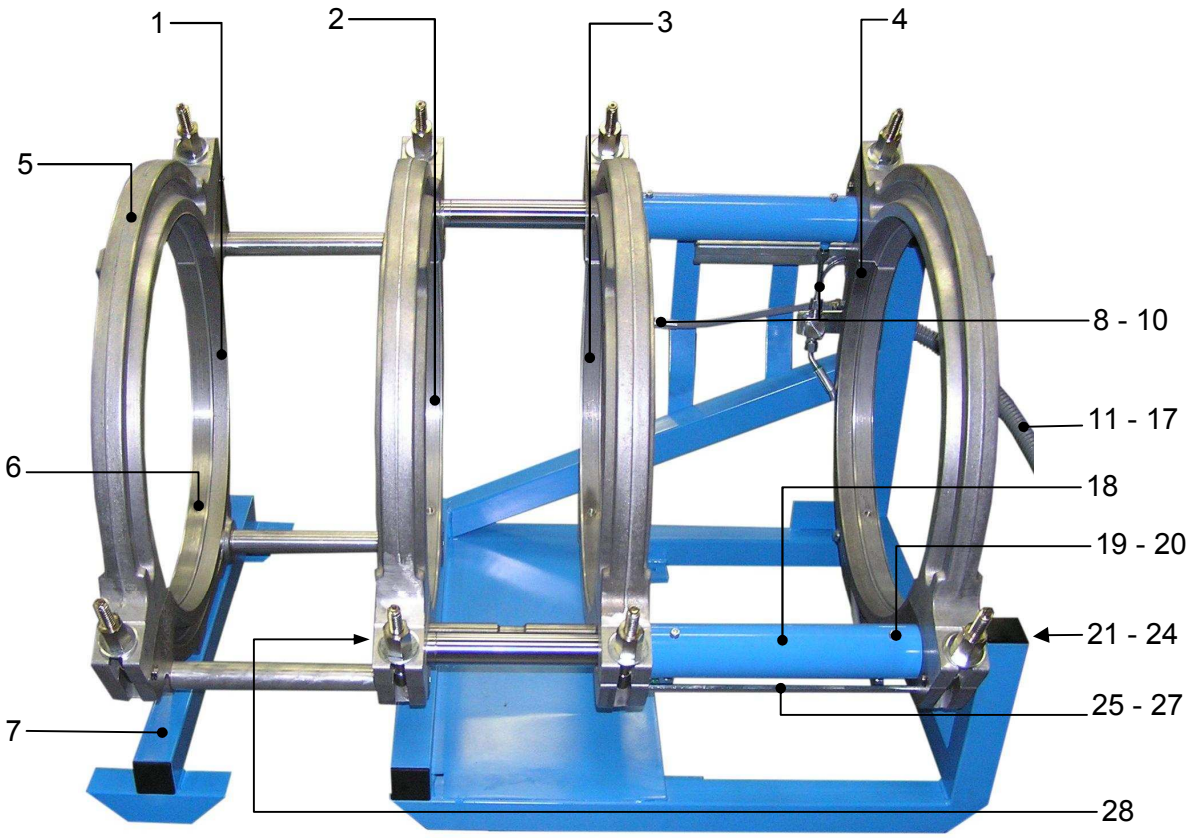

Klemmleiste =STROMLAUFPLAN-X35
von
=Anlage+Ort-BMK:Anschl
Quer-verweis
Bruecke
Klemmen-Nr.
nach
=Anlage+Ort-BMK:Anschl
Aderbe-zeichnung
Nr. Typ Quersch. Laenge Kabel
Bemerkung
5.2 1 X12:4 dark blue 1,50mm computer rear-panel
5.2 2 X12:5 green 1,50mm computer rear-panel
5.2 3 accu + white 1,50mm accu
5.2 4 accu - dark blue 1,50mm accu
5.2 5 S1:13 yellow 1,50mm main switch
5.2 6 S1:14 yellow 1,50mm main switch
5.2 7 T3:V+ yellow 1,50mm switch supply unit 15V
5.2 8 T3:0 dark blue 1,50mm switch supply unit 15V
5.2 9 X12:1 pink 0,50mm computer rear-panel
5.2 10 X12:2 dark blue 0,50mm computer rear-panel
5.2 11 X12:3 white 0,50mm computer rear-panel
5.4 12 T2:V+ violett 1,50mm switch supply unit 24V
5.4 13 T2:0 dark blue 1,50mm switch supply unit 24V
5.5 14 X7:16 dark blue 1,50mm rear-panel adapter
5.5 15 X7:15 violett 1,50mm rear-panel adapter
5.4 ST60:1 ST9:1 brown rear-panel adapter
5.4 ST60:2 ST9:2 red rear-panel adapter
5.4 ST60:3 ST9:3 orange rear-panel adapter
5.4 ST60:4 ST9:4 yellow rear-panel adapter
Kopieren oder Weitergabe nur mit unserer schriftlichen Genehmigung gestattet
Revision Datum Name
a
b
c
d
gez. 20.10.99 TE
gepr.
WIDOS
=Stromlaufplan-X35
rear-panel adapter
Projektbez. CNC 3.0
Auftragsnr. 5500 / 6100
Zeichnungsnr. e.10.531
=KLEMMENPLAN
+
Blatt 10
Bl. 10

