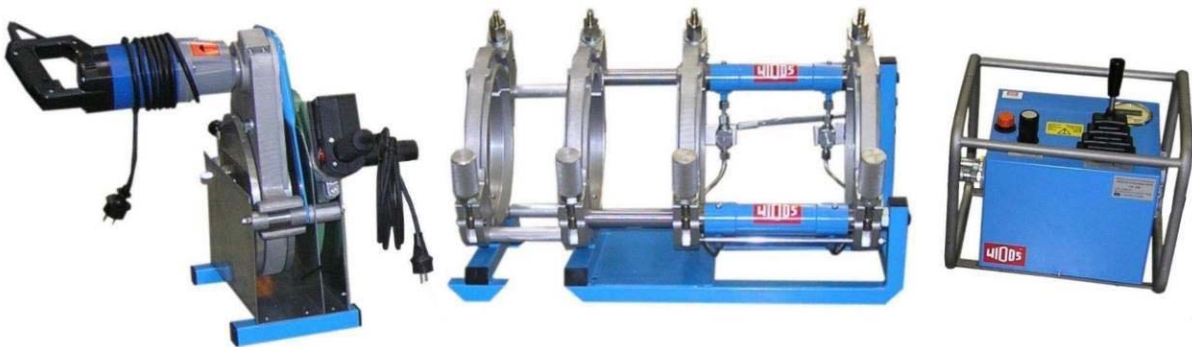


# Working Instructions Translation

Heating Element Butt Welding Machine

WIDOS 4600



Keep for further use!

Model:	Heating element butt welding machine
Type:	WIDOS 4600
Serial number / year of construction:	see type plate

### Customer Entries

Inventory-no.:

Place of working:

### Order of Spare Parts and After Sales Service:

#### Address of Manufacturer

#### WIDOS

Wilhelm Dommer Söhne GmbH  
Einsteinstr. 5

D-71254 Ditzingen

Phone: +49 7152 9939 0

Telefax: +49 7152 9939 40

info@widos.de

<http://www.widos.de>

## 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 advisers in the factory or in our subsidiary companies.

We will help you with pleasure.

According to our interest to make our products and working instructions continuously better, we kindly ask you to inform us about problems and defects which occur during operation.

Thank you.

## Structure of the Working Instructions

This manual is arranged in chapters, which refer to the different operating phases of the machine.

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



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Einsteinstraße 5

D-71254 Ditzingen

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Any changes prior to technical innovations.

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# 1. Description of the Product

This chapter gives important basic information about the product and its prescribed use. All technical details of the machine are put together as a general arrangement.

## 1.1. Usage and Purpose-oriented Use

The WIDOS 4600 has been designed for heating element butt welding of pipes and fittings with a diameter range of  $\varnothing = 75 - 250$  mm.

It is a machine for construction sites and particularly designed for the usage on-site, as well as in the workshop.

For this reason, the frame is kept small so that it can be used even under difficult conditions (e.g. building ditches).

All use going beyond is not purpose-oriented.

The manufacturer is not responsible for damages caused by misuse.

The risk is held only by the user.

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. Machine Overview



1	Planer
2	Reception box
3	Heating element
4	Basic machine with clamping tools
5	Hydraulic aggregate

### 1.3. 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.

### 1.4. Conformity

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

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

### 1.5. Designation of the Product

The product is designated by two type labels which are attached at the aggregate and at the basic machine.

They contain the type, the serial number and the year of construction of the machine.

#### 1.5.1 Technical Data

##### 1.5.1.1 WIDOS 4600 General Data

Material:	PP, PE 80, PVDF, PE 100
Pipe diameter range:	outside- $\varnothing$ = 75 - 250 mm
Transport box (lxwxh): Weight: Cases with compartments for reduction inserts:	appr. 950 x 850 x 570 mm appr. 40 kg
4 compartments:	appr. 680 x 410 x 310 weight: appr. 10 kg
7 compartments:	appr. 1160 x 410 x 310 weight: appr. 16 kg
9 compartments:	appr. 1470 x 410 x 310 weight: appr. 21 kg
Packing box (lxwxh): Weight:	appr. 1230 x 980 x 670 mm appr. 67 kg
Weight (without boxes):	appr. 93 kg
Fuse:	16 A
Wire cross section:	1.5 mm <sup>2</sup>
Emissions	<ul style="list-style-type: none"> <li>- The sound intensity level while using the planer is appr. 86 dB (A).</li> <li>- When using the named pipe materials and when welding below 260° C no toxicant damp arises.</li> </ul>

Ambient conditions in the welding area:	<ul style="list-style-type: none"> <li>- Take care for cleanness (no dust at the welding area)</li> <li>- Do not weld below 5° C, if necessary preheat</li> <li>- Avoid humidity, if necessary put up a tent</li> <li>- Avoid strong sun rays influence</li> <li>- Protect from wind, shut the pipe ends</li> </ul>
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### 1.5.1.2 Planer

Motor:	Monophase-alternating current motor
Power:	1150 Watt
Voltage:	230 V ( $\pm 10\%$ )
Nominal current:	4.5 A
Frequency:	50 Hz ( $\pm 10\%$ )
Speed n1 of motor:	760 rpm
Speed n2 of planer:	60 - 100 rpm
Attached elements:	On/off-switch with fixing device Connecting cable and plug with earthing contact
Weight:	appr. 14 kg