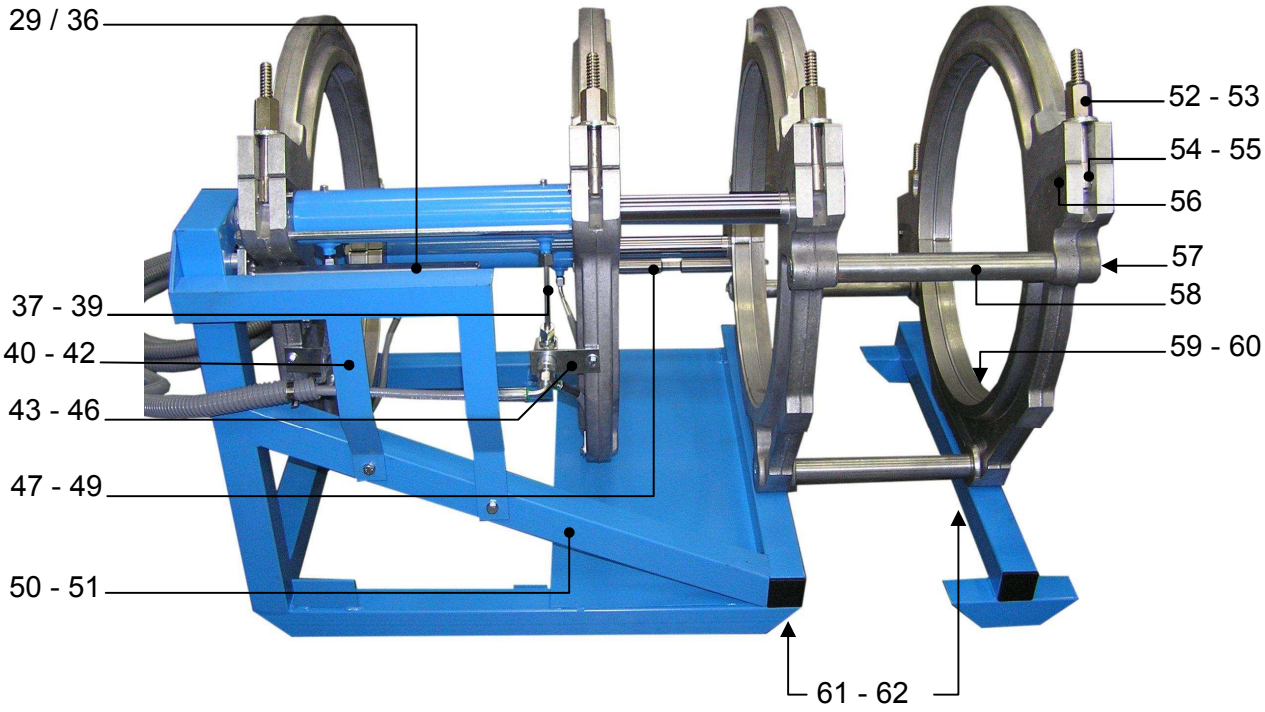
Mounting Plate



10.Spare Parts List

10.1. Basic Machine





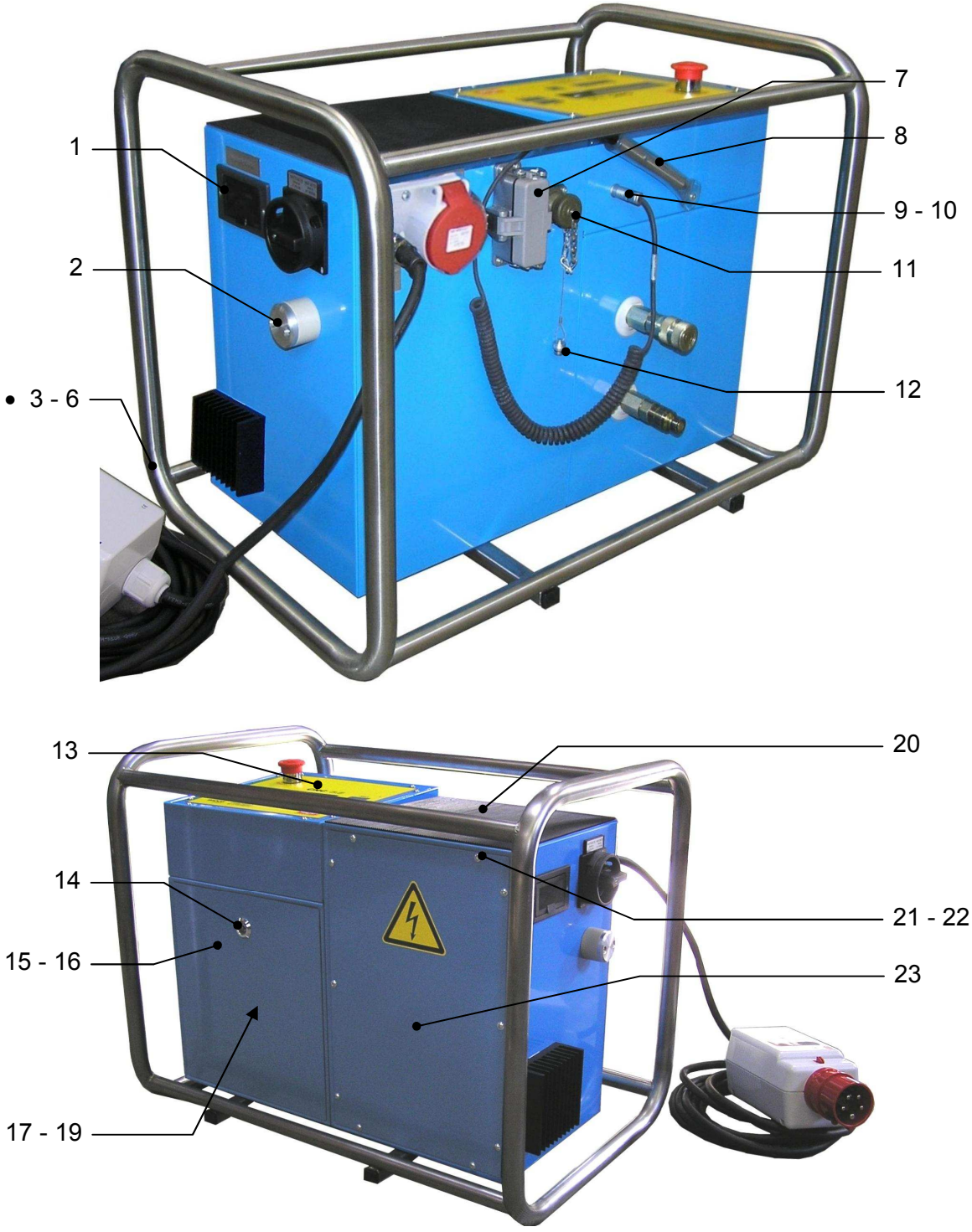
Basic unit WIDOS 5500 CNC 3.0

Pos.	Name	Piece	Order no.
1	Outer clamp, fixed	1	390101
2	Inner clamp, fixed	1	390102
3	Inner clamp, movable	1	390103
4	Outer clamp, movable	1	390104
5	Upper clamp	4	390105
6	Thread insert M10	8	GEW-M10
7	Support	1	071141
8	Hydraulic hose 0,65 m	2	VSCHL61
9	Compressed bushing	4	VP256
10	Bow-shaped nipple	2	VB386
11	Protective hose 6m	1	EA0805
12	Hydraulic tube 6m	2	VSCHL31
13	Coupling plug, flatpacking	1	VST14
14	Coupling box, flatpacking	1	VMU14
15	Compressed bushing	4	VP256
16	Bow-shaped nipple	2	VB386
17	Threaded nipple	2	VN856
18	Hydraulic cylinder	2	071106
--	Piston rod	2	on request
--	Guide bearing	4	LKH4060
--	Seal for cylinder	2 Set	D071106
19	Pan-head screw M6x10 DIN 912	4	0912F010
20	Ring for sealing 6.7x10x1	4	D6x9,3
21	Stop bolt	2	0911172
22	Thrust washer	1	071133
23	Hexagon-head screw M10x25 DIN 933	2	0933J025
24	Washer M10 DIN 125	2	0125J
25	Tension rod	2	071107
26	Hexagon nut M10 DIN 934	2	0934J
27	Washer M10 DIN 125	2	0125J
28	Flat-head screw M16x30 DIN 7991	2	7991P030
29	Rail for travel sensor	1	071161
30	Magnetic tape	1	EE0735
31	Hexagon-head screw M8x12 DIN 933	2	0933H012
32	Distance bush	1	091173
33	Holder for sensor	1	071162
34	Sensor digital	1	EE0727
35	Flat head screw with slot M 3x12 DIN 85	2	0085C012
36	Plastic sheath 0,3 m	1	EA08106
37	Hydraulic hose	2	391113
38	Bow-shaped 45°	2	DKOR6
39	Compressed bushing	4	VP256