### 1.5.1.3 Heating Element

Power:	1500 Watt
Voltage:	230 V ( $\pm 10\%$ )
Current:	6.5 A ( $\pm 10\%$ )
Frequency:	50 Hz
Outside- $\varnothing$ :	320 mm
Surface:	Nonstick coated
Elements:	Electronic temperature control Control lamps, on/off-switch Connecting cable and plug with earthing contact
Weight:	appr. 6 kg



#### 1.5.1.4 Hydraulic Aggregate

Power:	0,3 kW
Voltage:	230 V ( $\pm 10 \%$ )
Current:	2,7 A
Frequency:	50 Hz
Hydraulic oil tank:	appr. 1 L
Electromotor and pump:	
Speed:	1380 (rpm)
Max. working pressure of pump:	appr. 120 bar
Working pressure:	100 bar
Volume velocity:	1.9 L/min
Weight :	appr. 23 kg

#### 1.5.1.5 Basic Frame

Dimensions (lxwxh):	800 x 420 x 460 mm
Reduction inserts:	Dimensions can be selected
Material frame:	Machinery steel
Material clamping shells:	Aluminium
Weight:	appr. 40 kg
$\varnothing$ cylinder:	35 mm
$\varnothing$ piston rod:	30 mm
Length of stroke of cylinder:	140 mm
Max. force: (F=P*A)	5200 N (at 100 bar)
Velocity of piston rod:	6.2 cm/s

See spare parts list for article numbers and single parts

### 1.6. Equipment and Accessories:

The following accessories are part of the first delivery:

1	Tool bag for 10 parts
1	Socket spanner size 27
1	Torx screw driver T10
1 each	Allan key angulate, size 3 / 6 / 8
1 each	Allan key with T grip size 4 / 5
optional	Different sizes of reduction inserts, roller brackets for the pipes

## 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.

The safety indications of this chapter represent the general part.  
Particular information is listed directly before the corresponding actions are described.

- These working instructions contain the most important information to run the machine safely.
- The safety information must be read 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 possible danger for the life and the health of persons.
- The non-respect of these indications may have heavy consequences for the health.



- This symbol means a possible dangerous situation.
- The non-respect of these indications may cause light 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 gives important information for the proper use of the machine.
- The non-respect of these indications may conduct to misfunctions 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 work 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 should 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 much 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

- Only skilled and trained persons are allowed to work at the machine.
- 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.
- 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 machine WIDOS 4600 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 must 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.*

## 2.8. Maintenance and Inspection, 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.

## 2.9. Dangers Caused by Electric Energy



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.
- If works at alive parts are necessary, a second person has to assist who can disconnect the machine from the mains if necessary.
- All electric tools (heating element, planer, aggregate) have to be protected from rain and dropping water (if necessary 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.

## 2.10. Dangers Caused by the Hydraulics



System parts and pressure hoses should be made pressureless before beginning of any repair works. Even if the machine is switched off, pressure may be in the hydraulic accumulator!

- There is the danger of injuring the eyes by hydraulic oil squirting out
- 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 !

## 2.11. Special Dangers

### 2.11.1 Danger of Catching Clothes by the Planer



There is the danger of cutting yourself or even breaking bones !

- Only wear clothes tight to the body.
- Do not wear rings or jewellery during work.
- If necessary, wear a hair-net.
- Always put the planer back into the reception box after and before each use.
- Transport the planer at the handle only.
- Do not touch the planer surfaces.
- Switch the planer on only for usage. Otherwise the planer will start every time when the security microswitch is pressed.

### 2.11.2 Danger of being burnt by Heating Element, Reception Box and Welding Area



You can burn yourself, inflammable materials can be ignited!

The heating element temperature 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.
- Wear safety gloves.
- Always put the heating element back into the reception box after and before each use.
- Transport the heating element at the handle only.

### 2.11.3 Danger of Stumbling over Hydraulic and Electric Wires

- Make sure that no person has to step over the wires.
- Lay the wires in such a way that the danger is kept to a minimum.

### 2.11.4 Danger of Squeezing by Clamping Devices and Guideways



There is the 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 devices with not yet clamped pipes.
- Do not block opening and closing of the machine slides.

## 2.12. Structural Modifications on the Machine

- No modifications, extensions or reconstructions may be made on the machine without permission of the manufacturer.
- 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 number.

## 2.13. Cleaning the Machine

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

- when cleaning with solvents
- when lubricating with oil and grease

## 2.14. 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 transport, mounting, starting, operating and maintenance 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

**Basically, the international and national process guidelines are to be followed.**

The plastic pipes are clamped by means of the clamping devices.

Then the front sides of the pipes are cut plane and parallel by means of the **planer** and the misalignment of the pipes is checked.

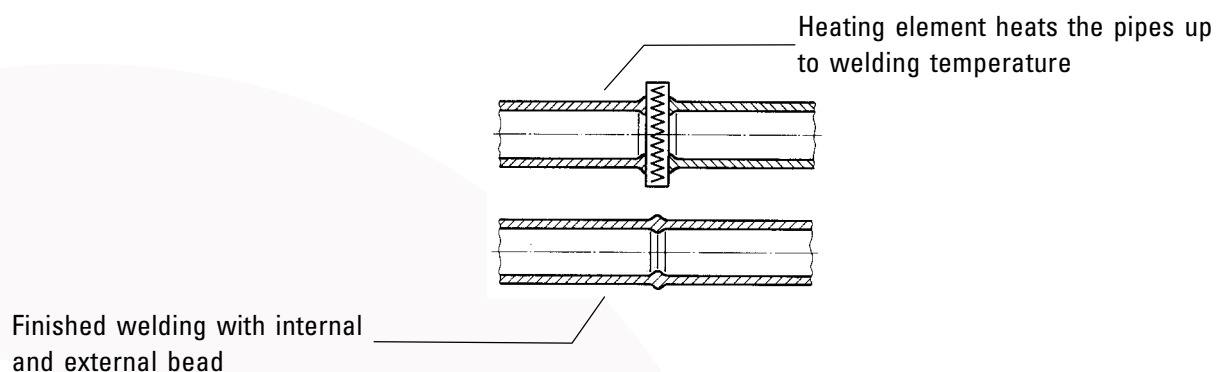
The heating element is inserted and the pipes are pressed against the heating element under defined adjusting pressure. This process is called "**adjusting**".

After the prescribed bead height being reached, pressure is reduced, the **heating time** begins. The function of this time is to heat up the pipe ends.

After expiration of the heating time, the slides are opened, the heating element is removed quickly and the pipes are driven together again. The time gap from the removal of the heating element to joining the pipes is called **change over time**.

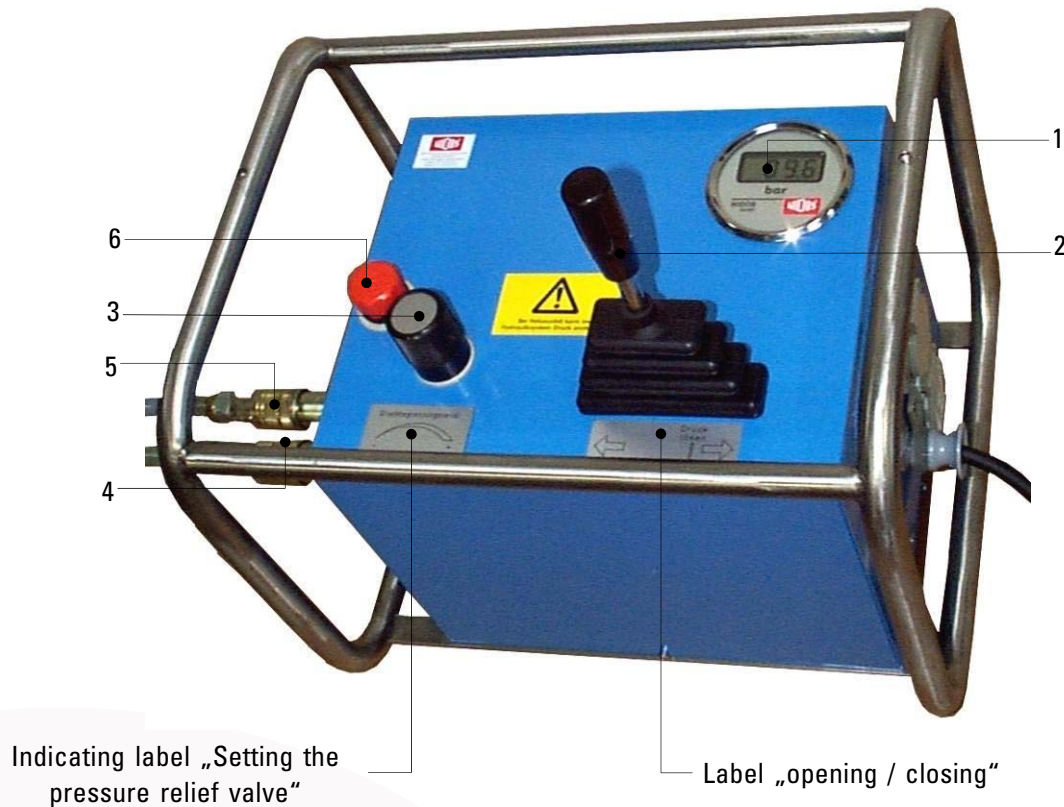
The pipes are joined under prescribed welding pressure and then cool down under pressure (**cooling time**).

The welded joint can be unclamped, the welding process is finished.



## 4. Operating and Indicating Elements

### 4.1. Elements on the Hydraulic Aggregate



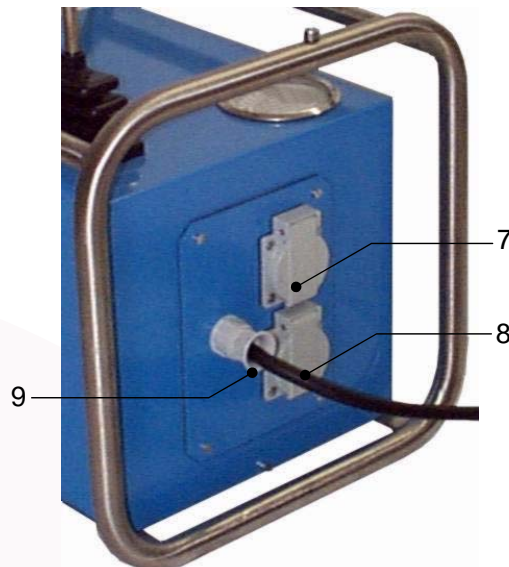
No.	Name	Function
1	Pressure gauge, digital	Digital display of the hydraulic pressure
2	Valve lever	Opening the slides. There are 4 different positions: - <b>to the left side</b> : slides close. - <b>in the middle</b> (usual position): the pressure which is currently achieved is kept (also by means of the built-in hydraulic accumulator) - <b>slightly to the right side</b> (position pressureless): a possibly existing pressure is released without moving the slides. Due to the hydraulic accumulator, it takes about 10 s until the pressure is completely released. - <b>to the right side</b> : slides open
3	Setting screw for pressure relief valve	- Limitation of the pressure to the desired value.
4	Hydraulic connection for closing the slides	- Non-dropping quick-acting coupling
5	Hydraulic connection for opening the slides	- Non-dropping quick-acting coupling
6	Screw with oil dipstick	- checking the oil level - oil filler neck