40	Angle for distance	1	391177

Basic unit WIDOS 5500 CNC 3.0

Pos.	Name	Piece	Order no.
41	Hexagon -head screw M 8x12 DIN 933	3	0933H010
42	Washer M8 DIN 125	3	0125H
43	Filter	2	V092114
44	Holder for filter	2	093119
45	Washer M8 DIN 125	2	0933H020
46	Hexagon-head screw M8x20 DIN 933	2	0933H020
47	Tear off bar	1	071503
48	Hexagon-head screw M10x12 DIN 933	2	0933J012
49	Washer M 10 DIN 9021	2	0921J
50	Base frame	1	391118
51	Protective cap	5	J0225
52	Nut	8	071109
53	Thrust washer	8	6340P
54	Thread spindle	8	071108
55	Rivet	8	071111
56	Lock washer seize 7 DIN 6799	8	6799G
57	Flat-head screw M16x30 DIN 7991	6	7991P030
58	Shaft	3	071131
59	Reduction insert **OD 355 - OD 400*)**	1 Set	0708...*
59	Reduction insert **OD 200 -OD 280*)**	1 Set	0308...*
59	Adaptor half coupling **(OD 315)**	8	071142
59	Adaptor half coupling / Inset **(OD 450)**	8	3908450
60	Screw M6x30 f. **OD 200-OD250**	8	0912F30X
60	Screw M6x25 f. **OD 280**	8	0912F25X
60	Screw M10x30 f. **OD 450**	8	7984J30X
60	Screw M10x55 f. **OD 315-400**	8	7984J55X
60	Screw M10x100 f. **OD 450 + OD 200-280**	8	7984J100X
61	Pan-head screw M10x60 DIN 912	3	0912J060
62	Washer M 10 DIN 9021	3	9021J
--	Nameplate	1	Scht5100
--	Hydraulic oil	2 l	HLPD35
--	Tool bag for 10 parts	1	ZWR
--	Allan key size 3	1	ZIG03
--	Allan key size 6	1	ZIG06
--	Allan key size 10	1	ZIG10
--	Socket spanner size 27	1	ZRS27
--	Allan key with T-grip size 4	1	ZIT04
--	Allan key with T-grip size 5	1	ZIT05
--	Allan key with T-grip size 7	1	ZIT07
--	transport box	1	TKA10
	*) When ordering, please give the dimension !		