### 4.1.1 Hydraulic aggregat with pressure gauge analog

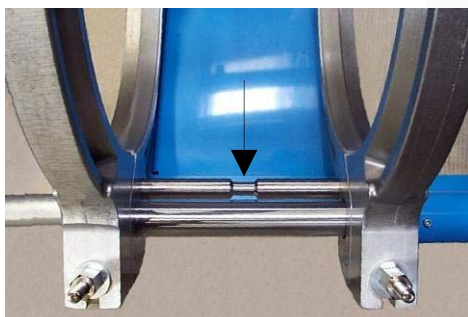


### 4.2. Elements on the side of the aggregate



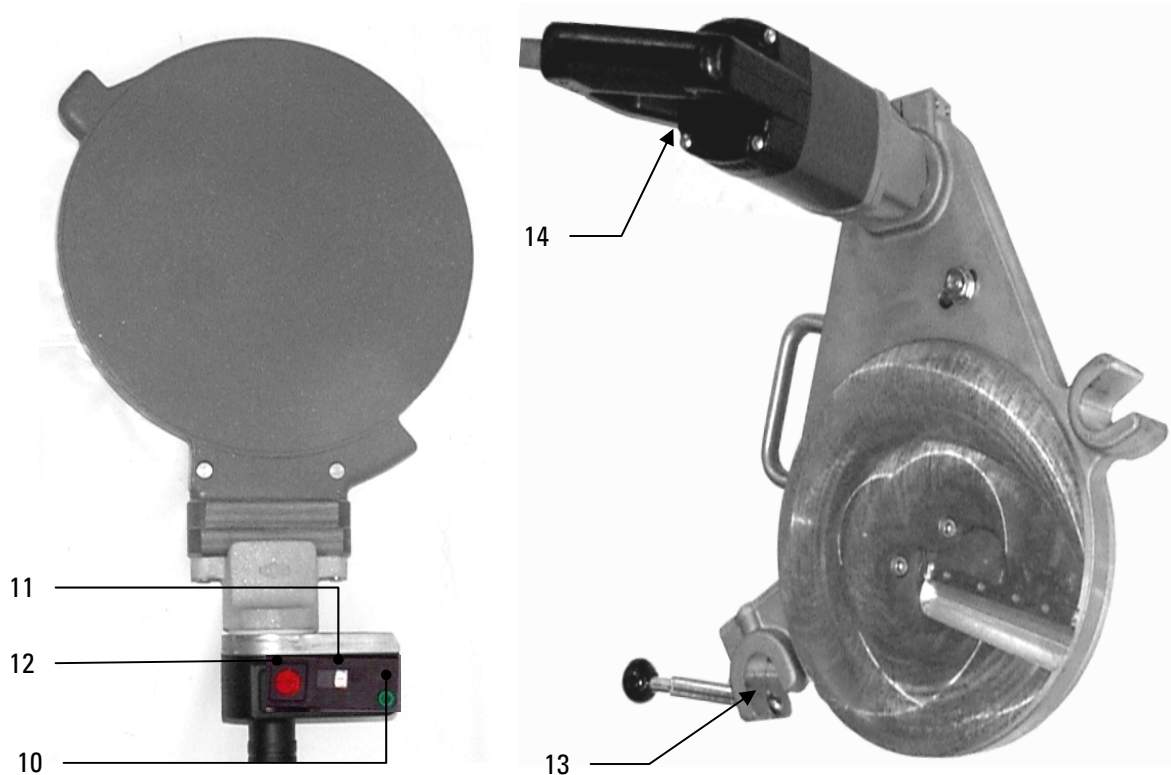
No.	Denomination	Function
7	Plug socket 230 V / 50 Hz	Possibility for connecting the planer / heating element
8	Plug socket 230 V / 50 Hz	Possibility for connecting the planer / heating element
9	Mains cable 230 V / 50Hz	Power supply

### 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 at heating element and planer



No.	Denomination	Function
10	Control lamp green	- There are three different states: <ul style="list-style-type: none"> <li>• off: signalizes that the heating element is not heated up at the moment or that it cools down</li> <li>• blinking: the heating element temperature is maintained by a certain pulse-position ratio</li> <li>• on: signalizes that the heating element is heated up at the moment. It has not yet reached the desired temperature</li> </ul>
11	Setting screw	- For regulating the temperature of the heating element
12	On/off-switch with red lamp	- As soon as the heating element is switched on, the red control lamp lightens
13	Locking lever with protection switch	- Protection against unintended running of the planer - Protection of the planer against jumping out of the machine - Planing is only possible if the security micro switch is pressed
14	On/off-switch for planer	- The planer can be switched on with the switch and the associated fixing knob. - The planer has to be switched off before and after each use.

## 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. Starting



The machine may only be operated by trained 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 mains plug has to be unplugged immediately.

In case of power failure, there may still be pressure in the hydraulic system. Therefore release pressure if need be.

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.

Protect the machine from wetness and moisture !

According to VDE 0100, the use on construction sites is only allowed with a power distributor with a FI-security protective switch.



Check the oil level of the hydraulic system before each starting of the control unit in order to avoid damages on the pump. The oil-level must be between the two marks at the oil dipstick.

- Connect the hydraulic aggregate to the mains (230 V / 50 Hz).
- Connect the heating element and the planer to the corresponding plug sockets of the aggregate.
- Connect the hydraulic hoses of the basic machine to the quick-acting couplings of the hydraulic aggregate.

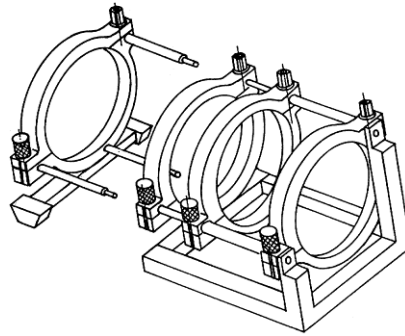


Lay hydraulic and electric wires carefully (danger of stumbling) !

- 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.
- In addition, take measures against rain, wind and dust.

### 5.1.1 Replacing the Reduction Inserts

- Unscrew the mounted reduction inserts by means of the provided Allan key.
- 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.



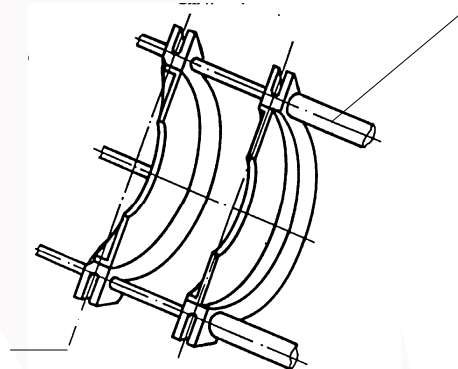
Dismantling of the outer fixed clamping device

### 5.1.2 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.

Small reduction insert, centered (for pipes)



Shown here:  
Small reduction insert,  
flush to the inside  
(for bends, T-pieces)

#### Large Reduction Inserts

- They are mainly used for a good tightening and are generally mounted on the inner clamping devices.
- Super large reduction inserts have a specially high guidance quality and are mainly used during the welding of fittings with long legs which can only be clamped with a single clamping tool.

## 5.2. Welding Process

The respectively valid welding prescriptions (ISO / CEN / DVS...) are to be basically followed.



There is the danger of serious bruising.

On the one hand between the inner clamping devices, on the other hand between the outer clamping device and the end of the guide bar.

- Do wear safety gloves as a protection against burning !
- A stop-watch must be available for recording the actual times for heating and cooling.
- A welding table must be available from which the parameters for the pipe dimensions to be welded prescribed by the welding prescriptions may be taken.
- The heating element surfaces are to be clean and, above all, free from grease.  
Therefore they are to be cleaned with non-fraying paper and detergent (e.g. PE - cleaner) before every welding or if they are dirty.  
The anti-adhesive coating of the heating element has to remain undamaged in the working area.
- Switch on the heating element and set the required welding temperature at the setting screw at the handle. (look at 4.4 no. 10 - 12)
  - when the control light is blinking, the desired temperature is obtained and maintained by a certain pulse-position ratio.
- Screw in the reduction inserts according to the outside diameter of the pipes to be welded.
- Lay the pipes to be welded into the clamping devices, tighten firmly the clamping nuts and align the pipes with respect to one another.  
In case of long pipe ends, use WIDOS rollerstands for alignment.
- Close the slides, thereby reading the **movement pressure** on the manometer.  
The movement pressure is displayed exactly when the slide with the clamped-pipe passes over into its movement.  
Subsequently, open slides again such that the planer fits therebetween.
- Insert the planer between the pipe ends, allow handle to lock with the security micro switch and switch on.



There is the danger that the planer pulls in clothes !

In case planer is switched on it will run immediately as soon as the security micro switch is pressed.

Do not hold the planer on its front sides in any case.

- Move the pipe ends towards one another by means of the valve lever and plane same with a planing pressure between 1 and 15 bar above the movement pressure.  
Planing must be carried out until a revolving cutting has been formed on both sides.
- Open the slides again by means of the valve lever, switch off planer motor, remove planer and put it into the heat protection box.  
Remove the produced cuttings without contacting the worked surfaces
- Close slides.