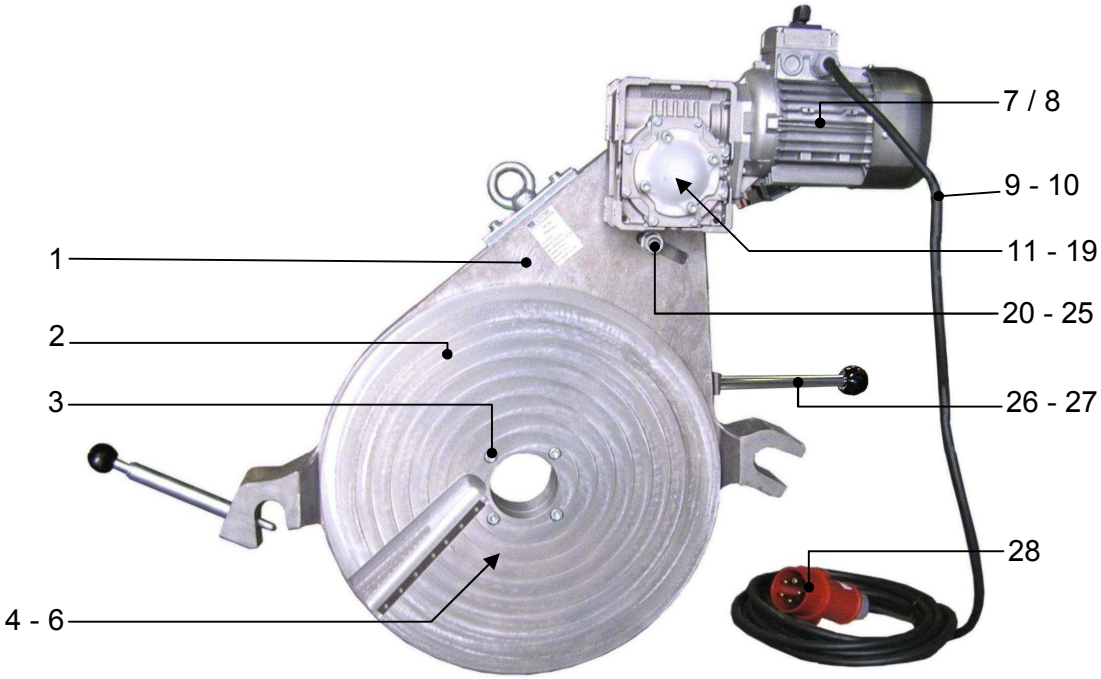
10.2. CNC Control Unit

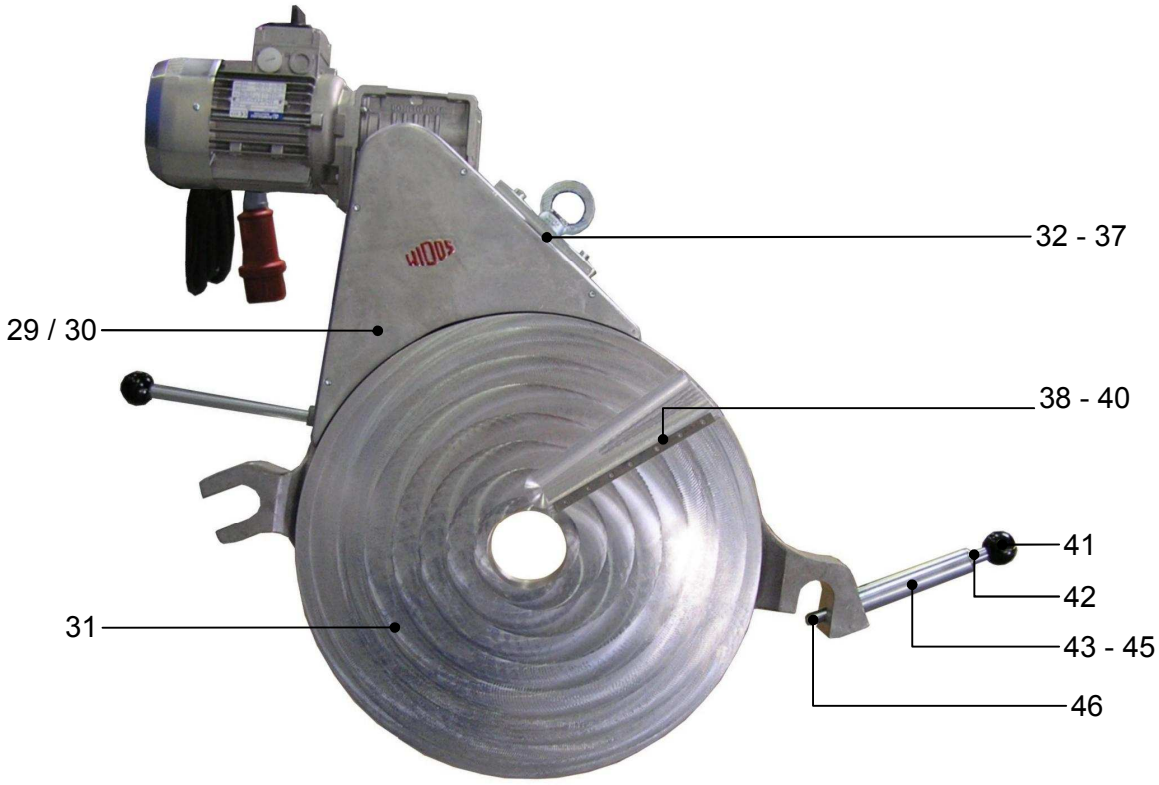


CNC-control unit WIDOS 5500 CNC 3.0

Pos.	Name	Piece	Order no.
1	Flat head screw M 3x16 DIN 965	2	0965C016
2	Outside temperature sensor KTY 10	1	EE0404
3	Carrying frame	1	105010
4	Pan head screw M 8x40 DIN 912	4	0912H040
5	Disk M 8 DIN 125	4	0125H
6	Hexagon nut M 8 DIN 934	4	0934H
7	Protective cap for 16-pins plug	1	on request
8	Barcode reader	1	EB0603
9	circular plug for barcode reading pen	1	on request
10	Stain relief	1	on request
11	Protecting cover (position sensor)	1	EST0508
12	Protecting cover	1	EST0547
13	Foil for front panel	1	EF0601
14	Lock for front cover	1	J1001
--	Key	1	on request
15	Front cover for hydraulic	1	105011
16	Seal for front panel	1	105013
17	Filler pipe	1	C1002002
18	Oil dip rod	1	C102001
19	Conical nipple for filler pipe	1	D24x18,5
--	Hydraulic oil	1 l	HLPD032
20	Rubber plate	1	105006
21	Flat head screw M 4x10 DIN 7991	8	7991D010
22	Rosette M4	8	ROSM4
23	Front panel for electric	1	105012
--	Legitimacy card, general	1	BAA001
--	Legitimacy card, gas *	1	BAG002
--	Pipe data card **	1	BAR003
	* Indicate the name of the welder when ordering		
	** Indicate pipe-diameter, wall thickness and material when ordering		