- Check pipe mismatch and gap on the joining pipe ends.  
According to DVS 2207, the mismatch on the pipe outer side must not exceed  $0.1 \times$  pipe wall thickness, the admissible gap must not exceed 0.5 mm.  
The mismatch compensation is carried out by further tightening or releasing the clamping nuts.  
In case mismatch compensation was carried out, planing must be repeated afterwards.
- The adjustment pressure for the pipe dimension to be welded can be gathered from the table. Add the movement pressure.  
Set the resulting pressure value at the pressure limiter valve and check it by actuating the valve lever.
- Open slides again slightly.
- Gather heating time, maximum change-over time, cooling down time and bead height for the pipe dimension to be welded from the table.
- Move the heating element, which has been cleaned and brought to desired temperature, between the pipes, take care that it lies in the zone of the throat of the tear-off bar (see point 4.3 ).
- Close slides smoothly to the set adjustment pressure.  
When the prescribed revolving bead height is reached, reduce pressure. For this purpose, move the valve lever to the position „pressure-less“ until the desired heating pressure is built up (heating pressure = approx. 10% of the adjustment pressure).
- The heating time starts now. Press the stop-watch and compare the actual time with the nominal time taken from the table.
- After expiration of the heating time, open the slides, remove the heating element as quickly as possible, put it into the protection box and close the slides smoothly.  
The maximum time frame for this process is predetermined by the value for the change over time taken from the table.
- When the welding pressure is built up, press the stop-watch and keep the control lever for approximately 10s on the position „pressure“ so that the hydraulic accumulator can be filled. During the cooling time re-adjust pressure, if necessary (the pressure for cooling is the same as the set adjustment pressure).
- After expiration of the cooling time, release pressure, remove the welded parts and open the slides.

## 6. Welding Log and Tables



You can access our website and select our welding tables via the qr code shown here. Select "WIDOS 4600" and the corresponding material (PE / PP /PVDF).





## 7. Maintenance and 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. 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.

### 7.2. Planer

- Check the stress of the drive chain in the planer and grease it regularly. Dismount the cover for that purpose.
- Do not lay the planer on its blades.
- Check the blades of the planer for sharpness, turn them if necessary (grinded on both sides, max. thickness of the cuttings: 0.2 mm !).
- Check the function of the safety micro switch.

### 7.3. 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.

### 7.4. Used Hydraulic Oil

Only use **HLPD 32**.

Features: protection against corrosion, resistance to ageing, abrasion-reducing additives, high carrying capacity and particulary water retending.

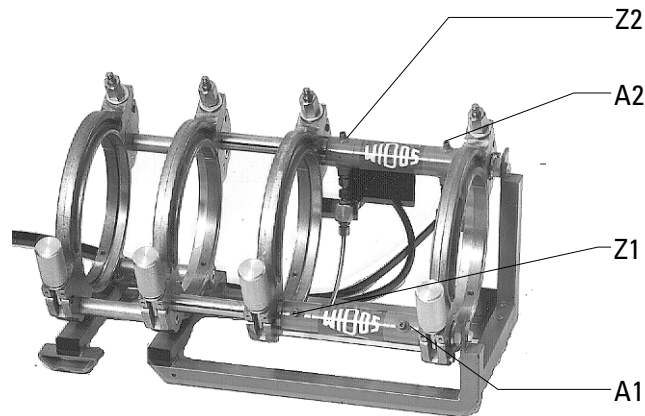


The hydraulic oil has to be disposed of properly.

### 7.5. Checking the Hydraulic Oil-Level

- Remove the red screw at the top of the aggregate.
- Take out the oil dipstick, clean it and insert it again.
- The oil-level must be between the two marks.

## 7.6. Venting the Hydraulic Cylinders



- Venting the hydraulic cylinder 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 cylinder **must 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.
- 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 of the aggregate.
- Close until there is no more air visible in the venting hose, then tighten again the vent screw.
- Close the machine completely.
- Unscrew the lower „vent screw (A1) for opening“ (righthand side).
- Connect the transparent venting hose and insert it in the collecting vessel of the aggregate.
- Open until there is no more air visible in the venting hose, then tighten again the vent screw.
- When the venting process at the lower vent screws is completed, repeat the process at the upper „vent screw (Z2) for closing“ (lefthand side), as well as at the upper „vent screw (A2) for opening“ (righthand side).



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.

## 8. Transport

The machine can be transported in two transport boxes or in one packing box.  
One transport box contains the basic machine, the aggregate and the reception box with planer and heating element, the other box contains the reduction inserts.

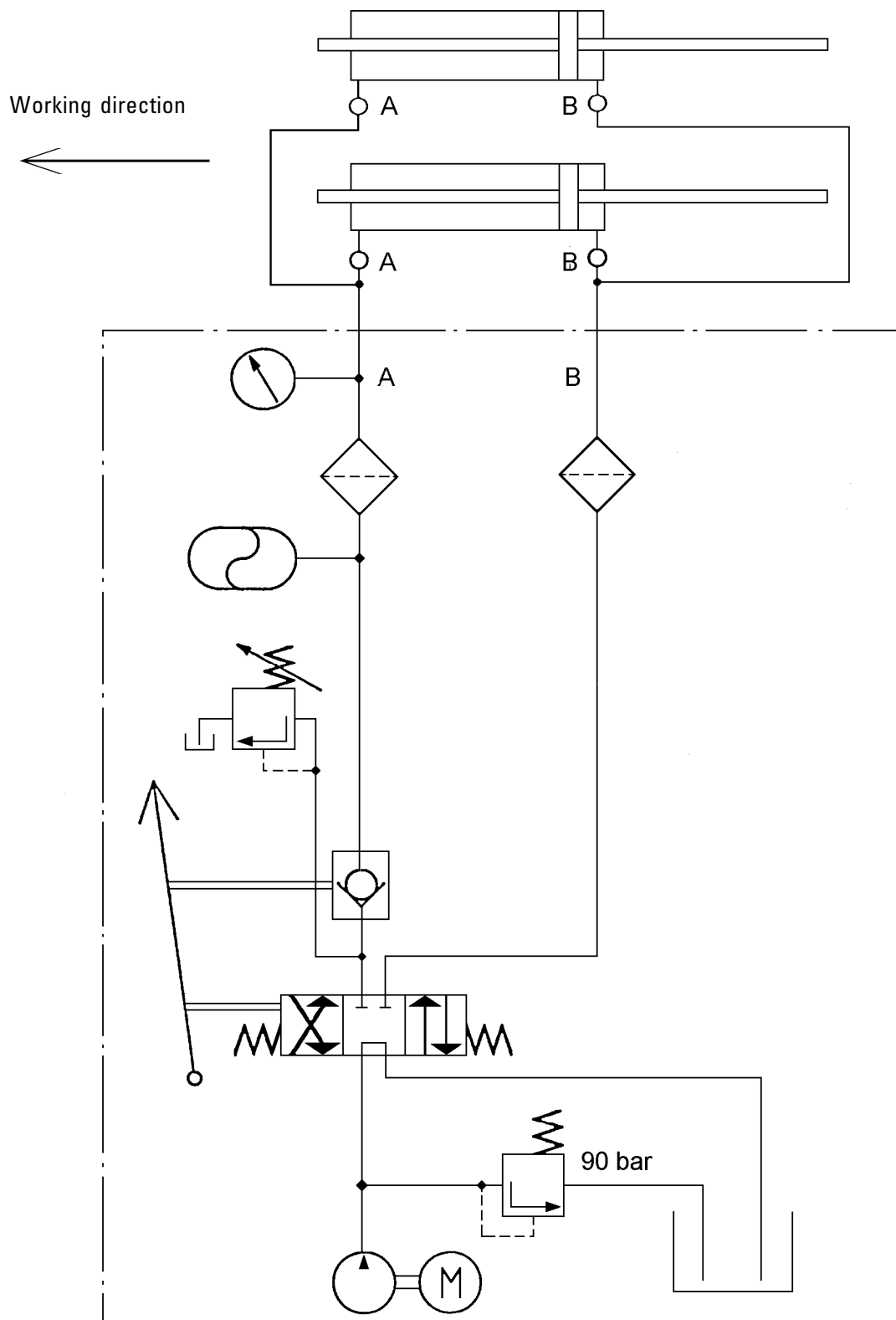
- In each box holders are included which are suitable for each single component in order to avoid slipping
- Put the components into the box in such a way that they are fitting in the holders.
- The hydraulic hoses at the basic machine should not be unscrewed (air penetration).
- Make sure that they are not squeezed.
- Handle the machine carefully.
- Do not tilt the aggregate too much. Otherwise there is the danger that oil may come out.
- Protect from heavy shocks and impacts.
- Make sure that the box cover is closed correctly.
- 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.



During the transport of the machine there may be cold weldings between the piston rod and the eyes of the planer housing. These spots on the piston rod may damage the sealing.

- Therefore the eyes must be lubricated with PTFE-spray before each transport!

## 9. Hydraulic and Electric Diagrams



Hydraulic diagram 4600

1 2 3 4 5 6 7 8



**WIDOS GmbH**  
Kunststoffschweißtechnik  
Plastic Welding Technology

Einsteinstrasse 5  
D-71254 Ditzingen  
Tel.: +49 (0) 7152 / 9939-0  
Fax: +49 (0) 7152 / 9939-40  
<http://www.widos.de>