10.3. Planer

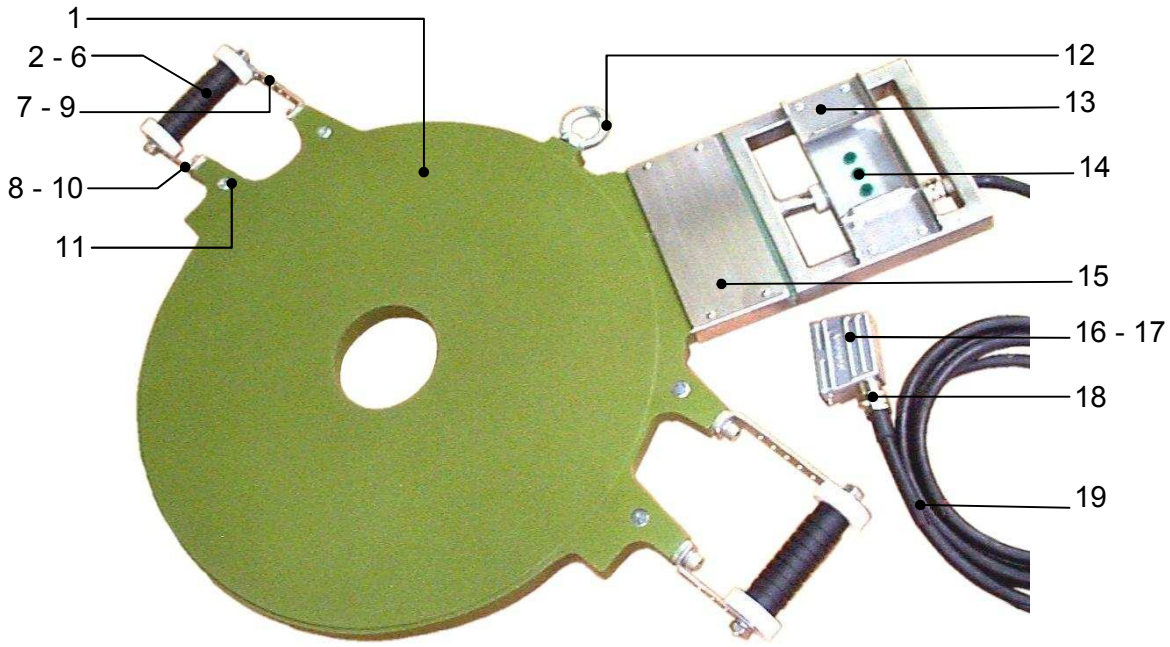


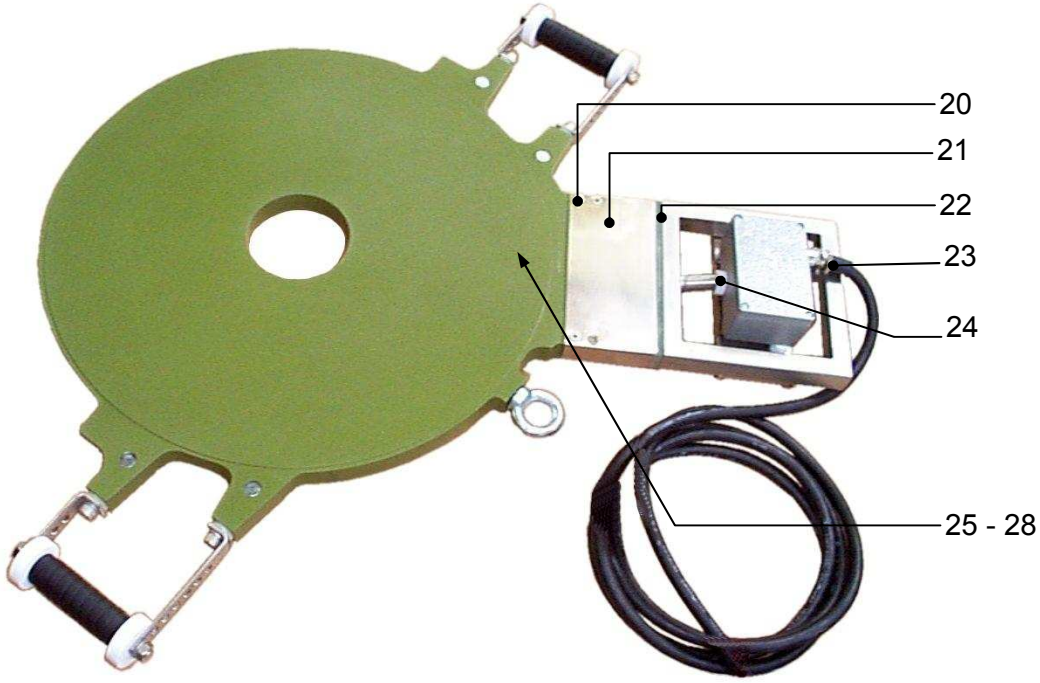


Planer WIDOS 5500

Pos.	Name	Piece	Order no.
1	Holder for planer	1	391401
2	Planer disc, right-hand	1	391402
3	Pan head screw M10x35 DIN 912	4	0912J035
4	Ball bearing 6028	1	LL6028
5	Chain wheel, large 3/8"x7/32" 95 Z.	1	023406
6	Flat head screw M 8x20 DIN 7991	4	7991H020
7	Three-phase geared motor	1	ADG11400
8	Pan head screw M8x40 DIN 912	4	0912H040
9	Cable	6 m	EL01515
10	Screwing M25x1,5	1	EV1025
11	Drive shaft for geared motor	1	0824111
12	Feathter key A8x7x90 DIN 6885	1	6885H090
13	Feather key A8x7x18DIN 6885	1	6885H018
14	Washer	1	081414
15	Flat head screw M8x20 DIN 7991	1	7991H020
16	Disc for chain weel	1	081409
18	Flat head screw M8x16 DIN 7991	1	7991H016
19	Chain wheel, small 3/8" 11 Z.	1	391406
20	Chain 3/8" 151 pieces	1	K38153
21	Chain joint 3/8"	1	KSCH38
22	Bolt	1	210410
23	Ball bearing 6003 Z	2	L6003Z
24	Washer M16 DIN 125	5	0125P
25	Hexagon nut M16x1,5 DIN 934	1	0934Y
26	Handlebar	1	071409
27	Spherical button	1	0319C40
28	Plug connector 380 V	1	EST0416
29	Cover for planer holder	1	390404
30	Pan head screw M4x16 DIN 912	4	0912D016
31	Planer disc, left-hand	1	391403
32	Suspension holder	1	081406
33	Suspension overarm	1	390407
34	Ring nut M 16 DIN 582-C15	1	0582P
35	Pan head screw M10x45 DIN 912	2	7984J045
36	Washer M10 DIN 125	2	0125J
37	Lock nut M10 DIN 985	2	0985J
38	Knife	2	MES120
39	Knife	2	MES085
40	Flat head screw M 3x8 DIN 965	14	0965C008TX
41	Locking for planer complete	1	082420
--	Torx screw driver T10	1	ZT10