# circuit diagram

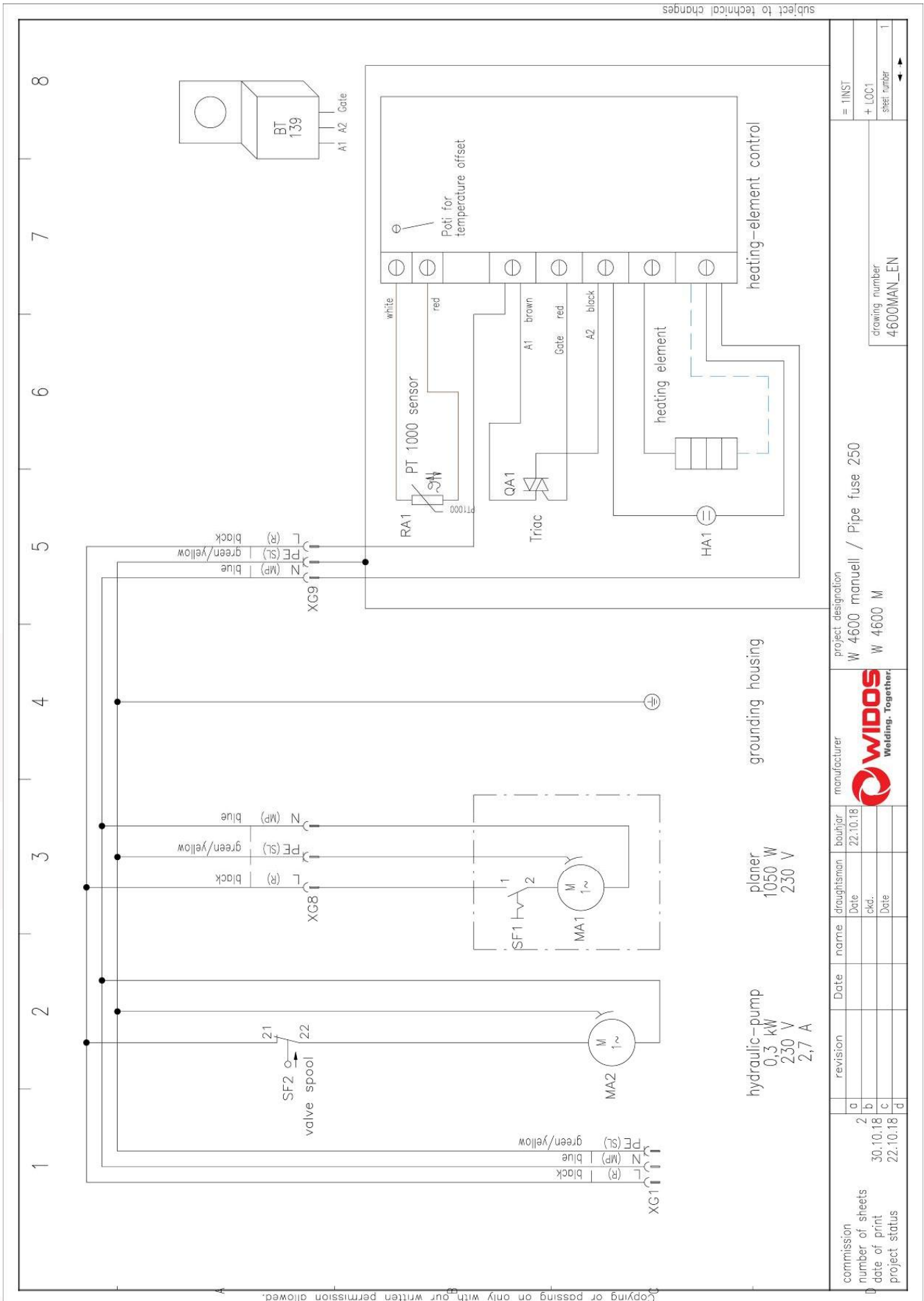
project designation W 4600 manuell / Pipe fuse 250

machine type W 4600 M - 230V

number of sheets 2  
Date 30.10.18

commission number of sheets date of print project status	Date	30.10.18	W 4600 M - 230V cover sheet	manufacturer <b>WIDOS</b> Welding - Together	project designation W 4600 manuell / Pipe fuse 250 Job number 4600MAN_EN	= 000KU
	draughtsman	Bauhjar				sheet number
	Date	30.10.18				confirmation sheet
	ckd.	22.10.18				number of sheets
						2

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subject to technical changes

commission	2							project designation	W 4600 manuell / Pipe fuse 250	
number of sheets	30.10.18							manufacturer	W 4600 M	
date of print	22.10.18							WIDOS	Welding. Together.	
project status								draughtsman	W 4600 M	
								revision	= 1INST	
									+ LOC1	
									drawing number	
									4600MAN_EN	
									sheet number	
									1	

## 10. Spare Parts List



You can access our website and select our spare parts lists via the qr code shown here. Select "4600 "

## 11. Declaration of Conformity

Issuing the declaration of conformity with regard to complying with the basic requirements and assembling the technical documentation is in the sole responsibility of:	
Manufacturer / Installation company:	WIDOS Wilhelm Dommer Söhne GmbH
Address:	WIDOS GmbH Einsteinstr. 5 D-71254 Ditzingen

Subject of the present declaration is the following device:	
<i>Product name:</i>	<b>Heating element butt welding machine</b>
<i>Model name:</i>	<b>WIDOS 4600</b>
<i>Machine number:</i>	
<i>Year of construction:</i>	

For the stated device we herewith declare that it complies with the <b>basic requirements</b> stipulated in the following designated harmonizing regulations: <b>in the sense of the EC guideline EC-Machinery Directive 2006/42/EC</b>
--

Statement of the relevant <b>harmonizing standards</b> referred to, or indication of the specifications that the conformity is declared for:	
Standard	Title
DIN EN ISO 12100	Safety of machines, basic concepts, general layout guidelines
DIN EN 1037	Safety of machines, prevention of unexpected starting
DIN EN 614-1	Safety of machines, ergonomic layout principles
DIN EN 60204.1	Electrical equipment of industrial machinery
DIN EN 1005-2	Human physical performance – manual handling of objects
DIN EN ISO 4413	Fluid technology, general regulations and safety-related requirements of hydraulic appliances
DVS 2208	Machines for the heating element butt welding of pipes, pipe fittings and sheets
ISO 12176-1	Pipes and fittings out of plastic- equipment for PE weld connections

Entitled to compile the technical documentation:	
Name:	WIDOS Wilhelm Dommer Söhne GmbH
Address:	Einsteinstr. 5 D-71254 Ditzingen

Signed on behalf of the company:	
Name, first name:	Dommer, Martin
Function:	Technical director



Ditzingen, 30.08.2019

Place / Date

Legally binding signature

This declaration is to certify the compliance with the mentioned harmonizing regulations, however does not include any assurance of properties.