10.4. Heating Element

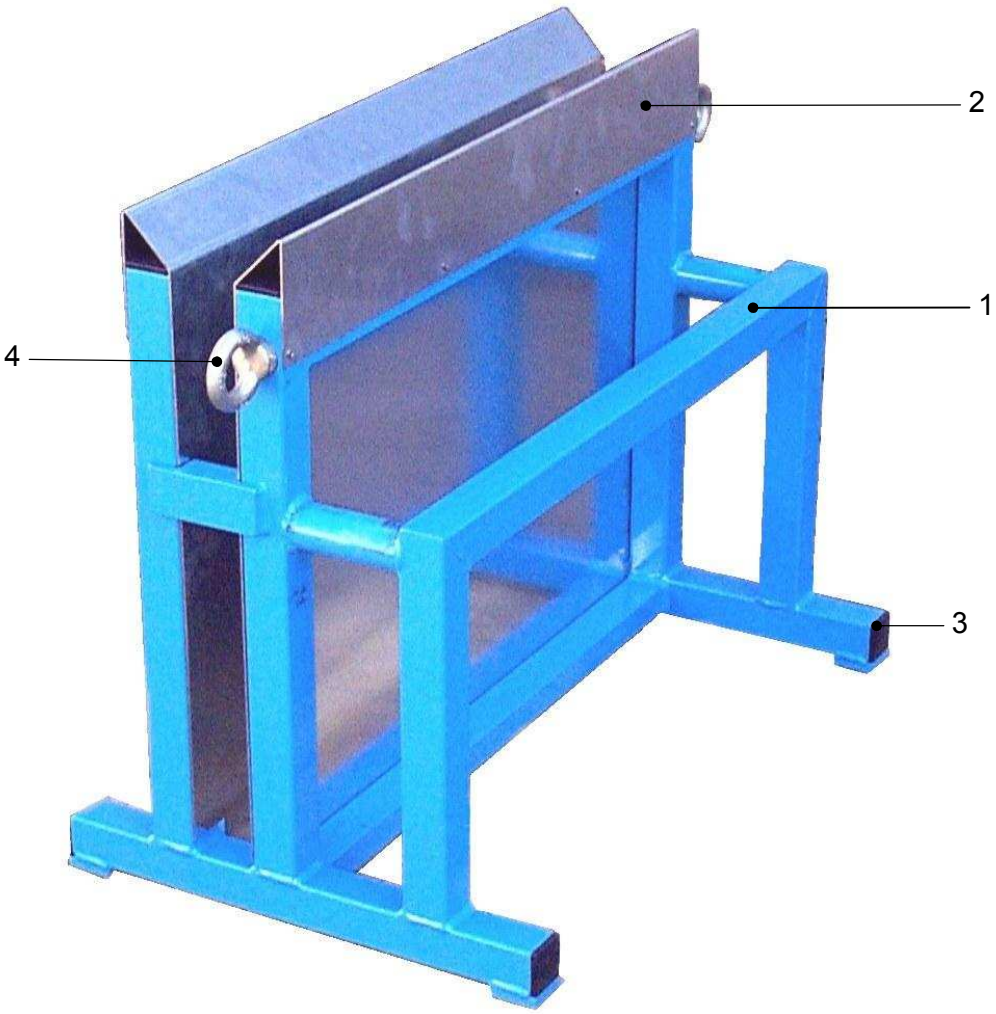




Heating element WIDOS 5500 CNC 3.0

Pos.	Name	Piece	Order no.
1	Heating element H 5500 230 V	1	H5500E
	Heating plate, new	1	HP5500E
	Heating plate in exchange	1	HPT550E
2	Washer	2	0715091
3	Handle	2	071508
4	Axis for grip	2	71507
5	Washer with collar	2	0715092
6	Hexagon-head screw M 10 DIN 934	4	0934J
7	Angle for grip long	2	071506
8	Insulating washer	4	071509
9	Pan-head screw M 10x50 DIN 912	4	0912J050
10	Angle for grip short	2	0715061
11	Tapped bushing	4	HGEW-M10
12	Lifting screw M 12 DIN 580	1	0580L
13	Frame with panel and control housing	1	H071538
14	Control lamp green	3	H2105
15	Terminal box	1	071550
16	Nozzle housing, 16-pins	1	EST0542
17	Bolt insert, 16-pins	1	EST0543
18	Bolting HKL	1	EVH21201615
19	Connecting cable 7 x 1,5 mm2	5 m	ELN01
20	Flat head screw M 6x12 DIN 7991	8	7991F012
21	Cover for clamping box	1	71550
22	Insulating piece	1	071556
23	Bolting HKL	1	EVH21201615
24	PTFE - insulating disk	1	211505
25	Holder for probe	1	023536
26	Oval-head screw M 4x6 DIN 7985	2	7985D006
27	Tooth lock washer M4 DIN 6797	2	6797D
28	Probe PT1000	1	H09082

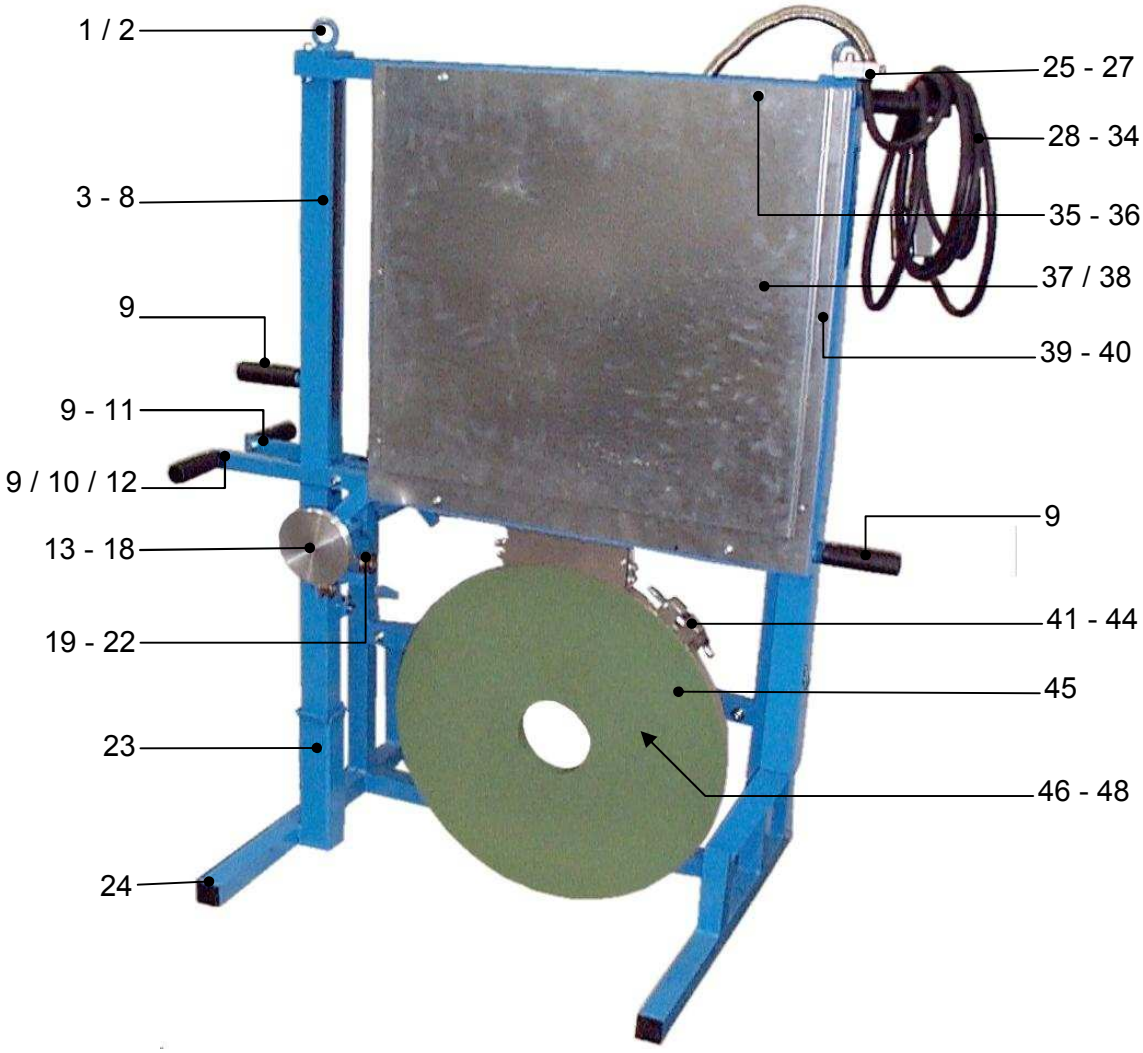
10.5. Reception box

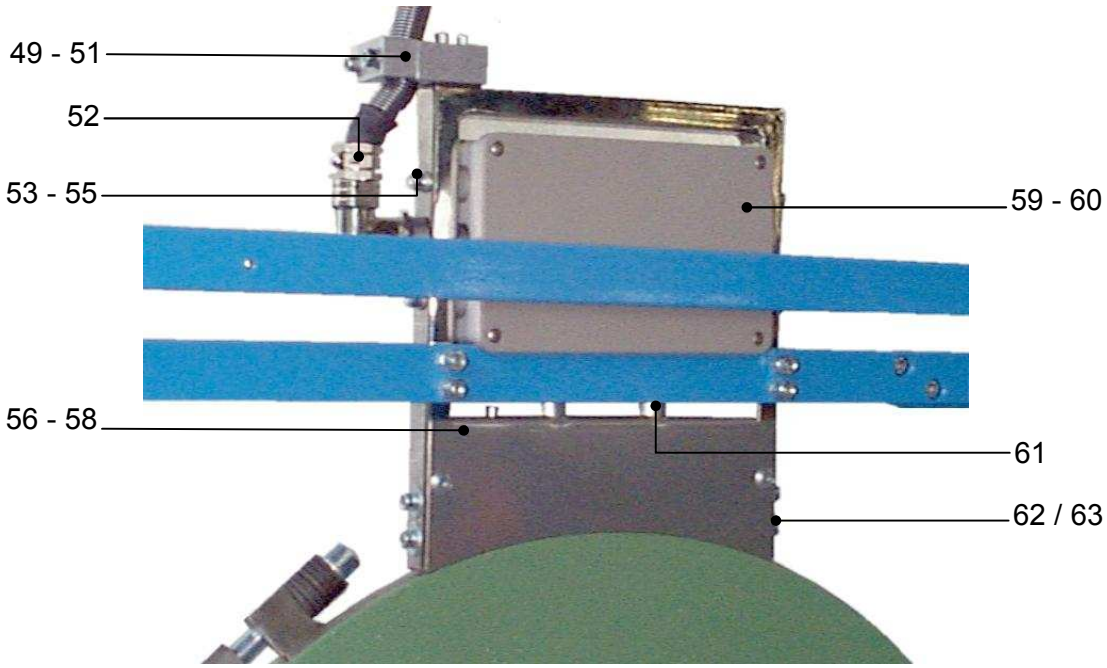


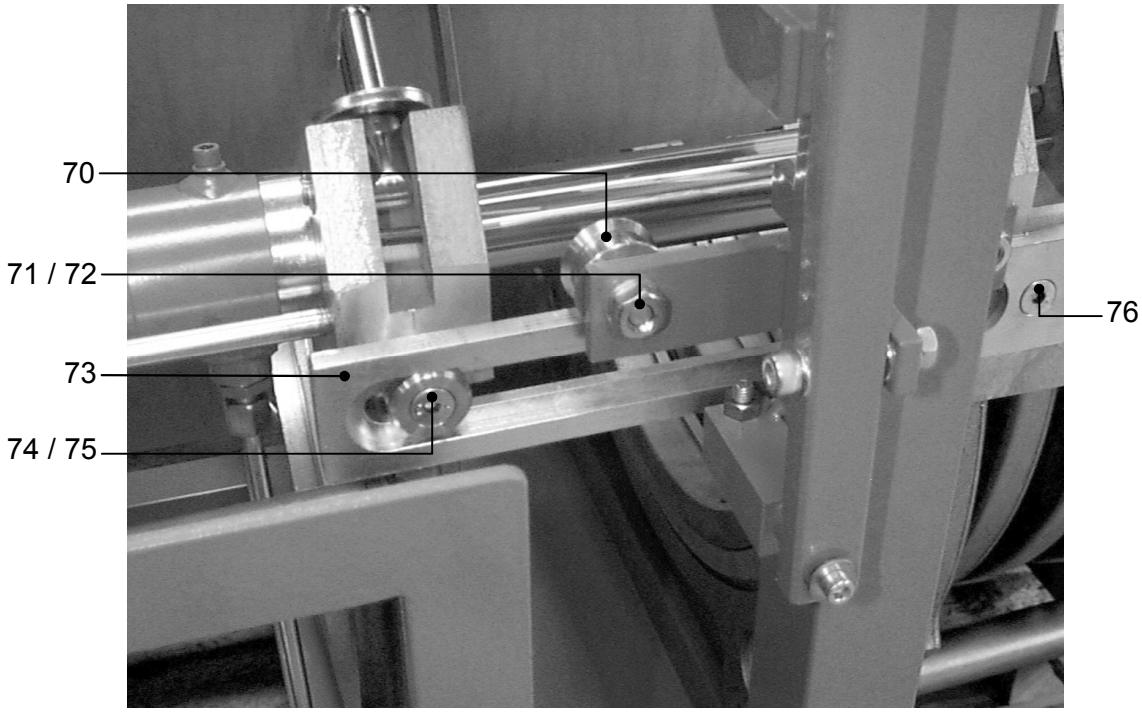
Reception box WIDOS 5500 CNC 3.0

Pos.	Name	Piece	Order no.
1	Reception box	1	390520
2	Heat absorbing steel sheet	2	3905201
--	Blind rivet 4x10 DIN 7337	8	7337D010
3	Fitting cap 40 x 30 x 2	4	J0203
4	Lifting screw M16 DIN 580	2	0580P

10.6. Automatic heating element (option)



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Automatic heating element 5500 CNC 3.0 (option)

Pos.	Name	Piece	Order no.
1	Cover plate with ring nut	2	3975301
2	Pan head screw M 8 x 20 DIN 912	4	0912H020
3	Frame for heating element	1	397530
4	Pneumatic cushion	1	on request
5	Wire cable with eye Ø4 x 800	1	on request
6	Screws ASS 331010004	1	on request
7	Bearing pedestal	1	397538
8	Guide pulley	1	397537
9	Grip with stud bolt	5	H0906
10	Handlever, lefthand	1	3975571
11	Pan head screw M 8 x 25 DIN 912	4	0912H025
12	Handlever, righthand	1	3975572
13	Disc for retention pin	1	397545
14	Retention pin for mouvable support	1	094544
15	Pressure spring	1	on request
16	Set collar for retention pin	1	094545
17	Pan head screw M8x10 DIN 912	1	0912H010
18	Set screw M8 x 10 DIN 913	1	0913H010
19	Supporting roller	2	094548
20	Pan head screw M10x25 DIN 7984	2	7984J025
21	Washer M10 DIN 125	2	0125J
22	Hexagon nut M10 DIN 934	2	0934J
23	Protective box for heating element	1	397559
24	Fitting cap 30x30x2	6	J0206
25	Cable reel	1	3975582
26	Pan head screw M 6 x 30 DIN 912	2	0912F030
27	Pan head screw M 8 x 30 DIN 912	1	0912H030
28	Strain relief	1	H09076
29	Pan head tapping screw M2,9x13 DIN 7981	2	7981C013
30	Cable bushing 16/15 f. Pg16	1	EVK1615
31	Rubber cable (H07RN-F) 5x1,5 mm²	1	EL02515
32	Nozzle housing (16 pole)	1	EST0542
33	Pin insert (16 pole)	1	EST0543
34	HKL-screwed connection PG 16/15	1	EVH1615
35	Distance washer for heat absorbing steel sheet	4	on request
36	Pan head screw M 6 x 15 DIN 912	4	0912F015
37	Thermal guard plate, inside	2	397554
38	Thermal guard plate, outside	2	397555
39	Pan head screw M 4 x 10 DIN 912	12	0912D010
40	Hexagon nut M 4 DIN 912	12	0934D
41	Cylinder head screw M 14x120 DIN 912	1	0912N120
42	Hexagon nut M 14 DIN 934	2	0934N
43	Disk spring 14x1,5 DIN 2093	12	2093N
44	Washer M 14 DIN 125	3	0125N
45	Heating element H5500E (modified)	1	on request

Automatic heating element 5500 CNC 3.0 (option)

Pos.	Name	Piece	Order no.
46	Heating cartridge Ø10 x 100; 230V; 160W; AL 1110	9	on request
47	Heating cartridge Ø10 x 190; 230V; 300W; AL 1110	9	on request
48	Temperature probe PT1000	1	H09082
49	Cable holder at terminal box	1	3975581
50	Pan head screw M 6 x 30 DIN 912	2	0912F030
51	Pan head screw M 8 x 30 DIN 912	2	0912H030
52	Angular screw connection PG16	1	EVK1615
53	Frame for terminal box	1	081506
54	Cylinder head screw M 6x35 DIN 912	4	0912F035
55	Washer M 6 DIN 125	4	0125F
56	Protection for terminal box	1	081505
57	Flat-head screw M 4x12 DIN 7991	4	7991D012
58	Rosette M 4	4	ROSM4
59	Terminal box	1	081507
60	Cover for terminal box	1	081511
61	Cable guide	2	081508
62	Pan head screw M 6x30 DIN 912	4	0912F030
63	Washer M 6 DIN 125	4	0125F

Add-on pieces for basic machine

70	Supporting roller	2	94548
71	Cylinder-head screw M10x40 (shortened)	2	on request
72	Hexagon nut M 10 DIN 934	2	0934J
73	Guide for supporting rollers	1	397549
74	Roller for guide	1	397536
75	Flat-head screw M8x40 DIN 7991	1	7991H040
76	Flat-head screw M8x35 DIN 7991	2	7991H035

11. Declaration of conformity

In the sense of the EC guideline EG-MRL 2006/42/EG

Corporation WIDOS GmbH
Einsteinstr. 5
D-71254 Ditzingen-Heimerdingen

declare under own responsibility that the product

Heating element butt welding machine with CNC control unit
WIDOS **5500 CNC 3.0**

to which this declaration refers corresponds to the following norms and norming documents:

1. DIN EN ISO 12100 – 1 and 2 (replacement for DIN EN 292 part 1 and 2)
   Safety of machines, basic terminology, general guidelines for design

2. DIN EN 60204.1
   Electric equipment of industrial machines

3. DIN EN 60950
   Safety of equipments of the information technology

4. DIN EN 4413
   Safety specifications for fluid technical installations and components

5. EN 60555, EN 50082, EN 55014
   Electro-magnetic resistance

The technical documentation is completely available.

Ditzingen-Heimerdingen, the 19.09.2011

Martin Dommer (Technical director)